

# Pre-Application Document (PAD)

## Rocky Mountain Pumped Storage Hydroelectric Project

December 2021

FERC No. 2725

Prepared with Kleinschmidt Associates



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## ACRONYMS

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### **A**

acre-ft                                      acre-feet  
Applicant                                      Oglethorpe Power Corporation

### **C**

CEII    Critical energy infrastructure information  
CISEH    Center for Invasive Species and Ecosystem Health  
CFR    Code of Federal Regulations  
cfs    cubic feet per second  
Commission                                      Federal Energy Regulatory Commission

### **D**

DLA    Draft License Application  
DO    dissolved oxygen

### **E**

EDDMapS                                        Early Detection and Distribution Mapping System  
EFH    essential fish habitat  
EPA     U.S. Environmental Protection Agency  
EPPC    Exotic Pest Plant Council

### **F**

FERC     Federal Energy Regulatory Commission  
FGDC     Federal Geographic Data Committee  
FLA     Final License Application  
FPA     Federal Power Act  
FS    U.S. Forest Service  
ft     feet  
FWS     U.S. Fish and Wildlife Service

### **G**

GDNR    Georgia Department of Natural Resources  
GEPD     Georgia Environmental Protection Division  
GHPD    Georgia Historic Preservation Division  
GIS    geographic information system  
GMFMC    Gulf of Mexico Fishery Management Council  
GPC     Georgia Power Company  
GWh     gigawatt-hour (equals one million kilowatt-hours)

**H**

Hp horsepower  
Hz hertz (cycles per second)

**I**

ILP Integrated Licensing Process  
ITS Integrated Transmission System

**K**

kW kilowatt  
kWh kilowatt-hour  
kV kilovolts

**M**

mg/L milligrams per liter  
MSL mean sea level  
MW megawatt  
MWH Montgomery Watson Harza  
 $\mu$ S/cm microSiemens per centimeter

**N**

NEPA National Environmental Policy Act  
NRCS Natural Resources Conservation Service  
NRHP National Register of Historic Places  
NOI Notification of Intent  
NWGRC Northwest Georgia Regional Commission  
NWI National Wetlands Inventory

**O**

OPC Oglethorpe Power Corporation

**P**

PAD Pre-Application Document  
PM&E protection, mitigation, and enhancement  
PMF probable maximum flood  
Project Rocky Mountain Pumped Storage Hydroelectric Project  
PURPA Public Utility Regulatory Policies Act of 1978

**R**

Rocky Mountain PFA  
RTE

Rocky Mountain Recreation and Public Fishing Area  
rare, threatened, and endangered

**S**

SCORP  
SHPO  
sq mi  
SWAP

Statewide Comprehensive Outdoor Recreation Plan  
State Historic Preservation Officer  
square miles  
State Wildlife Action Plan

**T**

TLP  
TRC

traditional licensing process  
TRC Environmental Corporation

**U**

USACE  
USDA  
USGS

U.S. Army Corps of Engineers  
U.S. Department of Agriculture  
U.S. Geological Survey

**W**

WMA

Wildlife Management Area

## 1.0 INTRODUCTION

---

Oglethorpe Power Corporation (An Electric Membership Corporation) (OPC) is filing with the Federal Energy Regulatory Commission (FERC, or Commission) its Notification of Intent (NOI) to file an application for a new license for its existing Rocky Mountain Pumped Storage Hydroelectric Project (FERC No. 2725) (Rocky Mountain Project, or Project).<sup>1</sup> The Rocky Mountain Project is an existing project consisting of a 221-acre Upper Reservoir, a 600-acre Lower Reservoir, two Auxiliary Pools, and a powerhouse on Heath Creek in Floyd County, Georgia (Figure 1). The Project has an installed generating capacity of 904 megawatts (MW). OPC is not proposing to add capacity or make any major modifications to the Rocky Mountain Project under the new license. The Project does not occupy any federal lands. The original license expires December 31, 2026.

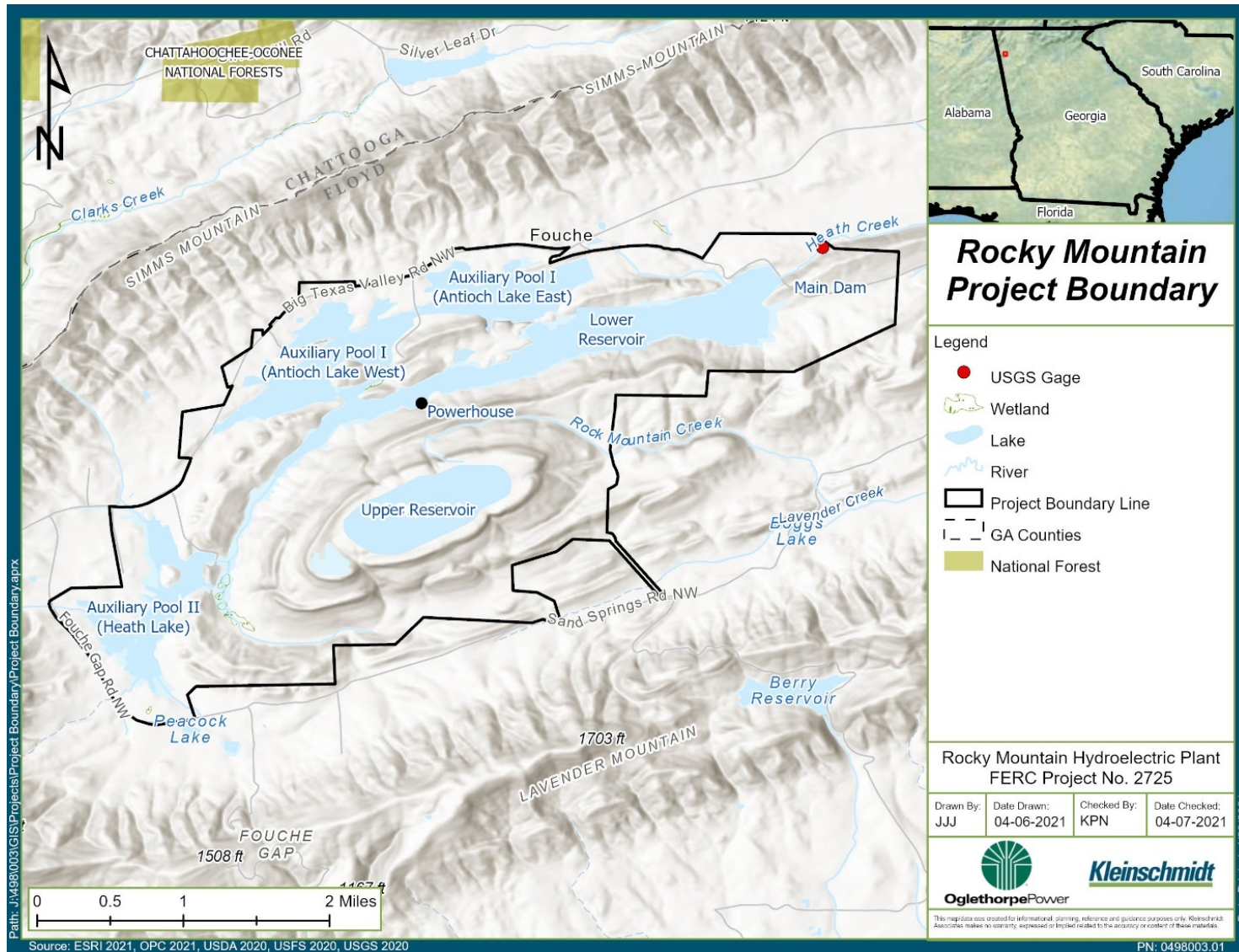
OPC is requesting to use FERC's Traditional Licensing Process (TLP) for all pre-application activities leading up to the filing of the Rocky Mountain license application by December 31, 2024. The TLP includes a three-stage pre-filing consultation process that allows for a more flexible schedule to consult with interested stakeholders and work cooperatively toward identifying information needs and addressing resource issues in an efficient, thorough, and timely manner.

In accordance with the TLP regulations (18 Code of Federal Regulations [CFR] Part 16), this Pre-Application Document (PAD) is being filed with the NOI and distributed to federal and state resource agencies, local governments, Indian Tribes, members of the public, and others likely to be interested in the proceeding. For those not familiar with the relicensing process, the NOI notifies FERC that OPC is seeking a new license for the Project; the NOI must be filed between five and five-and-a-half years prior to the expiration of the existing license. The PAD is intended to capture reasonably available, existing project and environmental information relevant to licensing the Project. The PAD also forms the basis for identifying environmental issues and developing study plans to assess project effects, along with details about the process and schedule for filing the license application.

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<sup>1</sup> As explained in Section 3.1, below, OPC is filing as agent for its co-licensees Georgia Power Company, Rocky Mountain Leasing Corporation, and U.S. Bank National Association.





**Figure 1 Project Boundary Map**

## 1.1 Purposes

The purposes of this PAD are to:

- Describe the existing facilities and the current and proposed operations of the Rocky Mountain Project.
- Provide existing, reasonably available information characterizing the affected environment and potential resource impacts of continued project operation.
- Serve as a precursor to the environmental analysis section (Exhibit E) of OPC's draft and final license applications.

The information provided herein will enable resource agencies and other entities interested in the relicensing proceeding to identify potential resource issues and any related information needs. OPC will collaborate with the resource agencies and other entities to develop appropriate study plans to address these information needs. Section 2.0 provides a detailed schedule for all pre-application activities in the proceeding.

OPC exercised due diligence in preparing this PAD by contacting agencies and other stakeholders potentially having existing, relevant, and reasonably available information characterizing the affected environment and potential resource impacts of continued project operation and describing or summarizing that information herein. OPC also identified and considered potentially applicable federal and state comprehensive plans filed with the Commission. To facilitate the gathering of relevant information, OPC distributed a PAD Questionnaire to agencies, Indian Tribes, and Floyd County. In addition, OPC held a relicensing meeting with the Georgia Department of Natural Resources (GDNR) on December 11, 2020, during which members of the OPC relicensing team provided information about the Project and the relicensing process.

Appendices A and B provide stakeholder meeting summaries and other documentation of stakeholder consultation for development of this PAD, including emails, letters, and meeting notes. Appendix C provides the completed PAD Questionnaires received from several federal and state agencies and Floyd County.

## 1.2 Document Organization

This PAD follows the form and content requirements at 18 CFR § 5.6(c) and (d) and includes the following sections:

- **Section 2** – Process plan and schedule for all pre-application activity, 18 CFR § 5.6(d)(1), including a protocol for distributing information in this proceeding.
- **Section 3** – Description of the project location, facilities, and operations of the Project, 18 CFR § 5.6(d)(2).
- **Section 4** – Description of the existing environment and resource impacts, including: a general description of the river basin (18 CFR § 5.6(d)(3)(xiii)); and for each of 11 resource areas, a description of the existing environment, summaries of existing data or studies regarding the resource, a description of any known or potential adverse impacts and issues, and a description of any existing or proposed project facilities, operations, or management activities undertaken for the purpose of protecting, mitigating impacts to, or enhancing resources affected by the Project (18 CFR § 5.6(d)(3)(i)-(xii)).
- **Section 5** – Preliminary resource issues and potential studies or information gathering needs associated with the identified issues, 18 CFR § 5.6(d)(4).
- **Section 6** – Literature and information sources cited in the descriptions and summaries of existing resource data, 18 CFR § 5.6(c)(2).
- **Appendices** – Summary of contacts made in preparing this document (18 CFR § 5.6(d)(5)); and completed PAD Questionnaires, diagrams, current license requirements, flow duration curves, and related information supporting the sections above.

## 2.0 PROCESS PLAN AND SCHEDULE

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On December 10, 2021, OPC is filing this PAD and a NOI to file a license application seeking a new license for the Rocky Mountain Project. In accordance with FERC's regulations (18 CFR § 5.3), OPC is requesting to use the TLP. This request, along with the reasons why OPC believes the TLP is the most appropriate licensing process for the Project, are detailed in the NOI and summarized in the cover letter accompanying this PAD.

Table 1 provides a Process Plan and Schedule outlining the anticipated timelines for accomplishing the pre-filing consultation required by the regulations governing the use of the TLP at 18 CFR § 16.8. The TLP includes three stages of consultation. The first stage begins with distributing information about the Project, the PAD, to potentially interested stakeholders and subsequently holding a Joint Meeting, including an opportunity for a site visit, with resource agencies, affected Indian Tribes, and the public. This stage also includes consultation on studies or information gathering to be conducted by OPC, using the PAD as a guide. The second stage consists of OPC implementing studies (to the extent pre-filing studies are necessary), developing a Draft License Application (DLA), and distributing the DLA and study results for review by the stakeholders. The third stage is initiated by OPC's filing of the Final License Application (FLA). Subsequently, FERC conducts a review of the FLA and the public comment process, completes an environmental analysis under the National Environmental Policy Act (NEPA), and makes a final decision regarding issuing a license for the Project.

Comments on OPC's request to use the TLP are due to the Commission and OPC no later than 30 days following the filing date of the request, which is contained within the NOI. Should FERC deny OPC's request to use the TLP and instead require the use of the Integrated Licensing Process (ILP)<sup>2</sup>, the Process Plan and Schedule would be adjusted for the required activities and timeframes of the ILP as set forth in 18 CFR Part 5.

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<sup>2</sup> The ILP is FERC's default process for filing an application for an original, new, or subsequent license.

**Table 1 Process Plan and Schedule**

Activity	Responsible Party	Timeframe	Regulation (18 CFR)	Date or Deadline <sup>1</sup>
<b>First Stage of Consultation:</b>				
File NOI, PAD, and Request to use TLP	OPC	At least 5 years but no more than 5.5 years prior to license expiration	§ 5.5	Dec 10, 2021
Publish local newspaper Notice of NOI/PAD and Request Comments on use of TLP	OPC	Concurrent with NOI	§ 5.3	Dec 10, 2021
Comments on use of TLP	Stakeholders	Within 30 days of Request to use TLP	§ 5.3	Jan 10, 2021
FERC Notice of Commencement and TLP Approval	FERC	Within 60 days of NOI, PAD, and Request to use TLP	§ 5.8	Feb 8, 2022
Joint Meeting Notice and Agenda to Stakeholders and FERC	OPC	At least 15 days prior to the Joint Meeting	§16.8(b)(3)	Estimated Mar 24, 2022
Publish Public Notice of Joint Meeting in Newspaper	OPC	At least 14 days prior to the Joint Meeting	§ 16.8(h)(1)	Estimated Mar 25, 2022
Hold Joint Meeting and Site Visit	OPC	30 to 60 days after FERC Notice of Commencement and TLP Approval	§ 16.8(b)(3)	Estimated Apr 8, 2022
File Comments on PAD and Study Requests	Stakeholders	Within 60 days of Joint Meeting	§ 16.8(b)(5)	Jun 7, 2022
<b>Second Stage of Consultation:</b>				
Conduct Reasonable and Necessary Studies	OPC	As defined in the first stage of consultation	§ 16.8(c)(1)	2022-2023, as applicable
File DLA and study results with Stakeholders and FERC	OPC	Prior to deadline for filing FLA, accommodating a 90-day stakeholder review period.	§ 16.8(c)(4)	Estimated February 2024
File Comments on Applicant's DLA	Stakeholders	Within 90 days of filing DLA	§ 16.8(c)(5)	Estimated May 2024
Joint Meeting Notice and Agenda to Disagreeing Agencies or Indian Tribes, and FERC (if needed)	OPC	At least 15 days prior to the Joint Meeting	§ 16.8(c)(6)	TBD (if needed)
Hold Joint Meeting with Disagreeing Agencies or Indian Tribes (if needed)	OPC	Within 60 days from the date of the disagreeing agency's or Indian Tribe's written comments	§ 16.8(c)(6)	TBD (if needed)
<b>Third Stage of Consultation:</b>				
File FLA	OPC	No later than 24 months before existing license expires	§ 5.17	Dec 31, 2024

<sup>1</sup> Some aspects of the schedule may be subject to change; however, the deadline for filing of the FLA is established by statute and is not subject to change.



## **2.1 Proposed Location and Date for Joint Meeting and Site Visit**

OPC will host a Joint Meeting and site visit no earlier than 30 days, and no later than 60 days after TLP approval if FERC approves this request (Table 1). The purpose of the Joint Meeting will be to provide stakeholders the opportunity to view the Project, discuss the information and data presented in the PAD, and identify issues and potential study needs related to the Project. OPC proposes to hold the Joint Meeting in the Rome, Georgia area, or other nearby location, by early April 2022. The Joint Meeting location, date, and times have yet to be determined and will be noticed to all interested parties at least 15 days in advance of the meeting. If FERC requires OPC to use the ILP, then FERC will hold a scoping meeting in accordance with the regulations at 18 CFR § 5.8.

## **2.2 Distribution Protocol**

OPC proposes the following protocol for distributing required licensing materials and communicating to relicensing participants. All participants, including OPC, will communicate with other participants by telephone, e-mail, or any other available electronic means to distribute information and communicate as necessary in a timely and efficient manner. Participants will distribute their respective input consistent with the timeframes established in the Process Plan and Schedule (Table 1).

In addition, OPC will share information on its Rocky Mountain relicensing website. The project website will be maintained as a readily accessible repository of OPC's key relicensing documents and information, including the PAD, Process Plan and Schedule, study plans and reports, DLA, FLA, and other relevant pre-filing information.

The Rocky Mountain relicensing website can be accessed through the following URL:

<https://opc.com/rockymountainrelicensing>

All relicensing documents issued and received by FERC, including all filings by relicensing participants, also will be available on the Internet using the eLibrary feature of FERC's website. The quick reference guide (eLibrary – Quick Help) and Detailed Online Help available on the FERC website describe the information needed to navigate eLibrary. OPC encourages all relicensing participants to sign up to utilize resources within FERC Online,

not only to monitor the relicensing proceeding (eLibrary) but to file their documents (eFiling) and to track all relicensing filings by receiving ongoing e-mail filing notices from FERC (eSubscriptions).

The internet addresses for FERC's hydropower website and the eLibrary feature are:

<http://www.ferc.gov/industries/hydropower.asp>

<https://www.ferc.gov/ferc-online/overview>

<http://www.ferc.gov/docs-filing/elibrary.asp>

## 3.0 PROJECT LOCATION, FACILITIES, AND OPERATIONS

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### 3.1 Applicant's Authorized Agent

OPC, Georgia Power Company (GPC), Rocky Mountain Leasing Corporation, and U.S. Bank National Association (as owner trustee) are co-licensees for the Rocky Mountain Project.<sup>3</sup> OPC owns a 74.61 percent undivided interest in the Project and GPC owns the remaining 25.39 percent undivided interest. The "Joint Participation Agreement" by and between OPC and GPC appoints OPC as agent with the sole authority and responsibility for, among other things, the planning, licensing, design, control, construction, maintenance, and disposal of the Project.

The exact name, business address, and telephone number of the person authorized to act as agent for OPC as the applicant in the proceeding are:

Mr. James A. Messersmith  
Senior Vice President of Plant Operations  
Oglethorpe Power Corporation  
2100 East Exchange Place  
Tucker, GA 30084  
Phone: 770.270.7210  
Email: [jim.messersmith@opc.com](mailto:jim.messersmith@opc.com)

ATTN: Mr. Craig A. Jones, Ph.D.  
Director of Environmental Policy  
Phone: 770.270.7348  
Email: [craig.jones@opc.com](mailto:craig.jones@opc.com)

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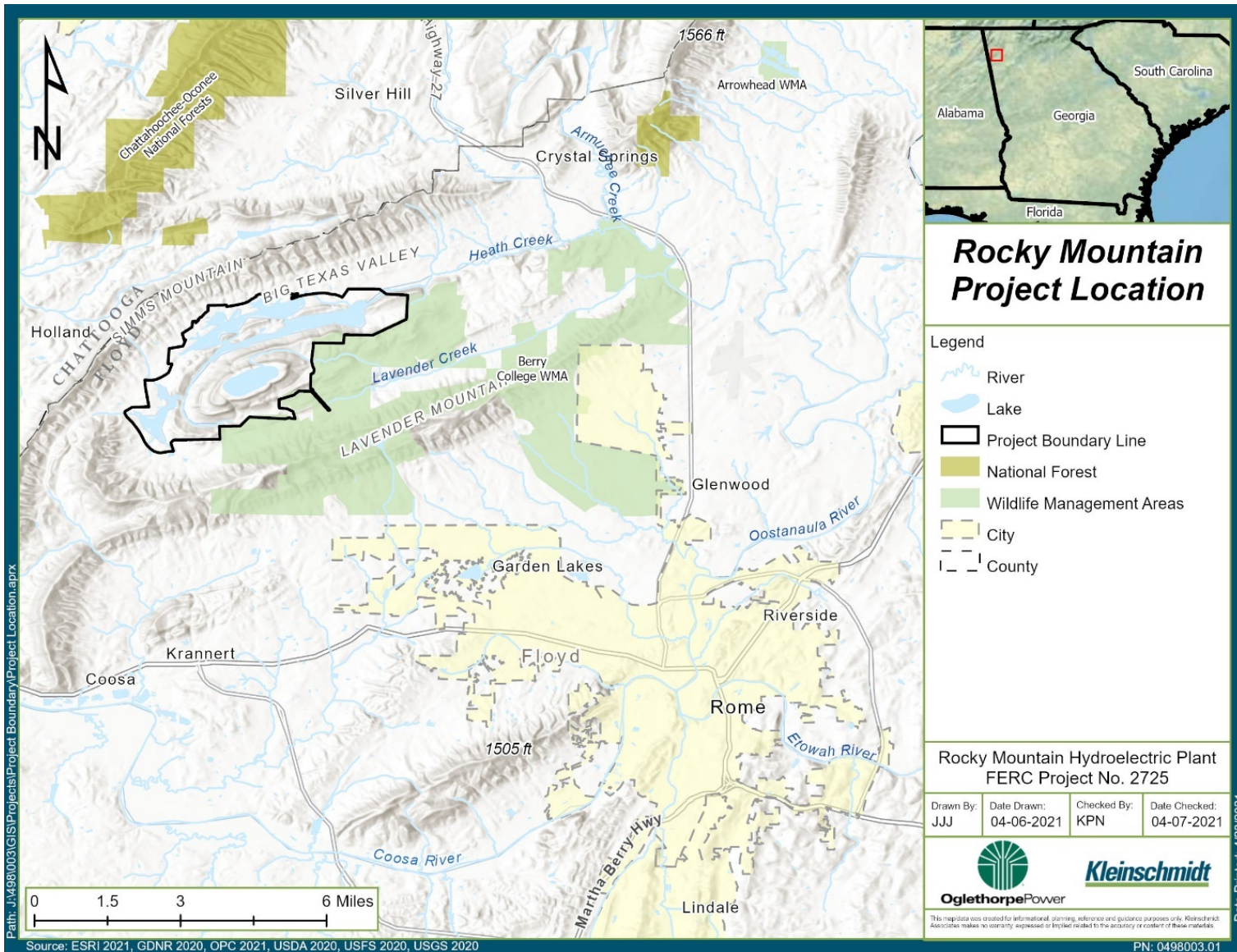
<sup>3</sup> The Federal Power Commission (now FERC) issued an original major license to Georgia Power Company for the Rocky Mountain Project, FERC Project No. 2725 (Project), on January 21, 1977. The 50-year license became effective January 1, 1977. *See Georgia Power Co.*, 57 F.P.C. 368, *order on reh'g*, 59 F.P.C. 744 (1977). By order issued January 28, 1988, FERC approved the addition of OPC as co-licensee to facilitate financing and construction of the Project. 42 FERC ¶ 62,060 (1988). By order dated December 24, 1996, FERC approved the addition of Fleet National Bank (as owner trustee), SunTrust Bank, Atlanta (as owner trustee), and Rocky Mountain Leasing Corporation (RMLC) as co-licensees to facilitate a sale and leaseback financing transaction. 77 FERC ¶ 62,193 (1996). On June 25, 2014, FERC approved partial transfer of the license to OPC, Georgia Power Company, RMLC, and U.S. Bank National Association (as owner trustee), as co-licensees. 147 FERC ¶ 62,228 (2014).

## 3.2 Project Location

The Rocky Mountain Project is located in Floyd County, Georgia, approximately 10 miles northwest of the city of Rome (Figure 2). The Project consists of: a 221-acre Upper Reservoir; a 600-acre Lower Reservoir on Heath Creek; two Auxiliary Pools (Auxiliary Pool I and Auxiliary Pool II) adjacent to the Lower Reservoir totaling about 600 acres; a three-unit powerhouse; a substation located 1.5 miles from the powerhouse; three 230-kV transmission lines comprising a total of 1.5 miles, known as the Primary Transmission Line; an access road; and appurtenant facilities.<sup>4</sup>

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<sup>4</sup> Both the substation, which is commonly referred to as the “Switching Station” of the Project, and the three 230-kV transmission lines comprising a total of approximately 1.5 miles, which is commonly referred to as the “Primary Transmission Line” of the Project, should be removed from the principal project works. The substation and transmission lines have been part of Georgia’s Integrated Transmission System (ITS) since 1994. The ITS is a 17,800+ mile network of integrated transmission assets almost exclusively located in the State of Georgia wherein each asset is individually owned, but all transmission assets are jointly planned and operated for the benefit of all of the ITS’s participating transmission owners. The ITS provides its participants nearly statewide transmission access while eliminating the need for multiple private transmission contracts or access fees. Since the substation and the transmission lines are part of the ITS, all participants in the ITS have the right to utilize the substation and the transmission lines as part of the state’s integrated transmission system, regardless of the Project’s status. OPC will be proposing in the license application that both the substation and the transmission lines be removed as Project works.



**Figure 2 Project Vicinity**



The Project is located on Heath Creek within the Armuchee Creek tributary system of the Oostanaula River in the Coosa River basin of northwest Georgia (Figure 2). The Coosa River begins within the city of Rome at the confluence of the Oostanaula and Etowah rivers. Armuchee Creek enters the Oostanaula River about 10 river miles upstream of Rome. The Project's Lower Reservoir inundates a portion of Heath Creek, about three miles downstream of its origin from springs in the Lavender and Simms mountains. The drainage area of Heath Creek at the Main Dam is 16.6 square miles (sq mi).

The FERC project boundary encompasses 5,000 acres of land and water (Figure 1). The Project's Upper Reservoir is formed by a 120-foot-high, 12,895-foot-long, continuous earth and rockfill dam, which circumscribes the natural concave top of Rock Mountain. The Lower Reservoir is located on Heath Creek. Adjacent to the Lower Reservoir to the north and west are 400-acre and 200-acre Auxiliary Pools. The Project's penstocks provide generating flows to the Project's powerhouse, which is located at the Lower Reservoir. Flows discharged from the powerhouse are stored in the Lower Reservoir. The Project includes a substation located 1.5 miles from the powerhouse and three 230-kV transmission lines comprising a total of 1.5 miles, known as the Primary Transmission Line.<sup>5</sup>

Auxiliary Pools I and II are managed and operated by GDNR as part of the Rocky Mountain Recreation and Public Fishing Area (Rocky Mountain PFA). They contain a variety of recreational facilities. Auxiliary Pool I is known as Antioch Lake and includes two sub-impoundments referred to as Antioch Lake East and Antioch Lake West. Auxiliary Pool II is known as Heath Lake.

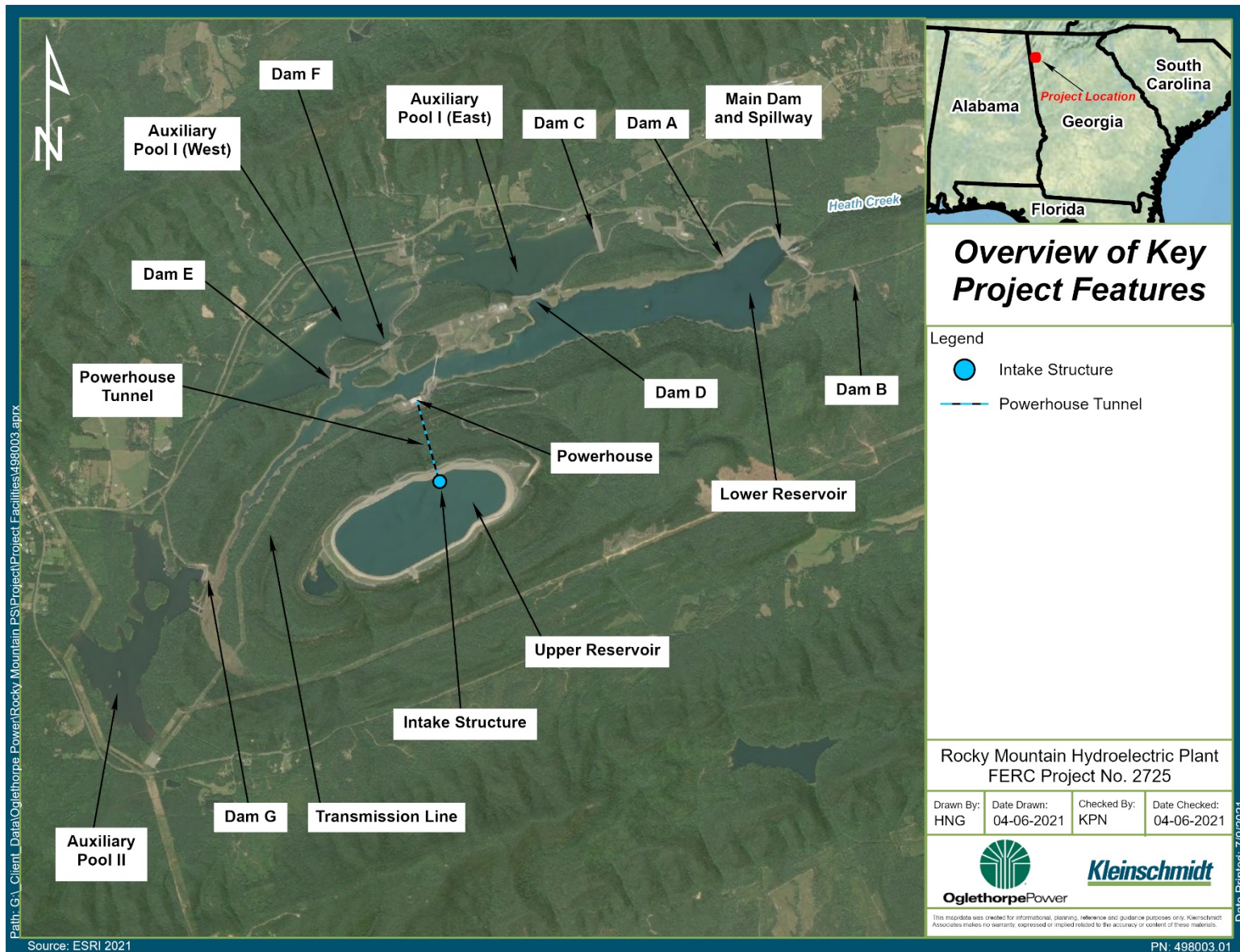
There are no lands of the U.S. known to be occupied or affected by the Rocky Mountain Project.

### **3.3 Project Facilities**

The Project began operation in 1995 and includes an Upper Reservoir, a Lower Reservoir, two Auxiliary Pools, water conduits, a powerhouse, electrical transmission interconnection, and recreational facilities (Figure 3). OPC does not propose any additions or modifications to the existing facilities at this time.

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<sup>5</sup> As discussed above, Footnote 4, OPC will be proposing that the substation and the Primary Transmission Line be removed from the Project's description.



**Figure 3 Project Facilities**

The Upper Reservoir is formed by a 120-foot-high, 12,895-foot-long, continuous earth and rockfill dam, which circumscribes the natural concave top of Rock Mountain. At normal maximum operating pool elevation, 1,392 feet (ft) MSL (elevation above mean sea level), the impoundment is 221 acres in size and contains 10,650 acre-feet (acre-ft) of gross storage (10,003 acre-ft of active storage).

The Lower Reservoir is formed by three dams: (1) Main Dam a 120-foot-high, 942-foot-long structure consisting of a combination earth and rockfill embankment type dam with an impervious core and a concrete gravity type dam that contains a gated spillway with two Tainter gates, a 10-inch jet flow gate, a 40-inch jet flow gate, and a minimum flow outlet and a south abutment cut off structure; (2) Dam A: a 70-foot-high, 1,260-foot-long earth and rockfill structure with an impervious core; and (3) Dam B: a 10-foot-high, 690-foot-long earthfill structure. The reservoir is approximately 600 acres containing 18,800 acre-ft of storage at its normal maximum elevation of 710.5 ft MSL.

The Project has two Auxiliary Pools located adjacent to the Lower Reservoir, both of which are normally maintained at a relatively constant elevation of 715 ft MSL. The primary purposes of the pools are to provide: (1) a total 5,800 acre-ft of reserve storage for drought periods; (2) recreational opportunities concentrated at developed facilities; and (3) wildlife management and lower-density recreational use. Auxiliary Pool I (Antioch Lake) is 400 acres and is contained by an ungated spillway and four dams: (1) Dam D: a 20-foot-high, 775-foot-long earth and rockfill structure; (2) Dam C: a 65-foot-high, 1,024-foot-long earth and rockfill structure; (3) Dam E: a 50-foot-high, 700-foot-long earth and rockfill structure; and (4) Dam F: a 50-foot-high, 405-foot-long earth and rockfill structure, and low-level outlet works. Auxiliary Pool II (Heath Lake) is 200 acres and is formed by Dam G, a 30-foot-high, 335-foot-long earth and rockfill structure with an ungated spillway and low-level outlet works.

The Project's water conduit consists of a 567-foot-long, 35-foot inside diameter, vertical concrete-lined shaft; a 1,935-foot-long, 35-foot inside diameter, horizontal concrete-lined tunnel; two horizontal concrete-lined bifurcations; three 19-foot inside diameter reinforced concrete-lined penstock connections of varying lengths; and three steel-lined penstocks, each about 470 ft long and each starting with a 19-ft inside diameter and ending with a 10ft 8-inch inside diameter.

The powerhouse contains three vertical shaft, reversible Francis type pump-turbines each directly connected to a synchronous motor/generator. Both the pump-turbines and the

motor-generators were manufactured by Hitachi, Ltd. Flows discharged from the powerhouse are stored in the Lower Reservoir. The Project has an installed generating capacity of 904 MW at 650 ft best-gate net head and a dependable generating capacity of 851 MW at 613 ft best-gate net head. The maximum hydraulic (discharge) capacity of the powerhouse in generating mode at best gate is 18,086 cubic feet per second (cfs) (FERC 2005).

The Project includes a substation located 1.5 miles from the powerhouse and three 230-kV transmission lines comprising a total of 1.5 miles, known as the Primary Transmission Line.<sup>6</sup> A single-line drawing of the project transmission lines is included in Appendix D.

There are approximately 5,000 acres of land and water within the FERC project boundary, with 3,700 acres available to the public for recreational activities. In 1997, OPC and GDNR entered into a resource management agreement, whereby OPC provides funding for and GDNR manages the recreation, fish, and wildlife resources, and associated habitat, at the Project consistent with the existing FERC license.

### **3.4 Current Operation**

The Project is staffed 24-hours per day and is operated in accordance with power grid dispatch requirements to provide peaking power and spinning reserve in the generating mode. The Project uses off-peak power from the grid in the pumping mode. The units are started and stopped from the distributed control system by an operator in the control room.

As a pumped storage project, all power produced by the Project results from generation using water in the Upper Reservoir during periods of peak electricity demand. The pumping of water from the Lower to the Upper Reservoir typically occurs at night and occasionally during daytime hours during cooler months. During the cooler months, generation occurs during the morning and evening hours. During the summer, generation occurs during the afternoon.

In accordance with Article 34 of the existing license, a minimum flow of 1.2 cfs is released into Heath Creek downstream of the Lower Reservoir (Main Dam).

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<sup>6</sup> As discussed in Section 3.2, Footnote 4, OPC will be proposing that the substation and the Primary Transmission Line be removed from the Project's description.

### 3.4.1 Normal Operation

During normal daily operation of generating and pumping, the Upper Reservoir water level fluctuates between the normal maximum operating pool elevation of 1,392 ft MSL and normal minimum operating pool elevation of 1,341 ft MSL. The active volume of the Upper Reservoir is 10,003 acre-ft of water, which is cycled between the Lower and Upper Reservoirs. At the normal minimum operating pool elevation, the Upper Reservoir impoundment contains a reserve storage capacity of 647 acre-ft.

During the generating cycle, the Lower Reservoir typically increases in elevation by 20 ft from approximately 690.5 ft MSL to 710.5 ft MSL.

The summary of the Upper and Lower reservoir elevations for the past five years are included in Table 2 and Table 3.

**Table 2 Upper Reservoir Elevation Summary**

<b>Year</b>	<b>Minimum Recorded Reservoir Elevation (Ft. NGVD)</b>	<b>Maximum Recorded Reservoir Elevation (Ft. NGVD)</b>
2016	1,341.84	1,392.21
2017	1,341.00	1,392.31
2018	1,339.56	1,392.00
2019	1,341.00	1,392.20
2020	1,342.14	1,392.22

**Table 3 Lower Reservoir Elevation Summary**

<b>Year</b>	<b>Minimum Recorded Reservoir Elevation (Ft. NGVD)</b>	<b>Maximum Recorded Reservoir Elevation (Ft. NGVD)</b>
2016	684.07	710.25
2017	684.76	710.74
2018	688.73	711.03
2019	687.99	710.47
2020	688.67	710.60

### 3.4.2 Summary of Project Generation and Outflow Records

From 2015 to 2020, total project gross generation has averaged 8,750,045 megawatt-hours.



As described in sections 4.1 and 4.3, inflow to the Project originates from small, headwater tributaries and drainageways of the Heath Creek system that drain toward the Auxiliary Pools and the Lower Reservoir. There are no natural watersheds or tributary streams entering the Upper Reservoir atop Rock Mountain. As a pumped storage facility, flows from Heath Creek are not directly used for generation.

Discharges from the Project occur at the Main Dam and are measured at the minimum flow release valve at the Main Dam and at the U.S. Geological Survey (USGS) Gage No. 02388320 (Heath Creek near Armuchee, GA) located about 0.3 mile downstream of the Main Dam. Flows released from the Project, as measured at the Heath Creek gage, for the past five years have averaged 21 cfs. The maximum instantaneous flow recorded at the USGS gage within the past five years was 604 cfs, occurring on February 6, 2020. The Project releases a minimum flow to Heath Creek through a 6-inch diameter pipe/flow release valve to meet the minimum flow requirement of 1.2 cfs. OPC continuously monitors the minimum flow requirement at the Main Dam using an Annubar flow measuring device, and not the USGS gage, because of the greater accuracy of the release valve measurement. The minimum instantaneous flow recorded from the flow release valve within the past five years was 1.36 cfs, with the exception of two short periods (2.5 and 4.5 hours) in January-February 2021 when the minimum flow was interrupted due to an underwater dive inspection and associated maintenance (see Section 3.6.2); OPC notified FERC in accordance with Article 34 of the project license and FERC determined that neither deviation would be considered a violation of the license.

The Project has the ability to provide spinning and supplemental (non-spinning) reserves. When providing spinning reserves, a unit is loaded to a part load, varying between 100 and 135 MW, and the differential between operating power and 100 percent capacity is treated as spinning reserve. Supplemental (non-spinning) reserves are provided by having the units responding to dispatch such that they can be brought online in less than 15 minutes.

In 2005, FERC issued an order amending the Project license allowing an increase in the Project's authorized generating capacity (111 FERC ¶ 62,079). FERC authorized OPC to replace the existing pump-turbine runners and modify other pump-turbine, motor-generator, and auxiliary equipment components to optimize the hydraulic performance and increase the operating capacity of the equipment, thereby increasing its FERC-authorized installed capacity from 760 MW to 904 MW.

### **3.4.3 High-Flow Operation**

As described in Section 3.4.2, given the limited nature of project inflows, high-flow operations are not significantly different from normal operations.

### **3.4.4 Drought Operation**

Storage in the Auxiliary Pools is used to replenish the Lower Reservoir only if, after the pumping cycle, the elevation of the Lower Reservoir has declined to elevation 681 ft MSL. To prevent cavitation damage to the pump-turbines, the Project cannot be operated when the elevation of the Lower Reservoir falls below elevation 681 ft MSL.

### **3.5 Proposed Operation**

OPC proposes to continue operating the Rocky Mountain Project as it is currently operated.

### **3.6 Other Project Information**

This section provides other project information required at 18 CFR § 5.6(d)(2).

#### **3.6.1 Current License Requirements**

A complete description of the current license requirements for the Rocky Mountain Project as amended during the license term is provided in Appendix E. The current license for the Project was issued for a period of 50 years, effective as of January 21, 1977. In addition to standard license articles, the license includes a number of project-specific license articles as summarized in Table 4.

**Table 4 Current License Requirements**

Article	Description	Summary of Requirement
24	Construction	Licensee shall commence construction within 2 years from the effective date of the license, and complete construction within 6 years from the effective date of the license.
25	Drawings	Licensee shall file copies of the contract drawings and specifications, and submit revised Exhibit L drawings with final design prior to construction.
26	Construction	Licensee shall retain a board of independent consultants to review project design and safety and submit final board report upon completion of construction.
27	Construction	Requires the licensee to install appropriate instrumentation and other devices to monitor seepage, uplift, and performance of the project structures and reservoir slopes and file a plan of instrumentation and a schedule for recording instrument readings prior to the initial filling of the upper reservoir. Also requires periodic reports and analyses of instrument readings upon request.
28	Construction	Licensee shall file a plan to assure the safety of the upper reservoir dam from inadvertent over-pumping.
29	Construction	Licensee shall consult/cooperate with federal, state, and local agencies including Floyd County, in determining the proper realignment of sections of Fouce Gap and Big Texas Valley roads which pass through the project area, and file a report to include maps and update other affected exhibits as necessary.
30	Wildlife and Fish Management	After consulting with GDNR and FWS, the Licensee must file a revised Exhibit S within 3 years of license issuance that include: 1) a wildlife management plan and schedule; 2) a project map of revegetated land and plant species in each area; 3) a fish management plan; and 4) a cost estimate of all plans.
31	Water Quality Monitoring Program	In cooperation with GDNR, 1) continue pre-construction monthly water quality studies on Heath Creek and inflowing tributaries, etc.; 2) conduct a post-operational water quality monitoring program on a monthly basis for 5 years from commencement of project operation at sites within the two auxiliary pools to include sampling; and 3) file annual progress reports with the Commission and file a final report within 1 year after completion of the water monitoring program.
32	Sediment Management	Prior to construction, consult/cooperate with GDNR to develop a plan to minimize inorganic sediment and pollutants from entering the streams or reservoirs in the project area. Studies/results to be filed within six months after completion.
33	Fish Sampling	After consulting with GDNR and FWS, licensee shall within six months of license issuance complete or arrange for the completion of fish sampling in affected streams to confirm the presence/absence for RTE fish species. Results/recommendations shall be filed within six months of completion of studies.

Article	Description	Summary of Requirement
34	Minimum Flows	Release shall be 1.2 cfs below the lower operating reservoir. In cooperation with GDNR, Licensee shall evaluate the minimum flow and file any proposed modifications within 1 year of commencing operations.  If the minimum flow falls below 1.2 cfs, Licensee must file a report with FERC within 30 days of the incident or when the data become available. Required by 74 FERC ¶ 62,080 (1996) <sup>7</sup> .
35	Drawings/ Recreation	Finalize within 1 year of license issuance the final design drawings and any amendments to Exhibit R.  Submit as-built drawings of completed recreational facilities within 6 months of construction. Required by 59 FERC ¶ 62,308.
36	Vectors	Take control of vectors at the project and seek the recommendations of GDNR, Georgia Dept. of Public Health (GDPH), and Floyd County Health Department (FCHD).
37	Sanitation	Requires the Licensee to cooperate with EPA, FCHD, and GDPH to comply with federal, state, and local regulations for sanitary facilities within the project area.
38	Sanitation	Licensee to coordinate with FCHD and GDPH to comply with state and local regulations in providing for the collection, storage, and disposal of solid waste, and within 1 year after commencement of project operation file a solid waste management plan as approved by the two agencies.
39	Vegetation	Licensee, in coordination with GDNR, FWS, and Univ. of Ga. Botany Dept., shall arrange for the completion of a spring and summer preconstruction vegetation survey within 1 year of license issuance to determine the presence/absence of any RTE plant species within the proposed project boundaries. Licensee shall, within six months after completing the survey, file with the Commission a report outlining the results of the survey.
40	Cultural Resources	Requires Licensee to implement a Cultural Resources Management Plan.
41	Real Property	The Licensee shall, for the relocation of those persons displaced by construction of the project, aid in locating suitable housing and provide reasonable financial assistance. In addition, the Licensee shall construct new access roads to those residents not displaced, but whose access to the Big Texas Valley and Fouché Gap roads will be blocked by construction of this project.
42	Cultural and Natural Resources	Licensee shall avoid or minimize any disturbance to the natural, scenic, historical, and recreational values of the area. The Licensee shall also blend project works with the natural character of the area, and re-vegetate, stabilize, and landscape any construction areas located outside the area of the project reservoirs as may be needed. Licensee shall consult with agencies and file a detailed plan within 1 year of license issuance.

<sup>7</sup> 74 FERC ¶ 62,080 Order Amending Streamflow Gaging Plan requires OPC to install Annubar flow gaging equipment located at the dam instead of pressure gages to monitor and report any deviations in the minimum flow requirement. The installed Annubar flow gaging equipment is the compliance point for minimum flow determination and not the USGS gage located in Heath Creek.

Article	Description	Summary of Requirement
43	Streamflows	Licensee shall operate the project during flood periods in a manner such that the peak stream flow below the lower reservoir will be no greater than would have occurred in the absence of the project.
44	Project Maps	Licensee shall file an Exhibit F and, for FERC approval, a revised Exhibit K within 1 year after commencement of operation of the project.
45	Finance	After the first 20 years of project operation of the project under license, 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.
46	Dredging/ Maintenance	Material may be dredged or excavated from, or placed as fill in, project lands and/or waters only in the prosecution of work specifically authorized under the license; in the maintenance of the project; or after obtaining FERC approval, as appropriate. Dredging and filling in a navigable water of the United States shall also be done to the satisfaction of the District Engineer, Corps of Engineers, Department of the Army, in charge of the locality.
47	Annual Charges	The Licensee shall pay annual charges on the installed capacity of 900,000 horsepower.
48	Land Clearance	Licensee, in consultation with the Georgia Forestry Commission, USFS, and other appropriate agencies, shall, within 1 year of license issuance, file a plan for clearing the reservoir area. Upon approval of the clearing plan, all clearing and disposal operations will be carried out to FERC's satisfaction.
49	Emergency Action Plan (EAP)	<p>Licensee shall file EAP with Regional Engineer. Licensee shall also submit a summary of the study used as a basis for determining the areas that may be affected by such emergency occurrence, including criteria and assumptions used.</p> <p>A copy of the current EAP must be posted in a prominent location readily accessible to the licensee's operating personnel who are responsible for controlling water flows and for notifying public health and safety agencies and affected persons. Required by 18 C.F.R. § 12.25.</p> <p>Annual EAP drill required by Section 6-2.2.6 of FERC Engineering Guidelines.</p>
50	Road Systems	<p>Within 2 years from the commencement of project operation, the Licensee shall, in consultation and cooperation with Floyd County and other appropriate state and local agencies, conduct a study and prepare a report on the existing use and future road system needs within the project boundary. The Licensee shall file with FERC a copy of the report on the results of that study, including documentation of consultation and subsequent plans for implementation of any facilities determined necessary from this study.</p> <p>Added to license June 10, 1983. 23 FERC ¶ 62,334.</p>

### **3.6.2 Compliance Summary**

A review of readily available electronic OPC correspondence and FERC compliance documentation shows that the Rocky Mountain Project has been, and continues to be, in compliance with the terms and conditions of the current license. One instance of alleged non-compliance is described below:

On December 23, 1996, FERC issued a letter based on its investigation of OPC's compliance with Article 40 of the license regarding implementation of the Project's Cultural Resource Management Plan (CRMP). The letter found a violation of the license for failure to protect or adequately mitigate adverse impacts on an historic property, specifically, Building 16E of the Fouche Hardy Complex or, alternatively, at a minimum, for failure to fully record and submit documentation of Building 16E to FERC. OPC disagreed with FERC's finding that it was obligated to preserve in place any buildings under the CRMP. Nevertheless, OPC proposed a comprehensive mitigation plan for all historic properties at the Project, which FERC approved in its December 23, 1996 letter. FERC's December 23, 1996 letter also stated that it would not take any enforcement action against OPC for the alleged violation in light of OPC's extensive research on historic properties during the period prior to OPC's takeover as manager of the Project, and OPC's new proposed mitigation plan.

For approximately 4.5 hours on January 20, 2021, and approximately 2.5 hours on February 23, 2021, the minimum flow of 1.2 cfs from the lower operating reservoir to Heath Creek, required by Article 34 of the project license, was interrupted due to an underwater dive inspection and associated maintenance at the Rocky Mountain Project. OPC notified FERC in compliance with ordering paragraph (C) of Article 34 and, per the letter dated August 19, 2021 from Adrea Claros, FERC determined that neither deviation event would be considered a violation of Article 34 of the project license.

### **3.6.3 Current Net Investment**

OPC's current net investment (book value) at the Rocky Mountain Project is \$339,723,351 as of December 31, 2020, which includes \$2,504,548 in construction work in progress expenditures. The current net investment does not include a substation located 1.5 miles from the powerhouse and the three 240-kV transmission lines comprising a total of 1.5 miles, known as the Primary Transmission Line, which OPC is proposing to remove from the project works as discussed in Section 3.2 above.

GPC's current net investment at the Rocky Mountain Project is \$37,513,931 as of December 31, 2020.



## 4.0 EXISTING ENVIRONMENT AND RESOURCE IMPACTS

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### 4.1 General Description of the River Basin

The Rocky Mountain Project is located on headwater tributaries of Armuchee Creek, a tributary to the Oostanaula River in the upper Coosa River basin in northwest Georgia (Figure 2). The Coosa River is part of the larger Alabama-Coosa-Tallapoosa (ACT) River basin. The main tributaries of the Coosa River, the Oostanaula and Etowah rivers, originate in the Blue Ridge physiographic province and flow west and southwest through the Ridge and Valley province. The Oostanaula and Etowah Rivers converge to form the Coosa River at Rome, Georgia, about 10 air miles southeast of the Project. The Coosa River flows west from Rome for 30 miles, enters Alabama, and continues south-southwest 256 miles before joining the Tallapoosa River to form the Alabama River (U.S. Army Corps of Engineers [USACE] 2014). The Alabama River flows west-southwest for 314 miles and converges with the Tombigbee River to form the Mobile River, which flows south 45 miles to the Gulf of Mexico at Mobile Bay.

The ACT River basin drains a total area of approximately 22,739 sq mi. The Coosa River basin drains approximately 10,156 sq mi, of which 4,579 sq mi (45 percent) are in northwest Georgia and 100 sq mi (1 percent) are in southeast Tennessee (USACE 2014, Georgia River Network 2018).

The Oostanaula River drains an area of approximately 2,150 sq mi (USACE 2014). The Coosawattee and Conasauga Rivers form the Oostanaula River about 25 air miles northeast of the Project. The Oostanaula River meanders southwest for 47 miles to its confluence with the Etowah River.

Armuchee Creek drains a watershed area of 226 sq mi in the Ridge and Valley province, flows southeasterly, and enters the Oostanaula River about 10 miles above its mouth (USACE 2014). Armuchee Creek originates in narrow, rolling valleys north of the Project in Walker and Chattooga Counties. Steep forested ridges along the east and west sides of the upper basin in these counties include some lands within the Chattahoochee-Oconee National Forest. After flowing south into Floyd County, Armuchee Creek is joined from the west by Little Armuchee Creek, Heath Creek, and Lavender Creek, as it meanders southeast to the Oostanaula River.

The Rocky Mountain Project occupies the Heath Creek and Lavender Creek tributary systems of Armuchee Creek. The drainage area of Heath Creek upstream of the Main Dam and spillway, which includes the Lower Reservoir and Auxiliary Pools, is approximately 16.6 sq mi. The Upper Reservoir sits atop Rock Mountain on the drainage divide between Rock Mountain Creek of the Lavender Creek system, which drains east, and intermittent headwaters of the Heath Creek system. There are no natural watersheds or streams entering the Upper Reservoir.

#### **4.1.1 Dams in the Basin**

Other than the Project, there are no major dams in the Armuchee Creek watershed. Two major dams are located on rivers in the upper Coosa River basin in northwest Georgia: Carters Dam and Lake and Carters Regulation Dam Project on the Coosawattee River; and Allatoona Dam and Lake Project on the Etowah River. Both projects are owned and operated by the USACE (Table 5).

The main stem of the Oostanaula River is unimpounded but the river's flow is regulated by Carters Dam and Lake and Carters Reregulation Dam, located on the Coosawattee River 27 miles upstream of its mouth (USACE 2014). Carters Dam is 445 ft high and creates a 3,275-acre reservoir. Carters Regulation Dam, located immediately downstream, creates an 870-acre pool. The Carters Project is a pumped storage peaking facility. The regulation dam is the lower pool for pumped storage operation and also serves to reregulate peaking flows from Carters Lake to provide a more stable downstream flow. Allatoona Dam and Lake are located on the Etowah River 48 miles upstream of its confluence with the Oostanaula River.

Nine major dams regulate the flow of the Coosa and Alabama Rivers downstream of the Rocky Mountain Project in Alabama. They include six FERC-licensed dams on the Coosa River owned and operated by Alabama Power Company (APC) and three USACE locks and dams on the Alabama River (Table 5). The nine dams impound 470 miles (80 percent) of the Coosa and Alabama Rivers downstream of the Project (Freeman et al. 1997).

The first dam downstream of the Project is Weiss Dam on the Coosa River in northeast Alabama. Weiss Lake covers 30,027 acres and extends 13 miles upstream into northwest Georgia on the Coosa River downstream of Rome.

**Table 5 Dams on the Mainstream Rivers of the Coosa and Alabama River Basins**

River Basin/Project	Owner	Reservoir Size (acres)	Total Storage (acre-ft)	Conservation Storage (acre-ft)
<b>GEORGIA</b>				
<b>Coosawattee River</b>				
Carters Dam and Lake	USACE	3,275	383,565	141,402
Carters Reregulation Dam	USACE	870	17,500	16,000
<b>Etowah River</b>				
Allatoona Dam and Lake	USACE	11,862	367,471	284,580
Thompson-Weinman Dam	Private	--	--	--
<b>ALABAMA</b>				
<b>Coosa River</b>				
Weiss Dam and Lake	APC	30,027	306,655	263,417
H. Neely Henry Dam and Lake	APC	11,235	120,853	118,210
Logan Martin Dam and Lake	APC	15,269	273,467	144,383
Lay Dam and Lake	APC	11,795	262,887	92,352
Mitchell Dam and Lake	APC	5,855	170,783	51,577
Jordan/Bouldin Dam and Lake	APC	5,890/734	236,130	19,057
<b>Alabama River</b>				
Robert F. Henry Lock and Dam/R.E. "Bob" Woodruff Lake	USACE	13,500	247,210	36,450
Millers Ferry Lock and Dam/William "Bill" Dannelly Lake	USACE	18,528	346,254	46,704
Claiborne Lock and Dam and Lake	USACE	6,290	102,480	NA

Source: USACE (2014)

#### 4.1.2 Major Land Uses

The Armuchee Creek basin drains portions of Walker, Chattooga, and Floyd Counties in northwest Georgia. The Rocky Mountain Project is located in northwestern Floyd County. There are no incorporated towns or cities in the small, rural watersheds of Heath and Lavender Creeks. According to the Rome-Floyd County Comprehensive Plan, the predominant land uses surrounding the Project are agricultural/conservation lands and residential areas along minor collector roads on the north and west sides of the Project (Rome-Floyd County 2018). The future character of land use surrounding the project is planned to include conservation, defined as undeveloped natural lands and

environmentally sensitive areas, and rural areas, defined as open or cultivated land including agricultural and timber operations and rural residential uses.

The Armuchee Creek basin is in the Coosa-North Georgia Water Planning Region of Georgia (Georgia Environmental Protection Division [GEPD] 2017). Approximately 66 percent of the land cover in the Coosa River portion of the planning region is forested and about 14 percent is used for pasture/hay and row crops.

Land uses in the Heath Creek watershed are primarily forest (77.8 percent), agriculture (10.6 percent), open water (6.5 percent), recreational lands (2.3 percent), and quarries (1.5 percent) (GEPD 2009). Residential uses, woody wetlands, emergent wetlands, and bare rock each comprise less than 1 percent. There are no national forest lands within Floyd County in either the Heath Creek or Lavender Creek watersheds.

All lands within the Rocky Mountain project boundary, except the project facilities, paved roads, and communication facilities, are managed and operated by GDNR as the Rocky Mountain PFA. GDNR manages and operates the recreational resources, which are centered on the Auxiliary Pools (Antioch Lake and Heath Lake), through an agreement with OPC, in the same manner as state public fishing areas and wildlife management areas. Rocky Mountain PFA offers fishing, hunting, boating, canoeing, hiking, picnicking, wildlife viewing, biking, swimming, camping, and archery (see Section 4.8.1).

The 15,609-acre Berry College Wildlife Management Area (WMA) abuts the Rocky Mountain project boundary along its southeasterly extent. Located in Floyd County, the WMA encompasses Lavender Mountain to the south, includes portions of Lavender Creek, and extends southeast to the Berry College campus near Rome. Berry College WMA offers opportunities for hunting, wildlife viewing, hiking, biking, and horseback riding.

Arrowhead WMA is located 8 miles northeast of the Project in Floyd County in the Lovejoy Creek watershed, a tributary to the Oostanaula River. The WMA consists of 338 acres of mostly forested land with lakes and managed waterfowl impoundments and offers hiking, hunting, wildlife viewing, and youth fishing.

John's Mountain WMA is located 18 miles northeast of the Project in the Oostanaula River basin at the intersection of Floyd, Walker, Gordon, and Whitfield Counties. This 24,849-acre WMA offers hunting opportunities for deer, bear, turkey, and small game.

### **4.1.3 Major Water Uses**

Public water supply is a major use in the upper Coosa River basin. The city of Rome draws water from both the Oostanaula and Etowah Rivers. Floyd County drinking water supply comes from several sources, including a spring in the city of Cave Spring, two wells, and Woodward Creek, an eastern tributary to the Oostanaula River.

As estimated by the U.S. Geological Survey (USGS), the principal water uses of water withdrawals (surface and groundwater) in the Coosa River basin in Floyd County, in descending magnitude of use, are thermo-electric generation<sup>8</sup>, industrial use, public supply, irrigation of crops and golf courses, livestock and aquaculture, domestic use, commercial and public use, and mining (Lawrence 2016). Surface water accounted for 98 percent of all 2010 water withdrawals in Floyd County, while groundwater accounted for 2 percent.

The Coosa-North Georgia Regional Water Plan (GEPD 2017), developed as part of Georgia's state-wide water planning process, assesses current and future water and wastewater needs in the 18-county planning region that includes the Rocky Mountain Project. Municipal water demands and wastewater flows for Floyd County are projected to remain relatively steady or increase slightly through 2050. The surface water availability resource assessment indicated that surface water sources in Floyd County are generally adequate to meet future water demands. In addition, the available assimilative capacity of the Oostanaula River for pollutants that deplete oxygen remains very good.

### **4.1.4 Tributary Streams**

The Project occupies the headwaters of the Heath Creek and Lavender Creek systems. Tributaries to the Lower Reservoir and Auxiliary Pools are small, unnamed warmwater tributaries and drainageways to Heath Creek. There are no natural watersheds or tributary streams entering the Upper Reservoir atop Rock Mountain.

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<sup>8</sup> Georgia Power's Plant Hammond is located in Floyd County downstream of Rome and used surface-water withdrawals from the Coosa River for cooling water purposes. However, the plant was decommissioned in July 2019.

#### **4.1.5 Climate**

Climate of the Coosa River basin near Rome, Georgia is moist and temperate with mean annual precipitation of 54 inches, with only 1 inch occurring as snowfall (U.S. Climate Data 2021). Rainfall is relatively evenly distributed throughout the year but the driest months are September and October. Winter is the wettest season and March the wettest month. Average high temperatures range from 52°F in January to 90°F in July. Average low temperatures range from 31°F in January to 71°F in July.

