

Joint Meeting Summary
Rocky Mountain Pumped Storage Hydroelectric Project (FERC Project No. 2725)

Date and Time: Thursday, April 11, 2024; 3:00-5:00 p.m.

Location: Microsoft Teams Virtual Meeting

Participants:

- U.S. Fish and Wildlife Service (FWS): Eric Bauer
- Georgia Department of Natural Resources Environmental Protection Division (GEPD): Liz Booth, Wei Zeng, David Hedeem, and Dewey Richardson
- Georgia Department of Natural Resources Wildlife Resources Division (WRD): Clint Peacock, Jim Hakala, Bryant Bowen, and Anakela Escobar
- Oglethorpe Power Corporation (OPC) Team: Craig Jones, Tyler McCaslin, and Christina Barrows, OPC; Mike Swiger, Van Ness Feldman LLP; Steve Layman and Jason Moak, Kleinschmidt Associates

Agenda (Attachment A):

1. Dissolved Oxygen (DO) Downstream of the Project
 - a. Discussion of Study Methods and Findings
 - b. Discussion of Project Operations
 - c. Discussion of USFWS Protection, Mitigation, or Enhancement Recommendations Related to DO

Meeting Summary

Craig Jones of Oglethorpe Power Corporation (OPC) welcomed everyone to the Joint Meeting, and introductions were made of the meeting participants. Craig described that the purpose of the meeting was to discuss dissolved oxygen (DO) in Heath Creek downstream of the Rocky Mountain Project's Main Dam (Lower Reservoir). OPC would first go through its water quality monitoring analysis of Heath Creek, summarizing its 2022 and 2023 water quality monitoring methods, findings, and conclusions, and then open up the meeting for questions and discussion. OPC wished to better understand and correctly characterize any disagreements with the U.S. Fish and Wildlife Service (FWS) concerning the continuous water quality monitoring conducted by OPC in Heath Creek downstream of the Main Dam, instances of intermittent summer DO excursions below 4.0 milligrams per liter (mg/L) in summer 2022, potential effects of project operations, and the need and feasibility of measures to enhance summer DO conditions in Heath Creek. OPC would attempt to reach agreement with FWS, the Georgia Department of Natural Resources (GDNR) Environmental Protection Division (GEPD), and the GDNR Wildlife Resources Division (WRD) on any protection, mitigation, or enhancement (PME) measures to be proposed by OPC in the final license application related to DO.

Summer 2023 DO Monitoring in Heath Creek

Steve Layman of Kleinschmidt Associates presented slides summarizing OPC's water quality monitoring conducted in summer 2023 in Heath Creek (Attachment B). The purpose of the monitoring was to explore potential causes of the intermittent DO excursions observed in Heath Creek in July-August 2022, including project operations. Continuous monitoring of DO was conducted in July-September 2023 at two locations downstream of the Main Dam – station RM11 about 1,000 feet downstream (same location monitored in 2022) and a new station at the Main Dam just downstream of the minimum flow outlet pipe. Other monitoring included vertical profile measurements in the Lower Reservoir, continuous DO monitoring within the Lower Reservoir at the elevation of the minimum flow intake pipe (48 feet below normal maximum pool elevation), and spot measurements of longitudinal change in DO between the two Heath Creek continuous monitoring locations on a July day.

OPC's summer 2023 monitoring found that DO values in Heath Creek at the Main Dam remained well above 4.0 mg/L at all times (Attachment B). DO values at station RM11 downstream also remained above 4.0 mg/L with the exception of a single day in early September. The elevation of the minimum flow intake pipe in the Lower Reservoir was within a chemocline, or steep gradient, of declining DO concentration with increasing depth. Continuous monitoring at that elevation found DO values often ranging below 4.0 mg/L. Nevertheless, the DO concentration of the minimum flow release into Heath Creek at the Main Dam was always above 4.0 mg/L and usually between 6.0 and 8.0 mg/L. These results demonstrated a constant aeration benefit of the minimum flow release, which discharges into Heath Creek from an outlet pipe located several feet above the tailwater elevation.

The plot of hourly DO and streamflow in Heath Creek at station RM11 in summer 2022 and summer 2023 showed that DO excursions in July-August 2022 and September 2023 followed prolonged periods of low-flow conditions (Attachment B). A larger number of excursions occurred in summer 2022, which was drier than summer 2023. During the critical period (May-October) for 2022 and 2023 combined, 99.3 percent of the hourly DO measurements at RM11 were greater than or equal to 4.0 mg/L. Heath Creek below the Main Dam met applicable DO water quality standards 100 percent of the time, indicating that the project minimum flow release was not causing the summer DO excursions downstream at station RM11.

Steve summarized available evidence supporting OPC's conclusion that natural groundwater inflow from karst geology likely influences the lower summer DO levels at station RM11 compared to the Main Dam. These include existing information in the Project's Preconstruction Geology Report describing the known occurrence of springs in the upstream watershed of Heath Creek near Texas Valley Road and in the vicinity and downstream of the Main Dam, patches of groundwater inflow observed along the streambed of Heath Creek downstream of the Main Dam in the vicinity of station RM11 during the fish survey (station HC-1), and the longitudinal DO spot measurements taken in July 2013 showing progressively declining DO values in the downstream direction toward station RM11.

FWS Views on Impacts to Water Quality (DO) in Heath Creek

Craig asked Eric Bauer of FWS to characterize the agency's level of disagreement with the study findings and/or need for PME measures, as related in their comment letter on the Draft License Application (DLA) dated February 9, 2024, and in light of the summer 2023 study findings. OPC shared a draft Water Quality Assessment Study Report Addendum with FWS on March 11, 2024, which provided the results of the summer 2023 DO monitoring in Heath Creek. OPC also met virtually with FWS on March 12, 2024, to discuss the summer 2023 DO monitoring results.¹

Eric replied that FWS' DLA comment letter indicated some level of disagreement with the study findings and need for PME measures but was based only on the results of the summer 2022 monitoring, as the summer 2023 data were not available at the time. The summer 2023 data changed FWS's perspective significantly in that the project discharge has been ruled out as the source of low-DO water during summer DO excursions at station RM11. FWS' only remaining disagreement is what exactly is meant by natural groundwater.

Eric shared his comments through the attached slide presentation (Attachment C). Regarding OPC's conclusion that natural groundwater inflow into Heath Creek likely influences the low-DO events, Eric presented summary statistics on DO concentration in ground water from the Valley and Ridge physiographic province in the eastern U.S. and hypothesized that groundwater dynamics in Heath Creek could be driven by the reservoir and discharge from the dam. Through historical monthly flow statistics presented for Heath Creek and U.S. Drought Monitor data for Floyd County, Eric suggested that project operations appear to be creating moderate drought conditions in Heath Creek causing declines in DO concentration, and that the Auxiliary Pools could be used to offset evaporative losses because drought was explicitly considered in construction of the Auxiliary Pools.

Eric presented graphics from scientific publications concerning species sensitivity, tolerance, and impacts of hypoxia on freshwater organisms, suggesting that 4.0 mg/L is not protective of many species of aquatic invertebrates. He discussed OPC's mussel survey findings of the greatest density occurring below the Main Dam, referred to literature on effects of low DO on juvenile mussels, summarized information on listed and at-risk mussel species in the Armuchee Creek watershed, and expressed concern for restoring listed mussels to Heath Creek pursuant to Endangered Species Act (ESA) Section 7(a)(1) due to low DO.

Eric identified that FWS recommendations will likely include a request for proposed measures to offset project impacts on DO, such as increasing the minimum flow, and that a drought plan be developed with modeling scenarios that examine the impacts to operations and recreational

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resources in the Rocky Mountain Public Fishing and Recreation Area (PFA) under different management scenarios that are likely to address water quality issues in Heath Creek, including supplementing summer downstream flows with withdrawals from the Auxiliary Pools.

Discussion

Discussion ensued concerning the complexity and uncertainty surrounding groundwater dynamics in the Heath Creek watershed and the DO content of groundwater in karst geology. Liz Booth of GEPD explained that ground water from karst is much different from surface ground water in that it diffuses through cracks from layers that are much deeper and, unlike a spring, DO is likely to be low as it comes to the surface. Wei Zeng of GEPD observed that the ground water divide may not be the same as the surface water divide of Heath Creek and that its contributing source might be quite different than the surface water. There was agreement about there being substantial uncertainty around the groundwater dynamics of Heath Creek in the area of the Lower Reservoir.

Discussion of the potential impacts of summer low DO events in Heath Creek included that no fish kills have been observed, although sublethal effects could occur before lethal effects, and that there is variability in the DO excursions and they are not perfectly correlated with project operation. Eric described comparing the average minimum flow of the past 5 years (1.36 cubic feet per second) to 7Q10 values, suggested that the minimum flow represents a moderate drought condition even in a moderately wet year, and maintained that project operation could be directly impacting DO and changes to groundwater dynamics/groundwater inflow. Craig expressed concern that those conclusions seem speculative and that there is a lack of evidence for significant adverse effects to aquatic resources in Heath Creek.

Discussion around the potential impacts of the summer DO excursions included studies in Texas concerning the effects of low DO conditions on aquatic invertebrates; low DO as a potential adverse effect on Alabama Rainbow, a mussel under review by FWS, as well as other listed mussels known from the Armuchee Creek system; and the sensitivity of juvenile mussels to sublethal effects of low DO. FWS is charged with carrying out its obligations under ESA Section 7(a)(1) to advance recovery of threatened and endangered species, and Heath Creek is within a priority watershed for restoring Fine-lined Pocketbook and Southern Pigtoe.

FWS suggested it would not take much additional flow from the Auxiliary Pools to offset the impacts of the current minimum flow release but would like to see modeling of potential operations, feasibility, and potential impacts to recreation in Rocky Mountain (PFA). Eric reiterated that FWS is likely to request proposed measures to offset project impacts of DO and that a drought plan be developed for pulling flows from the Auxiliary Pools.

Wei mentioned trying to bring the Assistant State Geologist into the discussion. Steve referred to the 1990 Preconstruction Geology Report for the Rocky Mountain Project, which characterized Heath Creek as alternately gaining and losing water through the Lower Reservoir area and local flow changes as the creek follows a path over alternating carbonate and clastic

bedrock. There are a number of springs upstream of the main dam along Big Texas Valley Road which originate in the deeper Floyd formation. Diffuse groundwater flow enters from a different stratum at the base of Rock Mountain in the vicinity of the Main Dam. As a result of its diffuse nature, measuring groundwater inflow would be difficult and it would be occurring along Heath Creek regardless of the Project.

Steve pointed to the lack of evidence from the fish and mussel surveys for a 0.7-percent excursion frequency near the Main Dam having any effects on aquatic biota downstream due to tributary flow accretion. The fisheries data indicate similar populations over time, mussel density was greatest in the reach downstream of the dam, and the mussel surveyor commented on the exceptional density of native mussels. Known adverse effects to water quality in Heath Creek originate from non-point sources, including fecal coliform bacteria, which are unrelated to project operations.

After this point in the discussion, the OPC team broke-off into a virtual call to caucus separately from the agencies.

Agreement on Framework for Proposed PME Measure in Final License Application

Upon resumption of the meeting, Wei asked about inflow data for project operation that could serve as a meaningful basis for assessing an alternative minimum flow provision. Clint Peacock of WRD indicated there would be value to additional monitoring from the standpoint of understanding the system, which is complicated by geology and groundwater. WRD would have thoughts from the recreational standpoint of potential impacts of supplementing flows from the Auxiliary Pools to the Rocky Mountain PFA.

Craig expressed OPC's view that there is no evidence of adverse impacts downstream or supporting a hypothesis that project operation causes groundwater infiltration into Heath Creek downstream of the Main Dam. However, given the level of uncertainty discussed around DO during low-flow conditions, as well as the unlikelihood of reaching meaningful conclusions about groundwater infiltration, Craig proposed that OPC would conduct a post-license study to examine DO impacts of different minimum flows under summer low-flow operations. OPC would propose a study in the final license application (FLA), to be conducted in consultation with the agencies. The proposed study measure would identify the study objectives and essential components of the study, with the detailed study methodology to be developed post-license with the relevant agencies and approved by the Federal Energy Regulatory Commission (FERC). The study would examine whether there is any positive impact on DO in Heath Creek at various points downstream of the Main Dam by increasing minimum flow under low-flow conditions, and, if so, would then examine the impacts of alternative higher minimum flows on recreation, power generation, and other project purposes. Based on the study findings, OPC would recommend an outcome and seek agreement with the agencies and FERC.

FWS, WRD, and GEPD expressed agreement with OPC's approach for proposing a flow study in Exhibit E of the FLA.

Commented [BEF1]: Correct me if I'm misremembering, but I think we clarified that this recommendation would come in the form of a license amendment, if it was determined that higher minimum flows resolved the DO issue and if the costs to other resources were not prohibitive.

Commented [BEF2]: Just to provide clarity - doesn't need to be included here necessarily - but I did say that I didn't think FWS would be opposed to this approach and would confirm with my supervisor. I have now gotten her approval for this approach.

From: [Mike Swiger](#)
To: "[Bauer, Eric F](#)"; [Jones, Craig](#); [McCaslin, Tyler](#); [Zeng, Wei](#); [Hedeem, David](#); [Elizabeth.Booth@dnr.ga.gov](#); [Hakala, Jim](#); [Escobar, Anakela](#); [Steven Layman](#); [Jason Moak](#); [Barrows, Christina](#); [Peacock, Clint](#); [Bryant.bowen@dnr.ga.gov](#); [Dewey.Richardson@dnr.ga.gov](#)
Subject: RE: [EXTERNAL] RE: Rocky Mountain Relicensing Joint Meeting
Date: Monday, June 10, 2024 11:27:29 AM
Attachments: [image001.png](#)
[2024-05-24 Post-DLA Joint Meeting Summary DRAFT.docx](#)

Eric, thank you for your review. Would the attached redline edits adequately address your comments?

Michael Swiger | Partner



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Suite 6000
Washington, DC 20006

(202) 413-4809 (cell) | mas@vnf.com | vnf.com

****Please note our new address – please update your records accordingly.****

From: Bauer, Eric F <eric_bauer@fws.gov>
Sent: Monday, June 10, 2024 9:29 AM
To: Jones, Craig <craig.jones@opc.com>; McCaslin, Tyler <tyler.mccaslin@opc.com>; Zeng, Wei <Wei.Zeng@dnr.ga.gov>; Hedeem, David <david.hedeem@dnr.ga.gov>; Elizabeth.Booth@dnr.ga.gov; Hakala, Jim <Jim.Hakala@dnr.ga.gov>; Escobar, Anakela <anakela.escobar@dnr.ga.gov>; Klein Schmidt Group (Steven Layman) <Steven.Layman@kleinschmidtgroup.com>; Jason Moak <Jason.Moak@kleinschmidtgroup.com>; Barrows, Christina <christina.barrows@opc.com>; Peacock, Clint <Clint.Peacock@dnr.ga.gov>; Bryant.bowen@dnr.ga.gov; Mike Swiger <mas@vnf.com>; Dewey.Richardson@dnr.ga.gov
Subject: Re: [EXTERNAL] RE: Rocky Mountain Relicensing Joint Meeting

Caution: External Email

All,

I just had a few notes towards the end for clarity (see attached). As a side note, and for what it's worth, I did quite a bit of digging into springs and aquifers of this region. There appears to be a mix of precipitation influenced springs and those that are not influenced by precipitation. However, I was unable to find any evidence of aquifers/springs in the area have low DO. Unfortunately, when folks study springs/aquifers they're mostly interested in if it's drinkable or able to be used on crops and how much water a well will produce and not so much on DO. I can provide the literature I've reviewed if anyone is

interested. And please let me know if there are any questions regarding any of my comments. Thanks everyone.

-Eric

Eric Bauer (he/him)

Fish and Wildlife Biologist

Georgia Ecological Services

US Fish and Wildlife Service

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Office: 706-535-2103

Teams: eric_bauer@fws.gov (preferred)

<http://www.fws.gov/athens>

Follow us on Facebook! <https://www.facebook.com/GeorgiaFieldOffice>

From: Jones, Craig <craig.jones@opc.com>

Sent: Friday, May 24, 2024 9:56 AM

To: McCaslin, Tyler <tyler.mccaslin@opc.com>; Bauer, Eric F <eric_bauer@fws.gov>; Zeng, Wei <Wei.Zeng@dnr.ga.gov>; Hedeem, David <david.hedeem@dnr.ga.gov>; Elizabeth.Booth@dnr.ga.gov <Elizabeth.Booth@dnr.ga.gov>; Hakala, Jim <Jim.Hakala@dnr.ga.gov>; Escobar, Anakela <anakela.escobar@dnr.ga.gov>; Klein Schmidt Group (Steven Layman) <Steven.Layman@Kleinschmidtgroup.com>; Jason Moak <Jason.Moak@kleinschmidtgroup.com>; Barrows, Christina <christina.barrows@opc.com>; Peacock, Clint <Clint.Peacock@dnr.ga.gov>; Bryant.bowen@dnr.ga.gov <Bryant.bowen@dnr.ga.gov>; Mike Swiger <mas@vnf.com>; Dewey.Richardson@dnr.ga.gov <Dewey.Richardson@dnr.ga.gov>

Subject: Re: [EXTERNAL] RE: Rocky Mountain Relicensing Joint Meeting

Hi Everyone,

Tyler, thanks for sending the summary.

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Agreement on Framework for Proposed PME Measure in Final License Application

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Commented [BEF1]: Correct me if I'm misremembering, but I think we clarified that this recommendation would come in the form of a license amendment, if it was determined that higher minimum flows resolved the DO issue and if the costs to other resources were not prohibitive.

FWS, WRD, and GEPD expressed agreement, subject to their management review, with OPC's approach for proposing a flow study in Exhibit E of the FLA.

Commented [BEF2]: Just to provide clarity - doesn't need to be included here necessarily - but I did say that I didn't think FWS would be opposed to this approach and would confirm with my supervisor. I have now gotten her approval for this approach.

DRAFT

From: [Jones, Craig](#)
To: "Hakala, Jim"
Cc: [McCaslin, Tyler](#); [Peacock, Clint](#); [Bowen, Bryant](#); [Escobar, Anakela](#); [Barrows, Christina](#); [Steven Layman](#); [Mike Swiger](#)
Subject: RE: [EXTERNAL] RE: Rocky Mountain Relicensing Joint Meeting
Date: Monday, June 10, 2024 12:08:07 PM
Attachments: [image001.png](#)

Thank you, Jim.

Best,

cj

Craig A. Jones, PhD

Vice President, EHS & Regulatory Affairs
Oglethorpe Power Corporation
2100 East Exchange Place, Tucker, GA 30084

Office: 770-270-7348 **Mobile:** 770-500-8912
Email: craig.jones@opc.com **Web:** www.opc.com



From: Hakala, Jim <Jim.Hakala@dnr.ga.gov>
Sent: Monday, June 10, 2024 11:25 AM
To: Jones, Craig <craig.jones@opc.com>
Cc: McCaslin, Tyler <tyler.mccaslin@opc.com>; Peacock, Clint <Clint.Peacock@dnr.ga.gov>; Bowen, Bryant <Bryant.Bowen@dnr.ga.gov>; Escobar, Anakela <anakela.escobar@dnr.ga.gov>
Subject: RE: [EXTERNAL] RE: Rocky Mountain Relicensing Joint Meeting

External E-Mail

Craig,

WRD concurs with the content of the draft meeting summary.

Thanks,

Jim

Jim Hakala
Northwest Georgia Region Fisheries Supervisor
Wildlife Resources Division
(706) 295-6102

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GEORGIA DEPARTMENT OF NATURAL RESOURCES

From: Jones, Craig <craig.jones@opc.com>

Sent: Friday, May 24, 2024 9:56 AM

To: McCaslin, Tyler <tyler.mccaslin@opc.com>; Bauer, Eric F <eric_bauer@fws.gov>; Zeng, Wei <Wei.Zeng@dnr.ga.gov>; Hedeem, David <david.hedeem@dnr.ga.gov>; Booth, Elizabeth <Elizabeth.Booth@dnr.ga.gov>; Hakala, Jim <Jim.Hakala@dnr.ga.gov>; Escobar, Anakela <anakela.escobar@dnr.ga.gov>; Klein Schmidt Group (Steven Layman) <Steven.Layman@Kleinschmidtgroup.com>; Jason Moak <Jason.Moak@kleinschmidtgroup.com>; Barrows, Christina <christina.barrows@opc.com>; Peacock, Clint <Clint.Peacock@dnr.ga.gov>; Bowen, Bryant <Bryant.Bowen@dnr.ga.gov>; Mike Swiger <mas@vnf.com>; Richardson, Dewey <Dewey.Richardson@dnr.ga.gov>

Subject: Re: [EXTERNAL] RE: Rocky Mountain Relicensing Joint Meeting

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Hi Everyone,

Tyler, thanks for sending the summary.

Just for clarification, we are asking for your agency's concurrence and, if you have any comments, please provide those as well by June 15.

Please also reach out with any questions.

I hope everyone has a safe and enjoyable Memorial weekend!

Best,

Craig

Sent from my iPhone.

On May 24, 2024, at 7:24 AM, McCaslin, Tyler <tyler.mccaslin@opc.com> wrote:

Hi everyone,

Thank you again for a productive joint meeting. Attached is a draft summary of the meeting that we would like to include in the final license application as documentation of our Joint Meeting agreement.

Please review and provide any comments by June 15.

-Tyler

From: McCaslin, Tyler

Sent: Monday, May 13, 2024 10:33 AM

To: Bauer, Eric F <eric_bauer@fws.gov>; Jones, Craig <craig.jones@opc.com>; Zeng, Wei <Wei.Zeng@dnr.ga.gov>; Hedeem, David <david.hedeem@dnr.ga.gov>; 'Elizabeth.Booth@dnr.ga.gov' <Elizabeth.Booth@dnr.ga.gov>; Hakala, Jim <Jim.Hakala@dnr.ga.gov>; Escobar, Anakela <anakela.escobar@dnr.ga.gov>; Klein Schmidt Group (Steven Layman) <Steven.Layman@Kleinschmidtgroup.com>; Jason Moak <Jason.Moak@Kleinschmidtgroup.com>; Barrows, Christina <christina.barrows@opc.com>; Peacock, Clint <Clint.Peacock@dnr.ga.gov>; 'Bryant.bowen@dnr.ga.gov' <Bryant.bowen@dnr.ga.gov>

Subject: RE: [EXTERNAL] RE: Rocky Mountain Relicensing Joint Meeting

Hi Eric,

Thank you so much for the follow up!

We did receive your slides and have been compiling a meeting summary on the discussion and proposals to distribute amongst the meeting participants for review and comment. We will be including this summary in our consultation record in the FLA as well.

We will be in touch soon when we are ready to send it out.

-Tyler

From: Bauer, Eric F <eric_bauer@fws.gov>

Sent: Monday, May 13, 2024 11:53 AM

To: Jones, Craig <craig.jones@opc.com>; Zeng, Wei <Wei.Zeng@dnr.ga.gov>; Hedeem, David <david.hedeem@dnr.ga.gov>; 'Elizabeth.Booth@dnr.ga.gov' <Elizabeth.Booth@dnr.ga.gov>; Hakala, Jim <Jim.Hakala@dnr.ga.gov>; Escobar, Anakela <anakela.escobar@dnr.ga.gov>; Klein Schmidt Group (Steven Layman) <Steven.Layman@Kleinschmidtgroup.com>; Jason Moak <Jason.Moak@Kleinschmidtgroup.com>; McCaslin, Tyler <tyler.mccaslin@opc.com>; Barrows, Christina <christina.barrows@opc.com>; Peacock, Clint <Clint.Peacock@dnr.ga.gov>; 'Bryant.bowen@dnr.ga.gov' <Bryant.bowen@dnr.ga.gov>

Subject: Re: [EXTERNAL] RE: Rocky Mountain Relicensing Joint Meeting

External E-Mail

Good morning Craig,

I just wanted to touch base and make sure that y'all received a copy of my PPT from this meeting. I had major issues trying to send it, apologies to those who got multiple copies. And to follow up, is there anything else that OPC needs from the Service? Would it help to have our comments in written form as well? Would it benefit OPC and this group to share and comment on the proposed post-licensing study prior to filing with FERC? And

are there written meeting notes from this meeting that need reviewing by the agencies - I don't know if that's standard practice but we've gotten that before from other FERC re-licensing related meetings -so I'm happy to review. Just let me know what you need from me. Thanks!

-Eric

Eric Bauer (he/him)
Fish and Wildlife Biologist

Georgia Ecological Services

US Fish and Wildlife Service

RG Stephens, Jr. Federal Building

355 East Hancock Avenue, Room 320

Athens, GA 30601

Office: 706-535-2103

Teams: eric_bauer@fws.gov (preferred)

<http://www.fws.gov/athens>

Follow us on Facebook! <https://www.facebook.com/GeorgiaFieldOffice>

From: Jones, Craig <craig.jones@opc.com>

Sent: Friday, April 5, 2024 11:52 AM

To: Bauer, Eric F <eric_bauer@fws.gov>; Zeng, Wei <Wei.Zeng@dnr.ga.gov>; Hedeem, David <david.hedeem@dnr.ga.gov>; 'Elizabeth.Booth@dnr.ga.gov' <Elizabeth.Booth@dnr.ga.gov>; Hakala, Jim <Jim.Hakala@dnr.ga.gov>; Escobar, Anakela <anakela.escobar@dnr.ga.gov>; Klein Schmidt Group (Steven Layman) <Steven.Layman@Kleinschmidtgroup.com>; Jason Moak <Jason.Moak@Kleinschmidtgroup.com>; McCaslin, Tyler <tyler.mccaslin@opc.com>; Barrows, Christina <christina.barrows@opc.com>; Peacock, Clint <Clint.Peacock@dnr.ga.gov>; 'Bryant.bowen@dnr.ga.gov' <Bryant.bowen@dnr.ga.gov>

Subject: [EXTERNAL] RE: Rocky Mountain Relicensing Joint Meeting

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Good Morning,

This is a reminder about the Joint Meeting scheduled for April 11 at 3:00 P.M. As previously discussed with you and filed with FERC, we will be addressing the following:

1. Dissolved Oxygen (DO) Downstream of the Project
 1. Discussion of Study Methods and Findings
 2. Discussion of Project Operations
 3. Discussion of USFWS Protection, Mitigation, or Enhancement Recommendations Related to DO

Please reach out with any questions.

Best regards,

Craig

Craig A. Jones, PhD

Vice President, EHS & Regulatory Affairs
Oglethorpe Power Corporation
2100 East Exchange Place, Tucker, GA 30084

Office: 770-270-7348 **Mobile:** 770-500-8912

Email: craig.jones@opc.com **Web:** www.opc.com

[<image001.png>](#)

-----Original Appointment-----

From: Jones, Craig

Sent: Thursday, March 14, 2024 12:46 PM

To: Jones, Craig; Bauer, Eric F; Zeng, Wei; Hedeem, David; 'Elizabeth.Booth@dnr.ga.gov'; Hakala, Jim; Escobar, Anakela; Klein Schmidt Group (Steven Layman); Jason Moak; McCaslin, Tyler; Barrows, Christina; Mike Swiger; Teilhet, Heather (OPC)

Cc: Peacock, Clint; 'Bryant.bowen@dnr.ga.gov'

Subject: Rocky Mountain Relicensing Joint Meeting

When: Thursday, April 11, 2024 3:00 PM-5:00 PM (UTC-05:00) Eastern Time (US & Canada).

Where: Microsoft Teams Meeting

Good Afternoon Everyone,

Thank you for coordinating with us to find a good time for this Joint Meeting. The meeting will be via Microsoft Teams.

I will be following up with more detail about the meeting including an agenda. Please reach out to

me in the meantime with any questions.

Best,

Craig

Craig A. Jones, PhD

Vice President, EHS & Regulatory Affairs
Oglethorpe Power Corporation
2100 East Exchange Place, Tucker, GA 30084

Office: 770-270-7348 **Mobile:** 770-500-8912
Email: craig.jones@opc.com **Web:** www.opc.com

[<image001.png>](#)

Microsoft Teams meeting

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<2024-05-24_Post-DLA Joint Meeting Summary_DRAFT.docx>

From: [McCaslin, Tyler](#)
To: [Jones, Craig: "Zeng, Wei"](#)
Cc: [Hedeen, David](#)
Subject: RE: Joint Meeting Follow Up
Date: Tuesday, July 30, 2024 10:53:00 AM
Attachments: [2024-05-24 Post-DLA Joint Meeting Summary_DRAFT.docx](#)
[image001.png](#)

Hey Wei and David,

Here is the draft joint meeting summary including a redline of the comments from USFWS.

-Tyler

From: Jones, Craig <craig.jones@opc.com>
Sent: Tuesday, July 30, 2024 10:48 AM
To: 'Zeng, Wei' <Wei.Zeng@dnr.ga.gov>
Cc: Hedeen, David <david.hedeen@dnr.ga.gov>; McCaslin, Tyler <tyler.mccaslin@opc.com>
Subject: RE: Joint Meeting Follow Up

Hi Wei,

No worries at all. Let's do Thursday afternoon at 3:30, if that still works for you. Once you confirm, I'll send an meeting invite.

Tyler, can you please send the latest summary of the Joint Meeting to Wei and David?

Wei and David, the Joint Meeting summary incorporates minor edits from USFWS, and both DNR Fish and Wildlife and USFWS concur with the summary.

Best,

cj

Craig A. Jones, PhD

Vice President, Environmental, Safety, and Regulatory Affairs
Oglethorpe Power Corporation
2100 East Exchange Place, Tucker, GA 30084

Office: 770-270-7348 **Mobile:** 770-500-8912
Email: craig.jones@opc.com **Web:** www.opc.com



From: Zeng, Wei <Wei.Zeng@dnr.ga.gov>
Sent: Tuesday, July 30, 2024 8:44 AM
To: Jones, Craig <craig.jones@opc.com>
Cc: Hedeen, David <david.hedeen@dnr.ga.gov>

Subject: Re: Joint Meeting Follow Up

External E-Mail

Good morning, Craig

Sorry if I missed your earlier message. A lot is going on lately.

Looking at our calendars, we should be available Wednesday afternoon, Thursday morning after 11, and Thursday afternoon after 3. For next week, Monday and Tuesday are wide open.

Please let us know what the best time is for you. Also, if there is a document for us to prepare for this meeting, please send it along.

Thanks.

Wei

From: Jones, Craig <craig.jones@opc.com>

Sent: Monday, July 29, 2024 10:53 AM

To: Zeng, Wei <Wei.Zeng@dnr.ga.gov>

Subject: RE: Joint Meeting Follow Up

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.

Hi Wei,

Floating this to the top of your email. Let me know if you have some time for a brief chat. I just want to make sure we correctly capture EPD's position coming out of the Joint Meeting, especially with respect to the summary.

