

Exhibit E-8 Recreation Resources

Downstream Recreational Flow Assessment Study Plan

DOWNSTREAM RECREATIONAL FLOW ASSESSMENT STUDY PLAN

PARR HYDROELECTRIC PROJECT (FERC No. 1894)

Prepared for:

**South Carolina Electric & Gas Company
Cayce, South Carolina**

Prepared by:

Kleinschmidt

Lexington, South Carolina
www.KleinschmidtUSA.com

October 2013

DOWNSTREAM RECREATIONAL FLOW ASSESSMENT
STUDY PLAN

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SOUTH CAROLINA ELECTRIC & GAS COMPANY

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DOWNSTREAM RECREATIONAL FLOW ASSESSMENT STUDY PLAN

PARR HYDROELECTRIC PROJECT (FERC No. 1894)

SOUTH CAROLINA ELECTRIC & GAS COMPANY

1.0 INTRODUCTION

South Carolina Electric & Gas Company (SCE&G) is the Licensee of the Parr Hydroelectric Project (FERC No. 1894) (Project). The Project consists of the Parr Hydro Development and the Fairfield Pumped Storage Development. Both developments are located along the Broad River in Fairfield and Newberry Counties, South Carolina.

The Parr Hydro Development, in particular, forms Parr Reservoir along the Broad River. The Development consists of a 37-foot-high, 200-foot-long concrete gravity spillway dam with a powerhouse housing generating units with a combined licensed capacity of 14.9 MW. Parr Hydro operates in a modified run-of-river mode and normally continuously operates to pass Broad River flow. The 13-mile-long Parr Reservoir has a surface area of 4,400 acres at full pool and serves as the lower reservoir for pumped-storage operations at the Fairfield Pumped Storage Development.

The Project is currently involved in a relicensing process which involves cooperation and collaboration between SCE&G, as licensee, and a variety of stakeholders including state and federal resource agencies, state and local government, non-governmental organizations (NGO), and interested individuals. The collaboration and cooperation is essential to the identification of and treatment of operational, economic, and environmental issues associated with a new operating license for the Project. SCE&G has established several Technical Working Committees (TWC's) with members from among the interested stakeholders with the objective of achieving consensus regarding the identification and proper treatment of these issues in the context of a new license.

Accordingly, SCE&G organized a Recreation TWC (Appendix A), comprised of interested stakeholders who will collaborate with SCE&G to identify and make recommendations related to recreational needs and opportunities in the Project area. The TWC has requested that a study be designed and implemented that would assess flows downstream of the Parr Shoals Dam (Parr Dam) that provide quality recreational experiences and identify preferred flows for recreational activities, primarily as they relate to wade-angling, canoeing and kayaking.

2.0 PURPOSE OF THE STUDY

To fulfill the needs identified by the TWC, this study will serve to assess potential and identify preferred recreational flows downstream of the Parr Dam primarily as they relate to wade-angling, canoeing and kayaking. This study encompasses the following goals and objectives:

Goal 1: Characterize currently available recreational opportunities on the Broad River, downstream of the Parr Dam, as they relate to wade-angling, canoeing and kayaking. This will be accomplished by meeting the following objectives:

- i. Utilize the information collected during focus group activities to identify the current patterns of non-motorized boating use on the Broad River, below the Parr Dam, by location and volume, and the quality of those activities.
- ii. Estimate preferred flows and seasonal distribution associated with reasonable and safe recreational use of the Broad River, below Parr Dam, for target activities.

Goal 2: Evaluate potential issues related to portage around Parr Dam. This will be accomplished by meeting the following objectives:

- i. Identify the need among paddlers for portage opportunities around Parr Dam through focus group discussions.

3.0 STUDY AREA

The Project boundary, as defined by FERC, does not encompass the Broad River below the Parr Dam. However, operation of the Parr Development affects and could serve to enhance recreational opportunities below Parr Dam. As noted, SCE&G currently operates the Parr Dam in a modified run-of-river capacity.

For this study, the geographic scope will begin at the base of the Parr Dam and encompass limited downstream areas of the Broad River (Figure 1). Focus group discussions will be directed toward recreational wading and boating flow opportunities as they relate to representative hydraulic conditions (i.e. runs, pools, and rapids) in identified reaches of the Broad River. Should Phase 2 be implemented, as discussed below, the specific areas of any on-water evaluations/verifications within the study reach will be chosen with regards to access and in consultation with the TWC/focus group.

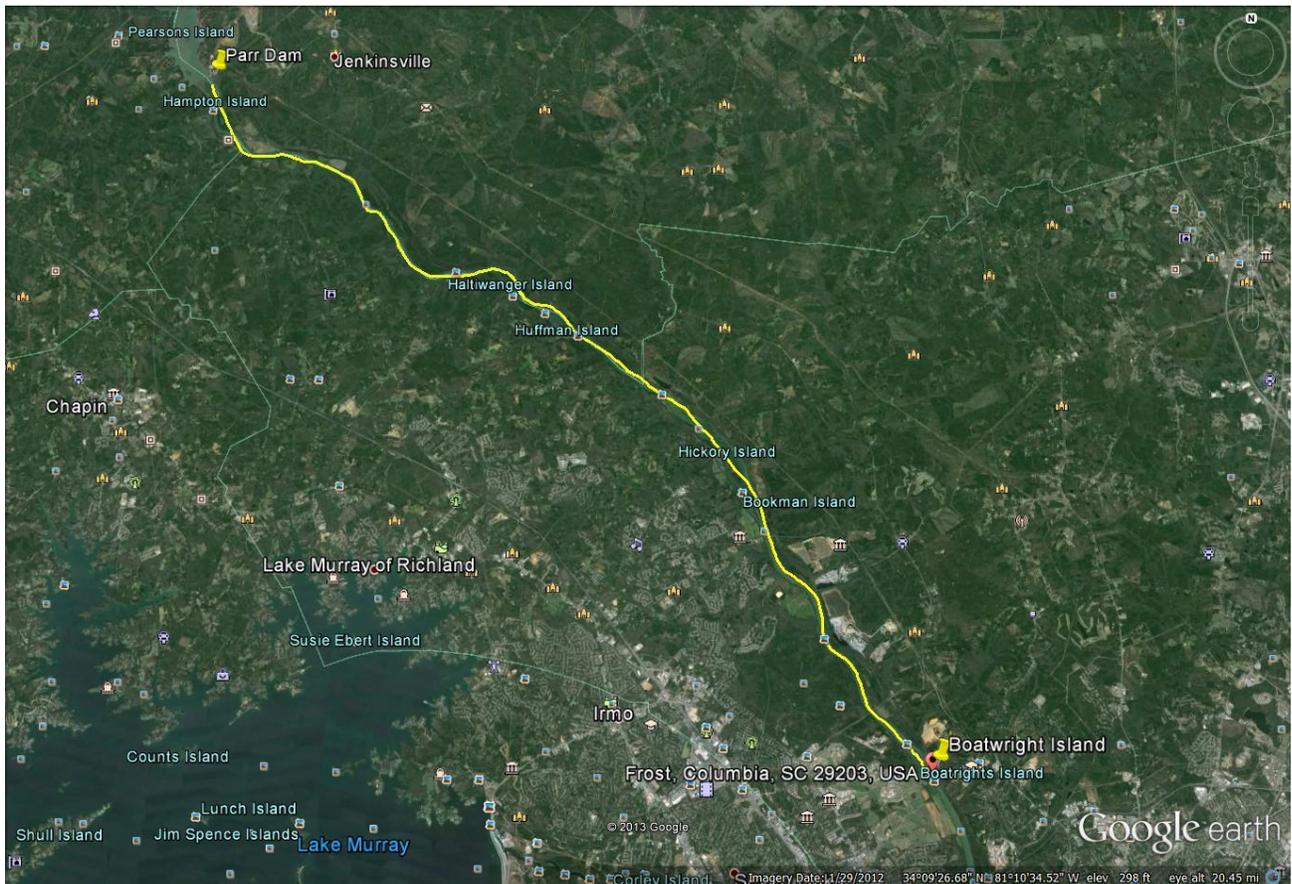


FIGURE 1 DOWNSTREAM RECREATIONAL FLOW ASSESSMENT STUDY REACH

4.0 METHODOLOGY

Information gathered for this study will be used to examine the suitability of the Broad River, downstream of the Parr Dam, for different recreational activities under various flow ranges. The study may involve a one or two-phase approach, depending upon the outcome of Phase 1, to meet the goals of the study through the objectives identified above. Phase 1 will involve convening a panel of experienced anglers, paddlers, NGOs and agency staff familiar with the study reaches to assess the feasibility and potential quality of particular flow ranges for specified on-water activities. Pertinent existing information will also be reviewed as it relates to this effort. Phase 2 will involve an on-site evaluation with members of the TWC and/or focus group convened during Phase 1, if the information gleaned during Phase 1 activities does not serve to meet study goals.

In addition to these efforts, the planned Project Recreation Use and Needs Study will provide information regarding recreational opportunities, patterns and levels of use on the Broad River, primarily above the Parr Dam. This data may be utilized in association with the data gathered from Phase 1 and, potentially, Phase 2 efforts.

4.1 PHASE 1 - FOCUS GROUP AND EXISTING INFORMATION REVIEW

A panel of knowledgeable and experienced parties will be formed to collect and disseminate information regarding recreation opportunities and potential flow effects on recreation on the Broad River downstream of the Parr Dam. The panel will include local paddlers/outfitters, anglers, canoe/kayak clubs, and members of the TWC. Focus group discussions will be conducted to identify and document characteristics of the Broad River within the Study Area with respect to the nature, seasonal distribution, and quality of target on-water activities and preferred river flows.

Existing information about the Broad River channel, hydrology, and flow data for the Broad River in the vicinity of the Project, will be compiled and reviewed to determine if there is any information or data pertinent to this effort. Literature searches will be conducted via the web, libraries, and SCE&G and agency and NGO collections.

4.2 PHASE 2 - SITE RECONNAISSANCE

Contingent upon discussions with the TWC and panel members under Phase 1, a site reconnaissance may be necessary to augment existing information and for the field verification of preferred recreational flows. Critical areas for evaluation will be pre-determined in consultation with the TWC. Information gained from mesohabitat studies may also aid in the identification of instream hydraulic alterations and may provide useful information for selecting on-water evaluation areas. The TWC and panel will observe and assess the quality of target recreational activities at the pre-determined locations and at the preferred flow ranges determined as part of the Phase 1 analysis.

5.0 DELIVERABLES

A draft and final report will be prepared for this effort. The draft report will be reviewed internally by the Recreation TWC and the Lake and Land Management and Recreation Resource Conservation Group (RCG). Comments and edits from the TWC will be incorporated into a Final Report for the relicensing effort. The report will include an executive summary, an introduction, objectives, methods and the resulting recommendations for recreational flows.

6.0 SCHEDULE

The proposed schedule for completion of the Downstream Recreational Flow Assessment is as follows:

TASK	DATE
Focus Group Meeting 1 and Literature Review	September – October 2014
Focus Group Meeting 2	September 2015
Phase 2 Panel Reconnaissance	October - November 2015
Submit Draft Report	2016
TWC Review	2016
Submit Final Report	2016

7.0 USE OF STUDY RESULTS

Study results will be used as an information resource during discussion of relicensing issues and developing potential Protection, Mitigation and Enhancement measures with the South Carolina Department of Natural Resources, USFWS, RT&E TWC, and other relicensing stakeholders.

8.0 REFERENCES

South Carolina Department of Parks, Recreation and Tourism, Recreation, Planning and Engineering Office. 2008. South Carolina Statewide Comprehensive Outdoor Recreation Plan.

University of South Carolina. 2005. South Carolina Recreation Participation & Preference Study. Prepared for the South Carolina Department of Parks, Recreation and Tourism. (Online) [URL]: <http://www.scprt.com/files/RPE/2005%20Rec%20Study.pdf>

Whitaker, Doug, Bo Shelby, and John Gangemi. 2005. Flows and Recreation: A Guide to Studies for River Professionals. October 2005.

Exhibit E-8 Recreation Resources

Downstream Recreational Flow Focus Group Meeting Summary

Parr Hydroelectric Project Relicense – FERC No. 1894

Downstream Recreational Flow Focus Group Meeting Summary

December 11, 2014

Kleinschmidt Offices – Lexington, SC

Recreational Flow Focus Group - Purpose Statement

As part of the relicensing process for the Parr Hydroelectric Project, stakeholders identified that there is a need for information that characterizes the currently available recreational opportunities, access areas, and preferred recreational flows downstream of the Parr Shoals Dam, primarily as they relate to wade-angling, canoeing and kayaking. SCE&G proposes to obtain some of this information through the use of a Recreation Flow Focus Group. The information identified by the Focus Group will be used to help SCE&G identify the current patterns of non-motorized boating use on the Broad River, downstream of the Parr Shoals Dam for both location and amount of use, and the quality of those recreation activities. An additional objective of Focus Group meetings will be to identify preferred recreation flows and seasonal distribution associated with reasonable and safe recreational use for target activities in the Broad River downstream of the Parr Shoals Dam.

Session Details

Facilitators: Alison Jakupca, Henry Mealing, Kelly Miller - Kleinschmidt Associates

Date of Session: December 11, 2014

Participant Information:

<u>Organization/Affiliation</u>	<u>Number Attending</u>
• Individuals/Business owners/NGO members*	10
• State and Local Agencies (SCDNR, SCPRT, City of Columbia)	3
• SCE&G Personnel	2
• Kleinschmidt Personnel	3

*Non-Governmental Organizations (NGOs) represented include: Palmetto Paddlers, American Whitewater, and Congaree Riverkeeper.

Results:

In December 2014, SCE&G conducted a focus group of individuals who recreate on the Broad River, downstream of the Parr Shoals Dam, and who are knowledgeable regarding flow releases from the Parr Hydroelectric Project. For the purposes of this meeting summary, the Broad River, directly downstream of the Parr Shoals Dam and above the Columbia Diversion Dam, is referred to as the Area of Interest (AOI). Information was gathered in 3 primary areas: *(1) recreation use patterns, seasonal trends and distribution of activities; (2) preferred recreational flows and the seasonal distribution of those flows; (3) current downstream access areas, needs, and teaming/cooperation opportunities.* Discussion results are summarized below.

Recreation Use Patterns, Seasonal Trends and Distribution of Activities:

- Responses by focus group attendees on their frequency of recreation in the AOI varied depending on access and length of travel to the AOI. Individuals owning property along the Broad River indicated that they recreated below the Project on a weekly basis, while other attendees indicated that they have recreated in the AOI within the past year.
- The number of times that attendees recreated in the AOI in the past year varied from 4 to 10 times, to over 100 times.
- Focus group attendees indicated that they generally utilized the AOI during weekends and warmer seasonal temperatures. However, attendees indicated that the AOI was utilized by duck hunters and fishermen during colder seasons.
- Attendees also indicated that they take advantage of the paddling opportunities provided by the higher spring flows.
- Focus group attendees noted that recreation in the AOI has increased over the past 25 years.

Preferred Recreational Flows and the Seasonal Distribution of Flows

- Focus group attendees were queried regarding preferred recreation flows in the AOI and attendees noted that preferred flows varied by recreational activity. Attendees indicated that higher flows were generally preferred for paddling, while lower flows were generally preferred for fishing.
- Several attendees stated that 3.5 to 4 feet at the USGS Gage at Alston (approximately 1,500 feet³/second (cfs) to 2,300 cfs) is ideal for paddlers, boaters, and preferred by some fishermen. It was also noted that many fishermen prefer low flows and clear water.

- Attendees noted that some areas, particularly the wide, flat area upstream of Bookman Island, were difficult to traverse in a canoe at flows of 1,200 cfs or less.
- Focus group attendees indicated that flows above 8,000 cfs limited most recreation opportunities.
- Attendees noted that passing flows through the west channel (directly downstream of Parr Shoals Dam) may provide additional paddling opportunities.

Current Downstream Access Areas, Needs, and Teaming/Cooperation Opportunities

- Focus group attendees noted that there are currently several access options in the AOI that include: Chestnut Hill; 213 Bridge; Harbison Forest.
- Attendees noted that most of these access options were not preferable due to safety concerns, lack of site maintenance by the entities that own them, or problems getting access (semi-public).
- The focus group facilitators discussed that Parr Hydroelectric Project lands end at the Parr Shoals Dam. However, facilitators and SCE&G noted that the focus group meetings could be used as a forum for focus group attendees to discuss teaming partnerships with the entities that own the current access areas and land within the AOI (Harbison Forest, counties, rowing clubs, etc.).
- Focus group attendees discussed that any downstream improvements should be focused on primitive access for non-motorized use. Access similar to Gardendale Landing on the lower Saluda River was preferred by the group.
- Attendees noted that new access that divided the AOI into 3 sections (7 to 8 miles a piece) would be preferable.
- SCE&G acknowledged that there may be opportunities to explore teaming arrangements between SCE&G and local stakeholders. This could include some agreement outside of relicensing. SCE&G clearly stated that they do not want to develop or maintain a park site outside of the Parr Shoals Project Boundary or extend the Project Boundary.
- Focus group attendees stated that paddling and bird watching opportunities would increase with improved access.

Other points and issues raised by focus group attendees:

- Focus group attendees indicated that the smallmouth bass fishery in AOI was one of the best in the southeast and fishermen were traveling to the AOI from other states to fish there.
- Attendees expressed concern regarding potential declines in the smallmouth bass population if too much access to the AOI is provided.
- Attendees noted that there was quite a bit of trash in the AOI due to irresponsible river users. Increased trash could also occur with increased access.

Notes submitted by focus group attendees subsequent to meeting:

- Subsequent to the meeting, a focus group attendee provided information regarding an article in the State Newspaper describing a potential paddle. This article suggested starting at the Peak Landing, paddling upstream to the Parr Shoals dam, then downstream on river-left to the trestle and back up to Peak Landing on river-right. The focus group attendee noted that this would be a great paddle, but not possible at low water levels and suggested that if a relatively small amount of water were spilled at the west end of the dam, this float would be possible.
- Subsequent to the meeting, a focus group attendee suggested that a small amount of water be spilled on the west side of the dam to make canoe portage easier.

Conclusions:

There were several common themes expressed during the focus group meeting discussions. Focus group attendees indicated that recreation occurs year-round in the AOI. The type of recreation varies seasonally (paddling and fishing during the warmer and higher flow months; fishing and duck hunting during the lower flow and colder months). Recreational flows preferred by focus group attendees varied by activity, but were generally between 1,500 cfs and 8,000 cfs. Teaming arrangements to improve access in the AOI could be explored by focus group attendees and downstream land-owners/counties, etc. SCE&G also noted that teaming arrangements between local stakeholders and SCE&G may be possible for the development of off-license access opportunities that will not be part of the Parr Shoals Project.

Appendix: Focus Group Discussion Questions

1. When was the last time you recreated on the Broad River, downstream of the Parr Shoals Dam?
2. What activities do you typically participate in? (Separate responses by activity on flip-chart)
3. How many times have you recreated on the river since this time last year?
4. Do you typically recreate during the week or on weekends? Why?
5. Is there a specific month that you tend to recreate most frequently? Why?
6. Are there any months that you generally avoid? Why?
7. What time of the day do you typically recreate?
8. What flow levels are most favorable to your activity of choice?
9. Looking at this map, what sites do you typically use to access the Broad River?
10. Why do you choose to use that site?
11. Are there any additional access sites needed on the Broad River? Where should these be located?

Exhibit E-8 Recreation Resources

Downstream Navigational Flow Assessment Study Plan

DRAFT
DOWNSTREAM NAVIGATIONAL FLOW ASSESSMENT
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SOUTH CAROLINA ELECTRIC & GAS COMPANY

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DOWNSTREAM NAVIGATIONAL FLOW ASSESSMENT STUDY PLAN

PARR HYDROELECTRIC PROJECT (FERC No. 1894)

SOUTH CAROLINA ELECTRIC & GAS COMPANY

1.0 INTRODUCTION

South Carolina Electric & Gas Company (SCE&G) is the Licensee of the Parr Hydroelectric Project (FERC No. 1894) (Project). The Project consists of the Parr Hydro Development and the Fairfield Pumped Storage Development. Both developments are located along the Broad River in Fairfield and Newberry Counties, South Carolina.

The Project is currently engaged in a relicensing process which involves cooperation and collaboration among SCE&G, as licensee, and a variety of stakeholders including state and federal resource agencies, state and local government, non-governmental organizations (NGO), and interested individuals. The collaboration and cooperation is essential to the identification of and treatment of operational, economic, and environmental issues associated with a new operating license for the Project. SCE&G has established Technical Working Committees (TWC's) with members from among the interested stakeholders with the objective of achieving consensus regarding the identification and proper treatment of these issues in the context of a new license.

The Recreation TWC has requested that flows downstream of the Parr Shoals Dam (Parr Dam) be assessed during planned Instream Flow Incremental Methodology (IFIM) studies to determine if downstream flows currently facilitate one-way navigation at an identified point of constriction in the Broad River, downstream of the Project. Although the primary purpose of the IFIM study is to develop an understanding of key habitat-flow relationships for aquatic species in the Broad River, the IFIM study also provides an appropriate means of determining consistency with navigational goals under various flow scenarios.

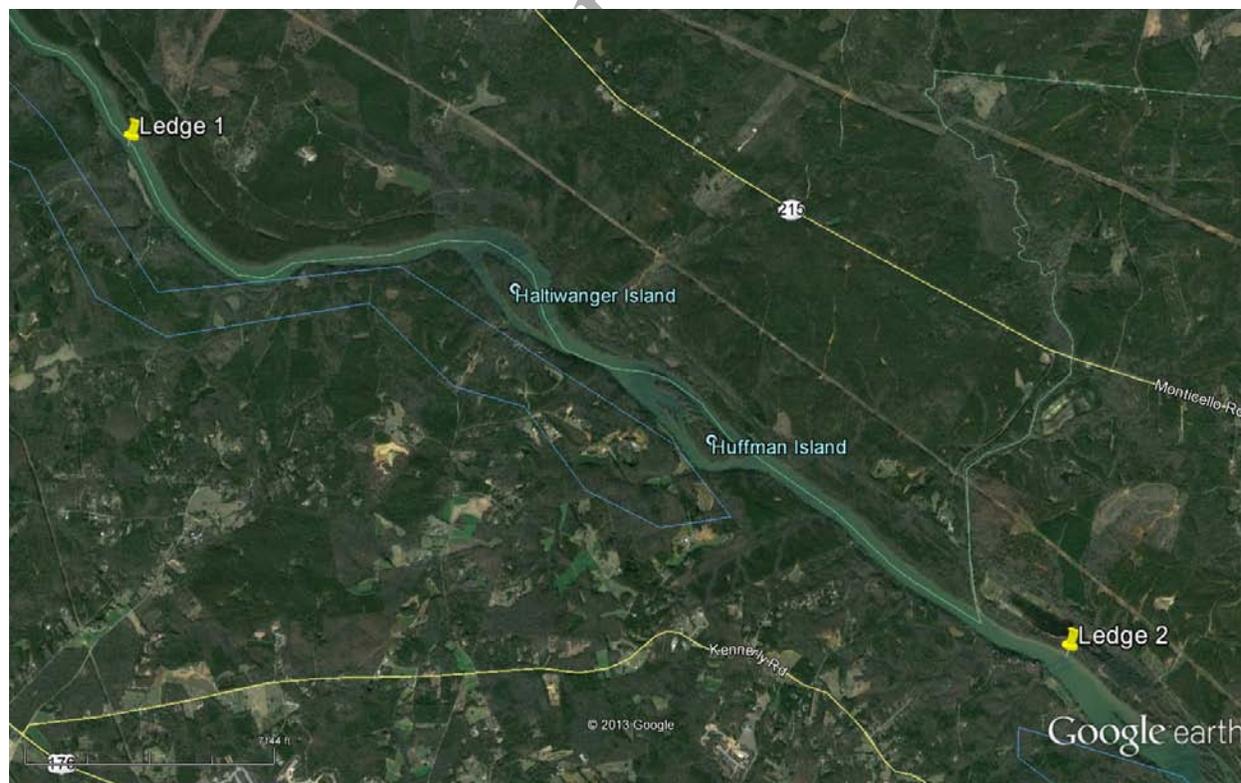
2.0 STUDY OBJECTIVE

The objective of the navigational analysis is to assess the flow levels within the Broad River, at identified points of constriction, needed to facilitate one-way navigation. The criteria for one-way navigation can be defined as a "minimum depth of one foot across a channel 10 feet wide or across 10 percent of the total stream width, whichever is greater. Minimum depth does not need to occur across a continuous 10 percent of the stream width, but each point of passage must be at least 10 feet wide."(SCWRC, 1988)

3.0 GEOGRAPHIC AND TEMPORAL SCOPE

The navigational analyses will evaluate flows within the Broad River at points of navigational constriction downstream of the Parr Dam. Recreation TWC participants initially identified two points of potential constriction. These points, identified as "Ledge 1" and "Ledge 2", were further investigated during Parr mesohabitat studies and are defined below. See Figure 1 for location of the two points of navigational constriction.

FIGURE 1 POTENTIAL POINTS OF NAVIGATIONAL CONSTRICTION



Ledge 1. Ledge 1 is located at a lat/long of 81°15'46.507"W, 34°12'49.999"N, approximately 2.4 miles upstream of Haltiwanger Island. Field investigations have identified a navigational passage point on river right (looking downstream) that is approximately 45 ft wide with an approximate elevation change of 1.5 feet. Please see Figure 2; the passage point is within the red circle.

FIGURE 2 LEDGE 1 IDENTIFICATION AND AREA OF NAVIGATIONAL PASSAGE



Ledge 2. Ledge 2 is located 1.3 miles upstream of Hickory Island and approximately 0.5 miles downstream of the mouth of Little River. Ledge 2 has a lat/long of 81°10' 15.941"W, 34°10' 18.154"N, and an approximate elevation change of 1.5 to 2.0 feet. Field investigations have identified a navigational passage point on river right (looking downstream) that is approximately 60 ft wide. Please see Figure 3; the passage point is within the red circle.

FIGURE 3 LEDGE 2 IDENTIFICATION AND AREA OF NAVIGATIONAL PASSAGE



The navigational analyses will be conducted during the summer of 2015 concurrent with IFIM study efforts.

4.0 METHODOLOGY

IFIM study transects will include the representative locations of navigational constriction identified in Section 3.0, to allow the characterization of hydraulics (wetted depth and width) during a range of flows. The transect locations will be field blazed with flagging, recorded via GPS, or other appropriate means. The study sites will be mapped sufficiently to quantify the areas represented by the transects. Consistent with IFIM survey protocol, transect headpin and tailpin ends will be located at or above the top-of-bank elevation, and secured by steel rebar or other similar means. A measuring tape accurate to 0.1-foot will be secured at each transect to enable repeat field measurements, if necessary. Stream bed and water elevations tied to a local datum will be surveyed to the nearest 0.1-foot using standard optical surveying instrumentation and methods. If USGS gage data is not available, a staff gage may be placed at the study site to confirm stable flow during measurements. Survey activities are anticipated to take place at a flow of 400 cfs. A water level logger will also be placed at the transect locations to gather water surface elevation data under various flow events. Water surface elevations will be used to develop stage-discharge relationships for the site and the stage-discharge relationships will be assessed on whether one-way navigation is achieved.

Information obtained during survey activities will be included within the draft IFIM report that will be submitted to the study team for review and comment. The report will document the methods and results as encountered in the field. Supporting data will be presented in graphic and tabular form and appendices will include cross-sectional survey data and reference photographs of study sites.

The methodology for this analysis may be revised or supplemented based on consultation with the Instream Flow TWC and other interested stakeholders, or if field efforts so dictate.

5.0 SCHEDULE AND REPORTING

Data will be gathered during the IFIM study, anticipated to occur in 2015. A final report summarizing IFIM study findings, including an analysis of impediments to one-way navigation under various flow conditions, will be issued subsequent to the completion of field work.

6.0 USE OF STUDY RESULTS

Study results will be used as an information resource during discussion of relicensing issues and developing potential Protection, Mitigation and Enhancement measures with the South Carolina Department of Natural Resources, USFWS, the Instream Flows TWC, and other relicensing stakeholders.

7.0 REFERENCES

South Carolina Water Resources Commission (SCWRC). 1988. Instream Flow Study Phase II: Determination of Minimum Flow Standards to Protect Instream Uses in Priority Stream Segments: A Report to the South Carolina General Assembly. Available Online. [URL]: <http://scwaterlaw.sc.gov/Instream%20Flow%20Study%20ph2.pdf>. Accessed August 2013.

Exhibit E-8 Recreation Resources

Downstream Navigational Flow Assessment and
Downstream Recreational Flow User Survey
Memo Package

**DOWNSTREAM NAVIGATIONAL FLOW
ASSESSMENT**

AND

**DOWNSTREAM RECREATIONAL FLOW USER
SURVEY MEMO**

**PARR HYDROELECTRIC PROJECT
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Prepared for:

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Lexington, South Carolina
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September 2016

EXECUTIVE SUMMARY

South Carolina Electric & Gas Company (SCE&G), Licensee for the Parr Hydroelectric Project (FERC No. 1984) (Project), is currently seeking a new license from the Federal Energy Regulatory Commission (FERC), as their current license is set to expire on June 30, 2020. The Project is currently engaged in a relicensing process which involves collaboration with a variety of stakeholders including state and federal resource agencies, state and local government, non-government organizations (NGOs) and interested individuals. SCE&G has established Technical Working Committees (TWCs) which include many of the interested stakeholders. The Recreation TWC was created to identify and resolve Project-related issues regarding recreation and is composed of representatives from the South Carolina Department of Natural Resources (SCDNR), the South Carolina Department of Health and Environmental Control (SCDHEC), the National Oceanic and Atmospheric Administration (NOAA), American Rivers, and the Congaree Riverkeeper, among others. Per request of the Recreation TWC, SCE&G performed two studies that addressed recreational resource issues downstream of the Project. These were:

- the Downstream Navigational Flow Assessment, and
- the Downstream Recreational Flow Assessment.

During issues scoping, the TWC identified two areas downstream of the Parr Dam as potential areas for navigational concern. SCE&G developed a study plan in consultation with the TWC to assess one-way navigation at these sites, and the results of this study are presented in the Downstream Navigational Flows Assessment, included herein.

The Recreation TWC also requested that a study be designed and implemented that would assess flows downstream of the Parr Shoals Dam that provide quality recreational experiences, and identify preferred flows for recreational activities, specifically wade angling, canoeing and kayaking. The Downstream Recreational Flow Assessment Study Plan was developed with consultation from stakeholders and the results of this assessment are included in the attached Downstream Recreational Flow User Survey Memo.

The Recreation TWC convened a meeting on May 10, 2016 to discuss the results of these two assessments. This report is an accumulation of the original study plans, study reports, and Recreation TWC meeting notes that will be used to develop flow recommendations for SCE&G to consider in developing a new license proposal.

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1.0 INTRODUCTION

South Carolina Electric & Gas Company (SCE&G) is the Licensee for the Parr Hydroelectric Project (FERC No. 1894) (Project). SCE&G is currently seeking a new license from the Federal Energy Regulatory Commission (FERC), as their current license is set to expire on June 30, 2020. The Project consists of two developments: the Parr Shoals Development and the Fairfield Pumped Storage Development.

The Parr Reservoir, located in Fairfield and Newberry counties, South Carolina, is a 4,400 acre impoundment formed by the Broad River and the Parr Shoals Dam and serves as the lower reservoir for the Fairfield Pumped Storage Development. Monticello Reservoir, a 6,800 acre impoundment is formed by a series of four earthen dams and serves as the upper reservoir for the pumped storage development. While the stretch of the Broad River downstream of the Parr Shoals Dam (Parr Dam) is not included in the Project Boundary, Project operations do influence this area. For this reason, the downstream reach of the Broad River was studied during the Instream Flow Incremental Methodology (IFIM) study to determine if downstream flows currently facilitate one-way navigation at identified points of constriction.

2.0 AGENCY CONSULTATION AND STUDY OBJECTIVES

The Project is currently engaged in a relicensing process which involves cooperation and collaboration with a variety of stakeholders including state and federal resource agencies, state and local government, non-governmental organizations (NGOs), and interested individuals. SCE&G has established Technical Working Committees (TWCs) which includes many of the interested stakeholders. The objective of each TWC is to identify, discuss, and propose options for resolution of Project-related issues, which will be evaluated for inclusion in the new Project license.

The Recreation TWC is composed of representatives from the South Carolina Department of Natural Resources (SCDNR), the South Carolina Department of Health and Environmental Control (SCDHEC), the National Oceanic and Atmospheric Administration (NOAA), American Rivers, and the Congaree Riverkeeper, among others. During issues scoping, the TWC identified two areas downstream of the Parr Dam as potential areas for navigational concern. SCE&G developed a study plan in consultation with the TWC to assess one-way navigation at these sites. The study plan is included in Appendix A.

The criteria for one-way navigation can be defined as a "minimum depth of one foot across a channel 10 feet wide or across 10 percent of the total stream width, whichever is greater. Minimum depth does not need to occur across a continuous 10 percent of the stream width, but each point of passage must be at least 10 feet wide." One-way navigation criteria are based on the passage of a 14 foot Jon-boat without a motor in the downstream direction only (SCWRC, 1988).

3.0 STUDY AREA

The navigational analyses evaluated flows within the Broad River at areas of navigational constriction downstream of the Parr Dam. Recreation TWC participants identified two areas of potential constriction. These areas, identified as "Ledge 1" and "Ledge 2" (Figure 3-1), were further investigated during preliminary field work for the IFIM study and are described in greater detail below.

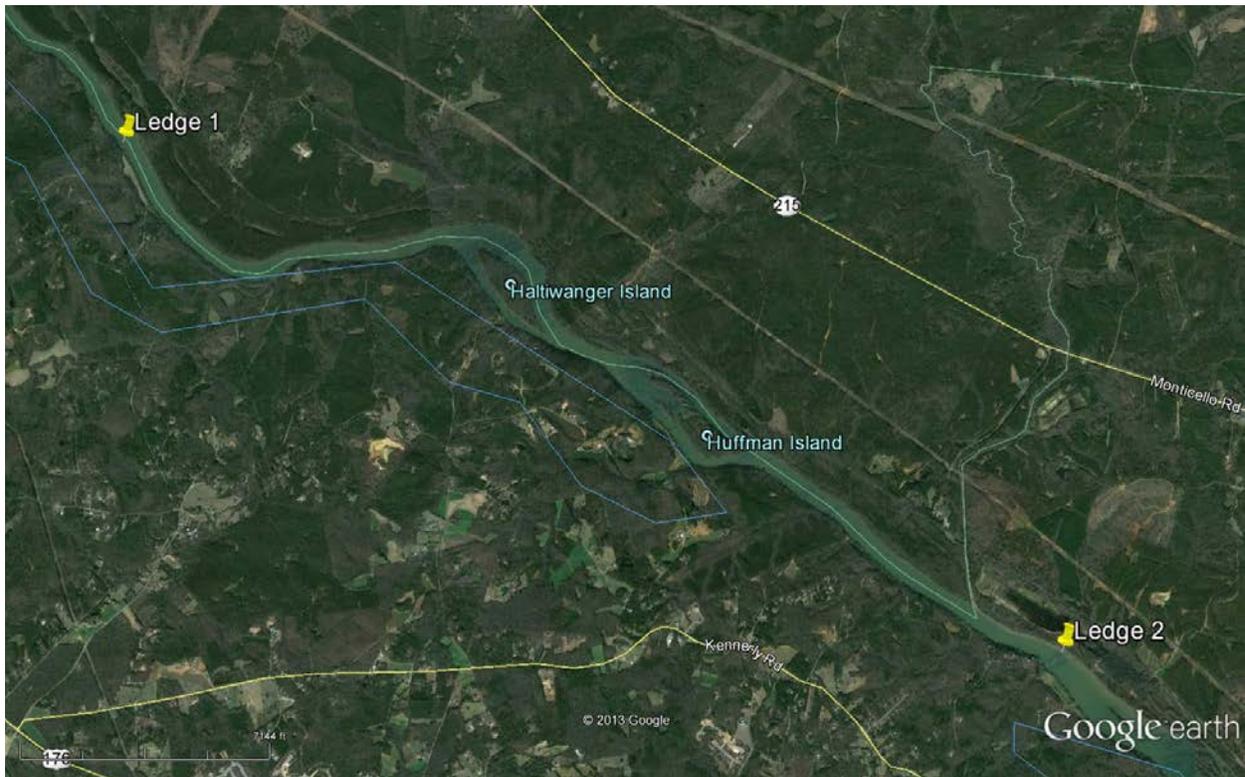


FIGURE 3-1 POTENTIAL POINTS OF NAVIGATIONAL CONSTRICTION

LEDGE 1

Ledge 1 consists of a bedrock ledge located at a lat/long of 81°15'46.507"W, 34°12'49.999"N, approximately 2.4 miles upstream of Haltiwanger Island. The study plan originally identified a primary navigational passage point on river left (looking upstream); however, a secondary passage point, located near mid-channel, was also noted during execution of the field effort (Figure 3-2).



FIGURE 3-2 LEDGE 1 IDENTIFICATION AND AREAS OF NAVIGATIONAL PASSAGE (CIRCLED IN RED)

LEDGE 2

Ledge 2 consists of a bedrock ledge located at a lat/long of 81°10'15.941"W, 34°10'18.154"N, 1.3 miles upstream of Hickory Island and approximately 0.5 miles downstream of the mouth of Little River. Field investigations identified the primary navigational passage point on river left (looking upstream) (Figure 3-3).



FIGURE 3-3 LEDGE 2 IDENTIFICATION AND AREA OF NAVIGATIONAL PASSAGE (CIRCLED IN RED)

4.0 METHODOLOGY

Bathymetric data within the navigational passage points were collecting using a Sontek M9 Acoustic Doppler Current Profiler (ADCP) and Sontek’s HydroSurveyor software. Field data were collected in January 2016, with river flows at approximately 6,500 cfs to allow sufficient depth for the ADCP to map the critical ledge features. Measured ADCP water depths were converted to bed elevations utilizing water surface elevations (WSELs) measured during the bathymetry survey. WSEL profiles were collected during the bathymetric survey by Glenn Associates Surveying, Inc. (Jenkinsville, SC) using a survey-grade Topcon GR3 Global Positioning System Rover paired with Spectra Ranger External Antenna. WSEL data were collected relative to the 1988 North American Vertical Datum (NAVD88), with the surveyor estimating vertical accuracy at < 0.1 ft. Following completion of the field effort, the HydroSurveyor software was used to create three-dimensional bathymetric models of each of the

passage points (Figure 4-1 through 4-3). The three-dimensional bathymetric models were then reviewed and the most limiting cross-section within each passage point was identified and exported to Microsoft Excel.

Stage-discharge relationships were developed for both ledges based on stage data obtained from Solinst Levellogger® dataloggers (level-loggers) deployed throughout the study area in support of the IFIM and Operations Modeling studies (See Kleinschmidt 2014 for additional detail regarding dataloggers). At Ledge 1, stage data were taken directly from a level-logger located at the ledge. At Ledge 2, level-loggers were located upstream and downstream of the ledge (as opposed to directly at the ledge), and as such, the HEC-RAS Model developed in support of the Operations Model was refined using the WSEL and bathymetry data collect for this study and used to interpolate between the level-loggers.

The exported cross-sectional bed profiles for each of the passage points was then overlain with WSELs corresponding to selected low-flow releases (500, 700 and 1000 cfs) and evaluated relative to navigational passage criteria.

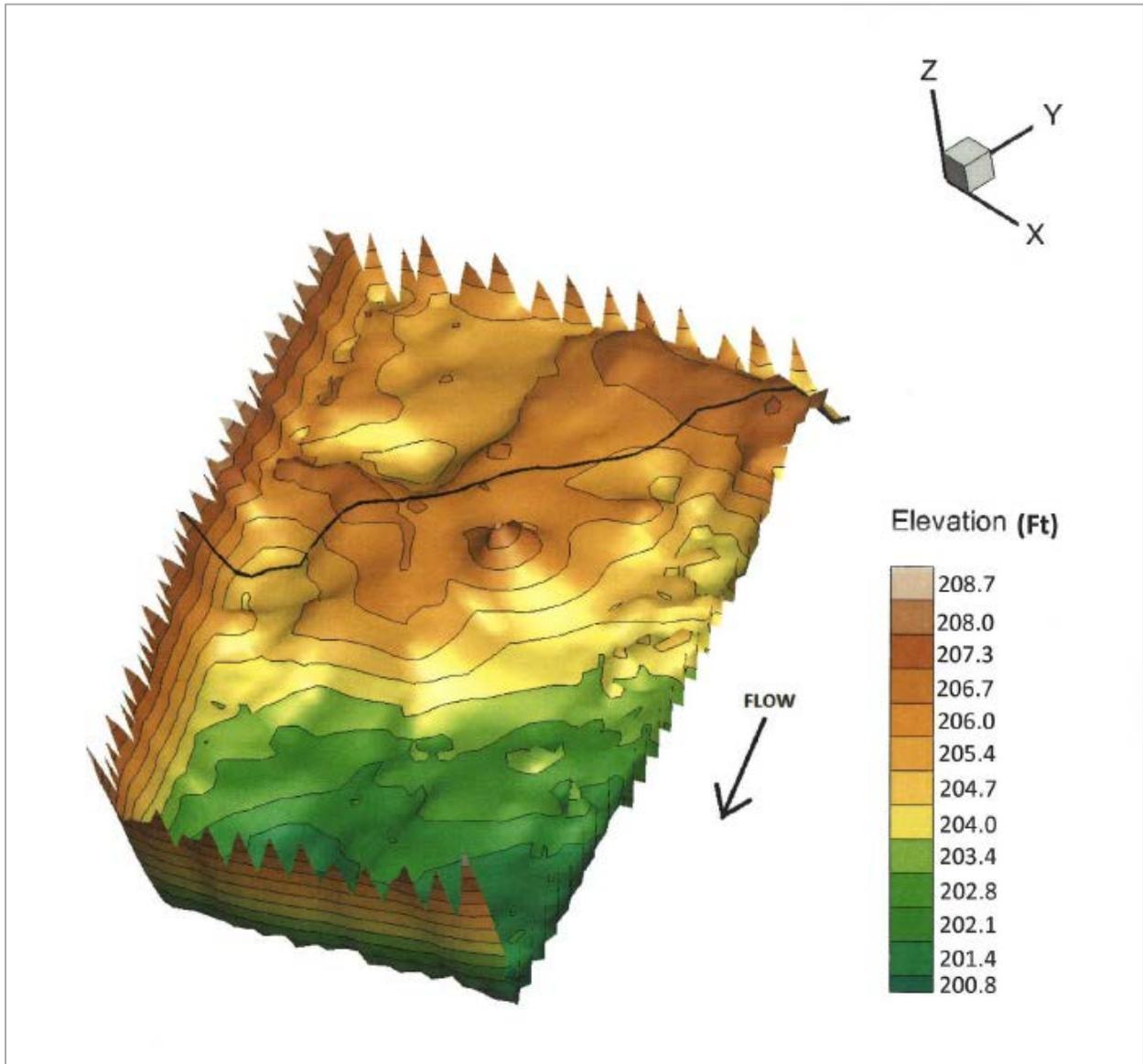


FIGURE 4-1 THREE-DIMENSIONAL UPSTREAM VIEW OF LEDGE 1 RIVER LEFT PASSAGE POINT (BLACK LINE DENOTES EXPORTED TRANSECT)

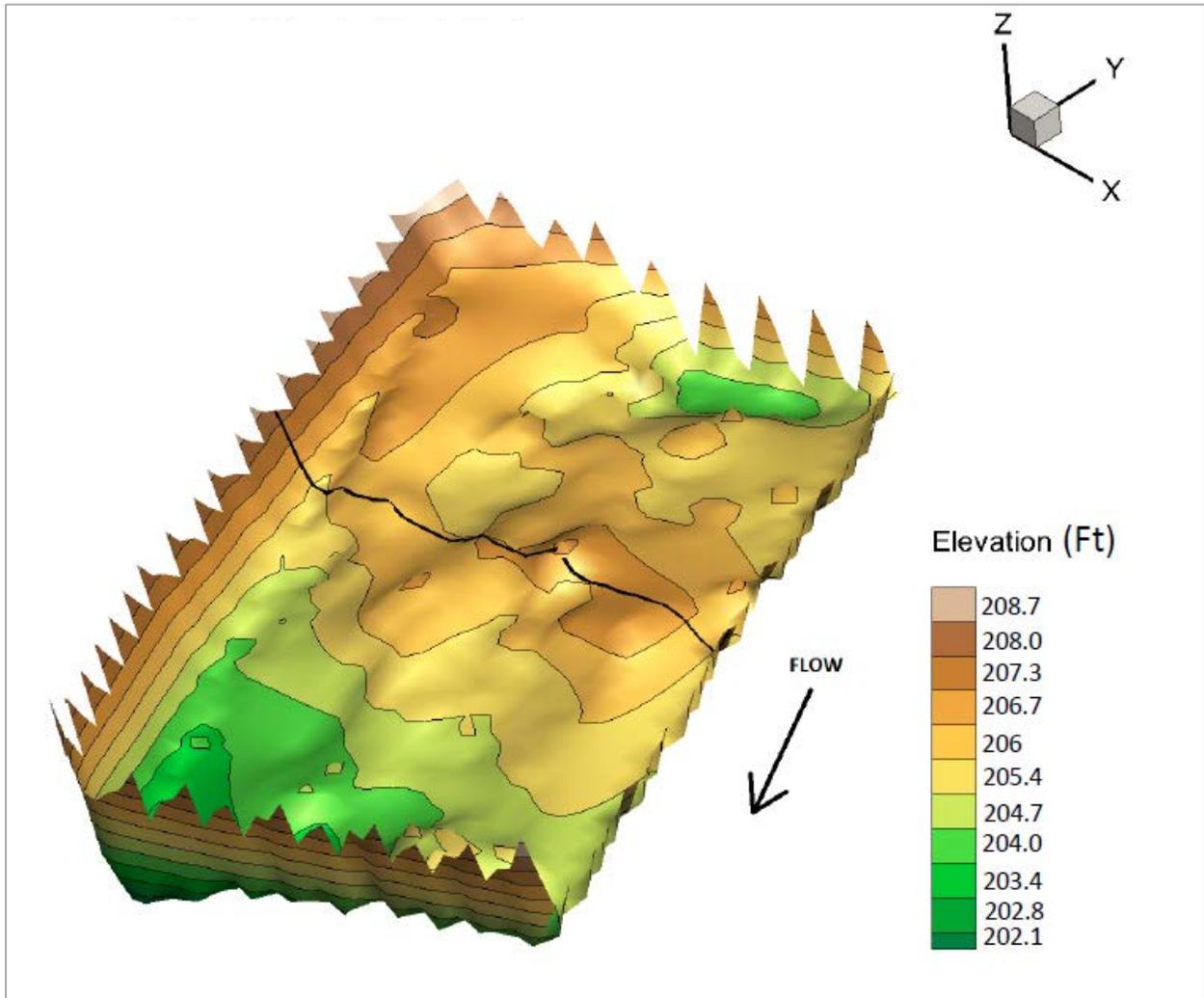


FIGURE 4-2 THREE-DIMENSIONAL UPSTREAM VIEW OF LEDGE 1 MID-CHANNEL PASSAGE POINT (BLACK LINE DENOTES EXPORTED TRANSECT)

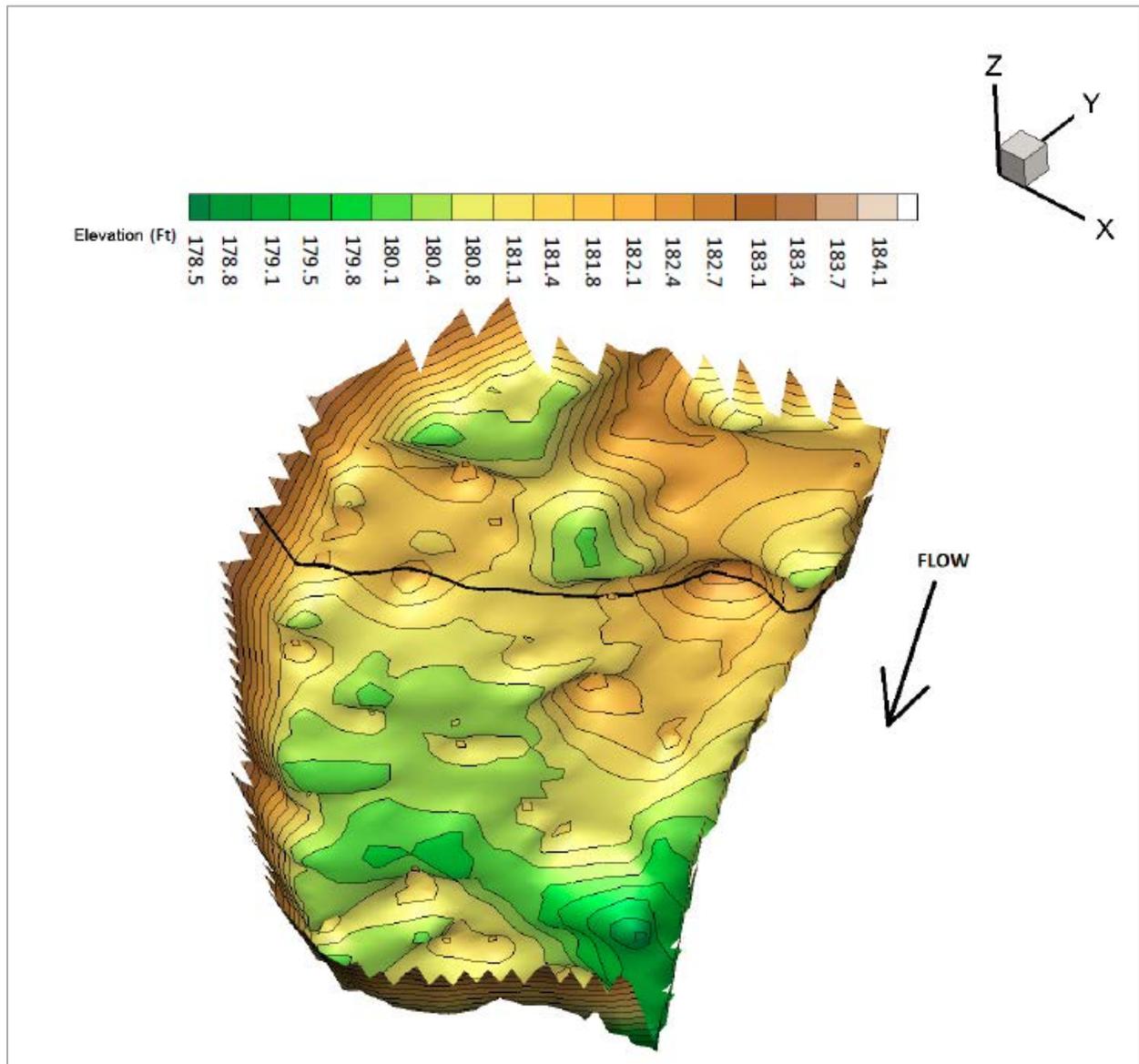


FIGURE 4-3 THREE-DIMENSIONAL UPSTREAM VIEW OF LEDGE 2 PASSAGE POINT (BLACK LINE DENOTES EXPORTED TRANSECT)

5.0 RESULTS AND DISCUSSION

The Broad River is approximately 650 ft wide at Ledge 1, meaning that a minimum depth of 1 ft is needed across a minimum cross-sectional distance of 65 ft in order to meet the navigation criteria. Data from this study indicate that a flow of 500 cfs meets the passage criteria from both the depth and width perspective, with approximately 205 ft (32 %) of cross-sectional passage provided collectively by the two passage points (Figure 5-1 and Figure 5-2). These data suggest that navigation passage is not a limiting factor at Ledge 1 for flows as low as 500 cfs.