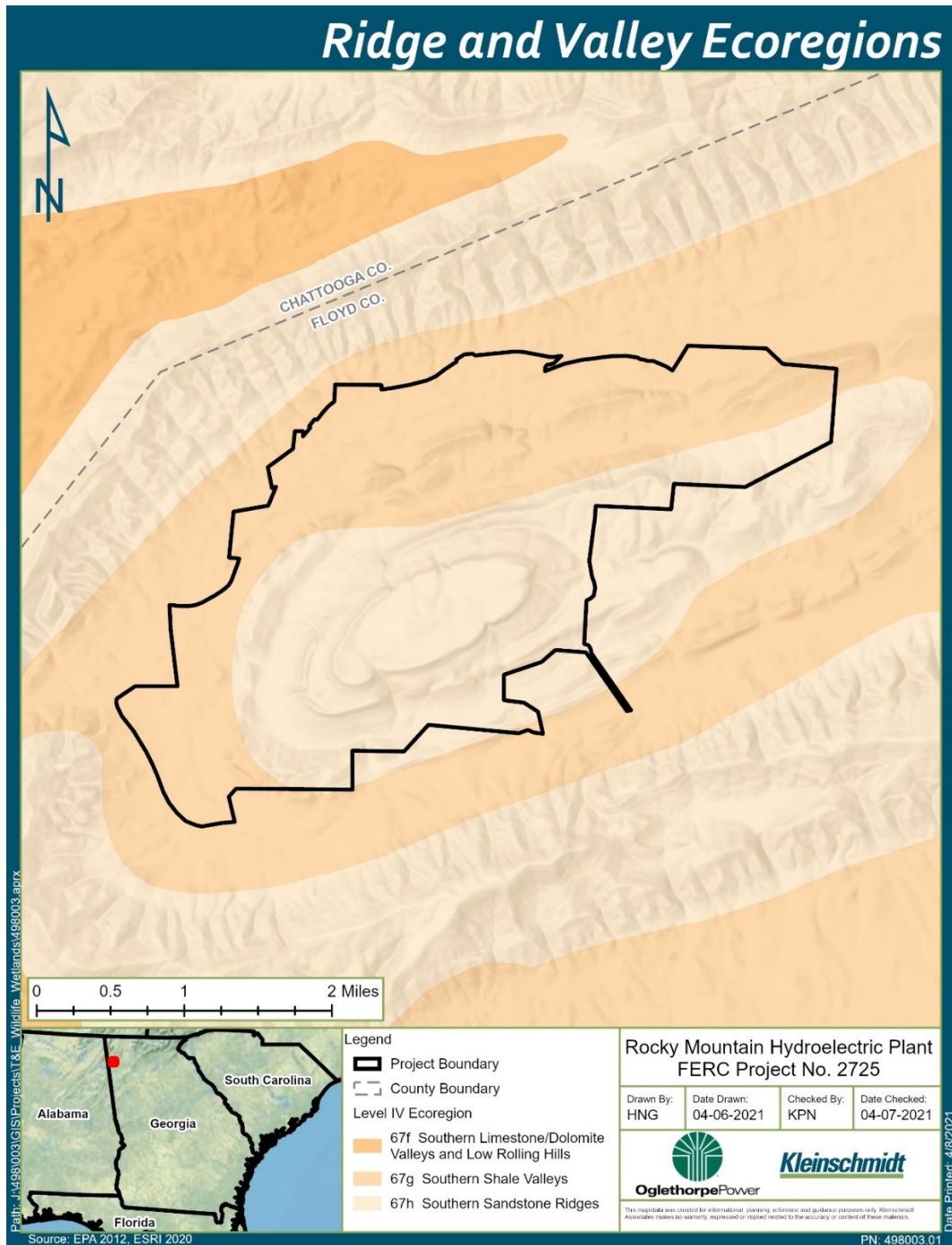
### **4.2 Geology and Soils**

#### **4.2.1 Existing Environment**

The Project is in northwest Georgia in the Ridge and Valley physiographic province (Clark and Zisa 1976). The geology at the Project is shown in Figure 4. The Southern Valley and Ridge physiographic section is in the Ridge and Valley Province which extends from New York to the edge of the Coastal Plain (fall line) in Alabama. The province consists of long north-northeasterly trending ridges with sandstone and chert forming thin acidic soils (Chowns 2018). The ridges are steep and are separated by valleys with fertile lowland soils underlain by shale and limestone. Within the Southern Valley and Ridge physiographic section, the Project is in the Armuchee Ridges District (Clark and Zisa 1976). The Armuchee Ridges District consists of a series of prominent, narrow, chevron-shaped ridges that rise 600-700 ft above the Chickamauga Valley District to the northwest and the Great Valley District to the south. These ridges, capped predominantly by the Red Mountain sandstone of Silurian age, stand at elevations of 1,400-1,600 ft. Intervening valley floors are generally underlain by shales and limestones of Mississippian and Cambro-Ordovician age, respectively. The Southern and eastern boundary of the Armuchee Ridges District parallels the fault line in Rome.

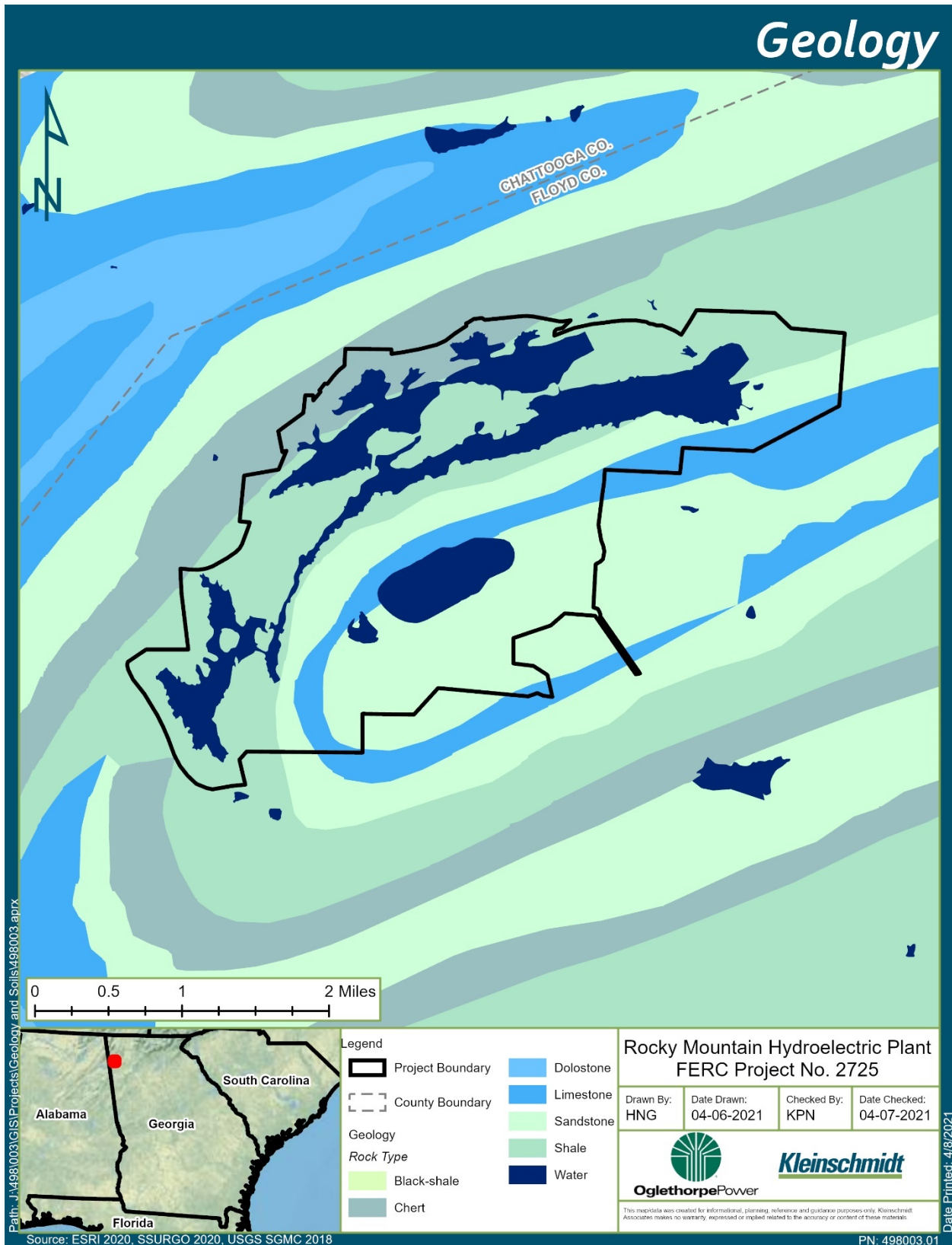
Ecoregions are areas where ecosystems, including the type, quality, and quantity of environmental resources, are generally similar (U.S. Environmental Protection Agency [EPA] 2021). The Project is in the Southern Shale Valleys and Southern Sandstone Ridges level IV ecoregions (Griffith et al. 2001) (Figure 4). The Southern Shale Valleys ecoregion is characterized by rolling valleys and some low, rounded hills and knobs that are dominated by shale. This ecoregion is known for its shale, shaly limestone, and clayey sediments (Figure 5), and the soils in the ecoregion tend to be deep, acidic, moderately well-drained, and slowly permeable. The Southern Sandstone Ridges ecoregion

encompasses sandstone ridges, but these ridges also have areas of shale, siltstone, and conglomerate. The ridges are steep and typically have narrow crests, and the soils are characterized as generally being stony, sandy, and of low fertility. the dominant land cover in this ecoregion is oak-hickory-pine forests (Griffith et al. 2001).



**Figure 4 Ecoregions Surrounding the Project**





**Figure 5 Geology Surrounding the Project**

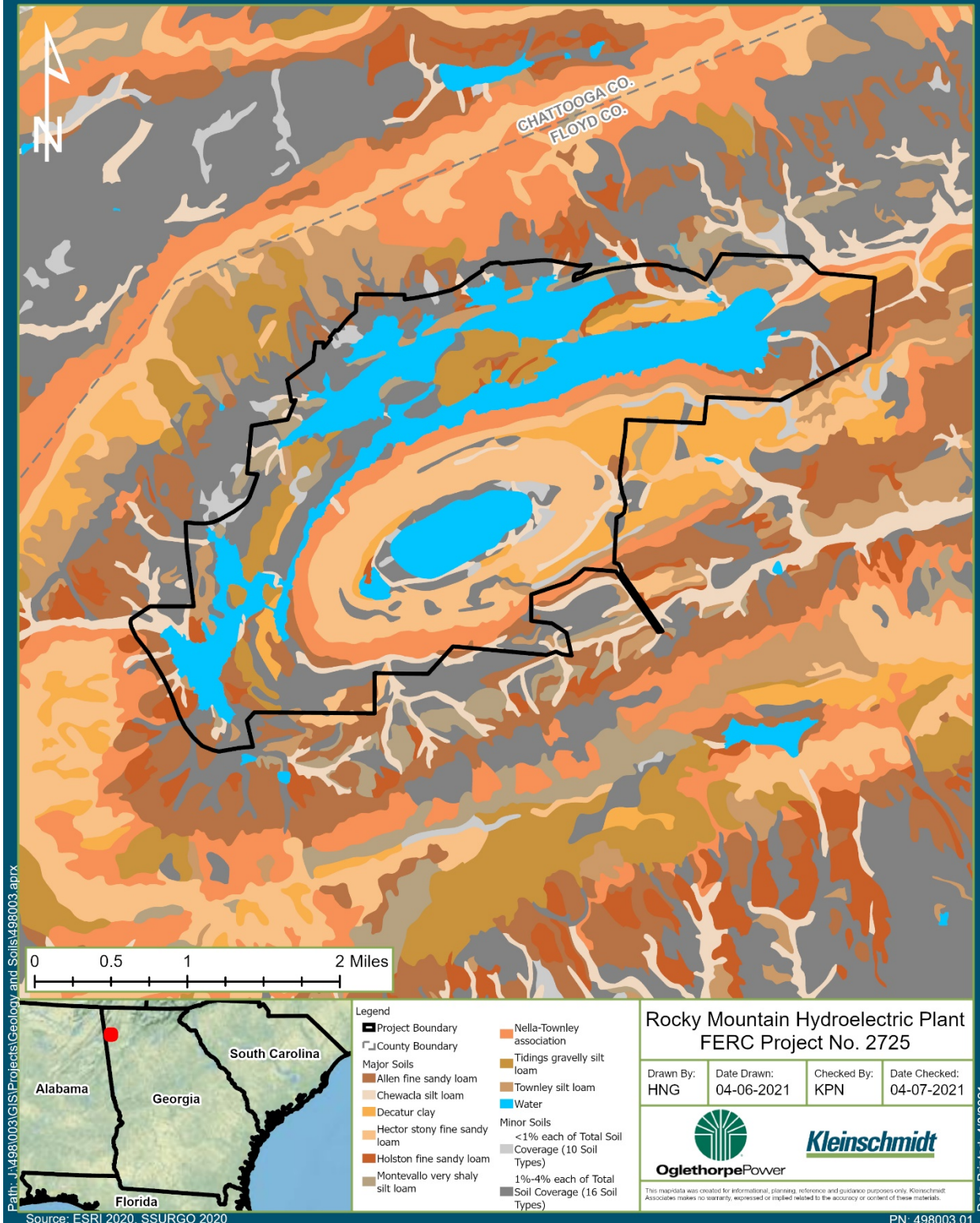
The soil types in the project boundary according to the U.S. Department of Agriculture (USDA) National Resources Conservation Service (NRCS) are tabulated in Table 6 and depicted in Figure 6 (USDA NRCS 2021). The most prevalent soil families in the project area include Hector stony fine sandy loam, Nella-Townley association, Allen fine sandy loam, and Decatur clay (USDA NRCS 2021).

**Table 6 NRCS Mapped Soils in the Project Boundary**

<b>Soil Type</b>	<b>Approximate Acres in Project Boundary</b>
Hector stony fine sandy loam	802
Nella-Townley association	392
Allen fine sandy loam	355
Decatur clay	307
Tidings gravelly silt loam	282
Chewacla silt loam	243
Townley silt loam	234
Montevallo very shaly silt loam	80
Holston fine sandy loam	73
<b>Total</b>	<b>2,768</b>

Source: USDA NRCS 2021

# Soils



**Figure 6 Soils in the Project Boundary**

The shoreline characteristics vary throughout the Project. There are no known areas of significant shoreline erosion at the Project.

The Upper Reservoir is a man-made structure with a continuous earth and rockfill dam that forms the reservoir structure. The Upper Reservoir shoreline is maintained clear of vegetation. Due to the composition of the Upper Reservoir shoreline, there are no issues of significant shoreline erosion at the Upper Reservoir.

The Lower Reservoir is an inundated portion of Heath Creek. Steeper shoreline areas, such as near the powerhouse, consist of exposed bedrock and riprap. OPC voluntarily conducts annual shoreline inspections along the Lower Reservoir, with the most recent inspection occurring in May 2021. The inspection report noted minor areas of erosion along the Lower Reservoir, although erosion did not appear to have increased since the previous inspection in 2020. Vegetation coverage was noted along approximately 90 percent of the shoreline. Photographs of identified areas of erosion and sloughing were documented in the report. The report recommended continuing annual shoreline inspections.

The shorelines of the Auxiliary Pools, Antioch Lake and Heath Lake, are well vegetated, including mature timber, with the exception of recreational facilities within the Rocky Mountain PFA. There are no known issues of erosion along the shorelines of the Auxiliary Pools.

#### **4.2.2 Potential Resource Impacts**

Fluctuations of the Upper and Lower Reservoirs caused by operations of the Project have the potential to contribute to shoreline erosion. However, the banks of the Upper and Lower Reservoirs, the Auxiliary Pools, and Heath Creek downstream of the Project are stable, and shoreline erosion is currently not a significant issue at the Project.

At this time, no structural or operational changes to the Project are proposed, and therefore no protection, mitigation, and enhancement (PM&E) measures relating to geology and soils at the Project are proposed. However, OPC proposes to continue conducting annual shoreline inspections of the Lower Reservoir.

## **4.3 Water Resources**

### **4.3.1 Existing Environment**

The Rocky Mountain Project is located on tributaries of Armuchee Creek in the Oostanaula River basin of the upper Coosa River basin. The Lower Reservoir and the Auxiliary Pools (Antioch Lake and Heath Lake) are on Heath Creek and its tributaries. The drainage area of Heath Creek upstream of the Main Dam is 16.6 sq mi. The Upper Reservoir is on the drainage divide between Rock Mountain Creek of the Lavender Creek system, and Heath Creek, and has no discharge outlet to either creek.

#### **4.3.1.1 Water Quantity**

Under a surface water withdrawal permit issued by GEPD, OPC is authorized to withdraw inflow from Heath Creek for the purpose of non-consumptive use for power generation; the permitted monthly average withdrawal is 140 million gallons per day (GEPD 2021a). Because the Project is a pumped storage facility, flows from Heath Creek are not directly used for generation. A total of 10,003 acre-ft of water is cycled between the Lower and Upper Reservoirs. The Project generates power using water from the Upper Reservoir during periods of peak electricity demand, and then pumps water from the Lower Reservoir back to the Upper Reservoir during periods of low demand and available base power.

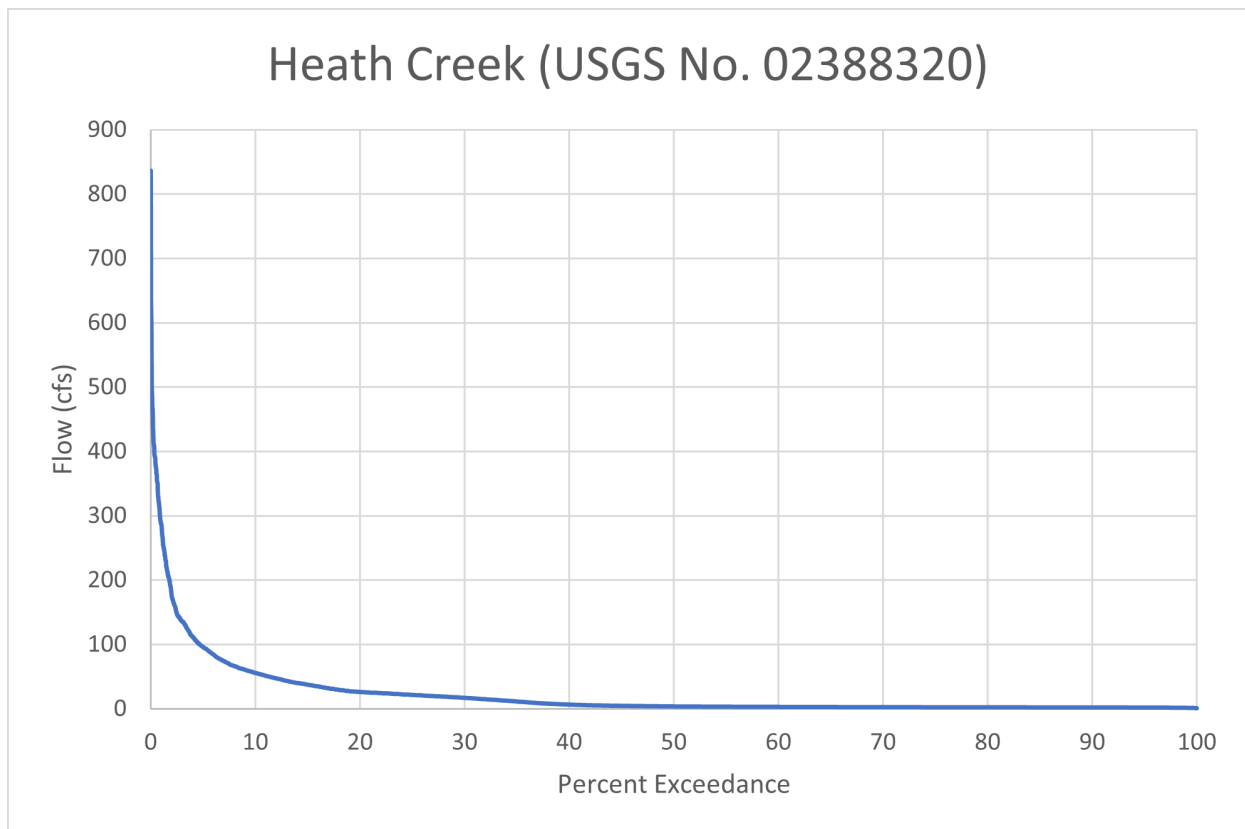
The pumping of water from the Lower Reservoir to the Upper Reservoir typically occurs at night and on weekends. During normal daily operations of generation and pumping, the Upper Reservoir water level fluctuates between a normal minimum pool elevation of 1,341 ft MSL and a normal maximum operating pool elevation of 1,392 MSL. The Lower Reservoir typically fluctuates 20 ft in elevation, between 690.5 ft MSL to the normal maximum operating pool elevation of 710.5 MSL. Storage in the Auxiliary Pools is used to replenish the Lower Reservoir only if, after the pumping cycle, the elevation of the Lower Reservoir has declined to 681 ft MSL. The project cannot be operated with a Lower Reservoir elevation below that level (FERC 2005).

Under a National Pollutant Discharge Elimination System permit issued by GEPD, OPC is authorized to discharge non-contact bearing oil cooling water from the three generating units, non-contact HVAC cooling water, and station sump and compressor cooling water to Heath Creek, subject to effluent limitations and monitoring requirements (GEPD 2021a).

There are no existing or proposed uses of project waters for irrigation, domestic water supply, industrial, or other consumptive purposes.

### Flow Statistics

OPC operates the Project to provide a continuous minimum flow release of 1.2 cfs from the Main Dam to Heath Creek via a designated minimum flow release valve. The nearest streamflow gage to the Project is located on Heath Creek about 0.3 mile downstream of the Main Dam (USGS Gage No. 02388320). Daily average flow data at the gage were compiled for the period January 1, 1996 through December 31, 2020. The mean daily average flow was 22.49 cfs. The maximum daily average flow for the years 1996-2020 was 836 cfs on November 24, 2004. The calculated 50-percent exceedance flow for the period is 3.70 cfs (Figure 7).



**Figure 7 Flow Duration Curve**



## **Minimum Flow Release to Heath Creek**

Article 34 of the FERC license for the Rocky Mountain Project requires OPC to provide a 1.2 cfs continuous minimum flow release from the Lower Reservoir to Heath Creek. Heath Creek is a low-gradient stream, descending about 25 ft in elevation over a length of about 5 miles, a gradient of 5 ft per mile. OPC completed a field study in 1996 to determine the adequacy of the current 1.2-cfs minimum flow requirement for maintaining water quality and aquatic resources in Heath Creek below the Main Dam. OPC examined the effects of four different minimum flow releases (0.6 cfs, 1.2 cfs, 2.8 cfs, and 8.3 cfs) on downstream aquatic habitat. The study measured depth of flow, velocity, substrate, and cover; sampled the fishery to quantify pre-operation versus post-operation differences; and recorded dissolved oxygen (DO) and water temperature continuously.

Measurements indicated that increasing the discharge from the Main Dam reduced daily fluctuations in DO and temperature. The 0.6 cfs discharge had the widest fluctuation in daily patterns with a minimum DO concentration of 4.9 mg/L. Significantly, releases of 1.2 cfs and 2.8 cfs maintained DO levels continuously above 5.5 mg/l. The 8.3 cfs release produced DO ranging from 7.2 to 8.4 mg/L. The survey data also showed higher water temperatures under all flow releases compared to Lavender Creek, a nearby free-flowing small stream. The study attributed Heath Creek's warmer water to solar heating of the Project's Lower Reservoir versus the shaded stream bank of Lavender Creek; nevertheless, the temperatures in Heath Creek were determined to be within an acceptable range. Based on study results, OPC filed with the FERC a final report on February 14, 1997, recommending that the Project's minimum flow remain at 1.2 cfs. FERC approved OPC's proposal to continue to release a 1.2 cfs minimum flow to Heath Creek (OPC 2005).

### **4.3.1.2 Water Quality**

GEPD publishes Rules and Regulations for Water Quality Control (Chapter 391-3-6) in accordance with the Federal Water Pollution Control Act and Georgia Water Quality Control Act. Water quality standards are included in the rules to provide enhancement of water quality, prevention of pollution, and protection of public health and welfare. The standards have been established to protect beneficial uses such as drinking water supplies; conservation of fish, wildlife, and other aquatic life; and agricultural, industrial, and recreational uses.



GEPD (2018) classifies the water use of tributaries to Heath Creek within the Rocky Mountain PFA, which contains the Auxiliary Pools (Antioch Lake and Heath Lake), as Recreation, including for boating, swimming, and fishing. Heath Creek downstream of the Lower Reservoir is classified as Fishing. The Project's Lower and Upper Reservoirs, which are not available for public use, are classified as Fishing.

In addition to general criteria applicable to all waters, specific criteria apply to Recreation and Fishing use designations, including numeric criteria for bacteria (*E. coli* for recreational waters, fecal coliform for fishing waters), DO, pH, and water temperature (GEPD 2018). The applicable DO criteria for the Auxiliary Pools and Heath Creek, which support warmwater species of fish, are a daily average of 5.0 milligrams per liter (mg/L) and no less than 4.0 mg/L at all times. The pH should be within the range of 6.0 to 8.5, and water temperature should not exceed 90°F (32.2°C).

GEPD's current water use attainability assessment of Georgia waters lists Antioch Lake as supporting its designated use and indicates that assessment is pending for Heath Lake, as fish tissue data indicate the lake is supporting its use but no other types of data are available to confirm the assessment (GEPD 2020). The 5-mile segment of Heath Creek downstream of the Project is currently listed as not supporting its designated use due to elevated densities of fecal coliform bacteria, attributed to nonpoint sources. A total maximum daily load (TMDL) evaluation of fecal coliform in Heath Creek indicated the potential sources are mainly wildlife, agricultural livestock (e.g., beef cattle, swine, and horses), and urban development (e.g., leaking septic systems) (GEPD 2009). None of these sources has a nexus with project operations or maintenance. A 70-percent reduction in load from the watershed is necessary to achieve the water quality standard.

GEPD (2018) classifies the Lavender Creek watershed upstream from Floyd County Road 893 as secondary trout waters. Secondary trout waters are streams without evidence of natural trout reproduction but that are capable of supporting stocked trout year-round. The designation includes Rock Mountain Creek, a tributary to Lavender Creek that originates at the base of the Upper Reservoir. Secondary trout stream criteria include no elevation exceeding 2 °F of natural stream temperature, a daily average DO concentration of 6.0 mg/L and DO no less than 5.0 mg/L at all times. Because there is no discharge from the Upper Reservoir, there is no nexus between project operations and effects on water temperature and DO concentration in Rock Mountain Creek. Rock Mountain Creek currently supports its designated use (GEPD 2020).

## Existing OPC Water Quality Data

Water quality data collected by OPC since project operations began in 1995 include both field measurements and samples for water chemistry analysis in the laboratory. Article 31 of the license required that water quality monitoring be completed for five years after the Project began operation. OPC submitted the final water quality report in 2005, finding that the Project did not have detrimental effects on water quality (Montgomery Watson Harza 2003 [MWH]; OPC 2005). Water quality data collection for lab analysis continued at the Project to the present with some changes to locations and frequency over time.

OPC monitored water quality at the following seven sampling stations during the five years following commencement of project operations in 1995:

- RM08 – Rock Mountain Creek, near Upper Reservoir flowing easterly away from the Project
- RM11 – Heath Creek downstream of Main Dam
- RM13 – Auxiliary Pool II
- RM14 – Auxiliary Pool I, between the two basins of the pool
- RM15 – Auxiliary Pool I, eastern basin
- RM16 – Downstream end of Lower Reservoir
- RM100 – Auxiliary Pool I, swimming beach

### *Field Measurements*

Water quality measurements conducted in the field by OPC staff since project operations began included water temperature, pH, DO, and conductivity, are summarized in Table 7 for the years 1996-2002. These data are consistent with overall good water quality conditions at the Project with parameter ranges and means typical of natural variation in reservoirs and small streams of northern Georgia. The following discussion summarizes variation and trends observed for each parameter based on the water quality report prepared by MWH (2003).

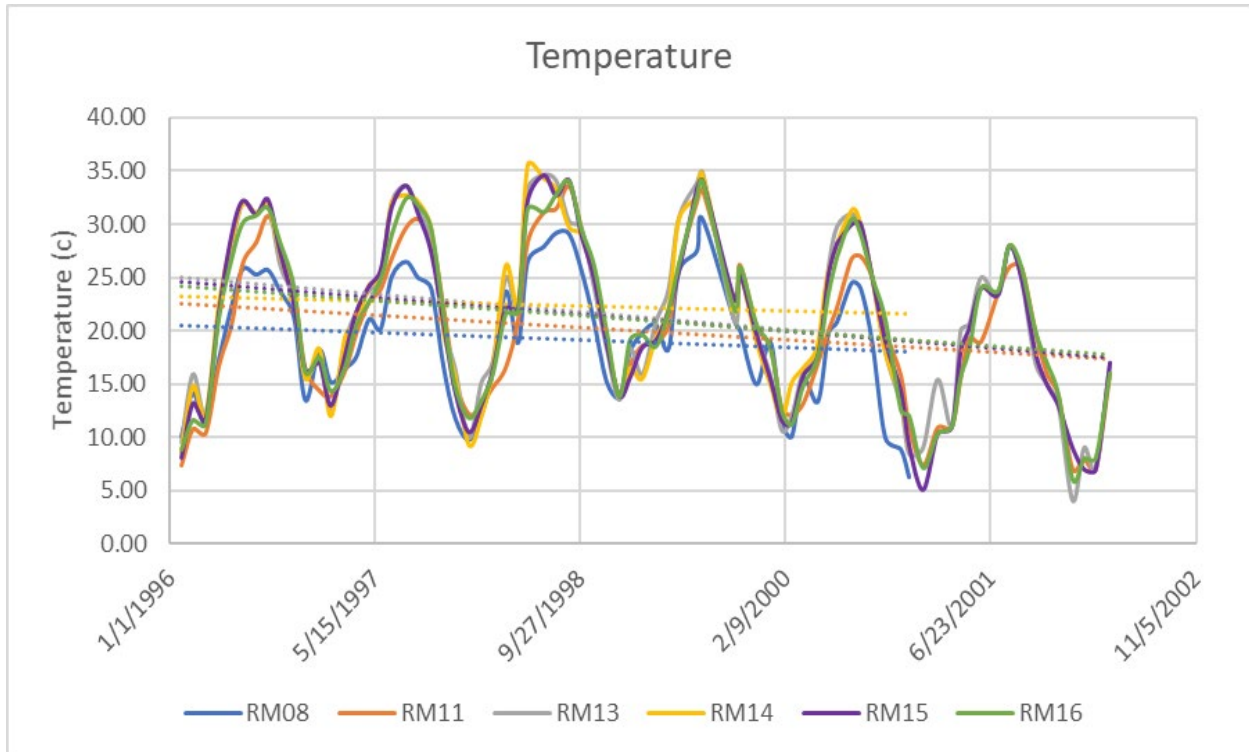
**Table 7 Summary of OPC Water Quality Field Measurements for the Rocky Mountain Project, 1996-2002**

			RM08 (Rock Mountain Creek)				RM11 (Heath Creek)			
Parameter	Units	Criterion	# of Samples	Minimum	Average	Maximum	# of Samples	Minimum	Average	Maximum
Water temperature	°C	32.2°	59	6.30	19.27	30.50	75	7.00	19.96	33.60
pH	Standard	6.0-8.5	58	6.75	7.67	8.48	74	6.77	7.91	8.85
Dissolved oxygen	mg/L	4	58	4.84	8.66	11.70	73	4.86	8.59	12.44
Conductivity	µS/cm	NA	59	84.90	233.83	426.00	75	26.70	194.12	390.00
			RM13 (Auxiliary Pool II)				RM14 (Auxiliary Pool I, between basins)			
Parameter	Units	Criterion	# of Samples	Minimum	Average	Maximum	# of Samples	Minimum	Average	Maximum
Water temperature	°C	32.2°	75	4.00	21.26	34.90	58	8.60	22.44	35.50
pH	Standard	6.0-8.5	73	6.72	7.87	10.36	57	6.56	7.89	9.26
Dissolved oxygen	mg/L	4	73	2.53	8.35	11.90	57	5.07	8.46	11.90
Conductivity	µS/cm	NA	75	42.80	102.83	325.00	58	60.00	108.29	810.00
			RM15 (Auxiliary Pool I, east)				RM16 (Lower Reservoir)			
Parameter	Units	Criterion	# of Samples	Minimum	Average	Maximum	# of Samples	Minimum	Average	Maximum
Water temperature	°C	32.2°	76	5.10	21.00	34.60	75	6.00	20.95	34.00
pH	Standard	6.0-8.5	75	7.16	8.17	9.80	73	6.72	7.85	8.30
Dissolved oxygen	mg/L	4	74	4.10	8.45	13.39	73	5.13	8.61	11.67
Conductivity	µS/cm	NA	76	68.00	114.48	850.00	75	84.90	182.81	258.00

Source: OPC

NA = not applicable.

Water temperatures exhibited seasonal fluctuations with readings ranging from 4.0°C to 35.5°C (MWH 2003). A slight overall decrease in temperature was observed at all sites (Figure 8). Water temperatures at the Project exceeded the temperature criterion of 90°F (32.2°C) on nine days (26 measurements) during the study period due to natural warming from solar radiation.

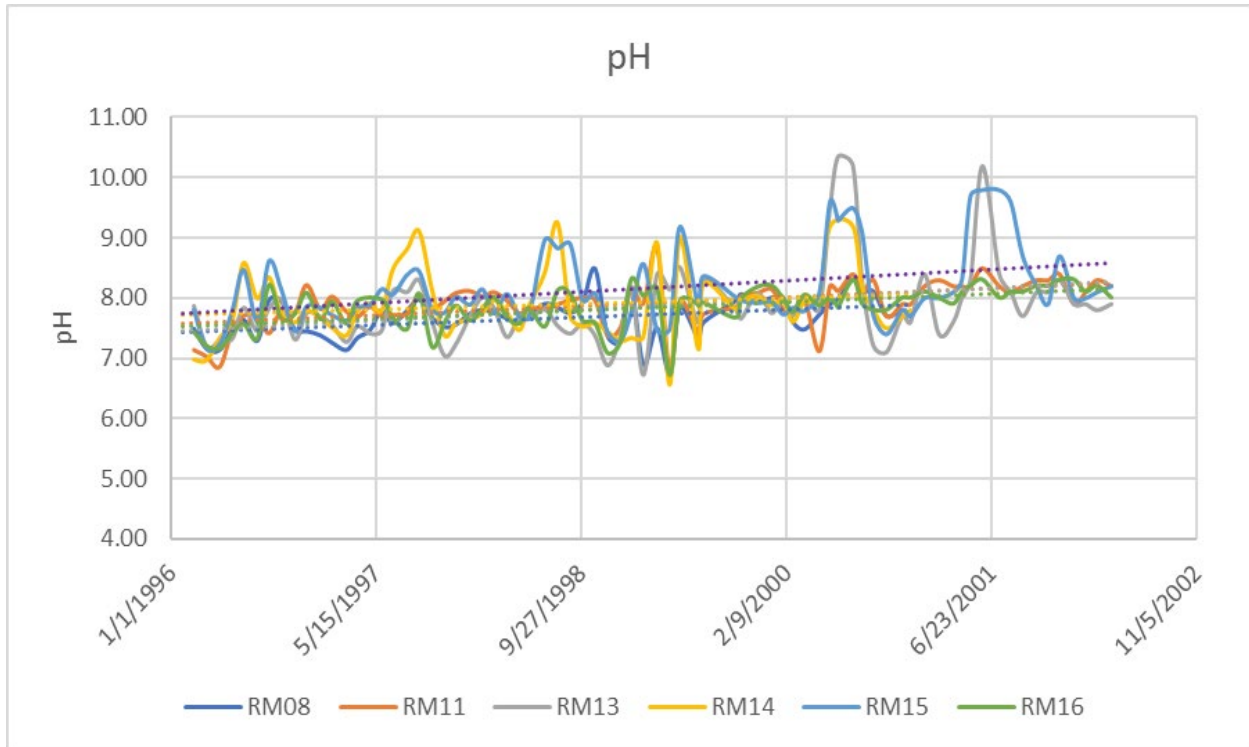


Source: MWH 2003

Note: Dashed lines are linear trend lines applied to the entire data series for each station

**Figure 8 Water Temperature at Six Stations, 1996-2002**

Field pH data collected at the Project exhibited an overall increasing trend between 1996 and 2002 (Figure 9). Noted during the study was increased variability in pH in the Auxiliary Pools during 2000 and 2001. This increasing trend and higher variability were attributed to natural maturation of the lakes and possible nutrient enrichment. There were 31 measurements above pH 8.5 and none below 6 (MWH 2003).

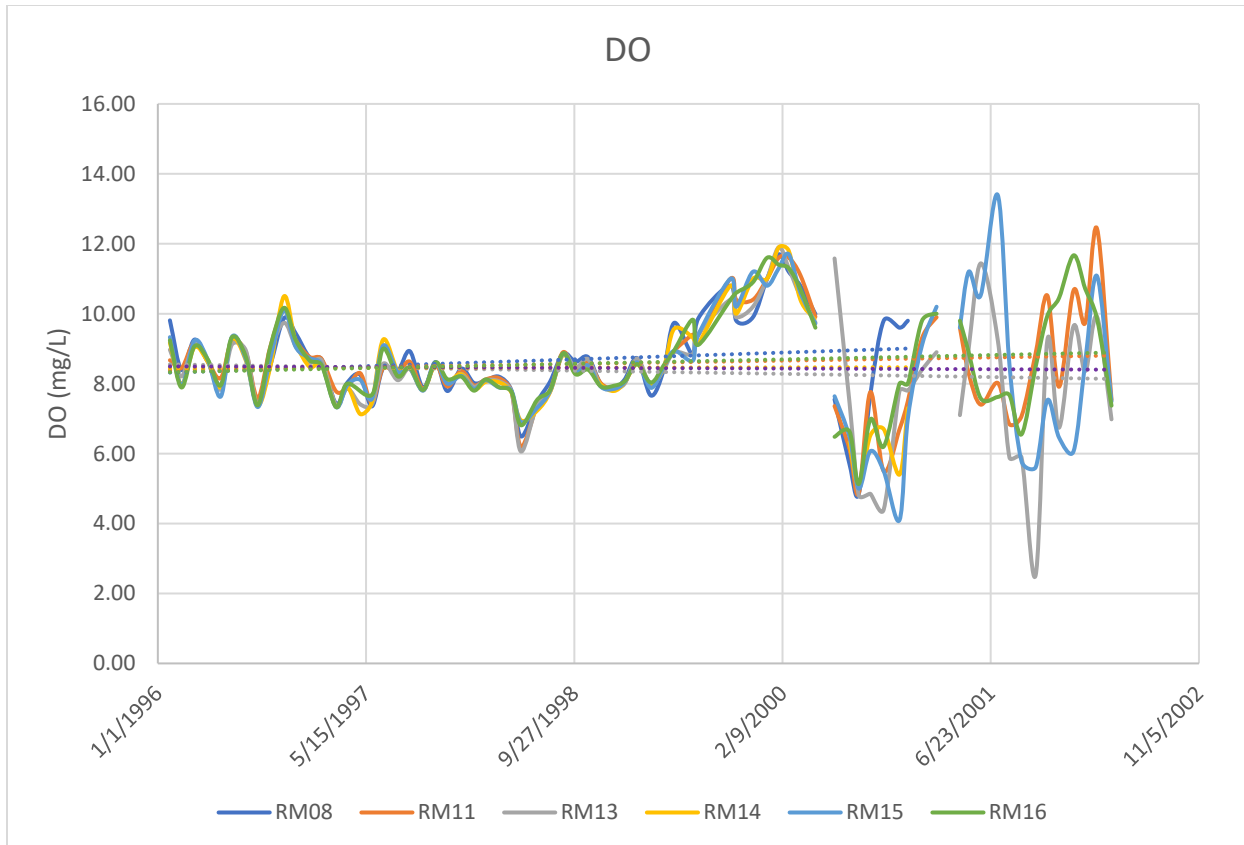


Source: MWH 2003

Note: Dashed lines are linear trends lines applied to the entire data series for each station

**Figure 9 Measure of pH at Six Stations, 1996-2002**

Field DO data collected at the Project exhibited no statistically significant trends over the study period (Figure 10). It was noted that DO at all sampling sites followed nearly identical patterns from 1996 to 2000. Values during 2001 were noted as being more variable, with periods of supersaturation in the Auxiliary Pools. Only one DO measurement was below the instantaneous minimum of 4.0 mg/L for the waterbodies which support warmwater species of fish (Auxiliary Pool II). In Rock Mountain Creek (RM08), only one measurement was below the instantaneous minimum of 5.0 mg/L for secondary trout waters.

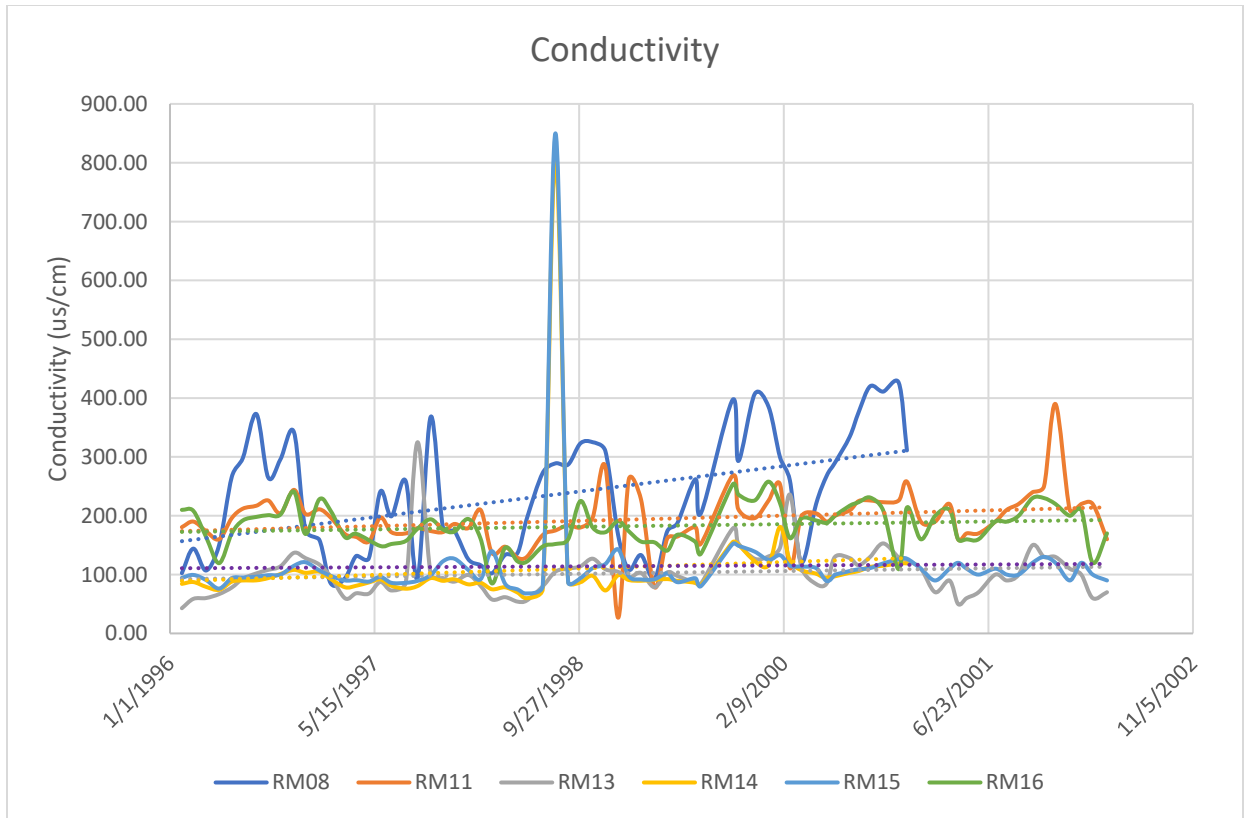


Source: MWH 2003

Note: Dashed lines are linear trends lines applied to the entire data series for each station

**Figure 10 Dissolved Oxygen Concentration at Six Stations, 1996-2002**

Field conductivity measurements collected showed relatively large seasonal fluctuations at RM08 (Rock Mountain Creek) while the reservoirs did not fluctuate as much (Figure 11). Low conductivity values were noted during the winter and spring months at RM08, likely due to increased runoff. No temporal trends were noted during the study with some outliers occurring during 1998 on Auxiliary Pool I being attributed to instrument malfunction. There is no Georgia numeric criterion for conductivity.



Source: MWH 2003

Note: Dashed lines are linear trends lines applied to the entire data series for each station

**Figure 11 Conductivity at Six Stations, 1996-2002**

### Water Chemistry

Since project operations began in 1995, OPC collected water chemistry grab samples at the same monitoring locations for laboratory analysis by an independent laboratory. Over time, sampling stations RM08 (Rock Mountain Creek), RM14 (Auxiliary Pool I between the two basins), and RM16 (downstream end of Lower Reservoir) were removed from the lab analysis sampling due to similarities with sampling points RM11 (Heath Creek downstream of Main Dam), RM13 (Auxiliary Pool II), and RM15 (Auxiliary Pool I, eastern basin). The following parameters were monitored after commercial operation of the Project began (MWH 2003; OPC 2005).

- Turbidity
- Total Suspended Solids (TSS)

- Hardness
- Methyl Orange Alkalinity
- Biological Oxygen Demand (BOD)
- Total Kjeldahl Nitrogen (TKN)
- Ammonia
- Nitrate Nitrogen
- Nitrite Nitrogen
- Ortho Phosphates
- Total Phosphates
- Total Coliforms
- Fecal Coliforms

A summary of the water chemistry results are shown in Table 8 for samples collected from 1996-2002 and 2015-2020 for sites RM11, RM13, and RM15. These data indicate overall good water quality conditions at the Project with parameter ranges and means typical of reservoirs and small streams in northern Georgia. The following discussion summarizes variation and trends observed in the data based on the water quality report prepared by MWH (2003) and in additional data from 2015-2020.



**Table 8 Summary of OPC Water Chemistry Data for the Rocky Mountain Project, 1996-2002,2015-2020**

Parameter	Units	RM08 (Rock Mountain Creek)					RM11 (Heath Creek)					RM13 (Aux. Pool II)				
		N	Min	Mean	Max	SD	N	Min	Mean	Max	SD	N	Min	Mean	Max	SD
Turbidity	NTU	57	0.00	13.74	97.40	20.03	88	0.00	3.10	11.00	2.53	121	0.00	13.47	1017.00	87.76
TSS	mg/L	60	0.00	18.93	272.00	41.95	75	0.00	4.73	50.00	6.02	75	0.00	4.81	22.00	4.33
Hardness	mg/L	59	15.60	98.20	250.00	56.48	136	5.88	95.47	868.00	100.69	136	7.06	45.31	186.00	24.48
Alkalinity	mg/L	59	1.37	65.78	159.20	40.32	136	0.89	68.65	127.60	23.45	136	0.52	44.29	598.00	50.59
BOD	mg/L	59	2.80	15.47	84.00	15.24	75	2.60	11.58	69.00	11.76	75	2.90	13.92	98.00	17.62
TKN	mg/L	59	0.00	0.44	3.50	0.70	80	0.00	0.64	2.80	0.64	111	0.00	1.15	39.92	3.47
Ammonia	mg/L	39	0.00	0.22	0.97	0.19	81	0.02	24.97	2000.00	171.48	86	0.03	0.35	1.77	0.31
Nitrate nitrogen	mg/L	51	0.00	0.47	1.31	0.29	76	0.00	0.37	1.61	0.30	75	0.00	0.65	25.00	2.13
Nitrite nitrogen	mg/L	51	0.00	0.05	0.11	0.03	75	0.00	0.04	0.17	0.03	75	0.00	0.05	0.34	0.05
Ortho phosphates	mg/L	58	0.00	0.22	2.19	0.40	75	0.00	0.16	1.07	0.23	72	0.00	55.73	2000.00	328.64
Total phosphates	mg/L	59	0.00	0.43	5.00	0.88	80	0.01	0.22	1.44	0.27	115	0.01	3.70	400.00	34.16
Total coliform	Col/100mL	59	1.00	784.31	9800.00	2216.89	74	0.00	370.92	5000.00	982.08	74	0.00	488.49	13000.00	1682.52
Fecal coliform	Col/100mL	53	0.00	31.08	440.00	70.33	61	0.00	3.69	20.00	3.71	60	0.00	5.92	55.00	9.68
Parameter	Units	RM14 (Aux. Pool I, between basins)					RM15 (Aux. Pool I, east)					RM16 (Lower Reservoir)				
		N	Min	Mean	Max	SD	N	Min	Mean	Max	SD	N	Min	Mean	Max	SD
Turbidity	NTU	59	0.00	12.28	122.00	20.95	110	0.00	3.56	24.00	3.50	74	0.00	5.51	47.20	8.55
TSS	mg/L	59	0.00	15.47	250.00	36.72	76	0.00	3.67	11.00	2.56	74	0.00	9.76	98.00	19.01
Hardness	mg/L	59	8.63	38.38	113.95	20.94	137	13.10	52.02	691.79	63.07	74	30.30	89.13	314.72	40.42
Alkalinity	mg/L	59	0.40	36.93	75.00	16.09	137	0.49	41.65	87.50	12.88	74	0.76	68.24	125.00	25.32
BOD	mg/L	59	2.00	18.44	108.00	21.64	76	2.10	14.62	97.00	17.01	74	3.80	17.17	125.00	23.95
TKN	mg/L	59	0.00	0.43	4.90	0.86	114	0.00	1.09	41.82	3.60	75	0.00	0.64	6.55	0.97
Ammonia	mg/L	59	0.02	68.14	4000.00	516.28	91	0.02	0.34	2.01	0.29	75	0.03	0.27	1.49	0.24
Nitrate nitrogen	mg/L	67	0.00	0.38	1.46	0.27	67	0.00	0.41	1.32	0.30	83	0.00	0.35	1.40	0.29
Nitrite nitrogen	mg/L	59	0.00	0.06	0.54	0.09	75	0.00	0.04	0.19	0.03	82	0.00	0.04	0.34	0.04
Ortho phosphates	mg/L	59	0.00	0.21	2.08	0.36	72	0.00	0.18	1.89	0.29	76	0.00	0.17	2.91	0.37
Total phosphates	mg/L	59	0.00	0.40	3.22	0.69	108	0.04	0.28	4.00	0.52	76	0.00	0.85	45.00	5.13
Total coliform	Col/100mL	12	10.00	122.50	360.00	86.90	0	--	--	--	--	60	0.00	189.67	3000.00	523.18
Fecal coliform	Col/100mL	45	0.00	13.82	260.00	36.39	57	0.00	3.65	30.00	4.63	64	0.00	13.22	180.00	26.54

Turbidity measured across the project waters varied depending on sample location. While general turbidity trends were consistent, peaks were more evident at RM08, RM13, and RM16, where tributary influence was more pronounced, indicating a relation to storm events and not anthropogenic activity. Turbidity readings were generally below 10 Nephelometric Turbidity Units (NTU) throughout the study period. As expected, TSS measurements generally correlated with turbidity measurements.

No statistical trends in alkalinity were found during the study. The general pattern in alkalinity levels was similar between Rock Mountain Creek (RM08) and the Upper (RM11) and Lower Reservoirs (RM16) and averaged around 70 mg/L. Alkalinity levels in the Auxiliary Pools (RM13, RM14 and RM15) were about 30 mg/L lower than in the Upper and Lower Reservoirs. Fluctuations in alkalinity were relatively consistent among stations and may represent variations due to rainfall (MWH 2003).

Levels of BOD exceeded 100 mg/L at station RM16 twice and RM14 once during 1996. BOD levels were generally elevated throughout 1996, and analytical problems apparently contributed to the high levels that year (MWH 2003). Following 1996, BOD levels declined and fell below the laboratory detection limits between 2000 and 2001. The laboratory detection limits for BOD in this study were typically 4 to 5 mg/L. Georgia does not have numeric criteria for BOD concentrations. BOD was not included in the laboratory analyses from 2015-2020.

Georgia does not have general numeric criteria for nitrogen levels in lakes. EPA (2000) recommends water quality criteria for nutrients in lakes and reservoirs of Subcoregion 67 of Ecoregion XI that are based on observed data. The recommended TKN level (based on the lower quartile [25<sup>th</sup> percentile] of all observations) is 0.288 mg/L. Laboratory methodology changed in mid-1999 to 1.0 mg/L, preventing evaluation of TKN levels against the recommended criterion. Based on an evaluation of the data, from January 1996 to mid-1999, readings were often below 0.25 mg/L. Peaks in TKN were observed during late 1999 and again in mid-2001. Detection limits for 2015-2020 were reported as 0.5 mg/L, hindering comparison to the recommended criterion of 0.288 mg/L.

Laboratory detection limits for ammonia did not remain constant. Between 1996 and 1998, laboratory detection limits were typically reported as 0.10 mg/L. After 1998, the laboratory detection limit for ammonia was typically reported as 0.20 mg/L. Detections

limits for 2015-2020 were reported as 0.04 mg/L. Despite changing detection limits, ammonia levels remained consistent, typically hovering around 0.2 mg/L.

Georgia does not have state standards for nitrate. The suggested upper limit for nitrate nitrogen that is protective of aquatic life (including warmwater fish) is 90 mg/L (AWWA 1990). EPA water quality criteria for protection of human health (consumption of water plus aquatic organisms) indicate that nitrate should not exceed 10 mg/L. Concentrations of nitrate nitrogen once exceeded the general criteria; the maximum level recorded at all sites was 25 mg/L. A statistical analysis of the data could not reasonably be performed due to the wide variability in detection limits. Detection limits were 0.5 mg/L during the early part of the original water quality study, while values as low as 0.025 mg/L were reported during the latter part of the study. This change in reported detection limits resulted in an apparent decline in nitrate levels; however, this change appears to be entirely due to the change in detection limits (MWH 2003). Nevertheless, detection limits returned to 0.5 mg/L from 2015-2020, with only one instance of levels above the detection limit in 2018 of 1.3 mg/L at RM11.

Analysis of the data during project operation at Rocky Mountain indicated that nitrite nitrogen values did not exceed 0.54 mg/L. Statistical analyses could not reasonably be performed for nitrite nitrogen because the detection limit varied from 0.10 mg/L to 0.006 mg/L during operational monitoring (MWH 2003).

Ortho phosphate levels at all stations exceeded EPA guidance; however, the analysis was limited by the laboratory detection limits. EPA's (1986) recommended water quality criteria state that phosphates should not exceed 0.05 mg/L if streams discharge into lakes or reservoirs; 0.025 mg/L within a lake or reservoir, and 0.1 mg/L in streams and flowing waters not discharging into lakes or reservoirs. Reported laboratory detection limits for phosphate, which typically varied between 0.10 mg/L and 0.04 mg/L, exceeded EPA levels limiting the analysis. During the early part of the operational period, ortho-phosphate levels were generally at, or near, detection limits. During late 1997 to early 1999, several peaks in ortho-phosphate concentrations were observed at all sampling sites. Although GDNR conducted fertilization of both Auxiliary Pools to enhance fish production coincident with the post-startup, 1997-1999 monitoring effort, follow-on analysis concluded that GDNR's fertilization activity did not correlate with the phosphorus spikes (MWH 2003). Ortho phosphates were not analyzed from 2015-2020.

Georgia does not have a standard for total phosphates. EPA (2000) recommends that total phosphorus in Subcoregion 67 (which includes the project area) should not exceed 0.0175 mg/L, based on sampling data for 52 lakes in the subcoregion. Detection limits considerably higher than EPA recommended levels did not allow for a meaningful analysis.

Reported values of total coliform following the start of commercial operation were consistently at low levels through early 2000. During the latter part of 2000, and during 2001, instantaneous elevated levels in total coliform numbers were observed at all sites. Linear trend analyses indicated that total coliforms increased toward the end of the period of operational monitoring (MWH 2003).

The current Georgia numeric standard for bacteria in recreation waters, which was not analyzed during OPC's water quality monitoring, is based on culturable *E. coli*. The current Georgia criterion for fishing waters is based on fecal coliform bacteria, which is not to exceed a geometric mean of 200 counts per 100 mL (200/100mL) based on at least four samples in a 30-day period. Since the start of commercial operation, the values for fecal coliform bacteria at the Project have generally remained below 50/100 mL. In October 1996, a spike (440/100 mL) was observed at station RM08. Sample concentrations of 270/100 mL and 260/100 mL were observed at stations RM08 and RM14, respectively, in October 2000. A spike of 530/100 mL was observed in August 2001 at Station RM100. No overall trends in fecal coliform concentrations were evident (MWH 2003).

### **Existing GDNR Water Quality Data**

#### *Heath Creek*

In 2001 and 2012, GEPD collected monthly water quality sampling data for 14 different parameters at a station on Heath Creek (RV-14-4434), located downstream of the Project as summarized in Table 9 (GEPD 2021b). These data are consistent with OPC's sampling results for Heath Creek and indicate overall good water quality conditions, with the exception of elevated levels of fecal coliform bacteria, with parameter ranges and means typical of natural variation in warmwater streams of northern Georgia. The elevated levels of fecal coliform bacteria indicate the influence of nonpoint source runoff from surrounding agricultural lands.

