EAGLE CREEK
RENEWABLE ENERGY
— EXCELLENCE IN HYDRO —

February 28, 2019

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Via Electronic Filing

Re: Reusens Hydroelectric Project (FERC No. 2376) Notification of Intent to File License Application, Request to Use the Traditional Licensing Process, and Pre-Application Document

Dear Secretary Bose:

Eagle Creek Reusens Hydro, LLC (Reusens Hydro) is preparing to relicense the Reusens Hydroelectric Project (Project; FERC No. 2376) with the Federal Energy Regulatory Commission (FERC or Commission). Reusens Hydro is the Licensee and owns and operates the Project. The Project is located on the James River in Bedford and Amherst Counties, Virginia. The current FERC license expires on February 29, 2024.

In accordance with the Commission's regulations, Reusens Hydro hereby commences the relicensing process by filing its Notice of Intent (NOI) to file an application for a new license and Pre-Application Document (PAD) for the Project. Also, pursuant to Section 5.3 of the Commission's regulations, 18 CFR § 5.3, Reusens Hydro is requesting approval to use the Traditional Licensing Process (TLP).

In accordance with Section 5.6(a)(1) of the Commission's regulations, 18 C.F.R. § 5.6(a)(1), Reusens Hydro is simultaneously distributing electronic copies of the NOI, PAD, and request to use the TLP to relevant federal and state resource agencies, Indian tribes, non-governmental organizations, and other potentially interested parties, by way of this transmittal, as set forth on the attached stakeholder distribution list. These electronic copies are being distributed to each stakeholder on the distribution list via an email, or where an email address is not available, via a hardcopy of this correspondence, containing the link or website address to the documents on Eagle Creek Renewable Energy's website (below). Electronic copies are also available on the Commission's e-library website at https://elibrary.ferc.gov/idmws/search/fercgensearch.asp and searching for docket P-2376. In addition, Reusens Hydro is providing two courtesy paper copies of the NOI – TLP request and PAD to Commission Staff in the Office of Energy Projects and Office of General Counsel – Energy Projects, as required by the Commission's filing guidelines. Reusens Hydro also has published notice of the NOI, PAD, and TLP Request Letter in the Bedford Bulletin and the Amherst New Era Progress, two newspapers that are in general circulation in Bedford and Amherst Counties, Virginia, respectively. The NOI, PAD, and TLP Request Letter are available for public inspection and

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116 N. State Street, PO Box 167, Neshkoro, WI 54960-0167
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www.eaglecreekre.com

copying during normal business hours at the Lynchburg Public Library located at 2315 Memorial Ave, Lynchburg ,VA 24501 as well as on the Project's relicensing website - http://www.eaglecreekre.com/reusens-relicensing. As required by 18 CFR § 5.3(d)(1), comments regarding Reusens Hydro's request to use the TLP to relicense the Project must be filed with the Commission within 30 days of this filing (by Monday, April 1, 2019) and must reference FERC Project No. 2376.

Reusens Hydro understands that the Commission will issue a public notice of the NOI and PAD, and then will issue a Notice of Commencement (NOC) no later than 60 days following the filing of the NOI, PAD, and TLP Request Letter. If the Commission approves Reusens Hydro's request to use the TLP to relicense the Project, Reusens Hydro will hold a Joint Meeting and Site Visit for the Project between 30 and 60 days of the NOC issuance, which is proposed to be conducted no later than Tuesday, June 18, 2019. Within 60 days following the Joint Meeting and Site Visit, interested parties must file written comments on the PAD and study requests with the Commission, with a copy provided to Reusens Hydro.

Some of the information presented in the PAD is considered Critical Energy Infrastructure Information (CEII) as defined by 18 CFR § 388.113(c). Such information has been removed from the public version of the PAD. In accordance with the Commission's filing guidelines, all CEII is included in a separate volume (Volume 2) that has been clearly marked as "CONTAINS CRITICAL ENERGY/ELECTRIC INFRASTRUCTURE INFORMATION – DO NOT RELEASE.". Reusens Hydro respectfully requests that this information be accorded treatment as CEII, as it consists of detailed Project facility diagrams and other information relating to the "production, generation, transportation, transmission, or distribution of energy" (18 CFR § 388.113(c)). In addition, some of the information presented in the PAD contains confidential financial information as defined by 18 CFR §388.112, which has been removed from the public version of the PAD and Reusens Hydro respectfully requests such information be treated as privileged. This information has been filed in accordance with the Commission's filing guidelines as Volume 3 that has been clearly marked as "CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE."

In support of relicensing and in accordance with 18 CFR §5.5(e), Reusens Hydro is requesting designation as the proceeding's non-federal representative for consultation under Section 7 of the Endangered Species Act with the United States Fish and Wildlife Service, National Marine Fisheries Service, and additional applicable agencies. Reusens Hydro is also requesting designation as the non-federal representative for consultation under Section 106 of the National Historic Preservation Act.

If you have any questions regarding this submittal or NOI, PAD, and TLP Request please contact me, at (973) 998-8400 or michael.scarzello@eaglecreekre.com.

Respectfully,

Michael Scarzello
Director

Eagle Creek Renewable Energy
116 N. State Street, PO Box 167, Neshkoro, WI 54960-0167
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UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Eagle Creek Reusens Hydro, LLC **Project No. 2376**

NOTICE OF INTENT TO FILE APPLICATION FOR NEW LICENSE

Pursuant to 18 CFR §5.5, the Eagle Creek Reusens Hydro, LLC ("Licensee" or "Applicant" or "Reusens Hydro"), a wholly owned indirect subsidiary of Eagle Creek Renewable Energy, LLC hereby notifies the Federal Energy Regulatory Commission of its intention to file an Application for New License for the Reusens Hydroelectric Project No. 2376 ("Project" or "Reusens Project"). The current Project license was issued on March 18, 1994, and expires on February 29, 2024. Accordingly, the Licensee shall file an Application for New License no later than February 28, 2022.

The following information is provided consistent with the requirements of 18 CFR §5.5:

(1) Applicants Name and Address:

Applicant's Name: Eagle Creek Reusens Hydro, LLC

Address: Eagle Creek Renewable Energy, LLC
116 N. State Street
P.O. Box 167
Neshkoro, WI 54960-0167 Telephone:
(973) 998-8400

(2) Project Number:

The FERC Project No. is 2376.

(3) License Expiration Date

February 29, 2024

(4) Unequivocal Statement of Intent to File:

Reusens Hydro intends to file an Application for License for Major Project - Existing Dam for the Reusens Hydroelectric Project using the Commission's Traditional Licensing Process (TLP). The Applicant's request and justification for using the TLP is attached hereto.

(5) Type of Principal Project Works to be Licensed:

The Reusens Project consists of the following: (1) a 24-foot-high, 416-foot-long concrete dam and spillway on the James River, with eight 16 3/4-foot-high floodgates; (2) a 25-

foot-high, 125-foot-long concrete curved auxiliary spillway section with 7-foot-high flashboards; (3) a 500-acre impoundment; (4) two powerhouses (Powerhouse A and Powerhouse B), one containing three generating units with a total installed capacity of 7.5 MW, and one containing two generating units with a total installed capacity of 5.0 MW, respectively; and (6) other related facilities.

(6) Project Location:

State or Territory:	Virginia
Counties:	Amherst County and Bedford County
Township:	Lynchburg
Waterway:	James River
Latitude:	37.4634
Longitude:	-79.1857

(7) The Installed Capacity of the Project is: 12,500 kW (12.5 MW)

Powerhouse A

Unit No. 1:	2,500 kW (2.5 MW)
Unit No. 2:	2,500 kW (2.5 MW)
Unit No. 3:	2,500 kW (2.5 MW)

Powerhouse B

Unit No. 1:	2,500 kW (2.5 MW)
Unit No. 2:	2,500 kW (2.5 MW)

Total: 12,500 kW (12.5 MW)

(8) Names and Mailing Addresses of Entities Listed in 18 CFR 5.5(b)(8):

(i) Every county in which any part of the project is located, and in which any Federal facility that is used or to be used by the project is located:

Amherst County	Bedford County
153 Washington Street	122 East Main Street, Suite 202
Amherst, VA 24521	Bedford, VA 24523

The Project uses no federal facilities and occupies no federal lands.

(ii)(A) Each city, town or similar political subdivision in which any part of the Project is located, and in which any federal facility that is used or to be used by the Project is located:

The Reusens Hydroelectric Project is located adjacent to the City of Lynchburg Virginia and is not adjacent to the boundary of any other city, town, or similar political subdivision, and does not use any federal facilities and occupies no federal lands.

(ii)(B) Each city or town that has a population of 5,000 or more people and is located within 15 miles of the existing Project dams:

The following cities and towns each have a population of 5,000 or more people (2010 U.S. Census data), and are located within 15 miles of the Project powerhouse:

City of Lynchburg
900 Church Street
Lynchburg, VA 24504
(Population: 75,568)

(iii)(A) Each irrigation district, drainage district, or similar special purpose political subdivision in which any part of the Project is located, and in which any Federal facility that is used or to be used by the Project is located:

There is no irrigation district, drainage district, or similar special purpose political subdivision in which any part of the Project is located or that owns, operates, maintains, or uses any Project facility. The Project uses no federal facilities and occupies no federal lands.

(iii)(B) Each irrigation district, drainage district, or similar special purpose political subdivision that owns, operates, maintains, or uses any Project facility or any Federal facility that is or is proposed to be used by the Project:

The Amherst County Service Authority could use the Project's reservoir to withdraw up to 3 million gallons of water per day to provide public water and waste water services to Amherst County; however the pumping station is not yet constructed. The City of Lynchburg also utilizes the Project reservoir as a municipal water supply. The City of Lynchburg has a water pumping station, the Abert Pump Station, which is located approximately 3.6 miles upstream of the Project dam. There are no other irrigation district, drainage district, or similar special purpose political subdivision in which any part of the Project is located or that owns, operates, maintains, or uses any Project facility. The Project uses no federal facilities and occupies no federal lands.

(iv) Every other political subdivision in the general area of the Project that there is reason to believe would likely be interested in, or affected by, this notification:

There is no other political subdivision in the general area of the Project that there is reason to believe would likely be interested in, or affected by, this notification.

(v) Affected Indian Tribes:

Eastern Band of
Cherokee Indians
PO Box 455
Cherokee, NC 28719

Monacan Indian Nation Inc.
P.O. Box 1136
Madison Heights, VA 24572

Absentee-Shawnee
2025 S. Gordon Cooper Drive
Shawnee, OK 74801

Eastern Shawnee Tribe of Oklahoma
P.O. Box 350
Seneca, MO 64865

Shawnee Tribe
21 North Eight Tribes Trail
Miami, OK 74355

Delaware Nation
31064 State Highway 281
P.O. Box 825
Anadarko, OK 73005

Cherokee Nation
PO Box 984
Tahlequah, OK 74465-0948

United Keetoowah Band of Cherokee Indians
PO Box 746
Tahlequah, OK 74465

Tuscarora Nation
2006 Mt. Hope Road
Lewiston, NY 14092

Pamunkey Indian Tribe
1054 Pocahontas Trail
King William, VA 23086

Nansemond Indian Tribal Association
1001 Pembroke Lane
Suffolk, VA 23434

All correspondence and service of documents relation to this Notice of Intent and subsequent proceedings should be addressed to:

Mr. Michael Scarzello
Director
Eagle Creek Renewable Energy, LLC
116 State Street
PO Box 167
Neshkoro, WI 54960

If you have any questions regarding this Notice of Intent or require additional information please call Mr. Scarzello at 973-998-8400 or Michael.Scarzello@eaglecreekre.com or Jot Splenda at 919-866-4417 or jsplenda@louisberger.com.

REUSENS HYDROELECTRIC PROJECT
FERC PROJECT NO. 2376
REQUEST TO USE THE TRADITIONAL LICENSING PROCESS

Eagle Creek Reusens Hydro, LLC (Reusens Hydro), Licensee for the Reusens Hydroelectric Project (Project), is including in this filing a request to use the Federal Energy Regulatory Commission's (FERC) Traditional Licensing Process (TLP) for the Project. Justification for this request, as required by 18 CFR § 5.3, is provided below. Any comments on the Applicant's request to use the TLP must be filed with the Commission within 30 days of the filing date of the request.

Likelihood of Timely License Issuance (18 CFR § 5.3(c)(1)(ii)(A))

Reusens Hydro anticipates FERC will be able to complete the timely issuance of a new license for the Project by approving the use of the TLP. The agencies and Non-Governmental Organizations (NGOs) that are participating in the relicensing have been involved in relicensing proceedings with other hydroelectric projects and have experience using the TLP. In preparing the Pre-Application Document (PAD), Reusens Hydro, agencies, and other stakeholders have informally consulted regarding issues related to the relicensing, and they are aware of the limited number of issues that are likely to be raised during the relicensing proceeding. In addition, many of the agencies and stakeholders are also involved in the TLP relicensing of the Bedford Hydroelectric Project (FERC Project No. 5596) located on the James River in Bedford and Amherst Counties, Virginia, and are currently involved in the TLP licensing of the proposed Scott's Mill Hydroelectric Project (FERC No. 14867) located on the James River immediately downstream of the Project. The agencies and stakeholder are therefore familiar with the TLP and its regulatory steps and requirements. The stakeholders' familiarity with the TLP and associated informational needs should allow for the timely issuance of the Project license on or before the expiration date of the existing license.

In addition, as described in Section 2 (*Process Plan and Schedule*) of the PAD for the Project, Reusens Hydro intends to complete and distribute the draft license application for the Project by September 1, 2021. The Process Plan and Schedule will allow Reusens Hydro to consult with agencies and other stakeholders regarding study plans, collect and analyze the necessary field data, and incorporate the study results into the final license application.

Complexity of the Resource Issues (18 CFR § 5.3(c)(1)(ii)(B))

The proposed Project is an existing FERC-licensed project of a conventional hydro design that has well-known and understood minimal impacts. As described in the PAD, there is existing resource information available for the project area. The Project operates in peaking mode, and has existing minimum flow requirements and resource management plans. The existing minimum flow requirement is established by license Article 401,[1] which states: the licensee shall release from the Reusens Dam into the James River an average hourly flow of 333 cfs or inflow, whichever is less, as measured downstream from the Project tailrace. In addition, Article 402

[1] As amended by Order Granting Rehearing issued July 8, 1994.

requires sufficient flows in the James River and water levels in the forebay (minimum 547 feet National Geodetic Vertical Datum) to protect municipal water pumps. Article 402 is met through implementing an Operations Plan required by Article 403, which was updated and filed with Commission on August 8, 2018. On December 10, 2018 the Commission approved the updated Operation Plan by Order Approving Updated Operation Plan. Furthermore, Reusens Hydro currently implements a Wildlife Management Plan and Cultural Resources Management Plan to protect wildlife and cultural resources of the Project. Reusens Hydro does not expect the resource issues to be complex as Reusens Hydro is not proposing changes to project facilities or operations.

Due to the limited geographic scope of the potential Project impacts, a relatively straightforward relicensing process is envisioned to generate the needed information to support the development of a complete license application. A list of identified resource issues and how these will be addressed in the study program is included in Section 5, *Preliminary Issues and Studies List*, of the PAD.

Consistent with previous relicensing efforts in Virginia, Reusens Hydro believes that any additional remaining resource issues will be identified through the Joint Agency Public Meeting and Site Visit, which are proposed to be held on June 18, 2019 in the vicinity of the Project, and through subsequent consultation activities.

Level of Anticipated Controversy (18 CFR § 5.3(c)(1)(ii)(C))

Reusens Hydro anticipates very limited or no controversy associated with the relicensing of the Project. Reusens Hydro has initiated informal consultation and outreach with the resource agencies and stakeholders to gain existing information about Project resources, and to consider resource issues and management goals that will need to be considered during the process. Reusens Hydro is not anticipating substantial public involvement or interest in the relicensing process given the location and nature of the Project.

Given the low complexity of issues already identified to date at the Project, it is not anticipated that the relicensing process will result in any significant controversy that cannot be resolved within the TLP. Reusens Hydro believes that the TLP is a process that will enable the license applicant and the stakeholders to reach agreement on protection, mitigation, and enhancement measures for the Project, as may be determined to be necessary.

Relative Cost of the Traditional Process Compared to the Integrated Process (18 CFR § 5.3(c)(1)(ii)(D))

Reusens Hydro believes that the TLP is the most efficient process to use for the Project, which is characterized by its relatively small size and no proposed changes to the current operation. Given the limited geographic scope of the Project boundary, the limited number of anticipated issues, the limited number of potential stakeholders, and the low level of controversy, Reusens Hydro believes that the TLP is better suited to license the Project from a cost standpoint than the Integrated Licensing Process (ILP). Experience to date at other projects nationwide demonstrates that the ILP is more costly to licensees compared to the TLP. For projects with limited geographic scope and related issues, significant process cost savings can be realized

using the TLP. Reusens Hydro believes that, given the circumstances at this Project, the TLP can be a more efficient relicensing process than the ILP. The Project licensing should proceed smoothly with the TLP, through consultation during designated phases in the process.

The TLP is also likely to be more efficient for the agencies and stakeholders expected to participate because there are other projects in the vicinity of the Project currently undergoing FERC relicensing engaging agency and stakeholder resources. Additionally, the timelines and more flexible nature of the TLP will provide Reusens Hydro and other stakeholders more flexibility to schedule meetings and develop pre-filing documentation. This flexibility will better allow all the relicensing parties to perform such activities in coordination with other ongoing relicensing and routine regulatory activities. The flexibility afforded by following the TLP will help reduce the overall cost of the relicensing effort for both the licensee and stakeholders.

The Amount of Available Information and Potential for Significant Disputes over Studies (18 CFR § 5.3(c)(1)(ii)(E))

Preparation of the PAD and outreach/consultation with agencies and stakeholders has indicated there is a reasonable amount of available information regarding resources associated with the Project, much of which comes from recently licensed and ongoing relicensing's of hydroelectric projects on the James River, and state biological surveys and environmental monitoring. A USGS gage is located immediately upstream of the Project, so an adequate flow record is available. Based on initial informal consultation conducted as part of the preparation of the PAD, it is anticipated that the information contained in the PAD will provide agencies and stakeholders with the information necessary to clarify any Project related issues or concerns, and to identify any additional study or data needs to be addressed by Reusens Hydro through the TLP.

As discussed above, the Project has a limited footprint and hence an equally limited effect on existing resources. It is Reusens Hydro's intent to conduct its pre-filing consultation in a manner that addresses and resolves, to the extent possible, any differences of opinion with regard to the design and implementation of any necessary studies. Due to the small geographic area of Project impacts, required field information can be collected in a relatively short amount of time. Given the productive exchange of data to date and the collective understanding of the relative scope of potential impacts, Reusens Hydro does not anticipate significant disputes over any necessary studies.

Other Factors Believed by the Applicant to be Pertinent (18 CFR § 5.3(c)(1)(ii)(F))

In conclusion, Reusens Hydro affirms that for the relicensing of this relatively small, straightforward project, the TLP will provide the most efficient, effective, and least burdensome process for relicensing the Reusens Hydroelectric Project. Reusens Hydro believes that this justification provides good cause for the Commission to grant this request to use the TLP and appreciates the Commission's consideration of this request.

CERTIFICATE OF SERVICE

I hereby certify that I caused to be served, either by U.S. First Class Mail or by electronic mail, the Notice of Intent to File Application for New License upon all interested parties designated on the attached service list in the Reusens Hydroelectric Project, Project No. 2376, in accordance with Rule 2010 of the Rules of Practice and Procedure, 18 CFR §385.2010.

February 28, 2019

Eagle Creek Reusens Hydro, LLC,

_____

Michael Scarzello
Director

REUSENS HYDROELECTRIC PROJECT, FERC No. 2376
INTERESTED PARTIES MAILING LIST

FEDERAL	
John T. Eddins Advisory Council on Historic Preservation 401 F Street N.W. Suite 308 Washington, DC 20001-2637	Bruce Maytubby Regional Director Bureau of Indian Affairs 545 Marriott Drive, Suite 700 Nashville, TN 37214-2751 615-564-6500 eastern.inquiries@bia.gov
Office of the Solicitor U.S. Bureau of Indian Affairs 1849 C Street, NW, MS 6557 Washington, DC 20240 District of Columbia	Office of Trust Services U.S. Bureau of Indian Affairs 1849 C St NW, MS-4655-MIB Washington, DC 20240 202-208-5480
Zach Reichold Manager Bureau of Land Management Lower Potomac Field Station 10406 Gunston Rd. Lorton VA, 22079	FERC Contact U.S. Bureau of Land Management Land & Renewable Resources 1849 C St NW Washington, DC 20240
Gregory L. Hogue Office of Environmental Policy and Compliance Department of Interior 75 Spring St SW, Room 1144 Atlanta, GA 30303-3309	Kyle Chelius Regional Contact US EPA Region III 1650 Arch St Philadelphia, PA 19103-2029
Trey Glen U.S. EPA Region IV 61 Forsyth St SW Atlanta, GEORGIA 30303-8931	Federal Emergency Management Agency 615 Chestnut Street One Independence Mall, Sixth Floor Philadelphia, PA 19106-4404

Wayne King Regional Engineer Office of Energy Projects Division of Dam Safety and Inspections Atlanta Regional Office Gwinnett Commerce Center 3700 Crestwood Pkwy, NW Suite 950 Duluth, GA 30096	Julie Crocker Energy Team Lead Greater Atlantic Region Fisheries Office National Marine Fisheries Service 55 Great Republic Drive Gloucester, MA 01930
Kevin Mendik, ESQ NPS Hydro Prgm Coord U.S. National Park Service 15 State Street 10th floor Boston, MA 02109	The Honorable Mark Warner United States Senate 703 Hart Senate Office Building Washington, DC 20510
The Honorable Tim Kaine United States Senate 231 Russell Senate Office Building Washington, DC 20510	U.S. Army Corps of Engineers Norfolk District 803 Front St Norfolk, VA 23510-1011
US Army Corps of Engineers Louisville District PO Box 59 Louisville, KY	Divisional Office Regulatory Branch U.S. Army Corps of Engineers 550 Main St; Rm 10524 Cincinnati, OH 45202-3222
David Purser NEPA Coordinator U.S. Forest Service 1720 Peachtree St NW Atlanta, GEORGIA 30309	Wendi Weber Regional Director USFWS Northeast Region 300 Westgate Center Dr. Hadley, MA 01035
Sherry White Assistant Regional Director USFWS Northeast Region 300 Westgate Center Dr. Hadley, MA 01035	Cindy Schulz Field Supervisor USFWS Virginia Field Office 6669 Short Lane Gloucester, VA 23061

Tony Anderson Supervisory Fish and Wildlife Biologist USFWS Virginia Field Office 6669 Short Lane Gloucester, VA 23061	David W. Sutherland, SR Fish and Wildlife Biologist Chesapeake Bay Field Office 177 Admiral Cochrane Dr. Annapolis, MD 21401
Virginia and West Virginia Water Science Center Mark Bennett Center Director 12201 Sunrise Valley Drive Reston, VA 20192	Rep. Bob Goodlatte 916 Main Street Suite 300 Lynchburg, VA 24504
Harold Peterson U.S. Bureau of Indian Affairs 545 Marriott Drive, Suite 700 Nashville, TN 37214-2751	
STATE	
Tony Cario Environmental Specialist Office of Water Supply Department of Environmental Quality P.O. Box 1105 Richmond, VA 23218	David K. Paylor Director Virginia Department of Environmental Quality P.O. Box 1105 Richmond, VA 23218
Jeffery L. Hurst Regional Director Virginia Department of Environmental Quality Southwest Region 355-A Deadmore St. Abington, VA 24210	Scott Smith Region 2 Fisheries Manager VA Dept. of Game and Inland Fisheries 1132 Thomas Jefferson Rd. Forest, VA 24551
Timothy Hatton Natural Heritage Director VA DCR 600 E. Main St., 24th Floor Richmond, VA 23219	Christine Bell Community Engagement Coordinator Virginia Department of Economic Development 901 East Cary St Richmond, VA 23219

Virginia Office of the Attorney General 900 E Main St. Richmond, VA 23219-3513	Virginia Soil and Water Conservation Districts Kendall Tyree, Ph.D. Executive Director 7308 Hanover Green Dr., Suite 100 Mechanicsville, VA 23111
Virginia Department of Historic Resources (SHPO) Michael Barber State Archaeologist 2801 Kensington Ave Richmond, VA 23221	Director Virginia Department of Health PO Box 2448 Richmond, VA 23218-2448
Mike Johnson Virginia Marine Resources Commission 2600 Washington Ave Fl 3 Newport News, VA 23607	Lynn Crump, PLA, ASLA, Environmental Programs Planner DCR -Planning & Recreation Resources 600 East Main Street, 24th Floor, Richmond, VA 23219
Virginia State Corporation Commission 1300 E. Main Street P.O. Box 1197 Richmond, Virginia 23218	Brian Watson VA Dept. of Game and Inland Fisheries 1132 Thomas Jefferson Rd. Forest, VA 24551
Alan Weaver Fish Passage Coordinator VA Dept. of Game and Inland Fisheries P.O. Box 11104 Richmond, VA 23230	Dan Goetz VA Dept. of Game and Inland Fisheries 1132 Thomas Jefferson Rd. Forest, VA 24551
George Palmer Fisheries Biologist VA Dept. of Game and Inland Fisheries 1796 Highway Sixteen Marion, VA 24354	Robbie Rhur Environ. Program Planner VA DCR 600 East Main Street Floor 17 Richmond, VA 23219-2094

Virginia Department of Agriculture and Consumer Services Commissioner PO Box 1163 Richmond, VA 23218-1163	
LOCAL	
Bob Hopkins Amherst County Assistant Director/Engineering Manager 153 Washington St PO Box 390 Amherst, VA 24521	Kevin Leamy Director of Natural Resources County of Bedford 122 East Main Street, Suite G-03 Bedford, VA 24523
Traci Blido Economic Development Director County of Bedford 122 East Main Street, Suite 202 Bedford, VA 24523	Bonnie Svrcek City Manager City of Lynchburg 900 Church Street City Hall, 3rd Floor Lynchburg, VA 24504
Shelia Phipps Librarian Jonnie B. Deel Memorial Library PO Box 650 Clintwood,VA 24228-0650	Northern Virginia Regional Park Authority 5400 Ox Rd Fairfax Station, VA 22039-1022
Donald Baker Town of Clintwood PO Box 456 Clintwood,VA 24228-0456	Sara Lu Christian Director, Recreation and Parks P.O. Box 556 Amherst VA, 24521
Frank Rogers County Adminstrator P.O. Box 100 Rustburg, VA 24588	Carl Boggess Bedford County Administrator 122 East Main Street, Suite 202 Bedford, VA 24523

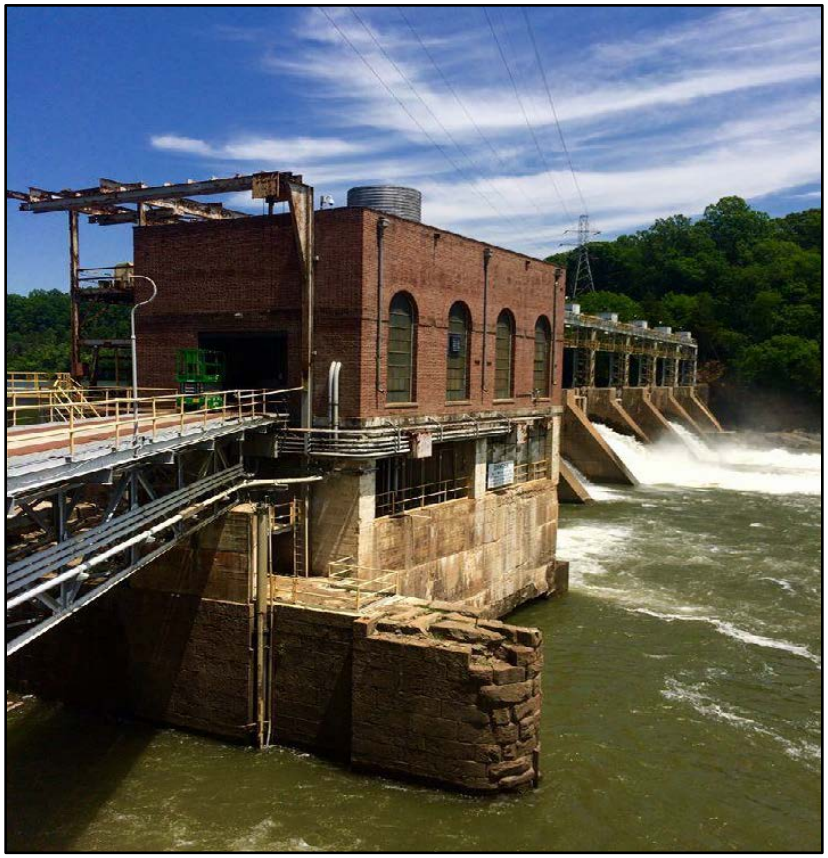
Susan M. Adams Appomattox County Administrator 153-A Morton Lane PO Box 863 Appomattox, VA 24522	Gary F. Christie Executive Director Regional 2000 Regional Commission 828 Main Street, 12th floor Lynchburg, VA 24504
NON-GOVERNMENTAL ORGANIZATION	
James River Association Attn: Bill Street 4833 Old Main Street Richmond, VA 23231	Trout Unlimiited Steve Romine Skyline Chapter
Mark Singleton, Executive Director American Whitewater PO Box 1540 Cullowhee, NC 28723	American Rivers Mid-Atlantic Region 1101 14th Street, NW, Suite 1400 Washington, DC 20005
Wade Blackwood American Canoe Association Executive Director 1340 Central Blvd, Suite 210 Fredericksburg, VA 22401	William E. Trout, III Director American Canal Society, Inc. 3806 S. Amherst Hwy Madison Heights, VA 24572
William Stokes Executive Director Flannagan Water Authority 52 Flannagan Dam Road Haysi, VA 24256	Melanie Stine Conservation Coastal Canoeists PO Box 566, Richmond, VA 23218
James River Association Rob Campbell 4833 Old Main Street Richmond, VA 23231	
TRIBAL	

Russell Townsend Tribal Historic Preservation Officer Eastern Band of Cherokee Indians PO Box 455 Cherokee, NC 28719	Dean Branham Monacan Indian Nation Inc. P.O. Box 1136 Madison Heights, VA 24572
Karenne Wood Monacan Nation Director, Virginia Indian Programs	Ms. Erin Thompson, THPO Absentee-Shawnee Tribal Historical Preservation Officer 2025 S. Gordon Cooper Drive Shawnee, OK 74801
Brett Barnes, THPO Eastern Shawnee Tribe of Oklahoma Tribal Historical Preservation Officer P.O. Box 350 Seneca, MO 64865	Shawnee Tribe Tribal Historical Preservation Officer P.O. Box 189 21 North Eight Tribes Trail Miami, OK 74355
Kimberley Penrod Delaware Nation Director, Cultural Resources/106 31064 State Highway 281 P.O. Box 825 Anadarko, OK 73005	Cherokee Nation Bill John Baker, Principal Chief & THPO PO Box 984 Tahlequah, OK 74465-0948
United Keetoowah Band of Cherokee Indians Chief PO Box 746 Tahlequah, OK 74465	Pamunkey Indian Tribe Chief Robert Gray 1054 Pocahontas Trail King William, VA 23086
Nansemond Indian Tribal Association 1001 Pembroke Lane Suffolk, VA 23434	Tuscarora Nation Chief Leo Henry 2006 Mt. Hope Road Lewiston, NY 14092

Chickahominy Indian Tribe 8200 Lott Cary Road Providence Forge, VA 2314	Mattaponi Indian Reservation 1314 Mattaponi Reservation Circle West Point, VA 23181
Chickahominy Indians Eastern Division 2895 Mt. Pleasant Road Providence Forge, VA 23140	Rappahannock Tribe Cultural Center 5036 Indian Neck Road Indian Neck, VA 23148
Upper Mattaponi Indian Tribe P.O. Box 184 King William, VA 23086	Cheroenhaka (Nottoway) Tribe P.O. Box 397 Courtland, VA 23837
Nottoway Indian Tribe of Virginia, Inc. PO Box 246 Capron, VA 23829	Patwomeck Tribe 215 Chapel Green Road Fredericksburg, VA 22405
OTHER	
Mark Fendig Scotts Mill Hydro, LLC P.O. Box 13 Coleman Falls, VA 24536	Wayne Dyok Scotts Mill Hydro, LLC P.O. Box 13 Coleman Falls, VA 24536
John Wagner Electric Department Town of Bedford 215 East Main Street Bedford, VA 24523	Scott Salmon Electric Department Town of Bedford 215 East Main Street Bedford, VA 24523

PRE-APPLICATION DOCUMENT

Reusens Hydroelectric Project
FERC Project No. 2376



Volume 1 of 3: Public

Submitted by:
Eagle Creek Reusens Hydro, LLC

a subsidiary of

EAGLE CREEK
RENEWABLE ENERGY
— EXCELLENCE IN HYDRO —

February 2019

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LIST OF ACRONYMS AND ABBREVIATIONS

%	Percent
°C	degrees Centigrade
°F	degrees Fahrenheit
µg/l	micrograms per liter
µS/cm	micro Siemens per centimeter
CEII	Critical Energy Infrastructure Information
CFR	Code of Federal Regulations
cfs	cubic feet per second
CWA	Clean Water Act
EMD	Environmental Monitoring Database
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
FPA	Federal Power Act
ft	feet
FWS	U.S. Fish and Wildlife Service
ILP	Integrated Licensing Process
IPaC	Information for Planning and Consultation
kV	kilovolt
kVA	kilovolt-ampere
kW	kilowatt
Licensee	Eagle Creek Reusens Hydro, LLC
m	meter
mg/l	milligrams per liter
ml	milliliters
mpn	most probable number
NAVD88	North American Vertical Datum of 1988
NGVD29	Nation Geodetic Vertical Datum of 1929
ng/l	nanograms per liter
NMFS	National Marine Fisheries Service
NOC	Notice of Commencement

NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NTU	Nephelometric Turbidity Units
NWI	National Wetlands Inventory
PAD	pre-application document
ppb	parts per billion
ppm	parts per million
Project	Reusens Hydroelectric Project
RPM	revolutions per minute
TLP	Traditional Licensing Process
TMDL	Total Maximum Daily Load
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VDCR	Virginia Department of Conservation and Recreation
VDEQ	Virginia Department of Environmental Quality
VDGIF	Virginia Department of Game and Inland Fish
VPDES	Virginia Pollutant Discharge Elimination System

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1.0 INTRODUCTION

Eagle Creek Reusens Hydro, LLC (Reusens Hydro or Licensee), a wholly owned indirect subsidiary of Eagle Creek Renewable Energy, LLC (Eagle Creek), is licensed by the Federal Energy Regulatory Commission (FERC or Commission) to operate the Reusens Hydroelectric Project (Project, FERC No. 2376). The Project is located on the James River in Amherst and Bedford Counties, Virginia. On March 18, 1994 the Commission issued an Order Issuing New License for a 30-year license, which expires on February 29, 2024.

Reusens Hydro is filing with FERC a Notice of Intent (NOI) to relicense the existing Project, which generally consists of: (1) a 24-foot-high, 416-foot-long concrete dam and spillway on the James River, with eight 16 3/4-foot-high floodgates; (2) a 25-foot-high, 125-foot-long concrete curved auxiliary spillway section with 7-foot-high flashboards; (3) a 500-acre impoundment; (4) two powerhouses (Powerhouse A and Powerhouse B), one containing three generating units with a total installed capacity of 7.5 MW, and one containing two generating units with a total installed capacity of 5.0 MW, respectively; and (6) other related facilities.

Accompanying the NOI for this relicensing is Reusens Hydro's request to use FERC's Traditional Licensing Process (TLP). As required by FERC regulations (18 Code of Federal Regulations [CFR] §5.3), this pre-application document (PAD) is being filed simultaneously with the NOI and request to use the TLP. The PAD also will be distributed to federal and state resource agencies, local governments, Indian tribes, and members of the public interested in the application.

The filing of the NOI and PAD commences the relicensing process for the Project. The PAD is a tool for providing engineering, operational, socioeconomic, historical and environmental information pertaining to the Project that is reasonably available at the time the NOI is filed. The PAD supplies information to help identify and evaluate potential impacts on the Project area resources resulting from continued Project operation. This evaluation will be documented in the license application to be prepared by Reusens Hydro and filed with FERC.

In compliance with FERC's regulations governing the content of the PAD, the Licensee contacted appropriate state and federal resource agencies, Indian tribes, and interested public parties who may be concerned with the Project's impacts on the James River (Appendix A). Reusens Hydro requested from the potentially interested parties any relevant information, studies, and data on topics such as water quality, fisheries, wetlands, wildlife, recreation, and cultural resources. Appendix B contains the complete record of stakeholder outreach and agency consultation in connection with the preparation of this PAD.

As set forth in 18 CFR §5.8, FERC will issue a public notice and comment on the NOI, PAD, and TLP request within 30 days of Reusens Hydro's filing of this PAD. Then, no later than 60 days following filing of the NOI, PAD, and TLP Request FERC will issue a Notice of Commencement and approve or deny the request to use the TLP. A site visit and public meeting will be held 30-60 days following FERC's Notice of Commencement and TLP approval. The site visit and public meeting will allow stakeholders an opportunity to better understand the Project and to engage in a question and answer session with Reusens Hydro.

In accordance with 18 CFR §5.6(d)(2)(i), the exact name, business address, and telephone number of each person authorized to act as agent for the Licensee are the following:

Michael Scarzello
Director
Eagle Creek Renewable Energy, LLC
116 North State Street
PO Box 167
Neshkoro, WI 54960-0167
Michael.Scarzello@eaglecreekre.com
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Jot Splenda
Principal Planner
1001 Wade Avenue, Suite 400
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jsplenda@louisberger.com
(919) 866-4417

The information contained in this document was assembled based on the requirements set forth in 18 CFR 5.6 (c) and (d) and is organized as follows:

- Section 1.0 – Introduction and Background Information
- Section 2.0 – Process plan and schedule for all pre-application activities, 18 CFR §5.6(d)(1)
- Section 3.0 – General description of the Project location, facilities, and operations, 18 CFR §5.6(d)(2)
- Section 4.0 – Description of the existing environment and resource impacts, 18 CFR §5.6(d)(3)
- Section 5.0 – Preliminary resource issues and potential studies or information gathering needs associated with the issues 18 CFR §5.6(d)(4).
- Section 6.0 – Consultation/Correspondence Summary 18 CFR §5.6(d)(5)
- Section 7.0 – Public Utility Regulatory Policy Act Benefit
- Section 8.0–Literature and information sources cited in the descriptions and summaries of existing resource data 18 CFR §5.6(c)(2)
- Appendices:
    - Appendix A – Summary of Contacts Used to Prepare the PAD
    - Appendix B – Stakeholder Outreach and Responses
    - Appendix C – General Design Drawings – Exhibit F (Filed Separately as CEII)
    - Appendix D – Current License and Amendments
    - Appendix E – Project Photographs
    - Appendix F – Monthly Flow Duration Curves
    - Appendix G – Project Boundary Exhibit G Maps

2.0 PROCESS PLAN AND SCHEDULE (18 CFR §5.6(d)(1))

On February 28, 2019, Reusens Hydro will file this PAD and NOI to relicense the Reusens Hydroelectric Project (FERC No. 2376). Pursuant to 18 CFR §5.3, 5.5, and 5.6, the filing of the NOI and PAD commences the relicensing process and sets the schedule for licensing activities.

Along with the filing of the NOI and PAD, and in accordance with 18 CFR §5.3, Reusens Hydro is requesting from the Commission approval to use the TLP to relicense the Project in lieu of the default Integrated Licensing Process (ILP). The TLP is a three-stage process, as detailed in 18 CFR § 16.8 for relicensing proceedings. The reasons for Reusens Hydro's requests to use the TLP are provided in the TLP request letter filed with the Commission concurrently with the NOI and this PAD.

In the event the Commission approves the Licensee's request to use the TLP, the Licensee has developed a process plan and schedule for relicensing the Project. For this proceeding, the Licensee intends to provide adequate opportunities to involve all interested parties. The Licensee will carefully document the relicensing process, including any information received from the interested parties and communication records. The Licensee will maintain records of licensing and other information that is publicly available. The process plan and schedule is based on actions by FERC, the Licensee, and other licensing participants through the license application filing. The Licensee plans early and frequent coordination with FERC and state and federal resource agencies to identify potential issues and possible field studies early in the process. The Licensee will adopt an efficient and timely schedule for consultation with the agencies and document production. Below is the proposed plan for communication, document distribution, handling of sensitive information, schedule, and meetings.

2.1 Communications

The Licensee is proposing a communication protocol to establish guidelines for effective participation and communication in the Project relicensing process. The primary means of communication will be meetings, formal documents, email, and telephone. To establish the consultation record, all formal correspondence requires adequate documentation. Communication will occur among the Licensee, the Licensee's Agent and stakeholders.

2.1.1 *Stakeholder Mailing List*

Throughout the pre-filing process the Licensee will maintain a mailing list of those stakeholders that have an interest in the Project and/or licensing. The stakeholder mailing list will include those interest parties, such as: individuals, governmental agencies (local, state, federal), and non-government organizations. The mailing list will include mailing addresses and available e-mail addresses for distributing notices and documents for public review.

2.2 Document Distribution

The Licensee or its Agent will distribute, whenever possible, all documents electronically, but may distribute hard copies of some documents for convenience or by request. Reusens Hydro will distribute primary licensing documents via email with a link to its relicensing web site or via attachments to e-mails. The website for the Reusens Relicensing is www.eaglecreekre.com/reusens-relicensing. Documents filed with the Commission will also be

available from FERC's eLibrary at www.ferc.gov/docs-filing/elibrary.asp by searching under Docket P-2376. Requests for hard copies of relicensing documents should be sent to Mr. Scarzello using the contact information provided in Section 1.0 above and should clearly indicate the document name, publication date (if known), and FERC Project No. 2376. A reproduction charge ($0.25/page) and postage costs may be assessed for hard copies requested by the public. Federal, state, and tribal entities will not be subject to document processing or postage fees.

If possible, the Licensee prefers to receive all documents electronically, in an appropriate format. E-mail electronic documents to Licensee or its Agent, at the above addresses. Hard copy documents may be mailed to the above addresses. In either case, all documents received become part of the consultation record and will be available for distribution to the public.

A copy of the NOI, TLP, and this PAD have been made available for public inspection and reproduction at Lynchburg Public Library located at 2315 Memorial Avenue, Lynchburg, VA 24501.

2.3 Sensitive Information

Certain Project-related documents and information are considered to be Critical Energy Infrastructure Information (CEII) or Privileged and restricted from public viewing in accordance with Section 388 of the Commission's regulations, 18 CFR § 388.113 and 18 CFR § 388.112. This information relates to the design and safety of the dams and appurtenant facilities as well as information considered commercially sensitive. Anyone seeking information protected as CEII from the Commission must file a CEII request. FERC's website at: https://www.ferc.gov/resources/guides/filing-guide/ceii-request.asp contains additional details related to CEII. The Licensee will allow limited access to documents containing sensitive information regarding specific cultural and/or protected environmental resources to authorized entities.

2.4 Meetings

The Licensee recognizes there are a number of agencies, groups, and individuals that may want to participate in the licensing process for the Project. The Licensee will work with all interested parties to develop meeting schedules that include locations and times which accommodate the majority of participants. The Licensee will follow the notification procedures for meetings as mandated by FERC regulations. The Licensee may schedule additional meetings to enhance the consultation process, as necessary.

For planning purposes, the proposed date for the Joint Meeting is Tuesday, June 18, 2019 with a time and venue to be named later. The proposed date for the Site Visit is also Tuesday, June 18, 2019.

2.5 Schedule

Table 2.5-1 provides an initial process plan and schedule for the Project. The process plan and schedule provides time frames for pre-application consultation, information gathering and studies. The process plan and schedule may reflect deadlines that fall on weekend days (Saturday or Sunday) or federal holidays. As such, weekend or holiday deadlines will default to the following Monday or business day in accordance with FERC regulations. The process plan

and schedule was developed in accordance with the regulations and incorporates the timeframes set forth in 18 CFR §16.8.

Comments on the request to use the TLP are due within 30 days of filing the NOI, making them due on or before Monday, March 25, 2019. The Licensee's request to use the TLP will then be addressed by FERC on or before Monday, April 23, 2019 through a Notice of Commencement (NOC) and TLP Approval. Between 30 to 60 days following the NOC and TLP Approval, Reusens Hydro will hold the Joint Meeting, a public meeting with stakeholders including agencies, tribes, and the public, along with a Site Visit. The meeting is proposed to be held on Tuesday June 18, 2019, with the specific time and venue to be named at a later date. The proposed date for the Site Visit is also Tuesday, June 18, 2019.

Additionally, depending on consultation with resource agencies, the Licensee intends to distribute to resources agencies and tribes a draft license application on or before September 1, 2021, and a final license application with FERC on or before February 28, 2022.

Table 2.5-1. Proposed Reusens Hydroelectric Project Relicensing Process Plan and Schedule.

Regulation (18 CFR)	Activity	Responsible Party	Time Frame	Deadline
16.6(c)(1)	File NOI and PAD, Request use of TLP	Licensee	5 to 5 ½ years before current license expiration	Thursday, February 28, 2019
16.6(d)(2)	FERC issues Public Notice of NOI, PAD, and TLP Request to affected stakeholders	FERC	Concurrent with NOI	March 2019
5.3(d)(1)	Comments on TLP Request	FERC, Stakeholders	Within 30 days of Public Notice	Monday, April 1, 2019
5.8(a)	FERC issues Notice of Commencement and TLP Approval	FERC	Within 60 days of Public Notice	Monday, April 29, 2019
16.8(b)(3)(i)(B)	Notify FERC and Stakeholders of Joint Meeting and Site Visit	Licensee	At least 15 days prior to the meeting	Monday, June 3, 2019
16.8(i)(1)	Publish Public Notice of Joint Meeting and Site Visit in Newspaper	Licensee	At least 14 days prior to the meeting	Tuesday, June 4, 2019
16.8(b)(3)(ii)(B)	Joint Meeting and Site Visit with stakeholders	Licensee	30 to 60 days after FERC Notice of Commencement and TLP Approval	May 29 to June 28, 2019 (Proposed Tuesday, June 18, 2019)
16.8(b)(5)	Comments and Study Requests	Stakeholders	No later than 60 days after the Joint Meeting	Monday, August 19, 2019
	Study Plan Development	Licensee	Following receipt of Comments and Study Requests	September 2019 to February 2020
16.8(c)(1)	Perform Field Studies	Licensee	—	Spring through Fall 2020 and/or Spring through Fall 2021, if necessary
	Circulate Draft Study Reports and Receive Study Report Comments from Stakeholders	Licensee, Stakeholders	After completion of field studies	Winter 2020 through Fall 2021
16.8(c)(4)	Draft License Application and Study Reports	Licensee	Produced concurrently with previous activities and following conclusion of field studies	Wednesday, September 1, 2021
16.8(c)(5)	Comments on Draft License Application	Stakeholders	90 days after receipt of the Draft License Application	Tuesday, November 30, 2021

Regulation (18 CFR)	Activity	Responsible Party	Time Frame	Deadline
16.9(b)(1)	Final License Application	Licensee	At least 2 years prior to license expiration	Monday February 28, 2022
5.19(a)	FERC Issues Public Notice of the Tendering for filing of the Application	FERC	Within 14 days of the Application filing date	Thursday February 15, 2024
	FERC License Expires	FERC	—	Thursday February 29, 2024

3.0 PROJECT LOCATION, FACILITIES, AND OPERATION (18 CFR §5.6(d)(2))

3.1 Project Location

The Reusens Hydroelectric Project is located on the James River at approximately river mile 265 near the City of Lynchburg, Virginia (Figure 3.1-1). The Project is located at the fifth dam on the mainstem of the James River from its mouth, and is situated 3.7 river miles upstream of the proposed Scott's Mill Hydroelectric Project (FERC Project No. 14425) at the Lynchburg Dam, and 8.0 river miles downstream of the Holcomb Rock Hydroelectric Project (FERC No. 2901). The Project is the second hydroelectric project on the James River, excluding the proposed Scott's Mill Hydroelectric Project. The latitude and longitude of the Project are 37.4634 and -79.1857, respectively.[1] Table 3.1-1 lists the other hydroelectric projects and dams on the James River, and Figure 3.1-1 illustrates their respective location to the Project.

[1] Latitude and longitude are in decimal degrees.

Table 3.1-1. Hydroelectric Projects and Dams on the Mainstem of the James River.

Dam/Project Name	Dam Height (feet)[1]	FERC Project No. (if applicable)	Latitude	Longitude	Approximate River Mile (from mouth)[2]	Purpose	Capacity (MW)	Note/Comment
Hollywood Power Plant	25	3024	37.5317	-77.4571	112	Hydropower	NA	Not operating (breached/notched)
Williams Island	25	NA	37.5464	-77.4997	115	Water Supply	NA	Not operating (breached/notched)
Bosher Dam	13	NA	37.5600	-77.5757	120	Navigation	NA	Fish passage facility present
Scotts Mill	21	13302	37.4244	-79.1409	261	Water Supply	4.5	Proposed Hydroelectric Project
Reusens	24	2376	37.4634	-79.1857	265	Hydropower	12.5	Operating
Holcomb Rock	39	2901	37.5101	-79.2659	273	Hydropower	1.9	Operating
Coleman Falls	20	5456	37.5023	-79.3002	275	Hydropower	2.0	FERC Exempt
Big Island	18	2902	37.5363	-79.3568	279	Hydropower	0.5	Operating
Bedford	20	5596	37.5752	-79.3733	283	Hydropower	5.0	Operating
Cushaw	26	906	37.5913	-79.3812	284	Hydropower	7.5	Operating

1. Source: National Inventory of Dams (USACE, 2016), unless otherwise noted.

2. As measured from the mouth at the confluence with Chesapeake Bay.

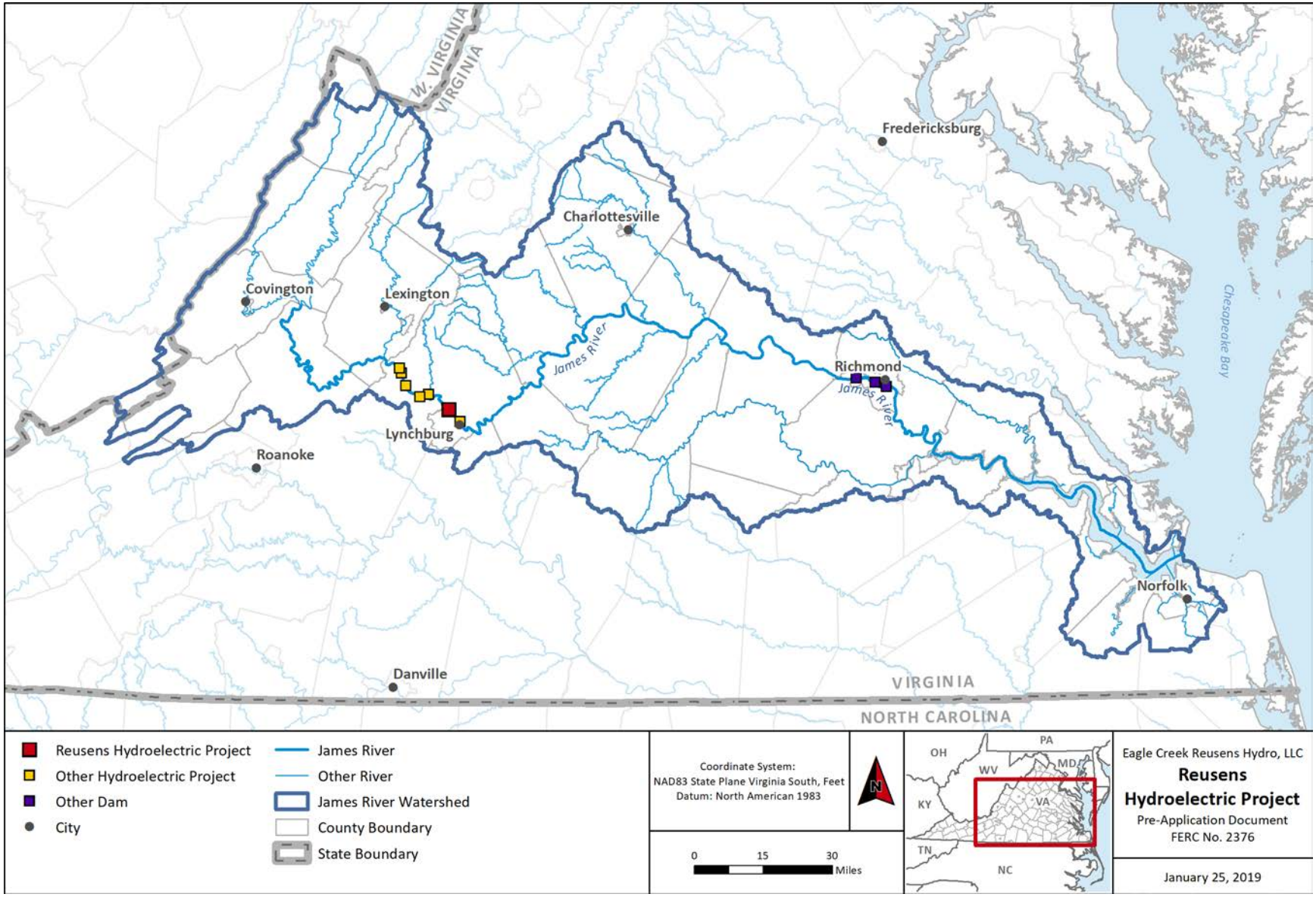


Figure 3.1-1. Hydroelectric projects and dams on the James River.

3.2 Facilities

The Project includes a dam with flood gates, a curved auxiliary spillway, reservoir, two powerhouses, Powerhouse A and Powerhouse B, with three and two turbine-generating units, respectively; a tailrace channel, a transmission line, switch yard, and appurtenant equipment. Figure 3.2-1 shows the general location of Project facilities and approximate Project boundary. Appendix C contains general design drawings of the Project and Appendix G presents the project boundary.

Dam

The existing dam is a concrete structure and spillway. The overall length is 416 feet, and total height is 24 feet. The spillway has eight 16.75 feet high floodgates that are approximately 52 feet in width. The dam abuts the river left bank of the James River (looking downstream) and extends partway across the river. The right abutment of the dam attaches to Powerhouse B.

Auxiliary Spillway

Separating Powerhouse B from Powerhouse A is a curved auxiliary spillway. This spillway is 25 feet high and 125-foot-long curved concreate structure topped with 7-foot-high wooden flashboards.

Reservoir

The reservoir for the Project has a surface area of about 500 acres, and a gross storage capacity of approximately 6,869 acre-ft at the Project's normal maximum water surface elevation of 550.7 feet NGVD. The reservoir shoreline with the project boundary is approximately 16 miles in length. Between the Project's normal maximum (550.7 feet NGVD) and minimum (547.0 feet NGVD) operating water surface elevations the usable storage is approximately 1,687 acre-ft.

Powerhouses

The Project has two powerhouses, Powerhouse A and Powerhouse B. Powerhouse A is a concrete and brick structure that is approximately 105-feet long, 83-feet wide, and 86-feet high. Within Powerhouse A are three identical 2.5 MW generator units and three vertical Francis turbines, for an installed capacity of 7.5 MW. Powerhouse B, which lies between the auxiliary spillway and dam, is an approximately 55-feet long, 27-feet wide, and 84-feet high concrete and brick structure. Powerhouse B contains two identical 2.5 MW generator unit with two vertical Francis turbines, for an installed capacity of 5.0 MW. Collectively, the Project has a total installed capacity of 12.5 MW. The average head of the Project is 31 feet. The minimum and maximum hydraulic capacity of the plant is 800 cfs and 6,460 and, respectively.

Tailrace

Turbine flows are discharged into two small tailraces immediately downstream of the Powerhouse A and Powerhouse B. The tailrace below Powerhouse A is about 100 feet wide and 250 feet in length, while the Powerhouse B tailrace is approximately 60 feet wide and 50 ft long.

Transmission Line

There are no primary transmission lines as a part of the Project because the point of interconnection is just outside of Powerhouse A. A single-line diagram is included as Figure 3.2-2; but is considered to be Critical Energy/Electric Infrastructure Information and has been filed separately as such.

Appurtenances

Appurtenances at the Project include: governors, step-up transformers, a 15-ton capacity crane at Powerhouse A, a 20-ton capacity crane at Powerhouse B, and other mechanical and electrical equipment necessary for efficient and safe operation of the Project.

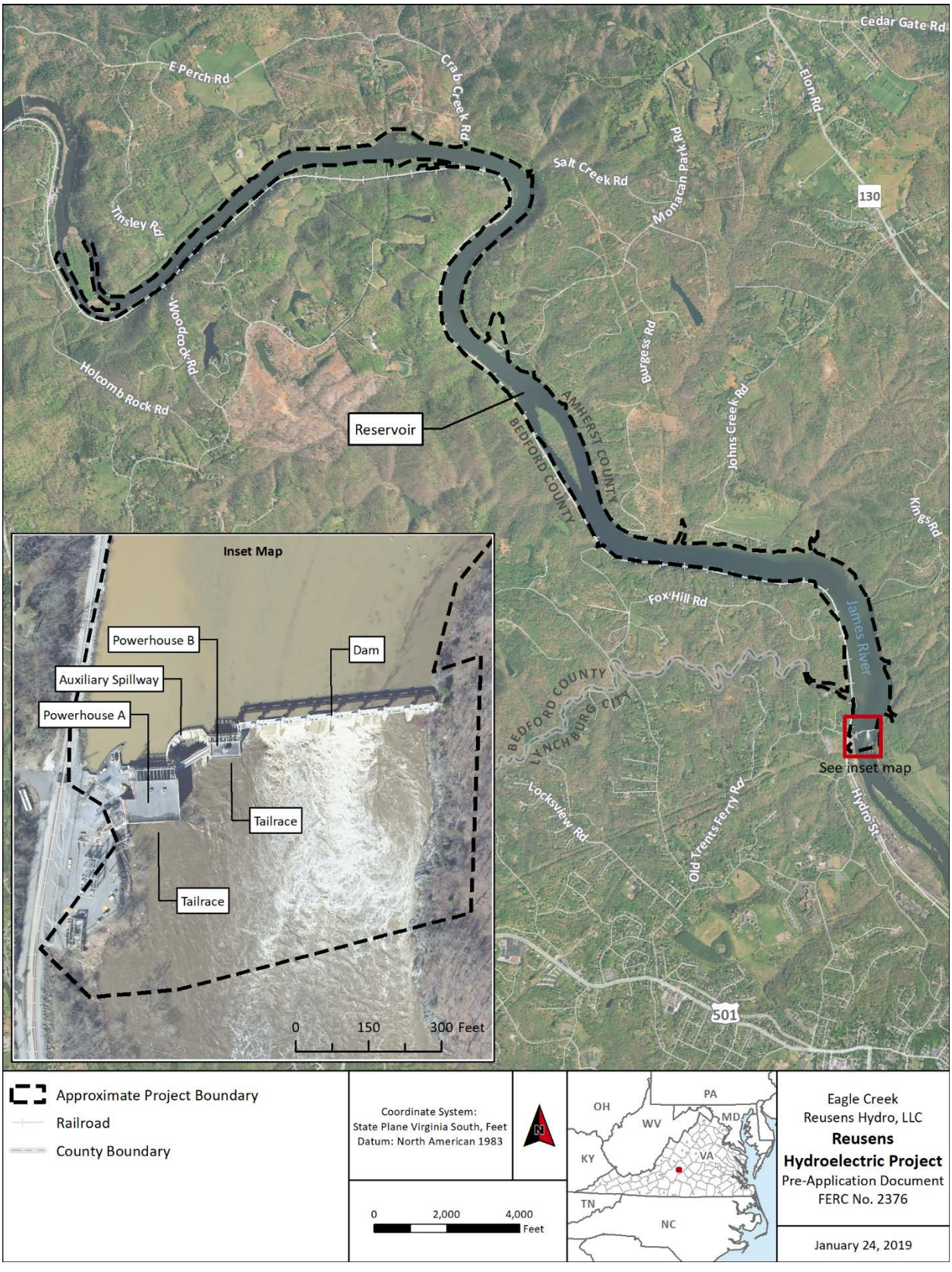


Figure 3.2-1. Reusens Hydroelectric Project features and approximate Project boundary.

(These drawings are considered Critical Energy/Electric Infrastructure Information [CEII] and have been removed from this document).

Figure 3.2-2. Single-line diagram for the Reusens Hydroelectric Project.

3.3 Project Lands

The approximate project boundary illustrated in Figure 3.2-1 includes all the of the Project features described in Section 3.2. The project boundary includes all lands that are necessary for the operation and maintenance of the Project. Appendix G contains the Project boundary drawing. Reusens Hydro owns approximately 29 acres of upland within the Project boundary, and the remaining portion of upland is held by other ownership. The Project does not occupy any federal lands.

3.4 Current Project Operations

The Project is operated as a peaking facility in accordance with the Operations Plan filed with Commission on August 9, 2018 per Article 403 of the current license.[2] The Operations Plan discusses normal operations and project outages, supplemental discharges, maintenance situations and emergency situations. These operations are summarized below.