At Ledge 2, the Broad River is approximately 800 ft wide, which means that a minimum depth of 1 ft is needed across a minimum cross-sectional distance of 80 ft in order to meet the navigation criteria. Data from this study indicate that a flow of 1000 cfs meets both the minimum depth and width aspects of the criteria, with approximately 82 ft (10 %) of cross-sectional passage provided collectively by the two passage points (Figure 5-3). However, we do note that the intent of the navigation passage criteria is to provide one-way downstream navigation of a 14 ft Jon-boat without a motor. Our study data suggest that flows as low as 500 cfs provide the “1-foot” passage criteria through a notch that is approximately 30 ft wide (Figure 5-4). Although this does not meet the exact navigation criteria, it does provide a passage point that should be more than sufficient for one-way passage of a 14 ft Jon-boat.

Results of this study may be verified in the field pending the results of the IFIM study.

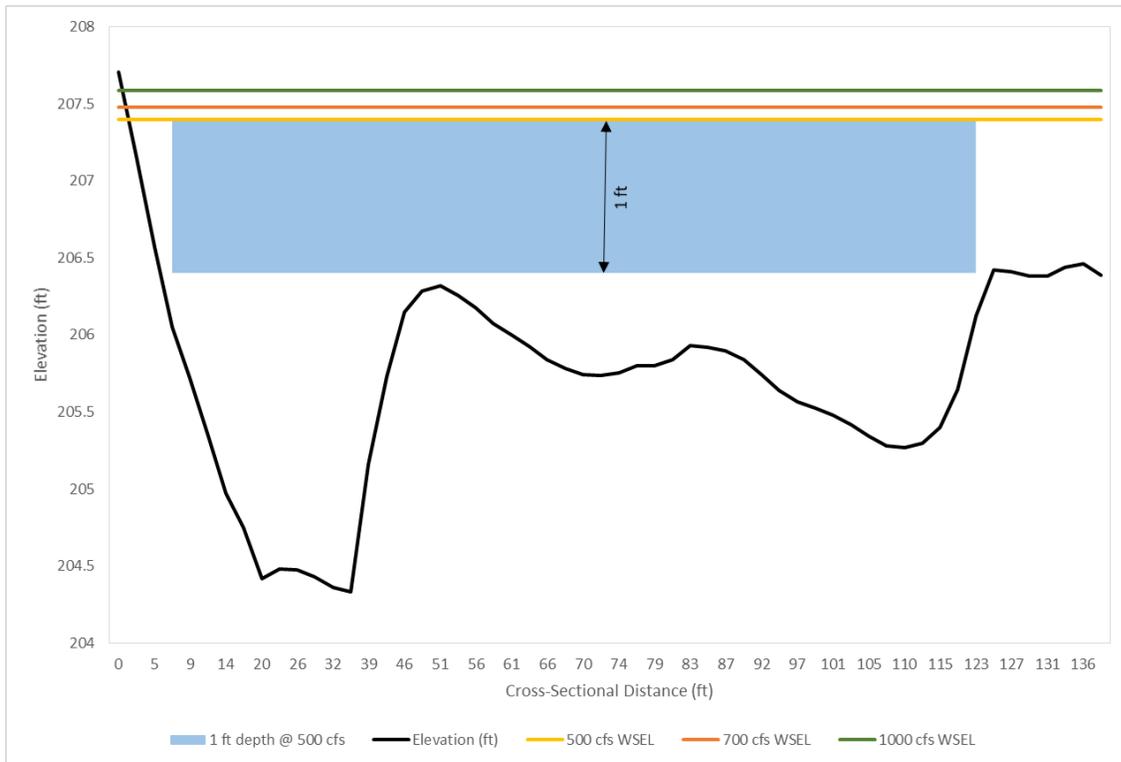


FIGURE 5-1 BED PROFILE AND WATER SURFACE ELEVATIONS AT THE RIVER LEFT PASSAGE POINT AT LEDGE 1 (UPSTREAM VIEW)

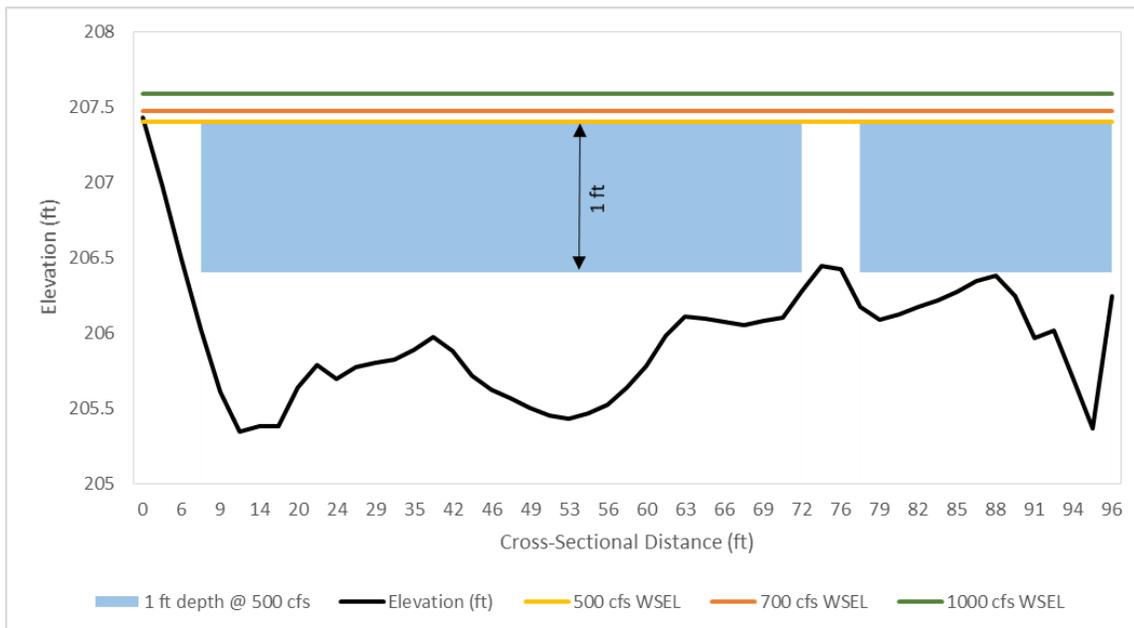


FIGURE 5-2 BED PROFILE AND WATER SURFACE ELEVATIONS AT THE MID-CHANNEL PASSAGE POINT AT LEDGE 1 (UPSTREAM VIEW)

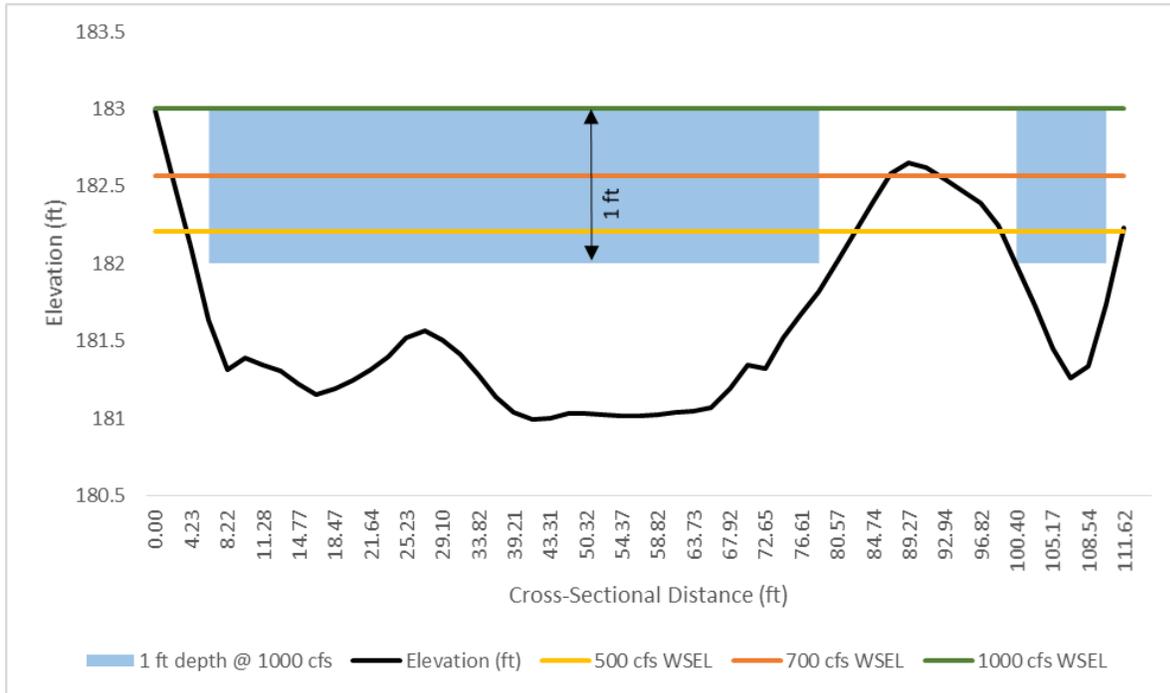


FIGURE 5-3 LEDGE 2 BED PROFILE SHOWING NAVIGATION PASSAGE AREA AT 1000 CFS (UPSTREAM VIEW)

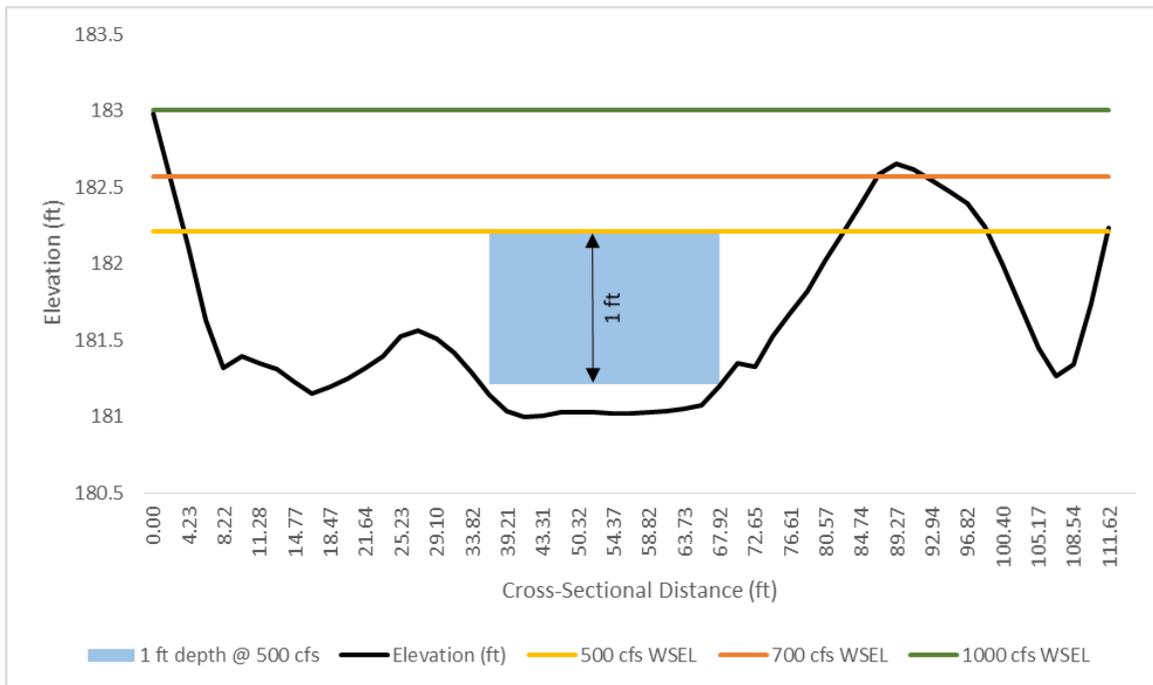


FIGURE 5-4 LEDGE 2 BED PROFILE SHOWING NAVIGATION PASSAGE AREA AT 500 CFS (UPSTREAM VIEW)

6.0 REFERENCES

South Carolina Water Resources Commission (SCWRC). 1988. Instream Flow Study Phase II: Determination of Minimum Flow Standards to Protect Instream Uses in Priority Stream Segments: A Report to the South Carolina General Assembly. Available Online. [URL]: <http://scwaterlaw.sc.gov/Instream%20Flow%20Study%20ph2.pdf>. Accessed August 2013.

Kleinschmidt Associates. 2014. Parr-Fairfield Operations Modeling System Final Report. Prepared for South Carolina Electric & Gas, Co. December 2014.

APPENDIX A

DOWNSTREAM NAVIGATIONAL FLOW STUDY PLAN

DRAFT
DOWNSTREAM NAVIGATIONAL FLOW ASSESSMENT
STUDY PLAN

PARR HYDROELECTRIC PROJECT
(FERC No. 1894)

Prepared for:

South Carolina Electric & Gas Company
Cayce, South Carolina

Prepared by:

Kleinschmidt

Lexington, South Carolina
www.KleinschmidtUSA.com

December 2013

DRAFT
DOWNSTREAM NAVIGATIONAL FLOW ASSESSMENT
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December 2013

DOWNSTREAM NAVIGATIONAL FLOW ASSESSMENT STUDY PLAN

**PARR HYDROELECTRIC PROJECT
(FERC No. 1894)**

SOUTH CAROLINA ELECTRIC & GAS COMPANY

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DOWNSTREAM NAVIGATIONAL FLOW ASSESSMENT STUDY PLAN

PARR HYDROELECTRIC PROJECT (FERC No. 1894)

SOUTH CAROLINA ELECTRIC & GAS COMPANY

1.0 INTRODUCTION

South Carolina Electric & Gas Company (SCE&G) is the Licensee of the Parr Hydroelectric Project (FERC No. 1894) (Project). The Project consists of the Parr Hydro Development and the Fairfield Pumped Storage Development. Both developments are located along the Broad River in Fairfield and Newberry Counties, South Carolina.

The Project is currently engaged in a relicensing process which involves cooperation and collaboration among SCE&G, as licensee, and a variety of stakeholders including state and federal resource agencies, state and local government, non-governmental organizations (NGO), and interested individuals. The collaboration and cooperation is essential to the identification of and treatment of operational, economic, and environmental issues associated with a new operating license for the Project. SCE&G has established Technical Working Committees (TWC's) with members from among the interested stakeholders with the objective of achieving consensus regarding the identification and proper treatment of these issues in the context of a new license.

The Recreation TWC has requested that flows downstream of the Parr Shoals Dam (Parr Dam) be assessed during planned Instream Flow Incremental Methodology (IFIM) studies to determine if downstream flows currently facilitate one-way navigation at an identified point of constriction in the Broad River, downstream of the Project. Although the primary purpose of the IFIM study is to develop an understanding of key habitat-flow relationships for aquatic species in the Broad River, the IFIM study also provides an appropriate means of determining consistency with navigational goals under various flow scenarios.

2.0 STUDY OBJECTIVE

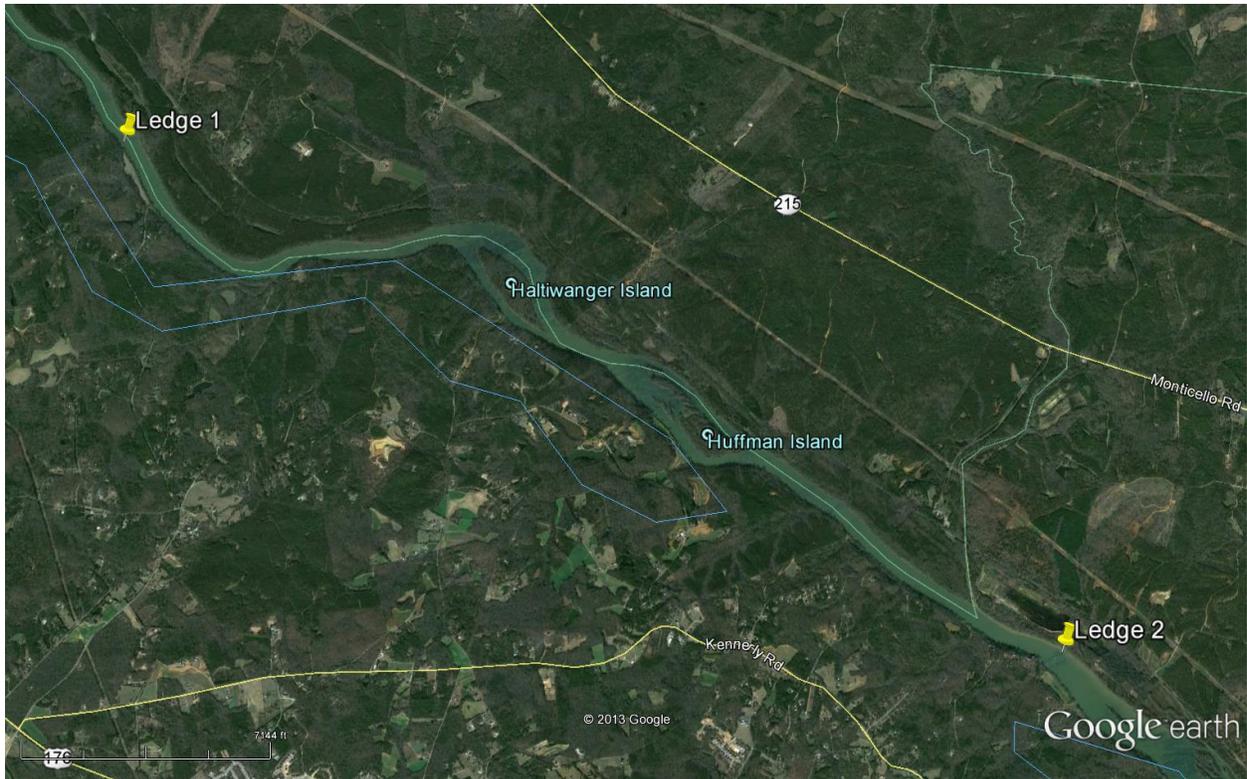
The objective of the navigational analysis is to assess the flow levels within the Broad River, at identified points of constriction, needed to facilitate one-way navigation. The criteria for one-way navigation can be defined as a "minimum depth of one foot across a channel 10 feet wide or across 10 percent of the total stream width, whichever is greater. Minimum depth does not need to occur across a continuous 10 percent of the stream width, but each point of passage must be at least 10 feet wide." One-way navigation criteria are based on the passage of a 14 foot Jon-boat without a motor in the downstream direction only (SCWRC, 1988).

Although not included within scope of this study, two-way navigation is defined as a "minimum depth of two feet across a channel 20 feet wide or across 20 percent of total stream width, whichever is greater. Minimum depth does not need to occur across a continuous 20 percent of stream width, but each point of passage must be at least 10 feet wide." Two-way navigation criteria are based on the passage of a 14 foot Jon-boat with a motor in either direction (SCWRC, 1988).

3.0 GEOGRAPHIC AND TEMPORAL SCOPE

The navigational analyses will evaluate flows within the Broad River at points of navigational constriction downstream of the Parr Dam. Recreation TWC participants initially identified two points of potential constriction. These points, identified as "Ledge 1" and "Ledge 2", were further investigated during Parr mesohabitat studies and are defined below. See Figure 1 for location of the two points of navigational constriction.

FIGURE 1 POTENTIAL POINTS OF NAVIGATIONAL CONSTRICTION



Ledge 1. Ledge 1 is located at a lat/long of 81°15'46.507"W, 34°12'49.999"N, approximately 2.4 miles upstream of Haltiwanger Island. Field investigations have identified a navigational passage point on river right (looking downstream) that is approximately 45 ft wide with an approximate elevation change of 1.5 feet. Please see Figure 2; the passage point is within the red circle.

FIGURE 2 LEDGE 1 IDENTIFICATION AND AREA OF NAVIGATIONAL PASSAGE



Ledge 2. Ledge 2 is located 1.3 miles upstream of Hickory Island and approximately 0.5 miles downstream of the mouth of Little River. Ledge 2 has a lat/long of 81°10'15.941"W, 34°10'18.154"N, and an approximate elevation change of 1.5 to 2.0 feet. Field investigations have identified a navigational passage point on river right (looking downstream) that is approximately 60 ft wide. Please see Figure 3; the passage point is within the red circle.

FIGURE 3 LEDGE 2 IDENTIFICATION AND AREA OF NAVIGATIONAL PASSAGE



The navigational analyses will be conducted during the summer of 2015 concurrent with IFIM study efforts.

4.0 METHODOLOGY

IFIM study transects will include the representative locations of navigational constriction identified in Section 3.0, to allow the characterization of hydraulics (wetted depth and width) during a range of flows. The transect locations will be field blazed with flagging, recorded via GPS, or other appropriate means. The study sites will be mapped sufficiently to quantify the areas represented by the transects. Consistent with IFIM survey protocol, transect headpin and tailpin ends will be located at or above the top-of-bank elevation, and secured by steel rebar or other similar means. A measuring tape accurate to 0.1-foot will be secured at each transect to enable repeat field measurements, if necessary. Stream bed and water elevations tied to a local datum will be surveyed to the nearest 0.1-foot using standard optical surveying instrumentation and methods. If USGS gage data is not available, a staff gage may be placed at the study site to confirm stable flow during measurements. Survey activities are anticipated to take place at a flow of 400 cfs. A water level logger will also be placed at the transect locations to gather water surface elevation data under various flow events. Water surface elevations will be used to develop stage-discharge relationships for the site and the stage-discharge relationships will be assessed on whether one-way navigation is achieved.

Information obtained during survey activities will be included within the draft IFIM report that will be submitted to the study team for review and comment. The report will document the methods and results as encountered in the field. Supporting data will be presented in graphic and tabular form and appendices will include cross-sectional survey data and reference photographs of study sites.

The methodology for this analysis may be revised or supplemented based on consultation with the Instream Flow TWC and other interested stakeholders, or if field efforts so dictate.

5.0 SCHEDULE AND REPORTING

Data will be gathered during the IFIM study, anticipated to occur in 2015. A final report summarizing IFIM study findings, including an analysis of impediments to one-way navigation under various flow conditions, will be issued subsequent to the completion of field work.

6.0 USE OF STUDY RESULTS

Study results will be used as an information resource during discussion of relicensing issues and developing potential Protection, Mitigation and Enhancement measures with the South Carolina Department of Natural Resources, USFWS, the Instream Flows TWC, and other relicensing stakeholders.

7.0 REFERENCES

South Carolina Water Resources Commission (SCWRC). 1988. Instream Flow Study Phase II: Determination of Minimum Flow Standards to Protect Instream Uses in Priority Stream Segments: A Report to the South Carolina General Assembly. Available Online. [URL]: <http://scwaterlaw.sc.gov/Instream%20Flow%20Study%20ph2.pdf>. Accessed August 2013.

APPENDIX B

COMMENTS FROM STAKEHOLDERS

April 8, 2016

Mr. William R. Argentieri
South Carolina Electric and Gas Company
Mail Code A221
220 Operations Way
Cayce, SC 29033-3701

Subject: Comments and Recommendations: Downstream Navigational Flow Assessment
Parr-Fairfield Hydroelectric Project (FERC No. 1894)

Dear Mr. Argentieri:

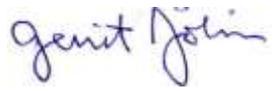
Ensuring downstream navigation and recreation needs are met through a new license for the Parr-Fairfield Hydroelectric Project is fundamental to American Rivers' interests in this relicensing and for the future of the Broad River which is directly affected by project operations. We are a member of the Recreation Technical Working Committee, and participated in numerous meetings and the development of the study plan for assessing downstream flows to meet the state's minimum standards for recreational navigation. American Rivers has reviewed the April 2016 Downstream Navigational Flow Assessment report and offer the following comments and recommendations.

The flow assessment report clearly indicates that a flow of 1,000 cfs is needed to satisfy the State of South Carolina's navigation requirements as a determined by state guidance (South Carolina Water Resources Commission 1988: Instream Flow Study Phase II: Determination of Minimum Flow Standards to Protect Instream Uses in Priority Stream Segments: A Report to the South Carolina General Assembly. The Water Resources Commission is now part of the South Carolina Department of Natural Resources which has adopted this method for determining navigation flow requirements.)

Despite the findings of the navigation assessment, the report recommends a flow of 500 cfs for navigation requirements. A flow of 500 cfs clearly does not meet the state's criteria for determining minimum navigation flows. We are baffled why the report recommends a flow which is clearly in conflict with the state's method and study results.

American Rivers recognizes that based on the findings of the Downstream Navigation Flow Assessment a flow of at least 1,000 cfs is needed to meet navigation requirements. We recommend that the report be changed to conclude that a 1,000 cfs flow, not a 500 cfs flow, is needed to meet navigation requirements.

Sincerely,



Gerrit Jöbsis
Senior Director, Southeast Conservation

cc: SC Department of Health and Environmental Control
SC Department of Natural Resources
Recreation Technical Working Committee

From: [Bill Marshall](#)
To: [Kelly Kirven](#); [Alex Pellett](#); [Alison Jakupca](#); [ARGENTIERI, WILLIAM R](#); [Bill Stangler](#) (CRK@congariverkeeper.org); [BRESNAHAN, AMY](#); btrump@scana.com; [Caleb Gaston](#) (caleb.gaston@scana.com); [Charlene Coleman](#) (cheetahtk@yahoo.com); [Chuck Hightower](#) (hightocw@dhec.sc.gov); [Dick Christie](#) (dchristie@comporium.net); [Edye Joyner](#); [Erich Miarka](#) (erich.miarka@gillscreekwatershed.org); [Frank Henning](#) (nps.gov); [Gerrit Jobsis](#) (gjobsis@americanrivers.org); [Greg Mixon](#); [Henry Mealing](#); [J. Hagood Hamilton Jr.](#) (jhamilton@scana.com); [Jaclyn Daly](#) (Jaclyn.Daly@noaa.gov); [Jay Maher](#); [Jeff Carter](#) (jmcarter00@sc.rr.com); [Joe Wojcicki](#); [John Fantry](#) (jfantry@bellsouth.net); [Jon Durham](#) (jondurham@bellsouth.net); [Karen Swank Kustafik](#) (kakustafik@columbiasc.net); [Lorianne Riggins](#); [Malcolm Leaphart](#) (mwleapjr@att.net); [Mark Davis](#); [Merrill McGregor](#) (merrillm@scccl.org); [Pace Wilber](#) (Pace.Wilber@noaa.gov); [rammarell@scana.com](#); [Randy Mahan](#) (randolph.mahan@scana.com); [randy mahan](#) (rmahan@sc.rr.com); [Robert Stroud](#); [Rusty Wenerick](#) (weneriwr@dhec.sc.gov); [Scott Collins](#) (secollins@scana.com); [Steve Summer](#); [STUTTS, BRANDON G](#); tbooz@scana.com; [Wayne and Ginny Boland](#) (wayneboland@bellsouth.net); [William Hendrix](#) (HendrixWB@dot.state.sc.us)
Subject: RE: draft Downstream Navigational Flow Assessment
Date: Thursday, April 14, 2016 3:15:37 PM

Hi Kelly, I have a few comments to offer.

I think the Navigational Flow Assessment provides useful information, and DNR staff will want to consider these results in combination with the Instream Flow Study findings as we further evaluate future flow needs below Parr hydro.

In addition, I think this navigational flow assessment at the two ledges may not capture the more complicated navigational obstruction presented in shoal complexes such as those in the upper Bookman Island complex, particularly the shoals just upstream of Hickory Island (see attached image). I'd be interested in seeing how the Instream Flow Study data collected for Study Site 10 (Bookman Island Complex, 2D data collection) might help us to evaluate navigational flow conditions for that area. Please let us know if those other data might be useful to further evaluating the navigation issues.

Thank you,
Bill Marshall
SCDNR
803-734-9096

From: Kelly Kirven [<mailto:Kelly.Kirven@KleinschmidtGroup.com>]

Sent: Friday, April 01, 2016 10:37 AM

To: Alex Pellett ; Alison Jakupca ; ARGENTIERI, WILLIAM R ; Bill Marshall ; Bill Stangler (CRK@congariverkeeper.org) ; BRESNAHAN, AMY ; btrump@scana.com; Caleb Gaston (caleb.gaston@scana.com) ; Charlene Coleman (cheetahtk@yahoo.com) ; Chuck Hightower (hightocw@dhec.sc.gov) ; Dick Christie (dchristie@comporium.net) ; Edye Joyner ; Erich Miarka (erich.miarka@gillscreekwatershed.org) ; Frank_Henning@nps.gov; Gerrit Jobsis (gjobsis@americanrivers.org) ; Greg Mixon ; Henry Mealing ; J. Hagood Hamilton Jr. (jhamilton@scana.com) ; Jaclyn Daly (Jaclyn.Daly@noaa.gov) ; Jay Maher ; Jeff Carter (jmcarter00@sc.rr.com) ; Joe Wojcicki ; John Fantry (jfantry@bellsouth.net) ; Jon Durham (jondurham@bellsouth.net) ; Karen Swank Kustafik (kakustafik@columbiasc.net) ; Kelly Kirven ; Lorianne Riggins ; Malcolm Leaphart (mwleapjr@att.net) ; Mark Davis ; Merrill McGregor (merrillm@scccl.org) ; Pace Wilber (Pace.Wilber@noaa.gov) ; rammarell@scana.com; Randy Mahan (randolph.mahan@scana.com) ; randy mahan (rmahan@sc.rr.com) ; Robert Stroud ; Rusty Wenerick (weneriwr@dhec.sc.gov) ; Scott Collins (secollins@scana.com) ; Steve Summer ; STUTTS, BRANDON G ; tbooz@scana.com; Wayne and Ginny Boland (wayneboland@bellsouth.net) ; William Hendrix (HendrixWB@dot.state.sc.us)

Subject: draft Downstream Navigational Flow Assessment

Good morning,

Attached is the draft Downstream Navigational Flow Assessment. Please review and submit any comments or edits by Friday, April 15th. We will discuss this document at the upcoming Recreation TWC meeting, to be scheduled for some time in May.

Thanks,

Kelly

Kelly Miller Kirven

Regulatory Coordinator

Kleinschmidt

Office: 803.462.5633

Cell: 803.917.4528

www.KleinschmidtGroup.com



April 15, 2016

Attn: Bill Argentieri
South Carolina Electric & Gas Company

Re: Downstream Navigational Flow Assessment – Parr Hydroelectric Project

Mr. Argentieri,

The following comments are in response to the Downstream Navigational Flow Assessment that was prepared as part of the relicensing of the Parr/Fairfield hydroelectric projects and was sent to members of the Recreation Technical Working Committee on April 1st.

- The transects used to determine navigability of a shoal should not follow a straight line, but rather should follow the top of the shoal (the shallowest area) to better reflect the possible blockages to navigation. We suggest the committee make an effort to verify the results by attempting to actually navigate the shoals at the recommended flows.
- The assessment states that a flow of 1,000 cfs meets the established criteria for navigation at ledge two, but goes on to recommend a navigational minimum flow of 500 cfs which the assessment clearly states does not meet the criteria. The assessment should not include a recommendation the author feels “should be more than sufficient” when we have clearly defined criteria to determine navigability.
- Additionally, as there should be supplementary data available from the IFIM study we recommend navigational flows be assessed at other sites including the Bookman Shoals area suggested by the DNR.

As we continue to review the assessment and the stage-discharge rating curves used in the analysis we may have additional questions or comments.

Thank you.

Sincerely,

Bill Stangler
Congaree Riverkeeper

Post Office Box 5294 • Columbia, South Carolina 29250
(803) 760-3357 • www.congareeriverkeeper.org



DOWNSTREAM RECREATIONAL FLOW USER SURVEY MEMO

MEMORANDUM

TO: Recreation TWC and Downstream Recreational Flow Focus Group
FROM: Alison Jakupca – Kleinschmidt Associates
DATE: January 20, 2016
RE: Downstream Recreational Flow User Survey

During relicensing issue identification meetings, the Recreation Technical Working Committee (TWC) requested that a study be designed and implemented that would do the following: 1) assess flows downstream of the Parr Shoals Dam (Parr Dam) that provide quality recreational experiences, and; 2) identify preferred flows for recreational activities, primarily as they relate to wade angling, canoeing and kayaking. In accordance with the [Downstream Recreational Flow Assessment Study Plan](#) designed to fulfill this request, a panel of stakeholders that are knowledgeable about the Project area was identified and convened as a focus group. The focus group provided information regarding quality recreation opportunities (to fulfill objective 1), potential flow effects on recreation on the Broad River, downstream of the Parr Dam (Area of Interest [AOI]), and preferred flows for recreational activities (to fulfill objective 2). The focus group meeting was held on December 11, 2014.

As a follow-up to the focus group meeting, an on-line survey was distributed to focus group members via SurveyMonkey on November 9, 2015 (see Appendix A for a copy of survey questions). The primary purpose of this survey was to gather user opinions on recreational use and preferred river flows for the AOI in 2015. Four focus group members responded to the on-line survey. This memorandum summarizes the contents and results of this survey which will be discussed further in the Recreation TWC, assessed in conjunction with [navigational](#) and environmental flows, and may be used in Settlement Agreement negotiations.

METHODS

The focus group meeting provided a good baseline of information regarding type of recreation activity, time of recreation activity, preferred flows for recreation activity, and access issues for the AOI. A summary of discussions from the focus group meeting is available at the following link: [Recreation Focus Group Discussions Summary](#). The 2015 on-line survey was intended to gather additional information regarding potential quality recreation opportunities and preferred flows based on specific user experiences during 2015. Data gathered through this activity is intended to provide guidance in addressing recreational flow needs in the AOI, as recommended by the Recreation TWC and through Settlement Agreement negotiations.

As shown in Appendix A, survey Questions 1 through 4 and Question 6 focus on the frequency and timing of recreation activities. These questions were designed to help determine the timing of recreational use for the development of potential recreational flow recommendations for the Settlement Agreement. Question 5 and Question 7 focus on the type of recreational activity and preferred flows associated with that activity. The goal of the study is to focus on preferred flows for wade-angling, canoeing and kayaking. In addition to these activities, boat fishing, bank fishing, and hunting were also provided as choices in the survey. These options were provided in

the survey because boat fishing, bank fishing and hunting were identified as popular activities during the 2014 focus group meeting. Questions 8 and 9 focus on additional comments and contact information, which was optional information.

RESULTS

The survey was sent to the thirteen members of the Downstream Recreational Flow Focus Group of which four responded to the survey. Three of the four respondents indicated that they recreated in the AOI during 2015 (Figure 1). The fourth respondent indicated that they had not recreated in the AOI during 2015 and did not provide responses to the subsequent survey questions.

FREQUENCY, TYPE AND TIMING OF USE

Two of the three respondents indicated that they recreated in the AOI one to five times during 2015. One respondent indicated that they had recreated in the survey area 6-10 times in 2015 (Figure 2).

When asked about the time of day and day of the week (Questions 3 and 4) in which recreation in the AOI took place, respondents indicated that they recreated all day during daylight hours (Figure 3) and generally on the weekends (Figure 4). Respondents indicated that they participated in all five activities listed under Question 5 (canoeing/kayaking; boat fishing; hunting; wade fishing, and; bank fishing) (Figure 5). One participant added swimming under “other activity”. Canoeing/kayaking and fishing (boat, wade and bank) were the most popular activities in 2015 among the respondents who answered this question.

Question 6 of the survey focused on the months in which the selected activities took place in 2015. The intent of this question was to narrow the time of year when the primary recreation activities take place. Respondents noted that canoeing/kayaking took place during the months of May through September, with May and June having the greatest response rate (Figure 6). Boat fishing activities occurred during the months of April through September with May and June receiving the highest response rate (Figure 7). Hunting was noted for the months of January and April (Figure 7). Respondents indicated that wade fishing occurred during May through October, with May, June and July receiving the highest response rate (Figure 8). Bank Fishing was noted as occurring during May through September, also with May, June and July receiving the highest response rate (Figure 8). One respondent noted that swimming took place May through August (Figure 9).

PREFERRED FLOW RANGES

Three respondents provided answers for Question 7, which served to identify preferred flow ranges for recreation activities. Preferred flow ranges for canoeing/kayaking were indicated as ranging from 3,000 – 4,999 cfs by one respondent and a stage of 3.5 to 5 feet by a second respondent (Figure 10). For reference purposes, stage ranges from 3.5 to 5 feet on the USGS Gage located on the Broad River at Alston, SC (02161000) are equal to approximately 1,450 to 4,000 cfs.

All three respondents provided preferred flow ranges for boat fishing. One of the respondents indicated that preferred flows ranged from 2,000-2,999 cfs; 3,000 – 4,999 cfs, and; 5,000 cfs and above (Figure 11). A second respondent indicated that preferred flows for boat fishing were lower, ranging from 500 to 1,499. The third respondent noted that a stage of 3.5 to 5 feet (1,450 to 4,000 cfs) was preferred for boat fishing.

One respondent indicated that flow ranges preferred for hunting ranged from 500 cfs to 2,999 cfs (Figure 11). Two respondents provided preferred flows for wade fishing. One respondent noted that wade fishing could take place in flows from 500 to 1,999 cfs. The second respondent noted that flows from 500 to 999 cfs were preferred for this activity (Figure 11).

Preferred flows for bank fishing were indicated as being fairly inclusive by one respondent, ranging from 0 to 4,999 cfs. The second responded noted that bank fishing was preferred from 500 to 999 cfs (Figure 12). One respondent noted that acceptable flow ranges for “other activity” (swimming) ranged from 0 to 1,999 cfs (Figure 12).

RESPONDENT COMMENTS

Question 8 and Question 9 served to gather general comments about recreation in the AOI and the contact information of the respondents (optional). Personal contact information is not being published in this memo; however, general comments regarding recreation are provided in Figure 14. A general theme among respondents’ comments is that additional access downstream of the Project is needed. This was also a key topic of conversation during 2014 focus group discussions. Focus group attendees indicated that recreational opportunities would increase with improved access. One respondent suggested limits on motorized boat usage. Another respondent indicated that flows below a stage of 3.5 (1,450 cfs) are too shallow for paddling in some areas of the river.

DISCUSSION

Although more survey responses would be preferred, the survey information and the 2014 focus group input led to several general conclusions. As indicated through Question 4 responses and 2014 focus group discussions, recreation in the AOI primarily takes place on the weekends. Furthermore, the months of May, June and July were the most popular recreation months for the activities targeted in the study plan (canoeing, kayaking, and wade fishing). Bank fishing and boat fishing have similar temporal use patterns, with boat fishing beginning earlier in the spring (April). Hunting occurs in the winter/early spring (January and April). This is supported by 2014 focus group discussions where attendees noted that they “generally utilized the AOI during weekends and warmer seasonal temperatures. However, attendees indicated that the AOI was utilized by duck hunters and fishermen during colder seasons.”

To fulfill study plan objectives, user preferences have been summarized into preferred flow ranges that provide the greatest recreational opportunity. These ranges, when combined with the temporal use patterns discussed above, may be considered in the context of a Settlement Agreement. Focus group input indicates that higher flows necessary for canoeing, kayaking and boat fishing are not always compatible with the generally lower flows needed for wade angling, bank fishing, hunting and swimming. Therefore, two preferred recreational flow ranges have resulted from focus group discussions and the 2015 survey results:

1. Responses indicate that a flow between 2,000 and 5,000 cfs during the months of May and/or June would generally support canoeing, kayaking and those individuals that prefer a higher flow for boat fishing.
2. Responses indicate that a flow between 500 and 999 cfs would generally support lower boat fishing flows, hunting, wade fishing and swimming. Although the preferred time period for these activities varies, May, June and July were the most popular months for these activities with the exception of hunting, which is generally confined by hunting seasons (September and January).

NEXT STEPS

Preferred flow ranges will be discussed with the Recreation TWC and focus group. They will also be considered in the context of other flows evaluated through the relicensing process (e.g. navigational flows and environmental flows). If recreational flows are included as part of the Settlement Agreement, the specific timing and duration of those flows will be determined during settlement negotiations and evaluated with the Parr Hydroelectric Project Operations Model. The Operations Model will be used to determine if the requested flows are available under current operations, how often the requested flows are typically available (hydrologic year), and if the requested flows will result in lost revenues for the Project. These two recommendations will be forwarded for evaluation and the Operations Model results will be discussed with TWC members and summarized in a final report that will be used in development of a Settlement Agreement.

APPENDIX A

SURVEY QUESTIONNAIRE



Parr Hydroelectric Project Relicensing Downstream Recreational Flow User Survey

South Carolina Electric & Gas Company (SCE&G) is currently relicensing the Parr Hydroelectric Project, located on the Broad River in Fairfield and Newberry counties, South Carolina. As part of the relicensing process, stakeholders identified the need for information that characterizes non-motorized boating use and preferred river flows associated with reasonable and safe recreational use on the Broad River downstream of the Parr Shoals Dam, primarily as they relate to wade-angling, canoeing and/or kayaking. In 2014, SCE&G held a Focus Group meeting for selected recreational users to help identify these needs and preferences. This survey is a follow-up to the Focus Group meeting to help gather additional user opinions regarding use and flow preferences, subsequent to the 2015 recreation season.

1. Did you recreate on the Broad River, downstream of Parr Shoals Dam, during 2015?
 - Yes
 - No (*If no, skip to Question 8*).

2. About how many times did you recreate on the Broad River, downstream of Parr Shoals Dam, during 2015?
 - 1-5 times
 - 6-10 times
 - More than 10 times

3. About what time of day did you typically recreate on the Broad River, downstream of Parr Shoals dam, during 2015.
 - Morning
 - Noon/early afternoon
 - Late afternoon/evening
 - All day

4. Did you typically recreate on the Broad River, downstream of Parr Shoals dam, during the weekdays or on weekends?
 - Weekdays
 - Weekends
 - Recreated on both weekdays and weekends equally



5. What activities did you participate in on the Broad River, downstream of Parr Shoals Dam, in 2015 (*Check all that apply*).

<input type="checkbox"/> canoeing/kayaking	<input type="checkbox"/> boat fishing	<input type="checkbox"/> hunting
<input type="checkbox"/> wade fishing	<input type="checkbox"/> bank fishing	
<input type="checkbox"/> other activity (please specify): _____)		

6. For each activity that you checked in Question 5, please indicate the month, or months, during which you engaged in this activity (Circle all the months that apply for each activity that you identified in Question 5).

Canoeing/kayaking –

(JAN FEB MAR APR MAY JUN JULY AUG SEP OCT)

Boat fishing –

(JAN FEB MAR APR MAY JUN JULY AUG SEP OCT)

Hunting–

(JAN FEB MAR APR MAY JUN JULY AUG SEP OCT)

Wade fishing–

(JAN FEB MAR APR MAY JUN JULY AUG SEP OCT)

Bank fishing–

(JAN FEB MAR APR MAY JUN JULY AUG SEP OCT)

Other activity–

(JAN FEB MAR APR MAY JUN JULY AUG SEP OCT)



7. For each activity that you identified in Question 5, please indicate what flow level (in cubic feet per second ["cfs"]) you would consider "preferred" for that activity. If a wider range of flows is acceptable for that activity, please check all flow ranges that apply. If you only know river stage, please identify the river stage under "Other flow or river stage". If you do not know flow in cfs or river stage, please skip to Question 8.