**Table 9 GEPD Water Quality Data at Heath Creek (RV-14-4434), 2001 and 2012**

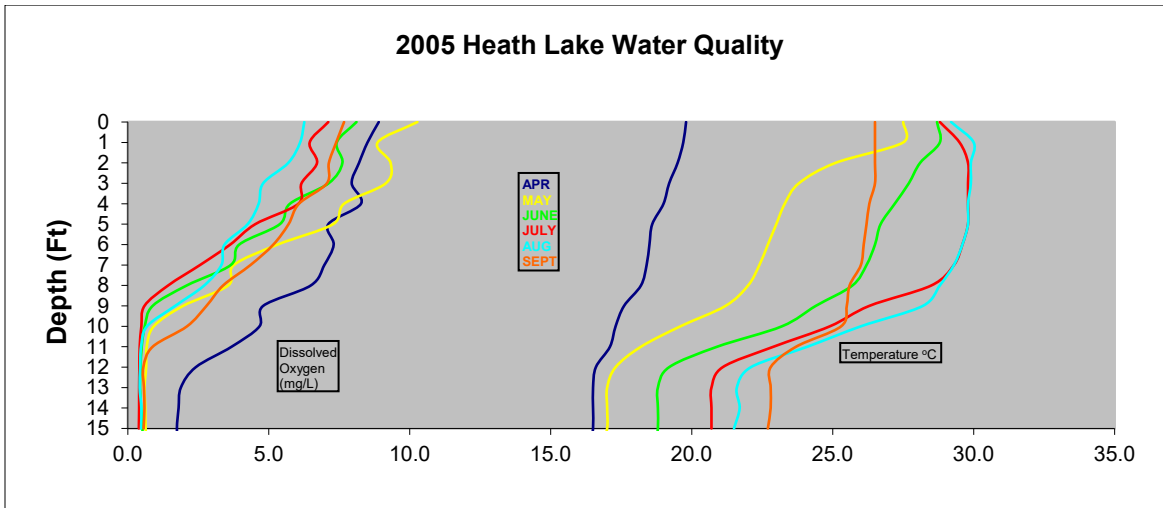
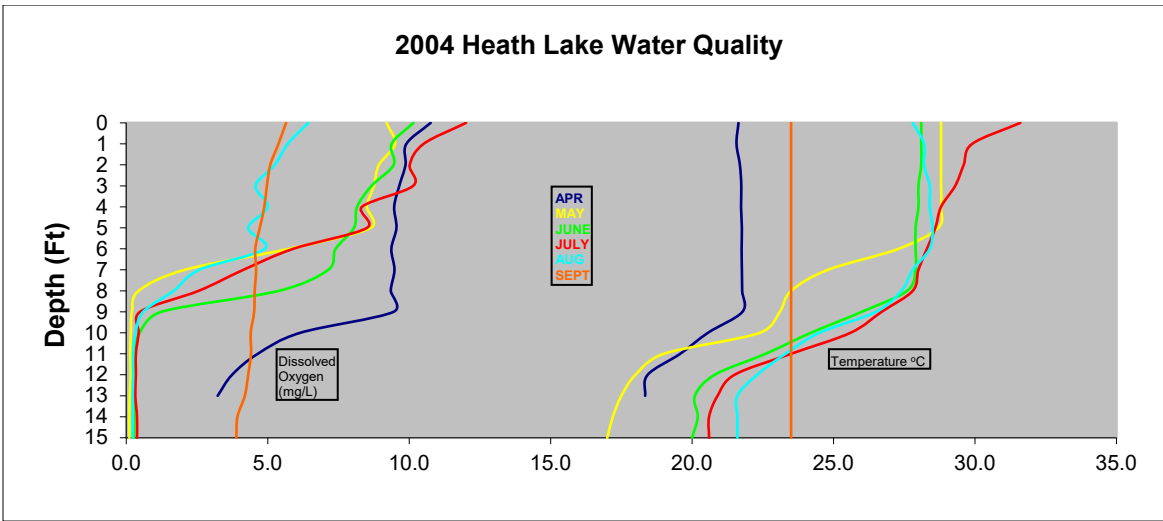
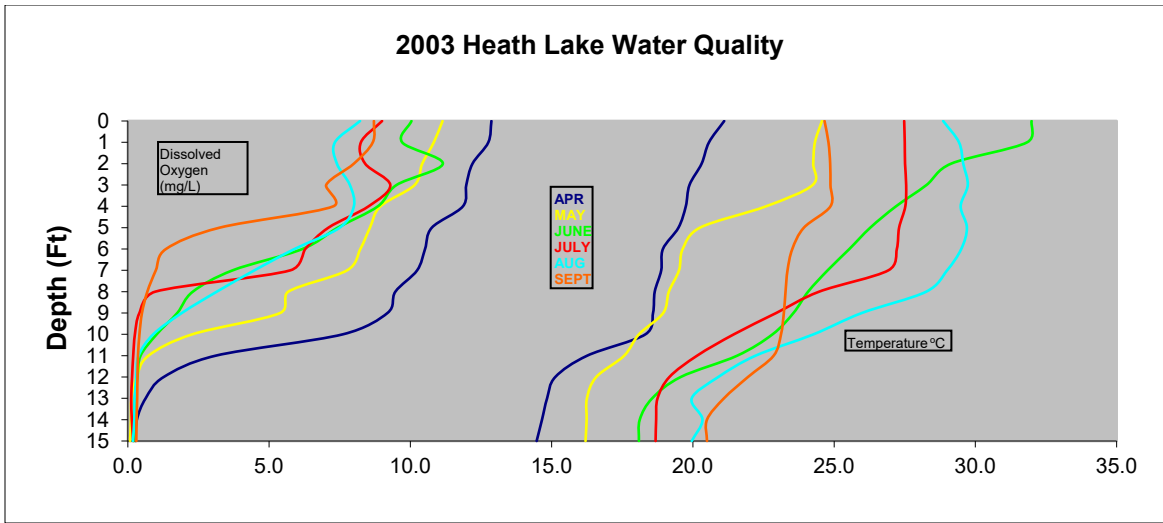
Parameter	Units	2001					2012				
		N	Min	Mean	Max	SD	N	Min	Mean	Max	SD
Water Temperature	°C	22	3.40	15.16	26.50	6.01	12	8.15	13.78	22.12	4.80
pH	Standard	21	7.10	7.68	8.20	0.23	12	6.62	7.37	7.78	0.38
Dissolved oxygen	mg/L	22	6.10	8.49	11.30	1.50	12	4.40	7.47	10.42	2.31
Conductivity	µmho/cm	22	104.00	190.23	221.00	32.33	12	130.00	163.08	193.00	24.84
Turbidity	NTU	12	0.50	3.29	7.20	2.29	12	2.40	5.33	8.00	2.14
Total Suspended Solids	mg/L	12	1.00	6.33	18.00	4.48	12	1.00	3.86	8.40	2.32
Alkalinity	mg/L CaCO <sub>3</sub>	12	69.00	84.17	95.00	8.32	12	58.00	76.58	88.00	10.61
Hardness	mg/L CaCO <sub>3</sub>	0	n/a	n/a	n/a	n/a	12	61.00	79.08	91.00	10.82
Biological Oxygen Demand	mg/L	12	0.20	0.59	1.30	0.30	12	2.00	2.00	2.00	0.00
Total Kjeldahl Nitrogen	mg/L	0	n/a	n/a	n/a	n/a	12	0.20	0.20	0.24	0.01
Ammonia	mg/L	12	0.02	0.04	0.07	0.01	12	0.03	0.03	0.03	0.00
Inorganic Nitrogen (Nitrate and Nitrite)	mg/L	12	0.02	0.08	0.15	0.04	12	0.02	0.06	0.10	0.03
Phosphorus	mg/L	12	0.02	0.02	0.02	0.00	12	0.02	0.02	0.03	0.00
Fecal Coliforms	MPN/100mL	16	20.00	248.75	1100.00	316.10	15	20.00	371.33	1700.00	512.01

Source: GEPD 2021

### *Auxiliary Pool Vertical Profiles*

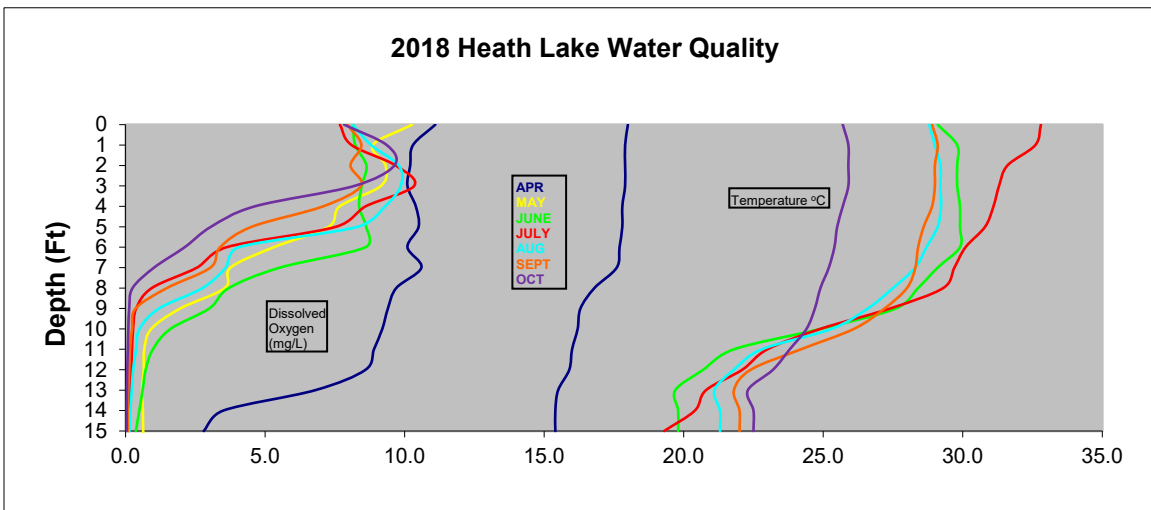
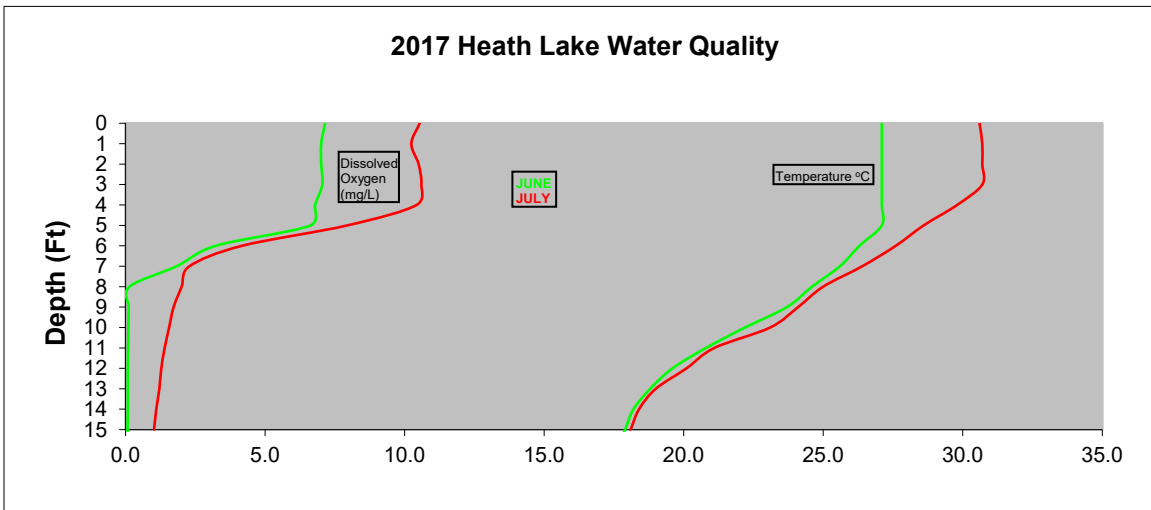
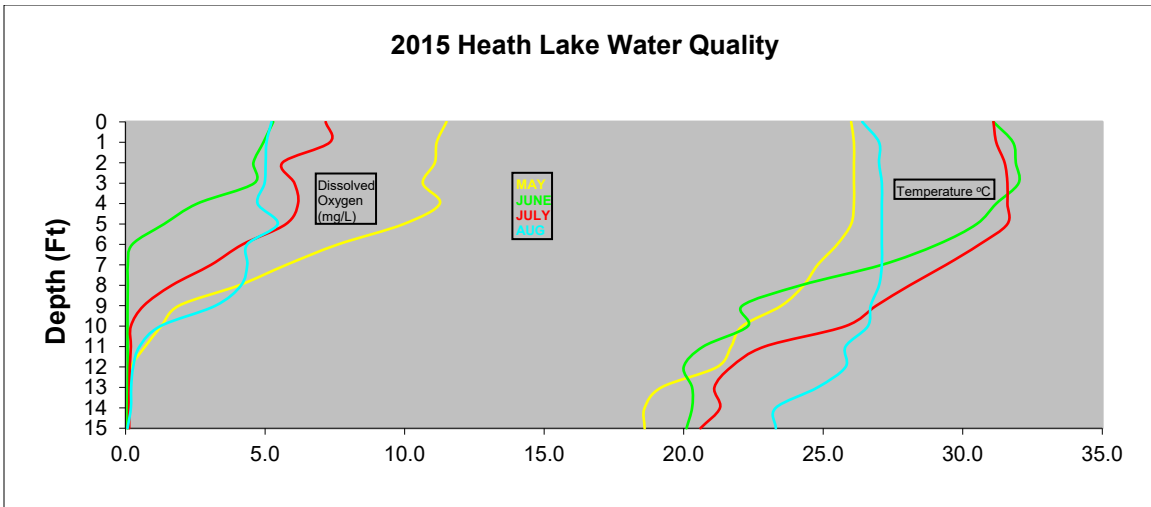
Water quality vertical profiles were collected on both Auxiliary Pool I (Antioch Lake East and West) and Auxiliary Pool II (Heath Lake) by GDNR during spring and summer in 2003-2005, 2015, and 2017-2018.

As shown in Figures 12 and 13, Heath Lake exhibits a typical reservoir vertical stratification, with warmer surface temperatures, a pronounced thermocline, and cooler, low-DO water below approximately 5 ft, with seasonal variation.



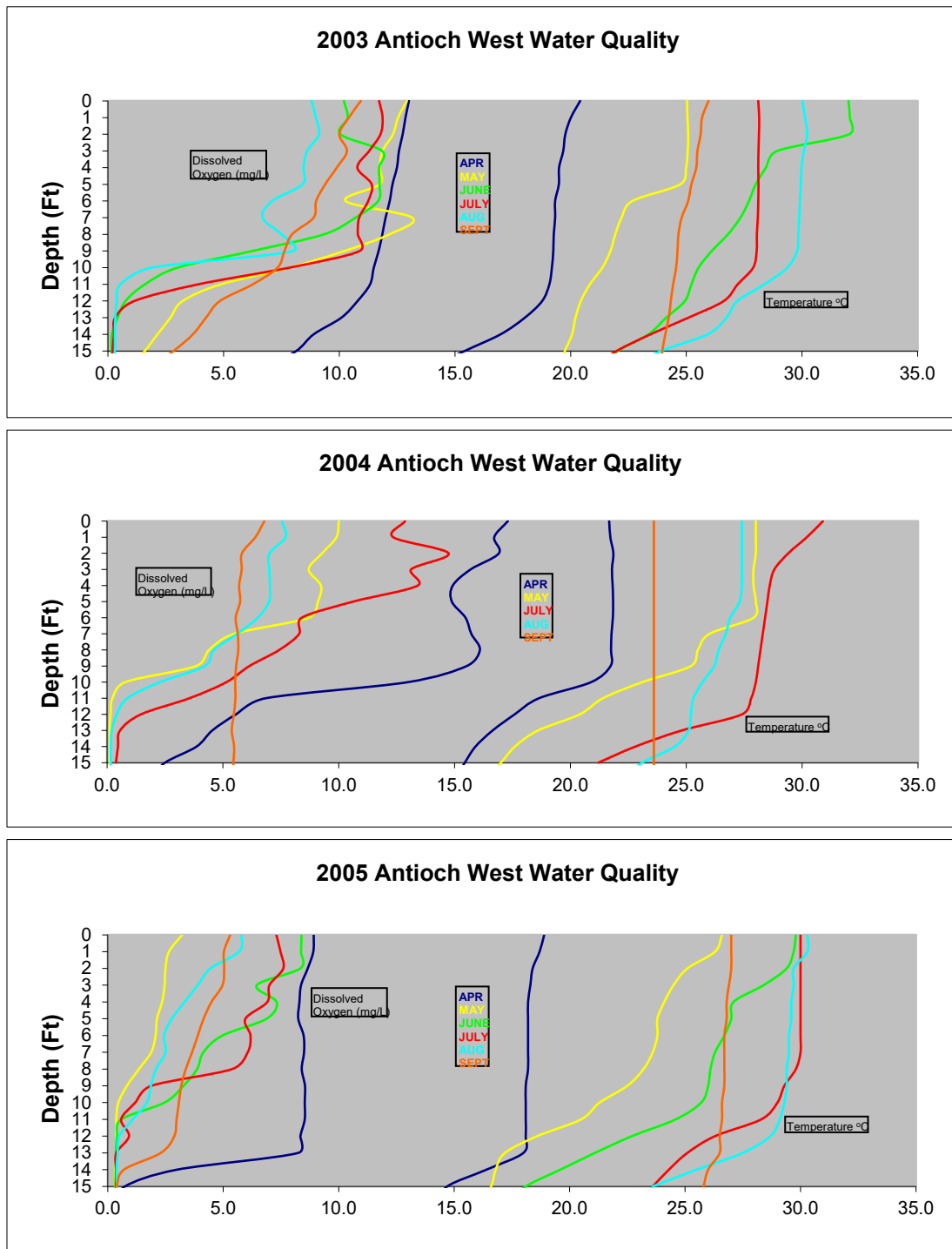
**Figure 12 Heath Lake (Auxiliary Pool II) Vertical Profiles, 2003-2005**



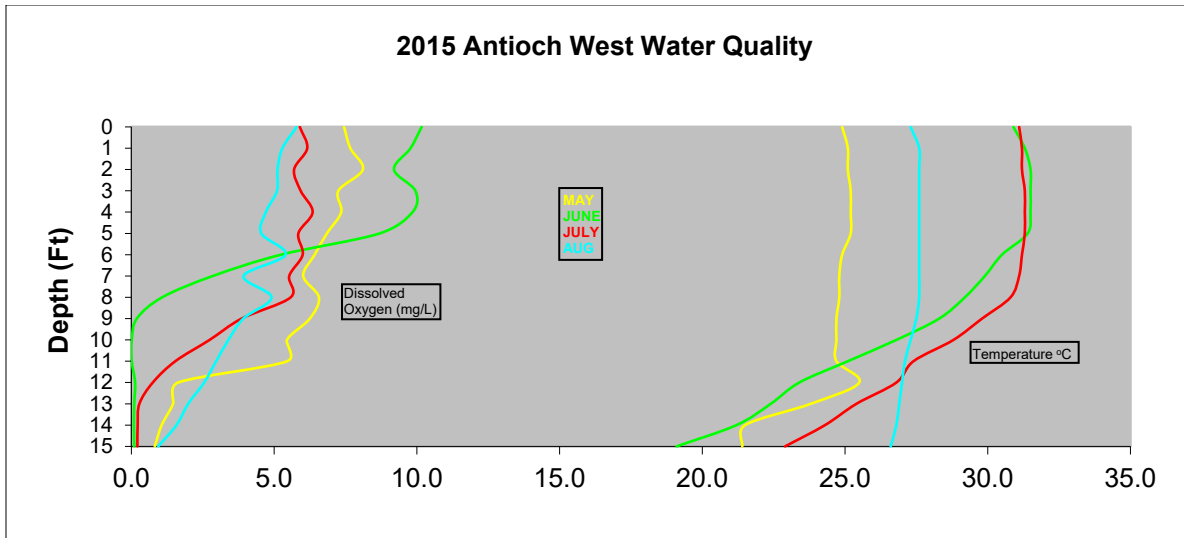


**Figure 13 Heath Lake (Auxiliary Pool II) Vertical Profiles, 2015-2018**

As shown in Figures 14 and 15, Antioch Lake West exhibits a typical reservoir vertical stratification, with warmer surface temperatures, a pronounced thermocline, and cooler, low-DO water below approximately 10 ft, with seasonal variation. Profiles were not collected in 2017 and 2018.

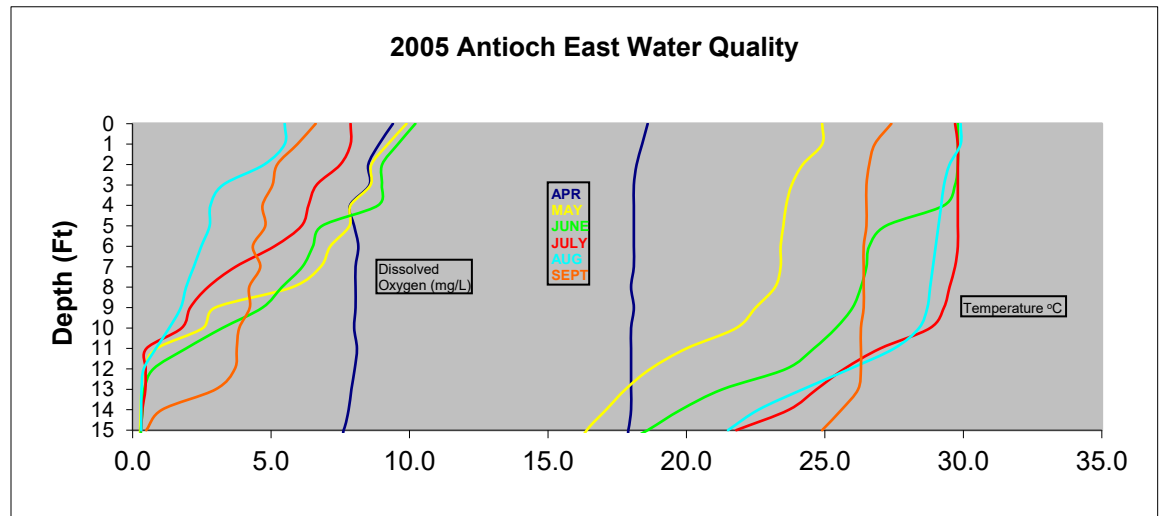
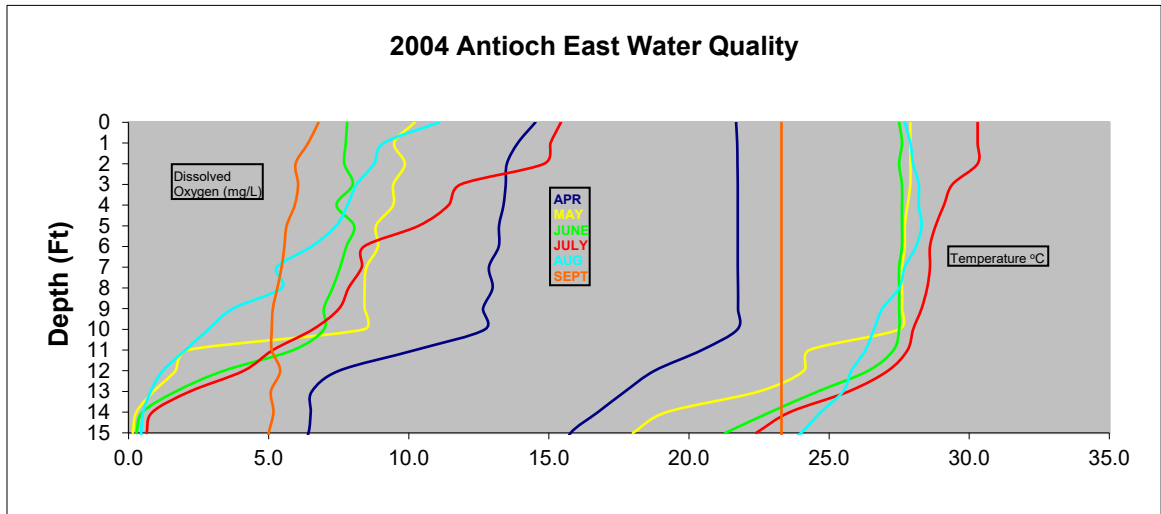
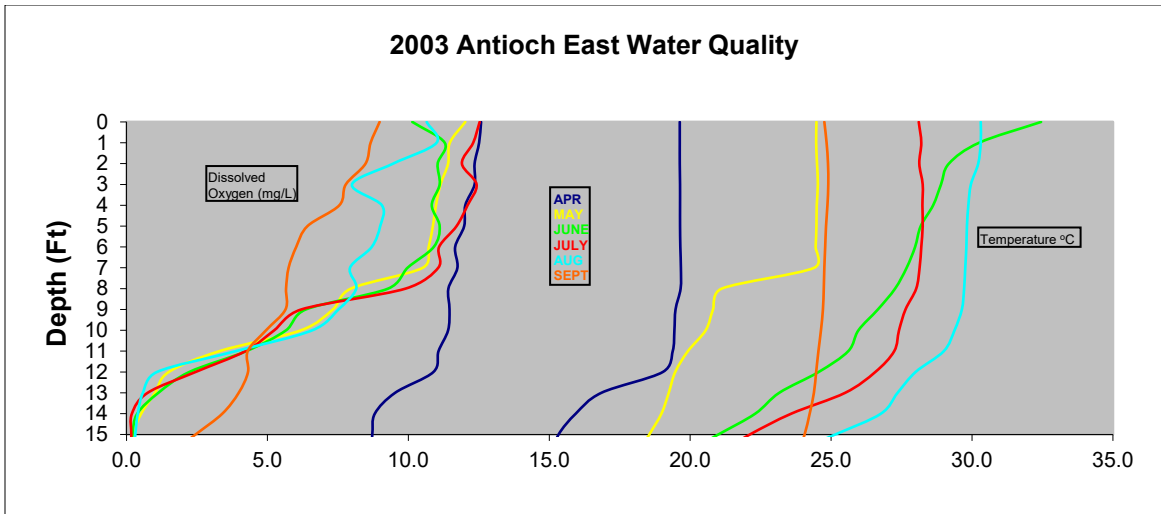


**Figure 14 Antioch Lake West (Auxiliary Pool I) Vertical Profiles, 2003-2005**

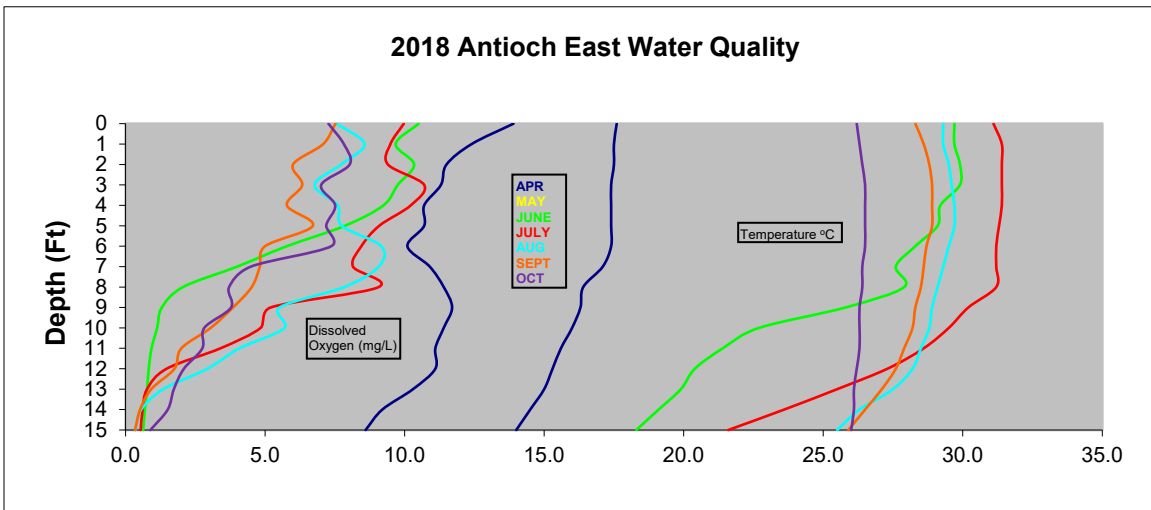
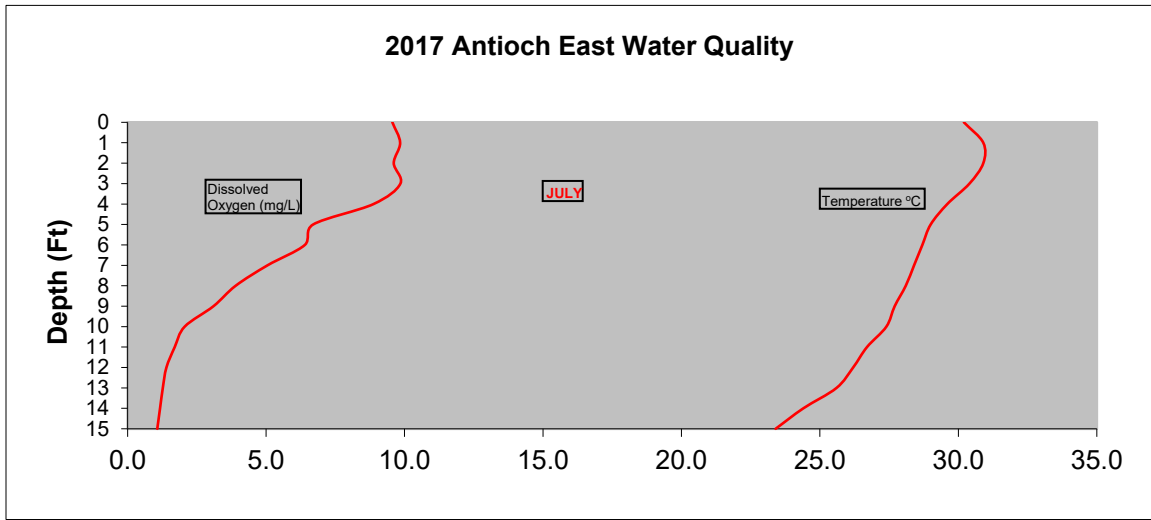
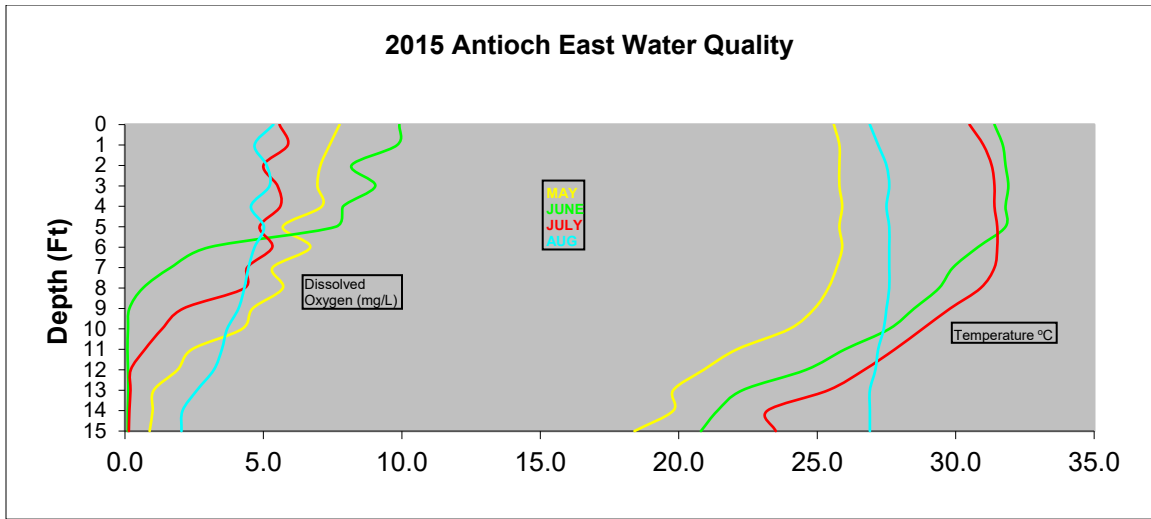


**Figure 15 Antioch Lake West (Auxiliary Pool I) Vertical Profiles, 2015**

As shown in Figures 16 and 17, Antioch Lake East exhibits a typical reservoir vertical stratification, with warmer surface temperatures, a pronounced thermocline, and cooler, low-DO water below approximately 10 ft, with seasonal variation. Notably, the 2015 and 2017-2018 profiles exhibit a slightly shallower thermocline developing. Profiles were not collected in 2017 and 2018.



**Figure 16 Antioch Lake East (Auxiliary Pool I) Vertical Profiles, 2003-2005**



**Figure 17 Antioch Lake East (Auxiliary Pool I) Vertical Profiles, 2015-2018**

### **4.3.2 Potential Resource Impacts**

Potential resource impacts of continued project operation and maintenance on water resources would be limited to the Lower and Upper Reservoirs, the Auxiliary Pools, and Heath Creek downstream of the Main Dam. OPC will evaluate effects of project operations on water resources in the license application.

No adverse effects or issues related to water resources attributed to project operations have been identified through review of abundant existing data. Therefore, OPC is not proposing any PM&E measures for water resources at this time.

### **4.4 Fish and Aquatic Resources**

Abundant existing information and data are available for characterizing the fish and aquatic resources in the vicinity of the Rocky Mountain Project and evaluating the potential resource impacts of continued project operation and maintenance. Key sources of this information include:

- Post-construction studies for the Project in the late 1990s, which included fisheries investigations and a minimum flow study on Heath Creek (Harza 1996).
- GDNR annual standardized fishery surveys and summary reports, and management data, for Antioch Lake and Heath Lake in the Rocky Mountain PFA.
- GDNR Stream Team fish community biomonitoring data and multi-metric biotic integrity ratings for Heath Creek downstream of the Project from 2000-2001.
- The Fishes of Georgia Website (Straight et al. 2009), cooperatively funded by the U.S. Fish and Wildlife Service (FWS), GDNR Wildlife Conservation Section, and Georgia Museum of Natural History. This source provides an online distributional atlas of freshwater fishes in Georgia based on historical and recent collection data.
- Online species accounts and occurrence maps by hydrologic unit code (HUC) 10 watershed for fish and mollusk species of conservation concern, prepared by GDNR's Wildlife Conservation Section (Georgia Biodiversity Portal [GDNR 2021a]).
- Scientific literature and other published information on the distribution of migratory fishes (Davin et al. 1999; Bezold and Peterson 2008) and freshwater mussels (FWS 2004; Williams et al. 2008) in the upper Coosa River basin.

#### **4.4.1 Existing Environment**

The Rocky Mountain Project is located on headwater tributaries of Armuchee Creek in the Oostanaula River basin, within the larger Coosa River basin. The Lower Reservoir and Auxiliary Pools impound Heath Creek and small tributaries. The Lower Reservoir discharges into Heath Creek, which flows east about 5 miles to Little Armuchee Creek. Little Armuchee Creek flows 0.7 mile to Armuchee Creek, which flows southeast about 9.5 miles to the Oostanaula River.

The Upper Reservoir sits atop the drainage divide between Heath and Lavender Creeks and has no discharge outlet to either drainage, other than via the intake to the Lower Reservoir. Rock Mountain Creek originates near the base of the Upper Reservoir and flows east about 3.3 miles to Lavender Creek. Lavender Creek flows about 5.4 miles before joining Armuchee Creek about 7 miles upstream of the Oostanaula River.

The Coosa River drains west to Alabama, then south-southwest to the Alabama River, Mobile River, and Gulf of Mexico at Mobile Bay. Nine dams downstream of the Project in Alabama impede the upstream passage of diadromous fish into the project vicinity (Table 5).

The Oostanaula River basin in the Ridge and Valley province principally supports warmwater fishes. The Auxiliary Pools support highly popular sport fisheries. Heath Creek downstream of the Project supports a healthy stream-fish community.

##### **4.4.1.1 Distribution of Fishes in the Project Vicinity**

Based on existing information, the Oostanaula River basin supports about 74 species of fish from 15 families. These include species that inhabit mainstem, tributary, and wetland habitats within the basin, and introduced species, such as common carp and rainbow trout. Table 10 lists the fish species known to occur in the Oostanaula River basin based on historical and recent collection records.

Heath Creek within the project boundary and downstream of the Project supports a warmwater fish community. Based on post-construction fish sampling conducted by OPC and GDNR Stream Team fish sampling data from 2000-2001, Heath Creek supports a relatively diverse small-stream community of about 42 species, including several species of native minnows, sunfishes, suckers, and darters (Table 10). No rare, threatened, or

endangered species of fish, mussels, or other aquatic biota are presently known to occur in Heath Creek downstream of the Project. At least one fish species in Heath Creek is an introduced, non-native species to the Oostanaula River basin.

**Table 10 Fish Species Known from the Oostanaula River Basin and Heath Creek**

Family/Scientific Name	Common Name	Oostanaula Basin <sup>a</sup>	Heath Creek <sup>b</sup>
<b>LAMPREYS:</b>			
<i>Ichthyomyzon castaneus</i>	chestnut lamprey	X	
<i>Ichthyomyzon gagei</i>	southern brook lamprey	X	X
<i>Lampetra aepyptera</i>	least brook lamprey	X	
<b>STURGEONS:</b>			
<i>Acipenser fulvescens</i>	lake sturgeon	X	
<b>GAR:</b>			
<i>Lepisosteus osseus</i>	longnose gar	X	
<b>HERRINGS AND SHAD:</b>			
<i>Hiodon tergisus</i>	mooneye	X	
<i>Dorosoma cepedianum</i>	gizzard shad	X	
<i>Dorosoma petenense</i>	threadfin shad	X	
<b>MINNOWS:</b>			
<i>Campostoma oligolepis</i>	largescale stoneroller		X
<i>Ctenopharyngodon idella</i>	grass carp <sup>c</sup>	X	
<i>Cyprinella callistia</i>	Alabama shiner	X	X
<i>Cyprinella lutrensis</i>	red shiner	X	
<i>Cyprinella trichroistia</i>	tricolor shiner	X	X
<i>Cyprinella venusta</i>	blacktail shiner	X	X
<i>Cyprinus carpio</i>	common carp <sup>c</sup>	X	
<i>Hybopsis lineapunctata</i>	lined chub	X	
<i>Luxilus chrysocephalus</i>	striped shiner	X	X
<i>Lythrurus lirus</i>	mountain shiner	X	X
<i>Macrhybopsis storeriana</i>	silver Chub	X	
<i>Notemigonus crysoleucas</i>	golden shiner	X	X
<i>Notropis asperifrons</i>	burrhead shiner	X	
<i>Notropis chrosomus</i>	rainbow shiner	X	X
<i>Notropis stilbuis</i>	silverstripe shiner	X	X
<i>Notropis xaenocephalus</i>	Coosa shiner	X	X
<i>Phenacobius catostomus</i>	riffle minnow	X	X
<i>Pimephales vigilax</i>	bullhead minnow	X	



Family/Scientific Name	Common Name	Oostanaula Basin <sup>a</sup>	Heath Creek <sup>b</sup>
<i>Rhinichthys obtusus</i>	western blacknose dace	X	X
<i>Semotilus atromaculatus</i>	creek chub		X
<b>SUCKERS:</b>			
<i>Hypentelium etowanum</i>	Alabama hog sucker	X	X
<i>Ictiobus bubalus</i>	smallmouth buffalo	X	
<i>Minytrema melanops</i>	spotted sucker	X	X
<i>Moxostoma carinatum</i>	river redhorse	X	
<i>Moxostoma duquesnei</i>	black redhorse	X	X
<i>Moxostoma erythrurum</i>	golden redhorse	X	X
<i>Moxostoma poecilurum</i>	blacktail redhorse	X	
<b>BULLHEAD CATFISHES:</b>			
<i>Ameiurus natalis</i>	yellow bullhead	X	X
<i>Ameiurus nebulosus</i>	brown bullhead	X	
<i>Ictalurus furcatus</i>	blue catfish	X	
<i>Ictalurus punctatus</i>	channel catfish	X	
<i>Noturus funebris</i>	black madtom		X
<i>Noturus leptacanthus</i>	speckled madtom	X	X
<i>Pylodictis olivaris</i>	flathead catfish	X	
<b>TROUT:</b>			
<i>Oncorhynchus mykiss</i>	rainbow trout <sup>c</sup>	X	
<b>TOPMINNONS:</b>			
<i>Fundulus olivaceus</i>	blackspotted topminnow	X	X
<i>Fundulus stellifer</i>	southern studfish	X	X
<b>LIVEBEARERS:</b>			
<i>Gambusia affinis</i>	western mosquitofish	X	X
<i>Gambusia holbrooki</i>	eastern mosquitofish	X	X
<b>SCULPINS:</b>			
<i>Cottus carolinae</i>	banded sculpin		X
<b>TEMPERATE BASSES:</b>			
<i>Morone chrysops</i>	white bass	X	
<i>Morone chrysops</i> x <i>M. saxatilis</i>	hybrid bass	X	
<i>Morone mississippiensis</i>	yellow bass <sup>c</sup>	X	
<i>Morone saxatilis</i>	striped bass	X	
<b>SUNFISHES:</b>			
<i>Ambloplites ariommus</i>	shadow bass	X	
<i>Lepomis auritus</i>	redbreast sunfish <sup>c</sup>	X	X
<i>Lepomis cyanellus</i>	green sunfish	X	X

Family/Scientific Name	Common Name	Oostanaula Basin <sup>a</sup>	Heath Creek <sup>b</sup>
<i>Lepomis gulosus</i>	warmouth	X	X
<i>Lepomis macrochirus</i>	bluegill	X	X
<i>Lepomis megalotis</i>	longear sunfish		X
<i>Lepomis microlophus</i>	redeer sunfish	X	X
<i>Lepomis punctatus</i>	spotted sunfish		X
<i>Micropterus coosae</i>	redeye bass		X
<i>Micropterus henshalli</i>	Alabama bass		X
<i>Micropterus salmoides</i>	largemouth bass	X	X
<i>Pomoxis annularis</i>	white crappie	X	
<i>Pomoxis nigromaculatus</i>	black crappie	X	X
<b>PERCHES:</b>			
<i>Etheostoma coosae</i>	Coosa darter	X	X
<i>Etheostoma rupestre</i>	rock darter	X	
<i>Etheostoma stigmaeum</i>	speckled darter	X	X
<i>Etheostoma trisella</i>	trispot darter	X	
<i>Percina caprodes</i>	logperch		X
<i>Percina kathae</i>	Mobile logperch	X	X
<i>Percina nigrofasciata</i>	blackbanded darter		X
<i>Sander vitreus</i>	walleye	X	
<b>DRUM:</b>			
<i>Aplodinotus grunniens</i>	freshwater drum	X	

<sup>a</sup> Source: Fishes of Georgia (Straight et al. 2009)

<sup>b</sup> Sources: Harza (1996); GDNR (2019) Stream Team database

<sup>c</sup> Introduced or invasive (non-native to the Oostanaula River basin)

#### 4.4.1.2 Lower and Upper Reservoirs

Fish populations in the Lower and Upper Reservoirs originate from native fishes in the upstream reaches of Heath Creek that can tolerate impounded conditions, and incidental dispersal of young fish from the Auxiliary Pools via outlet structures into the Lower Reservoir. Because of the large daily fluctuations of the Lower and Upper Reservoirs, these impoundments are not managed for public fisheries use. Fish are not stocked, nor is public fishing allowed, in either reservoir. For these reasons, any fish entrainment that occurs between the Lower and Upper Reservoirs is expected to be negligible.

#### 4.4.1.3 Auxiliary Pools

The Rocky Mountain PFA contains the Auxiliary Pools Antioch Lake and Heath Lake, which have a total surface area of 559 acres. GDNR intensively manages these lakes for quality public fishing opportunities. The powerhouse access road/causeway bisects Antioch Lake into east and west sub-impoundments, which are considered as separate lakes for fisheries management purposes. Table 11 summarizes the physical characteristics of the Auxiliary Pools.

**Table 11 Physical Characteristics of Antioch and Heath Lakes**

Attributes	Antioch Lake		Heath Lake
	East	West	
Surface area (acres)	154	203	202
Volume (acre-ft)	2,519	2,741	1,850
Shoreline length (ft)	32,060	31,320	NA
Shoreline development index	3.49	2.97	NA
Maximum depth (ft)	48	29	24
Mean depth (ft)	16.4	13.5	9.2
Area less than 10 ft deep (acres)	52 (34%)	89 (44%)	116 (57%)
Area less than 5 ft deep (acres)	29 (19%)	44 (22%)	66 (33%)
Flooded timber (acres)	2.6 (2%)	2.2 (1%)	58.0 (29%)

Source: Hakala (2019)

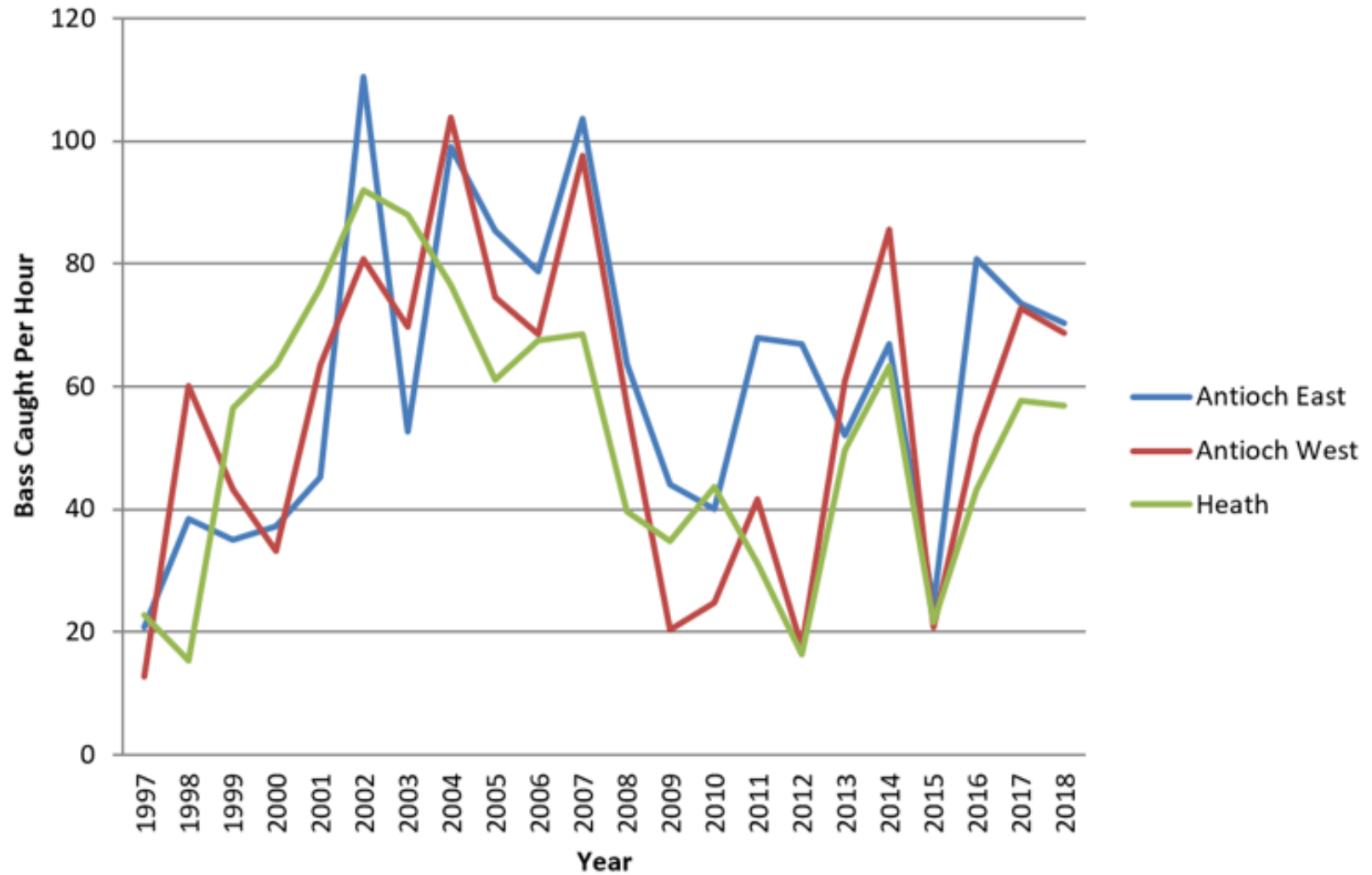
NA=not available

Antioch Lake and Heath Lake support popular fisheries for largemouth bass, bluegill, redear sunfish, black crappie, channel catfish, and walleye. Rocky Mountain PFA is the only PFA in Georgia containing walleye. Antioch Lake (East and West) is open to fishing year-round. Heath Lake, referred to as the “trophy lake,” is open the first ten days of every month and is managed to provide high catch rates of quality-sized largemouth bass. This access model limits fishing pressure on the trophy lake, while creel and slot-length limits for largemouth bass enhance the production of large bass available to anglers (Hakala 2020). Creel and length limits apply to bass, sunfish, crappie, channel catfish, and walleye on both lakes. On Heath Lake, largemouth bass in the slot size 14 to 20 inches long must be released, the daily limit is five bass, and only one bass can be over 20 inches long. On

Antioch Lake, largemouth bass must be at least 14 inches long. Fishing boats used on the lakes must operate at idle (no-wake) speed.

Since 1996, GDNR has performed annual standardized fisheries surveys of Antioch Lake (East and West) and Heath Lake targeting sport fishes at permanently designated stations on each lake (Dallmier 2003; Probst 2011; Hakala 2019). Boat electrofishing surveys are conducted during the spring, and experimental gillnetting surveys are conducted during the fall. For electrofishing, largemouth bass, bluegill, and redear sunfish are the primary species targeted for analysis. For gillnetting, only black crappie and walleye are caught in sufficient abundance for analysis. GDNR compiles the sampling data into annual reports, which present population data and trends for the primary species, including catch rates, length-frequency distribution, relative body condition, and the relationship between total annual fertilizer application amounts and the combined biomass of primary species. GDNR has provided OPC annual report summaries for 2002-2005 and 2009-2018.

GDNR initiated annual fertilization of the Auxiliary Pools in 1998. Fertilization increases primary productivity (i.e., plankton density), which drives energy transfer through the food chain, ultimately enhancing the growth and biomass of game fish populations. Substantial declines in the combined biomass of largemouth bass, bluegill, and redear sunfish were observed in Antioch and Heath Lakes after 2007, corresponding with dramatic reductions in fertilization rates due to increased fertilizer prices (Probst 2011). Since 2013, fertilization rates have steadily increased and, consequently, game fish biomass has been trending upwards toward pre-2007 levels (Hakala 2019, 2020). GDNR found a significant direct linear relationship between annual fertilization rates and the combined biomass of largemouth bass, bluegill, and redear sunfish collected during standardized spring electrofishing surveys two years later, evidence that fertilization levels dictate game fish biomass and fishing quality in the Auxiliary Pools (Hakala 2019). Figure 18 shows annual electrofishing catch rates of largemouth bass in the Auxiliary Pools since 1997. Table 12 summarizes catch rates of the primary species for the five most recent years of available surveys (2014-2018).



Source: Hakala (2019)

**Figure 18** Largemouth Bass Annual Electrofishing Catch Rates for Antioch and Heath Lakes, 1997-2018

**Table 12 Summary of GDNR Catch Rates for Antioch and Heath Lakes, 2014-2018**

Auxiliary Pools	Catch per Unit Effort				
	2014	2015	2016	2017	2018
<b>Antico Lake – East</b>					
Electrofishing (fish/hour):					
Largemouth bass	66.8	24.4	80.8	73.6	70.4
Bluegill	75.6	31.6	59.2	114.4	92.0
Redear sunfish	1.2	6.4	5.6	52.0	14.4
Gillnetting (fish/net-night):					
Black crappie	4.8	2.4	4.6	4.2	3.2
Walleye	1.8	3.4	3.2	NA	0.8
<b>Antioch Lake – West</b>					
Electrofishing (fish/hour):					
Largemouth bass	85.6	20.8	52.0	72.8	68.8
Bluegill	96.4	48.8	29.6	209.6	143.2
Redear sunfish	11.2	6.0	9.6	20.0	11.2
Gillnetting (fish/net-night):					
Black crappie	3.0	13.0	21.4	5.2	7.2
Walleye	1.0	3.8	5.8	7.2	4.6
<b>Heath Lake</b>					
Electrofishing (fish/hour):					
Largemouth bass	63.2	21.5	43.2	57.6	56.8
Bluegill	36.0	56.4	39.2	48.8	43.2
Redear sunfish	4.0	10.0	12.0	29.6	10.4
Gillnetting (fish/net-night):					
Black crappie	15.2	3.4	5.2	7.8	5.8

Source: Hakala (2015-2017, 2019)

NA=not available

Fishing tournaments are held on Antioch and Heath Lakes by a variety of angling groups, primarily in February-April and September-October (GDNR file data). In 2018-2020, six to nine tournaments were held each year on Antioch Lake. Three tournaments were held by

kayak angling groups on both Antioch and Heath Lakes. The number of participants in 22 tournaments ranged from 11 to 78 and averaged 29 anglers.

GDNR has stocked the Auxiliary Pools since 1994-1995 with a variety of fish species, mostly game fish (Table 13). Hybrid striped bass were stocked annually in both lakes through 2002 to establish an additional sport fishery, and as a forage management tool, but they did not attract the interest of anglers, so stocking was halted (Hakala 2019). Threadfin shad were first stocked in 2002 to establish a forage base for game fish, in addition to gizzard shad already present. Walleye fry were first stocked in both lakes in 2008. Walleye have since been stocked annually in Antioch Lake. In 2020, a total of 35,672 fingerling walleye were stocked in Antioch Lake (East and West). Given low angler returns of stocked walleye at Heath Lake, stocking was halted there after 2011.

**Table 13 Historical Fish Stocking of Antioch and Heath Lakes, 1994-2020**

Species	Year	Number Stocked	
		Antioch Lake (East and West)	Heath Lake
Channel catfish	1994	39,413	--
	1995	--	10,000
	1998	5,250	4,500
	1999	1,876	5,000
	2004	8,270	--
	2005	2,142	--
	2006	3,350	--
	2017	1,000	--
Grass carp	2002	--	243
	2003	--	693
	2005	380	305
	2006	--	530
	2012	301	--
	2013	960	400
Hybrid striped bass	1994	1,750	--
	1995	18,390	5,364
	1996	10,710	6,060
	1997	10,717	6,487
	1998	1,785	1,010
	1999	1,049	5,375
	2000	9,400	--

Species	Year	Number Stocked	
		Antioch Lake (East and West)	Heath Lake
	2001	7,140	3,030
	2002	7,140	3,030
Largemouth bass	1994	173,003	--
	2007	4,133	--
	2008	1,108	--
Threadfin shad	2002	4,500	2,500
	2012	20,000	--
	2013	20,000	5,000
	2015	--	8,000
Walleye	2008	150,000 <sup>a</sup>	150,000 <sup>a</sup>
	2009	368	--
	2010	4,097	4,097
	2011	6,800	7,430
	2012	14,286	--
	2013	13,158	--
	2014	38,574	--
	2015	37,118	--
	2016	--	--
	2017	12,479	--
	2018	21,364	--
	2019	18,028	--
	2020	35,672	--

Source: Hakala (2019); GDNR Fish Stocking Records

<sup>a</sup> Fry stocked

GDNR periodically implements fish habitat improvements in the Auxiliary Pools to enhance angler success. In 2019, a total of 40 fish attractors were placed in Antioch East and West lakes, including custom plastic-pipe trees, plastic pallet attractors, cedar trees, and mixed hardwood brush piles (Hakala 2019). Many of the attractors are marked to allow anglers to locate them more easily.

GDNR has investigated several minor fish kills in recent years in the Auxiliary Pools (GDNR file investigation forms). Most have occurred in Antioch Lake West and have involved bluegill and redear sunfish exhibiting red sores. Laboratory analysis of dead fish from a



2017 incident indicated a likely bacterial infection induced by spawning stress, which can weaken fish immune systems. Incidents at Heath Lake in 2019 and Antioch Lake East in 2012 also involved bluegill and redear sunfish with red sores. A fish kill in Heath Lake in 2015 involved mostly gizzard shad and apparently was caused by low DO levels (Hakala 2019). There has been no evidence that fish have died from other than natural causes during these incidents.

#### **4.4.1.4 Heath Creek Downstream of the Project**

Heath Creek downstream of the Main Dam flows about 5 miles to Little Armuchee Creek. OPC conducted post-construction fish sampling at five locations in Heath Creek in 1995-1996, in accordance with Article 33 of the original License, to evaluate the fish community (Table 10). A total of 32 taxa were collected representing nine families. Sunfish and bass species (family Centrarchidae) dominated the fish community with 12 species and comprised 77 percent of the catch by number for all stations and sampling months combined. The top ten numerically abundant species, in descending order of abundance, were longear sunfish, redbreast sunfish, bluegill, spotted sunfish, largescale stoneroller, blacktail shiner, redear sunfish, blackbanded darter, Alabama hog sucker, and redeye bass. These species comprised 82 percent of the total catch by number for all stations and sampling months combined. A biotic integrity analysis showed that there was a similar fish community in Heath and Lavender creeks, indicating that project operations had not adversely affected aquatic habitat in Heath Creek relative to unregulated Lavender Creek.

GDNR's Stream Team conducted fisheries sampling in Heath Creek in May 2001 and August 2002 to evaluate fish community health following GEPD's fish community biomonitoring standard operating procedures (GDNR 2019). Backpack electrofishing was conducted in wadable habitat at Texas Valley Road, about 2.5 stream miles downstream of the Main Dam. The Heath Creek fish community included 35 species in eight families, mostly species of sunfishes, minnows, suckers, darters, and topminnows (Table 14). The top ten numerically abundant species overall for both sampling events combined, in descending order of abundance, were striped shiner, redbreast sunfish, longear sunfish, Coosa shiner, tricolor shiner, largescale stoneroller, spotted sunfish, southern studfish, green sunfish, and bluegill. These species comprised 76 percent of the total catch by number. GDNR applied the Index of Biotic Integrity (IBI), a multi-metric approach to

comparing fish community attributes with least-disturbed reference conditions for the ecoregion, to assess the quality of the Heath Creek fish community. The IBI analysis yielded scores of 44 and 48 for May 2001 and August 2002, respectively, which corresponded to “good” biotic integrity compared to reference conditions. None of the species collected are federally or state-listed as threatened or endangered.

Article 34 of the FERC license for the Rocky Mountain Project requires OPC to provide a 1.2 cfs continuous minimum flow release from the Lower Reservoir to Heath Creek. OPC completed a field study in 1996, which demonstrated the adequacy of the current minimum flow requirement for maintaining water quality and aquatic resources in Heath Creek downstream of the Project (see Section 4.3.1.1).

**Table 14 Fish Collected in Heath Creek Downstream of the Rock Mountain Project in 2001-2002**

Family/Scientific Name	Common Name	May 2001		August 2002			
		Number <sup>b</sup>	Percent <sup>c</sup>	Number	Percent	Total	Percent <sup>d</sup>
<b>Cyprinidae (Minnows):</b>							
<i>Campostoma oligolepis</i>	largescale stoneroller	5	1.4	69	7.5	74	<b><u>5.8</u></b>
<i>Cyprinella callistia</i>	Alabama shiner			5	0.5	5	0.4
<i>Cyprinella trichroistia</i>	tricolor shiner	51	14.6	63	6.9	114	<b><u>9.0</u></b>
<i>Cyprinella venusta</i>	blacktail shiner	10	2.9	5	0.5	15	1.2
<i>Luxilus chrysocephalus</i>	striped shiner	40	11.5	125	13.6	165	<b><u>13.0</u></b>
<i>Lythrurus lirus</i>	mountain shiner	8	2.3	14	1.5	22	1.7
<i>Notropis chrosomus</i>	rainbow shiner			2	0.2	2	0.2
<i>Notropis stilbius</i>	silverstripe shiner			3	0.3	3	0.2
<i>Notropis xaenocephalus</i>	Coosa shiner	44	12.6	85	9.3	129	<b><u>10.2</u></b>
<i>Phenacobius catostomus</i>	riffle minnow			1	0.1	1	0.1
<i>Semotilus atromaculatus</i>	creek chub			6	0.7	6	0.5
<b>Catostomidae (Suckers):</b>							
<i>Hypentelium etowanum</i>	Alabama hog sucker	3	0.9	32	3.5	35	2.8
<i>Moxostoma duquesnei</i>	black redhorse	1	0.3	4	0.4	5	0.4
<i>Moxostoma erythrurum</i>	golden redhorse	13	3.7	2	0.2	15	1.2
<i>Moxostoma poecilurum</i>	blacktail redhorse	2	0.6	1	0.1	3	0.2
<b>Ictaluridae (Bullhead Catfishes):</b>							
<i>Noturus leptacanthus</i>	speckled madtom	1	0.3			1	0.1
<b>Fundulidae (Topminnows):</b>							
<i>Fundulus olivaceus</i>	blackspotted topminnow			5	0.5	5	0.4
<i>Fundulus stellifer</i>	southern studfish	14	4.0	38	4.1	52	<b><u>4.1</u></b>
<b>Poeciliidae (Livebearers):</b>							
<i>Gambusia holbrooki</i>	eastern mosquitofish			1	0.1	1	0.1

Family/Scientific Name	Common Name	May 2001		August 2002		Total	Percent <sup>d</sup>
		Number <sup>b</sup>	Percent <sup>c</sup>	Number	Percent		
<b>Cottidae (Sculpins):</b>							
<i>Cottus carolinae</i>	banded sculpin	1	0.3	7	0.8	8	0.6
<b>Centrarchidae (Sunfishes):</b>							
<i>Lepomis auritus</i>	redbreast sunfish	44	12.6	101	11.0	145	<b><u>11.5</u></b>
<i>Lepomis cyanellus</i>	green sunfish	2	0.6	43	4.7	45	<b><u>3.6</u></b>
<i>Lepomis gulosus</i>	warmouth	4	1.1	7	0.8	11	0.9
<i>Lepomis macrochirus</i>	bluegill	6	1.7	32	3.5	38	<b><u>3.0</u></b>
<i>Lepomis megalotis</i>	longear sunfish	30	8.6	107	11.7	137	<b><u>10.8</u></b>
<i>Lepomis microlophus</i>	redeer sunfish	8	2.3	9	1.0	17	1.3
<i>Lepomis punctatus</i>	spotted sunfish	25	7.2	41	4.5	66	<b><u>5.2</u></b>
<i>Micropterus coosae</i>	redest bass	9	2.6	28	3.1	37	2.9
<i>Micropterus henshalli</i>	Alabama bass	1	0.3			1	0.1
<i>Micropterus salmoides</i>	largemouth bass			23	2.5	23	1.8
<i>Pomoxis nigromaculatus</i>	black crappie			2	0.2	2	0.2
<b>Percidae (Perches):</b>							
<i>Etheostoma coosae</i>	Coosa darter	5	1.4	17	1.9	22	1.7
<i>Etheostoma stigmaeum</i>	speckled darter	11	3.2	22	2.4	33	2.6
<i>Percina kathae</i>	Mobile logperch			1	0.1	1	0.1
<i>Percina nigrofasciata</i>	blackbanded darter	11	3.2	15	1.6	26	2.1
Total Number of Fish		349		916		1,265	
Total Number of Taxa		25		33		35	

Source: GDNR (2019) Stream Team database

<sup>a</sup> Sampling location at Texas Valley Road.

<sup>b</sup> Number of fish collected using backpack electrofishing.

<sup>c</sup> Percent relative abundance.

<sup>d</sup> Top ten most numerically abundant species indicated in bold underline.

#### **4.4.1.5 Freshwater Mollusks**

Available records of freshwater mollusk species are limited for Heath Creek. Based on occurrence records for rare mollusks maintained by GDNR (2021), and the distribution and ecology of freshwater mussels known from the upper Coosa River basin (Williams et al. 2008), freshwater mussel species potentially occurring in Heath Creek include Etowah heelsplitter (*Lasmigona etowaensis*), Alabama rainbow (*Villosa nebulosa*), and Coosa creekshell (*Villosa umbrans*). All three species may be found in small creeks with flowing water, often in sandy substrates or combinations of sand, gravel, and cobbles (Williams et al. 2008). Although none of these species are known to occur in Heath Creek, there are relatively recent records of all three mussels in the Armuchee Creek hydrologic unit code (HUC)-10 watershed downstream of the Project (GDNR 2021a). Records of the freshwater snails brook hornsnail (*Pleurocera vestita*) and Savannah elimia (*Elimia caelatura*) are known to occur in the Little Armuchee Creek HUC-10 watershed, which includes Heath Creek. None of these mollusks are federally or state-listed in Georgia as protected species.

Several federally listed threatened and endangered species of mussels occur in the Oostanaula River downstream of the Project, but all of these species inhabit larger creeks and rivers and are not known to occur in smaller creeks the size of Heath Creek. The designated critical habitat for these species does not extend upstream from the Oostanaula River into the Armuchee Creek or Little Armuchee Creek HUC-10 watersheds (FWS 2004).

#### **4.4.1.6 Migratory Fishes**

The Rocky Mountain Project is about 670 miles upstream of the Gulf of Mexico. Due to the presence of multiple dams and impoundments downstream on the Coosa and Alabama Rivers, no diadromous fish species occur in the Oostanaula River basin. However, the landlocked population of striped bass in Weiss Lake, the first impoundment on the Coosa River downstream of Rome, appears to spawn in the Oostanaula and Conasauga Rivers (Davin et al. 1999). Striped bass spawning is not known to occur in Armuchee Creek or Heath Creek in the project vicinity.