Best,

cj

Craig A. Jones, PhD

Vice President, Environmental, Safety, and Regulatory Affairs
Oglethorpe Power Corporation
2100 East Exchange Place, Tucker, GA 30084

Office: 770-270-7348 **Mobile:** 770-500-8912

Email: craig.jones@opc.com **Web:** www.opc.com



From: Jones, Craig
Sent: Thursday, June 27, 2024 5:47 PM
To: Zeng, Wei <Wei.Zeng@dnr.ga.gov>
Subject: Joint Meeting Follow Up

Hi Wei,

I hope all is well. I'm reaching out to see if we can schedule a follow up call to touch base on the Joint Meeting and our plans going forward. Let me know if you have some availability over the next few weeks. I think we can cover everything in less than 30 mins.

Best,

cj

Craig A. Jones, PhD

Vice President, EHS & Regulatory Affairs
Oglethorpe Power Corporation
2100 East Exchange Place, Tucker, GA 30084

Office: 770-270-7348 **Mobile:** 770-500-8912
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Joint Meeting Summary
Rocky Mountain Pumped Storage Hydroelectric Project (FERC Project No. 2725)

Date and Time: Thursday, April 11, 2024; 3:00-5:00 p.m.

Location: Microsoft Teams Virtual Meeting

Participants:

- U.S. Fish and Wildlife Service (FWS): Eric Bauer
- Georgia Department of Natural Resources Environmental Protection Division (GEPD): Liz Booth, Wei Zeng, David Hedeem, and Dewey Richardson
- Georgia Department of Natural Resources Wildlife Resources Division (WRD): Clint Peacock, Jim Hakala, Bryant Bowen, and Anakela Escobar
- Oglethorpe Power Corporation (OPC) Team: Craig Jones, Tyler McCaslin, and Christina Barrows, OPC; Mike Swiger, Van Ness Feldman LLP; Steve Layman and Jason Moak, Kleinschmidt Associates

Agenda (Attachment A):

1. Dissolved Oxygen (DO) Downstream of the Project
 - a. Discussion of Study Methods and Findings
 - b. Discussion of Project Operations
 - c. Discussion of USFWS Protection, Mitigation, or Enhancement Recommendations Related to DO

Meeting Summary

Craig Jones of Oglethorpe Power Corporation (OPC) welcomed everyone to the Joint Meeting, and introductions were made of the meeting participants. Craig described that the purpose of the meeting was to discuss dissolved oxygen (DO) in Heath Creek downstream of the Rocky Mountain Project's Main Dam (Lower Reservoir). OPC would first go through its water quality monitoring analysis of Heath Creek, summarizing its 2022 and 2023 water quality monitoring methods, findings, and conclusions, and then open up the meeting for questions and discussion. OPC wished to better understand and correctly characterize any disagreements with the U.S. Fish and Wildlife Service (FWS) concerning the continuous water quality monitoring conducted by OPC in Heath Creek downstream of the Main Dam, instances of intermittent summer DO excursions below 4.0 milligrams per liter (mg/L) in summer 2022, potential effects of project operations, and the need and feasibility of measures to enhance summer DO conditions in Heath Creek. OPC would attempt to reach agreement with FWS, the Georgia Department of Natural Resources (GDNR) Environmental Protection Division (GEPD), and the GDNR Wildlife Resources Division (WRD) on any protection, mitigation, or enhancement (PME) measures to be proposed by OPC in the final license application related to DO.

Summer 2023 DO Monitoring in Heath Creek

Steve Layman of Kleinschmidt Associates presented slides summarizing OPC's water quality monitoring conducted in summer 2023 in Heath Creek (Attachment B). The purpose of the monitoring was to explore potential causes of the intermittent DO excursions observed in Heath Creek in July-August 2022, including project operations. Continuous monitoring of DO was conducted in July-September 2023 at two locations downstream of the Main Dam – station RM11 about 1,000 feet downstream (same location monitored in 2022) and a new station at the Main Dam just downstream of the minimum flow outlet pipe. Other monitoring included vertical profile measurements in the Lower Reservoir, continuous DO monitoring within the Lower Reservoir at the elevation of the minimum flow intake pipe (48 feet below normal maximum pool elevation), and spot measurements of longitudinal change in DO between the two Heath Creek continuous monitoring locations on a July day.

OPC's summer 2023 monitoring found that DO values in Heath Creek at the Main Dam remained well above 4.0 mg/L at all times (Attachment B). DO values at station RM11 downstream also remained above 4.0 mg/L with the exception of a single day in early September. The elevation of the minimum flow intake pipe in the Lower Reservoir was within a chemocline, or steep gradient, of declining DO concentration with increasing depth. Continuous monitoring at that elevation found DO values often ranging below 4.0 mg/L. Nevertheless, the DO concentration of the minimum flow release into Heath Creek at the Main Dam was always above 4.0 mg/L and usually between 6.0 and 8.0 mg/L. These results demonstrated a constant aeration benefit of the minimum flow release, which discharges into Heath Creek from an outlet pipe located several feet above the tailwater elevation.

The plot of hourly DO and streamflow in Heath Creek at station RM11 in summer 2022 and summer 2023 showed that DO excursions in July-August 2022 and September 2023 followed prolonged periods of low-flow conditions (Attachment B). A larger number of excursions occurred in summer 2022, which was drier than summer 2023. During the critical period (May-October) for 2022 and 2023 combined, 99.3 percent of the hourly DO measurements at RM11 were greater than or equal to 4.0 mg/L. Heath Creek below the Main Dam met applicable DO water quality standards 100 percent of the time, indicating that the project minimum flow release was not causing the summer DO excursions downstream at station RM11.

Steve summarized available evidence supporting OPC's conclusion that natural groundwater inflow from karst geology likely influences the lower summer DO levels at station RM11 compared to the Main Dam. These include existing information in the Project's Preconstruction Geology Report describing the known occurrence of springs in the upstream watershed of Heath Creek near Texas Valley Road and in the vicinity and downstream of the Main Dam, patches of groundwater inflow observed along the streambed of Heath Creek downstream of the Main Dam in the vicinity of station RM11 during the fish survey (station HC-1), and the longitudinal DO spot measurements taken in July 2013 showing progressively declining DO values in the downstream direction toward station RM11.

FWS Views on Impacts to Water Quality (DO) in Heath Creek

Craig asked Eric Bauer of FWS to characterize the agency's level of disagreement with the study findings and/or need for PME measures, as related in their comment letter on the Draft License Application (DLA) dated February 9, 2024, and in light of the summer 2023 study findings. OPC shared a draft Water Quality Assessment Study Report Addendum with FWS on March 11, 2024, which provided the results of the summer 2023 DO monitoring in Heath Creek. OPC also met virtually with FWS on March 12, 2024, to discuss the summer 2023 DO monitoring results.¹

Eric replied that FWS' DLA comment letter indicated some level of disagreement with the study findings and need for PME measures but was based only on the results of the summer 2022 monitoring, as the summer 2023 data were not available at the time. The summer 2023 data changed FWS's perspective significantly in that the project discharge has been ruled out as the source of low-DO water during summer DO excursions at station RM11. FWS' only remaining disagreement is what exactly is meant by natural groundwater.

Eric shared his comments through the attached slide presentation (Attachment C). Regarding OPC's conclusion that natural groundwater inflow into Heath Creek likely influences the low-DO events, Eric presented summary statistics on DO concentration in ground water from the Valley and Ridge physiographic province in the eastern U.S. and hypothesized that groundwater dynamics in Heath Creek could be driven by the reservoir and discharge from the dam. Through historical monthly flow statistics presented for Heath Creek and U.S. Drought Monitor data for Floyd County, Eric suggested that project operations appear to be creating moderate drought conditions in Heath Creek causing declines in DO concentration, and that the Auxiliary Pools could be used to offset evaporative losses because drought was explicitly considered in construction of the Auxiliary Pools.

Eric presented graphics from scientific publications concerning species sensitivity, tolerance, and impacts of hypoxia on freshwater organisms, suggesting that 4.0 mg/L is not protective of many species of aquatic invertebrates. He discussed OPC's mussel survey findings of the greatest density occurring below the Main Dam, referred to literature on effects of low DO on juvenile mussels, summarized information on listed and at-risk mussel species in the Armuchee Creek watershed, and expressed concern for restoring listed mussels to Heath Creek pursuant to Endangered Species Act (ESA) Section 7(a)(1) due to low DO.

Eric identified that FWS recommendations will likely include a request for proposed measures to offset project impacts on DO, such as increasing the minimum flow, and that a drought plan be developed with modeling scenarios that examine the impacts to operations and recreational

¹ OPC shared a preliminary draft Water Quality Assessment Study Report Addendum with WRD and GEPD on January 2, 2024. OPC discussed the results of the summer 2023 DO monitoring in a meeting with WRD on January 5, 2024, and in a virtual meeting with GEPD on January 16, 2024. Upon incorporating GEPD suggestions for data analysis, OPC shared a revised draft study report addendum with GEPD and FWS on March 11, 2024.

resources in the Rocky Mountain Public Fishing and Recreation Area (PFA) under different management scenarios that are likely to address water quality issues in Heath Creek, including supplementing summer downstream flows with withdrawals from the Auxiliary Pools.

Discussion

Discussion ensued concerning the complexity and uncertainty surrounding groundwater dynamics in the Heath Creek watershed and the DO content of groundwater in karst geology. Liz Booth of GEPD explained that ground water from karst is much different from surface ground water in that it diffuses through cracks from layers that are much deeper and, unlike a spring, DO is likely to be low as it comes to the surface. Wei Zeng of GEPD observed that the ground water divide may not be the same as the surface water divide of Heath Creek and that its contributing source might be quite different than the surface water. There was agreement about there being substantial uncertainty around the groundwater dynamics of Heath Creek in the area of the Lower Reservoir.

Discussion of the potential impacts of summer low DO events in Heath Creek included that no fish kills have been observed, although sublethal effects could occur before lethal effects, and that there is variability in the DO excursions and they are not perfectly correlated with project operation. Eric described comparing the average minimum flow of the past 5 years (1.36 cubic feet per second) to 7Q10 values, suggested that the minimum flow represents a moderate drought condition even in a moderately wet year, and maintained that project operation could be directly impacting DO and changes to groundwater dynamics/groundwater inflow. Craig expressed concern that those conclusions seem speculative and that there is a lack of evidence for significant adverse effects to aquatic resources in Heath Creek.

Discussion around the potential impacts of the summer DO excursions included studies in Texas concerning the effects of low DO conditions on aquatic invertebrates; low DO as a potential adverse effect on Alabama Rainbow, a mussel under review by FWS, as well as other listed mussels known from the Armuchee Creek system; and the sensitivity of juvenile mussels to sublethal effects of low DO. FWS is charged with carrying out its obligations under ESA Section 7(a)(1) to advance recovery of threatened and endangered species, and Heath Creek is within a priority watershed for restoring Fine-lined Pocketbook and Southern Pigtoe.

FWS suggested it would not take much additional flow from the Auxiliary Pools to offset the impacts of the current minimum flow release but would like to see modeling of potential operations, feasibility, and potential impacts to recreation in Rocky Mountain (PFA). Eric reiterated that FWS is likely to request proposed measures to offset project impacts of DO and that a drought plan be developed for pulling flows from the Auxiliary Pools.

Wei mentioned trying to bring the Assistant State Geologist into the discussion. Steve referred to the 1990 Preconstruction Geology Report for the Rocky Mountain Project, which characterized Heath Creek as alternately gaining and losing water through the Lower Reservoir area and local flow changes as the creek follows a path over alternating carbonate and clastic

bedrock. There are a number of springs upstream of the main dam along Big Texas Valley Road which originate in the deeper Floyd formation. Diffuse groundwater flow enters from a different stratum at the base of Rock Mountain in the vicinity of the Main Dam. As a result of its diffuse nature, measuring groundwater inflow would be difficult and it would be occurring along Heath Creek regardless of the Project.

Steve pointed to the lack of evidence from the fish and mussel surveys for a 0.7-percent excursion frequency near the Main Dam having any effects on aquatic biota downstream due to tributary flow accretion. The fisheries data indicate similar populations over time, mussel density was greatest in the reach downstream of the dam, and the mussel surveyor commented on the exceptional density of native mussels. Known adverse effects to water quality in Heath Creek originate from non-point sources, including fecal coliform bacteria, which are unrelated to project operations.

After this point in the discussion, the OPC team broke-off into a virtual call to caucus separately from the agencies.

Agreement on Framework for Proposed PME Measure in Final License Application

Upon resumption of the meeting, Wei asked about inflow data for project operation that could serve as a meaningful basis for assessing an alternative minimum flow provision. Clint Peacock of WRD indicated there would be value to additional monitoring from the standpoint of understanding the system, which is complicated by geology and groundwater. WRD would have thoughts from the recreational standpoint of potential impacts of supplementing flows from the Auxiliary Pools to the Rocky Mountain PFA.

Craig expressed OPC's view that there is no evidence of adverse impacts downstream or supporting a hypothesis that project operation causes groundwater infiltration into Heath Creek downstream of the Main Dam. However, given the level of uncertainty discussed around DO during low-flow conditions, as well as the unlikelihood of reaching meaningful conclusions about groundwater infiltration, Craig proposed that OPC would conduct a post-license study to examine DO impacts of different minimum flows under summer low-flow operations. OPC would propose a study in the final license application (FLA), to be conducted in consultation with the agencies. The proposed study measure would identify the study objectives and essential components of the study, with the detailed study methodology to be developed post-license with the relevant agencies and approved by the Federal Energy Regulatory Commission (FERC). The study would examine whether there is any positive impact on DO in Heath Creek at various points downstream of the Main Dam by increasing minimum flow under low-flow conditions, and, if so, would then examine the impacts of alternative higher minimum flows on recreation, power generation, and other project purposes. Based on the study findings, OPC would recommend an outcome, which could include an application to amend the license, and seek agreement with the agencies and FERC.

Commented [BEF1]: Correct me if I'm misremembering, but I think we clarified that this recommendation would come in the form of a license amendment, if it was determined that higher minimum flows resolved the DO issue and if the costs to other resources were not prohibitive.

FWS, WRD, and GEPD expressed agreement, subject to their management review, with OPC's approach for proposing a flow study in Exhibit E of the FLA.

Commented [BEF2]: Just to provide clarity - doesn't need to be included here necessarily - but I did say that I didn't think FWS would be opposed to this approach and would confirm with my supervisor. I have now gotten her approval for this approach.

DRAFT

From: [McCasin, Tyler](#)
To: Kelle.Moore@dnr.ga.gov
Cc: [Jones, Craig](#); [Barrows, Christina](#); [Steven Layman](#); [Kelly Kirven](#)
Subject: Rocky Mountain Pumped Storage Hydroelectric Project (FERC P-2725) - Coastal Zone Management Act
Date: Thursday, August 1, 2024 7:29:06 AM
Attachments: [image001.png](#)
[image002.png](#)

Hi Kelle,

Oglethorpe Power Corporation co-owns and operates the Rocky Mountain Pumped Storage Hydroelectric Project (FERC P-2725) located in Floyd County near Rome, Georgia. We are in the process of [relicensing this project with FERC](#) and, consistent with federal regulations, are requesting GDNR Coast Resources Division to document determinations of consistency or non-applicability with Georgia's Coastal Zone Management Program. We have been consulting with various other federal and state agencies during this process.

Based on Rocky Mountain's location in the upper Coosa River basin 270 miles upstream of the Gulf of Mexico and small drainage area, continued operation of the Project would not affect the coastal zone of either Alabama or Georgia. Nevertheless, FERC requires documentation of consultation in the final license application confirming the project would not affect the coastal zone, and therefore, a consistency determination is non-applicable.

I have included a short project description, a map depicting the project location, and concise background information about the project and FERC process below. Our [relicensing website](#) includes links to our documentation submitted to FERC thus far as well as some supporting information.

I appreciate your time and would be happy to answer any questions you may have or schedule a call to discuss further.

Tyler McCasin, PhD

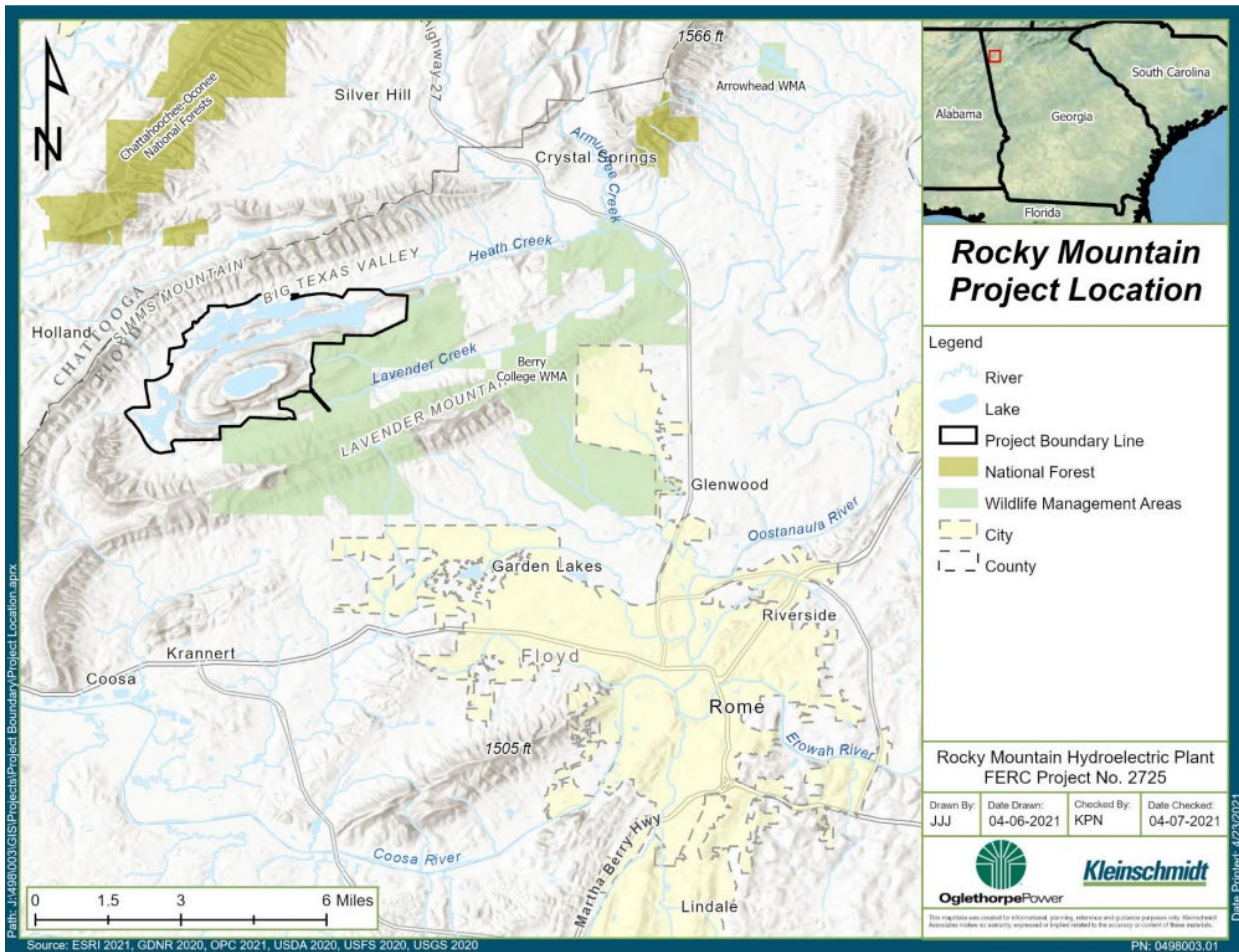
Senior Environmental Specialist
Oglethorpe Power Corporation
2100 East Exchange Place, Tucker, GA 30084

Office: 770-270-7723 **Mobile:** 404-576-9097
Email: tyler.mccasin@opc.com **Web:** www.opc.com



Oglethorpe Power Corporation (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 Pumped Storage Hydroelectric Project (FERC No. 2725) (Rocky Mountain Project or Project). OPC owns a 74.61 percent undivided interest in the Project and GPC owns the remaining 25.39 percent undivided interest. The Rocky Mountain Project is in Floyd County, Georgia approximately 10 miles northwest of the city of Rome. The 904-megawatt (MW) Project consists of a 221-acre Upper Reservoir, a 600-acre Lower Reservoir, two Auxiliary Pools, and a powerhouse on the Lower Reservoir. The Project does not occupy any federal lands. As a pumped storage project, all power produced by the Rocky Mountain 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.

OPC is utilizing the Traditional Licensing Process with FERC for this project, and we will be submitting a Final License Application with FERC by December 31, 2024.



Rocky Mountain Project Location

Legend

- River
- Lake
- Project Boundary Line
- National Forest
- Wildlife Management Areas
- City
- County

Rocky Mountain Hydroelectric Plant
FERC Project No. 2725

Drawn By: JJJ	Date Drawn: 04-06-2021	Checked By: KPN	Date Checked: 04-07-2021
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Path: J:\488\003\GIS\Project\Project Boundary\Project Location.aprx

Date Printed: 4/23/2021

Source: ESRI 2021, GDNr 2020, OPC 2021, USDA 2020, USFS 2020, USGS 2020

PN: 0498003.01

From: [McCaslin, Tyler](#)
To: [Steven Layman](#); [Kelly Kirven](#)
Subject: FW: E.O. 12372 Intergovernmental Review USDA Funding- Rocky Mountain Pumped Storage Hydroelectric Project (FERC P-2725) - Coastal Zone Management Act
Date: Thursday, August 1, 2024 8:54:30 AM
Attachments: [State Clearinghouse Notification Letter 080421.pdf](#)

From: Long, James <james.long1@dnr.ga.gov>
Sent: Thursday, August 1, 2024 8:08 AM
To: McCaslin, Tyler <tyler.mccaslin@opc.com>
Cc: Moore, Kelie <Kelie.Moore@dnr.ga.gov>
Subject: E.O. 12372 Intergovernmental Review USDA Funding- Rocky Mountain Pumped Storage Hydroelectric Project (FERC P-2725) - Coastal Zone Management Act

External E-Mail

Good morning, Tyler:

On August 1, 2024, GA CRD received a -Coastal Zone Management Concurrence Requirement Request for Rocky Mountain Pumped Storage Hydroelectric Project (FERC P-2725).

As of August 1, 2021, DNR Coastal Resources Division no longer sends individual environmental review letters (E.O 12372 or CZMA federal consistency) for funding projects outside the 11 coastal counties (Chatham, Effingham, Bryan, Long, Liberty, McIntosh, Glynn, Wayne, Brantley, Camden, and Charlton) or for HUD projects anywhere within the State. You may submit the attached Notification directly to the funding agency or HUD for this AND ALL FUTURE PROJECTS. Please consult the Georgia State Clearinghouse website (<https://opb.georgia.gov/about-us/state-clearinghouse>) for any other agencies that you must continue to notify. Please do not send electronic or hard copies of grant projects to our office outside the 11 coastal counties or is a HUD project anywhere with the state.

Thank you

Jim Long
Coastal Management Specialist
[Coastal Resources Division](#)
Main Office: 912-264-7218 | Direct: 912-602-9436
[Facebook](#) • [Twitter](#)
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A division of the
GEORGIA DEPARTMENT OF NATURAL RESOURCES



MARK WILLIAMS
COMMISSIONER

DOUG HAYMANS
DIRECTOR

NOTIFICATION

Effective August 1, 2021

To: Interested Applicants/Sponsors/General Public

From: Jill Andrews, Coastal Resources Division, Coastal Management Program Section Chief 

RE: Executive Order 12372 Intergovernmental Coordination & Environmental Review

The Coastal Zone Management Act (CZMA, 15 CFR 930) includes provisions that are intended to ensure that federal assistance to applicant agencies for activities affecting any coastal use or resource is granted only when such activities are consistent with approved coastal management programs. Georgia's Coastal Management Program (GCMP) area encompasses eleven coastal counties: Brantley, Bryan, Camden, Charlton, Chatham, Effingham, Glynn, Liberty, Long, McIntosh, and Wayne. For assistance within these counties please contact our Federal Consistency Coordinator (Kelie.Moore@dnr.ga.gov)

Assistance programs and intergovernmental reviews outside of these eleven (11) counties are not subject to the CZMA provisions and do not require approval from Coastal Resources Division.

Coastal Barrier Resources Act (CRBA) areas do not extend outside these eleven (11) coastal counties and do not require approval from Coastal Resources Division.

Housing and Urban Development (HUD) federal assistance projects proposed anywhere within Georgia, including within the eleven (11) coastal counties, do not require approval from Coastal Resources Division.

Please use this Notification as an official document to send when submitting your application to a funding agency or for other intergovernmental review verification needs. This letter is also available on the Georgia State Clearinghouse website: <http://www.opb.georgia.gov/state-clearinghouse> and on the Georgia Department of Natural Resources Coastal Resources Division website: <https://www.coastalgadnr.org/MarshShore>

From: [McCaslin, Tyler](#)
To: jsb@adem.alabama.gov
Cc: [Jones, Craig](#); [Barrows, Christina](#); [Steven Layman](#); [Kelly Kirven](#)
Subject: Rocky Mountain Pumped Storage Hydroelectric Project (FERC P-2725) - Coastal Zone Management Act
Date: Thursday, August 1, 2024 7:29:13 AM
Attachments: [image001.png](#)
[image002.png](#)

Hi Scott,

Oglethorpe Power Corporation co-owns and operates the Rocky Mountain Pumped Storage Hydroelectric Project (FERC P-2725) located in Floyd County near Rome, Georgia. We are in the process of [relicensing this project with FERC](#) and, consistent with federal regulations, are requesting ADEM to document determinations of consistency or non-applicability with Alabama's Coastal Area Management Program. We have been consulting with various other federal and state agencies during this process.

Based on Rocky Mountain's location in the upper Coosa River basin 270 miles upstream of the Gulf of Mexico and small drainage area, continued operation of the Project would not affect the coastal zone of either Alabama or Georgia. Nevertheless, FERC requires documentation of consultation in the final license application confirming the project would not affect the coastal zone, and therefore, a consistency determination is non-applicable.

I have included a short project description, a map depicting the project location, and concise background information about the project and FERC process below. Our [relicensing website](#) includes links to our documentation submitted to FERC thus far as well as some supporting information.

I appreciate your time and would be happy to answer any questions you may have or schedule a call to discuss further.

Tyler McCaslin, PhD

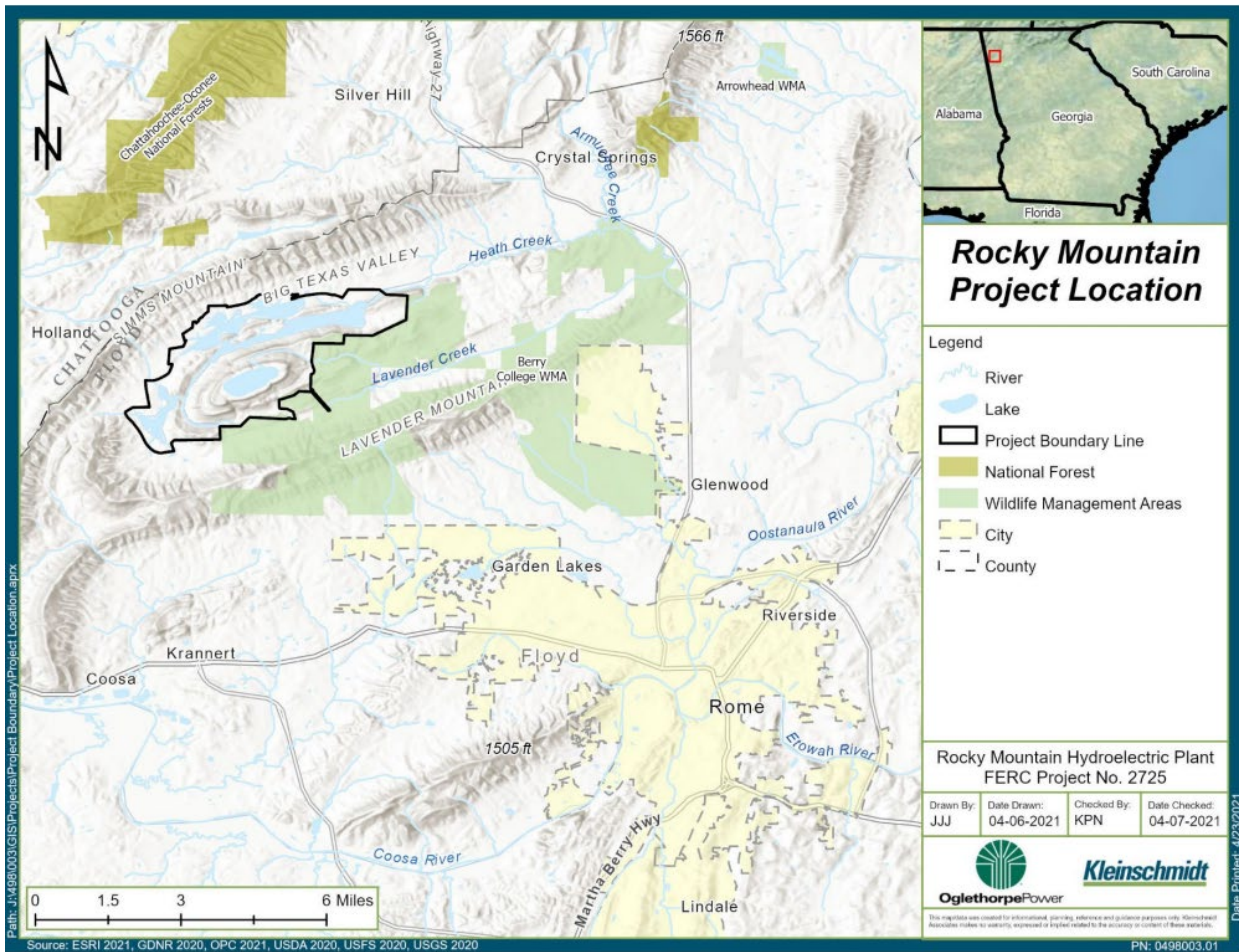
Senior Environmental Specialist
Oglethorpe Power Corporation
2100 East Exchange Place, Tucker, GA 30084

Office: 770-270-7723 **Mobile:** 404-576-9097
Email: tyler.mccaslin@opc.com **Web:** www.opc.com



Oglethorpe Power Corporation (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 Pumped Storage Hydroelectric Project (FERC No. 2725) (Rocky Mountain Project or Project). OPC owns a 74.61 percent undivided interest in the Project and GPC owns the remaining 25.39 percent undivided interest. The Rocky Mountain Project is in Floyd County, Georgia approximately 10 miles northwest of the city of Rome. The 904-megawatt (MW) Project consists of a 221-acre Upper Reservoir, a 600-acre Lower Reservoir, two Auxiliary Pools, and a powerhouse on the Lower Reservoir. The Project does not occupy any federal lands. As a pumped storage project, all power produced by the Rocky Mountain 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.

OPC is utilizing the Traditional Licensing Process with FERC for this project, and we will be submitting a Final License Application with FERC by December 31, 2024.