Canoeing/kayaking –

- 0-499 cfs
- 500-999 cfs
- 1,000-1,499 cfs
- 1,500-1,999 cfs
- 2,000-2,999 cfs
- 3,000 – 4,999 cfs
- 5,000 cfs and above
- Other flow or river stage (please list) _____

Boat fishing –

- 0-499 cfs
- 500-999 cfs
- 1,000-1,499 cfs
- 1,500-1,999 cfs
- 2,000-2,999 cfs
- 3,000 – 4,999 cfs
- 5,000 cfs and above
- Other flow or river stage (please list) _____

(Question 7 continued on next page)

Hunting-

- 0-499 cfs
- 500-999 cfs
- 1,000-1,499 cfs
- 1,500-1,999 cfs
- 2,000-2,999 cfs
- 3,000 – 4,999 cfs
- 5,000 cfs and above
- Other flow or river stage (please list) _____

Wade fishing-

- 0-499 cfs
- 500-999 cfs
- 1,000-1,499 cfs
- 1,500-1,999 cfs
- 2,000-2,999 cfs
- 3,000 – 4,999 cfs
- 5,000 cfs and above
- Other flow or river stage (please list) _____

(Question 7 continued on next page)

Bank fishing–

- 0-499 cfs
- 500-999 cfs
- 1,000-1,499 cfs
- 1,500-1,999 cfs
- 2,000-2,999 cfs
- 3,000 – 4,999 cfs
- 5,000 cfs and above
- Other flow or river stage (please list) _____

Other Activity– (please list activity) _____

- 0-499 cfs
- 500-999 cfs
- 1,000-1,499 cfs
- 1,500-1,999 cfs
- 2,000-2,999 cfs
- 3,000 – 4,999 cfs
- 5,000 cfs and above
- Other flow or river stage (please list) _____

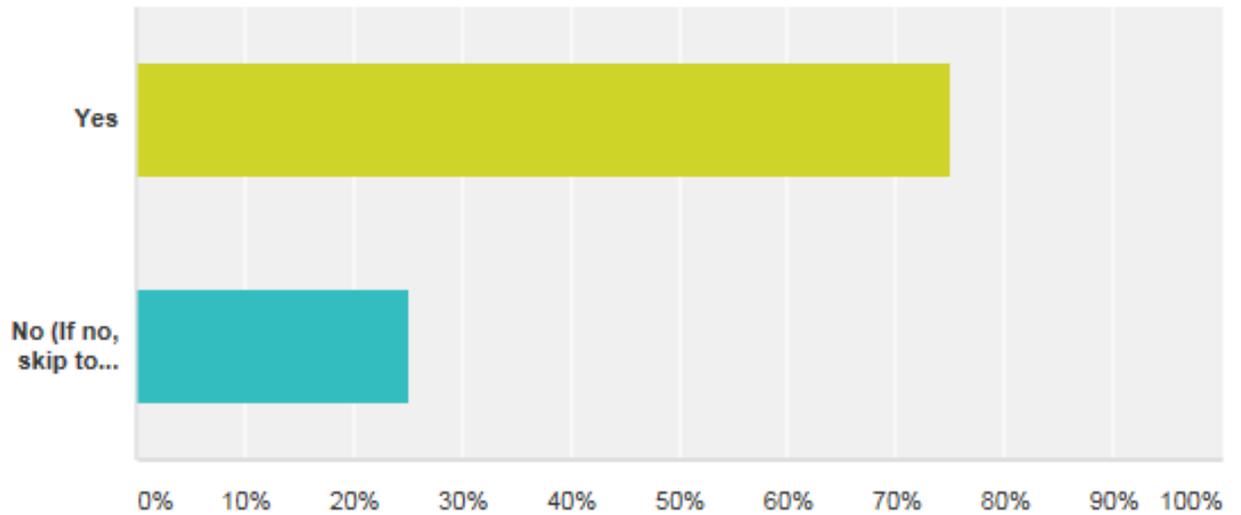
APPENDIX B

SURVEY RESPONSE FIGURES

FIGURE 1 – SURVEY RESPONSE FOR QUESTION 1

Did you recreate on the Broad River, downstream of Parr Shoals Dam, during 2015?

Answered: 4 Skipped: 0

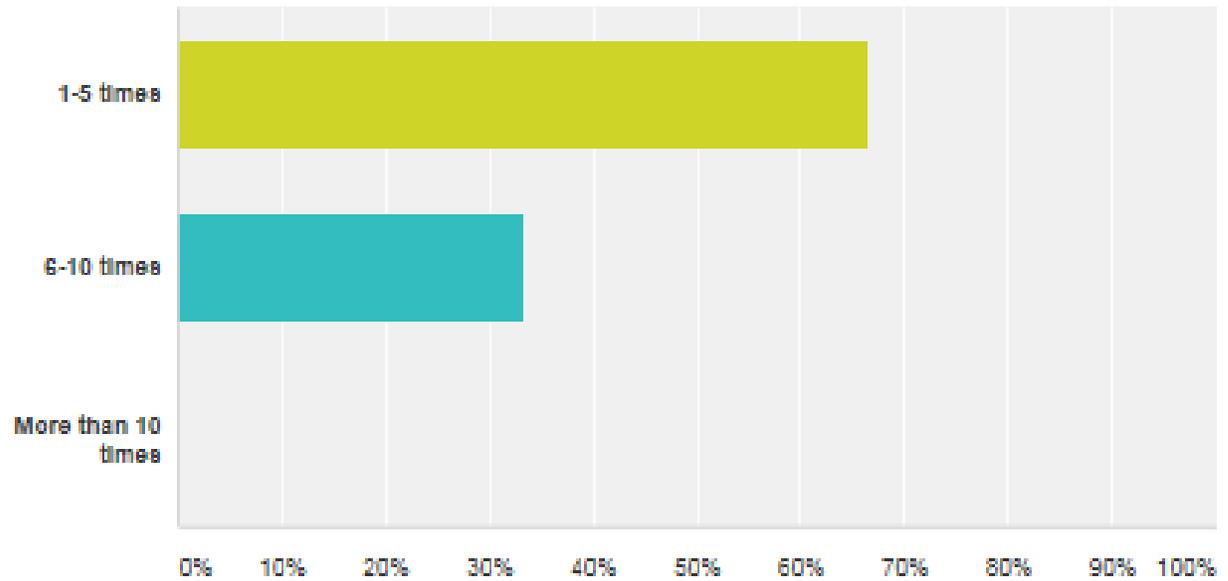


Answer Choices	Responses
Yes	75.00% 3
No (If no, skip to Question 8)	25.00% 1
Total	4

FIGURE 2 – SURVEY RESPONSE FOR QUESTION 2

About how many times did you recreate on the Broad River, downstream of Parr Shoals Dam, during 2015?

Answered: 3 Skipped: 1

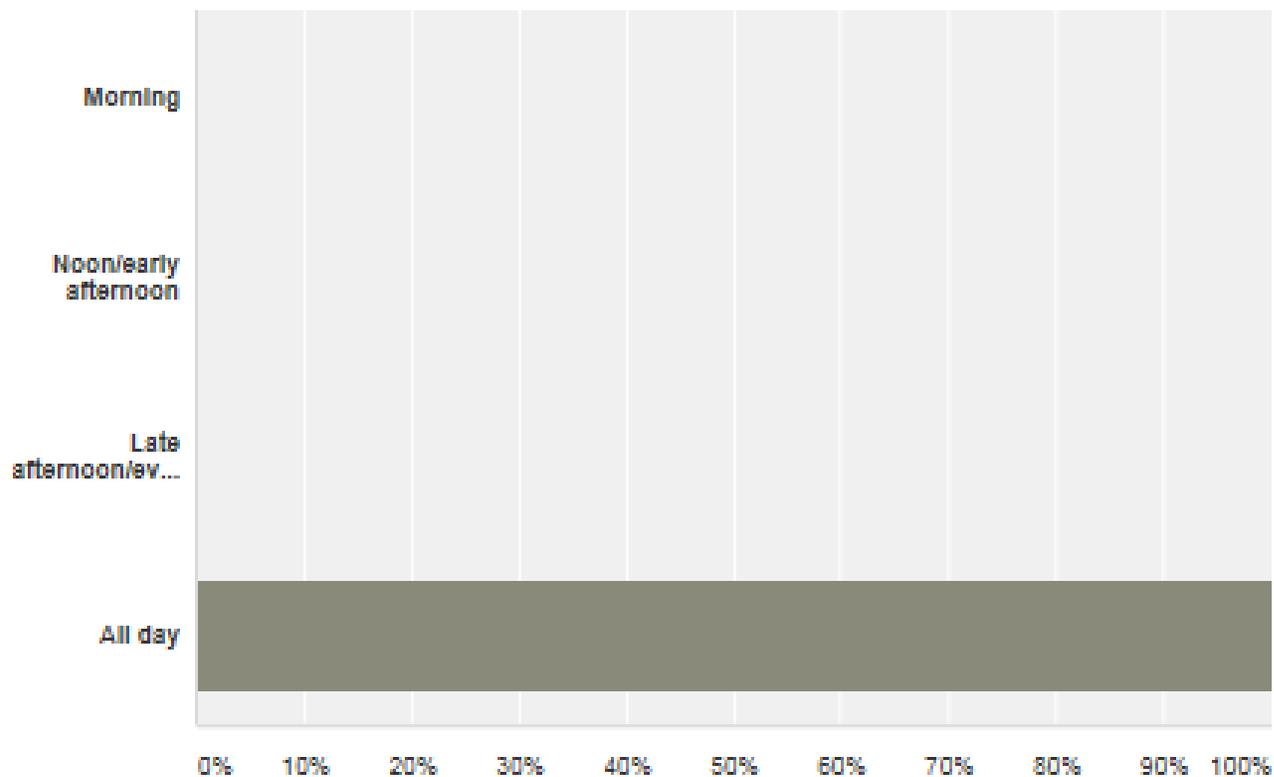


Answer Choices	Responses
1-5 times	66.67% 2
6-10 times	33.33% 1
More than 10 times	0.00% 0
Total	3

FIGURE 3 – SURVEY RESPONSE FOR QUESTION 3

**About what time of day did you typically
recreate on the Broad River, downstream of
Parr Shoals dam, during 2015.**

Answered: 3 Skipped: 1

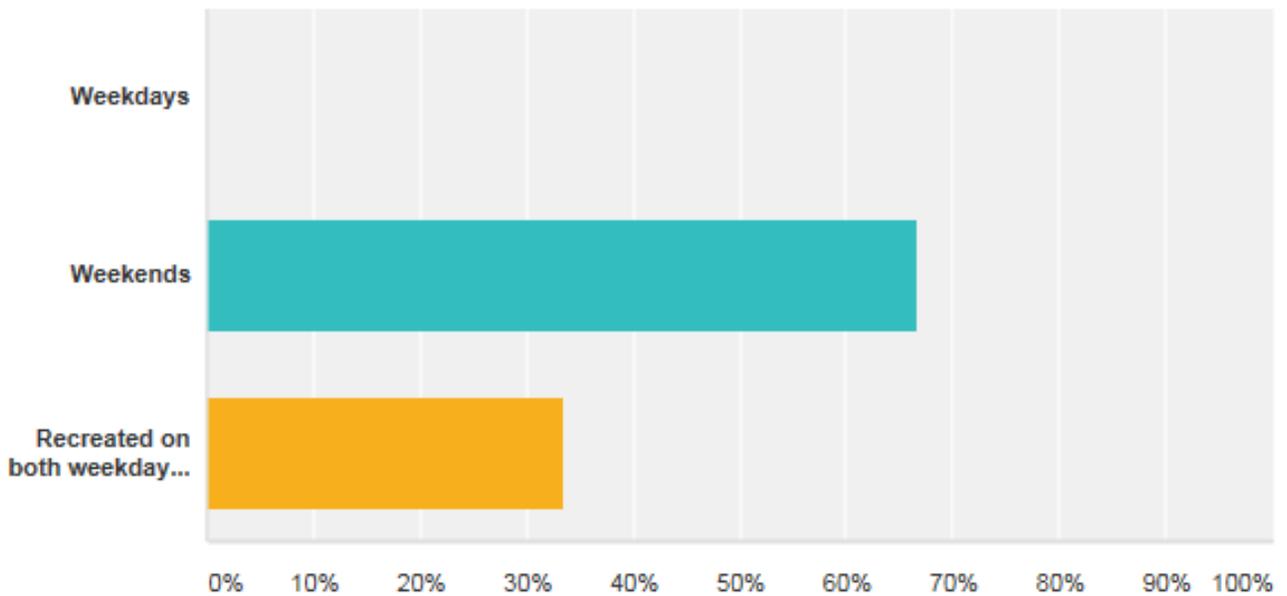


Answer Choices	Responses
▼ Morning	0.00% 0
▼ Noon/early afternoon	0.00% 0
▼ Late afternoon/evening	0.00% 0
▼ All day	100.00% 3
Total	3

FIGURE 4 – SURVEY RESPONSE FOR QUESTION 4

Did you typically recreate on the Broad River, downstream of Parr Shoals dam, during the weekdays or on weekends?

Answered: 3 Skipped: 1

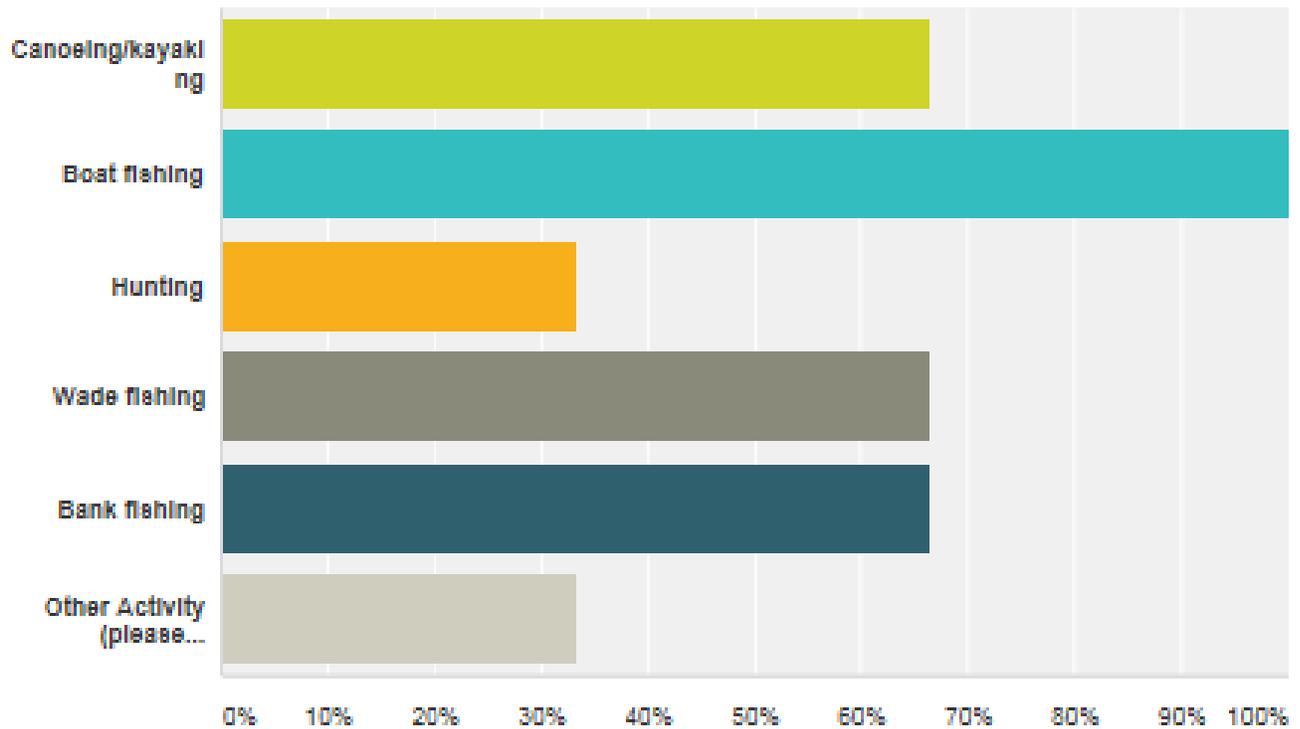


Answer Choices	Responses
Weekdays	0.00% 0
Weekends	66.67% 2
Recreated on both weekdays and weekends equally	33.33% 1
Total	3

FIGURE 5 – SURVEY RESPONSE FOR QUESTION 5

What activities did you participate in on the Broad River, downstream of Parr Shoals Dam, in 2015 (Select all that apply).

Answered: 3 Skipped: 1



Answer Choices	Responses
Canoeing/kayaking	66.67% 2
Boat fishing	100.00% 3
Hunting	33.33% 1
Wade fishing	66.67% 2
Bank fishing	66.67% 2
Other Activity (please specify) Responsee	33.33% 1
Total Respondents: 3	

FIGURE 6 – SURVEY RESPONSE FOR QUESTION 6

For each activity that you selected in Question 5, please indicate the month, or months, during which you engaged in this activity (Select all the months that apply for each activity that you identified in Question 5).

Answered: 3 Skipped: 1

- JAN
- FEB
- MAR
- APR
- MAY
- JUN
- JULY
- AUG
- SEP
- OCT

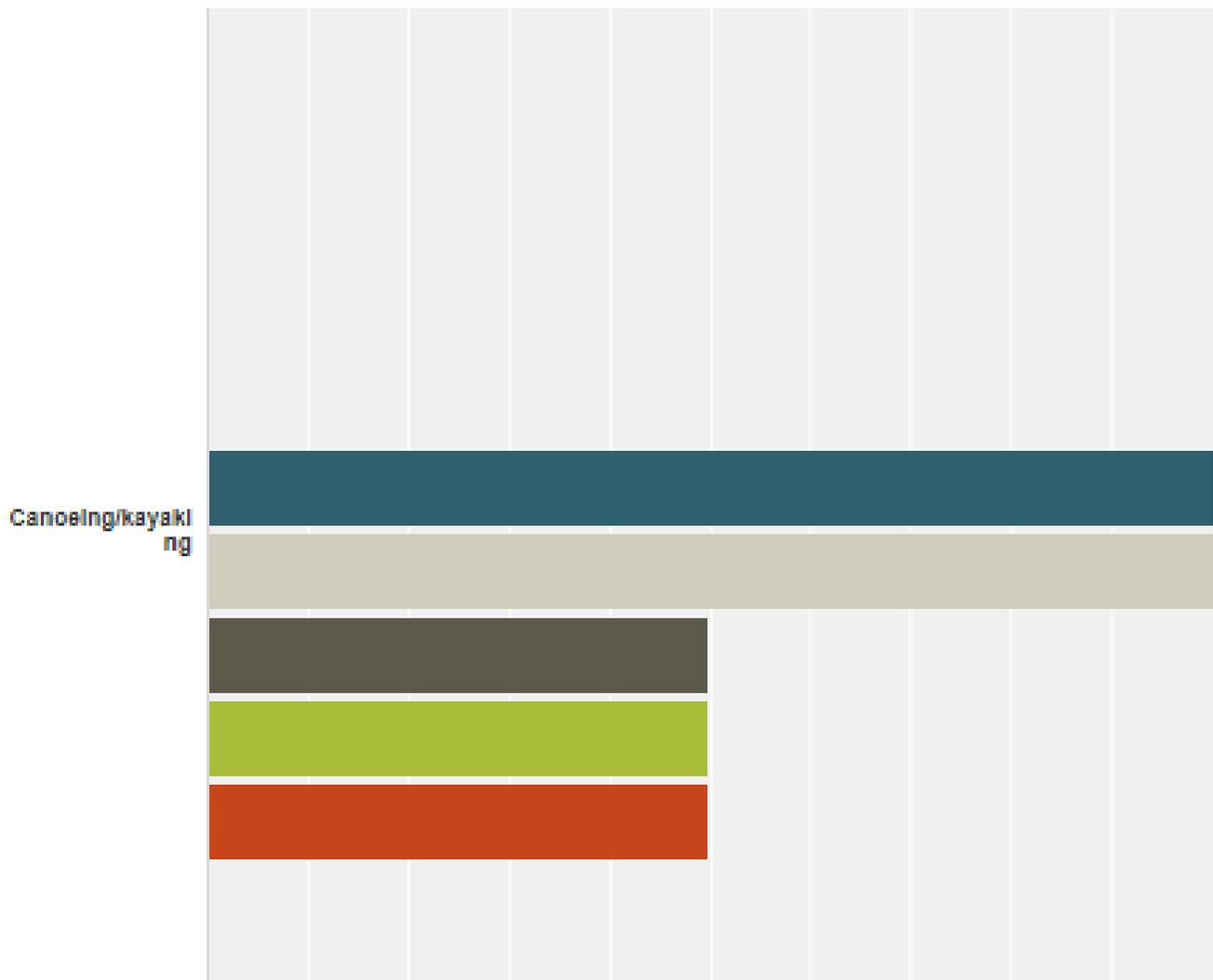


FIGURE 7 – SURVEY RESPONSE FOR QUESTION 6 (CONT.)

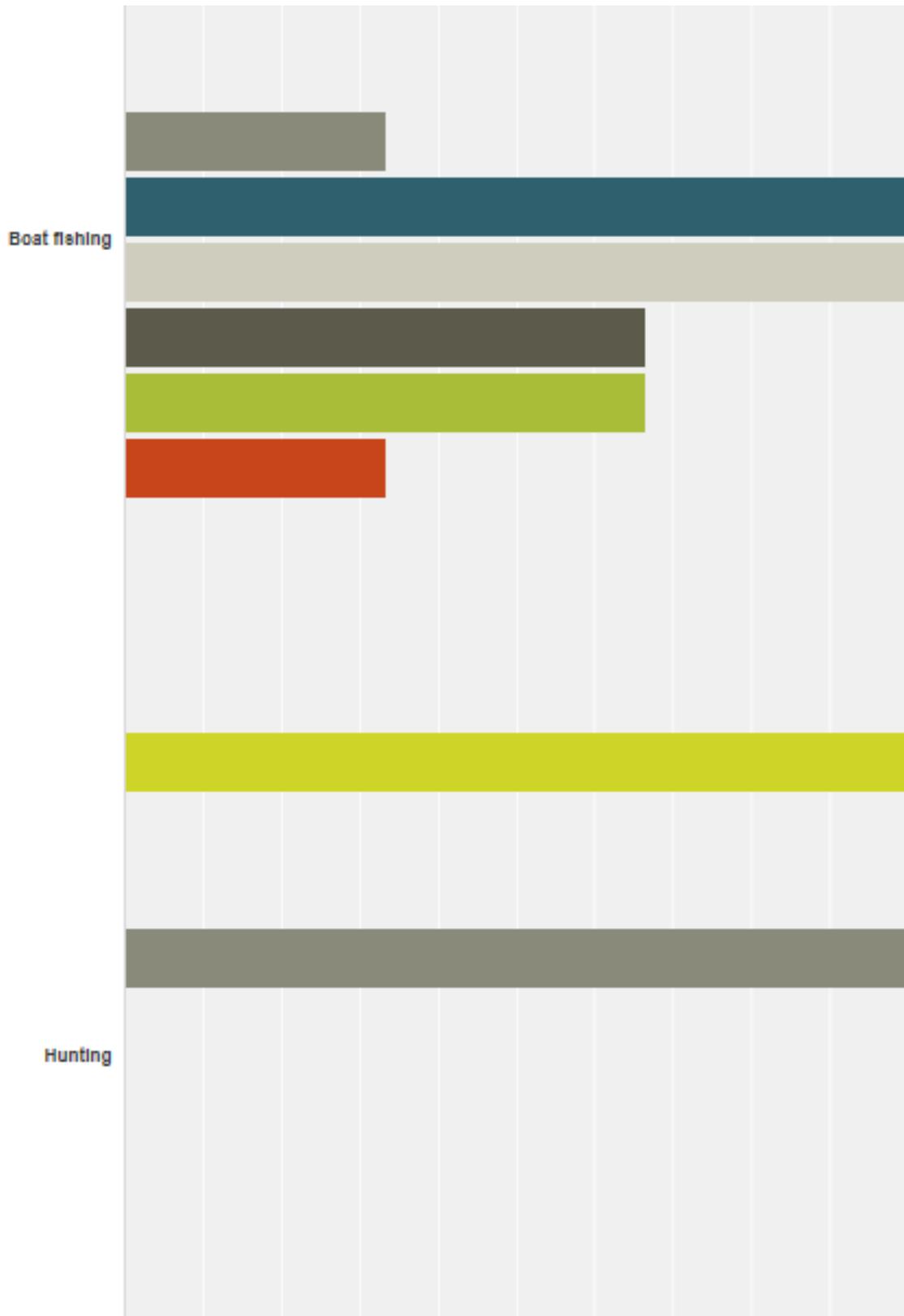


FIGURE 8 – SURVEY RESPONSE FOR QUESTION 6 (CONT.)

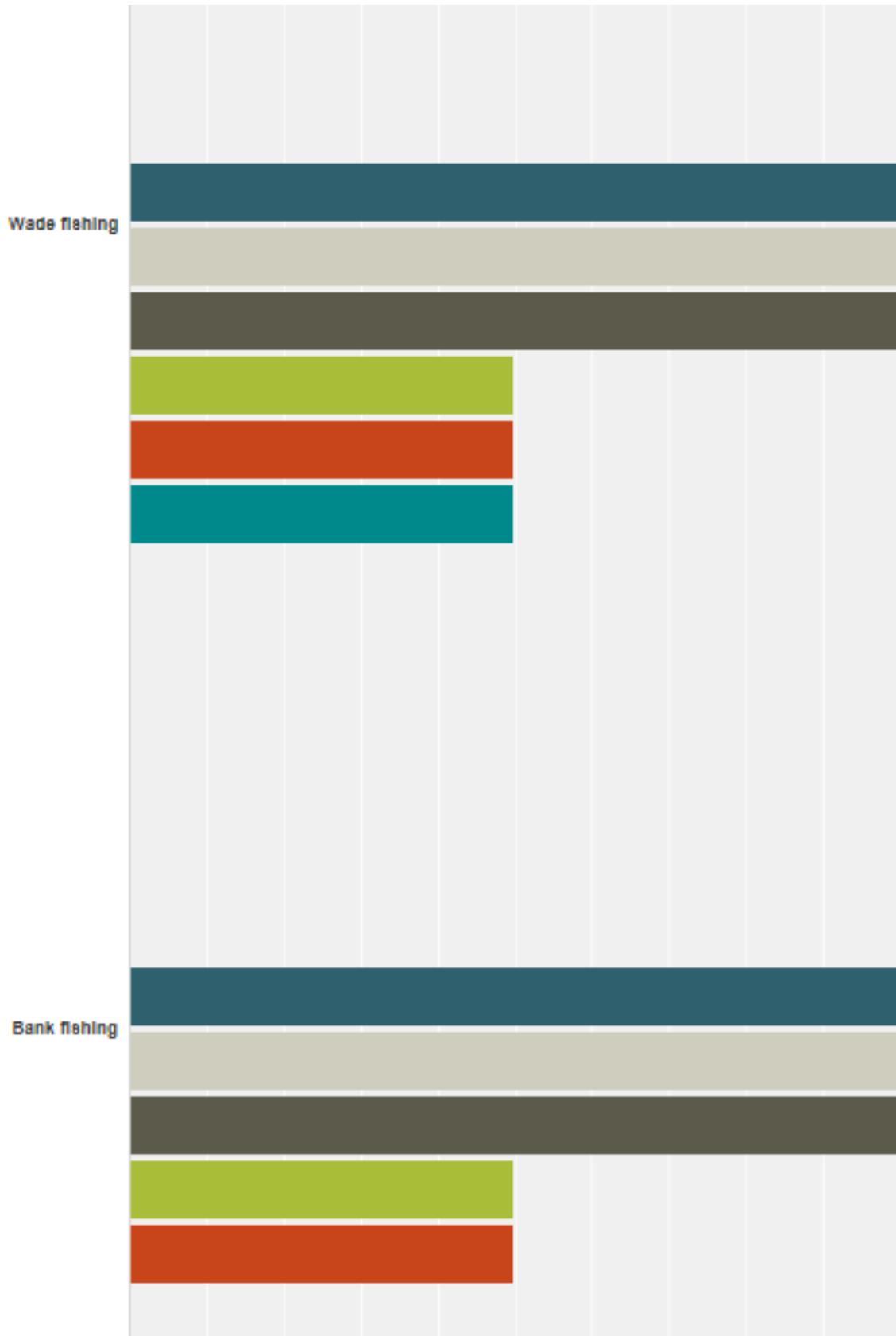
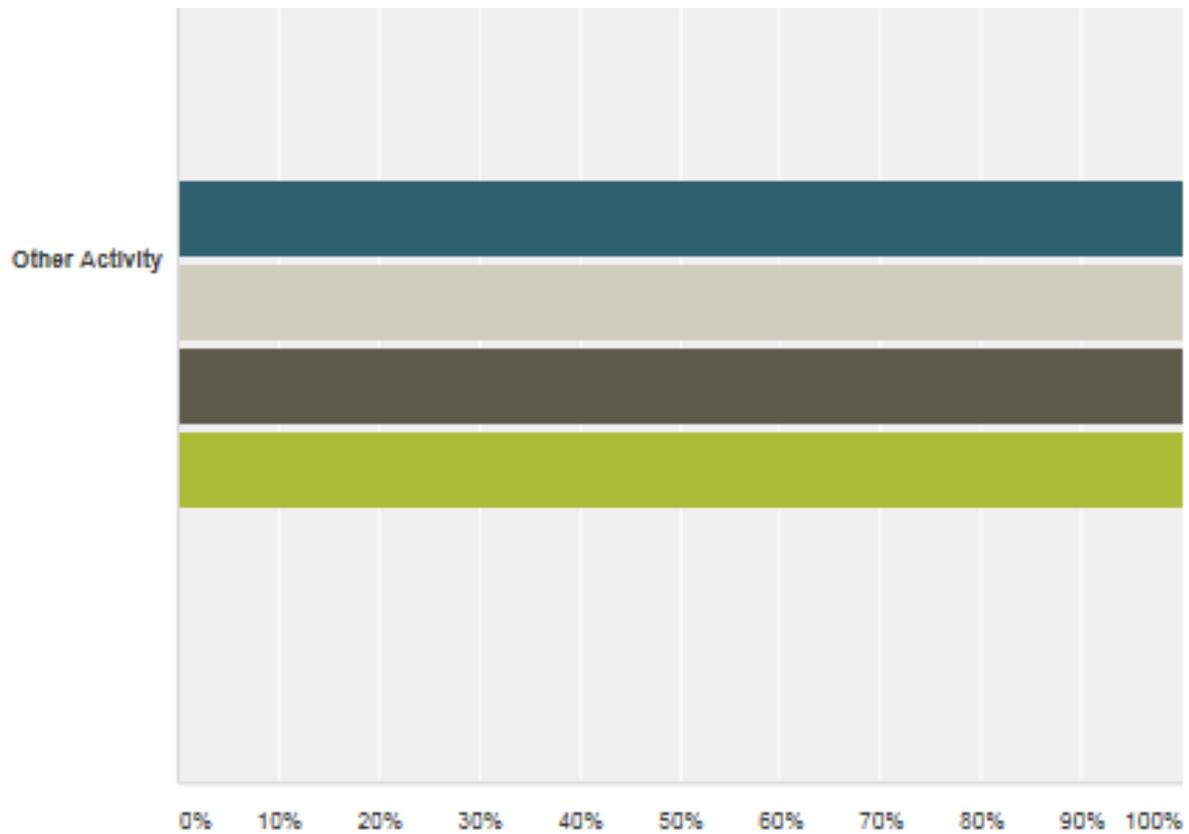


FIGURE 9 – SURVEY RESPONSE FOR QUESTION 6 (CONT.)



	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP	OCT	Total Respondents
Canoeing/kayaking	0.00% 0	0.00% 0	0.00% 0	0.00% 0	100.00% 2	100.00% 2	50.00% 1	50.00% 1	50.00% 1	0.00% 0	2
Boat fishing	0.00% 0	0.00% 0	0.00% 0	33.33% 1	100.00% 3	100.00% 3	66.67% 2	66.67% 2	33.33% 1	0.00% 0	3
Hunting	100.00% 1	0.00% 0	0.00% 0	100.00% 1	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	1
Wade fishing	0.00% 0	0.00% 0	0.00% 0	0.00% 0	100.00% 2	100.00% 2	100.00% 2	50.00% 1	50.00% 1	50.00% 1	2
Bank fishing	0.00% 0	0.00% 0	0.00% 0	0.00% 0	100.00% 2	100.00% 2	100.00% 2	50.00% 1	50.00% 1	0.00% 0	2
Other Activity	0.00% 0	0.00% 0	0.00% 0	0.00% 0	100.00% 1	100.00% 1	100.00% 1	100.00% 1	0.00% 0	0.00% 0	1

FIGURE 10 – SURVEY RESPONSE FOR QUESTION 7

For each activity that you identified in Question 5, please indicate what flow range (in cubic feet per second [“cfs”]) you would consider “preferred” for that activity. If a wider range of flows is acceptable for that activity, please check all flow ranges that apply. If you only know river stage, please identify the river stage under “Other flow or river stage”. If you do not know preferred flow in cfs or river stage, please skip to Question 8.

Answered: 2 Skipped: 2

- 0-499 cfs
- 500-999 cfs
- 1,000-1,499 cfs
- 1,500-1,999 cfs
- 2,000-2,999 cfs
- 3,000 – 4,999 cfs
- 5,000 cfs and above

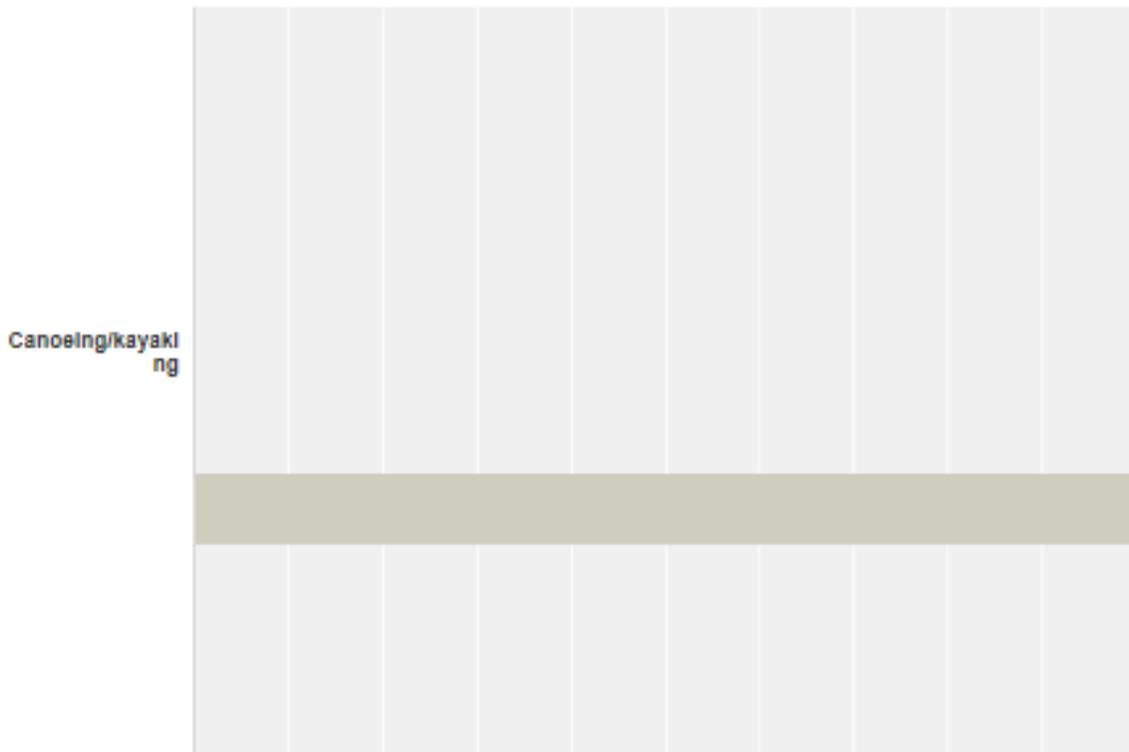


FIGURE 11 – SURVEY RESPONSE FOR QUESTION 7 (CONT.)



FIGURE 12 – SURVEY RESPONSE FOR QUESTION 7 (CONT.)

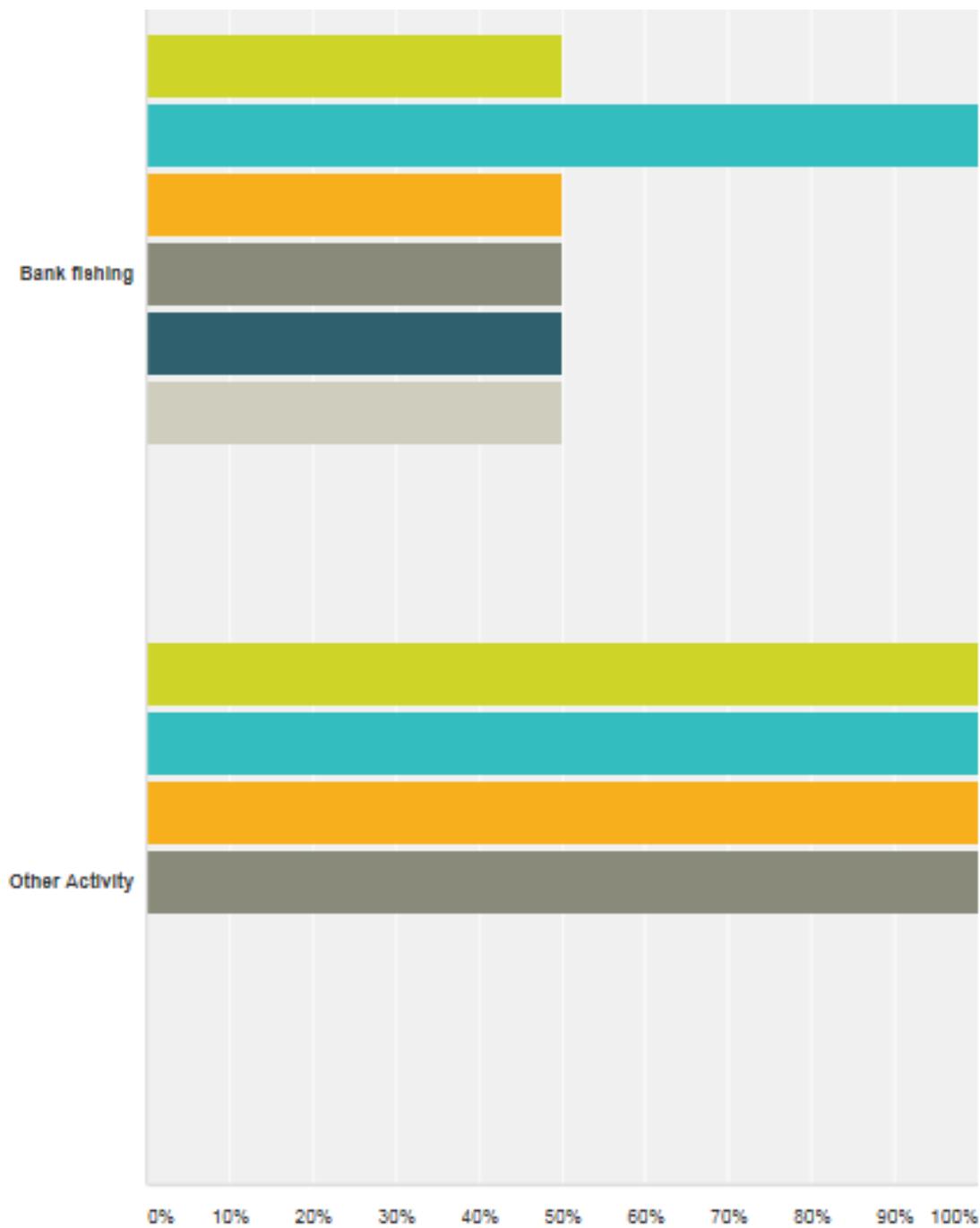


FIGURE 13 – SURVEY RESPONSE FOR QUESTION 7 (CONT.)

	0-499 cfs	500- 999 cfs	1,000-1,499 cfs	1,500-1,999 cfs	2,000-2,999 cfs	3,000 - 4,999 cfs	5,000 cfs and above	Total Respondents
Canoeing/kayaking	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	100.00% 1	0.00% 0	1
Boat fishing	0.00% 0	50.00% 1	50.00% 1	0.00% 0	50.00% 1	50.00% 1	50.00% 1	2
Hunting	0.00% 0	100.00% 1	100.00% 1	100.00% 1	100.00% 1	0.00% 0	0.00% 0	1
Wade fishing	0.00% 0	100.00% 2	50.00% 1	50.00% 1	0.00% 0	0.00% 0	0.00% 0	2
Bank fishing	50.00% 1	100.00% 2	50.00% 1	50.00% 1	50.00% 1	50.00% 1	0.00% 0	2
Other Activity	100.00% 1	100.00% 1	100.00% 1	100.00% 1	0.00% 0	0.00% 0	0.00% 0	1

Comments (2)

Categorize as... Filter by Category Search responses

Showing 2 responses

Swimming

11/22/2015 8:22 AM View respondent's answers

3.5 to 5 ft stage for both

11/9/2015 1:59 PM View respondent's answers

FIGURE 14 – SURVEY RESPONSE FOR QUESTION 8

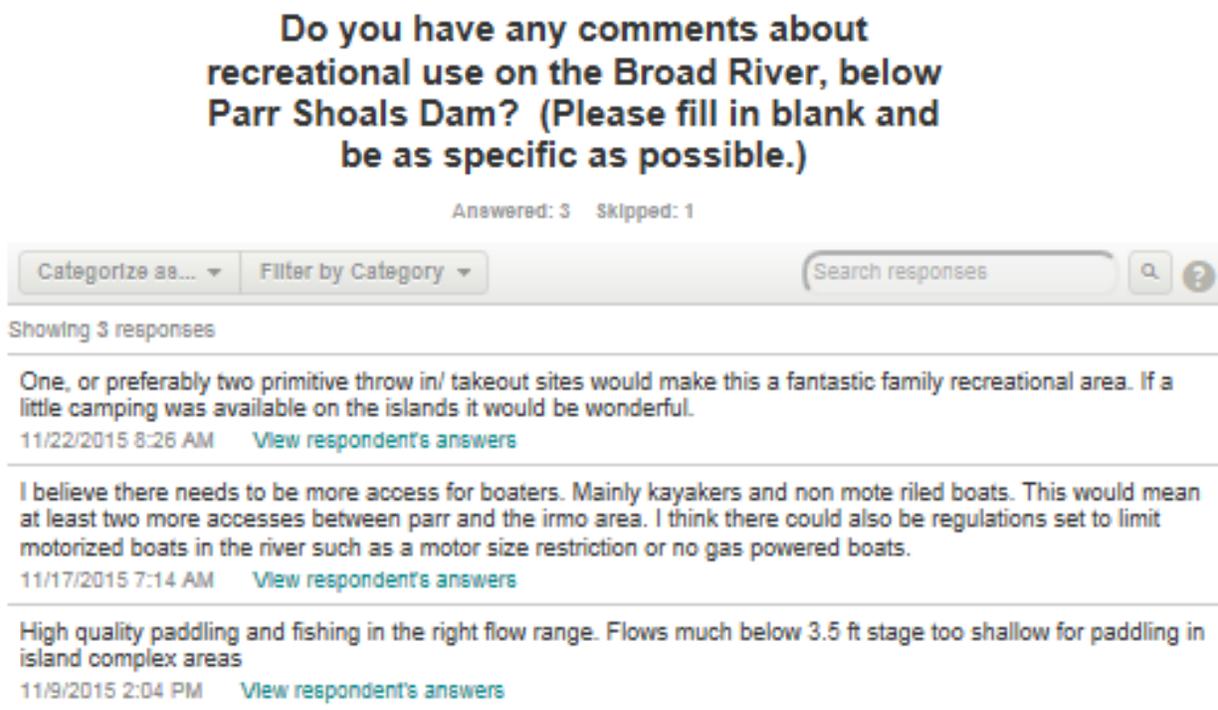


FIGURE 15 – SURVEY RESPONSE FOR QUESTION 9

Contact Information (optional)

Answered: 3 Skipped: 1

Answer Choices		Responses	
Name	Responses	100.00%	3
Organization	Responses	100.00%	3
Address	Responses	0.00%	0
Address 2	Responses	0.00%	0
City/Town	Responses	0.00%	0
State/Province	Responses	0.00%	0
ZIP/Postal Code	Responses	0.00%	0
Country	Responses	0.00%	0
Email Address	Responses	100.00%	3
Phone Number	Responses	100.00%	3

RECREATION TWC MEETING NOTES

MAY 10, 2016

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
Recreation TWC Meeting

May 10, 2016

Final KMK 06-03-16

ATTENDEES:

Bill Argentieri (SCE&G)
Ray Ammarell (SCE&G)
Steve Summer (SCANA)
Brandon Stutts (SCANA)
Caleb Gaston (SCANA)
Beth Trump (SCE&G)
Randy Mahan (SCE&G)
Bill Marshall (SCDNR)
Dick Christie (SCDNR)

Fritz Rohde (NOAA) via conference call
Gerrit Jobsis (American Rivers)
Bill Stangler (Congaree Riverkeeper)
Charlene Coleman (American Whitewater)
Stuart Greeter
Henry Mealing (Kleinschmidt)
Alison Jakupca (Kleinschmidt)
Shane Boring (Kleinschmidt)
Kelly Kirven (Kleinschmidt)

These notes are a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Alison opened the meeting with introductions and then reviewed the two objectives of the meeting: (1) to discuss the final Downstream Navigational Flows Assessment Report and determine if any additional follow-up is needed; and (2) to discuss the Downstream Recreation Flow User Survey Memo and identify recreation flow recommendations for the operations model. Alison reminded the group that the TWCs and RCGs will need to work together to balance the flow recommendations for the various resources (e.g., aquatic, recreation, navigation).

Downstream Navigational Flows Assessment Report

Shane reviewed the Downstream Navigational Flows Assessment Study Plan with the group, and discussed the two ledges that were identified as potential areas where navigation could be an issue. He explained that Ledge 1 was originally identified during scoping of the IFIM study plan and Ledge 2 was added to the Navigational Flows study plan during the mesohabitat assessment. The criteria for one-way navigation is defined as a “minimum depth of one foot across a channel 10 feet wide or across 10 percent of the total stream width, whichever is greater. Minimum depth does not need to occur across a continuous 10 percent of the stream width, but each point of passage must be at least 10 feet wide.” One-way navigation criteria are based on the passage of a 14 foot Jon-boat without a motor in the downstream direction only.

An Acoustic Doppler Current Profiler (ADCP) was used to collect bathymetry data at the two ledges when flows were at approximately 6,000 cfs. Shane showed the group a series of images that were included in the report. These images are attached to the end of these notes. Shane explained that the black line drawn across the first image of Ledge 1 maps out the most restrictive

portion of the ledge. ADCP data shows that Ledge 1 provides navigation passage that meets the SCDNR recommended criteria for one-way navigation at flows as low as 500 cfs. Shane stated that a 500 cfs flow provided a passage point that was 32% of the stream width.

According to the navigation criteria, Ledge 2 is navigable at flows as low as 1000 cfs. However, Shane pointed out that the ledge comes very close to meeting the criteria at a flow of 700 cfs and even 500 cfs. Although the criteria isn't met for providing navigation across 10 percent of the stream width, there are passage points that provide enough width for a 14 foot Jon-boat to pass through. Gerrit asked if there was a minimum width as part of the criteria and Shane said that it's either 10 feet or 10 percent of the stream width. So in the case of Ledge 2, there is a notch at 500 cfs that is wider than 10 feet, but it's not 10 percent of the stream width. Shane stated that at 1000 cfs the passage width is 82 ft (10% of the stream width); at 700 cfs the passage width is 67 ft (8% of the stream width); and at 500 cfs the passage width is 30 ft wide (4% of the stream width)

Bill Marshall mentioned that the Bookman Shoals complex is another area in the river where navigation can be difficult for paddlers at lower flows. Shane said that Bookman Shoals was considered for inclusion when the Navigational Flows study plan was being developed. However, this area will be studied in much greater detail during the IFIM study, so additional information will be coming with that report. Shane also mentioned that since Bookman Shoals is a very braided area of the river, although it is rocky, there are more navigation points than might be obvious at first glance.

Gerrit mentioned that the study plan allows for the possibility of a field assessment to verify the report results. He is interested in completing that component of the study. Alison said that the one-way navigation criteria also mentions that it shouldn't be necessary to get out and drag your boat in order to navigate an area of the river, and a field verification exercise would demonstrate if this is necessary at the recommended flows. Henry suggested that the field verification be scheduled after IFIM results are out. We will likely perform field observations for IFIM results and navigation passage at the same time later in August/September.