3.4.1 *Normal Operations and Project Outages*

Operation of the Project during non-maintenance and non-emergency condition periods is in accordance with the FERC license for the Project. Article 401 of the current license describes the minimum flow requirements the Licensee shall release into the James River below the Project (see section 3.6.1, *Current License Requirements*). Under the current Operations Plan, the Project is generally operated to maintain a continuous minimum flow of at least 333 cfs or reservoir inflow if less. The minimum flow is 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 of 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.

Article 402 requires that the Licensee maintain the Reusens forebay at a minimum surface water elevation of 547.0 feet NGVD to protect municipal water supply intakes. Currently, the equipment installed at the Project to monitor forebay elevations consists of a transducer/well system located at the intake of Powerhouse A. Forebay elevations detected by the monitoring equipment are electronically transmitted to a digital display in Powerhouse A, as well as in the control room also located in Powerhouse A. Reusens is manned eight hours per day, Monday through Friday, and four hours per day on weekends. Plant personnel verify forebay elevations at Reusens by visually observing the staff gauge located in the forebay adjacent to the Powerhouse A intakes daily. The transducer/well system is calibrated to the staff gauge annually or sooner if staff observe a discrepancy.

If all online units at the project trip offline (i.e., Project outage), an automated alarm is sent to the operations staff. Operations staff are on call 24 hours per day. In the event of a trip that interrupts

[2] Reusens Hydro sent a draft Operations Plan to the City of Lynchburg, Virginia Department of Game and Inland Fisheries, and the U.S. Fish and Wildlife Service on June 27, 2018 to consult with the agencies and requested they provide written comments on or before July 28, 2018. No comments were received. Reusens Hydro then prepared the final Operations Plan and filed it with the Commission. The final Operations Plan is available at FERC's e-library at https://elibrary.ferc.gov/idmws/search/fercgensearch.asp.

minimum flow, operations staff arrive at the project and restore minimum flow (either through a turbine, the auxiliary spillway outlet, or a floodgate) within one hour.

3.4.2 *Supplemental Discharges*

When requested by the City of Lynchburg's Director of Public Works, supplemental discharges from the Project are provided downstream when reservoir inflow is less than 223 cfs, emergency conditions exist at one or both of the City's raw water intakes, and existing storage and inflow conditions are conducive to providing supplemental discharges. Supplemental discharges are subject to all project equipment that would be used to provide the supplemental discharges being fully operational and the City providing timely notice of scheduled maintenance or emergency conditions at the raw water intakes and pumps.

3.4.3 *Maintenance Situations*

Routine repairs or maintenance work on the main spillway structures are performed using a bulkhead system so that the reservoir water levels do not fall below the minimum operating water level of 547.0 feet NVGD in order to protect the City of Lynchburg's water intakes. If maintenance work cannot be done within the bulkhead system the Licensee consults with the City of Lynchburg to schedule an agreed upon time to perform the work to minimize impacts to the City's water supply intakes. Should a water supply emergency develop during a period when the Reusens reservoir is drawn down to perform non-emergency maintenance or repair work, the Licensee coordinates with the City to resolve the emergency situation while minimizing impacts to the City's water intakes and Project structures.

3.4.4 *Emergency Situations*

Reusens Hydro employs a four-part emergency response to protect the City of Lynchburg water supply pump station intakes. First, Reusens Hydro personnel monitor plant forebay elevations and USGS gage levels for emergency situations. In addition, an automated alarm is in place to detect emergency situations, which when triggered, alerts the operator outside of normal work hours. Second, when alerted of a potential emergency situation, the Project operator makes an assessment of the potential adverse impact and the corrective action needed. Third, Project operations staff notify appropriate contractors from the Emergency Action Plan (EAP) for the Project, prepared by the Licensee in accordance with Part 12 of the Commission's regulations. Lastly, the Project operator would notify the City of Lynchburg Director of Public Works immediately if it is determined the emergency situation could impact the operation of the City of Lynchburg pump station intakes.

3.5 Reservoir Storage

The reservoir that supports the Project has a surface area of approximately 500 acres and a gross storage capacity of approximately 6,869 acre-ft at the Project's normal maximum water surface elevation of 550.7 feet NGVD feet msl. The Project has a total usable storage of approximately 1,687 acre-ft between the low and upper operating water levels of 547.0 and 550.7 ft NGVD, respectively.

3.6 Other Project Information

3.6.1 *Current License Requirements*

The Commission issued a new license for the Reusens Hydroelectric Project by order dated March 18, 1994 and amended that license by orders dated July 8, 1994, February 7 1995, and May 10, 2011. The current license expires February 29, 2024. The current project license, as amended, is provided in Appendix D. Articles 1 through 28 are "standard articles" contained in FERC's Form L-3 (October 1975) entitled, "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters of the United States."

The current license also has several additional Project-specific license articles:

- Article 201 refers to annual charges.
- Article 202 gives authority to the Licensee to grant permission to certain types of use and occupancies of Project lands and waters.
- Article 204 reserves the Commission's rule-making authority.
- Article 301 and 302 requires the Licensee to build a removal bulkhead system along the main spillway floodgates and file construction drawings with the Commission.
- Article 401, as modified by order dated July 8, 1994, specifies the Project minimum flow requirement of an average hourly flow of 333 cfs or inflow to the project reservoir, whichever is less, as measured downstream from the project tailrace, be released from Reusens Dam into the James River.
- Article 402 requires the Licensee to maintain the forebay water level at or above 547.0 ft NGVD or notify the City of Lynchburg and Commission if water levels fall below 547.0 ft NGVD.
- Article 403 requires the Operation Plan.
- Article 404 requires notification procedures for license surrender.
- Article 405 requires a framework for revising minimum flow requirements in the event of structural changes to the Lynchburg Dam downstream.
- Article 406 requires minimum flow be provided via the main dam flood gates in the event of a Project shutdown to protect aquatic resources downstream.
- Article 407 requires the Licensee to implement the Wildlife Management Plan filed with the Commission on February 25, 1993 with annual visual inspections of human disturbance at Chestnut Island and consult with VDGIF if disturbance is observed, consult with VDGIF if any planned project activity is expected to impact Chestnut Island is observed, monitor for bank erosion, notify VDGIF of any unanticipated impacts, and consult with the USFWS and VDGIF every five years regarding the success of the Wildlife Management Plan.
- Article 408 requires a Cultural Resources Management Plan, and Article 409 requires the Virginia SHPO be notified of archeological or historic sites become unearthed.

- Article 410 required a Canoe Portage be constructed; however, after several proposed plans and consultation with the agencies, the Commission issued an Order Amending License and Deleting Article 410 dated February 7, 1995, which removed the license article 410 requirement. The decision to remove license Article 410 was made due to land access restrictions along the CSX railway right-of-way, the steep topography of the site rendered portage development unsuitable for safe passage, any construction to provide safe portage would be cost prohibitive, and Monacan Park, 3 miles upstream of the Project, provided adequate public access to Project waters.
- Article 411 requires a report be provided to the State of Virginia within six months of license issuances that documents progress towards enhancing public access to the James River and Project waters improved public access to the Project.
- Article 501 discusses the application of headwater benefits assessments.

3.6.2 *Summary of Project Generation*

The average annual generation for the Project from 2014-2018 is provided in Table 3.6.2-1. It is important to note that Reusens Hydro acquired the Project license by Order Approving Transfer of License dated October 20, 2016. At the time of the license transfer none of the five units at the Project were operating, and none had been operated since 2011. Reusens Hydro is working towards bringing the Project up to the licensed generation capacity of 12.5 MW, and has been rehabilitating the generating units. Currently four of the five units are operable. Generation at the Project commenced in July of 2017. The estimated generation provided in Table 3.6.2-1 includes a time period when the Project was generating under the former Licensee and prior to undergoing rehabilitation of the generation units by Reusens Hydro. During the timeframe represented in Table 3.6.2-1, no more than three of the five units were operable at any given time. With four operating units, Reusens Hydro estimates that the average annual generation is 36,751 MWh, and the average monthly generation ranges from 1,220 to 5,414 MWh. With five operating units, Reusens Hydro estimate that the average annual generation would be approximately 40,000 MWh.

3.6.3 *Compliance History*

A review of the Project record indicates that the Reusens Project is generally in compliance with the terms and conditions of the existing license. Of note is the Commission's receipt of an allegation of low flows in the James River on December 29, 2017. Investigation into Project data indicated that the project had remained in compliance with minimum flow requirements but that a faulty spillway gate monitor caused inaccurate displays of the gate openings, which ultimately affected the accuracy of the discharge data record. As a result, Reusens Hydro has implemented a plan, which includes daily visual inspection to ensure gate settings have not drifted and monthly checks of the control system, to minimize the potential for future inaccurate gate readings. Furthermore, Reusens Hydro is currently exploring upgrading the current system to enhance reliability or installing a secondary alarm and monitoring in parallel to the existing SCADA system.

3.6.4 *Current Net Investment*

The current net investment for the Reusens Project is being filed with the Commission as privileged information. The current net investment in the Project should not be interpreted as the fair market value. The Federal Power Act generally defines a Licensee's net investment in a project as the original cost of the Project, plus additions and betterments, minus depreciation and other amounts (16 USC § 796 (13)).

3.6.5 *Proposed Project Operation*

Reusens Hydro proposes to continue to operate the Project in accordance with the existing license with no proposed changes in operations as described in Section 3.4.

Table 3.6.2-1. Reusens Project Monthly and Annual Generation (MWh).

Month	2014	2015	2016	2017	2018	Average[1]
January	0	0	0	0	1,471.9	1,471.9
February	0	0	0	0	2,752.2	2,752.2
March	0	0	0	0	2,875.8	2,875.8
April	0	0	0	0	3,163.7	3,163.7
May	0	0	0	0	3,341.1	3,341.1
June	0	0	0	0	2,216.5	2,216.5
July	0	0	0	413.1	546.9	480.0
August	0	0	0	439.0	1,473.9	956.4
September	0	0	0	241.1	2,742.5	1,491.8
October	0	0	0	359.5	3,221.3	1,790.4
November	0	0	0	1,162.7	3,050.1	2,106.4
December	0	0	0	690.5	2,427.8	1,559.1
Total	0	0	0	3,305.9	29,283.6	24,205.3

1. Does not include months and years with zero generation in the calculation.

4.0 DESCRIPTION OF EXISTING ENVIRONMENT AND RESOURCE IMPACTS (18 CFR §5.6(d)(3))

4.1 General Description of the River Basin (18 CFR §5.6(d)(3)(xiii))

The James River Basin covers about 10,060 square miles in eastern Virginia and is Virginia's largest river (JRA, 2018). The James River originates in the Allegheny Mountains at the confluence of the Jackson and Cowpasture rivers near Clifton Forge, Virginia. From its headwaters, the James River flows in a southeasterly direction, traversing the Blue Ridge Mountains, the Piedmont Plateau, and the Coastal Plain/Tidewater region where it discharges into the Chesapeake Bay, approximately 252 miles from its origin.

The Project resides in the Northern Inner Piedmont ecoregion, which is a part of the Piedmont physiographic Province of Virginia (EPA, 2003). The Northern Inner Piedmont is a dissected upland composed of hills, irregular plains, and isolated ridges and mountains. Elevations typically range from 200 to 1,000 feet but higher elevations of up to 2,000 feet occur on scattered monadnocks near the western boundary (Woods et al. 1999). Local relief near the Project is typically 500 to 1500 feet.

The Northern Inner Piedmont is characteristically underlain by highly deformed and deeply weathered Cambrian and Proterozoic feldspathic gneiss, schist, and melange. It is intruded by plutons and is veneered by clay-rich weathering products (i.e. saprolite). Ultisols occur widely and have developed from residuum; they are typically clay-rich, acid, and relatively low in base saturation. Higher, more westerly soils have a mesic temperature regime (Woods et al. 1999).

Vegetation of the area is predominantly consistent with Oak-Hickory-Pine Forests. Dominant plants include hickory (*Carya* spp.), shortleaf pine (*Pinus echinata*), loblolly pine (*Pinus taeda*), white oak (*Quercus alba*) and post oak (*Quercus stellata*). Dominant land uses are forestry and agricultural activity. Urban and suburban areas occur especially in the extreme northeast. Livestock, poultry, and dairy farms occur and corn, small grain, rye, tobacco, and hay are also grown in the basin (Woods et al. 1999).

The climate of the area is characterized by mild winters and warm, humid summers. The average annual temperature is 56.4°F, with average monthly temperatures varying widely. Temperatures may rise to over 100°F in the summer, and may fall to near -10°F in the winter. The average annual precipitation is 41.5 inches, with average annual snowfall of about 12.7 inches (Table 4.1-1).

The Project dam is located near Lynchburg, Virginia. The James River upstream of the Project dam drains an area of about 3,290 square miles (USGS, 2018a). From its origin to the Project, the James River mainstem flows approximately 73 river miles, and is fed by approximately 46 named streams of 909 river miles in total length (USGS, 2015).

Six named tributaries, Judith Creek, Burks Creek, Johns Creek, Widemouth Creek, Salt Creek, and Crab Creek, as well as several unnamed tributaries are within the project boundary (Figure 4.1-1). Downstream of the Project, the James River accepts flows from many large to small tributaries before draining into the Chesapeake Bay.

There are approximately 1,015 dams in the James River basin (Figure 4.1-2). On the mainstem of the James River there are 10 dams, eight of which are being used, have been used, or are planned to be used for hydropower generation. Table 3.1-1 lists the dams on the mainstem of the James

River. Upstream 8.1 river miles of the Project is the Holcomb Rock Hydroelectric Project (FERC No. 2901), and 3.8 river miles downstream of the Project is the proposed Scott's Mill Hydroelectric Project (FERC No. 14425) to be situated at the Lynchburg Dam.

Table 4.1-1. Climate information for the Project area.[1]

Statistic	Total Precipitation (inches)	Total Snowfall (inches)	Average Air Temperature (°F)	Maximum Air Temperature (°F)	Minimum Air Temperature (°F)
Mean	41.5	12.7	56.4	96	5
Maximum	59.11	56.8	58.6	103	16
Minimum	29.84	0	53.9	91	-11

Source: NOAA (2018)

1. Data represented for 1987 through 2017.

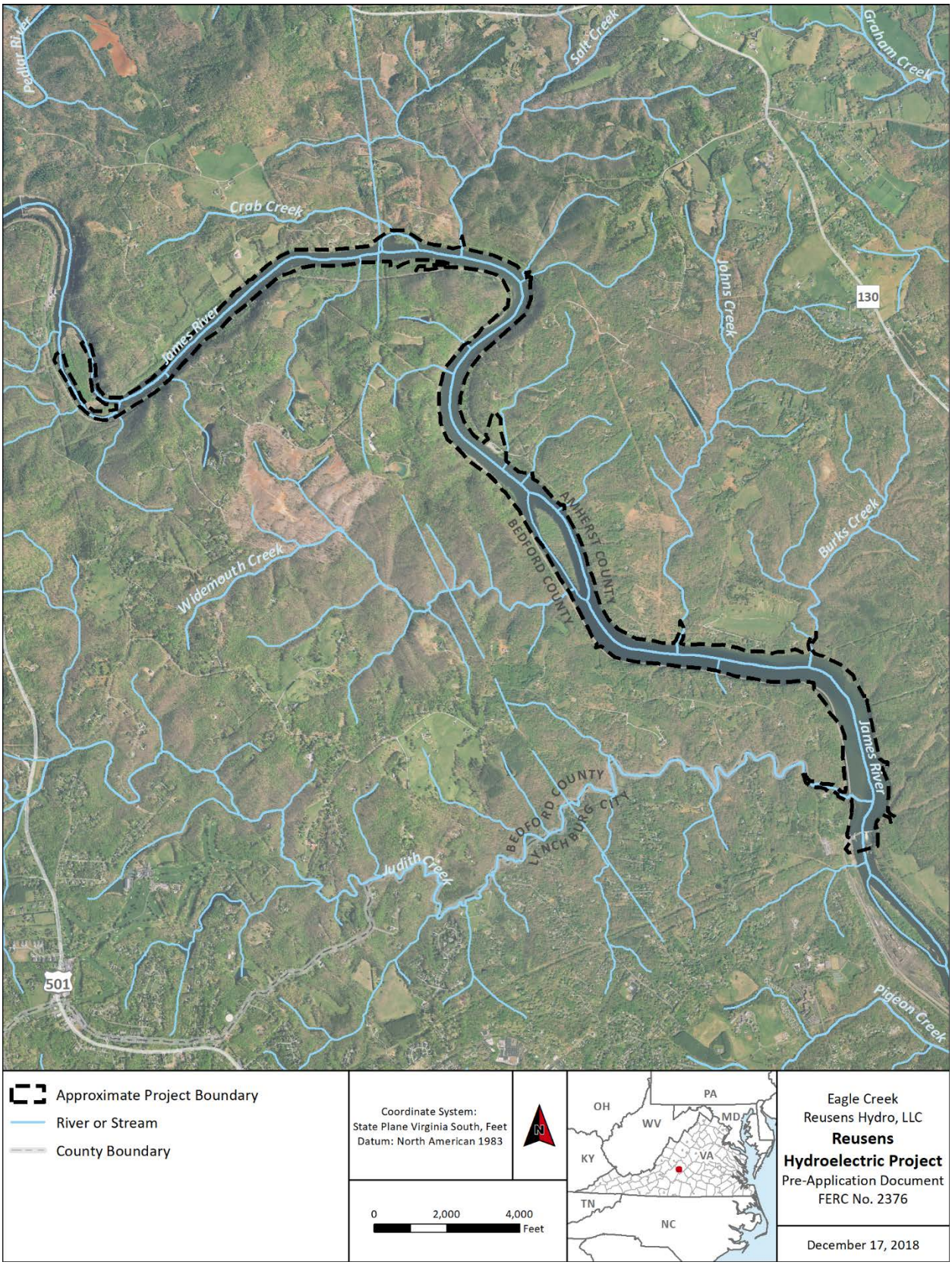


Figure 4.1-1. Tributary and stream reaches within the Project Boundary.

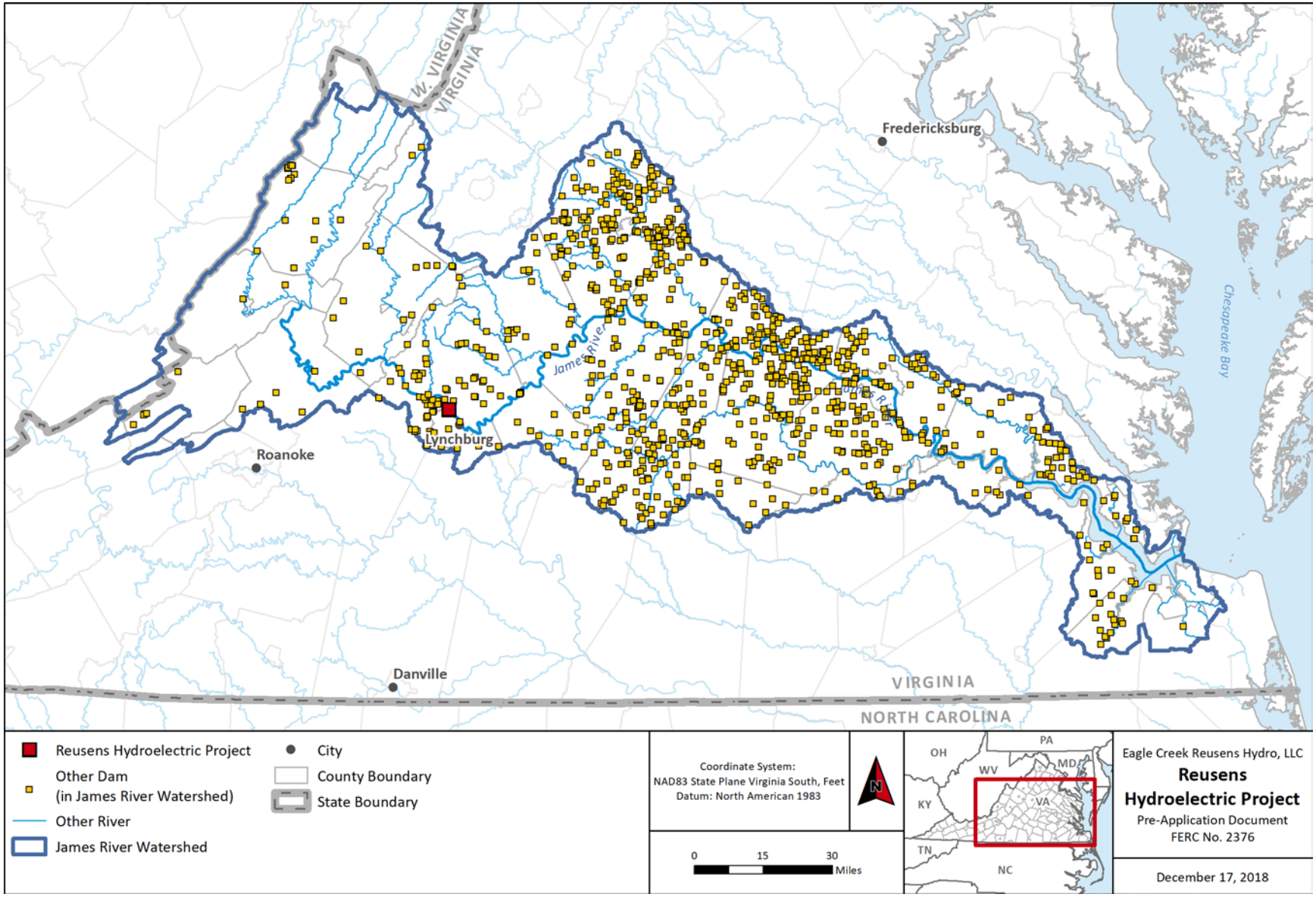


Figure 4.1-2. Dams in the James River basin.

4.2 Geology, Topography, and Soils (18 CFR § 5.6(d)(3)(ii))

4.2.1 *Geology*

The rocks of the central crystalline Appalachians are in basically parallel geologic terranes orientated in a southwest to northeast direction. From northwest to southeast, the geologic terrane crossing the James River basin in the vicinity of the Project is the Piedmont terrane. There are two distinct divisions to the Piedmont rocks, one a set of Late Proterozoic and Paleozoic igneous and metamorphic rocks, and a second of lower Mesozoic sedimentary rocks deposited in graben basins faulted into the igneous and metamorphic rocks (JMU, 2018a).

The Late Proterozoic and Paleozoic igneous and metamorphic rocks include three main components. First, the roots of several volcanic island chains such as in the Charlotte/Chopawamsic belt, and Carolina slate and Eastern slate belts. Second, several small continental fragments that are possibly Grenville in age (1.1-1.0 bya) running west of Richmond. Lastly, the Inner piedmont belt running just east of the Blue Ridge Province (JMU, 2018a).

The Project is located entirely within the Inner Piedmont belt. The Inner Piedmont belt is a fault-bounded composite stack of thrust sheets containing a variety of gneisses, schists, amphibolites, sparse ultramafic bodies, and intrusive granitoids. The Inner Piedmont is the Proto-Atlantic divergent continental margin shelf, slope and rise sediments, with some oceanic lithosphere fragments (JMU, 2000). In addition, numerous late Paleozoic granite intrusions cut through the region, mostly in the eastern half. These were generated in the Taconic orogeny (dated at 320 mya), and the Alleghenian orogeny. Because these rocks have been deformed and metamorphosed, often several times, they are very complex. They also contain many economically important mineral deposits, including gold, talc, kyanite, and feldspar (JMU, 2018a).

Figure 4.2.1-1 illustrates the bedrock lithography of the Project vicinity. Bedrock of the Project vicinity is entirely Proterozoic gneiss and granite. More specifically, augen gneiss, felsic gneiss, biotite gneiss, mafic gneiss, granitic gneiss, granite, and gneiss underlay the Project area.

The Project is within an area of relatively low seismicity in the Piedmont and Blue Ridge geographic provinces. Within a 50-mile radius of the Project, 5 earthquakes of body wave magnitude ≥2.5 have occurred (USGS, n.d.). U.S. Geological Survey (USGS) seismic hazard maps indicate a peak horizontal ground acceleration in the Project area of 0.06 to 0.14 g2 with a recurrence interval of 2,475 years (2 percent probability of exceedance in 50 years [USGS, 2014]).

4.2.2 *Topography*

The topography of the Project area is presented in Figure 4.2.2-1. In the immediate project vicinity the elevations range from around 500 feet to 600 feet NAVD 88,[3] with the majority of the reservoir following along the 560 ft contour. The western shoreline along the river right bank is steep with elevations that rise from about 560 to over 700 ft in approximately 500 to

[3] The orthometric conversion between NAVD88 and NGVD29 is -0.922 feet at the Project.

1,000 ft linear distance. The slope of the eastern shoreline is more gradual, with steep sloped areas.

4.2.3 *Soils*

Figure 4.2.3-1 presents the soils of the Project area, and Table 4.2.3-1 lists the soils in the Project boundary by area. Overall, there are 19 soil types in the Project boundary, excluding water. Aside from water, the top five most abundant soils types in the Project boundary are: Mongle silt loam, Myersville-Catoctin complex, Schaffenaker very stony loam, Kelly silt loam, and Lodi silt loam. Erodibility (K-Factor whole soil) of the soils in the Project boundary range from 0.05 to 0.37,[4] which indicates that the soils in the Project boundary have very low to moderate susceptible to erosion by water (Table 4.2.3-1) (USDA, 2017).

Soil Sampling and Contaminant Testing

In 2016, the Appalachian Power Company performed surficial soil sampling in proximity to the transformers, in the switchyard, sumps located in Powerhouse A, and sediment from an outfall connected to the transformer area for residual polychlorinated biphenyls (PCBs).[5] In addition, surficial soil sampling was also performed along the south property boundary to assess the presence of residual polycyclic aromatic hydrocarbons (PAHs) (Letter from D. Jelinek, REM, and T. Helfrich, PE, Burns and McDonald, Blue Ash, OH to T. Webb, Director, American Electric Power Service Corporation, Columbus, OH). In total, 14 locations where sampled within the transformer/switch yard area, 3 locations within the Powerhouse A sump, the one transformer outfall location, and 7 locations along the south end property boundary. Surficial soil samples were collected using a hand auger, and sump samples were collected by a stainless steel shovel. All samples were placed into appropriate laboratory-supplied containers, packed in a cooler with ice, and shipped to an Virginia Environmental Laboratory Accreditation Laboratory Virginia certified laboratory (TestAmerica Laboratories, Inc. in North Canton, Ohio). Sump and surficial soil samples in the transformer/switch yard area were subsequently analyzed

[4] K-Factor whole soil estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (K_{sat}). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

[5] The Appalachian Power Company was the previous licensee for the Reusens Hydroelectric Project.

following EPA Solid Waste (SW)-846 Method 8082A for PCBs,[6] and southend samples were analyzed following EPA SW-846 Method 8082A and EPA SW-846 Method 8270D for PCBs and PAHs, respectively.[7]

PCBs were detected within the sump and outfall locations. Levels within these locations ranged from 0.012 mg/kg to a maximum of 0.55 mg/kg for the PCB analytes detected. The analyte detected include: PCB 1016, 1221, 1232, 1242, 1248, 1254, 1260, 1262, and 1268. The same PCB analytes detected in the sump and outfall locations were also detected in the samples taken within the transformer/switch yard; where levels ranged from 0.01 to 1.2 mg/kg. These data indicate that PCB levels in these locations are less than EPA Toxic Control Substance Act standards (as provided in 40 CFR Part 761 for PCBs), EPA Regional Screening Level Standards for Commercial/Industrial Soil (RSL) for PCBs, and VDEQ Voluntary Remediation Program Tier III levels.[8]

PAHs were detected in soil samples collected from the along the southern boundary of the property. Sixteen PAH analytes were detected, which include: Acenaphthene, Acenaphthylene, Anthracene, Benzo[a]anthracene, Benzo[a]pyrene, Benzo[b]fluoranthene, Benzo[g,h,i]perylene, Benzo[k]fluoranthene, Chrysene, Dibenz(a,h)anthracene, Fluoranthene, Fluorene, ndeno[1,2,3-cd]pyrene, Naphthalene, Phenanthrene, Pyrene. PAHs levels detected were less than 0.1 mg/kg for all analytes. The detected concentrations were not in excess of the RSL and VRP Tier III, which range from 3 to 23,000 mg/kg depending on the analyte.

4.2.4 *Reservoir Shoreline and Streambanks*

The reservoir that supports the Project extends 7.2 river miles upstream, with a total shoreline length of approximately 14.6 miles. In the immediate Project vicinity, the shoreline and streambanks upstream of the Project have a steep slope, particularly along the western bank. Along the entire western bank is a CSX rail line. Aside from the rail line the streambanks are predominantly mature woody vegetation. Downstream of the project the shoreline slope is also steep with bedrock walls and steep vegetated banks. There are no areas of active erosion in the immediate Project vicinity.

[6] EPA SW-846 Method 8082A is a method used to determine the concentration on PCBs in a sample by gas chromatography.

[7] EPA SW-846 Method 8270D is a method used to determine the concentration of semivolatile organic compounds by gas chromatography/mass spectrometry.

[8] EPA Toxic Control Substance Act clean up threshold standard is 10 mg/kg, the EPA Regional Screening Level Standards for Commercial/Industrial Soil (RSL) for PCBs range from 1.5 to 10 mg/kg depending on the PCB depending on the PCB analyte, and VDEQ Voluntary Remediation Program Tier III threshold levels are the same as the EPA Regional Screening Level Standards for Commercial/Industrial Soil (RSL) for PCBs.

Table 4.2.3-1. Soils series, their total area and erodibility within the Project boundary.

Map Unit Name	Map Unit Symbol	Acres	Erodibility (K-Factor, whole soil)
Water	W	469.6	--
Mongle silt loam, 0 to 2 percent slopes, very stony, frequently flooded	9A	21.9	0.32
Myersville-Catoctin complex, 35 to 55 percent slopes, extremely stony	35E	16.6	0.32
Schaffenaker very stony loamy sand, 25 to 65 percent slopes	37E	16.3	0.37
Kelly silt loam, 0 to 2 percent slopes	32A	11.5	0.2
Lodi silt loam, 25 to 35 percent slopes	29E	10.2	0.17
Downer loamy sand, 0 to 2 percent slopes	33A	9.3	0.32
Frankstown channery silt loam, 25 to 35 percent slopes	13E	8.1	0.05
Wilkes loam, 25 to 60 percent slopes	WkF	4.3	0.37
Airmont-Weverton complex, 25 to 50 percent slopes	2E	3.6	0.05
Chewacla-Toccoa complex	CT	3.5	0.24
Carbo silt loam, 7 to 15 percent slopes	5C	2.2	0.37
Barkers Crossroads-Rhodhiss complex, 25-45 percent slopes	5E	1.7	0.37
Lehew channery fine sandy loam, 25 to 45 percent slopes	26E	1.6	0.24
Hazleton very stony sandy loam, 15 to 25 percent slopes	23D	1.1	0.37
Cataska channery silt loam, 15 to 45 percent slopes	16E	1.0	0.28
Barkers Crossroads-Rhodhiss-Rock outcrop complex, 25 to 45 percent slopes	6E	0.3	0.37
Chilhowie silty clay loam, 25 to 35 percent slopes	11E	0.1	0.37
Wilkes loam, 15 to 25 percent slopes	WkE	<0.1	0.37
Frederick-Rock outcrop complex, 15 to 45 percent slopes	34E	0.0	0.32

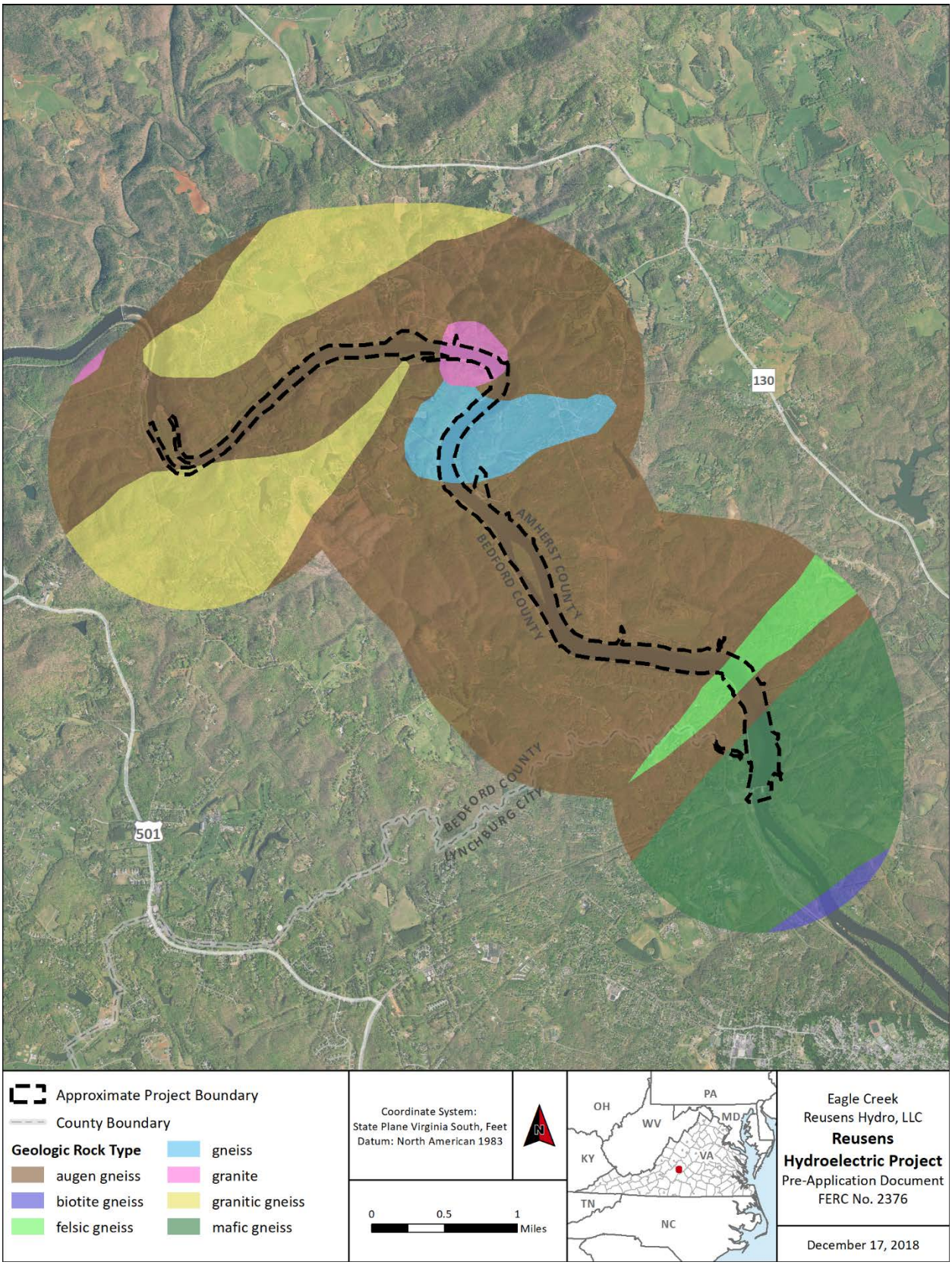


Figure 4.2.1-1. Bedrock geology of the Project vicinity.

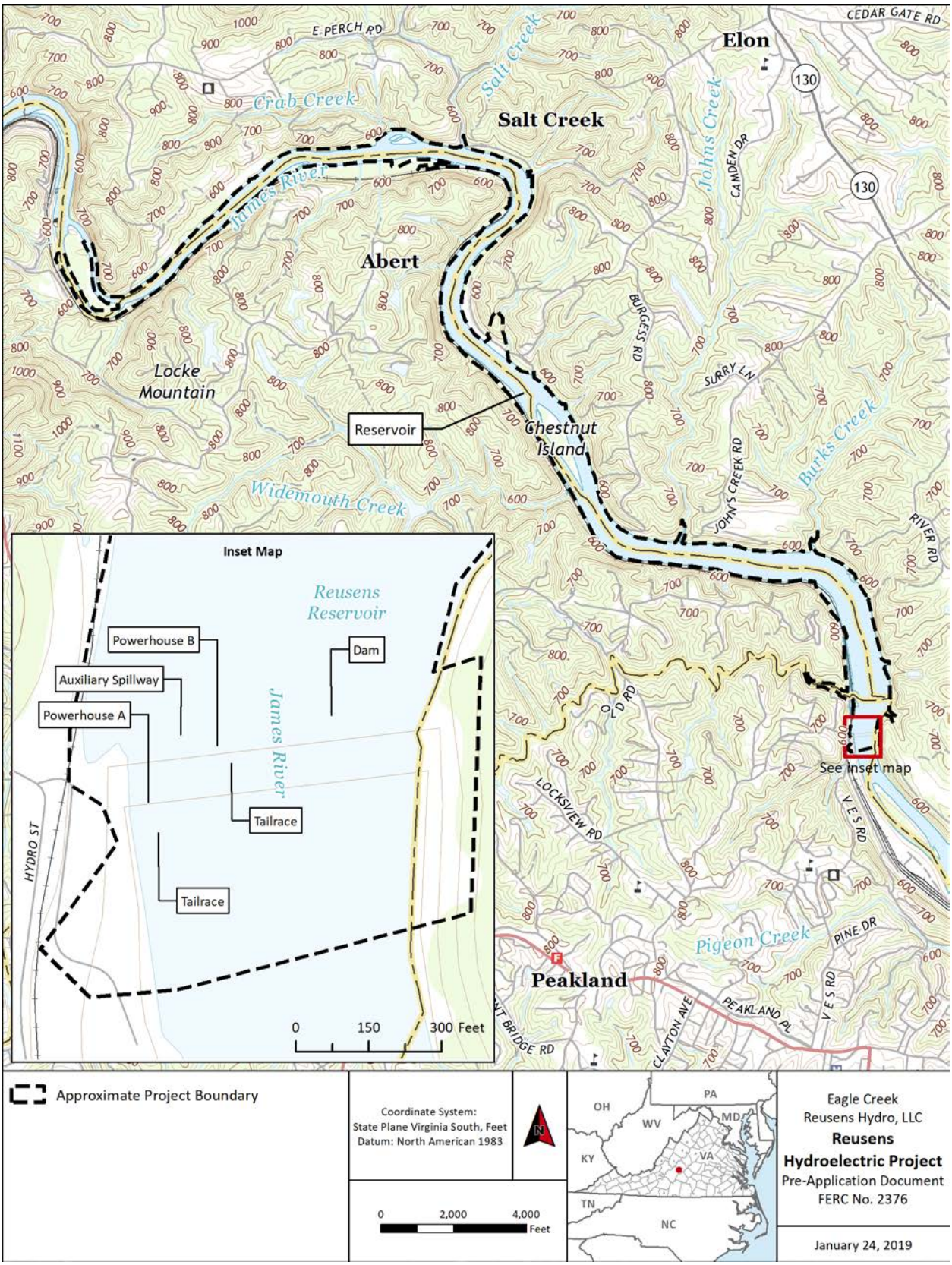


Figure 4.2.2-1. Topography of the Project area.

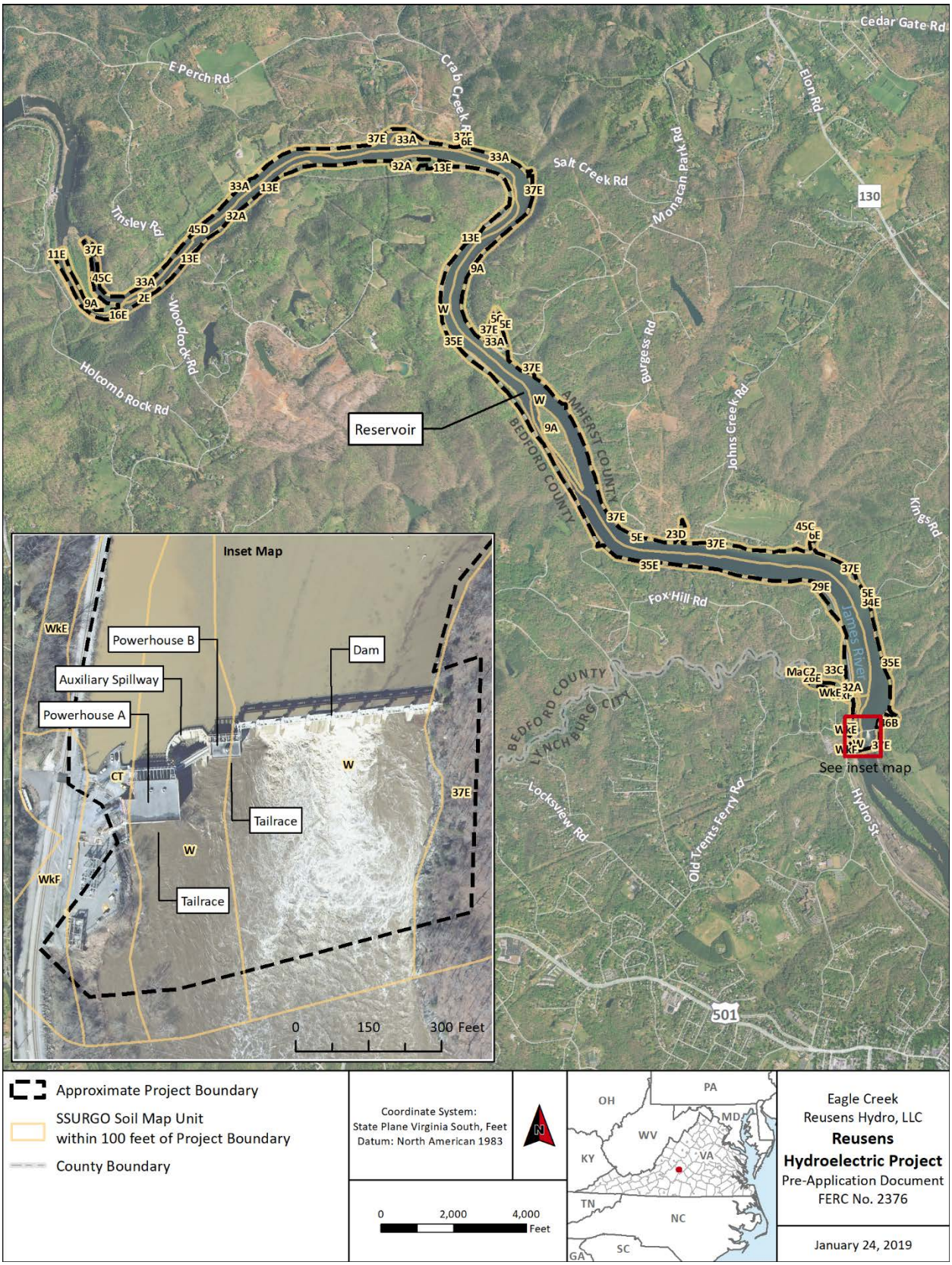


Figure 4.2.3-1. Soils of the Project area.

4.3 Water Resources (18 CFR §5.6(d)(3)(iii))

4.3.1 *Water Quantity*

Hydrology and Streamflow

The nearest U.S. Geological Survey (USGS) gage is the James River at Holcomb Rock, VA (USGS Gage No. 02025500). This gage is located approximately 7.2 river miles upstream of the Project dam (Figure 4.3.1-1). This gage is situated at an elevation of 547.83 feet NAVD88, and has a drainage area of 3,256 square miles. This gage provides both discharge (cfs) and gage height (feet). The period of record for this gage is October 1, 1990 to present (discharge). The nearest downstream USGS gage, James River at Bent Creek (USGS Gage No. 02026000) is located approximately 33.2 river miles downstream of the Project dam. This gage is situated at an elevation of 380.41 feet NGVD88 and has a drainage area of about 3,649 square miles. The gage also records discharge (cfs) and gage height (feet), and the period of record for this gage is October 1, 1990 to present (discharge). The gage is operated by the USGS in cooperation of the U.S. Army Corp of Engineers.

Table 4.3.1-1 provides adjusted monthly mean, median, maximum, and minimum flows at the Project dam based on 15-minute flow records from the James River at Holcomb Rock, VA USGS Gage No. 02025500. Overall, mean monthly flows ranged from 1,311 cfs to 6,712 cfs at the Project dam. The highest mean monthly flows occur in March, and the lowest mean monthly flows occur in August. The maximum instantaneous flow at the dam was 117,211 cfs, which occurred in January of 1996, and the lowest instantaneous flow was 13 cfs, which occurred in November of 2008 (USGS, 2018b).

The annual flow duration curve at the Project is presented in Figure 4.3.1-2. Monthly flow duration curves are presented in Appendix F. The Project has a minimum operating flow of 900 cfs. Based on the flow duration analysis, the minimum operating capacity of the turbine generating units at the Project are equaled or exceeded about 84 percent of the time. In addition, the minimum flow requirement of 333 cfs is exceeded 99.7 percent of the time.

The USGS calculated the 7-day 10 year low flow statistic (7Q10) for the USGS Gage James River at Holcomb Rock, VA (USGS Gage No. 02025500) to be 424 cfs (USGS, 2011). The 7Q10 is a low-flow statistic that is the lowest 7-day average flow that occurs (on average) once every 10 years. Prorated for the intervening drainage between the gage and the Project, the 7Q10 flow at the Project dam is 428 cfs. This 7Q10 flow at the Project dam is equaled or exceeded approximately 99.5 percent of the time.

Project Reservoir

The Project reservoir has a surface area of 500 acres and gross storage capacity of 6,869 acre-feet at the normal maximum operating elevation of 550.7 feet NGVD. At the lower normal minimum operating elevation of 547.0 feet NGVD the reservoir has a gross storage capacity of 5,182 acre-ft. Therefore, the Project has 1,687 acre-ft of usable storage. Figure 4.3.1-3 and 4.3.1-4 present the reservoir water surface elevation duration curve and daily water level change

frequency curve as measured at the Project forebay.[9] The median water level observed in the Project forebay is 550.44 ft, and between 549.89 ft to 551.13 represents the middle 95% of the observed water levels (Figure 4.3.1-3). On a daily basis, the median water surface elevation change within the forebay was 0.34 ft, with the middle 95% of daily water surface elevation change range between 0.09 to 1.24 ft (Figure 4.3.1-4).

The drainage area at the Project dam is about 3,290 square miles. At the upper end of the Project reservoir the drainage area is approximately 3,260 square miles. Therefore, approximately 30 square miles account of the intervening drainage between the Project dam and the upper extent of the reservoir. The intervening drainage consists of six named and several unnamed tributaries. The named tributaries are: Judith Creek, Burks Creek, Johns Creek, Widemouth Creek, Salt Creek, and Crab Creek. Figure 4.3.1-1 shows the locations of the tributaries that contribute flow to the Project reservoir.

Project Tailwaters

Figure 4.3.1-5 and 4.3.1-6 present the reservoir water surface elevation duration curve and daily water level change frequency curve as measured at the Project tailwater. The median water level observed in the Project tailwater is 516.72 ft, and between 515.10 ft to 520.1 represents the middle 95% of the observed water levels (Figure 4.3.1-5). On a daily basis, the median water surface elevation change within the tailwater is 1.23 ft, with the middle 95% of daily water surface elevation change range between 0.16 to 3.26 ft (Figure 4.3.1-6).

Water Uses

Water Discharges

Section 402 of the Clean Water Act established the National Pollutant Discharge Elimination System (NPDES) program to limit pollutant discharges into streams, rivers, and bays. In the Commonwealth of Virginia, VDEQ administers the program as the Virginia Pollutant Discharge Elimination System (VPDES). VDEQ issues VPDES permits for all point source discharges to surface waters. VDEQ issues two types of VPDES permits: individual and general permits. VDEQ issues individual permits to both municipal and industrial facilities. Individual permit requirements include special conditions, effluent limitations and monitoring requirements for each facility on a site specific basis in order to meet applicable water quality standards. Examples of individual permits are those issued to wastewater and sewage treatment facilities. General permits are permits written for a general class of dischargers, which include single family home septic, seafood processing, petroleum contaminated sites and hydrostatic tests, stormwater discharge, non-metallic mineral mining, animal feed operations, concrete facilities, vehicle wash and laundry, non-contact cooling water, pesticides, nutrient trading, and potable water treatment. The EPA maintains authority to review applications and permits for "major" dischargers, a distinction based on discharge quantity and content.

VDEQ maintains a list of individual and general permit holders as well as provides an online interactive map that shows the outfall locations of each individual and general permit

[9] Data for the time period 2007 to 2011. Between 2007 and 2011 the Project was operating between 13.1 to 20.3 percent to the time.

(http://www.deq.virginia.gov/mapper_ext/?service=public/wimby). Figure 4.3.1-3 shows the location of active VPDES individuals permits in the James River watershed upstream of the Project dam. The closest VPDES individual permit is the Boonsboro Country Club Sewage Treatment Plan (VPDES Permit No. VA0091162), which is authorized to discharge 0.015 million gallons per day of effluent into an unnamed tributary of Judith Creek, which is a tributary of the James River and the Reusens reservoir. Judith Creek's confluence with the James River is 0.2 river miles upstream of the Project dam. The outflow of the Boonsboro Country Club Sewage Treatment Plan is located approximately 6.0 river miles upstream from the creek's confluence with the James River.

The Reusens Hydroelectric Project also has a VPDES individual permit (VPDES Permit No. VA0087114). The permit authorizes Reusens to discharge into the James River 0.177 million gallons per day of turbine/generator bearing component cooling water.

Water Withdrawals

Waters of the reservoir and tailwater of the Reusens Hydroelectric Project are withdrawn by the Amherst County Service Authority (ACSA) and City of Lynchburg for municipal water supply. By order dated April 14, 2014, the Commission approved a non-project use for the ACSA to install a tertiary water withdraw facility and withdraw 3 mgd from the Project reservoir during emergency drought conditions (FERC, 2014). ACSA has yet to construct the intake facility. The intake of ACSA would be located approximately one mile upstream of the Project dam on the northeast bank of the James River. The ACSA tertiary facility would only be used when ACSA primary and secondary facilities cannot meet their demand for municipal water. The ACSA primary water source is Harris Creek and its secondary water source is Graham Creek, both of which are located outside the Project Boundary.

The City of Lynchburg has a water pumping station, the Abert Pump Station, which is located approximately 3.6 miles upstream of the Project dam. In addition, the City of Lynchburg also withdraws water from the James River approximately 4.2 miles downstream of the Project dam at their Downtown Pump Station. The City's two pumping stations are used during periods of greater water demand. The primary source of the City's municipal water is Pedlar Reservoir, which is located approximately 22 miles northeast of the Project and outside the Project boundary (FERC, 1994; City of Lynchburg, 2014). The City's Downtown Pumping Station is located outside of the Project boundary and downstream of the Lynchburg Dam, the site of the proposed Scott's Mill Hydroelectric Project.

The Reusens Project is operated in accordance with the Operations Plan filed with the Commission on August 9, 2018 per Article 403 of the current license. The Operation Plan requires the reservoir to be maintained at an elevation of 547 feet NGVD or higher to protect the City of Lynchburg and ACWA water supply intakes. The Operations Plan also contains measures to protect the water supply intakes during maintenance and emergency activities (see section 3.4 *Current Project Operations* above).

4.3.2 *Projected Future Uses of Project Waters*

A moderate to high potential for growth in the James River watershed exists (VDEQ 2018a). Residential, commercial, and industrial growth is expected along the U.S. Route 501 corridor from Natural Bridge through Big Island to Lynchburg. Growth of the manufacturing industry is dependent on infrastructural expansion, which is dependent on the capacity of existing facilities.

Approximately 3.7 river miles downstream of the Project is the Lynchburg Dam, where the proposed Scott's Mill Hydroelectric Project would be located. Currently, waters impounded by the Lynchburg Dam backup to the tailwaters of the Project. If licensed and once constructed, the proposed Scott's Mill Hydroelectric Project would use waters discharged by the Project for hydroelectric generation.

4.3.3 *Water Quality*

Water Quality Standards

The State Water Control Law mandates the protection of existing high-quality state waters and provides for the restoration of all other state waters so they will permit reasonable public uses and will support the growth of aquatic life. The adoption of water quality standards under Section 62.1-44.15(3a) of the law is one of the State Water Control Board's methods of accomplishing the law's purpose. Water quality standards consist of statements that describe water quality requirements. They also contain numeric limits for specific physical, chemical, biological or radiological characteristics of water. These statements and numeric limits describe water quality necessary to meet and maintain uses such as swimming and other water-based recreation, public water supply, and the propagation and growth of aquatic life. Standards include general and specific descriptions because not all requirements for water quality protection can be numerically defined.

The reach of the James River upstream and downstream of the Project is classified as Sections 11g and 11h, Class III, under the Virginia Water Quality Standards 9 VAC 25-260, as "Nontidal Waters (Coastal and Piedmont Zones)" (Virginia Law, 2018). These reaches include James River and its tributaries from the Business Route 29 bridge in Lynchburg to Reusens Dam and the James River and its tributaries, excluding the Pedlar River, from Reusens Dam to Coleman Dam. All state waters, including wetlands, are designated for the following uses: recreational uses (e.g., swimming and boating), the propagation and growth of a balanced, indigenous population of aquatic life, including game fish, which might reasonably be expected to inhabit them; wildlife; and the production of edible and marketable natural resources (e.g., fish and shellfish). Numeric and descriptive water quality standards associated of Non-tidal waters are included in Table 4.3.3-1.

Clean Water Act, Section 303(d) Listing of Impaired Waters, and Section 305(d) Assessment and Reporting

Under section 303(d) of the CWA, and in adherence with federal water quality planning and management regulations (40 C.F.R. Part 130), all states are required to develop lists of impaired waters, commonly referred to as the 303(d) list. The list includes lakes, ponds, rivers, and streams whose water quality does not meet state-defined water quality standards. Each state's list must be updated every two years and submitted to the United States Environmental Protection Agency (EPA) for approval. The CWA requires a Total Maximum Daily Load plan (TMDL) to be developed for waters on the list and to provide a schedule for TMDL completion. A TMDL is a regulatory term of the CWA that describes a plan for bringing impaired waters into compliance with approved water quality standards and designated uses. TMDLs specify the maximum amount of a pollutant a waterbody can receive while still attaining the approved water quality standards and designated uses.

VDEQ is responsible for water monitoring, water quality assessments, and water regulations of the Commonwealth. VDEQ, based on EPA guidance, created a categorical classification to determine whether a water body or water body segment attains all water quality standards and applicable designated uses. Each water body or water body segment may be listed in the following categories or subcategories:

- Category 1 – waterbody or waterbody segment is attaining all associated designated uses and no designated use is threatened.
    - Category 1A – waters are attaining all uses and a TMDL has been developed for one or more uses.
- Category 2 – available data and/or other information indicate that some, but not all of the designated uses are supported.
    - Category 2A – waters are supporting all of the uses for which they are monitored.
    - Category 2B – waters are of concern to the state but no water quality standard exists for a specific pollutant, or the water exceeds a state screening value or toxicity test.
    - Category 2C – waters are now attaining the use(s) for which they were originally 303(d) listed and the TMDL is EPA approved but other applicable use(s) were not monitored and assessed.
- Category 3 - insufficient data and/or information to determine whether any designated uses are met.
    - Category 3A - no data are available within the data window of the current assessment to determine if any designated use is attained and the water was not previously listed as impaired.
    - Category 3B - some data exist but are insufficient to determine support of designated uses. Such waters will be prioritized for follow-up monitoring, as resources allow.
    - Category 3C- data collected by a citizen monitoring or another organization indicating water quality problems may exist but the methodology and/or data quality has not been approved for a determination of support of designated use(s). These waters are considered as having insufficient data with observed effects. Such waters will be prioritized by VDEQ for follow-up monitoring.
    - Category 3D - data collected by a citizen monitoring or other organization indicating designated use(s) are being attained but the methodology and/or data quality has not been approved for such a determination.
- Category 4 – water is impaired or threatened but a TMDL is not required
    - Category 4A – water is impaired or threatened for one or more designated uses but does not require a TMDL. A new TMDL is not necessary to address the newly identified impaired tributaries if TMDL modeling, source identification and reductions cover the entire watershed and the TMDL has been approved by EPA. These waters are primarily related to shellfish and/or recreational bacteria impairments but could include benthic impairments.

  - Category 4B – water is impaired or threatened for one or more designated uses but does not require the development of a TMDL because other pollution control requirements (such as VPDES limits under a compliance schedule) are reasonably expected to result in attainment of water quality standards by the next reporting period or permit cycle.
  - Category 4C – water is impaired or threatened for one or more designated uses but does not require a TMDL because the impairment is not caused by a pollutant and/or is determined to be caused by natural conditions.
  - Category 4D – part(s) of a water quality standard is attained for a pollutant with a TMDL, but the remaining criteria for the standard were not assessed due to insufficient information. (Only to be applied to dissolved oxygen in tidal waters of the Chesapeake Bay).

- Category 5 – Waters are impaired or threatened and a TMDL is needed.
  - Category 5A – a water quality standard is not attained. The water is impaired or threatened for one or more designated uses (excluding shellfish use) by a pollutant(s) and requires a TMDL (303d list).
  - Category 5B – the water quality standard for shellfish use is not attained. One or more pollutants causing impairment require TMDL development.
  - Category 5C – the water quality standard is not attained due to "suspected" natural conditions. The water is impaired for one or more designated uses by a pollutant(s) and may require a TMDL (303d list). Water quality standards for these waters may be re-evaluated due to the presence of natural conditions.
  - Category 5D – the water quality standard is not attained where TMDLs for a pollutant(s) have been developed but one or more pollutants are still causing impairment requiring additional TMDL development.
  - Category 5E – effluent limited facilities are not expected to meet compliance schedules by next permit cycle or reporting period.
  - Category 5F – the water quality standard is attained for a pollutant(s) with a TMDL and 303(d) delisting approved but the water remains impaired for additional pollutant(s) requiring TMDL development.
  - Category 5R – the Water Quality Standard is not attained and the water is impaired, and implementation of an EPA-approved restoration plan is expected to result in attainment. A status update will be provided each 303(d) cycle to evaluate progress.
  - Category 5M – the water quality standard is not attained for mercury primarily due to atmospheric deposition.

Section 305(b) of the CWA directs states to periodically prepare a report that provides the water quality assessment results in a state. The most recent report for the Commonwealth of Virginia is the draft *2016 Water Quality Assessment Integrated Report*, which provides the results of Virginia's water quality assessments during the time period January 1, 2009, through December

31, 2014, and describes the extensive efforts to monitor, assess, and improve water quality in the waters of the Commonwealth (VDEQ and VDCR, 2017).

Figure 4.3.3-1 shows the results of 7,002 miles of assessed stream segments presented in the draft *2016 Water Quality Assessment Integrated Report* for the James River basin. These data indicate the 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 life, and fish consumption. VDEQ and VDCR (2017) identifies bacteria and non-point source pollutants as primary significant and suspected causes and sources of river segment impairment within the James River basin.

In the vicinity of the Project, there are two assessment units that encompass Project waters. Assessment Unit ID VAC-H03R_JMS06A02 extends 8.3 river miles of upstream from Reusens dam to Holcomb Rock dam. In addition Assessment Unit ID VAC-H03R_JMS04A02 encompasses Project tailwaters from the Reusens dam 4.2 miles downstream to the Business Route 29 bridge.

Both assessment units of the James River that encompass the Project are listed as Category 5D, and impaired for fish consumption due to PCB in fish tissue and recreation due to elevated levels of Escherichia coli (e-coli) bacteria. Aquatic life, wildlife, and public water supply designated uses are fully supported in these segments (VADEQ, 2018). The fish consumption impairment listing is based on 2004 fish tissue analyses where elevated levels of PCBs greater than the 0.00064 human health standard were measured among fish sampled from several VDEQ monitoring stations throughout the James River, from Big Island dam downstream to the I-95 bridge near Richmond, VA. The source of the PCBs is unknown (VDEQ and VDCR, 2017).

The recreation use impairment listing is based on 2001 data that found five and eight of 36 Escherichia coli bacteria samples exceeded the 235 cfs/100 ml instantaneous water quality standard within segments VAC-H03R_JMS06A02 and VAC-H03R_JMS04A02, respectively (VADEQ, 2018). VDEQ identified combined sewer overflows, discharges from municipal separate storm sewer systems (MS4s), municipal point source discharges, waste from pets, livestock, on-site waste treatment systems (i.e, septic systems), unspecified domestic waste, wildlife, and waterfowl, as sources of the impairment.

Total Maximum Daily Load

Currently, there is a fish consumption advisory for the assessment units that encompass the Project. The advisory recommends that no more than two meals per month of gizzard shad, carp, American eel, flathead catfish, or quillback carpsucker be consumed. VDEQ has established a High Priory Level for a TMDL to be developed to address PCBs in fish tissues in the James River. VDEQ anticipates to develop a TMDL to address PCBs in fish tissue by 2022 (VDEQ, 2018). Levels of PCBs detected in fish in the Project vicinity is further discussed in section 4.5 *Fish and Aquatic Resources*. In May of 2017, a TMDL for the segment of the James River encompassed by the Project for E. coli was completed (MapTech, 2017).