In 2002, GDNR began a program to re-establish Lake Sturgeon in the upper Coosa River basin through a reintroduction program. Annual stocking of hatchery-raised fingerlings

since 2002 has been successful and resulted in a steadily increasing population of Lake Sturgeon in the upper Coosa River basin (Bezold and Peterson 2008). Lake sturgeon principally inhabit the Coosa River from Rome downstream into Weiss Lake (GDNR 2021a). No historic or recent records of lake sturgeon are known for Armuchee Creek or Heath Creek in the project vicinity.

#### **4.4.1.7 Essential Fish Habitat**

The Magnuson-Stevens Fishery Conservation and Management Act requires federal agencies to consult with National Oceanic and Atmospheric Administration Fisheries on all actions that may adversely affect Essential Fish Habitat (EFH). The Rocky Mountain Project, located far upstream of the Fall Line in the Ridge and Valley province, does not affect any EFH for the maintenance of suitable marine fishery habitat quality and quantity under the Magnuson-Stevens Fishery Conservation and Management Act.

The Gulf of Mexico Fishery Management Council (GMFMC) has not designated EFH for any species of fish or shellfish found in the vicinity of the Rocky Mountain Project (GMFMC 2016). The Project is 670 river miles upstream from the Gulf of Mexico, above nine existing major dams on the Alabama and Coosa Rivers.

#### **4.4.2 Potential Resource Impacts**

Potential impacts of continued project operation on fish and aquatic resources would be limited mainly to Antioch and Heath Lakes, and Heath Creek downstream of the Project. OPC proposes to continue releasing the 1.2 cfs continuous minimum flow from the Lower Reservoir into Heath Creek. Heath Creek joins Little Armuchee Creek about 5 miles downstream, which adds substantial watershed area and tributary inflow, diminishing project operation effects farther downstream. Upstream passage of fish is not an issue because the Project is on a small stream, diadromous species do not have access to the upper Coosa River basin, and the migratory species striped bass and lake sturgeon are not known to range upstream into Heath Creek.

OPC will evaluate the effects of project operations on fish and aquatic resources in the license application. Potential impacts may include:

- Effects of project operations and maintenance on habitat for sport fish species in Antioch Lake and Heath Lake;
- Effects of project operations on aquatic habitat in Heath Creek downstream of the Project;
- Fish entrainment and turbine-induced mortality; and
- Invasive aquatic species within the project boundary.

## **4.5 Wildlife and Botanical Resources**

### **4.5.1 Existing Environment**

#### **4.5.1.1 Vegetation**

Major forest types of the Ridge and Valley province include a mixed pine-hardwood community comprised of Virginia pine (*Pinus virginiana*), short leaf pine (*Pinus echinata*), red maple (*Acer rubrum*), red oak (*Quercus rubra*), American elm (*Ulmus americana*), and red cedar (*Juniperus virginiana*) (Edwards et al. 2013). Dominant plant communities in the vicinity of the Project include upland hardwood, pine, and old pastureland. Vegetation is mixed and forests cover approximately 50 percent of the region.

The upland pine-hardwood community, which occur on rocky, exposes areas, is characterized by an overstory of various types of oak (*Quercus*), hickory (*Carya*), pine (*Pinus*), and sourwood (*Oxydendrum arboreum*). Associated understory shrub species include as witch-alder (*Fothergilla major*), mountain laurel (*Kalmia latifolia*), gorge rhododendron (*Rhododendron minus*), and arrowwood (*Viburnum dentatum*) (Edwards et al. 2013). The ground layer vegetation includes ferns and wildflowers such as harebell (*Campanula divaricate*), pink lady's-slipper orchid (*Cypripedium acaule*), and yellow stargrass (*Hypoxis hirsute*) (Edwards et al. 2013).

GDNR conducted a vegetative survey of the woodland uplands of the Rocky Mountain PFA in summer 2012 as part of the Terrestrial Management Plan for the Project (GDNR 2013). Three dominant upland natural vegetative communities were identified within the project boundary, including the following:

- Pine-Oak Piedmont Forest – mixed pine-hardwood forests in areas surrounding the Auxiliary Pools, including the public recreation facilities, and the northern side

and lower end of the Lower Reservoir; dominated by loblolly pine (*Pinus taeda*) and several species of hardwood, including sweetgum (*Liquidambar styraciflua*), black cherry (*Prunus serotina*), shagbark hickory (*Carya ovata*), and various oaks.

- Oak-Chestnut (Subxeric Ridgetop) Forest – oak-pine woodlands on the slopes around Rock Mountain, comprised of chestnut oak (*Quercus montana*), sand hickory, other mixed oaks, shortleaf pine, and loblolly pine; this community contains the regionally rare montane longleaf pine (*Pinus palustris*) and examples of the American chestnut/chinquapin hybrid (*Castanea dentata* x *Castanea pumila*).
- Oak-hickory (Dry-Mesic) Forest – located southwest of Rock Mountain at upstream end of the Heather Creek system, higher elevation forests comprised of chestnut oak, loblolly pine, shortleaf pine, black oak (*Quercus velutina*), post oak (*Quercus stellata*), and sand hickory (*Carya pallida*), with scattered areas of montane longleaf pine and chinquapin; lower elevation forests comprised of loblolly pine, tuliptree (*Liriodendron tulipifera*), willow oak (*Quercus phellos*), and red oak.

The Ridge and Valley province has a history of grazing dating back to 1780 and continuing through the present day. Extensive logging occurred from 1880 to 1920, which was followed by burning activities. More recently, fires have been suppressed through federal and state agency efforts. Currently, the foot slopes on bottomlands of the Southern Shale Valleys are utilized by farming activities such as dairy and beef cattle grazing and production of hay, corn, soybean, tobacco, and garden crops. The steeper slopes are used as pasture or have reverted to brush and mixed forest land. Development areas, including rural residential, urban, and industrial, occur throughout the region.

#### **4.5.1.2 Wildlife**

Characteristic terrestrial mammal species of the mixed pine-hardwood forests in the Ridge and Valley geomorphic province include red fox (*Vulpes vulpes*), striped skunk (*Mephitis mephitis*), bobcat (*Lynx rufus*), white-tailed deer (*Odocoileus virginianus*), Virginia opossum (*Didelphis virginiana*), and eastern chipmunk (*Tamias striatus*).

Bird species utilize mature pine stands for breeding and nesting. Species include pine warbler (*Setophaga pinus*), prairie warblers (*Setophaga discolor*), brown-headed nuthatch (*Sitta pusilla*), eastern wood-pewee (*Contopus virens*), Bachman's sparrow (*Peucaea aestivalis*), and black-throated green warbler (*Setophaga virens*). Migratory waterfowl and



game bird species known to occur within the project boundary include wood duck (*Aix sponsa*), wild turkey (*Meleagris gallopavo*), and Canada goose (*Branta canadensis*). Bald eagle (*Haliaeetus leucocephalus*) and osprey (*Pandion haliaetus*) live on and fish in the project impoundments (GDNR 2013). One known active bald eagle nesting territory occurs within the project boundary.

Due to the wide range of elevations of the Ridge and Valley ecoregion, both amphibians and reptiles are abundant. Amphibians are more likely to inhabit the wetter lowland areas (700-800 ft above sea level) of the Ridge and Valley ecoregion. Species include green tree frog (*Dryophytes cinereus*), American bullfrog (*Lithobates catesbeianus*), spring peeper (*Pseudacris crucifer*), eastern narrow-mouthed toad (*Gastrophryne carolinensis*), marbled salamander (*Ambystoma opacum*), and mole salamander (*Ambystoma talpoideum*). Reptiles are found in drier areas throughout the ecoregion, which extends up to 1,600 ft above sea level. Characteristic species include southeastern five-lined skink (*Plestiodon inexpectatus*), green anole (*Anolis carolinensis*), little brown skink (*Scincella lateralis*), eastern milk snake (*Lampropeltis Triangulum*), and corn snake (*Pantherophis guttatus*) (Edwards et al. 2013).

The green salamander (*Aneides aeneus*), a Georgia rare species, is found among the boulders and cliffs in forests on the slopes of Rock Mountain (GDNR 2013).

#### **4.5.1.3 Terrestrial and Wildlife Management**

GDNR created a Terrestrial Management Plan for the upland portions of the Rocky Mountain PFA in cooperation with OPC (GDNR 2013). The Plan addresses activities affecting terrestrial portions of the PFA, which are managed by GDNR, aside from the project works. The Plan serves as a guide for managing the natural upland portions of the PFA with goals developed using fieldwork and information from the State Wildlife Action Plan (SWAP) (GDNR 2015). The Terrestrial Management Plan characterizes the species and natural communities of Rock Mountain and the surrounding woodlands within the project boundary; provides management recommendations for various land units defined on the basis of natural and anthropogenic borders, or breaks, to support wildlife and natural community health; and identifies rare, threatened, endangered, and unique species and natural communities on Rock Mountain and in the surrounding woodlands and develops management strategies to support them (GDNR 2013).

The Rocky Mountain PFA is primarily used for public fishing, but also includes provisions for wildlife hunting. The PFA includes the Rocky Mountain Archery Range and provides opportunities for archery hunting of deer, turkey, and small game. Waterfowl hunting is allowed on Antioch Lake and Heath Lake (GDNR 2021b).

#### **4.5.1.4 Invasive Plant and Wildlife Species**

According to the Early Detection and Distribution Mapping System (EDDMapS) developed by the University of Georgia Center for Invasive Species and Ecosystem Health (CISEH), numerous invasive species of plants and animals have been reported for Floyd County.

##### **Invasive Plants**

Invasive plant species are any species, including its seeds, spores, or other biological material capable of propagating that species, that is not native to a particular ecosystem and whose introduction does or is likely to cause environmental harm (Georgia Exotic Pest Plant Council [EPPC] 2021). The Georgia EPPC maintains invasive plant species lists, monitors the spread of invasive species, and works to educate the public on harmful effects of invasive species. County distribution maps for invasive plant species are available online through EDDMapS (2021).

Georgia invasive plants are separated into various categories based on their abundance and potential degree of harm to native plant communities. Category 1 species pose serious problems because they extensively invade native plant communities and displace native species. Category 1 Alert species have significant potential to become serious problems but have not yet reached the level of harm of a Category 1 species. Category 1 and Category 1 Alert invasive plant species were identified for Floyd County based on the list compiled by Georgia EPPC (2021) and the EDDMapS distribution maps (Table 15).

**Table 15 Invasive Plants in Floyd County**

Scientific Name	Common Name	Category
<i>Ailanthus altissima</i>	tree-of-heaven	1
<i>Albizia julibrissin</i>	mimosa	1
<i>Arthraxon hispidus</i>	small carpetgrass	1 - Alert
<i>Elaeagnus umbellata</i>	autumn olive	1
<i>Hedera helix</i>	English ivy	1
<i>Lespedeza bicolor</i>	shrubby lespedeza	1
<i>Lespedeza cuneata</i>	Sericea lespedeza	1
<i>Ligustrum sinense</i>	Chinese privet	1
<i>Lonicera japonica</i>	Japanese honeysuckle	1
<i>Melia azedarach</i>	chinaberry	1
<i>Paulownia tomentosa</i>	princesstree	1
<i>Pueraria montana var. lobata</i>	kudzu	1
<i>Rosa multiflora</i>	multiflora Rose	1
<i>Wisteria sinensis</i>	Chinese wisteria	1

Some of the most problematical invasive plants in the Georgia Ridge and Valley are Chinese privet, kudzu, autumn olive, bicolor lespedeza, Chinese wisteria, Japanese stiltgrass, and Japanese honeysuckle (Edwards et al. 2013). Chinese privet, Japanese honeysuckle, and Japanese stiltgrass are especially common in floodplains (Ward 2002; Burton et al. 2005; Loewenstein and Loewenstein 2005). Chinese privet forms dense thickets, especially in floodplain habitats and bottomland forests, and spreads easily through the movement of its seeds by humans and wildlife and through prolific root sprouting (Miller 2003). The spread of invasive plants is often linked to urbanization, residential development, and anthropogenic disturbance of riparian habitats.

Invasive plants occur in patches on the north side of the Rocky Mountain PFA near the public recreation facilities, with Chinese privet being the most common (GDNR 2013). Other invasive plants found in the PFA include Japanese wisteria and Japanese stiltgrass.

### **Invasive Wildlife**

Invasive wildlife species in Georgia are those that have been introduced into areas outside their natural ranges and cause harm to the economy, natural environment, or human and

animal health (Georgia Invasive Species Task Force 2019). The CISEH maintains invasive wildlife species lists, monitors the spread of invasive species, and works to educate the public on harmful effects of invasive species. County distribution maps for invasive wildlife species are available online through the EDDMapS. Table 16 lists the invasive wildlife species that occur in Floyd County.

**Table 16 Invasive Wildlife Species in Floyd County**

Scientific Name	Common Name
<b>INSECTS:</b>	
<i>Aphis gossypii</i>	cotton aphid
<i>Halyomorpha halys</i>	brown marmorated stink bug
<i>Megacopta cribraria</i>	kudzu bug
<i>Melanaphis sacchari</i>	sugarcane aphid
<i>Popillia japonica</i>	Japanese beetle
<i>Solenopsis invicta</i>	red imported fire ant
<b>MAMMALS:</b>	
<i>Sus scrofa (feral type)</i>	feral pig

Sources: EDDMapS, University of Georgia CISEH (2021)

Brown marmorated stink bugs are native to Asia and were first introduced to the U.S. in the mid-1990s (EPA 2020, CISEH 2021). This species poses a threat to both agricultural crops and natural flora of Georgia, feeding on plant tissue and causing small necrotic areas on fruit and leaves (CISEH 2021).

Red imported fire ant was accidentally introduced to the U.S. from South America in the 1930s. The species can be easily identified by its aggressive behavior and mound-shaped nests. Populations in a single colony can grow to approximately 300,000 or more individuals. This species poses a threat to both domestic and wild animals and can also destroy crops, feeding on seedling corn, soybean, and other crops (CISEH 2021).

The feral pig includes feral domestic swine, pure Eurasian or Russian wild boar, and hybrids between the two. Feral swine are one of the most invasive species in Georgia, causing millions of dollars in damage every year. Feral swine are omnivorous, opportunistic feeders that are largely active at night and directly compete for food

resources with native species like bear, deer, and turkey (USDA 2016a, USDA 2016b). Feral swine have been reported in all counties in Georgia and adversely affect agricultural crops and natural resources, resulting in \$150 million in damage in 2016 (Georgia Association of Conservation Districts 2017).

#### **4.5.2 Potential Resource Impacts**

OPC's proposal to continue operating the Project would not involve activities directly affecting upland terrestrial habitats for wildlife and botanical resources. OPC will evaluate the effects of the proposed project, if any, on upland invasive species in the license application.

OPC is not proposing any PM&E measures at this time. Depending upon the resource studies and consultation with the resource agencies, OPC will consider PM&E measures to address wildlife and botanical resources as part of the license application.

### **4.6 Wetlands, Riparian, and Littoral Habitat**

#### **4.6.1 Existing Environment**

##### **4.6.1.1 Wetland Vegetation**

The FWS National Wetlands Inventory (NWI) provides a publicly available resource of abundance, distribution, and characteristics of U.S. wetlands. NWI data (FWS 2020a) indicates that the wetlands surrounding the Rocky Mountain Project are sparse and consist only of freshwater forested/shrub wetlands, totaling approximately 6.75 acres (Table 17; Figure 19). An additional 1.81 acres of forested/shrub wetlands occur within 2,000 ft beyond the project boundary. This zone was included to encompass a conservatively large area for describing the existing environment. These wetlands are associated primarily with tributary streams. Approximately 28.74 acres of stream habitat occur within the project boundary, which consist of both intermittent and perennial streams. An additional 55 acres of stream habitat occur within 2,000 ft beyond the project boundary.

Deep-water habitats in the project area are classified as lakes and riverine. About 1,262 acres of deep-water habitats are present within the project boundary, which include the Upper Reservoir, Lower Reservoir, Auxiliary Pool I East, Auxiliary Pool I West, and Auxiliary

Pool II; of which the latter three are used for recreation (Section 4.8; Recreation). There are no deep-water riverine habitats within the project boundary.

### **Freshwater Forested/Shrub Wetlands**

Wetlands within the project boundary are described as palustrine, which are relatively small (less than 20 acres) and shallow (less than 8.2 ft) wetlands dominated by trees, shrubs, and persistent emergent vegetation (Federal Geographic Data Committee [FGDC] 2013). Vegetation within forested/shrub wetlands include woody plants less than 20 ft tall with at least 30 percent annual coverage, as well as trees greater than 8.2 ft (FGDC 2013).

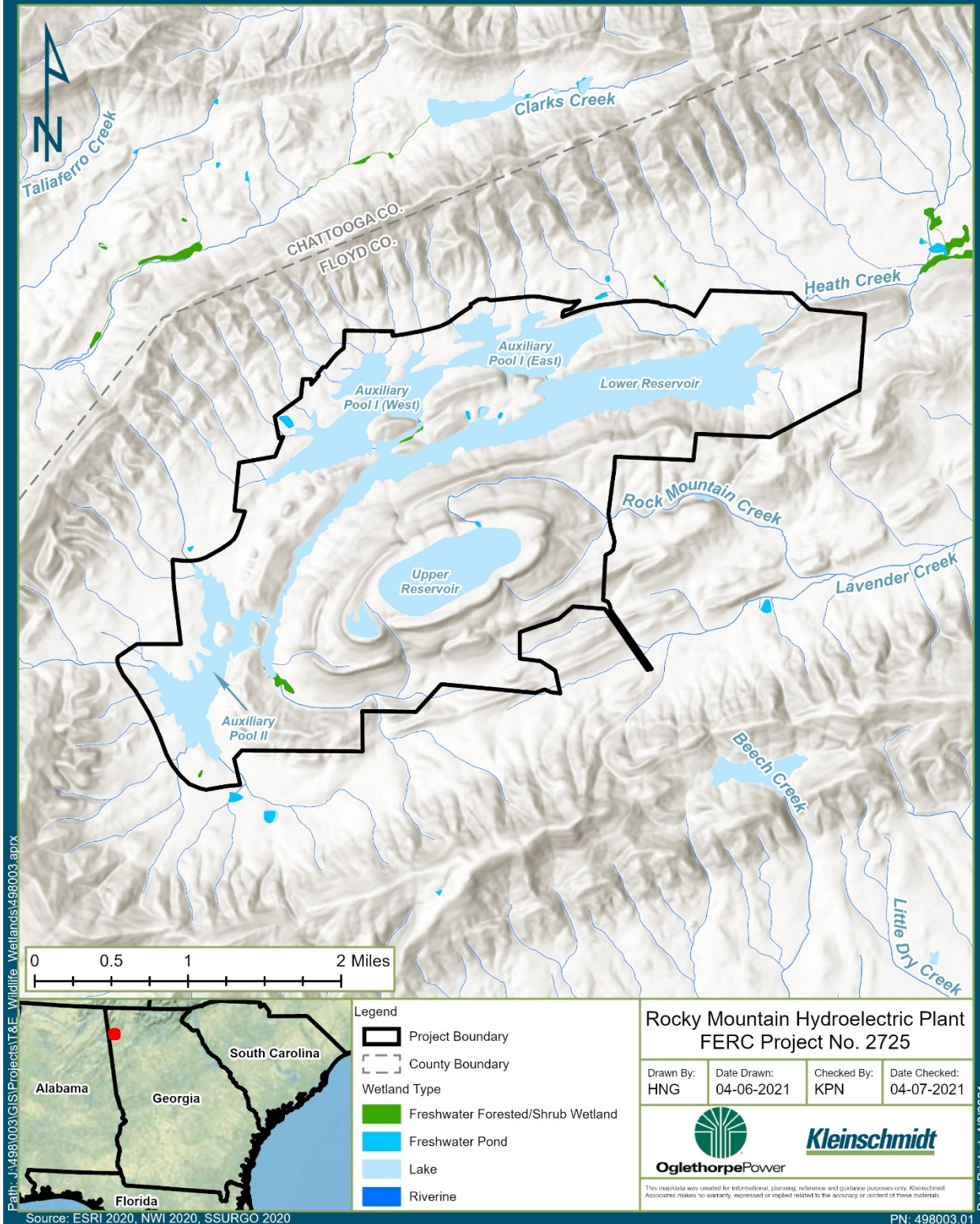
**Table 17 Inventory of NWI Wetlands Within or Adjacent to the Project**

NWI CLASSIFICATION	TOTAL WETLAND AREA (ACRES)	AREA WITHIN 2,000 FEET OF PROJECT BOUNDARY (ACRES)	AREA WITHIN PROJECT BOUNDARY (ACRES)	SYSTEM/ SUBSYSTEM	CLASS	SUBCLASS	WATER REGIME	SPECIAL MODIFIERS
PFO1Cb	0.58	-	0.58	Palustrine	Forested	Broad Leaved Deciduous	Seasonally Flooded	Beaver
PFO1Ch	1.53	-	1.53	Palustrine	Forested	Broad Leaved Deciduous	Seasonally Flooded	Dike/ Impounded
PFO1Fb	6.45	1.81	4.64	Palustrine	Forested	Broad Leaved Deciduous	Semi-permanently Flooded	Beaver
PUBHh	12.82	9.71	3.11	Palustrine	Unconsolidated Bottom	-	Permanently Flooded	Dike/ Impounded
PUBHx	2.68	-	2.68	Palustrine	Unconsolidated Bottom	-	Permanently Flooded	Excavated
R2UBH	4.14	2.84	1.3	Riverine/ Lower Perennial	Unconsolidated Bottom	-	Permanently Flooded	-
R4SBC	57.26	42.4	14.86	Riverine/ Intermittent	Streambed	-	Seasonally Flooded	-
R5UBH	22.35	9.77	12.58	Riverine/Unknown Perennial	Unconsolidated Bottom	-	Permanently Flooded	-

SOURCE: FWS 2020a



# Wetlands



**Figure 19 Wetlands within the Project Boundary**



#### **4.6.1.2 Riparian Habitat**

Streams near the Project are characterized by narrow floodplains with deposits of sand and clay. The floodplain within the project area consists of many species typical of the Ridge and Valley province, which includes a mixed pine-hardwood community comprised of Virginia pine (*Pinus virginiana*), short leaf pine (*Pinus echinata*), red maple (*Acer rubrum*), red oak (*Quercus rubra*), American elm (*Ulmus americana*), and red cedar (*Juniperus virginiana*) (Edwards et al. 2013).

#### **4.6.1.3 Littoral Habitat**

Littoral habitat within the project boundary includes mainly the shallow zones of the Auxiliary Pools where sunlight penetrates to the bottom substrates. Heath Lake has extensive littoral habitat, with 33 percent of the lake area having a depth of less than 5 ft and 29 percent of the lake area containing flooded timber (Table 11). Areas less than 5 ft deep comprise 19 percent and 22 percent of the areas of Antioch Lake East and Antioch Lake West, respectively. The littoral zone of the Lower Reservoir varies dramatically over the course of the day as the water level fluctuates with project operations.

#### **4.6.1.4 Wetland and Aquatic Wildlife**

A variety of waterfowl and wading birds live year-round in the Rocky Mountain project area. Wood duck, mallard, and Canada goose are common waterfowl species in the region. Commonly observed wading birds in the project vicinity include great blue heron and green heron. In addition, bald eagles and osprey are commonly seen above the Auxiliary Pools and Lower Reservoir.

The American beaver (*Castor canadensis*), muskrat (*Ondatra zibethicus*), and northern river otter (*Lutra canadensis*) commonly inhabit wetland and aquatic habitats in the project area (GMNH 2008). The mink (*Mustela vison*) is another mammal commonly found around lakes and wetland habitats in the Ridge and Valley province.

#### **4.6.2 Potential Resource Impacts**

Potential impacts of continued project operations and maintenance on wetlands, riparian, and littoral habitat would be limited mainly to Heath Lake and Antioch Lake, as they are

intensively managed for public recreation as part of the Rocky Mountain PFA. The Lower Reservoir would be affected to a lesser extent because it fluctuates widely on a daily basis with project operations and public access is not allowed.

OPC will evaluate the effects of project operations on these resources in the license application. Potential impacts may include effects of project operations and maintenance on reservoir wetland and littoral habitats and associated wildlife, and nuisance aquatic vegetation. OPC is not proposing any PM&E measures at this time.

## **4.7 Rare, Threatened, and Endangered Species**

### **4.7.1 Existing Environment**

Information on rare, threatened, and endangered (RTE) species potentially occurring in the Oostanaula River basin of Floyd County, Georgia, was obtained from rare species databases maintained by the GDNR Wildlife Conservation Section, FWS (Environmental Conservation Online System), and NatureServe (2021). Literature review also included manuals on Georgia's rare plants (Chafin 2007) and recovery plans and recent species evaluations completed by FWS for federally listed species. Based on known element of occurrence records (historic or present) and species range and habitat data, 49 state and/or federally listed protected species, or federal candidate species, of plants and wildlife potentially occur in the vicinity of the Rocky Mountain Project (Table 18).

**Table 18 Rare, Threatened and Endangered Species with Known Records of Occurrence in Floyd County<sup>a</sup>**

Scientific Name	Common Name	Federal Status <sup>b</sup>	Georgia Status <sup>c</sup>	Global Rank <sup>d</sup>	Habitat <sup>e</sup>
<b>PLANTS:</b>					
<i>Arabis georgiana</i>	Georgia rockcress	LT	T	G1	Rocky or sandy river bluffs and banks, in circumneutral soil
<i>Asclepias purpurascens</i>	purple milkweed		R	G5?	Calcareous flatwoods, wet meadows near Rome
<i>Aureolaria patula</i>	spreading yellow foxglove		T	G3	Circumneutral alluvial bottoms
<i>Carya myristiciformis</i>	nutmeg hickory		R	G4	Calcareous flatwoods
<i>Clematis fremontii</i>	Fremont's leatherflower		E	G5	Grassy openings in flatwoods of mostly lowland oaks and red maple
<i>Clematis socialis</i>	Alabama leatherflower	LE	E	G1	Grassy openings in flatwoods of mostly lowland oaks and red maple
<i>Crataegus triflora</i>	Rome hawthorn		R	G2	Gaps in hardwood forests, pine forests, cattle-grazed scrub on blackland soils and occasionally on prairie margins
<i>Crataegus triflora</i>	three-flower hawthorn		T	G2G3	Hardwood forests on rocky, limestone slopes
<i>Cypripedium parviflorum</i>	yellow ladyslipper		R	G5	Montane cove forests; rich deciduous forests
<i>Helianthus verticillatus</i>	whorled sunflower	LE	E	G1	Wet prairies over dolomite
<i>Jamesianthus alabamensis</i>	Alabama warbonnet		E	G3	Streambanks, in circumneutral soil
<i>Lilium michiganense</i>	Michigan lily		R	G5	Remnant wet prairies and calcareous flatwoods
<i>Lysimachia fraseri</i>	Fraser's loosestrife		R	G3	Moist, open, bouldery gravel bars and streambanks; edges of sandstone and granite outcrops
<i>Lysimachia graminea</i>	grassleaf yellow loosestrife		R	G1	Stream banks and dry creek beds
<i>Marshallia mohrii</i>	Mohr's Barbara's-buttons (Coosa Barbara's buttons)	LT	T	G3	Wet prairies over dolomite
<i>Neviusia alabamensis</i>	Alabama snow-wreath		T	G3	Along wet weather streams over limestone
<i>Pachysandra procumbens</i>	Allegheny-spurge		R	G4G5	Mesic hardwood forests over basic soils
<i>Prenanthes barbata</i>	barbed rattlesnake root		R	G3	Limestone glades and barrens, edges of remnant prairies

Scientific Name	Common Name	Federal Status <sup>b</sup>	Georgia Status <sup>c</sup>	Global Rank <sup>d</sup>	Habitat <sup>e</sup>
<i>Rudbeckia heliopsisidis</i>	Little River black-eyed Susan		T	G2	Limestone or sandstone barrens and streamsides
<i>Sabatia capitata</i>	Cumberland rose-gentian		R	G2	Meadows over sandstone or shale
<i>Scutellaria montana</i>	large-flowered skullcap	LT	T	G4	Mesic hardwood-shortleaf pine forests; usually mature forest with open understory, sometimes without a pine component
<i>Silene regia</i>	royal catchfly		E	G3	Limestone barrens; remnant prairies
<i>Spiranthes magnicamporum</i>	Great Plains ladies-tresses		E	G3G4	Limestone glades
<i>Symphotrichum georgianum</i>	Georgia aster		T	G3	Upland oak-hickory-pine forests and openings; sometimes with <i>Echinacea laevigata</i> or over amphibolite
<i>Thalictrum debile</i>	trailing meadowrue		T	G2	Mesic hardwood forests over limestone
<i>Viburnum bracteatum</i>	limerock arrow-wood		E	G1G2	Mesic hardwood forests over limestone
<i>Xyris tennesseensis</i>	Tennessee yellow-eyed grass	LE	E	G2	Seepy margins of limestone spring runs
<b>INSECTS:</b>					
<i>Danaus plexippus</i>	monarch butterfly	C		?	Lays eggs on milkweed as obligate host plant; adults undergo long-distance migration to overwinter at forested sites in Mexico and California
<b>MUSSELS:</b>					
<i>Elliptio arca</i>	Alabama spike		E	G2G3Q	Medium creeks to large rivers; sand and gravel substrate
<i>Hamiota altilis</i>	finelined pocketbook	LT	T	G2G3	Small streams to large rivers; sand, gravel, and cobble substrates; usually not in swift current
<i>Medionidus acutissimus</i>	Alabama moccasinshell	LT	E	G2	Usually found in sand on the margins of streams with a typical sand and gravel substrate in clear water of moderate flow in small to large rivers
<i>Medionidus parvulus</i>	Coosa moccasinshell	LE	E	G1	Usually found in sand and gravel in highly oxygenated, clear streams with moderate to strong flow in streams and small rivers
<i>Ptychobranthus greenii</i>	triangular kidneyshell	LE		G1	Sections of river 3 ft in depth and having a good current and a firm substrate as opposed to coarse gravel and sand
<i>Pleurobema decisum</i>	southern clubshell	LE	E	G2	Large rivers to medium sized streams with flowing water; gravel with interstitial sand
<i>Pleurobema georgianum</i>	southern pigtoe	LE	E	G1	High quality rivers (small rivers to large streams) in shoals and runs with stable gravel and sandy-gravel substrates
<i>Ptychobranthus foremanianus</i>	rayed kidneyshell	LE	E	G1	Medium to large rivers in moderate to swift current; sand and gravel substrate

Scientific Name	Common Name	Federal Status <sup>b</sup>	Georgia Status <sup>c</sup>	Global Rank <sup>d</sup>	Habitat <sup>e</sup>
<i>Villosa umbrans</i>	Coosa creekshell		R	G2	Small creeks to medium rivers with sand, gravel, and cobble substrates in moderate current
<b>FRESHWATER SNAILS:</b>					
<i>Leptoxis foremani</i>	interrupted rocksnail	LE	E	G1	Rocky shoals in current
<i>Pleurocera showalteri</i>	upland hornsnail		R	G2	Freshwater
<b>FISH:</b>					
<i>Etheostoma ditrema</i>	coldwater darter		R	G2	Occurs among aquatic vegetation or coarse organic debris in limestone springs and slow spring runs at depths of 1 meter or less
<i>Hybopsis lineapunctata</i>	lined chub		R	G3G4	Upland creeks over sandy substrate with gentle current
<i>Moxostoma carinatum</i>	river redhorse		R	G4	Swift waters of medium to large rivers
<i>Notropis asperifrons</i>	burrhead shiner		T	G4	Small streams to medium-sized rivers in pools, slow runs, and backwater areas
<b>AMPHIBIANS:</b>					
<i>Aneides aeneus</i>	green salamander		R	G3G4	Moist rock crevices; canopies of trees; within hardwood forests
<b>REPTILES:</b>					
<i>Graptemys geographica</i>	northern map turtle		R	G5	Large streams and rivers
<i>Graptemys pulchra</i>	Alabama map turtle		R	G4	Rivers and large streams
<b>BIRDS:</b>					
<i>Haliaeetus leucocephalus</i>	bald eagle		T	G5	Edges of lakes and large rivers; seacoasts
<b>MAMMALS:</b>					
<i>Myotis grisescens</i>	gray bat	LE	E	G4	Roost sites are nearly exclusively restricted to caves throughout the year. Winter roosts are in deep vertical caves with domed halls.
<i>Myotis septentrionalis</i>	northern long-eared bat	LT	E	G1G2	Old-growth forests composed of trees 100 years old or older. It relies on intact interior forest habitat, with low edge-to-interior ratios.

a This list is for rare species with known element of occurrence records in Floyd County, Georgia.

b Federal status: LE = listed endangered; LT = listed threatened; C = candidate species, not yet listed or proposed for listing.

c Georgia state status: E = Georgia endangered; T = Georgia threatened; R = Georgia Rare U=Unusual.

d Global ranks: G1 = critically imperiled, at very high risk of extinction due to extreme rarity; G2 = imperiled, at high risk of extinction due to very restricted range; G3 = vulnerable, at moderate risk of extinction due to restricted range; G4 = apparently secure, uncommon but not rare; G5 = secure – common, widespread, abundant; ? = denotes inexact numeric rank.

e Habitat descriptions from GDNR (2018b), Chafin (2007), NatureServe (2021), Reznicek et al. (2011), Wade et al. (2015), Lockwood and Bachman (2013), Duncan and Kartesz (1981), Kenny et al. (2017a), Kenny et al. (2017b), Watson (2000).

#### 4.7.1.1 Federally Listed and Candidate Species

Sixteen federally listed RTE species and one federal candidate species potentially occur in the vicinity of the project in Floyd County (Table 18). These include six plant species, eight invertebrate (mussel/snail) species, two mammal species, and one insect species:

- Georgia rockcress (*Arabis georgiana*) – threatened
- Alabama leatherflower (*Clematis socialis*) – endangered
- Whorled sunflower (*Helianthus verticillatus*) – endangered
- Mohr’s Barbara’s-buttons (*Marshallia mohrii*) – threatened
- Large-flowered skullcap (*Scutellaria montana*) – threatened
- Tennessee yellow-eyed grass (*Xyris tennesseensis*) – endangered
- Finelined pocketbook (*Hamiota altilis*) – threatened
- Alabama moccasinshell (*Medionidus acutissimus*) – threatened
- Coosa moccasinshell (*Medionidus parvulus*) – endangered
- Southern clubshell (*Pleurobema decisum*) – endangered
- Southern pigtoe (*Pleurobema georgianum*) – endangered
- Rayed kidneyshell (*Ptychobranthus foremanianus*) – endangered
- Triangular kidneyshell (*Ptychobranthus greenii*) – endangered
- Interrupted rocksnail (*Leptoxis foremani*) – endangered
- Gray bat (*Myotis grisescens*) – endangered
- Northern long-eared bat (*Myotis septentrionalis*) – threatened
- Monarch butterfly (*Danaus plexippus*) - candidate

Brief accounts of the six federally protected plant species, one federally protected mussel species, two federally protected mammal species, and one candidate insect species are provided below. Although all listed snail and mussel species’ habitat range occurs within the Oostanaula River Basin, only the Southern pigtoe has an extant population in Floyd County (FWS 2020b). The remaining six mussel and one freshwater snail species do not have extant populations within Floyd County, according to their recovery plan and amendments, and 5-year review. The Rocky Mountain Project is not within the designated critical habitat for any federally listed species.

## **Alabama Leatherflower**

Alabama leatherflower is a perennial herb that occurs in the Coosa Valley flatwoods in sunny, grassy openings with wet to moist and silty-clay soils (Chafin 2007). Alabama leatherflower begin flowering in late April-May (Chafin 2007). This species depends on rhizomes for vegetative reproduction (Chafin 2007). Although the herb can reproduce sexually, this method is not as effective due to infrequent visits by pollinators and heavy consumption of seeds by mice (Chafin 2007). Since its recovery plan in 1984, populations of Alabama leatherflower have expanded from two Alabama counties to eight natural populations (FWS 2020c). In Georgia, the only known natural population is located in a state Natural Area in Floyd County (FWS 2020c). This species is not presently known to occur in the Rocky Mountain project boundary.

## **Georgia Rockcress**

Georgia rockcress is a perennial herb that occurs in the Lower Gulf Coastal Plain, Upper Gulf Coastal Plain, Red Hills, Black Belt, Piedmont, and Ridge and Valley physiographic provinces (FWS 2014a). It can inhabit areas having shallow and basic/circumneutral soil, rocky slopes above streams, thinly wooded areas of limestone or granite bluffs, hardwood forests on slopes above streams, or recently eroded riverbanks (Chafin 2007). In these environments, this herb is often found under red cedar, black oak, sugar maple, chestnut oak, and oakleaf hydrangea (Chafin 2007). Georgia Rockcress begins flowering in March-April, with fruiting beginning in May-early June (FWS 2014a). Successful seed germination requires small disturbances, slightly increased light, a reliable water source with minimal competition, and exposed soil. Eighteen extant populations of Georgia rockcress are located across Alabama and Georgia, five of which are in Georgia and one of which spans across both states (FWS 2014a). FWS has designated 17 critical habitat units (732 acres) for Georgia rockcress, none of which occur in the project boundary. This species is not presently known to occur within the project boundary.

## **Large-flowered Skullcap**

Large-flowered skullcap is a perennial herb that occurs in areas with few shrubs in moist hardwood and hardwood pine forests across the Ridge and Valley province of northwest

Georgia and southeast Tennessee (Chafin 2007). This herb flowers from mid-May to early June and fruits mature in June-early July (FWS 1996). Large-flowered skullcap reproduces sexually after the individual is several years old, relying on moths, hummingbirds, and butterflies for pollination (Chafin 2007). Visits by pollinators are infrequent, resulting in low seed production or self-pollination. Production of viable fruit often fails. Although the 53 known populations are concentrated on Lookout and Signal Mountains in Tennessee and in Floyd County, Georgia, this species is not presently known to occur within the Rocky Mountain project boundary.

### **Mohr's Barbara's Buttons**

Mohr's Barbara's buttons (or Coosa Barbara's buttons) is a perennial herb that occurs in small, prairie openings in the Coosa Valley and on shale outcrops along streams (Chafin 2007). This herb reproduces sexually and can only produce viable fruit if cross-pollination occurs, usually by beetles and small insects. Seed dispersal may occur through small animals, such as birds (FWS 2016a). Flowering occurs in mid-May-June (Chafin 2007). Five extant populations of Mohr's Barbara's buttons occur in Georgia, all of which fall within Floyd County, totaling around 4,000 plants (FWS 2016a). One of these extant populations crosses into Cherokee County, Alabama (FWS 2016a). Most of the extant populations fall within state-owned or conservation lands, such as the Berry College WMA and a conservation easement on timber lands (FWS 2016a). This species is not presently known to occur within the project boundary.

### **Tennessee Yellow-eyed Grass**

Tennessee yellow-eyed grass is a perennial monocot and obligate wetland plant that occurs over calcareous bedrock in sunny, wet areas (FWS 2014b; Chafin 2007). Calcareous bedrock includes spring runs, edges of shallow streams and ponds, seeps, wet meadows, and swales (Chafin 2007). This herb reproduces vegetatively and sexually, but does not depend solely on pollinators for reproduction. A species of bee (*Lasioglossum zephyrum*) may have exclusive access to the flower's pollen, as it has learned to open the plant's buds and collect pollen from the early ripening anthers (Chafin 2007). This herb grows in clumps and flowers are only open mid-late-morning in August-September (Chafin 2007). There



are 25 known populations of Tennessee yellow-eyed grass, 9 of which occur in Georgia (Chafin 2007). Although one extant population is known to occur in Floyd County, the species is not presently known to occur within the Rocky Mountain project boundary (FWS 2014b).

### **Whorled Sunflower**

Whorled sunflower is a perennial herb and obligate wetland plant that occurs in the Coosa Valley (Chafin 2007). Habitat requirements include wet, sunny prairie openings in floodplains and wet depressions with prairie grasses (little bluestem and big bluestem). This herb reproduces sexually and must be cross pollinated in order to produce seeds. Common pollinators of the whorled sunflower include bees and butterflies. Reproduction can also occur through clonal propagation via rhizomes (FWS 2020d). Flowering occurs in August-October. There are six populations known in the Coosa Valley prairies of Georgia, all of which are protected by a conservation agreement (Chafin 2007). One extant population is known to occur in Floyd County on land owned by Weyerhaeuser Company, with most of the population protected by a conservation easement (FWS 2020d). This species is not presently known to occur within the Rocky project boundary.

### **Southern Pigtoe**

The southern pigtoe is an elliptical to oval-shaped mussel that has a maximum length of approximately 2.5 inches (FWS 2019a). The species is endemic to the Coosa River basin in Alabama, Georgia, and Tennessee, where occurs in riffles, runs, and shoals of medium creeks to large rivers, typically in sand and gravel substrates (Williams et al. 2008). The southern pigtoe is a short-term brooder, releasing parasitic larvae (glochidia) during spring and early summer. Reported glochidial host fishes include Alabama shiner, blacktail shiner, and tricolor shiner (FWS 2019b). Historically more common and widespread, the southern pigtoe is now very rare and occurs as only a few isolated populations. All known populations are small and localized (FWS 2019a). The southern pigtoe is currently known from a single site occurrence in Armuchee Creek, but Armuchee Creek was not included in the species' critical habitat designation because it was not considered essential due to limited habitat availability, degraded habitat, or other factors (FWS 2004, 2019b).

## **Gray Bat**

The gray bat is a highly colonial species in eastern North America distinguished from other species of the genus *Myotis* by its larger size and the uniformly gray fur on its back. The primary range of the species is centered on the cave regions of Alabama, Missouri, Arkansas, Kentucky, and Tennessee, with smaller populations found in adjacent states, including Georgia (FWS 2009; Ozier et al. 2020). Gray bats inhabit caves year-round, occupying cold hibernating caves or mines in winter and dispersing to warmer maternity and bachelor caves during summer (Ozier et al. 2020). Mating occurs in the fall prior to hibernation, and each female delivers a single pup after arriving at the maternity cave in late May or early June. The summer caves are almost always near a river or reservoir, where gray bats feed on night-flying aquatic and terrestrial insects. Most foraging occurs over open water near a forested shoreline, and bats forage up to 12 miles or more from roost sites. A primary threat to the gray bat is anthropogenic disturbance to their caves. Infection of gray bats by the fungus causing white-nose syndrome, a disease that infects the skin of hibernating bats and has devastated populations of other bat species, is also a possible threat (Ozier et al. 2020).

In Georgia, gray bats are known to occupy only three caves regularly during the summer in Chattooga, Walker, and Coosa Counties; however, additional roost caves are likely present in northwest Georgia (Ozier et al. 2020). In the Terrestrial Management Plan for the Project, GDNR (2013) reported the presence of the “caves, rock shelters, and talus slopes” habitat type on the slopes of Rock Mountain, a high-priority habitat type identified in the SWAP (GDNR 2015), but did not recommend any management measures for bats. The gray bat is not presently known to occur within the project boundary.

## **Northern Long-eared Bat**

The northern long-eared bat, distinguished from other species of *Myotis* by its long ears, is a wide-ranging species found in a variety of forested habitats in summer and hibernates in caves in winter (FWS 2016b). The species is found across eastern and north-central U.S. and southern Canada and is generally associated with old-growth forests (NatureServe 2021). Northern long-eared bats overwinter in hibernacula that include caves and abandoned mines (FWS 2016b). Rarely are there more than 100 individuals per

hibernation colony (NatureServe 2021). Mating occurs in late summer or fall prior to hibernation, and each female delivers a single pup in June or early July. In summer, the bats generally are colonial but tend to be more solitary than other *Myotis* species, often roosting alone in deep cracks and crevices, under bark, or in hollows of live and dead trees. Foraging occurs within forests, along forest edges and clearings, and occasionally over ponds. Principal threats to the species include human disturbance of hibernating bats and mortality due to white-nose syndrome (FWS 2016b).

The northern long-eared bat is more common in the northern part of its range and has only been documented in northern and western Georgia (Beck 2019). Although not known to occur in Floyd County, there are relatively recent records of the species from adjacent counties (GDNR 2021a). The species is not presently known to occur within the project boundary.

### **Monarch Butterfly**

Monarch butterfly is a candidate species not yet proposed for listing (FWS 2020e). The species is a large and conspicuous butterfly that exhibits long-distance migration and overwinters as adults at forested locations in Mexico and California. Adult monarch butterflies feed on nectar from a wide variety of flowers. Reproduction is dependent on the presence of milkweed, the sole food source for larvae. Larvae develop and feed on the milkweed plant and sequestering chemicals as a defense against predators. Adults live six to nine months, and multiple generations are produced over the course of the breeding season. Monarch butterflies potentially occur across the continental U.S. but populations have been declining over the past 20 years. Primary threats to the species include the loss and degradation of habitat from conversion of grasslands to agriculture, widespread use of herbicides, exposure to insecticides, land-clearing activities in overwintering sites, urban development, and general loss of milkweed and nectar sources across the species' range from various land development activities (FWS 2020e).

#### **4.7.1.2 State Protected Plant and Wildlife Species**

##### **State Protected Plant Species**

Twenty-one other Georgia listed plants potentially occur in the project vicinity, including five listed as endangered, six as threatened, and ten as rare. Table 18 identifies the habitat

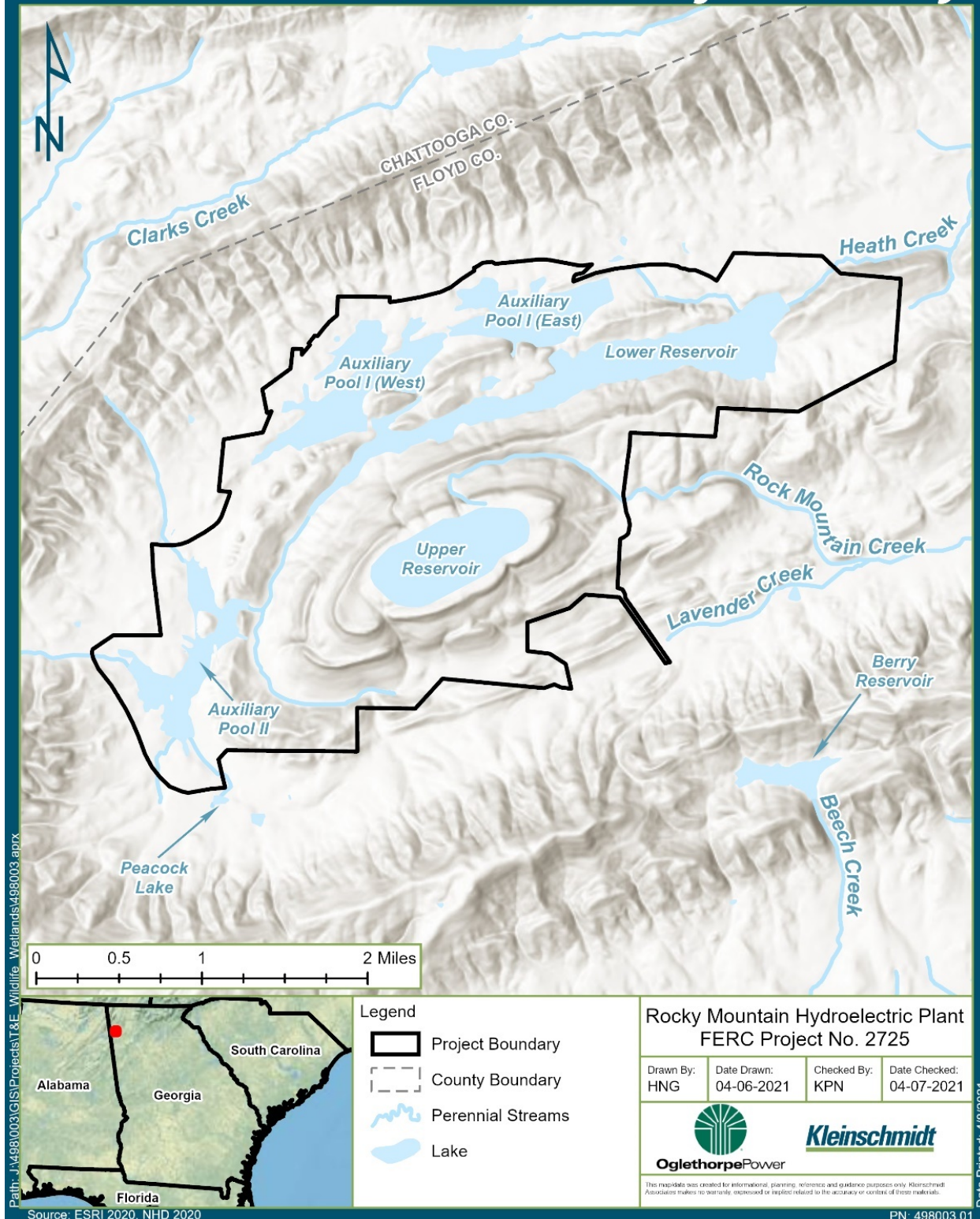
requirements of these species. State listed species are not presently known to occur within the Rocky Mountain project boundary.

### **State Protected Wildlife Species**

Eleven Georgia listed wildlife species potentially occur in the project vicinity, including two mussels, one freshwater snail, four fish, one amphibian, two reptiles, and one bird species (Table 18).

The only perennial streams located in the vicinity of the Project are small sized creeks, which include Heath Creek, Rock Mountain Creek, Lavender Creek, and various unnamed streams (Figure 20). The Alabama Spike (*Elliptio arca*), river redhorse (*Moxostoma carinatum*), northern map turtle (*Graptemys geographica*), and Alabama map turtle (*Graptemys pulchra*) inhabit medium creeks to large rivers. Suitable habitat for these species is not present in the project area. The upland hornsnail (*Pleurocera showalteri*), Coosa creekshell (*Coosa Creekshell*), coldwater darter (*Etheostoma ditrema*), lined chub (*Hybopsis lineapunctata*), and burrhead shiner (*Notropis asperifrons*) inhabit smaller streams. Although small streams are present in the project area, these species are unlikely to occur within the project boundary due to limited area of available habitat. Green salamander is known to occur in moist areas around the palisades and boulders in the oak-chestnut forest of Rock Mountain within the project boundary. Bald eagle is known to frequent areas around the Auxiliary Pools and Lower and Upper Reservoirs of the Project, and one active bald eagle nesting territory is present at the Project.

# Perennial Streams in the Project Vicinity

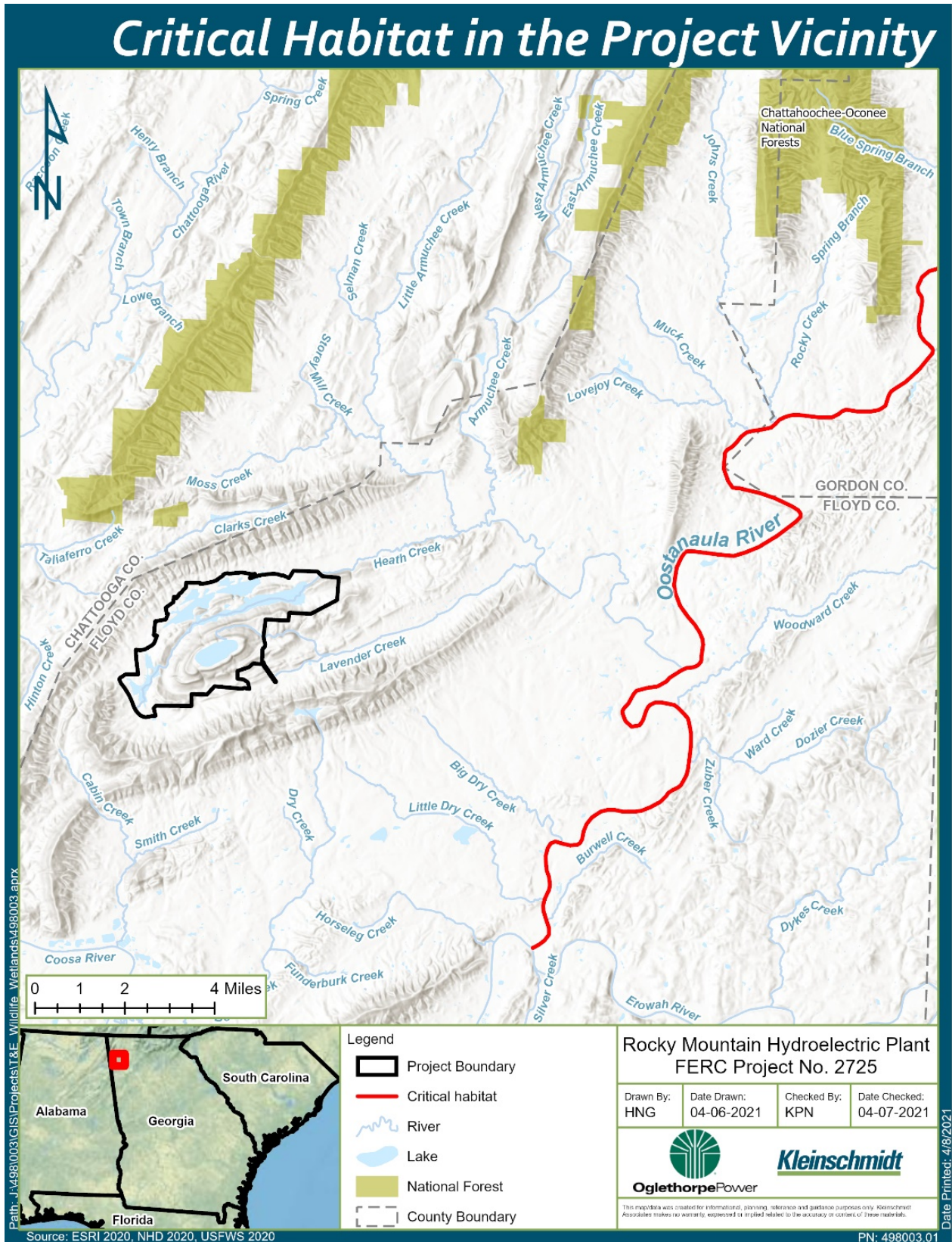


**Figure 20 Perennial Streams in the Project Vicinity**

#### **4.7.1.3 Federally-Designated Critical Habitat**

There is no designated critical habitat for RTE species within the project boundary. Critical habitat in the vicinity of the project boundary occurs approximately 7.5 miles east of the project boundary in the Oostanaula River. Species with critical habitat in the Oostanaula River include finelined pocketbook, Alabama moccasinshell, Coosa moccasinshell, southern clubshell, ovate clubshell (*Pleurobema perovatum*), southern pigtoe, southern acornshell (*Epioblasma othcaloogensis*), upland combshell (*Epioblasma metastriata*), triangular kidneyshell, and interrupted rocksnail (Figure 21). There is no designated critical habitat for these species in Heath Creek or the Armuchee Creek system.





**Figure 21 Critical Habitat in the Project Vicinity**

## **4.7.2 Potential Resource Impacts**

Presently, there are no known occurrences of federally threatened or endangered species of plants or wildlife within the Rocky Mountain project boundary that would be affected by continued project operation and maintenance. The state threatened bald eagle is known to nest and forage within the project boundary, and the state rare green salamander occupies habitats on the slopes of Rock Mountain, but no modifications to the Project are proposed and neither species would be adversely affected by continued project operation and maintenance.

OPC will consult with FWS and GDNR to avoid impacts to any federal or state-listed threatened or endangered species within the project boundary; address bald eagle management pursuant to the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act; and propose PM&E measures if appropriate for avoiding or minimizing impacts to state listed and other species of concern.

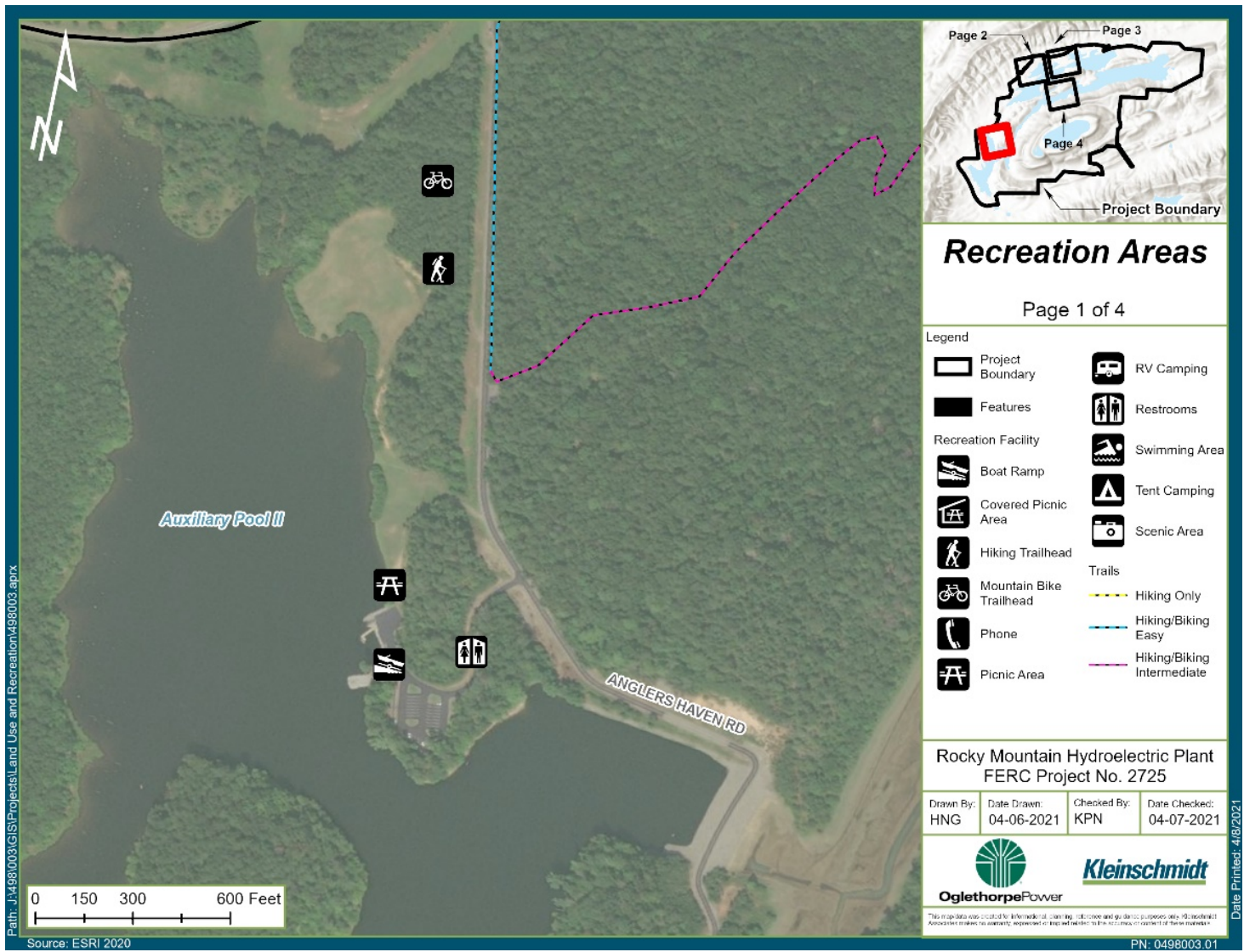
## **4.8 Recreation and Land Use**

### **4.8.1 Existing Environment**

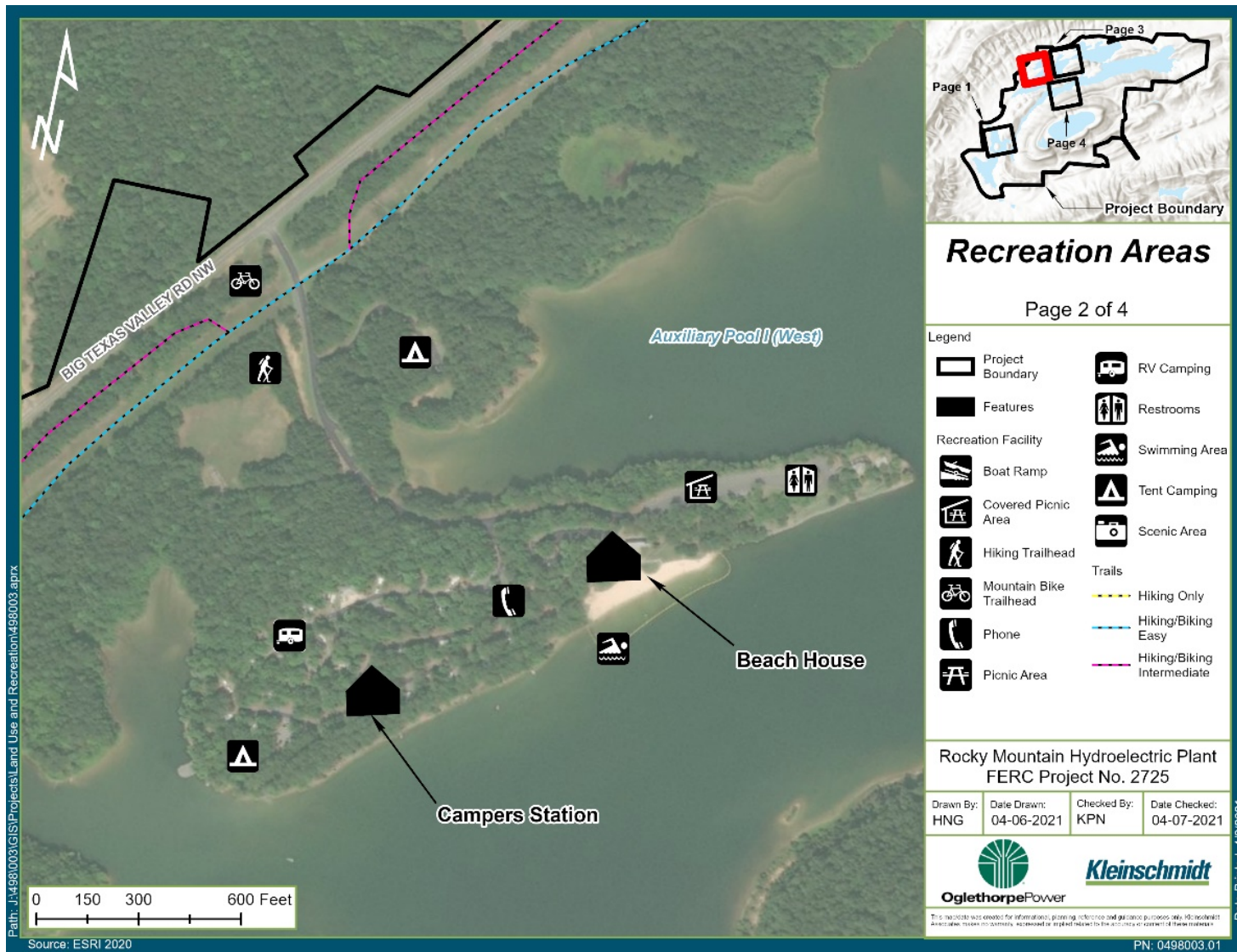
#### **4.8.1.1 Existing Recreational Facilities**

There are approximately 5,000 acres of land and water within the Rocky Mountain project boundary, of which 3,700 acres are available to the public for recreational activities within the Rocky Mountain PFA (OPC 2005). The Rocky Mountain PFA includes two main recreation areas at Auxiliary Pool I (Antioch Lake) and one main recreation area at Auxiliary Pool II (Heath Lake) (Figure 22). OPC prohibits recreational use on the Project's Upper and Lower Reservoirs and their shorelines due to public safety concerns. OPC maintains a contract with GDNR through which GDNR manages and operates the project recreation facilities. GDNR collects a fee for day use vehicle parking and overnight camping (OPC 2005).