Steve asked how flows will be balanced if 1,000 cfs is agreed on as necessary for navigation but the 7Q10 is different flow. He mentioned that Parr Reservoir is not a storage reservoir that might allow for greater flexibility in downstream flows. Henry said that we will use the Operations Model to assist in balancing between flows and water availability. The TWC will use the Operations Model results to develop a recommendation for consideration by SCE&G. Henry agreed that this project does not have a storage reservoir, which means that recreation flows will be extremely difficult to schedule, unlike at Lake Murray. We also will likely have a caveat for downstream flows being linked to inflows as well.

Charlene asked how many Jon-boats are actually on the Broad River downstream of the Project. She believes that mostly kayaks and canoes are used on this area of the river, since access is not great for Jon-boats. Gerrit said there are actually quite a few Jon-boats that get out there, utilizing private access. Charlene said she would be interested in knowing navigation issues from people who actually use this area of the river versus what the navigational flows assessment showed. Alison said this is another reason for doing a field verification. The information collected during the field verification will be included in an addendum to the navigation study report.

Bill S. said that after talking with Steve de Kozlowski, he was concerned that in the report, a straight line of navigation was used, thus excluding the most restrictive navigation points in the ledges. Shane said that a straight line was not modeled, instead the ADCP was run back and forth over each ledge approximately 10-20 times. This captured a 3D image of each entire ledge. The one-way navigation criteria was then applied to the ledge, which is a linear criteria. The idea was to pick the most restrictive area within each ledge. The black line depicted in the 3D figures included in the report are then used as the bed profile in the second set of report figures and compared to the linear criteria.

Gerrit said that using this ADCP technology, in addition to finding the most restrictive point, you could also map out the best course for navigation at each ledge. Shane agreed, and said that a grid showing the entire ledge can be exported from the data collected and the navigation course could be depicted there. This would give a good representation of what the shoal actually looks like. The group agreed that it would be helpful to have maps of this information for the two ledges and for the Bookman Shoals complex (if possible) to use during the field verification.

The report will be modified to mention that a field verification will be completed. Comments received on the report from SCDNR, American Rivers and Congaree Riverkeeper will be added to the report in an appendix. Once the field verification is completed, an addendum will also be added to the report discussing the results.

Downstream Recreation Flow User Survey Memo

Alison began the discussion by giving some background information on the memo. The Downstream Recreation Flows Study Plan was developed and a Focus Group meeting was held in 2014 to discuss what experiences recreators were having on the river downstream of the Project and to identify preferred flows for various activities. During that meeting, flows were narrowed down to a few preferred ranges. The Operations Model needs more specific flows at a specific time for input, so the ranges need to be narrowed down.

A second Focus Group meeting was originally planned for 2015 to again gather information on recreation experiences, however a survey was developed and distributed as a way to capture additional information instead. Alison mentioned that only four people responded to the survey, with only three respondents indicating that they had recreated in the study area the previous recreation season. However, the results of the survey were similar to the Focus Group discussion from 2014. Flow recommendations coming out of the survey were 2,000-5,000 cfs during May and/or June for canoeing, kayaking and higher flow boat fishing, and 500-999 cfs during May, June and July for lower flow boat fishing, hunting, wade fishing and swimming. Alison asked the TWC if they agreed with these recommendations and said the goal is to narrow down the ranges to specific flows for the Operations Model. Henry mentioned that the lower flow recommendation of 500-999 cfs is very close to what the Navigational Flow Assessment recommended. He suggested the group focus on picking flows from the higher range to run through the Operations Model.

Ray mentioned that the flow duration curves in the PAD show historically what flows are available at specific times. For example, a flow of 5,000 cfs may only be available for 30 percent of the time in May. Bill A. also mentioned that the wording of the settlement agreement will need to have flexibility since these flows will only be available when inflows allow. Gerrit said the goal is to include something that allows for a specific flow on weekends during the recreation season during a

specific timeframe, such as 8 AM until 1 PM. Gerrit said the benefit of recreation flows is to have something that people can depend on and schedule around. Gerrit indicated that he would like to see an attempt by SCE&G to provide a scheduled recreation flow if the water is available. Bill A. said that having a window of 6 hours would be much more doable than a 12 hour window, or an entire weekend, if the water is available.

Henry suggested to the group that flows of 2,000, 3,500, and 5,000 cfs during a 6 hour window on the weekends of May, June and July be run through the model. After some discussion, the group excluded 5,000 cfs since this high flow is also unlikely to occur often and expanded the timeframe to include the recreation season (May through September). The group agreed on the following recommendation for recreation flows to be run through the Operations Model:

- Flows of 2,000 cfs and 3,500 cfs
- Focus on weekends and holidays during the recreation season (May through September)
- 6 hour window (approximately 8 AM until 2 PM)

The group agreed that IFIM recommendations will likely cover the lower ranges of flows which would be ideal for activities such as wade fishing.

The meeting adjourned and action items are listed below.

ACTION ITEMS:

- Kleinschmidt will make maps for navigation through the two ledges and Bookman Shoals (if possible with the current data)
- SCE&G will schedule a field verification for navigation and fish habitat after the IFIM results are presented to the TWC for review.
- Kleinschmidt will add an appendix to the navigational flow report which will include the comments from SCDNR, American Rivers and Congaree Riverkeeper.
- Kleinschmidt will add an addendum to the Navigational Flows report which will include a report discussing the field verification results.

Exhibit E-8 Recreation Resources

Recreation Use and Needs Study Plan

RECREATION USE AND NEEDS STUDY PLAN

**PARR HYDROELECTRIC PROJECT
(FERC No. 1894)**

Prepared for:

**South Carolina Electric & Gas Company
Cayce, South Carolina**

Prepared by:

Kleinschmidt

Lexington, South Carolina
www.KleinschmidtUSA.com

January 2014
Revised October 2014

RECREATION USE AND NEEDS
STUDY PLAN

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RECREATION USE AND NEEDS STUDY PLAN

PARR HYDROELECTRIC PROJECT (FERC No. 1894)

SOUTH CAROLINA ELECTRIC & GAS COMPANY

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RECREATION USE AND NEEDS STUDY PLAN

PARR HYDROELECTRIC PROJECT (FERC No. 1894)

SOUTH CAROLINA ELECTRIC & GAS COMPANY

1.0 INTRODUCTION

South Carolina Electric & Gas Company (SCE&G) is the Licensee of the Parr Hydroelectric Project (FERC No. 1894) (Project). The Project consists of the Parr Hydro Development and the Fairfield Pumped Storage Development. Both developments are located along the Broad River in Fairfield and Newberry Counties, South Carolina.

The Parr Hydro Development forms Parr Reservoir along the Broad River. The Development consists of a 37-foot-high, 200-foot-long concrete gravity spillway dam with a powerhouse housing generating units with a combined licensed capacity of 14.9 MW. Parr Hydro operates in a modified run-of-river mode and normally operates to continuously pass Broad River flow. The 13-mile-long Parr Reservoir has a surface area of 4,400 acres at full pool and serves as the lower reservoir for pumped-storage operations.

The Fairfield Pumped Storage Development is located directly off of the Broad River and forms the 6,800-acre upper reservoir, Monticello Reservoir, with four earthen dams. As noted, Parr Reservoir serves as the lower reservoir for pumped storage operations. The Fairfield Development has a licensed capacity of 511.2 MW and is primarily used for peaking operations, reserve generation, and power usage.

2.0 PURPOSE OF THE STUDY

The Project is currently involved in a relicensing process which involves cooperation and collaboration between SCE&G, as licensee, and a variety of stakeholders including state and federal resource agencies, state and local government, non-governmental organizations (NGO), and interested individuals. The collaboration and cooperation is essential to the identification of and treatment of operational, economic, and environmental issues associated with a new

operating license for the Project. SCE&G has established several Technical Working Committees (TWC's) with members from among the interested stakeholders with the objective of achieving consensus regarding the identification and proper treatment of these issues in the context of a new license.

As a part of this process, SCE&G is proposing to perform an assessment of existing and future recreational use, opportunities, and needs for the Project. The assessment is designed to provide information pertinent to the current and future availability and adequacy of SCE&G owned and managed recreation sites and specific informal recreation areas at Monticello Reservoir and the Parr Reservoir. The overall study plan objective is to identify current and potential recreational use, opportunities, and needs at the Project by addressing the following goals and objectives:

Goal 1: *Characterize the existing recreational use of SCE&G's recreation sites on Monticello Reservoir and Parr Reservoir. This will be accomplished by meeting the following objectives:*

- i. Identify recreation points, inventory the services and facilities offered at each, and assess the general condition of each site (including whether the site provides barrier free access).
- ii. Identify the patterns of use at each site (type, volume, and daily patterns of use).

Goal 2: *Characterize existing use of waterfowl areas (Broad River Waterfowl Area, Enoree River Waterfowl area) and SCE&G recreation lands by hunters during designated hunting seasons. This will be accomplished by meeting the following objectives:*

- i. Identify the patterns of use within the Project boundary (type, volume, and daily/seasonal patterns of use).

Goal 3: *Identify future recreational needs relating to public recreation sites on Monticello Reservoir and Parr Reservoir. This will be accomplished by meeting the following objectives:*

- i. Identify existing user needs and preferences, including perceptions of crowding at recreation sites.
- ii. Estimate future recreational use of existing recreation sites.
- iii. Identify future needs for new recreation sites and facilities.

3.0 STUDY AREA

SCE&G designated recreation sites and informal recreation areas on Monticello Reservoir (Figure 1) and Parr Reservoir (Figure 2) that will be included in this assessment include the following:

TABLE 1 RECREATION SITES TO BE ASSESSED

MONTICELLO RESERVOIR RECREATION SITES & INFORMAL AREAS		PARR RESERVOIR RECREATION SITES & INFORMAL AREAS	
1.	Scenic Overlook (SCE&G-maintained portion)	1.	Cannon's Creek Boat Ramp
2.	Hwy 215 Boat Ramp	2.	Heller's Creek Boat Ramp
3.	Hwy 99 Boat Ramp	3.	Broad River Waterfowl Area (vehicle counter only)
4.	Recreation Lake Access Area	4.	Hwy 34 Boat Ramp (vehicle counter only)
5.	Informal fishing area, east side of Hwy 99	5.	Enoree River Waterfowl Area (vehicle counter only)
		6.	Enoree River Bridge Informal Access Area (vehicle counter only)



FIGURE 1 MONTICELLO RESERVOIR RECREATION STUDY SITES

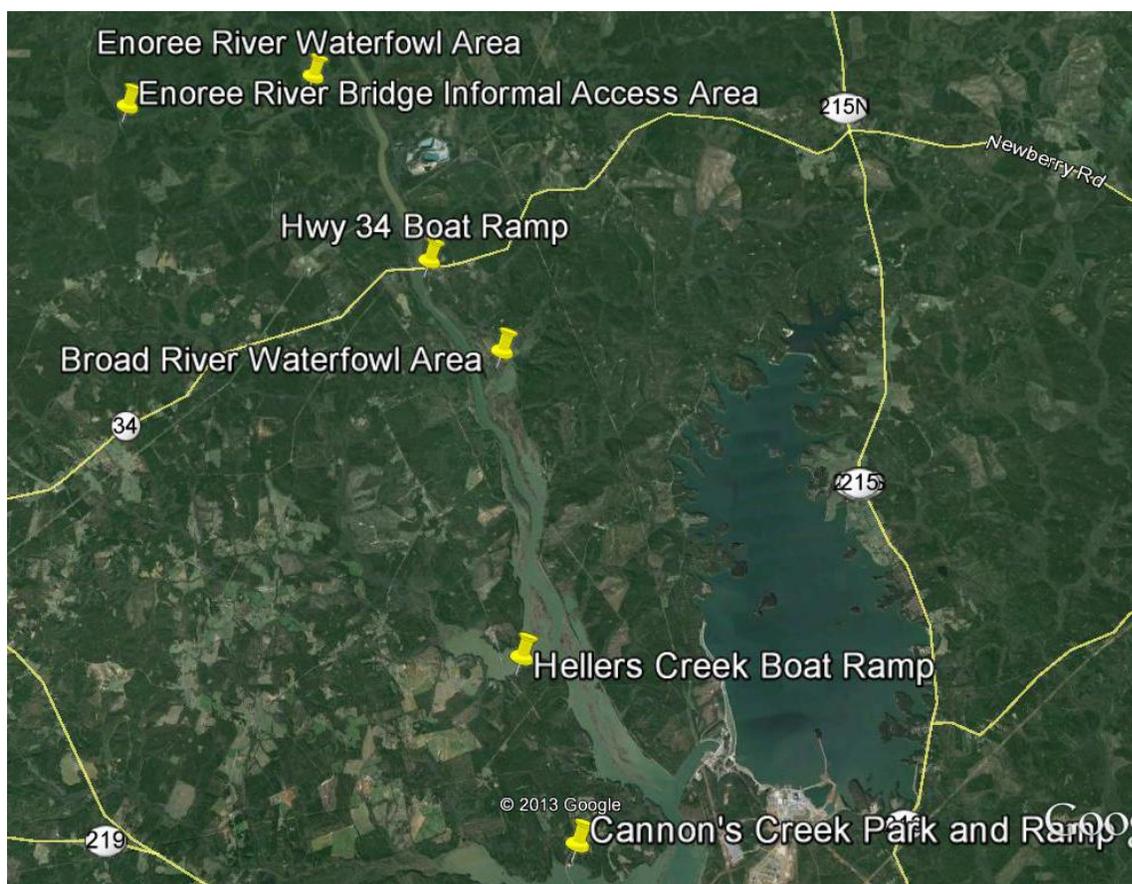


FIGURE 2 PARR RESERVOIR RECREATION STUDY SITES

4.0 STUDY SEASON

Study seasons will vary by study area based upon current knowledge of use patterns. Study seasons should capture specific seasonal activities, including hunting during legal seasons and on-water recreational use during the peak season (typically defined as Memorial Day to Labor Day). As hunting season dates vary annually based upon SCDNR board decisions, only approximate date ranges for specific targeted mail-in survey activities are provided within this study plan. Exact dates for waterfowl survey activities will be determined when study season dates are published, anticipated being mid-summer 2014. Study season specifics are further described below.

4.1 MONTICELLO RESERVOIR

Primary interview activities will occur from April 1 through Labor Day, 2015. Additional interviews will be conducted from February 1 through March 31, 2016 in order to capture recreational activity on the Reservoir during early crappie season. Specific targeted survey activities with mail-in surveys, as described in Section 5.5, will occur during the Canada Geese hunting season (approximately September 1 through September 30, depending on yearly SCDNR approved seasons).

4.2 PARR RESERVOIR

Primary interview activities, as described in Section 5.0, will occur from April 1 through Labor Day, 2015, to encompass turkey hunting season, as well as the peak recreation season. Specific targeted survey activities with mail-in surveys, as described in Section 5.5, will occur during Migratory Waterfowl Seasons, including Canada Geese hunting season (approximately September 2015 through January 2016, depending on yearly SCDNR approved seasons).

5.0 DATA COLLECTION METHODS

A variety of data collection techniques will be used to obtain the information necessary to meet the study objectives. Table 2 identifies the information needed to address each objective and the data collection methods to be used. Both primary and secondary data will be utilized. Primary data will entail site inventories, user counts, and use surveys (exit interviews). Secondary data will include U.S. Bureau of Census data, the South Carolina Statewide Comprehensive Outdoor Recreation Plan (SCORP), SC Recreation Participation & Preference Study, and other relevant, readily available literature. Additional input will be solicited from the Lake & Land Management and Recreation Resource Conservation Group (RCG), Recreation TWC, and target "focus groups" of especially knowledgeable individuals, offering knowledge of the recreation resources and needs of the lake and river.

TABLE 2 RECREATION USE AND NEEDS STUDY PLAN OBJECTIVES AND EFFORTS

OBJECTIVES	INFORMATION NEEDED	SOURCE
<i>Goal 1: Characterize existing recreational use of recreation sites on Monticello Reservoir and the Parr Reservoir</i>		
Identify formal recreation sites, inventory the services and facilities offered at each, and assess the general condition and ADA compliance of each site	<ul style="list-style-type: none"> • Physical inventory of all boat ramps, grills, shelters, restrooms, parking capacity, etc., at each site • General assessment of site condition to include maintenance, basic rehabilitation needs, etc. • Visitors' assessment of site conditions • Identification of activities that occur at each site • ADA compliance assessment 	<ul style="list-style-type: none"> • Recreation Site Inventory • Survey of Recreation Site Users
Identify the patterns of use at each site (type, volume, and daily patterns of use)	<ul style="list-style-type: none"> • Utilize vehicle counts as an estimation of people • Estimate of # people/vehicle • Estimate of # vehicles/site • Parking capacity 	<ul style="list-style-type: none"> • Traffic Counter Data • Surveyor Counts of Vehicles at Recreation Sites • Survey of Recreation Site Users - # of people per vehicle and length of visit • Recreation Site Inventory - # of parking spaces • County data from Scenic Overlook

OBJECTIVES	INFORMATION NEEDED	SOURCE
<i>Goal 2: Characterize existing use of waterfowl areas (Broad River Waterfowl Area, Enoree River Waterfowl area) and SCE&G recreation lands by hunters during designated hunting seasons.</i>		
Identify the patterns of use within the Project boundary (type, volume, and daily/seasonal patterns of use).	<ul style="list-style-type: none"> • Estimation of # hunters/site or waterfowl area 	<ul style="list-style-type: none"> • Counts of Vehicles at Recreation Sites/waterfowl areas • Mail-in questionnaire specific to hunting use at the Project • SCDNR waterfowl use data • SCDNR hunting permit data

OBJECTIVES	INFORMATION NEEDED	SOURCE
<i>Goal 3: Identify future recreational needs relating to public recreation sites on Monticello Reservoir and Parr Reservoir</i>		
Identify existing user needs and preferences, including perceptions of crowding at recreation sites	<ul style="list-style-type: none"> • User preferences and opinions of needs and crowding at sites • Condition assessment 	<ul style="list-style-type: none"> • Survey of Recreation Site Users • Recreation Site Inventory
Estimate future recreational use of existing recreation sites	<ul style="list-style-type: none"> • Current inventory and use data from Goals 1 and 2 • Population projections for the project area • Recreational use trends 	<ul style="list-style-type: none"> • Results of Goals 1 and 2 • U.S. Bureau of Census Data • SC Division of Research & Statistics (Budget and Control Board) • SCORP, SC Recreation Participation & Preference Study, or other readily available literature
Identify future needs for new recreation sites and facilities	<ul style="list-style-type: none"> • Population projections • Recreation use trends • "focus group" (stakeholders) knowledge of recreation resources and needs 	<ul style="list-style-type: none"> • SC Div. of Research & Statistics • SCORP, SC Recreation Participation & Preference Study, Palmetto Conservation Foundation trail use data, or other literature • Recreation TWC and Lake and Land Management & Recreation RCG

The capacity, availability, and overall condition of existing recreation sites will be assessed through review of existing information and an on-site inventory (Section 5.1). Recreational use of SCE&G's public recreation sites (Table 2) during the appropriate recreation season (as described in 4.0) will be estimated using a combination of data including traffic count, survey data, spot counts, and additional collection methods as described in Section 5.2, 5.3, 5.4, and 5.5. Methods for estimating recreational use are described in Section 6.0.

5.1 RECREATION SITE INVENTORY

Data on the types of amenities, activities supported, and the parking capacity of recreation sites at the Project, and the land area each site encompasses will be obtained from two sources. First, existing information regarding recreation sites such as FERC Form 80's and existing GIS data layers will be referenced. Second, a site visit will be made to collect data on the type, number, and size of facilities (restrooms, parking areas, boat ramps, picnic shelters and tables, etc.) located at each site. The general condition of recreation facilities will be recorded along with a qualitative assessment of whether the site is considered "barrier free". A copy of the inventory form is provided in Appendix A.

Upon completion of the inventory, all data will be uploaded into a database; anticipated to be a GIS database. The database will be structured so that it can be used in a variety of formats (brochure, maps, web pages, etc.) and can be updated as recreation sites are modified, added, or changed in any way.

5.2 TRAFFIC COUNTS

Traffic counters will be installed to record the number of vehicles that enter and exit the public recreation areas. Traffic count data will be collected for an entire year in order to capture the various hunting seasons. On Monticello Reservoir, traffic counters will be installed at the lake access point of the Scenic Overlook, the Hwy 215 Boat Ramp, the Hwy 99 Boat Ramp, Recreation Lake Access Area, and the Hwy 99 informal fishing area. At Parr Reservoir, traffic counters will be installed at Cannon's Creek Boat Ramp, Heller's Creek Boat Ramp, Broad River Waterfowl Area, Hwy 34 Boat Ramp, Enoree River Waterfowl Area, and the Enoree River Bridge informal area.

5.3 PUBLIC RECREATION AREA VISITOR EXIT INTERVIEWS

The preferences and perceptions of people using SCE&G's recreation sites and informal areas are important inputs in management decisions regarding the adequacy and availability of existing recreation sites. Information from recreation site users will be obtained via an onsite survey from April 1 through Labor Day, 2015, and from February 1 through March 31, 2016, on Monticello Reservoir and from April 1 through Labor Day, 2015, for Parr Reservoir.

Exit surveys will be administered to collect user characteristics (origin, gender, age, group size, etc.), the type of land-based and water-based recreation activities individuals are participating in, length of stay, perceptions of crowdedness, and conditions of recreation sites at the Project. Visitor demographic information will also be collected. Surveys will be conducted at the following locations:

Monticello Reservoir

- Scenic Overlook
- Hwy 215 Boat Ramp
- Hwy 99 Boat Ramp
- Recreation Lake Access Area
- Hwy 99 informal Fishing Area

Parr Reservoir

- Cannon's Creek Boat Ramp
- Heller's Creek Boat Ramp

The data collected will be used to provide a general pattern of recreation use and assist in the development of recreation use estimates at access sites. The data will also provide recreation user inputs on "crowdedness" and potential facility needs. The survey will be pre-tested in the field prior to implementation and revisions will be incorporated, as necessary. If any significant revisions to the survey or study protocol are deemed necessary subsequent to field pre-testing, the TWC will be notified.

Two survey versions will be implemented – one for Monticello Reservoir and one for Parr Reservoir. The two survey versions will be very similar to each other and will contain similar questions. Draft questionnaires are provided in Appendix B.

A draft sampling plan (Appendix C) has been prepared in consultation with the TWC utilizing stratified random sampling in order to complete at least 30 days of interviewing at each recreation site. Sampling days are made up of weekends, weekdays and holidays. Weekends will be sampled at a greater rate than weekdays, to account for the heavier use that typically occurs during those periods. Moreover, all major national holidays that fall within the recreation season have been included in the sampling plan (i.e., Memorial Day weekend, July 4th weekend, and Labor Day weekend)(Table 3). Furthermore, as the sampling season approaches, the TWC will be consulted on the potential for including special event days with the holidays.

TABLE 3 LIST OF HOLIDAYS TO BE INCLUDED IN THE 2015 RUNS EXIT INTERVIEW SAMPLING PLAN

DATE	HOLIDAY
May 23, 2015	Saturday before Memorial Day
May 24, 2015	Sunday before Memorial Day
May 25, 2015	Memorial Day
July 3, 2015	Friday before Independence Day
July 4, 2015	Independence Day
July 5, 2015	Sunday after Independence Day
September 5, 2015	Saturday before Labor Day
September 6, 2015	Sunday before Labor Day
September 7, 2015	Labor Day

All survey clerks will be trained thoroughly as a means of quality control. Survey clerks will be provided with detailed information on the study schedule, appropriate materials to aid in data collection, and direction on appropriate interviewing techniques and attire. Interviewers will also be provided with an incentive for survey respondents to complete the survey.

5.4 SPOT COUNTS

Spot counts will be conducted at the public recreation sites identified in Section 5.3 once per interview period, concurrent with exit interviews. Specifically, spot counts will document the number of visitors and/or vehicles present at that visit and help to characterize site use.

Information recorded during spot counts will include: date, time, and weather; amount of vehicle and vehicle/trailer parking capacity in use; number and type of activities observed at the site; and state license plate data. Spot count data will be used in parallel with traffic counter data.

5.5 ADDITIONAL USER DATA COLLECTION EFFORTS

Waterfowl hunting typically occurs during the fall and winter months. Waterfowl hunters represent a unique group of users whose preferences and perceptions may differ from those using recreation sites during the summer months. The preferences and perceptions of waterfowl hunters will be identified through use of a panel of waterfowl hunters.

Kleinschmidt will work with the Recreation TWC to identify waterfowl organizations whose hunters use the Project. A panel will be assembled from willing participants of the respective organizations. Should not enough participants be available from the organizations, additional individual hunters may be sought out to serve on the panel. A small group of hunters will be invited to participate in a group meeting, similar to a focus group, to identify the opportunities and needs of waterfowl hunters using Project access areas. The information collected will be similar to that of the access site survey. Kleinschmidt will recruit the hunters, develop a meeting format and materials, and will conduct the meeting. It is anticipated that the meeting will occur during the waterfowl hunting season.

Additionally, mail-in surveys similar to the access site survey will be distributed at the Broad River¹ and Enoree River Waterfowl Areas, on Parr Reservoir during waterfowl hunting season. On Monticello Reservoir, mail-in surveys will be distributed on vehicles parked at the Hwy 215 boat ramp and the Hwy 99 boat ramp during Canada Geese season. The study seasons for Monticello Reservoir and Parr Reservoir, as discussed in Section 4.0, will capture the turkey hunting season through exit interview activities.

Representation of those utilizing the Project during local fishing tournaments are anticipated to be represented during access site exit interviews, as registration, check-in and weigh-in typically occurs at access areas.

¹ In lieu of distributing mail-in surveys on parked vehicles at the Broad River Waterfowl Area, mail-in surveys may be provided to SCDNR to distribute to hunters winning the opportunity to hunt at this site through the SCDNR Public Lottery Hunt program.

6.0 ANALYSIS

The following sections provide a description of the approach for estimating existing and future recreational use, recreation site capacity and use density percentages, and recreation needs.

6.1 CURRENT RECREATION USE ESTIMATES

The reported estimates of recreation will be presented in "recreation days". The FERC defines a recreation day as one visit by a person to a development for purposes of recreation during any 24-hour period. The weekday, weekend, and holiday average recreation days will be calculated for each Monticello Reservoir and Parr Reservoir recreation site utilizing the traffic counters and recreation site survey data. The average number of people at each site within the morning and afternoon periods will be estimated within each day type and converted to a daily estimate. Daily estimates for each day type will be expanded to represent the study period and summed for a total estimate for each recreation site.

6.2 FUTURE RECREATION USE ESTIMATES

Estimated projections of future recreation use at Monticello Reservoir and Parr Reservoir will be developed using the average annual increase in population growth over the past 10 years, as reported by the Census Bureau or the State Division of Research and Statistics, for Newberry, Fairfield and Richland counties². The estimates will be augmented with discussion of trends reported in the SCORP (2014) and the SC Recreation Participation & Preference Study (2005). Estimated projections will be provided in 5 year intervals for the anticipated term of the license up to 50 years into the future (through year 2070).

While it is acknowledged that future changes in the supply of recreation resources, either in their quantity, accessibility, and/or quality may influence future demand and use, the demand analysis undertaken for this study does not attempt to predict what these future changes might consist of or how they might specifically affect levels of use at Project facilities. Therefore, the demand analysis results should be viewed as a general guide of potential future recreation pressure developed for planning purposes only.

² Although Richland County is not within the FERC Project boundary, it is believed that a significant number of those who recreate at the Project reside within Richland County.

6.3 RECREATION SITE CAPACITY

For purposes of this study, the carrying capacity for a recreation site is defined as the number of vehicles and boat trailers that can be parked at a recreation site at one time, based on the number of available parking spaces associated with each site. For paved parking areas, this will be achieved by counting the number of designated parking spaces available at the recreation site. For gravel parking areas, the number of available parking spaces for each recreation site will be estimated by measuring the area (sq ft) available for parking and estimating the number of vehicles that could be parked at the location, if optimal space were utilized. These estimates will be based on parking capacity standards for vehicle length, width, and available turn around space.

6.4 RECREATION SITE USE DENSITY

The use density of recreation sites will be estimated by comparing the average observed number of vehicles at the sites on sampled weekday, weekend, and holiday days with the available parking capacity for each recreation site. The average observed number of vehicles divided by the parking capacity will provide an estimated use density for each site.

6.5 RECREATION NEEDS ASSESSMENT

The need for recreation and site development or modification of existing recreation resources will be assessed based on the inventory, condition, capacity, and exit interview survey results. The needs assessment will focus on the existing condition and user opinions of recreation sites, whether a particular site provides "barrier free" access, and the ability of sites to meet current and anticipated future recreation demand pressures. Consideration will also be given to site opportunities and constraints, as well as support facilities such as signage and maintenance. The need for new recreational sites, facilities, and shoreline will be determined through assessment of the information collected and the input of stakeholders on the Recreation TWC and Lake & Land Management RCG.

7.0 SCHEDULE

The proposed schedule for completion of the Recreation Use and Needs Study is as follows:

TASK	DATE
Mobilization for field work (includes field clerk hiring, training, etc.)	March 2015
Survey development and pre-testing	March 2015
Installation of Traffic Counters	March 31, 2015
Interview survey collection (Monticello Reservoir)	April 1-September 7 (Labor Day, 2015); and February 1 - March 31, 2016 ³
Interview survey collection (Parr Reservoir)	April 1 -September 7 (Labor Day, 2015)
Waterfowl survey activities	Throughout 2015 and early 2016 during appropriate seasons.
Early data entry, cleaning, and processing	Early October 2015
Determine if additional data collection is needed	December 2015 ⁴
Conduct analyses	April - July 2016
Submit draft report	July 2016
Finalize report	July/August 2016

8.0 REFERENCES

South Carolina Department of Parks, Recreation and Tourism, Recreation, Planning and Engineering Office. 2008. South Carolina Statewide Comprehensive Outdoor Recreation Plan.

University of South Carolina. 2005. South Carolina Recreation Participation & Preference Study. Prepared for the South Carolina Department of Parks, Recreation and Tourism. (Online) [URL]: <http://www.scprt.com/files/RPE/2005%20Rec%20Study.pdf>

³ The recreation season has been extended into 2016 on Monticello Reservoir in order to capture use data during the early crappie season, from February 1 through March 31, 2016.

⁴ If additional data collection is required, data collection methods, results and analyses, developed and assessed in cooperation with the Recreation RCG, will be provided in an addendum to the report.

APPENDIX A

SITE INVENTORY FORM

SOUTH CAROLINA ELECTRIC & GAS COMPANY

RECREATION ASSESSMENT STUDY PLAN

**PARR HYDROELECTRIC PROJECT
(FERC NO. 1894)**

SCE&G Public Site Inventory Form

Inspected by: _____

Date: _____

Site Name: _____

Site Address: _____

City: _____ State: SC Zip Code: _____

Facility Type:

____ Primitive Camp ____ Picnic Area ____ Day Use
____ Overlook Site ____ Informal Site ____ Launch Ramp

Road Access:

____ Paved access..... # of lanes
____ Unpaved access..... # of lanes – (Circular entrance/exit)

Operations:

____ Manned ____ Seasonal (From ____ To ____)
____ Unmanned ____ Year Round
____ Fee (\$) (Site ____; Parking; ____)

Site Amenities:

#	Type	#	Type
_____	Picnic Tables	_____	Potable Water
_____	Grills	_____	Boat Fuel
_____	Firepit/ring	_____	Trash Cans
_____	Boat Pump Out	_____	Docks
_____	Trails (specify use _____: Miles_____)	_____	Playground
_____	Shelter	_____	Showers
_____	Designated Swim Area	_____	Concession
_____	Store	_____	Marina (# of slips_____)
_____	Dumping Station		

Parking Lots:

Type	Estimated # Paved	Estimated # Gravel	
ADA Spaces	_____	_____	_____ Spaces delineated?
Regular Spaces	_____	_____	_____ Curbs?
Vehicle & trailer spaces	_____	_____	

Sanitation Facilities:

	Flush	(BF*?)	Portable	(BF?)	Showers	(BF?)
Unisex	_____	(_____)	_____	(_____)	_____	(_____)
Women	_____	(_____)	_____	(_____)	_____	(_____)
Men	_____	(_____)	_____	(_____)	_____	(_____)

**BF - Barrier Free*

Campground/Campsite:

	RV sites	Cabins	Tent sites	Primitive sites
# of sites	_____	_____	_____	_____
On site parking	_____	_____	_____	_____
Water front	_____	_____	_____	_____
Barrier Free	_____	_____	_____	_____

Boat Launch Facilities:

_____ Hard surface

_____ Unimproved (informal)

_____ # of Lanes

_____ Gravel

_____ Carry In

_____ Boat Prep Area?

Courtesy/Fishing Docks:

Courtesy/Fishing

Dimensions

Barrier Free

Notes:

Picture Number From _____ To _____

APPENDIX B

RECREATION SITE QUESTIONNAIRES

Monticello Reservoir Public Access Site Questionnaire

Clerk: _____	Site: _____	Date: _____	Time: _____ am/pm
Weather: <input type="checkbox"/> Sunny	<input type="checkbox"/> Partly Cloudy	<input type="checkbox"/> Cloudy	<input type="checkbox"/> Light Rain <input type="checkbox"/> Heavy Rain
RESPONDENT GENDER: <input type="checkbox"/> Male <input type="checkbox"/> Female	RESPONDENT REFUSED INTERVIEW: <input type="checkbox"/>		
NUMBER OF PEOPLE IN VEHICLE: _____	RESPONDENT DOES NOT SPEAK ENGLISH: <input type="checkbox"/>		
VEHICLE HAS A BOAT TRAILER: <input type="checkbox"/>	RESPONDENT IS NOT 18 YEARS OR OLDER: <input type="checkbox"/>		
RESPONDENT HAS BEEN INTERVIEWED AT THIS SITE PREVIOUSLY: <input type="checkbox"/>			

THE FIRST FEW QUESTIONS ASK ABOUT YOUR EXPERIENCE HERE TODAY

1. Including yourself, how many people are in your party today? *(Fill in blank.)*
 _____ people in party

2. What time did you arrive **at Monticello Reservoir** today? *(Fill in blank.)*
 _____ am / pm

3. What is the primary recreation activity that you participated in today **at Monticello Reservoir**? *(Please read the list to respondents. Check only one main activity in the first column.)*

What other activities did you participate in today **at Monticello Reservoir**? *(Check all that apply in the second column.)*

<i>Check only one main activity</i>	<i>Check all other activities</i>	<i>Types of Activities</i>
		<i>FISHING:</i>
<input type="checkbox"/>	<input type="checkbox"/>	boat fishing
<input type="checkbox"/>	<input type="checkbox"/>	pier/dock fishing
<input type="checkbox"/>	<input type="checkbox"/>	bank fishing
		<i>BOATING:</i>
<input type="checkbox"/>	<input type="checkbox"/>	motor boating
<input type="checkbox"/>	<input type="checkbox"/>	pontoon/party boating
<input type="checkbox"/>	<input type="checkbox"/>	sailing
<input type="checkbox"/>	<input type="checkbox"/>	canoeing/kayaking
<input type="checkbox"/>	<input type="checkbox"/>	windsurfing
<input type="checkbox"/>	<input type="checkbox"/>	paddleboarding
		<i>OTHER:</i>
<input type="checkbox"/>	<input type="checkbox"/>	bicycling
<input type="checkbox"/>	<input type="checkbox"/>	tent or vehicle camping
<input type="checkbox"/>	<input type="checkbox"/>	horseback riding
<input type="checkbox"/>	<input type="checkbox"/>	walking/hiking/backpacking
<input type="checkbox"/>	<input type="checkbox"/>	sightseeing
<input type="checkbox"/>	<input type="checkbox"/>	hunting
<input type="checkbox"/>	<input type="checkbox"/>	nature study/wildlife viewing/photography
<input type="checkbox"/>	<input type="checkbox"/>	swimming
<input type="checkbox"/>	<input type="checkbox"/>	picnicking
<input type="checkbox"/>	<input type="checkbox"/>	sunbathing
<input type="checkbox"/>	<input type="checkbox"/>	other: _____

<i>Check only <u>one</u> main activity</i>	<i>Check all other activities</i>	<i>Types of Activities</i>
	<input type="checkbox"/>	None

4. Did you spend any time **on the water on Monticello Reservoir** today? (Check one box.)

- YES
 NO (If no, skip to Question 6.)

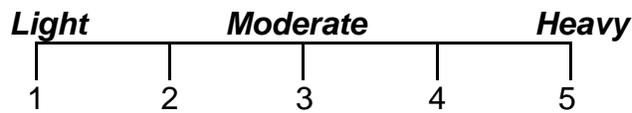
5A. Did you recreate on any of the **islands on Monticello Reservoir** today?

- YES
 NO (If no, skip to Question 6.)

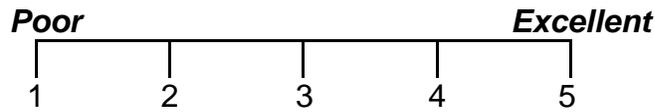
5B. What activities did you participate in **while on the island(s)**? (Do not read this list. Allow respondent to answer and check all that apply and/or fill in the blanks.)

<input type="checkbox"/> sunbathing	<input type="checkbox"/> bank fishing	<input type="checkbox"/> hunting
<input type="checkbox"/> camping	<input type="checkbox"/> walking/hiking	<input type="checkbox"/> sightseeing
<input type="checkbox"/> nature study/wildlife viewing/photography	<input type="checkbox"/> swimming	<input type="checkbox"/> picnicking
<input type="checkbox"/> other (please specify: _____)		

6. On a scale from 1 to 5, with 1 being light, 3 being moderate, and 5 being heavy, how would you rate the crowdedness **at this recreation site** today? (Circle one number.)



7A. On a scale from 1 to 5, with 1 being poor and 5 being excellent, how would you rate the overall condition **of this recreation site** today? (Circle one number.)



7B. Why did you choose to come to **this recreation site** today? (Fill in the blank.)

7C. Are there any additional facilities needed **at this recreation site**? (Check one box.)

- YES
- NO (If no, skip to Question 8.)

7D. What do you recommend? (Do not read this list. Allow respondent to answer and check all that apply and/or fill in the blanks.)

<input type="checkbox"/> access road	<input type="checkbox"/> bank fishing area	<input type="checkbox"/> boat dock
<input type="checkbox"/> boat launch	<input type="checkbox"/> camping area	<input type="checkbox"/> fish cleaning station
<input type="checkbox"/> fishing pier/dock	<input type="checkbox"/> lighting	<input type="checkbox"/> parking lot
<input type="checkbox"/> picnic tables/shelter	<input type="checkbox"/> restrooms	<input type="checkbox"/> signs & information
<input type="checkbox"/> swimming area	<input type="checkbox"/> trails	<input type="checkbox"/> trash cans
<input type="checkbox"/> RV camping	<input type="checkbox"/> tent camping	<input type="checkbox"/> bilingual signs & information
<input type="checkbox"/> other (please specify: _____)		

7E. Are there any other improvements that you would recommend for this site?

- YES
- NO (If no, skip to Question 8.)

7F. What improvements do you recommend? *(Fill in the blank.)*

8. What was your primary reason for choosing to recreate **at Monticello Reservoir** today versus another lake or area? *(Fill in blank.)*

9. What **other lakes** do you recreate at? *(Fill in blank.)*

I HAVE JUST A FEW MORE QUESTIONS

10. Do you own a permanent or seasonal lakefront residence **on Monticello Reservoir**? What is your zip code? *(Check one box and fill in the blank for zip code.)*

- YES – Permanent Home → ZIP CODE: _____
- YES – Seasonal Home → ZIP CODE: _____
- NO - Non-lakefront resident → ZIP CODE: _____

11. In what year were you born? *(Fill in blank.)*

_____ YEAR

12. Do you have any additional comments about the recreation facilities at **Monticello Reservoir**? *(Please fill in blank and be as specific as possible.)*

THANK YOU FOR YOUR HELP! WE APPRECIATE YOUR TIME TODAY!

Parr Reservoir/Broad River Public Access Site Questionnaire

Clerk: _____	Site: _____	Date: _____	Time: _____ am/pm
Weather: <input type="checkbox"/> Sunny	<input type="checkbox"/> Partly Cloudy	<input type="checkbox"/> Cloudy	<input type="checkbox"/> Light Rain <input type="checkbox"/> Heavy Rain
RESPONDENT GENDER: <input type="checkbox"/> Male <input type="checkbox"/> Female	RESPONDENT REFUSED INTERVIEW: <input type="checkbox"/>		
NUMBER OF PEOPLE IN VEHICLE: _____	RESPONDENT DOES NOT SPEAK ENGLISH: <input type="checkbox"/>		
VEHICLE HAS A BOAT TRAILER: <input type="checkbox"/>	RESPONDENT IS NOT 18 YEARS OR OLDER: <input type="checkbox"/>		
RESPONDENT HAS BEEN INTERVIEWED AT THIS SITE PREVIOUSLY: <input type="checkbox"/>			

THE FIRST FEW QUESTIONS ASK ABOUT YOUR EXPERIENCE HERE TODAY

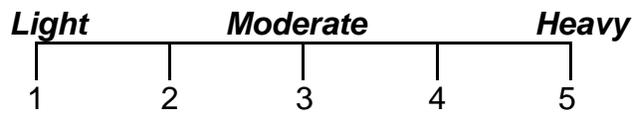
1. Including yourself, how many people are in your party today? *(Fill in blank.)*
 _____ people in party

2. What time did you arrive **at Parr Reservoir** today? *(Fill in blank.)*
 _____ am / pm

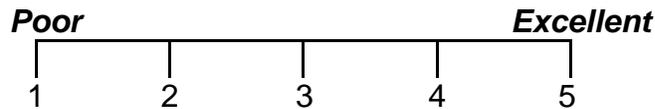
3. What is the primary recreation activity that you participated in today **at Parr Reservoir**?
(Please read the list to respondents. Check only one main activity in the first column.)
 What other activities did you participate in today **at Parr Reservoir**? *(Check all that apply in the second column.)*

<i>Check only one main activity</i>	<i>Check all other activities</i>	<i>Types of Activities</i>
		FISHING:
<input type="checkbox"/>	<input type="checkbox"/>	boat fishing
<input type="checkbox"/>	<input type="checkbox"/>	pier/dock fishing
<input type="checkbox"/>	<input type="checkbox"/>	bank fishing
		BOATING:
<input type="checkbox"/>	<input type="checkbox"/>	motor boating
<input type="checkbox"/>	<input type="checkbox"/>	canoeing/kayaking
		OTHER:
<input type="checkbox"/>	<input type="checkbox"/>	tent or vehicle camping
<input type="checkbox"/>	<input type="checkbox"/>	horseback riding
<input type="checkbox"/>	<input type="checkbox"/>	walking/hiking/backpacking
<input type="checkbox"/>	<input type="checkbox"/>	Sightseeing
<input type="checkbox"/>	<input type="checkbox"/>	Hunting
<input type="checkbox"/>	<input type="checkbox"/>	nature study/wildlife viewing/photography
<input type="checkbox"/>	<input type="checkbox"/>	Swimming
<input type="checkbox"/>	<input type="checkbox"/>	Picnicking
<input type="checkbox"/>	<input type="checkbox"/>	Sunbathing
<input type="checkbox"/>	<input type="checkbox"/>	other: _____
	<input type="checkbox"/>	None

4. On a scale from 1 to 5, with 1 being light, 3 being moderate, and 5 being heavy, how would you rate the crowdedness **at this recreation site** today? (Circle one number.)



- 5A. On a scale from 1 to 5, with 1 being poor and 5 being excellent, how would you rate the overall condition **of this recreation site** today? (Circle one number.)



- 5B. Why did you choose to come to **this recreation site** today? (Fill in the blank.)

- 5C. Are there any additional facilities needed **at this recreation site**? (Check one box.)

- YES
 NO (If no, skip to Question 6.)

- 5D. What do you recommend? (Do not read this list. Allow respondent to answer and check all that apply and/or fill in the blanks.)

<input type="checkbox"/> access road	<input type="checkbox"/> bank fishing area	<input type="checkbox"/> boat dock
<input type="checkbox"/> boat launch	<input type="checkbox"/> camping area	<input type="checkbox"/> fish cleaning station
<input type="checkbox"/> fishing pier/dock	<input type="checkbox"/> lighting	<input type="checkbox"/> parking lot
<input type="checkbox"/> picnic tables/shelter	<input type="checkbox"/> restrooms	<input type="checkbox"/> signs & information
<input type="checkbox"/> swimming area	<input type="checkbox"/> trails	<input type="checkbox"/> trash cans
<input type="checkbox"/> RV camping	<input type="checkbox"/> tent camping	<input type="checkbox"/> bilingual signs & information
<input type="checkbox"/> other (please specify: _____)		

- 5E. Are there any other improvements that you would recommend for this site?

- YES
 NO (If no, skip to Question 6.)

5F. What improvements do you recommend? *(Fill in the blank.)*

I HAVE JUST A FEW MORE QUESTIONS

6. Do you own a permanent or seasonal residence **on the Broad River**? What is your zip code? *(Check one box and fill in the blank for zip code.)*

- YES – Permanent Home → ZIP CODE: _____
- YES – Seasonal Home → ZIP CODE: _____
- NO - Non-lakefront resident → ZIP CODE: _____

7. In what year were you born? *(Fill in blank.)*

_____ YEAR

8. Do you have any additional comments about the recreation facilities on **Parr Reservoir**? *(Please fill in blank and be as specific as possible.)*

THANK YOU FOR YOUR HELP! WE APPRECIATE YOUR TIME TODAY!

Exhibit E-8 Recreation Resources

Recreation Use and Needs Study Report

RECREATION USE AND NEEDS STUDY REPORT

PARR HYDROELECTRIC PROJECT

(FERC No. 1894)

Prepared for:

**South Carolina Electric & Gas Company
Cayce, South Carolina**

Prepared by:

Kleinschmidt

Lexington, South Carolina
www.KleinschmidtGroup.com

November 2016

RECREATION USE AND NEEDS
STUDY REPORT

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November 2016

RECREATION USE AND NEEDS STUDY REPORT

**PARR HYDROELECTRIC PROJECT
(FERC NO. 1894)**

SOUTH CAROLINA ELECTRIC & GAS COMPANY

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RECREATION USE AND NEEDS STUDY REPORT

PARR HYDROELECTRIC PROJECT (FERC No. 1894)

SOUTH CAROLINA ELECTRIC & GAS COMPANY

1.0 INTRODUCTION

South Carolina Electric & Gas Company (“SCE&G”) is the Licensee of the Parr Hydroelectric Project (FERC No. 1894) (“Project”). The Project consists of the Parr Shoals Development (“Parr Development”) and the Fairfield Pumped Storage Development (“Fairfield Development”). Both Developments are located along the Broad River in Fairfield and Newberry counties, South Carolina.

The Parr Development creates the Parr Reservoir along the Broad River. The Development consists of a 37-foot-high, 200-foot-long concrete gravity spillway dam with a powerhouse and generating units with a combined licensed capacity of 14.9 MW. The Parr Development operates in a modified run-of-river mode and normally operates to continuously pass Broad River flow. The 13-mile-long Parr Reservoir has a surface area of 4,400 acres at full pool and serves as the lower reservoir for pumped-storage operations. Recreation opportunities at Parr Reservoir include hunting, boating, fishing, hiking and picnicking opportunities.

The Fairfield Development is located directly off of the Broad River and forms the 6,800-acre Monticello Reservoir, with four earthen dams. Monticello Reservoir serves as the upper reservoir and, as noted, Parr Reservoir serves as the lower reservoir for pumped storage operations. The Fairfield Development has a licensed capacity of 511.2 MW and is primarily used for peaking operations, reserve generation, and power usage. Recreation opportunities at Monticello Reservoir include hunting, boating, fishing, camping, hiking and picnicking opportunities.