Existing Water Quality Data

Water quality of the James River has been monitored by VDEQ, USGS, and other entities. Below is a summary of the existing water quality data collected by the various entities in the Project vicinity on the James River.

Instantaneous Monitoring

In the Project vicinity, water quality has been periodically monitored by VDEQ. VDEQ maintains a water quality monitoring station on the James River approximately 7.6 river miles upstream of the Project, near USGS Gage No. 02025500 James River near Holcomb Rock, VA. In addition, VDEQ also collected surface water quality data at two sites 0.6 and 0.7 river miles downstream of the Project dam, respectively. Collectively, these monitoring stations encompass the entire Project area. Figure 4.3.3-1 and Table 4.3.3-2 provide the location and period of record of water quality data available at these two locations.

Table 4.3.3-3 summarizes the available water quality data from 2007 through 2018 for the three VDEQ monitoring stations that encompass the Project. Over the past ten years, 56 different parameters have been collected or measured in the James River in the vicinity of the Project. These include various metals, organics, nutrients, solids, and other chemical and physical properties. These data indicate that water temperatures, dissolved oxygen concentrations, and pH level in the Project area range from 0.2 to 29.5°C, 6.5 to 15.7 mg/L, and 6.7 to 8.7 respectively. Furthermore, between the three stations, mean water temperature, mean dissolved oxygen, and mean pH levels range from 16.0 to 23.7°C, 7.4 to 9.8 mg/L mg/L, and 7.8, respectively.[10] Collectively, these data collected by VDEQ indicate 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 for non-tidal waters (see section 4.3.2, *Water Quality Standards*).

Furthermore, Scott's Mill Hydro, LLC (Scott's Mill) performed water temperature and dissolved oxygen monitoring as a part of the licensing studies for the proposed Scott's Mill Hydroelectric Project (FERC Project No. 14425) on the James River (Scott's Mill, 2017). These locations are described and pictured in Table 4.3.3-2 and Figure 4.3.3-1, respectively. In the immediate vicinity of the Reusens Project, Scott's Mill collected instantaneous water temperature and dissolved oxygen measurements immediately upstream and downstream of the Project in September 2016 during hot (+90°F) and dry conditions (no rain within 4 days). Upstream of the Reusens dam the water temperature was 31.5°C and the dissolved oxygen levels were 9.6 mg/L and 130.4 percent saturation. Downstream of the Reusens Project water temperatures were measured to be 27.5°C, and dissolved oxygen levels were 7.6 mg/L and 96.0 percent saturation (Scott's Mill, 2017).

Scott's Mill also collected dissolved oxygen and water temperature vertical profiles behind the Lynchburg Dam and along a cross-section of the James River downstream of the Reusens Project and just upstream of the Lynchburg Dam. For the river cross section the average dissolved oxygen concentration and water temperature ranged between 8.1 to 8.2 mg/L and 57.4 to 28.1°C. The vertical profiles collected indicate the dissolved oxygen concentration was lowest and ranged between 6.7 to 6.9 mg/L in the hypolimnion - the water column near the bottom of the river between 26 and 33 ft in depth. These data 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.

[10] Mean pH value is rounded; the actual range for mean pH is 7.77 to 7.84.

Continuous Monitoring

The USGS continuously monitored water temperature (°C) and specific conductivity (µS/cm) on a daily basis at the USGS Gage No. 02025500 James River near Holcomb Rock, VA upstream of the Project starting in late February of 2007 through early November 2008. The continuous water temperature data demonstrates seasonal warming and cooling of the James River in the vicinity of the Project (Figure 4.3.3-2). On average, the warmest water temperatures are observed in August whereas the coolest occur in January (Table 4.3.3-4). Specific conductivity in the vicinity of the Project appears to variable (Figure 4.3.3-2). On average, specific conductivity in the vicinity of the Project appears to be highest in October and lowest in January (Table 4.3.3-4).

Sediment Sampling

In September 2010, VDEQ collected sediment of the James River using a Petit Ponar grab sampler at their monitoring station 21VASWCB-2BJMS264.58, downstream of the Project (Table 4.3.3-2). The sediment was subsequently analyzed for metal concentrations. Table 4.3.3-5 present the results of VDEQ sediment metal analysis.

Scott's Mill collected river sediment behind the Lynchburg Dam (37.4249, -79.1408). Samples were collected using a hand auger and extensions, from the soil/sediment surface to a depth of approximately three feet. Samples were composited (mixed) in the field, and were then sent to the Cape Fear Analytical laboratory (in Wilmington, NC) for PCB analysis using US Environmental Protection Agency (USEPA) Method 1668A (low-level PCB / 209 congener analysis). Results of the analysis indicates PCB concentrations in the sediment of James River behind the Lynchburg Dam range from 9 to 75 picograms/per gram of sediment, or 0.000009 to 0.000075 ppm (Scott's Mill, 2017).

Operation Effects on Water Quality

By order dated April 14, 2014, the Commission approved a non-project use for the ACSA to install a tertiary water withdraw facility and withdraw 3 mgd from the Project reservoir during emergency drought conditions (FERC, 2014). As a part of the approval process the Licensee (Appalachian Power) at the time filed an application with the Commission for non-project use of project water, under Article 202 of the current license, on behalf of the Amherst County Service Authority (ACSA). Commission staff then prepared an Environment Assessment, part of which analyzed effects Reusens project operations have on dissolved oxygen and water temperature of the James River in the vicinity of the Project. Commission staff concluded project operations have little effect on water quality of the James River (FERC, 2014).

Table 4.3.1-1. Summary of flows measured at the Reusens Dam based on flows at USGS Gage No. 02025500) for the period of record (1990 to 2018).[1,2]

Month/ Time period	Monthly Mean (cfs)	Monthly Median (cfs)	Instantaneous		Average	
			Maximum (cfs)	Minimum (cfs)	Maximum (cfs)	Minimum (cfs)
January	4,923	2,961	117,211	97	23,528	1,153
February	4,804	3,031	45,066	125	15,742	1,765
March	6,712	4,789	65,578	353	22,215	2,206
April	6,064	4,294	106,096	403	24,733	1,922
May	5,004	3,577	54,362	149	17,131	1,526
June	3,399	1,758	88,717	92	15,718	601
July	1,733	1,192	32,132	97	6,352	560
August	1,311	1,071	28,697	62	3,976	388
September	2,074	959	72,651	26	12,537	356
October	1,718	978	32,031	37	7,810	825
November	2,428	1,122	52,139	13	12,521	543
December	3,840	2,092	56,080	77	17,022	1,015
Period of Record	3,678	1,940	117,211	13	14,940	1,072

1. Flows are prorated by 1.01 to account for the difference in drainage area between the gage and Project.
2. Data shown is for October 1, 1990 through October 1, 2018 (28 years).

Table 4.3.3-1. Applicable water quality standards for non-tidal waters.

Parameter	Administrative Code	Criteria
General Criteria	9VAC25-260-20	State waters, including wetlands, shall be free from substances attributable to sewage, industrial waste, or other waste in concentrations, amounts, or combinations which contravene established standards or interfere directly or indirectly with designated uses of such water or which are inimical or harmful to human, animal, plant, or aquatic life. Specific substances to be controlled include, but are not limited to: floating debris, oil, scum, and other floating materials; toxic substances (including those which bioaccumulate); substances that produce color, tastes, turbidity, odors, or settle to form sludge deposits; and substances which nourish undesirable or nuisance aquatic plant life. Effluents which tend to raise the temperature of the receiving water will also be controlled. Conditions within mixing zones established according to 9VAC25-260-20 B do not violate the provisions of this subsection.
Streamflow	9VAC25-260-40	Man-made alterations in stream flow shall not contravene designated uses including protection of the propagation and growth of aquatic life.
Dissolved Oxygen	9VAC25-260-50	Instantaneous minimum not less than 4.0 mg/L Daily average not less than 5.0 mg/L
pH	9VAC25-260-50	No less than 6.0 and not greater than 9.0
Water Temperature	9VAC25-260-50	Maximum not to exceed 32°C
	9VAC25-260-60	Any rise above natural temperature shall not exceed 3°C except in the case of Class VI waters (natural trout waters), where it shall not exceed 1°C. However, the board can, on a case-by-case basis, impose a more stringent limit on the rise above natural temperature. Natural temperature is defined as that temperature of a body of water (measured as the arithmetic average over one hour) due solely to natural conditions without the influence of any point-source discharge.
	9VAC25-260-70	The maximum hourly temperature change shall not exceed 2°C, except in the case of Class VI waters (natural trout waters) where it shall not exceed 0.5°C. These criteria shall apply beyond the boundaries of mixing zones and are in addition to temperature changes caused by natural conditions.
Bacteria	9VAC25-260-170	E. coli bacteria shall not exceed a monthly geometric mean of 126 CFU/100 ml in freshwater. If there are insufficient data to calculate monthly geometric means in freshwater, no more than 10% of the total samples in the assessment period shall exceed 235 E. coli CFU/100 ml. If there are insufficient data to calculate monthly geometric means in transition and saltwater, no more than 10% of the total

Parameter	Administrative Code	Criteria
		samples in the assessment period shall exceed enterococci 104 CFU/100 ml.
Methylmercury (Fish Tissue)	9VAC25-260-140	No greater than 0.30 µg/L
PCB_{total}	9VAC25-260-140	For freshwater no greater than 0.014 µg/L. For Human Health no greater than 0.00064 µg/L

Table 4.3.3-2. Project area surface water quality monitoring stations.

Organization	Station ID	Station Location (Latitude, Longitude)[1]	Distance from Project Dam	Period of Record	Sample Frequency
VDEQ	21VASWCB-2-JMS270.84	37.5031, -79.2622	7.6 river miles upstream	1974 to 2018	Intermittent from 1974 to 1994; About once every 2 months starting 2001 to 2018
VDEQ	21VASWCB-2BJMS264.58	37.4539, -79.1794	0.7 river miles downstream	2010	September 21 and 22, 2010
VDEQ	21VASWCB-2BJMS263.24	37.4561, -79.1795	0.6 river miles downstream	2017 to 2018	July 2017, February and September 2018
Scott's Mill	001	37.4632, -79.1871	At Project Powerhouse A	2016	1 day, September, 9 2016
Scott's Mill	002	37.4622, -79.1866	0.06 river mile downstream	2016	1 day, September, 9 2016
Scott's Mill	Cross-Section	37.4268, -79.1414	3.6 river miles downstream	2016	1 day, September, 12 2016
Scott's Mill	Vertical Profiles	37.4268, -79.1414	3.6 river miles downstream	2016	1 day, September, 12 2016

Source: NWQMC (2018); Scott's Mill (2017)

1. Decimal degrees NAD83

Table 4.3.3-3. Water quality monitoring data for stations 21VASWCB-2-JMS270.84, 21VASWCB-2BJMS264.58 and 21VASWCB-2BJMS263.24 from 2007-2018.[1]

Parameter	Units	21VASWCB-2-JMS270.84 (Upstream)				21VASWCB-2BJMS264.58 (Downstream)				21VASWCB-2BJMS263.24 (Downstream)			
		Count	Min	Max	Mean	Count	Min	Max	Mean	Count	Min	Max	Mean
Acid Neutralization Potential As %CaCO3	mg/L					1	120	120	120.00				
Acidity, hydrogen ion (H+)	mg/L					1	2.31	2.31	2.31				
Alkalinity, total	mg/L					1	115	115	115.00				
Aluminum	µg/L					3	0.06	48.8	20.65				
Ammonia	mg/L					3	0.01	0.04	0.03				
Antimony	µg/L					3	0.01	0.2	0.10				
Arsenic	µg/L					3	0.1	0.7	0.50				
Barium	µg/L					3	0.02	70.4	46.67				
Beryllium	µg/L					3	0.02	0.2	0.08				
Cadmium	µg/L					3	0.02	0.1	0.05				
Calcium	mg/L					3	0.01	49.6	32.64				
Chloride	mg/L					1	24.8	24.8	24.80				
Chlorophyll a, corrected for pheophytin	µg/L					1	1.28	1.28	1.28				
Chlorophyll a, uncorrected for pheophytin	µg/L					1	1.36	1.36	1.36				
Chlorophyll b	µg/L					1	0.1	0.1	0.10				
Chlorophyll c	µg/L					1	0.1	0.1	0.10				
Chromium	µg/L					3	0.04	2.7	1.15				
Copper	µg/L					3	0.3	1	0.73				
Dissolved oxygen (DO)	mg/L	32	6.5	15.7	9.84	2	7.3	7.5	7.40				
Enterococcus	cfu/100ml	23	10	800	198.26	1	10	10	10.00				
Escherichia coli	cfu/100ml	46	25	1225	114.67	1	10	10	10.00				
	MPN/100ml	25	10	5794	323.44								
Fecal Coliform	cfu/100ml	71	25	2000	165.14	1	25	25	25.00				
Fixed dissolved solids	mg/L					1	290	290	290.00				
Fixed suspended solids	mg/L					1	2	2	2.00				
Hardness, Ca, Mg	mg/L	28	59	164	116.71								
Hardness, carbonate	mg/L					3	1	158	104.67				
Iron	µg/L					3	4	96.4	42.07				
Kjeldahl nitrogen	mg/L	65	0.1	3.4	0.47	1	0.4	0.4	0.40				
Lead	µg/L					3	0.01	0.1	0.07				
Magnesium	mg/L					3	0.01	8.41	5.60				
Manganese	µg/L					3	0.02	29.6	17.24				

Parameter	Units	21VASWCB-2-JMS270.84 (Upstream)				21VASWCB-2BJMS264.58 (Downstream)				21VASWCB-2BJMS263.24 (Downstream)			
		Count	Min	Max	Mean	Count	Min	Max	Mean	Count	Min	Max	Mean
Mercury	ng/L					3	0.7	5.5	2.53				
Nickel	µg/L					3	0.08	1.9	1.29				
Nitrate	mg/L					3	0.04	0.05	0.04				
Nitrite	mg/L					3	0.004	0.01	0.01				
Nitrogen	mg/L	71	0.2	4.38	0.54	2	0.35	0.36	0.36				
Organic carbon	mg/L	6	3.76	5.41	4.23	1	5.78	5.78	5.78	6	3.25	4.04	3.69
Orthophosphate	mg/L					2	0.01	0.01	0.01				
pH	None	74	6.7	8.71	7.77	3	7.7	7.82	7.77	3	7.8	7.88	7.84
Pheophytin a	µg/L					1	0.1	0.1	0.10				
Pheophytin ratio	%					1	1.699	1.699	1.70				
Phosphorus	mg/L	71	0.01	0.56	0.05	2	0.01	0.02	0.02				
Potassium	mg/L					1	4.81	4.81	4.81				
Selenium	µg/L					3	0.3	0.5	0.40				
Silver	µg/L					3	0.004	0.01	0.01				
Sodium	mg/L					1	42.3	42.3	42.30				
Specific conductance	µS/cm	74	72	517	298.36	3	494	505	499.33	3	234	374	281.10
Sulfate	mg/L					1	88	88	88.00				
Temperature, water	°C	74	0.2	28.93	15.99	2	23.5	23.9	23.70	3	3.24	29.51	18.65
Thallium	µg/L					3	0.01	0.01	0.01				
Total fixed solids	mg/L					1	291	291	291.00				
Total solids	mg/L	71	104	411	220.94	2	320	328	324.00				
Total suspended solids	mg/L	80	0.86	322	20.74	4	0.5	2	1.46	9	0.12	172	46.17
Total volatile solids	mg/L					3	1	37	22.67				
Turbidity	NTU	71	0.66	228	12.11	1	1.62	1.62	1.62				
Zinc	µg/L					3	0.4	5.6	2.33				

Source: NWQMC (2018)

[1.] Note: empty cells indicate no water quality data was collected for the associated parameter.

Table 4.3.3-4. Monthly summary statistics for continuous water temperature and specific conductivity collected at USGS Gage No. 02025500 James River near Holcomb Rock, VA from October 2007 to November 2008.

Month	Water Temperature (°C)				Specific Conductivity (µS/cm)			
	Minimum	Maximum	Mean	Median	Minimum	Maximum	Mean	Median
Jan	1.3	7.3	3.6	3.1	177	275	223	223
Feb	3.2	7.9	5.1	4.8	170	273	218	218
Mar	5.3	16.4	9.9	9.8	151	608	366	366
Apr	9.4	19.6	14.1	13.9	69	555	250	250
May	13.2	27.3	19.4	19	100	353	273	273
Jun	22.5	28.5	26.2	26.4	195	418	296	296
Jul	24.9	28.4	26.6	26.6	239	533	363	363
Aug	21.8	30.4	27.1	27.7	251	533	357	357
Sep	20.2	28.9	24.5	24.5	265	503	387	387
Oct	11.2	25.4	18.7	18.9	310	579	470	470
Nov	8.6	13.2	10.5	10.2	204	535	332	332
Dec	4.3	8.9	5.9	5.3	179	277	235	235

Source: USGS (2018b)

Table 4.3.3-5. Results of VDEQ sediment sampling and analysis at monitoring station 21VASWCB-2BJMS264.58 in September 2010.

Metal	Result (mg/kg)
Copper	8.69
Iron	17900
Lead	13.5
Manganese	294
Nickel	16.5
Selenium	0.43[1]
Silver	0.24[1]
Thallium	0.15[1]
Zinc	111
Mercury	0.001
Aluminum	7000
Antimony	0.23[1]
Arsenic	1.78[1]
Beryllium	0.73[1]
Cadmium	0.38[1]
Chromium	13.1

Source: NWQMC (2018)

1. Analyte detected above the minimum detection limit but below the method quantification limit.

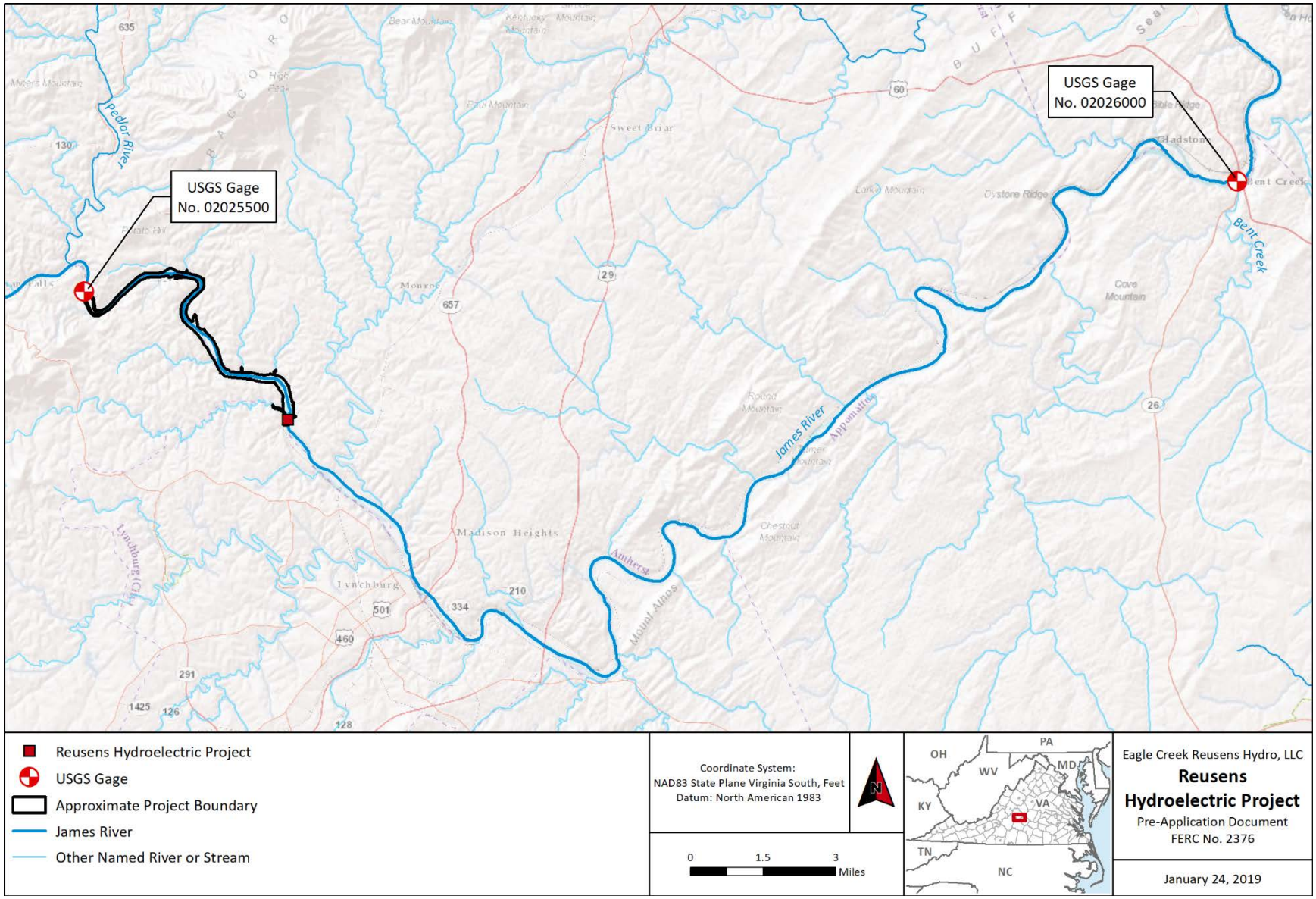
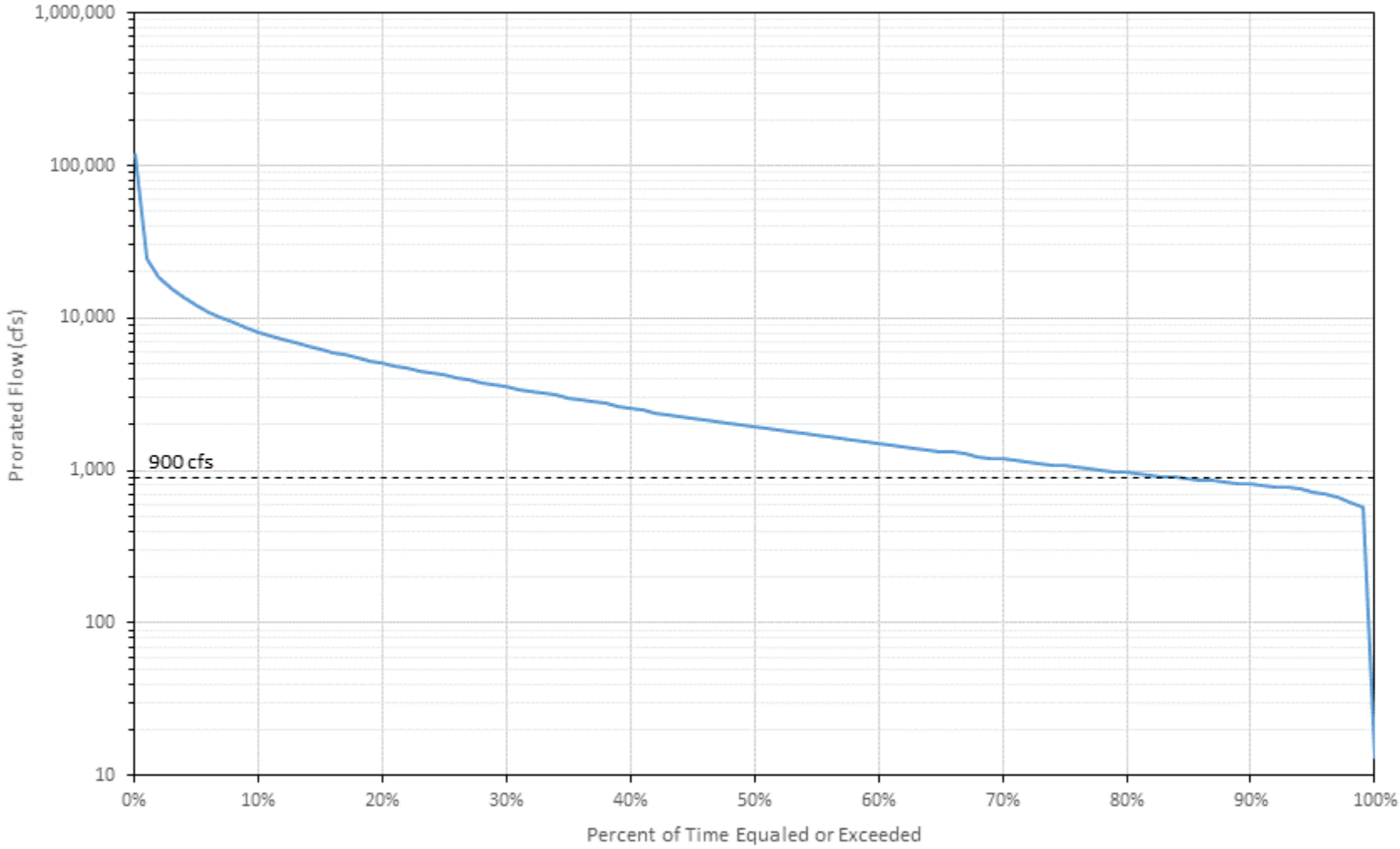
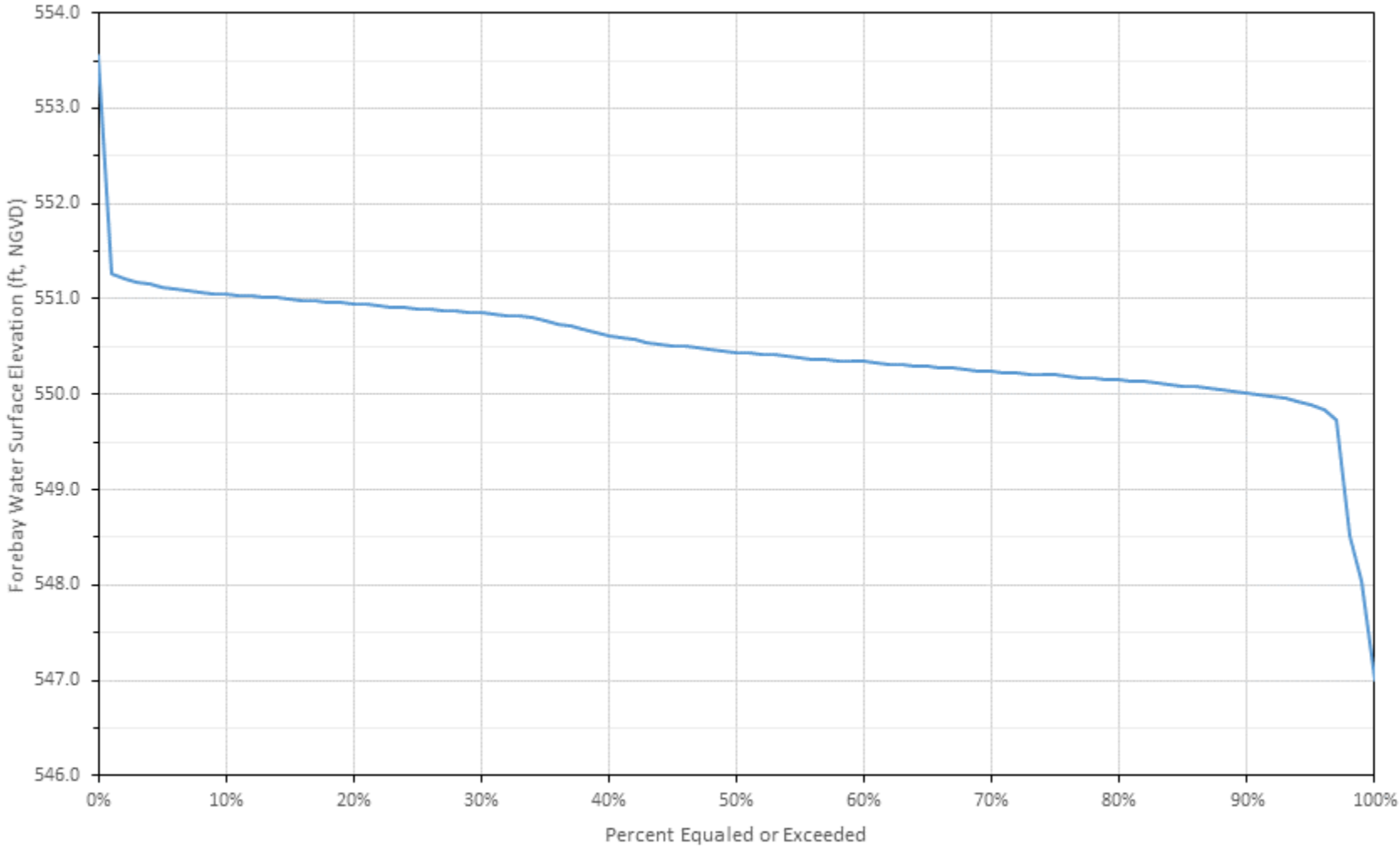


Figure 4.3.1-1. USGS gage locations and contributing tributaries to the Project reservoir in the vicinity of the Project.



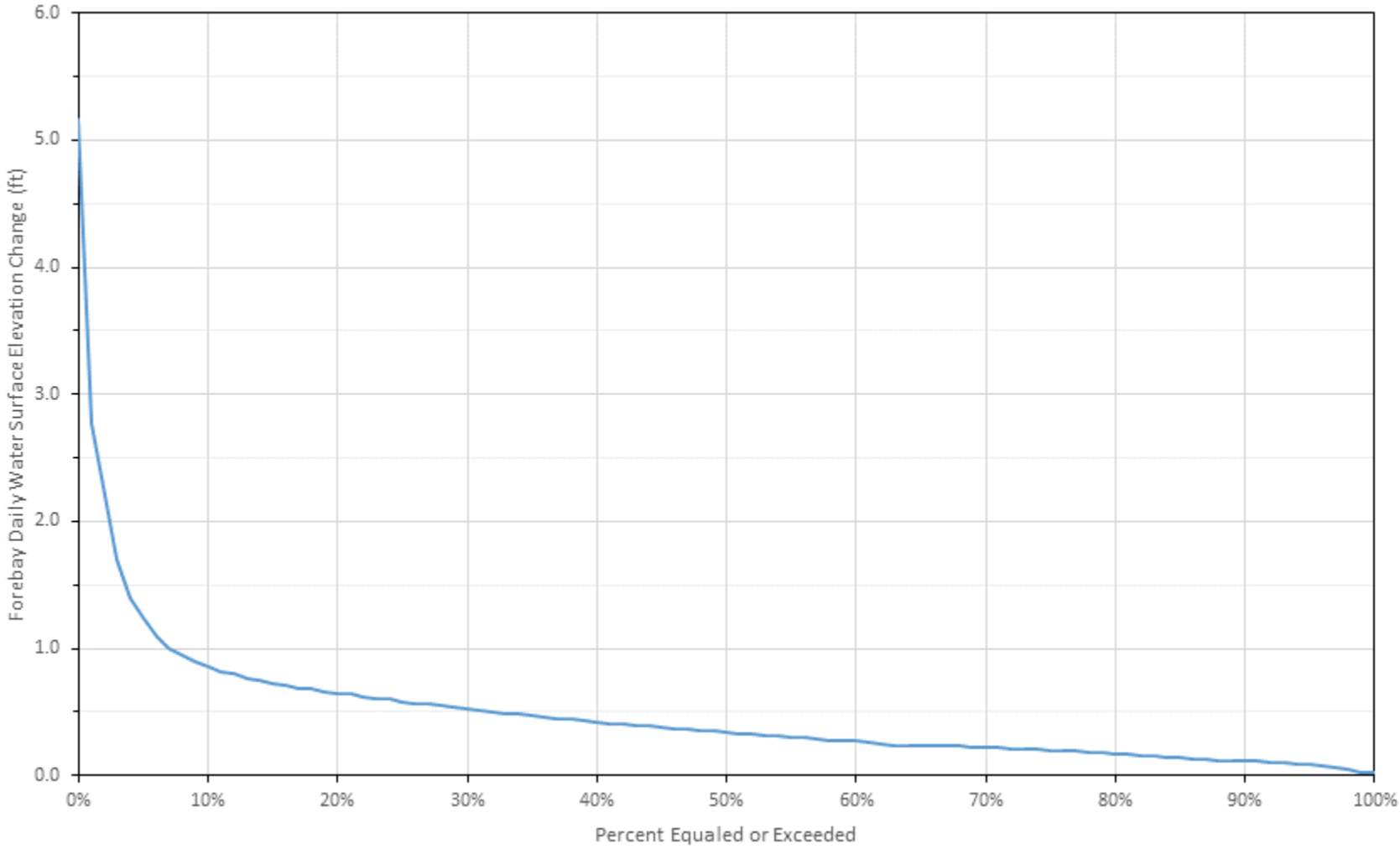
Note: 900 cfs is the Project's minimum hydraulic capacity.

Figure 4.3.1-2. Flow duration curve at the Project based on 15-minute flow records from USGS Gage No. 02025500 James River at Holcomb Rock, VA.



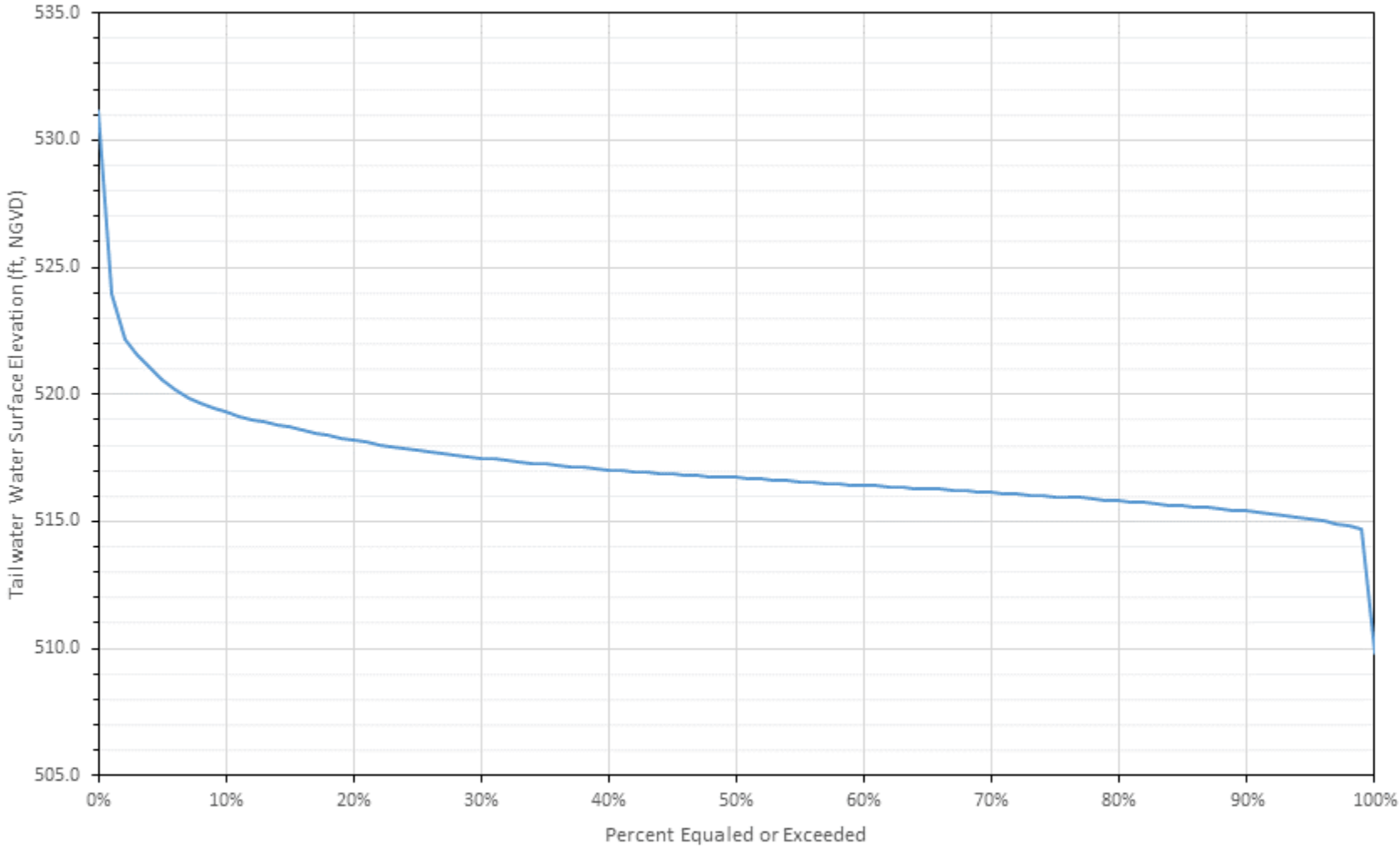
Note: Project was operating 13.1 to 20.3 percent of the time with at most 3 units operable.

Figure 4.3.1-3. Forebay water surface elevation duration curve based on hourly water surface elevations from 2007 through 2011.



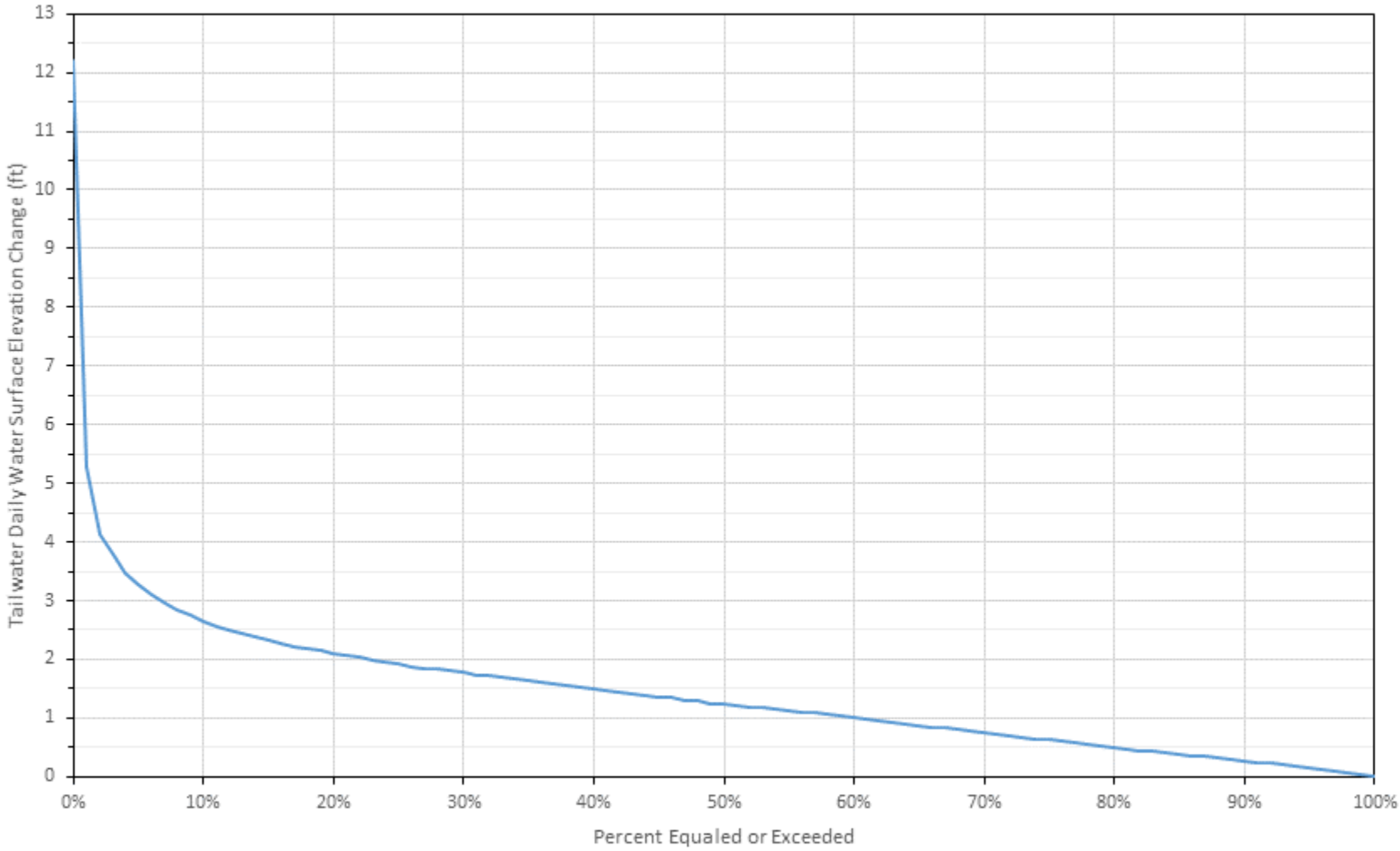
Note: Project was operating 13.1 to 20.3 percent of the time with at most 3 units operable.

Figure 4.3.1-4. Daily forebay water surface elevation change frequency curve based on hourly water surface elevations from 2007 through 2011.



Note: Project was operating 13.1 to 20.3 percent of the time with at most 3 units operable.

Figure 4.3.1-5. Tailwater water surface elevation duration curve based on hourly water surface elevations from 2007 through 2011.



Note: Project was operating 13.1 to 20.3 percent of the time with at most 3 units operable.

Figure 4.3.1-6. Daily tailwater water surface elevation change frequency curve based on hourly water surface elevations from 2007 through 2011.

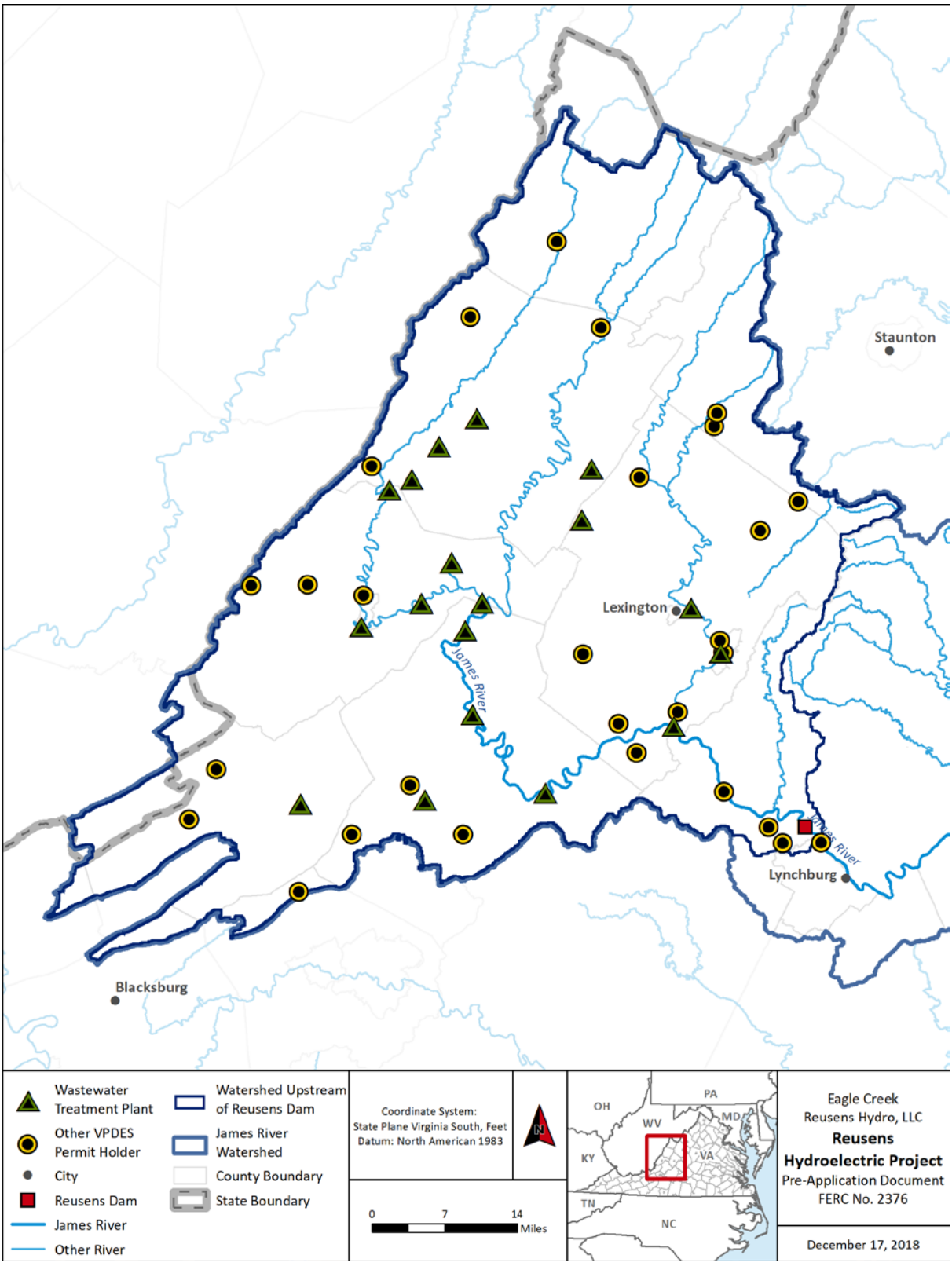


Figure 4.3.1-7. VPDES Individual Permits in the James River watershed upstream of the Project dam.

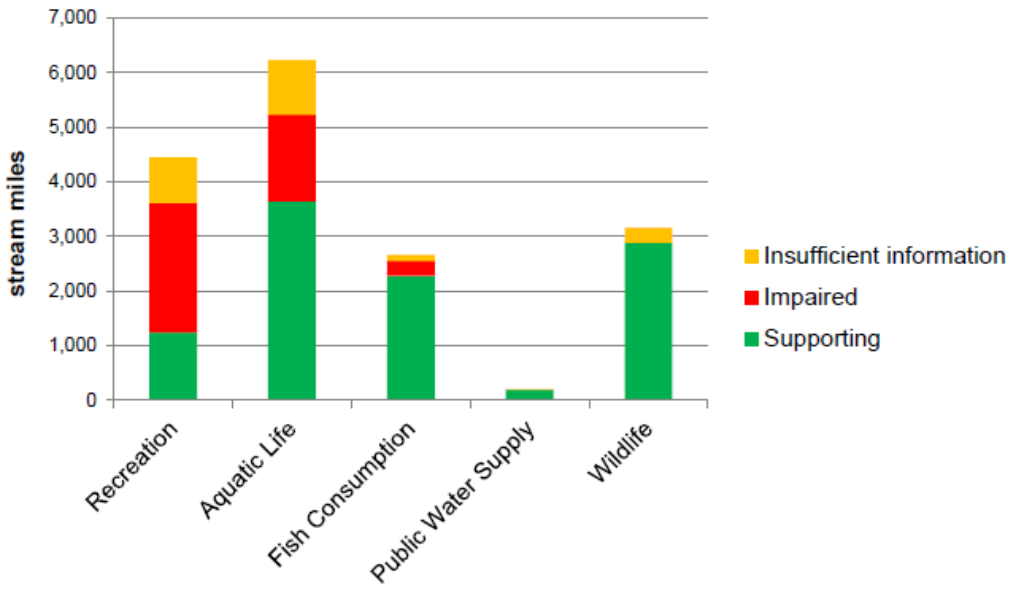


Figure 4.3.1-8. Rivers assessment designated use support summary for the James River basin.

Source: VDEQ and VDCR (2017)

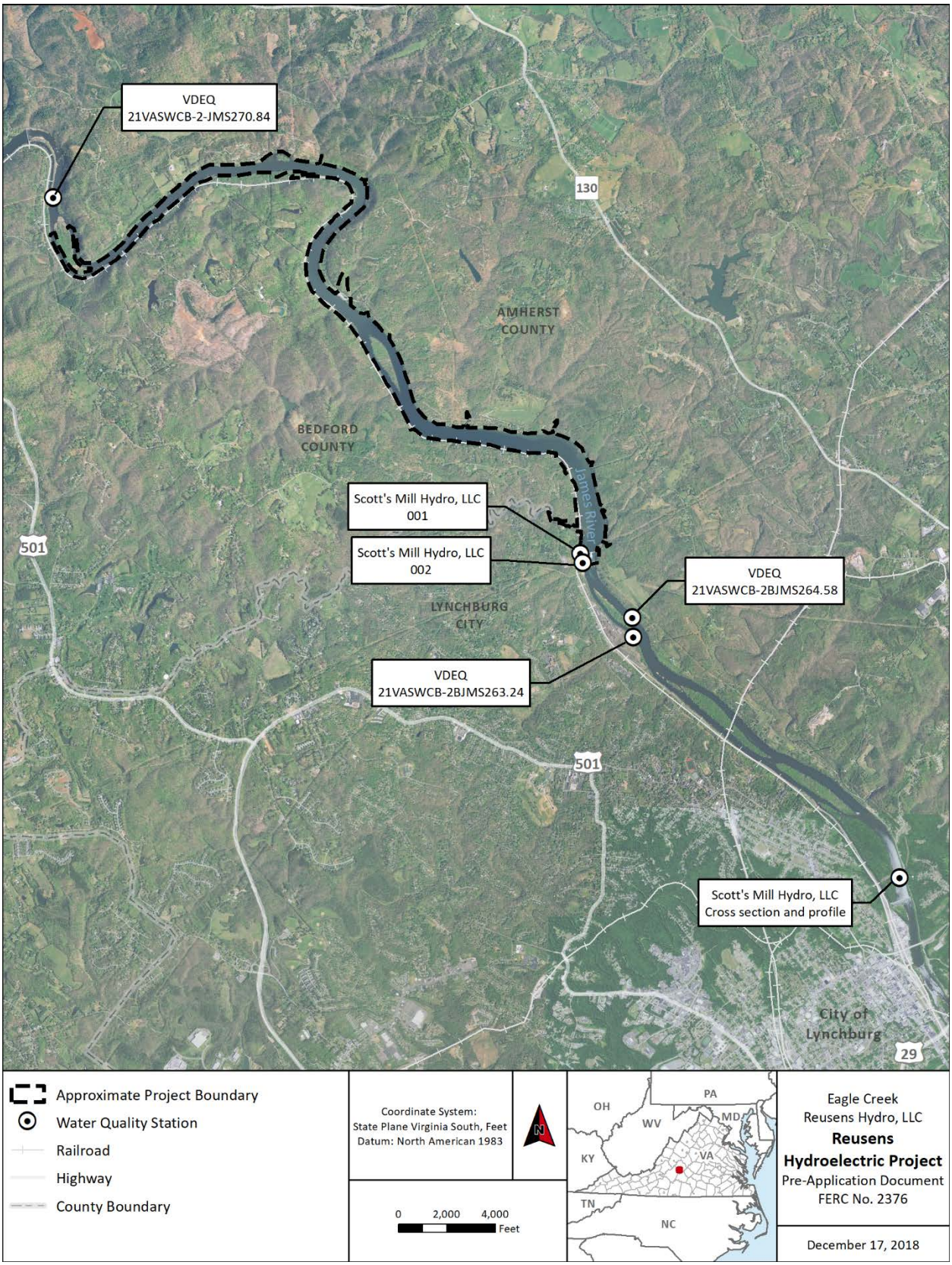


Figure 4.3.3-1. Water quality monitoring locations in the vicinity of the Project.

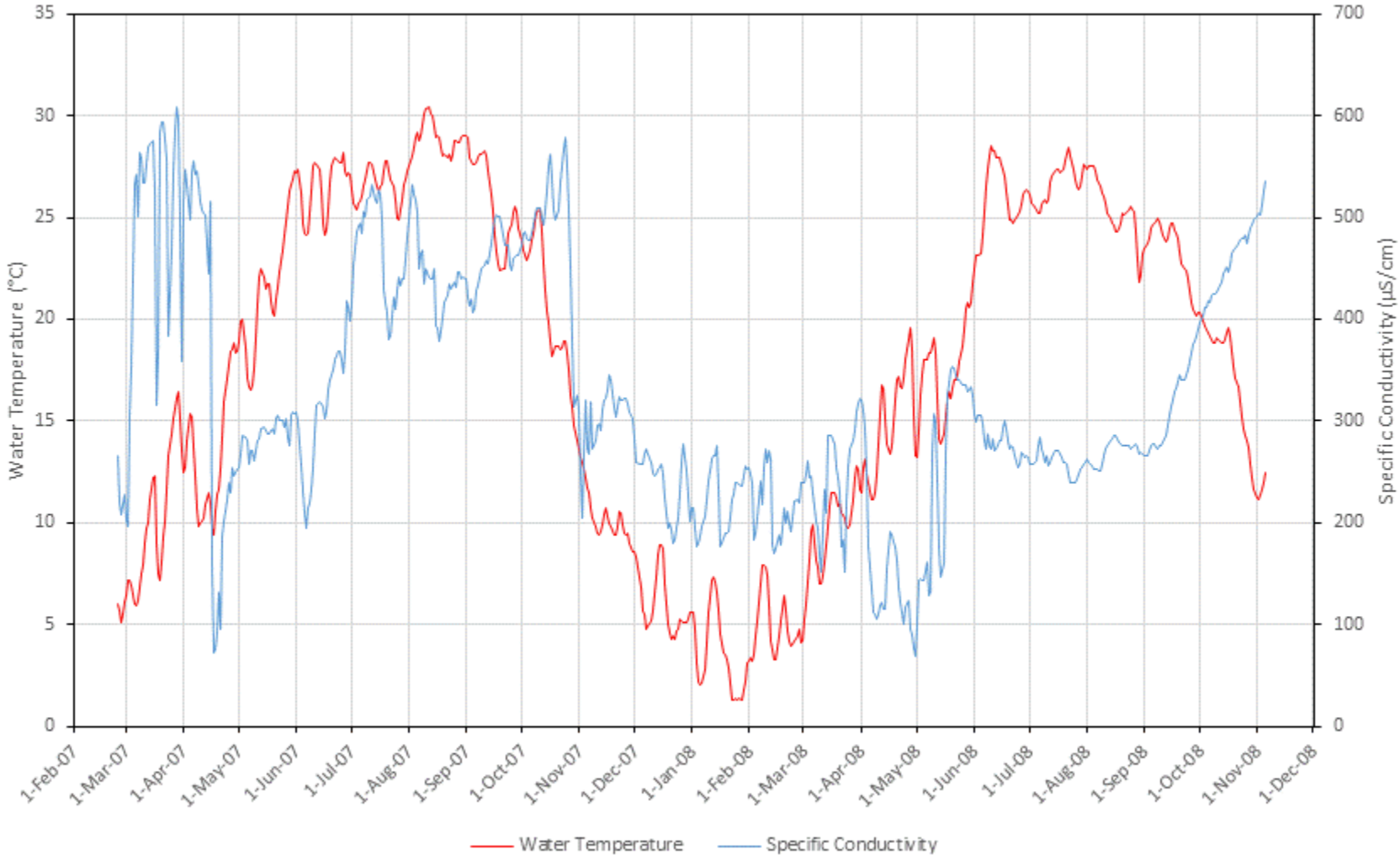


Figure 4.3.3-2. Continuous water temperature and specific conductivity data collected at USGS Gage No. 02025500 James River near Holcomb Rock, VA from October 2007 to November 2008.

4.4 Fish and Aquatic Resources (18 CFR §5.6(d)(3)(iv))

4.4.1 *Fish Community*

Resident Fish

The James River that encompasses the Project supports a variety of resident game and non-game species. The Project area and segments of the James River upstream and downstream have been sampled to inventory the fish species present by VDIF and the Appalachian Power Company (APC) as a part of Cushaw Hydroelectric Project (FERC No. 906) relicensing, the previous licensing proceeding of the Project, and a fish survey of the Middle James River (APC, 1991; Dominion, 2006; VDGIF, 2012).

APC, the former licensee of the Project, performed fish surveys of the Reusens impoundments and riffle areas upstream of the reservoir and downstream of the Project during the summer and fall of 1990. The surveys consisted of using a combination of sampling gears including electrofishing, and the deployment of hoopnets and gillnets. Table 4.4.1-1 shows the species collected during the APC fish surveys, which indicate that there are 26 unique resident fish species and one hybrid sunfish that could occur in the Project area. Bluegill dominated the samples numerically; and common carp, smallmouth bass, black crappie, flathead catfish, channel catfish, redbreast sunfish, and spottail were also abundant (APC, 1991).

Between 1991 and 2001 the VDGIF conducted fish surveys within the Cushaw Hydroelectric Project (FERC Project No. 906) reservoir, also called Snowden Pool, approximately 18.7 river miles upstream of the Project. Overall, 40 species of fish were collected (Table 4.4.1-1). Smallmouth bass, telescope shiner, bluntnose minnow, rock bass, bluegill and redbreast sunfish were collected every year and were generally among the most abundant species. Rosyface shiner and northern hog sucker occurred in all years, except one, and mimic shiner and swallowtail shiner were also abundant in some years (FERC, 2008).

In 2011, the VDGIF performed electrofishing of the Middle James River from Columbia to Watkins, VA. The nearly 60-mile stretch of the James River surveyed begins approximately 95 river miles downstream of the Project dam. Results of the survey indicate that 22 resident species were collected (Table 4.4.1-1). The most abundant species collected were smallmouth bass (n=177) followed by redbreast sunfish (n=107) and channel catfish (n=107) (VDGIF, 2012).

Game Fish

The James River in the vicinity of the Project provides a smallmouth bass fishery, with additional angling opportunities for muskellunge and catfish. Smallmouth bass are the dominant game species, but spotted and largemouth bass can also be caught. Other plentiful species in the James River include channel catfish, flathead catfish, and various sunfish species (redbreast, bluegill, and rock bass).

In 2017, the VDGIF collected fish using an electrofishing boat at nine sites within the Upper James River basin, from Iron Gate to Monacan Park, which is within the Project boundary (VDGIF, 2018b). In 2017, 999 smallmouth bass, ranging from 3 to 22 inches, were collected. Juvenile smallmouth bass (individuals less than 7 inches) made up 10% of all smallmouth bass collected. The majority of adult smallmouth bass collected were between 7 and 12 inches. Approximately 12% of adult smallmouth bass collected were between 14 and 22 inches;

therefore, protected under the current slot limit regulations. Catch per unit effort for adult and juvenile smallmouth in the Upper James River averaged about 80 and 4 fish per hour, respectively. In 2017, the adult fish per hour was well above the long-term mean catch per unit effort (CPUE) of 44 fish per hour, whereas the juvenile CPUE was below the long-term CPUE of 27 fish per hour (VDGIF, 2018b).

In addition, a total of 723 sunfish and 39 muskellunge (musky or muskies) were collected in 2017 within the Upper James River. Rock bass were the most abundant sunfish collected and ranged from 2 to 8 inches in length. Redbreast sunfish and bluegill were also commonly collected and ranged from 2 to 8 inches in length. The muskies collected ranged from 24 to 50 inches in length. Muskies in the size range of 39 to 40 inches were the most frequently collected (VDGIF, 2018b).

Chronic spring-time fish mortality and disease events have occurred in the Upper James River from 2007-2010 (VDGIF, 2014). Adult smallmouth bass, redbreast sunfish and rock bass have been the primary fish affected, but several other species have also been afflicted. Affected fish typically exhibit open sores or lesions on the sides of their bodies while some dead and dying fish have no visible external abnormalities. Other external symptoms include: dark patches of skin, raised bumps, loss of scales, split or eroded fins, and discolored/eroded gills. Mortality episodes and reports of disease have not been uniform in location or severity and have not occurred every year. In 2014, mortality was low in the James River; angler reports of dead or diseased fish were almost non-existent. (VDGIF 2014). The cause of these mortality/disease events has not been determined (VDGIF 2014). Scientists have and continue to conduct in-depth studies on fish health, pathogens, water quality, and contaminant exposure and recently have begun looking at possible toxins released by bacteria. The fact that these events have occurred in multiple watersheds that differ in many ways has added to the complexity of understanding the primary cause.

Diadromous Fish

Diadromous fish species that include American shad, alewife, blueback herring, striped bass, sea lamprey and American eel occur in the James River. However, only American eel has been documented recently (since 1990) to occur in the James River basin where the Project is located. Between 1989 and 1993 three mainstem dams on the James River in the fall zone near Richmond were breached or notched, which facilitated upstream fish passage into additional habitat up to Bosher Dam. In 1999, a fish passage facility was installed at Bosher Dam, reopening 137 miles of the James River to the next upstream dam in Lynchburg, VA (Lynchburg Dam) to diadromous fishes (Hilton et al., 2014). The Lynchburg Dam is in Lynchburg, VA, approximately 3.7 river miles downstream of the Project, and represents the upper extent diadromous fish, except American eel, may migrate. No dam upstream of the Bosher Dam, including the Project, have upstream fish passage facilities.

As a part of the Cushaw Hydroelectric Project relicensing in 2004 and 2005, Dominion sampled for American eel downstream of the Lynchburg Dam, within the Bedford Hydroelectric Project (FERC No. 5596) reservoir (approximately 17.5 river miles upstream of the Project) and within the Cushaw reservoir (approximately 18.7 river miles upstream of the Project. Twenty-eight eels were collected at the Lynchburg site, five at Bedford site, and no eels were collected within the Cushaw reservoir (FERC, 2008). In addition, sampling performed by APC during the previous relicensing of the Reusens Project collected only five eels in the Project's reservoir (APC, 1991).

Collectively, these data indicate that American eel, particularly glass eels, can migrate into Upper James River basin, but are in extreme low abundance in the Project area.

Downstream of the Lynchburg Dam American eel are more abundant. For instance, as a part of fishery survey performed by VDIF in 2011 in the Middle James River from Columbia to Watkins, VA, 459 American eel were collected at six locations over an approximately 60 mile segment of the river at a rate of 75.8 fish per hour electrofishing (VDGIF, 2012).