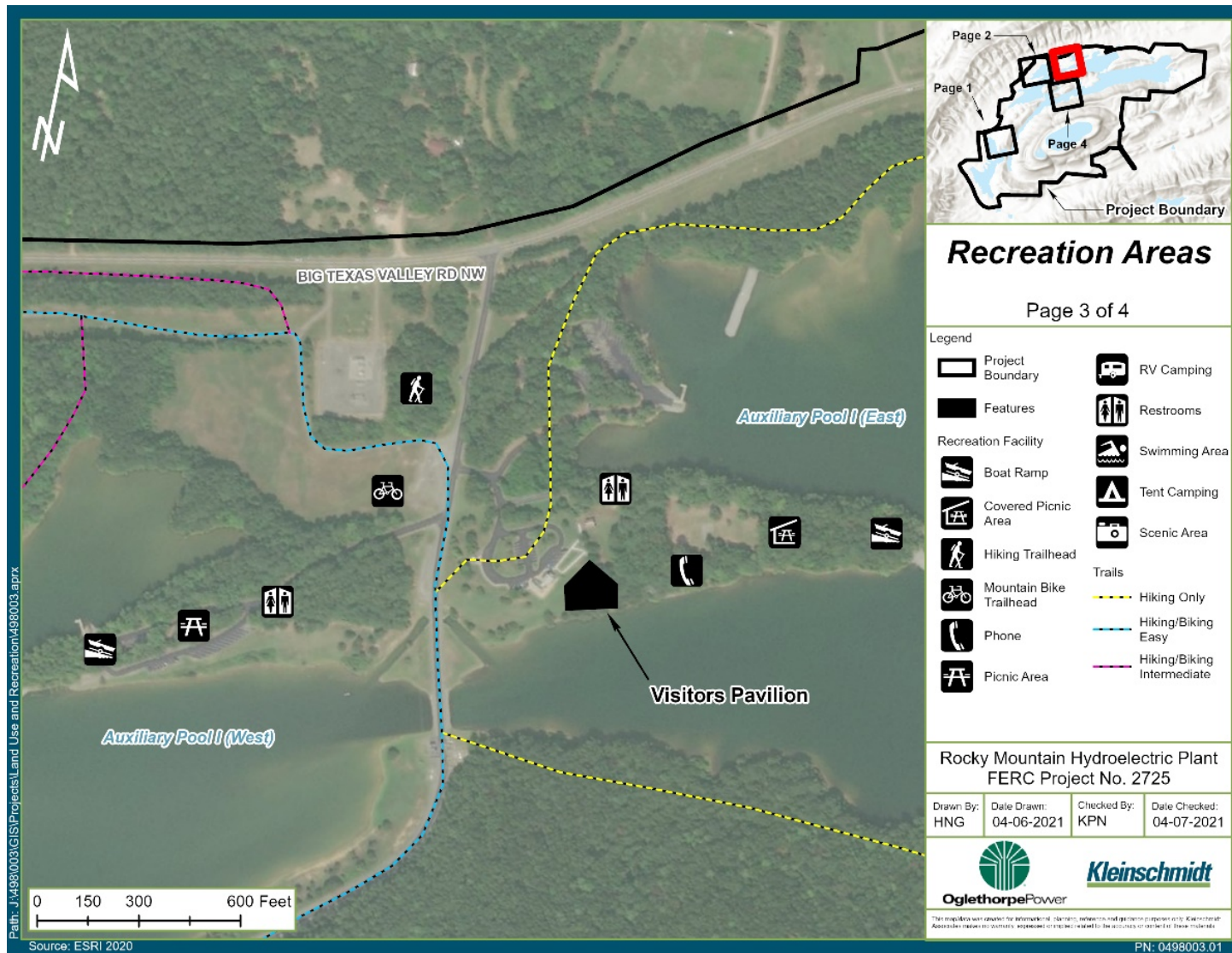


**Figure 22 Project Recreation Facilities  
(1 of 4)**

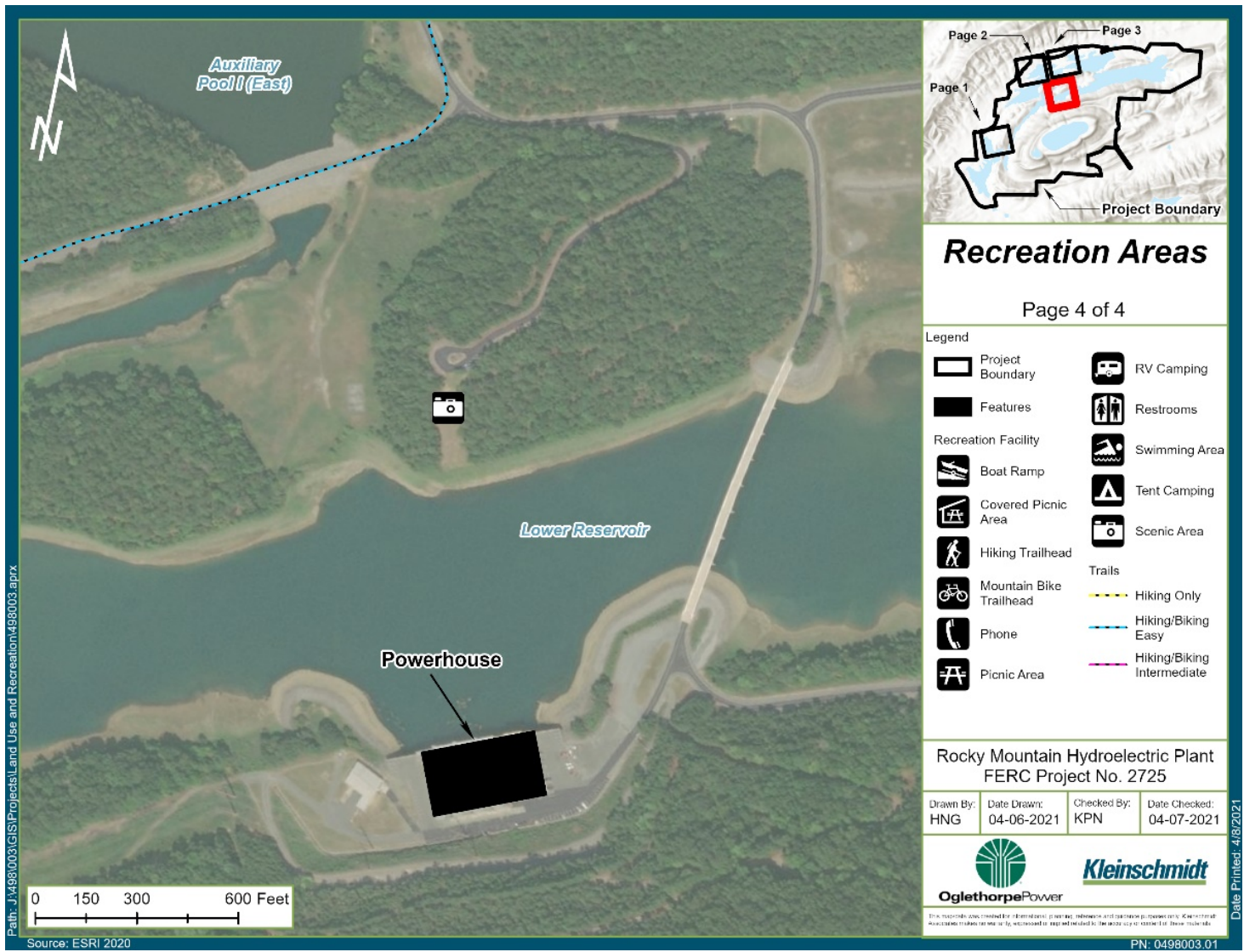


**Figure 22 Project Recreation Facilities**  
**(2 of 4)**





**Figure 22 Project Recreation Facilities**  
**(3 of 4)**



**Figure 22 Project Recreation Facilities  
(4 of 4)**

At Auxiliary Pool I, there are two impoundments, including a west sub-impoundment area (known as West Antioch Lake) and an east sub-impoundment area (known as East Antioch Lake) (OPC 2005). The west sub-impoundment area is the Project's most highly developed recreation area and includes the following amenities:

- A beach-oriented picnic area with a paved parking lot;
- A large picnic area with a group shelter, tables, and grills;
- A swimming beach with a sand beach, bathhouse, and restrooms;
- A boating area with parking for vehicles and vehicles with trailers, a concrete boat launch, a wooden courtesy dock, and a picnic area with tables and grills;
- Restrooms;
- A family camping area with RV sites, a comfort station, and a sanitary dump facility; and
- A group camping area with vehicle parking, walk-in tent sites, and a picnic shelter with tables and grills.

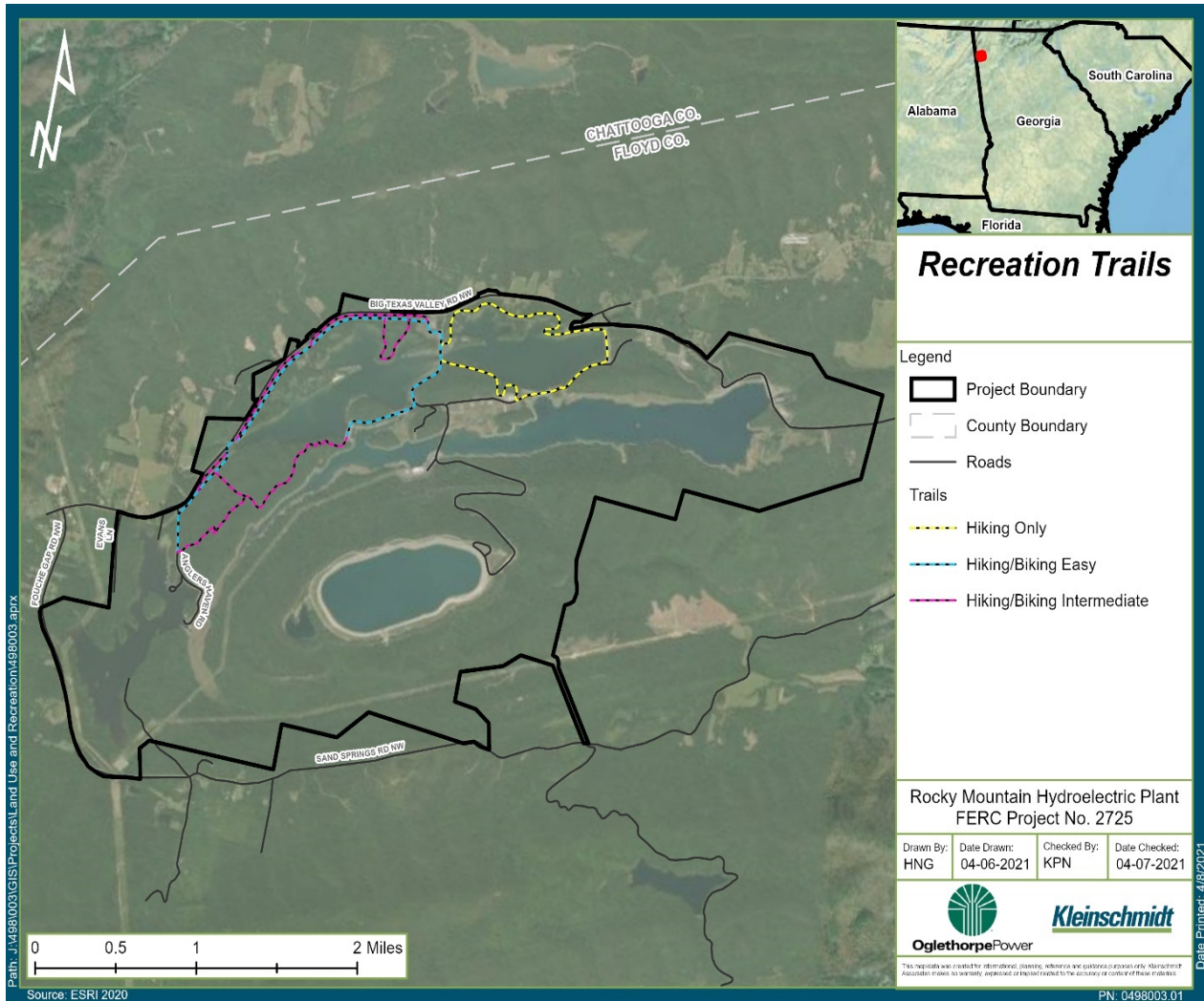
The east sub-impoundment area includes a day use facility and a visitor information center (OPC 2005). The visitor center provides interpretive signs informing the public about Project operations and includes parking for vehicles and tour buses, a building, and a picnic area with tables and grills. The day use facility includes the following amenities:

- A parking area;
- A picnic area with tables and grills;
- A group shelter with additional tables and grills;
- A one-lane, concrete boat launch;
- A floating dock; and
- Restrooms.

Auxiliary Pool II also provides recreational facilities including a parking area for vehicles and trailers; a single-lane, concrete boat launch; a family picnic area with tables and grills; a vault toilet; trailhead parking areas; and trails (Figure 23).



Hunting is allowed at the Project during state-designated hunting seasons. The use of firearms is allowed within the project boundary during waterfowl hunting seasons in designated areas. Bow-hunting is allowed within the project boundary during designated archery seasons for deer, small game and furbearers, and turkey (OPC 2005).



**Figure 23 Trails at the Project Recreation Areas**

#### 4.8.1.2 Form 80 Licensed Hydropower Development Recreation Report

GDNR collects recreational use data at the Rocky Mountain year-round through traffic and trail counters and attendance records (OPC 2015). This data was used to develop the most recent Licensed Hydropower Development Recreation Report (Form 80)<sup>9</sup>, filed with FERC in February 2015. The 2015 Form 80 estimated that 227,092 annual daytime recreation days<sup>10</sup> and 39,696 annual nighttime recreation days occurred at the Rocky Mountain Project in 2014. The 2015 Form 80 also estimated a peak weekend daytime average of 7,948 recreation days and a peak weekend nighttime average of 960 recreation days (OPC 2015).

The 2015 Form 80 also lists capacity utilization for the various recreation amenities located at the Project. Recreation amenities and their associated capacity utilization for 2014 are listed in Table 19.

**Table 19 Recreation Amenity Capacity Utilization at the Rocky Mountain Project as Listed on the 2015 Form 80**

<b>Recreation Amenity</b>	<b>Capacity Utilization (%)</b>
Boat Launch Areas	80%
Reservoir Fishing	80%
Swim Areas	90%
Trails	25%
Active Recreation Areas	50%
Picnic Areas	65%
Overlooks/Vistas	25%
Visitor Centers	15%
Hunting Areas	60%
Campsites	85%
Group Camps	85%

Source: OPC 2015

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<sup>9</sup> FERC eliminated the Form 80 requirement for licensees via Final Rule (83 FR 67060) effective March 28, 2019.

<sup>10</sup> FERC defines a "recreation day" as each visit by a person to a development for recreational purposes during any portion of a 24-hour period.

Since the 2015 Form 80, GDNR has continued to collect attendance records at the Rocky Mountain PFA. Attendance records from July 2015 through November 2020 are provided in Table 20.

**Table 20 GDNR Attendance Records at the Rocky Mountain PFA, 2015-2020**

MONTH	2015	2016	2017	2018	2019	2020	2021
January	--	3,520	13,448	10,508	9,700	10,287	11,838
February	--	4,200	16,670	14,794	10,448	12,333	10,494
March	--	32,304	2,3729	20,769	25,447	32,576	25,432
April	--	48,035	49,622	21,244	29,532	50,265	31,080
May	--	57,641	39,169	41,165	55,855	69,410	40,249
June	--	60,803	42,616	138,021	40,936	48,801	56,062
July	39,269	51,462	36,518	44,377	50,304	26,997	--
August	36,044	27,829	27,529	27,606	28,156	21,561	--
September	18,451	22,588	21,432	23,186	29,210	23,033	--
October	22,537	29,256	23,444	22,723	21,889	21,489	--
November	12,683	18,559	13,002	13,296	15,025	16,871	--
December	9,310	10,361	10,291	5,752	5,827	5,672	--
<b>Total</b>	<b>138,294*</b>	<b>366,558</b>	<b>317,470</b>	<b>383,441</b>	<b>322,329</b>	<b>339,295</b>	<b>175,155*</b>

\*Total numbers for 2015 and 2021 do not include a full year of attendance data.

#### 4.8.1.3 Recreation Areas of Importance

There are several important recreation resources in the project vicinity, and in adjacent counties, providing similar and unique recreational experiences. The Chattahoochee National Forest is located north and northeast of the Project. The Conasauga Ranger District, which covers the western third of the Chattahoochee National Forest, is located immediately north of the Project (U.S. Forest Service [FS] 2020). Recreation activities at the Conasauga Ranger District include bicycling, camping, fishing, hiking, horse riding, nature viewing, picnicking, and boating and swimming at Lake Conasauga and Peeples Lake (FS 2020).

North of the Rocky Mountain Project is the 561-acre James H. Floyd State Park, located in Chattooga County, Georgia (GDNR 2020a). Recreation facilities at the park include two lakes; tent, trailer, and RV campsites; rental cottages; picnic shelters; two boat ramps; one ADA-accessible fishing pier; and two playgrounds, among others. The trailhead to the scenic 60-mile Pinhoti Trail is accessible following a 1.6-mile hike (GDNR 2020a).



Weiss Lake is located southwest of the Rocky Mountain Project in Cherokee County in northeast Alabama. Alabama Power Company owns and manages the 30,200-acre impoundment on the Coosa River. The lake includes four public access areas and 37 privately run marinas. Weiss Lake is a popular destination for crappie and bass fishing (Outdoor Alabama 2020). Camping is also a popular activity at Weiss Lake with many campgrounds and RV parks along the lake's shoreline (Outdoor Alabama 2020).

John's Mountain WMA is located north of the Rocky Mountain Project in Walker, Whitfield, Gordon and Floyd counties, Georgia (GDNR 2020b). The 24,849-acre WMA allows hunting for deer, bear, turkey, and other small game. Other activities available include biking, hiking, horseback riding, picnicking, primitive camping, and river fishing (GDNR 2020b).

There are no rivers under study or currently designated as Wild and Scenic Rivers in the project vicinity. While there are no National Wilderness Preservation System lands (Wilderness Areas) or study areas in the project area, there are several Wilderness Areas located in the larger region, including several areas northeast of the Project within the Chattahoochee National Forest, and one Wilderness Area located southwest of the Project within the Talladega National Forest (Wilderness Connect 2020). No project lands are included or under study as part of the National Trails System.

#### **4.8.1.4 Existing State and Regional Recreation Plans**

This section describes state and regional recreation plans that provide information on current and future recreation needs for the project area. These plans include the Statewide Comprehensive Outdoor Recreation Plan (SCORP) and the resource management plan for the Northwest Georgia Regional Commission (NWGRC), which includes Floyd County. The resource management plan identifies Regionally Important Resources (RIR), which are defined as any natural or cultural resource area identified for protection by a Regional Commission following the minimum requirements established by the Department of Community Affairs.

#### **Northwest Georgia Regional Commission Regionally Important Resource Plan**

This plan addresses RIRs, in Floyd County where the Project is located, and one of 15 counties in the NWGRC (NWGRC 2012).

RIRs, categorized as state vital areas, protected natural resources, and cultural and historic resources, located within Floyd County include:

- State Vital Areas: one water supply watershed greater than 100 sq mi and 1,768 acres of wetlands
- Protected Natural Resources: 6,521 acres of the Chattahoochee National Forest and the 377-acre Arrowhead WMA
- Cultural and Historic Resources: National Historic Landmark known as Chieftains Museum; National Register listed properties including Berry Schools and the Etowah Valley District; and numerous Georgia Register listed properties; and
- Other regionally significant resources including Thornwood, Black's Bluff Preserve, and the Pinhoti Trail.

### **Statewide Comprehensive Outdoor Recreation Plan**

The Georgia SCORP for 2017-2021 (Georgia State Parks 2016) provides information on the existing supply and demand for outdoor recreation resources and guidance to the state's policy makers and citizens on how to effectively protect key resources and address the outdoor recreation needs of Georgians. A public parks inventory showed that less than 10 percent of the county is available for recreation and just over 10 percent of the county is classified as protected lands. Protected lands are those protected from commercial or residential development and include properties purchased but not yet opened to the public, cemeteries, memorials, small parks, traffic islands and medians, military bases, and properties protected by private conservation easements.

An assessment was completed to determine preferences and demands for public outdoor recreation services. The assessment included the following components: a telephone survey, public meetings, focus groups, written comments, practitioners' survey, regional planners, and an advisory committee. The public telephone survey indicated that of the approximately 63 percent of respondents who identified as outdoor recreators, their most popular activities included walking, jogging, or running. Other popular activities included picnicking, swimming, and nature viewing. Seventy percent of respondents indicated they had visited a park within the last year with a majority indicating they visited a park several times within that year. Barriers to recreation participation were cited most frequently as

lack of time, lack of organized groups, and crowding. Respondents also indicated that physical limitations were sometimes or always a barrier to recreation.

#### **4.8.1.5 Shoreline Buffer Zones and Management Policies**

OPC does not have a formal shoreline management plan. In consideration of public safety due to the rapid fluctuations of water levels in the operational pools, OPC prohibits recreational use and development of the Project's Upper and Lower Reservoir shorelines.

As noted in Section 4.2.1, OPC voluntarily conducts annual shoreline inspections along the Lower Reservoir to monitor erosion. The May 2021 inspection report noted minor areas of erosion along the Lower Reservoir although erosion did not appear to have increased since the previous inspection in 2020. OPC plans to continue its annual shoreline monitoring program in the Lower Reservoir.

#### **4.8.1.6 Land Use**

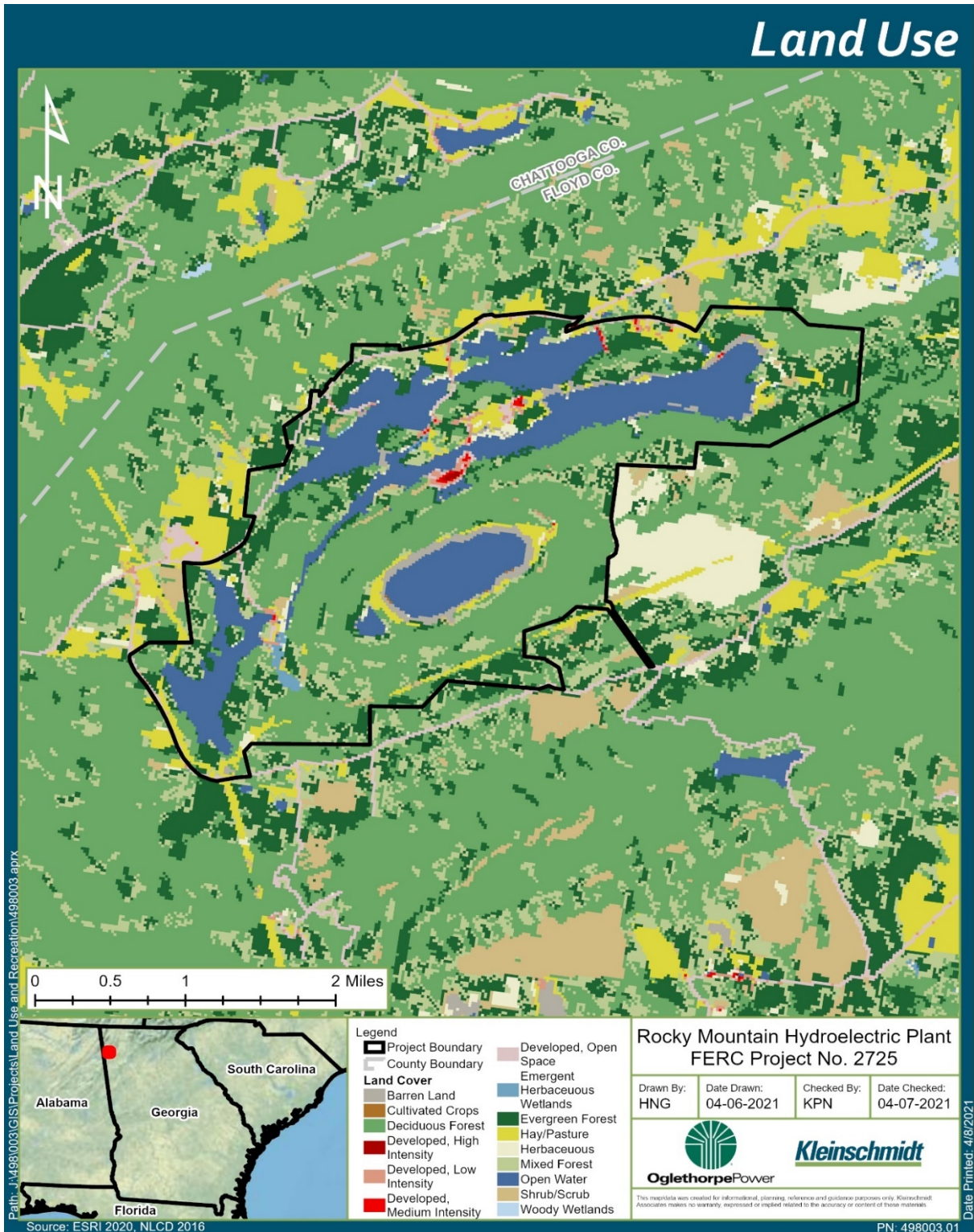
The Project is in the Texas Valley within the Ridge and Valley province. Specifically, the Project is located in a rural portion of Floyd County, Georgia, approximately 10 miles north of the city of Rome. Rome is the county's main employment and population center. Approximately 98,498 persons are residents of Floyd County with approximately 36,716 persons residing within the city of Rome (US Census Bureau 2019).

Land use in the project vicinity is dominated by small scale farms and rural residences (Figure 24). The approximately 5,000 acres of land within the project boundary can be classified into one of the following categories: project works, public recreation, and wildlife habitat. Project works are primarily located at the Upper and Lower Reservoirs and, generally speaking, facilities include: several dams; a partially submerged powerhouse; a substation; and three 230-kV transmission lines, known as the Primary Transmission Line.<sup>11</sup> Public recreation occupies approximately 3,700 acres within the project boundary and with most of those acres located at Auxiliary Pool I. Additional public recreation land is located at Auxiliary Pool II. Public access to the Upper and Lower Reservoirs is restricted for public safety reasons. These reservoirs are classified under the project works category. Consistent with the 1997 resource management agreement

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<sup>11</sup> As discussed in Section 3.2, Footnote 4, OPC will be proposing that the substation and the Primary Transmission Line be removed from the Project's description.

between OPC and GDNR, GDNR manages lands around the western portion of Auxiliary Pool II and lands around the southern portion of the Upper Reservoir as wildlife habitat.



**Figure 24 Land Use in the Project Vicinity**

## **4.8.2 Potential Resource Impacts**

Potential impacts of continued project operation and maintenance on recreation and land use would be limited mainly to the Auxiliary Pools within the Rocky Mountain PFA. Potential impacts may include effects of managing the Rocky Mountain PFA lakes and facilities on public fishing and recreation. OPC will evaluate the effects of continued project operations and maintenance on recreation and land use and, in consultation with GDNR and other relicensing participants, will consider and propose PM&E measures to address recreational access and facilities in the draft license application.

## **4.9 Aesthetic Resources**

### **4.9.1 Existing Environment**

As described in Section 3.3, the Project includes an Upper Reservoir, a Lower Reservoir, two Auxiliary Pools, water conduits, a powerhouse, electrical transmission interconnection, and recreational facilities. There are approximately 5,000 acres of land and water within the project boundary, with 3,700 acres available to the public for recreational activities. The main features of the Project are identified on Figure 3 and descriptions of the visual character of the features are provided below.

As described in detail in Section 3.3, the Upper Reservoir is a manmade impoundment that is 221 acres in size at normal maximum operating pool elevation and is formed by a 120-foot-high, 12,895-foot-long, continuous earth and rockfill dam, which circumscribes the natural concave top of Rock Mountain. The shoreline immediately adjacent to the reservoir is maintained clear of vegetation. An aerial image of the Upper Reservoir is provided in Figure 25. Rock Mountain is forested with an access road on the eastern side of the mountain. Due to the elevation and intervening vegetation, the Upper Reservoir is generally hidden from public view.

The Project's water conduit is underground between the intake at the Upper Reservoir and the Powerhouse. The Project's water conduit consists of a 567 ft. vertical concrete-lined shaft; a 1,935 ft. horizontal concrete-lined tunnel; two horizontal concrete-lined bifurcations; three reinforced concrete-lined penstock connections of varying lengths; and three steel-lined penstocks, each about 470 ft long. The underground conduit connects to the powerhouse. The powerhouse is a concrete structure on the Lower Reservoir. The powerhouse can be seen from a portion of the Auxiliary Pool I (West).

The Lower Reservoir is approximately 600 acres and is formed by three dams: (1) a 120-foot-high, 942-foot-long structure consisting of a combination earth and rockfill embankment type dam and a concrete gravity type dam that contains a gated spillway (identified as the Main Dam and Spillway on Figure 3); (2) a 70-foot-high, 1,260-foot-long earth and rockfill structure (Dam A on Figure 3); and (3) a 10-foot-high, 690-foot-long earthfill structure (Dam B on Figure 3). The Upper and Lower Reservoirs undergo daily water level fluctuations of 51 and 20 ft, respectively. The water level fluctuations of the Upper and Lower Reservoirs are largely hidden from main roadways, surrounding residences, and the Project recreational facilities because of the intervening topography, intervening vegetation, and relative isolation.

The Project has two Auxiliary Pools located adjacent to the Lower Reservoir, both of which are normally maintained at a relatively constant elevation. The pools provide reserve storage for drought periods, as well as recreational opportunities and wildlife management. Auxiliary Pool I is 400 acres and is contained by an ungated spillway and four dams: (1) a 20-foot-high, 775-foot-long earth and rockfill structure (Dam D on Figure 3); (2) a 65-foot-high, 1,024-foot-long earth and rockfill structure (Dam C on Figure 3); (3) a 50-foot-high, 700-foot-long earth and rockfill structure (Dam E on Figure 3); and (4) a 50-foot-high, 405-foot-long earth and rockfill structure, and low-level outlet works (Dam F on Figure 3). Auxiliary Pool II is 200 acres and is formed by a 30-foot-high, 335-foot-long earth and rockfill structure with an ungated spillway and low-level outlet works (Dam G on Figure 3). The Auxiliary Pools can be seen from several locations, including the project recreation facilities (as described in Section 4.8) (Figure 26 and Figure 27) and Antioch Baptist Church. Vegetation and forests surrounding the Auxiliary Pools interfere with the visibility of the pools from most locations along the roads, although the pools can be seen from certain segments of public roads, depending on the season.

The Project includes a substation located 1.5 miles from the powerhouse and three 230-kV transmission lines comprising a total of 1.5 miles, known as the Primary Transmission Line.<sup>12</sup>

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<sup>12</sup> As discussed in Section 3.2, Footnote 4, OPC will be proposing that the substation and the Primary Transmission Line be removed from the Project's description.





Source: Google Earth 2020 (Imagery Date: 2/7/2018)

**Figure 25 Overview of the Project Powerhouse and Upper Reservoir, Facing South**





**Figure 26 View of Auxiliary Pool I West (Antioch Lake) Beach Area**





**Figure 27 View of Auxiliary Pool II (Heath Lake) Boat Ramp**

## **4.9.2 Potential Resources Impacts**

OPC believes that sufficient information on aesthetics at the Project is available. Due to intervening topography, forests, and vegetation, viewsheds of the project features are minimal and are primarily of the Auxiliary Pools. The Upper and Lower Reservoirs undergo daily water level fluctuations of 51 and 20 ft, respectively; however, these fluctuations are hidden from main roadways, surrounding residences, and the Rocky Mountain PFA facilities because of the intervening topography and vegetation, and relative isolation. No issues related to the Project have been identified relative to aesthetic resources.

OPC's proposal to continue operating the Project would not involve activities directly affecting aesthetic resources. As no potential impacts are anticipated, and no known issues related to aesthetic resources have been identified, OPC is not proposing any PM&E measures at this time.

## **4.10 Cultural Resources**

### **4.10.1 Existing Environment**

#### **4.10.1.1 Existing Discovery Measures**

The Rocky Mountain project area, including Texas Valley and Rock Mountain, was used for thousands of years dating back to the Late Paleoindian period. The area was heavily used during the Early Archaic and Late Archaic times, and more lightly used in the Middle Archaic time. Historians believe that the Texas Valley and Rock Mountain were likely isolated from mainstream prehistoric life during all periods (Garrow and Cleveland 1997a).

Between 1972 and 1996, many cultural resources studies were completed at the Project, including (Garrow and Cleveland 1997a):

- *The Rocky Mountain Archaeological Survey*, by Patrick H. Garrow and Jan Eric Fortune, 1973
- *Archaeological Survey Rocky Mountain Pumped Storage Project, Floyd County, Georgia*, by Patrick H. Garrow, Richard A. Warner, G. Ishmael Williams, and Claudia L. Watson, 1978

- *Rocky Mountain Architectural Study, Floyd County, Georgia (GP-FL1, Structures A and B; GP-FL-6, Structures A, B, and C)* by Norman D. Askins and Stanley Solamillo, 1979
- *Additional Archaeological Survey and Testing, Rocky Mountain Pump Storage Project, Floyd County, Georgia* by Patrick H. Garrow, Ishmael Williams, Jack Bernhardt, Claudia Watson, and Thomas Wheaton, 1979
- *Historic Structures Report Rocky Mountain Project (GP-FL-5, Structure A; GP-FL-6, Structures A-E and M) Texas Valley, Floyd County, Georgia*, by W. Lane Greene, 1979
- *Cultural Resource Management: Effects Mitigation and Resource Management Plan, Rocky Mountain Pumped Storage Hydroelectric Generating Station, Floyd County, Georgia* by James J. Shive, 1981
- *Rocky Mountain Project: Cultural Resource Management Effects Mitigation and Resource Management Plan and Amendment I, Rocky Mountain Pumped Storage Generating Station, Floyd County, Georgia* by James J. Shive, 1982
- *Cultural Resource Effects Mitigation, Rocky Mountain Pumped Storage Project, Floyd County, Georgia* by Robin J. Myers, 1983
- *Report on Investigations Phase II, Task 1, Research and Recovery Program for Historic Resources Effects Mitigation Plan Rocky Mountain Pumped Storage Facility Project* by Robert G. McCullough and Robin J. Myers, 1984
- *Cultural Resource Mitigation: Prehistoric Investigations at GP-FL-9D, GP-FL-9B, GL-FL-5, and GP-FL-15 Rocky Mountain Project, Floyd County, Georgia* by Carol A. Ebright, 1986
- *Report on Cultural Resource Inventories R-I and R-II of the Coosa River Crossing of the Plant Bowen-Rocky Mountain Transmission Line, Floyd County, Georgia* by Ann I. Ottesen, 1986
- *Rocky Mountain Project: Report of Investigations, Phase I and II, Tasks 1 and 2; Research and Recovery Program for Historic Resources Cultural Resource Effects Mitigation, Rocky Mountain Pumped Storage Project, Floyd County, Georgia* by Anne I. Ottesen and Timothy B. Riordan, 1986



- *Rocky Mountain Project: Report on Investigations Phase I and II, Research and Recovery Program for Historic Resources Cultural Resource Effects Mitigation Plan, Rocky Mountain Pumped Storage Project* by Anne I. Ottesen and Timothy B. Riordan, 1986
- *Report on Investigations Phase II, Task 3 Research and Recovery Program for Historic Resources Rocky Mountain Pumped Storage Project, Floyd County, Georgia* by Anne I. Ottesen, 1988
- *Results of a Boundary Study of Seven (7) Archaeological Sites to be Preserved in Place on the Rocky Mountain Project, Floyd County, Georgia* by Patrick H. Garrow, 1990
- *Cultural Resource Investigation at the Rocky Mountain Project, FERC License No. 2725 (1973-1988): Summary* by C. Johnson and H.P. Ross, 1990
- *Cultural and Biological Resources Identified by a Literature Records Search and Reconnaissance Survey of Potential Routes for a 500kV Transmission Line, Rocky Mountain to Pinson, Floyd County, Georgia* by Jeffery L. Holland and Linda G. Chafin, 1992
- *A Phase I Archaeological Survey of the Proposed Rocky Mountain to Pinson 500kV Transmission Line Corridor, Floyd County, Georgia* by William F. Stanyard, 1993
- *A Phase II Testing at Seven Sites Along the Proposed Rocky Mountain to Pinson 500kV Transmission Line Corridor, Floyd County, Georgia* by William F. Stanyard, Patrick H. Garrow, and Richard W. Stoops, Jr., 1993
- *Historic Architecture Survey and Analysis of the Rocky Mountain Hydroelectric Project, Big and Little Texas Valleys, Floyd County, Georgia*, by M. Todd Cleveland, 1996

In 1997, Garrow & Associates, Inc. summarized these studies in one document, the *Cultural Resource Studies at the Rocky Mountain Project, Floyd County, Georgia: A Technical Synthesis, 1972-1977* (Garrow and Cleveland 1997a). The synthesis lists numerous prehistoric archaeological resources, historic archaeological resources, and historic architectural resources that have been documented in the Project area since 1972.

In 2020, TRC Environmental Corporation (TRC) conducted archaeological monitoring at the Project. The results are included in the Cultural Resources Monitoring for the FERC

Relicensing of the Rocky Mountain Hydroelectric Project Report (Appendix F - Privileged<sup>13</sup>) and are summarized below.

#### 4.10.1.2 Historic or Archaeological Sites in the Project Vicinity

The 1997 technical synthesis lists a total of 80 archaeological sites (prehistoric and historic), 24 isolated finds, and 14 standing structures or structural complexes that occur or occurred in the project area. The identified sites at Rocky Mountain Project represent just under 40 percent of the recorded archaeological sites in Floyd County (Garrow and Cleveland 1997a).

In 1997, Garrow & Associates, Inc. revised the existing Rocky Mountain Project Cultural Resource Management Plan (CRMP) for OPC. The Plan lists six archaeological properties and one moved standing structure for continued preservation (Garrow and Cleveland 1997b). These properties and their National Register of Historic Places (NRHP) eligibility are listed in Table 21.

**Table 21 Archaeological Properties Listed in the Rocky Mountain Project Cultural Resource Management Plan for Preservation**

Site Identification	Site Name	NRHP Eligibility
9FL80	The Fouche Mill Property	Not Recommended
9FL106	The Reed/Milam Property	Recommended
9FL108	The Cargle Property	Not Recommended
9FL138	The Fisher House	Recommended
9FL148	Fouche/Hardy Farm	Not Recommended
GP-FL-14 (State Site Number Not Assigned)	The Clarence Montgomery Farm	Not Recommended
9FL108	The Cordle Store <sup>14</sup>	Recommended

<sup>13</sup> As noted in 18 CFR § 5.6 (d)(3)(x)(C), any applicant must delete from any information made available under this section specific site or property locations, the disclosure of which would create a risk of harm, theft, or destruction of archaeological or Native American cultural resources or to the site at which the resources are located, or would violate any Federal law, including the Archaeological Resources Protection Act of 1979, 16 U.S.C. 470w-3, and the National Historic Preservation Act of 1966, 16 U.S.C. 470hh). For this reason, the Licensee is filing all Cultural Resource Reports as “privileged.” Requests to obtain documents submitted to the Commission as “privileged” must be in accordance with CFR § 388.112.

<sup>14</sup> The Cordle Store was formerly located on the Cargle Property and was built between 1911 and 1916. The store was moved from its original location to a site near the project visitor center, approximately 2.5 miles northeast, and stabilized and mothballed.

Cultural resources at the Rocky Mountain Project suffered significant bouts of vandalism during the 1979-1983 timeframe. Arson destroyed several potentially significant standing structures and other structures were vandalized and robbed of their materials. For this reason, the CRMP requires Rocky Mountain project staff to monitor the sites listed in Table 21 on a monthly basis, with an annual site-by-site assessment completed by a qualified professional archaeologist. In 1997, the Cordle Store was relocated from its historic location at Big Texas Valley Road and (Old) Fouché Gap Road to a site near the Project's visitor center, where it can be monitored constantly and protected from vandalism. The store was stabilized and mothballed and is surrounded by a security fence and warning signs (Garrow and Cleveland 1997b).

On February 28, 2020, the sites listed in Table 21 were monitored with the goal of locating and visually assessing the current condition of the sites that were previously recommended for preservation and monitoring (TRC 2021). All sites were located and shown to be well maintained and protected. No evidence of looting, natural destruction, erosion caused by project operations or vandalism was noted (TRC 2021). TRC recommended the following for each site:

- 9FL80 – Update the site boundaries to include the Fish Camp and send an updated site form and geographic information system (GIS) information to SHPO. Monitor once a year when waters levels are low.
- 9FL106 – Possible candidate for interpretive signage due to its proximity to walking trails. No additional archaeological work recommended. Monitor once a year.
- 9FL108 – With the removal of the store the original site location has lost its integrity. The site has been effectively mitigated by removing and preserving the Cargle/Cordle Store at the Rocky Mountain Visitors Center. Removal from monitoring list is recommended.
- 9FL138 – The site is mis-plotted on project and SHPO maps. Re-survey the boundaries of the site and update the location of the site in the Georgia Site Files and on project maps. Monitor once a year.
- 9148 – Additional structural debris was observed north of the current boundaries of the site. Additional work is recommended to refine and update the boundaries of the site. Monitor once a year.

- GP-FL-14/CRFL14 – Archaeological survey to define the boundaries of the site and determine its National Register of Historic Places eligibility status. Continue monitoring until eligibility is determined.

No archaeological properties listed in Table 21 are associated with Indian Tribes.

#### **4.10.1.3 Potential Resource Impacts**

Potential sources of adverse impacts to cultural resources listed in the existing CRMP include future project-related construction or ground disturbing activities; pothunting or vandalism; and natural disturbances caused by erosion or flooding. Continued project operations are not expected to have any adverse effects on the identified archaeological properties at the Project because no ground disturbing or construction activities are planned at this time. OPC will evaluate potential impacts to historic properties in the license application.

OPC will consult with the Georgia Department of Community Affairs' Historic Preservation Division (GHPD), affected Indian Tribes, and the Advisory Council on Historic Preservation in developing a Historic Properties Management Plan and implementing a Programmatic Agreement for the Project to avoid impacts to historic properties. OPC plans to continue monitoring the five archaeological properties recommended for continued monitoring in the 2021 TRC report throughout a new license term, in an effort to prevent pothunting or vandalism from occurring.

### **4.11 Socioeconomic Resources**

#### **4.11.1 Existing Environment**

The Project is located in Floyd County, Georgia, approximately 10 miles northwest of the city of Rome. Rome is the most populous city in the county and is the county seat. The Project employs 37 full-time and two part-time employees and contributes over \$3,200,000 per year in tax revenue to Floyd County.

The following sections describe socioeconomic conditions in the project region, including: the city of Rome, Floyd County, and the state of Georgia, to provide context. The selected socioeconomic characteristics of the project region discussed include general land use patterns, population patterns, and sources of employment in the project region.

#### 4.11.1.1 General Land Use Patterns

As described further in Sections 4.1 and 4.8, the area immediately surrounding the Project is primarily rural. Land cover in the FERC project boundary, which encompasses about 5,000 acres, can be divided into the following categories: project works, public recreation, and wildlife habitat. Land use in the project vicinity is devoted to small-scale farming and scattered residences. The project region contains both rural and urban areas. Table 22 summarizes the rural and urban nature in the project region. Floyd County is 63.2 percent urban and 36.8 percent rural, while the city of Rome encompasses almost entirely urban areas. Compared to Floyd County, the state of Georgia is a bit more urban, at 75.1 percent urban.

**Table 22 Population in Rural and Urban Areas, 2010**

	<b>City of Rome</b>	<b>Floyd County</b>	<b>State of Georgia</b>
Urban Areas	98%	63.2%	75.1%
Rural Areas	2%	36.8%	24.9%

Source: US Census Bureau 2020a

#### 4.11.1.2 Population Patterns

Table 23 summarizes the population and demographics in the project region. In 2010, the total population of Floyd County was 96,317, the population of the city of Rome was 36,303 and the population of the state of Georgia was 9,687,653. Floyd County, Georgia is the 22nd-largest county in Georgia by area (U.S. Census Bureau 2020a). Floyd County, Georgia is bordered by Chattooga County, Cherokee County, Bartow County, Polk County, Walker County, and Gordon County. It is estimated that the population has increased between 2010 and 2019. It is estimated that the population has increased by a greater amount statewide, at 9.6 percent population growth between 2010 and 2019, as compared to 0.9 percent in Rome and 2.3 percent in Floyd County, during the same time period.

Gender and age across Rome, Floyd County, and the state of Georgia are generally similar. Regarding race, the population of Floyd County is 78.2 percent white, which is more than the statewide percentage of 57.8 percent of the population being white, and 61.5 percent in Rome. The black or African American population makes up 14.3 percent of the total population in Floyd County, 31.9 percent of the population in Georgia, and 27.1 percent of the population in Rome.



**Table 23 Population Patterns and Demographics of Project Region**

	<b>City of Rome</b>	<b>Floyd County</b>	<b>Georgia</b>
<b>Population</b>			
Population (2010)	36,303	96,317	9,687,653
Population (2019 estimate)	36,716	98,498	10,617,423
Population Change (2010 to 2019)	0.9%	2.3%	9.6%
<b>Geography</b>			
Land Area (sq mi)	30.9	509.9	57,513.5
Population Density (people/sq mi)	1,174.4	188.9	168.4
<b>Gender</b>			
Female	53.0%	51.7%	51.3%
Male	47.0%	48.3%	48.7%
<b>Age</b>			
Median Age	36.4	38.5	37.2
Persons under 5 years old	6.3%	6.0%	6.0%
Persons under 18 years old	24.6%	23.4%	23.6%
Persons 65 years old and over	15%	16.1%	14.3%
<b>Race</b>			
White alone	61.5%	78.2%	57.8%
Black or African American alone	27.1%	14.3%	31.9%
American Indian and Alaska Native alone	0.3%	0.2%	0.4%
Asian alone	3.0%	1.6%	4.1%
Native Hawaiian and Other Pacific Islander alone	0%	0.0%	0.1%
Some Other Race alone	6.2%	3.7%	3.0%
Two or More Races	1.8%	2.0%	2.7%
<b>Hispanic or Latino</b>			
Hispanic or Latino	17.1%	10.8%	9.4%
Not Hispanic or Latino	82.9%	89.2%	90.6%
<b>Languages</b>			
Language other than English spoken at home	16.7%	10.0%	14.4%
<b>Health</b>			
Disability	13.9%	15.3%	12.6%
<b>Education</b>			
High School graduate or higher	77.1%	81.0%	87.9%
Bachelor's Degree or higher	24.2%	20.4%	32.5%

Sources: U.S. Census Bureau 2020a, 2020b

#### 4.11.2 Household/Family Distribution and Income

Table 24 summarizes data available from the American Community Survey (based on a 5-year survey of 2014 to 2018) regarding income, poverty, and employment rates of the project region. Available data show a median household income of \$46,367 for Floyd County, which is below the statewide median household income, and above the city of Rome’s median household income. When looking at all persons, the poverty rate of Floyd County was 19.1%, which is higher than the statewide poverty rate of 13.3 percent and lower than 25.6 percent poverty rate of Rome. The unemployment rate of Floyd County is 6.3 percent, which is similar to the statewide unemployment rate of 6.4 percent, and higher than the unemployment rate of Rome.

Table 25 summarizes the employment industry types and Table 26 shows the class of workers in the project region. The industry category of educational services, and health care and social assistance provide the greatest amount of employment in Floyd County, at 26.2 percent. The next highest industry type is manufacturing, at 17.7 percent in Floyd County.

In total, there are 3,800 firms in the city of Rome, 8,067 firms in Floyd County, and 929,865 firms in Georgia (U.S. Census Bureau 2020a: Table SB1200CSA01, 2012 Survey of Business Owners). Major employers in the city of Rome and the Floyd County area are listed in Table 27. The Floyd Medical Center is the top employer, with 3,380 employees. The top 10 manufacturers in the city of Rome and the Floyd County area are shown in Table 28. The top manufacturing industries include the following: food production, automotive, paper, and carpet manufacturing.

**Table 24      Income, Poverty, and Employment Characteristics of the Project Region**

	City of Rome	Floyd County	State of Georgia
Median Household Income	\$38,148	\$46,367	\$61,980
Mean Household Income	\$62,060	\$65,817	\$78,574
Per Capita Income	\$24,899	\$25,058	\$29,523
Poverty Rate	25.6%	19.1%	13.3%
In Labor Force	57.4%	57.5%	63.0%
Unemployment Rate	1.4%	6.3%	6.4%

Source: US Census Bureau 2018a

**Table 25 Employment Industry Types of the Project Region**

	<b>City of Rome</b>	<b>Floyd County</b>	<b>State of Georgia</b>
Agriculture, forestry, fishing and hunting, and mining	0.2%	0.5%	1.1%
Construction	5.2%	6.8%	6.6%
Manufacturing	20.2%	17.7%	10.6%
Wholesale trade	1.8%	1.9%	2.8%
Retail trade	11.4%	10.5%	11.7%
Transportation and warehousing, and utilities	2.6%	3.9%	6.4%
Information	1.9%	1.5%	2.4%
Finance and insurance, and real estate and rental and leasing	4.1%	3.5%	6.2%
Professional, scientific, and management, and administrative and waste management services	6.4%	7.9%	12.0%
Educational services, and health care and social assistance	26.2%	26.2%	20.8%
Arts, entertainment, and recreation, and accommodation and food services	10.2%	9.1%	9.4%
Other services, except public administration	5.8%	6.3%	4.9%
Public administration	4.1%	4.3%	5.0%

Source: US Census Bureau 2018a

**Table 26 Class of Workers in the Project Region**

	<b>City of Rome</b>	<b>Floyd County</b>	<b>State of Georgia</b>
Private wage and salary workers	81.9%	82.2%	79.9%
Government workers	13.4%	13.2%	14.5%
Self-employed in own not incorporated business workers	4.5%	4.5%	5.4%
Unpaid family workers	0.1%	0.1%	0.2%

Source: US Census Bureau 2018a

**Table 27 Major Employers in the City of Rome and the Floyd County Area**

<b>Employer</b>	<b>Type</b>	<b># of Employees</b>
Floyd Medical Center	Healthcare	3,380
Redmond Regional Medical Center	Healthcare	1,375
Lowe's RDC	Distribution	850
Harbin Clinic	Healthcare	1,300
Berry College	Education	541
Kellogg's	Manufacturing	552
F & P Georgia	Manufacturing	518
International Paper Company	Manufacturing	500
Floyd County Schools	Education	1,331
Rome City Schools	Education	852
Georgia Northwestern Technical College	Education	692
Georgia Highlands College	Education	476
Syntec Industries	Manufacturing	350

Source: Rome Floyd Chamber 2020

**Table 28 Top 10 Manufacturers in the City of Rome and the Floyd County Area**

<b>Employer</b>	<b>Type</b>	<b># of Employees</b>
Kellogg's	Food Production	552
F & P Georgia	Automotive	518
International Paper	Paper	500
Neaton Rome	Automotive	362
Hillshire Brands	Food Production	350
Syntec Industries	Carpet Fiber	350
Southeastern Mills	Food Production	290
Mohawk	Carpet Industry	150
Foss	Wire	N/A
Pirelli Tire	Tires	190

Source: Rome Floyd Chamber 2020

#### **4.11.3 Potential Resource Impacts**

OPC believes that sufficient socioeconomic data are available for the areas surrounding the Project. Under a new license, the Project is proposed to be operated in the same manner with similar contributions to the local economy resulting from lower cost

renewable energy provided from this Project to its customers, jobs, and operating and maintenance funding. The Licensee pays a gross shared revenue tax to the state of Georgia, which is distributed to communities throughout the state. The Project also contributes to the local labor force through employment opportunities at the Project and associated recreation resources. Given the current contribution the Project makes to local socioeconomic resources, there should be no change to socioeconomic resources. For these reasons, no studies or PM&E measures regarding socioeconomic resources are proposed.

## **4.12 Tribal Resources**

### **4.12.1 Existing Environment**

There are no federally recognized tribal lands existing in the State of Georgia. However, there are several federally recognized Indian Tribes that historically occupied the project vicinity. Consistent with the National Historic Preservation Act (NHPA) and implementing regulations (36 CFR 800), on April 8, 2021, FERC made initial contact inviting Indian Tribes<sup>15</sup> to participate in the Rocky Mountain Project relicensing. Tribal consultation is conducted on a “government to government” basis, with FERC representing the U.S. government. After a relationship has been established with interested Indian Tribes, OPC will be involved in the consultation process as FERC’s non-federal designee.

On January 16, 2021, OPC sent a copy of the PAD questionnaire to the following Indian Tribes:

- Alabama-Coushatta Tribe of Texas
- Alabama-Quassarte Tribal Town<sup>16</sup>
- Cherokee Nation
- Coushatta Tribe of Louisiana
- Eastern Band of Cherokee Indians
- Kialegee Tribal Town

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<sup>15</sup> See Document Accession # 20210408-3027 for a list of the Indian Tribes contacted by FERC.

<sup>16</sup> The January 16, 2021 PAD questionnaire sent to the Alabama-Quassarte Tribal Town was inadvertently mailed to an incorrect address. A follow-up mailing to the correct address was sent on March 16, 2021.

- Muscogee Creek Nation
- Seminole Tribe of Florida
- Seminole Nation of Oklahoma
- Thlopthlocco Tribal Town
- United Keetoowah Band of Cherokee

#### **4.12.2 Potential Resource Impacts**

OPC will address any effects of continued project operation on tribal resources through consultation conducted in a manner consistent with the Commission's *Policy Statement on Consultation with Indian Tribes in Commission Proceedings* (18 CFR Part 2). OPC is not currently aware of any potential impacts to tribal resources that would occur as a result of the proposed continued operation of the Rocky Mountain Project.

## 5.0 PRELIMINARY ISSUES AND STUDIES LIST

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### 5.1 Issues Pertaining to The Identified Resources

This section identifies potential resource issues pertaining to OPC's continued operation of the Rocky Mountain Project based on the abundant existing resource information and data summarized in Section 4, OPC's contacts with resource agencies and other interested stakeholders (Appendices A and B), and agency responses to the PAD Questionnaire (Appendix C). Following PAD submittal, federal and state resource agencies, Indian Tribes, non-governmental organizations, and individuals will be invited to the Joint Meeting to discuss resource issues to be analyzed in OPC's license application. The preliminary list of potential issues for consideration includes:

#### Geology and Soils

- Effects, if any, of continued project operation and project-related recreation on Lower Reservoir and Auxiliary Pool shoreline erosion and sedimentation.

#### Water Resources

- Effects of continued project operation and maintenance and project-related recreation on water quality in the Lower Reservoir, Auxiliary Pools, and Heath Creek.

#### Fish and Aquatic Resources

- Effects of continued project operation and maintenance and project-related recreation on fish habitat and aquatic resources in the Auxiliary Pools (Antioch Lake and Heath Lake).
- Effects, if any, of continued project operation on aquatic habitat downstream in Heath Creek.
- Effects, if any, of continued project operation and maintenance on non-native, invasive aquatic species within the project boundary.

### Wildlife and Botanical Resources

- Effects, if any, of continued project operation and maintenance and project-related recreation on upland habitat and associated wildlife.
- Effects, if any, of continued project operation and maintenance on non-native, invasive plant and wildlife species within the project boundary.

### Wetlands, Riparian, and Littoral Habitat

- Effects, if any, of continued project operation and maintenance and project-related recreation on wetland, riparian, and littoral habitat, and associated wildlife.
- Effects, if any, of continued project operation and maintenance on non-native, invasive aquatic plant species within the project boundary.

### Rare, Threatened, and Endangered Species

- Effects, if any, of continued project operation on federally listed threatened, endangered, and candidate species and their habitat.
- Effects, if any, of continued project operation on state protected plant and wildlife species.

### Recreation and Land Use

- Public recreational access and facilities in the Rocky Mountain PFA.
- Effects, if any, of existing shoreline management practices on erosion and the protection of environmental resources within the project boundary.

### Aesthetic Resources

- None currently known.

### Cultural Resources

- Effects of continued project operation and maintenance on properties included in, or eligible for inclusion in, the National Register of Historic Places.
- Effects of continued project operation and maintenance on archaeological and historic resources at the project.



## Socio-economic Resources

- None currently known.

## Tribal Resources

- None currently known.

## **5.2 Potential Studies and Information Gathering Requirements Associated With The Identified Issues**

This section identifies potential studies or information gathering that may be needed to fully analyze the potential resource issues identified in Section 5.1. Based upon the substantial amount of relevant information and data available for the Project and the project vicinity (Section 4), OPC believes that existing information is sufficient for the majority of the evaluation of resource impacts of continued project operation. However, some resource studies and additional information gathering may be necessary to fully inform the development of license requirements for the Project. Accordingly, OPC lists below the resource studies it believes may be necessary to meet the information needs for FERC's NEPA review. OPC intends to develop these preliminary study plans further in consultation with relicensing participants before beginning studies in 2022. Study results will be filed and addressed within the DLAs.

### **5.2.1 Preliminary Studies List**

#### **5.2.1.1 Water Quality Assessment**

- Objectives: Characterize existing water quality in the Rocky Mountain study area and analyze effects of project operation and maintenance and project-related recreation on water quality in the project area.
- Study Area: Lower Reservoir, Auxiliary Pool I, Auxiliary Pool II, and Heath Creek downstream of the Main Dam within the project boundary.
- Key Study Elements: Compile and analyze water quality data collected by OPC at the Project and conduct one year of monthly water quality sampling at four historic stations within the project boundary to characterize current conditions. Conduct monthly *in-situ* measurements of water temperature, DO concentration, pH, specific conductance, and turbidity. Collect grab samples for water chemistry

analysis of 5-day biological oxygen demand, ammonia, inorganic nitrogen (nitrate-nitrite), total Kjeldahl nitrogen, ortho-phosphate, and total phosphorus.

### **5.2.1.2 Aquatic Resources Study**

- Objectives: Characterize existing communities of fish and mussels in Heath Creek downstream of the Project and evaluate the effects of continued project operation on aquatic habitat downstream.
- Study Area: Heath Creek from the Main Dam downstream to Little Armuchee Creek.
- Key Study Elements: Conduct a fish community survey during spring at two representative locations on Heath Creek, including the location previously surveyed by the GDNR Stream Team, following GEPD's fish community biomonitoring standard operating procedures. Sample fish using backpack electrofishing and apply the multi-metric IBI to evaluate fish community health compared to ecoregional reference conditions. Conduct a mussel survey of Heath Creek using a search design appropriate for representing available habitats, assessing presence/absence of native species, and characterizing relative abundance and size characteristics of live specimens encountered.