Rocky Mountain Project Location

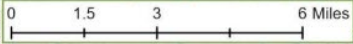
- Legend**
- River
 - Lake
 - Project Boundary Line
 - National Forest
 - Wildlife Management Areas
 - City
 - County

Rocky Mountain Hydroelectric Plant
FERC Project No. 2725

Drawn By: JJJ	Date Drawn: 04-06-2021	Checked By: KPN	Date Checked: 04-07-2021
------------------	---------------------------	--------------------	-----------------------------



Path: J:\488\003\GIS\Project\Project Boundary\Project Location.aprx



Source: ESRI 2021, GDNr 2020, OPC 2021, USDA 2020, USFS 2020, USGS 2020

Date Printed: 4/23/2021

PN: 0498003.01

From: [Brown, Scott](#)
To: [McCaslin, Tyler](#)
Cc: [Jones, Craig](#); [Barrows, Christina](#); [Steven Layman](#); [Kelly Kirven](#); [Mobile Coastal Mail](#)
Subject: RE: Rocky Mountain Pumped Storage Hydroelectric Project (FERC P-2725) - Coastal Zone Management Act
Date: Thursday, August 1, 2024 12:59:16 PM
Attachments: [image001.png](#)
[image002.png](#)

Some people who received this message don't often get email from jsb@adem.alabama.gov. [Learn why this is important](#)

Dr. McCaslin:

The referenced facility is located outside the coastal area of Alabama and the ACAMP does not anticipate any reasonably foreseeable coastal effects from the described work.

J. Scott Brown, Chief

The ADEM Coastal Office
1615 South Broad Street | Mobile, Alabama 36605
Telephones: 251.450.3400 Office | 334.850.4641 Cell
eMail: jsb@adem.alabama.gov
Direct Non-CZM or CWA§401WQC Related Correspondence To: Mobile@adem.alabama.gov
Direct CZM & CWA§401WQC Related Correspondence To: Coastal@adem.alabama.gov

From: McCaslin, Tyler <tyler.mccaslin@opc.com>
Sent: Thursday, August 1, 2024 6:29 AM
To: Brown, Scott <jsb@adem.alabama.gov>
Cc: Jones, Craig <craig.jones@opc.com>; Barrows, Christina <christina.barrows@opc.com>; Klein Schmidt Group (Steven Layman) <Steven.Layman@Kleinschmidtgroup.com>; Klein Schmidt Group (Kelly Kirven) <Kelly.Kirven@KleinschmidtGroup.com>
Subject: Rocky Mountain Pumped Storage Hydroelectric Project (FERC P-2725) - Coastal Zone Management Act

You don't often get email from tyler.mccaslin@opc.com. [Learn why this is important](#)

Hi Scott,

Oglethorpe Power Corporation co-owns and operates the Rocky Mountain Pumped Storage Hydroelectric Project (FERC P-2725) located in Floyd County near Rome, Georgia. We are in the process of [relicensing this project with FERC](#) and, consistent with federal regulations, are requesting ADEM to document determinations of consistency or non-applicability with Alabama's Coastal Area Management Program. We have been consulting with various other federal and state agencies during this process.

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I have included a short project description, a map depicting the project location, and concise background information about the project and FERC process below. Our [relicensing website](#) includes links to our documentation submitted to FERC thus far as well as some supporting information.

I appreciate your time and would be happy to answer any questions you may have or schedule a call to discuss further.

Tyler McCaslin, PhD

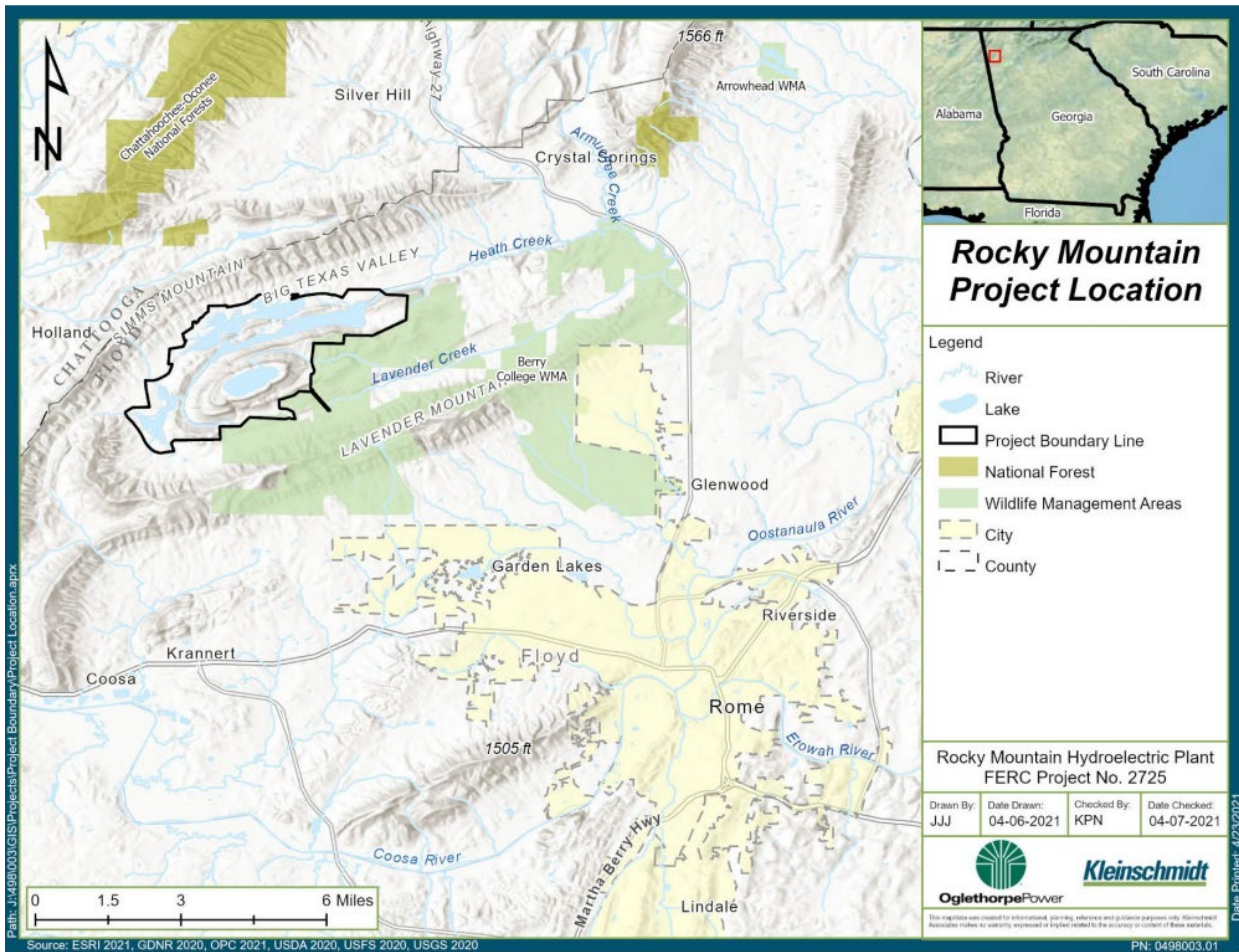
Senior Environmental Specialist
Oglethorpe Power Corporation
2100 East Exchange Place, Tucker, GA 30084

Office: 770-270-7723 **Mobile:** 404-576-9097
Email: tyler.mccaslin@opc.com **Web:** www.opc.com



Oglethorpe Power Corporation (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 Pumped Storage Hydroelectric Project (FERC No. 2725) (Rocky Mountain Project or Project). OPC owns a 74.61 percent undivided interest in the Project and GPC owns the remaining 25.39 percent undivided interest. The Rocky Mountain Project is in Floyd County, Georgia approximately 10 miles northwest of the city of Rome. The 904-megawatt (MW) Project consists of a 221-acre Upper Reservoir, a 600-acre Lower Reservoir, two Auxiliary Pools, and a powerhouse on the Lower Reservoir. The Project does not occupy any federal lands. As a pumped storage project, all power produced by the Rocky Mountain 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.

OPC is utilizing the Traditional Licensing Process with FERC for this project, and we will be submitting a Final License Application with FERC by December 31, 2024.



Rocky Mountain Project Location

- Legend**
- River
 - Lake
 - Project Boundary Line
 - National Forest
 - Wildlife Management Areas
 - City
 - County

Rocky Mountain Hydroelectric Plant
FERC Project No. 2725

Drawn By: JJJ	Date Drawn: 04-06-2021	Checked By: KPN	Date Checked: 04-07-2021
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This map/data was created for informational purposes only. Kleinschmidt Associates makes no warranty, expressed or implied, related to the accuracy or content of these materials.

Path: J:\488\003\GIS\Project\Project Boundary\Project Location.aprx

Source: ESRI 2021, GDNr 2020, OPC 2021, USDA 2020, USFS 2020, USGS 2020

Date Printed: 4/23/2021

PN: 0498003.01

From: [Hedeen, David](#)
To: [McCaslin, Tyler](#)
Cc: [Bauer, Eric F](#); [Mike Swiger](#); [Jones, Craig](#); [Zeng, Wei](#); [Booth, Elizabeth](#); [Hakala, Jim](#); [Escobar, Anakela](#); [Steven Layman](#); [Jason Moak](#); [Barrows, Christina](#); [Peacock, Clint](#); [Bowen, Bryant](#); [Richardson, Dewey](#)
Subject: RE: [EXTERNAL] RE: Rocky Mountain Relicensing Joint Meeting
Date: Thursday, August 1, 2024 4:42:53 PM
Attachments: [image001.png](#)

Some people who received this message don't often get email from david.hedeen@dnr.ga.gov. [Learn why this is important](#)

Tyler -- Thank you for compiling this meeting summary. To close the loop on this, EPD has no revision requests. Thank you,

David Hedeen
Manager – Wetlands Unit
Georgia Environmental Protection Division
2 Martin Luther King, Jr. Dr. SE, Suite 1052
Atlanta, GA 30334

david.hedeen@dnr.ga.gov
470-427-2730 (office)
678-483-2287 (cell)

From: Bauer, Eric F <eric_bauer@fws.gov>
Sent: Monday, June 10, 2024 4:00 PM
To: Mike Swiger <mas@vnf.com>; Jones, Craig <craig.jones@opc.com>; McCaslin, Tyler <tyler.mccaslin@opc.com>; Zeng, Wei <Wei.Zeng@dnr.ga.gov>; Hedeen, David <david.hedeen@dnr.ga.gov>; Booth, Elizabeth <Elizabeth.Booth@dnr.ga.gov>; Hakala, Jim <Jim.Hakala@dnr.ga.gov>; Escobar, Anakela <anakela.escobar@dnr.ga.gov>; Klein Schmidt Group (Steven Layman) <Steven.Layman@Kleinschmidtgroup.com>; Jason Moak <Jason.Moak@kleinschmidtgroup.com>; Barrows, Christina <christina.barrows@opc.com>; Peacock, Clint <Clint.Peacock@dnr.ga.gov>; Bowen, Bryant <Bryant.Bowen@dnr.ga.gov>; Richardson, Dewey <Dewey.Richardson@dnr.ga.gov>
Subject: Re: [EXTERNAL] RE: Rocky Mountain Relicensing Joint Meeting

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.

Yep, that works. Thanks Mike.

-Eric

Eric Bauer (he/him)
Fish and Wildlife Biologist

Georgia Ecological Services

US Fish and Wildlife Service

RG Stephens, Jr. Federal Building

355 East Hancock Avenue, Room 320

Athens, GA 30601

Office: 706-535-2103

Teams: eric_bauer@fws.gov (preferred)

<http://www.fws.gov/athens>

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From: Mike Swiger <mas@vnf.com>

Sent: Monday, June 10, 2024 11:26 AM

To: Bauer, Eric F <eric_bauer@fws.gov>; Jones, Craig <craig.jones@opc.com>; McCaslin, Tyler <tyler.mccaslin@opc.com>; Zeng, Wei <Wei.Zeng@dnr.ga.gov>; Hedeem, David <david.hedeem@dnr.ga.gov>; Elizabeth.Booth@dnr.ga.gov <Elizabeth.Booth@dnr.ga.gov>; Hakala, Jim <Jim.Hakala@dnr.ga.gov>; Escobar, Anakela <anakela.escobar@dnr.ga.gov>; Klein Schmidt Group (Steven Layman) <Steven.Layman@Kleinschmidtgroup.com>; Jason Moak <Jason.Moak@kleinschmidtgroup.com>; Barrows, Christina <christina.barrows@opc.com>; Peacock, Clint <Clint.Peacock@dnr.ga.gov>; Bryant.bowen@dnr.ga.gov <Bryant.bowen@dnr.ga.gov>; Dewey.Richardson@dnr.ga.gov <Dewey.Richardson@dnr.ga.gov>

Subject: RE: [EXTERNAL] RE: Rocky Mountain Relicensing Joint Meeting

Eric, thank you for your review. Would the attached redline edits adequately address your comments?

Michael Swiger | Partner



2000 Pennsylvania Ave., NW

Suite 6000

Washington, DC 20006

(202) 413-4809 (cell) | mas@vnf.com | vnf.com

****Please note our new address – please update your records accordingly.****

From: Bauer, Eric F <eric_bauer@fws.gov>

Sent: Monday, June 10, 2024 9:29 AM

To: Jones, Craig <craig.jones@opc.com>; McCaslin, Tyler <tyler.mccaslin@opc.com>; Zeng, Wei <Wei.Zeng@dnr.ga.gov>; Hedeem, David <david.hedeem@dnr.ga.gov>; Elizabeth.Booth@dnr.ga.gov; Hakala, Jim <Jim.Hakala@dnr.ga.gov>; Escobar, Anakela <anakela.escobar@dnr.ga.gov>; Klein Schmidt Group (Steven Layman) <Steven.Layman@Kleinschmidtgroup.com>; Jason Moak <Jason.Moak@kleinschmidtgroup.com>; Barrows, Christina <christina.barrows@opc.com>; Peacock, Clint <Clint.Peacock@dnr.ga.gov>; Bryant.bowen@dnr.ga.gov; Mike Swiger <mas@vnf.com>; Dewey.Richardson@dnr.ga.gov

Subject: Re: [EXTERNAL] RE: Rocky Mountain Relicensing Joint Meeting

Caution: External Email

All,

I just had a few notes towards the end for clarity (see attached). As a side note, and for what it's worth, I did quite a bit of digging into springs and aquifers of this region. There appears to be a mix of precipitation influenced springs and those that are not influenced by precipitation. However, I was unable to find any evidence of aquifers/springs in the area have low DO. Unfortunately, when folks study springs/aquifers they're mostly interested in if it's drinkable or able to be used on crops and how much water a well will produce and not so much on DO. I can provide the literature I've reviewed if anyone is interested. And please let me know if there are any questions regarding any of my comments. Thanks everyone.

-Eric

Eric Bauer (he/him)

Fish and Wildlife Biologist

Georgia Ecological Services

US Fish and Wildlife Service

RG Stephens, Jr. Federal Building

355 East Hancock Avenue, Room 320

Athens, GA 30601

Office: 706-535-2103

Teams: eric_bauer@fws.gov (preferred)

<http://www.fws.gov/athens>

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From: Jones, Craig <craig.jones@opc.com>

Sent: Friday, May 24, 2024 9:56 AM

To: McCaslin, Tyler <tyler.mccaslin@opc.com>; Bauer, Eric F <eric_bauer@fws.gov>; Zeng, Wei <Wei.Zeng@dnr.ga.gov>; Hedeem, David <david.hedeem@dnr.ga.gov>; Elizabeth.Booth@dnr.ga.gov <Elizabeth.Booth@dnr.ga.gov>; Hakala, Jim <Jim.Hakala@dnr.ga.gov>; Escobar, Anakela <anakela.escobar@dnr.ga.gov>; Klein Schmidt Group (Steven Layman) <Steven.Layman@Kleinschmidtgroup.com>; Jason Moak <Jason.Moak@kleinschmidtgroup.com>; Barrows, Christina <christina.barrows@opc.com>; Peacock, Clint <Clint.Peacock@dnr.ga.gov>; Bryant.bowen@dnr.ga.gov <Bryant.bowen@dnr.ga.gov>; Mike Swiger <mas@vnf.com>; Dewey.Richardson@dnr.ga.gov <Dewey.Richardson@dnr.ga.gov>

Subject: Re: [EXTERNAL] RE: Rocky Mountain Relicensing Joint Meeting

Hi Everyone,

Tyler, thanks for sending the summary.

Just for clarification, we are asking for your agency's concurrence and, if you have any comments, please provide those as well by June 15.

Please also reach out with any questions.

I hope everyone has a safe and enjoyable Memorial weekend!

Best,

Craig

Sent from my iPhone.

On May 24, 2024, at 7:24 AM, McCaslin, Tyler <tyler.mccaslin@opc.com> wrote:

Hi everyone,

Thank you again for a productive joint meeting. Attached is a draft summary of the meeting that we would like to include in the final license application as documentation of our Joint Meeting agreement.

Please review and provide any comments by June 15.

-Tyler

From: McCaslin, Tyler

Sent: Monday, May 13, 2024 10:33 AM

To: Bauer, Eric F <eric_bauer@fws.gov>; Jones, Craig <craig.jones@opc.com>; Zeng, Wei <Wei.Zeng@dnr.ga.gov>; Hedeem, David <david.hedeem@dnr.ga.gov>; 'Elizabeth.Booth@dnr.ga.gov' <Elizabeth.Booth@dnr.ga.gov>; Hakala, Jim <Jim.Hakala@dnr.ga.gov>; Escobar, Anakela <anakela.escobar@dnr.ga.gov>; Klein Schmidt Group (Steven Layman) <Steven.Layman@Kleinschmidtgroup.com>; Jason Moak <Jason.Moak@Kleinschmidtgroup.com>; Barrows, Christina <christina.barrows@opc.com>; Peacock, Clint <Clint.Peacock@dnr.ga.gov>; 'Bryant.bowen@dnr.ga.gov' <Bryant.bowen@dnr.ga.gov>

Subject: RE: [EXTERNAL] RE: Rocky Mountain Relicensing Joint Meeting

Hi Eric,

Thank you so much for the follow up!

We did receive your slides and have been compiling a meeting summary on the discussion and proposals to distribute amongst the meeting participants for review and comment. We will be including this summary in our consultation record in the FLA as well.

We will be in touch soon when we are ready to send it out.

-Tyler

From: Bauer, Eric F <eric_bauer@fws.gov>

Sent: Monday, May 13, 2024 11:53 AM

To: Jones, Craig <craig.jones@opc.com>; Zeng, Wei <Wei.Zeng@dnr.ga.gov>; Hedeem, David <david.hedeem@dnr.ga.gov>; 'Elizabeth.Booth@dnr.ga.gov' <Elizabeth.Booth@dnr.ga.gov>; Hakala, Jim <Jim.Hakala@dnr.ga.gov>; Escobar, Anakela <anakela.escobar@dnr.ga.gov>; Klein Schmidt Group (Steven Layman) <Steven.Layman@Kleinschmidtgroup.com>; Jason Moak <Jason.Moak@Kleinschmidtgroup.com>; McCaslin, Tyler <tyler.mccaslin@opc.com>; Barrows, Christina <christina.barrows@opc.com>; Peacock, Clint <Clint.Peacock@dnr.ga.gov>; 'Bryant.bowen@dnr.ga.gov' <Bryant.bowen@dnr.ga.gov>

Subject: Re: [EXTERNAL] RE: Rocky Mountain Relicensing Joint Meeting

External E-Mail

Good morning Craig,

I just wanted to touch base and make sure that y'all received a copy of my PPT from this meeting. I had major issues trying to send it, apologies to those who got multiple copies.

And to follow up, is there anything else that OPC needs from the Service? Would it help to have our comments in written form as well? Would it benefit OPC and this group to share and comment on the proposed post-licensing study prior to filing with FERC? And are there written meeting notes from this meeting that need reviewing by the agencies - I don't know if that's standard practice but we've gotten that before from other FERC relicensing related meetings -so I'm happy to review. Just let me know what you need from me. Thanks!

-Eric

Eric Bauer (he/him)

Fish and Wildlife Biologist

Georgia Ecological Services

US Fish and Wildlife Service

RG Stephens, Jr. Federal Building

355 East Hancock Avenue, Room 320

Athens, GA 30601

Office: 706-535-2103

Teams: eric_bauer@fws.gov (preferred)

<http://www.fws.gov/athens>

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From: Jones, Craig <craig.jones@opc.com>

Sent: Friday, April 5, 2024 11:52 AM

To: Bauer, Eric F <eric_bauer@fws.gov>; Zeng, Wei <Wei.Zeng@dnr.ga.gov>; Hedeem, David <david.hedeem@dnr.ga.gov>; 'Elizabeth.Booth@dnr.ga.gov' <Elizabeth.Booth@dnr.ga.gov>; Hakala, Jim <Jim.Hakala@dnr.ga.gov>; Escobar, Anakela <anakela.escobar@dnr.ga.gov>; Klein Schmidt Group (Steven Layman) <Steven.Layman@Kleinschmidtgroup.com>; Jason Moak <Jason.Moak@Kleinschmidtgroup.com>; McCaslin, Tyler <tyler.mccaslin@opc.com>; Barrows, Christina <christina.barrows@opc.com>; Peacock, Clint <Clint.Peacock@dnr.ga.gov>; 'Bryant.bowen@dnr.ga.gov' <Bryant.bowen@dnr.ga.gov>

Subject: [EXTERNAL] RE: Rocky Mountain Relicensing Joint Meeting

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Good Morning,

This is a reminder about the Joint Meeting scheduled for April 11 at 3:00 P.M. As previously discussed with you and filed with FERC, we will be addressing the following:

Dissolved Oxygen (DO) Downstream of the Project
Discussion of Study Methods and Findings
Discussion of Project Operations
Discussion of USFWS Protection, Mitigation, or Enhancement Recommendations
Related to DO

Please reach out with any questions.

Best regards,

Craig

Craig A. Jones, PhD

Vice President, EHS & Regulatory Affairs
Oglethorpe Power Corporation
2100 East Exchange Place, Tucker, GA 30084

Office: 770-270-7348 **Mobile:** 770-500-8912

Email: craig.jones@opc.com **Web:** www.opc.com

[<image001.png>](#)

-----Original Appointment-----

From: Jones, Craig

Sent: Thursday, March 14, 2024 12:46 PM

To: Jones, Craig; Bauer, Eric F; Zeng, Wei; Hedeem, David; 'Elizabeth.Booth@dnr.ga.gov'; Hakala, Jim; Escobar, Anakela; Klein Schmidt Group (Steven Layman); Jason Moak; McCaslin, Tyler; Barrows, Christina; Mike Swiger; Teilhet, Heather (OPC)

Cc: Peacock, Clint; 'Bryant.bowen@dnr.ga.gov'

Subject: Rocky Mountain Relicensing Joint Meeting

When: Thursday, April 11, 2024 3:00 PM-5:00 PM (UTC-05:00) Eastern Time (US & Canada).

Where: Microsoft Teams Meeting

Good Afternoon Everyone,

Thank you for coordinating with us to find a good time for this Joint Meeting. The meeting will be via Microsoft Teams.

I will be following up with more detail about the meeting including an agenda. Please reach out to me in the meantime with any questions.

Best,

Craig

Craig A. Jones, PhD

Vice President, EHS & Regulatory Affairs
Oglethorpe Power Corporation
2100 East Exchange Place, Tucker, GA 30084

Office: 770-270-7348 **Mobile:** 770-500-8912
Email: craig.jones@opc.com **Web:** www.opc.com

<[image001.png](#)>

Microsoft Teams meeting

Join on your computer, mobile app or room device
[Click here to join the meeting](#)

Meeting ID: 279 656 028 877
Passcode: RzHY9s
[Download Teams](#) | [Join on the web](#)

Or call in (audio only)

[+1 912-219-4112,,147452578#](#) United States, Savannah
Phone Conference ID: 147 452 578#
[Find a local number](#) | [Reset PIN](#)

[Learn More](#) | [Meeting options](#)

<2024-05-24_Post-DLA Joint Meeting Summary_DRAFT.docx>

From: [McCaslin, Tyler](#)
To: [Steven Layman](#); [Kelly Kirven](#)
Cc: [Barrows, Christina](#)
Subject: FW: Oglethorpe Power's Rocky Mountain Pumped Storage Hydroelectric Project Management Plans
Date: Monday, August 5, 2024 1:50:33 PM
Attachments: [image001.png](#)
[Draft Bat Habitat Protection Measures.docx](#)
[Invasive Species Management Plan_DRAFT.docx](#)
[Bald Eagle Management Plan_DRAFT.docx](#)
[Attachment 1 - USFWS national-bald-eagle-management-guidelines_2007.pdf](#)

For the consultation record

-Tyler

From: Barrows, Christina <christina.barrows@opc.com>
Sent: Monday, August 5, 2024 1:35 PM
To: Bauer, Eric F <eric_bauer@fws.gov>
Cc: Jones, Craig <craig.jones@opc.com>; McCaslin, Tyler <tyler.mccaslin@opc.com>
Subject: Oglethorpe Power's Rocky Mountain Pumped Storage Hydroelectric Project Management Plans

Good Afternoon Eric,

In Oglethorpe Power's effort to relicense the Rocky Mountain Pumped Storage Hydroelectric Project (FERC P-2725) located in Floyd County near Rome, Georgia, we would like for the US Fish and Wildlife Service to review our Invasive Species, Bat, and Bald Eagle Management Plans. Please review the attached documents and let us know if you have any major concerns by 8/23/24. If you would like a refresher on the project description, the project location, or concise background information, you may find it [here](#).

As always, we appreciate your time and would be happy to answer any questions you may have.

Thank you,

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DRAFT Invasive Species Management Plan

Rocky Mountain Project (FERC No. 2725)

Introduction

Oglethorpe Power Corporation (OPC) proposes to implement an Invasive Species Management Plan for the purposes of:

- Periodic monitoring of terrestrial invasive exotic plant occurrences and treatment, as may be warranted, within the Rocky Mountain project boundary;
- Educating recreational users within the Rocky Mountain Recreation and Public Fishing Area (Rocky Mountain PFA) on preventing the transport of aquatic nuisance species into the Auxiliary Pools (Antioch Lake and Heath Lake);¹ and
- Periodic treatment, control, or removal of aquatic nuisance species, as may be warranted, to avoid or minimize interference with public recreational use and hydropower operations.

This plan describes the specific measures to be implemented and provides a schedule for agency consultation and reporting.

Specific Measures

Every three years following license issuance, OPC will consult with the Georgia Department of Natural Resources (GDNR) Wildlife Resources Division on the management of invasive species within the project boundary as follows:

Terrestrial Invasive Exotic Plant Occurrences

- OPC will consult with GDNR on periodically monitoring invasive exotic plant occurrences at project recreation facilities and other areas within the project boundary where infestations of terrestrial invasive exotic plants have been observed or reported to exceed 10 percent coverage of the herbaceous or mid-story vegetation stratum. Monitoring may include, but will not necessarily be limited to, areas recommended for invasive species control in GDNR's 2013 *Terrestrial Management Plan for Rocky Mountain Hydroelectric Plant and Recreation & Public Fishing Area* and infestations identified and mapped in OPC's *Terrestrial and Wetlands Resources Survey Study Report* (Corblu Ecology Group 2023).

¹ Auxiliary Pool I is also known as Antioch Lake and Auxiliary Pool II is also known as Heath Lake.

- OPC will monitor invasive exotic plant occurrences, as determined in consultation with GDNR.
- OPC will treat invasive exotic plant infestations periodically, as determined in consultation with GDNR, to minimize any interference with public access and recreation use within the Rocky Mountain PFA. Acceptable treatment methods may include limited herbicide application (by a licensed applicator), pulling, hand-cutting, or other means considered effective for controlling invasive exotic plant species while presenting no substantial risk to other environmental resources.

Aquatic Nuisance Species (Plant and Animal)

- Within one year of license issuance, OPC will consult with GDNR on designing and installing educational signage at each boat ramp and proposed new kayak launch on preventing the transport and introduction of aquatic nuisance species to the Auxiliary Pools (Antioch Lake and Heath Lake). The signage will encourage boaters and anglers to take simple actions (consistent with GDNR statewide aquatic nuisance species prevention efforts) to prevent the movement of aquatic nuisance species between waterbodies. Signage will be installed at each boat ramp within two years of license issuance and at each new kayak launch within one year of construction. OPC will maintain the signage for the license term.
- Every three years, or more frequently as warranted, OPC will consult with GDNR on any significant invasive aquatic and plant animal species occurrences observed by GDNR in the Auxiliary Pools during fisheries surveys or routine management activities. Should significant occurrences be detected, consultation will consider management implications and acceptable means of control, removal, or management, if warranted, to avoid or minimize interference with public recreational use and/or hydropower operations. Consultation will also consider any need to update the educational signage.

Schedule and Reporting

Every three years after issuance of the new license, by March 31 of the following year, OPC will prepare a draft Invasive Species Management Plan Report documenting the consultation for GDNR's review. The report will include any plans for monitoring or treatment, results of monitoring or treatment, and any updates planned for educational

signage. OPC will incorporate any necessary changes to the draft report in a final report and file the final report with the Federal Energy Regulatory Commission by September 30.

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DRAFT Bat Habitat Protection Measures Rocky Mountain Project (FERC No. 2725)

<<Note to Reviewers: OPC proposes the following bat habitat protection measures for Exhibit E of the Final License Application (FLA), subject to agency consultation, to include seasonal restrictions for tree removal and protection of cave habitats. The project boundary contains known cave, rock shelter, and talus slope habitat on Rock Mountain but none of the federally listed or proposed-for-listing bat species are presently known to occupy this habitat within the project boundary.>>

Specific Measures to Propose in Exhibit E of FLA

OPC proposes the following specific measures to protect habitat for endangered Northern Long-eared Bat (*Myotis septentrionalis*), proposed endangered Tricolored Bat (*Perimyotis subflavus*), and endangered Gray Bat (*Myotis grisescens*), within the Rocky Mountain project boundary:

Seasonal Restrictions on Tree Removal

- Limit non-emergency tree removal to the period between November 16 and March 14 (hibernation period) to protect roosting habitat for Northern Long-eared Bat and Tricolored Bat during the active season (March 15-November 15), based on the Project being within the known hibernating range of the species in Georgia (U.S. Fish and Wildlife Service [FWS] 2024), unless otherwise authorized by FWS and the Georgia Department of Natural Resources (GDNR).

Protection of Cave Habitats

- To protect caves that may be occupied by hibernating bats, avoid non-emergency project maintenance or land management activities near known cave, rock shelter, and talus slope habitats on Rock Mountain during the hibernation season of Northern Long-eared Bat and Tricolored Bat in Georgia (November 16-March 14) (FWS 2024),¹ unless otherwise authorized by FWS and GDNR.

Reference

U.S. Fish and Wildlife Service (FWS). 2024. Range-Wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines. March 2024. U.S. Fish and Wildlife Service, Region 3, Bloomington, MN. 95 pp.

¹ Gray Bat and Indiana Bat currently are not known to hibernate in caves in Georgia.

DRAFT Bald Eagle Management Plan

Rocky Mountain Project (FERC No. 2725)

Introduction

Oglethorpe Power Corporation (OPC) proposes to implement a Bald Eagle (*Haliaeetus leucocephalus*) management plan for the Rocky Mountain Project to conserve and protect habitat for the species within the project boundary. The Bald Eagle is protected under the federal Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. This plan describes the specific measures to be implemented and provides a schedule for annual monitoring and reporting.