In an effort to reintroduce and enhance American shad in the James River VDGIF began a shad restoration program in 1992 which continued through spring 2017. The program consisted of stocking into the James River upstream of Richmond, VA hatchery-reared fry raised from springtime Pamunkey River (and later from the Potomac River) brood stock. The program had stocked, on an annual basis, a few thousand to nearly 10 million American shad fry in the James River. The goal of the restoration program was to re-establish and enhance self-sustaining American shad runs in the James River. However, due to bottlenecks to recovery occurring in areas outside of VDGIF's jurisdiction and given a lack of expected response (reestablishment of American Shad runs to the James River upstream of Bosher Dam and recovery of the James River American Shad population), in spite of decades-long stocking efforts, VDGIF will not be stocking American Shad in the foreseeable future (VDGIF, 2018a).

4.4.2 *Freshwater Mussels*

Freshwater mussel surveys were conducted at the Project in August 2002 and October 2008 (APC, 2013; FERC, 2014). These surveys were conducted in the Reusens Project impoundment in the area surrounding the ACSA's proposed water withdrawal site, and just downstream from the Project dam (Figure 4.4.2-1). Most of the proposed water withdrawal area in the Project impoundment was deep and silt covered, and determined to be unsuitable habitat for freshwater mussels. Only the reservoir margins were determined as possible habitat. No live or relic shells of freshwater mussels were observed, except the invasive Asian clam, *Corbicula fluminea*. Approximately 250 m (820 ft) downstream from the Project dam, in an area of suitable mussel habitat, 34 freshwater mussels of three species were observed; none of which were federally listed species. During the 2008 survey no freshwater mussels were observed in the vicinity of ACSA's proposed intake site, approximately 200 m upstream and 800 m downstream (APC, 2013; FERC, 2014).[11]

Recently the James River downstream of the Reusens dam to the Lynchburg dam was also surveyed for freshwater mussels as a part of the licensing effort for the proposed Scott's Mill Hydroelectric Project (Scott's Mill, 2017). Within this reach, seven locations were surveyed (Figure 4.4.2-1). Results of the survey indicate two mussel species are present downstream of the Reusens dam, Eastern Elliptio and Northern Lance. Estimates of abundance for these two species range from 0 to 4.0 mussels per hour of search time (Scott's Mill, 2017). The survey site closest to the Project dam, contained only two Eastern Elliptio. Overall, no special status mussels species were present and the reach supports a very low density of mussels (Scott's Mill, 2017).

4.4.3 *Polychlorinated Biphenyls in Fish Tissue*

[11] APC (2013) and FERC (2014) do not indicate the mussel species collected.

VDEQ sampled fish tissue of various species at 25 sites throughout the James River between 2014 and 2017 (VDEQ, N.d). The nearest upstream site relative to the Project is located downstream of the Big Island Hydroelectric Project (FERC No. 2902), approximately 20 river miles upstream of Reusens dam. The nearest downstream site relative to the Project is located below the Lynchburg dam, approximately 5.0 river miles downstream of the Project dam. Summary statistics of the sampling results are presented in Table 4.4.3-1. Levels of PCB in the tissue of American eel, blue catfish, common carp, channel catfish, flathead catfish, gizzard, largemouth bass, quillback carpsucker were above VDEQ screening level of 20 ppb. Only rock bass, smallmouth bass, and white perch had levels below the 20 ppb screening level threshold.

4.4.4 *Aquatic Habitat*

Aquatic habitat in the Project area is limited to the Project impoundment and tailwater area. Below is a discussion of the aquatic habitat of the Project tailwater and reservoir in the vicinity of the Project.

Impoundment

The Project impoundment represents the majority of available aquatic habitat of the Project. The impoundment is approximately 500 acres in area, has a total volume of 6,869 acre-ft, and offers approximately 16 miles of shoreline. Within the impoundment is a large vegetated island called Chestnut Island. The island is located approximately 2.5 river miles upstream of the Project dam and has an area of nearly 22 acres. A smaller, unnamed vegetated island is located at the confluence of the Crab Creek and the James River, approximately 4.9 river miles upstream of the Project dam. This island has a surface area of about 2.4 acres. The depth of the impoundment is variable with deeper areas located near the Project dam and shallow areas located at the upper extent of the impoundment. The substrate is also variable with a mixture of sand, gravel, pebble, cobble and boulders. Figure 4.4.4-1 provides a photograph of the Project impoundment upstream of the Project dam.

Project Tailwater

The tailwater area extends downstream of the Project dam approximately 0.1 miles and has a surface area of about 9 acres. Depth of the tailwater area varies but generally ranges from 3 to 15 feet. The substrate mainly consists of scoured cobble and boulder. The eastern shoreline is predominately a steep rock face, and the western shoreline is armored with rip-rap near Powerhouse A. Further downstream, the shoreline is sparsely vegetated and the substrate along the shoreline is sand. During periods of lower flows, two cobble and boulder shoals emerge. One shoal, about 0.3 acres in area separates turbine discharges from Powerhouse A from the main channel. The other, and larger shoal, begins approximately 300 feet downstream of the dam along the eastern shoreline, and is about 1 acre in area. Figure 4.4.4-2 provides a photograph of the tailwater area near the powerhouse downstream of the Project. The impoundment created by the Lynchburg Dam, located approximately 3.7 river miles downstream backwaters up to the Project's tailwater.

Essential Fish Habitat

Review of the National Marine Fisheries Service (NMFS) online Essential Fish Habitat Mapping Tool (https://www.habitat.noaa.gov/protection/efh/efhmapper/index.html) indicates that no

essential fish habitat designated under the Magnuson-Stevens Fishery Conservation and Management Act or established by the NMFS is located in the Project vicinity.

Table 4.4.1-1. Resident fish species collected in the James River upstream, downstream, and at the Reusens Project.

Common Name	Scientific Name	Appalachian Power (1991)	Dominion (2006)	VDGIF (2012)
		Present	Present	Present
Black Crappie	*Pomoxis nigromaculatus*	X	X	X
Black Jumprock	*Moxostoma cervinum*	—	X	X
Blue catfish	*Ictalurus furcatus*	—	—	X
Bluegill	*Lepomis macrochirus*	X	X	X
Bluehead chub	*Nocomis leptocephalus*	X	X	—
Bluntnose Minnow	*Pimephales notatus*	X	X	—
Brown bullhead	*Ameiurus nebulosus*	—	X	—
Bull chub	*Nocomis raneyi*	—	X	X
Central stoneroller	*Campostoma anomalum*	—	X	
Channel catfish	*Ictalurus punctatus*	X	—	X
Comely shiner	*Notropis amoenus*	—	X	—
Common Carp	*Cyprinus carpio*	X	X	X
Common shiner	*Luxilus cornutus*	—	X	—
Creek chubsucker	*Erimyzon oblongus*	—	X	—
Cresent shiner	*Luxilus cerasinus*	—	X	—
Fallfish	*Semotilus corporalis*	—	X	—
Flathead catfish	*Pylodictis olivaris*	X	X	X
Gizzard shad	*Dorosoma cepedianum*	—	—	X
Goldfish	*Carassius auratus*	—	—	X
Golden Redhorse	*Moxostoma erythrurum*	X	X	—
Golden Shiner	*Notemigonus crysoleucas*		X	—
Green sunfish	*Lepomis cyanellus*	X	X	X
Hybrid sunfish	—	X	X	—
Largemouth bass	*Micropterus salmoides*	X	X	X
Longnose gar	*Lepisosteus osseus*	X	—	X
Mimic shiner	*Notropis volucellus*	—	X	—
Muskellunge	*Esox masquinongy*	—	X	—
Northern hogsucker	*Hypentelium nigricans*	—	X	X
Pumpkinseed	*Lepomis gibbosus*	X	X	
Quillback	*Carpiodes cyprinu*	X	—	X

Common Name	Scientific Name	Appalachian Power (1991)	Dominion (2006)	VDGIF (2012)
		Present	Present	Present
Redbreast sunfish	*Lepomis auritus*	X	X	X
Redear sunfish	*Lepomis microlophus*	—	X	X
Roankoke darter	*Percina roanoka*	X	X	—
Rock bass	*Ambloplites rupestris*	X	X	X
Rosefin shiner	*Lythrurus ardens*		X	—
Rosyface shiner	*Notropis rubellus*	X	X	—
Roughhead shiner	*Notropis semperasper*		X	—
Satinfin shiner	*Cyprinella analostana*	X	X	—
Shield darter	*Percina peltata*	X	—	X
Shorthead redhorse	*Moxostoma macrolepidotum*	X	X	X
Smallmouth bass	*Micropterus dolomieu*	X	X	X
Spottail shiner	*Notropis hudsonius*	X	X	—
Spotted bass	*Micropterus punctulatus*	X	X	—
Stripeback darter	*Percina notogramma*	X	X	—
Swallowtail shiner	*Notropis procne*	—	X	—
Telescope shiner	*Notropis telescopus*	—	X	—
Warmouth	*Lepomis gulosus*	X		—
White sucker	*Catostomus commersonii*	X	X	X
Yellow bullhead	*Ameiurus natalis*	—	X	—
Total		26	40	22

Table 4.4.3-1. Summary statistics of PCB levels in fish tissue of specimens collected upstream and downstream of the Project.

Species	PCB_{total} (ng/g or ppb)							
	Site 10 Below Big Island Hydroelectric Project				Site 11 Below Lynchburg Dam			
	Count	Minimum	Maximum	Mean	Count	Minimum	Maximum	Mean
American Eel	1	477.11	477.11	477.11	1.00	130.62	130.62	130.62
Blue Catfish	1	24.45	24.45	24.45				
Common Carp	2	32.18	68.03	50.11	4.00	90.28	170.36	121.21
Channel Catfish	2	11.13	18.56	14.84	1.00	34.67	34.67	34.67
Flathead Catfish	1	54.15	54.15	54.15	4.00	32.70	540.68	211.71
Gizzard Shad	1	144.92	144.92	144.92				
Largemouth Bass	1	31.08	31.08	31.08				
Quillback Carpsucker	1	28.92	28.92	28.92	3.00	51.78	97.01	74.17
Rockbass	1	0.60	0.60	0.60				
Smallmouth Bass	1	0.73	0.73	0.73	1.00	0.00	0.00	0.00
White Perch	2	10.38	13.00	11.69				

Source: VDEQ, n.d.

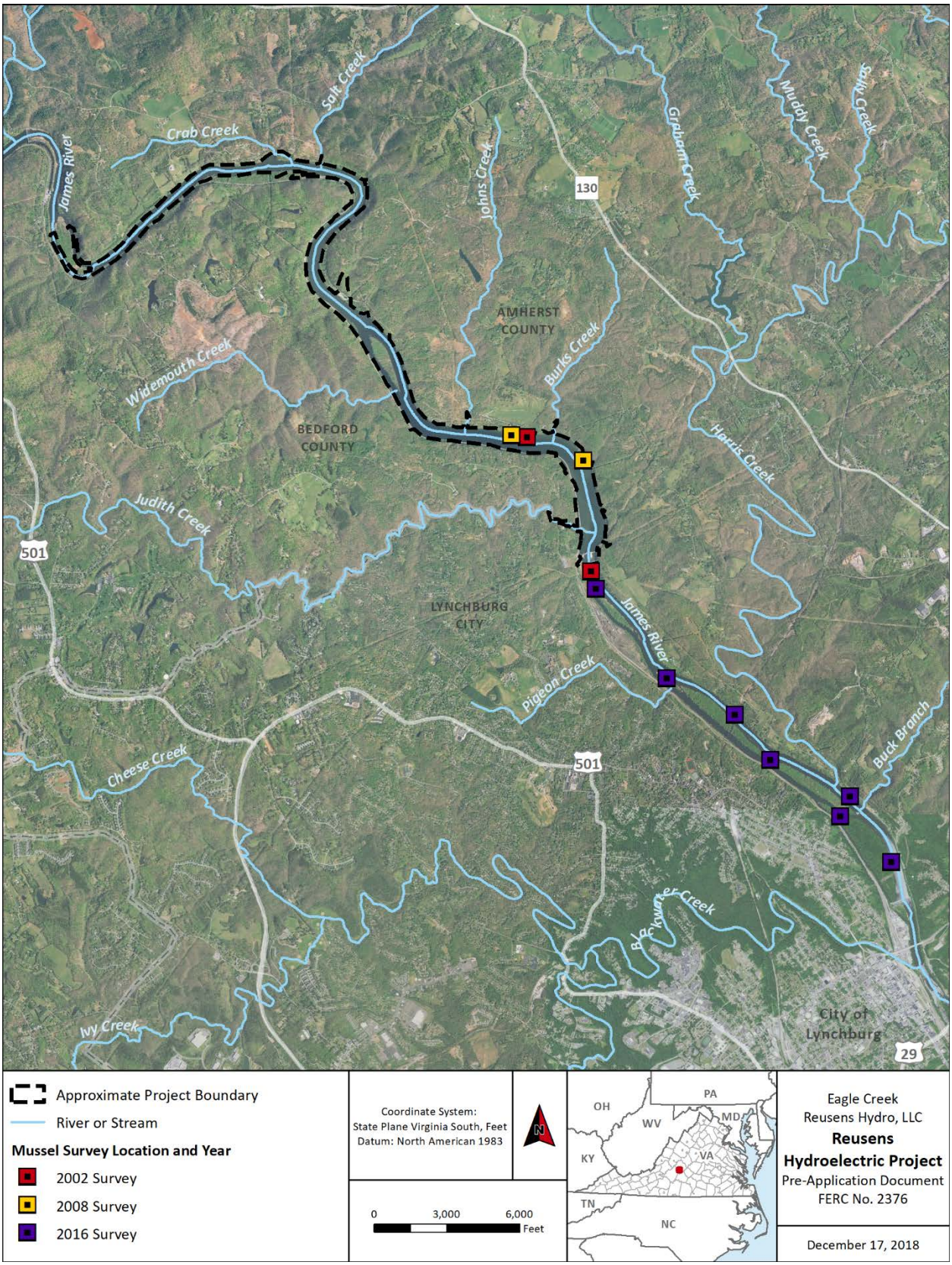


Figure 4.4.2-1. Freshwater mussel sampling locations in the Project vicinity.

Figure 4.4.4-1. Photograph of the Project impoundment upstream of the Project dam.

Figure 4.4.4-2. Photograph of the Project tailwater area.

4.5 Wildlife and Botanical Resources (18 CFR §(d)(3)(v))

4.5.1 *Wildlife Resources*

The upland habitat along the approximate 16 miles of reservoir shoreline of the James River consists of oak-hickory forests, rural, and sparsely developed areas with some open fields. Along the river-left bank the upland habitat extent is bound by the CSX railway, whereas the upland area along the river-right bank is predominantly continuous forest with some residential development and open space outside the Project boundary.

A large diversity of animals could be expected to occur in the Project vicinity. A complete list of mammals, amphibians and reptiles, and bird species that have ranges that may include the Project area was compiled using the VDGIF's Virginia Fish and Wildlife Information Service on-line tool (http://vafwis.org/fwis), using a 3-mile search radius around Chestnut Island, which encompasses the entire project boundary. Tables 4.5.1-1 through 4.5.1-4 contain a comprehensive list of these species. Species listed in these tables may or may not have habitat adjacent to the Project or occur within those habitats, if present.

Recreational important game species in the Project area include: white-tailed deer, black bear, fox and gray squirrel, eastern cottontail rabbit, wild turkey, ruffed grouse, bobwhite quail, mourning dove, mallard duck, and wood duck (FERC. 1994)

Wildlife Management Plan

In accordance with existing license article 407, Reusens Hydro is implementing a Wildlife Management Plan (WMP) filed with the Commission on February 25, 1993. Under the WMP, Reusens Hydro performs annual inspections of undisturbed lands of Chestnut Island for evidence of increased human disturbance. If any such disturbance is observed or planned Reusens Hydro is to consult with VDGIF. In addition, every five years after the license issuance Reusens Hydro is required to consult with VDGIF and the FWS regarding the success of the WMP and file a report with the Commission documenting the existing condition of Chestnut Island wildlife habitat. The most recent report was filed with the Commission on November 11, 2015, which indicates no changes have occurred to the wildlife habitat on Chestnut Island (APC, 2015).

4.5.2 *Botanical Resources*

The Project is located in the Northern Inner Piedmont ecoregion, of which the major forest community is Oak-Hickory-Pine Forest (Woods et al. 1999). Dominant tree species include hickory (*Carya spp*.), shortleaf pine (*Pinus echinata*), loblolly pine (*Pinus taeda*), white oak (*Quercus alba*) and post oak (*Quercus stellata*) (Wood et al. 1999). Other tree species commonly found in the Piedmont ecoregion of the Project area are maple, tulip poplar, sycamore, black walnut, butternut, black willow, box elder, red cedar, black locust, wildcherry, American beech, red maple, black gum, chestnut oak, black oak, red oak, Virginia pine, white pine, mulberry, hemlock, sourwood, and persimmon. Major understory species include dogwood, American holly, American redbud, honeysuckle, papaw, musclewood, sassafras, huckleberry, hackberry, elderberry, gooseberry, Queen Anne's lace, ironweed, white fringe, juniper, goldenrod, moccasin flower, rhododendron, laurel, flaming azalea, milkweed, ferns, mosses, liverworts, and a myriad of small flowering plants (VDCR, 2016a). Vines that are common to the area are wild yam, greenbriar, trumpet vine, Virginia creeper, wild grape, poison ivy, honeysuckle, virgin's bower, yellow jasmine, blackberry, and pokeberry (VDCR, 2016a).

The early Detection and Distribution Mapping System (EDDMapsS.org) was consulted to determine what invasive plant species occur in the Project area (EDDMaps, 2018). Search results of the Project area indicated that no invasive plant species have been report in the Project area.

Table 4.5.1-1. Mammal species that occur or have a the potential to occur in the Project area.

Common Name	Scientific Name
Bat, big brown	*Eptesicus fuscus*
Bat, eastern red	*Lasiurus borealis*
Bat, hoary	*Lasiurus cinereus*
Bat, little brown[1]	*Myotis lucifugus*
Bat, northern long-eared[1]	*Myotis septentrionalis*
Bat, silver-haired	*Lasionycteris noctivagans*
Bat, tri-colored[1]	*Perimyotis subflavus*
Bear, American black	*Ursus americanus*
Beaver, American	*Castor canadensis*
Beaver, Carolina	*Castor canadensis carolinensis*
Bobcat	*Lynx rufus rufus*
Chipmunk, Fisher's eastern	*Tamias striatus fisheri*
Cottontail, Appalachian	*Sylvilagus obscurus*
Cottontail, eastern	*Sylvilagus floridanus mallurus*
Coyote	*Canis latrans*
Deer, white-tailed	*Odocoileus virginianus*
Fox, common gray	*Urocyon cinereoargenteus cinereoargenteus*
Fox, red	*Vulpes vulpes fulva*
Lemming, Stone's southern bog	*Synaptomys cooperi stonei*
Mink, common	*Neovison vison mink*
Mole, eastern	*Scalopus aquaticus aquaticus*
Mole, hairy-tailed	*Parascalops breweri*
Mole, star-nosed	*Condylura cristata cristata*
Mouse, deer	*Peromyscus maniculatus nubiterrae*
Mouse, eastern harvest	*Reithrodontomys humulis humulis*
Mouse, house	*Mus musculus musculus*
Mouse, Lewis' golden	*Ochrotomys nuttalli nuttalli*
Mouse, meadow jumping	*Zapus hudsonius americanus*
Mouse, northern white-footed	*Peromyscus leucopus noveboracensis*
Mouse, woodland jumping	*Napaeozapus insignis roanensis*
Muskrat, common	*Ondatra zibethicus zibethicus*
Muskrat, large-toothed	*Ondatra zibethicus macrodon*

Common Name	Scientific Name
Opossum, Virginia	*Didelphis virginiana virginiana*
Otter, northern river	*Lontra canadensis lataxina*
Raccoon	*Procyon lotor lotor*
Rat, black	*Rattus rattus rattus*
Rat, hispid cotton	*Sigmodon hispidus virginianus*
Rat, Norway	*Rattus norvegicus norvegicus*
Shrew, American pygmy	*Sorex hoyi*
Shrew, least	*Cryptotis parva*
Shrew, northern short-tailed	*Blarina brevicauda kirtlandi*
Shrew, smoky	*Sorex fumeus*
Shrew, southeastern	*Sorex longirostris longirostris*
Skunk, eastern spotted	*Spilogale putorius putorius*
Skunk, striped	*Mephitis mephitis mephitis*
Squirrel, eastern fox	*Sciurus niger vulpinus*
Squirrel, northern gray	*Sciurus carolinensis pennsylvanicus*
Squirrel, red	*Tamiasciurus hudsonicus abieticola*
Squirrel, southern flying	*Glaucomys volans volans*
Squirrel, talkative red	*Tamiasciurus hudsonicus loquax*
Vole, meadow	*Microtus pennsylvanicus pennsylvanicus*
Vole, pine	*Microtus pinetorum scalopsoides*
Vole, southern red-backed	*Myodes gapperi*
Weasel, least	*Mustela nivalis allegheniensis*
Weasel, long-tailed	*Mustela frenata noveboracensis*
Woodchuck	*Marmota monax monax*
Woodrat, Allegheny	*Neotoma magister*

Source: VDGIF, 2018c

[1.] Denotes a special status species. See section 4.7 *Rare, Threatened, and Endangered Species*.

Table 4.5.1-2. Amphibian species that occur or have a the potential to occur in the Project area.

Common Name	Scientific Name
Bullfrog, American	*Lithobates catesbeianus*
Treefrog, gray	*Hyla versicolor*
Frog, green	*Lithobates clamitans*
Frog, eastern cricket	*Acris crepitans*
Frog, pickerel	*Lithobates palustris*
Frog, Coastal Plains leopard	*Lithobates sphenocephalus utricularius*
Frog, upland chorus	*Pseudacris feriarum*
Frog, wood	*Lithobates sylvaticus*
Salamander, mole	*Ambystoma talpoideum*
Salamander, black-bellied	*Desmognathus quadramaculatus*
Salamander, cave	*Eurycea lucifuga*
Salamander, four-toed	*Hemidactylium scutatum*
Salamander, long-tailed	*Eurycea longicauda longicauda*
Salamander, marbled	*Ambystoma opacum*
Salamander, Allegheny mountain dusky	*Desmognathus ochrophaeus*
Salamander, northern dusky	*Desmognathus fuscus*
Salamander, Peaks of Otter	*Plethodon hubrichti*
Salamander, eastern red-backed	*Plethodon cinereus*
Salamander, northern slimy	*Plethodon glutinosus*
Salamander, spotted	*Ambystoma maculatum*
Salamander, southern two-lined	*Eurycea cirrigera*
Salamander, three-lined	*Eurycea guttolineata*
Salamander, valley and ridge	*Plethodon hoffmani*
Toad, eastern American	*Anaxyrus americanus americanus*
Toad, eastern narrow-mouthed	*Gastrophryne carolinensis*
Toad, Fowler's	*Anaxyrus fowleri*
Newt, red-spotted	*Notophthalmus viridescens viridescens*
Salamander, Blue Ridge red	*Pseudotriton ruber nitidus*
Salamander, northern red	*Pseudotriton ruber ruber*
Peeper, spring	*Pseudacris crucifer*
Salamander, seal	*Desmognathus monticola*
Salamander, northern spring	*Gyrinophilus porphyriticus porphyriticus*

Common Name	**Scientific Name**
Salamander, white-spotted slimy	*Plethodon cylindraceus*

Source: VDGIF, 2018c

Table 4.5.1-3. Reptile species that occur or have a the potential to occur in the Project area.

Common Name	Scientific Name
Brownsnake, northern	*Storeria dekayi dekayi*
Cooter, eastern river	*Pseudemys concinna concinna*
Copperhead, northern	*Agkistrodon contortrix mokasen*
Cornsnake, red	*Pantherophis guttatus*
Earthsnake, eastern smooth	*Virginia valeriae valeriae*
Gartersnake, eastern	*Thamnophis sirtalis sirtalis*
Gecko, Mediterranean	*Hemidactylus turcicus*
Greensnake, northern rough	*Opheodrys aestivus aestivus*
Greensnake, smooth	*Opheodrys vernalis*
Kingsnake, eastern	*Lampropeltis getula*
Kingsnake, northern mole	*Lampropeltis calligaster rhombomaculata*
Kingsnake, scarlet	*Lampropeltis elapsoides*
Lizard, eastern fence	*Sceloporus undulatus*
Milksnake, eastern	*Lampropeltis triangulum*
Racer, northern black	*Coluber constrictor constrictor*
Racerunner, eastern six-lined	*Aspidoscelis sexlineata sexlineata*
Ratsnake, eastern	*Pantherophis alleghaniensis*
Rattlesnake, timber[1]	*Crotalus horridus*
Ribbonsnake, common	*Thamnophis sauritus sauritus*
Skink, broad-headed	*Plestiodon laticeps*
Skink, common five-lined	*Plestiodon fasciatus*
Skink, little brown	*Scincella lateralis*
Skink, northern coal	*Plestiodon anthracinus anthracinus*
Skink, southeastern five-lined	*Plestiodon inexpectatus*
Slider, red-eared	*Trachemys scripta elegans*
Snake, eastern hog-nosed	*Heterodon platirhinos*
Snake, northern red-bellied	*Storeria occipitomaculata occipitomaculata*
Snake, northern ring-necked	*Diadophis punctatus edwardsii*
Snake, queen	*Regina septemvittata*
Snake, southeastern crowned	*Tantilla coronata*
Turtle, eastern musk	*Sternotherus odoratus*
Turtle, eastern painted	*Chrysemys picta picta*

Common Name	Scientific Name
Turtle, snapping	*Chelydra serpentina*
Turtle, southeastern mud	*Kinosternon subrubrum subrubrum*
Turtle, woodland box	*Terrapene carolina carolina*
Watersnake, northern	*Nerodia sipedon sipedon*
Wormsnake, eastern	*Carphophis amoenus amoenus*

Source: VDGIF, 2018c

[1.] Denotes a special status species. See section 4.7 *Rare, Threatened, and Endangered Species*.

Table 4.5.1-4. Bird species that occur or have a the potential to occur in the Project area.

Common Name	Scientific Name
Bittern, least	*Ixobrychus exilis exilis*
Blackbird, red-winged	*Agelaius phoeniceus*
Blackbird, rusty	*Euphagus carolinus*
Bluebird, eastern	*Sialia sialis*
Bobolink	*Dolichonyx oryzivorus*
Bobwhite, northern	*Colinus virginianus*
Bunting, indigo	*Passerina cyanea*
Bunting, snow	*Plectrophenax nivalis nivalis*
Cardinal, northern	*Cardinalis cardinalis*
Catbird, gray	*Dumetella carolinensis*
Chat, yellow-breasted	*Icteria virens virens*
Chickadee, Carolina	*Poecile carolinensis*
Chuck-will's-widow	*Antrostomus carolinensis*
Coot, American	*Fulica americana*
Cormorant, double-crested	*Phalacrocorax auritus*
Cowbird, brown-headed	*Molothrus ater*
Creeper, brown	*Certhia americana*
Crossbill, red	*Loxia curvirostra*
Crossbill, white-winged	*Loxia leucoptera*
Crow, American	*Corvus brachyrhynchos*
Crow, fish	*Corvus ossifragus*
Cuckoo, black-billed	*Coccyzus erythropthalmus*
Cuckoo, yellow-billed	*Coccyzus americanus*
Dickcissel	*Spiza americana*
Dove, common ground	*Columbina passerina*
Dove, mourning	*Zenaida macroura carolinensis*
Dowitcher, short-billed	*Limnodromus griseus*
Duck, American black	*Anas rubripes*
Duck, ruddy	*Oxyura jamaicensis*
Duck, wood	*Aix sponsa*
Eagle, bald	*Haliaeetus leucocephalus*
Eagle, golden	*Aquila chrysaetos*

Common Name	Scientific Name
Egret, cattle	*Bubulcus ibis*
Egret, great	*Ardea alba egretta*
Falcon, peregrine[1]	*Falco peregrinus*
Finch, house	*Haemorhous mexicanus*
Finch, purple	*Haemorhous purpureus*
Flicker, northern	*Colaptes auratus*
Flycatcher, Acadian	*Empidonax virescens*
Flycatcher, great crested	*Myiarchus crinitus*
Flycatcher, least	*Empidonax minimus*
Flycatcher, willow	*Empidonax traillii*
Gadwall	*Anas strepera*
Gnatcatcher, blue-gray	*Polioptila caerulea*
Goldfinch, American	*Spinus tristis*
Goose, Canada	*Branta canadensis*
Goshawk, northern	*Accipiter gentilis*
Grackle, common	*Quiscalus quiscula*
Grebe, pied-billed	*Podilymbus podiceps*
Grosbeak, black-headed	*Pheucticus melanocephalus*
Grosbeak, blue	*Guiraca caerulea caerulea*
Grosbeak, evening	*Coccothraustes vespertinus*
Grosbeak, pine	*Pinicola enucleator*
Grosbeak, rose-breasted	*Pheucticus ludovicianus*
Grouse, ruffed	*Bonasa umbellus*
Harrier, northern	*Circus cyaneus*
Hawk, broad-winged	*Buteo platypterus*
Hawk, Cooper's	*Accipiter cooperii*
Hawk, red-shouldered	*Buteo lineatus lineatus*
Hawk, red-tailed	*Buteo jamaicensis*
Hawk, rough-legged	*Buteo lagopus johannis*
Hawk, sharp-shinned	*Accipiter striatus velox*
Heron, great blue	*Ardea herodias herodias*
Heron, green	*Butorides virescens*
Hummingbird, ruby-throated	*Archilochus colubris*
Hummingbird, rufous	*Selasphorus rufus*

Common Name	**Scientific Name**
Ibis, glossy	*Plegadis falcinellus*
Jay, blue	*Cyanocitta cristata*
Junco, dark-eyed	*Junco hyemalis*
Kestrel, American	*Falco sparverius sparverius*
Killdeer	*Charadrius vociferus*
Kingbird, eastern	*Tyrannus tyrannus*
Kingfisher, belted	*Ceryle alcyon*
Kinglet, golden-crowned	*Regulus satrapa*
Kinglet, ruby-crowned	*Regulus calendula*
Lark, horned	*Eremophila alpestris*
Limpkin	*Aramus guarauna*
Mallard	*Anas platyrhynchos*
Martin, purple	*Progne subis*
Meadowlark, eastern	*Sturnella magna*
Merlin	*Falco columbarius*
Mockingbird, northern	*Mimus polyglottos*
Moorhen, common	*Gallinula chloropus cachinnans*
Nighthawk, common	*Chordeiles minor*
Night-heron, black-crowned	*Nycticorax nycticorax hoactii*
Night-heron, yellow-crowned	*Nyctanassa violacea violacea*
Nuthatch, brown-headed	*Sitta pusilla*
Nuthatch, red-breasted	*Sitta canadensis*
Nuthatch, white-breasted	*Sitta carolinensis*
Oriole, Baltimore	*Icterus galbula*
Oriole, orchard	*Icterus spurius*
Osprey	*Pandion haliaetus carolinensis*
Ovenbird	*Seiurus aurocapilla*
Owl, barn	*Tyto alba pratincola*
Owl, barred	*Strix varia*
Owl, great horned	*Bubo virginianus*
Owl, short-eared	*Asio flammeus*
Parula, northern	*Setophaga americana*
Pewee, eastern wood	*Contopus virens*
Phalarope, red-necked	*Phalaropus lobatus*

Common Name	Scientific Name
Pheasant, ring-necked	*Phasianus colchicus*
Phoebe, eastern	*Sayornis phoebe*
Pigeon, rock	*Columba livia*
Rail, king	*Rallus elegans*
Rail, Virginia	*Rallus limicola*
Raven, common	*Corvus corax*
Redstart, American	*Setophaga ruticilla*
Robin, American	*Turdus migratorius*
Sandpiper, solitary	*Tringa solitaria*
Sandpiper, spotted	*Actitis macularia*
Sandpiper, upland	*Bartramia longicauda*
Sapsucker, yellow-bellied	*Sphyrapicus varius*
Scoter, white-winged	*Melanitta fusca deglandi*
Screech-owl, eastern	*Megascops asio*
Shrike, loggerhead[1]	*Lanius ludovicianus*
Shrike, migrant loggerhead[1]	*Lanius ludovicianus migrans*
Siskin, pine	*Spinus pinus*
Snipe, Wilson's	*Gallinago delicata*
Sora	*Porzana carolina*
Sparrow, chipping	*Spizella passerina*
Sparrow, field	*Spizella pusilla*
Sparrow, fox	*Passerella iliaca*
Sparrow, grasshopper	*Ammodramus savannarum pratensis*
Sparrow, Henslow's[1]	*Ammodramus henslowii*
Sparrow, house	*Passer domesticus*
Sparrow, savannah	*Passerculus sandwichensis*
Sparrow, song	*Melospiza melodia*
Sparrow, swamp	*Melospiza georgiana*
Sparrow, vesper	*Pooecetes gramineus*
Sparrow, white-crowned	*Zonotrichia leucophrys*
Sparrow, white-throated	*Zonotrichia albicollis*
Starling, European	*Sturnus vulgaris*
Stork, wood	*Mycteria americana*
Swallow, bank	*Riparia riparia*

Common Name	**Scientific Name**
Swallow, barn	*Hirundo rustica*
Swallow, cliff	*Petrochelidon pyrrhonota pyrrhonota*
Swallow, northern rough-winged	*Stelgidopteryx serripennis*
Swallow, tree	*Tachycineta bicolor*
Swift, chimney	*Chaetura pelagica*
Tanager, scarlet	*Piranga olivacea*
Tanager, summer	*Piranga rubra*
Teal, blue-winged	*Anas discors orphna*
Tern, Caspian	*Sterna caspia*
Thrasher, brown	*Toxostoma rufum*
Thrush, hermit	*Catharus guttatus*
Thrush, Swainson's	*Catharus ustulatus*
Thrush, wood	*Hylocichla mustelina*
Titmouse, tufted	*Baeolophus bicolor*
Towhee, eastern	*Pipilo erythrophthalmus*
Turkey, wild	*Meleagris gallopavo silvestris*
Veery	*Catharus fuscescens*
Vireo, blue-headed	*Vireo solitarius*
Vireo, red-eyed	*Vireo olivaceus*
Vireo, warbling	*Vireo gilvus gilvus*
Vireo, white-eyed	*Vireo griseus*
Vireo, yellow-throated	*Vireo flavifrons*
Vulture, black	*Coragyps atratus*
Vulture, turkey	*Cathartes aura*
Warbler, black-and-white	*Mniotilta varia*
Warbler, blackburnian	*Setophaga fusca*
Warbler, blackpoll	*Setophaga striata*
Warbler, black-throated blue	*Setophaga caerulescens*
Warbler, black-throated green	*Setophaga virens*
Warbler, blue-winged	*Vermivora cyanoptera*
Warbler, Canada	*Cardellina canadensis*
Warbler, Cape May	*Setophaga tigrina*
Warbler, cerulean	*Setophaga cerulea*
Warbler, chestnut-sided	*Setophaga pensylvanica*

Common Name	Scientific Name
Warbler, golden-winged	*Vermivora chrysoptera*
Warbler, hooded	*Setophaga citrina*
Warbler, Kentucky	*Geothlypis formosa*
Warbler, magnolia	*Setophaga magnolia*
Warbler, Nashville	*Oreothlypis ruficapilla*
Warbler, palm	*Setophaga palmarum*
Warbler, pine	*Setophaga pinus*
Warbler, prairie	*Setophaga discolor*
Warbler, prothonotary	*Protonotaria citrea*
Warbler, Tennessee	*Oreothlypis peregrina*
Warbler, worm-eating	*Helmitheros vermivorus*
Warbler, yellow	*Setophaga petechia*
Warbler, yellow-rumped	*Setophaga coronata*
Warbler, yellow-throated	*Setophaga dominica*
Waterthrush, Louisiana	*Parkesia motacilla*
Waterthrush, northern	*Parkesia noveboracensis*
Waxwing, Bohemian	*Bombycilla garrulus*
Waxwing, cedar	*Bombycilla cedrorum*
Whip-poor-will, Eastern	*Antrostomus vociferus*
Woodcock, American	*Scolopax minor*
Woodpecker, downy	*Picoides pubescens medianus*
Woodpecker, hairy	*Picoides villosus*
Woodpecker, pileated	*Dryocopus pileatus*
Woodpecker, red-bellied	*Melanerpes carolinus*
Woodpecker, red-headed	*Melanerpes erythrocephalus*
Wren, Carolina	*Thryothorus ludovicianus*
Wren, house	*Troglodytes aedon*
Wren, marsh	*Cistothorus palustris*
Wren, winter	*Troglodytes troglodytes*
Yellowthroat, common	*Geothlypis trichas*

Source: VDGIF, 2018c

1. Denotes a special status species. See section 4.7 *Rare, Threatened, and Endangered Species.*

4.6 Wetlands, Riparian and Littoral Habitat (18 CFR §5.6(d)(3)(vi))

Wetlands

The U.S. Fish and Wildlife Service (USFWS) classification scheme for wetlands serves as the national standard for wetland classification and has been used to classify wetlands appearing in the National Wetlands Inventory (NWI) (USFWS, 2018a). USFWS defines wetlands as:

"...lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water. For the purpose of the classification, wetlands must have one or more of these three attributes: (1) at least periodically, the land must support predominantly wetland plants; (2) the substrate is predominantly undrained hydric soil; and (3) rocky, gravelly, or sandy areas that are saturated with or covered by shallow water at some time during the growing season."

Information with regard to the location and spatial extent of wetland resources in the Project boundary were obtained from the NWI, as presented in Figure 4.6-1 and listed in Table 4.6.1. The NWI coverage is developed from aerial photography. Within the Project boundary there are 4 wetland types: riverine (483.9 acres), freshwater forested/shrub (3.2 acres), freshwater pond (2.4 acres), and freshwater emergent wetland (0.4 acres).

Riparian and Littoral Habitat

Riparian habitat is located along streams and rivers and provides ecosystem functions related to hydrology and flooding, nutrient cycling, and plant and wildlife habitat. The riparian habitat within the Project vicinity is primarily stands of deciduous trees and shrubs. The upland extent of the riparian area is bounded by the CSX railway along the river right bank. Along the river left bank riparian habitat is immediately adjacent to the shoreline. Littoral habitat in the Project area occurs in the reservoir and downstream of the Project where light can penetrate to the bottom and rooted vegetation can survive. The Project impoundment also has numerous piers and docks along river-left shoreline that occupy littoral habitat.

Table 4.6-1. USFWS National Wetlands Inventory wetlands in the Project vicinity.

NWI Type	NWI Code	NWI Code Description	Area within Project Boundary (acres)
Freshwater Emergent	PEM1C	Palustrine, emergent, persistent, seasonally flooded	0.39
	PEM1E	Palustrine, emergent, persistent, seasonally flooded/saturated	0.05
Freshwater Forested/Shrub	PFO1C	Palustrine, forested, broad-leaved deciduous, seasonally flooded	1.24
	PFO1F	Palustrine, forested, broad-leaved deciduous, semi-permanently flooded	0.91
	PFO1A	Palustrine, forested, broad-leaved deciduous, temporary flooded	0.40
	PFO1E	Palustrine, forested, broad-leaved deciduous, seasonally flooded/saturated	0.32
	PSS1/EM1C	Palustrine, scrub-shrub, broad-leaved deciduous, emergent, persistent, seasonally flooded	0.19
	PSS1C	Palustrine, scrub-shrub, broad-leaved deciduous, seasonally flooded	0.12
	PFO1Ch	Palustrine, forested, broad-leaved deciduous, seasonally flooded, diked/impounded	0.03
	PFO1/SS1C	Palustrine, forested, broad-leaved deciduous, scrub schrub, seasonally flooded	0.02
Freshwater Pond	PUBHh	Palustrine, unconsolidated bottom, permanently flooded, diked/impounded	1.07
	PUBH	Palustrine, unconsolidated bottom, permanently flooded	0.74
	PABHh	Palustrine, aquatic bed, permanently flooded, diked/impounded	0.63
Riverine	R2UBHh	Riverine, lower perennial, unconsolidated bottom, permanently flooded, diked/impounded	267.21
	R2UBH	Riverine, lower perennial, unconsolidated bottom, permanently flooded	215.31
	R5UBH	Riverine, unknown perennial, unconsolidated bottom, permanently flooded	1.28
	R4SBC	Riverine, intermittent, streambed, seasonally flooded	0.13

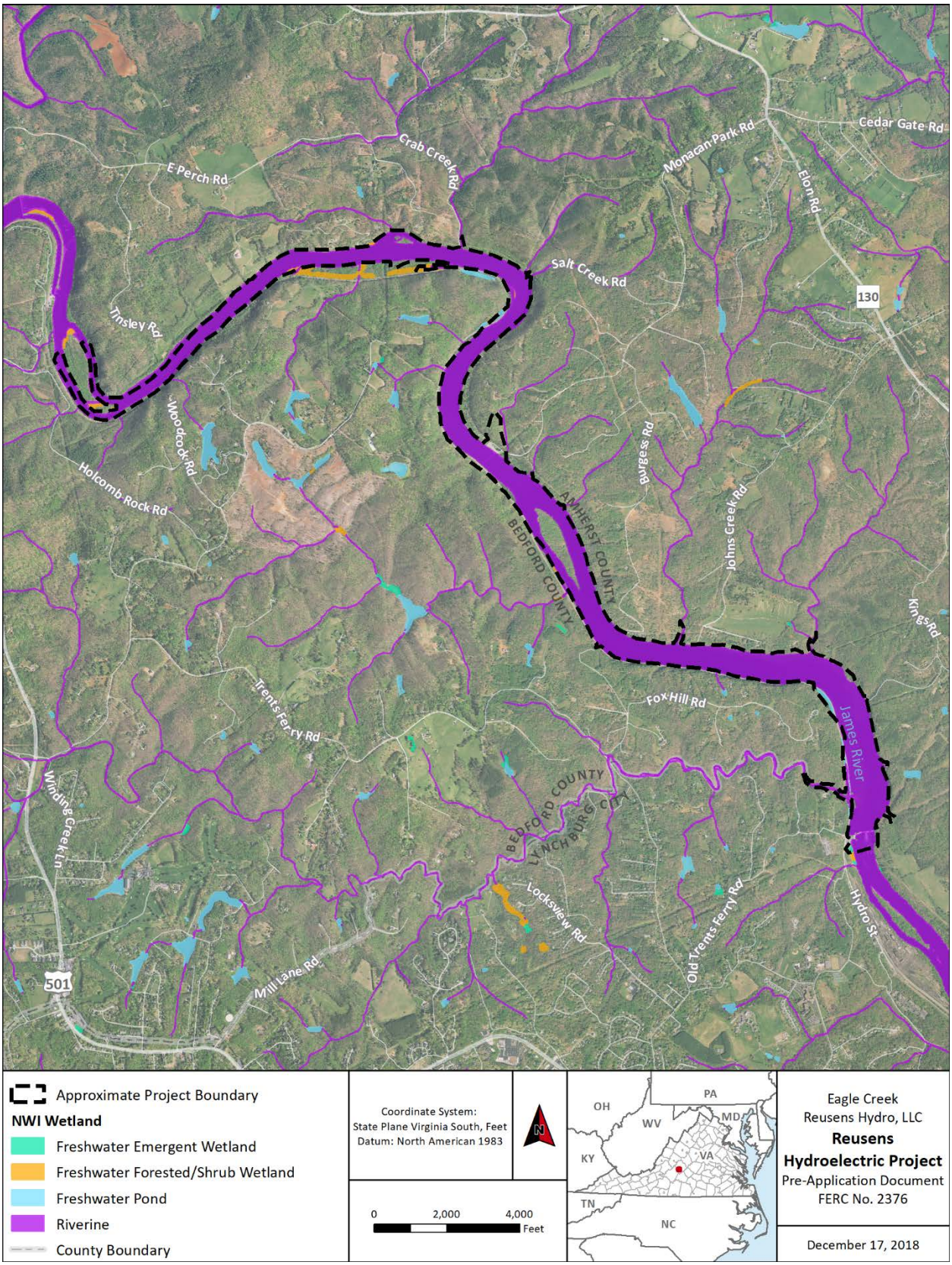


Figure 4.6-1. USFWS National Wetlands Inventory wetlands in the Project area.

4.7 Rare, Threatened, and Endangered Species (18 CFR §5.6(d)(3)(vii))

4.7.1 *Federal Species*

USFWS's Information for Planning and Consultation (IPaC) is a project planning tool that identifies any federally listed species or their critical habitat under the Endangered Species Act that are known to occur or are expected to occur in a project area. IPaC was consulted to identify any federally listed species that could be in the Project vicinity by defining the search area as the approximate Project Boundary. IPaC identified only one federally listed species that could be in the Project vicinity, the northern long-eared bat (USFWS, 2018a).

Northern long-eared bat

The northern long-eared bat is found across much of the eastern and north central United States and all Canadian provinces from the Atlantic coast west to the southern Northwest Territories and eastern British Columbia. It is a medium-sized bat about 3 to 3.7 inches in length and has a wingspan of 9 to 10 inches. The species' range includes 37 states. During the winter these bats hibernate in caves, and in the summer they roost underneath tree bark or in crevices, but rarely are they found in human-made structures. Breeding occurs in the fall when the bats swarm near hibernacula. Threats to the bat include impacts to hibernacula, habitat degradation, wind turbines, but no other is more severe than white-nose syndrome. White nose syndrome is a fungus that infects the bats muzzle and other parts of its body (USFWS, 2018e). On April 2, 2015, the USFWS listed the northern long-eared bat as threatened under the ESA (USFWS, 2018e). On January 14, 2016, USFWS issued a 4(d) ruling for the Norther long-eared bat (50 CFR Part 17 2016-00617). There is no designated critical habitat for the northern long-eared bat in the Project vicinity.

4.7.1 *State Species*

Commonwealth of Virginia rare, threatened, or endangered species that could occur or have the potential to occur in the Project area were determined by: (1) using the VDGIF Virginia Fish and Wildlife Information Service to conduct a geographic search of a 3 mile radius around the project to develop a list of rare, threatened, and endangered fish and wildlife species; (2) using VDCR's Natural Heritage Data Explorer to perform a Species/Community Search (https://vanhde.org/species-search) for the HUC 12 watershed, the Project is within (HUC12 020802030301 Judith Creek-James River), to develop a list of rare, threatened, or endangered plant and wildlife species; and (3) cross referencing these species list with VDCR (2016b) and VDCR (2016c).

In total, the above method identified twelve rare, threatened, or endangered species (both federal and state) that could occur or have the potential to occur in the Project vicinity. These include: three mammal species (all bats), three bird species, four freshwater mussel species, one fish and one reptile. No plant species were identified. It is important to note that this method identified the federally listed James River spinymussel and Roanoke Logperch; however based on the USFWS IPaC these species are not known to occur in the Project area. It is also important to note that recent mussel surveys performed in the Project area reveal that there are no special-status mussel species in the Project area (see section 4.4 *Fish and Aquatic Resources*). Furthermore, although the James River spiny mussel is known to occur in Amherst County, it is

only known to occur in small headwater stream of the Upper James River basin in Virginia (USFWS, 2008).

Table 4.7-1 presents the list of federal and state rare, threatened, or endangered species that could occur or have the potential to occur in the Project vicinity as well as their habitat requirements.

Table 4.7-1. Rare, Threatened, Endangered Species with Potential to Occur in the Project area.

Common Name	Scientific Name	Status	Habitat Requirements
Mammals			
Northern Long-eared Bat	*Myotis septentrionalis*	Federally Threatened State Proposed Threatened	Caves (winter), underneath bark, in cavities or in crevices of both live trees and snags (summer) (USFWS, 2018e).
Little Brown Bat	*Myotis lucifugus*	State Proposed Endangered	Humid caves and mines with constant temperatures (winter); roost in human-made structures, but have also been found in the summer under tree bark, in rock crevices, and in tree hollows (summer) (Wisconsin Bat Program, 2012)
Tri-colored Bat	*Perimyotis subflavus*	State Proposed Endangered	Limestone caves and abandoned mines in high humidity (winter); roost in forest vegetation in the canopy, most typically dead leaves on mature live or recently dead deciduous trees (summer) (MANH, 2015).
Birds			
Peregrine Falcon	*Falco peregrinus*	State Threatened	Occurs open county, cliffs (mountains to coast), often near water (Audubon, 2018a).
Loggerhead Shrike	*Lanius ludovicianus*	State Threatened	Semi-open country, from large clearings in wooded regions to open grassland (Audubon, 2018b).
Henslows's Sparrow	*Ammodramus henslowii*	State Threatened	Open fallow and grassy fields, sedge meadows, and pastures with high, dense herbaceous vegetation and a thick layer of ground litter with no woody vegetation (New Jersey Department of Fish and Game, undated).
Mussels			
James Spinymussel	*Parvaspina collina*	Federally Endangered State Endangered	Occurs in the James River in areas of high water quality and high mineral content. Prefers slow-moving water (USFWS, 2018c). Based on USFWS IPaC, not known to occur in the Project vicinity.
Atlantic Pigtoe	*Fusconaia masoni*	State Threatened	Coarse sand and gravel areas in small creeks to large rivers with excellent water quality, where

Common Name	Scientific Name	Status	Habitat Requirements
			flow are sufficient to maintain clean, silt-free substrates (USFWS, 2018b).
Green Floater	*Lasmigona subviridis*	State Threatened	Streams , small rivers, and canals of low to medium gradient with slow pools and eddies, fine gravel and sand bottom, and mid-range calcium concentrations. It cannot tolerate either flooding or droughts (Kipp et al., 2018).
Yellow Lance	*Elliptio lanceolata*	Federally Proposed as Threatened	Sand-loving species often found buried deep in clean, coarse to medium sand, although it can sometimes be found in gravel substrates. Yellow lances often are moved with shifting sand and eventually settle in sand at the downstream end of stable sand and gravel bars. This species depends on clean, moderate flowing water with high dissolved oxygen. This species is found in medium-sized rivers to smaller streams (USFWS, 2017).
Fish			
Roanoke Logperch[1]	*Percina rex*	Federally Endangered State Endangered	Gravel and boulder runs of small to medium rivers (Page and Burr, 1991). Based on USFWS IPaC, not known to occur in the Project vicinity.
Reptile			
Timber Rattlesnake	*Crotalus horridus*	Conservation Concern	Upland hardwood and mixed oak-pine forests in areas with south facing ledges or talus slopes, also in open woods, grass fields, and secondary growth during the summer (VHS, 2018).

Source: VDGIF, 2018c; USFWS, 2018a

1. Although reported by VDGIF (2018c) species search tool to potentially occur in the Project vicinity, according VDGIF the Roanoke Logperch does not occur in the James River (Town of Bedford, 2018).

4.8 Recreation and Land Use (18 CFR §5.6 (d)(3)(viii))

4.8.1 *Recreation*

The James River, Virginia's longest river, is an important recreational resource of the Commonwealth of Virginia. It typically supports about 100,000 angling trips and about 50,000 boating trips annually and is designated as a State Scenic River (Stanovick et al., 1991). Public recreation opportunities within the James River Basin near the Project are numerous. The Project is within a short commute of major recreation resources including the George Washington and Jefferson National Forests, the Peaks of Otter Recreation Area, and the Blue Ridge Parkway. Also in the general vicinity of the Project is the James River Natural Heritage Trail. The James River Heritage Trail is a braided trail network that follows the James River from the foothills of the Allegheny Mountains to the Chesapeake Bay. The trail segments follow the old Kanawha Canal towpath, park trails, scenic riverside roadways and urban riverfront trails. In the nearby City of Lynchburg there are also numerous recreation areas and trails (Figure 4.8.1-1).

Project Recreation Facilities

Figure 4.8.1-1 shows the location of Monacan Park, the only Project-related recreation facility. Monacan Park is located three miles upstream of the Reusens Dam alongside the project impoundment. This park is owned by Reusens Hydro and leased and maintained by Amherst County, Virginia. The site provides a picnic shelter containing 11 picnic tables, seven grills, and 17 trash cans; a playground, permanent restroom facilities, and a single lane concrete boat launch with a courtesy pier. The boat launch provides boating and fishing access to the entire Project impoundment. The site also provides paved parking for 24 regular vehicles and 16 vehicles with trailers with a single Americans with Disabilities Act (ADA) designated accessible parking space. Signage indicates that the site is operated by Amherst County and that camping, swimming, campfires, and several other activities are prohibited in the park (Kleinschimdt, 2015). Figures 4.8.1-2 through 4.8.1-4 provide photographs of the Monacan Park facilities.

Project Recreation Use

The most recent FERC Form 80 filed (filed March 20, 2015) estimated that the Project had a total of 22,068 recreation days in 2014, with fishing being the most popular activity followed by boating and picnicking. On average, the Project was at 27 percent recreation capacity on a typical summer weekend (Kleinschimdt, 2015). The Project's 500-acre impoundment and tailwater area provide fishing and boating opportunities for the public. The impoundment extends approximately 7 river miles upstream and supports a variety of game species including smallmouth bass, catfish, and pan fish. In the Project tailwaters, anglers fish from shore, wade, or boat. Tailwater access is provided by a non-project access point at a privately owned boat launch at Red and Dot's Grocery, which is open to the public for a fee. This access point is about 3 miles downstream of the Project dam.

Voluntary Recreation Flow Release

Since 1985, communities along the James River and beyond have come together during the early summer to participate in the James River Batteau Festival. The festival commemorates early colonial settlement and expansion in the James River basin through float trips on the James River

using historically-accurate batteaus.[12] In support of the festival, Reusens Hydro provides voluntary flow releases, which range from 1,300 to 3,000 cfs, during the festival period in early summer. Put-in and take-out locations for the festival are located along the James River from Lynchburg to Richmond, VA. The nearest location relative to the Project is the Amherst Boat Landing, approximately 4.4 river miles downstream of the Reusens dam, just downstream of the Lynchburg dam.

Shoreline Buffer Zones

Reusens Hydro owns approximately 29 acres of property around the Project reservoir within the Project boundary and does not maintain a buffer zone around the reservoir.

Shoreline Management Policy

Reusens Hydro does not have a shoreline management plan or policy with regards to permitting the development of piers, boat docks, or other shoreline facilities at the Project.

Wild and Scenic River

The James River is not designated as a part of, and is not under study for inclusion in the National Wild and Scenic River System (National Wild and Scenic Rivers System, 2018a; 2018b).

Nationwide Rivers Inventory

The James River in the vicinity of the Project is not listed by the National Park Service (NPS) on the Nationwide Rivers Inventory (NPS, 2018).

National Trails System and Wilderness Areas

The Captain John Smith Chesapeake Trail is a National Historic Trail that parallels the James River from its confluence with the Chesapeake Bay to Iron Gate, VA and thus is in the Project area. There are no wilderness areas in the Project area.

4.8.2 *Land Use*

Land use within the approximate Project boundary is predominantly open water and developed open land (Table 4.8.2-1; Figure 4.8.2-1). Adjacent to the Project area the land use is overwhelmingly deciduous forest intermixed with evergreen forest, some pasture and mixed forest uses.

[12] From the French, a bateau or batteau, is a shallow-draft, flat-bottomed boat used extensively across North America, especially in the colonial period and in the fur trade.

Table 4.8.2-1. Land use within the Project boundary.

Land Use Class	Land Use Class Description	Area (acres)	Area (percent)
Open Water	Areas of open water, generally with less than 25% cover of vegetation or soil.	461.7	79
Developed Open	Areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20% of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes.	77.9	13
Developed Low	Areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20% to 49% percent of total cover. These areas most commonly include single-family housing units.	17.1	3
Developed Medium	Areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 50% to 79% of the total cover. These areas most commonly include single-family housing units.	11.6	2
Developed High	Highly developed areas where people reside or work in high numbers. Examples include apartment complexes, row houses and commercial/industrial. Impervious surfaces account for 80% to 100% of the total cover.	6.6	1
Deciduous Forest	Areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. More than 75% of the tree species shed foliage simultaneously in response to seasonal change.	4.5	1
Evergreen Forest	Areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. More than 75% of the tree species maintain their leaves all year. Canopy is never without green foliage.	1.3	< 1
Mixed Forest	Areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. Neither deciduous nor evergreen species are greater than 75% of total tree cover.	1.3	< 1
Pasture Hay	Areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle. Pasture/hay vegetation accounts for greater than 20% of total vegetation.	1.1	< 1

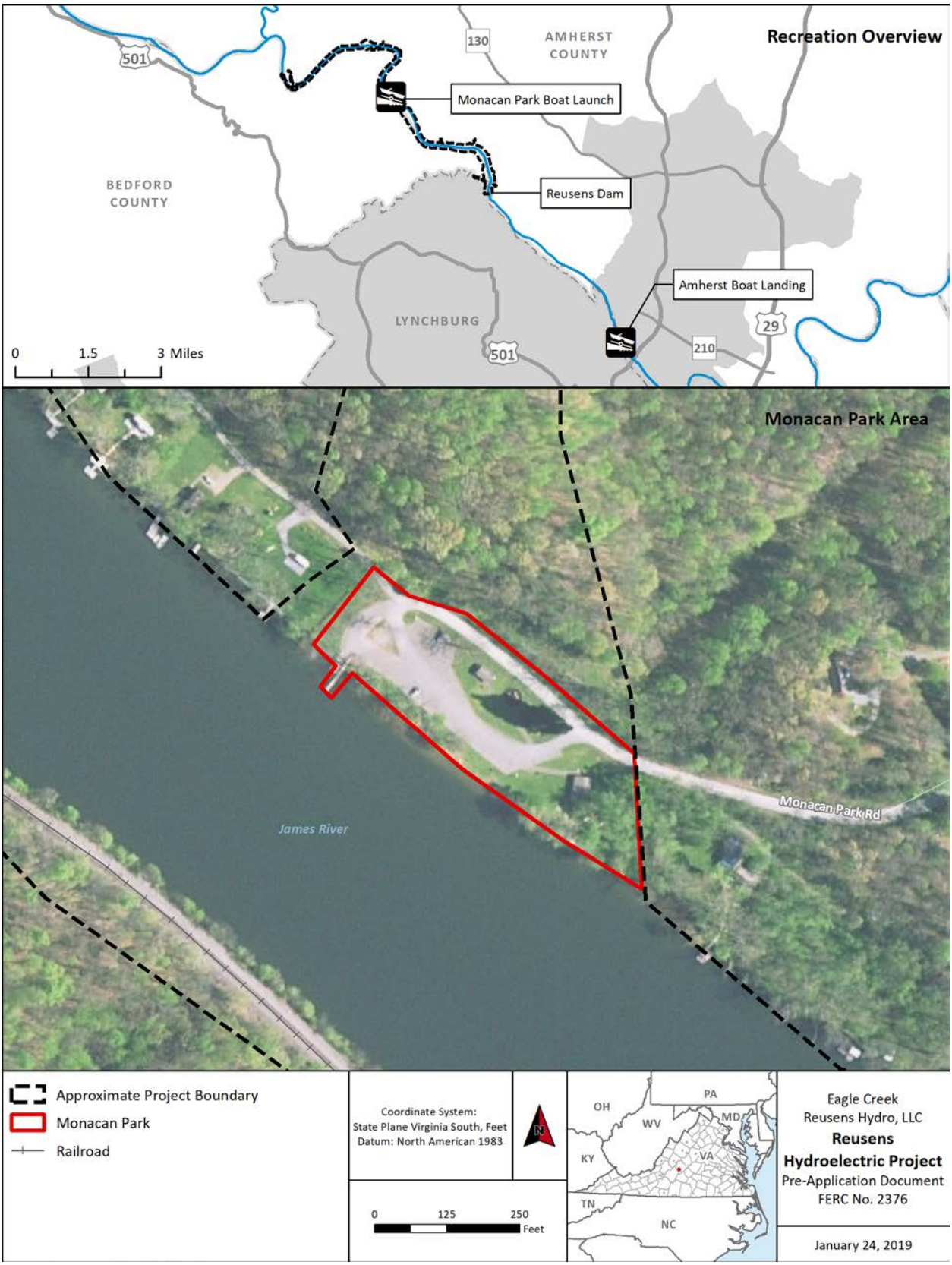


Figure 4.8.1-1. Recreational facilities in the Project vicinity.

Source: Kleinschmidt (2015)

Figure 4.8.1-2. Photograph of the Monacan Park parking and restroom facilities.

Source: Kleinschmidt (2015)

Figure 4.8.1-3. Photograph of the Monacan park boat ramp.

Source: Kleinschmidt (2015)

Figure 4.8.1-4. Photograph of the Monacan Park picnic shelter.