In addition to the Monticello and Parr Reservoirs, the Recreation Lake, which was constructed by SCE&G solely for recreational use, is located adjacent to Monticello Reservoir and has a surface area of 300 acres. The Recreation Lake is maintained at a stable water level and is not affected by the operation of the pumped storage facility. The Recreation Lake encompasses approximately 10.2 miles of shoreline and offers opportunities for fishing and picnicking.

Approximately 9,000 acres of land and water within the Project are part of the statewide Wildlife Management Area (“WMA”) Program, managed by the South Carolina Department of Natural Resources (“SCDNR”) (SCE&G, 2002).

1.1 STUDY PURPOSE AND OBJECTIVES

South Carolina Electric & Gas is currently in the process of obtaining a new federal operating license for the Project from the Federal Energy Regulatory Commission (“FERC”). This process involves cooperation and collaboration between SCE&G, as licensee, and a variety of stakeholders including state and federal resource agencies, state and local government, non-governmental organizations (“NGOs”), and interested individuals. SCE&G has established several Resource Conservation Groups (“RCGs”) and Technical Working Committees (“TWCs”) composed of interested stakeholders with the objective of achieving consensus regarding the identification and proper treatment of these issues in the context of a new license.

As part of this process, SCE&G performed an assessment of existing and future recreational use, opportunities, and needs for the Project. The assessment was designed to collect and provide information pertinent to the current and future availability and adequacy of SCE&G owned and managed recreation sites as well as specific informal recreation areas at Monticello Reservoir and Parr Reservoir. The overall study objective was to identify current and potential recreational use, opportunities, and needs at the Project by addressing the following goals and objectives:

Goal 1: Characterize the existing recreational use of SCE&G’s recreation sites on Monticello Reservoir and Parr Reservoir. This was accomplished by focusing on the following objectives:

- i. Identifying recreation points, inventorying the services and facilities offered at each, and assessing the general condition of each site, including whether the site provides barrier free access.
- ii. Identifying the patterns of recreation use at each site (type, volume, and daily patterns of use).

Goal 2: Characterize existing use of waterfowl areas (Broad River Waterfowl Area, Enoree River Waterfowl Area) and SCE&G recreation lands by hunters during designated hunting seasons. This was accomplished by focusing on the following objectives:

- i. Identifying the patterns of recreation use within the Project boundary (type, volume, and daily/seasonal patterns of use).

Goal 3: *Identify future recreational needs relating to public recreation sites on Monticello Reservoir and Parr Reservoir. This was accomplished by focusing on the following objectives:*

- i. Identifying existing recreation user needs and preferences, including perceptions of crowding at recreation sites.
- ii. Estimating future recreational use of existing recreation sites.
- iii. Identifying future needs for new recreation sites and facilities.

1.2 STUDY DEVELOPMENT AND CONSULTATION

Preceding submittal of the Pre-Application Document (“PAD”) for the Project, stakeholders requested additional information on the Project through the implementation of several studies, one of which was a Recreation Use and Needs Study (“RUNS”). At a meeting with the Lake and Land Management and Recreation RCG on October 16, 2013, stakeholders discussed the proposed draft RUNS Study Plan. The study plan was revised based on comments received at that meeting, and a finalized study plan was filed with the PAD on January 5, 2015. A copy of the study plan, along with meeting notes from the RCG meetings on February 19, 2013, and October 16, 2013, are included in Appendix A. This RUNS report provides the results of the study.

2.0 METHODOLOGY

This section describes data collection and analysis efforts used for this study. Data collection focused on obtaining information related to existing public recreation sites and facilities owned by SCE&G¹, estimating recreational use of those sites, and learning recreation user perceptions and site capacities. Analysis was performed to support study objectives, to characterize existing and potential future recreational use at SCE&G’s public access sites, and to assess future requirements necessary to support adequately, public recreational use of the Project resources.

2.1 STUDY AREA

Eleven recreation sites and informal recreation areas on Monticello Reservoir and Parr Reservoir were included in this assessment, with five on Monticello Reservoir and five on Parr Reservoir, and one, Enoree River Bridge Informal Access Area, upstream of Parr Reservoir and outside of the Project boundary. Table 1 summarizes the sites for which data was collected at each reservoir, which sites are considered Project recreation facilities, and the general type of data collected at each site. More specific and detailed descriptions of the data collection methods are provided in the following section. Figure 1 identifies the location of each recreation site for Monticello Reservoir and Parr Reservoir included in this study.

TABLE 1 RECREATION SITES ASSESSED

Recreation Sites and Informal Areas	Parr Project Facility	Site Inventory	Vehicle Counts	Exit Interviews	Mail-in Surveys	Spot Counts
Monticello Reservoir						
Scenic Overlook (SCE&G-maintained portion)	●	●	●	●		●
Highway 215 Boat Ramp	●	●	●	●	●	●
Highway 99 Boat Ramp	●	●	●	●	●	●
Recreation Lake Access Area	●	●	●	●		●
Highway 99 Informal Fishing Area	●	●	●	●		●
Parr Reservoir						
Cannon’s Creek Public Access Area	●	●	●	●	●	●

¹ At the request of the RCG, the RUNS also assessed recreation use at the Enoree River Bridge Informal Access Area, which is outside of the Project Boundary, and the Enoree and Broad River Waterfowl Areas which are within the Project boundary, but managed by South Carolina Department of Natural Resources.

Recreation Sites and Informal Areas	Parr Project Facility	Site Inventory	Vehicle Counts	Exit Interviews	Mail-in Surveys	Spot Counts
Heller's Creek Public Access Area	●	●	●	●	●	●
Highway 34 Primitive Ramp	●	●	●			
Broad River Waterfowl Area		●				
Enoree River Waterfowl Area		●	●		●	
Enoree River Bridge Informal Access Area		●	●			

2.2 DATA COLLECTION

A variety of data collection techniques were used to obtain the information necessary to meet the study objectives. Table 2 identifies the information collected to address each objective as well as the data collection methods. Primary data collection included site inventories, user counts, and use surveys (exit interviews). Secondary data included information from the U.S. Bureau of Census data, the South Carolina Statewide Comprehensive Outdoor Recreation Plan (SCORP), the South Carolina Recreation Participation & Preference Study, data provided by the South Carolina Department of Natural Resources (“SCDNR”) and other relevant, readily available literature. Additional input was obtained from the Lake & Land Management and Recreation RCG, Recreation TWC, and target "focus groups" offering “in the field” knowledge of the recreation resources and needs of the lake and river.

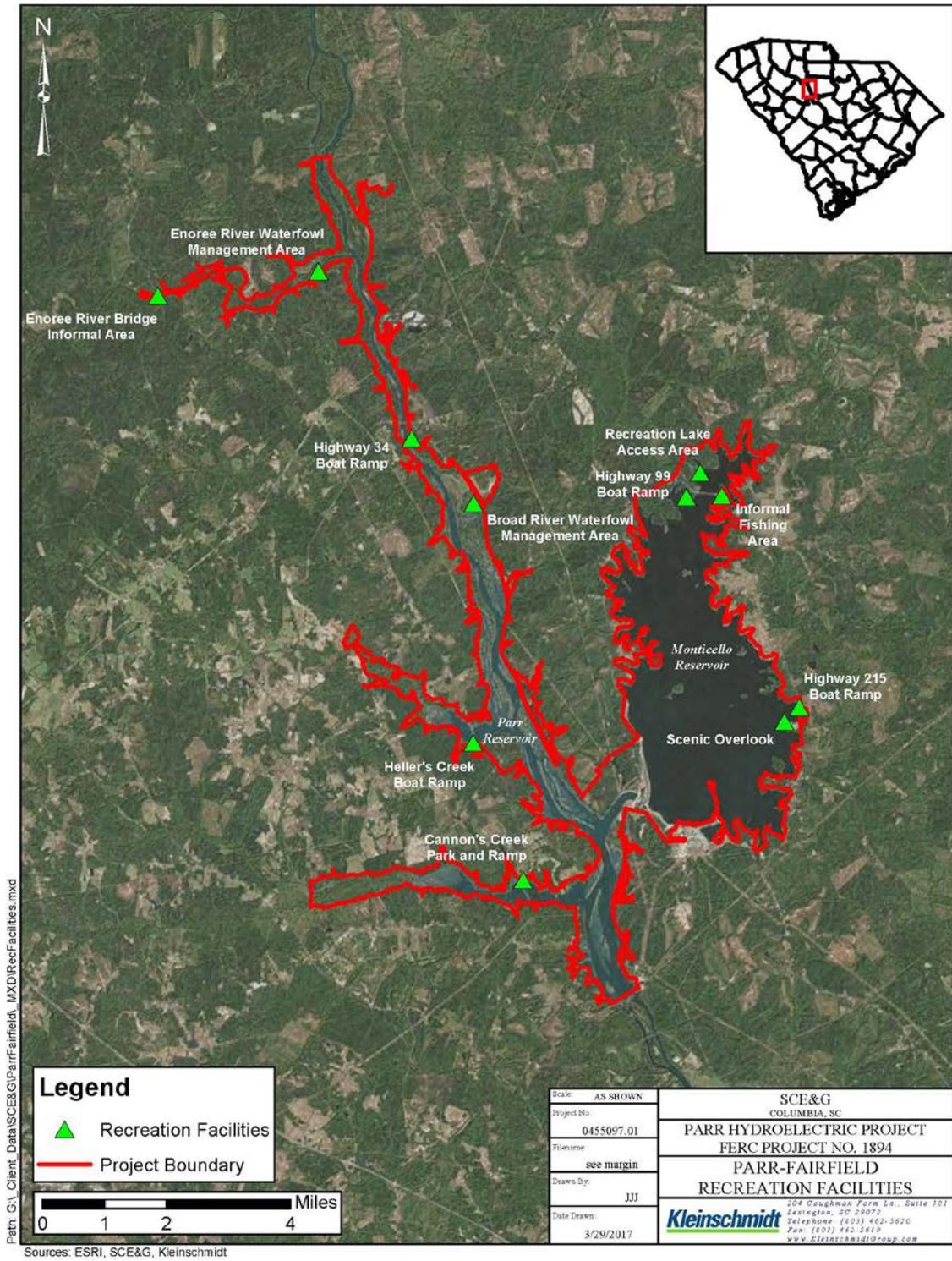


FIGURE 1 RECREATION FACILITIES AT PARR PROJECT

TABLE 2 RECREATION USE AND NEEDS STUDY OBJECTIVES AND EFFORTS

Objectives	Information Needed	Source
<i>Goal 1: Characterize existing recreational use of recreation sites on Monticello Reservoir and the Parr Reservoir</i>		
Identify formal recreation sites, inventory the services and facilities offered at each, and assess the general condition and ADA compliance of each site	<ul style="list-style-type: none"> • Physical inventory of all boat ramps, grills, shelters, restrooms, parking capacity, etc., at each site • General assessment of site condition to include maintenance, basic rehabilitation needs, etc. • Visitors’ assessment of site conditions • Identification of activities that occur at each site • ADA compliance assessment 	<ul style="list-style-type: none"> • Recreation Site Inventory • Survey of Recreation Site Users
Identify the patterns of use at each site (type, volume, and daily patterns of use)	<ul style="list-style-type: none"> • Utilize vehicle counts as an estimation of people • Estimate of number people/vehicle • Estimate of number vehicles/site • Parking capacity 	<ul style="list-style-type: none"> • Traffic Counter Data • Surveyor Counts of Vehicles at Recreation Sites • Survey of Recreation Site Users - number of people per vehicle and length of visit • Recreation Site Inventory - number of parking spaces • County data from Scenic Overlook
<i>Goal 2: Characterize existing use of waterfowl areas (Broad River Waterfowl Area, Enoree River Waterfowl area) and SCE&G recreation lands by hunters during designated hunting seasons.</i>		
Identify the patterns of use within the Project boundary (type, volume, and daily/seasonal patterns of use).	<ul style="list-style-type: none"> • Estimate number of hunters/site or waterfowl area 	<ul style="list-style-type: none"> • Counts of Vehicles at Recreation Sites/waterfowl areas • Mail-in questionnaire specific to hunting use at the Project • SCDNR waterfowl use data • SCDNR hunting permit data

TABLE 2 RECREATION USE AND NEEDS STUDY OBJECTIVES AND EFFORTS (CONTINUED)

Objectives	Information Needed	Source
<i>Goal 3: Identify future recreational needs relating to public recreation sites on Monticello Reservoir and Parr Reservoir</i>		
Identify existing user needs and preferences, including perceptions of crowding at recreation sites	<ul style="list-style-type: none"> • User preferences and opinions of needs and crowding at sites • Condition assessment 	<ul style="list-style-type: none"> • Survey of Recreation Site Users • Recreation Site Inventory
Estimate future recreational use of existing recreation sites	<ul style="list-style-type: none"> • Current inventory and use data from Goals 1 and 2 • Population projections for the project area • Recreational use trends 	<ul style="list-style-type: none"> • Results of Goals 1 and 2 • U.S. Bureau of Census Data • SC Division of Research & Statistics (Budget and Control Board) • SCORP, SC Recreation Participation & Preference Study, or other readily available literature
Identify future needs for new recreation sites and facilities	<ul style="list-style-type: none"> • Population projections • Recreation use trends • "focus group" (stakeholders) knowledge of recreation resources and needs 	<ul style="list-style-type: none"> • SC Div. of Research & Statistics • SCORP, SC Recreation Participation & Preference Study, Palmetto Conservation Foundation trail use data, or other literature • Recreation TWC and Lake and Land Management & Recreation RCG

2.2.1 STUDY SEASON

Primary interview activities occurred during the April 1 through September 7 (Labor Day), 2015 period. Additional interviews were conducted from February 1 through March 31, 2016, on the Monticello Reservoir in order to capture recreational activity on the reservoir during early crappie season. Specific targeted survey activities with mail-in surveys were implemented at both reservoirs during the migratory waterfowl seasons, including the Canada geese hunting season. The 2015 and 2016 waterfowl seasons extended as follows:

- September 1- September 30, 2015: Early Canada Geese Season
- September 11- September 26, 2015: Early Teal Season
- November 21- November 28, 2015, December 12, 2015 - January 31, 2016: Duck and Canada Geese Seasons
- February 14- February 29, 2016: Canada Geese Season

2.2.2 RECREATION SITE INVENTORY

Site inventories were completed at recreation sites on Monticello and Parr Reservoirs (see Table 1). Data on the types of activities supported, parking capacity, the type, number, and size of facilities (bathhouses/restrooms, boat ramps, picnic shelters and tables, etc.) were collected for each location.

2.2.3 VEHICLE COUNTS

Traffic counters were installed to record the number of vehicles entering and exiting the public recreation areas. Vehicle counts were conducted at ten² study sites during the recreation season and at the five Monticello Reservoir recreation sites during the crappie season. The data collected was summarized by day type (weekdays, weekends, and holidays) for each site location. The traffic counters were configured to divide the number of vehicles counted by two, in order to account for the same vehicle entering and exiting the recreation site. Two access areas on Monticello Reservoir have two separate entrance/exit locations: the Highway 99 Informal Fishing Area, and the Highway 215 Boat Ramp. A traffic counter was installed at each entrance/exit location in order to count all vehicles entering or exiting the site. Vehicle counts provided by each counter were divided by two, consistent with the other recreation sites.

² After communication with SCDNR, a vehicle counter was not placed at the Broad River Waterfowl Management Area, as it is a draw-hunt site and SCDNR is well-apprised of use at that site.

Additionally, the vehicle counts for both entrances/exits were added together to account for total vehicle use at that site.

2.2.4 PUBLIC RECREATION AREA VISITOR EXIT INTERVIEWS

The preferences and perceptions of people using SCE&G's recreation sites and informal areas are important inputs in management decisions regarding the adequacy and availability of existing recreation sites. Information from recreation site users was obtained via onsite exit interviews during the prime recreation season at both the Monticello and Parr Reservoirs during April 1 through September 7 (Labor Day), 2015. In addition, exit interviews were conducted during the crappie fishing seasons from February 1 through March 31, 2016, on Monticello Reservoir.

The surveys were designed to collect user characteristics (origin, gender, age, number of people per vehicle, total group size, etc.), the type of land-based and water-based recreation activities being participated in, length of stay, perceptions of crowdedness, conditions of recreation sites, and additional recreation facility needs at the Project. Exit interviews were conducted at all five of the Monticello Reservoir sites, and at the Parr Reservoir, Cannon's Creek and Heller's Creek Public Access Areas. Surveys were not conducted at the remaining Parr Reservoir sites due to the seasonal usage of these areas or the rural and informal nature of these areas.

Two survey versions were implemented, one for Monticello Reservoir and one for Parr Reservoir. The two survey versions were similar to each other and contained similar questions (see Appendix A). The survey was pre-tested in the field, prior to implementation. All survey clerks were trained as a means of quality control and were provided detailed information on the study purpose, schedule, data collection protocols and data sheet chain of custody, and direction on appropriate interviewing techniques and attire. Clerks were monitored regularly during the entire study period.

A sampling plan was prepared in consultation with the TWC utilizing stratified random sampling to target conducting at least 30 days of interviewing at each recreation site. Sampling days included weekends, weekdays and holidays. Weekends were sampled at a greater rate than weekdays to account for the heavier use that typically occurs during those periods. All major national holidays that fell within the recreation season were included in the sampling plan (see Table 3).

**TABLE 3 LIST OF HOLIDAYS INCLUDED IN THE 2015 RUNS
EXIT INTERVIEW SAMPLING PLAN**

Date	Holiday
May 23, 2015	Saturday before Memorial Day
May 24, 2015	Sunday before Memorial Day
May 25, 2015	Memorial Day
July 3, 2015	Friday before Independence Day
July 4, 2015	Independence Day
July 5, 2015	Sunday after Independence Day
September 5, 2015	Saturday before Labor Day
September 6, 2015	Sunday before Labor Day
September 7, 2015	Labor Day

A total of 710 surveys were distributed at the Project area, and a total of 681 useable surveys were completed. Interviewers provided an incentive of a floating keychain for survey respondents to complete the survey. Table 4 provides a summary of the response rates.

TABLE 4 SURVEY RESPONSE RATES

	Monticello Reservoir	Parr Reservoir	Total Project
Total Number Attempted	480	230	710
Individual did not speak English	8	1	9
Refusals	18	2	20
Total Number Completed	454	227	681
Survey Response Rate	95%	99%	96%

2.2.5 SPOT COUNTS

Spot counts were conducted at the public recreation sites where the exit interviews were conducted once per interview period, concurrent with exit interview period. Information recorded during spot counts included: date, time, and weather; amount of vehicle and vehicle/trailer parking capacity in use; number and type of activities observed at the site; and state license plate data. Spot count data was used in parallel with traffic counter data to document the number of visitors and/or vehicles present at that visit and to characterize site use.

2.2.6 WATERFOWL MANAGEMENT AREAS FOCUS GROUP AND SURVEYS

Waterfowl hunting typically occurs during the fall and winter months outside of the typical recreation season. Waterfowl hunters represent a unique group of users whose preferences and

perceptions may differ from those using recreation sites during the summer months. Therefore, in order to capture the preferences and perceptions of waterfowl hunters a panel of waterfowl hunters were asked to serve as an expert panel, or focus group, to provide information about waterfowl hunting at the Project.

SCE&G, in consultation with stakeholders, formed a Waterfowl Focus Group to aid in gathering this information, and conducted a focus group of waterfowl hunters in December of 2014. The focus group was comprised of 9 individuals, which included unaffiliated waterfowl hunters, Tyger Enoree River Alliance members, and SCDNR representatives. Similar to the recreation survey, the purpose of conducting the focus group of waterfowl hunters was to obtain information about:

- hunting preferences to understand how waterfowl hunters use public access sites and areas in the Project area (identify access sites used, time and locations on the lake where hunting occurs);
- waterfowl hunting seasonal trends and distribution of activities;
- waterfowl hunting Project area preferences and needs to identify perceptions of the adequacy and condition of existing recreation sites and identify needs for additional public access for waterfowl hunting.

In addition to this focus group, mail-in surveys similar to the access site survey were distributed at the Enoree River Waterfowl Area and on Parr and Monticello reservoirs during appropriate waterfowl hunting seasons. On Monticello Reservoir, mail-in surveys were distributed on vehicles parked at the Hwy 215 boat ramp and the Hwy 99 boat ramp during the Canada Geese hunting season. A total of 18 completed surveys were returned, with 6 individuals indicating that they were waterfowl hunting at the time the survey was distributed. On Parr Reservoir, mail-in surveys were distributed on vehicles parked at Heller's and Cannon's Creek Public Access Areas during Early Teal and Duck hunting seasons. A total of 43 completed surveys returned with 40 individuals indicating that they were waterfowl hunting at the time the survey was distributed. Additionally, a survey box was placed at the Enoree River Waterfowl Area containing mail-in surveys. An unknown number of surveys were distributed at that site with only 1 completed survey returned.

2.3 ANALYSIS

The following sections provide a description of the approach for estimating existing and future recreational use, recreation site capacity and use density percentages, and recreation needs.

2.3.1 CURRENT RECREATIONAL USE ESTIMATES

Estimates of recreation use were developed for weekdays, weekends, and holidays for each public access site at the Monticello and Parr Reservoirs utilizing the traffic counters and recreation site survey data. The reported estimates of recreation are presented in "recreation days". The FERC defines a recreation day as one visit by a person to a development for purposes of recreation during any 24-hour period³. The average number of people at each site within the morning and afternoon periods were estimated within each day type and converted to a daily estimate. Daily estimates for each day type were expanded to represent the study period and summed for a total estimate for each recreation site. Recreational use data at the Enoree River and Broad River waterfowl areas was provided by SCDNR, including annual use estimate and harvest data.

2.3.2 FUTURE RECREATIONAL USE ESTIMATES

Estimated projections of future recreation use at Monticello Reservoir and Parr Reservoir were developed using the average annual increase in population growth over the past 10 years, as reported by the Census Bureau or the State Division of Research and Statistics, for Newberry, Fairfield and Richland counties⁴. The estimates were augmented with discussion of trends reported in the SCORP (2014) and the SC Recreation Participation & Preference Study (2005). Estimated projections are provided in 5 year intervals for the anticipated term of the license up to 50 years into the future (through year 2070).

While it is acknowledged that future changes in the supply of recreation resources, either in their quantity, accessibility, and/or quality may influence future demand and use, the demand analysis undertaken for this study does not attempt to predict what these future changes might consist of or how they might specifically affect levels of use at Project facilities. Therefore, the demand

³ Recreation use estimates are provided in recreation days, which the Federal Energy Regulatory Commission (FERC) defines as "each visit by a person to a development for recreational purposes during any portion of a 24-hour period." Providing use estimates in this fashion allows for comparisons between sites, as well as between FERC projects around the country.

⁴ Although Richland County is not within the FERC Project boundary, it is believed that a significant number of those who recreate at the Project reside within Richland County.

analysis results should be viewed as a general, data supported projection of potential future recreation pressure developed for planning purposes only.

2.3.3 RECREATION SITE CAPACITY

For purposes of this study, the carrying capacity for a recreation site is defined as the number of vehicles and boat trailers that can be parked at a recreation site at one time, based on the number of available parking spaces associated with each site. For paved parking areas, capacity was estimated by counting the number of designated parking spaces available at the recreation site. For gravel parking areas, the number of available parking spaces for each recreation site was estimated by measuring the area (sq. ft.) available for parking and estimating the number of vehicles that could be parked at the location, if optimal space were utilized. These estimates were based on parking capacity standards for vehicle length, width, and available turn around space.

2.3.4 RECREATION SITE USE DENSITY

The use density of recreation sites was estimated by comparing the estimated peak number of vehicles at the sites during a specific time period with the available parking capacity for the recreation sites. Use densities were calculated for the sites at which a survey clerk was present, as the other necessary data input (i.e. initial spot count and average length of stay) was gathered through clerk data and exit interviews. One weekend day and one week day per month was randomly selected from the sampling period for each site at which a clerk performed exit interviews. Recreation capacity should be considered for typical weekday and weekend use in management and site design decisions. Therefore, holidays were not used to estimate recreation site use density as they are regarded as special circumstances, with use levels that are experienced only a few times a year.

Recreation clerk spot count data was used to determine the amount of vehicles occupying spaces at the start of a shift. The total number of vehicles entering a site per hour during a shift was obtained from traffic counters. The average trip length in hours (from survey results) was used to estimate the length of time vehicles were occupying spaces at each site. For example, if the average length of stay was 3 hours, vehicles entering the site at 1:00 pm were assumed to remain at the site and exit at 4:00 pm. Total hourly vehicle counts from the initial spot count and from traffic counters were then estimated for each hour during the selected sample day for each site. The maximum number of vehicles at the site at a given time (peak hour) was then derived from

the totals. The maximum number of vehicles was then divided by the parking capacity to provide an estimated use density for each site.

It should be noted that use density should be considered an *over-estimate*, as traffic counter data also includes those individuals that drive through the site, but do not stay to recreate. Moreover, vehicles observed by clerks performing initial spot counts at the beginning of their shift were assumed to have stayed for the entire average length of stay estimated for the site. Therefore, this should also be considered an over-estimate as these vehicles may have departed soon after the initial count.

An example of how this analysis was performed is shown in Table 5, and explained as follows. Fictitious numbers are used for this explanation. Suppose a recreation site had 250 parking spaces, and survey results show that people using that site spent an average of 3 hours there. Initial spot count data indicated that there were 24 vehicles parked at the site when the clerk arrived. If 56 vehicles arrive from 7:00 to 8:00 AM, 50 arrive from 8:00 AM to 9:00 AM, and 64 arrive from 9:00 AM to 10:00 AM, then the parking area would be at 78 percent capacity until the first vehicle departed around 10:00 AM. If 56 additional vehicles arrive before 10:00 AM, then there may not be enough parking spaces (capacity) to accommodate demand (number of vehicles).

TABLE 5 HYPOTHETICAL CALCULATION OF ESTIMATED AVERAGE DEMAND FOR PARKING SPACES

Methods	Example Calculation
On average, length of time that individuals spend at the recreation site	Average Length of Stay 3 hours
Vehicle counts by hour from spot count and traffic counter for recreation clerk shift	Initial Spot Count: 24 at 7 AM (assume vehicles stay the 3 hour length of stay) 56 vehicles traffic counter from 7:00 AM to 8:00 AM 50 vehicles traffic counter from 8:00 AM to 9:00 AM 64 vehicles traffic counter from 9:00 AM to 10:00 AM 48 vehicles traffic counter from 10:00 AM to 11:00 AM 62 vehicles traffic counter from 11:00 AM to 12:00 PM 50 vehicles traffic counter from 12:00 PM to 1:00 PM
Vehicle counts are summed across the average length of stay	Vehicles at the site from 7:00 AM to 10:00 AM = 24+56+50+64=194 Vehicles at the site from 8:00 AM to 11:00 AM = 50+64+48=162 Vehicles at the site from 9:00 AM to 12:00 PM = 64+48+62=174 Vehicles at the site from 10:00 AM to 1:00 PM = 48+62+50=160 Vehicles at the site from 11:00 AM to 2:00 PM = 62+50+50=162 Vehicles at the site from 12:00 AM to 3:00 PM = 50+50+50=150 Vehicles begin departing at 10:00 AM, resulting in a maximum estimate of 194 vehicles at the recreation site.
Ratio of maximum vehicles at site to parking capacity	Site parking capacity = 250 spaces Maximum vehicles = 194 Capacity at which the site is used = $194/250 = 78\%$

2.3.5 RECREATION NEEDS ASSESSMENT

The need for recreation and site development or modification of existing recreation resources will be assessed based on the inventory, condition, capacity, and exit interview survey results. The needs assessment will focus on the existing condition and user opinions of recreation sites, whether a particular site provides "barrier free" access, and the ability of sites to meet current and anticipated future recreation demand pressures. Consideration will also be given to site opportunities and constraints, as well as support facilities such as signage and maintenance. The

need for new recreational sites and facilities will be determined through assessment of the information collected and summarized within this report and the input of stakeholders on the Recreation and Lake & Land Management RCG. Final protection mitigation and enhancement measures relating to recreation resources will be included in a Settlement Agreement and proposed Recreation Management Plan.

3.0 RECREATION RESOURCES

This section provides an overview of regional recreational resources available in the Project vicinity. Additionally, detailed information is summarized regarding the recreation facilities located at Parr and Monticello reservoirs included in this study.

3.1 REGIONAL RECREATION RESOURCES

The Project is located within Newberry and Fairfield Counties and situated in the Piedmont Region of South Carolina. The Piedmont Region is the largest geographic region in the State and is home to Kings Mountain National Military Park, Sumter National Forest, and major tourist attractions such as Lake Keowee, Lake Hartwell, Lake Wylie, the Catawba River, and the Saluda River (StudySC.org, 2014). The Project is not located on a designated wild and scenic river segment. In addition, no Project lands are being considered for inclusion in the National Trails System or as a Wilderness Area.

Regionally and nationally recognized recreation opportunities within the Project vicinity include Dreher Island State Park, Chester State Park, Kings Mountain National Military Park, Sumter National Forest, Lake Greenwood State Park, and Lake Wateree State Park. These areas provide opportunities for hunting, boating, fishing, hiking, picnicking, swimming, and camping in the Project vicinity (StudySC.org, 2014).

Sumter National Forest is a 371,000-acre national forest providing walking, riding, and camping opportunities. Lake Greenwood State Park provides access to the 11,400-acre Lake Greenwood along the southwestern border of Newberry County with several miles of shoreline and public access. Lake Wateree State Park is a 72-acre state park containing outdoor and water-oriented facilities, a campground, picnic areas, and a boat ramp. Lynch's Woods Park is a 260-acre woodland area in the city of Newberry which has 7.5 miles of hiking and biking trails, 3.5 miles of equestrian trails, a primitive camp site, and picnic tables. Lake Monticello Park is a 25-acre park containing tennis courts, ball field, basketball court, picnic facilities, fishing pier, and walking trail.

Lake Murray is a 79.5 square-mile hydropower reservoir located in Newberry, Saluda, Lexington and Richland Counties. Lake Murray supports numerous on-water recreation opportunities through 15 public access sites situated around the reservoir. Lake Murray also hosts several

national and local fishing tournaments. The lower Saluda River, which extends 10 miles downstream of the Lake Murray Dam, supports an active recreational fishery and provides a variety of paddling experiences, from flatwater to whitewater.

Fairfield and Newberry Counties encompass several municipal recreation areas. Fairfield County has 16 public parks and recreation facilities encompassing approximately 90 acres, and Newberry County has 45 public parks and recreation facilities encompassing more than 530 acres. These facilities (Table 6) provide the following amenities: playgrounds, picnic areas, softball fields, horseback riding, hand-carried and trailered boat launches, basketball courts, swimming pools, birding and wildlife watching opportunities, and multi-use trails that support hiking.

TABLE 6 RECREATION FACILITIES IN FAIRFIELD AND NEWBERRY COUNTIES

Fairfield County	Newberry County
Lake Monticello	Brick House Recreation Area
Feasterville Mini Park	Broad River Canoe Access
Mitford Mini Park	Cannon's Creek Public Access Area
Sheldon Mini Park	Dreher Island State Park
Eunice Shelton Trail	Heller's Creek Access Area
Adger Park	Little Mountain Reunion Park
Blair Park/Willie Lee Recreation Center	Lynch's Woods Park
Garden St. Park	Peak-to-Prosperty Rail Trail
Middle Six Mini Park	Wells Japanese Garden
Chappelltown Mini Park	Little Mountain Explorer Bicycling Route
Centerville Mini Park	
Horeb Glenn Park	
Alton Trail	
Fortunes Spring Park	

The South Carolina State Comprehensive Outdoor Recreation Plan (SCORP) provides information on the supply and demand for outdoor recreation facilities in South Carolina, creates policies for meeting that demand, and to qualify South Carolina for funding from the federal Land and Water Conservation Fund (LWCF) for acquiring or developing lands for public outdoor recreation (SCPRT 2008). The SCORP offers no recommendations specific to the

Project, but the recreation goals outlined in the SCORP may be applied by governments at the state, county, or municipal levels, including Newberry and Fairfield Counties and the city of Newberry. The following goals of the SCORP may be relevant to the Project: promote the state's tourist attractions; provide for the preservation and perpetuation of South Carolina's rich historical heritage; lease or convey lands to local governments for parks and recreation facilities; and, study the state's park and outdoor recreational resources and facilities, the current and projected needs for these resources, and the extent to which these needs are being met (SCPRT, 2008).

3.2 PROJECT AREA RECREATION RESOURCES

SCE&G permits public use of the Project land and waters for recreation. Monticello and Parr Reservoirs are popular recreational sites in western Fairfield County. SCE&G maintains six public access sites on Monticello and Parr reservoirs that are considered Project recreational facilities. In addition to the Project recreation sites, there are two informal recreation sites at the Project and one informal recreation site located primarily outside of the Project boundary. Sites are not regularly staffed, but are frequented by managing personnel and/or law enforcement to check on site and safety conditions. Table 7 lists recreation sites and associated facilities provided at these sites at Monticello and Parr Reservoirs. The location of these sites are shown in Figure 1.

On Monticello Reservoir, Project and non-Project recreation access sites include the Scenic Overlook, the Highway 215 Boat Ramp, the Highway 99 Public Access Area, the Recreation Lake Access Area, and the Highway 99 Informal Fishing Area. Monticello Reservoir recreation sites provide boating and fishing access and scenic viewing opportunities. The Scenic Overlook is managed in conjunction with the Fairfield County Recreation Commission, and includes a multiple-use recreational area at Monticello Reservoir, that includes a scenic overlook, baseball field, tennis courts, basketball court, picnic facilities, and fishing facilities. The Highway 99 Informal Fishing Area is available for bank fishing only.

On the Parr Reservoir, there are two Project boat ramps maintained by SCE&G and one informal boat ramp. Cannon's Creek and Heller's Creek provide boat launches, courtesy docks, and picnic facilities. The Highway 34 Primitive Ramp provides primitive boat access to the upper portions of Parr Reservoir. Additionally, two waterfowl management areas, the Broad River and the

Enoree River waterfowl areas were included in this study. These facilities provide public waterfowl hunting access and are under management jurisdiction of SCDNR under its WMA Program. These waterfowl areas are located within the Project boundary adjacent to the Parr Reservoir (Broad River Waterfowl Sub-impoundment) and the Enoree River (Enoree River Waterfowl Sub-impoundment). The RCG also requested that the study include collecting use information for the Enoree River Bridge Informal Access area which is located outside of the Project boundary, on U.S. Forest Service lands.

TABLE 7 PUBLIC RECREATION SITE INVENTORY SUMMARY FOR MONTICELLO AND PARR RESERVOIRS

Site Name	\$ Fee	Barrier Free/ADA Amenities ^a	Picnicking	# Shelters	# of Tables	# of Grills	Trail Length (Mi)	Camping	Swimming	Bank Fishing	Dock Fishing	# Ramps	# Docks	Parking Spaces	Restrooms	Playground and Sport Facilities	Owned by SCE&G	Operated by SCE&G	Leased to Other Entity
Monticello Reservoir																			
Scenic Overlook	\$0	●	●	5	12		1	●	●	●	●		1	100	●	●	●	Partial	Partial
Highway 215 Boat Ramp	\$0		●	1	2					●		2	1	30			●	●	
Highway 99 Public Access Area	\$0		●	2	5	1		●		●		3	1	80	●		●	●	
Recreation Lake Access Area	\$0	●	●	2	26	7	0.3		●	●		1		105	●		●	●	
Highway 99 Informal Fishing Area	\$0									●				20			●	●	
TOTALS	\$0			10	45	8	1.3					6	3	335					
Parr Reservoir																			
Cannon's Creek Public Access Area	\$0		●	2	2	1		●	●	●		1		30	●		●	●	
Heller's Creek Public Access Area	\$0		●	2	2			●		●		1		25	●		●	●	
Highway 34 Primitive Ramp	\$0							●		●		1		5			●	●	
TOTALS	\$0			4	4	1						3		60					

^a Although a recreation site may not be entirely ADA-compliant, this column indicates that the facility provides some level of barrier free amenities. Barrier free access at Project recreation sites is discussed further in Section 6.0.

3.2.1 PROJECT RECREATION FACILITIES - MONTICELLO RESERVOIR

SCENIC OVERLOOK



PHOTO 1 SCENIC OVERLOOK

Scenic Overlook Park (Photo 1) is located on the eastern shore of the reservoir and can be accessed from Highway 215. This is a day use site, managed in conjunction with Fairfield County. The site is designed primarily for dock fishing, bank fishing, and picnicking. The site provides one picnic shelter and eight picnic tables, a fishing pier, a scenic overlook, gravel parking areas and restrooms. In addition to these amenities, the portion of the site maintained by Fairfield County includes tennis courts, a baseball field, a playground area, additional picnic shelters, a 1-mile hiking trail, and a community center. The site is unstaffed and free to visitors year round.

Based on a scale of 1 to 5, with 5 being excellent, 2015 exit interview survey respondents rated the overall site condition of the Scenic Overlook Park as 4.42 (n=132).

HIGHWAY 215 BOAT RAMP



PHOTO 2 HIGHWAY 215 BOAT RAMP

The Highway 215 Boat Ramp (Photo 2) is located on the eastern side of the reservoir, off of Highway 215. The site is primarily used as a boat launch, and offers a dock and two boat ramps. There are 30 parking spaces for vehicles with trailers. The site also provides a picnic shelter with two tables. There are no restrooms at the site. The site is unstaffed, and use of the boat ramp is free to visitors year round.

Based on a scale of 1 to 5, with 5 being excellent, 2015 exit interview survey respondents rated the overall site condition of the Highway 215 Boat Ramp as 4.44 (n=134).

HIGHWAY 99 PUBLIC ACCESS AREA



PHOTO 3 HIGHWAY 99 PUBLIC ACCESS AREA

The Highway 99 Public Access Area (Photo 3) is a medium sized recreation area that is open for both day use and primitive tent camping. It is located on the northern side of the reservoir off of Highway 99. The site is primarily used as a boat launch, and also provides opportunities for

primitive tent camping, picnicking, bank fishing, and boating. The site offers three boat ramps and one dock, as well as 80 parking spaces for vehicles with trailers. The site also provides restrooms, two picnic shelters, five picnic tables, and one grill. The area is unstaffed and access is free to visitors year round.

Based on a scale of 1 to 5, with 5 being excellent, 2015 exit interview survey respondents rated the overall site condition of the Highway 99 Public Access Area as 4.17 (n=104).

RECREATION LAKE ACCESS AREA



PHOTO 4 RECREATION LAKE ACCESS AREA

The Recreation Lake Access Area (Photo 4) is adjacent to Lake Monticello, off of Highway 99. The site provides a boat launch that is open year-round and a beach area that is open from April 1 to September 30. The site provides a total of 2 picnic shelters, 26 tables, and 7 grills. There is a 0.3-mile-long hiking trail at the beach area, as well. The beach area provides a gravel parking area for approximately 95 vehicles, including designated ADA parking spaces (although unpaved). The boat launch provides parking for up to 10 vehicles with trailers. Restrooms are provided at both the beach area and the boat launch. Both areas are unstaffed and free to visitors.

Based on a scale of 1 to 5, with 5 being excellent, the average survey response rating the overall condition of the site was 4.0 (n=61).

3.2.2 PROJECT RECREATION FACILITIES - PARR RESERVOIR

CANNON'S CREEK PUBLIC ACCESS AREA



PHOTO 5 CANNON’S CREEK PUBLIC ACCESS AREA

Cannon’s Creek Public Access Area (Photo 6) is located on the western side of Parr Reservoir off of Broad River Road. This site provides one boat launch, as well as amenities that include two shelters, two tables, a grill, and restrooms. There are parking spaces for up to 30 vehicles with trailers. Primitive camping is allowed at this site.

Based on a scale of 1 to 5, with 5 being excellent, 2015 exit interview survey respondents rated the overall site condition of this site as 3.95 (n=146).

HELLER'S CREEK PUBLIC ACCESS AREA



PHOTO 6 HELLER’S CREEK PUBLIC ACCESS AREA

Heller’s Creek Public Access Area (Photo 7) is located on the western side of Parr reservoir, off of Broad River Road. This site provides one boat launch, as well as amenities that include two picnic shelters, two tables, and restrooms. There are parking spaces for up to 25 vehicles with trailers. Primitive camping is allowed at this site. The site is unstaffed and open year round to visitors with no fees required.

Based on a scale of 1 to 5, with 5 being excellent, 2015 exit interview survey respondents rated the overall site condition of this site as 3.81 (n=80).

BROAD RIVER WATERFOWL MANAGEMENT AREA

The Broad River Waterfowl Management Area is a Category I waterfowl area, meaning hunts are conducted on selected Saturdays during the waterfowl season, with hunters having been selected by the SCDNR through a lottery system. This site is closed to the public during waterfowl season, and it is open to the public from February 2 through October 31. Recreation opportunities outside of waterfowl season include bird watching, bank fishing, deer hunting, and small game hunting.

ENOREE RIVER WATERFOWL MANAGEMENT AREA

The Enoree River Waterfowl Management Area is a category II hunting area, meaning it is open to the general public for waterfowl hunting. Waterfowl hunting is permitted on Saturdays until 12 p.m. during the hunting season. Outside of the waterfowl season, the area is open to visitors for activities including bird watching, deer hunting, and small game hunting.

3.2.3 NON-PROJECT ACCESS AREAS

HWY 99 INFORMAL FISHING AREA



PHOTO 7 HIGHWAY 99 INFORMAL FISHING AREA

The Highway 99 Informal Fishing Area (Photo 5) is located on the north side of Monticello Reservoir, off of Highway 99. This small, day use recreation site is primarily designed for bank

fishing. Swimming is prohibited at this site and there are no tables or other amenities. The site provides parking for up to 20 vehicles, as well as shoreline access for bank fishing. There are no fees at this site and it is open year round to visitors.

Based on a scale of 1 to 5, with 5 being excellent, 2015 exit interview survey respondents rated the overall site condition of the Highway 99 Informal Fishing Area as 4.24 (n=21).

ENOREE RIVER BRIDGE INFORMAL ACCESS AREA



PHOTO 8 ENOREE RIVER BRIDGE INFORMAL ACCESS AREA

At the request of the RCG, a traffic counter was placed at the Enoree River Bridge Informal Access Area. This area is located on U.S. Forest Service lands, outside of the Project boundary. The Project boundary extends to the high water mark in the vicinity of this access area. This site provides a primitive ramp, used primarily for small watercraft access to the Enoree River.

HIGHWAY 34 PRIMITIVE RAMP



PHOTO 9 HIGHWAY 34 PRIMITIVE RAMP

The Highway 34 Primitive Ramp (Photo 8) provides a gravel/earthen boat ramp and parking for up to five vehicles. The site provides boaters and shoreline anglers with access to the Broad River at the upper end of Parr Reservoir. Primitive camping is also permitted at the site. There are no fees at this site and it is open year round.

A site condition rating is not available for the Highway 34 Primitive Ramp, as exit interviews were not conducted at this site.

4.0 CHARACTERIZATION OF EXISTING RECREATION USE

The following sections characterize the existing recreation use at public access sites on Monticello Reservoir and Parr Reservoir during the study season. This section summarizes visitor characteristics at the recreation sites, as well as the patterns of recreational use at the sites including type of recreation activity.

4.1 PUBLIC ACCESS SITE USERS

Knowledge of who is using Project sites and why they are using them can be useful in understanding future needs and how best to accommodate them. In this section, the characteristics of public access site users and their reasons for recreating at the Project are described.

4.1.1 MONTICELLO RESERVOIR

Of the individuals interviewed at Monticello Reservoir sites, the majority were male (72 percent) and the average age was 48. Almost all of the visitors were from South Carolina (97 percent) with a large representation from the surrounding four (Fairfield, Lexington, Newberry and Richland) counties and the Columbia area (18 percent). Of those respondents interviewed, less than 2 percent indicated they owned a permanent or seasonal lakefront residence on Monticello.

In terms of why visitors chose to recreate at Monticello Reservoir, 17 percent indicated it was close to home, 15 percent indicated they visited the site to go fishing, and others indicated that the easy access and facilities were a motivating factor for recreating at the Reservoir. In addition, many visitors stated that it provided a place to recreate with friends and family.

Table 8 provides a summary of visitor characteristics at the recreation sites where visitor interviews were conducted. The average party size of visitors interviewed at Monticello sites was 2.7 visitors, with 2.3 being the average number of people in a vehicle when visiting the sites. The average length of stay was about 3 hours 20 minutes, with the Scenic Overlook having the shortest length of stay per visit and the two boat ramp access areas having the longest, at 5 hours for the average length of stay.

TABLE 8 SUMMARY OF VISITOR CHARACTERISTICS AT MONTICELLO RESERVOIR SITES

Site Name		Age	Number of People in Vehicle	Party Size	Length of Stay
Scenic Overlook	Mean	47	2.59	3.06	0:56:48
	Median	49	2.00	2.00	0:15:00
	<i>N</i>	131	93	132	132
Highway 215 Boat Ramp	Mean	51	2.23	2.26	4:50:36
	Median	53	2.00	2.00	4:26:00
	<i>N</i>	134	107	134	133
Highway 99 Boat Ramp	Mean	48	2.05	2.69	4:53:34
	Median	49	2.00	3.00	4:05:30
	<i>N</i>	99	55	106	106
Recreation Lake Access Area	Mean	41	2.05	3.03	2:33:30
	Median	42	2.00	3.00	2:35:00
	<i>N</i>	53	20	61	61
Highway 99 Informal Fishing Area	Mean	45	2.50	2.71	2:59:45
	Median	45	2.00	3.00	0:30:00
	<i>N</i>	17	10	21	21
Total	Mean	48	2.31	2.72	3:19:34
	Median	49	2.00	2.00	2:40:00
	<i>N</i>	434	285	454	453

4.1.2 PARR RESERVOIR

The average age of the individuals interviewed at the Parr Reservoir sites was 43 and 89 percent were male. Of those respondents interviewed, less than 2 percent indicated they owned a permanent or seasonal lakefront residence on Parr Reservoir. All except for one visitor interviewed were from South Carolina with a large representation from Newberry County (over 75 percent) and from the Columbia area (12 percent).

In terms of why visitors chose to recreate at Parr Reservoir, the majority of those individuals interviewed indicated good fishing (52 percent). Others indicated that they selected the site because it was not crowded, had easy access, and that the site was close to home. The average party size was 2.3 visitors, with the average number of people in a vehicle when visiting the sites of 2.1 people. The average length of stay was about 3 hours 30 minutes. Table 9 provides a summary of visitor characteristics at the recreation sites where visitor interviews were conducted.

TABLE 9 SUMMARY OF VISITOR CHARACTERISTICS AT PARR RESERVOIR SITES

Site Name		Age	Number of People in Vehicle	Party Size	Length of Stay
Cannon's Creek Public Access Area	Mean	44	2.19	2.46	3:13:55
	Median	41	2.00	2.00	3:10:00
	<i>N</i>	139	124	147	148
Heller's Creek Public Access Area	Mean	42	2.08	2.09	3:58:06
	Median	39	2.00	2.00	3:50:00
	<i>N</i>	77	76	80	80
Total	Mean	43	2.15	2.33	3:29:25
	Median	41	2.00	2.00	3:31:30
	<i>N</i>	216	200	227	228

4.2 CURRENT USE

Recreation use estimates and identification of recreation activities are provided below for the Project, followed by total and site-specific estimates for the Monticello Reservoir and the Parr Reservoir.

4.2.1 PROJECT

During the April through September 2015 recreation season, recreation site visitation at the Project was estimated at a total of 152,709 recreation days. About 52 percent of the total use occurred on weekdays, and 38 percent on weekends and 10 percent on holidays. The greatest amount of use occurred during May (23 percent) followed by June (19 percent) and July (18 percent) during this period. Monticello Reservoir sites received the greatest use of the developments at 126,525 recreation days (83 percent of the total use) and Parr Reservoir sites received 26,184 recreation days during this period. See Table 10 for the summary of the recreation visitation by reservoir and day type during the 2015 study period.