Specific Measures

The management activities will focus on land management practices on OPC-owned lands within the project boundary that avoid disturbance at active Bald Eagle nest sites known to occur within the project boundary, as follows:

- Super canopy trees will be left on the shoreline of the Auxiliary Pools and near the shoreline of the Lower Reservoir above the normal maximum pool elevation.¹
- OPC will monitor annually for the presence of active Bald Eagle nests and roost sites within the project boundary in partnership with biologists of the Georgia Department of Natural Resources Wildlife Resources Division (WRD) and U.S. Fish and Wildlife Service (FWS).
 - Surveys will be conducted once each year during the nesting season (mid-winter). Survey methods will consist of two biologists walking or boating along the shorelines of the Auxiliary Pools and Lower Reservoir, observing and documenting the location of any Bald Eagle nests or Bald Eagles detected.
 - OPC will report survey results annually to WRD and FWS. OPC will communicate with WRD personnel regarding any observations of Bald Eagle nesting and roosting at the Project as part of WRD's statewide monitoring program or during WRD management activities at the Project. This information also will be summarized in the monitoring report.
 - The annual report will be distributed to WRD and FWS and filed with the Federal Energy Regulatory Commission (FERC) by April 30 each year as privileged, non-public information.

¹ The Upper Reservoir is formed by a continuous earth and rockfill dam without shoreline forest vegetation.

- To avoid disturbing nesting Bald Eagles on OPC lands within the project boundary, OPC will implement current FWS national Bald Eagle management guidance pertaining to prescribed buffers and activity-specific guidelines. Attachment 1 provides the current FWS national guidance (2007). The guidance will be followed for activities potentially occurring within the primary and secondary zones around Bald Eagle nests, as applicable. These activities may include tree cutting or removal,² building construction or renovation, off-road vehicle use, non-motorized recreation and human entry, and similar activities.
- Motorized watercraft are not expected to disturb Bald Eagle nests around the Auxiliary Pools because eagles have demonstrated tolerance for such activity. No watercraft are allowed on the Lower Reservoir or Upper Reservoir. Therefore, management activities will not include posting signs or public communications about eagle nest locations so as to avoid drawing attention that could result in disturbance.

Schedule

Annual monitoring will be conducted during the nesting season (mid-winter) and reporting will be completed by April 30. OPC will file the annual monitoring report with FERC as privileged, non-public information.

² Tree-cutting/removal limitations required by FWS guidance for the protection of federally endangered bat species may also apply during other time periods different from the current FWS Bald Eagle management guidelines.

ATTACHMENT 1

**U.S. FISH AND WILDLIFE SERVICE (2007)
NATIONAL BALD EAGLE MANAGEMENT GUIDELINES**

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NATIONAL BALD EAGLE MANAGEMENT GUIDELINES

U.S. Fish and Wildlife Service

May 2007

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INTRODUCTION

The bald eagle (*Haliaeetus leucocephalus*) is protected by the Bald and Golden Eagle Protection Act (Eagle Act) and the Migratory Bird Treaty Act (MBTA). The MBTA and the Eagle Act protect bald eagles from a variety of harmful actions and impacts. The U.S. Fish and Wildlife Service (Service) developed these National Bald Eagle Management Guidelines to advise landowners, land managers, and others who share public and private lands with bald eagles when and under what circumstances the protective provisions of the Eagle Act may apply to their activities. A variety of human activities can potentially interfere with bald eagles, affecting their ability to forage, nest, roost, breed, or raise young. The Guidelines are intended to help people minimize such impacts to bald eagles, particularly where they may constitute “disturbance,” which is prohibited by the Eagle Act.

The Guidelines are intended to:

- (1) Publicize the provisions of the Eagle Act that continue to protect bald eagles, in order to reduce the possibility that people will violate the law,
- (2) Advise landowners, land managers and the general public of the potential for various human activities to disturb bald eagles, and
- (3) Encourage additional nonbinding land management practices that benefit bald eagles (see Additional Recommendations section).

While the Guidelines include general recommendations for land management practices that will benefit bald eagles, the document is intended primarily as a tool for landowners and planners who seek information and recommendations regarding how to avoid disturbing bald eagles. Many States and some tribal entities have developed state-specific management plans, regulations, and/or guidance for landowners and land managers to protect and enhance bald eagle habitat, and we encourage the continued development and use of these planning tools to benefit bald eagles.

Adherence to the Guidelines herein will benefit individuals, agencies, organizations, and companies by helping them avoid violations of the law. However, the Guidelines themselves are not law. Rather, they are recommendations based on several decades of behavioral observations, science, and conservation measures to avoid or minimize adverse impacts to bald eagles.

The U.S. Fish and Wildlife Service strongly encourages adherence to these guidelines to ensure that bald and golden eagle populations will continue to be sustained. The Service realizes there may be impacts to some birds even if all reasonable measures are taken to avoid such impacts. Although it is not possible to absolve individuals and entities from liability under the Eagle Act or the MBTA, the Service exercises enforcement discretion to focus on those individuals, companies, or agencies that take migratory birds without regard for the consequences of their actions and the law, especially when conservation measures, such as these Guidelines, are available, but have not been implemented. The Service will prioritize its enforcement efforts to focus on those individuals or entities who take bald eagles or their parts, eggs, or nests without implementing appropriate measures recommended by the Guidelines.

The Service intends to pursue the development of regulations that would authorize, under limited circumstances, the use of permits if “take” of an eagle is anticipated but unavoidable. Additionally, if the bald eagle is delisted, the Service intends to provide a regulatory mechanism to honor existing (take) authorizations under the Endangered Species Act (ESA).

During the interim period until the Service completes a rulemaking for permits under the Eagle Act, the Service does not intend to refer for prosecution the incidental “take” of any bald eagle under the MBTA or Eagle Act, if such take is in full compliance with the terms and conditions of an incidental take statement issued to the action agency or applicant under the authority of section 7(b)(4) of the ESA or a permit issued under the authority of section 10(a)(1)(B) of the ESA.

The Guidelines are applicable throughout the United States, including Alaska. The primary purpose of these Guidelines is to provide information that will minimize or prevent violations only of *Federal* laws governing bald eagles. In addition to Federal laws, many states and some smaller jurisdictions and tribes have additional laws and regulations protecting bald eagles. In some cases those laws and regulations may be more protective (restrictive) than these Federal guidelines. If you are planning activities that may affect bald eagles, we therefore recommend that you contact both your nearest U.S. Fish and Wildlife Service Field Office (see the contact information on p.16) and your state wildlife agency for assistance.

LEGAL PROTECTIONS FOR THE BALD EAGLE

The Bald and Golden Eagle Protection Act

The Eagle Act (16 U.S.C. 668-668c), enacted in 1940, and amended several times since then, prohibits anyone, without a permit issued by the Secretary of the Interior, from “taking” bald eagles, including their parts, nests, or eggs. The Act provides criminal and civil penalties for persons who “take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof.” The Act defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” “Disturb” means:

"Disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle=s return, such alterations agitate or bother an eagle to a degree that injures an eagle or substantially interferes with normal breeding, feeding, or sheltering habits and causes, or is likely to cause, a loss of productivity or nest abandonment.

A violation of the Act can result in a criminal fine of \$100,000 (\$200,000 for organizations), imprisonment for one year, or both, for a first offense. Penalties increase substantially for additional offenses, and a second violation of this Act is a felony.

The Migratory Bird Treaty Act

The MBTA (16 U.S.C. 703-712), prohibits the taking of any migratory bird or any part, nest, or egg, except as permitted by regulation. The MBTA was enacted in 1918; a 1972 agreement supplementing one of the bilateral treaties underlying the MBTA had the effect of expanding the scope of the Act to cover bald eagles and other raptors. Implementing regulations define “take” under the MBTA as “pursue, hunt, shoot, wound, kill, trap, capture, possess, or collect.”

Copies of the Eagle Act and the MBTA are available at: <http://permits.fws.gov/ltr/ltr.shtml>.

State laws and regulations

Most states have their own regulations and/or guidelines for bald eagle management. Some states may continue to list the bald eagle as endangered, threatened, or of special concern. If you plan activities that may affect bald eagles, we urge you to familiarize yourself with the regulations and/or guidelines that apply to bald eagles in your state. Your adherence to the Guidelines herein does not ensure that you are in compliance with state laws and regulations because state regulations can be more specific and/or restrictive than these Guidelines.

NATURAL HISTORY OF THE BALD EAGLE

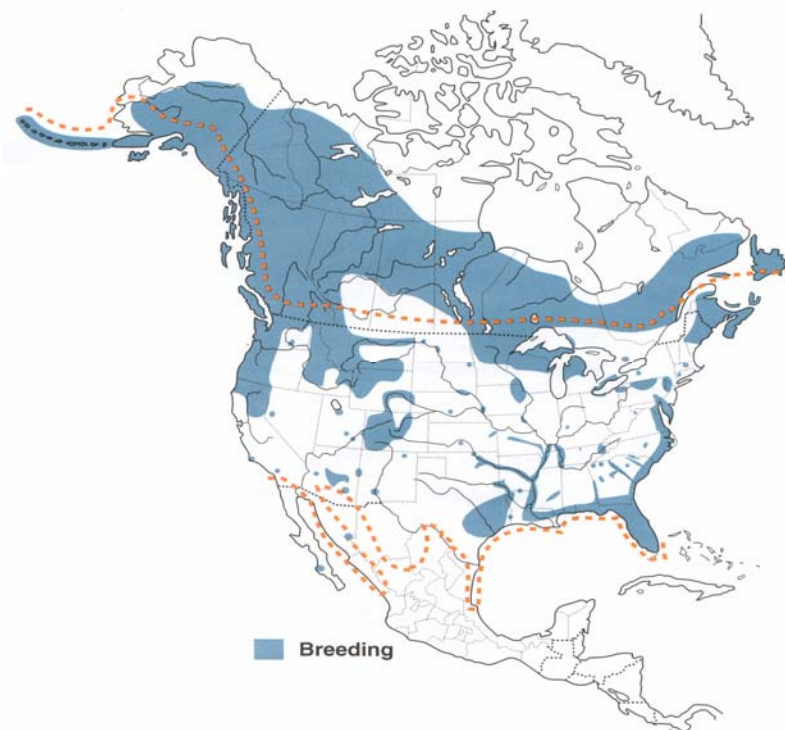
Bald eagles are a North American species that historically occurred throughout the contiguous United States and Alaska. After severely declining in the lower 48 States between the 1870s and the 1970s, bald eagles have rebounded and re-established breeding territories in each of the lower 48 states. The largest North American breeding populations are in Alaska and Canada, but there are also significant bald eagle populations in Florida, the Pacific Northwest, the Greater Yellowstone area, the Great Lakes states, and the Chesapeake Bay region. Bald eagle distribution varies seasonally. Bald eagles that nest in southern latitudes frequently move northward in late spring and early summer, often summering as far north as Canada. Most eagles that breed at northern latitudes migrate southward during winter, or to coastal areas where waters remain unfrozen. Migrants frequently concentrate in large numbers at sites where food is abundant and they often roost together communally. In some cases, concentration areas are used year-round: in summer by southern eagles and in winter by northern eagles.

Juvenile bald eagles have mottled brown and white plumage, gradually acquiring their dark brown body and distinctive white head and tail as they mature. Bald eagles generally attain adult plumage by 5 years of age. Most are capable of breeding at 4 or 5 years of age, but in healthy populations they may not start breeding until much older. Bald eagles may live 15 to 25 years in the wild. Adults weigh 8 to 14 pounds (occasionally reaching 16 pounds in Alaska) and have wingspans of 5 to 8 feet. Those in the northern range are larger than those in the south, and females are larger than males.

Where do bald eagles nest?

Breeding bald eagles occupy “territories,” areas they will typically defend against intrusion by other eagles. In addition to the active nest, a territory may include one or more alternate nests (nests built or maintained by the eagles but not used for nesting in a given year). The Eagle Act prohibits removal or destruction of both active and alternate bald eagle nests. Bald eagles exhibit high nest site fidelity and nesting territories are often used year after year. Some territories are known to have been used continually for over half a century.

Bald eagles generally nest near coastlines, rivers, large lakes or streams that support an adequate food supply. They often nest in mature or old-growth trees; snags (dead trees); cliffs; rock promontories; rarely on the ground; and with increasing frequency on human-made structures such as power poles and communication towers. In forested areas, bald eagles often select the tallest trees with limbs strong enough to support a nest that can weigh more than 1,000 pounds. Nest sites typically include at least one perch with a clear view of the water where the eagles usually forage. Shoreline trees or snags located in reservoirs provide the visibility and accessibility needed to locate aquatic prey. Eagle nests are constructed with large sticks, and may be lined with moss, grass, plant stalks, lichens, seaweed, or sod. Nests are usually about 4-6 feet in diameter and 3 feet deep, although larger nests exist.



Copyright *Birds of North America*, 2000

The range of breeding bald eagles in 2000 (shaded areas). This map shows only the larger concentrations of nests; eagles have continued to expand into additional nesting territories in many states. The dotted line represents the bald eagle’s wintering range.

When do bald eagles nest?

Nesting activity begins several months before egg-laying. Egg-laying dates vary throughout the U.S., ranging from October in Florida, to late April or even early May in the northern United States. Incubation typically lasts 33-35 days, but can be as long as 40 days. Eaglets make their first unsteady flights about 10 to 12 weeks after hatching, and fledge (leave their nests) within a few days after that first flight. However, young birds usually remain in the vicinity of the nest for several weeks after fledging because they are almost completely dependent on their parents for food until they disperse from the nesting territory approximately 6 weeks later.

The bald eagle breeding season tends to be longer in the southern U.S., and re-nesting following an unsuccessful first nesting attempt is more common there as well. The following table shows the timing of bald eagle breeding seasons in different regions of the country. The table represents the range of time within which the majority of nesting activities occur in each region and does not apply to any specific nesting pair. Because the timing of nesting activities may vary within a given region, you should contact the nearest U.S. Fish and Wildlife Service Field Office (see page 16) and/or your state wildlife conservation agency for more specific information on nesting chronology in your area.

Chronology of typical reproductive activities of bald eagles in the United States.

Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.
SOUTHEASTERN U.S. (FL, GA, SC, NC, AL, MS, LA, TN, KY, AR, eastern 2 of TX)											
Nest Building											
		Egg Laying/Incubation									
				Hatching/Rearing Young							
					Fledging Young						
CHESAPEAKE BAY REGION (NC, VA, MD, DE, southern 2 of NJ, eastern 2 of PA, panhandle of WV)											
				Nest Building							
						Egg Laying/Incubation					
								Hatching/Rearing Young			
									Fledging Young		
NORTHERN U.S. (ME, NH, MA, RI, CT, NY, northern 2 of NJ, western 2 of PA, OH, WV exc. panhandle, IN, IL, MI, WI, MN, IA, MO, ND, SD, NB, KS, CO, UT)											
				Nest Building							
						Egg Laying/Incubation					
								Hatching/Rearing Young			
										Fledging Young	
PACIFIC REGION (WA, OR, CA, ID, MT, WY, NV)											
				Nest Building							
						Egg Laying/Incubation					
								Hatching/Rearing Young			
										Fledging Young	
SOUTHWESTERN U.S. (AZ, NM, OK panhandle, western 2 of TX)											
				Nest Building							
						Egg Laying/Incubation					
								Hatching/Rearing Young			
									Fledging Young		
ALASKA											
						Nest Building					
								Egg Laying/Incubation			
										Hatching/Rearing Young	
Ing Young											Fledg-
Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.

How many chicks do bald eagles raise?

The number of eagle eggs laid will vary from 1-3, with 1-2 eggs being the most common. Only one eagle egg is laid per day, although not always on successive days. Hatching of young occurs on different days with the result that chicks in the same nest are sometimes of unequal size. The overall national fledging rate is approximately one chick per nest, annually, which results in a healthy expanding population.

What do bald eagles eat?

Bald eagles are opportunistic feeders. Fish comprise much of their diet, but they also eat waterfowl, shorebirds/colonial waterbirds, small mammals, turtles, and carrion. Because they are visual hunters, eagles typically locate their prey from a conspicuous perch, or soaring flight, then swoop down and strike. Wintering bald eagles often congregate in large numbers along streams to feed on spawning salmon or other fish species, and often gather in large numbers in areas below reservoirs, especially hydropower dams, where fish are abundant. Wintering eagles also take birds from rafts of ducks at reservoirs and rivers, and congregate on melting ice shelves to scavenge dead fish from the current or the soft melting ice. Bald eagles will also feed on carcasses along roads, in landfills, and at feedlots.

During the breeding season, adults carry prey to the nest to feed the young. Adults feed their chicks by tearing off pieces of food and holding them to the beaks of the eaglets. After fledging, immature eagles are slow to develop hunting skills, and must learn to locate reliable food sources and master feeding techniques. Young eagles will congregate together, often feeding upon easily acquired food such as carrion and fish found in abundance at the mouths of streams and shallow bays and at landfills.

The impact of human activity on nesting bald eagles

During the breeding season, bald eagles are sensitive to a variety of human activities. However, not all bald eagle pairs react to human activities in the same way. Some pairs nest successfully just dozens of yards from human activity, while others abandon nest sites in response to activities much farther away. This variability may be related to a number of factors, including visibility, duration, noise levels, extent of the area affected by the activity, prior experiences with humans, and tolerance of the individual nesting pair. The relative sensitivity of bald eagles during various stages of the breeding season is outlined in the following table.

Nesting Bald Eagle Sensitivity to Human Activities

Phase	Activity	Sensitivity to Human Activity	Comments
I	Courtship and Nest Building	Most sensitive period; likely to respond negatively	Most critical time period. Disturbance is manifested in nest abandonment. Bald eagles in newly established territories are more prone to abandon nest sites.
II	Egg laying	Very sensitive period	Human activity of even limited duration may cause nest desertion and abandonment of territory for the breeding season.
III	Incubation and early nestling period (up to 4 weeks)	Very sensitive period	Adults are less likely to abandon the nest near and after hatching. However, flushed adults leave eggs and young unattended; eggs are susceptible to cooling, loss of moisture, overheating, and predation; young are vulnerable to elements.
IV	Nestling period, 4 to 8 weeks	Moderately sensitive period	Likelihood of nest abandonment and vulnerability of the nestlings to elements somewhat decreases. However, nestlings may miss feedings, affecting their survival.
V	Nestlings 8 weeks through fledging	Very sensitive period	Gaining flight capability, nestlings 8 weeks and older may flush from the nest prematurely due to disruption and die.

If agitated by human activities, eagles may inadequately construct or repair their nest, may expend energy defending the nest rather than tending to their young, or may abandon the nest altogether. Activities that cause prolonged absences of adults from their nests can jeopardize eggs or young. Depending on weather conditions, eggs may overheat or cool too much and fail to hatch. Unattended eggs and nestlings are subject to predation. Young nestlings are particularly vulnerable because they rely on their parents to provide warmth or shade, without which they may die as a result of hypothermia or heat stress. If food delivery schedules are interrupted, the young may not develop healthy plumage, which can affect their survival. In addition, adults startled while incubating or brooding young may damage eggs or injure their young as they abruptly leave the nest. Older nestlings no longer require constant attention from the adults, but they may be startled by loud or intrusive human activities and prematurely jump from the nest before they are able to fly or care for themselves. Once fledged, juveniles range up to ¼ mile from the nest site, often to a site with minimal human activity. During this period, until about six weeks after departure from the nest, the juveniles still depend on the adults to feed them.

The impact of human activity on foraging and roosting bald eagles

Disruption, destruction, or obstruction of roosting and foraging areas can also negatively affect bald eagles. Disruptive activities in or near eagle foraging areas can interfere with feeding, reducing chances of survival. Interference with feeding can also result in reduced productivity (number of young successfully fledged). Migrating and wintering bald eagles often congregate at specific sites for purposes of feeding and sheltering. Bald eagles rely on established roost sites because of their proximity to sufficient food sources. Roost sites are usually in mature trees where the eagles are somewhat sheltered from the wind and weather. Human activities near or within communal roost sites may prevent eagles

from feeding or taking shelter, especially if there are not other undisturbed and productive feeding and roosting sites available. Activities that permanently alter communal roost sites and important foraging areas can altogether eliminate the elements that are essential for feeding and sheltering eagles.

Where a human activity agitates or bothers roosting or foraging bald eagles to the degree that causes injury or substantially interferes with breeding, feeding, or sheltering behavior and causes, or is likely to cause, a loss of productivity or nest abandonment, the conduct of the activity constitutes a violation of the Eagle Act's prohibition against disturbing eagles. The circumstances that might result in such an outcome are difficult to predict without detailed site-specific information. If your activities may disturb roosting or foraging bald eagles, you should contact your local Fish and Wildlife Service Field Office (see page 16) for advice and recommendations for how to avoid such disturbance.

RECOMMENDATIONS FOR AVOIDING DISTURBANCE AT NEST SITES

In developing these Guidelines, we relied on existing state and regional bald eagle guidelines, scientific literature on bald eagle disturbance, and recommendations of state and Federal biologists who monitor the impacts of human activity on eagles. Despite these resources, uncertainties remain regarding the effects of many activities on eagles and how eagles in different situations may or may not respond to certain human activities. The Service recognizes this uncertainty and views the collection of better biological data on the response of eagles to disturbance as a high priority. To the extent that resources allow, the Service will continue to collect data on responses of bald eagles to human activities conducted according to the recommendations within these Guidelines to ensure that adequate protection from disturbance is being afforded, and to identify circumstances where the Guidelines might be modified. These data will be used to make future adjustments to the Guidelines.

To avoid disturbing nesting bald eagles, we recommend (1) keeping a distance between the activity and the nest (distance buffers), (2) maintaining preferably forested (or natural) areas between the activity and around nest trees (landscape buffers), and (3) avoiding certain activities during the breeding season. The buffer areas serve to minimize visual and auditory impacts associated with human activities near nest sites. Ideally, buffers would be large enough to protect existing nest trees and provide for alternative or replacement nest trees.

The size and shape of effective buffers vary depending on the topography and other ecological characteristics surrounding the nest site. In open areas where there are little or no forested or topographical buffers, such as in many western states, distance alone must serve as the buffer. Consequently, in open areas, the distance between the activity and the nest may need to be larger than the distances recommended under Categories A and B of these guidelines (pg. 12) if no landscape buffers are present. The height of the nest above the ground may also ameliorate effects of human activities; eagles at higher nests may be less prone to disturbance.

In addition to the physical features of the landscape and nest site, the appropriate size for the distance buffer may vary according to the historical tolerances of eagles to human activities in particular localities, and may also depend on the location of the nest in relation

to feeding and roosting areas used by the eagles. Increased competition for nest sites may lead bald eagles to nest closer to human activity (and other eagles).

Seasonal restrictions can prevent the potential impacts of many shorter-term, obtrusive activities that do not entail landscape alterations (e.g. fireworks, outdoor concerts). In proximity to the nest, these kinds of activities should be conducted only outside the breeding season. For activities that entail both short-term, obtrusive characteristics and more permanent impacts (e.g., building construction), we recommend a combination of both approaches: retaining a landscape buffer *and* observing seasonal restrictions.

For assistance in determining the appropriate size and configuration of buffers or the timing of activities in the vicinity of a bald eagle nest, we encourage you to contact the nearest U.S. Fish and Wildlife Service Field Office (see page 16).

Existing Uses

Eagles are unlikely to be disturbed by routine use of roads, homes, and other facilities where such use pre-dates the eagles' successful nesting activity in a given area. Therefore, in most cases *ongoing* existing uses may proceed with the same intensity with little risk of disturbing bald eagles. However, some *intermittent, occasional, or irregular* uses that pre-date eagle nesting in an area may disturb bald eagles. For example: a pair of eagles may begin nesting in an area and subsequently be disturbed by activities associated with an annual outdoor flea market, even though the flea market has been held annually at the same location. In such situations, human activity should be adjusted or relocated to minimize potential impacts on the nesting pair.

ACTIVITY-SPECIFIC GUIDELINES

The following section provides the Service's management recommendations for avoiding bald eagle disturbance as a result of new or intermittent activities proposed in the vicinity of bald eagle nests. Activities are separated into 8 categories (A – H) based on the nature and magnitude of impacts to bald eagles that usually result from the type of activity. Activities with similar or comparable impacts are grouped together.

In most cases, impacts will vary based on the visibility of the activity from the eagle nest and the degree to which similar activities are already occurring in proximity to the nest site. Visibility is a factor because, in general, eagles are more prone to disturbance when an activity occurs in full view. For this reason, we recommend that people locate activities farther from the nest structure in areas with open vistas, in contrast to areas where the view is shielded by rolling topography, trees, or other screening factors. The recommendations also take into account the existence of similar activities in the area because the continued presence of nesting bald eagles in the vicinity of the existing activities indicates that the eagles in that area can tolerate a greater degree of human activity than we can generally expect from eagles in areas that experience fewer human impacts. To illustrate how these factors affect the likelihood of disturbing eagles, we have incorporated the recommendations for some activities into a table (categories A and B).

First, determine which category your activity falls into (between categories A – H). If the activity you plan to undertake is not specifically addressed in these guidelines, follow the recommendations for the most similar activity represented.

If your activity is under A or B, our recommendations are in table form. The vertical axis shows the degree of visibility of the activity from the nest. The horizontal axis (header row) represents the degree to which similar activities are ongoing in the vicinity of the nest. Locate the row that best describes how visible your activity will be from the eagle nest. Then, choose the column that best describes the degree to which similar activities are ongoing in the vicinity of the eagle nest. The box where the column and row come together contains our management recommendations for how far you should locate your activity from the nest to avoid disturbing the eagles. The numerical distances shown in the tables are the closest the activity should be conducted relative to the nest. In some cases we have included additional recommendations (other than recommended *distance* from the nest) you should follow to help ensure that your activity will not disturb the eagles.

Alternate nests

For activities that entail permanent landscape alterations that may result in bald eagle disturbance, these recommendations apply to both active and alternate bald eagle nests. Disturbance becomes an issue with regard to alternate nests if eagles return for breeding purposes and react to land use changes that occurred while the nest was inactive. The likelihood that an alternate nest will again become active decreases the longer it goes unused. If you plan activities in the vicinity of an alternate bald eagle nest and have information to show that the nest has not been active during the preceding 5 breeding seasons, the recommendations provided in these guidelines for avoiding disturbance around the nest site may no longer be warranted. The nest itself remains protected by other provisions of the Eagle Act, however, and may not be destroyed.

If special circumstances exist that make it unlikely an inactive nest will be reused before 5 years of disuse have passed, and you believe that the probability of reuse is low enough to warrant disregarding the recommendations for avoiding disturbance, you should be prepared to provide all the reasons for your conclusion, including information regarding past use of the nest site. Without sufficient documentation, you should continue to follow these guidelines when conducting activities around the nest site. If we are able to determine that it is unlikely the nest will be reused, we may advise you that the recommendations provided in these guidelines for avoiding disturbance are no longer necessary around that nest site.

This guidance is intended to minimize disturbance, as defined by Federal regulation. In addition to Federal laws, most states and some tribes and smaller jurisdictions have additional laws and regulations protecting bald eagles. In some cases those laws and regulations may be more protective (restrictive) than these Federal guidelines.

Temporary Impacts

For activities that have temporary impacts, such as the use of loud machinery, fireworks displays, or summer boating activities, we recommend seasonal restrictions. These types of activities can generally be carried out outside of the breeding season without causing disturbance. The recommended restrictions for these types of activities can be lifted for alternate nests within a particular territory, including nests that were attended during the current breeding season but not used to raise young, after eggs laid in another nest within the territory have hatched (depending on the distance between the alternate nest and the active nest).

In general, activities should be kept as far away from nest trees as possible; loud and disruptive activities should be conducted when eagles are not nesting; and activity between the nest and the nearest foraging area should be minimized. If the activity you plan to undertake is not specifically addressed in these guidelines, follow the recommendations for the most similar activity addressed, or contact your local U.S. Fish and Wildlife Service Field Office for additional guidance.

If you believe that special circumstances apply to your situation that increase or diminish the likelihood of bald eagle disturbance, or if it is not possible to adhere to the guidelines, you should contact your local Service Field Office for further guidance.

Category A:

- Building construction, 1 or 2 story, with project footprint of ½ acre or less.
- Construction of roads, trails, canals, power lines, and other linear utilities.
- Agriculture and aquaculture – new or expanded operations.
- Alteration of shorelines or wetlands.
- Installation of docks or moorings.
- Water impoundment.

Category B:

- Building construction, 3 or more stories.
- Building construction, 1 or 2 story, with project footprint of more than ½ acre.
- Installation or expansion of marinas with a capacity of 6 or more boats.
- Mining and associated activities.
- Oil and natural gas drilling and refining and associated activities.

	<i>If there is no similar activity within 1 mile of the nest</i>	<i>If there is similar activity closer than 1 mile from the nest</i>
<i>If the activity will be visible from the nest</i>	660 feet. Landscape buffers are recommended.	660 feet, or as close as existing tolerated activity of similar scope. Landscape buffers are recommended.
<i>If the activity will not be visible from the nest</i>	Category A: 330 feet. Clearing, external construction, and landscaping between 330 feet and 660 feet should be done outside breeding season. Category B: 660 feet.	330 feet, or as close as existing tolerated activity of similar scope. Clearing, external construction and landscaping within 660 feet should be done outside breeding season.

The numerical distances shown in the table are the closest the activity should be conducted relative to the nest.

Category C. Timber Operations and Forestry Practices

- Avoid clear cutting or removal of overstory trees within 330 feet of the nest at any time.
- Avoid timber harvesting operations, including road construction and chain saw and yarding operations, during the breeding season within 660 feet of the nest. The distance may be decreased to 330 feet around alternate nests within a particular territory, including nests that were attended during the current breeding season but not used to raise young, after eggs laid in another nest within the territory have hatched.
- Selective thinning and other silviculture management practices designed to conserve or enhance habitat, including prescribed burning close to the nest tree, should be undertaken outside the breeding season. Precautions such as raking leaves and woody debris from around the nest tree should be taken to prevent crown fire or fire climbing the nest tree. If it is determined that a burn during the breeding season would be beneficial, then, to ensure that no take or disturbance will occur, these activities should be conducted only when neither adult eagles nor young are present at the nest tree (i.e., at the beginning of, or end of, the breeding season, either before the particular nest is active or after the young have fledged from that nest). Appropriate Federal and state biologists should be consulted before any prescribed burning is conducted during the breeding season.
- Avoid construction of log transfer facilities and in-water log storage areas within 330 feet of the nest.

Category D. Off-road vehicle use (including snowmobiles). No buffer is necessary around nest sites outside the breeding season. During the breeding season, do not operate off-road vehicles within 330 feet of the nest. In open areas, where there is increased visibility and exposure to noise, this distance should be extended to 660 feet.