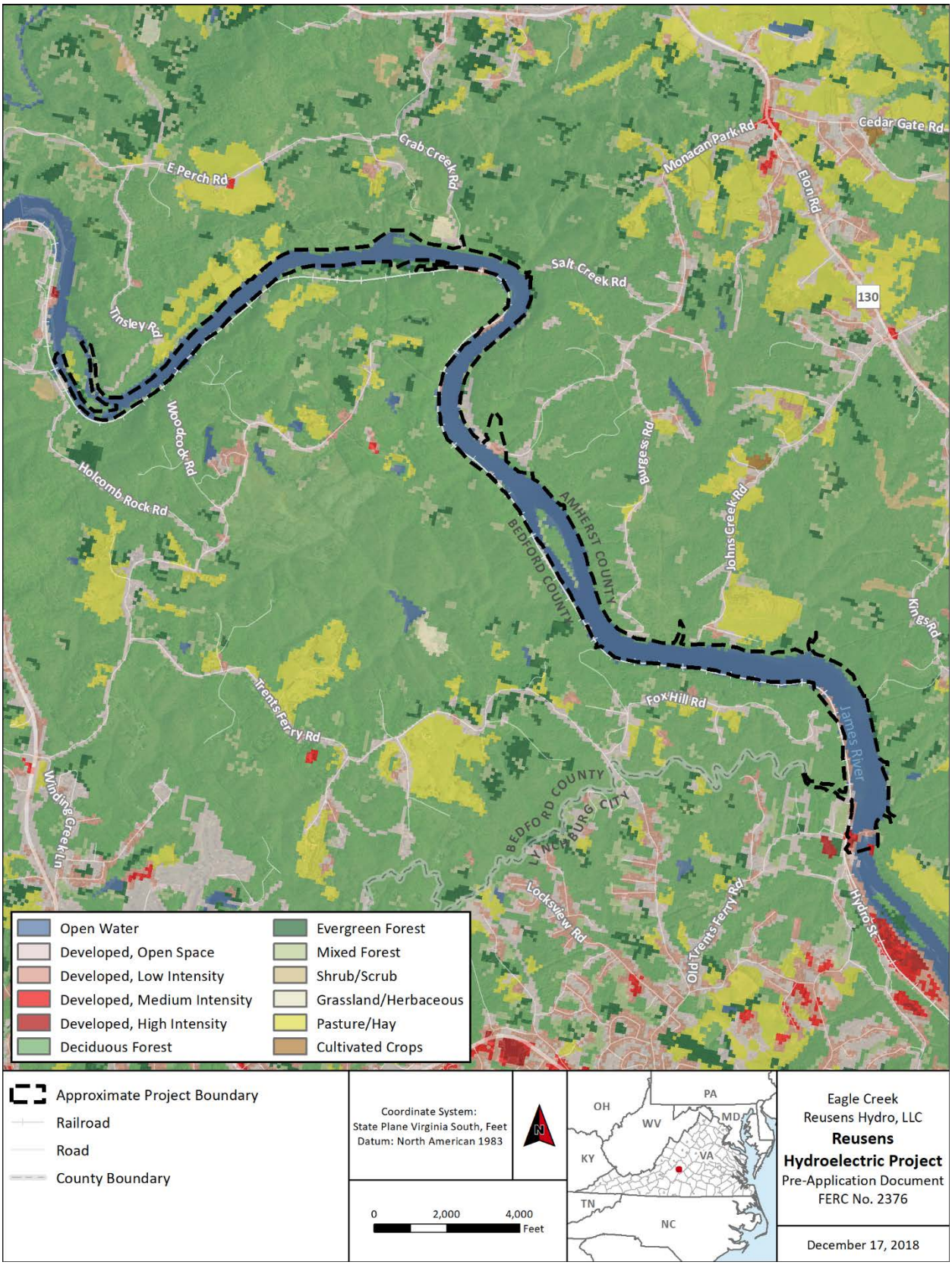


Figure 4.8.2-1. Land use within and adjacent to the Project boundary.

4.9 Aesthetics and Visual Resources (18 CFR §5.6(d)(3)(ix))

Aesthetic value is preserved by classifying a waterway as a "Wild and Scenic River" or by designating a road as a scenic byway. The James River in the vicinity of the Project is not classified as a Wild and Scenic River (see section 4.8 *Recreation and Land Use*). However, there are four national scenic byways in the Commonwealth of Virginia, one of which, the Blue Ridge Parkway, though not within or adjacent to the Project boundary, crosses the James River 15.7 river miles upstream of the Project dam. The Blue Ridge Parkway meanders from the Shenandoah National Park, Virginia to the Great Smokey Mountains National Park, North Carolina. The Project cannot be viewed from the Blue Ridge Parkway.

Views of the Project area are limited to Monacan Park and the public road used to access the Project, which parallels the CSX railway and James River before turning west at the Project powerhouse. Figures 4.9-1 and 4.9-2 present views of the Project impoundment from Monacan Park and the powerhouse, respectively. At Monacan Park, the Project impoundment, both upstream and downstream, including Chestnut Island, can be seen. In addition, the Project powerhouse and dam and flood gates can be seen from the public road used (Hydro Street) to access the Project. The exterior of the powerhouses are divided into bays of brick pilasters with segmented-arched window opening with concrete sills and wooden double hung sash windows. The dam is constructed of granite block and concrete and the flood gates are constructed of steel. The visual character of the Project facilities are maintained following a Cultural Resources Management Plan, which is described below in section 4.10, *Cultural Resources*.

The area surrounding the Project is rural with deciduous forest vegetation along the impoundment banks and throughout the Project boundary. Any inflows to the Project in excess of the hydraulic capacity of the powerhouse units is spilled at the dam. Under normal operating conditions, the impoundment is generally maintained between the lower and upper operating levels of 547.0 and 550.7 ft. respectively.

Source: Teague (2008)

Figure 4.9-1. Photograph of the Project impoundment from Monacan Park.

Source: GoogleEarth (2018)

Figure 4.9-2. Photograph of the Project powerhouse from Hydro Street.

4.10 Cultural Resources (18 CFR § 5.6(d)(3)(x))

4.10.1 *Project Historical Context*

The first hydroelectric station at the location of the Project was built by the Lynchburg Traction and Light Company (LTLC), a corporation created in 1901 by the Rivermont Street Railway Company and the Lynchburg Electric Railway and Light Company. The site selected to construct the Project was at the Judith lock and dam, which had been constructed in the 1850s as a part of the James River and Kanawha Canal system. Construction of the hydroelectric station at Judith Dam began in 1903. The completed facility consisted of a powerhouse, Judith Dam, and curved concrete spillway. The powerhouse was originally equipped with two 750kW generators, each connected by rope drives to two pairs of horizontal camelback hydraulic turbines. In 1910, the Project was taken over by the American Railways Company of Philadelphia, PA and a 1000 kW generator was added, and by 1925 the Project's generating capacity was nearly doubled by the addition of a second powerhouse, Powerhouse B (Louis Berger, 1995).

The Appalachian Electric Company took over operating the Project in 1926 and rebuilt and modernized the Project by 1931. This entailed cutting down the crest of the original Judith dam to accommodate new floodgates, which allowed water levels behind the dam to be raised by ten feet to create more operational head. During this modernization the units that are currently in Powerhouses A and B were installed (Louis Berger, 1995).

4.10.2 *Historic or Archeological Sites*

A review of the National Park Service's National Register of Historic Places indicates two properties within a one mile vicinity of the Project are on the National Register of Historic Places. Figure 4.10.2-1 shows the location of the two listed properties. The first, Hope Dawn, is a finely crafted Federal-style story-and-a-half brick farmhouse, which was added to the register on October 9, 1974 (Figure 4.10.2-2; NRHP, 1974). The second, the Virginia Episcopal School, was added to the register on June 6, 1985, and consists of four buildings that typify the Georgian Revival style of architecture from the late 19th and early 20th centuries (Figure 4.10.2-3; NRHP, 1992). Reusens Hydro is unaware of any properties that are recommended for the National Register of Historic places in the Project vicinity.

4.10.3 *Cultural Resource Management Plan*

The Project is eligible for inclusion in the National Register of Historic Places because it is the only Virginia example of a large low-head hydroelectric facility and a major historical event in the development of hydroelectric projects in the United States, specifically the upgrading of the Project in the late 1920s and 1930 (FERC, 1994). The Project facilities are maintained by following a Cultural Resources Management Plan (CRMP) that was developed in consultation with the Virginia Department of Historic Places and filed with the Commission on June 16, 1995 and approved by Order Amending Cultural Resources Management Plan issued June 26, 1996 (Louis Berger, 1995). The CRMP includes procedures on the maintenance of exterior and interior structures. The CRMP also includes a monitoring and reporting component, which specifies that Reusens Hydro file every two years with the Commission copies of written consultations with Virginia State Historic Preservation Officer and large-scale photo documentation of the Project facilities.

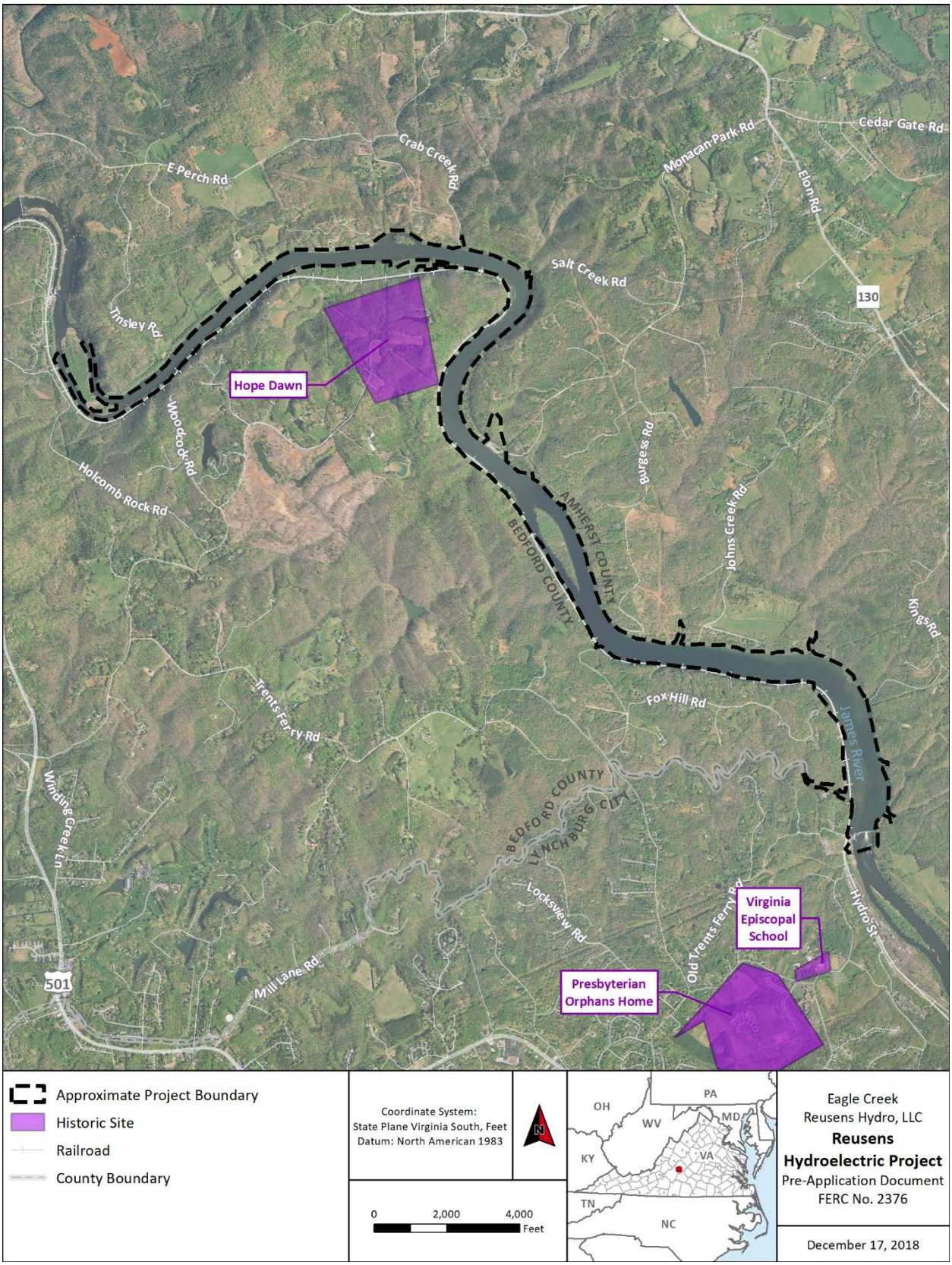
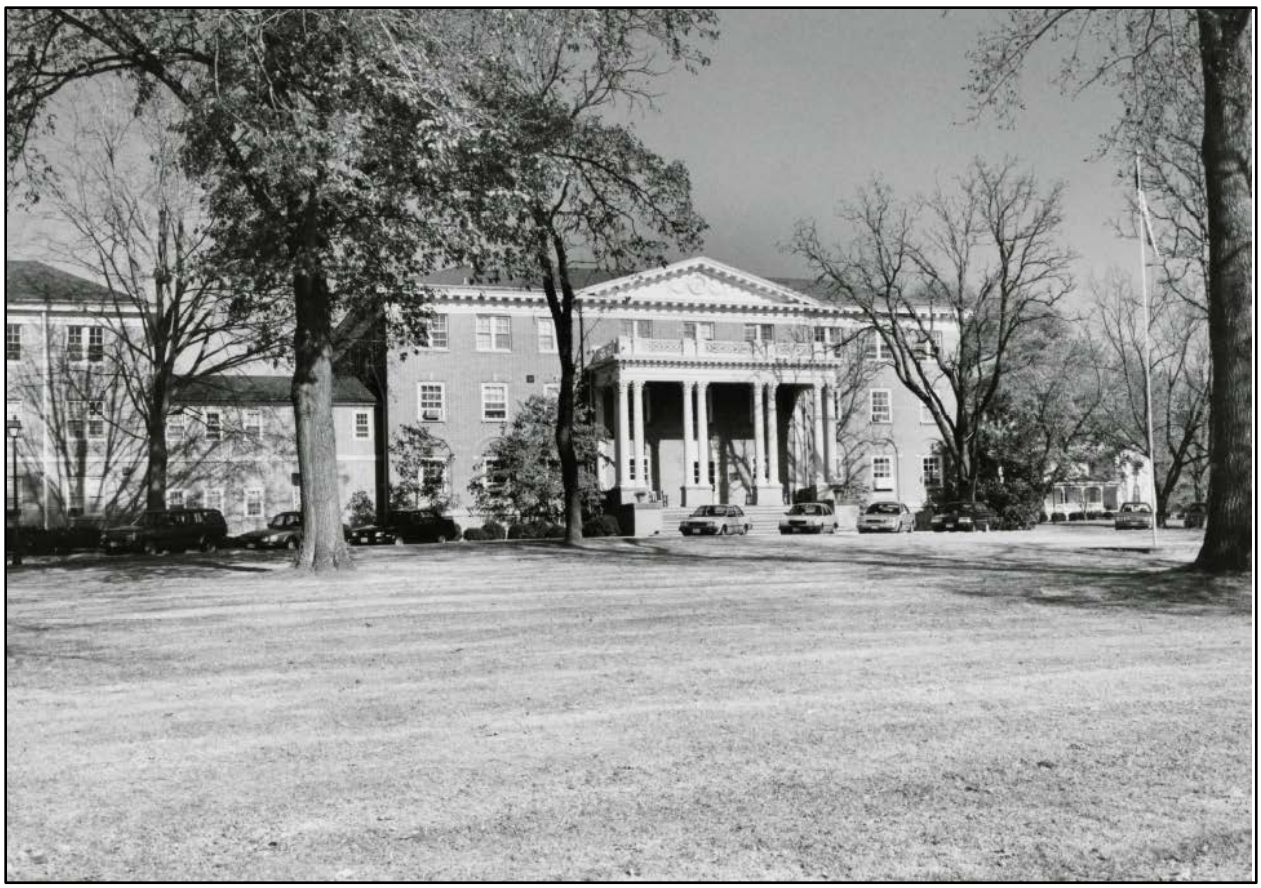


Figure 4.10.2-1. Location of historic properties in relation to the Project vicinity.

Source: NRHP (1974)

Figure 4.10.2-2. Photograph of the Hope Dawn historic building.



Source: NRHP (1992)

Figure 4.10.2-3. Photograph of the Virginia Episcopal School.

4.11 Tribal Resources (18 CFR §5.6(d)(3)(xii))

Federally recognized Indian tribes within Virginia that may attach religious and cultural significance to historic properties in the Project vicinity are listed below (U.S. Bureau of Indian Affairs, 2018):

- Chuckahominy Indian Tribe
- Pamunkey Indian Tribe

State recognized Indian tribes within Virginia that may attach religious and cultural significance to historic properties in the Project vicinity are listed below (Secretary of the Commonwealth, 2018):

- Mattaponi
- Pamunkey
- Chickahominy
- Eastern Chickahominy
- Rappahannock
- Upper Mattaponi
- Nansemond
- Monacan Indian Nation
- Cheroenhaka (Nottoway)
- Nottoway of Virginia
- Patwomeck

At this time, the Licensee is unware of any tribal resources in the Project vicinity.

4.12 Socioeconomic Resources (18 CFR §5.6(d)(3)(xi))

The Project is located within both Amherst and Bedford Counties, Virginia, near the north boundary of the City of Lynchburg, Virginia. The immediate vicinity of the Project Powerhouse and dam is primarily residential to the west of Project and rural/agriculture to the east. The area along the Project boundary, upstream of the Project, is rural. Population centers within a 25-mile radius of the Project dam are listed in Table 4.12-1.

According to the U.S. Census Bureau (2018a), the population of Bedford County is about 69,000 and the population of Amherst County is 32,000, or 89 and 67 persons per square mile, respectively. There are 27,465 housing units in Bedford County and 13,976 housing units Amherst County, or about 35 and 29 housing units per square mile, respectively. Each housing units has an average household size of 2.5 persons (U.S. Census Bureau, 2018a). In addition, the City of Lynchburg, Virginia is the most populated area near the Project. According to the U.S. Census Bureau (2018a), the City of Lynchburg has a population of approximately 76,000, or approximately 1,950 persons per square mile. There are approximately 32,000 housing units within the City of Lynchburg, or approximately 830 units per square mile. Each housing unit has an average household size of 2.3 persons (U.S. Census Bureau, 2018a). Table 4.12-2 provides socioeconomic indicators of Bedford and Amherst Counties and the City of Lynchburg, Virginia.

According to the U.S. Census Bureau (2018b, 2018c, 2018d) the median household incomes for Bedford and Amherst Counties, and the City of Lynchburg are $56,725, $47,002, and $40,728 respectively (Table 4.12-2). Between 2012 and 2016, the unemployment rate for Bedford and Amherst Counties and the City of Lynchburg were estimated to be 4.7, 5.5 and 4.2 percent, respectively (Table 4.12-2). Of the population 16-year of age or older, 55.4 percent (26,484 individuals) in Amherst County, 57.7 percent (62,897 individuals) in Bedford County, and 58.3 percent (38,095 individuals) within the City of Lynchburg are employed (U.S. Census Bureau, 2018b; 2018c, 2018d).

Table 4.12-3 presents sources of employment for the population of Bedford and Amherst Counties, Virginia and the City of Lynchburg, Virginia. The primary sources of employment for both Bedford and Amherst Counties are: (1) education, health care, social services; (2) manufacturing; and (3) retail. In Bedford County, these industries employ 23.6, 13.9, and 12.5 percent of the labor force, 16 years of age and older, respectively. Similarly, these industries employ 26.6, 16.2, and 11.8 percent of the labor force, 16 years of age or older, in Amherst County, respectively. The primary sources of employment within the City of Lynchburg are (1) education, health care, social services; (2) retail; and (3) arts, entertainment, and recreation, and accommodation and food services. In City of Lynchburg, these industries employ 33.3, 12.4, and 11.8 percent of the labor force 16 years of age and older, respectively.

According to Economic Development of Amherst, Virginia (2018) major employers in Amherst County include:

- Clorox/Glad
- Greif
- Englands Stove Works
- Buffalo Air Handling

- S&S/TruBall
- Shibuya Hoppman
- Lynchburg Steel
- Quality Archery Design
- Hermle North America
- Central Virginia Training Center
- Sweet Briar College
- Commercial Steel Erection
- Old Dominion Job Corps
- Cowan Systems
- H.T. Hackney
- Black Box
- Old Dominion Footwear

According to the Bedford Office of Economic Development (2018), major employers in Bedford County include:

- TEVA Pharmaceuticals
- Innovairre (Mail America Communications)
- GP Big Island, LLC
- Centra – Bedford Memorial Hospital
- Sam Moore Furniture
- Carilion Professional Services
- Sentry Equipment Erectors
- Harris Corporation
- Inservice America
- R.S.T. Marketing Associates
- Bedford Weaving Mills
- Cintas
- Valtim
- CommScope Andrew Corporation
- Utility One Source (Forestry Equipment of Virginia)
- Generation Solutions
- Smyth Companies

According to the Lynchburg Economic Development Authority (2018), major employers in the City of Lynchburg include:

- Framatome
- ACS Automatic Conveyor Systems
- BWX Technologies
- Baush and Lomb
- Belvac, Inc.
- Pacific Life
- C.B. Fleet, Inc.
- Centra Health
- Centrail Virginia Community College
- City of Lynchburg
- Delta Star
- Flowers Baking Company
- Flowserve Corporation
- Frito Lay, Inc.
- U.S. Pipe
- Genworth
- Harris
- International Paper
- J. Crew Outfitters
- Liberty University
- Lynchburg College
- Parker Hannifin Corp.
- Randolph College
- R.R. Donnelly Printing
- Sodexho
- Southern Air, Inc.
- Midcontinent Cabinetry
- Tessy Plastics, LLC
- Tri Tech Laboratories, Inc.
- VDOT

- YMCA
- Walmart
- Westminster Canterbury

Table 4.12-1. Population centers within a 25-mile radius of the Project dam.

City/Town	Distance from Project	Area (square miles)	Population[1]
Lynchburg, VA	0 miles	38.6	75,568
Amherst, VA	9 miles North	4.9	2,231
Bedford, VA	18 miles Southwest	8.7	6,222
Glasgow, VA	18 miles Northwest	1.5	1,133
Buena Vista, VA	19 miles Northwest	6.5	6,650
Appomattox, VA	20 miles East	2.3	1,733
Altavista, VA	23 miles South	5.1	6,650

1. U.S. Census Bureau (2018a).

Table 4.12-2. Socioeconomic indicators for Bedford and Amherst Counties and the City of Lynchburg, Virginia.[1]

Parameter/Indicator	Bedford County	Amherst County	City of Lynchburg
Area	776 square miles	479 square miles	38.6 square miles
Population	68,676	32,353	75,568
Population density	88.5 people per square mile	67.5 people per square mile	1,958 people per square mile
Population growth rate (2000 to 2010)	+1.4 % per year	+ 0.1 % per year	+ 1.6 % per year
Housing units	27,465	13,976	31,992
Housing unit density	35.4 units per square mile	29.2 units per square mile	827.0 units per square mile
Per Capita Income[2,3,4]	$29,561	$23,372	$22,016
Median household income[2,3,4]	$56,725	$47,002	$40,728
People with incomes below poverty level[2,3,4]	9.2 %	14.1 %	24.3 %
Unemployment Rate[2,3,4]	4.7 %	5.5 %	4.2 %

1. Data source is U.S. Census Bureau (2018a) unless otherwise noted.
2. U.S. Census Bureau (2018b)
3. U.S. Census Bureau (2018c).
4. U.S. Census Bureau (2018d).

Table 4.12-3. Source of employment for civilian population 16-years of age and older, Bedford and Amherst Counties and the City of Lynchburg, Virginia.

Industry	Bedford County (percent)	Amherst County (percent)	City of Lynchburg (percent)
Agriculture, forestry, fishing and hunting, and mining	1.2	1.8	0.8
Construction	6.9	7.2	4.5
Manufacturing	13.9	16.2	8.9
Wholesale trade	2.2	1.8	1.8
Retail trade	12.5	11.8	12.4
Transportation, warehousing, utilities	6.3	4.4	2.8
Information	1.6	0.8	1.9
Finance and insurance, and real estate and rental and leasing	5.7	5.2	4.2
Professional, scientific, and management, and administrative and waste management services	8.9	6.5	9.6
Educational services, and health care and social assistance	23.6	26.6	33.3
Arts, entertainment, and recreation, and accommodation and food services	6.8	6.6	11.8
Other services, except public administration	5.8	6.7	4.8
Public administration	4.6	4.3	3.2

Source: U.S. Census Bureau (2018b; 2018c, 2018d).

5.0 PRELIMINARY ISSUES AND STUDIES LIST (18 CFR §5.6(d)(4))

This section identifies preliminary issues pertaining to Reusens Hydro's continued operation of the Project based upon the existing resource information summarized in Section 4 and in consultation with state and federal resource agencies. For the purposes of this PAD, Project issues are considered any new changes to the natural and human environment attributable to licensing the continued operation of the Project.

Identification of issues is a key step in the relicensing process because any specific concerns or questions arising from the proposed continued Project operations may need to be addressed in the context of the relicensing proceeding. Reusens Hydro has preliminarily identified the issues that have a nexus to licensing continued Project operations. The list of issues is not final, given that the agencies and other interested parties have not had the opportunity to review this PAD. During Stage 1 of the TLP, public scoping will occur, which the Licensee will initiate upon FERC's issuance of the Notice of Commencement, whereby federal and state resource agencies, Indian tribes, non-governmental organizations, and individuals will be invited to participate in identifying and refining the resource issues to be analyzed in license application, through the Joint Meeting / Site Visit and subsequently by providing written comments and study requests to the Licensee and FERC.

5.1 Issues Pertaining to the Identified Resources

5.1.1 *Geology and Soils*

The large majority of the shoreline within the Project boundary is forested or adjacent to developed lands and railroad which limits erosion. It is not anticipated that significant erosion would be caused by continued Project operation because the majority of shoreline soils are well vegetated, armored, and stable. Therefore, it is not anticipated that Project operations will adversely affect shoreline erosion, and there are currently no known existing issues relating to geology and soils at the Project.

5.1.2 *Water Resources Issues*

As discussed in section 4.3.1, the City of Lynchburg and the ACSA use Project waters for municipal water supply. To protect the water supply intakes, Reusens Hydro operates the Project according to the most recent Operations Plan filed with the Commission on August 9, 2018 per Article 403 of the current license, which prioritizes municipal water supply over hydroelectric generation.

In addition, as discussed in section 4.3.3, existing and recent water quality data indicate that water quality conditions at the Project are generally consistent with state surface water quality standards. Given the long period of record for water quality data, under which the Project was operating, and that the Licensee is proposing to continue to operate the Project as currently licensed, it is not expected that continued operation of the Project would affect attainment of state surface water quality standards. Furthermore, VDEQ identified elevated levels of PCBs in fish tissue, of which the source is unknown. In addition, VDEQ attributed elevated levels of bacteria in the Project vicinity to sources other than the Project. For both PCB and bacteria, TMDLs are in place or scheduled to address these issues. The Licensee is not proposing any

changes to its current operation for the next license term; therefore, continued operation is expected to provide and maintain existing water quality and not result in any resource issues.

In response to the PAD questionnaire the VDGIF commented that they would be requesting a modification of operations to maintain a more natural flow regime because current peaking operations result significant flow alterations below the project, and that flow alterations should result in <10% change from the natural flow regime.

As described in section 4.4 *Water Resources* and 4.4 *Fish and Aquatic Resources,* the impoundment of the Lynchburg Dam backwaters to the tailrace of the Project. Therefore, the natural flow regime of the James River downstream of the Project to the Lynchburg Dam is already modified, and discharges from the Project would attenuate through the Lynchburg Dam impoundment. In addition, during the previous relicensing, a habitat-based instream flow study was performed that consisted of visual evaluations of peaking operations with agency participation and surveys of three river cross-section profiles. Visual evaluations were made of the Project tailrace and within the Lynchburg impoundment, and the cross-section profiles were measured just downstream of Reusens Dam, within the Lynchburg Dam impoundment and downstream of the Lynchburg Dam. Flows surveyed during the visual evaluation of peaking operations had an average hourly flows of 340-360, 180, and 715 cfs. The maximum and minimum water surface elevations measured during the visual observation were subsequently used to assess changes to the wetted perimeter at the three cross-sections. At the cross-sections surveyed below Reusens Dam, within the Lynchburg Dam impoundment, and downstream of the Lynchburg Dam the change in wetted perimeter ranged from -0.01 to -1.31 percent. In response to this study VDGIF commented that the observed autocycling operation of the Project would protect downstream aquatic resources (AEP, 1993). Currently, Reusens Hydro generally operates to release at least 333 cfs continuously into the Project tailrace but may at times deviate below this level due to operational or equipment constraints while still releasing at least 333 cfs on an hourly average basis as required under the current license. Therefore, Reusens Hydro expects that existing flow regime that results from Project operations would continue to protect downstream aquatic resources.

5.1.3 *Fish and Aquatic Resources Issues*

The minimum flow regime, already in place to protect fish and aquatic resources in the Project area, as required by license article 401, states that the Licensee shall pass below the dam an average hourly flow of 333 cfs or inflow to the project reservoir, whichever is less. There are no anadromous fish in the Project area as the Lynchburg dam downstream of the Project does not have fish passage, nor is it certain when fish passage would be required and installed at the Lynchburg dam. Furthermore, restoration efforts to restore American shad to the Upper James River basin have been suspended. The catadromous American eel is known to occur in the Project area, but in very low abundance. Available fish survey data indicates the presence of a diverse resident fish community in the Project area. There are currently no known existing issues relating to fish and aquatic resources at the Project.

In response to the PAD questionnaire both the VDGIF and FWS commented that Reusens Dam is a fish passage barrier and that fish passage is necessary for migratory diadromous and resident fish species. A described in section 4.4.1 *Fish Community, Diadromous Fish* the Lynchburg Dam is considered the upstream extent for all diadromous migratory species, except American eel. Reusens Hydro is aware that at the Lynchburg Dam, the Scott's Mill Hydroelectric Project

is being proposed with fish passage. However, at this time, Scott's Mill Hydro has not filed it's final license application, and has ongoing licensing's studies to complete. Currently it is unknown when the final license application would be filed and when or whether the Commission would issue a license for the Scott's Mill Hydroelectric Project. Therefore, the efficacy of fish passage at the Lynchburg Dam is unknown. As a result of the uncertainty regarding the licensing of the Scott's Mill project and the potential for fish passage there, Reusens Hydro believes that the appropriate baseline regarding fish passage is the existing condition, and pending any future fish passage requirement at the Scott's Mill Project, acknowledges that fish passage may be raised as an issue in the future, potentially post-license issuance.

Also in response the PAD questionnaire both the VDGIF and FWS stated they would be requesting a freshwater mussel survey of the area to document their occurrence. As described in section 4.4.2 *Fish Community, Freshwater Mussels* three mussels surveys were recently conducted in the Project area, both downstream and upstream within the Project impoundment. Results of those surveys indicate that the Project impoundment is not suitable habitat for mussels and no special-status mussel species are present downstream of the Project. Reusens Hydro believes these surveys represent recent available information that sufficiently describes the existing freshwater mussel community in the Project vicinity and that no further studies are required.

5.1.4 *Wildlife and Botanical Resources Issues*

Reuses Hydro is not proposing any new construction, ground-disturbing activity, or change in operation that would affect wildlife and botanical resources. Currently, wildlife resources at the Project are protected through the implementation of the Wildlife Management Plan (see section 4.5.1, *Wildlife Resources*). No existing issues pertaining to wildlife and botanical resources have been identified.

5.1.5 *Wetlands and Riparian and Littoral Habitat Issues*

Reusens Hydro will continue to operate the Project as a currently licensed. There are no changes to inundation levels or hydrologic patterns. No existing issues related to wetlands, riparian areas, or littoral habitat have been identified.

5.1.6 *Rare, Threatened, and Endangered Species Issues*

Reusens Hydro is not proposing any new construction, ground-disturbing activity, or change to operation that would affect rare, threatened, and endangered species. No protected critical habitat has been identified in the Project area and no rare, threatened, or endangered species have been documented in the Project area. Because Reusens Hydro is proposing no changes to project operations there will be no issues pertaining to rare, threatened, or endangered species over the next license term.

5.1.7 *Recreation and Land Use Issues*

Reusens Hydro is not proposing any new recreation facilities. Access to Project waters upstream and downstream are already provided by existing non-Project facilities. There are currently no known existing issues relating to recreation and land use at the Project.

In response to the PAD questionnaire VDGIF commented they would be seeking enhancement of recreational access to the Project impoundment and downstream of the dam. As described in section 4.8.1 *Recreation*, recreational access to the Project impoundment is available at Monacan Park, which is well-maintained, and provides various recreational opportunities. Downstream of the Project, recreational users access the Project tailwater from shore, as well as a non-Project fee-based boat ramp that allows access to the Lynchburg Dam impoundment downstream of the Project. In addition, a recent recreation assessment indicated that on a typical summer weekend the Project recreational utilization is 27 percent, indicating that Project existing recreational facilities are underutilized despite the facilities being well-maintained. Therefore, Reusens Hydro does not foresee the need for recreation enhancement.

5.1.8 *Aesthetics and Visual Resources Issues*

The aesthetic appearance of the Project is maintained through the implementation of a Cultural Resources Management Plan (see section 4.9, *Aesthetic and Visual Resources*). There are currently no known existing issues relating to aesthetic resources at the Project.

5.1.9 *Cultural Resources Issues*

Reusens Hydro is not proposing any new construction, ground-disturbing activity or change in operation that would expose culturally significant resources, making them susceptible to alteration, damage, and theft/vandalism. The existing Cultural Resources Management Plan (see section 4.10.3, *Cultural Resources Management Plan*), currently protects cultural resources at the project. If changes to the Project are found to be necessary during relicensing or after a license has been issued, then Reusens Hydro will consult with the Virginia SHPO before beginning any land-clearing or land-disturbing activities within the Project boundaries. The consultation will determine the need to conduct archaeological or historical survey(s) or to implement further avoidance or mitigation measures before undertaking the action. With no planned ground disturbance, construction activity or change in operation, there are currently no known issues relating to cultural resources at the Project.

5.1.10 *Tribal Resources*

There are currently no known issues relating to tribal resources at the Project.

In response to the PAD questionnaire both the FWS and BIA commented that the Project area has historic interest to Nansemond Indian Nation, Monacan Indian Nation, and Pemunkey Indian Tribe. We note these tribes were provided with the PAD questionnaire, and Reusens Hydro did not receive a response to the solicitation.

5.1.11 *Socioeconomic Resources Issues*

There are currently no known issues relating to socioeconomic resources at the Project.

5.2 Potential Studies or Information Gathering

This section identifies potential studies or information gathering that may be needed to analyze the preliminary resource issues identified in Section 5.1. In accordance with 18 CFR § 16.8(b)(5), within 60 days of the Joint Agency Meeting, each interested resource agency, Indian tribe, and members of the public must provide any and all study requests to the Licensee.

Although it is the desire of the Licensee to use the TLP for the relicensing process, Reusens Hydro requests that all stakeholders follow the Integrated Licensing Process (ILP) study request guidelines as set forth by the Commission and outlined below. Reusens Hydro affirms that the well-defined ILP study request criteria create better study requests, and as such, provide more effective relicensing related data, which will better serve all parties throughout the relicensing process. The ILP Study criteria are as follows:

1. Describe the goals and objectives of each study proposal and the information to be obtained;

2. If applicable, explain the relevant resource management 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 in regard to the proposed study;

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 (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements;

6. Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge; and

7. Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs.

Reusens Hydro is not proposing any resource studies for the relicensing at this time. The Licensee recognizes that there is further opportunity during Stage I of the TLP process for stakeholders to learn more about the Project through review of this PAD and the subsequent public meeting and to submit their concerns regarding resource issues and potential study needs during the written comment period that follows the Licensee's NOI. If Project-related resource impacts are identified during this process, Reusens Hydro will work closely with all of the stakeholders, as necessary, to define study requests and develop study plans.

5.3 Relevant Comprehensive Waterway Plans

Section 10(a)(2)(A) of the Federal Power Act (FPA), 16 USC § 803(a)(2)(A), requires FERC to consider the extent to which a project is consistent with Federal or State comprehensive plans for improving, developing, or conserving a waterway affected by the project.

FERC Order No. 481-A, issued on April 27, 1988, established that FERC will accord FPA Section 10(a)(2)(A) comprehensive plan status to any Federal or state plan that:

- Is a comprehensive study of one or more of the beneficial uses of a waterway or waterways;
- Specifies the standards, the data, and the methodology used; and
- Is filed with the Secretary of the Commission.

FERC's most recent list of Comprehensive Plans was published in January 2018 (FERC, 2018). Based on this list 51 comprehensive plans are available for the Commonwealth of Virginia, of which, 19 pertain to the Project:

- Atlantic States Marine Fisheries Commission. 1999. Amendment 1 to the Interstate Fishery Management Plan for shad and river herring. (Report No. 35). April 1999.
- Atlantic States Marine Fisheries Commission. 2000. Interstate Fishery Management Plan for American eel (*Anguilla rostrata*). (Report No. 36). April 2000.
- Atlantic States Marine Fisheries Commission. 2000. Technical Addendum 1 to Amendment 1 of the Interstate Fishery Management Plan for shad and river herring. February 9, 2000.
- Atlantic States Marine Fisheries Commission. 2008. Amendment 2 to the Interstate Fishery Management Plan for American eel. Arlington, Virginia. October 2008.
- Atlantic States Marine Fisheries Commission. 2009. Amendment 2 to the Interstate Fishery Management Plan for shad and river herring, Arlington, Virginia. May 2009.
- Atlantic States Marine Fisheries Commission. 2010. Amendment 3 to the Interstate Fishery Management Plan for shad and river herring, Arlington, Virginia. February 2010.
- Atlantic States Marine Fisheries Commission. 2013. Amendment 3 to the Interstate Fishery Management Plan for American eel. Arlington, Virginia. August 2013.
- Atlantic States Marine Fisheries Commission. 2014. Amendment 4 to the Interstate Fishery Management Plan for American eel. Arlington, Virginia. October 2014.
- Forest Service. 2004. Jefferson National Forest revised land and resource management plan. Department of Agriculture, Roanoke, Virginia. January 2004.
- Forest Service. 1993. George Washington National Forest revised land and resource management plan. Department of Agriculture, Harrisonburg, Virginia
- National Park Service. The Nationwide Rivers Inventory. Department of the Interior, Washington, D.C. 1993.
- National Park Service. 2013. Chesapeake Bay watershed public access plan. Annapolis, Maryland. January 2013.
- National Park Service. 2010. Comprehensive management plan and environmental assessment for the Captain John Smith Chesapeake National Historic Trail. Annapolis, Maryland. September 2010.
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- Virginia Department of Conservation and Recreation. The 2007 Virginia Outdoors Plan (SCORP). Richmond, Virginia.
- Virginia Department of Conservation and Historic Resources. 1984. The Upper James Scenic River, a report to the Governor and General Assembly. Richmond, Virginia. November 1984.
- Virginia Department of Conservation and Historic Resources. 1987. Lower James Scenic River, a report to the Governor and General Assembly. Richmond, Virginia. November 1987.
- Virginia Department of Conservation and Historic Resources. n.d. Virginia's scenic rivers. Richmond, Virginia.
- Virginia Department of Environmental Quality. 2015. Commonwealth of Virginia State Water Resources Plan. Richmond, Virginia. October 2015.
- Virginia State Water Control Board. 1986. Minimum instream flow study – final report. Annandale, Virginia. February 1986.

6.0 SUMMARY OF CONTACTS/CONSULTATION (18 CFR §5.6(d)(5))

In the development of this PAD, the Licensee exercised due diligence in collecting reasonably available information and data for the Project resources. Reusens Hydro contacted state and federal agencies, local governments, and other non-governmental organizations to obtain as much information about Project resources as possible. Agencies and other stakeholders were also queried about their interest in the FERC relicensing process and were informed of the Licensee's plans to request permission from FERC to use the TLP. No agencies or stakeholders contacted during the development of the PAD expressed any objection to or concerns about the proposed use of the TLP. Several agencies provided Reusens Hydro with the names and contact information for agency personnel to include on the service list for distribution of the Reusens Project NOI and PAD. Appendix A contains the complete Summary of contacts used to prepare the PAD, and Appendix B provides the results of the stakeholder outreach for the development of this Lakeport Project PAD. Table 6.0-1 provides a summary of the comments received from the respondents.

Table 6.0-1. Summary or responses from the questionnaire distribution concerning resource issues at the Project.

Stakeholder	Organization	Plans to Participate in the Relicensing	Comments Regarding Resource Issues
Randy Casey	VA Division of Mined Land Reclamation	No	None
Roberta Rhur	VA Department of Conservation and Recreation	Not answered	None; questionnaire not returned; responded via e-mail
Gary Christie	Central Virginia Planning District Commission	Not answered	None
Scott Smith	VA Dept. Game and Inland Fish	Yes	• Looking for options to enhance recreational access to the project area, in the pool and below the dam. • Current peaking operations result in flow significant flow alterations below the project. Flow alterations should result in <10% change from the natural flow regime, which is not the current case. We will be requesting a modification of operations to maintain a more natural flow regime. • Reusens Dam is a fish passage barrier. We will be requesting facilities to pass migratory species (American eel, sea lamprey, American shad), as well as resident species. • Due to the potential for rare/listed mussel species, we will be requesting a mussel survey for the project.
Mark Fendig	Luminaire Tech Inc.	Yes	None
Mike Johnson	VA Marine Resources Commission	Not answered	None; questionnaire not returned; responded via letter
David Sutherland	U.S. Fish and Wildlife Service	Yes	• American Eel, Long Eared Bat, James Spiny Mussel, Green Floater Mussel, Brook Floater Mussel are of interest. Surveys will be needed for all species as was conducted at other projects on river. • Both upstream and downstream American eel passage will also likely be a priority for us. • This area is of historic interest to the Monacan Indian Nation. The Federal Energy Regulatory Commission has a responsibility to conduct complete tribal consultation before approving a project per 36 CFR Part 800.2(c)(2)(ii).

Stakeholder	Organization	Plans to Participate in the Relicensing	Comments Regarding Resource Issues
Harold Peterson	Bureau of Indian Affairs	Yes	• Nansemond Indian Nation, Monacan Indian Nation, Pemunkey Indian Tribe have historic interest in this location.

7.0 PUBLIC UTILITY REGULATORY POLICY ACT BENEFIT

In accordance with 18 CFR §5.6(e), the applicant is indicating in this document that it intends to exercise its rights under Section 210(e) of the Public Utility Regulatory Policies Act of 1978 (PURPA). The project is not located at a new dam or diversion. The applicant reserves the right to exercise any additional rights available to it under PURPA in the future.

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Appendix A – Summary of Contacts Solicited for Information to Prepare the PAD

FEDERAL	
John T. Eddins Advisory Council on Historic Preservation 401 F Street N.W. Suite 308 Washington, DC 20001-2637	Bruce Maytubby Regional Director Bureau of Indian Affairs 545 Marriott Drive, Suite 700 Nashville, TN 37214-2751
Office of the Solicitor U.S. Bureau of Indian Affairs 1849 C Street, NW, MS 6557 Washington, DC 20240	Office of Trust Services U.S. Bureau of Indian Affairs 1849 C St NW, MS-4655-MIB Washington, DC 20240
Zach Reichold Manager Bureau of Land Management Lower Potomac Field Station 10406 Gunston Rd. Lorton VA, 22079	FERC Contact U.S. Bureau of Land Management Land & Renewable Resources 1849 C St NW Washington, DC 20240
Gregory L. Hogue Office of Environmental Policy and Compliance Department of Interior 75 Spring St SW, Room 1144 Atlanta, GA 30303-3309	Kyle Chelius Regional Contact US EPA Region III 1650 Arch St Philadelphia, PA 19103-2029
Trey Glen U.S. EPA Region IV 61 Forsyth St SW Atlanta, GA 30303-8931	Federal Emergency Management Agency 615 Chestnut Street One Independence Mall, Sixth Floor Philadelphia, PA 19106-4404
Wayne King Regional Engineer Office of Energy Projects Division of Dam Safety and Inspections Atlanta Regional Office Gwinnett Commerce Center 3700 Crestwood Pkwy, NW Suite 950 Duluth, GA 30096	Julie Crocker Energy Team Lead Greater Atlantic Region Fisheries Office National Marine Fisheries Service 55 Great Republic Drive Gloucester, MA 01930

Kevin Mendik, ESQ NPS Hydro Prgm Coord U.S. National Park Service 15 State Street 10th floor Boston, MA 02109	The Honorable Mark Warner United States Senate 703 Hart Senate Office Building Washington, DC 20510
The Honorable Tim Kaine United States Senate 231 Russell Senate Office Building Washington, DC 20510	U.S. Army Corps of Engineers Norfolk District 803 Front St Norfolk, VA 23510-1011
US Army Corps of Engineers Louisville District PO Box 59 Louisville, KY	Divisional Office Regulatory Branch U.S. Army Corps of Engineers 550 Main St; Rm 10524 Cincinnati, OH 45202-3222
David Purser NEPA Coordinator U.S. Forest Service 1720 Peachtree St NW Atlanta, GA 30309	Wendi Weber Regional Director USFWS Northeast Region 300 Westgate Center Dr. Hadley, MA 01035
Sherry White Assistant Regional Director USFWS Northeast Region 300 Westgate Center Dr. Hadley, MA 01035	Cindy Schulz Field Supervisor USFWS Virginia Field Office 6669 Short Lane Gloucester, VA 23061
Tony Anderson Supervisory Fish and Wildlife Biologist USFWS Virginia Field Office 6669 Short Lane Gloucester, VA 23061	David W. Sutherland, SR Fish and Wildlife Biologist Chesapeake Bay Field Office 177 Admiral Cochrane Dr. Annapolis, MD 21401

Virginia and West Virginia Water Science Center Mark Bennett Center Director 12201 Sunrise Valley Drive Reston, VA 20192	Rep. Bob Goodlatte 916 Main Street Suite 300 Lynchburg, VA 24504
STATE	
Tony Cario Environmental Specialist Office of Water Supply Department of Environmental Quality P.O. Box 1105 Richmond, VA 23218	David K. Paylor Director Virginia Department of Environmental Quality P.O. Box 1105 Richmond, VA 23218
Jeffery L. Hurst Regional Director Virginia Department of Environmental Quality Southwest Region 355-A Deadmore St. Abington, VA 24210	Scott Smith Region 2 Fisheries Manager VA Dept. of Game and Inland Fisheries 1132 Thomas Jefferson Rd. Forest, VA 24551 Scott.smith@dgif.virginia.gov 434-525-7522 (ext. 106)
Timothy Hatton Natural Heritage Director VA DCR 600 E. Main St., 24th Floor Richmond, VA 23219 timothy.hatton@dcr.virginia.gov	Virginia Dept. of Game and Inland Fisheries Region 2 Office 1132 Thomas Jefferson Rd. Forest, VA 24551 dgifweb@dgif.virginia.gov
Christine Bell Community Engagement Coordinator Virginia Department of Economic Development 901 East Cary St Richmond, VA 23219	Virginia Office of the Attorney General 900 E Main St. Richmond, VA 23219-3513
Virginia Soil and Water Conservation Districts Kendall Tyree, Ph.D. Executive Director 7308 Hanover Green Dr., Suite 100 Mechanicsville, VA 23111	Virginia Department of Historic Resources (SHPO) Michael Barber State Archaeologist 2801 Kensington Ave Richmond, VA 23221

Robbie Rhur Environ. Program Planner Virginia Department of Conservation and Recreation 600 East Main Street Floor 17 Richmond, VA 23219-2094	Virginia Department of Agriculture and Consumer Services Commissioner PO Box 1163 Richmond, VA 23218-1163
Randy Casey Division Director Virginia Division of Mines, Minerals, and Energy PO Box 900 Big Stone Gap, VA 24219-0900	Mike Johnson Virginia Marine Resources Commission 2600 Washington Ave Fl 3 Newport News, VA 23607
Lynn Crump, PLA, ASLA, Environmental Programs Planner DCR -Planning & Recreation Resources 600 East Main Street, 24th Floor, Richmond, VA 23219	Virginia State Corporation Commission 1300 E. Main Street P.O. Box 1197 Richmond, Virginia 23218
LOCAL	
Bob Hopkins Amherst County Assistant Director/Engineering Manager 153 Washington St PO Box 390 Amherst, VA 24521	Kevin Leamy Director of Natural Resources County of Bedford 122 East Main Street, Suite G-03 Bedford, VA 24523
Traci Blido Economic Development Director County of Bedford 122 East Main Street, Suite 202 Bedford, VA 24523	Bonnie Svrcek City Manager City of Lynchburg 900 Church Street City Hall, 3rd Floor Lynchburg, VA 24504
Shelia Phipps Librarian Jonnie B. Deel Memorial Library PO Box 650 Clintwood, VA 24228-0650	Northern Virginia Regional Park Authority 5400 Ox Rd Fairfax Station, VA 22039-1022

Donald Baker Town of Clintwood PO Box 456 Clintwood, VA 24228-0456	Sara Lu Christian Director, Recreation and Parks P.O. Box 556 Amherst VA, 24521
Frank Rogers County Administrator P.O. Box 100 Rustburg, VA 24588	Carl Boggess Bedford County Administrator 122 East Main Street, Suite 202 Bedford, VA 24523
Susan M. Adams Appomattox County Administrator 153-A Morton Lane PO Box 863 Appomattox, VA 24522	Gary F. Christie Executive Director Regional 2000 Regional Commission 828 Main Street, 12th floor Lynchburg, VA 24504
NON-GOVERNMENTAL ORGANIZATION	
James River Association Bill Street 4833 Old Main Street Richmond, VA 23231	Trout Unlimited Steve Romine Skyline Chapter
Mark Singleton, Executive Director American Whitewater PO Box 1540 Cullowhee, NC 28723	American Rivers Mid-Atlantic Region 1101 14th Street, NW, Suite 1400 Washington, DC 20005
Wade Blackwood American Canoe Association Executive Director 1340 Central Blvd, Suite 210 Fredericksburg, VA 22401	William E. Trout, III Director American Canal Society, Inc. 3806 S. Amherst Hwy Madison Heights, VA 24572

William Stokes Executive Director Flannagan Water Authority 52 Flannagan Dam Road Haysi, VA 24256	Melanie Stine Conservation Coastal Canoeists PO Box 566, Richmond, VA 23218
James River Association Rob Campbell 4833 Old Main Street Richmond, VA 23231	
TRIBAL	
Russell Townsend Tribal Historic Preservation Officer Eastern Band of Cherokee Indians PO Box 455 Cherokee, NC 28719	Dean Branham Monacan Indian Nation Inc. P.O. Box 1136 Madison Heights, VA 24572
Karenne Wood Monacan Nation Director, Virginia Indian Programs	Ms. Erin Thompson, THPO Absentee-Shawnee Tribal Historical Preservation Officer 2025 S. Gordon Cooper Drive Shawnee, OK 74801
Brett Barnes, THPO Eastern Shawnee Tribe of Oklahoma Tribal Historical Preservation Officer P.O. Box 350 Seneca, MO 64865	Shawnee Tribe Tribal Historical Preservation Officer P.O. Box 189 21 North Eight Tribes Trail Miami, OK 74355
Kimberley Penrod Delaware Nation Director, Cultural Resources/106 31064 State Highway 281 P.O. Box 825 Anadarko, OK 73005	Cherokee Nation Bill John Baker, Principal Chief & THPO PO Box 984 Tahlequah, OK 74465-0948

United Keetoowah Band of Cherokee Indians Chief PO Box 746 Tahlequah, OK 74465	Tuscarora Nation, Chief Leo Henry 2006 Mt. Hope Road Lewiston, NY 14092
Pamunkey Indian Tribe Chief Robert Gray 1054 Pocahontas Trail King William, VA 23086	Nansemond Indian Tribal Association 1001 Pembroke Lane Suffolk, VA 23434
OTHER	
Mark Fendig Scotts Mill Hydro, LLC P.O. Box 13 Coleman Falls, VA 24536	

Appendix B – Stakeholder Outreach and Responses

EAGLE CREEK
RENEWABLE ENERGY
— EXCELLENCE IN HYDRO —

November 6, 2018

Re: Request for Information for the Federal Energy Regulatory Commission Relicensing of the Reusens Hydroelectric Project (FERC No. 2376)

Dear Stakeholder:

Eagle Creek Reusens Hydro, LLC (Reusens Hydro), a subsidiary of Eagle Creek Renewable Energy, LLC, is the Licensee and operator of the Reusens Hydroelectric Project (Project). The Reusens Project is an existing hydroelectric facility located on the James River in Bedford and Amherst Counties, Virginia, and is licensed by the Federal Energy Regulatory Commission (FERC) as Project No. 2376. The FERC license for the Project expires on February 29, 2024.

Reusens Hydro intends to pursue a new license for the Project and is beginning the FERC relicensing process. Louis Berger has been retained to assist Reusens Hydro in developing the Pre-Application Document (PAD), one of the first steps in the FERC relicensing process. The PAD is a document that summarizes all existing, relevant, and reasonably available information on the Project that has been collected and obtained by Reusens Hydro, state and federal agencies, and non-governmental organizations.

Reusens Hydro plans to follow FERC's Traditional Licensing Process (TLP) to relicense the Project. The original license for the Project was issued on March 18, 1994 for a 30 year term. As such, the final license application for the Project must be filed with FERC no later than February 28, 2022 (two years prior to the expiration date). According to FERC regulations, a Notice of Intent (NOI) to license the project and PAD must be filed not earlier than 5-1/2 years and no later than 5 years prior to the license expiration, which are August 29, 2018 to February 28, 2019, respectively. Reusens Hydro will prepare and file the NOI and PAD with FERC on or before February 28, 2019.

On behalf of Reusens Hydro, Louis Berger is gathering information to support preparation of the PAD. Consistent with this effort, we respectfully request any information your organization may have collected regarding the environmental, recreational and/or cultural resources along the James River in the vicinity of the Project. Additionally, we kindly ask that you complete the enclosed questionnaire and provide copies of any pertinent information as soon as possible, **but no later than Friday November 30, 2018**. Pertinent information would be applicable to subject matters related to the PAD's Table of Content, as described below.

Eagle Creek Renewable Energy
116 N. State Street, PO Box 167, Neshkoro, WI 54960-0167
Tel: 920-293-4628 – Fax: 920-293-8087
www.eaglecreekre.com

Table of contents for a typical PAD:

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2) Proposed Communications Protocol for the Relicensing Process Plan and Schedule
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    a) Issues pertaining to the identified resources
    b) Potential studies or information gathering requirements associated with the identified issues
    c) Relevant qualifying Federal and state or tribal comprehensive waterway plans
    d) Relevant resource management plans
6) Summary of Contacts
7) References

The Project is operated by Reusens Hydro as a peaking facility. The Reusens Project, which consists of a 24-foot-high concrete dam and spillway, eight floodgates, and a 25-foot-high curved concrete auxiliary spillway with flashboards, impounds a 500-acre reservoir. There are two powerhouses—A and B stations—that are licensed with FERC for 7.5 megawatts (MW) and 5.0 MW of capacity, respectively, from five 2.5-MW generators for a total installed generating capacity of 12.5 MW.

The Reusens Project has a minimum flow requirement as specified by Article 401 of the current license. Article 401 states: (1) when inflow to the reservoir is less than 500 cubic feet per second (cfs), the Project must release 333 cfs, or reservoir inflow, whichever is less; (2) when inflow to the reservoir is between 500 and 3,300 cfs, the Project must release 333 cfs; (3) when inflow to the reservoir is 3,300 to 4,000 cfs, the Project must release 1,000 cfs; and (4) when inflow to the reservoir is greater than 4,000 cfs, the Project must release the equivalent of reservoir inflow. In addition, Article 402 requires sufficient flows in the James River and water levels in the forebay (minimum 547.0 feet National Geodetic Vertical Datum) to minimize effects on two municipal water pumps for the City of Lynchburg. Article 402 is met through implementing an Operations Plan required by Article 403; Eagle Creek updated and filed the plan with FERC on August 8, 2018. Several other license articles require development of plans to protect and monitor environmental resources at the Project, including a Wildlife Management Plan for Chestnut Island and Cultural Resources Management Plan. In addition, Article 410 of the current license required the Licensee of the Project to develop a canoe portage plan. However, after iterations and review of multiple proposed plans, Commission staff determined providing a canoe portage at the Project is not feasible because of railroad right-of-way restrictions on the Lynchburg side of the river and steep topography on the Amherst side of the river, which would result in an unreasonably high-cost for providing safe public portage. Additionally, Monacan Park, located three miles upstream, provides sufficient public access. Therefore, the Commission deleted Article 410 from the license by Order Amending License and Deleting Article 410 dated February 7, 1995.

Figures 1 and 2 provide the location of the Project and major project features, respectively. The Reusens Hydroelectric Project facilities consist of:

- a 24-foot high, 416-foot long concrete dam and spillway with eight 16.75-foot high floodgates;
- a 25-foot high, 125-foot long concrete curved auxillary spillway with 7-foot high flashboards
- a 500-acre impoundment
- Two powerhouses, Station A and Station B
- Station A contains three 2.5 MW generating units with a total installed capacity of 7.5 MW;
- Station B contains two 2.5 MW generation units with a total installed capacity of 5.0 MW; and
- Other related facilities.

The information you provide will assist Reusens Hydro in obtaining all available data as well as assess potential issues for the relicensing. Paper or electronic copies (preferred) of the pertinent information may be sent to:

Matthew Burak
Louis Berger
9 Jarvis Avenue
Holyoke, MA 01040
mburak@louisberger.com

Reusens Hydro is promoting the use of electronic communications and requests that all parties who intend to be engaged in the relicensing process provide your email address via the attached questionnaire. For those entities where we do not have email information we are distributing material via hard copy mailings. If you prefer to receive materials in a particular method please indicate such on the questionnaire.

If you have any questions please do not hesitate to contact me at 973-998-8400.

Sincerely,

Michael Scarzello
Director
Eagle Creek Renewable Energy, LLC

Eagle Creek Renewable Energy
116 N. State Street, PO Box 167, Neshkoro, WI 54960-0167
Tel: 920-293-4628 – Fax: 920-293-8087
www.eaglecreekre.com

Reusens Hydroelectric Project FERC No 2367
Pre-Application Document Stakeholder Questionnaire

Eagle Creek Reusens Hydro, LLC (Reusens Hydro) a subsidiary of Eagle Creek Renewable Energy, LLC is beginning the Federal Energy Regulatory Commission (FERC) relicensing process for the existing Reusens Hydroelectric Project (FERC No. 2376). The Reusens Hydroelectric Project (Project) is located on the James River near the City of Lynchburg in Bedford and Amherst Counties. Reusens Hydro is preparing a Pre-Application Document (PAD) for the Project that provides FERC, resource agencies and other stakeholders with existing, relevant, and reasonably available information regarding the Project to help identify issues and related information needs, develop study requests and study plans, and prepare environmental documents analyzing project impacts. This Questionnaire will be used to help identify sources of existing, relevant, and reasonably available information that is not in Reusen Hydro's possession.

Please return this questionnaire and any pertinent information as soon as possible or no later than Friday, November 30, 2018 to:

Matthew Burak
Louis Berger
9 Jarvis Avenue
Holyoke, MA 01040
mburak@louisberger.com

Hardcopy mailings include a self-addressed return envelope.

1. Information about person completing the questionnaire:

Name and Title:	Randy Casey, Director
Organization:	Division of Mined Land Reclamation
Address:	3405 Mountain Empire Road Big Stone Gap, VA 24219
Phone:	276-523-8286
E-mail Address:	randy.casey@dmme.virginia.gov

2. Do you or your organization know of existing, relevant, and reasonably available information that describes the existing environment of the Project (i.e., information regarding the resource areas listed below in the vicinity of the Project)?

_____ Yes (please complete 2a through 2e) X____ No (please go to question 3)

a) Please indicate by "X" next to the specific resource area or areas that the information relates to:

_____ Geology and Soil Resources

_____ Water Resource

_____ Fish and Aquatic Resources

_____ Wildlife and Botanical Resources

_____ Wetlands, Riparian, and Littoral Habitat Resources

_____ Other Resource Information

_____ Recreation and Land use Resources

_____ Aesthetic Resources

_____ Cultural/Historical Resources

_____ Socioeconomic Resources

_____ Tribal Resources

_____ Rare, threatened and endangered species

b) Please briefly describe the information or list the available documents (additional writing space is provided on page 4 of this questionnaire).

c) Where can Reusens Hydro obtain this information (additional writing space is provided on page 4 of this questionnaire)?

d) Please indicate whether there is a specific representative you wish to designate for a potential follow-up contact by a Reusens Hydro representative for the resource area or areas indicated above (additional information may be provided on page 4 of this questionnaire).

Representative Contact Information

Name and Title:
Organization:
Address:

Phone:
E-mail Address:

e) Based on the specific resources listed in 2a, are you aware of any specific issues pertaining to the resource you identified? For example, the historic significance of the facilities must be addressed during the relicensing (additional information may be provided on page 4 of this questionnaire).

_____ Yes (please list the specific issues below) X____ No

Resource Area	Specific Issue

3. Do you or your organization plan to participate in the Reusens Hydroelectric Project relicensing proceeding?

_____ Yes X____ No

If yes, please provide the contact information for the representative(s) of your organization that will be participating in the relicensing process:

Name and Title:
Organization:
Address:

Phone:
E-mail Address:

If no, please confirm that you do not want to receive any further correspondence associated with this proceeding, by indicating so below:

X Please remove me and the entity that I represent from the mailing list.