### **5.2.1.3 Terrestrial and Wetland Resources Survey**

- Objectives: Describe existing terrestrial wildlife and botanical resources and floodplain, wetlands, riparian habitats, and littoral habitats occurring in the project area that use representative habitats. Identify potentially suitable habitats for RTE species of plants and wildlife, and identify invasive species.
- Study Area: The project boundary around the Lower and Upper Reservoirs, the Auxiliary Pools, and Heath Creek.
- Key Study Elements: Conduct a single field reconnaissance survey in spring/early summer, primarily by boat along the shorelines of the project waters and by pedestrian surveys of project recreation areas, to characterize available habitats, including representative plant and animal species, identify unique or sensitive habitat types that may harbor rare plant or animal species, and identify invasive species. Prepare a map of the project boundary delineating principal vegetation

community types, including wetlands, based on ground-truthing of aerial photography interpretation.

#### **5.2.1.4 Recreation Use Analysis**

- Objectives: Characterize the existing facilities and recreational use within the project boundary through existing information review, contacts with recreation user groups, and field activities to inventory and describe existing facilities.
- Study Area: The Rocky Mountain PFA, which contains Auxiliary Pool I (Antioch Lake East and West), Auxiliary Pool II (Heath Lake), and other recreation areas within the project boundary.
- Key Study Elements: Review and analysis of Form 80 recreational use information gathered at project recreation facilities in 2014; analysis of existing information from GDNR, including attendance records, car count data, use estimates, user surveys indicating user satisfaction with the public fishing and wildlife management area, and staff observations; interviews with targeted user groups, including fishing, hunting, and boating clubs; and the Rome-Floyd County Comprehensive Plan.

#### **5.2.1.5 Cultural Resources Assessment**

- Objectives: Identify and summarize known historic properties through a literature and site file review, including topographic maps, the county tax assessor site, and review of the existing archaeological and historic studies conducted by OPC at the site for original construction; conduct a field survey to identify historic structures that are now 40 years of age or older and will turn 50 during the new license term, including the Rocky Mountain powerhouse and other project features and determine potential eligibility for National Register of Historic Places (NRHP) listing; conduct archaeological survey for site (GP-FL-14/CRFL14) specified in the 2020 Cultural Resources Monitoring report (TRC) to define the boundaries of the site, determine NRHP eligibility status and the need for future monitoring; evaluate the potential for effects on historic resources from the continued operation of the Project or by activities conducted along the project shoreline.
- Study area: The Area of Potential Effect, to be identified and delineated in consultation with GHPD and FERC; preliminarily to include the project boundary.

- Key Study Elements: Development of study design in consultation with GHPD and FERC to define the boundaries of one existing site (GP-FL-14/CRFL14) and determine NRHP eligibility status; development of study design in consultation with GHPD and FERC to evaluate project features, including description and photo-documentation, and determine if any are eligible for NRHP listing during a new license term and require further monitoring; modification of existing CRMP into a new HPMP.

### **5.3 Relevant Comprehensive Waterway Plans**

Section 10(a) of the Federal Power Act (FPA), 16 U.S.C. §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 or waterways affected by the Project. On April 27, 1988, FERC issued Order No. 481 – A, revising Order No. 481, issued on October 26, 1987, establishing 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 (2021) currently lists comprehensive plans for the State of Georgia and US resources. Of these listed plans, 22 are potentially relevant to the Project, as listed below in Table 29. These plans may be useful in the relicensing proceedings for characterizing desired conditions.

**Table 29 List of Qualifying Federal and State Comprehensive Waterway Plans Potentially Relevant to the Project**

RESOURCE	COMPREHENSIVE PLAN
Fisheries	Atlantic States Marine Fisheries Commission. 1998. Interstate fishery management plan for Atlantic striped bass. (Report No. 34). January 1998
Fisheries	Atlantic States Marine Fisheries Commission. 1999. Amendment 1 to the Interstate Fishery Management Plan for shad and river herring. (Report No. 35). April 1999
Fisheries	Atlantic States Marine Fisheries Commission. 2000. Interstate Fishery Management Plan for American eel ( <i>Anguilla rostrata</i> ). (Report No. 36). April 2000
Fisheries	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
Fisheries	Atlantic States Marine Fisheries Commission. 2008. Amendment 2 to the Interstate Fishery Management Plan for American eel. Arlington, Virginia. October 2008
Fisheries	Atlantic States Marine Fisheries Commission. 2009. Amendment 2 to the Interstate Fishery Management Plan for shad and river herring, Arlington, Virginia. May 2009
Fisheries	Atlantic States Marine Fisheries Commission. 2010. Amendment 3 to the Interstate Fishery Management Plan for shad and river herring, Arlington, Virginia. February 2010
Fisheries	Atlantic States Marine Fisheries Commission. 2013. Amendment 3 to the Interstate Fishery Management Plan for American eel. Arlington, Virginia. August 2013
Fisheries	Atlantic States Marine Fisheries Commission. 2014. Amendment 4 to the Interstate Fishery Management Plan for American eel. Arlington, Virginia. October 2014
Water Resources	Department of the Army, Corps of Engineers. Savannah District. 1983. Northeast Georgia region water resources management study. Savannah, Georgia. September 1983
Water Resources	Department of the Army, Corps of Engineers. Savannah District. 1985. South metropolitan Atlanta region: Georgia water resources management study. Savannah, Georgia. January 1985.
Water Resources	Department of the Army, Corps of Engineers. Savannah District. 1985. Water resources development by the U.S. Army Corps of Engineers in Georgia. Savannah, Georgia. January 1985

RESOURCE	COMPREHENSIVE PLAN
Water Resources	Georgia Department of Natural Resources. 1986. Water availability and use report - Altamaha River Basin. Atlanta, Georgia. March 1986.
Recreation	Georgia Department of Natural Resources. 2008. Georgia Statewide Comprehensive Outdoor Recreation Plan (SCORP): 2008-2013.
Water Resources	Metropolitan North Georgia Water Planning District. 2003. District-wide watershed management plan. Atlanta, Georgia. September 2003
Water Resources	Metropolitan North Georgia Water Planning District. 2003. Long-term wastewater management plan. Atlanta, Georgia. September 2003
Water Resources	Metropolitan North Georgia Water Planning District. 2003. Water supply and water conservation management plan. Atlanta, Georgia. September 2003
Recreation	National Park Service. The Nationwide Rivers Inventory. Department of the Interior, Washington, D.C. 1993
Water Resources	State of Georgia. Office of the Governor. 1987. Water resources management strategy-summary document. Atlanta, Georgia. January 12, 1987
Fisheries	U.S. Fish and Wildlife Service. 2012. Alabama shad ( <i>Alosa alabamae</i> ) restoration and management plan for the Apalachicola-Chattahoochee-Flint River Basin. Athens, Georgia
Fisheries	U.S. Fish and Wildlife Service. n.d. Fisheries USA: the recreational fisheries policy of the U.S. Fish and Wildlife Service. Washington, D.C.
Fisheries	U.S. Fish and Wildlife Service. National Marine Fisheries Service. Georgia Department of Natural Resources. 2013. Priority restoration and management actions for the American shad in the Altamaha River Basin, Georgia. Athens, Georgia. 2013.

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## **APPENDIX A**

### **MEETING SUMMARIES**



## Consultation Summary

**Date and Time:** Friday, December 11, 2020, 10:00 a.m.-12:00 p.m.

**Subject:** Rocky Mountain PAD Kickoff with GDNR – Introduction, Overview, Relicensing Approach

**Participants:** Jim Hakala, Georgia Department of Natural Resources (GDNR)  
Clint Peacock, Georgia Department of Natural Resources (GDNR)  
Paula Marcinek, Georgia Department of Natural Resources (GDNR)  
Jackson Sibley, Georgia Department of Natural Resources (GDNR)  
David Gregory, Georgia Department of Natural Resources (GDNR)  
Theron Menken, Georgia Department of Natural Resources (GDNR)  
Jim Messersmith, Oglethorpe Power Corporation (OPC)  
Keith Russell, Oglethorpe Power Corporation (OPC)  
Suzanne Roberts, Oglethorpe Power Corporation (OPC)  
Rick Hayes, Oglethorpe Power Corporation (OPC)  
Vann Newell, Oglethorpe Power Corporation (OPC)  
Craig Jones, Oglethorpe Power Corporation (OPC)  
Tyler McCaslin, Oglethorpe Power Corporation (OPC)  
Steve Layman, Kleinschmidt Associates

**Prepared by:** Tyler McCaslin

### Call Summary

The purpose of the call was to provide an introduction of the individuals involved in the relicensing effort between OPC and GDNR. OPC provided an overview of project operations at Rocky Mountain. GDNR provided an overview of recreation management at Rocky Mountain. OPC detailed a preliminary timeline of the overall relicensing process and covered the three different FERC relicensing approaches. OPC held a question and answer session for any open questions following distribution of the PAD Questionnaire. GDNR indicated the separate divisions would submit responses to the questionnaire and provide resource data as requested.

**Date and Time:** Tuesday, January 12, 2021, 9:00-9:15 a.m.

**Subject:** Rocky Mountain PAD Information with GDNR – Data Request Details

**Participants:** Jim Hakala, Georgia Department of Natural Resources (GDNR)  
Tyler McCaslin, Oglethorpe Power Corporation (OPC)  
Steve Layman, Kleinschmidt Associates

**Prepared by:** Steve Layman

### **Call Summary**

The purpose of the call was to discuss how best for GDNR to share fisheries, water quality, and recreation use data for OPC's use in preparing the Rocky Mountain Project Pre-Application Document (PAD). The PAD questionnaire submitted by Jim identified several summary reports and datasets pertaining to fisheries management, water quality, and recreational use of the auxiliary pools at Rocky Mountain (Antioch Lake and Heath Lake). OPC would like to summarize the most relevant data in characterizing the affected environment of the Project in the PAD.

Jim referred to the annual standardized fish survey reports as summarizing the health of the fisheries in Antioch and Heath Lakes, especially trends evident since 2010 showing the positive relationship between fertilization and fish biomass 2 years later. Without fertilization, the age and growth characteristics of the fisheries would be more ordinary for the region. The fish kill reports indicate there were no pollution-caused kills, maybe one incident that was dissolved oxygen-related, fish disease, but nothing out of the ordinary.

Regarding annual visitation to the Rocky Mountain Public Fishing Area, Jim believes the visitation is high compared to other PFAs, may be the highest, and is growing. Steve described that the license application would evaluate future annual visitation based on population growth trends and projections for the surrounding area.

We agreed that Steve would set up a secure, shared, online folder for sharing the information and data. Steve will send a link to the shared folder to Jim and Tyler this morning so that GDNR can begin uploading the information.

**Date and Time:** Wednesday, May 26, 2021, 9:00-10:00 a.m.

**Subject:** Rocky Mountain PAD Updates with GDNR – Contents and Timeline

**Participants:** Jim Hakala, Georgia Department of Natural Resources (GDNR)  
Clint Peacock, Georgia Department of Natural Resources (GDNR)  
Paula Marcinek, Georgia Department of Natural Resources (GDNR)  
Jackson Sibley, Georgia Department of Natural Resources (GDNR)  
David Gregory, Georgia Department of Natural Resources (GDNR)  
Craig Jones, Oglethorpe Power Corporation (OPC)  
Tyler McCaslin, Oglethorpe Power Corporation (OPC)  
Steve Layman, Kleinschmidt Associates

**Prepared by:** Tyler McCaslin

### **Call Summary**

The purpose of the call was to provide an overview of the timeline for submission of the PAD and NOI. OPC provided a high-level overview of the contents of the PAD. OPC detailed a projected timing of comment periods, public meetings, and site tour. OPC also covered a summary of the studies proposed in the PAD. Lastly, OPC expressed its intent to request that FERC allow the use of the Traditional Licensing Process (TLP) for this relicensing effort.

**Date and Time:** Wednesday, May 26, 2021, 11:00 a.m.-12:00 p.m.

**Subject:** Rocky Mountain PAD Updates with HPD – Contents and Timeline

**Participants:** Aspen Kemmerlin, Historic Preservation Division, Georgia Department of Community Affairs (HPD)  
Craig Jones, Oglethorpe Power Corporation (OPC)  
Tyler McCaslin, Oglethorpe Power Corporation (OPC)  
Steve Layman, Kleinschmidt Associates

**Prepared by:** Tyler McCaslin

### **Call Summary**

The purpose of the call was to provide an overview of the timeline for submission of the PAD and NOI. OPC provided a high-level overview of the contents of the PAD. OPC detailed a projected timing of comment periods, public meetings, and site tour. OPC also covered a summary of the studies proposed in the PAD. Lastly, OPC expressed its intent to request that FERC allow the use of the Traditional Licensing Process (TLP) for this relicensing effort.

**Date and Time:** Wednesday, May 26, 2021, 2:00-3:00 p.m.

**Subject:** Rocky Mountain PAD Updates with FWS – Contents and Timeline

**Participants:** Donald Imm, US Fish and Wildlife (FWS)  
Eric Bauer, US Fish and Wildlife (FWS)  
Craig Jones, Oglethorpe Power Corporation (OPC)  
Tyler McCaslin, Oglethorpe Power Corporation (OPC)  
Steve Layman, Kleinschmidt Associates

**Prepared by:** Tyler McCaslin

### **Call Summary**

The purpose of the call was to provide an overview of the timeline for submission of the PAD and NOI. OPC provided a high-level overview of the contents of the PAD. OPC detailed a projected timing of comment periods, public meetings, and site tour. OPC also covered a summary of the studies proposed in the PAD. Lastly, OPC expressed its intent to request that FERC allow the use of the Traditional Licensing Process (TLP) for this relicensing effort.

**Date and Time:** Wednesday, June 4, 2021, 10:00 -11:00 a.m.

**Subject:** Rocky Mountain PAD Updates with Floyd County– Contents and Timeline

**Participants:** Bruce Ivey, Floyd County  
Craig Jones, Oglethorpe Power Corporation (OPC)  
Tyler McCaslin, Oglethorpe Power Corporation (OPC)  
Steve Layman, Kleinschmidt Associates

**Prepared by:** Tyler McCaslin

### **Call Summary**

The purpose of the call was to provide an overview of the timeline for submission of the PAD and NOI. OPC provided a high-level overview of the contents of the PAD. OPC detailed a projected timing of comment periods, public meetings, and site tour. OPC also covered a summary of the studies proposed in the PAD. Lastly, OPC expressed its intent to request that FERC allow the use of the Traditional Licensing Process (TLP) for this relicensing effort.

**Date and Time:** Wednesday, June 21, 2021, 10:00-11:00 a.m.

**Subject:** Rocky Mountain PAD Updates with EPD – Contents and Timeline

**Participants:** Elizabeth Booth, Environmental Protection Division, Georgia Department of Natural Resources (EPD)  
Stephen Wiedl, Environmental Protection Division, Georgia Department of Natural Resources (EPD)  
Wei Zeng, Environmental Protection Division, Georgia Department of Natural Resources (EPD)  
Craig Jones, Oglethorpe Power Corporation (OPC)  
Tyler McCaslin, Oglethorpe Power Corporation (OPC)  
Steve Layman, Kleinschmidt Associates

**Prepared by:** Tyler McCaslin

### **Call Summary**

The purpose of the call was to provide an overview of the timeline for submission of the PAD and NOI. OPC provided a high-level overview of the contents of the PAD. OPC detailed a projected timing of comment periods, public meetings, and site tour. OPC also covered a summary of the studies proposed in the PAD. Lastly, OPC expressed its intent to request that FERC allow the use of the Traditional Licensing Process (TLP) for this relicensing effort. EPD requested a copy of Rocky's surface water withdrawal permit and a copy of the Section 401 CWA certification if available.

**Date and Time:** Tuesday, June 29, 2021, 10:00-11:00 a.m.

**Subject:** Rocky Mountain PAD Updates with EPA – Contents and Timeline

**Participants:** Maria Clark, US Environmental Protection Agency (EPA)  
Ntale Kajumba, US Environmental Protection Agency (EPA)  
Craig Jones, Oglethorpe Power Corporation (OPC)  
Tyler McCaslin, Oglethorpe Power Corporation (OPC)  
Steve Layman, Kleinschmidt Associates

**Prepared by:** Tyler McCaslin

### **Call Summary**

The purpose of the call was to provide an overview of the timeline for submission of the PAD and NOI. OPC provided a high-level overview of the contents of the PAD. OPC detailed a projected timing of comment periods, public meetings, and site tour. OPC also covered a summary of the studies proposed in the PAD. Lastly, OPC expressed its intent to request that FERC allow the use of the Traditional Licensing Process (TLP) for this relicensing effort.

## **APPENDIX B**

### **CONSULTATION CORRESPONDENCE**

**From:** [Jones, Craig](#)  
**To:** [Hakala, Jim](#)  
**Cc:** [clint.peacock@dnr.ga.gov](mailto:clint.peacock@dnr.ga.gov); [McCaslin, Tyler](#); [Steven Layman](#)  
**Subject:** Rocky Mountain Relicensing PAD Questionnaire  
**Date:** Thursday, November 19, 2020 11:46:30 AM  
**Attachments:** [image002.png](#)  
[Rocky Mountain PAD Questionnaire\\_Rev 11-12-2020.docx](#)

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Hi Jim,

As we've been discussing, Oglethorpe Power Corporation (OPC) is preparing to relicense its Rocky Mountain Pumped Storage Project (FERC Project No. 2725). The project has an installed capacity of 904 megawatts and is located about 10 miles northwest of the City of Rome in Floyd County, Georgia. The original Federal Energy Regulatory Commission (FERC) license expires December 31, 2026. As you know, project relicensing is a multi-year process that begins with OPC filing a Notice of Intent (NOI) to seek a new license and Pre-Application Document (PAD) with FERC and providing copies to stakeholders for their review and comment.

The PAD is intended to provide detailed information about the project early in the process and comprises a description of the project and relevant information about the project environment and resources to facilitate the identification of issues and information needs. OPC plans to distribute the PAD next summer to federal and state resource agencies, Indian tribes, local governments, and members of the public likely to be interested in the proceeding. To help ensure that we are including the requisite project information, we are reaching out to stakeholders who are likely to have such information with a PAD Questionnaire (attached). The questionnaire will help identify whether you have information that is relevant to this relicensing process. Your responses are an important and helpful part of preparing a comprehensive PAD and are very much appreciated.

Please feel free to contact me with any questions about the attached PAD Questionnaire or the relicensing process for the Rocky Mountain Pumped Storage Project. Please also reach out with any questions about the types of data that would be helpful in preparing the PAD.

I look forward to working with you and DNR on this project.

Best regards,

Craig

**Craig A. Jones, PhD**

Director of Environmental Policy  
Oglethorpe Power Corporation  
2100 East Exchange Place, Tucker, GA 30084

**Office:** 770-270-7348 **Mobile:** 770-500-8912  
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**From:** [Jones, Craig](#)  
**To:** [iveyb@floydcountyga.org](mailto:iveyb@floydcountyga.org)  
**Cc:** [mccordj@floydcountyga.org](mailto:mccordj@floydcountyga.org); [McCaslin, Tyler](#); [Steven Layman](#)  
**Subject:** Rocky Mountain Hydropower Relicensing  
**Date:** Thursday, November 19, 2020 3:23:35 PM  
**Attachments:** [image003.png](#)  
[Rocky Mountain PAD Questionnaire\\_Rev 11-12-2020.docx](#)

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Hi Bruce,

It was good chatting with this afternoon. As we discussed, Oglethorpe Power Corporation (OPC) is preparing to relicense its Rocky Mountain Pumped Storage Project (FERC Project No. 2725). The project has an installed capacity of 904 megawatts and is located about 10 miles northwest of the City of Rome in Floyd County, Georgia. The original Federal Energy Regulatory Commission (FERC) license expires December 31, 2026. As I briefly touched on, project relicensing is a multi-year process that begins with OPC filing a Notice of Intent (NOI) to seek a new license and Pre-Application Document (PAD) with FERC and providing copies to stakeholders for their review and comment.

The PAD is intended to provide detailed information about the project early in the process and comprises a description of the project and relevant information about the project environment and resources to facilitate the identification of issues and information needs. OPC plans to distribute the PAD next summer to federal and state resource agencies, Indian tribes, local governments, and members of the public likely to be interested in the proceeding. To help ensure that we are including the requisite project information, we are reaching out to stakeholders who are likely to have such information with a PAD Questionnaire (attached). The questionnaire will help identify whether you have information that is relevant to this relicensing process. Your responses are an important and helpful part of preparing a comprehensive PAD and are very much appreciated.

Please feel free to contact me with any questions about the attached PAD Questionnaire or the relicensing process for the Rocky Mountain Pumped Storage Project. Please also reach out with any questions about the types of data that would be helpful in preparing the PAD.

Best regards,

Craig

**Craig A. Jones, PhD**

Director, Environmental Policy  
Oglethorpe Power Corporation  
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**From:** [Jones, Craig](#)  
**To:** [edward.hunter@usda.gov](mailto:edward.hunter@usda.gov)  
**Cc:** [McCaslin, Tyler](#); [Steven Layman](#)  
**Subject:** Rocky Mountain Hydropower Relicensing  
**Date:** Thursday, November 19, 2020 3:58:43 PM  
**Attachments:** [image003.png](#)  
[Rocky Mountain PAD Questionnaire\\_Rev 11-12-2020.docx](#)

---

Good Afternoon,

Oglethorpe Power Corporation (OPC) is preparing to relicense its Rocky Mountain Pumped Storage Project (FERC Project No. 2725). The project has an installed capacity of 904 megawatts and is located about 10 miles northwest of the City of Rome in Floyd County, Georgia. The original Federal Energy Regulatory Commission (FERC) license expires December 31, 2026. As you may be aware, project relicensing is a multi-year process that begins with OPC filing a Notice of Intent (NOI) to seek a new license and Pre-Application Document (PAD) with FERC and providing copies to stakeholders for their review and comment.

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Best regards,

Craig

**Craig A. Jones, PhD**  
Director of Environmental Policy  
Oglethorpe Power Corporation  
2100 East Exchange Place, Tucker, GA 30084

**Office:** 770-270-7348 **Mobile:** 770-500-8912  
**Email:** [craig.jones@opc.com](mailto:craig.jones@opc.com) **Web:** [www.opc.com](http://www.opc.com)



**From:** [Jones, Craig](#)  
**To:** [James.Capp@dnr.state.ga.us](mailto:James.Capp@dnr.state.ga.us); [Elizabeth.Booth@dnr.state.ga.us](mailto:Elizabeth.Booth@dnr.state.ga.us); [jennifer.welte@dnr.state.ga.us](mailto:jennifer.welte@dnr.state.ga.us)  
**Cc:** [McCaslin, Tyler](#); [Steven Layman](#)  
**Subject:** Rocky Mountain Hydropower Relicensing  
**Date:** Thursday, November 19, 2020 4:19:40 PM  
**Attachments:** [image001.png](#)  
[Rocky Mountain PAD Questionnaire\\_Rev 11-12-2020.docx](#)

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Good Afternoon,

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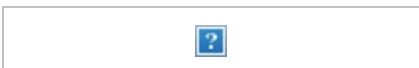
I look forward to working with you on this project.

Best regards,

Craig

**Craig A. Jones, PhD**  
Director of Environmental Policy  
Oglethorpe Power Corporation  
2100 East Exchange Place, Tucker, GA 30084

**Office:** 770-270-7348 **Mobile:** 770-500-8912  
**Email:** [craig.jones@opc.com](mailto:craig.jones@opc.com) **Web:** [www.opc.com](http://www.opc.com)



**From:** [Jones, Craig](#)  
**To:** [Booth, Elizabeth](#)  
**Cc:** [Welte, Jennifer](#); [Steven Layman](#); [McCaslin, Tyler](#)  
**Subject:** RE: Rocky Mountain Hydropower Relicensing  
**Date:** Friday, November 20, 2020 12:58:04 PM  
**Attachments:** [image002.png](#)  
[image003.png](#)  
[image009.png](#)

---

Hi Liz,

Thank you for the quick feedback and for forwarding the questionnaire water resources.

Please feel free to reach out at any point with questions about our relicensing process. We anticipate filing our NOI and PAD in July 2021, with the public comment period and site tour (possibly modified depending on where we are with the virus) following into the late summer/early fall timeframe.

Best regards,

Craig

**Craig A. Jones, PhD**

Director of Environmental Policy  
Oglethorpe Power Corporation  
2100 East Exchange Place, Tucker, GA 30084

**Office:** 770-270-7348 **Mobile:** 770-500-8912  
**Email:** [craig.jones@opc.com](mailto:craig.jones@opc.com) **Web:** [www.opc.com](http://www.opc.com)



---

**From:** Booth, Elizabeth [mailto:Elizabeth.Booth@dnr.ga.gov]  
**Sent:** Friday, November 20, 2020 12:41 PM  
**To:** Jones, Craig <craig.jones@opc.com>  
**Cc:** Welte, Jennifer <Jennifer.Welte@dnr.ga.gov>  
**Subject:** RE: Rocky Mountain Hydropower Relicensing

**\*External E-Mail\***

Craig, any water quality data we have related to the Rocky Mountain Storage Project is available online. The data can be obtained through the public portal to our database:

<https://gomaspublic.gaepd.org/>

I have also forwarded you questionnaire to Wei Zeng the manager of the hydrology group who deals with the state's water resources.

Please let me know if you need anything else.

Thanks Liz

Elizabeth A. Booth, Ph.D., P.E.  
Georgia Environmental Protection Division  
Watershed Protection Branch  
Watershed Planning and Monitoring Program  
2 Martin Luther King Jr. Drive, Suite 1152  
Atlanta, Georgia 30334  
404 463-4929  
[elizabeth.booth@dnr.ga.gov](mailto:elizabeth.booth@dnr.ga.gov)



---

**From:** Jones, Craig <[craig.jones@opc.com](mailto:craig.jones@opc.com)>  
**Sent:** Thursday, November 19, 2020 4:19 PM  
**To:** Capp, James <[James.Capp@dnr.ga.gov](mailto:James.Capp@dnr.ga.gov)>; Booth, Elizabeth <[Elizabeth.Booth@dnr.ga.gov](mailto:Elizabeth.Booth@dnr.ga.gov)>; Welte, Jennifer <[Jennifer.Welte@dnr.ga.gov](mailto:Jennifer.Welte@dnr.ga.gov)>  
**Cc:** McCaslin, Tyler <[tyler.mccaslin@opc.com](mailto:tyler.mccaslin@opc.com)>; Steven Layman <[Steven.Layman@Kleinschmidtgroup.com](mailto:Steven.Layman@Kleinschmidtgroup.com)>  
**Subject:** Rocky Mountain Hydropower Relicensing

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good Afternoon,

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I look forward to working with you on this project.

Best regards,

Craig

**Craig A. Jones, PhD**

Director of Environmental Policy  
Oglethorpe Power Corporation  
2100 East Exchange Place, Tucker, GA 30084

**Office:** 770-270-7348 **Mobile:** 770-500-8912  
**Email:** [craig.jones@opc.com](mailto:craig.jones@opc.com) **Web:** [www.opc.com](http://www.opc.com)



## Kelly Kirven

---

**From:** Jones, Craig <craig.jones@opc.com>  
**Sent:** Friday, November 20, 2020 3:09 PM  
**To:** walker.mary@epa.gov; clark.maria@epa.gov; fite.mark@epa.gov  
**Cc:** McCaslin, Tyler; Steven Layman  
**Subject:** Rocky Mountain Hydropower Relicensing

Good Afternoon,

Oglethorpe Power Corporation (OPC) is preparing to relicense its Rocky Mountain Pumped Storage Project (FERC Project No. 2725). The project has an installed capacity of 904 megawatts and is located about 10 miles northwest of the City of Rome in Floyd County, Georgia. The original Federal Energy Regulatory Commission (FERC) license expires December 31, 2026. As I'm sure you are aware, project relicensing is a multi-year process that begins with OPC filing a Notice of Intent (NOI) to seek a new license and Pre-Application Document (PAD) with FERC and providing copies to stakeholders for their review and comment.

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Best regards,

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**Email:** [craig.jones@opc.com](mailto:craig.jones@opc.com) **Web:** [www.opc.com](http://www.opc.com)



**From:** [Jones, Craig](#)  
**To:** [Jim.Hakala@dnr.state.ga.us](mailto:Jim.Hakala@dnr.state.ga.us)  
**Cc:** [McCaslin, Tyler](#); [Steven Layman](#)  
**Subject:** Relicensing Meeting Follow Up  
**Date:** Friday, December 11, 2020 12:52:17 PM  
**Attachments:** [image001.png](#)  
[Oglethorpe Power Relicensing Contacts.docx](#)  
[OPC and GDNR Rocky Mountain Relicensing Discussion Slides 12-11-2020.pdf](#)

---

Hi Jim,

It was good seeing you and the rest of your DNR team today on Webex. I'm glad we had the opportunity to begin talking about the relicensing process for Rocky Mountain, and I look forward to working with you more as we get rolling.

As discussed, attached is an OPC contact list and a PDF of the presentation we walked through today. Please reach out at any time with questions.

Best regards,

Craig

**Craig A. Jones, PhD**

Director of Environmental Policy  
Oglethorpe Power Corporation  
2100 East Exchange Place, Tucker, GA 30084

**Office:** 770-270-7348 **Mobile:** 770-500-8912  
**Email:** [craig.jones@opc.com](mailto:craig.jones@opc.com) **Web:** [www.opc.com](http://www.opc.com)





January 19, 2021

**Certified Mail/ Return Receipt #  
7020 0640 0001 1374 1017**

Mr. Joe Bunch  
Chief  
United Keetoowah Band Cherokee  
P.O. Box 746  
Tahlequah, Ok 74465

Dear Mr. Bunch

Subject: Pre-Application Document Questionnaire for FERC Relicensing

Oglethorpe Power Corporation (OPC) is preparing to relicense its Rocky Mountain Pumped Storage Project (FERC Project No. 2725). The project has an installed capacity of 904 megawatts and is located about 10 miles northwest of the City of Rome in Floyd County, Georgia. The original Federal Energy Regulatory Commission (FERC) license expires December 31, 2026. As you may be aware, project relicensing is a multi-year process that begins with OPC filing a Notice of Intent (NOI) to seek a new license and Pre-Application Document (PAD) with FERC and providing copies to stakeholders for their review and comment.

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If possible, we would like to have the questionnaire responses back by February 28, 2021, but that date is flexible so let us know if it is problematic for any reason.

Please feel free to contact me at (770) 270-7348 with any questions about the attached PAD Questionnaire or the relicensing process for the Rocky Mountain Pumped Storage Project. Please also reach out with any questions about the types of data that would be helpful in preparing the PAD.

I look forward to hearing from you about any data you may have to offer.

Sincerely,



Craig Jones

Director, Environmental Affairs

c: Mr. Keith Russell (Oglethorpe) (w/att.)  
Mr. Jim Messersmith (Oglethorpe) (w/att.)  
Ms. Suzanne Roberts (Oglethorpe) (w/att.)  
Mr. Rick Hayes (Oglethorpe) (w/att.)

ENV-RM-21-17





**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

---

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**Please fill out and return this questionnaire to Steve Layman by email ([Steven.Layman@KleinschmidtGroup.com](mailto:Steven.Layman@KleinschmidtGroup.com)). You may also email any comments and/or questions to Steve Layman at the email address above. Thank you for your time and attention to this matter.**

Contact Information for person completing the questionnaire:

Name & Title: \_\_\_\_\_  
Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
Phone: \_\_\_\_\_  
Email: \_\_\_\_\_  
Address: \_\_\_\_\_

**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

---

- 2(d) Please provide the name(s) of any specific representative(s) of your organization other than yourself you wish to designate for a potential follow-up contact by OPC or OPC's representative for the resource area(s) checked above. *(Additional contacts may be provided on a separate page.)*

**Representative Contact Information**

Name & Title:	_____
Address:	_____ _____
Phone:	_____
Email Address:	_____ _____
Name:	_____
Address:	_____ _____
Phone:	_____
Email Address:	_____ _____

- 2(e) Are you aware of any specific Project-related issues pertaining to the resource area(s) listed in 2(a) above? *(Additional information may be provided on a separate page.)*

Yes *(Please list specific issues below.)*       No

<u>Resource Area</u>	<u>Specific Issue</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

3. Do you or does your organization plan to participate in the relicensing process?

Yes                                       No



January 19, 2021

**Certified Mail/ Return Receipt #**  
**7020 0640 0001 1374 1017**

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Chief  
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Sincerely,

Craig Jones  
Director, Environmental Affairs

c: Mr. Keith Russell (Oglethorpe) (w/att.)  
Mr. Jim Messersmith (Oglethorpe) (w/att.)  
Ms. Suzanne Roberts (Oglethorpe) (w/att.)  
Mr. Rick Hayes (Oglethorpe) (w/att.)

ENV-RM-21-17





**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

---

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Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
Phone: \_\_\_\_\_  
Email: \_\_\_\_\_  
Address: \_\_\_\_\_

**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

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1. Do you know of any reasonably available materials or information related to the Project's environment that is not already included in the attached reference list?

- Yes (*If yes, please complete 2a thru 2e.*)                       No (*If no, please go to 3.*)

2(a) Please indicate the specific resource area(s) for which you have information:

- |   |   |
|---|---|
| <input type="checkbox"/> Geology and soils                        | <input type="checkbox"/> Recreation and land use    |
| <input type="checkbox"/> Water resources                          | <input type="checkbox"/> Aesthetic resources        |
| <input type="checkbox"/> Fish and aquatic resources               | <input type="checkbox"/> Cultural resources         |
| <input type="checkbox"/> Wildlife and botanical resources         | <input type="checkbox"/> Socio-economic resources   |
| <input type="checkbox"/> Wetlands, riparian, and littoral habitat | <input type="checkbox"/> Tribal resources           |
| <input type="checkbox"/> Rare, threatened & endangered species    | <input type="checkbox"/> Other resource information |

2(b) Please briefly describe the information or list available documents or references. If listing references, please provide author(s), date, title, publication, volume, and page numbers where applicable. (*Additional information may be provided on a separate page.*)

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2(c) Where and how can OPC obtain this information?

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**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

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- 2(d) Please provide the name(s) of any specific representative(s) of your organization other than yourself you wish to designate for a potential follow-up contact by OPC or OPC's representative for the resource area(s) checked above. *(Additional contacts may be provided on a separate page.)*

**Representative Contact Information**

Name & Title: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
Phone: \_\_\_\_\_  
Email Address: \_\_\_\_\_  
\_\_\_\_\_  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
Phone: \_\_\_\_\_  
Email Address: \_\_\_\_\_  
\_\_\_\_\_

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Yes *(Please list specific issues below.)*       No

<u>Resource Area</u>	<u>Specific Issue</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

3. Do you or does your organization plan to participate in the relicensing process?

Yes                                       No

**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

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4. We are interested in your comments. If you have comments and/or questions regarding the Project, the Pre-Application Document, or FERC licensing, please note them below:

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# OglethorpePower

An Electric Membership Corporation

January 19, 2021

**Certified Mail/ Return Receipt #**  
**7019 1640 0001 6084 5899**

Mr. Ryan Morrow  
Town King  
Thlopthlocco Tribal Town  
P.O. Box 188  
Okemah, OK 74859

Dear Mr. Morrow:

Subject: Pre-Application Document Questionnaire for FERC Relicensing

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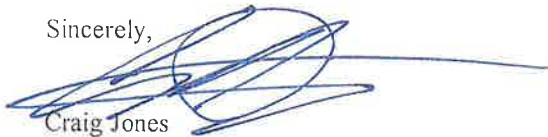
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Craig Jones  
Director, Environmental Affairs

- c: Mr. Keith Russell (Oglethorpe) (w/att.)
- Mr. Jim Messersmith (Oglethorpe) (w/att.)
- Ms. Suzanne Roberts (Oglethorpe) (w/att.)
- Mr. Rick Hayes (Oglethorpe) (w/att.)

ENV-RM-21-16



January 19, 2021

**Certified Mail/ Return Receipt #**  
**7019 1640 0001 6084 5851**

Mr. Theodore Isham  
THPO  
Seminole Tribe of Oklahoma  
P.O. Box 1498  
Wewoka, OK 74884

Dear Mr. Isham:

Subject: Pre-Application Document Questionnaire for FERC Relicensing

Oglethorpe Power Corporation (OPC) is preparing to relicense its Rocky Mountain Pumped Storage Project (FERC Project No. 2725). The project has an installed capacity of 904 megawatts and is located about 10 miles northwest of the City of Rome in Floyd County, Georgia. The original Federal Energy Regulatory Commission (FERC) license expires December 31, 2026. As you may be aware, project relicensing is a multi-year process that begins with OPC filing a Notice of Intent (NOI) to seek a new license and Pre-Application Document (PAD) with FERC and providing copies to stakeholders for their review and comment.

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If possible, we would like to have the questionnaire responses back by February 28, 2021, but that date is flexible so let us know if it is problematic for any reason.

Please feel free to contact me at (770) 270-7348 with any questions about the attached PAD Questionnaire or the relicensing process for the Rocky Mountain Pumped Storage Project. Please also reach out with any questions about the types of data that would be helpful in preparing the PAD.

I look forward to hearing from you about any data you may have to offer.

Sincerely,



Craig Jones  
Director, Environmental Affairs

C: Mr. Keith Russell (Oglethorpe) (w/att.)  
Mr. Jim Messersmith (Oglethorpe) (w/att.)  
Ms. Suzanne Roberts (Oglethorpe) (w/att.)  
Mr. Rick Hayes (Oglethorpe) (w/att.)

ENV-RM-21-15





January 19, 2021

**Certified Mail/ Return Receipt #**  
**7019 1640 0001 6084 5868**

Mr. Marcellus Osceola Jr.  
Chairman  
Seminole Tribe of Florida  
6300 Stirling Road  
Hollywood, FL 33024

Dear Mr. Osceola:

Subject: Pre-Application Document Questionnaire for FERC Relicensing

Oglethorpe Power Corporation (OPC) is preparing to relicense its Rocky Mountain Pumped Storage Project (FERC Project No. 2725). The project has an installed capacity of 904 megawatts and is located about 10 miles northwest of the City of Rome in Floyd County, Georgia. The original Federal Energy Regulatory Commission (FERC) license expires December 31, 2026. As you may be aware, project relicensing is a multi-year process that begins with OPC filing a Notice of Intent (NOI) to seek a new license and Pre-Application Document (PAD) with FERC and providing copies to stakeholders for their review and comment.

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I look forward to hearing from you about any data you may have to offer.

Sincerely,

Craig Jones  
Director, Environmental Affairs

c: Mr. Keith Russell (Oglethorpe) (w/att.)  
Mr. Jim Messersmith (Oglethorpe) (w/att.)  
Ms. Suzanne Roberts (Oglethorpe) (w/att.)  
Mr. Rick Hayes (Oglethorpe) (w/att.)

ENV-RM-21-14





# OglethorpePower

An Electric Membership Corporation

January 19, 2021

**Certified Mail/ Return Receipt #  
7019 1640 0001 6084 5844**

Ms. Corain Lowe-Zepeda  
THPO  
Muscogee Creek Nation  
P.O. Box 580  
Okmulgee, OK 74447

Dear Ms. Lowe-Zepeda:

Subject: Pre-Application Document Questionnaire for FERC Relicensing

Oglethorpe Power Corporation (OPC) is preparing to relicense its Rocky Mountain Pumped Storage Project (FERC Project No. 2725). The project has an installed capacity of 904 megawatts and is located about 10 miles northwest of the City of Rome in Floyd County, Georgia. The original Federal Energy Regulatory Commission (FERC) license expires December 31, 2026. As you may be aware, project relicensing is a multi-year process that begins with OPC filing a Notice of Intent (NOI) to seek a new license and Pre-Application Document (PAD) with FERC and providing copies to stakeholders for their review and comment.

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I look forward to hearing from you about any data you may have to offer.

Sincerely,

Craig Jones  
Director, Environmental Affairs

- c: Mr. Keith Russell (Oglethorpe) (w/att.)
- Mr. Jim Messersmith (Oglethorpe) (w/att.)
- Ms. Suzanne Roberts (Oglethorpe) (w/att.)
- Mr. Rick Hayes (Oglethorpe) (w/att.)

ENV-RM-21-13





# Oglethorpe Power

An Electric Membership Corporation

January 19, 2021

**Certified Mail/ Return Receipt #**  
**7019 1640 0001 6084 5837**

Mr. David Hill  
Principal Chief  
Muscogee Creek Nation  
P.O. Box 580  
Okmulgee, OK 74447

Dear Mr. Hill

Subject: Pre-Application Document Questionnaire for FERC Relicensing

Oglethorpe Power Corporation (OPC) is preparing to relicense its Rocky Mountain Pumped Storage Project (FERC Project No. 2725). The project has an installed capacity of 904 megawatts and is located about 10 miles northwest of the City of Rome in Floyd County, Georgia. The original Federal Energy Regulatory Commission (FERC) license expires December 31, 2026. As you may be aware, project relicensing is a multi-year process that begins with OPC filing a Notice of Intent (NOI) to seek a new license and Pre-Application Document (PAD) with FERC and providing copies to stakeholders for their review and comment.

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I look forward to hearing from you about any data you may have to offer.

Sincerely,

Craig Jones  
Director, Environmental Affairs

- c: Mr. Keith Russell (Oglethorpe) (w/att.)
- Mr. Jim Messersmith (Oglethorpe) (w/att.)
- Ms. Suzanne Roberts (Oglethorpe) (w/att.)
- Mr. Rick Hayes (Oglethorpe) (w/att.)

ENV-RM-21-12







# OglethorpePower

An Electric Membership Corporation

January 19, 2021

**Certified Mail/ Return Receipt #  
7019 1640 0001 6084 5813**

Mr. Brian Givens  
Town King  
Kialegee Tribal Town  
P.O. Box 332  
Wetumka, Ok 74883-0332

Dear Mr. Givens

Subject: Pre-Application Document Questionnaire for FERC Relicensing

Oglethorpe Power Corporation (OPC) is preparing to relicense its Rocky Mountain Pumped Storage Project (FERC Project No. 2725). The project has an installed capacity of 904 megawatts and is located about 10 miles northwest of the City of Rome in Floyd County, Georgia. The original Federal Energy Regulatory Commission (FERC) license expires December 31, 2026. As you may be aware, project relicensing is a multi-year process that begins with OPC filing a Notice of Intent (NOI) to seek a new license and Pre-Application Document (PAD) with FERC and providing copies to stakeholders for their review and comment.

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I look forward to hearing from you about any data you may have to offer.

Sincerely,



Craig Jones  
Director, Environmental Affairs

c: Mr. Keith Russell (Oglethorpe) (w/att.)  
Mr. Jim Messersmith (Oglethorpe) (w/att.)  
Ms. Suzanne Roberts (Oglethorpe) (w/att.)  
Mr. Rick Hayes (Oglethorpe) (w/att.)

ENV-RM-21-11

Oglethorpe Power Corporation • 2100 East Exchange Place • Tucker, GA 30084-5336  
Phone: 770-270-7600 • Fax: 770-270-7872



A member of the National Rural Electric Cooperative Association



January 19, 2021

*Certified Mail/ Return Receipt #*

*7019 1640 0001 6084 5820*

Mr. Russell Townsend  
THPO  
Eastern Band of Cherokee Indians  
P.O. Box 455  
Cherokee, NC 28719

Dear Mr. Townsend:

Subject: Pre-Application Document Questionnaire for FERC Relicensing

Oglethorpe Power Corporation (OPC) is preparing to relicense its Rocky Mountain Pumped Storage Project (FERC Project No. 2725). The project has an installed capacity of 904 megawatts and is located about 10 miles northwest of the City of Rome in Floyd County, Georgia. The original Federal Energy Regulatory Commission (FERC) license expires December 31, 2026. As you may be aware, project relicensing is a multi-year process that begins with OPC filing a Notice of Intent (NOI) to seek a new license and Pre-Application Document (PAD) with FERC and providing copies to stakeholders for their review and comment.


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I look forward to hearing from you about any data you may have to offer.

Sincerely,



Craig Jones

Director, Environmental Affairs

c: Mr. Keith Russell (Oglethorpe) (w/att.)  
Mr. Jim Messersmith (Oglethorpe) (w/att.)  
Ms. Suzanne Roberts (Oglethorpe) (w/att.)  
Mr. Rick Hayes (Oglethorpe) (w/att.)

ENV-RM-21-10





January 19, 2021

**Certified Mail/ Return Receipt #  
7019 1640 0001 6084 5806**

Mr. Richard Sneed  
Principal Chief  
Eastern Band of Cherokee  
P.O. Box 1927  
Cherokee, NC 28719

Dear Mr. Sneed:

Subject: Pre-Application Document Questionnaire for FERC Relicensing

Oglethorpe Power Corporation (OPC) is preparing to relicense its Rocky Mountain Pumped Storage Project (FERC Project No. 2725). The project has an installed capacity of 904 megawatts and is located about 10 miles northwest of the City of Rome in Floyd County, Georgia. The original Federal Energy Regulatory Commission (FERC) license expires December 31, 2026. As you may be aware, project relicensing is a multi-year process that begins with OPC filing a Notice of Intent (NOI) to seek a new license and Pre-Application Document (PAD) with FERC and providing copies to stakeholders for their review and comment.

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I look forward to hearing from you about any data you may have to offer.

Sincerely,

Craig Jones

Director, Environmental Affairs

c: Mr. Keith Russell (Oglethorpe) (w/att.)  
Mr. Jim Messersmith (Oglethorpe) (w/att.)  
Ms. Suzanne Roberts (Oglethorpe) (w/att.)  
Mr. Rick Hayes (Oglethorpe) (w/att.)

ENV-RM-21-09







# OglethorpePower

An Electric Membership Corporation

January 19, 2021

**Certified Mail/ Return Receipt #**  
**7019 1640 0001 6084 5790**

Mr. David Sickey  
Tribal Chairman  
Coushatta Tribe of Louisiana  
P.O. Box 818  
Elton, LA 70532

Dear Mr. Sickey:

Subject: Pre-Application Document Questionnaire for FERC Relicensing

Oglethorpe Power Corporation (OPC) is preparing to relicense its Rocky Mountain Pumped Storage Project (FERC Project No. 2725). The project has an installed capacity of 904 megawatts and is located about 10 miles northwest of the City of Rome in Floyd County, Georgia. The original Federal Energy Regulatory Commission (FERC) license expires December 31, 2026. As you may be aware, project relicensing is a multi-year process that begins with OPC filing a Notice of Intent (NOI) to seek a new license and Pre-Application Document (PAD) with FERC and providing copies to stakeholders for their review and comment.

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I look forward to hearing from you about any data you may have to offer.

Sincerely,

Craig Jones  
Director, Environmental Affairs

c: Mr. Keith Russell (Oglethorpe) (w/att.)  
Mr. Jim Messersmith (Oglethorpe) (w/att.)  
Ms. Suzanne Roberts (Oglethorpe) (w/att.)  
Mr. Rick Hayes (Oglethorpe) (w/att.)

ENV-RM-21-08





# OglethorpePower

An Electric Membership Corporation

January 19, 2021

**Certified Mail/ Return Receipt #  
7020 0640 0001 1375 3935**

Dr. Linda Langley  
THPO  
Coushatta Tribe of Louisiana  
P.O. Box 10  
Elton, LA 70532

Dear Dr. Langley:

Subject: Pre-Application Document Questionnaire for FERC Relicensing

Oglethorpe Power Corporation (OPC) is preparing to relicense its Rocky Mountain Pumped Storage Project (FERC Project No. 2725). The project has an installed capacity of 904 megawatts and is located about 10 miles northwest of the City of Rome in Floyd County, Georgia. The original Federal Energy Regulatory Commission (FERC) license expires December 31, 2026. As you may be aware, project relicensing is a multi-year process that begins with OPC filing a Notice of Intent (NOI) to seek a new license and Pre-Application Document (PAD) with FERC and providing copies to stakeholders for their review and comment.

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I look forward to hearing from you about any data you may have to offer.

Sincerely,

Craig Jones  
Director, Environmental Affairs

c: Mr. Keith Russell (Oglethorpe) (w/att.)  
Mr. Jim Messersmith (Oglethorpe) (w/att.)  
Ms. Suzanne Roberts (Oglethorpe) (w/att.)  
Mr. Rick Hayes (Oglethorpe) (w/att.)

ENV-RM-21-07





January 19, 2021

**Certified Mail/ Return Receipt #  
7019 1640 0001 6084 5783**

Ms. Elizabeth Toombs  
THPO  
Cherokee Nation  
P.O. Box 948  
Tahlequah, OK 74465-0948

Dear Ms. Toombs:

Subject: Pre-Application Document Questionnaire for FERC Relicensing

Oglethorpe Power Corporation (OPC) is preparing to relicense its Rocky Mountain Pumped Storage Project (FERC Project No. 2725). The project has an installed capacity of 904 megawatts and is located about 10 miles northwest of the City of Rome in Floyd County, Georgia. The original Federal Energy Regulatory Commission (FERC) license expires December 31, 2026. As you may be aware, project relicensing is a multi-year process that begins with OPC filing a Notice of Intent (NOI) to seek a new license and Pre-Application Document (PAD) with FERC and providing copies to stakeholders for their review and comment.

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I look forward to hearing from you about any data you may have to offer.

Sincerely,



Craig Jones  
Director, Environmental Affairs

c: Mr. Keith Russell (Oglethorpe) (w/att.)  
Mr. Jim Messersmith (Oglethorpe) (w/att.)  
Ms. Suzanne Roberts (Oglethorpe) (w/att.)  
Mr. Rick Hayes (Oglethorpe) (w/att.)

ENV-RM-21-06





January 19, 2021

*Certified Mail/ Return Receipt #  
7019 1120 0000 1736 6066*

Mr. Chuck Hoskin Jr.  
Principal Chief  
Cherokee Nation  
P.O. Box 948  
Tahlequah, OK 74465-0948

Dear Mr. Hoskin:

Subject: Pre-Application Document Questionnaire for FERC Relicensing

Oglethorpe Power Corporation (OPC) is preparing to relicense its Rocky Mountain Pumped Storage Project (FERC Project No. 2725). The project has an installed capacity of 904 megawatts and is located about 10 miles northwest of the City of Rome in Floyd County, Georgia. The original Federal Energy Regulatory Commission (FERC) license expires December 31, 2026. As you may be aware, project relicensing is a multi-year process that begins with OPC filing a Notice of Intent (NOI) to seek a new license and Pre-Application Document (PAD) with FERC and providing copies to stakeholders for their review and comment.

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I look forward to hearing from you about any data you may have to offer.

Sincerely,

Craig Jones  
Director, Environmental Affairs

c: Mr. Keith Russell (Oglethorpe) (w/att.)  
Mr. Jim Messersmith (Oglethorpe) (w/att.)  
Ms. Suzanne Roberts (Oglethorpe) (w/att.)  
Mr. Rick Hayes (Oglethorpe) (w/att.)

ENV-RM-21-05





# OglethorpePower

An Electric Membership Corporation

January 19, 2021

**Certified Mail/ Return Receipt #**  
**7020 0640 0001 1375 3942**

Mr. Nelson Harjo  
Chief  
Alabama-Quassarte Tribal Town  
P.O. Box 187  
Wetumka, OK 74883

Dear Mr. Harjo:

Subject: Pre-Application Document Questionnaire for FERC Relicensing

Oglethorpe Power Corporation (OPC) is preparing to relicense its Rocky Mountain Pumped Storage Project (FERC Project No. 2725). The project has an installed capacity of 904 megawatts and is located about 10 miles northwest of the City of Rome in Floyd County, Georgia. The original Federal Energy Regulatory Commission (FERC) license expires December 31, 2026. As you may be aware, project relicensing is a multi-year process that begins with OPC filing a Notice of Intent (NOI) to seek a new license and Pre-Application Document (PAD) with FERC and providing copies to stakeholders for their review and comment.

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I look forward to hearing from you about any data you may have to offer.

Sincerely,



Craig Jones

Director, Environmental Affairs

- c: Mr. Keith Russell (Oglethorpe) (w/att.)
- Mr. Jim Messersmith (Oglethorpe) (w/att.)
- Ms. Suzanne Roberts (Oglethorpe) (w/att.)
- Mr. Rick Hayes (Oglethorpe) (w/att.)

ENV-RM-21-04



FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, D.C. 20426  
April 8, 2021

OFFICE OF ENERGY PROJECTS

Project No. 2725-000 – Georgia  
Rocky Mountain Hydroelectric Project  
Oglethorpe Power Corporation

VIA Electronic Mail

**Reference: Consultation with Tribes for the Rocky Mountain Hydroelectric  
Project No. 2725-000**

To the Tribal Leaders Addressed:

The Federal Energy Regulatory Commission (Commission) invites your participation in the relicensing process for the existing Rocky Mountain Hydroelectric Project No. 2725 (Rocky Mountain Project). The Commission's relicensing process is an opportunity for both the licensee and interested agencies, tribes, and other stakeholders to consider the project's existing operation and protection, mitigation, and enhancement measures, and evaluate the need for any changes or additional measures to be implemented over the term of any new license issued for the project. The 904-megawatt Rocky Mountain Hydroelectric Project is a pumped-storage project with a lower reservoir on Heath Creek and an upper reservoir on top of Rocky Mountain in Floyd County, Georgia. We anticipate that Oglethorpe Power Corporation (Oglethorpe Power), the licensee for the project, will file a notice of intent and Pre-Application Document by December 31, 2021, to initiate the pre-filing process and file an application for a new license by December 31, 2024.

It is very important that a tribe whose interests could be affected by the proposed Rocky Mountain Project participate early in the process so that tribal issues are addressed. For this reason, please inform us if you have an interest in participating in the relicensing process for the project.

In addition, please indicate if you would like to meet with Commission staff to discuss the Commission's licensing process, how your tribe can participate to the fullest extent possible, your interests and concerns in the affected area, and how to establish procedures to ensure appropriate communication between Commission and tribal staffs. The meeting can be limited to Commission and your tribal staff or can be open to other tribes or Oglethorpe Power.



**If at all possible, we would appreciate your response by May 11, 2021.** The Commission strongly encourages electronic filing. Please file your response using the Commission's eFiling system at <http://www.ferc.gov/docs-filing/efiling.asp>. Commenters can submit brief comments up to 6,000 characters, without prior registration, using the eComment system at <http://www.ferc.gov/docs-filing/ecomment.asp>. You must include your name and contact information at the end of your comments. For assistance, please contact FERC Online Support at [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov), (866) 208-3676 (toll free), or (202) 502-8659 (TTY). In lieu of electronic filing, please send a paper copy via the U.S. Postal Service to: Secretary, Federal Energy Regulatory Commission, 888 First Street, N.E., Room 1A, Washington, D.C. 20426. The first page of any filing should include docket number P-2725-000.

If you have any questions or comments, please contact Dustin Wilson at (202) 502-6528, or at [dustin.wilson@ferc.gov](mailto:dustin.wilson@ferc.gov). Mr. Wilson will contact you shortly to follow-up on this letter.

Sincerely,

Stephen Bowler, Chief  
South Branch  
Division of Hydropower Licensing

Addressees:

Town King Nelson Harjo  
Alabama-Quassarte Tribal Town  
[nharjo@alabama-quassarte.org](mailto:nharjo@alabama-quassarte.org)

Chairman David Sickey  
Coushatta Tribe of Louisiana  
[dsickey@coushatta.org](mailto:dsickey@coushatta.org)

Principal Chief David Hill  
Muscogee (Creek) Nation  
[dhill@mcn-nsn.gov](mailto:dhill@mcn-nsn.gov)

Chairwoman Stephanie Bryan  
Poarch Band of Creek Indians  
[sbryan@pci-nsn.gov](mailto:sbryan@pci-nsn.gov)

Chairperson Nita Battise  
Alabama-Coushatta Tribe of Texas  
[tcnbattise@actribe.org](mailto:tcnbattise@actribe.org)

Town King Brian Givens  
Kialegee Tribal Town  
[brian.givens@kialegetribe.net](mailto:brian.givens@kialegetribe.net)

Town King Ryan Morrow  
Thlopthlocco Tribal Town  
[rmorrow@tttown.org](mailto:rmorrow@tttown.org)

Principal Chief Richard Sneed  
Eastern Band of Cherokee Indians  
[richsnee@nc-choerokee.com](mailto:richsnee@nc-choerokee.com)

Chief Joe Bunch  
United Keetoowah Band of Cherokee  
Indians in Oklahoma  
jbunch@ukb-nsn.gov

Principal Chief Chuck Hoskin, Jr.  
Cherokee Nation  
Chuck-hoskin@cherokee.org

Principal Chief Leonard Harjo  
Seminole Nation of Oklahoma  
Chief.prin@sno-nsn.gov

cc:

Samantha Robison, THPO  
Alabama-Quassarte Tribal Town  
aqhpo@mail.com

Dr. Linda Langley, THPO  
Coushatta Tribe of Louisiana  
llangley@coushatta.org

RaeLynn Butler, Manager  
Muscogee (Creek) Nation  
Section106@mcn-nsn.gov

Bryant Celestine, THPO  
Alabama-Coushatta Tribe of Texas  
Celestine.Bryant@actribe.org

Brett Barnes, THPO  
Eastern Shawnee Tribe of Oklahoma  
bbarnes@estoo.net

Paul Backhouse, PhD, THPO  
Seminole Tribe of Florida  
paulbackhouse@semtribe.com

Chief Glenna Wallace  
Eastern Shawnee Tribe of Oklahoma  
gwallace@estoo.net

Chairman Marcellus W. Osceola, Jr.  
Seminole Tribe of Florida  
Chairman@semtribe.com

Stephen Yerka, THPO  
Eastern Band of Cherokee Indians  
syerka@nc-chokeee.com

Larry Haikey, THPO  
Poarch Band of Creek Indians  
THPO@pci-nsn.gov

Janet Maylen, Interim THPO  
Thlopthlocco Tribal Town  
thpo@tntown.org

Whitney Warrior, THPO  
United Keetoowah Band of Cherokee  
Indians in Oklahoma  
wwarrior@ukb-nsn.gov

Elizabeth Toombs, THPO  
Cherokee Nation  
Elizabeth-toombs@cherokee.org

David Frank, THPO  
Seminole Nation of Oklahoma  
Franks.D@sno-nsn.gov



## McCaslin, Tyler

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**From:** McCaslin, Tyler  
**Sent:** Friday, September 24, 2021 1:14 PM  
**To:** 'Jim Hakala'  
**Cc:** Jones, Craig; 'Steven Layman'; 'Clint Peacock'; 'Paula Marcinek'; 'Jackson Sibley'; 'David Gregory'; 'Theron Menken'  
**Subject:** Oglethorpe Power Corporation - Rocky Mountain FERC Relicensing Updates (NOI/PAD)

Hi Jim,

I am reaching out to update you on the timing of submitting our Notice of Intent (NOI) and Pre-Application Document (PAD) for the Rocky Mountain Pumped Storage Hydroelectric Project (P-2725). We are preparing to finalize the NOI and PAD and will do so as soon as possible in the next few months. The statutory deadline to submit these documents to FERC is December 31, 2021.

As we've discussed with you previously, as part of the NOI, OPC will be requesting that FERC allow the use of the Traditional Licensing Process (TLP) for this project. Following filing of the NOI and PAD, stakeholders will have 30 days to comment on the utilization of the TLP. FERC will issue a Notice of Commencement and a decision on OPC's request to use the TLP within 60 days of filing the NOI and PAD. Notwithstanding any COVID-related protocols, OPC will be hosting a joint meeting and site visit 30 to 60 days following FERC's Notice of Commencement. Stakeholders will have the opportunity to file comments on the PAD and study requests within 60 days of the joint meeting.

So you can have time to prepare for your review, we will reach out as soon as we have a more precise timeframe for submitting the NOI and PAD. As always, we look forward to working with you throughout this project, and please do not hesitate to reach out if you have any questions.

### **Tyler McCaslin, PhD**

Environmental Specialist  
Oglethorpe Power Corporation  
2100 East Exchange Place, Tucker, GA 30084

**Office:** 770-270-7723 **Mobile:** 404-576-9097  
**Email:** [tyler.mccaslin@opc.com](mailto:tyler.mccaslin@opc.com) **Web:** [www.opc.com](http://www.opc.com)



## McCaslin, Tyler

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**From:** McCaslin, Tyler  
**Sent:** Friday, September 24, 2021 1:14 PM  
**To:** 'Elizabeth Booth'; 'Wei Zeng'; 'Stephen Wiedl'  
**Cc:** Jones, Craig; 'Steven Layman'  
**Subject:** Oglethorpe Power Corporation - Rocky Mountain FERC Relicensing Updates (NOI/PAD)

Hi everyone,

I am reaching out to update you on the timing of submitting our Notice of Intent (NOI) and Pre-Application Document (PAD) for the Rocky Mountain Pumped Storage Hydroelectric Project (P-2725). We are preparing to finalize the NOI and PAD and will do so as soon as possible in the next few months. The statutory deadline to submit these documents to FERC is December 31, 2021.