Category E. Motorized Watercraft use (including jet skis/personal watercraft). No buffer is necessary around nest sites outside the breeding season. During the breeding season, within 330 feet of the nest, (1) do not operate jet skis (personal watercraft), and (2) avoid concentrations of noisy vessels (e.g., commercial fishing boats and tour boats), except where eagles have demonstrated tolerance for such activity. Other motorized boat traffic passing within 330 feet of the nest should attempt to minimize trips and avoid stopping in the area where feasible, particularly where eagles are unaccustomed to boat traffic. Buffers for airboats should be larger than 330 feet due to the increased noise they generate, combined with their speed, maneuverability, and visibility.

Category F. Non-motorized recreation and human entry (e.g., hiking, camping, fishing, hunting, birdwatching, kayaking, canoeing). No buffer is necessary around nest sites outside the breeding season. If the activity will be visible or highly audible from the nest, maintain a 330-foot buffer during the breeding season, particularly where eagles are unaccustomed to such activity.

Category G. Helicopters and fixed-wing aircraft.

Except for authorized biologists trained in survey techniques, avoid operating aircraft within 1,000 feet of the nest during the breeding season, except where eagles have demonstrated tolerance for such activity.

Category H. Blasting and other loud, intermittent noises.

Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area. This recommendation applies to the use of fireworks classified by the Federal Department of Transportation as Class B explosives, which includes the larger fireworks that are intended for licensed public display.

RECOMMENDATIONS FOR AVOIDING DISTURBANCE AT FORAGING AREAS AND COMMUNAL ROOST SITES

1. Minimize potentially disruptive activities and development in the eagles' direct flight path between their nest and roost sites and important foraging areas.
2. Locate long-term and permanent water-dependent facilities, such as boat ramps and marinas, away from important eagle foraging areas.
3. Avoid recreational and commercial boating and fishing near critical eagle foraging areas during peak feeding times (usually early to mid-morning and late afternoon), except where eagles have demonstrated tolerance to such activity.
4. Do not use explosives within ½ mile (or within 1 mile in open areas) of communal roosts when eagles are congregating, without prior coordination with the U.S. Fish and Wildlife Service and your state wildlife agency.
5. Locate aircraft corridors no closer than 1,000 feet vertical or horizontal distance from communal roost sites.

ADDITIONAL RECOMMENDATIONS TO BENEFIT BALD EAGLES

The following are additional management practices that landowners and planners can exercise for added benefit to bald eagles.

1. Protect and preserve potential roost and nest sites by retaining mature trees and old growth stands, particularly within ½ mile from water.
2. Where nests are blown from trees during storms or are otherwise destroyed by the elements, continue to protect the site in the absence of the nest for up to three (3) complete breeding seasons. Many eagles will rebuild the nest and reoccupy the site.
3. To avoid collisions, site wind turbines, communication towers, and high voltage transmission power lines away from nests, foraging areas, and communal roost sites.
4. Employ industry-accepted best management practices to prevent birds from colliding with or being electrocuted by utility lines, towers, and poles. If possible, bury utility lines in important eagle areas.
5. Where bald eagles are likely to nest in human-made structures (e.g., cell phone towers) and such use could impede operation or maintenance of the structures or jeopardize the safety of the eagles, equip the structures with either (1) devices engineered to discourage bald eagles from building nests, or (2) nesting platforms that will safely accommodate bald eagle nests without interfering with structure performance.
6. Immediately cover carcasses of euthanized animals at landfills to protect eagles from being poisoned.
7. Do not intentionally feed bald eagles. Artificially feeding bald eagles can disrupt their essential behavioral patterns and put them at increased risk from power lines, collision with windows and cars, and other mortality factors.
8. Use pesticides, herbicides, fertilizers, and other chemicals only in accordance with Federal and state laws.
9. Monitor and minimize dispersal of contaminants associated with hazardous waste sites (legal or illegal), permitted releases, and runoff from agricultural areas, especially within watersheds where eagles have shown poor reproduction or where bioaccumulating contaminants have been documented. These factors present a risk of contamination to eagles and their food sources.

CONTACTS

The following U.S. Fish and Wildlife Service Field Offices provide technical assistance on bald eagle management:

<u>Alabama</u>	Daphne	(251) 441-5181	<u>New Hampshire</u>	Concord	(603) 223-2541
<u>Alaska</u>	Anchorage	(907) 271-2888	<u>New Jersey</u>	Pleasantville	(609) 646-9310
	Fairbanks	(907) 456-0203	<u>New Mexico</u>	Albuquerque	(505) 346-2525
	Juneau	(907) 780-1160	<u>New York</u>	Cortland	(607) 753-9334
<u>Arizona</u>	Phoenix	(602) 242-0210		Long Island	(631) 776-1401
<u>Arkansas</u>	Conway	(501) 513-4470	<u>North Carolina</u>	Raleigh	(919) 856-4520
<u>California</u>	Arcata	(707) 822-7201		Asheville	(828) 258-3939
	Barstow	(760) 255-8852	<u>North Dakota</u>	Bismarck	(701) 250-4481
	Carlsbad	(760) 431-9440	<u>Ohio</u>	Reynoldsburg	(614) 469-6923
	Red Bluff	(530) 527-3043	<u>Oklahoma</u>	Tulsa	(918) 581-7458
	Sacramento	(916) 414-6000	<u>Oregon</u>	Bend	(541) 383-7146
	Stockton	(209) 946-6400		Klamath Falls	(541) 885-8481
	Ventura	(805) 644-1766		La Grande	(541) 962-8584
	Yreka	(530) 842-5763		Newport	(541) 867-4558
<u>Colorado</u>	Lakewood	(303) 275-2370		Portland	(503) 231-6179
	Grand Junction	(970) 243-2778		Roseburg	(541) 957-3474
<u>Connecticut</u>	(See New Hampshire)		<u>Pennsylvania</u>	State College	(814) 234-4090
<u>Delaware</u>	(See Maryland)		<u>Rhode Island</u>	(See New Hampshire)	
<u>Florida</u>	Panama City	(850) 769-0552	<u>South Carolina</u>	Charleston	(843) 727-4707
	Vero Beach	(772) 562-3909	<u>South Dakota</u>	Pierre	(605) 224-8693
	Jacksonville	(904) 232-2580	<u>Tennessee</u>	Cookeville	(931) 528-6481
<u>Georgia</u>	Athens	(706) 613-9493	<u>Texas</u>	Clear Lake	(281) 286-8282
	Brunswick	(912) 265-9336	<u>Utah</u>	West Valley City	(801) 975-3330
	Columbus	(706) 544-6428	<u>Vermont</u>	(See New Hampshire)	
<u>Idaho</u>	Boise	(208) 378-5243	<u>Virginia</u>	Gloucester	(804) 693-6694
	Chubbuck	(208) 237-6975	<u>Washington</u>	Lacey	(306) 753-9440
<u>Illinois/Iowa</u>	Rock Island	(309) 757-5800		Spokane	(509) 891-6839
<u>Indiana</u>	Bloomington	(812) 334-4261		Wenatchee	(509) 665-3508
<u>Kansas</u>	Manhattan	(785) 539-3474	<u>West Virginia</u>	Elkins	(304) 636-6586
<u>Kentucky</u>	Frankfort	(502) 695-0468	<u>Wisconsin</u>	New Franken	(920) 866-1725
<u>Louisiana</u>	Lafayette	(337) 291-3100	<u>Wyoming</u>	Cheyenne	(307) 772-2374
<u>Maine</u>	Old Town	(207) 827-5938		Cody	(307) 578-5939
<u>Maryland</u>	Annapolis	(410) 573-4573			
<u>Massachusetts</u>	(See New Hampshire)				
<u>Michigan</u>	East Lansing	(517) 351-2555			
<u>Minnesota</u>	Bloomington	(612) 725-3548			
<u>Mississippi</u>	Jackson	(601) 965-4900			
<u>Missouri</u>	Columbia	(573) 234-2132			
<u>Montana</u>	Helena	(405) 449-5225			
<u>Nebraska</u>	Grand Island	(308) 382-6468			
<u>Nevada</u>	Las Vegas	(702) 515-5230			
	Reno	(775) 861-6300			

<p><u>National Office</u> U.S. Fish and Wildlife Service Division of Migratory Bird Management 4401 North Fairfax Drive, MBSP-4107 Arlington, VA 22203-1610 (703) 358-1714 http://www.fws.gov/migratorybirds</p>
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State Agencies

To contact a state wildlife agency, visit the Association of Fish & Wildlife Agencies' website at http://www.fishwildlife.org/where_us.html

GLOSSARY

The definitions below apply to these National Bald Eagle Management Guidelines:

Communal roost sites – Areas where bald eagles gather and perch overnight – and sometimes during the day in the event of inclement weather. Communal roost sites are usually in large trees (live or dead) that are relatively sheltered from wind and are generally in close proximity to foraging areas. These roosts may also serve a social purpose for pair bond formation and communication among eagles. Many roost sites are used year after year.

Disturb – To agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.

In addition to immediate impacts, this definition also covers impacts that result from human-caused alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle=s return, such alterations agitate or bother an eagle to a degree that injures an eagle or substantially interferes with normal breeding, feeding, or sheltering habits and causes, or is likely to cause, a loss of productivity or nest abandonment.

Fledge – To leave the nest and begin flying. For bald eagles, this normally occurs at 10-12 weeks of age.

Fledgling – A juvenile bald eagle that has taken the first flight from the nest but is not yet independent.

Foraging area – An area where eagles feed, typically near open water such as rivers, lakes, reservoirs, and bays where fish and waterfowl are abundant, or in areas with little or no water (i.e., rangelands, barren land, tundra, suburban areas, etc.) where other prey species (e.g., rabbit, rodents) or carrion (such as at landfills) are abundant.

Landscape buffer – A natural or human-made landscape feature that screens eagles from human activity (e.g., strip of trees, hill, cliff, berm, sound wall).

Nest – A structure built, maintained, or used by bald eagles for the purpose of reproduction. An **active** nest is a nest that is attended (built, maintained or used) by a pair of bald eagles during a given breeding season, whether or not eggs are laid. An **alternate** nest is a nest that is not used for breeding by eagles during a given breeding season.

Nest abandonment – Nest abandonment occurs when adult eagles desert or stop attending a nest and do not subsequently return and successfully raise young in that nest for the duration of a breeding season. Nest abandonment can be caused by altering habitat near a nest, even if the alteration occurs prior to the breeding season. Whether the eagles migrate during the non-breeding season, or remain in the area throughout the non-breeding season, nest abandonment can occur at any point between the time the eagles return to the nesting site for the breeding season and the time when all progeny from the breeding season have

dispersed.

Project footprint – The area of land (and water) that will be permanently altered for a development project, including access roads.

Similar scope – In the vicinity of a bald eagle nest, an existing activity is of similar scope to a new activity where the types of impacts to bald eagles are similar in nature, and the impacts of the existing activity are of the same or greater magnitude than the impacts of the potential new activity. Examples: (1) An existing single-story home 200 feet from a nest is similar in scope to an additional single-story home 200 feet from the nest; (2) An existing multi-story, multi-family dwelling 150 feet from a nest has impacts of a greater magnitude than a potential new single-family home 200 feet from the nest; (3) One existing single-family home 200 feet from the nest has impacts of a lesser magnitude than three single-family homes 200 feet from the nest; (4) an existing single-family home 200 feet from a communal roost has impacts of a lesser magnitude than a single-family home 300 feet from the roost but 40 feet from the eagles' foraging area. The existing activities in examples (1) and (2) are of similar scope, while the existing activities in example (3) and (4) are not.

Vegetative buffer – An area surrounding a bald eagle nest that is wholly or largely covered by forest, vegetation, or other natural ecological characteristics, and separates the nest from human activities.

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From: [McCaslin, Tyler](#)
To: [Steven Layman](#); [Kelly Kirven](#)
Cc: [Barrows, Christina](#)
Subject: FW: Oglethorpe Power's Rocky Mountain Pumped Storage Hydroelectric Project Management Plans
Date: Monday, August 5, 2024 1:49:15 PM
Attachments: [image001.png](#)
[Attachment 1 - USFWS national-bald-eagle-management-guidelines_2007.pdf](#)
[Bald Eagle Management Plan_DRAFT.docx](#)
[Draft Bat Habitat Protection Measures.docx](#)
[Invasive Species Management Plan_DRAFT.docx](#)

For the consultation record

-Tyler

From: Barrows, Christina <christina.barrows@opc.com>
Sent: Monday, August 5, 2024 1:32 PM
To: Hakala, Jim <Jim.Hakala@dnr.ga.gov>; Peacock, Clint <Clint.Peacock@dnr.ga.gov>; Escobar, Anakela <anakela.escobar@dnr.ga.gov>; Dewey.Richardson@dnr.ga.gov; 'Bryant.bowen@dnr.ga.gov' <Bryant.bowen@dnr.ga.gov>
Cc: Jones, Craig <craig.jones@opc.com>; McCaslin, Tyler <tyler.mccaslin@opc.com>
Subject: Oglethorpe Power's Rocky Mountain Pumped Storage Hydroelectric Project Management Plans

Good Afternoon,

In Oglethorpe Power's effort to relicense the Rocky Mountain Pumped Storage Hydroelectric Project (FERC P-2725) located in Floyd County near Rome, Georgia, we would like for the Department of Natural Resources to review our Invasive Species Management Plan, Bat Management Plan, and Bald Eagle Management Plan. Please review the attached documents and let us know if you have any major concerns by 8/23/24. If you would like a refresher on the project description, project location, or concise background information, you can find it [here](#).

As always, we appreciate your time and would be happy to answer any questions you may have.

Thank you,

Christina Barrows

Environmental Specialist
Oglethorpe Power Corporation
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DRAFT Invasive Species Management Plan

Rocky Mountain Project (FERC No. 2725)

Introduction

Oglethorpe Power Corporation (OPC) proposes to implement an Invasive Species Management Plan for the purposes of:

- Periodic monitoring of terrestrial invasive exotic plant occurrences and treatment, as may be warranted, within the Rocky Mountain project boundary;
- Educating recreational users within the Rocky Mountain Recreation and Public Fishing Area (Rocky Mountain PFA) on preventing the transport of aquatic nuisance species into the Auxiliary Pools (Antioch Lake and Heath Lake);¹ and
- Periodic treatment, control, or removal of aquatic nuisance species, as may be warranted, to avoid or minimize interference with public recreational use and hydropower operations.

This plan describes the specific measures to be implemented and provides a schedule for agency consultation and reporting.

Specific Measures

Every three years following license issuance, OPC will consult with the Georgia Department of Natural Resources (GDNR) Wildlife Resources Division on the management of invasive species within the project boundary as follows:

Terrestrial Invasive Exotic Plant Occurrences

- OPC will consult with GDNR on periodically monitoring invasive exotic plant occurrences at project recreation facilities and other areas within the project boundary where infestations of terrestrial invasive exotic plants have been observed or reported to exceed 10 percent coverage of the herbaceous or mid-story vegetation stratum. Monitoring may include, but will not necessarily be limited to, areas recommended for invasive species control in GDNR's 2013 *Terrestrial Management Plan for Rocky Mountain Hydroelectric Plant and Recreation & Public Fishing Area* and infestations identified and mapped in OPC's *Terrestrial and Wetlands Resources Survey Study Report* (Corblu Ecology Group 2023).

¹ Auxiliary Pool I is also known as Antioch Lake and Auxiliary Pool II is also known as Heath Lake.

- OPC will monitor invasive exotic plant occurrences, as determined in consultation with GDNR.
- OPC will treat invasive exotic plant infestations periodically, as determined in consultation with GDNR, to minimize any interference with public access and recreation use within the Rocky Mountain PFA. Acceptable treatment methods may include limited herbicide application (by a licensed applicator), pulling, hand-cutting, or other means considered effective for controlling invasive exotic plant species while presenting no substantial risk to other environmental resources.

Aquatic Nuisance Species (Plant and Animal)

- Within one year of license issuance, OPC will consult with GDNR on designing and installing educational signage at each boat ramp and proposed new kayak launch on preventing the transport and introduction of aquatic nuisance species to the Auxiliary Pools (Antioch Lake and Heath Lake). The signage will encourage boaters and anglers to take simple actions (consistent with GDNR statewide aquatic nuisance species prevention efforts) to prevent the movement of aquatic nuisance species between waterbodies. Signage will be installed at each boat ramp within two years of license issuance and at each new kayak launch within one year of construction. OPC will maintain the signage for the license term.
- Every three years, or more frequently as warranted, OPC will consult with GDNR on any significant invasive aquatic and plant animal species occurrences observed by GDNR in the Auxiliary Pools during fisheries surveys or routine management activities. Should significant occurrences be detected, consultation will consider management implications and acceptable means of control, removal, or management, if warranted, to avoid or minimize interference with public recreational use and/or hydropower operations. Consultation will also consider any need to update the educational signage.

Schedule and Reporting

Every three years after issuance of the new license, by March 31 of the following year, OPC will prepare a draft Invasive Species Management Plan Report documenting the consultation for GDNR's review. The report will include any plans for monitoring or treatment, results of monitoring or treatment, and any updates planned for educational

signage. OPC will incorporate any necessary changes to the draft report in a final report and file the final report with the Federal Energy Regulatory Commission by September 30.

DRAFT

DRAFT Bat Habitat Protection Measures Rocky Mountain Project (FERC No. 2725)

<<Note to Reviewers: OPC proposes the following bat habitat protection measures for Exhibit E of the Final License Application (FLA), subject to agency consultation, to include seasonal restrictions for tree removal and protection of cave habitats. The project boundary contains known cave, rock shelter, and talus slope habitat on Rock Mountain but none of the federally listed or proposed-for-listing bat species are presently known to occupy this habitat within the project boundary.>>

Specific Measures to Propose in Exhibit E of FLA

OPC proposes the following specific measures to protect habitat for endangered Northern Long-eared Bat (*Myotis septentrionalis*), proposed endangered Tricolored Bat (*Perimyotis subflavus*), and endangered Gray Bat (*Myotis grisescens*), within the Rocky Mountain project boundary:

Seasonal Restrictions on Tree Removal

- Limit non-emergency tree removal to the period between November 16 and March 14 (hibernation period) to protect roosting habitat for Northern Long-eared Bat and Tricolored Bat during the active season (March 15-November 15), based on the Project being within the known hibernating range of the species in Georgia (U.S. Fish and Wildlife Service [FWS] 2024), unless otherwise authorized by FWS and the Georgia Department of Natural Resources (GDNR).

Protection of Cave Habitats

- To protect caves that may be occupied by hibernating bats, avoid non-emergency project maintenance or land management activities near known cave, rock shelter, and talus slope habitats on Rock Mountain during the hibernation season of Northern Long-eared Bat and Tricolored Bat in Georgia (November 16-March 14) (FWS 2024),¹ unless otherwise authorized by FWS and GDNR.

Reference

U.S. Fish and Wildlife Service (FWS). 2024. Range-Wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines. March 2024. U.S. Fish and Wildlife Service, Region 3, Bloomington, MN. 95 pp.

¹ Gray Bat and Indiana Bat currently are not known to hibernate in caves in Georgia.

DRAFT Bald Eagle Management Plan

Rocky Mountain Project (FERC No. 2725)

Introduction

Oglethorpe Power Corporation (OPC) proposes to implement a Bald Eagle (*Haliaeetus leucocephalus*) management plan for the Rocky Mountain Project to conserve and protect habitat for the species within the project boundary. The Bald Eagle is protected under the federal Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. This plan describes the specific measures to be implemented and provides a schedule for annual monitoring and reporting.

Specific Measures

The management activities will focus on land management practices on OPC-owned lands within the project boundary that avoid disturbance at active Bald Eagle nest sites known to occur within the project boundary, as follows:

- Super canopy trees will be left on the shoreline of the Auxiliary Pools and near the shoreline of the Lower Reservoir above the normal maximum pool elevation.¹
- OPC will monitor annually for the presence of active Bald Eagle nests and roost sites within the project boundary in partnership with biologists of the Georgia Department of Natural Resources Wildlife Resources Division (WRD) and U.S. Fish and Wildlife Service (FWS).
 - Surveys will be conducted once each year during the nesting season (mid-winter). Survey methods will consist of two biologists walking or boating along the shorelines of the Auxiliary Pools and Lower Reservoir, observing and documenting the location of any Bald Eagle nests or Bald Eagles detected.
 - OPC will report survey results annually to WRD and FWS. OPC will communicate with WRD personnel regarding any observations of Bald Eagle nesting and roosting at the Project as part of WRD's statewide monitoring program or during WRD management activities at the Project. This information also will be summarized in the monitoring report.
 - The annual report will be distributed to WRD and FWS and filed with the Federal Energy Regulatory Commission (FERC) by April 30 each year as privileged, non-public information.

¹ The Upper Reservoir is formed by a continuous earth and rockfill dam without shoreline forest vegetation.

- To avoid disturbing nesting Bald Eagles on OPC lands within the project boundary, OPC will implement current FWS national Bald Eagle management guidance pertaining to prescribed buffers and activity-specific guidelines. Attachment 1 provides the current FWS national guidance (2007). The guidance will be followed for activities potentially occurring within the primary and secondary zones around Bald Eagle nests, as applicable. These activities may include tree cutting or removal,² building construction or renovation, off-road vehicle use, non-motorized recreation and human entry, and similar activities.
- Motorized watercraft are not expected to disturb Bald Eagle nests around the Auxiliary Pools because eagles have demonstrated tolerance for such activity. No watercraft are allowed on the Lower Reservoir or Upper Reservoir. Therefore, management activities will not include posting signs or public communications about eagle nest locations so as to avoid drawing attention that could result in disturbance.

Schedule

Annual monitoring will be conducted during the nesting season (mid-winter) and reporting will be completed by April 30. OPC will file the annual monitoring report with FERC as privileged, non-public information.

² Tree-cutting/removal limitations required by FWS guidance for the protection of federally endangered bat species may also apply during other time periods different from the current FWS Bald Eagle management guidelines.

ATTACHMENT 1

**U.S. FISH AND WILDLIFE SERVICE (2007)
NATIONAL BALD EAGLE MANAGEMENT GUIDELINES**

DRAFT

NATIONAL BALD EAGLE MANAGEMENT GUIDELINES

U.S. Fish and Wildlife Service

May 2007

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INTRODUCTION

The bald eagle (*Haliaeetus leucocephalus*) is protected by the Bald and Golden Eagle Protection Act (Eagle Act) and the Migratory Bird Treaty Act (MBTA). The MBTA and the Eagle Act protect bald eagles from a variety of harmful actions and impacts. The U.S. Fish and Wildlife Service (Service) developed these National Bald Eagle Management Guidelines to advise landowners, land managers, and others who share public and private lands with bald eagles when and under what circumstances the protective provisions of the Eagle Act may apply to their activities. A variety of human activities can potentially interfere with bald eagles, affecting their ability to forage, nest, roost, breed, or raise young. The Guidelines are intended to help people minimize such impacts to bald eagles, particularly where they may constitute “disturbance,” which is prohibited by the Eagle Act.

The Guidelines are intended to:

- (1) Publicize the provisions of the Eagle Act that continue to protect bald eagles, in order to reduce the possibility that people will violate the law,
- (2) Advise landowners, land managers and the general public of the potential for various human activities to disturb bald eagles, and
- (3) Encourage additional nonbinding land management practices that benefit bald eagles (see Additional Recommendations section).

While the Guidelines include general recommendations for land management practices that will benefit bald eagles, the document is intended primarily as a tool for landowners and planners who seek information and recommendations regarding how to avoid disturbing bald eagles. Many States and some tribal entities have developed state-specific management plans, regulations, and/or guidance for landowners and land managers to protect and enhance bald eagle habitat, and we encourage the continued development and use of these planning tools to benefit bald eagles.

Adherence to the Guidelines herein will benefit individuals, agencies, organizations, and companies by helping them avoid violations of the law. However, the Guidelines themselves are not law. Rather, they are recommendations based on several decades of behavioral observations, science, and conservation measures to avoid or minimize adverse impacts to bald eagles.

The U.S. Fish and Wildlife Service strongly encourages adherence to these guidelines to ensure that bald and golden eagle populations will continue to be sustained. The Service realizes there may be impacts to some birds even if all reasonable measures are taken to avoid such impacts. Although it is not possible to absolve individuals and entities from liability under the Eagle Act or the MBTA, the Service exercises enforcement discretion to focus on those individuals, companies, or agencies that take migratory birds without regard for the consequences of their actions and the law, especially when conservation measures, such as these Guidelines, are available, but have not been implemented. The Service will prioritize its enforcement efforts to focus on those individuals or entities who take bald eagles or their parts, eggs, or nests without implementing appropriate measures recommended by the Guidelines.

The Service intends to pursue the development of regulations that would authorize, under limited circumstances, the use of permits if “take” of an eagle is anticipated but unavoidable. Additionally, if the bald eagle is delisted, the Service intends to provide a regulatory mechanism to honor existing (take) authorizations under the Endangered Species Act (ESA).

During the interim period until the Service completes a rulemaking for permits under the Eagle Act, the Service does not intend to refer for prosecution the incidental “take” of any bald eagle under the MBTA or Eagle Act, if such take is in full compliance with the terms and conditions of an incidental take statement issued to the action agency or applicant under the authority of section 7(b)(4) of the ESA or a permit issued under the authority of section 10(a)(1)(B) of the ESA.

The Guidelines are applicable throughout the United States, including Alaska. The primary purpose of these Guidelines is to provide information that will minimize or prevent violations only of *Federal* laws governing bald eagles. In addition to Federal laws, many states and some smaller jurisdictions and tribes have additional laws and regulations protecting bald eagles. In some cases those laws and regulations may be more protective (restrictive) than these Federal guidelines. If you are planning activities that may affect bald eagles, we therefore recommend that you contact both your nearest U.S. Fish and Wildlife Service Field Office (see the contact information on p.16) and your state wildlife agency for assistance.

LEGAL PROTECTIONS FOR THE BALD EAGLE

The Bald and Golden Eagle Protection Act

The Eagle Act (16 U.S.C. 668-668c), enacted in 1940, and amended several times since then, prohibits anyone, without a permit issued by the Secretary of the Interior, from “taking” bald eagles, including their parts, nests, or eggs. The Act provides criminal and civil penalties for persons who “take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof.” The Act defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” “Disturb” means:

"Disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle=s return, such alterations agitate or bother an eagle to a degree that injures an eagle or substantially interferes with normal breeding, feeding, or sheltering habits and causes, or is likely to cause, a loss of productivity or nest abandonment.

A violation of the Act can result in a criminal fine of \$100,000 (\$200,000 for organizations), imprisonment for one year, or both, for a first offense. Penalties increase substantially for additional offenses, and a second violation of this Act is a felony.

The Migratory Bird Treaty Act

The MBTA (16 U.S.C. 703-712), prohibits the taking of any migratory bird or any part, nest, or egg, except as permitted by regulation. The MBTA was enacted in 1918; a 1972 agreement supplementing one of the bilateral treaties underlying the MBTA had the effect of expanding the scope of the Act to cover bald eagles and other raptors. Implementing regulations define “take” under the MBTA as “pursue, hunt, shoot, wound, kill, trap, capture, possess, or collect.”

Copies of the Eagle Act and the MBTA are available at: <http://permits.fws.gov/ltr/ltr.shtml>.

State laws and regulations

Most states have their own regulations and/or guidelines for bald eagle management. Some states may continue to list the bald eagle as endangered, threatened, or of special concern. If you plan activities that may affect bald eagles, we urge you to familiarize yourself with the regulations and/or guidelines that apply to bald eagles in your state. Your adherence to the Guidelines herein does not ensure that you are in compliance with state laws and regulations because state regulations can be more specific and/or restrictive than these Guidelines.

NATURAL HISTORY OF THE BALD EAGLE

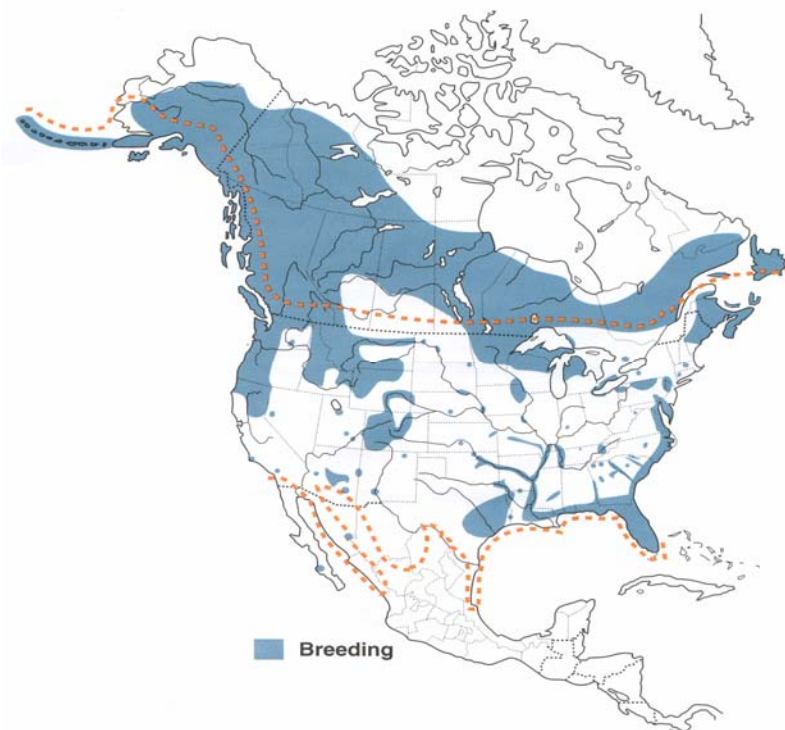
Bald eagles are a North American species that historically occurred throughout the contiguous United States and Alaska. After severely declining in the lower 48 States between the 1870s and the 1970s, bald eagles have rebounded and re-established breeding territories in each of the lower 48 states. The largest North American breeding populations are in Alaska and Canada, but there are also significant bald eagle populations in Florida, the Pacific Northwest, the Greater Yellowstone area, the Great Lakes states, and the Chesapeake Bay region. Bald eagle distribution varies seasonally. Bald eagles that nest in southern latitudes frequently move northward in late spring and early summer, often summering as far north as Canada. Most eagles that breed at northern latitudes migrate southward during winter, or to coastal areas where waters remain unfrozen. Migrants frequently concentrate in large numbers at sites where food is abundant and they often roost together communally. In some cases, concentration areas are used year-round: in summer by southern eagles and in winter by northern eagles.

Juvenile bald eagles have mottled brown and white plumage, gradually acquiring their dark brown body and distinctive white head and tail as they mature. Bald eagles generally attain adult plumage by 5 years of age. Most are capable of breeding at 4 or 5 years of age, but in healthy populations they may not start breeding until much older. Bald eagles may live 15 to 25 years in the wild. Adults weigh 8 to 14 pounds (occasionally reaching 16 pounds in Alaska) and have wingspans of 5 to 8 feet. Those in the northern range are larger than those in the south, and females are larger than males.

Where do bald eagles nest?

Breeding bald eagles occupy “territories,” areas they will typically defend against intrusion by other eagles. In addition to the active nest, a territory may include one or more alternate nests (nests built or maintained by the eagles but not used for nesting in a given year). The Eagle Act prohibits removal or destruction of both active and alternate bald eagle nests. Bald eagles exhibit high nest site fidelity and nesting territories are often used year after year. Some territories are known to have been used continually for over half a century.