4. We are interested in your comments. If you have comments and/or questions regarding the Reusens Hydroelectric Project, PAD, or the relicensing proceeding please provide them below.

***** If you know of any other stakeholder not included on the e-mail list but should have been we kindly ask that you forward the e-mail and questionnaire you received onto them. *****

Additional Comments:

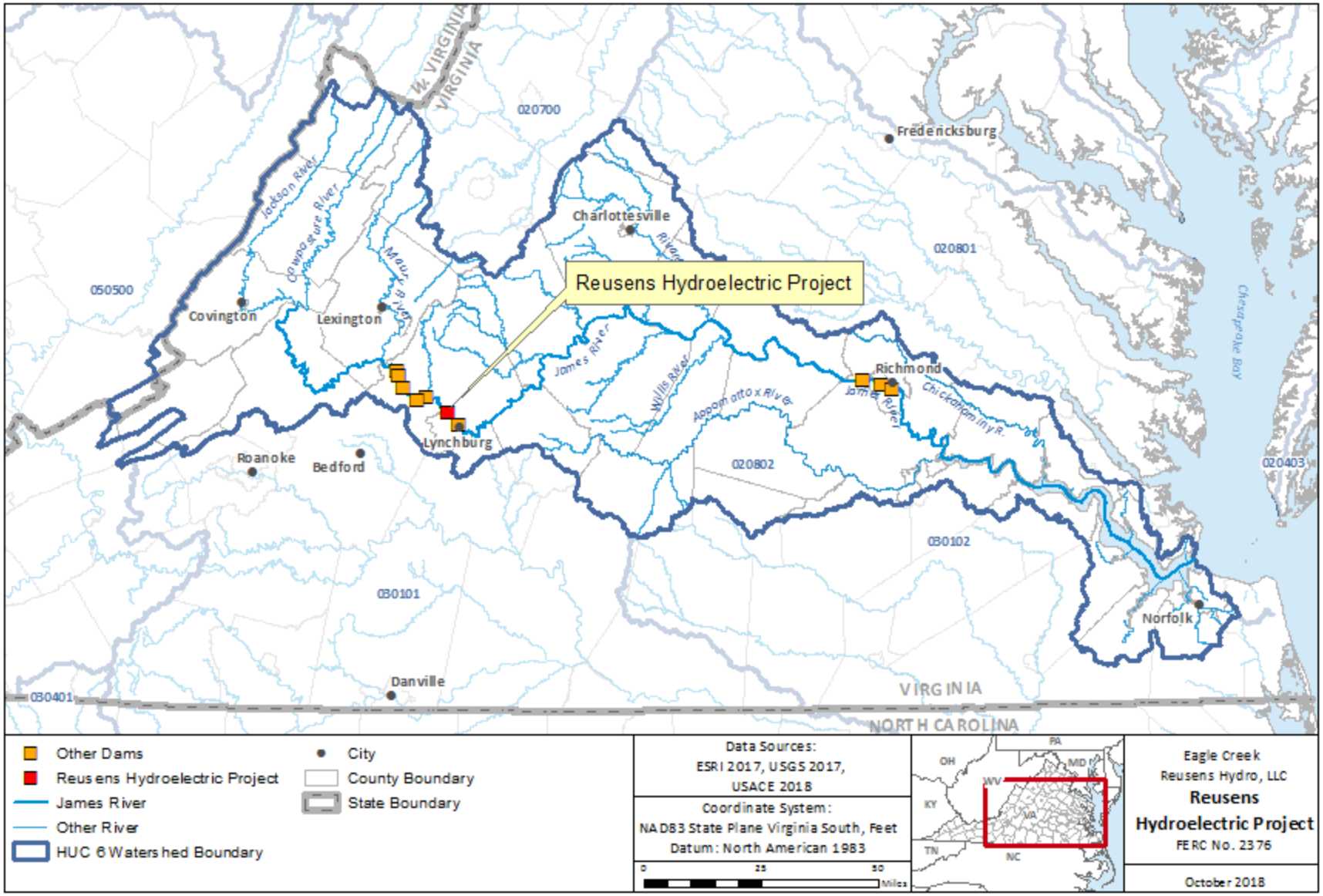

Figure 1: Location of the Reusens Hydroelectric Project.

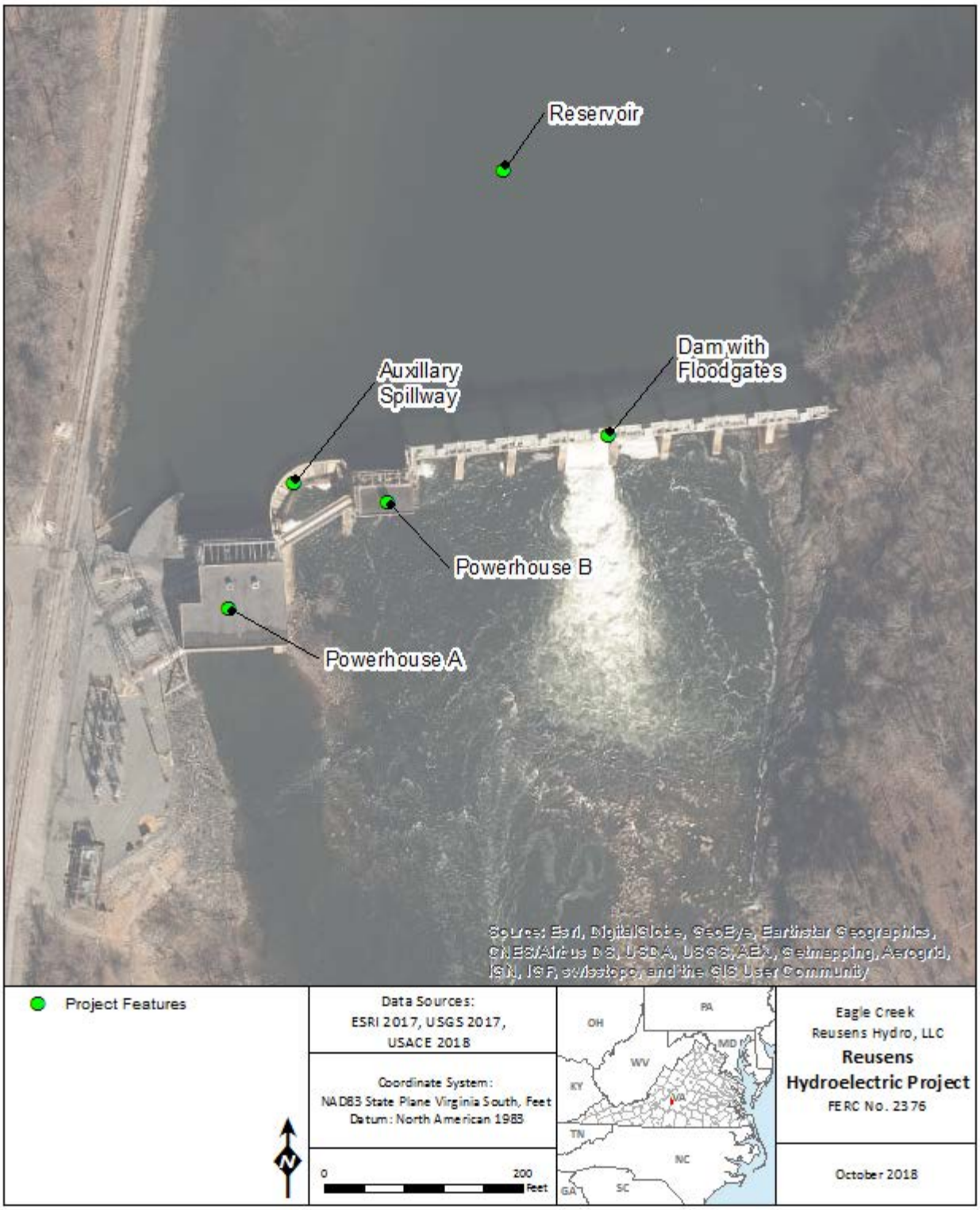

Figure 2: Main features of the Reusens Hydroelectric Project.

Burak, Matthew

From: Rhur, Roberta <robbie.rhur@dcr.virginia.gov>
Sent: Wednesday, November 07, 2018 4:29 PM
To: Burak, Matthew
Cc: nhreview (DCR)
Subject: Eagle Creek Reusens Hydro, LLC (Reusens Hydro)

External

Afternoon Matthew;

I'm responding the review request for Reusens Hydro project. Lynn Crump, with my office, will respond to you; however, you might also require a review by the Division of Natural Heritage (copied here). You can find the review process request here: http://www.dcr.virginia.gov/natural-heritage/infoservices

Thank you for the opportunity to comment.
--
Robbie Rhur
DCR VOP Project Planner and Environmental Review Coordinator
600 East main Street
Richmond VA 23219
804-371-2594

Reusens Hydroelectric Project FERC No 2367
Pre-Application Document Stakeholder Questionnaire

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Matthew Burak
Louis Berger
9 Jarvis Avenue
Holyoke, MA 01040
mburak@louisberger.com

Hardcopy mailings include a self-addressed return envelope.

1. Information about person completing the questionnaire:

Name and Title:	GARY CHRISTIE
Organization:	CENTRAL VIRGINIA PLANNING District Commission
Address:	828 MAIN STREET, 12th FLOOR LYNCHBURG VA 24504
Phone:	434 845 3491
E-mail Address:	GCHRISTIE @ REGION2000.ORG

2. Do you or your organization know of existing, relevant, and reasonably available information that describes the existing environment of the Project (i.e., information regarding the resource areas listed below in the vicinity of the Project)?

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Resource Area	Specific Issue

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_____ Yes _____ No WE WOULD LIKE TO STAY ON THE MAILING LIST

If yes, please provide the contact information for the representative(s) of your organization that will be participating in the relicensing process:

Name and Title:	GARY CHRISTIE, EXECUTIVE DIRECTOR
Organization:	CENTRAL VIRGINIA PLANNING District Commission
Address:	6828 MAIN STREET, 12TH FLOOR LYNCHBURG, VA 24504

Phone:	434 845 3491
E-mail Address:	SCHRISTIE @ REGION2000.ORG

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Additional Comments:

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RENEWABLE ENERGY
— EXCELLENCE IN HYDRO —

November 6, 2018

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Louis Berger
9 Jarvis Avenue
Holyoke, MA 01040
mburak@louisberger.com

Reusens Hydro is promoting the use of electronic communications and requests that all parties who intend to be engaged in the relicensing process provide your email address via the attached questionnaire. For those entities where we do not have email information we are distributing material via hard copy mailings. If you prefer to receive materials in a particular method please indicate such on the questionnaire.

If you have any questions please do not hesitate to contact me at 973-998-8400.

Sincerely,

Michael Scarzello
Director
Eagle Creek Renewable Energy, LLC

Eagle Creek Renewable Energy
116 N. State Street, PO Box 167, Neshkoro, WI 54960-0167
Tel: 920-293-4628 – Fax: 920-293-8087
www.eaglecreekre.com

Reusens Hydroelectric Project FERC No 2367
Pre-Application Document Stakeholder Questionnaire

Eagle Creek Reusens Hydro, LLC (Reusens Hydro) a subsidiary of Eagle Creek Renewable Energy, LLC is beginning the Federal Energy Regulatory Commission (FERC) relicensing process for the existing Reusens Hydroelectric Project (FERC No. 2376). The Reusens Hydroelectric Project (Project) is located on the James River near the City of Lynchburg in Bedford and Amherst Counties. Reusens Hydro is preparing a Pre-Application Document (PAD) for the Project that provides FERC, resource agencies and other stakeholders with existing, relevant, and reasonably available information regarding the Project to help identify issues and related information needs, develop study requests and study plans, and prepare environmental documents analyzing project impacts. This Questionnaire will be used to help identify sources of existing, relevant, and reasonably available information that is not in Reusen Hydro's possession.

Please return this questionnaire and any pertinent information as soon as possible or no later than Friday, November 30, 2018 to:

Matthew Burak
Louis Berger
9 Jarvis Avenue
Holyoke, MA 01040
mburak@louisberger.com

Hardcopy mailings include a self-addressed return envelope.

1. Information about person completing the questionnaire:

Name and Title: Scott M. Smith; Regional Fisheries Manager
Organization: Virginia Dept. of Game and Inland Fisheries
Address: 1132 Thomas Jefferson Rd., Forest, VA 24551
Phone: 434/525-7522
E-mail Address: Scott.Smith@dgif.virginia.gov

2. Do you or your organization know of existing, relevant, and reasonably available information that describes the existing environment of the Project (i.e., information regarding the resource areas listed below in the vicinity of the Project)?

__X__ Yes (please complete 2a through 2e) _____ No (please go to question 3)

a) Please indicate by "X" next to the specific resource area or areas that the information relates to:

_____ Geology and Soil Resources

_____ Water Resource

__X__ Fish and Aquatic Resources

__X__ Wildlife and Botanical Resources

_____ Wetlands, Riparian, and Littoral Habitat Resources

_____ Other Resource Information

__X__ Recreation and Land use Resources

_____ Aesthetic Resources

_____ Cultural/Historical Resources

_____ Socioeconomic Resources

_____ Tribal Resources

__X__ Rare, threatened and endangered species

b) Please briefly describe the information or list the available documents (additional writing space is provided on page 4 of this questionnaire). Angler use data (James River); Fish community data (James R.); Terrestrial wildlife information; Wildlife Action Plan; Listed species database.

c) Where can Reusens Hydro obtain this information (additional writing space is provided on page 4 of this questionnaire)? Much of this can be obtained from our Environmental Services Section (ESS), contact = ProjectReview@dgif.virginia.gov Additional information can be obtained from the Forest Regional Office, contact = Scott.Smith@dgif.virginia.gov

d) Please indicate whether there is a specific representative you wish to designate for a potential follow-up contact by a Reusens Hydro representative for the resource area or areas indicated above (additional information may be provided on page 4 of this questionnaire).

Representative Contact Information

Name and Title: Scott M. Smith; Regional Fisheries Manager
Organization: Virginia Dept. of Game and Inland Fisheries

Address: 1132 Thomas Jefferson Rd., Forest, VA 24551
Phone: 434/525-7522
E-mail Address: Scott.Smith@dgif.virginia.gov

e) Based on the specific resources listed in 2a, are you aware of any specific issues pertaining to the resource you identified? For example, the historic significance of the facilities must be addressed during the relicensing (additional information may be provided on page 4 of this questionnaire).

__**X**__ Yes (please list the specific issues below) _____ No

Resource Area	**Specific Issue**
Recreation	Looking for options to enhance recreational access to the project area, in the pool and below the dam.
Water Resources	Current peaking operations result in flow significant flow alterations below the project. Flow alterations should result in <10% change from the natural flow regime, which is not the current case. We will be requesting a modification of operations to maintain a more natural flow regime.
Fish and Aquatic Resources	Reusens Dam is a fish passage barrier. We will be requesting facilities to pass migratory species (American eel, sea lamprey, American shad), as well as resident species.
Rare, Threatened, and Endangered Species	Due to the potential for rare/listed mussel species, we will be requesting a mussel survey for the project.

3. Do you or your organization plan to participate in the Reusens Hydroelectric Project relicensing proceeding?

__**X**__ Yes _____ No

If yes, please provide the contact information for the representative(s) of your organization that will be participating in the relicensing process:

Name and Title: Scott M. Smith, Brian Watson, Alan Weaver, Dan Goetz, George Palmer

Organization: Virginia Dept. of Game and Inland Fisheries
Address: various
Phone: various
E-mail Address: Scott.Smith@dgif.virginia.gov , Brian.Watson@dgif.virginia.gov , Alan.Weaver@dgif.virginia.gov , Dan.Goetz@dgif.virginia.gov , George.Palmer@dgif.virginia.gov

If no, please confirm that you do not want to receive any further correspondence associated with this proceeding, by indicating so below:

_____Please remove me and the entity that I represent from the mailing list.

4. We are interested in your comments. If you have comments and/or questions regarding the Reusens Hydroelectric Project, PAD, or the relicensing proceeding please provide them below.

***** If you know of any other stakeholder not included on the e-mail list but should have been we kindly ask that you forward the e-mail and questionnaire you received onto them. *****

Additional Comments:

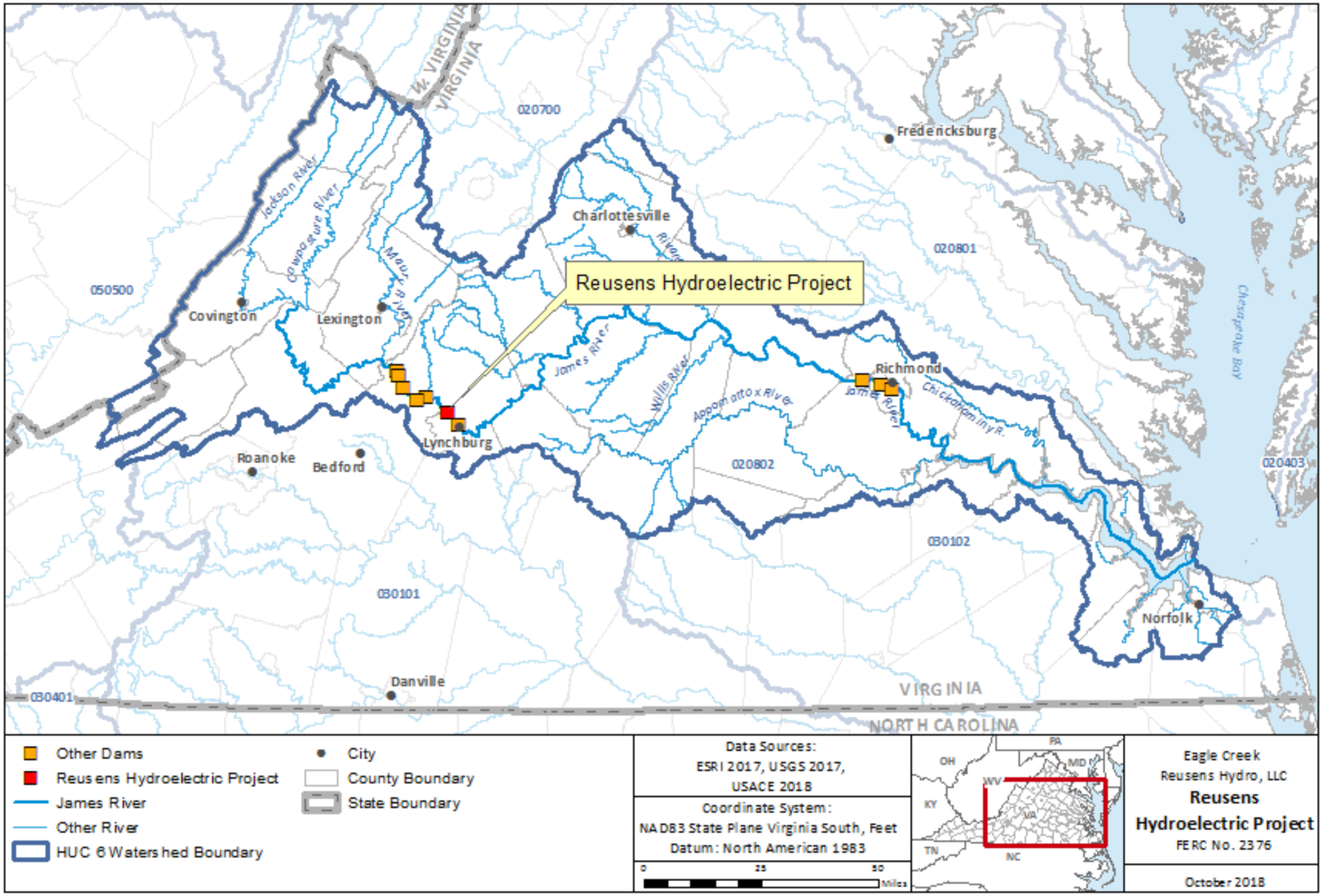

Figure 1: Location of the Reusens Hydroelectric Project.

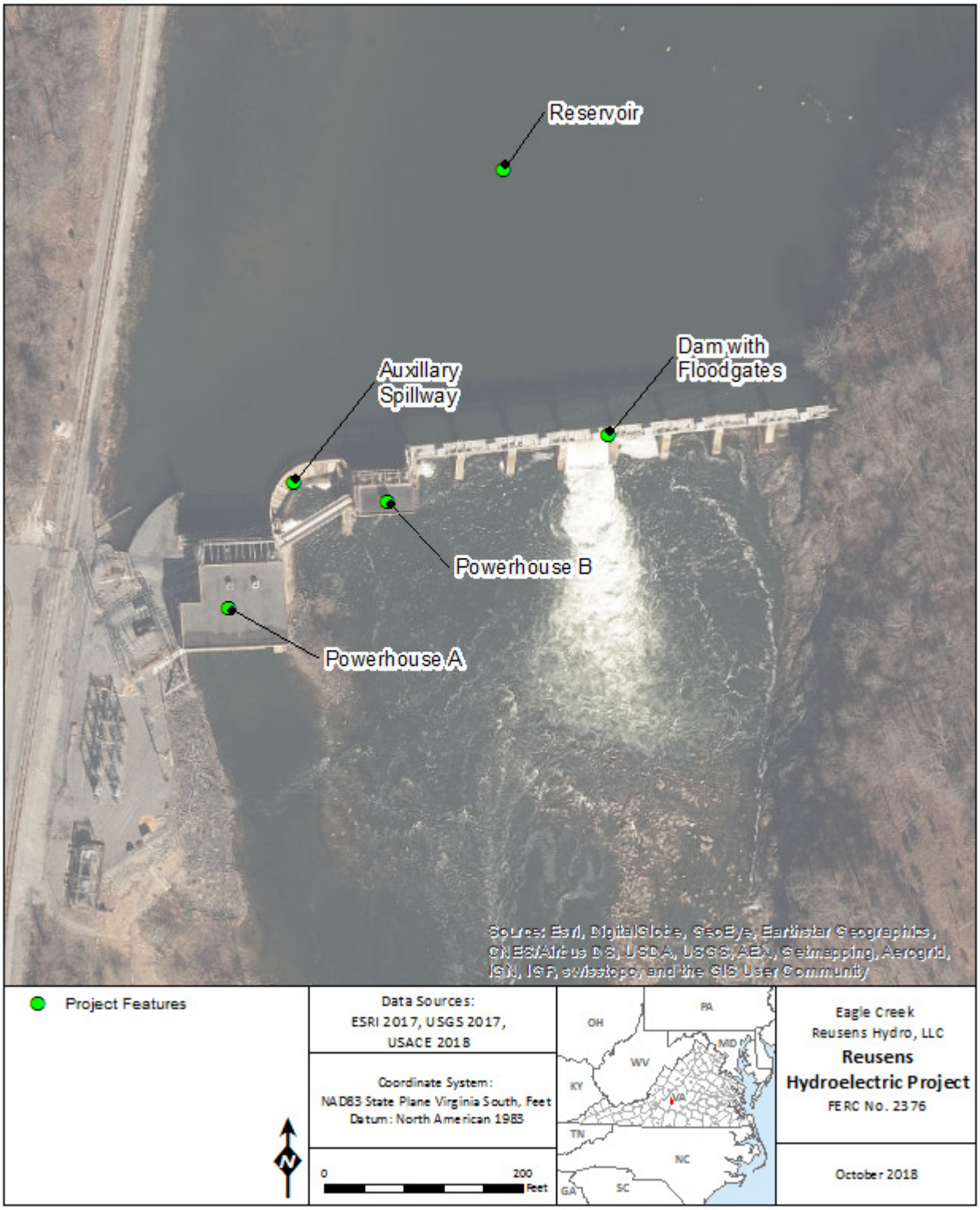

Figure 2: Main features of the Reusens Hydroelectric Project.

Reusens Hydroelectric Project FERC No 2367
Pre-Application Document Stakeholder Questionnaire

Eagle Creek Reusens Hydro, LLC (Reusens Hydro) a subsidiary of Eagle Creek Renewable Energy, LLC is beginning the Federal Energy Regulatory Commission (FERC) relicensing process for the existing Reusens Hydroelectric Project (FERC No. 2376). The Reusens Hydroelectric Project (Project) is located on the James River near the City of Lynchburg in Bedford and Amherst Counties. Reusens Hydro is preparing a Pre-Application Document (PAD) for the Project that provides FERC, resource agencies and other stakeholders with existing, relevant, and reasonably available information regarding the Project to help identify issues and related information needs, develop study requests and study plans, and prepare environmental documents analyzing project impacts. This Questionnaire will be used to help identify sources of existing, relevant, and reasonably available information that is not in Reusen Hydro's possession.

Please return this questionnaire and any pertinent information as soon as possible or no later than Friday, November 30, 2018 to:

Matthew Burak
Louis Berger
9 Jarvis Avenue
Holyoke, MA 01040
mburak@louisberger.com

Hardcopy mailings include a self-addressed return envelope.

1. Information about person completing the questionnaire:

Name and Title:	MARK A FENDIG
Organization:	LUMINAIRE TECH INC
Address:	[redacted] 9932 WILSON HWY MOUTH-OF-WILSON, VA 24536
Phone:	(434) 386-5557
E-mail Address:	Mfendig@aisva.net

2. Do you or your organization know of existing, relevant, and reasonably available information that describes the existing environment of the Project (i.e., information regarding the resource areas listed below in the vicinity of the Project)?

[redacted] Yes (please complete 2a through 2e) ___ V ___ No (please go to question 3)

a) Please indicate by "X" next to the specific resource area or areas that the information relates to:

- Geology and Soil Resources
- Water Resource
- Fish and Aquatic Resources
- Wildlife and Botanical Resources
- Wetlands, Riparian, and Littoral Habitat Resources
- Other Resource Information
- Recreation and Land use Resources
- Aesthetic Resources
- Cultural/Historical Resources
- Socioeconomic Resources
- Tribal Resources
- Rare, threatened and endangered species

b) Please briefly describe the information or list the available documents (additional writing space is provided on page 4 of this questionnaire).

c) Where can Reusens Hydro obtain this information (additional writing space is provided on page 4 of this questionnaire)?

d) Please indicate whether there is a specific representative you wish to designate for a potential follow-up contact by a Reusens Hydro representative for the resource area or areas indicated above (additional information may be provided on page 4 of this questionnaire).

Representative Contact Information

Name and Title:	SCOTTS MILL HYDRO, LLC
Organization:	SCOTTSMILLHYDRO.ORG
Address:	PO BOX 13 COLEMAN FALLS, VA 24536

Phone:	(434) 386-5557
E-mail Address:	MFendig@AISVA.NET

e) Based on the specific resources listed in 2a, are you aware of any specific issues pertaining to the resource you identified? For example, the historic significance of the facilities must be addressed during the relicensing (additional information may be provided on page 4 of this questionnaire).

____ Yes (please list the specific issues below) __✓__ No

Resource Area	Specific Issue

3. Do you or your organization plan to participate in the Reusens Hydroelectric Project relicensing proceeding?

__✓__ Yes ____ No

If yes, please provide the contact information for the representative(s) of your organization that will be participating in the relicensing process:

Name and Title:	WAYNE DYOK / MARK FENDIG
Organization:	SCOTTS MILL HYDRO, HOLCOMB ROCK COMPANY COLEMAN FALLS CO.
Address:	PO BOX 13 COLEMAN FALLS, VA 24536

Phone:	(434) 386-5557
E-mail Address:	DYOK@PRODIGY, [redacted] DYOK@PRODIGY.NET

If no, please confirm that you do not want to receive any further correspondence associated with this proceeding, by indicating so below:

_____Please remove me and the entity that I represent from the mailing list.

4. We are interested in your comments. If you have comments and/or questions regarding the Reusens Hydroelectric Project, PAD, or the relicensing proceeding please provide them below.

***** If you know of any other stakeholder not included on the e-mail list but should have been we kindly ask that you forward the e-mail and questionnaire you received onto them. *****

Additional Comments: PLEASE ADD AMERICAN DAM.ORG TO STAKEHOLDER SERVICE LIST. AS WELL AS LUMINAIRE TECH INC. AND SCOTTS MILL HYDRO, LLC AT Mferdig@aisva.net

COMMONWEALTH of VIRGINIA

Marine Resources Commission
2600 Washington Avenue
Third Floor
Newport News, Virginia 23607

Matthew J. Strickler
Secretary of Natural Resources

Steven G. Bowman
Commissioner

November 28, 2018

Louis Berger
Attn: Matthew K. Burrak
9 Jarvis Avenue
Holyoke, MA 01040

Re: Review for FERC Relicensing
Reusens Hydroelectric Project

Dear Mr. Burrak:

This will respond to the request for information regarding the Federal Energy Regulatory Commission relicensing process for the Reusens Hydroelectric Project. The Reusens Project is an existing hydroelectric facility located on the James River in Bedford and Amherst Counties. The Federal Energy Regulatory Commission license for the Project will expire on February 29, 2024. Specifically, the Reusens Hydro intends to pursue a new license for the Project and is beginning the FERC relicensing process. Because this is a preliminary relicensing request, and no additional encroachments are proposed, the Marine Resources Commission (Commission) has no comments to provide at this time.

Please be advised that the Commission, pursuant to §28.2-1200 et seq of the Code of Virginia, has jurisdiction over any encroachments in, on, or over the beds of the bays, ocean, rivers, streams, or creeks which are the property of the Commonwealth. Accordingly, if any portion of the subject project involves any encroachments channelward of ordinary high water along natural rivers and streams with a drainage area greater than 5-square miles, a permit may be required from our agency. Any jurisdictional impacts will be reviewed by the Commission during the Joint Permit Application process.

Should you have any questions please contact me at (757) 247- 2255 or by email at mike.johnson@mrc.virginia.gov. Thank you for the opportunity to comment.

Sincerely,

Mike Johnson
Environmental Engineer, Habitat Management

JMJ/lrp
HM

Michael Scarzello, Director
Eagle Creek Renewable Energy, LLC
Eagle Creek Renewable Energy
116 N. State Street, PO Box 167, Neshkoro, WI 54960-0167
Tel: 920-293-4628 – Fax: 920-293-8087
www.eaglecreekre.com

The information is provide to assist Reusens Hydro in obtaining all available data as well as assess potential issues for the relicensing. Electronic copies are preferred.

David Sutherland, 410-573-4535

Matthew Burak
Louis Berger
Jarvis Avenue
Holyoke, MA 01040
mburak@louisberger.com

Reusens Hydro is promoting the use of electronic communications and requests that all parties who intend to be engaged in the relicensing process provide your email address via the attached questionnaire. For those entities where we do not have email information we are distributing material via hard copy mailings. If you prefer to receive materials in a particular method please indicate such on the questionnaire.

If you have any questions please do not hesitate to contact me at 973-998-8400.

Reusens Hydroelectric Project FERC No 2367
Pre-Application Document Stakeholder Questionnaire

Eagle Creek Reusens Hydro, LLC (Reusens Hydro) a subsidiary of Eagle Creek Renewable Energy, LLC is beginning the Federal Energy Regulatory Commission (FERC) relicensing process for the existing Reusens Hydroelectric Project (FERC No. 2376). The Reusens Hydroelectric Project (Project) is located on the James River near the City of Lynchburg in Bedford and Amherst Counties. Reusens Hydro is preparing a Pre-Application Document (PAD) for the Project that provides FERC, resource agencies and other stakeholders with existing, relevant, and reasonably available information regarding the Project to help identify issues and related information needs, develop study requests and study plans, and prepare environmental documents analyzing project impacts. This Questionnaire will be used to help identify sources of existing, relevant, and reasonably available information that is not in Reusen Hydro's possession.

Please return this questionnaire and any pertinent information as soon as possible or no later than Friday, November 30, 2018 to:

Matthew Burak
Louis Berger
9 Jarvis Avenue
Holyoke, MA 01040
mburak@louisberger.com

Hardcopy mailings include a self-addressed return envelope.

1. Information about person completing the questionnaire:

Name and Title:	David Sutherland, F&W Biologist
Organization:	USFWS
Address:	Chesapeake Bay Field Office 177 Admiral Cochrane Drive Annapolis, MD 21401
Phone:	410-4=573-4535
E-mail Address:	david_sutherland@fws.gov

2. Do you or your organization know of existing, relevant, and reasonably available information that describes the existing environment of the Project (i.e., information regarding the resource areas listed below in the vicinity of the Project)?

__X___ Yes (please complete 2a through 2e) __ No (please go to question 3)

a) Please indicate by "X" next to the specific resource area or areas that the information relates to:

_____ Geology and Soil Resources	__X__ Recreation and Land use Resources
_____ Water Resource	_____ Aesthetic Resources
X____ Fish and Aquatic Resources	__X__ Cultural/Historical Resources
_____ Wildlife and Botanical Resources	_____ Socioeconomic Resources
__X__ Wetlands, Riparian, and Littoral Habitat Resources	__X__ Tribal Resources
_____ Other Resource Information	X____ Rare, threatened and endangered species

b) Please briefly describe the information or list the available documents (additional writing space is provided on page 4 of this questionnaire)

American Eel, Long Eared Bat, James Spiny Mussel, Green Floater Mussel, Brook Floater Mussel are of interest. Surveys will be needed for all species as was conducted at other projects on river. Both upstream and downstream American eel passage will also likely be a priority for us. NPS will be involved given the project's location on the James River within the Captain John Smith Chesapeake NHT. Similar NPS interests as with May 2018 filing on the Bedford project (5596) PAD and Scott's Mill (14867) PAD.

d) Please indicate whether there is a specific representative you wish to designate for a potential follow-up contact by a Reusens Hydro representative for the resource area or areas indicated above (additional information may be provided on page 4 of this questionnaire).

Representative Contact Information

Name and Title: David Sutherland
Organization:
Address:

Phone:
E-mail Address:

e) Based on the specific resources listed in 2a, are you aware of any specific issues pertaining to the resource you identified? For example, the historic significance of the facilities must be addressed during the relicensing (additional information may be provided on page 4 of this questionnaire).

_____ Yes (please list the specific issues below) _____ No

Resource Area	Specific Issue

3. Do you or your organization plan to participate in the Reusens Hydroelectric Project relicensing proceeding?

X_____ Yes _____ No

If yes, please provide the contact information for the representative(s) of your organization that will be participating in the relicensing process:

Name and Title: David Sutherland
Organization: USFWS
same as above **Address:**

Phone:
E-mail Address:

If no, please confirm that you do not want to receive any further correspondence associated with this proceeding, by indicating so below:

_____Please remove me and the entity that I represent from the mailing list.

4. We are interested in your comments. If you have comments and/or questions regarding the Reusens Hydroelectric Project, PAD, or the relicensing proceeding please provide them below.

***** If you know of any other stakeholder not included on the e-mail list but should have been we kindly ask that you forward the e-mail and questionnaire you received onto them. *****

Additional Comments: We look forward to this FERC relicensing proceeding.
Please be sure to reach out to the following Native American Tribes:

Native American Tribe Consultation
These comments are from the Bureau of Indian Affairs (BIA) for the Bedford Hydroelectric Project in Amherst and Bedford Counties, Virginia. This area is of historic interest to the Monacan Indian Nation. The Federal Energy Regulatory Commission has a responsibility to conduct complete tribal consultation before approving a project per 36 CFR Part
800.2(c)(2)(ii). The Nation may be contacted at the following address:
Monacan Indian Nation
P.O. Box 1136
Madison Heights, VA 24572
Should you have any questions, please feel free to contact Mr. Harold Peterson, Natural Resources Officer, at 615-564-6838.

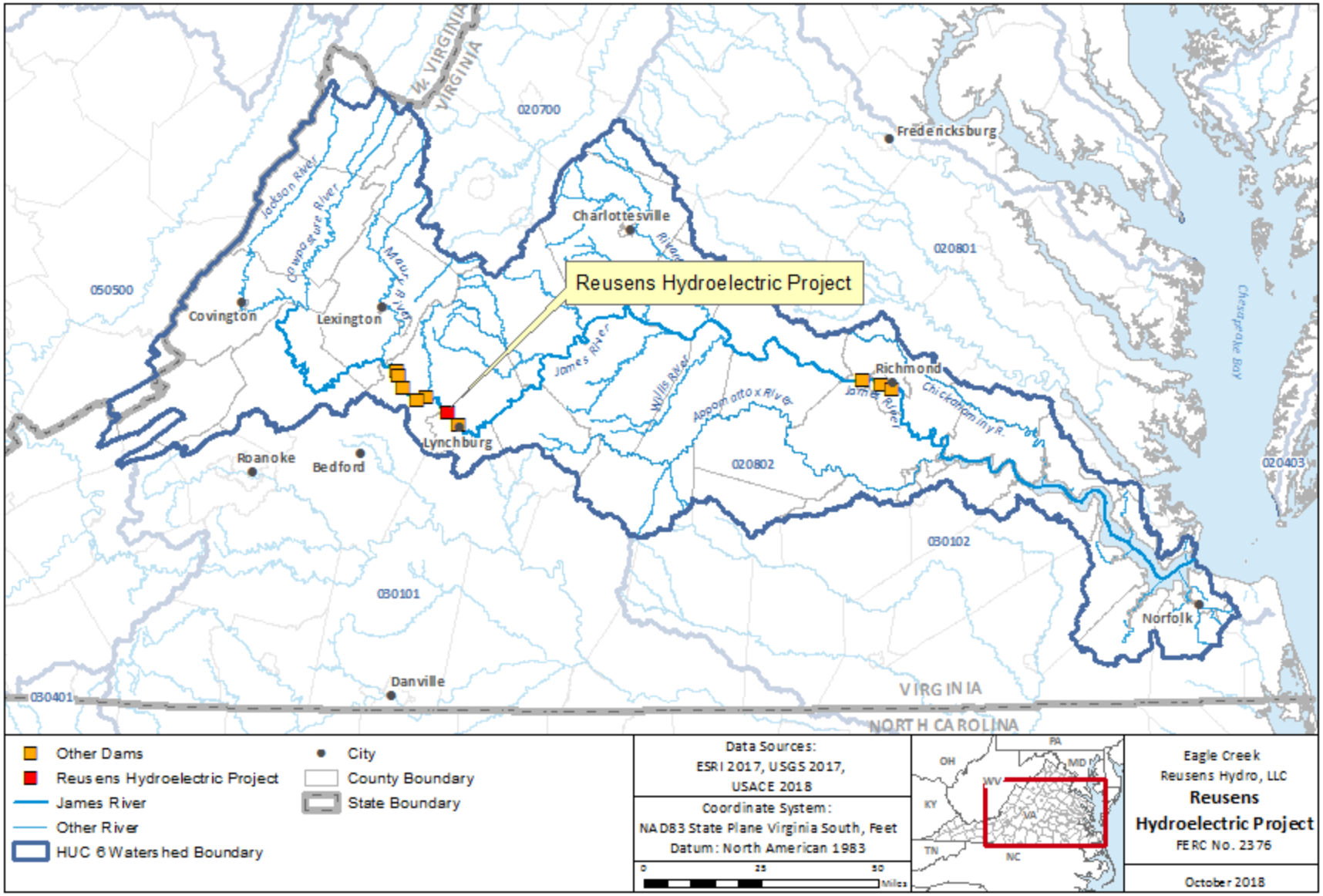

Figure 1: Location of the Reusens Hydroelectric Project.

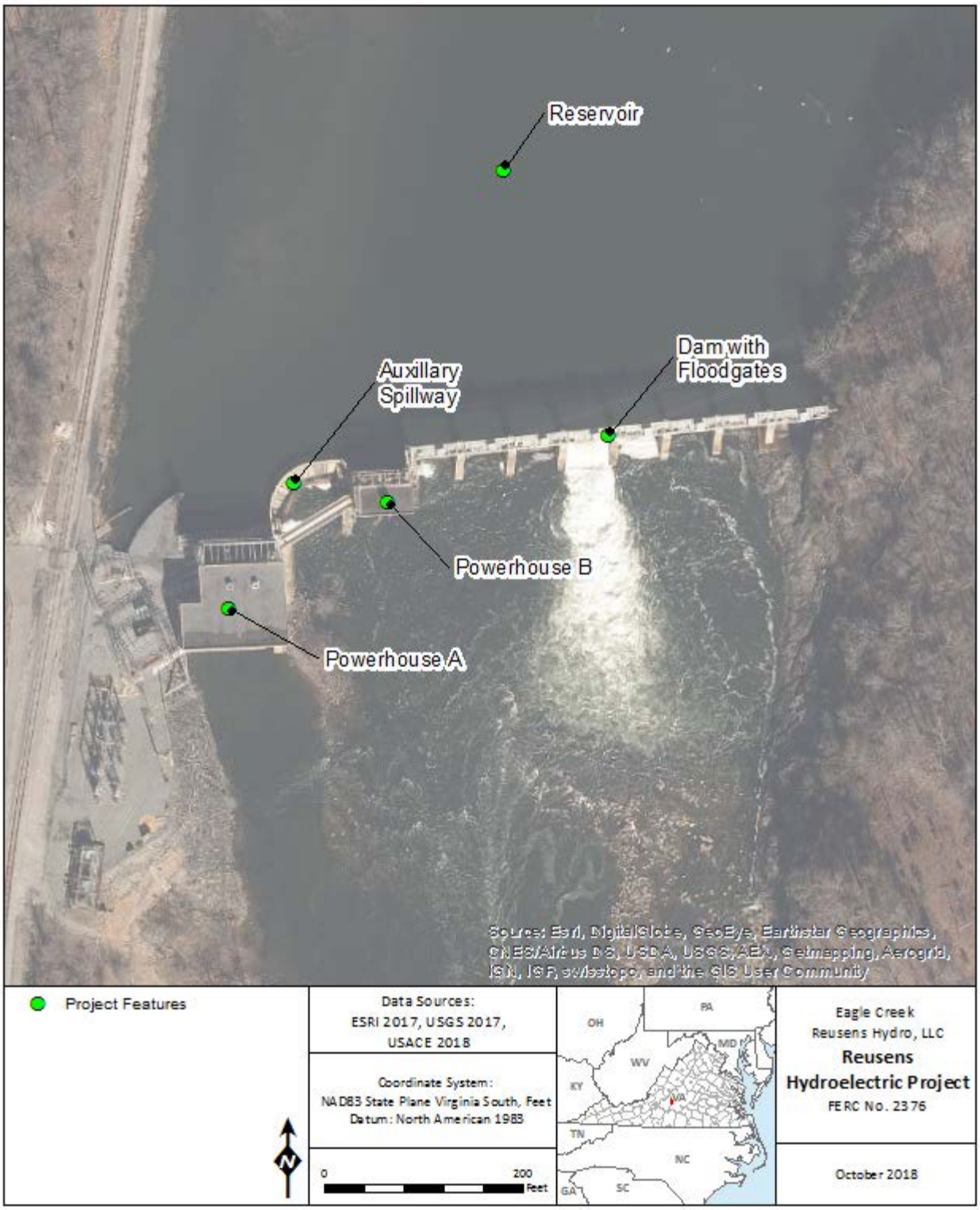

Figure 2: Main features of the Reusens Hydroelectric Project.

Reusens Hydroelectric Project FERC No 2367
Pre-Application Document Stakeholder Questionnaire

Eagle Creek Reusens Hydro, LLC (Reusens Hydro) a subsidiary of Eagle Creek Renewable Energy, LLC is beginning the Federal Energy Regulatory Commission (FERC) relicensing process for the existing Reusens Hydroelectric Project (FERC No. 2376). The Reusens Hydroelectric Project (Project) is located on the James River near the City of Lynchburg in Bedford and Amherst Counties. Reusens Hydro is preparing a Pre-Application Document (PAD) for the Project that provides FERC, resource agencies and other stakeholders with existing, relevant, and reasonably available information regarding the Project to help identify issues and related information needs, develop study requests and study plans, and prepare environmental documents analyzing project impacts. This Questionnaire will be used to help identify sources of existing, relevant, and reasonably available information that is not in Reusen Hydro's possession.

Please return this questionnaire and any pertinent information as soon as possible or no later than Friday, November 30, 2018 to:

Matthew Burak
Louis Berger
9 Jarvis Avenue
Holyoke, MA 01040
mburak@louisberger.com

Hardcopy mailings include a self-addressed return envelope.

1. Information about person completing the questionnaire:

Name and Title:	Harold Peterson, Natural Resources Officer
Organization:	U.S. Bureau of Indian Affairs
Address:	545 Marriott Dr Ste 700 Nashville, TN 37214
Phone:	615-564-6838
E-mail Address:	harold.peterson@bia.gov

2. Do you or your organization know of existing, relevant, and reasonably available information that describes the existing environment of the Project (i.e., information regarding the resource areas listed below in the vicinity of the Project)?

X Yes (please complete 2a through 2e) _____ No (please go to question 3)

a) Please indicate by "X" next to the specific resource area or areas that the information relates to:

____ Geology and Soil Resources	____ Recreation and Land use Resources
____ Water Resource	____ Aesthetic Resources
____ Fish and Aquatic Resources	X Cultural/Historical Resources
____ Wildlife and Botanical Resources	____ Socioeconomic Resources
____ Wetlands, Riparian, and Littoral Habitat Resources	X Tribal Resources
____ Other Resource Information	____ Rare, threatened and endangered species

b) Please briefly describe the information or list the available documents (additional writing space is provided on page 4 of this questionnaire).

Nansemond Indian Nation, Monacan Indian Nation, Pamunkey Indian Tribe have a historic interest in this location

c) Where can Reusens Hydro obtain this information (additional writing space is provided on page 4 of this questionnaire)?

Obtained by directly contacting the Tribes

d) Please indicate whether there is a specific representative you wish to designate for a potential follow-up contact by a Reusens Hydro representative for the resource area or areas indicated above (additional information may be provided on page 4 of this questionnaire).

Representative Contact Information

Name and Title:
Organization:
Address:

Phone:
E-mail Address:

e) Based on the specific resources listed in 2a, are you aware of any specific issues pertaining to the resource you identified? For example, the historic significance of the facilities must be addressed during the relicensing (additional information may be provided on page 4 of this questionnaire).

_____ Yes (please list the specific issues below) _X_ No

Resource Area	**Specific Issue**

3. Do you or your organization plan to participate in the Reusens Hydroelectric Project relicensing proceeding?

_X_ Yes _____ No

If yes, please provide the contact information for the representative(s) of your organization that will be participating in the relicensing process:

Name and Title:
Organization:
Address:

Phone:
E-mail Address:

If no, please confirm that you do not want to receive any further correspondence associated with this proceeding, by indicating so below:

_____Please remove me and the entity that I represent from the mailing list.

4. We are interested in your comments. If you have comments and/or questions regarding the Reusens Hydroelectric Project, PAD, or the relicensing proceeding please provide them below.

***** If you know of any other stakeholder not included on the e-mail list but should have been we kindly ask that you forward the e-mail and questionnaire you received onto them. *****

Additional Comments:

Appendix C – General Design Drawings - Exhibit F

(Filed Separately as CONTAINS CRITICAL ENERGY/ELECTRIC INFRASTRUCTURE INFORMATION – DO NOT RELEASE)

Appendix D – Existing License and License Requirements

UNITED STATES OF AMERICA 66 FERC 61,316
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Elizabeth Anne Moler, Chair;
Vicky A. Bailey, James J. Hoecker,
William L. Massey, and Donald F. Santa, Jr.

Appalachian Power Company) Project No. 2376-001

ORDER ISSUING NEW LICENSE

(Issued March 18, 1994)

The Appalachian Power Company (Appalachian or licensee) has filed an application for a new license pursuant to Section 15 of the Federal Power Act (FPA), 16 U.S.C. ⊥ 807, to continue to operate and maintain the 12.5-megawatt (MW) Reusens Project No. 2376, located on the James River, near the northern limits of the City of Lynchburg, Virginia, in Amherst and Bedford Counties, Virginia. The Commission issued the original license for the project to Appalachian on August 12, 1964, 1/ under its jurisdiction over constructed projects situated on navigable waters of the United States. 2/ The license expired on December 31, 1993, and since then Appalachian has operated the project under annual license. 3/

Appalachian proposes no changes to increase the project's capacity. Appalachian, an electric utility, would continue to utilize the electricity generated by the project for its customers. For the reasons discussed below, we will issue a new license to Appalachian.

BACKGROUND

Notice of the application was published. 4/ Six parties filed timely motions to intervene in this proceeding: the U.S. Department of the Interior (Interior), the Commonwealth of Virginia Department of Game and Inland Fisheries (State

1/ 32 F.P.C. 591 (1964).

2/ The pertinent portion of the James River, from its mouth to its confluence with the Jackson River, is a navigable waterway of the United States. Id. at p. 591. Section 23(b) of the FPA therefore requires the project to be licensed.

3/ See Section 15(a)(1) of the FPA, 16 U.S.C. ⊥ 808(a)(1).

4/ 57 FR 29,721 (July 6, 1992).

♀

Fisheries), the City of Lynchburg, Virginia (Lynchburg), the Lynchburg Boat and Ski Club (Boat Club), the Coastal Canoeists, Inc. (Canoeists), and the Virginia Wildlife Federation (Virginia Wildlife). The Boat Club opposes issuance of a new license, absent inclusion of a boating launch as described by the Boat Club.

The motions to intervene of Canoeists and Virginia Wildlife were granted over Appalachian's objections. 5/ The remaining motions to intervene were unopposed and therefore granted automatically under Rule 214(c)(1) of the Commission's Rules of Practice and Procedure. 6/

Comments on the application were filed by the U.S. Department of Commerce (Commerce), Interior, the Commonwealth of Virginia Council on the Environment (State Environment), whose filing included comments submitted through it by State Fisheries, the Commonwealth of Virginia Department of Conservation and Recreation (State Recreation), the Virginia Department of Historic Resources (State Historic), the Virginia Department of Health, and Amherst County.

The Commission's staff prepared a Draft Environmental Assessment (Draft EA), made available for public comment on November 2, 1993. Comments on the Draft EA were filed by Appalachian, Canoeists, State Fisheries, the American Canal Society (Canal Society), State Recreation, the Commonwealth of Virginia Department of Historic Resources (State Historic), and Lynchburg. 7/ Commission staff considered these comments in preparing the final Environmental Assessment (EA), which was issued on March 2, 1994. The EA is attached to and made part of the license.

The Commission's staff also prepared a Safety and Design Assessment (S&DA), which is available in the Commission's public file associated with this project.

We have fully considered the motions and comments of the above-named organizations in determining to issue the new license for Project No. 2376.

5/ Notice issued March 10, 1993, by the Commission's Secretary (unpublished).

6/ 18 C.F.R. ⊥ 385.214(c)(1) (1993).

7/ On February 7 and 22, 1994, Appalachian filed replies to the comments on the draft EA of the Coastal Canoeists and Lynchburg, respectively.

♀

PROJECT DESCRIPTION

The existing project facilities include a 24-foot high concrete dam and spillway with eight, 16 3/4-foot-high floodgates, a 25-foot-high concrete curved auxiliary spillway section with 7 1/4-foot-high flashboards, a 500-acre impoundment, and two powerhouses (A and B Stations), one with a total installed capacity of 7.5 MW and the other with a total installed capacity of 5.0 MW. A detailed project description is included in ordering paragraph B(2).

Appalachian proposes to continue to operate the project in a peaking mode.

MUNICIPAL WATER SUPPLY

Lynchburg is the primary supplier of water to the Lynchburg metropolitan area. It obtains its water supplies from Pedlar Lake, which is about 22 miles northwest of Lynchburg, and from two water intake pumping stations located on the James River: The Downtown Pump Station, located approximately 4.2 miles downstream from the Reusens Project, and the Abert Pump Station, located approximately 3.6 miles upstream from the project. Due to its proximity to the Downtown and Abert Pump Stations, the operations at the Reusens Project (such as maintenance of reservoir and downstream water levels) could affect the water withdrawal operations of those pump stations. 8/

In its motion to intervene, Lynchburg proposes several license conditions to protect its water supply operations at its Abert and Downtown Pump Stations. 9/ Lynchburg requests

8/ See Lynchburg's August 17, 1992 motion to intervene, pp. 2-4. Lynchburg also states that generally its water is supplied from Pedlar Lake; that the Downtown Pump Station, which has relatively limited pumping capacity and which is susceptible to flood conditions that would prevent its operation, is only operated in emergency conditions to supplement water supplies from Pedlar Lake or the Abert Pump Station; that, during dry weather periods, the water supply from Pedlar Lake is augmented by increased flows from the Abert Pump Station; and that Lynchburg's expanding water needs will be supplied by expanding operations at the Abert Station.

9/ Lynchburg cites the 1985 record flood of the James River, which damaged the Reusens Dam, after which Appalachian required Lynchburg to bear certain costs before restoring the reservoir's water level so that Lynchburg could operate

(continued...)

license conditions that require: (1) operating and maintaining

the Reusens Project so as to provide adequate water levels for pumping operations at the Abert and Downtown Pump Stations; (2) notifying Lynchburg about reservoir drawdowns for normal project maintenance, and scheduling such maintenance for a time mutually agreeable to Appalachian and Lynchburg; (3) a project operating plan that gives priority to Lynchburg's water needs during emergency drawdowns of the project reservoir; (4) adherence by any transferee of the project license to the license's conditions; and (5) one year's notice to Lynchburg of Appalachian's intent to surrender the project license.

In its comments on the Draft EA, Lynchburg requests that Appalachian be required to prepare the noted operating plan for providing water to the pumping stations during normal maintenance and emergency drawdowns and to file the operating plan after Lynchburg agrees to the plan and prior to issuance of a new license.

The Commission has included special articles in other licenses, similar to the articles requested by Lynchburg, to ensure that project operations do not interfere with municipal water supply operations. 10/ We believe that it is in the

9/(...continued)
the Abert Pump Station. Lynchburg states that Appalachian agreed to repair and operate the Reusens Dam, as Lynchburg requested, conditioned on Lynchburg's paying the costs of: (1) secondary-source power to operate the dam's floodgates; (2) repairing access from the public roadway to the dam's operating buildings; and (3) manual operation of the dam until the necessary instrumentation was repaired. See Lynchburg's motion to intervene, pp. 4-5. Lynchburg states that, except for the 1985 flood, the Reusens Project has been operated in a way that does not adversely affect Lynchburg's ability to pump water at either the Abert or the Downtown Pump Stations. Id., at p. 4.

10/ See, e.g., City of Portland, Oregon, 6 FERC ¶ 61,257 (1979); and Appomattox River Water Authority, 60 FERC ¶ 61,083 (1992) (Appomattox). In City of Portland, 6 FERC at pp. 61,626-29, the Commission modified standard license Article 12 to require the licensee to operate the project's reservoirs to assure at all times sufficient quality and quantity of water for the City's water supply. In Appomattox, 60 FERC at pp. 61,262-65, the Commission, in light of special legislation, included special license articles and modified standard license articles to ensure that project operations would not interfere with water supply operations.

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public interest, to the extent consistent with our statutory obligations under the FPA, to include Lynchburg's proposed articles in the new license for Project No. 2376.

Appalachian and Lynchburg are in general agreement on the

license requirements necessary to maintain adequate water levels for Lynchburg's water withdrawal operations. Studies performed by Appalachian show that raising the Reusens Project's minimum forebay operating water elevation, from 546.8 feet National Geodetic Vertical Datum (NGVD) to 547.0 feet NGVD, will provide a sufficiently high water elevation for Lynchburg's current and projected uses of its pumping stations. 11/ We have included Article 402 to require maintenance of the 547.0-foot forebay elevation.

Appalachian proposes to construct a bulkhead system at the Reusens Dam that will enable it to perform routine maintenance and repairs on the main spillway without drawing down the reservoir, which will further ensure maintenance of adequate water withdrawal levels at Lynchburg's Abert Pump Station. 12/ Articles 301 and 302 provide for construction of the bulkhead system.

In the context of this case, we do not object to Appalachian's scheduling its maintenance drawdowns of the Reusens Reservoir at times mutually agreeable to it and Lynchburg. Accordingly, Article 402 provides for the licensee to modify the reservoir water level during short periods of time upon agreement between the licensee and Lynchburg. However, the provision should not be construed as requiring Lynchburg's agreement to changes in reservoir levels ordered by the Commission, and Article 402 is worded accordingly. 13/

At times of unforseen or emergency reservoir drawdowns, we require Appalachian, in Article 402, to give immediate notice to

11/ See the "Water Rights" subsection of Section V.B.1. of the EA.

12/ We note that Lynchburg has agreed to pay for half the costs of installing this system. See July 5, 1991 comments on Appalachian's draft application license by E. Allen Culverhouse, City Manager, City of Lynchburg, to Charles H. Ellis, Virginia Council on the Environment, at 4.

13/ Compare Appomattox, supra, 60 FERC at p. 61,267, where the Commission modified a license article requiring run-of-river operations to require a non-licensee municipality's agreement for any changes to project operations, except to any change ordered by the Commission.

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Lynchburg of the operating emergency that requires reservoir drawdown below 547.0 feet NGVD.

We further require Appalachian, in Article 403, to file with the Commission, within six months after license issuance, an operation plan that establishes procedures to maintain water elevations at all times (including emergency situations) sufficient to minimize adverse impacts to Lynchburg's water pumping stations. In preparing this plan, Appalachian must

consult with Lynchburg (as well as State Fisheries and Interior's Fish and Wildlife Service) and must show how it accommodates Lynchburg's requests. 14/

Appalachian has agreed to release limited supplemental emergency flows when operation of the Downtown Pump Station is needed for Lynchburg's water supply operations. 15/ However,

14/ We decline Lynchburg's request to require Appalachian to file the operation plan prior to our issuing the new license for Project No. 2376, or to condition the filing of the plan on Lynchburg's agreeing to the plan's provisions. We are including articles in this license to ensure that project operations will not interfere with Lynchburg's water supply operations. In the operation plan, Appalachian must show how it will tailor project operations under the license to meet Appalachian's requirements for minimizing adverse project impacts on Lynchburg's water supply operations. Preparing and filing the operation plan for Commission approval are properly required as post-licensing matters, and are properly subject to consultation with, and the comments of, Lynchburg rather than being conditioned on Lynchburg's prior agreement.

15/ See the license application, Exhibit E, p. E-13. Supplemental emergency flows are needed when one or both of Lynchburg's raw water sources are experiencing emergency restrictions to operations and when inflow into the project's reservoir is less than 223 cubic feet per second (cfs). In its comments on the draft application, Lynchburg requested that, under normal operating conditions, Appalachian be required to release a minimum flow of 333 cfs, or the inflow into the project's reservoir, whichever is less, to maintain adequate water levels for Lynchburg's Downtown Pump Station. As noted in the "Minimum Flow" subsection of Section V.B.1. of the EA, Appalachian proposes to maintain its current flow releases, which include a minimum flow of 333 cfs, or inflow into the reservoir, whichever is less (a proposal that State Fisheries agrees will adequately protect fisheries habitat), (continued...)

Appalachian's ability to release such supplemental flows will depend on reservoir storage and inflow conditions. 16/ Accordingly, the operation plan to be submitted under Article 403 should include requirements for such emergency releases. 17/

Lynchburg requests that the license require that, with the exception of safety requirements, Lynchburg's water supply operations must take priority over all other license requirements. Circumscribing our authority in such a manner, however, would be inconsistent with our statutory responsibilities. 18/ The license articles we are approving in this order should ensure that the project will be operated and maintained consistent with Lynchburg's water supply operations.

A license article requiring transferee compliance with the license is unnecessary. Under Section 8 of the FPA, 16 U.S.C. ⊥ 801, any transferee of the licensee is subject to all of the conditions of the license as though it were the original licensee.

We decline to restrict the licensee's access to the Commission's processes by requiring Appalachian to provide Lynchburg with one year's notice of any intent to surrender the license, as Lynchburg requests. Lynchburg will have ample opportunity to be heard should such a surrender application be filed. Section 6 of the FPA, 16 U.S.C. ⊥ 799, provides that a license may be surrendered only after 30 days' public notice. We will include a license article (Article 404) requiring the

15/(...continued)
and Article 401 requires the proposed minimum flow operations.

16/ See the "Water Rights" subsection of Section V.B.1. of the EA.

17/ Lynchburg requests that, in situations involving emergency drawdowns of the reservoir, the license require Appalachian to bear the cost of restoring adequate water levels for Lynchburg's water supply operations. Article 403 makes the licensee responsible for restoring the water levels. How the license finances the cost of doing so is left to the licensee, as long as the licensee does, in fact, restore the water levels.

18/ See Appomattox, supra, 60 FERC at p. 61,263-65, where the Commission denied the municipality's request for a license provision to require that special license articles requiring protection of the municipality's water supply operations supersede all other license obligations.

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licensee to show proof of service on Lynchburg of any application to surrender the license. Additionally, Section 6.2 of the Commission's regulations provides that licenses may be surrendered upon such conditions as the Commission may prescribe. 19/

BOAT CLUB'S OPPOSITION

Boat Club opposes issuance of a new license for the Reusens Project unless Appalachian reopens a boat launch that Boat Club had formerly operated for its members under license from Appalachian, the operation of which Appalachian terminated in 1991 for safety reasons, or unless Appalachian develops an alternate boat launch site on the Lynchburg side (Bedford County side) of the Reusens impoundment, either at a site described by Boat Club or another site.