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### **Tyler McCaslin, PhD**

Environmental Specialist  
Oglethorpe Power Corporation  
2100 East Exchange Place, Tucker, GA 30084

**Office:** 770-270-7723 **Mobile:** 404-576-9097  
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## McCaslin, Tyler

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**From:** McCaslin, Tyler  
**Sent:** Friday, September 24, 2021 1:14 PM  
**To:** 'Bruce Ivey'  
**Cc:** Jones, Craig; 'Steven Layman'; 'Jamie McCord'  
**Subject:** Oglethorpe Power Corporation - Rocky Mountain FERC Relicensing Updates (NOI/PAD)

Hi Bruce,

I am reaching out to update you on the timing of submitting our Notice of Intent (NOI) and Pre-Application Document (PAD) for the Rocky Mountain Pumped Storage Hydroelectric Project (P-2725). We are preparing to finalize the NOI and PAD and will do so as soon as possible in the next few months. The statutory deadline to submit these documents to FERC is December 31, 2021.

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### **Tyler McCaslin, PhD**

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Oglethorpe Power Corporation  
2100 East Exchange Place, Tucker, GA 30084

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**Email:** [tyler.mccaslin@opc.com](mailto:tyler.mccaslin@opc.com) **Web:** [www.opc.com](http://www.opc.com)



## McCaslin, Tyler

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**From:** McCaslin, Tyler  
**Sent:** Friday, September 24, 2021 1:14 PM  
**To:** 'John Doresky'; 'Peter Maholland'; 'Eric Bauer'  
**Cc:** Jones, Craig; 'Steven Layman'  
**Subject:** Oglethorpe Power Corporation - Rocky Mountain FERC Relicensing Updates (NOI/PAD)

Hi everyone,

I am reaching out to update you on the timing of submitting our Notice of Intent (NOI) and Pre-Application Document (PAD) for the Rocky Mountain Pumped Storage Hydroelectric Project (P-2725). We are preparing to finalize the NOI and PAD and will do so as soon as possible in the next few months. The statutory deadline to submit these documents to FERC is December 31, 2021.

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### **Tyler McCaslin, PhD**

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Oglethorpe Power Corporation  
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**Email:** [tyler.mccaslin@opc.com](mailto:tyler.mccaslin@opc.com) **Web:** [www.opc.com](http://www.opc.com)



## McCaslin, Tyler

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**From:** McCaslin, Tyler  
**Sent:** Friday, September 24, 2021 1:15 PM  
**To:** 'Maria Clark'; 'Ntale Kajumba'  
**Cc:** Jones, Craig; 'Steven Layman'  
**Subject:** Oglethorpe Power Corporation - Rocky Mountain FERC Relicensing Updates (NOI/PAD)

Hi Maria and Ntale,

I am reaching out to update you on the timing of submitting our Notice of Intent (NOI) and Pre-Application Document (PAD) for the Rocky Mountain Pumped Storage Hydroelectric Project (P-2725). We are preparing to finalize the NOI and PAD and will do so as soon as possible in the next few months. The statutory deadline to submit these documents to FERC is December 31, 2021.

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### **Tyler McCaslin, PhD**

Environmental Specialist  
Oglethorpe Power Corporation  
2100 East Exchange Place, Tucker, GA 30084

**Office:** 770-270-7723 **Mobile:** 404-576-9097  
**Email:** [tyler.mccaslin@opc.com](mailto:tyler.mccaslin@opc.com) **Web:** [www.opc.com](http://www.opc.com)



## McCaslin, Tyler

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**From:** McCaslin, Tyler  
**Sent:** Friday, September 24, 2021 1:15 PM  
**To:** 'Santiago Martinez'; 'Aspen Kemmerlin'  
**Cc:** Jones, Craig; 'Steven Layman'  
**Subject:** Oglethorpe Power Corporation - Rocky Mountain FERC Relicensing Updates (NOI/PAD)

Hi Aspen and Santiago,

I am reaching out to update you on the timing of submitting our Notice of Intent (NOI) and Pre-Application Document (PAD) for the Rocky Mountain Pumped Storage Hydroelectric Project (P-2725). We are preparing to finalize the NOI and PAD and will do so as soon as possible in the next few months. The statutory deadline to submit these documents to FERC is December 31, 2021.

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### **Tyler McCaslin, PhD**

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Oglethorpe Power Corporation  
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## McCaslin, Tyler

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**From:** McCaslin, Tyler  
**Sent:** Friday, September 24, 2021 1:31 PM  
**To:** 'Wei Zeng'  
**Cc:** Jones, Craig; 'Steven Layman'  
**Subject:** Oglethorpe Power Corporation - Rocky Mountain FERC Relicensing - Follow Up on Water Permits/Sec. 401 Water Quality Certification  
**Attachments:** 190723 Rocky Final NPDES Permit.pdf; 050309 Letter from GDNR to FERC RE Sec 401 Water Quality Certification.pdf; 131031 Rocky Surface Water Withdrawal Permit.pdf

Hi Wei,

I wanted to follow up on some information you requested when we last spoke via Webex regarding the FERC relicensing efforts for the Rocky Mountain Pumped Storage Hydroelectric Project (P-2725).

I have attached the current surface water withdrawal and NPDES permits along with a letter from GDNR to FERC regarding CWA Sec. 401 Water Quality Certification from our capacity amendment in 2005. Additionally, you had a question on the penstock capacity at Rocky. The maximum hydraulic (discharge) capacity of the powerhouse in generating mode at best gate is 18,086 cubic feet per second (cfs). Please also note that we have a 1.2 cfs minimum flow requirement that we will be seeking to continue through the new license term.

Please reach out if you'd like to discuss any of this information in more detail, as well as with any questions about this relicensing process.

### Tyler McCaslin, PhD

Environmental Specialist  
Oglethorpe Power Corporation  
2100 East Exchange Place, Tucker, GA 30084

**Office:** 770-270-7723 **Mobile:** 404-576-9097  
**Email:** [tyler.mccaslin@opc.com](mailto:tyler.mccaslin@opc.com) **Web:** [www.opc.com](http://www.opc.com)



## **APPENDIX C**

### **PAD QUESTIONNAIRES**



**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

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Oglethorpe Power Corporation (OPC) is preparing to relicense its Rocky Mountain Pumped Storage Project (Project) (FERC Project No. 2725). The Rocky Mountain Project is a 904-megawatt pumped storage project located about 10 miles northwest of the City of Rome in Floyd County, Georgia. The original Federal Energy Regulatory Commission (FERC) license expires December 31, 2026. Beginning in 2021, OPC will formally commence the FERC relicensing process by filing a Notice of Intent (NOI) to relicense the Project and by distributing a Pre-application Document (PAD) to Federal and state resource agencies, Indian tribes, local governments, and members of the public likely to be interested in the proceeding. The PAD will compile existing, relevant, and reasonably available information pertaining to the Project. This information will be used throughout the proceeding to help identify resource issues and related information needs, develop study plans, and analyze any Project impacts.

Through this PAD Questionnaire, OPC is seeking the input of interested stakeholders to help identify sources of existing, relevant, and reasonably available resource information pertaining to the Project. Your responses will provide OPC with valuable information for preparing a comprehensive PAD.

**Please fill out and return this questionnaire to Steve Layman by email ([Steven.Layman@KleinschmidtGroup.com](mailto:Steven.Layman@KleinschmidtGroup.com)). You may also email any comments and/or questions to Steve Layman at the email address above. Thank you for your time and attention to this matter.**

Contact Information for person completing the questionnaire:

Name & Title:	<u>Paula Marcinek, Aquatic Biologist</u>
Organization:	<u>GADNR, Wildlife Resources Division, Wildlife Conservation Section</u>
Address:	<u>2065 US Hwy 278 SE</u> <u>Social Circle, GA 30025</u>
Phone:	<u>404-353-7751</u>
Email Address:	<u>Paula.Marcinek@dnr.ga.gov</u>

**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

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1. Do you know of any reasonably available materials or information related to the Project's environment that is not already included in the attached reference list?

- Yes (*If yes, please complete 2a thru 2e.*)                       No (*If no, please go to 3.*)

2(a) Please indicate the specific resource area(s) for which you have information:

- |   |   |
|---|---|
| <input type="checkbox"/> Geology and soils                                | <input type="checkbox"/> Recreation and land use    |
| <input type="checkbox"/> Water resources                                  | <input type="checkbox"/> Aesthetic resources        |
| <input checked="" type="checkbox"/> Fish and aquatic resources            | <input type="checkbox"/> Cultural resources         |
| <input checked="" type="checkbox"/> Wildlife and botanical resources      | <input type="checkbox"/> Socio-economic resources   |
| <input type="checkbox"/> Wetlands, riparian, and littoral habitat         | <input type="checkbox"/> Tribal resources           |
| <input checked="" type="checkbox"/> Rare, threatened & endangered species | <input type="checkbox"/> Other resource information |

2(b) Please briefly describe the information or list available documents or references. If listing references, please provide author(s), date, title, publication, volume, and page numbers where applicable. (*Additional information may be provided on a separate page.*)

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Rare species and community data

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2(c) Where and how can OPC obtain this information?

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Rare species data (aquatic and terrestrial) are available through the GADNR Environmental Review tool (site specific) and the GADNR Data Portal (general):

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<https://georgiawildlife.com/environmental-review>

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<https://georgiabiodiversity.a2hosted.com/natels/home>

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Fish community data and corresponding IBI scores for the Heath and Lavender Creek watersheds are available from the GADNR Stream Survey Team (Bryant Bowen, Program Manager, [Bryant.Bowen@dnr.ga.gov](mailto:Bryant.Bowen@dnr.ga.gov))

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**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

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- 2(d) Please provide the name(s) of any specific representative(s) of your organization other than yourself you wish to designate for a potential follow-up contact by OPC or OPC's representative for the resource area(s) checked above. *(Additional contacts may be provided on a separate page.)*

**Representative Contact Information**

Name & Title: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
Phone: \_\_\_\_\_  
Email \_\_\_\_\_  
Address: \_\_\_\_\_

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
Phone: \_\_\_\_\_  
Email \_\_\_\_\_  
Address: \_\_\_\_\_

- 2(e) Are you aware of any specific Project-related issues pertaining to the resource area(s) listed in 2(a) above? *(Additional information may be provided on a separate page.)*
- Yes *(Please list specific issues below.)*       No

<u>Resource Area</u>	<u>Specific Issue</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

3. Do you or does your organization plan to participate in the relicensing process?
- Yes       No

**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

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4. We are interested in your comments. If you have comments and/or questions regarding the Project, the Pre-Application Document, or FERC licensing, please note them below:

GADNR has records of state and federally listed fishes and mollusks from Armuchee Creek, but no records from Heath Creek.

However, there is a paucity of aquatic data downstream of the project. No recent mollusk or fish surveys have been conducted in the project area/Heath Creek.

Most recent fish surveys were 2001 & 2002, and mollusk survey in 2000.

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**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

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Oglethorpe Power Corporation (OPC) is preparing to relicense its Rocky Mountain Pumped Storage Project (Project) (FERC Project No. 2725). The Rocky Mountain Project is a 904-megawatt pumped storage project located about 10 miles northwest of the City of Rome in Floyd County, Georgia. The original Federal Energy Regulatory Commission (FERC) license expires December 31, 2026. Beginning in 2021, OPC will formally commence the FERC relicensing process by filing a Notice of Intent (NOI) to relicense the Project and by distributing a Pre-application Document (PAD) to Federal and state resource agencies, Indian tribes, local governments, and members of the public likely to be interested in the proceeding. The PAD will compile existing, relevant, and reasonably available information pertaining to the Project. This information will be used throughout the proceeding to help identify resource issues and related information needs, develop study plans, and analyze any Project impacts.

Through this PAD Questionnaire, OPC is seeking the input of interested stakeholders to help identify sources of existing, relevant, and reasonably available resource information pertaining to the Project. Your responses will provide OPC with valuable information for preparing a comprehensive PAD.

**Please fill out and return this questionnaire to Steve Layman by email ([Steven.Layman@KleinschmidtGroup.com](mailto:Steven.Layman@KleinschmidtGroup.com)). You may also email any comments and/or questions to Steve Layman at the email address above. Thank you for your time and attention to this matter.**

Contact Information for person completing the questionnaire:

Name & Title:	<u>Jim Hakala, Northwest Region Fisheries Supervisor</u>
Organization:	<u>Georgia DNR, Wildlife Resources Division, Fisheries Section</u>
Address:	<u>2650 Floyd Springs Rd.</u> <u>Armuchee, GA 30105</u>
Phone:	<u>706-295-6102</u>
Email Address:	<u><a href="mailto:Jim.hakala@dnr.ga.gov">Jim.hakala@dnr.ga.gov</a></u>

**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

---

1. Do you know of any reasonably available materials or information related to the Project's environment that is not already included in the attached reference list?

- Yes (*If yes, please complete 2a thru 2e.*)                       No (*If no, please go to 3.*)

2(a) Please indicate the specific resource area(s) for which you have information:

- |   |   |
|---|---|
| <input type="checkbox"/> Geology and soils                        | <input checked="" type="checkbox"/> Recreation and land use |
| <input checked="" type="checkbox"/> Water resources               | <input type="checkbox"/> Aesthetic resources                |
| <input checked="" type="checkbox"/> Fish and aquatic resources    | <input type="checkbox"/> Cultural resources                 |
| <input type="checkbox"/> Wildlife and botanical resources         | <input type="checkbox"/> Socio-economic resources           |
| <input type="checkbox"/> Wetlands, riparian, and littoral habitat | <input type="checkbox"/> Tribal resources                   |
| <input type="checkbox"/> Rare, threatened & endangered species    | <input type="checkbox"/> Other resource information         |

2(b) Please briefly describe the information or list available documents or references. If listing references, please provide author(s), date, title, publication, volume, and page numbers where applicable. (*Additional information may be provided on a separate page.*)

DNR Standardized Annual Fish Survey Summary Reports, 2002-2018

Fish age and growth data

Natural caused fish kill reports/summaries

Historic fish stocking records through present

Bass tournament data 2018-pres.

Dissolved oxygen and water temperature lake profile data, various dates

Lake fertilization and sechi depth data, 2003-pres.

Facility visitation data, 2007-pres.

Parking capacity (number of parking spaces)

Rocky PFA user survey data, 2006-2007

Trushel, B.E. 2010. Influence of Multi-Scale Factors on Sportfish Structural Indices in Small to Medium-Sized Impoundments in Georgia, U.S.: Implications for Successful Fisheries Management. Master's Thesis. U. of Georgia, Athens, GA. 84pp.

2(c) Where and how can OPC obtain this information?

Contact Region Fisheries Supervisor Jim Hakala.

Majority of data is available electronically.

**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

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- 2(d) Please provide the name(s) of any specific representative(s) of your organization other than yourself you wish to designate for a potential follow-up contact by OPC or OPC's representative for the resource area(s) checked above. *(Additional contacts may be provided on a separate page.)*

**Representative Contact Information**

Name & Title: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
Phone: \_\_\_\_\_  
Email \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
Phone: \_\_\_\_\_  
Email \_\_\_\_\_  
Address: \_\_\_\_\_

- 2(e) Are you aware of any specific Project-related issues pertaining to the resource area(s) listed in 2(a) above? *(Additional information may be provided on a separate page.)*

Yes *(Please list specific issues below.)*       No

**Resource Area**                      **Specific Issue**

\_\_\_\_\_  
No truly ADA compliant fishing accessible sites at Antioch and Heath Lakes.  
\_\_\_\_\_

\_\_\_\_\_  
Safety/operational concerns associated with unreliable internet and cellular service at the campground.  
\_\_\_\_\_

\_\_\_\_\_  
Crowding/safety concerns at the Heath Lake Boat Ramp. Given the rise in popularity of kayak fishing in recent years, the existing boat ramp is often crowded with anglers hand launching kayaks amongst others launching boats on trailers.  
\_\_\_\_\_

\_\_\_\_\_  
Campground and beach sewage lift system renovation and need for a back-up generator system to keep sewage lift pumps at both locations operational during power outages.  
\_\_\_\_\_

**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

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**Resource Area**

**Specific Issue**

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Visitor complaint regarding unavoidable odor of pit privy bathrooms at the facility and continual need/cost associated with waste removal.

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Lack of showers in the beach bathroom facility. Beachgoers commonly use/mis-use the shower facility in the nearby campground that is for registered camper use only.

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Aging septic tank system at campground host site. continual need/cost associated with waste removal.

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3. Do you or does your organization plan to participate in the relicensing process?

Yes

No

4. We are interested in your comments. If you have comments and/or questions regarding the Project, the Pre-Application Document, or FERC licensing, please note them below:

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**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

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Oglethorpe Power Corporation (OPC) is preparing to relicense its Rocky Mountain Pumped Storage Project (Project) (FERC Project No. 2725). The Rocky Mountain Project is a 904-megawatt pumped storage project located about 10 miles northwest of the City of Rome in Floyd County, Georgia. The original Federal Energy Regulatory Commission (FERC) license expires December 31, 2026. Beginning in 2021, OPC will formally commence the FERC relicensing process by filing a Notice of Intent (NOI) to relicense the Project and by distributing a Pre-application Document (PAD) to Federal and state resource agencies, Indian tribes, local governments, and members of the public likely to be interested in the proceeding. The PAD will compile existing, relevant, and reasonably available information pertaining to the Project. This information will be used throughout the proceeding to help identify resource issues and related information needs, develop study plans, and analyze any Project impacts.

Through this PAD Questionnaire, OPC is seeking the input of interested stakeholders to help identify sources of existing, relevant, and reasonably available resource information pertaining to the Project. Your responses will provide OPC with valuable information for preparing a comprehensive PAD.

**Please fill out and return this questionnaire to Steve Layman by email ([Steven.Layman@KleinschmidtGroup.com](mailto:Steven.Layman@KleinschmidtGroup.com)). You may also email any comments and/or questions to Steve Layman at the email address above. Thank you for your time and attention to this matter.**

Contact Information for person completing the questionnaire:

Name & Title:	<u>Maria R. Clark- EPS</u>
Organization:	<u>U.S. EPA</u>
Address:	<u>61 Forsyth Street SW</u>
	<u>Atlanta, GA 30303-8960</u>
Phone:	<u>404-562-9513</u>
Email	
Address:	<u>Clark.maria@epa.gov</u>

**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

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1. Do you know of any reasonably available materials or information related to the Project's environment that is not already included in the attached reference list?

- Yes (*If yes, please complete 2a thru 2e.*)       No (*If no, please go to 3.*)

2(a) Please indicate the specific resource area(s) for which you have information:

- |   |   |
|---|---|
| <input type="checkbox"/> Geology and soils                        | <input type="checkbox"/> Recreation and land use    |
| <input type="checkbox"/> Water resources                          | <input type="checkbox"/> Aesthetic resources        |
| <input type="checkbox"/> Fish and aquatic resources               | <input type="checkbox"/> Cultural resources         |
| <input type="checkbox"/> Wildlife and botanical resources         | <input type="checkbox"/> Socio-economic resources   |
| <input type="checkbox"/> Wetlands, riparian, and littoral habitat | <input type="checkbox"/> Tribal resources           |
| <input type="checkbox"/> Rare, threatened & endangered species    | <input type="checkbox"/> Other resource information |

2(b) Please briefly describe the information or list available documents or references. If listing references, please provide author(s), date, title, publication, volume, and page numbers where applicable. (*Additional information may be provided on a separate page.*)

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2(c) Where and how can OPC obtain this information?

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**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

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2(d) Please provide the name(s) of any specific representative(s) of your organization other than yourself you wish to designate for a potential follow-up contact by OPC or OPC's representative for the resource area(s) checked above. *(Additional contacts may be provided on a separate page.)*

**Representative Contact Information**

Name & Title: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
Phone: \_\_\_\_\_  
Email \_\_\_\_\_  
Address: \_\_\_\_\_  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
Phone: \_\_\_\_\_  
Email \_\_\_\_\_  
Address: \_\_\_\_\_

2(e) Are you aware of any specific Project-related issues pertaining to the resource area(s) listed in 2(a) above? *(Additional information may be provided on a separate page.)*

Yes *(Please list specific issues below.)*       No

<u>Resource Area</u>	<u>Specific Issue</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

3. Do you or does your organization plan to participate in the relicensing process?

Yes       No

**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

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4. We are interested in your comments. If you have comments and/or questions regarding the Project, the Pre-Application Document, or FERC licensing, please note them below:

In regards to a Water Quality Certification (WQC) process, I would like to suggest that data be available for the state as soon as possible. Additionally, do you have the original WQC available? I would like to be able to add it to my file.

Also, it would be extremely helpful to post original documents, such as the license, WQC, etc., on your website with links to FERC.

Please cc me on your process and do not hesitate to contact me if you have any questions regarding EPA involvement in the relicensing of this pumped storage.

Thank you for the opportunity to be involved this early in the process.

Sincerely,

Maria Clark.

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**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

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Oglethorpe Power Corporation (OPC) is preparing to relicense its Rocky Mountain Pumped Storage Project (Project) (FERC Project No. 2725). The Rocky Mountain Project is a 904-megawatt pumped storage project located about 10 miles northwest of the City of Rome in Floyd County, Georgia. The original Federal Energy Regulatory Commission (FERC) license expires December 31, 2026. Beginning in 2021, OPC will formally commence the FERC relicensing process by filing a Notice of Intent (NOI) to relicense the Project and by distributing a Pre-application Document (PAD) to Federal and state resource agencies, Indian tribes, local governments, and members of the public likely to be interested in the proceeding. The PAD will compile existing, relevant, and reasonably available information pertaining to the Project. This information will be used throughout the proceeding to help identify resource issues and related information needs, develop study plans, and analyze any Project impacts.

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**Please fill out and return this questionnaire to Steve Layman by email ([Steven.Layman@KleinschmidtGroup.com](mailto:Steven.Layman@KleinschmidtGroup.com)). You may also email any comments and/or questions to Steve Layman at the email address above. Thank you for your time and attention to this matter.**

Contact Information for person completing the questionnaire:

Name & Title:	<u>Jeff Gardner, District Ranger</u>
Organization:	<u>Chattahoochee-Oconee National Forest, Conasauga Ranger District</u>
Address:	<u>3941 Hwy 76</u> <u>Chatsworth, GA 30705</u>
Phone:	<u>706-695-6736</u>
Email Address:	<u>Jeff.gardner@usda.gov</u>

**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

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1. Do you know of any reasonably available materials or information related to the Project's environment that is not already included in the attached reference list?

Yes (*If yes, please complete 2a thru 2e.*)



No (*If no, please go to 3.*)

2(a) Please indicate the specific resource area(s) for which you have information:

Geology and soils

Water resources

Fish and aquatic resources

Wildlife and botanical resources

Wetlands, riparian, and littoral habitat

Rare, threatened & endangered species

Recreation and land use

Aesthetic resources

Cultural resources

Socio-economic resources

Tribal resources

Other resource information

2(b) Please briefly describe the information or list available documents or references. If listing references, please provide author(s), date, title, publication, volume, and page numbers where applicable. (*Additional information may be provided on a separate page.*)

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2(c) Where and how can OPC obtain this information?

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**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

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2(d) Please provide the name(s) of any specific representative(s) of your organization other than yourself you wish to designate for a potential follow-up contact by OPC or OPC's representative for the resource area(s) checked above. *(Additional contacts may be provided on a separate page.)*

**Representative Contact Information**

Name & Title: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
Phone: \_\_\_\_\_  
Email \_\_\_\_\_  
Address: \_\_\_\_\_

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
Phone: \_\_\_\_\_  
Email \_\_\_\_\_  
Address: \_\_\_\_\_

2(e) Are you aware of any specific Project-related issues pertaining to the resource area(s) listed in 2(a) above? *(Additional information may be provided on a separate page.)*

Yes *(Please list specific issues below.)*       No

<u>Resource Area</u>	<u>Specific Issue</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

3. Do you or does your organization plan to participate in the relicensing process?

Yes       No

**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

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4. We are interested in your comments. If you have comments and/or questions regarding the Project, the Pre-Application Document, or FERC licensing, please note them below:

It is my understanding that this project does not impact any lands administered by the Conasauga Ranger District (Chattahoochee-Oconee National Forest).

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**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

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Oglethorpe Power Corporation (OPC) is preparing to relicense its Rocky Mountain Pumped Storage Project (Project) (FERC Project No. 2725). The Rocky Mountain Project is a 904-megawatt pumped storage project located about 10 miles northwest of the City of Rome in Floyd County, Georgia. The original Federal Energy Regulatory Commission (FERC) license expires December 31, 2026. Beginning in 2021, OPC will formally commence the FERC relicensing process by filing a Notice of Intent (NOI) to relicense the Project and by distributing a Pre-application Document (PAD) to Federal and state resource agencies, Indian tribes, local governments, and members of the public likely to be interested in the proceeding. The PAD will compile existing, relevant, and reasonably available information pertaining to the Project. This information will be used throughout the proceeding to help identify resource issues and related information needs, develop study plans, and analyze any Project impacts.

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**Please fill out and return this questionnaire to Steve Layman by email ([Steven.Layman@KleinschmidtGroup.com](mailto:Steven.Layman@KleinschmidtGroup.com)). You may also email any comments and/or questions to Steve Layman at the email address above. Thank you for your time and attention to this matter.**

Contact Information for person completing the questionnaire:

Name & Title:	<u>Eric F. Bauer, PhD – Fish and Wildlife Biologist</u>
Organization:	<u>US Fish and Wildlife Service, Georgia Ecological Services Field Office</u>
Address:	<u>355 East Hancock Avenue, Room 320, Box 7</u>
Phone:	<u>518-321-1215</u>
Email	<u>eric_bauer@fws.gov</u>
Address:	

**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

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1. Do you know of any reasonably available materials or information related to the Project's environment that is not already included in the attached reference list?

- Yes (If yes, please complete 2a thru 2e.)       No (If no, please go to 3.)

2(a) Please indicate the specific resource area(s) for which you have information:

- |  |   |
|--|---|
| <input type="checkbox"/> Geology and soils                                   | <input type="checkbox"/> Recreation and land use    |
| <input checked="" type="checkbox"/> Water resources                          | <input type="checkbox"/> Aesthetic resources        |
| <input checked="" type="checkbox"/> Fish and aquatic resources               | <input type="checkbox"/> Cultural resources         |
| <input checked="" type="checkbox"/> Wildlife and botanical resources         | <input type="checkbox"/> Socio-economic resources   |
| <input checked="" type="checkbox"/> Wetlands, riparian, and littoral habitat | <input type="checkbox"/> Tribal resources           |
| <input checked="" type="checkbox"/> Rare, threatened & endangered species    | <input type="checkbox"/> Other resource information |

2(b) Please briefly describe the information or list available documents or references. If listing references, please provide author(s), date, title, publication, volume, and page numbers where applicable. *(Additional information may be provided on a separate page.)*

Georgia DNR Heritage Data

Georgia DNR Stream Team Data

Georgia DNR Fisheries Data

The Service retains information pertaining to rare, threatened, and endangered species and uses this information (location, life history etc.) to determine potential impacts to these species.

Collections of threatened and Endangered species

HUC 10 Watershed reports for the Little Armuchee and Armuchee Creek watersheds

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\_\_\_\_\_

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2(c) Where and how can OPC obtain this information?

Georgia DNR data - <https://georgiawildlife.com/species> The Service will provide pertinent information during consultation.

HUC 10 watershed reports - <https://www.fws.gov/athens/transportation/coordination.html>

These data should be publicly available, but please contact me if you have any questions.

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**Oglethorpe Power Corporation  
Rocky Mountain Pumped Storage Project (FERC Project No. 2725)**

**Pre-Application Document Questionnaire for FERC Relicensing**

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2(d) Please provide the name(s) of any specific representative(s) of your organization other than yourself you wish to designate for a potential follow-up contact by OPC or OPC's representative for the resource area(s) checked above. *(Additional contacts may be provided on a separate page.)*

**Representative Contact Information**

Name & Title:	<u>Don Imm, Field Supervisor</u>
Address:	<u>355 East Hancock Avenue, Room 320, Box 7</u>
Phone:	<u>706-208-7501</u>
Email Address:	<u>donald_imm@fws.gov</u>

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Email: \_\_\_\_\_  
Address: \_\_\_\_\_

2(e) Are you aware of any specific Project-related issues pertaining to the resource area(s) listed in 2(a) above? *(Additional information may be provided on a separate page.)*

Yes *(Please list specific issues below.)*       No

<b><u>Resource Area</u></b>	<b><u>Specific Issue</u></b>
	<u>The Armuchee and Little Armuchee watersheds are designated as a highest significance high priority and moderately significant high priority HUC10 watersheds by Georgia's State Wildlife Action Plan, respectively. There are several threatened and endangered species of mollusks that have been collected downstream of the Rocky Mountain Pumped Storage project. Furthermore, Armuchee Creek is a tributary of the Oostanaula located between two other tributaries from which the threatened Trispot Darter has been collected suggesting that Armuchee Creek occurs within the historical</u>

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***Contains Critical Energy Infrastructure Information***  
**- CUI//CEII -**

**APPENDIX D**

**SINGLE-LINE DRAWING OF TRANSMISSION LINES**

This Material is Critical Energy Infrastructure Information (CEII).  
Members of the Public may Obtain Nonpublic or Privileged Information by Submitting a  
Freedom of Information Act (FOIA) Request

## **APPENDIX E**

### **CURRENT LICENSE REQUIREMENTS**

UNITED STATES OF AMERICA 111 FERC ¶62,079  
FEDERAL ENERGY REGULATORY COMMISSION

Oglethorpe Power Corporation  
Georgia Power Company

Project No. 2725-068

ORDER AMENDING LICENSE

(Issued April 20, 2005)

On January 24, 2005, and supplemented on April 4, and April 14, 2005, the Oglethorpe Power Corporation (OPC), co-licensee for the Rocky Mountain Pumped Storage Hydroelectric Project, FERC No. 2725, filed a license amendment application to increase its authorized generating capacity. The project is located on Heath Creek, Floyd County, Georgia.

BACKGROUND

On January 21, 1977, the Commission issued a license for the Rocky Mountain Project, authorizing three reversible pump generator units at 225 MW each, for a total installed capacity of 675 MW.<sup>1</sup> Based on a filing dated August 11, 1987, the licensee said that due to refined design, the proposed generating units would have a dependable capacity of 760 MW. Based on a revised Exhibit M filed by the licensee on June 5, 1996, to reflect the ratings of the major mechanical and electrical equipment installed at the project, the Commission approved the project's as-built dependable capacity of 794.25 MW, by order issued September 23, 1996.<sup>2</sup>

THE AMENDMENT

OPC proposes to replace the existing pump-turbine runners and possibly modify pump-turbine, motor-generator, and auxiliary equipment components for the project over the next four years. The modifications would be to optimize the hydraulic performance and increase the maximum operating capacity of the equipment. OPC states that the modifications would not: (1) change the Plant's existing reservoirs or water conduits; (2)

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<sup>1</sup>57 FPC 368 (1977).

<sup>2</sup> See 76 FERC ¶62,224 (1996). The revised Exhibit M described the 3 turbines ratings at 353,000 hp each at a net head of 613 feet, for a total capacity of 1,059,000 hp. One (hp) is equivalent to (0.75 kW); 1,059,000 hp x 0.75 kW/hp= 794,250 kW or 794.25 MW.

Project No. 2725-068

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change the maximum and minimum operating water levels of the existing reservoirs; (3) require any modifications to the Plant's existing transmission lines or the construction of new transmission facilities; (4) change the release of minimum flows to Heath Creek; (5) change wildlife habitat and recreational facilities operation and management; or (6) increase discharge of pollution and adverse impact on water quality. OPC also states that the modifications would: (1) increase the maximum hourly releases from the Upper Reservoir and the hourly flows pumped back into the Upper Reservoir; (2) produce a greater amount of power in the generating mode and consume a greater amount of power in the pumping mode; and (3) begin the equipment overhaul in October 2006.

## CONSULTATION AND COMMENTS

Prior to filing its amendment application, OPC solicited comments from federal, and state resource agencies, including the National Marine Fisheries Service, the National Park Service, the U.S. Environmental Protection Agency (EPA), the state fish and wildlife agencies, the state water resource management agencies, the certifying agency of the Clean Water Act, and Indian tribes that may be affected by the plan.

On April 27, 2004, OPC distributed the initial information package to the resources agencies and public for review and comment. On May 10, 2004, OPC published a public notice of the May 27 joint agency/public meetings in the Rome (Georgia) News-Tribune. By letter dated May 24, OPC provided the initial information package to the tribes recommended by the Bureau of Indian Affairs. Resource agencies including the U.S. Fish & Wildlife Service, the U.S. National Park Service, EPA, the U.S. Bureau of Indian Affairs, the U.S. National Oceanic and Atmospheric Administration, the Georgia Department of Natural Resources, the Georgia Department of Environmental Protection, and the general public responded with comments during the course of the consultation process. There were no significant issues, concerns, or study requests regarding the proposed modifications in the comments. The comments from consulted parties were included in the Environmental Assessment attached to this order.

On February 7, 2005, the Commission issued a Public Notice on the application, soliciting comments, motions to intervene, and protests. The notice indicated that the deadline for filing comments, motions to intervene, and protests was March 8, 2005. No comments were filed in opposition to the proposed amendment.

## ENVIRONMENTAL REVIEW

We completed an environmental assessment (EA) for the proposed action which includes comments from consulted federal and state agencies and Indian tribes. The EA is attached to this order. Based on analysis of possible environmental impacts, we



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conclude in the EA that approval of the proposed action, with the licensees' coordination with the Commission's Division of Dam Safety and Inspections-Atlanta Regional Office, and compliance with the articles in the license for the Rocky Mountain Project, should result in minor, short-term negative environmental impacts to wildlife and recreation. Given this conclusion, approval of the proposed action would not constitute a major federal action significantly affecting the quality of the human environment.

## DISCUSSION

OPC proposed replacement of the turbines' runners would change the project's authorized installed and hydraulic capacities, as shown in the following table.

Plant Generating Mode	Existing	Proposed Capacity	
		Dependable	Installed
Best Gate Net Head (ft)	613	613	650
Plant Discharge at Best Gate (cfs)	16,656	18,196	18,086
Plant Generating Capacity (MW)	794.25	851	904

After the upgrade of all three units, and at an estimated net head of 650 feet,<sup>3</sup> the project's best-gate generating capacity would be 904 MW, which we would use as the project's authorized installed capacity for the purpose of annual charges. The project's dependable capacity would be 851 MW (an increase of 56.75 MW) at a net head of 613 ft,<sup>4</sup> and the maximum full-gate generating capacity would be 1,091 MW at a net head of 681 feet.

Our review of the license amendment application did not identify any significant impacts that would result from the Commission's approval of the application to upgrade the generating units. We conclude that approval of the proposed amendment of license would not constitute a major federal action significantly affecting the quality of the human environment.

This order approves the proposed upgrade of the generating units. In ordering paragraph (C) we are requiring the licensee to start construction of the generating units

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<sup>3</sup> Based on the mean head between the normal maximum and normal minimum operating levels of the upper and lower reservoirs.

<sup>4</sup> Minimum head for dependable power guaranteed by manufacturer.

Project No. 2725-068

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upgrade within two years and complete construction within eight years from the date of this order. In ordering paragraph (D) we are requiring the licensee to notify the Commission of the construction date, within 90 days from the start of construction on each unit. The date will be used to amend license article 47 concerning the assessment of annual charges. The licensee shall pay revised annual charges effective the date of commencement of construction of the revised capacity.<sup>5</sup> Furthermore, in ordering paragraph (E) we are requiring the licensee to submit a revised exhibit M describing the characteristics of the as-built generating units 90 days after the upgrades to all three units have been completed.

The Director orders:

(A) The application to amend the license to increase the project's installed capacities, as filed January 24, 2005, and supplemented on April 4, and April 14, 2005, is approved as provided in this order.

(B) The project description under ordering paragraph (B)(ii) of the license, is revised, in part, to read as follows:

(ii) Project works consisting of: ... (d) A semi-outdoor-type powerhouse containing three vertical shaft, reversible pump generator units, rated at a total generating capacity of 904 MW at a net head of 650 ft;...

(C) The licensee shall start upgrading the three turbine-generator units and appurtenant equipment within two years from the date of this order and complete construction within five years from the date of this order.

(D) The licensee shall coordinate with and get prior authorization from our Atlanta Regional Office for the on-site construction of each turbine-generator unit.

(E) Within 90 days after the start of construction, the licensee shall notify the Commission of the date unit fabrication began. The filing should include written documentation and photographs of all work performed since the start of construction. The

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<sup>5</sup>See, 66 FERC ¶ 61,086, issued January 18, 1994. The order states that, "With respect to substantial changes in installed capacity that receive prior approval, the effective date for revised annual charges will be the date of the commencement of construction of the revised capacity."

Project No. 2725-068

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date of commencement of construction will be used to amend license article 47 for the assessment of annual charges.

(F) Within 90 days from completion of the upgrades to all three units, the licensee must submit an as-built exhibit M describing the actual capacities of the upgraded turbines and generators and the date each unit began operation.

(G) 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.

Mohamad Fayyad  
Engineering Team Lead  
Division of Hydropower Administration  
and Compliance

**ENVIRONMENTAL ASSESSMENT**

**AMENDMENT OF LICENSE TO INCREASE AUTHORIZED CAPACITY**

**Rocky Mountain Pumped Storage Project**

**FERC No. 2725-068**

**Georgia**

**Federal Energy Regulatory Commission  
Office of Energy Projects  
Division of Hydropower Administration and Compliance  
888 First Street, N.E.  
Washington, D.C. 20426**

**April 2005**

## **ENVIRONMENTAL ASSESSMENT**

**Federal Energy Regulatory Commission  
Office of Energy Projects  
Division of Hydropower Administration and Compliance  
Washington, D.C.**

### **Rocky Mountain Pumped Storage Project**

**FERC Project No. 2725-068**

#### **1.0 APPLICATION**

Application type: Amendment of license to increase authorized generating capacity by replacing the project's existing pump-turbine runners and possibly modifying the pump-turbine, motor-generator, and auxiliary equipment components. The proposed work would increase the project's maximum hydraulic capacity at peak generation by 20 to 25 percent, and the dependable generating capacity by 56.75 megawatts (MW).

Date filed: January 24, 2005

Applicant: Oglethorpe Power Corporation and Georgia Power Company

Water body: Heath Creek, within the Coosa River drainage

County and state: Floyd County, Georgia

#### **2.0 PURPOSE AND NEED FOR ACTION**

On January 24, 2005, Oglethorpe Power Corporation and Georgia Power Company (licensees) filed an application to amend the license for the Rocky Mountain Pumped Storage Project.<sup>[1]</sup> The licensees propose to increase the authorized generating capacity of the project by replacing the project's existing pump-turbine runners and possibly modifying pump-turbine, motor-generator, and auxiliary equipment components. The proposed work would increase the project's maximum hydraulic capacity at peak generation by 20 to 25 percent and the dependable generating capacity by 56.75 MW.

The licensees' proposal is made to optimize the hydraulic performance and increase the maximum operating capacity of the project, increasing the maximum hydraulic capacity at peak generation by 20 to 25 percent. Increased pumping capacity would reduce the daily pumping period from approximately 8.2 hours to approximately 7.3 hours and substantially increase the flexibility of the project to take advantage of overall power grid efficiencies and economic benefits.

The licensees' proposal would not involve any changes to the project reservoirs, water conduits or transmission lines. All manufacturing would occur off-site, and all installation would occur within the powerhouse. The proposal would slightly increase the rate of water movement between the two reservoirs, but would not modify the minimum and maximum water levels in the project reservoirs. It would not modify the total volume of daily releases from the upper reservoir or the volume of water pumped daily to the upper reservoir. The proposal would not affect movement of water from the auxiliary pools to the lower reservoir, or minimum flow releases from the lower reservoir to Heath Creek.

This environmental assessment (EA) examines the environmental effects associated with the licensees' proposal (Proposed Action) and a No-Action Alternative.

### **3.0 ROCKY MOUNTAIN PUMPED STORAGE PROJECT**

#### **3.1 Hydroelectric Project Description and Operation**

The Rocky Mountain Pumped Storage Project is a pumped-storage hydroelectric facility that includes an upper reservoir, a lower reservoir on Heath Creek, and two adjacent auxiliary pools. The upper reservoir has a water surface area of approximately 221 acres, with essentially no drainage area, and sits in a depression atop Rock Mountain, circumscribed by a 12,895-foot-long, 120-foot-high earth and rockfill dam. The normal maximum operating pool elevation is 1,392 mean sea level (MSL). This reservoir receives water from precipitation and through water pumped up to it from the lower reservoir.

The lower reservoir is approximately 600 acres in surface area and has a normal maximum operating pool elevation of 710.5 MSL. It is a long body of water, curling around the north and west sides of Rock Mountain. It is formed by three dams. The first is a 942-foot-long 120-foot-high combination dam with a earth and rockfill embankment section and a concrete gravity section. The concrete section has a gated spillway and two Taintor gates, a 10-inch jet-flow gate, a 40-inch jet-flow gate, and a minimum flow outlet. The second dam is a 1,260-foot-long, 70-foot-high earth and rockfill structure. The third dam is earthfill, 690 feet long, and 10 feet high.

The two auxiliary pools are located along the outside bends of the lower reservoir. Together they have a combined surface area of about 600 acres. They are each maintained at a relatively constant surface elevation of 715 feet MSL. The first auxiliary

Project No. 2725-068

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pool (Auxiliary Pool I), has a surface area of 400 acres. The second auxiliary pool (Auxiliary Pool II) has a surface area of approximately 200 acres.

Runoff is the primary source of water for Auxiliary Pool I, and Heath Creek is the primary source of water for Auxiliary Pool II. The two auxiliary pools are not directly connected. Water travels from the auxiliary pools to the lower reservoir via ungated spillways, with spillway crests 4.5 inches above the maximum operating elevation of the lower reservoir. There is seldom more than one inch of flow over the spillways. Each auxiliary pool also has a gated, low-level outlet pipe that is normally closed, but can be used to release additional water to the lower reservoir under special circumstances, such as drought conditions.

The Rocky Mountain Pumped Storage Project is a pumped-storage facility and does not use flows from Heath Creek for generation. Water is transferred from one reservoir to another via a 2,500-foot-long tunnel extending from the bottom of the upper reservoir to three steel penstocks leading to the powerhouse and the lower reservoir. The steel penstocks are each about 470 feet long. The project generates using water from the upper reservoir during periods of peak electricity demand, and then pumps water back from the lower reservoir to the upper reservoir during periods of low demand and available base power.

The pumping of water from the lower reservoir to the upper reservoir typically occurs at night and on weekends. During normal daily operations of generation and pumping, the upper reservoir water level fluctuates between a normal minimum pool elevation of 1,341 feet MSL and a normal maximum operating pool elevation of 1,392 MSL. The lower reservoir typically fluctuates 20 feet in elevation, between 690.5 feet MSL to the normal maximum operating pool elevation of 710.5 MSL. Storage in the auxiliary pools is used to replenish the lower reservoir only if, after the pumping cycle, the elevation of the lower reservoir has declined to 681 feet MSL. The project cannot be operated with a lower reservoir elevation below that level.

The project powerhouse contains three vertical-shaft, reversible Francis-type pump-turbines, each connected to a synchronous motor/generator. Based on the net head operating range of 613 to 690 feet and an active storage of 10,003 acre-feet in the upper reservoir, the generating units can produce a range of continuous firm power from 120 MW to 848 MW. The licensed, as-built dependable capacity for the project is 794.25 MW, as described in the revised Exhibit M that was approved by order issued September 23, 1996 (76 FERC ¶62,224). The project includes a substation located 1.5 miles from the powerhouse, and 1.5-mile-long, 230-kilovolt transmission line.

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## **4.0 PROPOSED ACTION AND NO-ACTION ALTERNATIVE**

### **4.1 Licensees' Proposed Action**

The licensees propose to replace the existing pump-turbine runners and, if necessary, modify other pump-turbine, motor-generator and auxiliary equipment components such as the spherical valve operator and foundation, stay-vane profile, discharge ring, and motor-generator cooling system. This would increase the project's maximum operating capacity during generation, and increase its pumping capacity when water is returned to the upper reservoir. Therefore, the rate at which water would move between the reservoirs on a daily basis would increase. However, the proposal would not change the volume of water being moved between the two reservoirs. Water transfer from the auxiliary pools would also not be affected under the proposal.

#### **4.1.1. Schedule**

The licensees' filing includes a schedule for the proposed work. In summary, design and model testing would occur January 2005 through October 2005. Design and manufacturing of the new equipment would occur November 2005 through October 2008. The project's three units would be modified one at a time. Approximately, modification of the first unit would occur October 2006 through April 2007, the second October 2007 through April 2008, and the third October 2008 through April 2009. The proposed modifications are scheduled to occur during currently-planned major maintenance overhaul periods. Completion would occur in approximately April 2009.

### **4.2 No-Action Alternative**

The No-Action Alternative would deny the licensees' proposal to amend the project license and to increase the authorized generating capacity through the proposed work. The project's maximum hydraulic capacity and firm peak generating capacity would not be increased. A reduction in the daily pumping period would not occur, and the increased flexibility in project operation would not be available. We use this Alternative to establish the baseline environmental condition for comparison with other alternatives.

## **5.0 CONSULTATION AND COMMENTS**

On January 24, 2005, the licensees filed a copy of its amendment application with a cover letter, dated January 18, 2005, as mailed to a distribution list of 44 parties, including federal and state agencies, municipalities, Indian Tribes and Nations, [\[2\]](#) and other interested groups. The cover letter indicated that no action was being sought from



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the recipients at the time, and that the Commission would seek input at a later date. However, responses to the licensees' mailing were filed with the Commission by the Georgia Department of Natural Resources-Historic Preservation Division, and the Jena Band of the Choctaw Indians.

On February 7, 2005, the Commission issued a Public Notice on the application, soliciting comments, motions to intervene, and protests. The notice indicated that the deadline for filing comments, motions to intervene, and protests was March 8, 2005. All comments received were fully considered in the writing of this EA.

<u>Entity</u>	<u>Date of Comment</u>
U.S. Department of the Interior	March 3, 2005
Georgia Department of Natural Resources- Environmental Protection Division	March 9, 2005
Georgia Department of Natural Resources- Historic Preservation Division	February 4, 2005
Jena Band of Choctaw Indians	February 1, 2005

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## 5.1 U.S. Department of the Interior

Section 7(a) of the Endangered Species Act (ESA), 16 U.S.C. § 1536(a), requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened or endangered species, or result in the destruction or adverse modification of designated critical habitat.

The U.S. Department of the Interior (DOI) responded to the Commission's notice in a letter dated March 3, 2005. The DOI indicated that it concurs with the licensees' determination that the proposal is not likely to adversely affect federally listed or candidate species. The DOI stated that the requirements of Section 7 of the ESA have been satisfied, but that obligations under the ESA must be reconsidered if (1) the project is modified in a manner not considered in its assessment, (2) a new species is listed or critical habitat is determined that may be affected by the project, or (3) new information indicates that the project may affect critical habitat of a listed species in a manner not considered.

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## **5.2 Georgia Department of Natural Resources-Environmental Protection Division**

The Georgia Department of Natural Resources-Environmental Protection Division (GDNR-EPD), by letter dated March 9, 2005, informed the Commission that Section 401 Water Quality Certification would not be required for the proposal.

## **5.3 Georgia Department of Natural Resources-Historic Preservation Division**

The Georgia Department of Natural Resources-Historic Preservation Division (GDNR-HPD), by letter dated February 4, 2005, indicated that it had reviewed the information concerning the proposal, and was submitting comments to assist the Commission and the licensees in complying with the provisions of Section 106 of the National Historic Preservation Act (NHPA). The GDNR-HPD indicated that it has determined that no archaeological resources or historic structures that are eligible for listing in the National Register of Historic Places would be affected by the proposed undertaking, as defined in 36 CFR Part 800.4(d)(1). The GDNR-HPD stated that its February 4, 2005 letter was evidence of the Commission's and applicants' compliance with the NHPA, and that, therefore, no further steps are required regarding the undertaking. However, the GDNR-HPD indicated that any changes to the proposal could require additional steps for Section 106 compliance.

## **5.4 Indian Tribes**

A February 1, 2005 letter from the Jena Band of Choctaw Indians indicated that, after review of the January 18, 2005 proposal, it has determined that no significant impacts would occur, and raised no objections. No responses have been received from any other Indian groups.

## **6.0 AFFECTED ENVIRONMENT**

The information in this section is drawn primarily from the licensees' January 2005 application for amendment of license, the Commission's 1998 Environmental and Public Use Inspection Report (FERC 1999), and the Commission's 2003 Operation Report (FERC 2003). Information regarding movement of water between the auxiliary pools and the lower reservoir, fish species in the project area, and wetlands is taken from the licensees' April 1, 2005 response to the Commission's February 23, 2005 request for additional information.

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## **6.1 General Description of the Project Area**

The Rocky Mountain Pumped Storage Project is located in a highly scenic area within the foothills of the Appalachian Mountains in a rugged section of Floyd County, Georgia. The top of Rock Mountain, where the project's upper reservoir is located, is a resistant sandstone formation, and is surrounded by palisades of sheer sandstone cliffs. The project is about 10 miles northwest of the City of Rome, Georgia on Heath Creek, in the Coosa River drainage.

To the north of the project is Chattahoochee National Forest, and nearby to the southeast is Berry College Wildlife Management Area and Refuge. Nearby valleys hold a combination of forest, cropland, and pasture.

## **6.2 Water Resources**

### **6.2.1 Water Quantity**

Heath Creek originates in the Appalachian foothills and is approximately 10 miles long; it terminates at its confluence with Armuchee Creek, which is a tributary to the Oostanaula River. The Oostanaula River joins the Etowah River in Rome, Georgia, creating the Coosa River. As indicated earlier, Heath Creek was dammed during project construction to create the project's lower reservoir and its two auxiliary pools. Project construction inundated almost half of the length of the small stream. The characteristics of the project's upper and lower reservoirs and two auxiliary pools are given above in Section 3.1, Hydroelectric Project Description and Operation.

Examination of 1972 U.S. Geological Survey (USGS) 1:250,000 mapping of the project area indicates that upper Heath Creek, through the area that was inundated by the construction of the lower reservoir, was likely no more than a second-order in size. The short reach of Heath Creek from the base of the project dam at the lower reservoir to its confluence with Armuchee Creek appears to be second or third order, due to inflow from a small tributary. According to the licensees' proposal, Heath Creek's drainage area at the lower reservoir dam is 16.6 square miles.

Article 34 of the project license, issued January 21, 1977, requires a minimum flow release into Heath Creek from the lower reservoir of 1.2 cubic feet per second (cfs). Review of data from the USGS streamflow gage No. 02388320, located on Heath Creek downstream of the project, indicates that mean streamflows for 2001, 2002, and 2003 were 9.61 cfs, 19.5cfs, and 26.1 cfs, respectively (USGS 2005). For the water years 1982 through 1998, the highest daily mean flow recorded was 762 cfs, on February 16, 1990.

The lowest daily mean flow during that period was 0.19 cfs, recorded on November 4, 1994. The calculated 50-percent exceedence flow for the period is 7.5 cfs (USGS 1998).

### **6.2.2 Water Quality**

The GDNR has classified the project's two auxiliary pools as waters for recreational usage and warmwater fish, indicating that water temperatures should not exceed 90 degrees Fahrenheit, pH should be from 6.0 to 8.5, and average daily minimum dissolved oxygen (DO) should be at least 5.0 milligrams per liter (mg/L), with instantaneous minimum levels not below 4.0 mg/L. The project's upper and lower reservoirs, which are not open to the public, have not been given beneficial use classifications. The GDNR standard for maximum concentrations of coliform bacteria in recreational waters is 200 per 100 mL.

Pursuant to license article 31, water quality monitoring was performed at the project on a monthly basis for 5 years following project start-up in 1995. Water temperature, pH, DO, and conductivity were monitored at one site in the lower reservoir, three sites in Auxiliary Pool I, including near the public swimming beach, one site in Auxiliary Pool II, Heath Creek downstream of the project, and a nearby small stream that is not a tributary of Heath Creek and does not flow into the project. Water samples were also collected during the monitoring period for laboratory analysis of turbidity, chemical parameters, and coliform bacteria. Although the study found a small percentage of measurements outside those recommended by the GDNR, the study showed that, overall, there were no significant adverse water quality conditions in the reservoir, auxiliary pools, or flow releases to Heath Creek.

The licensees continue regular water quality sampling using all parameters from the 5-year study, using sites in the lower reservoir, and the auxiliary pools. Coliform bacteria sampling is also performed at the swimming beach during the swimming season.

### **6.2.3 Fisheries Resources**

The project's upper and lower reservoirs undergo large daily fluctuations in water levels, and do not support managed fisheries. Fishing is not allowed in the reservoirs. However, unmanaged fish populations do occur in the lower reservoir. The species composition in the lower reservoir is likely similar to that found in the auxiliary pools, although no surveys have been conducted.

The auxiliary pools were originally filled in 1992, and have been stocked with game and forage fish. The pools were sampled by the GDNR with electrofishing gear and gillnets during the spring and fall of 1993, 1994, and 1995. Species established in

the auxiliary pools include gizzard shad, seven species of minnow and sucker, four species of catfish, one species of topminnow, 15 species of sunfish including crappie and bass, and striped bass. The auxiliary pool fisheries are managed by the GDNR, under contract to the licensees.

In 1995 and 1996, fish sampling was conducted in Heath Creek downstream of the project's main dam. Sunfish, including crappie and bass, were found to dominate the fish fauna, with 14 species represented. Ten species of minnow and sucker were found, and, in addition, species of topminnow, darter, sculpin, and lamprey. The licensees note that they have identified 11 active and seven abandoned beaver dams on Heath Creek between the project dam and the creek's confluence with Little Armuchee Creek, which impound the creek during low-flow conditions and probably help to maintain the dominant sunfish populations.

### **6.3 Terrestrial Resources**

The Rocky Mountain Pumped Storage Project is located in the foothills of the Appalachian Mountains, within the Valley and Ridge Geologic Province. The topography is rugged in nature, and local elevations range from 1,200 to 1,700 feet MSL. The project area is surrounded by palisades of sheer sandstone cliffs. The rugged nature of the project area has precluded other development. Nearby Big Texas Valley and Little Texas Valley hold a combination of forest, cropland, and pasture. Parts of Chattahoochee National Forest are located approximately 2 miles north of the project and 2.5 miles northeast of the project. The 35,000-acre Berry College Wildlife Management Area and Refuge is located about 0.4 miles southeast of the project.

#### **6.3.1 Vegetation**

The prominent plant community in the project area is mixed pine-hardwood, consisting mainly of Virginia pine, short leaf pine, red maple, red oak, American elm, and red cedar. Other dominant plant communities in the immediate area are upland hardwood, pine, and old pastureland.

Upland hardwood community dominates the north-facing slopes of Rock Mountain, and is characterized by an overstory of various types of oak, hickory, sugar maple, tulip poplar and basswood. The understory contains redbud, flowering dogwood, and blueberry. Small areas of mature pine are found near the project's reservoirs and the southwestern areas of Rock Mountain. The old pastureland areas often contain early-secessional herbaceous plant species.

There is no woody riparian vegetation along Heath Creek immediately downstream of the lower reservoir. The riparian area was cleared during project construction, and currently consists of herbaceous vegetation and riprap.

### **6.3.2 Wetland Resources**

A wetland assessment of the project area was performed in March 2005. Wetlands were identified using field surveys and interpretation of aerial photography.

Thirty-four wetlands within the project area were identified, 18 of which are along the margins of the project's lower reservoir or the two auxiliary pools. No wetlands were found along the margins of the upper reservoir. The three wetlands along the margins of the lower reservoir are all emergent systems, totaling approximately 34.4 acres. The 12 wetlands along the margins of Auxiliary Pool I are a combination of emergent, forested/emergent, scrub-shrub, and forested systems, totaling approximately 16.8 acres. Two wetlands along Auxiliary Pool II were classified as forested/emergent, and one was classified as scrub-shrub. The wetlands along Auxiliary Pool II total approximately 15.3 acres.

### **6.3.3 Wildlife Resources**

Game animals in the project area include white-tailed deer, gray squirrel, wild turkey, mourning dove, quail, Canada geese, and various species of duck. Non-game species include red fox, skunk, mole, several species of bats and mice. Reptiles and amphibians present include timber rattlesnake, copperhead, and a variety of lizards, turtles, frogs, and salamanders. Non-game birds include several species of hawks, owls, and vultures, as well as waterfowl and songbirds. Federally-listed threatened bald eagles have occasionally been spotted within the project boundary.

The licensees fund a wildlife management program, as required by article 30 of the project license, through the GDNR. Major features of the program include the establishment of food plots for waterfowl and upland game birds, installation and inspection of wood duck nesting boxes, goose nesting platforms, and raptor poles, and periodic wildlife surveys. The proximity of Chattahoochee National Forest and the Berry College Wildlife Management Area and Refuge contribute to local biodiversity.

## **6.4 Threatened and Endangered Species**

As indicated above, bald eagles have occasionally been spotted within the project boundary. However, the DOI has indicated in its March 3, 2005 letter that the Proposed Action is not likely to adversely affect federally listed or candidate species.

## **6.5 Recreation and Aesthetics**

The licensees prohibit recreational use of the upper and lower reservoirs, and their shorelines, for public safety. However, there are hiking trails though parts of the project area, and maintained public recreation areas at the project's two auxiliary pools and near the upper reservoir. Overall, public recreation is allowed on approximately 3,700 acres within the project boundary. The GDNR manages public recreation areas under contract for the licensees, and use fees are collected for day-use parking and overnight camping.

The recreation area located on the western sub-impoundment of Auxiliary Pool I is the project's most developed recreation site. It includes a beach and picnic facilities, restrooms and bathhouse, a wooden fishing pier, a boating area with a concrete launch, and facilities for RV's, group camping with parking, walk-in camp sites, and a dump.

A recreation area at the eastern sub-impoundment of Auxiliary Pool I is a day-use facility. It also offers picnicking and boat-launching, a dock, and restrooms. This recreation area includes a visitor information center with parking for cars and buses. There are interpretive signs explaining the area's natural, cultural, and geologic resources, as well as the operation of the pumped-storage project. An overlook area provides a view that includes the project powerhouse, across the lower reservoir.

Recreational facilities at the project's Auxiliary Pool II include a concrete boat launch, a picnic area, and hiking trailhead parking.

There are some facilities for picnicking, hiking, and viewing around the project's upper reservoir. Firearm use is prohibited within the project boundary, except during posted waterfowl seasons in designated areas. There are bow hunting seasons for deer, small game, and turkey.

## **6.6 Cultural Resources**

The project area has been extensively surveyed for archaeological areas and historic structures. The area contains six known prehistoric sites, representing varied subsistence and hunting activities. Despite being affected by recent farming activity and erosion, two of these sites may be eligible for listing in the National Register of Historic Places. A number of historic sites have also been located within the project area, mostly associated with cotton farming or logging. A December 29, 1997 Commission order approved the licensees' revised cultural resource management plan and a building relocation and stabilization plan to protect archaeological and historic sites.

Because the proposed work would occur in the project powerhouse, which is located in a previously-disturbed area on the lower project reservoir, no archaeological or historic aspects of the area would be threatened. The licensees mailed copies of the amendment application to the State Historic Preservation Office (Georgia Department of Natural Resources, Historic Preservation Division (GDNR-HPD)), and local Indian Tribes on January 18, 2005. The GDNR-HPD indicated by letter dated February 4, 2005 that no archaeological resources or historic structures that are eligible for listing in the National Register of Historic Places would be affected by the Proposed Action. The Jena Band of Choctaw Indians responded via letter dated February 1, 2005, indicating that it had determined that the Proposed Action would have no significant impacts to that group. No responses have been received from any other Indian groups.

## **7.0 ENVIRONMENTAL IMPACTS**

### **7.1 Proposed Action**

#### **7.1.1 Water Quantity and Quality**

The GDNR-EPD has indicated that Section 401 Water Quality Certification is not required for the Proposed Action.

All work under the Proposed Action would occur in the project powerhouse, with no in-water or land-disturbing aspects. During the proposed modification of the pump-turbines, there would be little potential for any spills of oil or other hazardous materials reaching the lower reservoir near the powerhouse because the drains in the powerhouse are routed to oil separators, and not to the water. Also, the flowing waters of Heath Creek are over two miles away from the work area. In addition, the licensees indicate in the proposal that Best Management Practices would be utilized to initially avoid any spills.

Project operation following completion of the proposed work would not affect the total volume of water cycled between the upper and lower reservoirs. However, the duration of daily pumping necessary to move water back to the upper reservoir following generation would be slightly reduced. This would result in a slightly increased rate of change in upper and lower reservoir levels, creating a slight potential for increased bank erosion. However, because the banks of the upper and lower reservoirs are stable, the change in operation should not produce any measurable increases in erosion or changes in water quality.

Water levels in the two auxiliary pools would not be affected by the Proposed Action, either during the proposed work or later, during project operation. The auxiliary



pools are connected to the lower reservoir through spillways with crests several inches above the lower reservoir surface, preventing project operation from affecting water levels in the auxiliary pools. The frequency of use of the lower-level outlets from the auxiliary pools to the lower reservoir should not be affected by the Proposed Action.

For these reasons, the Proposed Action should not result in any significant short- or long-term negative impacts to water quantity or quality in the reservoirs, auxiliary pools, or in Heath Creek.