Bald eagles generally nest near coastlines, rivers, large lakes or streams that support an adequate food supply. They often nest in mature or old-growth trees; snags (dead trees); cliffs; rock promontories; rarely on the ground; and with increasing frequency on human-made structures such as power poles and communication towers. In forested areas, bald eagles often select the tallest trees with limbs strong enough to support a nest that can weigh more than 1,000 pounds. Nest sites typically include at least one perch with a clear view of the water where the eagles usually forage. Shoreline trees or snags located in reservoirs provide the visibility and accessibility needed to locate aquatic prey. Eagle nests are constructed with large sticks, and may be lined with moss, grass, plant stalks, lichens, seaweed, or sod. Nests are usually about 4-6 feet in diameter and 3 feet deep, although larger nests exist.



Copyright *Birds of North America*, 2000

The range of breeding bald eagles in 2000 (shaded areas). This map shows only the larger concentrations of nests; eagles have continued to expand into additional nesting territories in many states. The dotted line represents the bald eagle’s wintering range.

When do bald eagles nest?

Nesting activity begins several months before egg-laying. Egg-laying dates vary throughout the U.S., ranging from October in Florida, to late April or even early May in the northern United States. Incubation typically lasts 33-35 days, but can be as long as 40 days. Eaglets make their first unsteady flights about 10 to 12 weeks after hatching, and fledge (leave their nests) within a few days after that first flight. However, young birds usually remain in the vicinity of the nest for several weeks after fledging because they are almost completely dependent on their parents for food until they disperse from the nesting territory approximately 6 weeks later.

The bald eagle breeding season tends to be longer in the southern U.S., and re-nesting following an unsuccessful first nesting attempt is more common there as well. The following table shows the timing of bald eagle breeding seasons in different regions of the country. The table represents the range of time within which the majority of nesting activities occur in each region and does not apply to any specific nesting pair. Because the timing of nesting activities may vary within a given region, you should contact the nearest U.S. Fish and Wildlife Service Field Office (see page 16) and/or your state wildlife conservation agency for more specific information on nesting chronology in your area.

Chronology of typical reproductive activities of bald eagles in the United States.

Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.
SOUTHEASTERN U.S. (FL, GA, SC, NC, AL, MS, LA, TN, KY, AR, eastern 2 of TX)											
Nest Building											
		Egg Laying/Incubation									
				Hatching/Rearing Young							
					Fledging Young						
CHESAPEAKE BAY REGION (NC, VA, MD, DE, southern 2 of NJ, eastern 2 of PA, panhandle of WV)											
		Nest Building									
				Egg Laying/Incubation							
						Hatching/Rearing Young					
								Fledging Young			
NORTHERN U.S. (ME, NH, MA, RI, CT, NY, northern 2 of NJ, western 2 of PA, OH, WV exc. panhandle, IN, IL, MI, WI, MN, IA, MO, ND, SD, NB, KS, CO, UT)											
			Nest Building								
					Egg Laying/Incubation						
							Hatching/Rearing Young				
									Fledging Young		
PACIFIC REGION (WA, OR, CA, ID, MT, WY, NV)											
				Nest Building							
					Egg Laying/Incubation						
						Hatching/Rearing Young					
								Fledging Young			
SOUTHWESTERN U.S. (AZ, NM, OK panhandle, western 2 of TX)											
			Nest Building								
				Egg Laying/Incubation							
					Hatching/Rearing Young						
							Fledging Young				
ALASKA											
					Nest Building						
							Egg Laying/Incubation				
								Hatching/Rearing Young			
Ing Young											Fledg-
Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.

How many chicks do bald eagles raise?

The number of eagle eggs laid will vary from 1-3, with 1-2 eggs being the most common. Only one eagle egg is laid per day, although not always on successive days. Hatching of young occurs on different days with the result that chicks in the same nest are sometimes of unequal size. The overall national fledging rate is approximately one chick per nest, annually, which results in a healthy expanding population.

What do bald eagles eat?

Bald eagles are opportunistic feeders. Fish comprise much of their diet, but they also eat waterfowl, shorebirds/colonial waterbirds, small mammals, turtles, and carrion. Because they are visual hunters, eagles typically locate their prey from a conspicuous perch, or soaring flight, then swoop down and strike. Wintering bald eagles often congregate in large numbers along streams to feed on spawning salmon or other fish species, and often gather in large numbers in areas below reservoirs, especially hydropower dams, where fish are abundant. Wintering eagles also take birds from rafts of ducks at reservoirs and rivers, and congregate on melting ice shelves to scavenge dead fish from the current or the soft melting ice. Bald eagles will also feed on carcasses along roads, in landfills, and at feedlots.

During the breeding season, adults carry prey to the nest to feed the young. Adults feed their chicks by tearing off pieces of food and holding them to the beaks of the eaglets. After fledging, immature eagles are slow to develop hunting skills, and must learn to locate reliable food sources and master feeding techniques. Young eagles will congregate together, often feeding upon easily acquired food such as carrion and fish found in abundance at the mouths of streams and shallow bays and at landfills.

The impact of human activity on nesting bald eagles

During the breeding season, bald eagles are sensitive to a variety of human activities. However, not all bald eagle pairs react to human activities in the same way. Some pairs nest successfully just dozens of yards from human activity, while others abandon nest sites in response to activities much farther away. This variability may be related to a number of factors, including visibility, duration, noise levels, extent of the area affected by the activity, prior experiences with humans, and tolerance of the individual nesting pair. The relative sensitivity of bald eagles during various stages of the breeding season is outlined in the following table.

Nesting Bald Eagle Sensitivity to Human Activities

Phase	Activity	Sensitivity to Human Activity	Comments
I	Courtship and Nest Building	Most sensitive period; likely to respond negatively	Most critical time period. Disturbance is manifested in nest abandonment. Bald eagles in newly established territories are more prone to abandon nest sites.
II	Egg laying	Very sensitive period	Human activity of even limited duration may cause nest desertion and abandonment of territory for the breeding season.
III	Incubation and early nestling period (up to 4 weeks)	Very sensitive period	Adults are less likely to abandon the nest near and after hatching. However, flushed adults leave eggs and young unattended; eggs are susceptible to cooling, loss of moisture, overheating, and predation; young are vulnerable to elements.
IV	Nestling period, 4 to 8 weeks	Moderately sensitive period	Likelihood of nest abandonment and vulnerability of the nestlings to elements somewhat decreases. However, nestlings may miss feedings, affecting their survival.
V	Nestlings 8 weeks through fledging	Very sensitive period	Gaining flight capability, nestlings 8 weeks and older may flush from the nest prematurely due to disruption and die.

If agitated by human activities, eagles may inadequately construct or repair their nest, may expend energy defending the nest rather than tending to their young, or may abandon the nest altogether. Activities that cause prolonged absences of adults from their nests can jeopardize eggs or young. Depending on weather conditions, eggs may overheat or cool too much and fail to hatch. Unattended eggs and nestlings are subject to predation. Young nestlings are particularly vulnerable because they rely on their parents to provide warmth or shade, without which they may die as a result of hypothermia or heat stress. If food delivery schedules are interrupted, the young may not develop healthy plumage, which can affect their survival. In addition, adults startled while incubating or brooding young may damage eggs or injure their young as they abruptly leave the nest. Older nestlings no longer require constant attention from the adults, but they may be startled by loud or intrusive human activities and prematurely jump from the nest before they are able to fly or care for themselves. Once fledged, juveniles range up to ¼ mile from the nest site, often to a site with minimal human activity. During this period, until about six weeks after departure from the nest, the juveniles still depend on the adults to feed them.

The impact of human activity on foraging and roosting bald eagles

Disruption, destruction, or obstruction of roosting and foraging areas can also negatively affect bald eagles. Disruptive activities in or near eagle foraging areas can interfere with feeding, reducing chances of survival. Interference with feeding can also result in reduced productivity (number of young successfully fledged). Migrating and wintering bald eagles often congregate at specific sites for purposes of feeding and sheltering. Bald eagles rely on established roost sites because of their proximity to sufficient food sources. Roost sites are usually in mature trees where the eagles are somewhat sheltered from the wind and weather. Human activities near or within communal roost sites may prevent eagles

from feeding or taking shelter, especially if there are not other undisturbed and productive feeding and roosting sites available. Activities that permanently alter communal roost sites and important foraging areas can altogether eliminate the elements that are essential for feeding and sheltering eagles.

Where a human activity agitates or bothers roosting or foraging bald eagles to the degree that causes injury or substantially interferes with breeding, feeding, or sheltering behavior and causes, or is likely to cause, a loss of productivity or nest abandonment, the conduct of the activity constitutes a violation of the Eagle Act's prohibition against disturbing eagles. The circumstances that might result in such an outcome are difficult to predict without detailed site-specific information. If your activities may disturb roosting or foraging bald eagles, you should contact your local Fish and Wildlife Service Field Office (see page 16) for advice and recommendations for how to avoid such disturbance.

RECOMMENDATIONS FOR AVOIDING DISTURBANCE AT NEST SITES

In developing these Guidelines, we relied on existing state and regional bald eagle guidelines, scientific literature on bald eagle disturbance, and recommendations of state and Federal biologists who monitor the impacts of human activity on eagles. Despite these resources, uncertainties remain regarding the effects of many activities on eagles and how eagles in different situations may or may not respond to certain human activities. The Service recognizes this uncertainty and views the collection of better biological data on the response of eagles to disturbance as a high priority. To the extent that resources allow, the Service will continue to collect data on responses of bald eagles to human activities conducted according to the recommendations within these Guidelines to ensure that adequate protection from disturbance is being afforded, and to identify circumstances where the Guidelines might be modified. These data will be used to make future adjustments to the Guidelines.

To avoid disturbing nesting bald eagles, we recommend (1) keeping a distance between the activity and the nest (distance buffers), (2) maintaining preferably forested (or natural) areas between the activity and around nest trees (landscape buffers), and (3) avoiding certain activities during the breeding season. The buffer areas serve to minimize visual and auditory impacts associated with human activities near nest sites. Ideally, buffers would be large enough to protect existing nest trees and provide for alternative or replacement nest trees.

The size and shape of effective buffers vary depending on the topography and other ecological characteristics surrounding the nest site. In open areas where there are little or no forested or topographical buffers, such as in many western states, distance alone must serve as the buffer. Consequently, in open areas, the distance between the activity and the nest may need to be larger than the distances recommended under Categories A and B of these guidelines (pg. 12) if no landscape buffers are present. The height of the nest above the ground may also ameliorate effects of human activities; eagles at higher nests may be less prone to disturbance.

In addition to the physical features of the landscape and nest site, the appropriate size for the distance buffer may vary according to the historical tolerances of eagles to human activities in particular localities, and may also depend on the location of the nest in relation

to feeding and roosting areas used by the eagles. Increased competition for nest sites may lead bald eagles to nest closer to human activity (and other eagles).

Seasonal restrictions can prevent the potential impacts of many shorter-term, obtrusive activities that do not entail landscape alterations (e.g. fireworks, outdoor concerts). In proximity to the nest, these kinds of activities should be conducted only outside the breeding season. For activities that entail both short-term, obtrusive characteristics and more permanent impacts (e.g., building construction), we recommend a combination of both approaches: retaining a landscape buffer *and* observing seasonal restrictions.

For assistance in determining the appropriate size and configuration of buffers or the timing of activities in the vicinity of a bald eagle nest, we encourage you to contact the nearest U.S. Fish and Wildlife Service Field Office (see page 16).

Existing Uses

Eagles are unlikely to be disturbed by routine use of roads, homes, and other facilities where such use pre-dates the eagles' successful nesting activity in a given area. Therefore, in most cases *ongoing* existing uses may proceed with the same intensity with little risk of disturbing bald eagles. However, some *intermittent, occasional, or irregular* uses that pre-date eagle nesting in an area may disturb bald eagles. For example: a pair of eagles may begin nesting in an area and subsequently be disturbed by activities associated with an annual outdoor flea market, even though the flea market has been held annually at the same location. In such situations, human activity should be adjusted or relocated to minimize potential impacts on the nesting pair.

ACTIVITY-SPECIFIC GUIDELINES

The following section provides the Service's management recommendations for avoiding bald eagle disturbance as a result of new or intermittent activities proposed in the vicinity of bald eagle nests. Activities are separated into 8 categories (A – H) based on the nature and magnitude of impacts to bald eagles that usually result from the type of activity. Activities with similar or comparable impacts are grouped together.

In most cases, impacts will vary based on the visibility of the activity from the eagle nest and the degree to which similar activities are already occurring in proximity to the nest site. Visibility is a factor because, in general, eagles are more prone to disturbance when an activity occurs in full view. For this reason, we recommend that people locate activities farther from the nest structure in areas with open vistas, in contrast to areas where the view is shielded by rolling topography, trees, or other screening factors. The recommendations also take into account the existence of similar activities in the area because the continued presence of nesting bald eagles in the vicinity of the existing activities indicates that the eagles in that area can tolerate a greater degree of human activity than we can generally expect from eagles in areas that experience fewer human impacts. To illustrate how these factors affect the likelihood of disturbing eagles, we have incorporated the recommendations for some activities into a table (categories A and B).

First, determine which category your activity falls into (between categories A – H). If the activity you plan to undertake is not specifically addressed in these guidelines, follow the recommendations for the most similar activity represented.

If your activity is under A or B, our recommendations are in table form. The vertical axis shows the degree of visibility of the activity from the nest. The horizontal axis (header row) represents the degree to which similar activities are ongoing in the vicinity of the nest. Locate the row that best describes how visible your activity will be from the eagle nest. Then, choose the column that best describes the degree to which similar activities are ongoing in the vicinity of the eagle nest. The box where the column and row come together contains our management recommendations for how far you should locate your activity from the nest to avoid disturbing the eagles. The numerical distances shown in the tables are the closest the activity should be conducted relative to the nest. In some cases we have included additional recommendations (other than recommended *distance* from the nest) you should follow to help ensure that your activity will not disturb the eagles.

Alternate nests

For activities that entail permanent landscape alterations that may result in bald eagle disturbance, these recommendations apply to both active and alternate bald eagle nests. Disturbance becomes an issue with regard to alternate nests if eagles return for breeding purposes and react to land use changes that occurred while the nest was inactive. The likelihood that an alternate nest will again become active decreases the longer it goes unused. If you plan activities in the vicinity of an alternate bald eagle nest and have information to show that the nest has not been active during the preceding 5 breeding seasons, the recommendations provided in these guidelines for avoiding disturbance around the nest site may no longer be warranted. The nest itself remains protected by other provisions of the Eagle Act, however, and may not be destroyed.

If special circumstances exist that make it unlikely an inactive nest will be reused before 5 years of disuse have passed, and you believe that the probability of reuse is low enough to warrant disregarding the recommendations for avoiding disturbance, you should be prepared to provide all the reasons for your conclusion, including information regarding past use of the nest site. Without sufficient documentation, you should continue to follow these guidelines when conducting activities around the nest site. If we are able to determine that it is unlikely the nest will be reused, we may advise you that the recommendations provided in these guidelines for avoiding disturbance are no longer necessary around that nest site.

This guidance is intended to minimize disturbance, as defined by Federal regulation. In addition to Federal laws, most states and some tribes and smaller jurisdictions have additional laws and regulations protecting bald eagles. In some cases those laws and regulations may be more protective (restrictive) than these Federal guidelines.

Temporary Impacts

For activities that have temporary impacts, such as the use of loud machinery, fireworks displays, or summer boating activities, we recommend seasonal restrictions. These types of activities can generally be carried out outside of the breeding season without causing disturbance. The recommended restrictions for these types of activities can be lifted for alternate nests within a particular territory, including nests that were attended during the current breeding season but not used to raise young, after eggs laid in another nest within the territory have hatched (depending on the distance between the alternate nest and the active nest).

In general, activities should be kept as far away from nest trees as possible; loud and disruptive activities should be conducted when eagles are not nesting; and activity between the nest and the nearest foraging area should be minimized. If the activity you plan to undertake is not specifically addressed in these guidelines, follow the recommendations for the most similar activity addressed, or contact your local U.S. Fish and Wildlife Service Field Office for additional guidance.

If you believe that special circumstances apply to your situation that increase or diminish the likelihood of bald eagle disturbance, or if it is not possible to adhere to the guidelines, you should contact your local Service Field Office for further guidance.

Category A:

- Building construction, 1 or 2 story, with project footprint of ½ acre or less.
- Construction of roads, trails, canals, power lines, and other linear utilities.
- Agriculture and aquaculture – new or expanded operations.
- Alteration of shorelines or wetlands.
- Installation of docks or moorings.
- Water impoundment.

Category B:

- Building construction, 3 or more stories.
- Building construction, 1 or 2 story, with project footprint of more than ½ acre.
- Installation or expansion of marinas with a capacity of 6 or more boats.
- Mining and associated activities.
- Oil and natural gas drilling and refining and associated activities.

	<i>If there is no similar activity within 1 mile of the nest</i>	<i>If there is similar activity closer than 1 mile from the nest</i>
<i>If the activity will be visible from the nest</i>	660 feet. Landscape buffers are recommended.	660 feet, or as close as existing tolerated activity of similar scope. Landscape buffers are recommended.
<i>If the activity will not be visible from the nest</i>	Category A: 330 feet. Clearing, external construction, and landscaping between 330 feet and 660 feet should be done outside breeding season. Category B: 660 feet.	330 feet, or as close as existing tolerated activity of similar scope. Clearing, external construction and landscaping within 660 feet should be done outside breeding season.

The numerical distances shown in the table are the closest the activity should be conducted relative to the nest.

Category C. Timber Operations and Forestry Practices

- Avoid clear cutting or removal of overstory trees within 330 feet of the nest at any time.
- Avoid timber harvesting operations, including road construction and chain saw and yarding operations, during the breeding season within 660 feet of the nest. The distance may be decreased to 330 feet around alternate nests within a particular territory, including nests that were attended during the current breeding season but not used to raise young, after eggs laid in another nest within the territory have hatched.
- Selective thinning and other silviculture management practices designed to conserve or enhance habitat, including prescribed burning close to the nest tree, should be undertaken outside the breeding season. Precautions such as raking leaves and woody debris from around the nest tree should be taken to prevent crown fire or fire climbing the nest tree. If it is determined that a burn during the breeding season would be beneficial, then, to ensure that no take or disturbance will occur, these activities should be conducted only when neither adult eagles nor young are present at the nest tree (i.e., at the beginning of, or end of, the breeding season, either before the particular nest is active or after the young have fledged from that nest). Appropriate Federal and state biologists should be consulted before any prescribed burning is conducted during the breeding season.
- Avoid construction of log transfer facilities and in-water log storage areas within 330 feet of the nest.

Category D. Off-road vehicle use (including snowmobiles). No buffer is necessary around nest sites outside the breeding season. During the breeding season, do not operate off-road vehicles within 330 feet of the nest. In open areas, where there is increased visibility and exposure to noise, this distance should be extended to 660 feet.

Category E. Motorized Watercraft use (including jet skis/personal watercraft). No buffer is necessary around nest sites outside the breeding season. During the breeding season, within 330 feet of the nest, (1) do not operate jet skis (personal watercraft), and (2) avoid concentrations of noisy vessels (e.g., commercial fishing boats and tour boats), except where eagles have demonstrated tolerance for such activity. Other motorized boat traffic passing within 330 feet of the nest should attempt to minimize trips and avoid stopping in the area where feasible, particularly where eagles are unaccustomed to boat traffic. Buffers for airboats should be larger than 330 feet due to the increased noise they generate, combined with their speed, maneuverability, and visibility.

Category F. Non-motorized recreation and human entry (e.g., hiking, camping, fishing, hunting, birdwatching, kayaking, canoeing). No buffer is necessary around nest sites outside the breeding season. If the activity will be visible or highly audible from the nest, maintain a 330-foot buffer during the breeding season, particularly where eagles are unaccustomed to such activity.

Category G. Helicopters and fixed-wing aircraft.

Except for authorized biologists trained in survey techniques, avoid operating aircraft within 1,000 feet of the nest during the breeding season, except where eagles have demonstrated tolerance for such activity.

Category H. Blasting and other loud, intermittent noises.

Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area. This recommendation applies to the use of fireworks classified by the Federal Department of Transportation as Class B explosives, which includes the larger fireworks that are intended for licensed public display.

RECOMMENDATIONS FOR AVOIDING DISTURBANCE AT FORAGING AREAS AND COMMUNAL ROOST SITES

1. Minimize potentially disruptive activities and development in the eagles' direct flight path between their nest and roost sites and important foraging areas.
2. Locate long-term and permanent water-dependent facilities, such as boat ramps and marinas, away from important eagle foraging areas.
3. Avoid recreational and commercial boating and fishing near critical eagle foraging areas during peak feeding times (usually early to mid-morning and late afternoon), except where eagles have demonstrated tolerance to such activity.
4. Do not use explosives within ½ mile (or within 1 mile in open areas) of communal roosts when eagles are congregating, without prior coordination with the U.S. Fish and Wildlife Service and your state wildlife agency.
5. Locate aircraft corridors no closer than 1,000 feet vertical or horizontal distance from communal roost sites.

ADDITIONAL RECOMMENDATIONS TO BENEFIT BALD EAGLES

The following are additional management practices that landowners and planners can exercise for added benefit to bald eagles.

1. Protect and preserve potential roost and nest sites by retaining mature trees and old growth stands, particularly within ½ mile from water.
2. Where nests are blown from trees during storms or are otherwise destroyed by the elements, continue to protect the site in the absence of the nest for up to three (3) complete breeding seasons. Many eagles will rebuild the nest and reoccupy the site.
3. To avoid collisions, site wind turbines, communication towers, and high voltage transmission power lines away from nests, foraging areas, and communal roost sites.
4. Employ industry-accepted best management practices to prevent birds from colliding with or being electrocuted by utility lines, towers, and poles. If possible, bury utility lines in important eagle areas.
5. Where bald eagles are likely to nest in human-made structures (e.g., cell phone towers) and such use could impede operation or maintenance of the structures or jeopardize the safety of the eagles, equip the structures with either (1) devices engineered to discourage bald eagles from building nests, or (2) nesting platforms that will safely accommodate bald eagle nests without interfering with structure performance.
6. Immediately cover carcasses of euthanized animals at landfills to protect eagles from being poisoned.
7. Do not intentionally feed bald eagles. Artificially feeding bald eagles can disrupt their essential behavioral patterns and put them at increased risk from power lines, collision with windows and cars, and other mortality factors.
8. Use pesticides, herbicides, fertilizers, and other chemicals only in accordance with Federal and state laws.
9. Monitor and minimize dispersal of contaminants associated with hazardous waste sites (legal or illegal), permitted releases, and runoff from agricultural areas, especially within watersheds where eagles have shown poor reproduction or where bioaccumulating contaminants have been documented. These factors present a risk of contamination to eagles and their food sources.

CONTACTS

The following U.S. Fish and Wildlife Service Field Offices provide technical assistance on bald eagle management:

<u>Alabama</u>	Daphne	(251) 441-5181	<u>New Hampshire</u>	Concord	(603) 223-2541
<u>Alaska</u>	Anchorage	(907) 271-2888	<u>New Jersey</u>	Pleasantville	(609) 646-9310
	Fairbanks	(907) 456-0203	<u>New Mexico</u>	Albuquerque	(505) 346-2525
	Juneau	(907) 780-1160	<u>New York</u>	Cortland	(607) 753-9334
<u>Arizona</u>	Phoenix	(602) 242-0210		Long Island	(631) 776-1401
<u>Arkansas</u>	Conway	(501) 513-4470	<u>North Carolina</u>	Raleigh	(919) 856-4520
<u>California</u>	Arcata	(707) 822-7201		Asheville	(828) 258-3939
	Barstow	(760) 255-8852	<u>North Dakota</u>	Bismarck	(701) 250-4481
	Carlsbad	(760) 431-9440	<u>Ohio</u>	Reynoldsburg	(614) 469-6923
	Red Bluff	(530) 527-3043	<u>Oklahoma</u>	Tulsa	(918) 581-7458
	Sacramento	(916) 414-6000	<u>Oregon</u>	Bend	(541) 383-7146
	Stockton	(209) 946-6400		Klamath Falls	(541) 885-8481
	Ventura	(805) 644-1766		La Grande	(541) 962-8584
	Yreka	(530) 842-5763		Newport	(541) 867-4558
<u>Colorado</u>	Lakewood	(303) 275-2370		Portland	(503) 231-6179
	Grand Junction	(970) 243-2778		Roseburg	(541) 957-3474
<u>Connecticut</u>	(See New Hampshire)		<u>Pennsylvania</u>	State College	(814) 234-4090
<u>Delaware</u>	(See Maryland)		<u>Rhode Island</u>	(See New Hampshire)	
<u>Florida</u>	Panama City	(850) 769-0552	<u>South Carolina</u>	Charleston	(843) 727-4707
	Vero Beach	(772) 562-3909	<u>South Dakota</u>	Pierre	(605) 224-8693
	Jacksonville	(904) 232-2580	<u>Tennessee</u>	Cookeville	(931) 528-6481
<u>Georgia</u>	Athens	(706) 613-9493	<u>Texas</u>	Clear Lake	(281) 286-8282
	Brunswick	(912) 265-9336	<u>Utah</u>	West Valley City	(801) 975-3330
	Columbus	(706) 544-6428	<u>Vermont</u>	(See New Hampshire)	
<u>Idaho</u>	Boise	(208) 378-5243	<u>Virginia</u>	Gloucester	(804) 693-6694
	Chubbuck	(208) 237-6975	<u>Washington</u>	Lacey	(306) 753-9440
<u>Illinois/Iowa</u>	Rock Island	(309) 757-5800		Spokane	(509) 891-6839
<u>Indiana</u>	Bloomington	(812) 334-4261		Wenatchee	(509) 665-3508
<u>Kansas</u>	Manhattan	(785) 539-3474	<u>West Virginia</u>	Elkins	(304) 636-6586
<u>Kentucky</u>	Frankfort	(502) 695-0468	<u>Wisconsin</u>	New Franken	(920) 866-1725
<u>Louisiana</u>	Lafayette	(337) 291-3100	<u>Wyoming</u>	Cheyenne	(307) 772-2374
<u>Maine</u>	Old Town	(207) 827-5938		Cody	(307) 578-5939
<u>Maryland</u>	Annapolis	(410) 573-4573			
<u>Massachusetts</u>	(See New Hampshire)				
<u>Michigan</u>	East Lansing	(517) 351-2555			
<u>Minnesota</u>	Bloomington	(612) 725-3548			
<u>Mississippi</u>	Jackson	(601) 965-4900			
<u>Missouri</u>	Columbia	(573) 234-2132			
<u>Montana</u>	Helena	(405) 449-5225			
<u>Nebraska</u>	Grand Island	(308) 382-6468			
<u>Nevada</u>	Las Vegas	(702) 515-5230			
	Reno	(775) 861-6300			

<p><u>National Office</u> U.S. Fish and Wildlife Service Division of Migratory Bird Management 4401 North Fairfax Drive, MBSP-4107 Arlington, VA 22203-1610 (703) 358-1714 http://www.fws.gov/migratorybirds</p>
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State Agencies

To contact a state wildlife agency, visit the Association of Fish & Wildlife Agencies' website at http://www.fishwildlife.org/where_us.html

GLOSSARY

The definitions below apply to these National Bald Eagle Management Guidelines:

Communal roost sites – Areas where bald eagles gather and perch overnight – and sometimes during the day in the event of inclement weather. Communal roost sites are usually in large trees (live or dead) that are relatively sheltered from wind and are generally in close proximity to foraging areas. These roosts may also serve a social purpose for pair bond formation and communication among eagles. Many roost sites are used year after year.

Disturb – To agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.

In addition to immediate impacts, this definition also covers impacts that result from human-caused alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle=s return, such alterations agitate or bother an eagle to a degree that injures an eagle or substantially interferes with normal breeding, feeding, or sheltering habits and causes, or is likely to cause, a loss of productivity or nest abandonment.

Fledge – To leave the nest and begin flying. For bald eagles, this normally occurs at 10-12 weeks of age.

Fledgling – A juvenile bald eagle that has taken the first flight from the nest but is not yet independent.

Foraging area – An area where eagles feed, typically near open water such as rivers, lakes, reservoirs, and bays where fish and waterfowl are abundant, or in areas with little or no water (i.e., rangelands, barren land, tundra, suburban areas, etc.) where other prey species (e.g., rabbit, rodents) or carrion (such as at landfills) are abundant.

Landscape buffer – A natural or human-made landscape feature that screens eagles from human activity (e.g., strip of trees, hill, cliff, berm, sound wall).

Nest – A structure built, maintained, or used by bald eagles for the purpose of reproduction. An **active** nest is a nest that is attended (built, maintained or used) by a pair of bald eagles during a given breeding season, whether or not eggs are laid. An **alternate** nest is a nest that is not used for breeding by eagles during a given breeding season.

Nest abandonment – Nest abandonment occurs when adult eagles desert or stop attending a nest and do not subsequently return and successfully raise young in that nest for the duration of a breeding season. Nest abandonment can be caused by altering habitat near a nest, even if the alteration occurs prior to the breeding season. Whether the eagles migrate during the non-breeding season, or remain in the area throughout the non-breeding season, nest abandonment can occur at any point between the time the eagles return to the nesting site for the breeding season and the time when all progeny from the breeding season have

dispersed.

Project footprint – The area of land (and water) that will be permanently altered for a development project, including access roads.

Similar scope – In the vicinity of a bald eagle nest, an existing activity is of similar scope to a new activity where the types of impacts to bald eagles are similar in nature, and the impacts of the existing activity are of the same or greater magnitude than the impacts of the potential new activity. Examples: (1) An existing single-story home 200 feet from a nest is similar in scope to an additional single-story home 200 feet from the nest; (2) An existing multi-story, multi-family dwelling 150 feet from a nest has impacts of a greater magnitude than a potential new single-family home 200 feet from the nest; (3) One existing single-family home 200 feet from the nest has impacts of a lesser magnitude than three single-family homes 200 feet from the nest; (4) an existing single-family home 200 feet from a communal roost has impacts of a lesser magnitude than a single-family home 300 feet from the roost but 40 feet from the eagles' foraging area. The existing activities in examples (1) and (2) are of similar scope, while the existing activities in example (3) and (4) are not.

Vegetative buffer – An area surrounding a bald eagle nest that is wholly or largely covered by forest, vegetation, or other natural ecological characteristics, and separates the nest from human activities.

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From: [McCaslin, Tyler](#)
To: [Steven Layman](#); [Kelly Kirven](#)
Cc: [Barrows, Christina](#)
Subject: Fwd: [EXTERNAL] Oglethorpe Power's Rocky Mountain Pumped Storage Hydroelectric Project Management Plans
Date: Thursday, August 15, 2024 12:47:14 PM
Attachments: [image001.png](#)

For the consultation record.