Boat Club states that it operated the closed boat launch for 32 years without incident, and that this history shows that the now-closed boat launch did not present a safety problem. However, the lack of past documented accidents does not ensure against the risk of future accidents, and where, as here, matters of safety are at issue: 20/

> it is better to err on the side of caution and not be stymied simply because of difficulty of proving that a particular precaution is "necessary". If there is a reasonable doubt about the need for a safety precaution, but not about its desirability, it should be taken.

We believe that closing the boat launch clearly falls within the "reasonably necessary or desirable" standard. As described in the EA, 21/ the Commission's staff investigated Appalachian's closing the boat launch, Appalachian's reasons for so doing, and Boat Club's suggestions of how a re-opened boat

19/ 18 C.F.R. ⊥ 6.2.

20/ See City of Idaho Falls, Idaho, 45 FERC ¶ 61,042 at p. 61,137 (1988), quoting Water Power Projects and Project Works Safety, FERC Stats. and Regs., Regulations Preambles 1977-1981 ¶ 30,225, at p. 31,465. In Idaho Falls, the Commission denied rehearing of a requirement to install buoy lines upstream from project diversions, rejecting the argument that the lack of past accidents showed that the buoy lines were unnecessary.

21/ See the "Impoundment Access" subsection of section V.B.5. of the EA.

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launch could be operated safely. Appalachian reported that the boat launch was located adjacent to the A Station Powerhouse intakes, well within the 300-foot distance from intake structures required by the Commission's general guidelines for boat launching facilities. 22/ Also, its location only 50 feet from the CSX railroad track meant that cars and trailers carrying boats had to cross the railroad track twice, and that these vehicles had to be maneuvered on the railroad right-of-way in order to position the boats for launching. In sum, Appalachian's decision to close the boat launch was a prudent action to improve public safety.

Boat Club maintains that an existing boat launch located at Monacan Recreation Area, a nine-acre park on the Amherst County side of the James River, leased by Appalachian to the Amherst County Parks and Recreation Department, is not practical for people from Lynchburg and the Counties of Bedford and Campbell because that boat launch is often crowded and also because of the round-trip travel time involved.

Boat Club proposes as alternative sites for a boat launch on

the Lynchburg side of the Reusens Reservoir either of two sites in Bedford County, one near the Abert Pump Station, 3.6 miles upstream of the dam, and the other 5.3 miles upstream of the dam where a private road crosses the CSX railroad track that parallels the Reusens Reservoir, or another site to be identified by Appalachian.

We will deny Boat Club's request for alternative boat launch sites. The Commission's policy with respect to recreational development at licensed projects was promulgated in Order No. 313 23/ and is set forth in a statement of policy in the Commission's regulations at 18 C.F.R. ⊥ 2.7. The preamble to the policy statement noted that, in developing an appropriate recreation plan, "the licensee should consider each project on the basis of its physical and economic characteristics, its operational plan, and area needs for outdoor recreation." 24/

As Appalachian points out, both of the boat launch sites that Boat Club suggest are impractical. The shoreline at the Abert site is steep (about a 45 percent grade) and dominated by a CSX railroad track. There isn't enough land between the track

22/ Guidelines for Public Safety at Hydropower Projects, Federal Energy Regulatory Commission, Division of Dam Safety and Inspections, at p. 17 (March 1992).

23/ 34 F.P.C. 1546 (1965).

24/ 34 F.P.C. at 1548.

and the water to build a launch. The second site is impractical because the water there is too shallow. Moreover, construction of a boat launch, appurtenant facilities, and an access road to the public road approximately one mile away would be difficult and costly. Appalachian consulted State Recreation and State Fisheries about Boat Club's two suggested alternative sites. 25/ These agencies agreed with Appalachian that a boat launch on the Reusens Reservoir in Bedford County is not practical because of topography and the railroad track. 26/

As discussed in the EA, 27/ the Commission's staff studied Boat Club's two proposed upriver sites. The staff concurs with the resource agencies' conclusions and recommends against developing either site as a boat launch area. We agree.

Although we do not grant Boat Club's request for a boat launch at the Reusens Reservoir, we are, as discussed below, providing for enhanced reservoir and river access with potential off-site river access and with canoe portage around the Reusens Dam. As discussed below, on balance we do not regard the absence of Boat Club's requested boat launch to constitute a valid basis for denying the license.

25/ See Section 2.7(c) of the Commission's policy statement, which requires a licensee:

> To encourage and cooperate with appropriate local, state, and federal agencies and other interested entities in the determination of public recreation needs and to cooperate in the preparation of plans to meet those needs.

In addition to consulting with State Recreation and State Fisheries, Appalachian reports that it contacted the Bedford County Department of Community Development and the Bedford County Recreation Commission, but that these local agencies did not respond.

26/ See Appalachian's letter, filed February 23, 1993, attaching, inter alia, the January 27, 1993 letter to Appalachian from the Project Manager, Lands and Engineering Division, Virginia Department of Game and Inland Fisheries; and the February 3, 1993 letter to Appalachian from the Planning Bureau Manager, Virginia Department of Conservation and Recreation.

27/ See the "Impoundment Access" subsection of Section V.B.5. of the EA.

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OFF-SITE RIVER ACCESS

State Recreation's comments on the Draft EA stated that a potential existed for boat access to other segments of the James River, not adjacent to the Reusens Project, and that it and Appalachian were at that time formalizing a memorandum of understanding. 28/ State Fisheries' comments on the Draft EA stated that it, State Recreation and Appalachian were planning to enhance recreational access opportunities at various hydropower projects; the Partners-in-River-Access program had been presented to interested recreational users of the James River in a November 30, 1993 public meeting, and would be formalized through a memorandum of agreement among the three entities. 29/

These agency comments substantiated Appalachian's previously-filed information describing its efforts, with these agencies, to develop approximately 15 public access sites on the James, New, and Roanoke Rivers in the vicinity of the Reusens Project and other projects licensed to Appalachian. Appalachian described its participation as including monetary contributions for construction of the access sites and conveyance of interests in land parcels owned by Appalachian to the state agencies. 30/ In commenting on the Draft EA, Appalachian repeated its willingness to work with the state agencies in the Partners-in-River-Access program, but opposed inclusion of off-site recreational development as a condition for the new license for the Reusens Project. 31/

While a suitable site for boat access to the James River in the vicinity of the project has not yet been identified, such access is needed to meet some of the demand for river access near Lynchburg and to serve to offset the loss in river access caused by the closing of the boat launch at the Reusens Reservoir. 32/ Moreover, where requiring on-site recreation

28/ State Recreation's filing of December 16, 1993.

29/ State Fisheries filing of December 14, 1993.

30/ Appalachian's filing of August 6, 1993.

31/ Appalachian's filing of February 7, 1994.

32/ See the "Off-Site River Access" subsection of section V.B.5. of the EA. See also State Fisheries' August 12, 1991 letter to Appalachian attached to State Fisheries' motion to intervene, which states that there is a great need for water-related recreation in the Lynchburg area, and urging Appalachian's cooperation to develop a river access site on the James River.

facilities is impossible due to geographic impediments, the Commission requires off-site facilities, if available, to mitigate project impacts on recreation. 33/ We therefore require, in Article 410, that Appalachian continue its cooperative efforts with the Virginia resource agencies to locate and develop, in the Lynchburg vicinity, a boat access area that may become part of the Reusens Project. We require periodic progress reports and, if successful, the filing of a plan for development of the boat access area.

CANOE PORTAGE

Canoeists identified, in its intervention and its comments on the Draft EA, the need for a canoe portage around the Reusens Dam. State Environment, in its comments on Appalachian's draft license application, also identified the need to enhance recreational opportunities by providing canoe portage around the dam. 34/ State Fisheries' comments on the draft license application identified the need for boat access in the tailrace area of the Reusens Project. 35/

Appalachian's draft license application had proposed a canoe portage along the Lynchburg side of the Reusens Dam that would use a portion of the CSX Railroad's trackage right-of-way running along the river bank, contingent upon CSX permitting this use of the right-of-way. Appalachian withdrew the proposal after CSX indicated its refusal in telephone communication and declined to respond in writing to Appalachian's letter requesting use of the right-of-way for the canoe portage. 36/ State Recreation noted CSX' resistance, but stated that the need for portage still remained and recommended that Appalachian continue negotiations with CSX and explore other locations for portage. 37/

33/ See, e.g., Allegheny Electric Cooperative, 51 FERC ¶ 61,820 at p. 61,848 (1990).

34/ See "Consultation Documentation" volume of Exhibit E to Appalachian's application enclosing the July 26, 1991 letter from Administrator, Virginia Council on the Environment, to Appalachian.

35/ July 3, 1989 letter from Chief, Environmental Section, Virginia Department of Game and Inland Fisheries, to Appalachian.

36/ Appalachian's license application, filed December 31, 1991, at E-45.

37/ State Recreation's memorandum of May 12, 1992, included in State Environment's August 17, 1992 filing.

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Subsequently, at the request of Commission staff, Appalachian re-assessed the possibility of canoe portage around the Reusens Dam, 38/ this time including consideration of a portage along the Amherst County side of the reservoir as well as the Lynchburg side. Appalachian concluded that providing a canoe portage along the Amherst County side at reasonable cost is infeasible, a conclusion with which State Recreation concurred. 39/ However, Appalachian also filed three conceptual plans for a Lynchburg-side portage, one of which would require two crossings of the railroad tracks. 40/

In the interest of public safety, we do not believe that requiring boaters to cross the tracks in order to portage the dam is the most prudent alternative. Staff reviewed the other two portage options, along with photographs filed by Appalachian, 41/ and Canoeists. 42/ The approximate distance between the railroad tracks and the impoundment in the area of the proposed portage routes ranges between 20 feet at the narrowest and about 100 feet at the widest. Slopes are minimal to moderate in this area. Specific sections could be terraced if needed. Given that five to six feet of width is all that may be needed for an adequate portage, there appears to be sufficient space to locate the portage between the tracks and the reservoir.

As discussed in the EA, 43/ Commission staff concluded that recreational needs warrant a Lynchburg-side canoe portage, and that the CSX railroad right-of-way is sufficiently large for people to hand carry canoes or other small boats safely along it without encroaching on the space needed for railroad operations. Appalachian repeated its willingness to provide a portage around the Lynchburg side should the CSX railway right-of-way become available for use and recreational demand be evidenced. 44/

38/ Appalachian's filing of February 24, 1993.

39/ February 3, 1993 letter from Planning Bureau Manager, Virginia Department of Conservation and Recreation, to Appalachian.

40/ Appalachian's filing of February 24, 1993.

41/ Appalachian's application for license filed December 31, 1991, Figures E-133 through E-17.

42/ Caneoist's comments on the DEA, filed December 13, 1993.

43/ See the "Canoe Portage" subsection of section V.B.5. of the EA.

44/ Appalachian's filing of February 7, 1994.

The length of the portage, assuming the existing boat barrier is not moved, would be about 950 feet, 700 feet of which would be on CSX land. If the boat barrier is move closer to the dam, the amount of CSX land involved would decrease accordingly. Moving the existing boat barrier to within 300 feet of the dam, the Commission's minimum recommended distance, would shorten the portage length and would only involve using about 200 feet of CSX land.

We agree that a canoe portage should be provided on the Lynchburg side of the Reusens Reservoir. In fact, the Commission considers designated portages not only as recreational facilities, but as safety facilities, and has found that portage signs directing the public to safe take-out sites are needed at all projects that have even occasional canoeing or kayaking use. 45/ Accordingly, we require, in Article 410, that Appalachian prepare a plan for approval to provide a canoe portage around the dam. As noted in the article, we are directing Appalachian to provide CSX with the opportunity to comment on the safety of any proposed canoe portage. The Commission reserves the right to review all the data and the proposed plan.

CULTURAL RESOURCES

Section 10(a)(2)(B) of the FPA, 16 U.S.C. ⊥ 803(a)(2)(B), requires the Commission to consider the recommendations of relevant federal and state agencies exercising administration over, inter alia, cultural resources affected by the project.

1. Reusens Dam and Powerhouse

Section 106 of the National Historic Preservation Act, 16 U.S.C. ⊥ 470s (NHPA) requires federal agencies to take into account, prior to licensing a project, the effect of the project on properties listed or eligible for listing on the National Register of Historic Places (National Register) and to provide the Advisory Council on Historic Preservation (Advisory Council) a reasonable opportunity to comment. The Section 106 process generally involves three steps: First, the Commission, in

consultation with the State Historic Preservation Officer (SHPO) (here, State Historic), must identify any historic properties that may be affected by the project. Second, a determination is made whether the project could have an effect on historic properties. Third, the Advisory Council is afforded an opportunity to comment. However, if the Commission and the SHPO agree that the project will have no effect on historic

45/ See Guidelines for Public Safety at Hydropower Projects, supra, at p. 17.

properties, it is not necessary to consult the Advisory Council and no further action is required. 46/

State Historic states that after reviewing historic hydroelectric development in Virginia, it determined that the Reusens dam and powerhouse are eligible for listing on the National Register, under the National Historic Preservation Act, 16 U.S.C. ⊥ 470 et seq. (NHPA). 47/ State Historic states also that, as the proposed relicensing does not involve any physical modification to the historic structure, project operation will have no effect on historic properties. 48/

Appalachian disagrees with State Historic's determination of eligibility for the National Register. Its consultant concluded that the facility lacks the integrity of design, workmanship or materials to qualify it as an example of the early years of the hydroelectric industry. 49/ The reconstruction work done between 1924 and 1931, according to the consultant, produced a facility much like other projects built in Virginia during the same period. 50/

We agree with State Historic that the Reusens power plant is eligible for listing on the National Register. As discussed in the EA, 51/ the earlier project development does not merit inclusion in the National Register because the principal components were changed in subsequent reconstruction. However, the existing project, which has not been rebuilt since 1931, is an unique example in Virginia of re-development during the 1920's of a large, low-head hydroelectric facility, and therefore is eligible for listing in the National Register.

46/ For a more detailed discussion of the Section 106 process, see Thomas Hodgson & Sons, 63 FERC ¶ 61,068 at pp. 61,298-300 (1993).

47/ January 17, 1991 letter from Deputy State Preservation Officer, Virginia Department of Historic Resources, to Appalachian; and State Historic's February 7, 1992 letter to FERC, contained in State Environment's filing of August 14, 1993.

48/ See State Historic's February 7, 1992 letter to the Commission, supra.

49/ The first hydroelectric station at the site of the current Reusens Hydroelectric Project was constructed in 1903.

50/ Appalachian's filing of December 14, 1993.

51/ See the Section V.B.4. of the EA.

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We also agree with State Historic that the proposed project operations will have no effect on the historic properties, as defined under the NHPA. Section 800.9(a) of the regulations of the Advisory Council states that: 52/

> An undertaking has an effect on historic property when the undertaking may alter characteristics of the property that may qualify the property for inclusion in the National Register. For the purpose of determining effect, alteration to features of a property's location, setting, or use may be relevant depending on a property's significant characteristics and should be considered.

As noted, Appalachian proposes no changes to the dam and powerhouse structures except for installation of a bulkhead system for the project's spillway. The bulkheads, which are removable, would be installed in tracks on the spillway as needed for maintenance and repair operations. The installation of tracks would not result in any significant physical or visual alteration of the spillway gates or any other project structures. Therefore, the license's requirement for a bulkhead system would not alter the characteristics of the project (as a large, low-head hydroelectric facility redeveloped during the 1920's) that make it eligible for inclusion on the National Register. Accordingly, we find that issuing the new license for Project No. 2376 will have no effect on the historic properties, as defined under the NHPA.

Under Section 800.5(b) of the Advisory Council's regulations, 53/ where, as here, the Commission and the SHPO (State Historic) both find that a proposed project will have no effect on historic properties, the Commission "is not required to take any further steps in the section 106 process."

While we find no effect on the project's property eligible for inclusion on the National Register, we are nevertheless including Article 407, which requires Appalachian, after consulting with the SHPO, to file for Commission approval a cultural resources management plan to prevent any adverse effects on the eligible properties of maintenance and repair work at the project.

52/ 36 C.F.R. ⊥ 800.9(a) (1993).

53/ 36 C.F.R.⊥ 800.5(b).

2. James River and Kanawha Canal

Canal Society states, in its comments on the Draft EA, that the south end of the Reusens Dam (Lynchburg side) contains the remains of an original stone canal lock, built in the 1840's when the first dam at the site was constructed, as part of the James River and Kanawha Canal. 54/ As discussed in the EA, 55/ the Commission's staff anticipates that continued operation of the Reusens Project will not affect the canal lock, but that development of the canoe portageway may possibly lead to the identification of other buried remains of the canal. The staff recommends that in developing the canoe portageway, Appalachian consult with Canal Society and the SHPO, as it must do in any case if archeological or historic sites are discovered during project operations.

We therefore require, in Articles 408 and Article 409, that the historic canal lock and canoe portage area be subject to historic site protective measures, and that Appalachian include Canal Society as an entity to be consulted if the project modifications affect the historic canal lock or other canal remains in the vicinity of the canoe portage area.

WATER QUALITY CERTIFICATION

Under Section 401(a)(1) of the Clean Water Act, 33 U.S.C. ⊥ 1341(a)(1), the Commission may not issue a license for a hydroelectric project unless the state certifying agency has either issued water quality certification for the project or waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed one year.

On March 14, 1990, Appalachian filed a request with the Virginia State Water Control Board (Water Board) for water quality certification under Section 401(a)(1) of the Clean Water Act. The Water Board received the request on March 19, 1990, but has not acted further on the request. Under Order No. 533, Regulations Governing Submittal of Proposed Hydropower License Conditions and Other Matters, 56/ since the Water Board did not act on Appalachian's request within one year following the

54/ Canal Society's filing of November 17, 1993.

55/ See section V.B.4. of the EA.

56/ 56 FR 23,108 (May 20, 1991), III FERC Stats. & Regs., Regs. Preambles ¶ 30,921, on reh'g, Order No. 533-A, 56 FR 61,137 (Dec. 2, 1991), III FERC Stats. & Regs., Regs. Preambles ¶ 30,932.

June 19, 1991 effective date of Order No. 533, certification is deemed waived. 57/

We note that attached to State Environment's comments on the Reusens Project 58/ is an August 3, 1992 memorandum from the Water Board, which states that:

> The Water Board has no comments on this project. *** So long as the plant is operated in an autocycling mode during low flows [which is the project's low-flow ("dry") operating mode, see the "Project Operation" section of the S&DA] we do not anticipate any water quality standards violations with temperatures or dissolved oxygen.

FISH PASSAGE

Section 18 of the FPA, 16 U.S.C. ┴ 811, states that the Commission shall require construction, maintenance, and operation by a licensee of such fishways as the Secretaries of Commerce and Interior may prescribe. Interior's comments were silent on the

57/ In Order No. 533, the Commission revised its rules for determining the one-year period within which a state certifying agency must act on a request for water quality certification. Under the new rule, for certification requests filed on or after June 19, 1991, the effective date of Order No. 533, the waiver period begins on the date that the certifying agency receives the request. Order No. 533 also gave guidance for applying the new rule to pending requests for water quality certification, such as Appalachian's request, filed before June 19, 1991. For those certification requests, if the certifying agency had not accepted the request for filing "in accordance with applicable law governing filings with that agency," as described in the City of Fredericksburg, Virginia v. FERC, 876 F.2d 1109 (4th Cir. 1989) (Fredericksburg), on or before June 19, 1991, the one-year period begins on that date. See Order No. 533, n. 116, and Order No. 533-A, n. 70. As noted in section V.D. of the EA, the record does not conclusively show when, if ever, the Water Board "accepted" Appalachian's request for certification, as construed in Fredericksburg. In any event, regardless of whether the Water Board waived certification under the requirements of Fredericksburg, the Water Board has waived certification under Order No. 533 by failing to act on the certification request by one year following the effective date of Order No. 533.

58/ State Environment's filing of August 14, 1992.

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matter of fishways. 59/ Commerce (National Marine Fisheries Service (NMFS)) stated that the Reusens Project will not affect resources for which NMFS is responsible, that NMFS will have no interest in the project until anadromous fish can bypass the existing downstream barriers in the vicinity of Richmond, and that inclusion of an article providing for reopening the fish passage issue when anadromous fish reach the project area will satisfy NMFS's concerns. 60/ Accordingly, the license does not require Appalachian to construct a fishway at the project. Moreover, since neither Interior nor NMFS has specifically requested a Section 18 reservation of fishway prescription authority, and since standard license Article 15 of the license will reserve the Commission's authority to consider fish passage in the future, 61/ we are not including a license article reserving Section 18 fishway prescription authority.

State Fisheries suggested that Appalachian consider installation of fish passage facilities to allow resident fish populations to move upriver, and that the Commission should include a license article requiring provision of fish passage facilities for anadromous fish, if such facilities are deemed necessary in the future by State Fisheries and Interior. 62/ Standard Article 15 will meet State Fisheries' concerns.

59/ Interior's filings of August 31, 1993, and March 2, 1992.

60/ See NMFS's letter, filed December 27, 1991. See also NMFS's letter to Appalachian, filed April 14, 1993, which states that the project will not affect resources for which NMFS is responsible and that "[n]o additional consultation with NMFS, further copies of any correspondence or any additional information is required ... ."

61/ See Form L-3, Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters of the United States, 54 F.P.C. 1792, 1822 (1975), incorporated by reference in the new license for project No. 2376. See ordering paragraph (D), infra. Standard license Article 15 provides that the Commission, either upon its own motion or upon recommendation by Interior or state fish and wildlife agencies, and after notice and opportunity for hearing, may order the licensee to install facilities to benefit fish resources.

62/ See State Fisheries' comments to the Draft EA, filed December 14, 1993.

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SECTION 10 OF THE FEDERAL POWER ACT

Section 15(a)(2) of the FPA, 16 U.S.C. ⊥ 808(a)(2), provides that the requirements of Section 10 of the FPA, 16 U.S.C. ⊥ 803, pertaining to conditions of licenses are applicable also to Commission consideration of new license applications. Following is a discussion of the relevant provisions of Section 10.

1. Comprehensive Plans (Section 10(a)(2)(A))

Section 10(a)(2)(A) of the FPA, 16 U.S.C. ⊥ 803(a)(2)(A), requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project. 63/ Under this section, federal and state agencies filed 21 plans that address various resources in Virginia. Of these, three plans are relevant to the Reusens Project. 64/ No conflicts were found.

2. Recommendations of other agencies (Section 10(a)(2)(B))

Section 10(a)(2)(B) of the FPA requires the Commission to consider the recommendations of relevant federal and state agencies exercising administration over flood control, navigation, irrigation, recreation, cultural and other relevant resources, and the recommendations of Indian tribes affected by the project. We have included articles requiring protection of project properties eligible for inclusion on the National Register, consistent with the recommendations of State Historic, and articles requiring enhancement of recreational resources, such as canoe portage and river access, consistent with the recommendations of State Fisheries and State Recreation.

3. Consumption Efficiency Improvement Program 10(a)(2)(C)

Section 10(a)(2)(C) of the FPA, 16 U.S.C. ⊥ 803(a)(2)(C), requires the Commission, in acting on a license application, to consider the extent of electricity consumption efficiency improvement programs in the case of license applicants primarily

63/ Comprehensive plans for this purpose are defined at 18 C.F.R. ⊥ 2.19 (1993).

64/ (1) Virginia Department of Conservation and Recreation, The 1989 Virginia Outdoors Plan, Richmond, Virginia, 1989; (2) U.S. Fish and Wildlife Service and Canadian Wildlife Service, North American Wildlife Management Plan, Twin Cities, Minnesota, 1986; and (3) U.S. Fish and Wildlife Service and Canadian Wildlife Service, North American Waterfowl Management Plan, 1986.

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engaged in the generation or sale of electric power, like Appalachian. 65/

The Reusens Project is integrated into Appalachian's transmission and distribution system serving approximately 827,000 customers in southwestern Virginia and southeastern West Virginia. As Appalachian is a subsidiary of American Electric Power Company, Inc (AEP), its system is integrated into AEP's entire interconnected system.

Appalachian's activities to promote conservation and to reduce demand for peak period generating capacity are performed through its parent company, AEP. Among these activities are: informing customers about booklets and brochures on conservation measures; 66/ advertising energy saving programs; maintaining a speakers bureau that provides speakers, films and video tapes on efficient energy use; promoting high-efficiency heating and cooling devises and energy conservation measures to area builders and dealers; offering customers low-interest financing for insulation materials and storm doors and windows; promoting heat pumps to conserve energy; and testing new devices for residential homes. We find that Appalachian is making a good faith effort to encourage its customers to conserve electricity.

4. Recommendations of Federal and State Fish and Wildlife Agencies (Section 10(j))

Section 10(j) of the FPA, 16 U.S.C. ⊥ 803(j), requires the Commission to include license conditions that are based on recommendations of federal and state fish and wildlife agencies submitted pursuant to the Fish and Wildlife Coordination Act, 16 U.S.C. ⊥ 661 et seq., for the protection of, mitigation of adverse impacts to, and enhancement of fish and wildlife. However, the Commission retains ultimate authority to decide whether any recommended conditions are "inconsistent with the purposes of" the FPA or other laws, and when the Commission acts contrary to a recommendation of a fish and wildlife agency, the Commission must make an appropriate finding on the record to justify its decision. No fish and wildlife agency filed

65/ Section 10(a)(2)(C) requires the Commission to take into account the conservation policies, restrictions, and requirements of applicable state regulatory authorities. The Commonwealth of Virginia has no public utility commission or other regulatory body with specific authority to set conservation policies in the state.

66/ Appalachian offers booklets about home insulation, home energy management, electric thermal storage, heat pump use, and water heater insulation.

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Section 10(j) conditions or recommendations for inclusion in the new license.

SECTION 15 OF THE FEDERAL POWER ACT

Section 15 of the FPA, 16 U.S.C. ⊥ 808, specifies a number of factors that the Commission is required to consider in acting

on an application for a new license following the expiration of an existing license.

1. The plans and abilities of the applicant to comply with the articles, terms, and conditions of any license issued to it and other applicable provisions of Part I of the FPA (Section 15(a)(2)(A))

Appalachian states that compliance with license terms and conditions is a priority goal. The Federal Power Commission issued the license for the Reusens Project to Appalachian in 1964. We have reviewed Appalachian's compliance with the terms and conditions of the existing license. Appalachian has a satisfactory record of filing submittals in a timely fashion, and generally complying with its existing license. Therefore, and in consideration of the requirements of the new license, we conclude that Appalachian will be able to comply with the terms and conditions of the new license and other provisions of Part I of the FPA.

2. The plans of the applicant to manage, operate and maintain the project safely (Section 15(a)(2)(B))

Appalachian has a good history of safe operation of the Reusens Project. Appalachian reports that the project undergoes a structural maintenance inspection yearly, with certain structural points surveyed semi-annually. Additionally, it uses monitoring devices to examine the powerhouse for structural movement and cracks.

No injuries or deaths to the public have occurred at the project since Appalachian began keeping records of public safety in 1971. Before the Reusens Project begins generation, a warning siren sounds for two minutes and the generating units can not start unless the siren sounds. The project floodgates must be operated on site; when flow conditions require floodgate discharges, plant personnel visually observe upriver and downriver areas beforehand. Appalachian has posted signs warning the public of changes in downstream river flows from project generation.

In 1991, Appalachian undertook two measures to promote boating safety. It installed a boat barrier upstream of the project to prevent boaters and canoeists from entering the area

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immediately upstream of the powerhouse intakes and spillway floodgates. It also closed the boat launch located near the powerhouse intake (see discussion above).

Based upon our review of the specific information provided by Appalachian on various aspects of the project that affect public safety, inspection reports by the Commission's Regional Director, and independent consultant reports filed under Part 12 of our regulations, 67/ we conclude that Appalachian's plans to manage, operate, and maintain the Reusens Project safely are adequate.

3. The plans and abilities of the applicant to operate and maintain the project in a manner most likely to provide efficient and reliable electric service (Section 15(a)(2)(C))

Appalachian and its predecessors have operated the Reusens Project since 1926. Appalachian reports that the project has a history of low costs associated with each megawatthour (MWh) of generation and offers, in its license application, a table showing these costs from 1980 to 1990. Except for 1985, when a record flood damaged the Reusens Dam, these costs range from a low of $4.56 MWh in 1984 to a high of $12.77 MWh in 1988.

Appalachian states that, typically, generating units are inspected quarterly for preventive maintenance. Appalachian states that during the term of a new license it will continue regular inspections and maintenance of the project's generating equipment, including evaluation of the equipment's physical condition. Should it be necessary and economical to replace any existing major generating equipment with new equipment, Appalachian advises that it will submit the appropriate information to Commission staff.

Commission staff examined records of Appalachian's operation of the Reusens Project and found that the applicant has operated the project in an efficient manner. The staff examined records of lost generation caused by unscheduled power outages, and found that the amount of lost generation was not significant compared to total annual generation.

Based on the above considerations and our review of the operation inspection reports by the Regional Director and Appalachian's past performance and future plans to operate the project, we believe that the project is, and under the new license will continue to be, operated and maintained in an efficient and reliable manner.

67/ 18 C.F.R. Part 12.

4. The need of the applicant over the short and long term for the electricity generated by the project to serve its customers (Section 15(a)(2)(D))

The Reusens Project is located in the region covered by the East Central Area Reliability Council (ECAR). 68/ A 1993 ECAR report 69/ projects an annual 1.4 percent demand growth and continued capacity additions in its region during the 10-year forecast period. Appalachian anticipates that the electric energy requirements of its customers will increase by 1.5% annually in the foreseeable future.

The net energy generated by the project is small when compared to Appalachian's total energy sales. For example, in 1990, Appalachian's total energy generation was 29,052,942 MWh,

while the Reusens Project's net energy generation was 47,267 MWh, or considerably less than one percent. However, the project is useful to Appalachian and its customers as an inexpensive source of energy and to meet local loads.

The Reusens Project's energy production costs are lower than the replacement energy costs from available sources. Appalachian identifies the types of generating facilities that would supply replacement power (if the project were not issued a new license) as gas-fired combustion turbine, gas-fired combined cycle units and pulverized coal with flue gas desulfurization units. Reusens Project generation thus displaces electric power generation from fossil fuels, conserving these non-renewable resources, and reducing the emission of noxious byproducts from their combustion.

Because of the Reusens Project's small size, the overall effect on the customers of, and communities served by, Appalachian of ceasing project operation would be minimal. However, we find that continued project generation is more beneficial than the alternative means of replacing project power. The Reusens Project will provide system benefits that justify a new license for the project from a need-for-power perspective.

68/ On January 4, 1967, 23 utilities operating in the Federal Power Commission's East Central region II consummated the East Central Area Reliability Coordinating Agreement to coordinate planning and augment the reliability of the operation of their generation and transmission facilities.

69/ The 1993 ECAR IE-411 Program Report summarizes the resource plans of its various members.

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5. The applicant's existing and planned transmission services (Section 15(a)(2)(E))

Appalachian proposes no redevelopment of the existing transmission system, which includes: the 4.15-kilovolt (kV) project generator leads; a 3-phase, 4.15/34.5-kV, 15.5-megavoltampere step-up transformer; the short, 34.5-kV overhead service connection transmission line; and appurtenant facilities.

The Reusens Project's electrical system is designed to function so that no significant operational or circuit loading impacts occur when the project is out of service. The project is in close proximity to the load it serves, thus minimizing electrical losses and improving area system efficiency.

We find that Appalachian's existing transmission system is sufficient and that no changes are needed.

6. Whether the plans of the applicant will be achieved, to

the greatest extent possible, in a cost effective manner (Section 15(a)(2)(F)

Appalachian considered but rejected as economically infeasible plans to increase Reusens Project generation by installing an additional generating unit or by replacing existing units with higher capacity units. The combined hydraulic capacity of the project's five existing generating units is exceeded only about 14 percent of the time. Appalachian computed that the resulting levelized costs of increasing generation would be more than twice the levelized cost of power from alternative sources. The Commission's staff investigated and concurs that adding additional capacity is not warranted.

7. Such other factors as the Commission deems relevant (Section 15(a)(2)(G))

As discussed elsewhere in this order and in the attached EA, the issuance of a new license for the Reusens Project would not result in any major, long-term adverse environmental impacts. Moreover, the issuance of a new license will permit implementation of Appalachian's plans to protect Lynchburg's water supply, and to continue protection of wildlife on Chestnut Island in the Reusens Reservoir, and protection of the Reusens Dam and Powerhouse as historic landmarks.

8. The applicant's record of compliance with the terms and conditions of the existing license (Section 15(a)(3)(A))

As discussed more fully above, based on a review of the Regional Director's and other Commission records,we conclude that

Appalachian has complied with the terms and conditions of its existing license. We find that Appalachian's overall record of making timely filings and compliance with its license is satisfactory. Appalachian has the ability to comply with the terms of the new license.

9. The applicant's actions related to the project which affect the public (Section 15(a)(3)(B))

Appalachian reports payment in 1990 of Virginia real estate, personal property and gross receipts taxes totaling $75,528, an amount that would be diminished were a new license not issued. Appalachian has demonstrated its regard for public safety by installing a boat barrier at the Reusens Dam and ending boat launches near the A Station intake, and Appalachian has encouraged energy-saving among its customers and land developers. Thus, Appalachian's actions affecting the public in relation to the Reusens Project support the issuance of a new license.

COMPREHENSIVE DEVELOPMENT

Sections 4(e) and 10(a)(1) of the FPA, 16 U.S.C. ⊥⊥ 797(e) and 803(a)(1), require the Commission, in acting on applications

for license, to give equal consideration to the power and development purposes and to the purposes of energy conservation, the protection, mitigation of damage to, and enhancement of fish and wildlife, the protection of recreational opportunities, and the preservation of other aspects of environmental quality. Any license issued shall be such as in the Commission's judgment will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration. For the reasons discussed below, we conclude that the new license issued today for the Reusens Project does not conflict with any planned or authorized development and is best adapted to comprehensive development of the James River for beneficial public uses.

In the EA, the Commission's staff analyzed three options for a new license: Appalachian's proposed project, the proposed project with the staff's enhancement measure of a canoe portage, and the project as originally licensed (the no-action alternative). We have reviewed the staff's analysis and have decided to issue the new license with the staff's enhancement measure.

Along with Appalachian's recommendation for building the bulkhead system, only one of the staff's recommended enhancement measure could have a significant cost: providing a canoe portage.

The bulkheads will allow Appalachian to perform maintenance and repair work without drawing down the reservoir, thus ensuring continued water withdrawal operations at Lynchburg's Abert Pump Station. These bulkheads will be installed at the upstream side of the floodgates. Installation and operation of the bulkhead system will not affect the aquatic resources in the project areas. Even with the cost of the bulkhead system, the proposed project will still have net power benefits over the new license term compared to the least-cost alternative.

As discussed more fully in the EA, the canoe portage that we are requiring will provide safe passage around the Reusens Dam and will enable increased recreational use of this reach of the James River. Its construction is estimated to cost less than $10,000, and subsequent maintenance costs will be minimal. Mitigating closure of the boat launch on the impoundment, because of public safety problems, is not practicable; however, the new license requires Appalachian to continue its efforts with the Virginia resource agencies to develop a public boat access area on the James River in the Lynchburg vicinity.

As noted, the Boat Club opposes issuance of the new license absent construction of a boat launch at the Reusens reservoir. As discussed in the EA, in light of the benefits from issuing a new license for Project No. 2376 (generating electricity from a renewable resource and providing recreational opportunities), we believe that the absence of the Boat Club's boat launch, on balance, does not justify denying the license.

In determining whether a proposed project will be best adapted to a comprehensive plan for developing a waterway for beneficial public purposes, pursuant to Section 10(a)(1) of the FPA, 16 U.S.C. ⊥ 803(a)(1), the Commission considers, among other things, whether the project will provide economic benefits. In determining whether this project will provide economic benefits, the Commission considered the costs of protection of Lynchburg's water supply (including the cost of the proposed bulkhead system described above) and building a canoe portageway.

As a general rule, a proposed project is economically beneficial so long as its projected levelized cost is less than its long-term levelized cost of alternative energy to any utility in the region that can be served by the project. The estimated long-term levelized cost of the Reusens Project, including the costs of installing the bulkhead system, would be approximately 42 mills per kilowatt hour (mills/kWh) over the course of a 30-year license. As noted above, the cost of the canoe portageway is estimated to not exceed $10,000, too small an amount to influence the long-term economics of the project. The cost of the bulkhead system reduces the net energy benefits of the project by about 1.0 mills/kWh. The long-term levelized cost of

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alternative energy is estimated to be 61 mills/kWh. The projected levelized cost of operating the Reusens Project is less than the levelized cost of alternative energy, and, therefore, the project is economically beneficial. The benefits from the canoe portage and bulkhead system for recreation and protection of municipal water supply operations far outweigh their modest decrease in energy benefits.

Therefore, in light of all of the above, and based on our review of our staff's evaluation of the environmental and economic effects of the proposed project and its alternatives, we conclude that issuing a new license with the requirements of bulkhead construction, a canoe portage, and pursuit of a boat access area will best adapt the Reusens Project to a comprehensive plan for developing the James River drainage basin.

PROJECT RETIREMENT

The Commission has issued a Notice of Inquiry (NOI), dated September 15, 1993, requesting comments that address numerous issues involving the decommissioning of licensed hydropower projects. 70/ The NOI states that the Commission is not proposing new regulations at this time, but is inviting comments on whether new regulations may be appropriate. Alternatively, the Commission may consider issuing a statement of policy addressing the decommissioning of licensed hydropower projects, or take other measures. The Reusens Project may be affected by future actions that the Commission takes with respect to issues raised in the NOI. Therefore, we have included Article 204, which reserves authority to the Commission to require the licensee to conduct studies, make financial provisions, or otherwise make reasonable provisions for decommissioning the

project.

By including Article 204, the Commission does not intend to prejudge the outcome of the NOI. We are simply including the article so that we will be in a position to make any lawful and appropriate changes in the terms and conditions of this license, which is being issued during the pendency of the NOI, based on the final outcome of that proceeding.

70/ Notice of Inquiry, Project Decommissioning at Relicensing, Docket No. RM93-23-000, September 15, 1993, 58 FR 48,991 (1993).

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LICENSE TERM

In 1986, the Electric Consumers Protection Act 71/ modified Section 15 of the FPA to specify that any license issued under Section 15 shall be for a term that the Commission determines to be in the public interest, but not less than 30 years, nor more than 50 years. The Commission's policy is to establish 30-year terms for those projects that propose little or no redevelopment, new construction or new capacity; 40-year terms for those projects that propose moderate redevelopment, new construction or new capacity; and 50-year terms for those projects that propose extensive redevelopment, new construction or new capacity.

Appalachian does not propose significant changes in the existing project works for the Reusens Project. Accordingly, the new license for this project will be for a term of 30 years.

SUMMARY OF FINDINGS

The EA issued for this project contains background information, analysis of impacts, support for related license articles, and the basis for the finding of no significant impact on the environment. Issuance of this license is not a major federal action significantly affecting the quality of the human environment.

The design of this project is consistent with engineering safety standards. The project will be safe if operated and maintained in accordance with the requirements of this license. Analysis of related issues is provided in the above-referenced Safety and Design Assessment.

We conclude that the Reusens Project does not conflict with any planned or authorized development and is best adapted to the comprehensive development of the James River for beneficial

public use.

The Commission orders:

(A) This license is issued to the Appalachian Power Company (licensee) for a period of 30 years, effective the first day of the month in which it is issued, to operate and maintain the Reusens Project. This license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of this license, and to the regulations the Commission issues under the provisions of the FPA.

71/ Pub. L. 99-495, 100 Stat. 1243 (1986).

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, as shown on Exhibit G, FERC Drawing Number 14.

(2) Project works consisting of: (1) a 24-foot-high, 416-foot-long concrete dam and spillway on the James River, with eight 16 3/4-foot-high floodgates; (2) a 25-foot-high, 125«-foot-long concrete curved auxiliary spillway section with 7¬-foot-high flashboards; (3) a 500-acre impoundment; (4) two powerhouses (A Station and B Station), one containing three generating units with a total installed capacity of 7.5 MW, and one containing two generating units with a total installed capacity of 5.0 MW; and (6) other related facilities.

The project works generally described above are more specifically described in Exhibit A of the license application and shown by Exhibit F:

Exhibit F-	FERC No. 2376-	Title
1	12	General Design Drawing Plan and Elevation
2	13	General Design Drawing Sections

(3) All of the structures, fixtures, equipment, or facilities used to operate or maintain the project and located within the project boundary, all portable property that may be employed in connection with the project and located within or outside the project boundary, and all riparian or other rights that are necessary or appropriate in the operation or maintenance of the project.

(C) Section A1.0 -- Project Description, and Section A1.1 -- Physical Composition, Dimensions and General Configuration of Major Project Structures, of Exhibit A, Exhibit F, and Exhibit G of the license application are approved and made part of the license.

(D) This license is subject to the articles set forth in Form L-3 (October 1975), entitled "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters of the United States," and the following additional articles:

Article 201. The licensee shall pay the United States an annual charge, effective the first day of the month in which this license is issued, for the purpose of reimbursing the United States for the cost of administration of Part I of the FPA, as

determined by the Commission. The authorized installed capacity for that purpose is 17,700 horsepower.

Article 202. (a) In accordance with the provisions of this article, the licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensee shall also have continuing responsibility to supervise and control the use and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed, under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, canceling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The type of use and occupancy of project lands and water for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than ten watercraft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements.

Before granting permission for construction of bulkheads or retaining walls, the licensee shall: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of

the reservoir shoreline. To implement this paragraph (b), the licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the licensee's costs of administering the permit program. The Commission reserves the right to require the licensee to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

(c) The licensee may convey easements or rights-of-way across, or leases of, project lands for: (1) replacement, expansion, realignment, or maintenance of bridges or roads where all necessary state and federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kV or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project reservoir. No later than January 31 of each year, the licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 watercraft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina; (6) recreational development consistent with an approved Exhibit R or approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet, measured

horizontally, from project waters at normal surface elevation; and (iii) no more than 50 total acres of project lands for each

project development are conveyed under this clause (d)(7) in any calendar year. At least 60 days before conveying any interest in project lands under this paragraph (d), the licensee must submit a letter to the Director, Office of Hydropower Licensing, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked Exhibit G or K map may be used), the nature of the proposed use, the identity of any federal or state agency official consulted, and any federal or state approvals required for the proposed use. Unless the Director, within 45 days from the filing date, requires the licensee to file an application for prior approval, the licensee may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraph (c) or (d) of this article:

(1) Before conveying the interest, the licensee shall consult with federal and state fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.

(2) Before conveying the interest, the licensee shall determine that the proposed use of the lands to be conveyed is not inconsistent with any approved Exhibit R or approved report on recreational resources of an Exhibit E; or, if the project does not have an approved Exhibit R or approved report on recreational resources, that the lands to be conveyed do not have recreational value.

(3) The instrument of conveyance must include the following covenants running with the land : (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; (ii) the grantee shall take all reasonable precautions to insure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project; and (iii) the grantee shall not unduly restrict public access to project waters.

(4) The Commission reserves the right to require the licensee to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised Exhibit G or K

drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded from the project only upon a determination that the lands are not necessary for project purposes, such as operation and maintenance, flowage, recreation, public access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project shall be consolidated for consideration when revised Exhibit G or K drawings would be filed for approval for other purposes.

(g) The authority granted to the licensee under this article shall not apply to any part of the public lands and reservations of the United States included within the project boundary.

Article 203. Pursuant to Section 10(d) of the FPA, a specified reasonable rate of return upon the net investment in the project shall be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. The licensee shall set aside in a project amortization reserve account at the end of each fiscal year one half of the project surplus earnings, if any, in excess of the specified rate of return per annum on the net investment. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year, the licensee shall deduct the amount of that deficiency from the amount of any surplus earnings subsequently accumulated, until absorbed. The licensee shall set aside one-half of the remaining surplus earnings, if any, cumulatively computed, in the project amortization reserve account. The licensee shall maintain the amounts established in the project amortization reserve account until further order of the Commission.

The specified reasonable rate of return used in computing amortization reserves shall be calculated annually based on current capital ratios developed from an average of 13 monthly balances of amounts properly includible in the licensee's long-term debt and proprietary capital accounts as listed in the Commission's Uniform System of Accounts. The cost rate for such ratios shall be the weighted average cost of long-term debt and preferred stock for the year, and the cost of common equity shall be the interest rate on 10-year government bonds (reported as the Treasury Department's 10 year constant maturity series) computed on the monthly average for the year in question plus four percentage points (400 basis points).

Article 204. The Commission reserves authority, in the context of a rulemaking proceeding or a proceeding specific to this license, to require the licensee at any time to conduct

studies, make financial provisions, or otherwise make reasonable provisions for decommissioning of the project. The terms of this article shall be effective unless the Commission, in docket No. RM93-23, finds that the Commission lacks statutory authority to require such actions, or otherwise determines that the article should be rescinded.

Article 301. The licensee shall, within three years from the date of issuance of the license, build a removable bulkhead system on the main spillway floodgates, allowing the gates to be isolated for maintenance and repair without lowering the reservoir.

Article 302. The licensee shall, at least 60 days prior to the start of construction, submit one copy to the Commission's Regional Director and two copies to the Commission (one of these shall be a courtesy copy to the Director, Division of Dam Safety and Inspections), of the final contract drawings and specifications for the bulkhead system. The Commission may require changes in the plans and specifications to assure a safe and adequate project.

If the licensee plans substantial changes to location, size, type, or purpose of the water-retention structures, powerhouse, or water conveyance structures, the plans and specifications must be accompanied by revised Exhibit F and G drawings, as necessary.

Article 401. The licensee shall release from the Reusens dam into the James River the following minimum flows as measured immediately downstream from the project tailrace. The table shows the appropriate minimum flow that shall be released below the tailrace when the inflow to the reservoir reaches a certain level.

Reservoir Inflows	Minimum Discharge 1
less than 500 cfs	333 cfs or reservoir inflow, whichever is less
500 to 3,300 cfs	333 cfs
3,300 to 4,000 cfs	1,000 cfs
greater than 4,000 cfs	reservoir inflow

1 Minimum discharge is measured as average hourly flow.

These flows may be temporarily modified if required by operating emergencies beyond the control of the licensee, and for short periods upon mutual agreement between the licensee, the

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Virginia Department of Game and Inland Fisheries, and the U.S.

Fish and Wildlife Service. If the flow is so modified, the licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.

Article 402. The licensee shall maintain the Reusens forebay at a minimum water surface elevation of 547.0 feet National Geodetic Vertical Datum. This minimum forebay water surface elevation may be temporarily modified if required by operating emergencies beyond the control of the licensee, and for short periods of time upon agreement between the licensee and the City of Lynchburg, Virginia, except as modified by order of the Commission pursuant to reserved authority in this license. If the forebay water surface elevation is so modified, the licensee shall notify the City of Lynchburg immediately and the Commission as soon as possible, but no later than 10 days after each such incident.

Article 403. Within six months from the issuance of this license, the licensee shall file with the Commission, for approval, a plan and schedule for preparing and implementing an operation plan for the project. The operation plan shall establish procedures for maintaining water elevations in the James River at sufficient levels to minimize adverse impacts to the City of Lynchburg's (City) James River pump stations during any emergency or maintenance situations.

The licensee shall prepare the plan after consultation with the City, the Virginia Department of Game and Inland Fisheries, and the United States Fish and Wildlife Service. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the City and the agencies, and specific descriptions of how the City's and the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the City and the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 404. Any application to surrender this license shall include proof of service of a copy of that application on the City of Lynchburg, Virginia.

Article 405. Within six months after issuance of the license, the licensee shall file with the Commission, for

approval, a plan that provides a framework for developing minimum flows to protect fishery resources in the James River in the event of any structural changes to Lynchburg dam that affect water levels between the project and Lynchburg Dam. The plan shall include provisions for filing a report with the Commission,

at least six months prior to any structural changes to Lynchburg Dam, that outlines proposed minimum flows. The report shall be prepared after consulting with the Virginia Department of Game and Inland Fisheries and the U.S. Fish and Wildlife Service.

The licensee shall prepare the plan after consultation with the Virginia Department of Game and Inland Fisheries and the U.S. Fish and Wildlife Service. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 406. Within six months after issuance of the license, the licensee shall file with the Commission, for approval, a plan to release flows through the floodgates into the James River below the Reusens dam during project shutdowns. The purpose of this plan is to ensure that a minimum flow is maintained in the James River below the project to protect aquatic resources.

The licensee shall prepare the plan after consultation with the Virginia Department of Game and Inland Fisheries, the City of Lynchburg, and the U.S. Fish and Wildlife Service. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agency to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

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Article 407. The licensee shall implement the management plan for wildlife habitat on Chestnut Island, filed on February 25, 1993, providing for the following measures: (1) conducting an annual visual inspection for evidence of increased human disturbance and, in the event of such disturbance, consulting with the Virginia Department of Game and Inland Fisheries (VDGIF); (2) consulting with VDGIF about any planned activities that may affect Chestnut Island; (3) monitoring the island for evidence of increased bank erosion

and, in the event of increased erosion, consulting with VDGIF; (4) notifying VDGIF if unanticipated impacts occur to the island, and (5) consulting with VDGIF and the U.S. Fish and Wildlife Service every five years regarding the wildlife management plan's success and proposing, if necessary, revisions or modifications to the plan. The Commission reserves the right to require changes to the plan.

Article 408. Within six months after issuance of the license, the licensee shall file: (1) for Commission approval, a cultural resources management plan for the Reusens hydroelectric facilities to avoid any effects of maintenance and repair work at the facilities; and (2) the Virginia State Historic Preservation Officer's (SHPO) written comments on the plan. The plan shall be based on the recommendations of the SHPO, and adhere to the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation.

The Commission may require additional work based on the filing. The licensee shall take the necessary steps to protect the historical integrity of the project facilities from any effects of repair and maintenance work until notified by the Commission that the requirements of this article have been satisfied.

Article 409. If archeological or historic sites are discovered during project operation, the licensee shall: (1) consult with the Virginia State Historic Preservation Officer (SHPO); (2) prepare a cultural resources management plan and a schedule to evaluate the significance of the sites and to avoid or mitigate any impacts to any sites found eligible for inclusion in the National Register of Historic Places; (3) base the plan on the recommendations of the SHPO and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation; (4) file the plan for Commission approval, together with the written comments of the SHPO on the plan; and (5) take the necessary steps to protect the sites from impact until notified by the Commission that all of these requirements have been satisfied.

The historic canal lock site buried under project facilities shall be subject to these protective measures if potentially

affected by project operation or project modifications or repairs. In this case, the licensee shall consult and provide written comments from the American Canal Society in addition to the SHPO.

The Commission may require a cultural resources survey and changes to the cultural resources management plan based on the filings. The licensee shall not implement a cultural resources management plan or begin any land-clearing or land-disturbing activities in the vicinity of any affected sites until informed by the Commission that the requirements of this article have been fulfilled.

Article 410. Within six months from the date of issuance of this license, the licensee shall file a plan for developing a canoe portage on the south side of the project. The plan shall include, at a minimum, the following: (1) design drawings for a put-in, take-out, and portage way, including use of the existing rail crossing at the dam for public access to the portage way; (2) cost estimates; (3) a construction schedule; (4) provisions for operating and maintaining the facility; and (5) procedures for identifying historic sites in the area associated with the James River and Kanawha Canal; and (6) constructing signs or other interpretive facilities to make the public aware of historical significance of the canal.

The licensee shall prepare the plan after consultation with the SHPO, the Virginia Department of Conservation and Recreation, the Virginia Department of Game and Inland Fisheries, the Coastal Canoeists Inc., the CSX Inc., the American Canal Society and the Commission's Atlanta Regional Office. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the entities consulted, and specific descriptions of how these entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. No modification or enhancement activities covered by the plan shall begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

If any archeological or historic sites are identified during this work that need to be evaluated for inclusion in the National Register of Historic Places, the licensee shall follow

consultation, documentation, and filing requirements in Article 409.

Article 411. Within six months after issuance of this license, the licensee shall file a report documenting its progress toward enhancing, cooperatively with the State of Virginia, public access to the James River in the project area.

The report shall be filed on an annual basis thereafter until such time as a suitable public access site is identified in the vicinity of the City of Lynchburg. If a site is identified, within one year from the identification the licensee shall file, for approval, a plan for its development. The plan shall include, at a minimum, the following: (1) design drawings, (2) cost estimates, (3) a construction schedule, and (4) provisions for operating and maintaining the facility. The plan shall be prepared after consultation with the Virginia

Department of Game and Inland Fisheries, the Virginia Department of Conservation and Recreation, the City of Lynchburg, Campbell County, and the Coastal Canoeists, Inc.

The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the consulted entities, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. No modification or enhancement activities covered by the plan shall begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 501. If the licensee's project was directly benefitted by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement during the term of the original license (including extensions of that term by annual licenses), and if those headwater benefits were not previously assessed and reimbursed to the owner of the headwater improvement, the licensee shall reimburse the owner of the headwater improvement for those benefits, at such time as they are assessed, in the same manner as for benefits received during the term of this new license.

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(E) The licensee shall serve copies of any Commission filing required by this order on any entity specified in this order to be consulted on matters related to the Commission filing. Proof of service on these entities must accompany the filing with the Commission.

(F) This order is final unless a request for rehearing is filed within 30 days of the date of issuance of this order, pursuant to Section 313 of the FPA. The filing of a request for rehearing does not operate as a stay of the effective date of this order or of any other date specified in this order, except as specifically ordered by the Commission. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

By the Commission. Commissioner Bailey concurred with a separate statement attached.

(S E A L)

Lois D. Cashell,

940510-0228

940510-0228

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Appalachian Power Company) Project No. 2376-001

ERRATUM NOTICE

(May 5, 1994)

ORDER ISSUING NEW LICENSE

(Issued March 18, 1994)

Page 31, 2nd line from top: change "17,700" to "16,700".

Lois D. Cashell,
Secretary.

68 FERC ¶ 61,036UNITED STATES OF AMERICA

FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Elizabeth Anne Moler, Chair;
Vicky A. Bailey, James J. Hoecker,
William L. Massey, and Donald F. Santa, Jr.

Appalachian Power Company) Project No. 2376-002

ORDER GRANTING REHEARING

(Issued July 8, 1994)

The Appalachian Power Company (Appalachian) filed a timely request for rehearing of the Commission's order, issued on March 18, 1994, that granted Appalachian a new license for the Reusens Project No. 2376, located on the James River, in Amherst and Bedford Counties, Virginia. 1/ Appalachian asks for revision of license Articles 401 and 408, pertaining to minimum flows and to the filing of a cultural resources management plan. 2/ As discussed below, the request for rehearing is granted.

Article 401 stipulates four different minimum flow releases from the Reusens Dam, depending on the level of inflow into the project reservoir. 3/ Appalachian asks the Commission to modify the article by instead requiring a single continuous minimum flow of 333 cfs or reservoir inflow, whichever is less. Appalachian states that requiring the flows above the described 333-cfs level will unnecessarily limit flexible and efficient project operations.

1/ 66 FERC ¶ 61,316.

2/ Appalachian also asked that Article 201 be corrected to state that the project's authorized installed capacity is 17,700 horsepower instead of 16,700 horsepower. This correction was made in an erratum notice issued on May 5, 1994.

3/ 66 FERC at p. 61,969. Article 401 sets forth the following reservoir inflow levels and corresponding required minimum flows: (1) 333 cubic feet per second (cfs) or reservoir inflow, whichever is less, when inflow is less than 500 cfs; (2) 333 cfs, when inflow is 500 cfs to 3,300 cfs; (3) 1,000 cfs, when inflow is 3,300 cfs to 4,000 cfs; and reservoir inflow, when inflow is greater than 4,000 cfs.

The flow releases required under Article 401 represent typical historic project operations, as described by Appalachian in its application for a new license. However, as noted by the Commission in its March 18, 1994 order, 4/ the Environmental Assessment for the project determined that a minimum average hourly flow of 333 cfs, or reservoir inflow, whichever is less, will adequately protect fishery resources and will provide adequate water levels for downstream municipal water supply operations. Consequently, the minimum flow requirements of Article 401, which were not requested by resource agencies, are not required to protect environmental resources and could hamper operations. Accordingly, we grant Appalachian's request.

Article 408 requires Appalachian to file, for Commission approval and within six months after issuance of the license, a cultural resources plan for avoiding effects of maintenance and repair work at the facilities, particularly effects on the historical integrity of project facilities. The plan must be based on the recommendations of the Virginia State Historic Preservation Officer (SHPO), whose comments must be filed with the plan. 5/ Appalachian asks that the filing deadline be extended from six months to two years. It anticipates that its consultations with the SHPO will be lengthy because of its disagreement with the SHPO over the Reusens Project facilities' eligibility for listing on the National Register of Historic Places. 6/

Because current project operations do not affect any archeological sites in the vicinity of the project or the historical integrity of project facilities, as defined under the National Historic Preservation Act, 16 U.S.C. ⊥ 470 et seq., 7/ and because we find the requested time extension reasonable under the circumstances, we grant Appalachian's request.

The Commission orders:

(A) The request for rehearing filed in this proceeding by Appalachian Power Company on March 24, 1994, is granted.

4/ Id. at p. 61,956 n. 15.

5/ Id. at p. 61,971.

6/ The Commission agreed with the SHPO that the project dam and powerhouse are eligible for listing in the National Register of Historic Places. Id. at pp. 61,959-60. Appalachian has not sought rehearing of this finding.

7/ Id. at p. 61,960.

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(B) Article 401 of the new license issued on March 18, 1994, for the Reusens Project No. 2367 is revised to read:

> Article 401. The licensee shall release from the Reusens Dam into the James River an average hourly flow of 333 cubic feet per second (cfs) or inflow to the project reservoir, whichever is less, as measured downstream from the project tailrace. This flow requirement may be temporarily modified if required by operating emergencies beyond the control of the licensee, and for short periods of time upon mutual agreement between the licensee, the Virginia Department of Game and Inland Fisheries, and the U.S. Fish and Wildlife Service. If the flow is so modified, the licensee shall notify the Commission as soon as possible, but not later than ten days after each such incident.

(C) Article 408 of the new license issued on March 18, 1994, for the Reusens Project No. 2367 is revised to read:

> Article 408. Within two years after issuance of the license, the licensee shall file: (1) for Commission approval, a cultural resources management plan for the Reusens hydroelectric facilities to avoid any effects of maintenance and repair work at the facilities; and (2) the Virginia State Historic Preservation Officer's (SHPO) written comments on the plan. The plan shall be based on the recommendations of the SHPO, and adhere to the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation.
>
> The Commission may require additional work based on the filing. The licensee shall take the necessary steps to protect the historical integrity of the project facilities from any effects of repair and maintenance work until notified by the Commission that the requirements of this article have been satisfied.

By the Commission.

(S E A L)

Linwood A. Watson, Jr.,
Acting Secretary.

Appalachian Power Company Project No. 2376-004
Virginia

ORDER AMENDING LICENSE AND DELETING ARTICLE 410
FEBRUARY 7, 1995

On September 16, 1994, Appalachian Power Company (licensee) filed a plan for development of a canoe portage around the Reusens Hydroelectric Project.1 This plan is required by article 410 of the project license.

Article 410 requires the filing of a plan for developing a canoe portage on the south side of the project which includes:

(1) design drawings for a put-in, take-out, and portage way, including use of the existing rail crossing at the dam for public access to the portage way;

(2) cost estimates;

(3) a construction schedule;

(4) provisions for operating and maintaining the facility;

(5) procedures for identifying historic sites in the area associated with the James River Kanawha Canal; and

(6) constructing signs or other interpretive facilities to make the public aware of historical significance of the canal.

The consulting agencies included the State Historic Preservation Office (SHPO), the Virginia Department of Conservation and Recreation (VDCR), the Virginia Department of Game and Inland Fisheries (VDGIF), the Coastal Canoeists Inc.(CCI), the CSX Inc.(CSX), the American Canal Society (ACS), and the Commission's Atlanta Regional Office (ARO).

Proposed Plan

The licensee filed a proposed plan meeting the requirements of Article 410. However, they also stated that the proposed plan was unsafe, unjustified, and impractical.

1 See Order Issuing New License (Major Project), 66 FERC, 61,316 (1994).

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The take-out for the portage would be located approximately 340 feet upstream of the south abutment of the Reusens structures. The take-out would consist of large stone and riprap built up at a 3:1 slope with approximately 4 to 6 inches of crushed stone topping the above-water surface. The filing proposed relocating the existing boat barrier to 300 feet upstream of the project structures to shorten the portage distance.

The upstream portage path would be 5 to 7 feet wide and extend downstream to a point near the Reusens structures. The pathway would consist of large stone or riprap built up to elevation 553.0 ft. National Geodetic Vertical Datum (NGVD) with a 3:1 side slope and 4 to 6 inches of crushed stone comprising the walking surface. Geotextile material would be placed between the existing grade and the stone fill for erosion control. For the portion of the pathway upstream of the Reusens structures, a 6-foot-high, barbed wire topped, galvanized steel chain link fence would be provided between the CSX railroad track and the portage path to discourage canoeists from accessing the track bed. Around the Reusens A Station, the existing gravel access road would be used for the portage path. Downstream of the project structures the portage would consist of a cleared and mowed path approximately 10 feet wide. To construct the downstream path, the relatively flat area below A Station would be cleared and grubbed and then graded as necessary.