TABLE 10 ESTIMATED RECREATION DAYS FOR MONTICELLO RESERVOIR AND PARR RESERVOIR SITES

	Monticello Reservoir Sites	Parr Reservoir Sites	Total
April	18,318	4,217	22,535
Weekdays	11,503	2,703	14,206
Weekends	6,815	1,514	8,329
Holidays	-	-	-
May	29,267	6,018	35,284
Weekdays	10,895	2,799	13,695
Weekends	11,975	2,232	14,208
Holidays	6,396	986	7,382
June	23,992	4,645	28,636
Weekdays	12,216	3,031	15,247
Weekends	11,776	1,614	13,390
Holidays	-	-	-
July	23,721	4,191	27,912
Weekdays	12,571	2,417	14,988
Weekends	6,776	1,195	7,971
Holidays	4,374	579	4,953
August	17,463	4,103	21,566
Weekdays	9,481	2,169	11,650
Weekends	7,983	1,934	9,916
Holidays	-	-	-
September	13,765	3,010	16,775
Weekdays	8,042	1,763	9,805
Weekends	2,810	775	3,585
Holidays	2,913	472	3,386
Total			
Weekdays	64,707	14,883	79,590
Weekends	48,135	9,263	57,398
Holidays	13,683	2,038	15,721
TOTAL	126,525	26,184	152,709

4.2.2 MONTICELLO RESERVOIR

Overall, the public recreation sites at Monticello Reservoir supported an estimated 126,525 recreation days during the study period (Table 11). The most used site was the Scenic Overlook (30 percent of total use at Monticello Reservoir sites and 37,384 recreation days), followed by the Highway 99 Informal Fishing Area (21 percent of total use). The Recreation Lake Access Area (17 percent of total use) and the Highway 215 Boat Ramp (17 percent of total use) and the Highway 99 Boat Ramp (15 percent of total use) received fairly equal amounts of use across the recreation season. About 51 percent of the total use occurred on weekdays, about 38 percent on weekends and the remaining 11 percent on holidays. The month of May received the greatest use at 23 percent of the total use during the recreation study season, following by June (19 percent) and July (19 percent).

TABLE 11 ESTIMATED RECREATION DAYS FOR MONTICELLO RESERVOIR SITES

	Scenic Overlook	Highway 215 Boat Ramp	Highway 99 Boat Ramp	Recreation Lake Access Area	Highway 99 Informal Fishing Area	Total
April						18,318
Weekdays	3,362	2,110	1,894	947	3,190	11,503
Weekends	2,051	1,249	1,246	689	1,580	6,815
Holidays	-	-			-	-
May						29,267
Weekdays	3,108	2,185	1,763	1,189	2,650	10,895
Weekends	3,730	2,105	1,968	2,312	1,860	11,975
Holidays	1,756	1,244	990	1,581	825	6,396
June						23,992
Weekdays	3,362	1,864	1,759	2,481	2,750	12,216
Weekends	3,750	1,766	1,689	3,050	1,520	11,776
Holidays	-	-	-	-	-	-
July						23,721
Weekdays	3,476	2,011	1,939	2,120	3,025	12,571
Weekends	1,958	1,231	972	1,820	795	6,776
Holidays	1,368	549	640	1,285	533	4,374
August						17,463
Weekdays	2,883	1,639	1,248	1,033	2,678	9,481
Weekends	2,253	1,539	1,271	1,620	1,300	7,983
Holidays		-	-	-	-	-
September						13,765
Weekdays	2,448	1,218	947	1,119	2,310	8,042
Weekends	901	482	615	197	615	2,810
Holidays	979	468	406	603	458	2,913
Total						

	Scenic Overlook	Highway 215 Boat Ramp	Highway 99 Boat Ramp	Recreation Lake Access Area	Highway 99 Informal Fishing Area	Total
Weekdays	18,638	11,027	9,551	8,889	16,603	64,707
Weekends	14,644	8,371	7,761	9,688	7,670	48,135
Holidays	4,103	2,261	2,036	3,469	1,815	13,683
TOTAL	37,384	21,660	19,348	22,046	26,088	126,525

The primary recreation activities on Monticello Reservoir included boat fishing (42 percent), following by bank fishing, pier/dock fishing and swimming (Table 12). Visitors also indicated they participated in other activities while at the reservoir in addition to their primary activities, these included picnicking, sunbathing, sightseeing, and walking. In terms of the activity by day-type, visitors interviewed indicated participation in similar type of activities during weekdays and weekend periods. For holidays, visitors reported some increased activities for canoeing and kayaking, as compared to the non-holiday periods.

TABLE 12 PRIMARY ACTIVITIES AT MONTICELLO RESERVOIR

Activity	Day Type			Total
	Weekday	Weekend	Holiday	
Boat Fishing	42%	43%	34%	42%
Pier/Dock Fishing	13%	11%	9%	11%
Bank Fishing	14%	20%	16%	18%
Motor Boating	3%	1%	0%	2%
Pontoon/Party Boating	0%	0%	0%	0%
Sailing	1%	0%	0%	0%
Canoeing/Kayaking	0%	1%	11%	2%
Windsurfing	1%	0%	0%	0%
Paddleboarding	0%	0%	2%	0%
Bicycling	0%	0%	0%	0%
Tent/Vehicle Camping	2%	5%	2%	4%
Walking/Hiking/Backpacking	2%	1%	5%	1%
Sightseeing	5%	3%	2%	4%
Hunting	0%	0%	2%	0%
Swimming	10%	6%	14%	8%
Picnicking	3%	5%	2%	4%
Sunbathing	1%	1%	0%	1%
Other	3%	2%	0%	2%
Total	100%	100%	100%	100%
<i>N</i>	<i>127</i>	<i>282</i>	<i>44</i>	<i>453</i>

About 54 percent of exit interview respondents indicated they spent time on Monticello Reservoir and about 15 percent indicated they recreated on Monticello Reservoir Islands. Of those respondents that recreated on the islands, the primary activity was bank fishing on the islands at 53 percent followed by camping on the islands at 38 percent (see Table 13).

TABLE 13 PRIMARY ACTIVITIES AT MONTICELLO RESERVOIR ISLANDS

Activity ^a	Day Type			Total
	Weekday	Weekend	Holiday	
Island Sunbathing	0%	20%	0%	13%
Island Bank Fishing	43%	70%	0%	53%
Island Hunting	0%	10%	40%	13%
Island Camping	43%	45%	0%	38%
Island Walking/Hiking	0%	15%	20%	13%
Island Sightseeing	14%	30%	0%	22%
Island Nature Study/Wildlife Viewing/Photography	14%	20%	20%	19%
Island Swimming	29%	30%	40%	31%
Island Picnicking	14%	20%	20%	19%
<i>N</i>	7	20	5	32

^a Respondents were asked what activities they participated in while on Monticello island(s). Many individuals provided more than one activity in response to this question. Therefore, percentages equal greater than 100 percent.

In addition to data collected during the primary recreation season (April 1 through September 7), recreation use data was collected at the Monticello Reservoir sites during early crappie fishing season (February 1 through March 31, 2016). Table 14 summarizes recreation use at each site. The Highway 99 Informal Fishing Area site visitation was estimated at the greatest use; at about 36 percent, following by the Scenic Overlook at 25 percent of the total use during this period. Weekdays during March comprised the most use with 45 percent of the total estimated use during this period.

TABLE 14 MONTICELLO RESERVOIR RECREATION USE DURING EARLY CRAPPIE SEASON, 2016

	Scenic Overlook	Highway 215 Boat Ramp	Highway 99 Boat Ramp	Recreation Lake Access Area	Highway 99 Informal Fishing Area	Total
February						
Weekdays	1,360	1,030	646	215	2,940	6,191
Weekends	767	785	656	180	860	3,248
Holidays	-	-	-	-	-	-
March						
Weekdays	2,919	2,103	2,027	660	4,313	12,022
Weekends	1,595	981	1,033	344	1,480	5,434
Holidays	-	-	-	-	-	-
TOTAL	6,641	4,899	4,362	1,400	9,593	26,895

4.2.3 PARR RESERVOIR

The public recreation sites at Parr Reservoir supported an estimated 26,184 recreation days during the study period (Table 15). The most used sites were the Cannon's Creek Public Access Area (14,452 recreation days and 55 percent of the total use at the Parr Reservoir sites), followed by Heller's Creek Public Access Area (29 percent), and Highway 34 Primitive Ramp (16 percent). About 57 percent of the total use occurred on weekdays, about 35 percent on weekends and the remaining 8 percent on holidays. The month of May received the greatest use at 23 percent of the total use during the recreation study season, following by June (18 percent), April (16 percent), July (16 percent) and August (16 percent).

TABLE 15 ESTIMATED RECREATION DAYS FOR PARR RESERVOIR SITES

	Cannon's Creek Public Access Area	Heller's Creek Public Access Area	Highway 34 Primitive Ramp	Total
April				4,217
Weekdays	1,638	686	378	2,703
Weekends	823	433	258	1,514
Holidays	-	-	-	-
May				6,018
Weekdays	1,621	749	430	2,799
Weekends	1,121	716	396	2,232
Holidays	519	312	155	986
June				4,645
Weekdays	1,734	824	473	3,031
Weekends	806	532	275	1,614
Holidays	-	-	-	-
July				4,191
Weekdays	1,349	595	473	2,417
Weekends	526	437	232	1,195
Holidays	302	200	77	579
August				4,103
Weekdays	1,242	612	316	2,169
Weekends	1,029	603	301	1,934
Holidays	-	-	-	-
September				3,010
Weekdays	1,012	480	271	1,763
Weekends	434	212	129	775
Holidays	296	112	65	472
Total				
Weekdays	8,596	3,946	2,341	14,883
Weekends	4,739	2,933	1,591	9,263
Holidays	1,117	624	297	2,038
TOTAL	14,452	7,503	4,229	26,184

The predominant recreation activity on Parr Reservoir was boat fishing (75 percent), followed by bank fishing at 12 percent of visitors indicating this as their primary recreation activity (Table 16). Other secondary activities reported included tent/vehicle camping, sightseeing and pier/dock fishing. In terms of the activity by day-type, visitors interviewed indicated participation in similar type of activities during weekdays and weekend periods. For holidays, visitors reported some increased activities for tent/vehicle camping, as compared to the non-holiday periods.

TABLE 16 PRIMARY ACTIVITIES AT PARR RESERVOIR SITES

Activity	Day Type			Total
	Weekday	Weekend	Holiday	
Boat Fishing	85%	73%	64%	75%
Pier/Dock Fishing	2%	2%	0%	2%
Bank Fishing	8%	15%	11%	12%
Motor Boating	0%	0%	3%	0%
Canoeing/Kayaking	0%	2%	0%	1%
Tent/Vehicle Camping	0%	5%	11%	5%
Sightseeing	2%	2%	3%	2%
Hunting	0%	0%	3%	0%
Swimming	0%	0%	3%	0%
Picnicking	0%	1%	0%	0%
Other	2%	0%	3%	1%
None	2%	0%	0%	0%
Total	100%	100%	100%	100%
<i>N</i>	<i>61</i>	<i>130</i>	<i>36</i>	<i>227</i>

4.2.4 ENOREE RIVER BRIDGE INFORMAL ACCESS AREA

In addition to the Project public access sites, the recreation visitation was collected at the Enoree River Bridge Informal Access Area, which is located mostly outside of the Project boundary. Visitation was estimated through vehicle counters, and no interviews were conducted at this non-Project facility. For the use estimates, the vehicle counts were estimated and then the average rating of 2.15 people per vehicle was applied based on the average visitor use estimates at Cannon's and Heller's Creek Public Access Areas. The total estimated recreation use during the study season (April through September) was estimated at 1,342 visitor days with 69 percent of this use occurring during weekdays, 27 percent during weekends and the remaining use during

holiday periods. April had the greatest visitation with 370 recreation days at 28 percent, followed by May (17 percent), June (16 percent) and September (16 percent) of the total use during the study period (Table 17).

TABLE 17 ESTIMATED RECREATION DAYS FOR NON-PROJECT SITES – ENOREE RIVER BRIDGE INFORMAL ACCESS AREA

	Enoree Bridge
April	370
Weekdays	284
Weekends	86
Holidays	-
May	234
Weekdays	129
Weekends	86
Holidays	19
June	211
Weekdays	142
Weekends	69
Holidays	-
July	181
Weekdays	142
Weekends	26
Holidays	13
August	133
Weekdays	90
Weekends	43
Holidays	-
September	213
Weekdays	135
Weekends	52
Holidays	26
Total	
Weekdays	922
Weekends	361
Holidays	58
TOTAL	1,342

4.2.5 WATERFOWL MANAGEMENT AREAS

Waterfowl hunting remains an important recreation activity at the Project and was identified as a primary goal (Goal 2) of this study.

A variety of waterfowl hunting opportunities are available to Project recreators. The waters of Monticello Reservoir, excluding the Recreation Lake, are designated as a waterfowl management area under SCDNR's Waterfowl Management Area (WMA) program and are available for public waterfowl hunting to those individuals possessing a permit. Portions of Parr Reservoir are also designated under SCDNR's WMA program. The Broad River and Enoree River Waterfowl Areas, which are managed by SCDNR, are both located within the Project boundary, adjacent to Parr Reservoir and the Enoree River, respectively.

This study was constructed to gather waterfowl hunter use data by employing several different data collection methods: a waterfowl focus group; vehicle counts at recreation sites/waterfowl areas; mail-in questionnaires specific to hunting use at the Project; and, SCDNR waterfowl use data.

WATERFOWL FOCUS GROUP RESULTS

The waterfowl focus group meeting was held on December 9, 2014 and was attended by nine individuals with affiliations ranging from individual waterfowl hunters, to members of the Tyger Enoree River Alliance, to SCDNR resource managers. Information was gathered in three primary areas: personal hunting preferences, seasonal trends and distribution of activities, Project area preferences and needs. Personal hunting preferences, seasonal trends, and the distribution of activities is discussed below. Project area preferences and needs is discussed under Section 5.3 User Perceptions of Site Conditions and Needs.

Personal Hunting Preferences. Most of the focus group attendees indicated that they hunted in the Project area on a weekly basis during the hunting season. Attendees generally indicated that waterfowl hunting is more enjoyable as a group activity and that they prefer to hunt with 1 to 4 other people. Attendees noted that hunting was usually preferable in the morning; however the preferable time of day to hunt was highly weather dependent. Weekdays are preferred over Saturdays (no hunting allowable in the Project area on Sundays) due to less crowding during the weekdays. In general, all species of waterfowl are hunted, no particular species of interest is specifically sought. Attendees indicated that they hunt by both boat and by wading. Hunters generally boat in from a public launch facility and then wade to a particular hunting location. The recreation facilities most often utilized by waterfowl hunters were indicated as follows: the

Highway 99 Boat Ramp and the Highway 215 Boat Ramp on Monticello; the Highway 34 Primitive Ramp and the Enoree River Bridge Informal Access Area on Parr.

Seasonal Trends. Attendees noted that they generally begin hunting on or around Thanksgiving Day and hunt through the end of January (concurrent with the state and federal seasons). However, many indicated that they also hunt during the September teal and goose seasons and the February goose season. Holidays were indicated as being some of the best hunting days due to a lack of other hunters.

A meeting summary is included in Appendix B.

RECREATION USE ESTIMATES FOR THE ENOREE RIVER WATERFOWL MANAGEMENT AREA

Recreation days were estimated for the Enoree River Waterfowl Management Area using data from the vehicle counter placed at the site entrance, using the Parr Reservoir average of 2.15 people per vehicle.

Vehicle counter data indicated that the Enoree River Waterfowl Area supported an estimated 263 recreation days during the study period (Table 18). This total does not account for individuals who accessed the site by boat. SCDNR's use data estimated that 131 people used the site during the study season. The difference between estimated recreation days, using an average of 2.15 people per vehicle, and SCDNR data may indicate that hunters are traveling to the site individually.

TABLE 18 ESTIMATED RECREATION DAYS FOR THE ENOREE RIVER WATERFOWL MANAGEMENT AREA

	Enoree River Waterfowl Management Area
November	
Weekends	13
Holidays	39
December	
Weekends	60
Holidays	22
January	
Weekends	120
Holidays	9
Total	
Weekends	193
Holidays	70
TOTAL	263

SURVEY RESULTS

Monticello Reservoir

A total of 18 surveys were returned from those distributed on vehicles parked at the Highway 215 Boat Ramp and at the Highway 99 Boat Ramp during waterfowl study seasons. Of those surveys that were returned, six individuals indicated that they were waterfowl hunting at the time the survey was distributed. All 6 respondents indicated that they hunt with at least one other person (2.17 people average), with 5 out of the 6 respondents (83 percent) indicating that they primarily hunt on Saturdays. Most respondents indicated that they traveled from Newberry County, SC. No respondents indicated that they had traveled from out-of-state. Five of the respondents provided additional comments regarding waterfowl hunting on Monticello Reservoir. All of the comments were positive, noting that limited hunting days and Wednesday and Saturday AM hunting times were favorable to provide good hunting opportunities on Monticello.

Parr Reservoir

A total of 43 surveys were returned from those distributed on vehicles parked at the Cannon's Creek Public Access Area and at the Heller's Creek Public Access Area during waterfowl study seasons. Of those surveys that were returned, 40 individuals indicated that they were waterfowl hunting at the time the survey was distributed. Approximately 90 percent of respondents indicated that they hunt with at least one other person (1.80 people average). Ninety-five percent⁵ of respondents indicated that they hunt on Saturdays. Wednesdays (53 percent) and Fridays (48 percent) were also popular hunting days among respondents. All but one respondent indicated that they hunt in the morning (98 percent). All respondents indicated that they were from South Carolina. Forty-three percent of respondents indicated that they had traveled from Richland County. Lexington was the second highest county of origin (27 percent) and Newberry County was listed third-highest, at approximately 19 percent. Other counties of origin included: Union, Fairfield, Edgefield and Aiken. Twenty-eight of the respondents provided additional comments regarding waterfowl hunting on Parr Reservoir. Approximately one-half of respondents that commented indicated that there were too many hunters on Parr Reservoir or that waterfowl hunting days/times should be limited.

Enoree River Waterfowl Management Area

Only 1 survey was returned by a waterfowl hunter using the Enoree River Waterfowl Management Area. That individual indicated that they typically hunt with one other person and that they had traveled from Lexington County, SC.

SCDNR WATERFOWL MANAGEMENT AREA USE DATA

SCDNR provided the following use data for the Enoree River Waterfowl Management Area: 131 hunters harvested 90 ducks and 1 Canada goose and shot 839 times. The bag included 54 wood ducks, 12 hooded mergansers, 17 ring-necked ducks, 3 black ducks, 1 green-winged teal, 1 gadwall, 1 pintail and 1 mallard (personal communication with Willie Simmons, SCDNR, on April 5, 2016).

SCDNR provided the following use data for the Broad River Waterfowl Management area: 58 hunters killed 130 ducks during 7 lottery hunts. The bag included 33 mallards, 7 black ducks,

⁵ Many respondents indicated that they hunt on more than one day of the week. As such, percentages add up to be greater than 100 percent.

5 gadwall, 1 American widgeon, 15 green winged teal, 1 northern pintail, 10 wood ducks, 1 redhead, 10 scaup, 35 ring-necked ducks, 6 ruddy ducks and 6 mergansers. Additionally, SCDNR hosted 1 youth hunt on February 6, 2016. Five youths participated and harvested 7 ducks (2 ring-neck ducks, 2 scaup, and 3 wood ducks (personal communication with Sam Stokes, Wildlife Coordinator, SCDNR, on April 5, 2016).

5.0 CHARACTERIZATION OF POTENTIAL FUTURE USE AND NEEDS

The third goal of this study was to identify future recreational needs for public recreation sites on Monticello and Parr reservoirs and to assess the ability of existing access sites to accommodate that projected need. This includes estimating potential future use, assessing site capacity and crowdedness levels, and assessing whether current sites and facilities are adequate for long term management needs.

5.1 FUTURE USE

National trends in outdoor recreation between 1999 and 2009 has generally increased with activities such as viewing and photographing nature (about 20 percent increase), warmwater fishing (increase of about 17 percent), day hiking (15 percent increase) and visiting developed sites for family gatherings (10.5 percent increase) (White, et al 2014). Projected national outdoor recreation trends for the period from 2008 to 2030 provided by the U. S Forest Service as part of the 2010 Resources Planning Act Assessment estimated an increase of about 26 percent for visiting at developed sites, and about 21 percent for fishing activities, 30 percent for motorized water use, and hiking at about 33 percent (White, et al 2014).

Recreation trends in South Carolina show walking for pleasure remains a top outdoor activity at 83.2 percent participation for individuals age 12 and older (USC 2005). Picnicking and swimming remain in the top 10 activities, and along with freshwater fishing have remained fairly constant in participation rates with less than 5 percent change between the 1999 and 2005 period (USC, 2005). The top 25 recreation activities for the Central Midlands Planning District, which includes the four counties surrounding the Project (Fairfield, Newberry, Lexington, and Richland), are provided in Table 19. Of the activities rated above 50 percent, walking for pleasure, beach swimming, and sunbathing, and picnicking are all activities that are available at the Project's public recreation access sites.

TABLE 19 RECREATION PARTICIPATION (2005), AGE 12 AND OLDER, FOR THE FOUR COUNTIES SURROUNDING THE PARR PROJECT

	Activity	District	State
1.	Walking for pleasure or exercise	82.8	83.2
2.	Attending outdoor sporting events	68.7	63.4
3.	Beach swimming/sunbathing	68.5	62.5
4.	Driving for pleasure	52.8	58.2
5.	Weights or exercise machines	70.7	57.1
6.	Picnicking	54.1	53.4
7.	Pool swimming	52.6	53.2
8.	Visiting historical sites	50.1	52.1
9.	Bicycling	50.6	42.8
10.	Visiting a museum	45.4	38.4
11.	Fresh water fishing	37.6	37.2
12.	Visiting an unusual natural feature	35.3	34.7
13.	Playing basketball	44.2	34.5
14.	Visiting a zoo	60.4	34.1
15.	Motorboating	33.0	34.1
16.	Jogging/running	42.6	33.9
17.	Watching wildlife	34.3	33.4
18.	Lake/river swimming	26.8	28.0
19.	Off-road vehicle riding	22.7	23.5
20.	Camping	20.2	23.1
21.	Playing football	28.9	22.4
22.	Golf	24.7	21.1
23.	Guided nature trail/study	28.9	20.2
24.	Bird watching	17.7	20.2
25.	Hiking	19.9	18.2

Source: USC, 2005; data for the Central Midlands Planning District which includes the four counties surrounding the Project Fairfield, Newberry, Lexington, and Richland.

The population of the counties within the Central Midlands Planning District (Fairfield, Newberry, Lexington, and Richland) increased by 4.7 percent between 2010 and 2015 and is projected to increase by about 12.9 percent from 2015 to the year 2030 (SCRFA, 2016). Lexington County is projected to have the fastest population growth of the area, at an average of 6.3 percent from 2015 to 2030. And Fairfield is projected to have the slowest population growth of these counties, at 0.5 percent for the same time period. If participation in recreation increases at a similar rate, one can expect to see increased demand for recreation opportunities in the future use at the Project sites. Table 20 summarizes the estimated population projections to 2030 for the four counties surrounding the Project.

TABLE 20 POPULATION PROJECTIONS FOR THE FOUR COUNTIES SURROUNDING THE PARR PROJECT

County	2010 Census	2015 Projection	2020 Projection	2025 Projection	2030 Projection
Fairfield	23,956	24,100	24,200	24,300	24,500
Lexington	262,391	277,100	291,800	312,500	333,200
Newberry	37,508	37,900	38,200	39,000	39,800
Richland	384,504	404,400	424,300	440,100	456,000

Four County Subtotal	708,359	743,500	778,500	815,900	853,500
Percent Change	0%	4.73%	4.50%	4.58%	4.41%

South Carolina	4,625,364	4,823,200	5,020,800	5,235,500	5,451,700
Percent Change	0	4.10%	3.94%	4.10%	3.97%

Source: http://www.sccommunityprofiles.org/census/proj_c2010.html
 South Carolina Revenue and Fiscal Affairs Office, South Carolina State and County Population Projections 2000-2030. Accessed at http://www.sccommunityprofiles.org/census/proj_c2010.html on July 12, 2016.

5.1.1 PROJECT

Overall future use at the Project is estimated at 174,241 recreation days in the year 2030, based on the estimated population projections for the four county region and existing recreation use estimates at the Project. This would result in an increase of about 21,532 recreation days or about a 12.4 percent increase as compared to the 2015 estimated use. Table 21 provides a summary of projected estimated use at the Project out to year 2070. These estimates are based on applying the average population increase from 2010 to 2030 of 4.55 percent and applying this average estimate for each 5-year period. Future use estimates extending out in time beyond the 2030 period are even more subject to change as various assumptions, such assumptions about future births, deaths, net international migration, and domestic migration, affect these population trends over time.

TABLE 21 ESTIMATED FUTURE RECREATION DAYS FOR THE PARR SHOALS PROJECT, 2020-2070

Year	Population Growth Rates	Monticello Reservoir Sites	Parr Reservoir Sites	Total Project
Use Estimates (2015)		126,525	26,184	152,709
2020	4.50%	132,213	27,361	159,575
2025	4.58%	138,274	28,615	166,889
2030	4.41%	144,365	29,876	174,241
2035	4.55%	150,938	31,236	182,174
2040	4.55%	157,810	32,658	190,469
2045	4.55%	164,995	34,145	199,140
2050	4.55%	172,507	35,700	208,207
2055	4.55%	180,361	37,325	217,686
2060	4.55%	188,573	39,025	227,597
2065	4.55%	197,158	40,801	237,960
2070	4.55%	206,135	42,659	248,794

5.1.2 MONTICELLO RESERVOIR

Table 22 summarizes the projected recreation use by activity for each 5-year increment out to the year 2050 at the Monticello Reservoir sites. Fishing and boating are anticipated to remain the dominant recreation activities at Monticello Reservoir sites.

5.1.3 PARR RESERVOIR

Table 23 summarizes the projected recreation use by activity for each 5-year increment out to the year 2050 at the Parr Reservoir sites. Boat fishing and bank fishing are anticipated to remain the dominant recreation activities at the Parr Reservoir sites.

TABLE 22 PROJECTED FUTURE RECREATION DAY ESTIMATES FOR MONTICELLO RESERVOIR BY ACTIVITY, 2020-2050

	Use Estimates (2015)	2020	2025	2030	2035	2040	2045	2050
Population Growth Rates		4.50%	4.58%	4.41%	4.55%	4.55%	4.55%	4.55%
Activity								
Boat Fishing	52,789	55,162	57,690	60,232	62,974	65,841	68,839	71,973
Pier/Dock Fishing	14,245	14,885	15,567	16,253	16,993	17,767	18,576	19,421
Bank Fishing	22,624	23,641	24,724	25,814	26,989	28,218	29,502	30,846
Motor Boating	2,234	2,335	2,442	2,550	2,666	2,787	2,914	3,046
Pontoon/Party Boating	279	292	305	319	333	348	364	381
Sailing	559	584	610	637	666	697	728	762
Canoeing/Kayaking	2,514	2,627	2,747	2,868	2,999	3,135	3,278	3,427
Windsurfing	279	292	305	319	333	348	364	381
Paddleboarding	559	584	610	637	666	697	728	762
Bicycling	279	292	305	319	333	348	364	381
Tent/Vehicle Camping	4,748	4,962	5,189	5,418	5,664	5,922	6,192	6,474
Walking/Hiking/Backpacking	1,676	1,751	1,831	1,912	1,999	2,090	2,185	2,285
Sightseeing	4,469	4,670	4,884	5,099	5,331	5,574	5,828	6,093
Hunting	559	584	610	637	666	697	728	762
Swimming	9,776	10,215	10,683	11,154	11,662	12,193	12,748	13,328
Picnicking	5,307	5,545	5,800	6,055	6,331	6,619	6,920	7,235
Sunbathing	838	876	916	956	1,000	1,045	1,093	1,142
Other	2,793	2,919	3,052	3,187	3,332	3,484	3,642	3,808
Total	126,525	132,213	138,274	144,366	150,938	157,810	164,995	172,507

TABLE 23 ESTIMATED FUTURE RECREATION DAYS FOR PARR RESERVOIR BY ACTIVITY, 2020-2050

	Use Estimates (2015)	2020	2025	2030	2035	2040	2045	2050
Population Growth Rates		4.50%	4.58%	4.41%	4.55%	4.55%	4.55%	4.55%
Activity								
Boat Fishing	19,609	20,491	21,430	22,374	23,393	24,458	25,571	26,736
Pier/Dock Fishing	461	482	504	526	550	575	602	629
Bank Fishing	3,230	3,375	3,530	3,685	3,853	4,028	4,212	4,404
Motor Boating	115	121	126	132	138	144	150	157
Pontoon/Party Boating	-	-	-	-	-	-	-	-
Sailing	-	-	-	-	-	-	-	-
Canoeing/Kayaking	231	241	252	263	275	288	301	315
Windsurfing	-	-	-	-	-	-	-	-
Paddleboarding	-	-	-	-	-	-	-	-
Bicycling	-	-	-	-	-	-	-	-
Tent/Vehicle Camping	1,269	1,326	1,387	1,448	1,514	1,583	1,655	1,730
Walking/Hiking/Backpacking	-	-	-	-	-	-	-	-
Sightseeing	577	603	630	658	688	719	752	786
Hunting	115	121	126	132	138	144	150	157
Swimming	115	121	126	132	138	144	150	157
Picnicking	115	121	126	132	138	144	150	157
Sunbathing	-	-	-	-	-	-	-	-
Other	346	362	378	395	413	432	451	472
Total	26,184	27,361	28,615	29,876	31,236	32,658	34,145	35,700

5.2 RECREATION SITE USE DENSITY

Project recreation sites are well used throughout the recreation season with sites generally being used within their design capacities. For the purposes of this study, sites were considered to be utilized within their design capacities if parking areas are regularly less than 75 percent full. Use is considered to be approaching capacity if parking areas are regularly between 75 and 99 percent full. Use is considered to be exceeding capacity if parking areas are regularly greater than 99 percent full. It is important to note that high levels of use typically experienced on holidays are regarded as special circumstances, as these use levels are experienced only a few times a year. Recreation capacity should be considered for typical weekday and weekend use in management and site design decisions.

5.2.1 MONTICELLO RESERVOIR

Results suggest that 3 sites are being used within their design capacities for the typical weekdays and weekend days selected during the study season and may accommodate additional use: Scenic Overlook; Highway 99 Boat Ramp; Recreation Lake Access Area (Table 24). Estimates for the Highway 99 Informal Fishing Area are shown to be within their design capacities during weekdays, but approaching capacity on weekend days. Estimates for the Highway 215 Boat Ramp potentially exceeded capacities during peak hours on some weekend days throughout the study season.

While data suggest that public access sites on Monticello Reservoir are being very well used during the summer season, at times at rates at or above their intended capacities, additional information can help in interpreting these findings to better understand how sites are used. Traffic counter data often provide an over-estimate of site use, as it includes those individuals that drive through a site, but do not stay to recreate. Drive-through traffic was frequently observed by recreation clerks stationed at the Highway 99 Informal Fishing Area. Spot count data for this site also indicate that 0 to 1 vehicles were observed parked at the site approximately 90 percent of the time. Additionally, this recreation site has a double entrance/exit and is located directly adjacent to a main road. This allows for easy turn around/lake viewing access. The Highway 215 Boat Ramp is also located directly off of a main road and has a double entrance/exit. Spot count data alone indicate that this site may be consistently approaching design capacities during the summer season, to meeting design capacities on weekend days.

However, when combined with traffic counter data, estimated peak use is frequently above 100 percent on weekend days.

TABLE 24 MONTICELLO RESERVOIR RECREATION SITE USE PEAK DENSITY ESTIMATES

	Scenic Overlook	Highway 215 Boat Ramp	Highway 99 Boat Ramp	Recreation Lake Access Area	Highway 99 Informal Fishing Area ^a	Monticello Development Total
April						
Peak Capacity - Weekday	7%	92%	14%	7%	55%	35%
Peak Capacity - Weekend day	10%	145%	56%	20%	75%	61%
May						
Peak Capacity - Weekday	8%	80%	33%	7%	58%	37%
Peak Capacity - Weekend day	37%	235%	28%	46%	88%	87%
June						
Peak Capacity - Weekday	13%	55%	30%	45%	85%	46%
Peak Capacity - Weekend day	24%	205%	99%	95%	95%	104%
July						
Peak Capacity - Weekday	9%	32%	42%	4%	58%	29%
Peak Capacity - Weekend day	18%	87%	45%	32%	70%	50%
August						
Peak Capacity - Weekday	6%	85%	16%	2%	68%	35%
Peak Capacity - Weekend day	11%	115%	35%	26%	88%	55%
September						
Peak Capacity - Weekday	5%	25%	31%	8%	48%	23%
Peak Capacity - Weekend day	6%	40%	28%	8%	68%	30%
Total						49%
Average Peak Capacity - Weekday	8%	62%	28%	12%	62%	
Average Peak Capacity - Weekend day	17%	138%	49%	38%	81%	

^a .Drive-through traffic was frequently observed by recreation clerks stationed at the Highway 99 Informal Fishing Area. Spot count data for this site indicate that 0 to 1 vehicles were observed parked at the site approximately 90 percent of the time.

Perceptions of crowding can influence a person's enjoyment of a recreation site and can be a useful tool for managers when making decisions about whether a site can accommodate additional use. Table 25 provides a summary of user perceptions of crowding at Monticello Reservoir by access site. Crowdedness was rated on a scale from 1 (light) to 5 (heavy).

Overall, Monticello Reservoir respondents indicated generally low perceptions of crowdedness during the weekday (1.56 average). Additionally, Monticello Reservoir respondents indicated a generally moderate crowdedness rating for weekends (2.56 average weekend) and with a slightly higher average for holidays (2.93 average). The Highway 99 Boat Ramp received the highest crowdedness rating, overall. However, all of the sites received low to very moderate crowdedness ratings by interview respondents.

Fifty percent of waterfowl hunter survey respondents reported Monticello Reservoir as being moderately crowded, with other responses being distributed evenly among light to heavy.

TABLE 25 CROWDEDNESS RATINGS FOR MONTICELLO RESERVOIR RECREATION SITES ^a

Site	Crowdedness Rating	
	Average	Median
Scenic Overlook Park	2.08	2.00
Highway 215 Boat Ramp	2.42	2.50
Highway 99 Boat Ramp	2.70	3.00
Recreation Lake Access Area	2.05	1.00
Highway 99 Informal Fishing Area	1.90	1.00
Monticello Reservoir Total	2.31	2.00

^a Crowding at Project recreation sites was rated on a scale from 1 to 5, where a 1 equals “light” and a 5 equals “heavy”

5.2.2 PARR RESERVOIR

The capacity at which Parr Reservoir public access sites are being used was estimated for Cannon’s Creek and Heller’s Creek public access areas. Highway 34 primitive ramp does not have a substantial parking area and is mainly used by boaters accessing the upper portions of Parr Reservoir.

Results suggest that both Cannon’s Creek and Heller’s Creek Public Access Areas are being consistently used below their design capacities and can accommodate additional use (Table 26). An exception to this was observed for a weekend day in May where Cannon’s Creek peak estimates met design capacity.

TABLE 26 PARR RESERVOIR RECREATION SITE USE PEAK DENSITY ESTIMATES

	Cannon's Creek Public Access	Heller's Creek Public Access	Parr Development Total
April			
Peak Capacity - Weekday	30%	18%	24%
Peak Capacity - Weekend day	32%	16%	24%
May			
Peak Capacity - Weekday	45%	16%	31%
Peak Capacity - Weekend day	100%	58%	79%
June			
Peak Capacity - Weekday	35%	28%	32%
Peak Capacity - Weekend day	48%	34%	41%
July			
Peak Capacity - Weekday	18%	14%	16%
Peak Capacity - Weekend day	38%	32%	35%
August			
Peak Capacity - Weekday	27%	12%	20%
Peak Capacity - Weekend day	42%	54%	48%
September			
Peak Capacity - Weekday	10%	18%	14%
Peak Capacity - Weekend day	45%	18%	32%
TOTAL			33%
Average Peak Capacity - Weekday	28%	18%	
Average Peak Capacity - Weekend day	51%	35%	

Parr Reservoir interview respondents indicated generally low perceptions of crowdedness during the weekday (1.64 average), moderate crowdedness rating for weekends (2.25 average weekend) with slightly lower ratings for holidays (2.11 average). Lower crowdedness ratings for holidays is unusual, and could be due to the high availability of regional recreation opportunities.

Table 27 provides a summary of user perceptions of crowding at Parr Reservoir by access site. Both Cannon's Creek and Heller's Creek Public Access Areas received moderate crowdedness ratings, overall. Heller's Creek Public Access Area (2.31 average) was perceived as being slightly more crowded than Cannon's Creek Public Access Area (1.93 average).

Fifty-three percent of waterfowl survey respondents on Parr Reservoir indicated Parr Reservoir as being moderately crowded ("3" rating) for waterfowl hunting, with 33 percent of respondents

indicating a crowdedness rating of moderately heavy (“4” rating). Waterfowl focus group attendees indicated that there was over-crowding at the Enoree Waterfowl Management Area, and collectively rated that area as a “5” for crowdedness. Focus group attendees also indicated that Parr Reservoir, from the Monticello tailrace to the Hwy 34 boat ramp, was also moderately crowded (rated as a "4" on Saturday mornings).

Several options were suggested by Waterfowl Focus Group attendees to alleviate some of the crowding issues currently experienced at the Enoree Waterfowl Area. All of these options would need to be implemented by SCDNR and include: a SCDNR decision to categorize the Enoree Waterfowl Area as "Category 1" (currently "Category 2"); only allow a certain number of individuals to hunt the area at one time; require a hunting pass; only allow hunting on Wednesdays.

TABLE 27 CROWDEDNESS RATINGS FOR PARR RESERVOIR RECREATION SITES ^a

Site	Crowdedness Rating	
	Average	Median
Cannon’s Creek Public Access Area	1.93	2.00
Heller’s Creek Public Access Area	2.31	2.50
Parr Reservoir Total	2.07	2.00

^a Crowding at Project recreation sites was rated on a scale from 1 to 5, where a 1 equals “light” and a 5 equals “heavy”

5.3 USER PERCEPTIONS OF SITE CONDITIONS AND NEEDS

This section addresses user perceptions of recreation site conditions, and their recommendations for additional facilities and site improvements.

5.3.1 MONTICELLO RESERVOIR

Site Conditions. Monticello Reservoir recreation sites were considered to be in very good condition by respondents (Table 28). On a scale of 1 to 5 where a 1 is “poor” and a 5 is “excellent,” all of the recreation sites received a 4, or above. The Highway 215 Boat Ramp and Scenic Overlook Park received the highest condition ratings with scores approaching “excellent.” Overall, the sites received the highest condition ratings during weekdays, with an average of 4.44

for all of the sites. Weekends and holidays rated only slightly lower, with averages of 4.25 and 4.27, respectively.

Waterfowl hunter survey respondents⁶ considered Monticello Reservoir to be in “very good” condition, with an average condition rating of 4.17.

Need for Additional Facilities. Respondents were asked to indicate what, if any, additional facilities were needed at the site at which they were interviewed (Table 29). Approximately 57 percent of respondents indicated that the Monticello Reservoir recreation site at which they were interviewed was in need of additional facilities. Of those indicating a need for additional facilities, restrooms were identified as the most needed additional facility at Monticello Reservoir recreation sites, comprising approximately 70⁷ percent of the responses. This was particularly true for the Highway 215 Boat Ramp and the Highway 99 Informal Fishing Area, where 93 and 89 percent of respondents, respectively, indicated the need for restroom facilities. Picnic tables and shelters (18 percent of responses), lighting (16 percent of responses), and the addition of a fishing pier or dock (14 percent of responses) were also requested at Monticello Reservoir recreation sites. Individuals interviewed at the Scenic Overlook Park, the Recreation Lake Access Area and at the Highway 99 Boat Ramp had varying suggestions for additional facilities. At the Scenic Overlook Park, the addition of a fishing pier/dock and picnic tables/shelter was frequently requested. An additional parking area and picnic tables/shelter comprised many of the responses at the Recreation Lake Access Area. Additional lighting was frequently requested at the Highway 99 Boat Ramp. However, overall, the majority of respondents at the Highway 99 Boat Ramp and the Recreation Lake Access Area indicated that no additional facilities were needed. Not surprisingly, a variety of additional facilities were recommended at the Highway 99 Informal Fishing Area.

Although only 6 surveys were received from individuals who were waterfowl hunting on Monticello Reservoir, 3 of those respondents indicated that no additional facilities or improvements were needed for waterfowl hunting at Monticello Reservoir. Additional lighting, bathrooms, and a deeper boat landing was requested by the remaining three waterfowl survey

⁶ Eighteen total surveys were returned; of those, only six individuals indicated that they were waterfowl hunting.

⁷ Because many respondents provided more than one recommended facility, total responses add up to greater than 100 percent.

respondents. No improvements to Monticello Reservoir recreation sites were recommended during the Waterfowl Focus Group meeting.

Need for Improvements. Thirty-five percent of respondents indicated that additional improvements were needed at Monticello Reservoir. The Scenic Overlook Park received the highest response for additional improvement recommendations, 47 percent of respondents, and responses varied greatly (Table 30). Additional grills/tables and restroom improvements/year-round restroom access were the most frequently requested by respondents interviewed at Scenic Overlook Park. Dock/Pier improvements or repairs was the most frequently requested improvement at the Highway 215 Boat Ramp (23 percent). Respondents requesting facility improvements at the Highway 99 Boat Ramp most often indicated that restroom improvements/year-round access were needed. Benches/seating was requested most often at the Highway 99 Informal Fishing Area. Responses varied greatly for the Recreation Lake Access Area; however, most respondents (74 percent) indicated that no additional improvements were needed at this site.

As noted, 3 of the Monticello Reservoir waterfowl survey respondents indicated that no additional facilities or improvements were needed for waterfowl hunting at Monticello Reservoir. Additional lighting, bathrooms, and a deeper boat landing was requested by the remaining three waterfowl survey respondents. Additionally, no improvements to Monticello Reservoir recreation sites were recommended during the Waterfowl Focus Group meeting.

**TABLE 28 CONDITION RATINGS FOR
MONTICELLO RESERVOIR RECREATION SITES ^a**

SITE	CONDITION RATING	
	AVERAGE	MEDIAN
Scenic Overlook Park	4.42	5.00
Highway 215 Boat Ramp	4.44	5.00
Highway 99 Boat Ramp	4.17	4.00
Recreation Lake Access Area	4.00	4.00
Highway 99 Informal Fishing Area	4.24	5.00
Monticello Reservoir Total	4.30	5.00

^a Condition ratings on a scale from 1 “poor” to 5 “excellent”

TABLE 29 ADDITIONAL FACILITIES RECOMMENDED FOR MONTICELLO RESERVOIR RECREATION SITES

Site	Additional Facilities Recommended? - No	Additional Facilities Recommended? - Yes	n- Total Respondents	Bank Fishing Area	Boat Dock	Boat Launch	Camping Area	Fish Cleaning Station	Fishing Pier/Dock	Lighting	Parking Lot	Picnic Tables/Shelter	Restrooms	Signs and Information	Swimming Area	Trails	Trash Cans	RV Camping	Bilingual Signs	n – Total Respondents ^a
Scenic Overlook Park	38%	62%	132	2%	0%	2%	5%	7%	25%	12%	5%	31%	54%	2%	3%	5%	8%	2%	0%	59
Highway 215 Boat Ramp	31%	69%	134	0%	0%	2%	1%	1%	6%	15%	3%	7%	93%	0%	0%	0%	1%	0%	0%	88
Highway 99 Boat Ramp	58%	42%	106	0%	15%	9%	6%	9%	9%	24%	0%	6%	36%	0%	3%	3%	6%	3%	0%	33
Recreation Lake Access Area	70%	30%	61	8%	0%	0%	16%	8%	8%	8%	25%	33%	42%	0%	0%	8%	0%	0%	8%	12
Highway 99 Informal Fishing Area	10%	90%	21	5%	0%	0%	0%	16%	26%	21%	0%	42%	89%	5%	0%	5%	32%	0%	0%	19

^a Individuals that responded that additional facilities were needed at a particular recreation site may not have provided a recommendation on what type of facilities were needed. As such, fewer facility recommendation responses were gathered. Additionally, many individuals provided more than one recommendation. Therefore, facility recommendation percentages may equal greater than 100%.

TABLE 30 IMPROVEMENTS RECOMMENDED FOR MONTICELLO RESERVOIR SITES

Site	Improvements Recommended? - No	Improvements Recommended? - Yes	n- Total Respondents	Additional Tables/Grills	Repair/Improve Docks/Piers	Ice/Vending/Concessions	Restroom Improvements/Year-round Access	Benches/Seating	General Maintenance/Upkeep	Handicap Access	Electricity	Security	Lighting	Beach Area	Parking Area Improvements	Boat Launch Improvements	Water Fountains	Other	n - Total Respondents ^a
Scenic Overlook Park	53%	47%	132	16%	6%	2%	11%	6%	8%	2%	2%	3%	2%	5%	2%	0%	3%	21%	32
Highway 215 Boat Ramp	71%	29%	133	8%	23%	8%	5%	3%	3%	0%	0%	3%	15%	0%	3%	13%	3%	13%	39
Highway 99 Boat Ramp	69%	31%	106	3%	6%	0%	52%	0%	21%	0%	6%	3%	0%	0%	3%	0%	0%	6%	33
Recreation Lake Access Area	74%	26%	61	6%	0%	13%	19%	0%	13%	0%	6%	0%	0%	0%	0%	0%	0%	44%	16
Highway 99 Informal Fishing Area	67%	33%	21	0%	0%	0%	0%	29%	0%	0%	0%	0%	14%	0%	0%	0%	14%	43%	7

^a Individuals that responded that improvements were needed at a particular recreation site may not have provided a recommendation on what type of improvements were needed. As such, fewer improvement recommendation responses were gathered. Additionally, many individuals provided more than one recommendation. Therefore, percentages may equal greater than 100%.

5.3.2 PARR RESERVOIR

Site Conditions. In general, respondents interviewed at recreation sites on Parr Reservoir considered them to be in “good” to “very good” condition, regardless of day-type. On a scale of 1 to 5 where a 1 is “poor” and a 5 is “excellent”, Cannon’s Creek Public Access Area received a 3.95 and Heller’s Creek Public Access Area received a 3.81 (Table 31). Waterfowl hunter survey respondents⁸ considered Parr Reservoir to be in “average” condition, with an average condition rating of 2.58.

Need for Additional Facilities. Respondents were asked to indicate what, if any, additional facilities were needed at the site at which they were interviewed (Table 32). Seventy percent⁹ of respondents interviewed at Parr Reservoir recreation sites indicated that additional facilities are needed. Individuals most often requested the addition of a boat launch (37 percent of respondents). This was particularly true for Heller’s Creek Public Access Area, where 44 percent of respondents indicated the need for additional boat launching facilities. Additional restrooms (30 percent of respondents) and the addition of a boat dock (30 percent of respondents) were also commonly requested. The addition of a boat dock was most often requested at Cannon’s Creek Public Access Area.

Eighty percent of waterfowl survey respondents indicated that additional facilities or improvements are needed for waterfowl hunting at Parr Reservoir. Additional lighting (30 percent) and food for waterfowl (30 percent) were the most common requests received by waterfowl survey respondents. Other common facility requests included the addition of a dock (13 percent), the addition or repair of a boat ramp (10 percent) and the provision of stable Parr Reservoir levels (10 percent). Only one survey was received from a respondent hunting at the Enoree River Waterfowl Management Area. This respondent recommended additional trash cans at this site.

Waterfowl Focus Group attendees indicated that maintaining a Parr Reservoir level of 260’ or above would be preferable, particularly during December and January. Attendees also indicated that they would like for SCE&G to maintain the Highway 34 Ramp in a “primitive” state. The

⁸ Forty-three total surveys were returned; of those, forty individuals indicated that they were waterfowl hunting on Parr Reservoir.