Sent from mobile

Tyler McCaslin, PhD

Senior 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 **Web:** www.opc.com

From: Bauer, Eric F <eric_bauer@fws.gov>
Sent: Thursday, August 15, 2024 12:44:59 PM
To: Barrows, Christina <christina.barrows@opc.com>
Cc: Jones, Craig <craig.jones@opc.com>; McCaslin, Tyler <tyler.mccaslin@opc.com>
Subject: Re: [EXTERNAL] Oglethorpe Power's Rocky Mountain Pumped Storage Hydroelectric Project Management Plans

External E-Mail

Christina et al.,

These all look good to me and I don't have any further suggestions. However, I had our bat biologist, Laci Pattavina take a look at the Bat plan as well. She said that you could also include any standard Water Quality protection measures that y'all use at the project because Gray Bat feeds heavily on aquatic insects - so any measures protecting WQ would also benefit this species. Thanks for the opportunity to review these plans. Thanks again!

-Eric

Eric Bauer (he/him)
Fish and Wildlife Biologist
Georgia Ecological Services
US Fish and Wildlife Service
RG Stephens, Jr. Federal Building

355 East Hancock Avenue, Room 320
Athens, GA 30601
Office: 706-535-2103
Teams: eric_bauer@fws.gov (preferred)

<http://www.fws.gov/athens>

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From: Barrows, Christina <christina.barrows@opc.com>
Sent: Monday, August 5, 2024 1:35 PM
To: Bauer, Eric F <eric_bauer@fws.gov>
Cc: Jones, Craig <craig.jones@opc.com>; McCaslin, Tyler <tyler.mccaslin@opc.com>
Subject: [EXTERNAL] Oglethorpe Power's Rocky Mountain Pumped Storage Hydroelectric Project Management Plans

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Good Afternoon Eric,

In Oglethorpe Power's effort to relicense the Rocky Mountain Pumped Storage Hydroelectric Project (FERC P-2725) located in Floyd County near Rome, Georgia, we would like for the US Fish and Wildlife Service to review our Invasive Species, Bat, and Bald Eagle Management Plans. Please review the attached documents and let us know if you have any major concerns by 8/23/24. If you would like a refresher on the project description, the project location, or concise background information, you may find it [here](#).

As always, we appreciate your time and would be happy to answer any questions you may have.

Thank you,

Christina Barrows
Environmental Specialist
Oglethorpe Power Corporation
2100 East Exchange Place, Tucker, GA 30084
Office: 770-270-7996
Cell: 470-791-4355
Email: christina.barrows@opc.com **Web:** www.opc.com



From: [McCaslin, Tyler](#)
To: [Steven Layman](#); [Kelly Kirven](#)
Cc: [Barrows, Christina](#); [Jones, Craig](#)
Subject: FW: Oglethorpe Power's Rocky Mountain Pumped Storage Hydroelectric Project Management Plans
Date: Thursday, August 22, 2024 4:43:12 PM
Attachments: [image001.png](#)

For the consultation record.

-Tyler

From: Hakala, Jim <Jim.Hakala@dnr.ga.gov>
Sent: Thursday, August 22, 2024 2:23 PM
To: Barrows, Christina <christina.barrows@opc.com>
Cc: Jones, Craig <craig.jones@opc.com>; McCaslin, Tyler <tyler.mccaslin@opc.com>; Peacock, Clint <Clint.Peacock@dnr.ga.gov>; Escobar, Anakela <anakela.escobar@dnr.ga.gov>; Bowen, Bryant <Bryant.Bowen@dnr.ga.gov>; Richardson, Dewey <Dewey.Richardson@dnr.ga.gov>; Gregory, David <David.Gregory@dnr.ga.gov>
Subject: RE: Oglethorpe Power's Rocky Mountain Pumped Storage Hydroelectric Project Management Plans

External E-Mail

Christina,

We have reviewed and have no major concerns. I will add that we have aquatic nuisance species signage that we use at boat ramps across the state that could be used at Rocky Mountain.

Thanks,

Jim

Jim Hakala
Northwest Georgia Region Fisheries Supervisor

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From: Barrows, Christina <christina.barrows@opc.com>
Sent: Monday, August 5, 2024 1:32 PM
To: Hakala, Jim <Jim.Hakala@dnr.ga.gov>; Peacock, Clint <Clint.Peacock@dnr.ga.gov>; Escobar, Anakela <anakela.escobar@dnr.ga.gov>; Richardson, Dewey <Dewey.Richardson@dnr.ga.gov>; Bowen, Bryant <Bryant.Bowen@dnr.ga.gov>
Cc: Jones, Craig <craig.jones@opc.com>; McCaslin, Tyler <tyler.mccaslin@opc.com>
Subject: Oglethorpe Power's Rocky Mountain Pumped Storage Hydroelectric Project Management

Plans

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Good Afternoon,

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As always, we appreciate your time and would be happy to answer any questions you may have.

Thank you,

Christina Barrows

Environmental Specialist

Oglethorpe Power Corporation

2100 East Exchange Place, Tucker, GA 30084

Office: 770-270-7996

Cell: 470-791-4355

Email: christina.barrows@opc.com Web: www.opc.com



From: [McCaslin, Tyler](#)
To: [Steven Layman](#); [Kelly Kirven](#)
Cc: [Barrows, Christina](#); [Jones, Craig](#)
Subject: FW: Oglethorpe Power's Rocky Mountain Pumped Storage Hydroelectric Project Management Plans
Date: Thursday, August 22, 2024 4:43:12 PM
Attachments: [image001.png](#)

For the consultation record.

-Tyler

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Sent: Thursday, August 22, 2024 2:23 PM
To: Barrows, Christina <christina.barrows@opc.com>
Cc: Jones, Craig <craig.jones@opc.com>; McCaslin, Tyler <tyler.mccaslin@opc.com>; Peacock, Clint <Clint.Peacock@dnr.ga.gov>; Escobar, Anakela <anakela.escobar@dnr.ga.gov>; Bowen, Bryant <Bryant.Bowen@dnr.ga.gov>; Richardson, Dewey <Dewey.Richardson@dnr.ga.gov>; Gregory, David <David.Gregory@dnr.ga.gov>
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Jim

Jim Hakala
Northwest Georgia Region Fisheries Supervisor

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From: Barrows, Christina <christina.barrows@opc.com>
Sent: Monday, August 5, 2024 1:32 PM
To: Hakala, Jim <Jim.Hakala@dnr.ga.gov>; Peacock, Clint <Clint.Peacock@dnr.ga.gov>; Escobar, Anakela <anakela.escobar@dnr.ga.gov>; Richardson, Dewey <Dewey.Richardson@dnr.ga.gov>; Bowen, Bryant <Bryant.Bowen@dnr.ga.gov>
Cc: Jones, Craig <craig.jones@opc.com>; McCaslin, Tyler <tyler.mccaslin@opc.com>
Subject: Oglethorpe Power's Rocky Mountain Pumped Storage Hydroelectric Project Management

Plans

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As always, we appreciate your time and would be happy to answer any questions you may have.

Thank you,

Christina Barrows

Environmental Specialist

Oglethorpe Power Corporation

2100 East Exchange Place, Tucker, GA 30084

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Cell: 470-791-4355

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Meeting Summary
Rocky Mountain Relicensing Final License Application PM&E Review Meeting
with Georgia Department of Natural Resources Wildlife Resources Division

Date and Time: Tuesday, October 8, 2024, 2:00 pm

Location: Virtual meeting on Microsoft Teams

Participants:

Jim Hakala, Georgia Department of Natural Resources (GDNR)

Clint Peacock, GDNR

David Gregory, GDNR

Anakela Escobar, GDNR

Craig Jones, Oglethorpe Power Corporation (OPC)

Tyler McCaslin, OPC

Christina Barrows, OPC

Kelly Kirven, Kleinschmidt Associates

Steve Layman, Kleinschmidt Associates

Prepared by: Steve Layman

Meeting Summary

OPC provided an overview of its proposed protection, mitigation, and enhancement (PM&E) measures for the Final License Application, which OPC anticipates filing in mid-November 2024. Slides were presented (attached) listing all of OPC's proposed measures and focusing primarily on the proposed Recreation Enhancement Plan. Discussion centered around conceptual drawings of OPC's proposals for an Americans with Disabilities Act (ADA)-accessible fishing pier on Antioch Lake East, a kayak launch on Antioch Lake West, and a kayak launch and parking area at Heath Lake. GDNR interests relative to specialty hunting opportunities were also discussed.



Rocky Mountain Relicensing PM&E Review Meeting

October 2024



PM&E Measures Proposed in the FLA

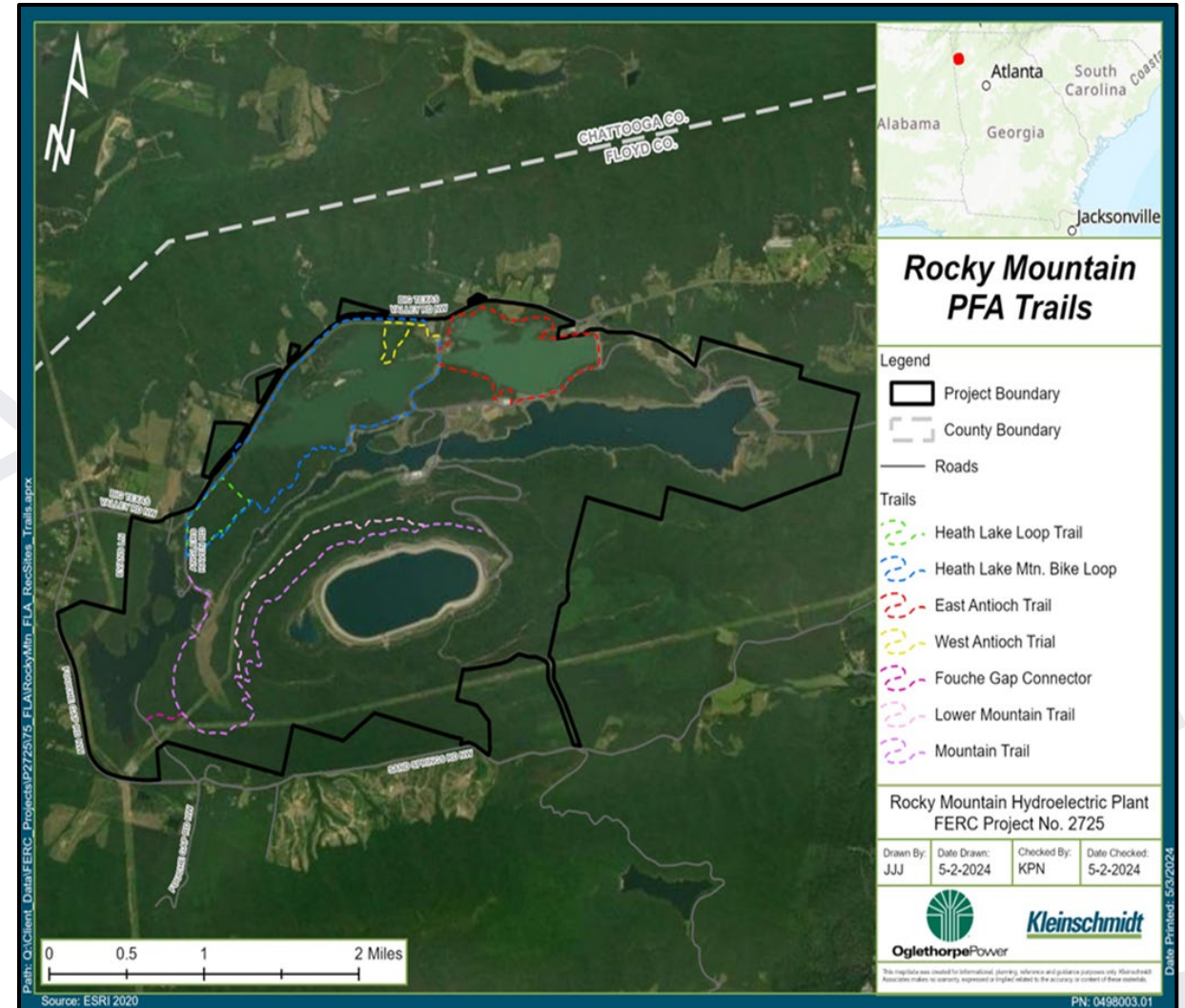
- ▶ Continuous Minimum Flow (1.2 cfs)
- ▶ Minimum Flow Study
- ▶ Bald Eagle Mgt. Plan
- ▶ Bat Habitat Protection Measures
- ▶ Invasive Species Mgt. Plan
- ▶ Recreation Enhancement Plan
- ▶ Recreation Enhancements
- ▶ Resource Management Agreement between OPC and GDNR
- ▶ Historic Properties Mgt. Plan/Programmatic Agreement

Recreation PM&Es



Recreation Enhancement Plan

- ▶ Develop and Implement Recreation Enhancement Plan (REP)
 - Enhancement Measures
 - Construction BMPs
 - Recreation Monitoring



Recreation Enhancements – Main Entrance

▶ Antioch Lake East

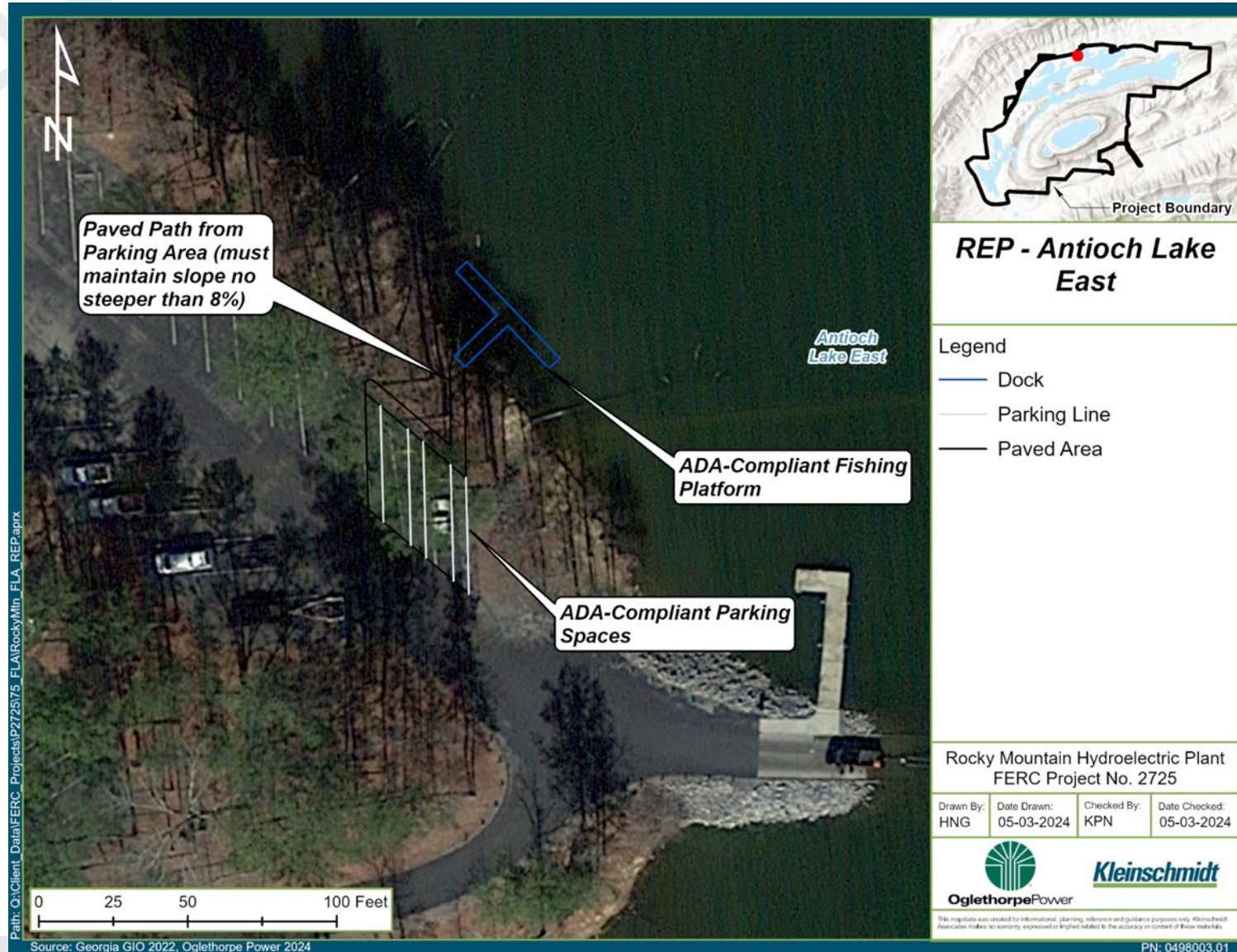
- Visitors Center Restroom Enhancements
- Boat Launch Restroom Enhancements (ADA)
- **New** Fishing Pier (ADA)

▶ Antioch Lake West

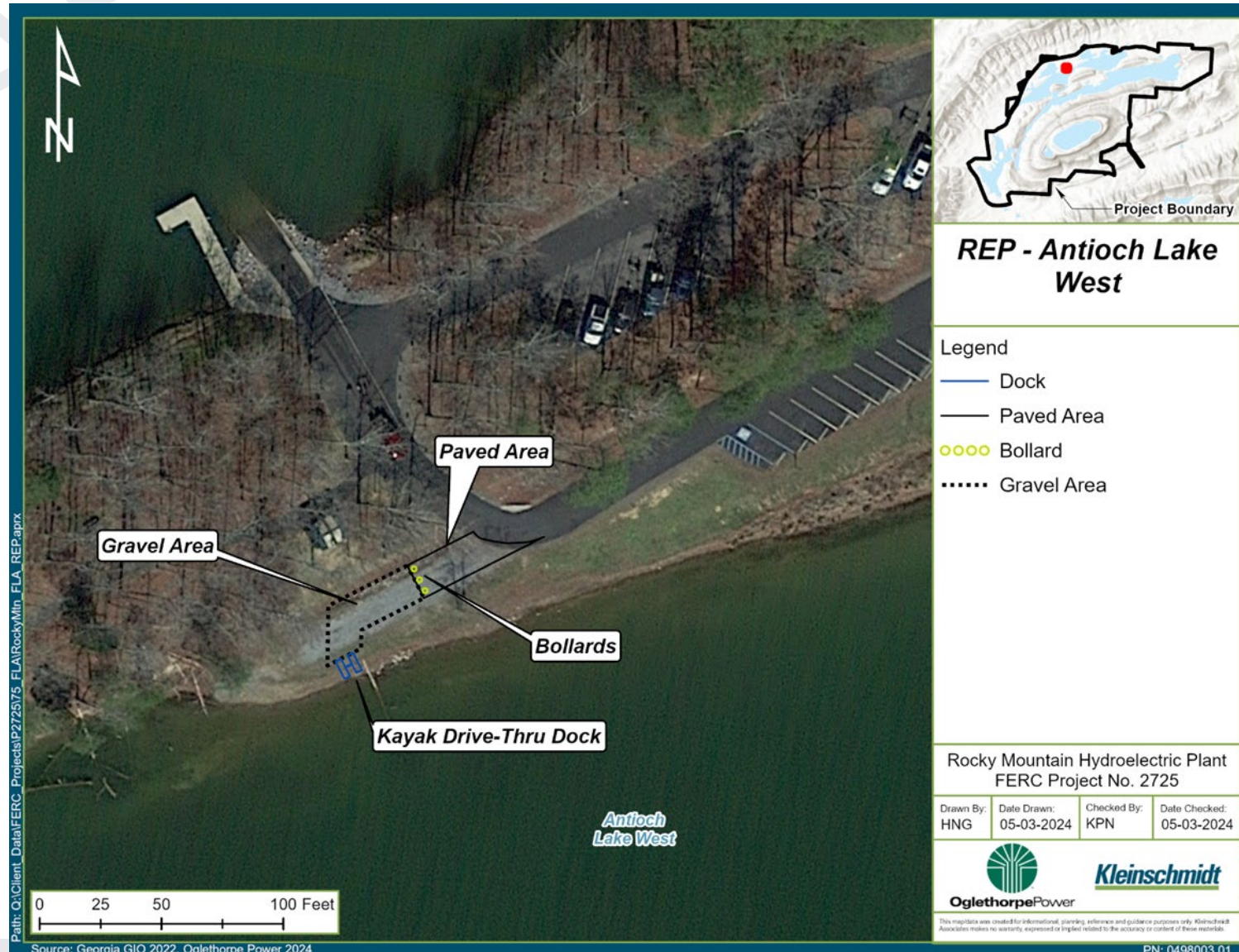
- Boat Launch Restroom Enhancements (ADA)
- **New** Kayak Launch



Antioch Lake East Fishing Pier – Conceptual Drawing

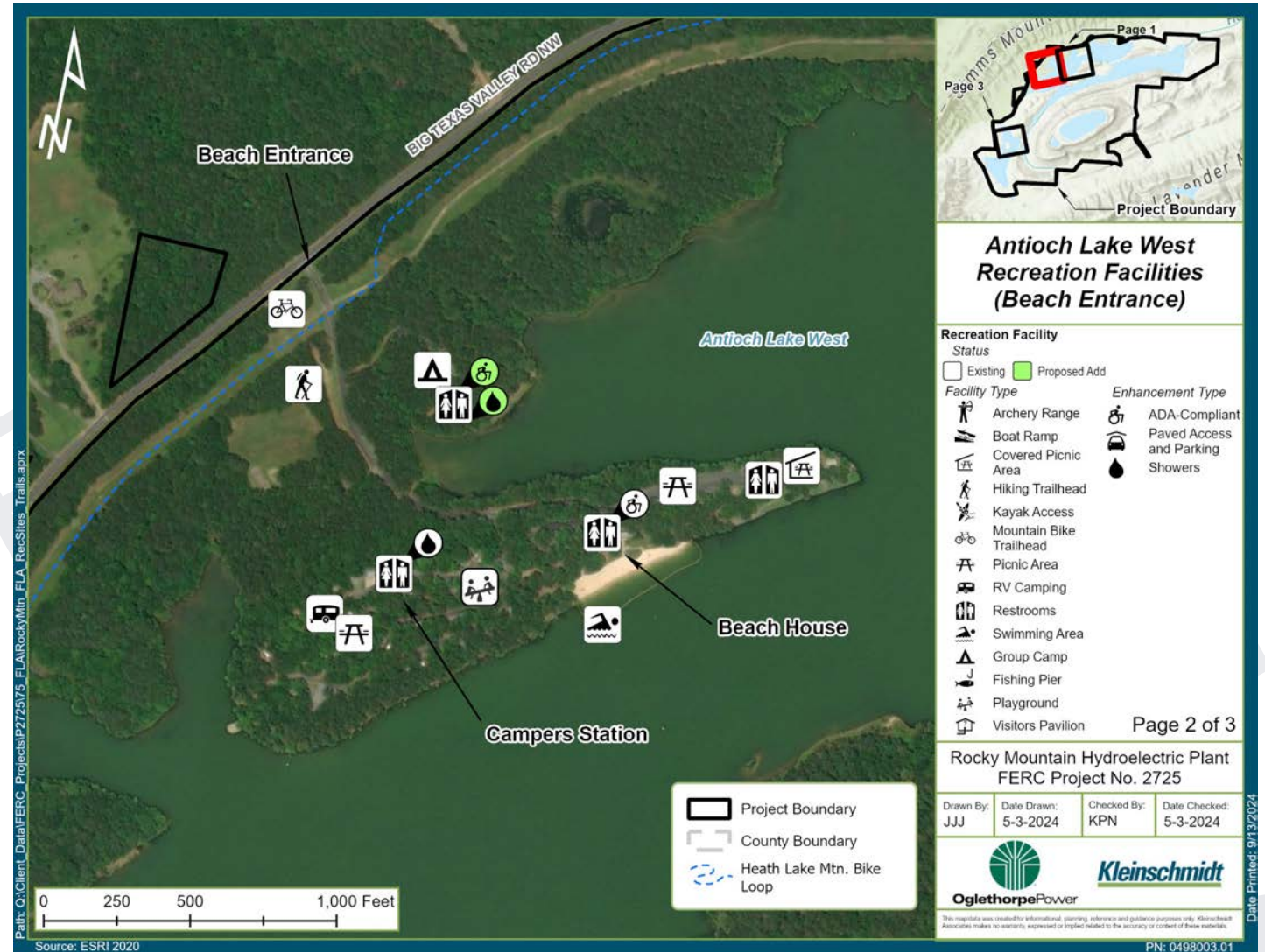


Antioch Lake West Kayak Launch – Conceptual Drawing



Recreation Enhancements – Beach Entrance

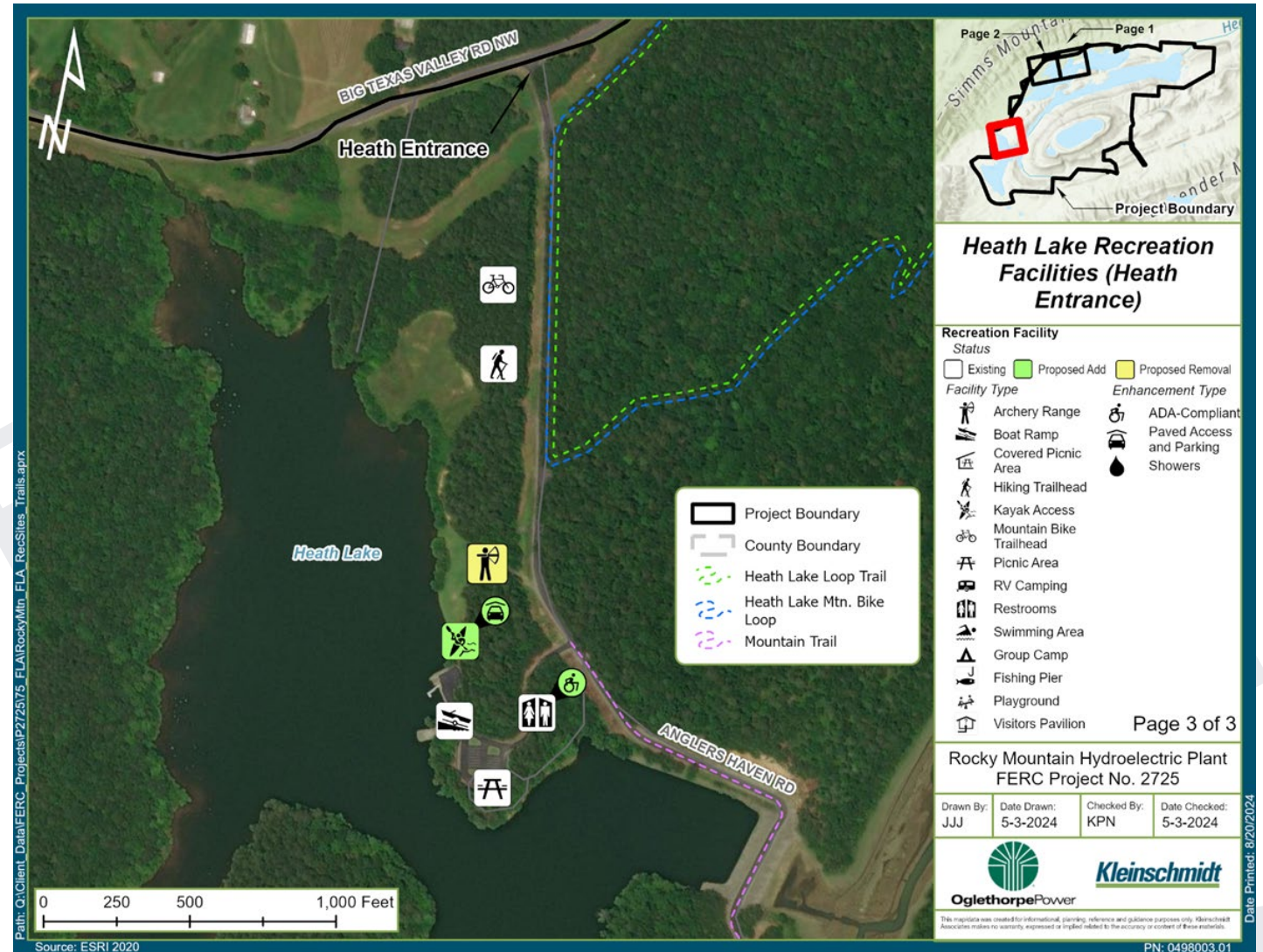
- ▶ Antioch Lake West
 - Beach, Point, and Campground Restroom Enhancements (ADA)
 - Group Camp Restroom Enhancements (ADA)
 - Other Sanitation Enhancements
 - Sewage/Septic renovations at campground, beach, and point



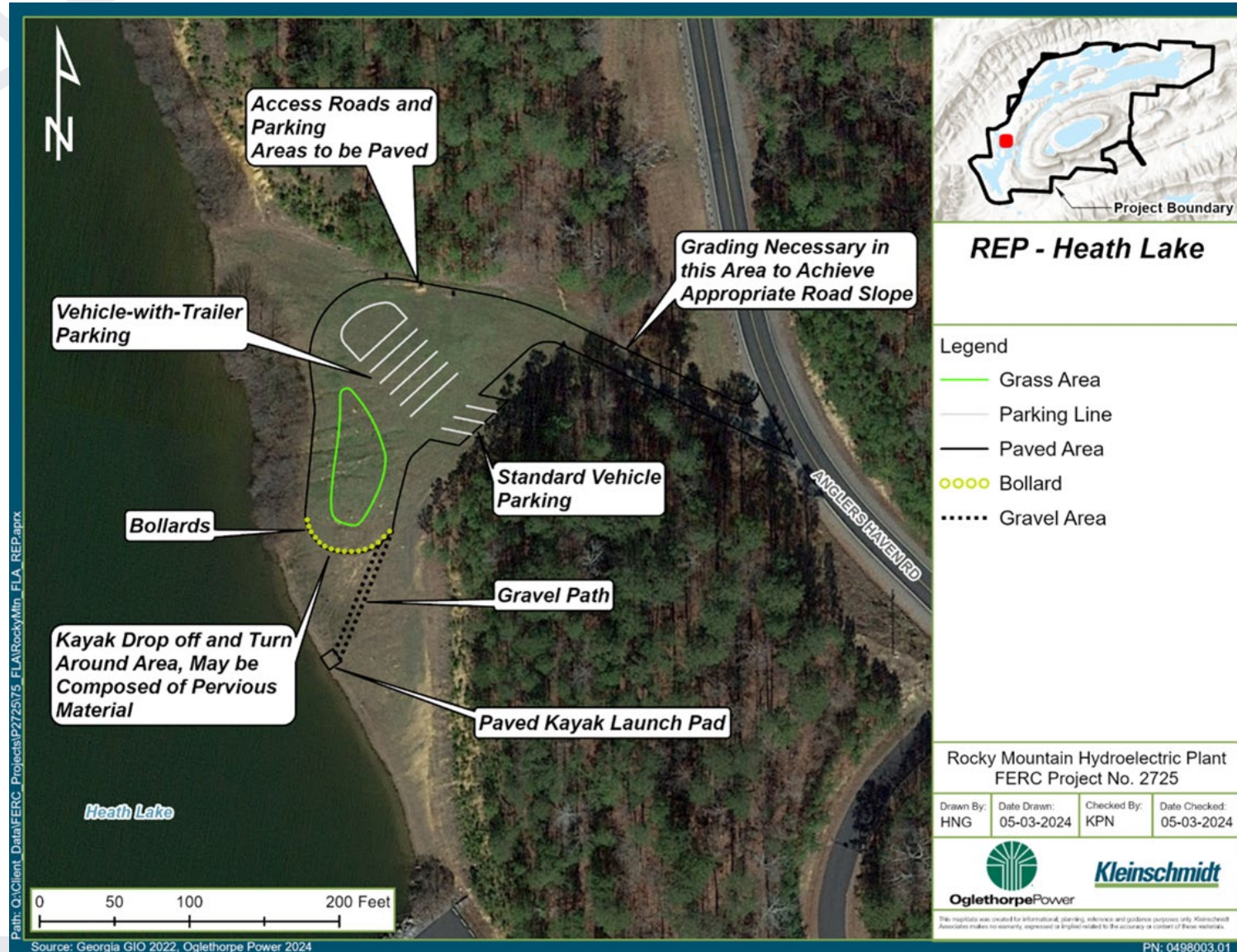
Recreation Enhancements – Heath Entrance

► Heath Lake

- Boat Launch Restroom Enhancements (ADA)
- **New** Kayak Launch and Parking Area
- Remove Archery Range



Heath Lake Kayak Launch – Conceptual Drawing



Questions and Discussion

From: [Hakala, Jim](#)
To: [McCaslin, Tyler](#); [Jones, Craig](#)
Cc: [Barrows, Christina](#); [Steven Layman](#); [Kelly Kirven](#)
Subject: RE: Power Point
Date: Tuesday, October 15, 2024 3:03:05 PM
Attachments: [image001.png](#)

Got it! Thank you.