A large stone and riprap put-in pad is proposed approximately 380 feet downstream of the Reusens A Station. This put-in pad would be approximately 20 feet wide with a crushed stone surface.

The licensee projected the total cost of the project to be $73,440. The majority of the expenses would go into placing stone and riprap fill along the shoreline and into the reservoir to increase the clearance distance between the reservoir and the railroad track. Annual maintenance costs were estimated at $2,500.

The construction schedule proposed final design and completion of the project could be obtained two years after Commission approval of the plan. Operation and maintenance of the facility would be provided by the licensee for the term of the current license.

Agency Comments and Licensee's Response

On August 3, 1994, a draft of this proposed plan was sent to all the consulting agencies for a 30-day comment period. Only VDCR and CSX responded.

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In a letter dated August 31, 1994, CSX responded that "due

to safety reasons CSXT must object to the project."

In a letter dated September 13, 1994, VDCR responded "The proposal to develop a path along the toe of the bank by placing riprap and crushed stone fill on the bottom of the lake would require a considerable cost not presently justified by current or projected use levels."

The licensee agrees with CSX that the proposed project is unsafe due to the limited amount of space between the railroad tracks and the reservoir. The licensee also agrees with the VDCR that the portage design proposed is impractical at this time considering the high cost is not justified by the small amount of use the facility would receive.

Background and Discussion

The Order Issuing New License discusses at great lengths the development of a canoe portage. The CCI and the Commonwealth of Virginia Council on the Environment (State Environment) both identified the need for a canoe portage path around the Reusens structure.2

The licensee's draft license application had proposed a canoe portage path along the Lynchburg side of the Reusens Dam that would use a portion of the CSX Railroad's trackage right-of-way which was contingent on CSX permitting this use of the right-of-way. The licensee withdrew the proposal after CSX indicated its refusal in a telephone communication.

The licensee, at the request of Commission staff, re-assessed the possibility of placing a portage path around the dam. The possibility of placing the portage on the Amherst side of the Reusens' structure was assessed and found infeasible due to the topography. Another possibility of placing the portage path on the Lynchburg side was assessed; however, the proposal would have required two crossings of the railroad tracks. In the interest of public safety this proposal was rejected.

2CCI identified the need for a canoe portage in their motion to intervene when the notice of application for license was public noticed in 57 Fed. Reg. 29721 (July 6, 1992) and also in their comments to the Draft Environmental Assessment which was made available for public comment on November 2, 1993. State Environment identified the need for a portage path in their letter to the licensee dated July 26, 1991.

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Commission staff then reviewed two more options. The approximate distance between the railroad tracks and the impoundment, in the area of the proposed portage routes, ranges between 20 feet at the narrowest and about 100 feet at the widest. Slopes are minimum to moderate in this area. Given that

five to six feet of width is all that is needed for an adequate portage, the license stated there appears to be sufficient space to locate the portage between the tracks and the reservoir. The length of the portage, assuming the boat barrier was not moved, would be about 950 feet, 700 feet of which would be on CSX land. If the boat barrier were moved closer to the dam, the amount of CSX land involved would decrease accordingly. Moving the boat barrier to within 300 feet of the dam would shorten the portage length and would only involve 200 feet of CSX land.

The conclusion reached in the Order Issuing New License was that a canoe portage should be provided on the Lynchburg side of the Reusens Reservoir. The possibility of using the north side of the reservoir for a canoe passage was found not feasible because of steep topography and high capital cost. The Commission staff concluded in the license that the CSX railroad right-of-way is sufficiently large for people to hand carry canoes or other small boats safely along it without encroaching on the space needed for railroad operations. Accordingly, Article 410 was added to the license requiring the licensee to prepare a plan for approval to provide a canoe portage around the dam. The licensee was directed to provide CSX with the opportunity to comment on the safety of any proposed canoe portage.

CSX, in a letter dated August 31, 1994, responded to the licensee's proposal by stating it remains opposed to this project. They indicated it would not grant permission for use of its property for this project. A review of CSX's Guidelines for Design and Construction of Industrial Tracks (June 14, 1988) shows clearance diagrams that note no property is to be leased to outside parties within 18 feet of the centerline of the track. The narrowest portion of the area where this canoe portage is being proposed is 16 to 20 feet wide from the tracks to the reservoir. This would leave, at the most, a 2-foot passage for the proposed path. Clearly, construction of the portage path would require use of the railroad right-of-way and would mean a deviation from the CSX construction clearance guidelines.

The proposed plan calls for the licensee to place stone and riprap fill along the shoreline and into the reservoir to increase the clearing distance between the reservoir and the railroad bed. This significantly escalates the cost of the project. Originally, the cost of building a portage path had been estimated in the Environmental Assessment at $10,000. With the expense of adding stone and riprap fill, the estimated cost jumps to $75,000.

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Many optional proposals have been looked at on both the Lynchburg and the Amherst side of the river. On the Lynchburg side of the river the proposals required the crossing of the railroad tracks. In the interest to public safety, we do not believe that requiring boaters to cross the tracks in order to portage the dam is the most prudent alternative. On the Amherst side steep topography also led to high capital costs.

Use of this area by canoes and other paddle crafts is light,

probably due to the sequence of dams concentrated in a relatively short stretch of the James River upstream of the Reusens Project and due to the use of the reservoir by powerboats. (There are 7 dams on the James River within 20 miles of the Reusens Project and 5 are upstream of the project.)

It also should be noted the licensee does not propose to restrict access or recreational use of the watershed. Subsequent to issuance of the license, the licensee signed a Memorandum of Agreement (dated June 7, 1994) with the VDCR and VDGIF which provides for development of 17 public access sites along the New, James, and Roanoke Rivers in Virginia. Four such developments are planned for the James River, one in the City of Lynchburg. This will give the population of Lynchburg access to that stretch of river immediately below the Reusens Project and give them an 85-mile stretch of free-flowing river without the need to portage.

Monacan Park is located 3 miles upstream of the Reusens Project and contains an existing boat ramp which allows the public access to the impoundment area. The tract the park sits on was purchased by the licensee in 1968 and on March 3, 1969 leased the area to Amherst County who, at this time, is responsible for the maintenance and supervision of the recreational facilities. Facilities include a covered picnic area with tables and grills, sanitary facilities, a lighted parking area, a single-lane boat launching ramp with a docking pier, and drinking fountains.

The proposal of deleting the requirement for a canoe portage facility at the Reusens Project was public noticed. No comments were filed in response to the public notice.

The proposed deletion of this facility from the license at this time will not conflict with the operation of the project, nor will it significantly affect permitted recreational uses and levels. Due to the concerns associated with the portage route's proximity to the CSX right-of-way and the high cost in providing a safe facility, Commission staff feels the canoe portage path should be deleted from the license. If future recreational

surveys show an increasing need for such a facility, then article 17 allows the Commission, upon its own motion or recommendation of other interested Federal or State agencies, after notice and opportunity for hearing, to reconsider the facility based on the newly available information.

The Director orders:

(A) The license for the Reusens Project is amended by deleting the requirements of article 410.

(B) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. ⊥385.713.

J. Mark Robinson
Director, Division of Project
Compliance and Administration

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75 FERC ¶ 62,199

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Appalachian Power Company) Project No. 2376-013

ORDER AMENDING CULTURAL RESOURCES MANAGEMENT PLAN

(Issued JUN 18 1996)

On May 28, 1996, Appalachian Power Company (licensee) filed a request to amend the Cultural Resources Management Plan (CRMP) for the Reusens Hydroelectric Project 1/ located on the James River in the Counties of Amherst and Bedford, Virginia.

BACKGROUND

On June 19, 1995, Appalachian Power Company filed a CRMP as required by Article 408 of the project license. The Commission issued Order Modifying and Approving Cultural Resources Management Plan 2/ on September 8, 1995. The Commission adopted the CRMP with the modification that the licensee file a report with the Commission every two years describing implementation of the plan and including an outline of proposed activities for the ensuing two years. All the reports would be submitted after consultation with the Virginia State Historic Preservation Officer (SHPO).

PROPOSED PLAN

On May 28, 1996, the licensee filed a request for amendment stating the reporting requirements of ordering paragraph B of the 1995 Order are overly burdensome, contain inherent redundancies of effort on the part of the licensee and the SHPO, and imply

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1/ See Order Issuing New License (Major Project), 66 FERC, ¶ 61,316 (1994).

2/ See Order Modifying and Approving Cultural Resources Management Plan, 72 FERC, ¶62,220 (1995).

On October 11, 1995, the licensee filed a timely request for rehearing of the above order. Specifically, the licensee requested that the requirement of ordering paragraph (B) of the order be modified so as to avoid redundancies of effort with the CRMP. In addition, the licensee requested that the reporting requirements to provide an outline of proposed activities requiring implementation of the CRMP for two years into the future also be eliminated from the Order.

On May 28, 1996, the licensee filed this proposed modification to the order and proposed to withdraw its October 11 Request for Rehearing upon approval of this proposal.

commitment by the licensee to forecast future work which may change over time for economic and/or other reasons. The licensee believes the CRMP provides for adequate consultations between the licensee and the SHPO regarding activities that will or may affect historic features of the Reusens project. The licensee also cites the difficulties of forecasting maintenance and capital improvements for a two-year period because of changes in available funds, priorities, and regulatory requirements.

The licensee proposes filing, biennially, copies of written consultations between the licensee and the SHPO associated with implementation of the CRMP during the previous two years. Each submittal will include any large-format photo-documentation materials and copies of drawings which were provided to the SHPO. If implementation of the CRMP were not required during the previous two years, the licensee will provide a letter to the Commission stating such. This plan as proposed would eliminate the need for the licensee to expend additional resources compiling the report information and the need for SHPO review and comment on information and materials it has already reviewed.

DISCUSSION

Ordering paragraph B of the 1995 Order was added to allow the Commission to track compliance of the licensee with the terms of the CRMP. Staff believes the proposed plan submitted by the licensee would avoid duplicative consultation with the SHPO while still allowing the Commission to track compliance with the CRMP. The licensee's proposed plan to amend ordering paragraph B of the 1995 Order should be approved.

The Director orders:

(A) The Cultural Resources Management Plan (CRMP) for the Reusens Project is amended by modifying ordering paragraph B of Order Modifying and Approving Cultural Resources Management Plan issued September 8, 1995 as follows:

> The licensee shall file every two years with the Commission copies of written consultations between the licensee and the State Historic Preservation Officer (SHPO) that are associated with the implementation of the CRMP during the previous two years. Each submittal will include any large-format photo-documentation materials and copies of drawings which are provided to the SHPO. The first report is due no later than March 18, 1998.

(B) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. §385.713.

J. Mark Robinson
Director, Division of Project
Compliance and Administration

95 FERC ¶ 62, 109
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Appalachian Power Company Project No. 2376-027

ORDER AMENDING ARTICLE 411

(Issued May 10, 2001)

On May 12, 2000, Appalachian Power Company (licensee) filed a request to amend article 411 of the Reusens Project, located on the James River in Amherst and Bedford Counties, Virginia. Article 411 requires the licensee to file on an annual basis a report documenting its progress toward enhancing, cooperatively with the Commonwealth of Virginia, public access to the James River in the project area. This report is to be filed on an annual basis until such time as a suitable public access site is identified in the vicinity of the City of Lynchburg. If a site is identified, within one year from the identification the licensee shall file, for approval, a plan for its development. Article 411 requires the licensee to consult with the Virginia Department of Game and Inland Fisheries (VDGIF), the Virginia Department of Conservation and Recreation (VDCR), the City of Lynchburg, Campbell County, and the Coastal Canoeists, Inc. The licensee is requesting that the drawings of the access site identified in the vicinity of the City of Lynchburg not to be filed for Commission approval and that the facility not be placed in the project boundary.

BACKGROUND

The Order Issuing New License [1] concluded that providing an off-site public river access site near Lynchburg would offset some of the impacts on paddle recreation that have occurred due to dam construction in the 20-mile reach from Balcony Falls to Lynchburg, would help meet some of the demand for river access near Lynchburg identified in the Virginia Outdoors Plan, and would offset some of the loss in river access from closing an earlier launch at the Reusens Project. Since 1994, the licensee has filed with the Commission the progress reports required under license article 411. In the 1994 report, the licensee forwarded a copy of a Memorandum of Understanding (MOU) among the licensee, the VDCR and the VDGIF. This MOU established a "Partners in River Access" program and provided for development of 17 public access

[1] See 66 FERC ¶ 61,316 (1994).

sites along the New, James and Roanoke Rivers in Virginia. The MOU provided funds from the licensee to the VDCR to be utilized for the construction of numerous recreational facilities, including those required under the conditions of other licenses for various projects operated by the licensee. As part of the MOU, the licensee will contribute capital funding and land for development of the recreational facilities. The Virginia agencies party to the agreement will contribute the balance of the capital funds, will construct the facilities and will acquire other lands required for development of the sites. Maintenance responsibilities will be divided among the three parties depending on the site. For the Reusens Project, the funds were to be utilized to construct a public access site on the James River in the vicinity of the City of Lynchburg, in accordance with the conditions of license article 411.

In its most recent progress report filed on January 2, 2001, the licensee stated that property was acquired by VDCR adjacent to the Route 29 bridge in Amherst County. The property obtained by VDCR is approximately four miles downstream of the dam for the Reusens Project and will provide river access in the vicinity of the City of Lynchburg. By letter dated April 11, 2000, from VDCR to the licensee, the VDCR stated that construction of the boat ramp had begun and that the boat ramp was being constructed as an element of the MOU between the licensee and VDCR

PROPOSAL

Article 411 requires the licensee to file for approval any plan for development of a public access to the James River in the vicinity of the City of Lynchburg. The licensee gives the following reasons for not putting the subject facility in the project boundary:

- giving consideration to the plans the VDCR has regarding the above described boat access being constructed;

- that the licensee's involvement in the construction of the facilities is minor;

- that the boat access is part of a larger plan for the park;

- that arrangements for operation and maintenance of the boat access have been made between the VDCR and Amherst County;

- that funds provided by the licensee through the MOU are being utilized for construction of the boat launch; and
- that the boat launch is being constructed approximately four miles down stream of the project boundary.

DISCUSSION

In total, the reasons the licensee states for not requiring the drawings for the access site be filed for approval or requiring the facility to be placed in the project boundary are justified. The boat launch area is owned by the VDCR and is being developed as part of a larger MOU program. The licensee's funds have been combined with others in the program for the construction of numerous recreational facilities, including those required under the conditions of the licenses for various other projects owned by the licensee. Under the terms of the MOU concerning this specific access area, the licensee does not own any of the land involved, is only to provide funds and will have no long-term maintenance requirement. The intent of article 411 has been met but given the limited role the licensee will have in further activities at the site, Commission staff concludes the access area in the vicinity of Lynchburg should not be incorporated into the boundary of the Reusens Project. Therefore, there is no need for the facility drawings to be filed with the Commission for approval. The licensee has cooperated with the VDCR and VDGIF to enhance public access in the vicinity of Lynchburg as intended by article 411. The licensee is no longer required to file annual update reports.

The Director orders:

(A) Appalachian Power Company's request to amend article 411 filed on May 12, 2000, is approved. Article 411 shall read:

> "Within six months after issuance of the license, the licensee shall file a report documenting its progress toward enhancing, cooperatively with the State of Virginia, public access to the James River in the project area.
>
> The report shall be filed on an annual basis thereafter until such time as a suitable public access site is identified by the State of Virginia in the vicinity of the City of Lynchburg. If a site is identified, the licensee shall file at a minimum the following: (1) a drawing showing the location of the public access, (2) a site plan showing the facilities to be provided, (3) cost estimates, (4) a construction schedule, and (5) provisions for operating and maintaining the facility."

(B) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 CFR § 385.713.

Hossein Ildari
Division of Hydropower Administration
and Compliance

OEP/DHAC Potvin, J:jap 5/7/01 K01

147 FERC ¶ 62,036
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Appalachian Power Company Project No. 2376-048

ORDER MODIFYING AND APPROVING NON-PROJECT USE OF PROJECT WATER: WATER WITHDRAWAL UNDER ARTICLE 202

(Issued April 14, 2014)

1. On July 31, 2013, Appalachian Power Company (licensee), licensee for the Reusens Hydroelectric Project, filed an application with the Federal Energy Regulatory Commission (Commission), for non-project use of project water, under Article 202.[1] On behalf of the Amherst County Service Authority (ACSA), the licensee requested authorization from the Commission to allow ACSA to construct a permanent water intake structure and associated piping, and allow ACSA to withdraw up to 3 million gallons per day (mgd) from the Reusens Project reservoir as a tertiary source for municipal water supply. The Reusens Project is located on the James River in Amherst and Bedford Counties, Virginia.

2. An Environmental Assessment (EA) was prepared for the licensee's proposed action and is attached to this order. We will approve the application because we find that the proposed permanent water intake structure and the withdraw of 3 mgd from the Reusens Project reservoir as a tertiary municipal water supply source will have no significant effect on environmental resources and public uses of the waterway and is in the public interest.

Background

3. Article 202 of the project license defines the licensee's responsibility in allowing non-project use of project lands and waters. In part, Article 202 allows the licensee to convey easements or right-of-ways across, or leases of, projects lands for water intake or pumping facilities that do not extract more than 1 mgd from the project reservoir. Since ACSA's withdrawal will exceed 1 mgd, the licensee is requesting Commission approval for the withdrawal.

4. On March 19, 2003, the licensee filed a request for the Commission to grant it authority to allow ACSA to withdraw water, under emergency drought conditions, for

[1] Order Issuing New License. 66 FERC ¶ 61,316 (issued March 18, 1994).

municipal water supply. This request was approved by the Commission's December 10, 2003 order,[2] and the licensee granted ACSA permission to install temporary facilities within the project boundary in order to withdraw 2 mgd under emergency water demand periods.

Licensee's Proposal

5. The licensee's July 31, 2013 filing requests that the Commission authorize it to allow ACSA to construct a permanent water intake structure and associated water intake piping in the same location as the temporary withdrawal deployment site approved in the Commission's December 10, 2003 order. The temporary water withdrawal site is located on the northeast bank of the river approximately one mile upstream of the Reusens Project dam. The ACSA would increase the pumping volume to 3 mgd based on projected municipal water demand.

6. The permanent intake structure would include the installation of approximately 630 feet of 18-inch diameter pipe buried below the reservoir bottom. The concrete and steel intake structure would have a top elevation approximately 539.0 feet National Geodetic Vertical Datum (NGVD), which is 8 feet below the normal low water elevation of 547.0 feet NGVD. The intake would be covered and protected with ¼-inch screen. The installation of the intake and piping will require the construction of a temporary cofferdam in the reservoir that would not exceed 641 feet in length and 50 feet in width. The licensee estimates that the construction activity will create an area of disturbance to the reservoir bottom of 0.735 acre.

7. Water pumped from the reservoir would move from the intake to a connection with a 17,000-foot-long (approximately 3.2 miles), 12-inch-diameter pipe delivering the water into a tributary of Graham Creek, and into the Graham Creek water supply reservoir (a secondary ACSA water supply source). The pump station and delivery pipe are not in the project boundary. Graham Creek is a tributary of Harris Creek, which discharges into the James River about 2.5 miles downstream from the Reusens Project dam.

8. The licensee states that the ACSA's operating protocol for water withdrawal as it relates to water supply demand would continue as it does at present, whereby ACSA uses Harris Creek as the primary source of water for the county and Graham Creek as the secondary source. When water from these two sources is insufficient to meet the total water supply demand, the proposed permanent water intake facility would be the tertiary water source for the county and replace the temporary facility previously approved by the

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[2] Order Allowing Non-Project Use of Project Waters Under Article 202. 105 FERC ¶ 62,160 (issued December 10, 2003).

Commission's December 10, 2003 order.

9. During the process of approving the temporary water intake facility in 2003, the Virginia Department of Environmental Quality (DEQ) and Virginia Department of Game and Inland Fisheries (DGIF) expressed concern regarding the proposed ¼-inch screen size and velocity of the intake pipe. As a result of their comments, the Commission's 2003 order approving the temporary intake required the licensee to file a larval fish entrainment study plan. On January 26, 2004, the licensee filed the plan, and on February 12, 2004, the Commission approved that plan.[3] Since the 2003 approval of the 2 mgd water withdrawal, water supply conditions have not required the ACSA to withdraw water through the temporary intake system. Therefore, no studies approved under the 2004 larval entrainment order have been conducted to date. Therefore, the licensee's current filing proposes to initiate the approved 2004 larval fish entrainment study in order to evaluate the same concerns for the permanent water intake structure

Pre-Filing Consultation

10. Prior to filing its application, the licensee and the ACSA consulted with the U.S. Army Corp of Engineers (Corp), U.S. Fish and Wildlife Service (FWS), DEQ, Virginia Department of Marine Resources Commission (DMRC), DGIF, Virginia Department of Historic Resources (DHR), and the City of Lynchburg, Virginia. The licensee included in its application to the Commission, a Virginia State Water Protection Permit issued to the ACSA by the DEQ approving the construction of the permanent water intake facility. This permit was issued on May 3, 2010 and is valid until May 2, 2025.[4] Also included in the licensee's application was a permit issued by the DMRC, on January 25, 2011, and amended on March 22, 2011 and December 7, 2011, authorizing the construction of the permanent water intake structure and associated infrastructure. The permit is valid until December 6, 2016.

11. On September 12, 2013, the licensee filed with the Commission several comments that it received from interested parties since filing its application. On August 28, 2013, the Virginia Department of Health filed a comment advising that the ACSA is responsible for verifying the proximity of the proposed infrastructure to public drinking water sources

[3] Order Approving Larval Fish Entrainment Study Plan Under December 10, 2003 Order. 106 FERC ¶ 62,102 (issued February 12, 2004).

[4] By comment filed by Virginia Department of Environmental Quality on October 2, 2013, the permit included in the licensee's filing is superseded by a permit dated November 15, 2010, that contains changes to work related to the permanent water intake facility located outside the project boundary.

and that potential impacts to public water distribution systems and sanitary sewage collection systems need to be verified. The Virginia Department of Health notes that a City of Lynchburg intake is located approximately five miles downstream. They also advise the licensee that a permit from Virginia Department of Health will be required. Also, DMRC filed a comment with the licensee on August 20, 2013, noting that its construction permit issued on January 25, 2011 is still valid and reminded the licensee and ACSA that the permit will expire on December 6, 2016. Finally, on August 21, 2013, the DEQ sent a letter to the licensee advising it that the DEQ Office of Environmental Impact Review will coordinate Virginia's review of federal documents prepared pursuant to the National Environmental Policy Act and comment to the appropriate federal agency on behalf of the commonwealth.

Public Notice

12. The Commission issued a public notice of the proposal on September 12, 2013, soliciting comments, motions to intervene, and protests. Several comments were received. DEQ filed a comment on October 2, 2013, informing the Commission that the DEQ Water Protection Permit included in the licensee's filing has been superseded by a more current version; however, the superseding permit only exhibited changes to activities outside the project boundary and would not affect the Commission's review of the non-project use proposal. On October 31, 2013, the U.S. Department of Interior filed a letter informing the Commission that they have no comment on the proposal.

Threatened and Endangered Species

13. Section 7(a)(2) of the Endangered Species Act[5] requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened and endangered species, or result in the destruction or adverse modification of their designated critical habitat. No federally listed or proposed threatened and endangered species are known to occur in the project area.

National Historic Preservation Act

14. Under Section 106 of the National Historic Preservation Act,[6] and its implementing regulations,[7] federal agencies must take into account the effect of any

[5] 16 U.S.C. §1536(a) (2012).

[6] 16 U.S.C. § 470 (2012).

[7] 36 CFR Part 800 (2013).

proposed undertaking on properties listed or eligible for listing in the National Register of Historic Places (defined as historic properties) and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking. This generally requires the Commission to consult with the State Historic Preservation Office (SHPO)[8] to determine whether and how a proposed action may affect historic properties, and to seek ways to avoid or minimize any adverse effects.

15. During the licensee's consultation regarding the temporary water intake approved in 2003, the Virginia Department of Historic Resources stated that no known historic resources would be affected by the installation of the temporary water intake equipment and stated its approval by letters dated September 26, 2002 and October 1, 2002. In our review of the licensee's application, the licensee included a Corp permit number NAO-2007-2429, that requires the licensee to conduct Section 106 consultation regarding historic properties that may be affected as a result of the water intake facility construction. Therefore, we determine that the licensee has conducted the required Section 106 consultation regarding the licensee's request to construct the permanent water intake facilities.[9] Commission staff research conducted on April 10, 2014, revealed that a house listed on the National Register of Historic Places is located approximately one-half mile upstream and across the reservoir from the proposed intake location.

Discussion

16. An EA was prepared to evaluate the licensee's proposed water withdrawal application. We analyzed the effects that constructing, operating, and maintaining a permanent intake in the reservoir and increasing pumped volume, could have on the resources in the area. The EA concluded that there would be no significant long term impacts to water, wildlife, cultural or recreational resources associated with the construction of a permanent water intake structure and allowing the withdraw of 3 mgd, as proposed.

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[8] Virginia Department of Historic Resources acts as the State Historic Preservation Office for the Commonwealth of Virginia.

[9] The U.S. Army Corp of Engineers (Corp) Permit number NAO-2007-2429 that the licensee filed with the Federal Energy Regulatory Commission, as an appendix to its non-project use of project waters expired on June 1, 2012. Therefore, it is the licensee's responsibility to request an extension of this permit from the Corp prior to commencing construction.

Water Quantity

17. In the EA, we considered the effects of the proposed action as it relates to historical water supply at the project. The EA showed that pumping the maximum proposed withdraw of 3 mgd from the project reservoir translates to 4.6 cubic feet per second (cfs) which is approximately 0.12 percent of the mean annual flow (3,581 cfs) for the project. This amount is 0.8 percent of the lowest monthly mean flow recorded (581 cfs), and 1.4 percent of the required minimum flow release at the project. Therefore, staff concluded this rate of withdraw would not significantly reduce flows downstream of the Reusens Project and that it would not have a significant effect on water levels in the project reservoir. Further, there would be no diversion of water to areas outside the James River Basin.

Fisheries Resources

18. The installation of a permanent water intake structure has the potential to impinge and entrain fish. Low intake velocities typically do not pose a threat of impingement to fish as they are able to avoid the intake flow. However, one potential impact from the proposed action could be to entrain larval fish and fish eggs at the intake structure with the proposed ¼-inch intake screen rather than the original 1-millimeter screen that DGIF recommended during the processing of the temporary water intake that was approved by the Commission on December 10, 2003. During that time, the licensee consulted with DGIF and it was determined that an entrainment study would help to assess if the intake would adversely affect fisheries resources and specifically, if the ¼-inch screen was sufficient. Ordering paragraph (D) of the Commission's 2003 order approving the temporary water intake required the licensee to file a plan with the Commission to determine if the temporary intake, fitted with ¼-inch screen was adequate. The licensee was also required to file recommendations regarding the adequacy of the intake screening component and include the resource agencies' comments on the recommendations.

19. The licensee consulted with the FWS, DGIF, and DEQ, prior to filing a larval fish entrainment study plan with the Commission on January 26, 2004. The Commission approved the study by Order Approving Larval Fish Entrainment Study Plan on February 12, 2004.

20. In the licensee's current filing, it states that the larval fish study plan approved by the Commission in February 2004, has not yet been conducted because ACSA has not needed to activate the temporary water intake for a drought emergency. The licensee states that it intends to conduct the study when the proposed permanent intake facility is constructed and activated.

21. Since the licensee's request for a permanent water intake structure differs from the

temporary intake structure, and because the permanent intake facility may be used more frequently as population growth in the county increases, the licensee should review its 2004 larval fish study plan in the context of the proposed permanent intake facility. The licensee should consult with the FWS, DGIF, and DEQ, regarding the existing study plan, make any necessary changes to the study and file a revised study plan for Commission approval. Ordering paragraph (B) requires the licensee to file this plan.

Recreational Use

22. The project's Monacan Recreation Area provides a single lane boat launch for boaters and fisherman to access the reservoir. We reviewed the licensee's most recent Licensed Hydroelectric Development Recreation Report, filed with the Commission.[10] The licensee reported an annual total of 37,400 visits (in recreation days) to the entire project. The licensee also reported an overall use of the boat launch at 75-percent capacity. This informs us that the boat launch facility gets used frequently and indicates that boaters and fisherman are recreating on the reservoir.

23. In our EA, we concluded that the temporary coffer dam could create a boating hazard. Standard Project Condition C. of the Virginia Water Protection Permit number 08-0619 issued by the DEQ (Attachment C of the licensee request for non-project use of project waters) filed with the Commission on July 31, 2013, requires that the ACSA minimize adverse effect on navigation, and to not block more than half of the width of the stream (reservoir) at any given time. While the proposed temporary coffer dam will abide by this requirement, it could still create a navigational hazard to boaters, particularly at night. To address this concern, we recommend that the licensee post a sign at the Monacan Recreation Area warning recreationalists of the potential hazard during the construction period. We also recommend that the licensee mark the extent of the coffer dam with buoys that are visible during both day and night, warning recreationalists of the potential hazard during the construction period. Ordering paragraph (C) requires the licensee to ensure this provision is implemented.

Historic Properties and Cultural Resources

24. The EA determined that the Reusens project dam is eligible for listing in the National Register of Historic Places and a current search of the Virginia Cultural

[10] Licensed Hydropower Development Recreation Report (FERC Form 80) filed with the Federal Energy Regulatory Commission on March 30, 2009.

Resources Information System[11] identified a plantation house that is listed in the National Register of Historic Places. The house is located approximately one-half mile upstream and across the river from the proposed water intake site. Because of the distance from the proposed site and its location across the reservoir, the EA determined that the proposed intake would not have an effect on this or any known historic property.

25. The EA also determined no archeological sites have been identified in the vicinity of the proposed intake structure and therefore, construction or installation of the proposed intake and an increase in water withdraw volume is unlikely to affect cultural resources, however, the licensee should ensure that cultural resources are addressed in the event they are discovered during construction, operation or maintenance of the permanent water intake facility. If a previously undiscovered cultural resource site is discovered during construction, operation, and/or maintenance of the facilities, ACSA should cease all work at the site and immediately contact the licensee. The licensee should consult with the SHPO and any tribes that might attach religious or cultural significance to the discovered cultural resources to determine what steps need to be taken to evaluate the discovery. If the cultural resource is determined to be eligible for listing in the National Register of Historic Places, the licensee must consult with the SHPO and tribes, if applicable, to determine what measures would be needed to mitigate or avoid any adverse effects. The licensee should file with the Commission, for approval, a report on the historic property and the effects of the undertaking. If the property would be adversely affected, the report should contain the proposed mitigation measures along with any comments received from the SHPO and tribes on the report. The licensee should allow 30 days for an agency to comment. If there are no comments, the licensee should include its request for comments in the filing to the Commission. The licensee should not resume work in the vicinity of the discovered site until instructed by the Commission. Ordering paragraph (D) requires the licensee to add this provision to any approval it grants to ACSA.

26. In order to keep the Commission's record up to date of all approved non-project use of project waters, the licensee should file location point data representative of the location of the intake structure and the location where the buried pipe exits the project boundary that are approved by this order. The location points should be filed with the Commission within 60 days of the date of this order, and be positionally accurate to ± 40 feet, to comply, at a minimum, with National Map Accuracy Standards for maps at a

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[11] On April 8, 2014, Commission staff contacted the Virginia Department of Historical Resources (DHR) requesting current information regarding historical properties or cultural resources that may exist near the proposed water intake facility. A search and report was generated by DHR staff and forwarded to Commission staff on April 10, 2014.

1:24,000 scale. The location points should include latitude/longitude in decimal degrees, based on the horizontal reference datum of the North American Datum of 1983 (NAD 1983). Ordering Paragraph (E) requires the licensee to file this information.

Conclusion

27. In our review of the proposal, we did not identify any significant impacts that would result from the Commission's approval of the licensee's request to allow the ACSA to construct a permanent water intake structure and withdraw 3 mgd from the Reusens Project reservoir as a tertiary municipal water supply source. The EA concluded that the approval of the proposed amendment of license would not constitute a major federal action significantly affecting the quality of the human environment. Therefore, we are approving the licensee's request to allow ACSA to install a permanent water intake structure and to withdraw 3 mgd from the project reservoir as a tertiary municipal water supply source as modified in ordering paragraphs (B) through (E).

The Director orders:

(A) Appalachian Power Company's (licensee) application, filed July 31, 2013, with the Federal Energy Regulatory Commission (Commission) for non-project use of project waters at the Reusens Project (FERC No. 2376), to allow the Amherst County Service Authority to construct a permanent water intake structure and associated piping, and withdraw up to 3 million gallons per day from the Reusens Project reservoir as a tertiary source for municipal water supply, as modified in paragraphs (B) through (E), is approved.

(B) The Licensee shall file a revised larval fish entrainment study plan with the Federal Energy Regulatory Commission (Commission) by February 1, 2015. The licensee shall consult with the Virginia Department of Game and Inland Fisheries, Virginia Department of Environmental Quality, and the U.S. Fish and Wildlife Service , (collectively, resource agencies) in the development of the plan. The licensee shall incorporate the resource agencies recommendations in its plan before filing the plan with the Commission for approval. If the licensee does incorporate a resource agency recommendation into its plan, the licensee shall describe the reason for not adopting the recommendation. The Commission reserves the right to require changes to the plan.

(C) The licensee shall post a sign at the Monacan Recreation Area warning recreationalists of the potential hazard created by the coffer dam and mark the extent of the coffer dam with buoys that are visible during both day and night, during the construction period.

(D) The licensee shall include as a condition of any approval it issues to Amherst County Service Authority (ACSA), a provision that if any cultural resources are discovered during construction, operation, and/or maintenance of the permanent water intake facility; ACSA shall immediately cease all work at the site and immediately contact the licensee. The licensee shall consult with the State Historic Preservation Office (SHPO) and any tribes that might attach religious or cultural significance to the cultural resources to determine what steps need to be taken to evaluate the discovered cultural resources. If the resource is found to be eligible for the National Register of Historic Places, the licensee, in consultation with the SHPO and tribes, if applicable, shall develop measures to mitigate or to avoid any adverse effects. The licensee shall file with the Commission, for approval, a report on the historic property and the effects of the undertaking. If the property would be adversely affected, the report shall contain the proposed mitigation measures along with any comments received from the SHPO and tribes on the report. The licensee shall allow 30 days for an agency to comment. If there are no comments, the licensee shall include its request for comments in the filing to the Commission. The licensee shall not resume work in the vicinity of the discovered site until instructed by the Commission.

(E) The licensee shall file location point data representative of the location of the intake structure and the location where the buried pipe exits the project boundary that are approved by this order. The location points shall be filed with the Commission within 60 days of the date of this order, and be positionally accurate to ± 40 feet, to comply, at a minimum, with National Map Accuracy Standards for maps at a 1:24,000 scale. The location points shall include latitude/longitude in decimal degrees, based on the horizontal reference datum of the North American Datum of 1983 (NAD 1983).

(F) This order constitutes final agency action. Any party may file a request for rehearing of this order within 30 days from the date of its issuance, as provided in section 313(a) of the Federal Power Act, 16 U.S.C. § 825*l* (2012), and the Commission's regulations at 18 C.F.R. § 385.713 (2013). The filing of a request for rehearing does not operate as a stay of the effective date of this order, or of any other date specified in this order. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

Thomas J. LoVullo
Chief, Aquatic Resources Branch
Division of Hydropower Administration
and Compliance

Appendix E – Project Photographs

Photo 1. Reusens main dam and spillway.

Photo 2. Reusens auxiliary spillway.

Photo 3. Reusens impoundment.

Photo 4. Reusens Powerhouse A.

Photo 5. Reusens Powerhouse B.

Appendix F – Monthly Flow Duration Curves

Figure F-1. Flow duration curve at Reusens Dam based on 15-minute flow data from USGS Gage No. 02025500 for January, February, and March, October 1, 1990 to October 1, 2018.

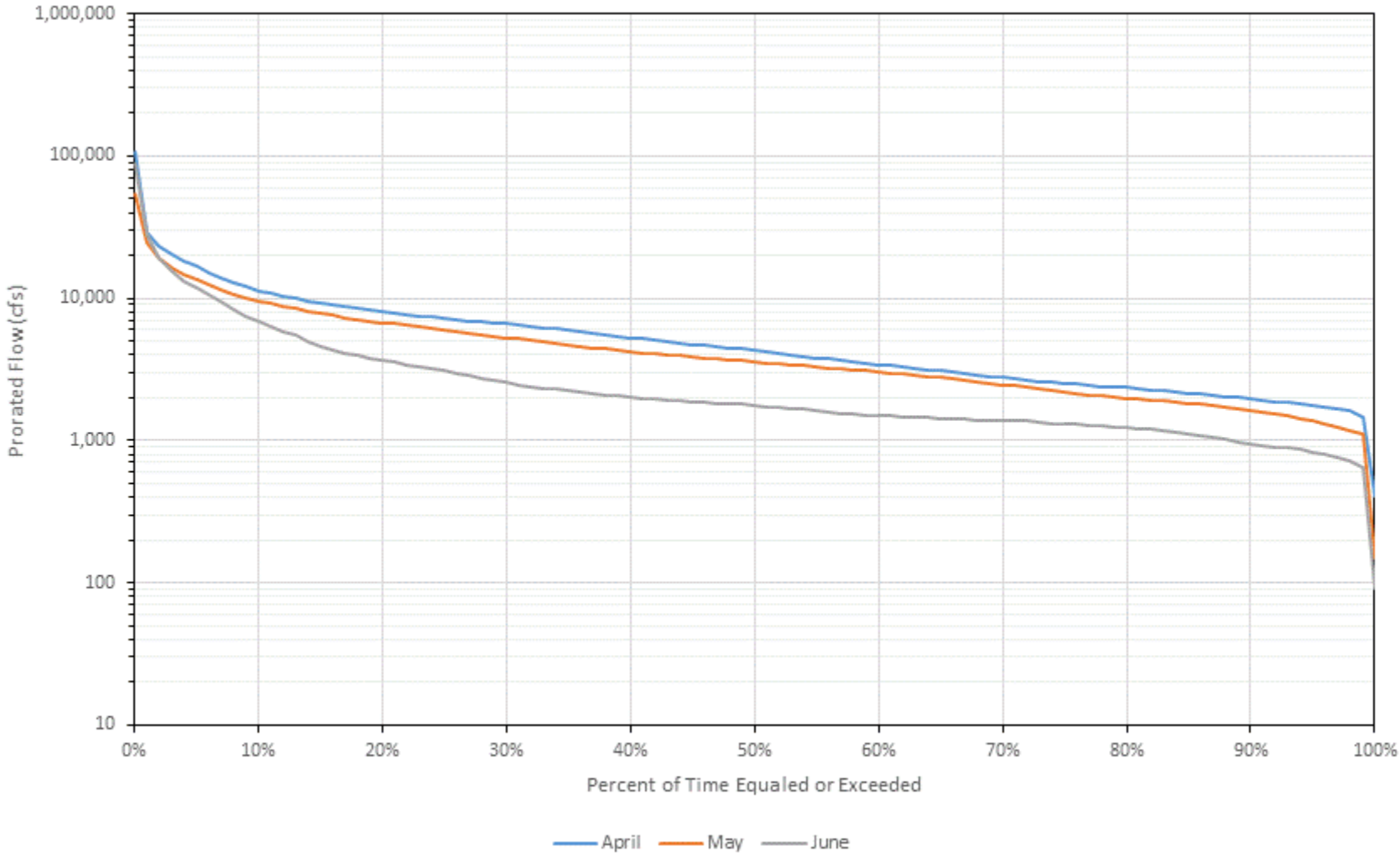


Figure F-2. Flow duration curve at Reusens Dam based on 15-minute flow data from USGS Gage No. 02025500 for April, May, and June, October 1, 1990 to October 1, 2018.

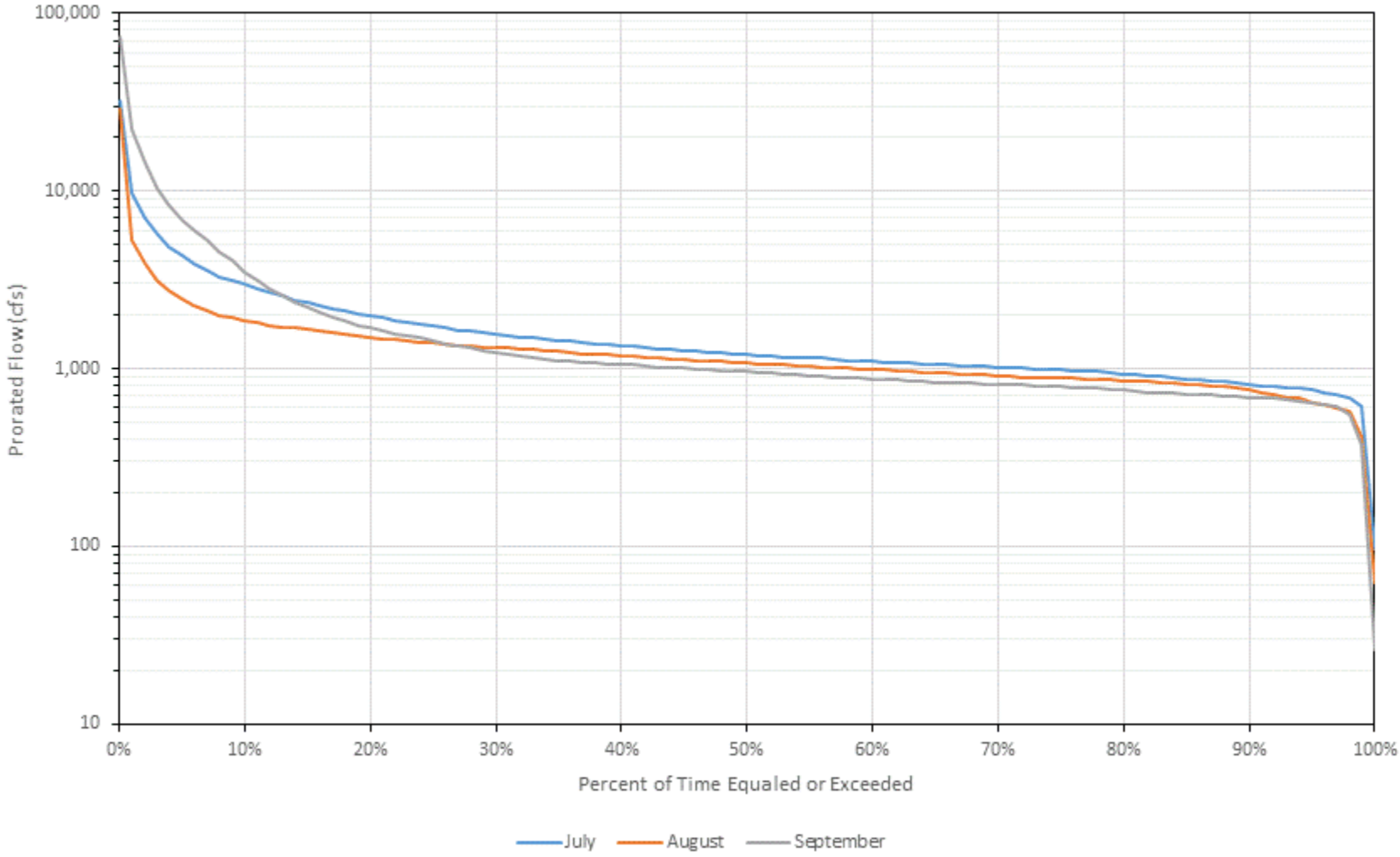


Figure F-3. Flow duration curve at Reusens Dam based on 15-minute flow data from USGS Gage No. 02025500 for July, August, and September, October 1, 1990 to October 1, 2018.

Figure F-4. Flow duration curve at Reusens Dam based on 15-minute flow data from USGS Gage No. 02025500 for October, November, and December, October 1, 1990 to October 1, 2018.

Appendix G – Project Boundary Exhibit G Maps

1. Unless otherwise noted, the flowage rights forming part of the project area are perpetual and give the Company the right to overflow and/or affect so much of the lands encumbered thereby as may be overflowed and/or affected in any manner whatsoever as a result of the operation and maintenance of the power stations and the dam so constructed that the maximum surface level of the pond at said dam will be at Elevation 551 feet except during floods when the control gates mounted on or in said dam are open. The consideration paid for such flowage rights includes full compensation for any effect whatsoever which the resultant impounding of water or overflowing of land may, in any manner whatsoever, cause or produce to or upon said lands. Such flowage rights also give the Company the right to enter upon said lands and at its option cut or remove therefrom trees, bushes, driftwood or any other debris of any kind or description which may be below an elevation of 555 feet.

2. Wherever, as an element of the Project Boundary, there appear the words "Approximate Location of Contour 551", the meaning is that it is the surface level of a pond having an elevation of 551 feet at the dam which is intended, or is believed to be intended, to be controlling.

3. The elevations shown hereon are based upon a bench mark, being a brass plug in a rock cliff located on the east bank of James River approximately 133 feet downstream from the wing wall of the dam. Said brass plug is at the same elevation as the masonry crest of the main spillway of the dam as it existed on April 1, 1930 and has an elevation of 539.46 feet according to United States Coast and Geodetic Survey Datum as checked against United States Government Bench Mark Elev. (L-15) 1928, located on the west side of James River approx. 850 feet south of Chesapeake and Ohio Railway Company's station at Reusens, VA. Elevations shown on Exhibits J and K of the Federal Power Commission license for Project No. 2376, issued August 12, 1964, are based on Chesapeake and Ohio Railway Company datum which is Approx. 10.0 feet higher than the United States Coast and Geodetic Survey Datum.

4. There are included as part of the project perpetual rights of way and easements for the following power lines and equipment located outside but adjacent to the project boundary, to-wit:

(a) All or any portion of Power and Control Cables and Conduits used for the control and operation of the plant or station project equipment; and

(b) All or any portion of the 3 phase 4 KV Feeder between the 4 KV indoor bus and the 34.5/4 KV step-up transformer bank, which may overhang the non-project station area;

which are necessary, useful or convenient for or in the operation of the project, or may become so from time to time in the future.

Said rights of way and easements shall comprise all rights, privileges and appurtenances in or to Appalachian Power Company's land adjoining the project area requisite for the continuing full enjoyment of said rights of way and easements, including, but not restricted to, the continuing right to construct, reconstruct, relocate, augment, repair, maintain, patrol, inspect and otherwise operate the said power lines and equipment and the facilities comprising the same, including any poles, towers, wires and cables and any other fixtures or portions of said power lines or equipment; also the continuing right to cut and remove any trees, overhanging branches or other obstructions which may endanger the safety of or interfere with said power lines or equipment or any part thereof, whether in the course of construction or after the completion thereof; also the continuing right and privilege of removing, at any time, any or all of the said power lines or equipment or the facilities comprising part of any of said power lines or equipment.

4. (Cont) Provided, that if any of the said power lines or equipment or appurtenances thereto not now existing should substantially interfere with Appalachian Power Company's operations on said land, the then owner of these rights of way and easements, covenants and agrees by the acceptance of such rights of way and easements, to remove or relocate the same or to take such other steps as may be necessary to eliminate such interference.

5. Parcels 17 and 19 - Project owner was released from obligation of raising public road along river between Abert Ferry and Salt Creek by the Board of Supervisors of Amherst County by Resolution and Order dated March 5, 1931.

6. Parcel 6 - flowage rights essentially identical to those referred to in Note 1 were acquired from The Chesapeake and Ohio Railway Company (C. and O.) but the grant was made subject to certain obligations and duties set forth in an agreement between C. and O. and Appalachian Electric Power Company (now Appalachian Power Company) dated May 31, 1929, to which the project is hereby made subject. It is believed all such obligations and duties have been performed except those of:

(a) indemnifying and saving harmless the C. and O., its successors and assigns, from and against all loss, cost or expense on account of damage arising from or growing out of or in any way connected with the existance, maintenance or operation of the dam and resulting from the dam owner's negligence, whether by acts of omission or commission;

(b) successively opening the spillway gates, whenever excessive floods occur locally on Judith Creek and/or Wide Mouth Creek, in order, so far as may be necessary and practicable, to protect the C. and O. by lowering the pool level below elevation 551.0 feet, and

(c) Paying to the C. and O. the sum of $30,000 at such time as the C. and O. will construct a second track along that portion of its main line within the limits of the pool formed by the dam.

7. Parcel 16 - flowage rights identical to those referred to in Note 1 above were acquired except that as to trees located below an elevation of 555 feet, only dead ones may be cut or removed.

8. Parcel 22 - flowage rights essentially identical to those referred to in Note 1 above were acquired by condemnation.

9. Out of the project area and in favor of Appalachian Power Company, its successors and assigns, there are reserved the perpetual rights of way and easements for all power lines, whether for transmission or distribution and whether or not now existing, and the following equipment:

(a) All Microwave Communication Equipment, including antenna, relay and control equipment, and control cables, all located in the west hydro plant building;

(b) All Carrier Current Communication Equipment, including relays, panels, telephone sets, and control cables, located in the west hydro plant building;

(c) All or any portion of main and minature switchboards with all related relay, and control equipment, and control cables, located in the west hydro plant building, and used for the control and operation of the non-project station facilities;

(d) The portion of the 6 feet by 6 feet Concrete Drainage Box and Culvert, located in the station yard project area and used principally for drainage of non-project station yard area;

(e) Any portion of the non-project Bus and Switching Structure for the 138/34.5 Transformer Bank No. 1 located in the station yard project area, including any or all 138/34.5 transformers in Bank No. 1

(f) The non-project station A-frame Get-Away Structure for the 138 KV lead from the 138 KV Transformer Bank No. 1 to the 138 KV Bus in the station on the hill, including a portion of the 138 KV lead, and

(g) Any portion of the non-project Bus and switching Structure for the 34.5/4 KV Transformer Bank No. 2 including any or all 34.5/4 KV Transformers in Bank No. 2.

(h) The non-project station concrete and steel cable trough or trench support on the south wall of the West hydro plant building.

which are necessary, useful or convenient for or in the business of said company, its successors or assigns, or may become so from time to time in the future. None of such power lines or equipment excepting the 3 phase 4 KV Feeder between the 4 KV Indoor Bus and the 34.5/4 KV Step-Up Transformer Bank, are or are to become part of the project works. The approximate locations of those of such power lines as now exist are shown on this exhibit.

The rights of way and easements so reserved comprise all rights, privileges and appurtenances in or to the project area, or any part thereof, requisite for the continuing full enjoyment of said rights of way and easements, including, but not restricted to, the continuing right to construct, reconstruct, relocate, augment, repair, maintain, patrol, inspect or otherwise operate the said power lines and equipment and the facilities comprising the same, including any poles, towers, wires and cables and any other fixtures or portions of said power lines or equipment or facilities, and including appurtenant communication lines; also the continuing right to cut and remove any trees, overhanging branches or other obstructions which may endanger the safety of or interfere with said power lines or equipment or any part thereof, in the course of construction or after the completion thereof; also the continuing right and privilege of removing, at any time, any or all of the said power lines or equipment or the facilities comprising part of any of said power lines or equipment. Provided that if any of the said power lines or equipment or appurtenances thereto not now existing should substantially interfere with the operation of any of said project works, the said company covenants and agrees, for itself, its successors and assigns, forthwith to remove or relocate the same or to take such other steps as may be necessary to eliminate such interference.

10. In the cases of all parcels owned in fee by Appalachian Power Company, adjoining the project boundary and not to become part of the project area, there are reserved in favor of Appalachian Power Company, its successors and assigns, the right of access across any part of the adjoining portions of the project area to the waters of the reservoir and/or of James River and the right to use said waters for domestic purposes, including the watering of livestock.

11. The project area is subject to a license and permit granted by Appalachian Power Company to Lynchburg Boat and Ski Club, Inc., dated March 23, 1959, giving the Club the right to place and use a boat launching ramp at the location shown on this exhibit, to enjoy public boating and fishing rights.

12. The project area is also subject to public utility easements and such other uses as are now being made or exist therein, if any.

13. The project is the beneficiary of and subject to obligations and conditions set forth in that certain deed between Lynchburg Traction & Light Company, Lynchburg Water Power Company, The Real Estate Trust Company of Philadelphia, The Real Estate Title Insurance & Trust Company of Philadelphia, and Oriskany Ore & Iron Company, dated November 6, 1911, including:

(a) Limitations on narrowing the channel of James River or obstructing the river bed or banks; and

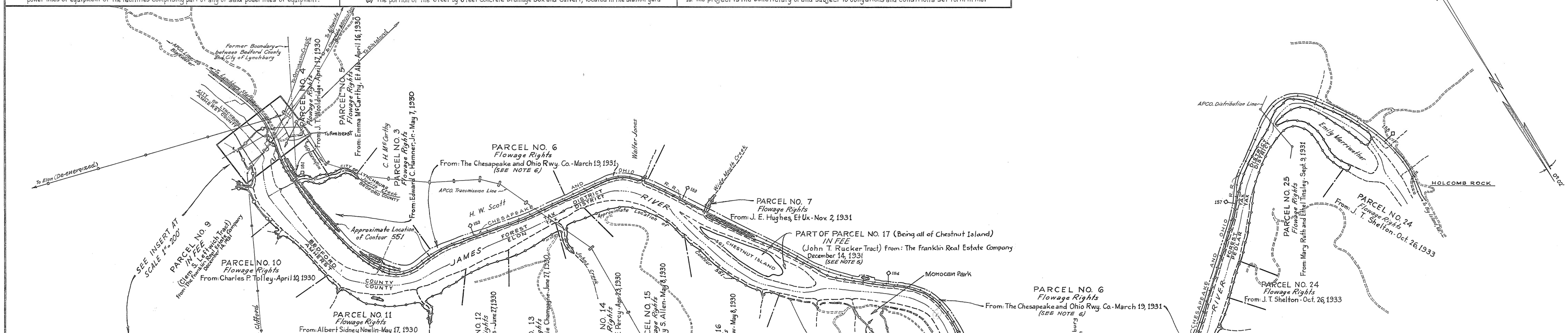
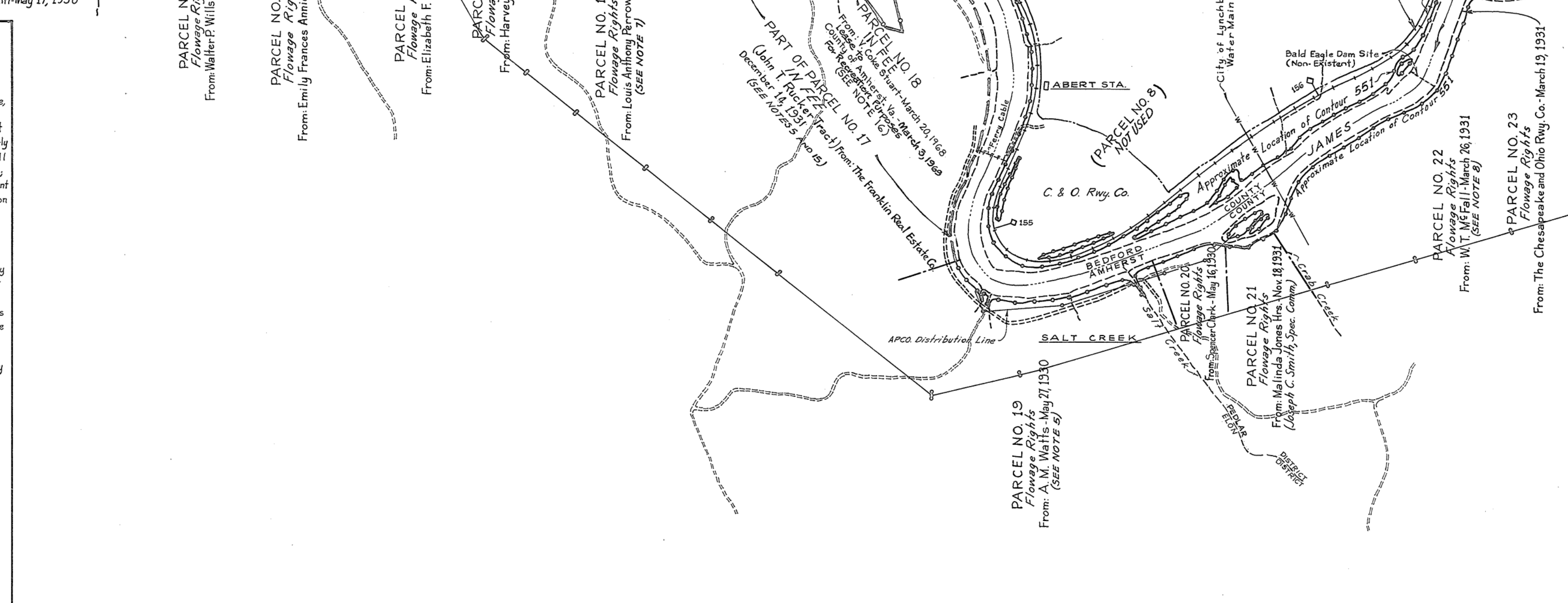
(b) The right to take water from the canal gate at the dam by a pipe not exceeding 16 inches in diameter and only during periods of high water.

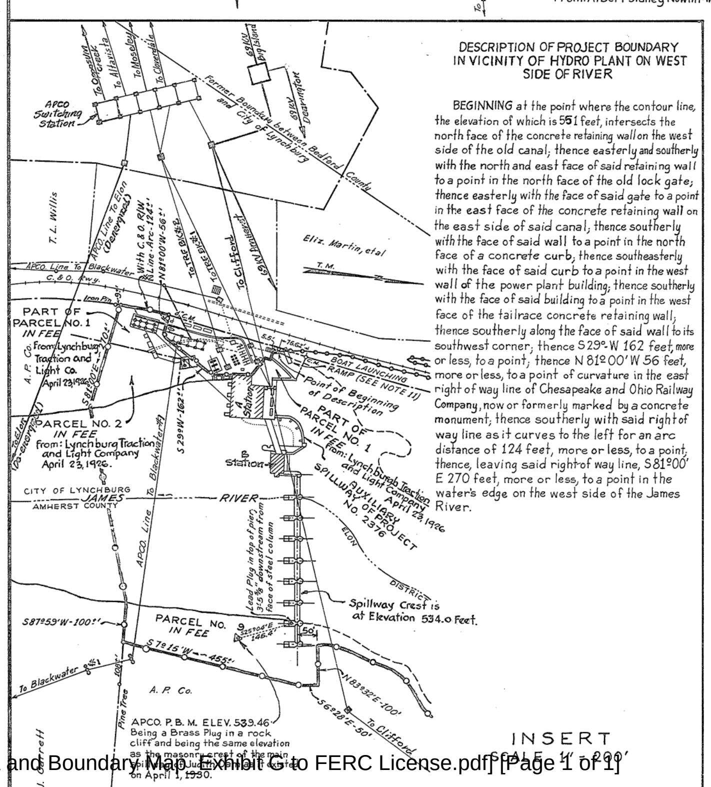
14. All statements and interpretations as to ownership of lands and nature and extent of ownership of rights indicated on this exhibit are correct in the opinion of Appalachian Power Company but are not warranted.

15. Parcel 17 · The consideration paid for this parcel includes full compensation for any effect whatsoever which the operation and maintenance of the power stations and dam mentioned in Note 1 may have on the adjoining lands.

16. Parcel 18 - In the deed dated January 16, 1975 from Appalachian Power Company to the Commonwealth of Virginia conveying the 1.66 acre roadway strip, the Company reserved existing electric and water lines and easements therefore, as well as such rights thereover as it might require for the operation of the Reusens Project.

(symbol)	PROJECT BOUNDARY INCLUDING THE APPROXIMATION OF ANY CONTOUR (USUALLY 551) WHICH CONSTITUTES SUCH BOUNDARY
(symbol)	CONTOUR 551 CROSSING LAND TO WHICH THE PROJECT RIGHTS ARE NOT LIMITED TO ANY SPECIFIC LOWER ELEVATION
(symbol)	ELECTRIC POWER LINES OF APCO.
(symbol)	PARCEL LINES
(symbol)	CONCRETE MONUMENT OR IRON PIN
APCO. P. B. M.	APCO. PERMANENT BENCH MARK
(symbol)	PUBLIC ROAD
—W——W—	WATER MAIN
(symbol)	APPROXIMATION OF A PROPERTY LINE AND CONTOUR 551 LIMITING SOME BUT NOT ALL PROJECT RIGHTS.



THIS DRAWING, EXHIBIT G, IS PART OF THE APPLICATION FOR LICENSE MADE BY APPALACHIAN POWER COMPANY.

BY [signature]

DATE 11/4/91

SCALE OF FEET

0' 500' 1000' 2000' 3000' 4000' 5000' 6000'

EXHIBIT G
SHEET 1 OF 1 SHEET

APPALACHIAN POWER COMPANY

REUSENS
HYDROELECTRIC PROJECT NO. 2376
VIRGINIA
PROJECT AREA AND BOUNDARY MAP

SCALE - 1" = 1000'

This map was prepared from drawings of a Topographic Survey made for Appalachian Power Company by Wm. C. Whitner and Company, Inc., Consulting Engineers, of Richmond Va., dated Jan. 1928, surveys made by APCo's engineers in 1927 and 1931 and topographic mapping prepared for Appalachian Power Company Feb., 1990