### **7.1.2 Fisheries Resources**

For the reasons described in the previous section, the Proposed Action should have no effect on fisheries through changes in water quantity or quality. The Proposed Action should not significantly change any fish entrainment that already occurs, in the upper and lower reservoirs, although a very minor increase may occur due to the increased rate of pumping water back to the upper reservoir following generation. The licensees included in their proposal a copy of a July 26, 2004 email from the GDNR in which the agency concludes that fish mortality associated with existing project operations is negligible, and that an increase in water velocity near the water intakes through the Proposed Action would not significantly alter existing fish entrainment rates.

Because the Proposed Action would result in only a small increase in the rate of daily water level changes in the reservoirs, and not the minimum and maximum levels achieved each day, the amount of shallow-water habitat that would be affected by project operation would not measurably change. Therefore, no changes in the level of impacts to fish and wildlife utilizing shallow-water shoreline habitat would occur. Because the Proposed Action does not involve changes in water levels in the auxiliary pools, there should be no effect to fish and wildlife resources in those areas.

The Proposed Action would not be expected to have any effect the managed fisheries in Auxiliary Pool I or Auxiliary Pool II. Some passage of small fishes may now occur over the spillways from the auxiliary pools into the lower reservoir, and through the low-level outlets during their infrequent use. Because the Proposed Action would not affect spill or the use of the outlets, there would be no change in any fish passage to the lower reservoir.

The Proposed Action should have no negative impacts to fisheries.

### **7.1.3 Terrestrial Resources**

As stated, the Proposed Action would not involve any land clearing or construction activities outside of the project powerhouse, and therefore should have little to no negative impacts to terrestrial resources.

Construction under the Proposed Action could cause some short-term, very minor impacts to wildlife behavior through increases in traffic, noise, and human activity during the construction period.

Following the proposed construction, the periods in which the wetland areas along the lower reservoir would be inundated if the Proposed Action were approved would change very slightly. The wetlands could reasonably be expected to adapt to the minor changes. The wetlands along the auxiliary pools would not be affected by the Proposed Action. Therefore, overall, the Proposed Action would have no significant negative impacts on wetlands, or wildlife using those wetlands.

### **7.1.4 Threatened and Endangered Species**

As indicated by the DOI in its letter dated March 3, 2005, the Proposed Action is not likely to adversely affect federally listed or candidate species.

### **7.1.5 Recreation and Aesthetics**

The Proposed Action would occur in the project powerhouse, which is itself located in a previously-disturbed area on the lower project reservoir, and would not involve any land-clearing or outdoor construction. However, public views which include the powerhouse area, including views from overlooks, could be impacted by work activity during parts of the construction period.

The primary activity associated with the Proposed Action outside of the immediate powerhouse vicinity would be minor increases in construction traffic during the three-year work period. Also, according to the licensees' April 1, 2005 additional information response, temporary (a few hours or less) closures of a nearby main road could occur during the transport of the largest loads during construction, and approximately six loads of that size are expected. However, these loads would be transported during winter, causing a minimum of disruption to the public, and there are a number of alternative routes by which the public can access recreation areas.

To ensure public safety and minimize recreation disturbance, the licensees should produce a plan for signage and/or other appropriate notification to inform the public of

periods when potentially disruptive work may occur. With appropriate public notification, short-term negative impacts to recreation and aesthetics at the Rocky Mountain Pumped Storage Project should be minor.

### **7.1.6 Cultural Resources**

The proposed work would occur in the project powerhouse, which is itself located in a previously-disturbed area on the lower project reservoir, and would not involve any land-clearing or construction. The only activity associated with the Proposed Action outside of the immediate powerhouse vicinity would be a short-term increase in construction traffic during the work period, which would not affect any archaeological or historic resources. The GDNR-HPD has indicated that no archaeological resources or historic structures that are eligible for listing in the National Register of Historic Places would be affected by the Proposed Action. A local Indian Tribe (Jena Band of Choctaw Indians) has indicated that the Proposed Action would have no significant impacts to that group. Approval of the Proposed Action would have no effect on cultural resources.

### **7.1.7 Secondary and Cumulative Effects**

Secondary impacts are those that are indirectly caused by or result from an activity, and are reasonably foreseeable. They may occur later in time than the activity and be removed in terms of distance. According to the Council on Environmental Quality's regulations for implementing the National Environmental Policy Act, an action may cause cumulative impacts on the environment if its impacts overlap in space and/or time with the impacts of other past, present, or reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions. There are no foreseeable secondary or cumulative effects involving the Proposed Action.

## **7.2 No-Action Alternative**

Under the No-Action Alternative, the licensees' amendment request would be denied and the proposed work and increase in generating capacity would not occur. Selection of the No-Action Alternative would result in no environmental impacts.

## **8.0 CONCLUSIONS AND RECOMMENDATIONS**

Under the Proposed Action, the licensees would increase the authorized generating capacity of the project by replacing the project's existing pump-turbine runners and possibly modifying pump-turbine, motor-generator, and auxiliary equipment components. This would increase the project's maximum hydraulic capacity at peak

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generation by 20 to 25 percent, and the dependable generating capacity by 56.75 MW. Increased pumping capacity would reduce the daily pumping period from approximately 8.2 hours to approximately 7.3 hours.

Approval of the Proposed Action, with (1) the licensees' compliance with existing project license articles, as well as (2) coordination with the Commission's Division of Dam Safety and Inspections-Atlanta Regional Office (D2SI-ARO) and any necessary coordination with the DOI (both discussed below), should result in at most minor, short-term negative environmental impacts to wildlife and recreation.

A denial of the licensees' proposal would require the licensees to continue to operate the project as licensed in 1977, and to bypass the increases in generation and operational flexibility that would occur under the proposal.

In accordance with the Commission's regulations, at least 60 days prior to the start of construction, the licensees must file a Quality Control and Inspection Program (QCIP), including erosion and sediment control plans with the Commission's D2SI-ARO. The plans must be approved by the Commission's ARO prior to start of construction. The ARO should be informed of any changes or refinements to construction or protection plans or measures. The licensees' filing with D2SI-ARO should include a plan for signage and/or other appropriate notification to inform the public of periods when work could potentially affect traffic, or aesthetics at frequently-used public viewing areas.

All environmental protection measures should be reviewed with contractors and relevant resource agencies before, during, and after the work period, as necessary.

As stated by the DOI, obligations under the ESA must be reconsidered if (1) the project is modified in a manner not considered in its assessment, (2) a new species is listed or critical habitat is determined that may be affected by the project, or (3) new information indicates that the project may affect listed species critical habitat in a manner not considered. Additionally, it is noted that the GDNR-HPD has indicated that any changes to the licensees' proposal could require additional steps for Section 106 compliance regarding historical resource protection.

Based upon analysis of possible environmental impacts, we conclude that approval of the Proposed Action, with the licensees' coordination with the Commission's D2SI-ARO and compliance with the articles in the license for the Rocky Mountain Pumped Storage Project, would not constitute a major federal action significantly affecting the quality of the human environment. Approval of the licensees' proposal is the recommended course of action.

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## **9.0 LITERATURE USED OR CITED**

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U.S. Department of the Interior, U.S. Geological Survey. 2005. USGS Water Resources internet page with data from USGS streamflow gage No. 02388320, Heath Creek Near Armuchee, Georgia. Located at [http://waterdata.usgs.gov/ga/nwis/dv/?site\\_no=02388320&PARAMeter\\_cd=00060,00065](http://waterdata.usgs.gov/ga/nwis/dv/?site_no=02388320&PARAMeter_cd=00060,00065). Accessed February 25, 2005.

U.S. Department of the Interior, U.S. Geological Survey. 1999. Water Resources Data for Georgia, Water Year 1998. Water-Data Report GA-98-1.

## 10.0 PREPARERS

B. Peter Yarrington, Fisheries Biologist, Federal Energy Regulatory Commission.

Jean Potvin, Environmental Protection Specialist, Federal Energy Regulatory Commission.

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<sup>[1]</sup> Order Issuing License (Major), January 21, 1977: 57 FPC 368.

<sup>[2]</sup> The Bureau of Indian Affairs provided the licensees with a list of groups that may have an interest in the Proposed Action. The groups are: Cherokee Nation, Choctaw Nation of Oklahoma, Eastern Band of Cherokee Indians, Jena Band of Choctaw Indians, Kialegee Tribal Town, Mississippi Band of Choctaw Indians, Muscogee (Creek) Nation, Poarch Creek Indians, Seminole Nation of Oklahoma, Seminole Indian Tribe, Thlopthlocco Tribal Town, and the United Keetoowah Band of the Cherokee Indians.

57 F.P.C. 368, 1977

GEORGIA POWER COMPANY,  
PROJECT NO. 2725  
ORDER ISSUING LICENSE (MAJOR)

January 21, 1977\*

\*368 MAJOR LICENSE

\*\*1 Before Commissioners: Richard L. Dunham, Chairman; Don S. Smith, John H. Holloman III and James G. Watt.

On January 2, 1974, Georgia Power Company (Applicant) of Atlanta, Georgia, filed an application<sup>1</sup> for license under Section 4(e) of the Federal Power Act (Act) to construct, maintain and operate a pumped-storage hydroelectric project. The Rocky Mountain Project (FPC Project No. 2725) would be located in Floyd County, Georgia, approximately 10 miles northwest \*369 of the City of Rome, and would include a 947-acre lower reservoir on Heath Creek, a 221-acre upper reservoir on top of Rocky Mountain, a powerhouse containing three 225-MW reversible pump generator units, and a three-mile long, 230 kV transmission line. The lower reservoir would be divided into a 440-acre operating pool and two auxiliary pools of 120 and 387 acres, around which would be located public boat-launching, hiking, camping, and picnicking facilities.

The Applicant supplies electric power throughout the State of Georgia and interchanges electric power with private and public systems in several nearby States. Electric energy generated at the Rocky Mountain Project would be used in Applicant's own service area in the State of Georgia and would be available for transmission across State lines pursuant to agreements for exchange of power. Therefore, the Rocky Mountain Project would affect the interstate flow of electric energy within the meaning of Section 23(b) of the Federal Power Act, [16 U.S.C. § 817](#).

*Public Notice; Protests; and Petitions to Intervene*

Public notice of the application for license was issued May 23, 1974, with July 15, 1974, designated as the last day for filing protests or petitions to intervene. Publication was made in the Federal Register on May 31, 1974, and in the News-Tribune, Rome, Georgia, on June 7, 14, 21, and 28, 1974.

No protest pursuant to the notice of the application was filed. A petition to intervene was filed on July 16, 1974, by the Georgia Power Project, an unincorporated group of citizens interested in environment and consumer matters. The Commission granted intervention by order issued October 16, 1974, [52 FPC 936](#). The specific allegations of the Georgia Power Project are considered hereinafter.

Notice of Availability of the Commission Staff's Draft Environmental Impact Statement (DEIS) dated September 1975 was published in the Federal Register on September 10, 1975.

No Petition to Intervene pursuant to the notice was filed.

A Protest pursuant to this notice was filed October 29, 1975, by Mr. Robert H. DuPree, a citizen of Floyd County, Georgia, urging further consideration of alternative solutions to the problem of peak-hour demand of electrical energy, pointing out that the Rocky Mountain Project would result in the destruction of plant and animal life in the area, the scarring of scenery, the possible siltation of streams, and the uprooting of families in the lower reservoir area.

\*\*2 Another Protest was filed on March 19, 1976, by Ms. Kathy Pledger, a resident of Big Texas Valley in which the lower reservoir would be impounded. The protest asserted the irreplaceable beauty of the valley, including the area to be inundated; suggested that Georgia Power Company ask people to conserve energy so as to make the project unnecessary; and asked \*370 that the Commission not approve construction of the lower reservoir, hence the project.

Public notice of the availability of the Commission's Final Environmental Impact Statement (FEIS) was given on May 14, 1976.

A protest by the Georgia Public Interest Research Group, Inc. (Georgia PIRG) against licensing and construction of the project was filed on October 15, 1976. Georgia PIRG asserted that it was necessary to hold a public hearing in the vicinity of the project for full analysis of the issues involved. Georgia PIRG further alleged that the FEIS failed to give adequate

consideration to the viability of load management alternatives to the project.

We hereinafter respond, under Environmental Evaluation, to comments on the FEIS filed July 19, 1976, by the Georgia State Clearinghouse, Office of Planning and Budget and those filed October 15, 1976, by Georgia PIRG.

*Nature of Applicant and Financial Ability*

Applicant is a corporation organized under the laws of the State of Georgia, having its offices and principal place of business in Atlanta, Georgia, and is authorized to do business in the State of Georgia. The Applicant is an operating subsidiary of The Southern Company.

The Applicant indicates in Exhibit G of its applicant that it has an established and ready market for its securities and cites its FPC Form No. 1 to demonstrate that it is financially able to construct, maintain, and operate the project.

*Water Rights and Compliance With State Law*

The Applicant states that it will acquire the water rights necessary for the construction, maintenance, and operation of the project by purchasing in fee simple the lands adjacent to Heath Creek and the necessary flowage rights. It is also noted that no specific State authority is required for the construction and operation of the project, since under the laws of the State of Georgia corporations owning or controlling lands on either side of a non-navigable stream are authorized to construct and maintain a dam across the stream for the purposes of the development of water power. Finally, Applicant states that it has by its charter the right to engage in the business of generating, transmitting, and distributing power and any other business necessary to effect its business purpose.

*Conflicting Applications and Effect on Government Dam*

There are no conflicting applications before the Commission, and the project would have no effect on a government dam.

*Project Analysis; Economic Feasibility; and Safety and Adequacy of Project Structures*

We have concluded that the proposed Rocky Mountain Project is feasible from an engineering and financial standpoint and that its construction and \*371 operation would be consistent with the comprehensive development of the basin resource upon compliance with special articles hereinafter required.

\*\*3 The Applicant's electric system has been studied using existing generating capacity, planned retirements, and a generation expansion mix consisting of planned generating stations through 1985, including construction the Rocky Mountain pumped-storage project or an appropriate alternative. The alternatives considered appropriate were: other pumped-storage hydroelectric projects, use of combustion turbines, combined-cycle plants, steam peaking plants, and nuclear-fueled base-load plants. The generating mix was operated by economical dispatch using a computer program to meet system demand with the Rocky Mountain project or an alternative included to determine the overall effect on system production costs.

The estimated capital cost of the proposed Rocky Mountain project, including Staff's estimate of \$4,000,000 for additional foundation treatment, is less than the estimated capital cost of any alternative pumped-storage project studied.

The 1983 estimated annual cost of operating the Georgia Power Company System with Rocky Mountain project in operation, excluding fixed costs of other system plants, would be \$1,088,800,000, which is about \$12,600,000 less than the 1983 estimated annual cost of operating the system with combustion turbines installed. The combustion turbine alternative is the lowest cost alternative which could be installed in time to meet Georgia Power Company's 1983 system needs in the event Rocky Mountain project is not constructed.

The Exhibit L drawings for the project are adequate to show the layout of the project and are sufficient for cost estimations. They are considered inadequate for determining the safety and adequacy of the project, however, since they do not show treatment to prevent potential leakage from developing through the geologic formation underlying the upper and lower reservoirs and possible changes in design or realignment of the structures which may be necessary subsequent to further site investigations. Any such changes in the design of project structures will be shown on revised Exhibit L drawings to be filed for Commission approval prior to the start of construction pursuant to Article 25. A report covering the design of the project structures shown on the revised Exhibit L drawings is to be submitted by the independent board of consultants pursuant to Article 26. The Exhibit L drawings filed on January 2, 1974, are approved only insofar as they show the general layout and



design of the project structures.

Articles 27 and 28 require (1) that the Licensee install instrumentation to monitor seepage, uplift, and the performance of structures, and file with the Commission reports thereon and (2) that the Licensee file for Commission approval prior to filling the upper reservoir detailed plans to assure the safety of the upper reservoir dike in the event of overpumping. Article 49 requires the Licensee to file an Action Plan for use in case of emergency.

**\*372** *Agency Comments on the Application*

**\*\*4** The application of January 2, 1974, was forwarded to Federal, State, and local agencies and interests by letter dated April 15, 1974, from the Commission's Secretary.

All comments filed in response to the letter from the Secretary were forwarded to the Applicant for information and comment, by letter dated September 11, 1974.

The Applicant filed its reply to the agency comments by letter dated October 10, 1974.

We address hereafter the significant issues raised in the various agency letters. Where appropriate, we discuss the Applicant's reply to the agency comments.

The United States Forest Service, by letter dated August 16, 1974, stated that the project as described in the application would not interfere or be inconsistent with the purposes for which the Chattahoochee National Forest was created or acquired, nor would the project conflict with a project which has been or should be constructed by the United States. The Forest Service noted that the Rocky Mountain Project would, in part, be located on privately owned lands within the acquisition boundary of the Chattahoochee National Forest.

The Forest Service stated that the project concept seems to have been developed with a considerable degree of environmental consciousness and attention to matters maximizing opportunities for the public benefit. It recommended (1) that the Company coordinate its future plans with the forest supervisor, Chattahoochee National Forest, (2) that the Company take mitigative and protective measures to minimize effects of construction operations on fisheries, wildlife habitat, and water quality, and (3) that measures be taken to minimize the environmental impact of the transmission line corridor and substation construction.

The Applicant, in reply, offered evidence of prior consultation with the Forest Service's Gainesville, Georgia office concerning Exhibit W and suggested that the Forest Service be specific in recommending what mitigative measures be taken to minimize adverse impacts due to construction and operation of the project, in view of existing statements in Exhibit W concerning this matter.

We believe that the concerns of the Forest Service will be adequately provided for in Articles 15, 16, 17, 18, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38 and 42.

The United States Department of the Interior commented by letter dated July 12, 1974, stating that the project would not be inconsistent with the protection and utilization of any reservation under its supervision, nor would the project be in conflict with a project which has been, or may be, constructed by it.

**\*373** Interior stated that the project would not adversely affect any existing, proposed or known historic, natural, or environmental education sites eligible for the National Landmarks Programs; and followed with generally favorable comments on the recreational and environmental aspects of the project as described in Exhibits R, V and W, with minor exceptions.

**\*\*5** Interior noted that the project is within seismic risk zone 2 (U.S. Coast and Geodetic Survey, 1969) where moderate damage can be expected from earthquakes. Interior recommended, therefore, that the stability of the natural foundations, nature of the materials to be used in dams and dikes, and the magnitude and ground accelerations of the potential earthquake used for design purposes should be more fully developed. As discussed previously, further information will be required from the Applicant and our approval of the final design of project structures is necessary before construction commences.

Due to the relatively short period during which streamflow in Heath Creek has been observed, Interior indicated some concern for the accuracy of observed average flow, 18.1 cfs, and estimated low flow, less than 1.2 cfs, estimating a greater flow in each case. Interior questioned whether the water quality would remain essentially the same if the project were

constructed. In response to this latter concern it should be noted that we are requiring that Applicant conduct a water quality monitoring program in cooperation with the Georgia Department of Natural Resources (Article 31) and, by Article 32 herein, condition this license so as to minimize or prevent siltation problems from construction activities. A 5-year water quality program will monitor the situation after construction is completed. As discussed hereinafter, a State water quality certificate has been issued requiring low flow augmentations when natural flows are less than 1.2 cfs.

Finally, Applicant submitted revised calculations of projected visitor cash outlay associated with recreational use of proposed facilities to correct an error noted by Interior.

The Department of the Army, Corps of Engineers, commented by letter dated June 20, 1974, stating that the project would have no significant effect on navigation and that insertion of special terms and conditions in the license in the interest of navigation would not be necessary. The Corps further stated that the project would have no appreciable effect on present and potential Corps projects in the area.

In the interest of protecting downstream channel improvements, however, the Corps recommended that the license contain a provision specifying that the project not be operated during flood periods in a manner causing downstream flows to be greater than would have occurred in the absence of the project. This concern is provided for by Article 43. The Corps has no objection to issuance of a license, subject to the inclusion of this provision.

The United States Environmental Protection Agency (Region IV) commented by letter dated June 11, 1974, stating that the project has been well \*374 designed, and all issues concerning water quality have been adequately addressed.

EPA offered some additional observations regarding project impacts upon air quality and noise levels. It recommended that an acoustical survey be performed and that assurance should be given that construction noise will not violate any State or local ordinance.

\*\*6 It is sufficient to note, however, that the project will be located in a distinctly rural setting. We do not foresee a problem due to noise from construction or operation of the project.

The United States Atomic Energy Commission reported by letter dated July 2, 1974, that the project would not interfere with any projects subject to licensing by that Commission and offered no objection to the proposed project. The letter further stated that nuclear power does not appear to be a viable alternative since the project is designed to produce peaking energy.

The United States Department of Health, Education, and Welfare, by letter dated April 18, 1974, offered no comment on the application for license, preferring instead to comment on a draft environmental impact statement.

The United States Department of Housing and Urban Development, Atlanta Area Office, by letter dated June 5, 1974, stated that it had no objection to the application for license.

The United States Department of Transportation, Coast Guard, by letter dated July 23, 1974, stated that it had no comment on or objection to the application for license.

The Georgia Department of Natural Resources, Game and Fish Division, by letter dated May 30, 1974, pointed out that its recommendations to the Applicant that the spillways of the auxiliary pools be constructed so that overflow into the operating pool would not exceed six inches to prevent excessive fish escape and that a vertical drop of three feet between the pools be maintained to prevent rough fish from entering the auxiliary pools were not incorporated into the application and recommended that these features be included. The DNR further suggested the construction of eight jetties in the two auxiliary pools for fishermen.

We believe that all DNR concerns relating to recreation and fishery matters are adequately covered by Articles 30 and 35.

The Floyd County Board of Commissioners, by letter dated June 18, 1974, cited the positive environmental attributes of the project, pointed out the benefits of the project to the County, and concluded that the benefits will far outweigh any harmful effects of the project.

The Rome Area Chamber of Commerce, by letter dated August 9, 1974, stated that its Board of Directors had unanimously voted to endorse the project and recommend that a license be issued.

The Rome City Commission, by letter dated July 10, 1974, stated that it approved the ecological and environmental features

of the project, commented **\*375** on the desirability of the proposed recreation facilities, and concluded that it favored construction of the project.

The President of Berry College, by letter dated June 5, 1974, stated that based on first-hand knowledge of the area the project would have an overall favorable impact on the environment.

The Tennessee Valley Authority, by letter dated June 28, 1974, stated that the project would have no direct impact on TVA programs or projects, and offered no further comment on the project.

**\*\*7** The Advisory Council on Historic Preservation commented by letter dated April 23, 1974, suggesting additional data for consideration in the draft environmental impact statement.

The Rome Chapter of the Georgia Conservancy, Inc., by letter dated June 11, 1974, commented on the application and offered some suggestions for certain minor modifications of the project. Specifically, the Georgia Conservancy noted that the Applicant has agreed to preserve the waterfalls and hardwood trees on the western end of the mountain. The Georgia Conservancy also suggested that the road and parking location should be eliminated in Day Use Area III and that upon termination of the license the Applicant should be required to restore the mountain top. Article 35, requiring Commission approval of final design drawings for location of recreational facilities, is responsive to the concerns for Day Use Area III. Articles 21 and 22 adequately address the concern for action upon termination of the present license.

#### *Water Quality Certification*

The State of Georgia, Department of Natural Resources, Environmental Protection Division, issued certification for the Rocky Mountain Project to Georgia Power Company pursuant to Section 401 of the Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. § 1341) by letter dated September 12, 1973. State certification was reaffirmed by letter dated May 23, 1974, upon the conditions of the earlier certification. Certification is conditioned upon compliance with the following: (1) all work performed during construction will be done in a manner so as not to violate applicable water quality standards; (2) no oils, grease, materials or other pollutants will be discharged from the construction activities which reach the waters of Heath Creek; and (3) when natural stream flow in Heath Creek drops below 1.2 cfs, as determined by monitoring the maximum pool elevations in the lower generating pool, the Applicant will provide the minimum average flow for a seven-day period with a recurrence interval of ten years. Article 34 requires a minimum flow of 1.2 cfs.

A copy of the State water quality certificate was mailed to the Environmental Protection Agency pursuant to 40 CFR § 123.11 (1976).

#### **\*376** *Environmental Evaluation*

As stated above, a Final Environmental Impact Statement (FEIS) was prepared and issued by the Commission's Staff on May 14, 1976. Ten copies of the FEIS were mailed to the Council on Environmental Quality on the same date.

The environmental impacts associated with construction, operation, and maintenance of the project have been fully considered after reviewing the FEIS, and all other materials on file with the Commission. A summary of the more important issues relating to environmental impacts of this project is discussed below.

The Rocky Mountain Project would be located in a pastoral setting in the Appalachian foothills of northwestern Georgia about 10 miles from the City of Rome, in Floyd County.

**\*\*8** The project has been designed in a manner such that the lower operating pool having a 25-foot normal operating drawdown would not be visible from Big Texas Valley and Fouche Gap Roads which would pass through portions of the two auxiliary pools. Likewise, the upper reservoir dike would not be noticeable from the two roads.

The project boundary, as proposed, would include approximately 360 acres of privately owned land from within the acquisition boundary of the Chattahoochee National Forest, about 2,150 acres of land from within the Berry College Wildlife Management Area and Refuge, and around 1,560 acres of other privately owned land, altogether encompassing approximately 4,110 acres.

The proposed project boundary as shown on Exhibit K generally exceeds 200 feet, horizontal distance, from the exterior margins of the reservoirs; the maximum distance allowed by Section 4.41-K of Commission Regulations without proper justification.

Exhibit K indicates that the Applicant proposes to include all recreation area buffer zones, natural areas, and wildlife areas, generally exceeding the 200-foot limit, within the project boundary. The intent is to assure that the present natural surroundings will remain undeveloped and that after construction of the project the environment will remain undisturbed during the license period.

All lands within the project boundary not inundated by the reservoirs or specifically devoted to project power facilities would be administered by the Georgia Department of Natural Resources, Game and Fish Division, as a part of the Berry College Wildlife Management Area and Refuge. This proposal has been endorsed by several Federal, State, and local agencies and interests, including Berry College which now owns 2,150 acres of the land. We believe that the Applicant has given sufficient justification for portions of the proposed project boundary exceeding 200 feet and we approve.

Due to the nature of pumped-storage operation, all water-oriented recreation **\*377** would be confined to the two auxiliary pools of the lower reservoir, around which would be developed two day-use areas, a camping area, and three boat-launching areas. A third day-use area and a combined overlook and visitors center would be located at opposite ends of the upper reservoir; a second overlook would be located on a low ridge immediately above the powerhouse; and a 5-mile-long hiking trail would connect the upper day-use area and the lower overlook. In total, about 300 acres of land would be specifically devoted to recreation purposes.

The property of 21 landowners in Big Texas Valley would be acquired for development of the lower reservoir and the recreational areas around the auxiliary pools. Relocation of 16 families from homesites which would be flooded by the lower reservoir is scheduled to take place during the second year of construction work. As a mitigation effort, Article 41 would require (1) that the Licensee provide financial assistance and aid in the relocation of persons displaced by construction of the project, in accordance with guidelines set forth in the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, and (2) that the Licensee construct new access roads for persons not displaced but cut off from access to Big Texas Valley and Fouché Gap Roads by construction of the project.

**\*\*9** The Applicant initially proposed to locate the Big Texas Valley and Fouché Gap Roads on the existing roadway alignments in the basin of the lower auxiliary pools by raising the roads on earth fills running through extensive lengths of the reservoir. Floyd County has objected to the relocation of Big Texas Valley and Fouché Gap Roads in such a manner as to require extensive construction on fill areas or road dikes. We are aware that the Applicant and Floyd County appear to have made substantial progress toward a voluntary resolution of this matter, although a plan showing the proposed roadway realignment was not furnished by the Applicant, as requested by the Staff. Therefore, we are requiring in Article 29 that the Applicant file plans of the two roads, realigned so as to lessen the extensive use of earth fills, the adverse visual impacts of the extensive earth fills, and the excessive division of the recreation pool.

Water from Health Creek flows downstream of the project site in turn into Little Armuchee Creek, Armuchee Creek, Oostanaula River about six miles above Rome, and into the Coosa River immediately upstream from Weiss Reservoir of Alabama Power Company's Coosa River Project No. 2146. Turbidity and siltation caused by runoff from construction sites and those facilities associated with construction activities could have an adverse and lasting impact on the aquatic ecosystems of the receiving waters. Applicant, by Article 32, will be required to prevent or minimize these problems from disturbed areas. In addition, Applicant will be required by Article 31 to continue its pre-impoundment water quality program on a monthly basis to establish further baseline data. After construction, a 5-year water quality monitoring program will be required.

**\*378** In sum, environmental impacts due to construction and operation of the project will include: (1) inundation of about 1,200 acres of land, eliminating existing wildlife habitat and agricultural land; (2) displacement of 48 persons in the Big Texas Valley; (3) elimination of a section of free-flowing stream and agricultural land; (4) changes in landscape character and scenic values and agricultural land; (4) changes in water quality due to construction and impoundment; (6) benefits of new outdoor recreational use developments in the area; (7) increased fish habitat provided by the auxiliary pools; (8) shortterm economic benefits to the area from construction payrolls; and (9) longterm economic benefits to the area from an expanded tax base.

Alternatives to the proposed project were evaluated in the FEIS and have been reviewed by the Commission. Alternatives considered include denial of application for license, purchase of peaking power, electric energy conservation and rate revision, Federal development, alternative forms of generation, and alternate pumped-storage sites. None of these alternatives was considered to be a reasonable substitute for the Rocky Mountain Project.

As noted previously, the Georgia State Clearinghouse by memorandum dated July 16, 1976, responded to the FEIS. It stated

that the State of Georgia would consider the project to be consistent with State objectives only if two Staff recommendations in the FEIS were adopted by this Commission, *i.e.*, that an additional archaeological survey of the upper reservoir area be conducted in coordination with the State Archaeologist during the land clearing stage of project construction and that a fishery management plan for the two subimpoundments be developed prior to construction in cooperation with the U.S. Fish and Wildlife Service and the Game and Fish Division, Georgia Department of Natural Resources. These concerns are provided for in Articles 30, 33, and 40 of the license.

**\*\*10** The State Clearinghouse also stated that, in its opinion, the FEIS did not demonstrate sufficient justification for the project in view of lower demand projections contained in the latest Report of the Southeastern Electric Reliability Council (SERC), dated April 1, 1976, nor did the FEIS adequately consider the potential economic impacts on consumers due to underutilization of the project should sufficient demand fail to materialize.

The latest SERC Report shows a forecast 1976 peak demand of 19,130 megawatts for the Southern Companies Subregion and a forecast peak demand of 26,155 megawatts for 1980, which corresponds to an average annual growth of 8.1 percent. The average annual growth rate in demand forecast for the Georgia Power Company system for the period 1976 to 1985, as shown in Table 8-2 of the FEIS, is 8.0 percent. For the period 1976 to 1980, Table 8-2 shows the average annual growth rate in demand for Applicant's system to be 8.6 percent. If it is assumed that an 8.6 percent annual growth rate is too high and that an 8 percent growth rate during that period is more likely to occur, then the 1980 forecast peak demand for Applicant's system would be 12,448 megawatts instead of 13,110 megawatts and the reserve **\*379** margin would be 14.6 percent instead of 11.95 percent. Thus, even assuming a more modest demand growth rate, the estimated reserve margin for 1980 would be below the 18 percent minimum reserve margin considered to be necessary for acceptable values of loss-of-load probability of Applicant's system.

There have been, and always will be, difficulties and uncertainties in forecasting future demands for generating capacity. Today's uncertain fuel supplies and economic and social uncertainties make load forecasting more difficult than even before. Nevertheless, it is a basic responsibility of the FPC and the utilities of the nation to provide an adequate and reliable supply of electric power and energy at all times. We believe that we must be cautious and reasonably conservative in the matter of power availability, due to the ever present danger of power shortage.

A recent power shortage on the Applicant's system demonstrates our concerns. Despite the fact that the Southern Companies had forecast comfortable reserve margins for the summer of 1976, on the morning of July 26, 1976, it was necessary for the Georgia Power Company to adopt broad load reduction measures due to a critical shortage of generating capacity. At that time 3,195 megawatts of Southern Companies' generating capacity was unavailable. Two 675 MW units (Bowen No. 1 and No. 2) of the Applicant were unavailable and the 896.5 MW Wansley No. 1 unit, which was expected to be in service in June, was not yet operational. Emergency capacity sufficient to relieve the deficiency was not available from neighboring utilities.

We conclude that the 8 percent forecast of average annual growth rate in demand is based on the most reliable data available, and is reasonable. Construction schedules are experiencing a variety of delays at this time, and the true values of reserve margins as a result of such delays may be lower than the values which have been forecast. There is no reason to expect that, within the time span with which we are here concerned, the proposed pumped storage capacity will not continue to be the most economical and, operationally, the most advantageous form of peaking capacity available to Applicant. Thus we conclude that underestimating the effects of any reduction in the average annual growth rate in demand below the forecast value of 8 percent would be far less serious than the consequences of underestimating the need for the project. In any event, should demand forecasts result in the installation of excess generating capacity, the proposed Rocky Mountain pumped storage project would still operate in the manner set forth in the FEIS; however, old and/or inefficient generating plants would be idled, with concomitant savings in fuel and operating costs.

**\*\*11** By letter dated September 28, 1976, the Georgia Public Interest Research Group, Inc. (Georgia PIRG), protested the lack of public hearings on the project and requested that such a hearing be held in Rome, Georgia, prior to final decision by this Commission on the pending license application. We hereinafter address the issue of the need for a public **\*380** hearing. The Georgia PIRG also asserted that the FEIS had failed to consider adequately the possibility of load management programs as an alternative to the project.

We disagree with the assertion of the Georgia PIRG that load management programs as alternatives to the project were not adequately considered in the FEIS. Section 8.1.1 and Section 8.1.2 of the FEIS fully considered the possibility of conservation and rate revision as means for controlling load growth. While recognizing the benefits to be expected from such load management techniques, the FEIS concluded that they were not reasonable alternatives to additional generating capacity for the Georgia Power Company system. We agree, in light of our responsibility to assure adequate and reliable supplies of electric energy in the nation, discussed above, and the demonstrated need for additional generation. While such load

management programs should be vigorously pursued, the uncertainties associated with such programs, the time lag associated with consumer responses, and the long lead times required for constructing new capacity, prevent the practical implementation of such programs, at this time, in place of scheduling needed additional generating capacity.

The Intervenor, Georgia Power Project, has alleged that: (1) construction of the project would cause the loss of some valuable and increasingly rare resources; (2) environmental problems due to operation of the project would occur; (3) the project would seriously damage the scenic character of the area; (4) the need for the project had not been demonstrated; (5) the recreational facilities of the proposed projects would fill no real need in view of its close proximity to several established recreational areas; (6) the Applicant did not consider the alternative of using a variable rate structure to flatten peakdemand; (7) the gas turbine is a valid and desirable alternative; and (8) it has doubt as to the need for the project in view of its costs.

We recognize that certain adverse impacts noted above are unavoidable. For the reasons previously cited, however, we believe that the beneficial effects to be derived from construction and operation of the Rocky Mountain Project, subject to the conditions hereinafter imposed, outweigh the adverse effects upon the environment. Therefore, we conclude that licensing the project best meets the comprehensive development standard of the Act. See [16 U.S.C. § 803\(a\)](#).

We note that in addition to Georgia PIRG, a number of individuals have filed petitions and other requests for a public hearing in Rome, Georgia. However, we believe that the subject matter of the instant application has been fully developed and considered by this Commission. The facts have been fully developed by the data on file with this Commission, including but not limited to, the license application, the DEIS, FEIS, and comments on each of these specified documents. We do not believe that a public hearing would contribute any new and relevant information not already a part of the record gathered in this proceeding. We, therefore, conclude that it is not in the public interest to hold a local public hearing.

**\*381** *Required Exhibits*

**\*\*12** Exhibit J (General Map of the Project Area) conforms to the Commission's Regulations and is hereafter approved. Exhibit K (Detail Map of the Project Area) is hereafter approved only insofar as it shows the project layout and shows lands to be retained in a natural state for wildlife management purposes. Article 44 requires that a revised Exhibit K showing the final project boundary be filed for Commission approval within one year after commencement of project operation.

Exhibit L (General Design Drawings of Principal Project Structures and Appurtenant Works), as discussed above, is not adequate for determining the safety and adequacy of the project, since the drawings do not show treatment necessary to prevent potential leakage from the upper and lower reservoirs and possible changes or realignment of structures in the final design of the project. By Article 25 we are requiring that revised Exhibit L drawings showing the final design of project structures be filed and approved by the Commission prior to commencing construction.

We hereafter approve Exhibit M (General Description of Mechanical, Electric and Transmission Equipment), as submitted.

Exhibit R (Recreation Plan) is approved only insofar as it described proposed recreational facilities at the instant project. Article 35 requires that the Exhibit R be amended with design drawings and a schedule of development of recreational facilities.

Exhibit S (Fish and Wildlife Plan) generally complies with Commission Regulations and discusses in general, some impacts of project construction and operation on the fish and wildlife resources of the project area. Detailed fish and wildlife management plans with specific measures to protect, regulate, and maintain these resources are not provided. Article 30 requires that a revised Exhibit S be filed for Commission approval to include specific measures for the protection and enhancement of project fish and wildlife resources.

Exhibit V (Natural, Historic and Scenic Values of Project Area) generally complies with Commission Regulations but does not include detailed plans to avoid or minimize conflicts between (1) historic, scenic, and recreational values and (2) plans associated with project construction. By Article 42 we are requiring the filing of such detailed plans.

*Period of License*

We believe that a license should be issued to Georgia Power Company for a period of 50 years effective as of the first day of the month in which the license is issued.

*Annual Charges*

The installed capacity of the Rocky Mountain Project would be 675,000 kW. For annual charge purposes the authorized horsepower is 900,000 ( $4/3 \times 675,000 \text{ kW} = 900,000 \text{ hp}$ ).

**\*382** *The Commission finds:*

- (1) The Rocky Mountain Project No. 2725 affects the interests of interstate commerce.
  - (2) Applicant is a corporation incorporated under the laws of the State of Georgia and has submitted satisfactory evidence of compliance with the requirements of all applicable State laws insofar as necessary to effectuate the purposes of a license for the project.
- \*\*13** (3) Public notice of the filing of the application has been given. A petition to intervene was filed by the Georgia Power Project.
- (4) The petition of Georgia Power Project has been granted.
  - (5) A public hearing on the application is neither warranted nor in the public interest.
  - (6) No conflicting application is before the Commission.
  - (7) The project does not affect a government dam, nor will the issuance of a license therefor, as herein provided, affect the development of any water resources for public purposes which should be undertaken by the United States.
  - (4) Subject to the terms and conditions hereinafter imposed, the project is best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce, for the improvement and utilization of water power development, and for other beneficial uses, including recreational purposes.
  - (9) The installed horsepower capacity of the project hereinafter authorized for the purpose of computing the capacity component of the administrative annual charge to be paid under the license for the cost of administration of Part I of the Act is reasonable as hereinafter fixed and specified.
  - (10) A FEIS has been prepared in accordance with the National Environmental Policy Act of 1969, Pub. L. No. 91-190, after preparation and circulation of a DEIS and receipt of comments thereon.
  - (11) The term of the license hereinafter authorized is reasonable.
  - (12) The Exhibits designated and described in paragraph (B) below conform to the Commission's Rules and Regulations and should be approved to the extent noted as part of the license for the project.
  - (13) There is a demonstrated need for project power in Applicant's system.
  - (14) The proposed project is superior to any alternative considered.
  - (15) The Applicant has demonstrated satisfactory evidence that it has the necessary financial capabilities to construct and operate the project.

*The Commission orders:*

(A) A major license is hereby issued to Georgia Power Company (Licensee) of Atlanta, Georgia, under Section 4(e) of the Federal Power Act for a period of 50 years, commencing the first day of the month in which this **\*383** license is issued, for the construction, maintenance, and operation of the Rocky Mountain Project, FPC No. 2725, located in Floyd County, Georgia, on Heath Creek, subject to terms and conditions of the Federal Power Act which is incorporated herein by reference as part of this license, and subject to such rules and regulations as the Commission has issued or prescribed under provisions of the Act.

(B) The Rocky Mountain Project consists of:

- (i) all lands constituting the project area and enclosed by the project boundary, the limits of which are otherwise defined and/or interests in such lands necessary or appropriate for the purposes of the project, whether such lands or interests therein

are owned or held by the Applicant or by the United States; such project area, project boundary, and other facilities being generally shown and described by certain exhibits which form part of the application for license and which are designated and described as follows:

**\*\*14 Exhibit J:** 1 Sheet (FPC No. 2725-1 filed October 16, 1972; tracing filed October 21, 1972) entitled 'General Map of Project.'

*Exhibit k: Insofar as it shows the project layout and indicates lands to be retained in a natural state for environmental Purposes*—1 Sheet (FPC No. 2725-16) filed January 2, 1974, entitled 'Detail Map of Project Area.'

(ii) project works consisting of:

(a) *A Lower Reservoir* impounded by (1) a dam across Heath Creek composed of a 1,500-foot-long earth-fill section with crest at elevation 725 feet and a 111-foot-long tainter-gate spillway section providing controlled discharge below elevation 714 feet, and (2) a 1,085-foot-long earth-fill dam across a saddle some 1,000 feet north of the main dam with maximum crest at elevation 725 feet, having a 150-foot fuse plug section designed to breach at elevation 718 feet; partitioned by three dikes and two ungated spillways, each with a valve-controlled sluice, into three separate pools: (a) the Lower Operating Pool having a surface area of 440 acres at normal maximum pool elevation 712 feet, a 9,200-acre-foot usable storage volume in a 25-foot normal drawdown, and a 1,400-acre-foot reserve storage between normal minimum operating pool elevation 687 feet and minimum operating pool elevation 681 feet for use during dry periods; and (b) Auxiliary Pools having surface areas of 387 and 120 acres at normal full pool elevation 713 feet, to be used for recreation purposes and reserve storage for make-up water during extended dry periods;

(b) *An Upper Reservoir* formed by a 13,500-foot-long, 50-foot-high, earth and rock-fill dam, circumscribing the natural concave top of Rocky Mountain, having a surface area of 221 acres at normal full pool elevation 1,390 feet, a usable storage volume of 9,200 acre-feet in a 45.5-foot normal drawdown, and a reserve storage capacity of 900 acre-feet between normal minimum pool elevation 1,344.5 feet and minimum pool elevation 1339 feet;

(c) *A water conduit* connecting the upper and lower reservoirs, consisting of a 35-foot-diameter concrete-lined shaft 577 feet deep extending from an \*384 intake in the floor of the Upper Reservoir to a 34-foot-diameter, concretelined, horseshoe-shaped, inclined tunnel section extending 1463 feet to a 28-foot-diameter, 1,087-foot-long, steel-lined, horizontal tunnel section trifurcating into three 15-foot steel penstocks;

(d) *A semi-outdoor-type powerhouse* containing three vertical-shaft, 225-mW, reversible pump generator units;

(e) *A substation* adjacent to the powerhouse;

(f) *A three-mile-long, 230-kV transmission line*;

(g) *Appurtenant facilities*; and

(h) *Recreational and Environmental features* comprising (1) lands surrounding the project works and recreation facilities included within the project boundary to form a buffer zone to assure preservation of the present natural setting to the greatest extent possible; (2) water-oriented recreation confined to the two Auxiliary Reservoirs, around which would be developed two day-use areas, a camping area, and three boat-launching areas; (3) a third day-use area and a combined overlook and visitors center located at opposite ends of the Upper Reservoir; (4) a second overlook located on a low ridge immediately above the powerhouse; and (5) a 5-mile-long hiking trail connecting the upper day-use area and the lower overlook;

**\*\*15 \* \* \*** the location, nature, and character of which are shown and described by exhibits hereinbefore cited and by certain other exhibits which also form part of the amended application for license and which are designated and described as follows:

*Exhibit L: Insofar as it shows the general layout and design of project structures*—Seven general design drawings, filed as part of the January 2, 1974, amended application for license, described as follows:

Tracing FPC No. 2725 Date Filed Showing

L 1 17 1 2 74 Plan and Elevation of Lower



Operating Pool, Main Dam

and Spillway, and Saddle Dike.

L 2 18 1 2 74 Section through Development

and Typical Tunnel Sections.

L 3 19 1 2 74 Typical Section Through

Spillway, Non-Overflow and

Main Dikes.

L 4 20 1 2 74 Plans and Elevations of Auxiliary

Dams and Spillways.

L 5 21 1 2 74 Typical Sections—Auxiliary

Structures.

L 6 22 1 2 74 Powerhouse-Plan and

Transverse Section.

L 7 23 1 2 74 Powerhouse Floor Plans.

*Exhibit M.*: Three typewritten pages entitled ‘General Description of Mechanical, Electrical and Transmission Equipment’ and one figure labeled ‘Pumping Capabilities of Pump Turbine,’ filed January 2, 1974.

**\*385** *Exhibit R: Insofar as it describes the proposed recreational facilities at the project*—16 typewritten pages (numbered 1 through 16) and one map (FPC No. 2725–11) filed October 16, 1972.

(iii) all of the structures, fixtures, equipment or facilities used or useful in the maintenance and operation of the project area, if and to the extent that the inclusion of such property as part of the project is approved or acquiesced in by the Commission; together with all riparian or other rights, the use or possession of which is necessary or appropriate in the maintenance or operation of the project.

(C) This license is subject to the terms and conditions (Articles 1 through 23, except for Article 20) of Form L–11 (Revised October 1975, 57 FPC 1864) entitled ‘Terms and Conditions of License for Unconstructed Major Project Affecting the Interests of Interstate and Foreign Commerce’ and is also subject to the following special terms and conditions:

*Article 24.* The Licensee shall commence construction of the project within two years from the effective date of the license and shall thereafter in good faith and with due diligence prosecute such construction and shall complete construction of such project works within six years from the effective date of the license.

**\*\*16** *Article 25.* The Licensee shall file with the Commission’s Regional Engineer and Chief, Bureau of Power, one copy each of the contract drawings and specifications as soon as they become available; and shall submit for Commission approval prior to the start of construction revised Exhibit L drawings showing the final design of the project works.

*Article 26.* The Licensee shall retain a Board of three or more qualified, independent, engineering consultants to review the design, specifications, and construction of the project for safety and adequacy. The names and qualifications of the Board members shall be submitted to the Chief, Bureau of Power, for approval. Among other things, the Board shall assess the geology of the project site and surroundings; the design, specifications, and construction of the dikes, dams, spillways, powerhouse, electrical and mechanical equipment involved in water control, and emergency power supply; instrumentation; the filling schedule for the upper and lower reservoirs and plans for surveillance during the initial filling; the construction inspection program; and construction procedures and progress. The Licensee shall submit to the Commission copies of the

Board's report on each meeting. Reports reviewing each portion of the project shall be submitted prior to or simultaneously with the submission of the corresponding Exhibit L final design drawings. The Licensee shall also submit a final report of the Board upon completion of the project. The final report shall contain a statement indicating the Board's satisfaction with the construction, safety, and adequacy of the project structures.

*Article 27.* The Licensee shall install appropriate instrumentation and other devices to monitor seepage, uplift, and performance of the project structures and reservoir slopes. A plan of instrumentation and a schedule for recording instrument readings shall be filed with the Commission prior to the \*386 initial filling of the upper reservoir. The Licensee shall furnish periodically to the Commission, as may be requested by the Commission or its authorized representative, a report and analysis of the instrument readings.

*Article 28.* The Licensee shall file for Commission approval detailed plans to assure the safety of the upper reservoir dam from inadvertent overpumping and shall not commence construction of the upper reservoir dam until such plans are approved.

*Article 29.* The Licensee shall consult and cooperate with appropriate Federal, State and local agencies, including Floyd County, Georgia, in determining the proper realignment of those sections of Fouché Gap and Big Texas Valley roads which pass through the project area. In determining realignment, the Licensee shall consider: (a) lessening the extensive use of road dikes; (b) lessening or eliminating the visual impacts of these roads from all recreation facilities; and (c) eliminating the division of recreation pools into several sub-pools. Within one year following issuance of the license, Licensee shall file a report to include maps of the recommended realignment. Should the road realignment affect any Exhibits as approved herein, an amendment to the appropriate Exhibits shall be filed concurrently for Commission approval.

**\*\*17 Article 30.** Licensee, after consultation and cooperation with the Georgia Department of Natural Resources, and the U.S. Fish and Wildlife Service of the Department of the Interior, shall file within three years from the date of issuance of this license a revised Exhibit S for Commission approval which shall include the following:

(1) a detailed wildlife management plan to include and implementation schedule, and a description of the locations and acreages of land to be managed for wildlife;

(2) a detailed project map showing the areas to be revegetated for wildlife habitat and the plant species selected for planting in each area;

(3) a detailed fish management plan for the two auxiliary pools with measures to protect, regulate, and maintain the fishery resources established in these pools; and

(4) estimated costs, and the portions to be paid by the Licensee and others, for implementing the wildlife and fish management plans.

*Article 31.* For the purpose of assessing the impact of construction and operation on water quality, the Licensee in cooperation with the Georgia Department of Natural Resources shall: (1) continue on a monthly basis until the project becomes operational, its pre-construction water quality studies at selected locations on Heath Creek and inflowing tributaries within the sites of the proposed lower operating pool and auxiliary pools, Heath Creek below the proposed lower reservoir, and Rocky Mountain Creek above its confluence with Lavender Creek for measurement of dissolved oxygen, temperature, pH, conductivity, total alkalinity, turbidity, total suspended solids, ortho and total phosphorus, inorganic and total nitrogen, total hardness, \*387 total and fecal coliform, BOD, stream flow, and any other significant parameter; (2) conduct a post-operational water quality monitoring program on a monthly basis for a period of five years from the date of commencement of project operation at sites within the two auxiliary pools to include sampling within those coves separated by causeways from the main bodies of the auxiliary pools, within the lower operating pool, on Heath Creek below the lower reservoir, and on Rocky Mountain Creek above its confluence with Lavender Creek for those parameters measured during the pre-construction monitoring program; and (3) file with the Commission annual progress reports during the course of the studies, and, within one year following conclusion of the monitoring program, a final report showing the findings of this program together with recommendations of any need for further sampling or proposals for changes in the operation of the project to protect the aquatic environment as shown to be desirable by the studies.

The Commission reserves the right, after notice and opportunity for hearing, to require additional studies and require such reasonable changes in the project and its operation as may be found necessary or appropriate to maintain or improve the aquatic environment.

**\*\*18 Article 32.** Licensee shall, prior to the start of construction, consult and cooperate with the Georgia Department of Natural Resources in developing a plan to minimize the quantity of inorganic sediments or other pollutants from entering the streams or reservoirs in the project area resulting from construction, operation, or maintenance of the project. The plan, to be filed with the Commission, shall include a schedule for its implementation and a description of the methods to be used to control sedimentation and other forms of pollution.

*Article 33.* Licensee, after consultation and cooperation with the Georgia Department of Natural Resources and the U.S. Fish and Wildlife Service of the Department of the Interior, shall, within six months after issuance of this license, complete or arrange for the completion of fish sampling in streams to be affected by the project, for the purpose of confirming the presence or absence of any threatened, rare, or endangered fish species recognized by Federal and State authorities, and shall determine what measures may be necessary for enhancement and protection. Results and recommendations of this study shall be filed with the Commission within 6 months after its completion.

*Article 34.* Licensee shall release a minimum flow of 1.2 cfs below the lower operating reservoir. After the project becomes operational, the Licensee, in cooperation with the Georgia Department of Natural Resources, shall evaluate such minimum flow to determine the adequacy of such flow and any modification needed to protect downstream water quality and aquatic habitat of Heath Creek. Further, Licensee shall file, within one year after the project becomes operational, the results of such evaluation and, for Commission approval, plans for any proposed modification of such flow.

**\*388 Article 35.** The Licensee shall consult with the appropriate Federal, Regional, State and local agencies and, within 1 year of the date of issuance of this license, shall file for Commission approval an amendment to the Exhibit R which shall include final design drawings and location of the recreational facilities, the location of a hiking trail, and a revised schedule of recreational facility development.

*Article 36.* Licensee shall take such

*Article 36.* Licensee shall take such control of vectors at the project, and shall seek, in this regard, the recommendations of the Georgia Departments of Natural Resources and Public Health, and the Floyd County Health Department. In the event of the Licensee's failure to undertake effective control measures, the Commission reserves the right to order Licensee, after notice and opportunity for hearing, to take appropriate measures for the control of vectors at the project.

*Article 37.* Licensee shall consult and cooperate with the U.S. Environmental Protection Agency, the Floyd County Health Department, and the Georgia Department of Public Health in complying with Federal, State, and local regulations in the construction, operation, and maintenance of sanitary facilities within the project area.

**\*\*19 Article 38.** Licensee shall consult and cooperate with the Georgia Department of Public Health and the Floyd County Health Department in complying with State and local regulations in planning and providing for the collection, storage, and disposal of solid wastes, and, within one year after commencement of operation of the project, shall file with the Commission a solid waste management plan which has been approved by the two agencies. This plan shall include, among other things, the following: (a) the location of solid waste receptacles to be provided at public recreational use areas, including camping, picnicking, and boat-launching areas; (b) schedules of collection for the above receptacles; (c) provisions for expansion of the plan to include any future public use areas as they are developed; and (d) disposal sites and methods of disposal.

*Article 39.* Licensee, in coordination with the Georgia Department of Natural Resources, the U.S. Fish and Wildlife Service of the Department of the Interior and the University of Georgia Botany Department, shall arrange for the completion of a spring and summer preconstruction vegetation survey within one year from the date of issuance of this license in order to determine the presence or absence of any rare, threatened, or endangered plant species within the proposed project boundaries. If any rare, threatened, or endangered plant species is found to exist within the boundaries, the Licensee shall implement measures to preserve the species and, if possible, protect the area in which the rare, threatened, or endangered species is found. Licensee shall, within six months after completing the survey, file with the Commission a report outlining the results of the survey.

*Article 40.* The Licensee shall, prior to the commencement of construction, consult with the Georgia State Archeologist and the Atlanta Office of **\*389** the National Park Service's Intergency Archeological Services Division to determine the extent of any additional archeological surveys and salvage that may be necessary within the project boundary. The Licensee shall afford sufficient time and provide the necessary funds for such surveys and, if necessary, for the excavation and salvage of significant archeological sites discovered by the survey. Copies of survey and salvage reports shall be filed with the Commission, the State Archeologist, and the Interagency Archeological Services Division. For the purposes of this Article the project boundary shall be the 'proposed project boundary' shown on Exhibit K, Sheet 1 (FPC No. 2725-16).

*Article 41.* The Licensee shall, for the relocation of those persons displaced by construction of the project, aid in locating suitable housing and provide reasonable financial assistance. Guidelines set forth in the 'Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970' shall be followed. In addition, the Licensee shall construct new access roads to those residents not displaced, but whose access to the Big Texas Valley and Fouché Gap roads will be blocked by construction of this project.

**\*\*20** *Article 42.* In the construction and maintenance of the project works, the Licensee shall avoid or minimize any disturbance to the natural, scenic, historical, and recreational values of the area. The Licensee shall also blend project works with the natural character of the area, and revegetate, stabilize, and landscape any construction areas located outside the area of the project reservoirs as may be needed to: (a) protect and preserve the environmental values of the project; and (b) respect the integrity of its landscape units. In so doing Licensee shall consider placing the transmission line right-of-way along the edge of the lower operating pool in order to (a) make the right-of-way common to two landscape units (lake and forest), so as not to destroy the integrity of either; (b) lessen the width of right-of-way required for the transmission line; and (c) facilitate maintenance of the transmission facilities; and Licensee shall paint appropriate transmission facilities as well as provide planting to help blend transmission towers into the natural surroundings. Within one year from the date of issuance of this license, Licensee shall file with the Commission its detailed plan to avoid or minimize any disturbance to these values. The plan shall be prepared after consultation with appropriate Federal, State, and local agencies, and shall include architectural renderings of the major project features including project transmission facilities. This plan shall follow the Commission's 'Guidelines for the Protection of Natural, Historic, Scenic and Recreational Values in the Design and Location of Rights-of-Way and Transmission Facilities,' appended to Commission Order No. 414 issued November 27, 1970, [44 FPC 1491](#), and other recognized engineering and landscape practices. The Commission reserves the right, after notice and opportunity for hearing, to prescribe any changes in the plans as the public interest may warrant.

*Article 43.* Licensee shall operate the project during flood periods in a **\*390** manner such that the peak stream flow below the lower reservoir will be no greater than would have occurred in the absence of the project.

*Article 44.* Licensee shall file an Exhibit F and, for Commission approval, a revised Exhibit K within 1 year after commencement of operation of the project.

*Article 45.* Pursuant to Section 10(d) of the Act, after the first 20 years of operation of the project under license, 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. One-half of the project surplus earnings, if any, accumulated after the first 20 years of operation under the license, in excess of the specified rate of return per annum on the net investment, shall be set aside in a project amortization reserve account as of the end of each fiscal year. Provided, that if and to the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year or years after the first 20 years of operation under the license, the amount of such deficiency shall be deducted from the amount of any surplus earnings accumulated thereafter until absorbed, and one-half of the remaining surplus earnings, if any, thus cumulatively computed, shall be set aside in the project amortization reserve account; and the amounts thus established in the project amortization reserve account shall be maintained until further order of the Commission.

**\*\*21** The annual specified reasonable rate of return shall be the sum of the weighted cost components of long-term debt, preferred stock, and the cost of common equity, as defined herein. The weighted cost components for each element of the reasonable rate of return is the product of its capital ratios and cost rate. The current capital ratios for each of the above elements of the rate of return shall be calculated annually based on an average of 13 monthly balances of amounts properly includable in the Licensee's long-term debt and proprietary capital accounts as listed in the Commission's Uniform System of Accounts. The cost rates 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 4 percentage points (400 basis points).

*Article 46.* Material may be dredged or excavated from, or placed as fill in, project lands and/or waters only in the prosecution of work specifically authorized under the license; in the maintenance of the project; or after obtaining Commission approval, as appropriate. Any such material shall be moved and/or deposited in such manner as to reasonably preserve the environmental values of the project and so as not to interfere with traffic on land or water. Dredging and filling in a navigable water of the United States shall also be done to the satisfaction of the District Engineer, Corps of Engineers, Department of the Army, in charge of the locality.

**\*391** *Article 47.* The Licensee shall pay the United States the following annual charge, effective as of the first day of the

month in which the license is issued:

For the purpose of reimbursing the United States for the cost of administration of Part I of the Act, a reasonable annual charge as determined by the Commission in accordance with the provisions of its Regulations, in effect from time to time. The authorized installed capacity for such purposes is 900,000 horsepower.

*Article 48.* The Licensee, after consulting with the Georgia Forestry Commission, the U.S. Forest Service, and other appropriate agencies, shall, within one year from the date of issuance of this license, file for Commission approval a plan for clearing the reservoir area. The plan shall show the nature and extent of agency consultation and include provisions for the sale or utilization of merchantable timber. All temporary structures, unmerchantable timber, brush, refuse, or other unusable residues that remain following clearing operations or result from the maintenance or alteration of the project works shall be disposed of in an acceptable manner. In addition, sufficient land on both sides of all open conduits shall be cleared of large vegetative growth and maintained in such condition. Trees along the periphery of reservoirs which die subsequent to project operations shall be removed by the Licensee. All clearing and disposal activities be supervised by the Licensee's professional forestry staff. Upon approval of the clearing plan, all clearing and disposal operations will be carried out to the satisfaction of the Commission's authorized representative, and in accordance with appropriate Federal, State, and local statutes and regulations.

**\*\*22 Article 49.** Licensee shall file with the Commission an emergency action plan designed to provide an early warning to downstream inhabitants and property owners if there should be an impending or actual sudden release of water caused by an accident to or failure of, project structures. Such plan, to be submitted prior to initial filling of the project reservoirs, shall include, but not be limited to, instructions to be provided on a continuing basis to operators and attendants for actions they are to take in the event of an emergency; detailed and documented plans for notifying law enforcements agents, appropriate Federal, State and local agencies, operators of downstream water-related facilities, and those residents and owners of properties that could be endangered; actions that would be taken to reduce the inflow to the reservoir, if such is possible, by limiting the outflow from upstream dams or control structures; and actions to reduce downstream flows by controlling the outflow from dams located on tributaries to the stream on which the project is located. Licensee shall also submit a summary of the study used as a basis for determining the areas that may be affected by such emergency occurrence, including criteria and assumptions used.

(D) The Exhibits designated and described in Paragraph (B) above are hereby approved and made a part of this license to the extent heretofore noted.

**\*392 (E)** This order shall become final 30 days from the date of its issuance unless application for rehearing shall be filed as provided in Section 313(a) of the Act, and failure to file such an application shall constitute acceptance of this license. In acknowledgment of the acceptance of this license it shall be signed for the Licensee and returned to the Commission within 60 days from the date of issuance of this order.

#### FEDERAL POWER COMMISSION

#### Footnotes

\* Order issued March 25, 1977 granting rehearing unreported. Order on rehearing issued July 19, 1977, [59 FPC 744](#).

<sup>1</sup> The instant application superseded a prior application for the project filed on October 16, 1972.

Document Content(s)

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## **APPENDIX F**

### **CULTURAL RESOURCES INFORMATION**

This Material is Privileged Information.

Members of the Public may Obtain Nonpublic or Privileged Information by Submitting a  
Freedom of Information Act (FOIA) Request