Jim Hakala
Northwest Georgia Region Fisheries Supervisor

Wildlife Resources Division

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From: McCaslin, Tyler <tyler.mccaslin@opc.com>
Sent: Tuesday, October 15, 2024 2:41 PM
To: Jones, Craig <craig.jones@opc.com>; Hakala, Jim <Jim.Hakala@dnr.ga.gov>
Cc: Barrows, Christina <christina.barrows@opc.com>; Klein Schmidt Group (Steven Layman) <Steven.Layman@Kleinschmidtgroup.com>; Klein Schmidt Group (Kelly Kirven) <Kelly.Kirven@KleinschmidtGroup.com>
Subject: RE: Power Point

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.

Hi Jim,

I have the slide deck attached. Thanks again for your time and productive discussion last week.

-Tyler

From: Jones, Craig <craig.jones@opc.com>
Sent: Tuesday, October 15, 2024 1:47 PM
To: 'Hakala, Jim' <Jim.Hakala@dnr.ga.gov>
Cc: McCaslin, Tyler <tyler.mccaslin@opc.com>; Barrows, Christina <christina.barrows@opc.com>
Subject: RE: Power Point

Hi Jim,

I was travelling last week and am just now getting to your email. Happy to provide a copy of the presentation.

Tyler, would please send a copy to Jim? Jim, please note that we are marking the presentation as draft to allow for any changes, although we are not expecting anything significant at this time.

Best,

cj

Craig A. Jones, PhD

Vice President, Environmental, Safety, and Regulatory Affairs
Oglethorpe Power Corporation
2100 East Exchange Place, Tucker, GA 30084

Office: 770-270-7348 **Mobile:** 770-500-8912
Email: craig.jones@opc.com **Web:** www.opc.com



From: Hakala, Jim <Jim.Hakala@dnr.ga.gov>
Sent: Wednesday, October 9, 2024 12:01 PM
To: Jones, Craig <craig.jones@opc.com>
Subject: Power Point

External E-Mail

Craig,

Would you mind sending me the power point presentation we went over yesterday?

Thanks,

Jim

Jim Hakala
Northwest Georgia Region Fisheries Supervisor

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Rocky Mountain Relicensing PM&E Review Meeting

October 2024



PM&E Measures Proposed in the FLA

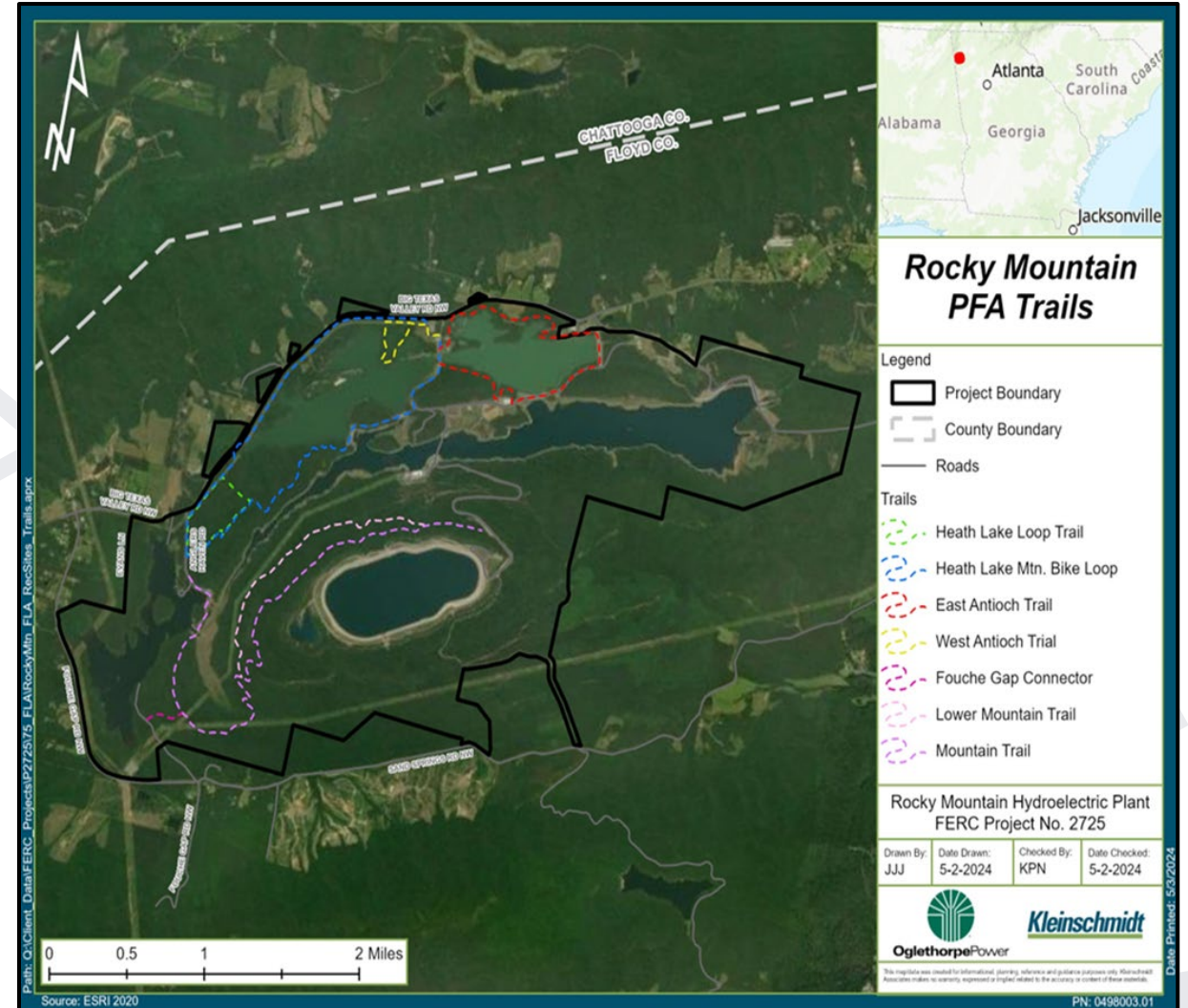
- ▶ Continuous Minimum Flow (1.2 cfs)
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Recreation PM&Es



Recreation Enhancement Plan

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 - Enhancement Measures
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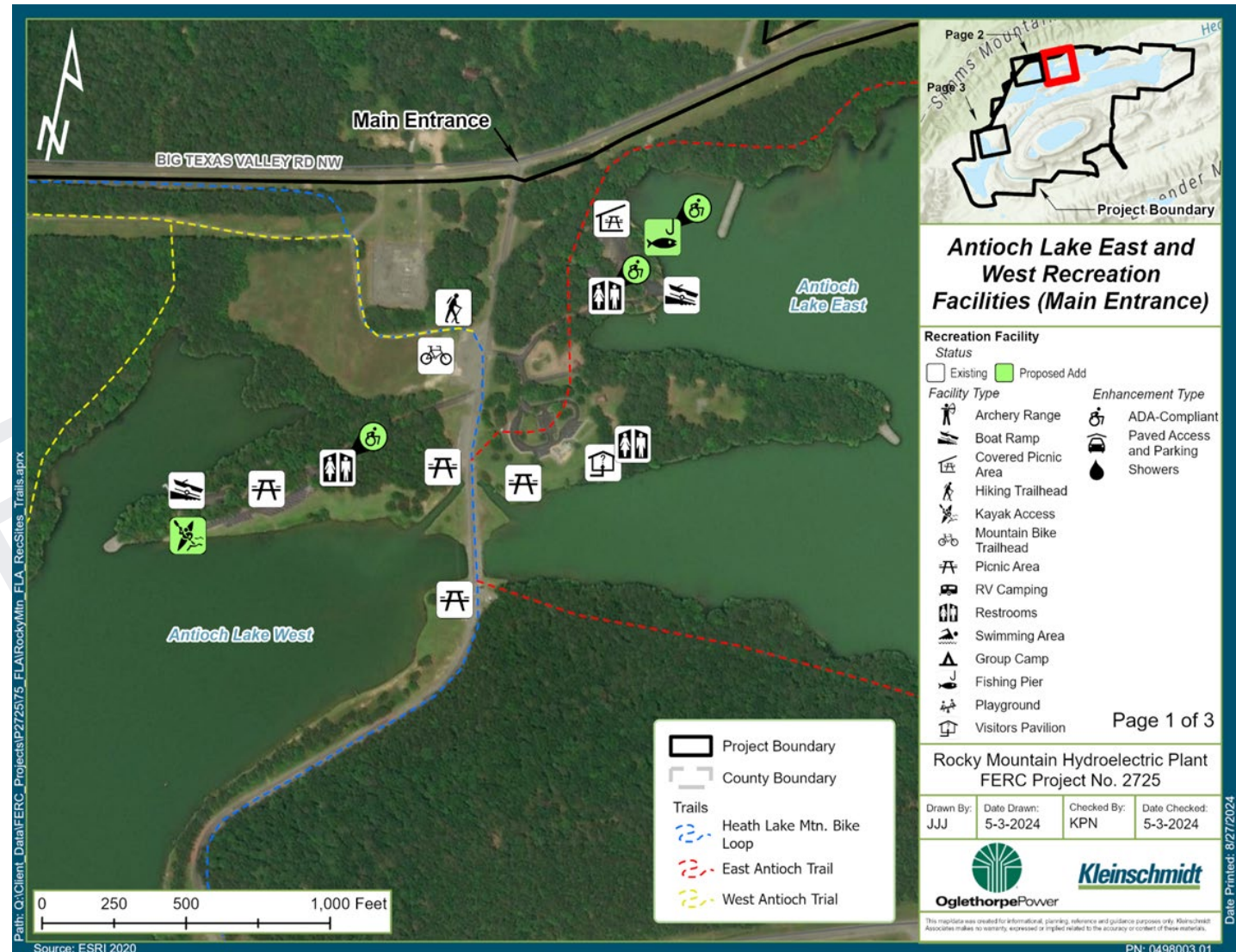
Recreation Enhancements – Main Entrance

▶ Antioch Lake East

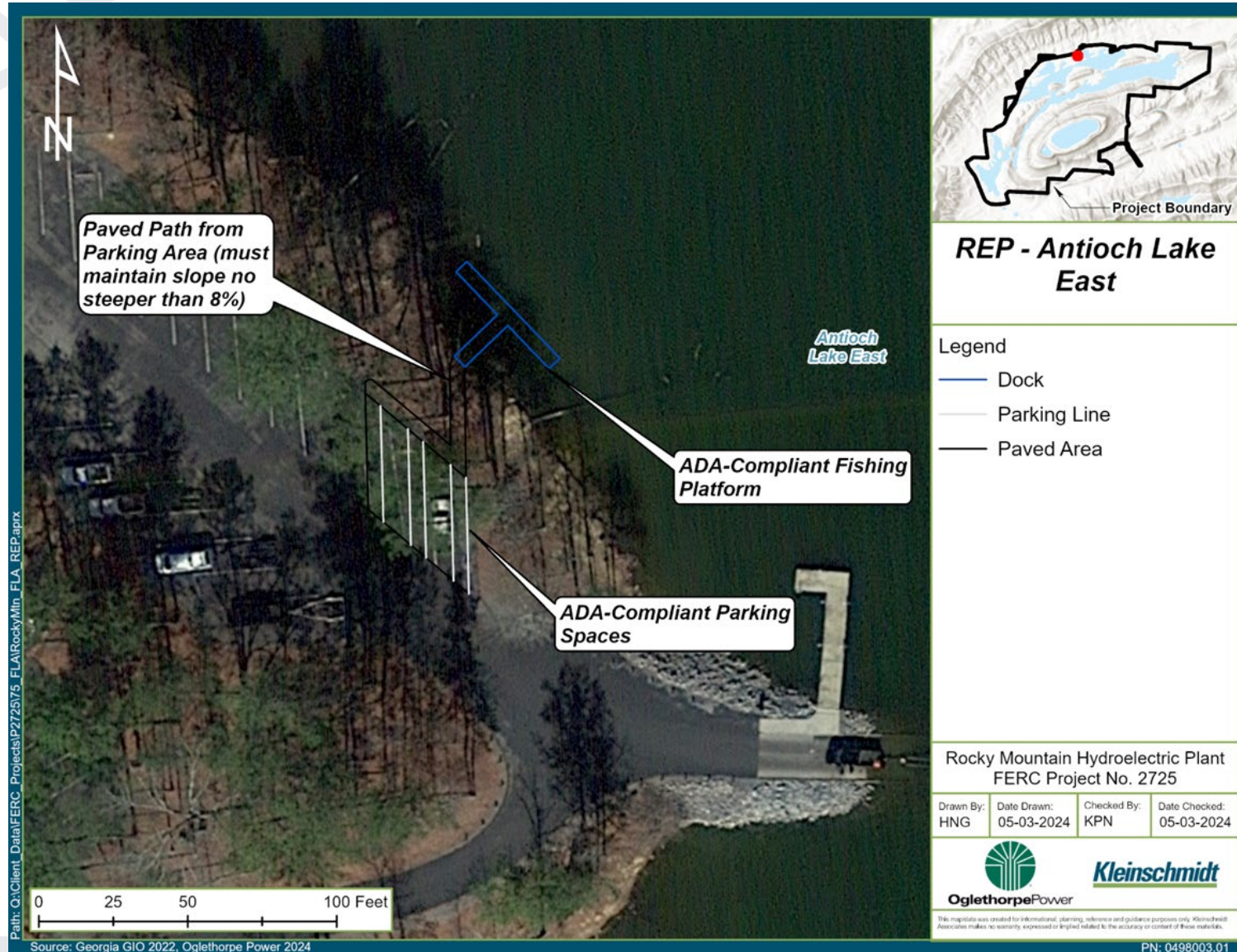
- Visitors Center Restroom Enhancements
- Boat Launch Restroom Enhancements (ADA)
- **New** Fishing Pier (ADA)

▶ Antioch Lake West

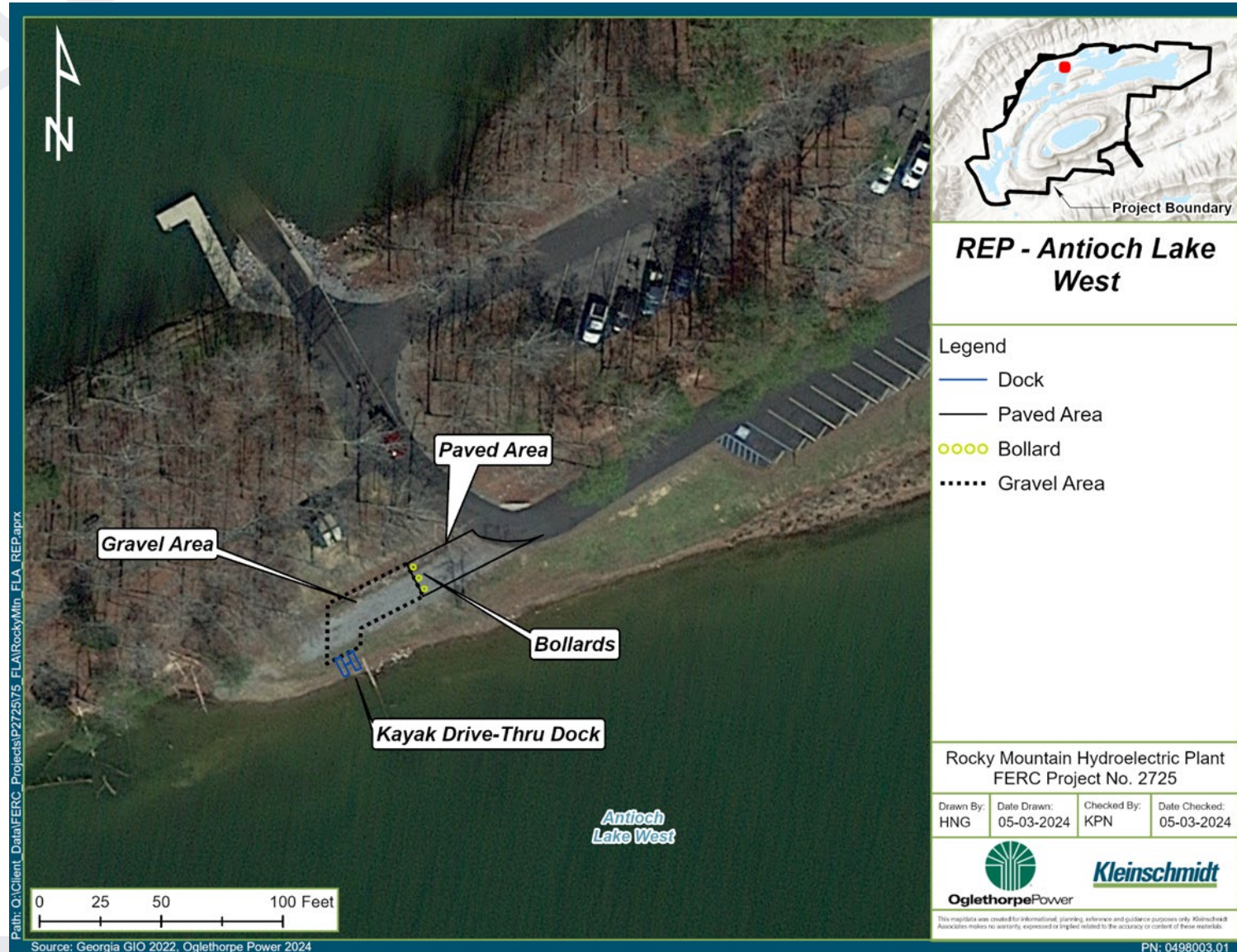
- Boat Launch Restroom Enhancements (ADA)
- **New** Kayak Launch



Antioch Lake East Fishing Pier – Conceptual Drawing

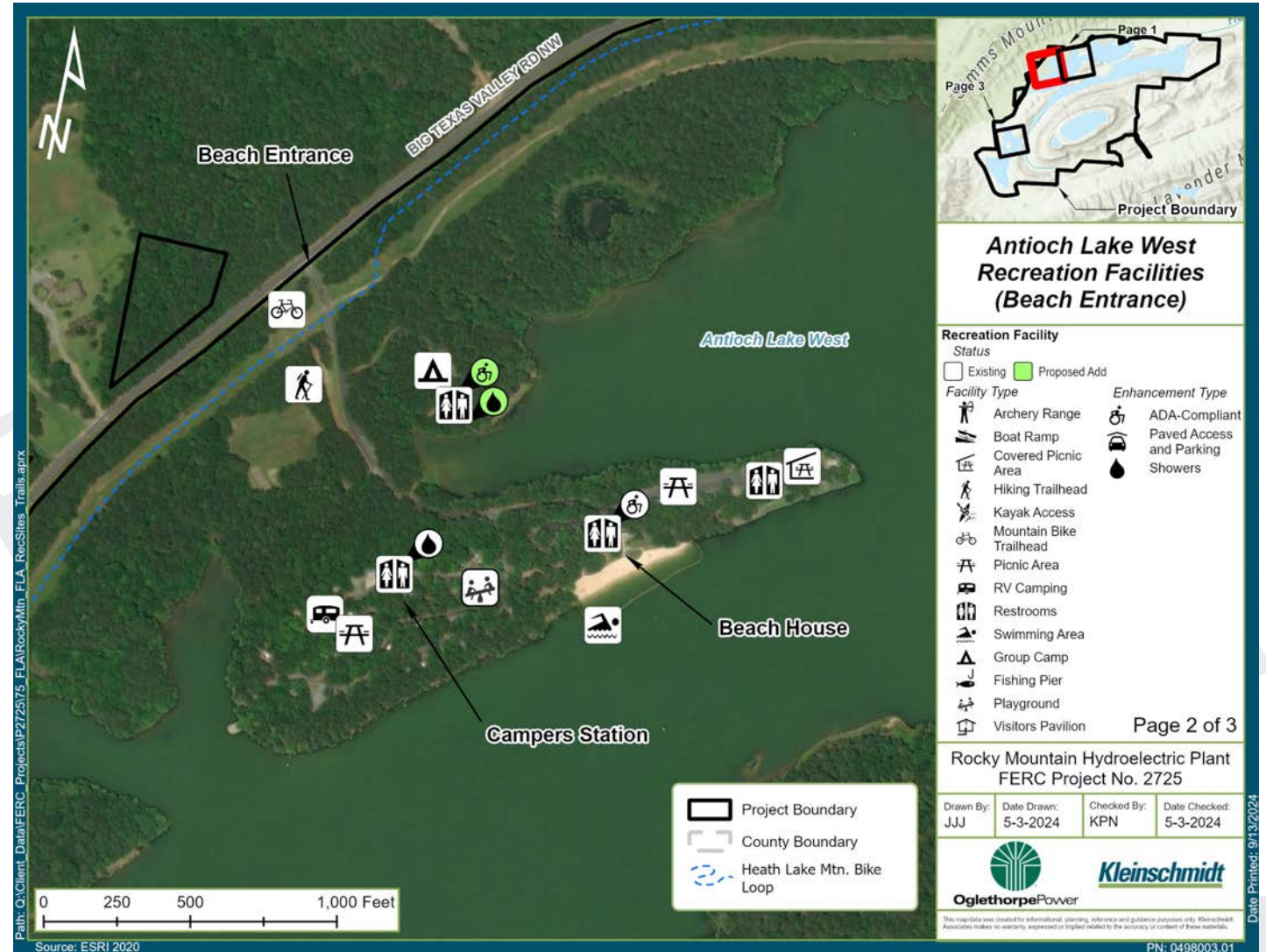


Antioch Lake West Kayak Launch – Conceptual Drawing



Recreation Enhancements – Beach Entrance

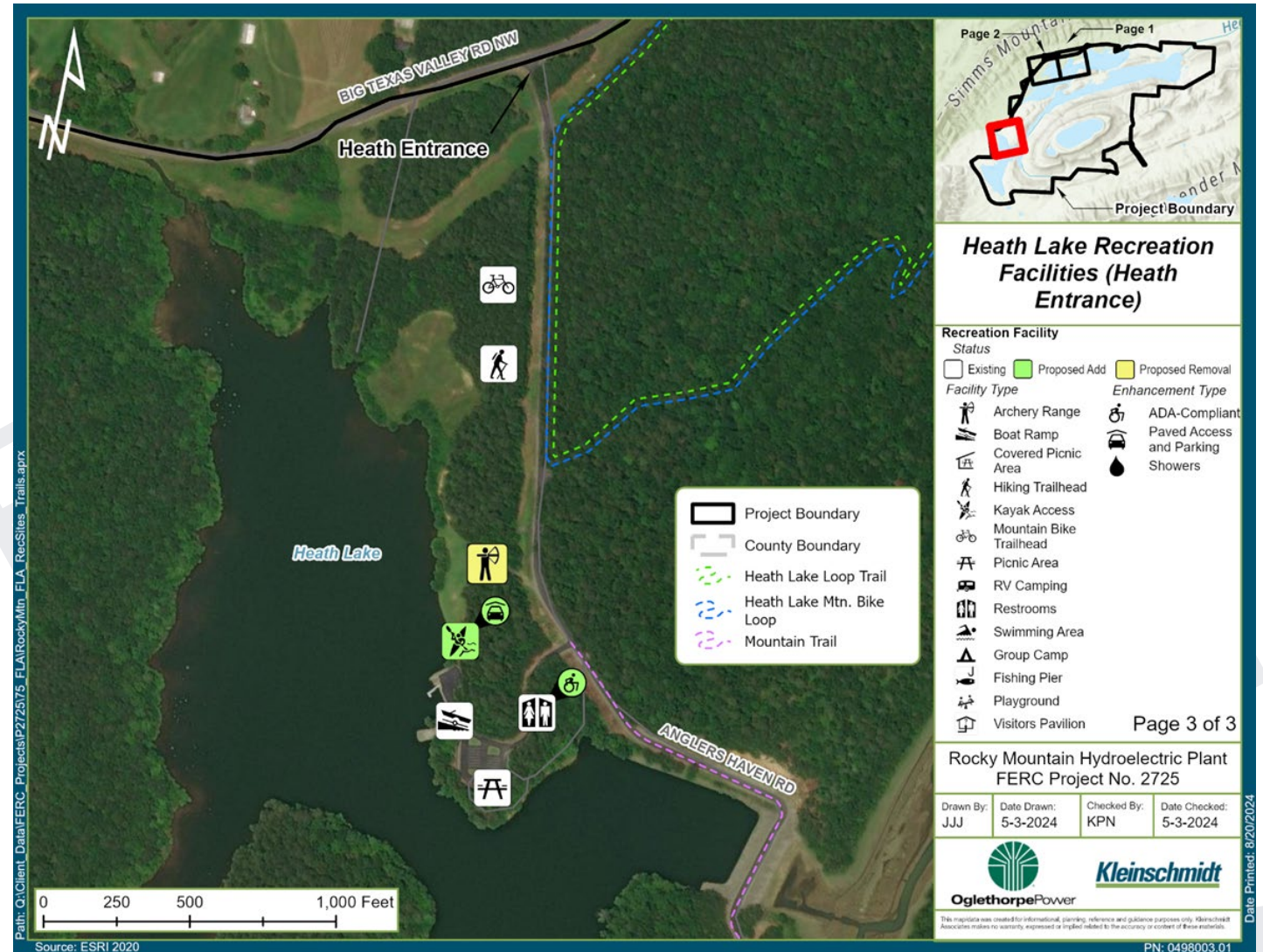
- ▶ Antioch Lake West
 - Beach, Point, and Campground Restroom Enhancements (ADA)
 - Group Camp Restroom Enhancements (ADA)
 - Other Sanitation Enhancements
 - Sewage/Septic renovations at campground, beach, and point



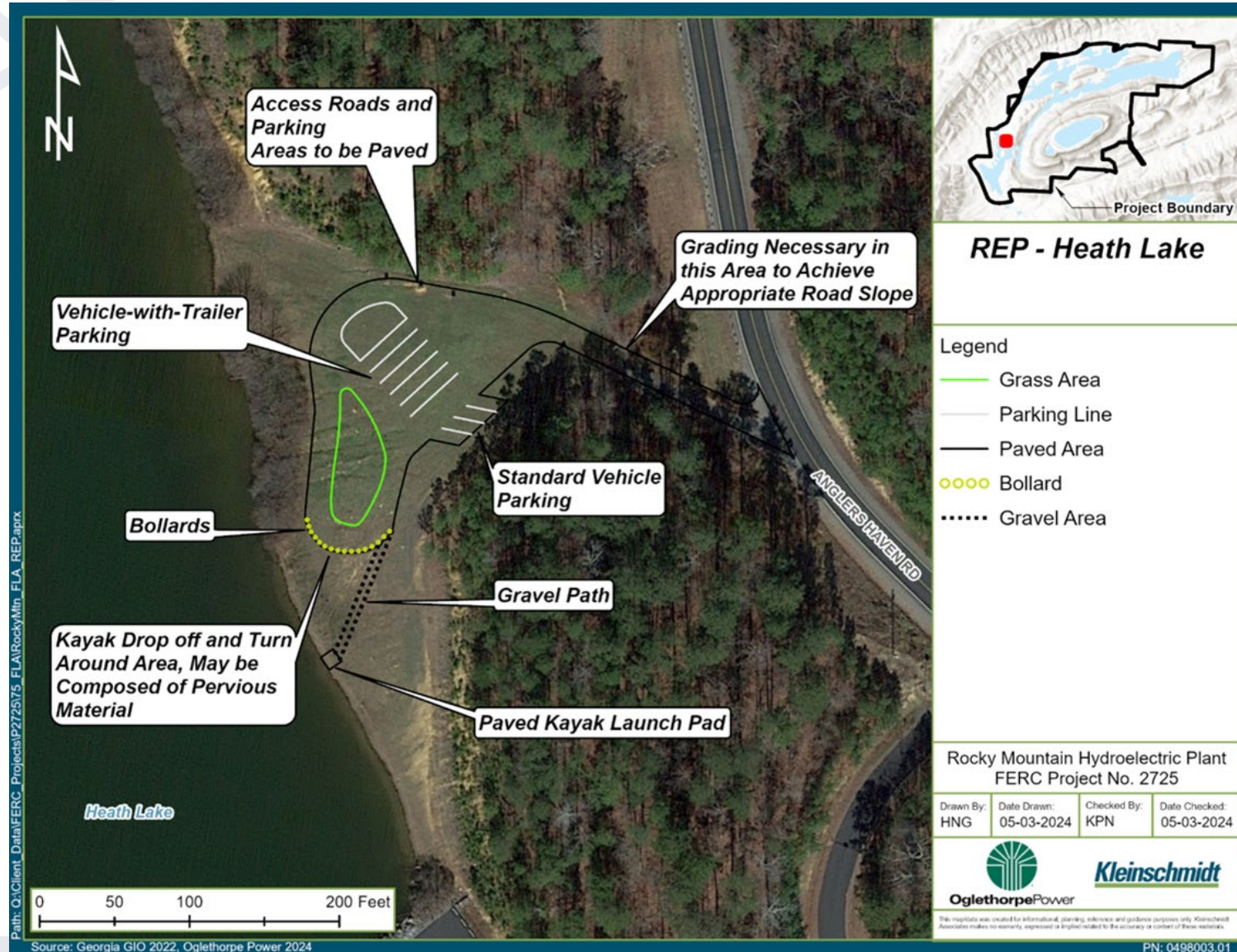
Recreation Enhancements – Heath Entrance

► Heath Lake

- Boat Launch Restroom Enhancements (ADA)
- **New** Kayak Launch and Parking Area
- Remove Archery Range



Heath Lake Kayak Launch – Conceptual Drawing



Questions and Discussion