⁹ Because many respondents provided more than one recommended facility, total responses add up to greater than 100 percent.

Waterfowl Focus Group attendees did not recommend any additions or improvements at Cannon’s Creek or Heller’s Creek public access areas. Focus Group attendees generally noted that waterfowl hunting opportunities could possibly be improved in the Project area through the creation of an additional waterfowl habitat/resting area (in particular, an area upstream of the Enoree Waterfowl Area, along the Enoree River).

Need for Improvements. Thirty-one percent of respondents indicated that improvements are needed at Parr Reservoir recreation sites. Boat ramp upgrades or improvements was most commonly requested by respondents (26 percent), and most often requested by those individuals interviewed at Heller’s Creek Public Access Area (Table 33). Improved or expanded restroom facilities was also commonly requested among respondents interviewed at both Cannon’s Creek and Heller’s Creek public access areas. Respondents commonly requested a courtesy dock or fishing pier at Cannon’s Creek Public Access Area.

The Enoree River Bridge informal access area (non-Project) was noted as being highly utilized by Waterfowl Focus Group attendees. Attendees noted that it is difficult to launch a boat at this site and attendees recommended gravel or other boat launching improvements.

TABLE 31 CONDITION RATINGS FOR PARR RESERVOIR RECREATION SITES ^a

Site	Condition Rating	
	Average	Median
Cannon’s Creek Public Access Area	3.95	4.00
Heller’s Creek Public Access Area	3.81	4.00
Total	3.90	4.00

^a Condition ratings on a scale from 1 “poor” to 5 “excellent”

TABLE 32 ADDITIONAL FACILITIES RECOMMENDED FOR PARR RESERVOIR ACCESS SITES

Site	Additional Facilities Recommended? - No	Additional Facilities Recommended? - Yes	n- Total Respondents	Additional Access Road	Bank Fishing Area	Boat Dock	Boat Launch	Camping Area	Fishing Pier/Dock	Lighting	Parking Lot	Picnic Tables/Shelter	Restrooms	Signs and Information	Swimming Area	Trash Cans	Other	n – Total Respondents ^a
Cannon’s Creek Public Access Area	32%	68%	147	6%	8%	34%	33%	2%	23%	21%	0%	9%	29%	2%	6%	0%	3%	100
Heller’s Creek Public Access Area	26%	74%	80	5%	2%	24%	44%	0%	20%	29%	2%	8%	32%	0%	3%	2%	2%	59

^a Individuals that responded that additional facilities were needed at a particular recreation site may not have provided a recommendation on what type of facilities were needed. As such, fewer facility recommendation responses were gathered. Additionally, many individuals provided more than one recommendation. Therefore, facility recommendation percentages may equal greater than 100%.

TABLE 33 IMPROVEMENTS RECOMMENDED FOR PARR RESERVOIR ACCESS SITES

Site	Improvements Recommended? - No	Improvements Recommended? - Yes	n- Total Respondents	Restroom Improvements	Repair/Improve Boat Ramps	Dredging/Low Water Level	Benches/Seating	Electricity	Lighting	Swimming/Beach Area	Courtesy dock/Fishing Piers	Grills	Other	n – Total Respondents ^a
Cannon’s Creek Public Access Area	68%	32%	100	25%	25%	6%	3%	3%	3%	3%	16%	6%	9%	32
Heller’s Creek Public Access Area	69%	31%	59	28%	50%	11%	0%	6%	6%	0%	0%	0%	0%	18

^a Individuals that responded that improvements were needed at a particular recreation site may not have provided a recommendation on what type of improvements were needed. As such, fewer improvement recommendation responses were gathered. Additionally, many individuals provided more than one recommendation. Therefore, percentages may equal greater than 100%.

6.0 CONCLUSIONS

The objective of this study was to identify current and potential recreational use, opportunities, and needs at the Project. This was accomplished by identifying and inventorying existing Project recreation facilities, identifying patterns of recreation use and user needs and preferences at each site, and estimating future recreational use and needs at the Project over the anticipated new license term. In the following sections, study results are summarized in the context of the overall study goals and objectives and are intended to facilitate recreation planning and management discussions.

6.1 CHARACTERIZATION OF EXISTING USE

The Project is surrounded by a number of regionally and nationally recognized recreation resources; yet, study results indicate that the Project is well used, providing an estimated 152,709 recreation days during the 2015 recreation season. This is undoubtedly due to the unique recreation atmosphere created by the Project, which includes riverine and lacustrine environments, waterfowl hunting areas, and areas that support a number of day-use activities such as picnicking, hiking and beach swimming. The Project supports eight public access sites and two waterfowl hunting areas, which are well distributed around the Project area. Survey results suggest that the sites are in good to very good condition, overall. Results specific to each development are provided below.

6.1.1 MONTICELLO RESERVOIR

Five public access sites are available on Monticello Reservoir and were included in this study. Study results indicate that site users are predominately local residents, traveling to the Project from the surrounding four counties (Fairfield, Lexington, Newberry and Richland). Visitors indicated a variety of reasons why they chose to recreate on Monticello Reservoir, with most noting that they chose it due to its proximity to their home or because it provided good fishing opportunities. It was shown that visitors tend to recreate at Monticello Reservoir in parties of between 2 and 3 people, with an average length of stay of approximately 3.5 hours.

Individuals using Monticello Reservoir recreation sites primarily engage in water-based recreation activities. Boat fishing was the most popular activity observed, followed by bank and pier fishing. Boat fishing, pier fishing and bank fishing occur fairly consistently across day types,

with bank fishing increasing slightly on weekends, and boat fishing decreasing slightly on holidays. Canoeing and kayaking was shown to increase significantly on holidays. Respondents indicating that they recreated on Monticello Reservoir islands primarily reported that they did so to bank fish, with camping also being reported as popular island activities.

All five of the Monticello Reservoir recreation sites provide angler access through boat launches or through bank or pier fishing, supporting the demand for fishing access. Not surprisingly, boat fishing was the most popular activity reported at Highway 99 and Highway 215 boat ramps, with bank fishing being the most popular activity reported at the Highway 99 Informal Fishing Area. Bank fishing and pier fishing were equally popular at the Scenic Overlook. The Highway 215 boat ramp was also shown to support a significant amount of bank fishing, at approximately 17 percent of the reported site use. The Recreation Lake primarily supports day-use activities such as swimming, picnicking, and sightseeing. However, boat fishing still accounted for approximately 30 percent of the reported use at the Recreation Lake.

Monticello Reservoir was also shown to support significant recreational use during early crappie season in 2016 (February 1 through March 31). Visitation data indicates that March weekdays comprise the greatest amount of use during this period, with visitors primarily recreating at the bank and pier fishing sites of Highway 99 Informal Fishing Area and the Scenic Overlook.

Study results indicate that recreation sites on Monticello Reservoir receive very similar levels of use, with most of the use occurring on the weekends. Data indicates that the Scenic Overlook accommodated the greatest numbers of patrons over the course of the 2015 study season, followed by the Highway 99 Informal Fishing Area. Additional data provided by spot counts and clerk observations indicates that use results for the Highway 99 Informal Fishing Area may be elevated, as this site was observed to receive a significant amount of drive-through traffic. This is also depicted through site density data which, in itself, indicates that the Highway 99 Informal Fishing Area is approaching site capacity, while this result is not supported by spot count data. Drive-through traffic also likely contributes to the high site density estimates calculated at the Highway 215 Boat Ramp. Data alone estimates peak use frequently above 100 percent capacity on weekend days. However, this site received very moderate crowdedness ratings (2.42), and also has a double entrance/exit which facilitates lake viewing and drive-through visits. The Highway 99 Boat Ramp, which received the highest crowdedness rating out of all the Monticello Reservoir sites (2.93) had low to moderate site density ratings. However, this site has one

entrance/exit road, and is not directly visible from, and adjacent to, the main road, which may otherwise facilitate a large number of drive-through visits. Site visitation during the 2015 recreation season may also be slightly elevated due to the construction of additional nuclear electric-generating units at the V.C. Summer Nuclear Station, located adjacent to Monticello Reservoir. Site expansion has resulted in the creation of an additional 3,000 to 3,500 jobs at that site.

Overall, perceptions of crowding at Monticello Reservoir sites are low to moderate and site conditions were rated very high, with no Monticello Reservoir recreation site receiving below a 4¹⁰ rating. Restrooms were indicated as being the most needed additional facility at Monticello Reservoir, which is very typical for recreation use studies. Other facility and amenity recommendations included picnic tables, shelters, lighting, and fishing piers or docks.

The five public access sites on Monticello Reservoir were surveyed for compliance with ADA guidelines. The Highway 215 Boat Ramp and Highway 99 Boat Ramp are paved; however neither site contains designated ADA compliant parking spaces. Parking areas at the Scenic Overlook Park, Recreation Lake Access Areas, and Highway 99 Informal Fishing Area are gravel. The Recreation Lake Beach Access Area contains designated ADA parking; however, as noted, neither of the two designated spaces are paved. Access trails to the facilities and amenities offered at the various Lake Monticello access sites (i.e. picnic areas, camping areas, and bank fishing areas) are unpaved. The Scenic Overlook provides ADA compliant restrooms; however no other permanent restroom facilities at the Monticello Reservoir sites are entirely ADA compliant. This is primarily due to the lack of paved access to restroom facilities. Other common deficiencies with restroom facilities include the inability to operate restroom doors with a closed fist and thresholds greater than 0.25 inches high. The general layout of restrooms and stalls are ADA compliant across all of the sites, with the exception of the Highway 99 Boat Ramp where the lavatories do not have enough clearance beneath them. Boat docks located at the Highway 215 and Highway 99 Boat Ramps are not ADA compliant due to their ramp slopes, missing transition plates between the ramp and dock, lack of two-inch curbs at the dock edges, and lack of paved access. The fishing pier at the Scenic Overlook Park would not be considered ADA compliant due to the lack of paved access, lack of sections of railing that are 34 inches in height, and lack of two-inch curbs around the outside ramp edges of the pier. While the Monticello

¹⁰ On a scale of 1 to 5 where a 1 is “poor” and a 5 is “excellent.”

Reservoir recreation sites are not entirely ADA compliant in their current state, the addition of paved surfaces to the various facilities and amenities offered would eliminate many of the current barriers.

6.1.2 PARR RESERVOIR

Two public boat launch sites, one primitive boat launch, and two waterfowl sub-impoundments are available within the Project boundary at the Parr development. Respondents interviewed at Parr sites were primarily local, with a large representation from Newberry County (over 75 percent). Over half of the individuals interviewed noted that they chose to recreate at Parr Reservoir due to the good fishing opportunities. It was shown that visitors tend to recreate at Parr Reservoir with one other person, on average, with an average length of stay of approximately 3.5 hours.

As with Monticello Reservoir, individuals recreating at Parr Reservoir recreation sites during the recreation season, from April to September, primarily engage in water-based recreation activities. Boat fishing was the most popular activity observed, accounting for 69 percent of the use at Cannon's Creek Public Access Area and 86 percent of the use at Heller's Creek Public Access Area. Bank fishing was the second most popular activity at the Parr development, accounting for 16 percent of the use at Cannon's Creek Public Access Area. Boat fishing increased slightly during weekdays as compared to weekends and holidays. Conversely, bank fishing increased on the weekends and holidays. For holidays, visitors reported some increased activities for tent/vehicle camping, as compared to the non-holiday periods.

Study results indicate that Cannon's Creek Public Access Area receives the greatest amount of use, followed by Heller's Creek Public Access Area and the Highway 34 primitive ramp. Data collected at the Enoree Bridge Informal Access Area, located outside of the Project boundary, indicates that it receives approximately 5 percent of the use experienced at the three SCE&G maintained access areas on Parr Reservoir.

Density estimates calculated for Cannon's and Heller's Creek Public Access Areas suggest that these areas are consistently being used below their design capacities and can accommodate additional use, with the exception of peak hours during the occasional weekend day. This was also reflected in the low to moderate crowdedness ratings for these sites.

User perceptions of site conditions at Cannon's and Heller's Creek Public Access Areas ranged from good to very good. Additional boat launching or docking facilities were some of the most requested additional facilities, along with lighting and additional restrooms.

The three public access on Parr Reservoir were surveyed for compliance with ADA guidelines. All three sites have gravel lots and none of the sites contain ADA compliant parking spaces. None of the sites have paved access to bathrooms, picnic areas, bank fishing areas, or camping areas. In addition to the lack of paved access, the bathrooms do not comply with ADA guidelines for toilet seat height, entrance threshold heights, or the ability to operate doors with a closed fist. While the Parr Reservoir recreation sites are not currently ADA compliant, the addition of paved surfaces at the site would eliminate many of the current barriers.

6.1.3 WATERFOWL MANAGEMENT AREAS

Goal 2 of this study is to characterize existing use of waterfowl areas and SCE&G recreation lands by hunters during designated hunting seasons. Data was gathered by employing several different data collection methods: a waterfowl focus group; vehicle counts at recreation sites/waterfowl areas; mail-in questionnaires specific to hunting use at the Project; and, SCDNR waterfowl use data. Collectively, the data helps to characterize existing use of lands and waters designated for waterfowl hunting within the Project boundary.

Results from surveys distributed on vehicles parked Monticello Reservoir recreation sites during Canada Geese hunting season indicated that the majority of hunters are local residents who prefer to hunt on Saturday mornings. Several survey respondents noted that they prefer Monticello as it is less crowded than other areas in the vicinity, although they noted that the number of people recreating on Monticello reservoir has increased in recent years.

Results from surveys distributed at Parr Reservoir indicate that the majority of hunters are residents of the surrounding counties, primarily Richland and Lexington, who hunt on Saturday mornings. Approximately one-half of the respondents cited crowding as an issue, noting that there were too many hunters on Parr Reservoir. Similarly, waterfowl focus group attendees noted that they prefer to hunt during weekday mornings, as there are less hunters on the Reservoir. Waterfowl focus group attendees also emphasized that they would prefer that the Highway 34 Boat Ramp remain a primitive site.

Data regarding recreation use at the Enoree River and Broad River Waterfowl Management Areas was primarily obtained from SCDNR and waterfowl focus group attendees. Traffic counter data from the Enoree River Waterfowl Management Area indicates that it is well used. Crowding at this site was a primary concern among waterfowl focus group attendees. Several attendees suggested that this site be re-categorized as “Category I”, or that hunting pressure be otherwise limited by SCDNR management actions. Crowding is not an issue for the Broad River Waterfowl Management Area as this site is a draw-hunt site.

6.2 CHARACTERIZATION OF FUTURE USE

As described by Cordell et al. (2004), population growth in the surrounding counties will likely be the primary contributing factor to future use of Project recreation facilities. Study data shows that site users are primarily local residents that do not have shoreline access via private residences. As such, public access areas at the Project generally serve as community parks rather than tourist destinations. It is possible that the V.C. Summer Nuclear Station expansion and associated job growth is contributing to increased recreation use of Project facilities. Once the expansion is complete, it is unknown whether any increases in recreation that may be currently taking place will subside. Waterfowl hunters, both through the focus group sessions and target surveys noted significant increases in waterfowl hunting, and associated crowding, at the Project in recent years. Interestingly, while the majority of recreators on Parr Reservoir during the 2015 peak recreation season were from Newberry County, the majority of Parr Reservoir waterfowl survey respondents were from Richland and Lexington counties. As Richland and Lexington counties are anticipated to have the greatest growth rates from 2015 to 2030, one may also surmise that waterfowl hunting in the Project area may also increase.

It is projected that the population of the surrounding counties will increase by 12.9 percent from 2015 to the year 2030. Fishing and boating are anticipated to remain the dominant recreation activities at Monticello Reservoir sites, and boat fishing and bank fishing are anticipated to remain the dominant recreation activities at Parr Reservoir sites.

There are many uncertainties when predicting future recreation use, including new technologies, shifting demographic patterns, and economic growth. Study data shows that Project facilities are well used, and in good condition. While data indicates that some sites may be used at rates approaching or at capacity during peak periods, there are alternative sites in the vicinity that

provide similar amenities with lower density ratings. Moreover, crowdedness ratings for all Project facilities were shown to be low to moderate. Data related to the need for additional facilities and amenities, as summarized in this report, will be assessed in coordination with stakeholders on the Recreation and Lake & Land Management RCG. Project stakeholders will collectively work to develop appropriate measures to enhance Project recreation resources over the anticipated license term. These measures will be included in a Settlement Agreement and proposed Recreation Management Plan to be filed with the Final License Application.

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APPENDIX A

PARR RECREATION USE AND NEEDS STUDY PLAN

RECREATION USE AND NEEDS STUDY PLAN

**PARR HYDROELECTRIC PROJECT
(FERC No. 1894)**

Prepared for:

**South Carolina Electric & Gas Company
Cayce, South Carolina**

Prepared by:

Kleinschmidt

Lexington, South Carolina
www.KleinschmidtUSA.com

January 2014
Revised October 2014

RECREATION USE AND NEEDS
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RECREATION USE AND NEEDS STUDY PLAN

PARR HYDROELECTRIC PROJECT (FERC No. 1894)

SOUTH CAROLINA ELECTRIC & GAS COMPANY

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RECREATION USE AND NEEDS STUDY PLAN

PARR HYDROELECTRIC PROJECT (FERC No. 1894)

SOUTH CAROLINA ELECTRIC & GAS COMPANY

1.0 INTRODUCTION

South Carolina Electric & Gas Company (SCE&G) is the Licensee of the Parr Hydroelectric Project (FERC No. 1894) (Project). The Project consists of the Parr Hydro Development and the Fairfield Pumped Storage Development. Both developments are located along the Broad River in Fairfield and Newberry Counties, South Carolina.

The Parr Hydro Development forms Parr Reservoir along the Broad River. The Development consists of a 37-foot-high, 200-foot-long concrete gravity spillway dam with a powerhouse housing generating units with a combined licensed capacity of 14.9 MW. Parr Hydro operates in a modified run-of-river mode and normally operates to continuously pass Broad River flow. The 13-mile-long Parr Reservoir has a surface area of 4,400 acres at full pool and serves as the lower reservoir for pumped-storage operations.

The Fairfield Pumped Storage Development is located directly off of the Broad River and forms the 6,800-acre upper reservoir, Monticello Reservoir, with four earthen dams. As noted, Parr Reservoir serves as the lower reservoir for pumped storage operations. The Fairfield Development has a licensed capacity of 511.2 MW and is primarily used for peaking operations, reserve generation, and power usage.

2.0 PURPOSE OF THE STUDY

The Project is currently involved in a relicensing process which involves cooperation and collaboration between SCE&G, as licensee, and a variety of stakeholders including state and federal resource agencies, state and local government, non-governmental organizations (NGO), and interested individuals. The collaboration and cooperation is essential to the identification of and treatment of operational, economic, and environmental issues associated with a new

operating license for the Project. SCE&G has established several Technical Working Committees (TWC's) with members from among the interested stakeholders with the objective of achieving consensus regarding the identification and proper treatment of these issues in the context of a new license.

As a part of this process, SCE&G is proposing to perform an assessment of existing and future recreational use, opportunities, and needs for the Project. The assessment is designed to provide information pertinent to the current and future availability and adequacy of SCE&G owned and managed recreation sites and specific informal recreation areas at Monticello Reservoir and the Parr Reservoir. The overall study plan objective is to identify current and potential recreational use, opportunities, and needs at the Project by addressing the following goals and objectives:

Goal 1: *Characterize the existing recreational use of SCE&G's recreation sites on Monticello Reservoir and Parr Reservoir. This will be accomplished by meeting the following objectives:*

- i. Identify recreation points, inventory the services and facilities offered at each, and assess the general condition of each site (including whether the site provides barrier free access).
- ii. Identify the patterns of use at each site (type, volume, and daily patterns of use).

Goal 2: *Characterize existing use of waterfowl areas (Broad River Waterfowl Area, Enoree River Waterfowl area) and SCE&G recreation lands by hunters during designated hunting seasons. This will be accomplished by meeting the following objectives:*

- i. Identify the patterns of use within the Project boundary (type, volume, and daily/seasonal patterns of use).

Goal 3: *Identify future recreational needs relating to public recreation sites on Monticello Reservoir and Parr Reservoir. This will be accomplished by meeting the following objectives:*

- i. Identify existing user needs and preferences, including perceptions of crowding at recreation sites.
- ii. Estimate future recreational use of existing recreation sites.
- iii. Identify future needs for new recreation sites and facilities.

3.0 STUDY AREA

SCE&G designated recreation sites and informal recreation areas on Monticello Reservoir (Figure 1) and Parr Reservoir (Figure 2) that will be included in this assessment include the following:

TABLE 1 RECREATION SITES TO BE ASSESSED

MONTICELLO RESERVOIR RECREATION SITES & INFORMAL AREAS		PARR RESERVOIR RECREATION SITES & INFORMAL AREAS	
1.	Scenic Overlook (SCE&G-maintained portion)	1.	Cannon's Creek Boat Ramp
2.	Hwy 215 Boat Ramp	2.	Heller's Creek Boat Ramp
3.	Hwy 99 Boat Ramp	3.	Broad River Waterfowl Area (vehicle counter only)
4.	Recreation Lake Access Area	4.	Hwy 34 Boat Ramp (vehicle counter only)
5.	Informal fishing area, east side of Hwy 99	5.	Enoree River Waterfowl Area (vehicle counter only)
		6.	Enoree River Bridge Informal Access Area (vehicle counter only)



FIGURE 1 MONTICELLO RESERVOIR RECREATION STUDY SITES

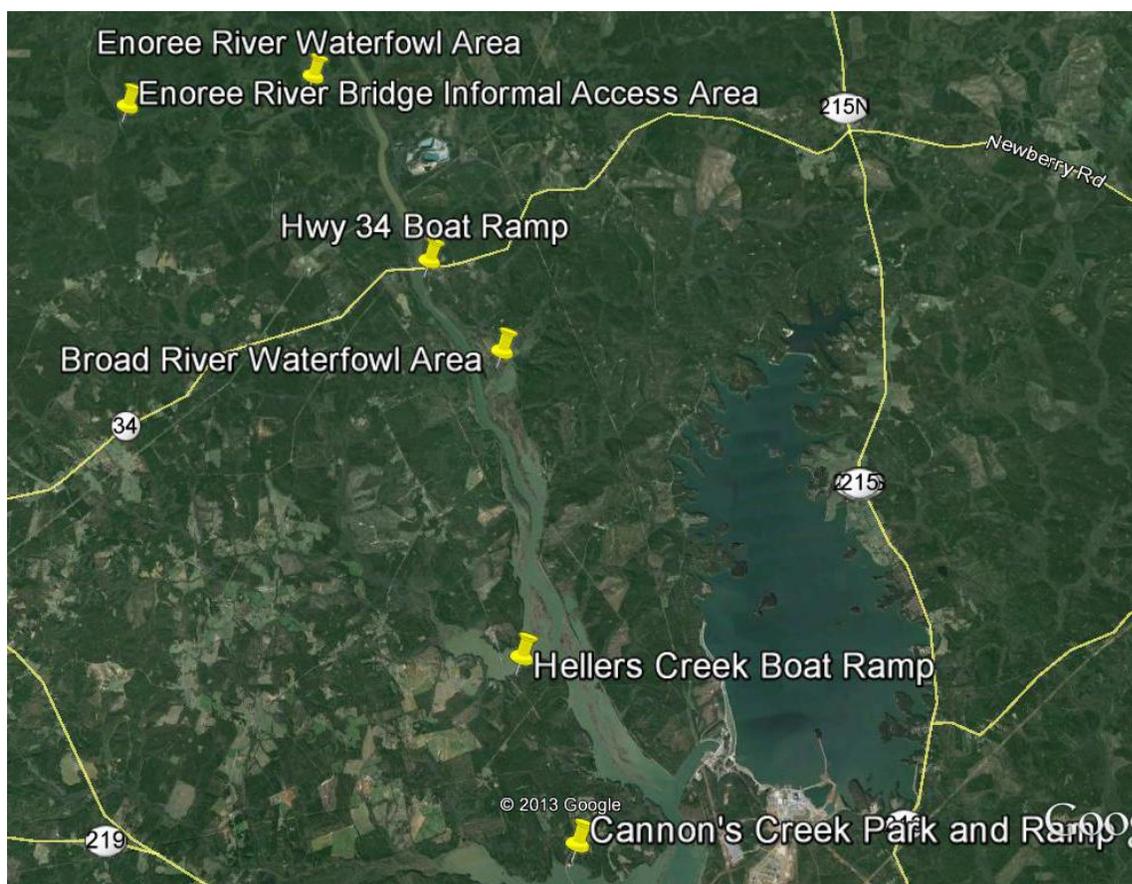


FIGURE 2 PARR RESERVOIR RECREATION STUDY SITES

4.0 STUDY SEASON

Study seasons will vary by study area based upon current knowledge of use patterns. Study seasons should capture specific seasonal activities, including hunting during legal seasons and on-water recreational use during the peak season (typically defined as Memorial Day to Labor Day). As hunting season dates vary annually based upon SCDNR board decisions, only approximate date ranges for specific targeted mail-in survey activities are provided within this study plan. Exact dates for waterfowl survey activities will be determined when study season dates are published, anticipated being mid-summer 2014. Study season specifics are further described below.

4.1 MONTICELLO RESERVOIR

Primary interview activities will occur from April 1 through Labor Day, 2015. Additional interviews will be conducted from February 1 through March 31, 2016 in order to capture recreational activity on the Reservoir during early crappie season. Specific targeted survey activities with mail-in surveys, as described in Section 5.5, will occur during the Canada Geese hunting season (approximately September 1 through September 30, depending on yearly SCDNR approved seasons).

4.2 PARR RESERVOIR

Primary interview activities, as described in Section 5.0, will occur from April 1 through Labor Day, 2015, to encompass turkey hunting season, as well as the peak recreation season. Specific targeted survey activities with mail-in surveys, as described in Section 5.5, will occur during Migratory Waterfowl Seasons, including Canada Geese hunting season (approximately September 2015 through January 2016, depending on yearly SCDNR approved seasons).

5.0 DATA COLLECTION METHODS

A variety of data collection techniques will be used to obtain the information necessary to meet the study objectives. Table 2 identifies the information needed to address each objective and the data collection methods to be used. Both primary and secondary data will be utilized. Primary data will entail site inventories, user counts, and use surveys (exit interviews). Secondary data will include U.S. Bureau of Census data, the South Carolina Statewide Comprehensive Outdoor Recreation Plan (SCORP), SC Recreation Participation & Preference Study, and other relevant, readily available literature. Additional input will be solicited from the Lake & Land Management and Recreation Resource Conservation Group (RCG), Recreation TWC, and target "focus groups" of especially knowledgeable individuals, offering knowledge of the recreation resources and needs of the lake and river.

TABLE 2 RECREATION USE AND NEEDS STUDY PLAN OBJECTIVES AND EFFORTS

OBJECTIVES	INFORMATION NEEDED	SOURCE
<i>Goal 1: Characterize existing recreational use of recreation sites on Monticello Reservoir and the Parr Reservoir</i>		
Identify formal recreation sites, inventory the services and facilities offered at each, and assess the general condition and ADA compliance of each site	<ul style="list-style-type: none"> • Physical inventory of all boat ramps, grills, shelters, restrooms, parking capacity, etc., at each site • General assessment of site condition to include maintenance, basic rehabilitation needs, etc. • Visitors' assessment of site conditions • Identification of activities that occur at each site • ADA compliance assessment 	<ul style="list-style-type: none"> • Recreation Site Inventory • Survey of Recreation Site Users
Identify the patterns of use at each site (type, volume, and daily patterns of use)	<ul style="list-style-type: none"> • Utilize vehicle counts as an estimation of people • Estimate of # people/vehicle • Estimate of # vehicles/site • Parking capacity 	<ul style="list-style-type: none"> • Traffic Counter Data • Surveyor Counts of Vehicles at Recreation Sites • Survey of Recreation Site Users - # of people per vehicle and length of visit • Recreation Site Inventory - # of parking spaces • County data from Scenic Overlook

OBJECTIVES	INFORMATION NEEDED	SOURCE
<i>Goal 2: Characterize existing use of waterfowl areas (Broad River Waterfowl Area, Enoree River Waterfowl area) and SCE&G recreation lands by hunters during designated hunting seasons.</i>		
Identify the patterns of use within the Project boundary (type, volume, and daily/seasonal patterns of use).	<ul style="list-style-type: none"> • Estimation of # hunters/site or waterfowl area 	<ul style="list-style-type: none"> • Counts of Vehicles at Recreation Sites/waterfowl areas • Mail-in questionnaire specific to hunting use at the Project • SCDNR waterfowl use data • SCDNR hunting permit data

OBJECTIVES	INFORMATION NEEDED	SOURCE
<i>Goal 3: Identify future recreational needs relating to public recreation sites on Monticello Reservoir and Parr Reservoir</i>		
Identify existing user needs and preferences, including perceptions of crowding at recreation sites	<ul style="list-style-type: none"> • User preferences and opinions of needs and crowding at sites • Condition assessment 	<ul style="list-style-type: none"> • Survey of Recreation Site Users • Recreation Site Inventory
Estimate future recreational use of existing recreation sites	<ul style="list-style-type: none"> • Current inventory and use data from Goals 1 and 2 • Population projections for the project area • Recreational use trends 	<ul style="list-style-type: none"> • Results of Goals 1 and 2 • U.S. Bureau of Census Data • SC Division of Research & Statistics (Budget and Control Board) • SCORP, SC Recreation Participation & Preference Study, or other readily available literature
Identify future needs for new recreation sites and facilities	<ul style="list-style-type: none"> • Population projections • Recreation use trends • "focus group" (stakeholders) knowledge of recreation resources and needs 	<ul style="list-style-type: none"> • SC Div. of Research & Statistics • SCORP, SC Recreation Participation & Preference Study, Palmetto Conservation Foundation trail use data, or other literature • Recreation TWC and Lake and Land Management & Recreation RCG

The capacity, availability, and overall condition of existing recreation sites will be assessed through review of existing information and an on-site inventory (Section 5.1). Recreational use of SCE&G's public recreation sites (Table 2) during the appropriate recreation season (as described in 4.0) will be estimated using a combination of data including traffic count, survey data, spot counts, and additional collection methods as described in Section 5.2, 5.3, 5.4, and 5.5. Methods for estimating recreational use are described in Section 6.0.

5.1 RECREATION SITE INVENTORY

Data on the types of amenities, activities supported, and the parking capacity of recreation sites at the Project, and the land area each site encompasses will be obtained from two sources. First, existing information regarding recreation sites such as FERC Form 80's and existing GIS data layers will be referenced. Second, a site visit will be made to collect data on the type, number, and size of facilities (restrooms, parking areas, boat ramps, picnic shelters and tables, etc.) located at each site. The general condition of recreation facilities will be recorded along with a qualitative assessment of whether the site is considered "barrier free". A copy of the inventory form is provided in Appendix A.

Upon completion of the inventory, all data will be uploaded into a database; anticipated to be a GIS database. The database will be structured so that it can be used in a variety of formats (brochure, maps, web pages, etc.) and can be updated as recreation sites are modified, added, or changed in any way.

5.2 TRAFFIC COUNTS

Traffic counters will be installed to record the number of vehicles that enter and exit the public recreation areas. Traffic count data will be collected for an entire year in order to capture the various hunting seasons. On Monticello Reservoir, traffic counters will be installed at the lake access point of the Scenic Overlook, the Hwy 215 Boat Ramp, the Hwy 99 Boat Ramp, Recreation Lake Access Area, and the Hwy 99 informal fishing area. At Parr Reservoir, traffic counters will be installed at Cannon's Creek Boat Ramp, Heller's Creek Boat Ramp, Broad River Waterfowl Area, Hwy 34 Boat Ramp, Enoree River Waterfowl Area, and the Enoree River Bridge informal area.

5.3 PUBLIC RECREATION AREA VISITOR EXIT INTERVIEWS

The preferences and perceptions of people using SCE&G's recreation sites and informal areas are important inputs in management decisions regarding the adequacy and availability of existing recreation sites. Information from recreation site users will be obtained via an onsite survey from April 1 through Labor Day, 2015, and from February 1 through March 31, 2016, on Monticello Reservoir and from April 1 through Labor Day, 2015, for Parr Reservoir.

Exit surveys will be administered to collect user characteristics (origin, gender, age, group size, etc.), the type of land-based and water-based recreation activities individuals are participating in, length of stay, perceptions of crowdedness, and conditions of recreation sites at the Project. Visitor demographic information will also be collected. Surveys will be conducted at the following locations:

Monticello Reservoir

- Scenic Overlook
- Hwy 215 Boat Ramp
- Hwy 99 Boat Ramp
- Recreation Lake Access Area
- Hwy 99 informal Fishing Area

Parr Reservoir

- Cannon's Creek Boat Ramp
- Heller's Creek Boat Ramp

The data collected will be used to provide a general pattern of recreation use and assist in the development of recreation use estimates at access sites. The data will also provide recreation user inputs on "crowdedness" and potential facility needs. The survey will be pre-tested in the field prior to implementation and revisions will be incorporated, as necessary. If any significant revisions to the survey or study protocol are deemed necessary subsequent to field pre-testing, the TWC will be notified.

Two survey versions will be implemented – one for Monticello Reservoir and one for Parr Reservoir. The two survey versions will be very similar to each other and will contain similar questions. Draft questionnaires are provided in Appendix B.

A draft sampling plan (Appendix C) has been prepared in consultation with the TWC utilizing stratified random sampling in order to complete at least 30 days of interviewing at each recreation site. Sampling days are made up of weekends, weekdays and holidays. Weekends will be sampled at a greater rate than weekdays, to account for the heavier use that typically occurs during those periods. Moreover, all major national holidays that fall within the recreation season have been included in the sampling plan (i.e., Memorial Day weekend, July 4th weekend, and Labor Day weekend)(Table 3). Furthermore, as the sampling season approaches, the TWC will be consulted on the potential for including special event days with the holidays.

TABLE 3 LIST OF HOLIDAYS TO BE INCLUDED IN THE 2015 RUNS EXIT INTERVIEW SAMPLING PLAN

DATE	HOLIDAY
May 23, 2015	Saturday before Memorial Day
May 24, 2015	Sunday before Memorial Day
May 25, 2015	Memorial Day
July 3, 2015	Friday before Independence Day
July 4, 2015	Independence Day
July 5, 2015	Sunday after Independence Day
September 5, 2015	Saturday before Labor Day
September 6, 2015	Sunday before Labor Day
September 7, 2015	Labor Day

All survey clerks will be trained thoroughly as a means of quality control. Survey clerks will be provided with detailed information on the study schedule, appropriate materials to aid in data collection, and direction on appropriate interviewing techniques and attire. Interviewers will also be provided with an incentive for survey respondents to complete the survey.

5.4 SPOT COUNTS

Spot counts will be conducted at the public recreation sites identified in Section 5.3 once per interview period, concurrent with exit interviews. Specifically, spot counts will document the number of visitors and/or vehicles present at that visit and help to characterize site use.

Information recorded during spot counts will include: date, time, and weather; amount of vehicle and vehicle/trailer parking capacity in use; number and type of activities observed at the site; and state license plate data. Spot count data will be used in parallel with traffic counter data.

5.5 ADDITIONAL USER DATA COLLECTION EFFORTS

Waterfowl hunting typically occurs during the fall and winter months. Waterfowl hunters represent a unique group of users whose preferences and perceptions may differ from those using recreation sites during the summer months. The preferences and perceptions of waterfowl hunters will be identified through use of a panel of waterfowl hunters.

Kleinschmidt will work with the Recreation TWC to identify waterfowl organizations whose hunters use the Project. A panel will be assembled from willing participants of the respective organizations. Should not enough participants be available from the organizations, additional individual hunters may be sought out to serve on the panel. A small group of hunters will be invited to participate in a group meeting, similar to a focus group, to identify the opportunities and needs of waterfowl hunters using Project access areas. The information collected will be similar to that of the access site survey. Kleinschmidt will recruit the hunters, develop a meeting format and materials, and will conduct the meeting. It is anticipated that the meeting will occur during the waterfowl hunting season.

Additionally, mail-in surveys similar to the access site survey will be distributed at the Broad River¹ and Enoree River Waterfowl Areas, on Parr Reservoir during waterfowl hunting season. On Monticello Reservoir, mail-in surveys will be distributed on vehicles parked at the Hwy 215 boat ramp and the Hwy 99 boat ramp during Canada Geese season. The study seasons for Monticello Reservoir and Parr Reservoir, as discussed in Section 4.0, will capture the turkey hunting season through exit interview activities.

Representation of those utilizing the Project during local fishing tournaments are anticipated to be represented during access site exit interviews, as registration, check-in and weigh-in typically occurs at access areas.

¹ In lieu of distributing mail-in surveys on parked vehicles at the Broad River Waterfowl Area, mail-in surveys may be provided to SCDNR to distribute to hunters winning the opportunity to hunt at this site through the SCDNR Public Lottery Hunt program.

6.0 ANALYSIS

The following sections provide a description of the approach for estimating existing and future recreational use, recreation site capacity and use density percentages, and recreation needs.

6.1 CURRENT RECREATION USE ESTIMATES

The reported estimates of recreation will be presented in "recreation days". The FERC defines a recreation day as one visit by a person to a development for purposes of recreation during any 24-hour period. The weekday, weekend, and holiday average recreation days will be calculated for each Monticello Reservoir and Parr Reservoir recreation site utilizing the traffic counters and recreation site survey data. The average number of people at each site within the morning and afternoon periods will be estimated within each day type and converted to a daily estimate. Daily estimates for each day type will be expanded to represent the study period and summed for a total estimate for each recreation site.

6.2 FUTURE RECREATION USE ESTIMATES

Estimated projections of future recreation use at Monticello Reservoir and Parr Reservoir will be developed using the average annual increase in population growth over the past 10 years, as reported by the Census Bureau or the State Division of Research and Statistics, for Newberry, Fairfield and Richland counties². The estimates will be augmented with discussion of trends reported in the SCORP (2014) and the SC Recreation Participation & Preference Study (2005). Estimated projections will be provided in 5 year intervals for the anticipated term of the license up to 50 years into the future (through year 2070).

While it is acknowledged that future changes in the supply of recreation resources, either in their quantity, accessibility, and/or quality may influence future demand and use, the demand analysis undertaken for this study does not attempt to predict what these future changes might consist of or how they might specifically affect levels of use at Project facilities. Therefore, the demand analysis results should be viewed as a general guide of potential future recreation pressure developed for planning purposes only.

² Although Richland County is not within the FERC Project boundary, it is believed that a significant number of those who recreate at the Project reside within Richland County.

6.3 RECREATION SITE CAPACITY

For purposes of this study, the carrying capacity for a recreation site is defined as the number of vehicles and boat trailers that can be parked at a recreation site at one time, based on the number of available parking spaces associated with each site. For paved parking areas, this will be achieved by counting the number of designated parking spaces available at the recreation site. For gravel parking areas, the number of available parking spaces for each recreation site will be estimated by measuring the area (sq ft) available for parking and estimating the number of vehicles that could be parked at the location, if optimal space were utilized. These estimates will be based on parking capacity standards for vehicle length, width, and available turn around space.

6.4 RECREATION SITE USE DENSITY

The use density of recreation sites will be estimated by comparing the average observed number of vehicles at the sites on sampled weekday, weekend, and holiday days with the available parking capacity for each recreation site. The average observed number of vehicles divided by the parking capacity will provide an estimated use density for each site.

6.5 RECREATION NEEDS ASSESSMENT

The need for recreation and site development or modification of existing recreation resources will be assessed based on the inventory, condition, capacity, and exit interview survey results. The needs assessment will focus on the existing condition and user opinions of recreation sites, whether a particular site provides "barrier free" access, and the ability of sites to meet current and anticipated future recreation demand pressures. Consideration will also be given to site opportunities and constraints, as well as support facilities such as signage and maintenance. The need for new recreational sites, facilities, and shoreline will be determined through assessment of the information collected and the input of stakeholders on the Recreation TWC and Lake & Land Management RCG.

7.0 SCHEDULE

The proposed schedule for completion of the Recreation Use and Needs Study is as follows:

TASK	DATE
Mobilization for field work (includes field clerk hiring, training, etc.)	March 2015
Survey development and pre-testing	March 2015
Installation of Traffic Counters	March 31, 2015
Interview survey collection (Monticello Reservoir)	April 1-September 7 (Labor Day, 2015); and February 1 - March 31, 2016 ³
Interview survey collection (Parr Reservoir)	April 1 -September 7 (Labor Day, 2015)
Waterfowl survey activities	Throughout 2015 and early 2016 during appropriate seasons.
Early data entry, cleaning, and processing	Early October 2015
Determine if additional data collection is needed	December 2015 ⁴
Conduct analyses	April - July 2016
Submit draft report	July 2016
Finalize report	July/August 2016

8.0 REFERENCES

South Carolina Department of Parks, Recreation and Tourism, Recreation, Planning and Engineering Office. 2008. South Carolina Statewide Comprehensive Outdoor Recreation Plan.

University of South Carolina. 2005. South Carolina Recreation Participation & Preference Study. Prepared for the South Carolina Department of Parks, Recreation and Tourism. (Online) [URL]: <http://www.scprt.com/files/RPE/2005%20Rec%20Study.pdf>

³ The recreation season has been extended into 2016 on Monticello Reservoir in order to capture use data during the early crappie season, from February 1 through March 31, 2016.

⁴ If additional data collection is required, data collection methods, results and analyses, developed and assessed in cooperation with the Recreation RCG, will be provided in an addendum to the report.

APPENDIX A

SITE INVENTORY FORM

SOUTH CAROLINA ELECTRIC & GAS COMPANY

RECREATION ASSESSMENT STUDY PLAN

**PARR HYDROELECTRIC PROJECT
(FERC NO. 1894)**

SCE&G Public Site Inventory Form

Inspected by: _____

Date: _____

Site Name: _____

Site Address: _____

City: _____ State: SC Zip Code: _____

Facility Type:

____ Primitive Camp ____ Picnic Area ____ Day Use
____ Overlook Site ____ Informal Site ____ Launch Ramp

Road Access:

____ Paved access..... # of lanes
____ Unpaved access..... # of lanes – (Circular entrance/exit)

Operations:

____ Manned ____ Seasonal (From ____ To ____)
____ Unmanned ____ Year Round
____ Fee (\$) (Site ____; Parking; ____)

Site Amenities:

#	Type	#	Type
_____	Picnic Tables	_____	Potable Water
_____	Grills	_____	Boat Fuel
_____	Firepit/ring	_____	Trash Cans
_____	Boat Pump Out	_____	Docks
_____	Trails (specify use _____: Miles_____)	_____	Playground
_____	Shelter	_____	Showers
_____	Designated Swim Area	_____	Concession
_____	Store	_____	Marina (# of slips_____)
_____	Dumping Station		

Parking Lots:

Type	Estimated # Paved	Estimated # Gravel	
ADA Spaces	_____	_____	_____ Spaces delineated?
Regular Spaces	_____	_____	_____ Curbs?
Vehicle & trailer spaces	_____	_____	

Sanitation Facilities:

	Flush	(BF*?)	Portable	(BF?)	Showers	(BF?)
Unisex	_____	(_____)	_____	(_____)	_____	(_____)
Women	_____	(_____)	_____	(_____)	_____	(_____)
Men	_____	(_____)	_____	(_____)	_____	(_____)

*BF - Barrier Free

Campground/Campsite:

	RV sites	Cabins	Tent sites	Primitive sites
# of sites	_____	_____	_____	_____
On site parking	_____	_____	_____	_____
Water front	_____	_____	_____	_____
Barrier Free	_____	_____	_____	_____

Boat Launch Facilities:

_____ Hard surface

_____ Unimproved (informal)

_____ # of Lanes

_____ Gravel

_____ Carry In

_____ Boat Prep Area?

Courtesy/Fishing Docks:

Courtesy/Fishing

Dimensions

Barrier Free

Notes:

Picture Number From _____ To _____

APPENDIX B

RECREATION SITE QUESTIONNAIRES

Monticello Reservoir Public Access Site Questionnaire

Clerk: _____	Site: _____	Date: _____	Time: _____ am/pm
Weather: <input type="checkbox"/> Sunny	<input type="checkbox"/> Partly Cloudy	<input type="checkbox"/> Cloudy	<input type="checkbox"/> Light Rain <input type="checkbox"/> Heavy Rain
RESPONDENT GENDER: <input type="checkbox"/> Male <input type="checkbox"/> Female	RESPONDENT REFUSED INTERVIEW: <input type="checkbox"/>		
NUMBER OF PEOPLE IN VEHICLE: _____	RESPONDENT DOES NOT SPEAK ENGLISH: <input type="checkbox"/>		
VEHICLE HAS A BOAT TRAILER: <input type="checkbox"/>	RESPONDENT IS NOT 18 YEARS OR OLDER: <input type="checkbox"/>		
RESPONDENT HAS BEEN INTERVIEWED AT THIS SITE PREVIOUSLY: <input type="checkbox"/>			

THE FIRST FEW QUESTIONS ASK ABOUT YOUR EXPERIENCE HERE TODAY

1. Including yourself, how many people are in your party today? *(Fill in blank.)*
 _____ people in party

2. What time did you arrive **at Monticello Reservoir** today? *(Fill in blank.)*
 _____ am / pm

3. What is the primary recreation activity that you participated in today **at Monticello Reservoir**? *(Please read the list to respondents. Check only one main activity in the first column.)*

What other activities did you participate in today **at Monticello Reservoir**? *(Check all that apply in the second column.)*

<i>Check only one main activity</i>	<i>Check all other activities</i>	<i>Types of Activities</i>
		<i>FISHING:</i>
<input type="checkbox"/>	<input type="checkbox"/>	boat fishing
<input type="checkbox"/>	<input type="checkbox"/>	pier/dock fishing
<input type="checkbox"/>	<input type="checkbox"/>	bank fishing
		<i>BOATING:</i>
<input type="checkbox"/>	<input type="checkbox"/>	motor boating
<input type="checkbox"/>	<input type="checkbox"/>	pontoon/party boating
<input type="checkbox"/>	<input type="checkbox"/>	sailing
<input type="checkbox"/>	<input type="checkbox"/>	canoeing/kayaking
<input type="checkbox"/>	<input type="checkbox"/>	windsurfing
<input type="checkbox"/>	<input type="checkbox"/>	paddleboarding
		<i>OTHER:</i>
<input type="checkbox"/>	<input type="checkbox"/>	bicycling
<input type="checkbox"/>	<input type="checkbox"/>	tent or vehicle camping
<input type="checkbox"/>	<input type="checkbox"/>	horseback riding
<input type="checkbox"/>	<input type="checkbox"/>	walking/hiking/backpacking
<input type="checkbox"/>	<input type="checkbox"/>	sightseeing
<input type="checkbox"/>	<input type="checkbox"/>	hunting
<input type="checkbox"/>	<input type="checkbox"/>	nature study/wildlife viewing/photography
<input type="checkbox"/>	<input type="checkbox"/>	swimming
<input type="checkbox"/>	<input type="checkbox"/>	picnicking
<input type="checkbox"/>	<input type="checkbox"/>	sunbathing
<input type="checkbox"/>	<input type="checkbox"/>	other: _____

<i>Check only <u>one</u> main activity</i>	<i>Check all other activities</i>	<i>Types of Activities</i>
	<input type="checkbox"/>	None

4. Did you spend any time **on the water on Monticello Reservoir** today? (Check one box.)

- YES
 NO (If no, skip to Question 6.)

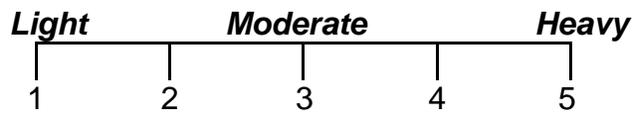
5A. Did you recreate on any of the **islands on Monticello Reservoir** today?

- YES
 NO (If no, skip to Question 6.)

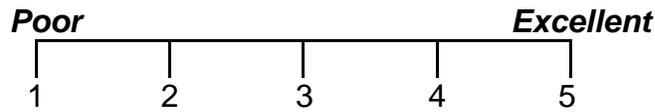
5B. What activities did you participate in **while on the island(s)**? (Do not read this list. Allow respondent to answer and check all that apply and/or fill in the blanks.)

<input type="checkbox"/> sunbathing	<input type="checkbox"/> bank fishing	<input type="checkbox"/> hunting
<input type="checkbox"/> camping	<input type="checkbox"/> walking/hiking	<input type="checkbox"/> sightseeing
<input type="checkbox"/> nature study/wildlife viewing/photography	<input type="checkbox"/> swimming	<input type="checkbox"/> picnicking
<input type="checkbox"/> other (please specify: _____)		

6. On a scale from 1 to 5, with 1 being light, 3 being moderate, and 5 being heavy, how would you rate the crowdedness **at this recreation site** today? (Circle one number.)



7A. On a scale from 1 to 5, with 1 being poor and 5 being excellent, how would you rate the overall condition **of this recreation site** today? (Circle one number.)



7B. Why did you choose to come to **this recreation site** today? (Fill in the blank.)

7C. Are there any additional facilities needed **at this recreation site**? (Check one box.)

- YES
- NO (If no, skip to Question 8.)

7D. What do you recommend? (Do not read this list. Allow respondent to answer and check all that apply and/or fill in the blanks.)

<input type="checkbox"/> access road	<input type="checkbox"/> bank fishing area	<input type="checkbox"/> boat dock
<input type="checkbox"/> boat launch	<input type="checkbox"/> camping area	<input type="checkbox"/> fish cleaning station
<input type="checkbox"/> fishing pier/dock	<input type="checkbox"/> lighting	<input type="checkbox"/> parking lot
<input type="checkbox"/> picnic tables/shelter	<input type="checkbox"/> restrooms	<input type="checkbox"/> signs & information
<input type="checkbox"/> swimming area	<input type="checkbox"/> trails	<input type="checkbox"/> trash cans
<input type="checkbox"/> RV camping	<input type="checkbox"/> tent camping	<input type="checkbox"/> bilingual signs & information
<input type="checkbox"/> other (please specify: _____)		

7E. Are there any other improvements that you would recommend for this site?

- YES
- NO (If no, skip to Question 8.)

7F. What improvements do you recommend? *(Fill in the blank.)*

8. What was your primary reason for choosing to recreate **at Monticello Reservoir** today versus another lake or area? *(Fill in blank.)*

9. What **other lakes** do you recreate at? *(Fill in blank.)*

I HAVE JUST A FEW MORE QUESTIONS

10. Do you own a permanent or seasonal lakefront residence **on Monticello Reservoir**? What is your zip code? *(Check one box and fill in the blank for zip code.)*

- YES – Permanent Home → ZIP CODE: _____
- YES – Seasonal Home → ZIP CODE: _____
- NO - Non-lakefront resident → ZIP CODE: _____

11. In what year were you born? *(Fill in blank.)*

_____ YEAR

12. Do you have any additional comments about the recreation facilities at **Monticello Reservoir**? *(Please fill in blank and be as specific as possible.)*

THANK YOU FOR YOUR HELP! WE APPRECIATE YOUR TIME TODAY!

Parr Reservoir/Broad River Public Access Site Questionnaire

Clerk: _____	Site: _____	Date: _____	Time: _____ am/pm
Weather: <input type="checkbox"/> Sunny	<input type="checkbox"/> Partly Cloudy	<input type="checkbox"/> Cloudy	<input type="checkbox"/> Light Rain <input type="checkbox"/> Heavy Rain
RESPONDENT GENDER: <input type="checkbox"/> Male <input type="checkbox"/> Female	RESPONDENT REFUSED INTERVIEW: <input type="checkbox"/>		
NUMBER OF PEOPLE IN VEHICLE: _____	RESPONDENT DOES NOT SPEAK ENGLISH: <input type="checkbox"/>		
VEHICLE HAS A BOAT TRAILER: <input type="checkbox"/>	RESPONDENT IS NOT 18 YEARS OR OLDER: <input type="checkbox"/>		
RESPONDENT HAS BEEN INTERVIEWED AT THIS SITE PREVIOUSLY: <input type="checkbox"/>			

THE FIRST FEW QUESTIONS ASK ABOUT YOUR EXPERIENCE HERE TODAY

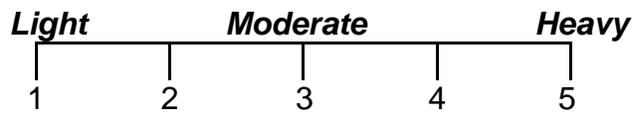
1. Including yourself, how many people are in your party today? *(Fill in blank.)*
 _____ people in party

2. What time did you arrive **at Parr Reservoir** today? *(Fill in blank.)*
 _____ am / pm

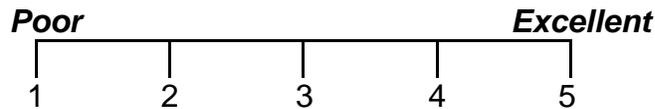
3. What is the primary recreation activity that you participated in today **at Parr Reservoir**?
(Please read the list to respondents. Check only one main activity in the first column.)
 What other activities did you participate in today **at Parr Reservoir**? *(Check all that apply in the second column.)*

<i>Check only one main activity</i>	<i>Check all other activities</i>	<i>Types of Activities</i>
		FISHING:
<input type="checkbox"/>	<input type="checkbox"/>	boat fishing
<input type="checkbox"/>	<input type="checkbox"/>	pier/dock fishing
<input type="checkbox"/>	<input type="checkbox"/>	bank fishing
		BOATING:
<input type="checkbox"/>	<input type="checkbox"/>	motor boating
<input type="checkbox"/>	<input type="checkbox"/>	canoeing/kayaking
		OTHER:
<input type="checkbox"/>	<input type="checkbox"/>	tent or vehicle camping
<input type="checkbox"/>	<input type="checkbox"/>	horseback riding
<input type="checkbox"/>	<input type="checkbox"/>	walking/hiking/backpacking
<input type="checkbox"/>	<input type="checkbox"/>	Sightseeing
<input type="checkbox"/>	<input type="checkbox"/>	Hunting
<input type="checkbox"/>	<input type="checkbox"/>	nature study/wildlife viewing/photography
<input type="checkbox"/>	<input type="checkbox"/>	Swimming
<input type="checkbox"/>	<input type="checkbox"/>	Picnicking
<input type="checkbox"/>	<input type="checkbox"/>	Sunbathing
<input type="checkbox"/>	<input type="checkbox"/>	other: _____
	<input type="checkbox"/>	None

4. On a scale from 1 to 5, with 1 being light, 3 being moderate, and 5 being heavy, how would you rate the crowdedness **at this recreation site** today? (Circle one number.)



- 5A. On a scale from 1 to 5, with 1 being poor and 5 being excellent, how would you rate the overall condition **of this recreation site** today? (Circle one number.)



- 5B. Why did you choose to come to **this recreation site** today? (Fill in the blank.)

- 5C. Are there any additional facilities needed **at this recreation site**? (Check one box.)

- YES
 NO (If no, skip to Question 6.)

- 5D. What do you recommend? (Do not read this list. Allow respondent to answer and check all that apply and/or fill in the blanks.)

<input type="checkbox"/> access road	<input type="checkbox"/> bank fishing area	<input type="checkbox"/> boat dock
<input type="checkbox"/> boat launch	<input type="checkbox"/> camping area	<input type="checkbox"/> fish cleaning station
<input type="checkbox"/> fishing pier/dock	<input type="checkbox"/> lighting	<input type="checkbox"/> parking lot
<input type="checkbox"/> picnic tables/shelter	<input type="checkbox"/> restrooms	<input type="checkbox"/> signs & information
<input type="checkbox"/> swimming area	<input type="checkbox"/> trails	<input type="checkbox"/> trash cans
<input type="checkbox"/> RV camping	<input type="checkbox"/> tent camping	<input type="checkbox"/> bilingual signs & information
<input type="checkbox"/> other (please specify: _____)		

- 5E. Are there any other improvements that you would recommend for this site?

- YES
 NO (If no, skip to Question 6.)

5F. What improvements do you recommend? *(Fill in the blank.)*

I HAVE JUST A FEW MORE QUESTIONS

6. Do you own a permanent or seasonal residence **on the Broad River**? What is your zip code? *(Check one box and fill in the blank for zip code.)*

- YES – Permanent Home → ZIP CODE: _____
- YES – Seasonal Home → ZIP CODE: _____
- NO - Non-lakefront resident → ZIP CODE: _____

7. In what year were you born? *(Fill in blank.)*

_____ YEAR

8. Do you have any additional comments about the recreation facilities on **Parr Reservoir**? *(Please fill in blank and be as specific as possible.)*

THANK YOU FOR YOUR HELP! WE APPRECIATE YOUR TIME TODAY!

APPENDIX B

2014 WATERFOWL FOCUS GROUP MEETING SUMMARY

Parr Shoals Hydroelectric Project Relicense – FERC No. 1894

Waterfowl Hunters Focus Group Meeting Summary

December 9, 2014

Kleinschmidt Offices – Lexington, SC

Waterfowl Focus Group - Purpose Statement

Waterfowl hunting is a recreation activity that occurs within the Parr Hydroelectric Project boundary. As part of the relicensing of the Parr Hydroelectric Project, stakeholders identified the need to gather information from waterfowl hunters that use the Parr Project Area for hunting in order to learn about their use and perceptions regarding the adequacy of existing resources and opportunities within the Project boundary. SCE&G, in consultation with stakeholders, has formed a Waterfowl Focus Group to aid in gathering this information. The resulting Focus Group information will be used to help SCE&G identify ways to support waterfowl hunting and balance waterfowl hunters' needs with other demands at the Project.

Session Details

Facilitators: Alison Jakupca, Henry Mealing, Kelly Miller - Kleinschmidt Associates

Date of Session: December 9, 2014

Participant Information:

<u>Organization/Affiliation</u>	<u>Number Attending</u>
• Individual Waterfowl Hunters	3
• SCDNR	3
• Tyger Enoree River Alliance (TERA) Members	3
• SCE&G Personnel	3
• Kleinschmidt Personnel	3

Results:

SCE&G conducted a focus group of waterfowl hunters in December of 2014. Information was gathered in 3 primary areas: *personal hunting preferences, seasonal trends and distribution of activities, Project Area preferences and needs.* Individual waterfowl hunters and TERA members are collectively referred to as "attendees" in the following notes.

Personal Hunting Preferences:

- Most of the focus group attendees indicated that they hunted in the Project Area on a weekly basis during the hunting season, noting that they would hunt whenever time and personal commitments allow.
- Attendees generally indicated that waterfowl hunting is more enjoyable as a group activity and that they prefer to hunt with 1 to 4 other people.
- Attendees noted that hunting was usually preferable in the morning; however the preferable time of day to hunt was highly weather dependant.
- Weekdays are preferred over Saturdays (no hunting allowable in the Project Area on Sundays) due to less crowding during the weekdays.
- In general, all species of waterfowl are hunted, no particular species of interest is specifically sought.
- Attendees indicated that they hunt by both boat and by wading. Hunters generally boat in from a public launch facility and then wade to a particular hunting location.
- The Project area launch facilities most often utilized by waterfowl hunters are as follows: Hwy 99 and the site at Hwy 215 on Monticello; Hwy 34 primitive site, the Dawkins access (primitive boat ramp and cross over RR tracks); and the Maybinton (Keitts Bridge¹) landing on Parr.

Seasonal Trends:

- Attendees noted that they generally begin hunting on or around Thanksgiving Day and hunt through the end of January (concurrent with the state and federal seasons). However, many indicated that they also hunt during the September teal and goose seasons and the February goose season.
- Holidays were indicated as being some of the best hunting days due to a lack of other hunters.
- Attendees noted an observed decrease in wood duck populations in the Project Area in the last 3 to 4 years. It was noted that snow geese are beginning to be observed in the Project Area.

¹ Please see clarification submitted subsequent to the meeting located at the end of this document.

Project Area Preferences and Needs:

- Parr Reservoir and associated waterfowl areas seems to be preferred to Monticello Reservoir. This may be due to the fact that Monticello Reservoir is only open to waterfowl hunting on Wednesday and Saturday, while Parr is open 6 days a week.
- Attendees indicated that there was over-crowding at the Enoree Waterfowl Area.
- It was noted that people drive from long distances to hunt at the Enoree Waterfowl Area due to the fact that it is a Category 2² waterfowl area (appears "attractive" on paper).
- Attendees also indicated that they have been stranded a few times on the reservoir, as lake levels drop. Additionally, attendees indicated that maintaining a Parr Reservoir level of 260' or above would be preferable, particularly during December and January.
- A bridge may be needed in the Enoree River Waterfowl Area to allow people to hunt at the far side of the area. This would, however, allow more public into this area, which may be a negative impact to serious hunters who wade to that area³.
- Attendees indicated that they would like for SCE&G to maintain Hwy 34 in a primitive state.
- The Maybinton site is difficult to get in and out of and could use some gravel or other boat launching improvements.
- No improvements were recommended at Monticello recreation sites or at Heller's or Cannon's creek sites.
- Enoree Waterfowl Area was indicated as being the most used site, being rated by attendees as a "5" (with "1" being light and "5" being heavy).
- Focus group attendees indicated that the mainstem of the Broad River, from the Monticello tailrace to the Hwy 34 boat ramp, was also fairly crowded (rated as a "4" on Saturday mornings).
- Attendees noted that hunting opportunities could possibly be improved in the Project Area through the creation of an additional waterfowl habitat/resting area (in particular, an area upstream of the Enoree Waterfowl Area, along the Enoree River)⁴.

² SCDNR defines a "Category 1" Waterfowl Area as one where hunting is permitted only by means of a special permit obtained from SCDNR through an annual drawing. Hunting is permitted on an "Category 2" Waterfowl Area only during SCDNR specified days and times during state waterfowl seasons.

³ Please see clarification submitted subsequent to the meeting located at the end of this document.

⁴ Please see clarification submitted subsequent to the meeting located at the end of this document.

Parr Shoals Hydroelectric Project Relicense – FERC No. 1894

Waterfowl Hunters Focus Group Meeting Summary

December 9, 2014

Kleinschmidt Offices – Lexington, SC

Other points and issues raised by focus group attendees:

- Attendees indicated that there are general issues regarding disrespectful and inexperienced hunters in the Project Area; however, they also noted that this seems to be an issue present at any public hunting area and has been compounded by the new-found popularity of waterfowl hunting due to a popular TV show.
- An increase in the number of private impoundments was indicated as potentially attracting ducks away from Project Area waters.
- The VC Summer nuclear station service water pond also provides a good sanctuary for waterfowl.
- Attendees indicated that they general do not experience conflicts with other types of hunting in the Project Area (small game, large game, etc.). They indicated that they occasionally experience conflicts with fisherman in the Project Area.
- Several options were suggested by attendees to alleviate some of the crowding issues currently experienced at the Enoree Waterfowl Area. All of these options would need to be implemented by S.C. Department of Natural Resources (SCDNR) and include:
 - A SCDNR decision to categorize the Enoree Waterfowl Area as "Category 1" (currently "Category 2").
 - Only allow a certain number of individuals to hunt the area at one time.
 - Require a hunting pass.
 - Only allow hunting on Wednesdays.
- SCDNR indicated the desire to work with SCE&G on an annual basis to facilitate SCDNR management of waterfowl areas during planting and hunting seasons. In particular, was the discussion of SCE&G maintaining Parr Reservoir at levels that would assist with either flooding or draining of waterfowl areas.

Conclusions:

There were many common themes expressed during the focus group meeting. Over-crowding at the Enoree Waterfowl Area was a main concern. Some improvements were suggested at the Hwy 34 boat ramp and the Maybinton Landing. However, it was emphasized that improvements/maintenance should continue to focus on keeping these areas primitive. Focus

group attendees expressed satisfaction with the Monticello Reservoir access areas as well as the developed access areas at Parr (Cannons and Hellers Creek). Attendees noted that desire to work with SCDNR to alleviate some of the crowding issues in the Project Area. Potential opportunities for SCE&G and SCDNR to work together in the future for the management of waterfowl areas were also identified.

Comments and Clarifications Submitted Subsequent to the Meeting

The following comments were provided subsequent to the focus group meeting to clarify the preceding meeting summary:

- In the "Personal Preferences" bullet points, Keitts Bridge appears to be referenced as being on Parr Reservoir. That landing is on the Enoree, upriver of the Enoree Waterfowl Area.
- In the "Project Area Preference and Needs" bullet points, there is a reference to the foot bridge in the Enoree Waterfowl Area. That bridge already exists. The conversation was about the fact that the bridge may be contributing to the over - crowding issue in the area. It does provide easier access to the far side of the area. Previously, that area was a long *walk* around the impoundment. Now wading to that area is possible because the foot bridge gets you over the creek channel out in the middle of the water.
- In the "Project Area Preference and Needs" bullet points, there is mention of "improving hunting opportunities" regarding the SCE&G property upstream of the Enoree Waterfowl Area. To be clear, the intent of the suggested enhancements to the area is to restore wetland habitat for waterfowl and other wetland dependant organisms.... critters. With its proximity to the Enoree Waterfowl Area, it is possible that the improved area would be a sanctuary. While this would contribute to overall habitat, I am not sure it directly contributes to "hunting opportunities". Waterfowl hunters have long correlated habitat conservation and restoration with sustaining populations conducive to hunting, but the two efforts are distinct.

Appendix: Focus Group Discussion Questions

1. When was the last time you hunted waterfowl in the Project Area (refer to map)?
2. When you hunt waterfowl in the Project Area, how many people do you usually hunt with?
3. What time of day do you usually hunt in the Project Area?
4. Is there a specific month that you tend to hunt most frequently? Why? Are there any months during the season that you generally avoid? Why?
5. What species or group (geese, wood ducks, puddle ducks, diving ducks) of waterfowl do you typically hunt for in these areas?
6. How many times a season do you typically hunt in these areas?
7. Do you typically hunt on weekends, weekdays or both?
8. Have you seen any changes in the species of ducks harvested over the last 5 years?
9. Looking at this map, I'd like you to show me areas where you typically hunt waterfowl in the Project Area. Why do you choose to hunt waterfowl here?
10. Do you typically hunt waterfowl by wading, from a boat, or both?
11. For those of you who typically hunt from a boat, do you usually launch from private property or a public launch facility? If either of the latter responses, which ones? (looking for specific names here)
12. I'd like to focus on the public access sites you use for launching on the lake for waterfowl hunting. Are there any additional facilities needed at these sites? [By "facilities" I mean

parking spaces, restrooms, launch lanes, lighting, etc.] Are there any improvements that you would recommend for this site?

13. On a scale from 1 to 5, with 1 being light, 3 being moderate, and 5 being heavy, how would you rate the crowdedness overall in the Project Area when you go waterfowl hunting?

14. Do you experience conflicts with other types of hunting (small game, large game, etc.) or recreation activities (fishermen) in the Project Area?

15. How do you think waterfowl hunting in the Project Area could be improved?

Exhibit E-8 Recreation Resources

Recreation Management Plan

RECREATION MANAGEMENT PLAN

PARR HYDROELECTRIC PROJECT (FERC No. 1894)

Prepared for:

**South Carolina Electric & Gas Company
Cayce, South Carolina**

Prepared by:

Kleinschmidt

Lexington, South Carolina
www.KleinschmidtGroup.com

June 2018

RECREATION MANAGEMENT PLAN

PARR HYDROELECTRIC PROJECT (FERC No. 1894)

Prepared for:

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June 2018

RECREATION MANAGEMENT PLAN

PARR HYDROELECTRIC PROJECT (FERC No. 1894)

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RECREATION MANAGEMENT PLAN

PARR HYDROELECTRIC PROJECT (FERC No. 1894)

1.0 INTRODUCTION

South Carolina Electric & Gas Company (SCE&G) (Licensee) is the owner and operator of the Parr Hydroelectric Project (FERC No. 1894) (Project). The Project consists of the two developments: the Parr Shoals Development (Parr Development), and the Fairfield Pumped Storage Development (Fairfield Development). Both developments are located on the Broad River in Fairfield and Newberry counties, South Carolina. The Parr Development creates the Parr Reservoir, located along the Broad River, and the Fairfield Development creates the Monticello Reservoir, located adjacent to the Broad River. The current Project license is set to expire on June 30, 2020.

1.1 BACKGROUND AND CONSULTATION

SCE&G is currently involved in a multi-year relicensing process with the ultimate goal of obtaining a new 50 year operating license for the Project. The Federal Energy Regulatory Commission's (FERC or Commission) regulations at 18 C.F.R. § 2.7 require the evaluation of project recreational resources within license applications with the goal of developing these resources consistent with a recreation plan approved by the Commission. It is the licensee's responsibility to allow for suitable public access and recreational use of project lands and waters consistent with the recreational needs of the area and primary project purposes. Likewise, it is the licensee's responsibility to inform the public of project recreational opportunities, as well as the rules governing the accessibility and use of recreational facilities. A Commission-approved recreation plan, developed in cooperation with appropriate local, state, and federal agencies, and other interested parties, aids licensees in fulfilling these responsibilities.

During relicensing, SCE&G formed the Recreation Technical Working Committee (TWC) to address recreation issues associated with operation of the Project. The Recreation TWC is composed of representatives from various federal, state, and local agencies, non-governmental organizations (NGOs) and private landowners. Agencies and NGOs on the Recreation TWC

include the U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration (NOAA), National Park Service (NPS), South Carolina Department of Natural Resources (SCDNR), South Carolina Department of Health and Environmental Control (SCDHEC), American Rivers, and Congaree Riverkeeper.

The Recreation TWC has convened throughout the relicensing process to discuss the development, implementation and results of a Recreation Use and Needs Study (RUN Study) and the development of this Recreation Management Plan (RMP). The consultation record for the development of the RMP is included in Appendix A.

As noted by FERC, a well-documented user survey is “an essential part of a good recreation plan” (*Recreation Development at Licensed Hydropower Projects*, FERC 1996). SCE&G completed the above-referenced RUN Study in 2016 to determine what additions and improvements are needed at the Project to accommodate for future recreation use. This RMP was subsequently developed in consultation with stakeholders using the results of the 2016 RUN Study. Moreover, this RMP will be filed with FERC as part of the Final License Application. Upon FERC approval, this RMP establishes SCE&G’s requirements for providing public recreation in accordance with the new license.

1.2 PROJECT LANDS AND WATERS

The Parr Development creates the 15-mile long Parr Reservoir, which has a surface area of 4,400 acres at full pool and serves as the lower reservoir for Fairfield Development pumped-storage operations. The Parr Development operates in a modified run-of-river mode and normally operates continuously, passing flow from the Broad River. Parr Reservoir has approximately 88 miles of shoreline within the Project boundary, much of which is available to the public for recreation purposes¹. The waters and shoreline of Parr Reservoir provide the public with recreation opportunities including hunting, boating, fishing, hiking, and picnicking. Many of these opportunities are available to the public through Project Recreation Sites and Non-Project

¹ SCE&G manages its lands per the classification system described within the Parr Shoreline Management Plan – however, the public is generally not precluded from access to SCE&G-owned lands and shoreline regardless of classification, except for lands reserved and used for Project operations or other areas specifically protected from public access and posted as such.

Recreation Sites². Detailed information on Project and Non-Project Recreation Sites at Parr Reservoir is included in Section 4.0.

The Fairfield Development creates the 6,800 acre Monticello Reservoir, which serves as the upper reservoir for pumped storage operations. The Fairfield Development is primarily used for peaking operations, reserve generation, and power usage. Monticello Reservoir has approximately 47 miles of shoreline within the Project boundary, much of which are available to the public for recreation purposes³. The waters and shoreline of Monticello Reservoir are a source for many public recreation opportunities including hunting, boating, fishing, swimming, camping, hiking, and picnicking. Many of these opportunities are available to the public through Project Recreation Sites and Non-Project Recreation Sites. Detailed information on the Project and Non-Project Recreation Sites at Monticello Reservoir is included in Section 5.0.

Adjacent to Monticello Reservoir is the Recreation Lake, which was constructed by SCE&G for the sole purpose of recreation. The Recreation Lake has a surface area of 300 acres and 10 miles of shoreline available to the public for recreation. While Parr and Monticello reservoirs are subject to daily fluctuations from Project operations, the Recreation Lake is maintained at a stable water level. The Recreation Lake provides the public with recreation opportunities such as fishing, swimming and picnicking.

In addition to the Project Recreation Sites at Parr and Monticello reservoirs and the Recreation Lake, approximately 9,000 acres of land and water within the Project boundary are included by lease or agreement in the statewide Wildlife Management Area (WMA) Program, managed by the South Carolina Department of Natural Resources (SCDNR). The Broad River Waterfowl Management Area and the Enoree River Waterfowl Management Area provide hunting opportunities to the public throughout the year.

² Project Recreation Sites are recreation sites that are owned, operated, and maintained by SCE&G and Non-Project Recreation Sites are recreation sites that are operated and maintained by an entity other than SCE&G. Both types of recreation sites are located within the Project boundary.

³ SCE&G manages its lands at the Fairfield Development per the classification system described within the Monticello Shoreline Management Plan – however, the public is generally not precluded from access to SCE&G-owned lands regardless of classification, except for lands reserved and used for Project operations, lands/areas within the Nuclear Exclusion Zone, or other areas specifically protected from public access and posted as such.

1.3 RECREATION USE AND NEEDS STUDY

As previously mentioned, this RMP was developed based on the findings of the 2016 RUN Study. The study was designed to provide information relevant to the current and future availability and adequacy of SCE&G owned and managed Project Recreation Sites and informal recreation sites at Monticello Reservoir and Parr Reservoir. Additionally, information was gathered regarding waterfowl hunting in the Project area, as waterfowl hunters represent a unique group of users whose preferences and perceptions may differ from those using Project recreation sites.

RUN Study results showed most study participants at Parr Reservoir reported the following:

- Individuals chose to visit Parr Reservoir because of the good fishing opportunities.
- Low to moderate crowding perceptions.
- Good to very good recreation site condition perception.
- Additional boat launching or docking facilities were the most requested additional facility.
- Other facility and amenity recommendations included additional lighting and restrooms.

RUN Study results showed most study participants at Monticello Reservoir reported the following:

- Individuals chose to visit Monticello Reservoir because it was close to home and because it provided good fishing opportunities.
- Low to moderate crowding perceptions.
- Very good recreation site condition perceptions.
- Restrooms were reported as the most requested additional facility
- Other facility and amenity recommendations included picnic tables, shelters, lighting and fishing piers or docks.

The RUN Study showed that the population of the Project's surrounding counties will increase by approximately 13 percent over the next 15 years. Study data showed that Project facilities are in good condition and well used. Some sites are closer to capacity during peak periods while others have low density ratings. Generally, existing crowdedness at all facilities appeared to be low to moderate. Waterfowl hunters noted crowding at the Enoree River Waterfowl Management

Area (non-Project recreation site leased, maintained and managed by SCDNR) and on Saturdays at Parr Reservoir.

To address the requests for additional facilities, SCE&G is proposing enhancements to four (4) Project Recreation Sites during the first 10 years of the new license term. SCE&G is also creating four (4) new Project Recreation Sites by upgrading and formalizing existing informal sites, to address the potential future need for additional recreation access at the Project. The proposed schedule for enhancement implementation is included in Section 3.2.

1.4 STRUCTURE OF THE RMP

Pursuant to FERC guidelines, this RMP includes the following information:

- **Project Recreation Site Management Policies:** Information on the management policies for all Project Recreation Sites owned by SCE&G.
- **Ongoing Public Recreation Planning and Monitoring:** SCE&G is proposing to implement enhancements and monitor future recreation use during the term of the new license through an Adaptive Management Process (AMP) outlined in this RMP.
- **Existing Project Recreation Sites:** A comprehensive inventory of the existing Project Recreation Sites; facility amenities including type, number, and barrier free provisions; maps depicting existing Project Recreation Sites; location; owner; manager; user fees; hours of operation if applicable.
- **Enhancements to Project Recreation Sites:** Proposed facility enhancements including; type, number, and barrier free provisions; conceptual site plans; schedule for enhancement completion.
- **Consultation Record:** Documentation of consultation during preparation of the RMP, including comments and recommendations provided by consulting agencies and organizations; a description of how comments and recommendations have been addressed, including any justifications for not accommodating specific comments and recommendations

2.0 PROJECT RECREATION SITE MANAGEMENT POLICIES

Project Recreation Sites, as listed in Table 2-1, will be operated and managed according to the following policies.

TABLE 2-1 PROPOSED AND EXISTING PROJECT RECREATION SITES

PARR DEVELOPMENT PROJECT RECREATION SITES	FAIRFIELD DEVELOPMENT PROJECT RECREATION SITES
Cannon's Creek Project Recreation Site	Scenic Overlook Recreation Site
Heller's Creek Project Recreation Site	Highway 215 Recreation Site
Parr Shoals Dam Canoe Portage (<i>Proposed</i>)	Highway 99 West Recreation Site
Highway 34 Recreation Site (<i>Proposed</i>)	Highway 99 East Recreation Site (<i>Proposed</i>)
Enoree River Bridge Recreation Site (<i>Proposed</i>)	Recreation Lake Access Area

2.1 PROJECT RECREATION SITE HOURS OF OPERATIONS

All Project Recreation Sites and associated amenities such as boat ramps, picnic shelters, etc. are available and open to the public year-round except for the Recreation Lake Access Area. The Recreation Lake Access Area - Beach Area is open from sunrise to sunset April 1 through September 30 and is closed from October 1 through March 31. All other amenities at the Recreation Lake are open year-round. Restroom facilities at all SCE&G operated recreation sites are currently open from April 1 through September 30 and closed from October 1 through March 31.⁴

2.1.1 PROJECT RECREATION SITE CLOSINGS

In the case of temporary closures of Project Recreation Sites due to maintenance or safety issues, the Licensee will implement notification procedures to the public, including the installation of appropriate signage and physical barriers at the entrance of the recreation site or boat ramp.

⁴ Restroom facilities at the Highway 99 West Recreation Site are proposed to be upgraded for year-round access during the new license term.

2.2 USER FEES

All Project Recreation Sites are owned by the Licensee and are currently available to the public at no charge.

2.3 BANK FISHING AT THE PROJECT AND PROJECT RECREATION SITES

The shoreline around Parr and Monticello reservoirs and associated islands is open to the public for bank fishing, except for shoreline that is included in the Nuclear Exclusion Zone. Bank fishing is allowed at all Project Recreation Sites.

2.4 BARRIER FREE REQUIREMENTS

The Commission's regulations at 18 C.F.R. § 2.7(b) requires that the Licensee "develop suitable public recreational facilities upon project lands and waters ... and to include therein consideration of the needs of persons with disabilities in the design and construction of such project facilities and access." These facilities and access points are often referred to as "barrier free." Barrier free is defined as a design for those with physical or other disabilities, involving the provision of alternative means of access to steps. Currently, two of the Project Recreation Sites at Monticello Reservoir have some barrier free amenities and none of the Project Recreation Sites at Parr Reservoir have barrier free amenities. The Licensee will modify some of the Project Recreation Sites to increase the amount of barrier free recreation access at the Project. The barrier free modifications for specific sites are discussed in further detail in Sections 4.0 and 5.0.

2.5 PROHIBITED USES, ACTIVITIES AND STRUCTURES

Use of Project Recreation Sites must not endanger public health or safety, or create a public nuisance, or otherwise be compatible with the overall public recreation use of the Project. A list of prohibited uses, activities and structures is included below. The Licensee will consult with local enforcement agencies in the event the Licensee becomes aware the following activities are occurring at Project Recreation Sites.

- Littering
- Consuming alcoholic beverages or illegal controlled substances
- Destroying or defacing property
- Harassing wildlife

- Discharging firearms
- Operation of motorized trail bikes or off-road vehicles
- Open fires
- Private boat docks or boat ramps
- Boathouses
- Commercial marinas
- Marine rails and sea walls
- Permanent structures
- Land-based structures, storage buildings, shelters, patios, gazebos, fences, swimming pools, satellite dishes, signs, storage of boats, canoes or other watercraft or automobiles
- Jet skiing
- Water skiing
- Parasailing
- Paragliding
- Mooring
- Excavations/dredging (except commercial operations authorized by SCE&G and permitted by the regulatory authorities.)
- Effluent discharges
- Storage or stockpiling of construction material
- Livestock access to reservoir
- Vegetation removal, limbing or trimming of any type
- Use of herbicides

A complete list of prohibited activities and structures on Project lands and waters is provided in the Parr and Monticello Shoreline Management Plans and Permitting Handbook.

2.6 COMPLIANCE WITH STATE, FEDERAL AND LOCAL LAWS AND REGULATIONS

Use of Project Recreation Sites must be consistent with all FERC orders and regulations regarding recreation opportunities and development at licensed projects including Order No. 313 (FERC Recreation Policy) and all applicable regulations or directives issued by FERC, or its predecessor, the Federal Power Commission. Use of Project Recreation Sites must also comply with applicable state, federal, and local laws as well as all ordinances, rules, regulations, and sanctions of any regulatory body or governmental agency (state, federal, or local) having

jurisdiction within the recreation site. Project Recreation Site facility construction projects shall comply with applicable federal, state and local rules, regulations, building and zoning codes, and public safety design standards.

2.7 PROTECTION OF THE ENVIRONMENT

During construction, operation and maintenance of Project Recreation Site facilities, necessary precautions will be taken to protect the scenic, environmental, recreational, and cultural quality of affected lands and waters of the Project. Construction of Project Recreation Site facilities shall be completed using Low Impact Development practices for storm water management, when possible and soil and erosion control measures will be implemented and maintained. When practicable, facilities will be designed and constructed to retain vegetation, maintain natural habitat, provide a natural view from the water, and use shielded lighting where lighting is provided.

2.7.1 HISTORIC PROPERTIES

Measures to address the management of historic properties at Project Recreation Sites and islands are addressed in the Project Historic Properties Management Plan.

2.7.2 RECREATIONAL WATERCRAFT

Houseboats, jet skis, recreational watercraft exceeding 30 feet in length, and recreational watercraft with marine sanitation devices are prohibited from use of Project recreation sites to access Project waters.

2.8 PROJECT ISLANDS

SCE&G owns all islands within Monticello Reservoir and Pearson's Island within Parr Reservoir and will retain ownership of these islands for the term of the new license.

2.8.1 PERMITTED USES OF ISLANDS

Unless otherwise noted, all islands in Monticello Reservoir and Pearson's Island in Parr Reservoir are available year round, for passive⁵ public recreation activities including walking,

⁵ Passive recreation use is defined as those recreation activities that are generally non-consumptive in nature, require a minimum of facilities, and/or have a minimal environmental impact.

wading, picnicking, and bird watching. Waterfowl hunting is permitted on these islands in accordance with federal and state hunting laws and regulations pertaining to Wildlife Management Area (WMA) lands. Islands in Monticello Reservoir are also open for overnight camping.

2.8.2 RESTRICTED USE OF ISLANDS

Overnight camping is expressly prohibited on Project islands in Parr Reservoir. The Licensee may also restrict use of specific islands in consultation with federal, state or local agencies to protect cultural resources or endangered species or for public safety, security, or other management concerns.

2.9 PROJECT RECREATION SITE PLANNING

Continued public recreation planning and consultation with appropriate federal, state and local resource agencies, parks and recreation agencies, tribes, local governments, and resource or recreation-based non-governmental organizations (NGOs) is important to the Licensee. Over the term of the new license, unanticipated Project-related recreation needs may be identified and/or it may be determined that existing or planned recreation facilities are no longer needed. To aid in planning for future recreation needs at the Project, the Licensee plans to conduct the following activities.

2.9.1 FERC FORM 80 REPORTS

FERC regulations require the Licensee to prepare and file a Licensed Hydropower Development Recreation Report (Form 80) for each Project development every six years. The purpose of the Form 80 is to provide FERC and other agencies with a periodic assessment of the recreation facilities located at FERC-licensed projects, whether public recreation needs are being accommodated by the facilities, and where additional efforts could be made to meet future needs.

2.9.2 REVISING THE RMP

The Licensee will convene a group of interested stakeholders approximately 12 years after the issuance of the new license to discuss the development of a Recreation Assessment Study Plan. During relicensing, SCE&G agreed to conduct a Recreation Assessment two years after the completion of Project Recreation Site enhancements, which are scheduled to be complete 10

years after license issuance. Based on the findings of the Recreation Assessment, SCE&G, with input from stakeholders, will revise the RMP, as necessary, and submit it for FERC approval. The need for additional Recreation Assessments or Recreation Use and Needs Studies will be determined in consultation with interested stakeholders as part of an AMP. The AMP is discussed in further detail in Section 3.0.

2.10 MAINTENANCE OF PROJECT RECREATION SITES

SCE&G currently maintains Project Recreation Sites according to a pre-determined schedule developed by their Lake Management Department. Sites are monitored on a quarterly basis and the Lake Management Department addresses maintenance issues on an as-needed basis. SCE&G will continue to monitor and maintain existing Project Recreation Sites in the same manner during the term of the new license. New Project Recreation Sites will be added to the monitoring schedule and regular monitoring and maintenance visits will begin upon completion of the planned enhancements of the site.

3.0 ADAPTIVE MANAGEMENT PROCESS

3.1 OVERVIEW

During relicensing, the Recreation TWC discussed implementing an Adaptive Management Process (AMP) to address Project related recreation issues that arise during the term of the new license. The TWC agreed that SCE&G will complete proposed Project Recreation Site enhancements according to the schedule included in Section 3.2. Stakeholders will also meet with SCE&G periodically during the term of the new license to discuss recreation issues and determine the need for additional recreation assessments. Additional details on the enhancement schedule and future recreation assessments are discussed below.

3.2 PROJECT RECREATION SITE ENHANCEMENT SCHEDULE

Table 3-1 illustrates the schedule for completion of recreation site enhancements, as agreed to in consultation with relicensing stakeholders. Specific enhancements planned for each Project Recreation Site are discussed in Sections 4.0 and 5.0. A summary of proposed enhancements for each site is included in Section 6.0.

TABLE 3-1 PROJECT RECREATION SITE ENHANCEMENT SCHEDULE

PROJECT RECREATION SITE	SITE STATUS	TIMEFRAME FOR COMPLETION
Highway 215 Recreation Area	Existing Site	Prior to license issuance
Parr Shoals Dam Canoe Portage	Proposed new facility	Upon license issuance
Informal Highway 34 Boat Ramp	Proposed new site	Within 2 years after new license is issued
Informal Enoree River Bridge Recreation Site	Proposed new site	Within 2 years after new license is issued ⁶
Cannon's Creek Recreation Site	Existing site	Within 4 years after new license is issued
Highway 99 West Recreation Site (previously known as Highway 99 Boat Ramp)	Existing site	Within 6 years after new license is issued
Recreation Lake Access Area	Existing site	Within 6 years after new license is issued
Highway 99 East Recreation Site	Proposed new site	Within 8 years after new license is issued
Scenic Overlook Recreation Site	Existing site	Within 10 years after new license is issued

⁶ Completion of this recreation site enhancement is dependent upon approval from the US Forest Service.

3.3 FUTURE RECREATION ASSESSMENTS

SCE&G will conduct a Recreation Assessment approximately 12 years after the new license is issued. The Recreation Assessment will take place two years after the site enhancements are complete. At that time, SCE&G will convene a meeting with interested stakeholders to discuss the Recreation Assessment and develop a study plan. Data collected during the Recreation Assessment will be used to complete the subsequent Form 80 Report.

Depending on the term of the new license, SCE&G will complete one or two additional Recreation Assessments approximately 10 and 20 years after the conclusion of the first Recreation Assessment. The complexity and detail of the additional assessments will be determined by SCE&G and interested stakeholders during a meeting held one year prior to each assessment. A meeting with interested stakeholders will be held within one year of the completion of each assessment to discuss the assessment results related to future recreation site improvements.

4.0 PARR RESERVOIR PUBLIC RECREATION SITES

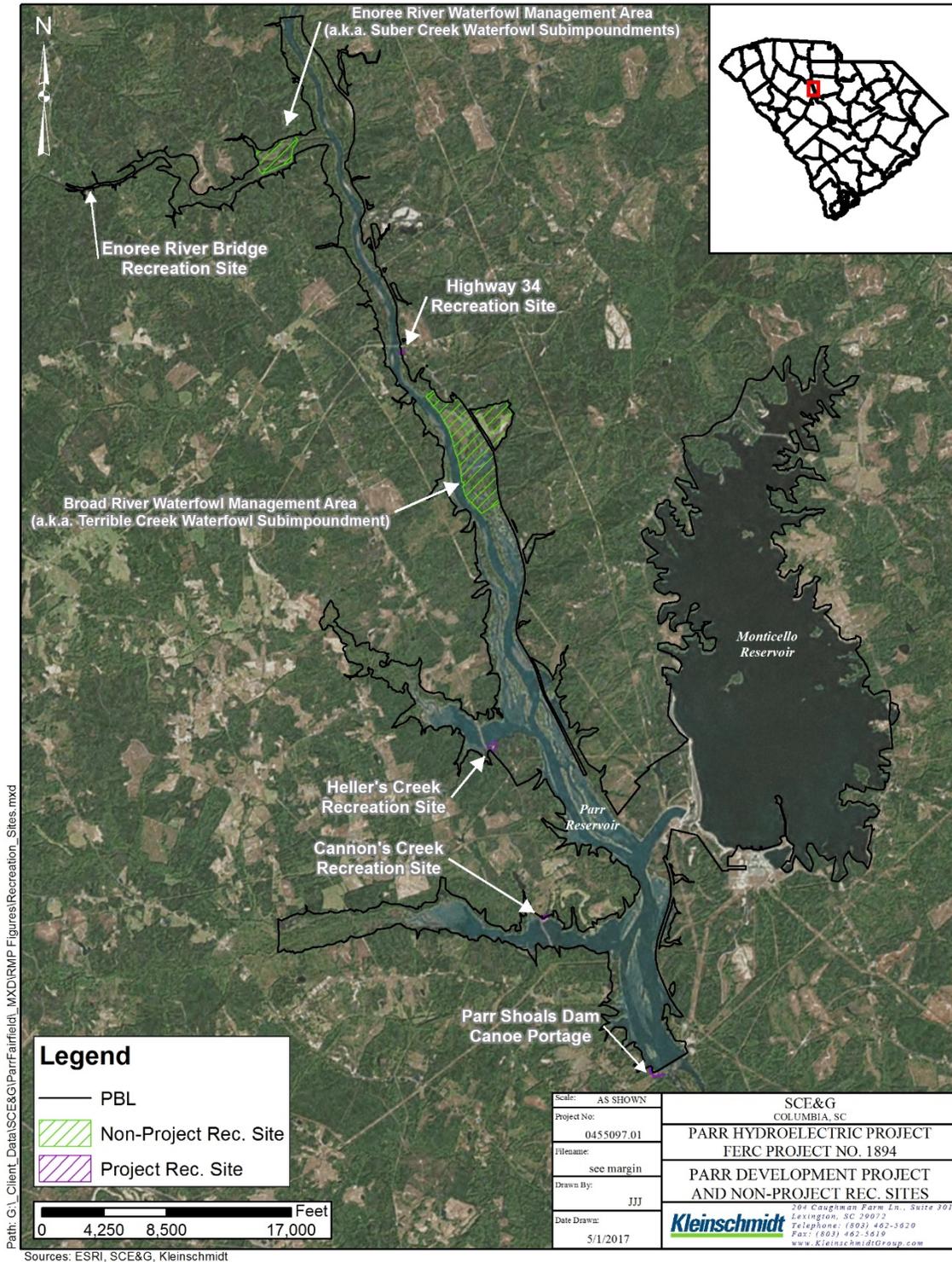
4.1 OVERVIEW

Parr Reservoir currently provides the public with several existing Project and Non-Project recreation sites. In addition, SCE&G is proposing to develop and/or enhance several new and/or informal Project recreation sites at Parr Reservoir. SCE&G owns, or has flowage rights over, all land on which the existing and proposed Project recreation sites are located. Existing and proposed new public recreation sites (both Project and Non-Project) are listed below in Table 4-1 and shown in Figure 4-1. Recreation facility and amenities tables are included in appendices C and D. In addition to the designated public recreation sites at the Project, lands within the Project boundary have been set aside for future recreational development. These lands are shown on land classification maps included in the Parr Reservoir Shoreline Management Plan.

TABLE 4-1 PUBLIC RECREATION SITES AT PARR RESERVOIR

EXISTING PUBLIC RECREATION SITES	PROPOSED NEW PUBLIC RECREATION SITES
Cannon's Creek Recreation Site	Parr Shoals Dam Canoe Portage
Heller's Creek Recreation Site	Highway 34 Recreation Site
Broad River Waterfowl Management Area (Non-Project Recreation Site)	Enoree River Bridge Recreation Site
Enoree River Waterfowl Management Area (Non-Project Recreation Site)	

FIGURE 4-1 PUBLIC RECREATION SITES AT PARR RESERVOIR



4.2 EXISTING PROJECT RECREATION SITES

4.2.1 CANNON'S CREEK RECREATION SITE

4.2.1.1 SITE DESCRIPTION AND EXISTING AMENITIES

Cannon's Creek Recreation Site is an existing Project Recreation Site located in Newberry County (Photo 1). Specifically, the recreation site is located on the western side of Parr Reservoir off of Broad River Road north of Peak, SC. GPS coordinates for this recreation site are latitude 34.2866, longitude -81.3631. This recreation site is owned and operated by SCE&G. A portion of this site is currently located on SCE&G lands outside of the Project boundary. SCE&G proposes to expand the Project boundary by 4.43 acres to bring the entire recreation site within the Project boundary, as shown on Exhibit G drawings filed with the new license application.



PHOTO 1 CANNON'S CREEK RECREATION SITE

Existing amenities at this recreation site include one concrete boat ramp, two shelters each with a picnic table and one grill. Restroom facilities are also located at this recreation site. There is a gravel parking area with spaces for up to 30 vehicles with trailers. Additional supported activities

include primitive camping and bank fishing. This site is unstaffed and open year round to the public without fee.

4.2.1.2 PROPOSED ENHANCEMENTS

During relicensing, SCE&G agreed to implement enhancements at Cannon’s Creek Recreation Site, as detailed below. Enhancements will be completed according to the schedule⁷ found in Section 3.2. A map of Cannon’s Creek Recreation Site that displays existing and proposed amenities is in Appendix B.

- Add at least one (1) interpretive display (two panels) on the cultural and historic resources of the area prior to issuance of the new license in accordance with the Historic Properties Management Plan and Programmatic Agreement.
- Install one (1) fishing pier
- Install one (1) courtesy dock
- Install two (2) additional lights, one (1) near the road and one (1) near the restrooms
- Barrier Free enhancements – pave two (2) barrier free parking spaces and access paths to the picnic area, fishing pier and restrooms, upgrade the restroom to barrier free standards with a new handle on the men’s room door and install proper height toilet seats
- Include 4.43 acres of land in the Project boundary, as identified in Appendix B

4.2.2 HELLER’S CREEK RECREATION SITE

4.2.2.1 SITE DESCRIPTION AND EXISTING AMENITIES

Heller’s Creek Recreation Site is an existing Project Recreation Area located in Newberry County, South Carolina (Photo 2). Specifically, the recreation site is located on the western side of Parr Reservoir, off of Broad River Road in Pomaria, SC. GPS coordinates for this site are latitude 34.3193 and longitude -81.3744. This site is owned and operated by SCE&G.

⁷ Construction of the interpretive display will occur prior to issuance of the new license in accordance with the Historic Properties Management Plan and Programmatic Agreement.



PHOTO 2 HELLER'S CREEK RECREATION SITE

Existing amenities at the recreation site include one concrete boat ramp, two shelters with one picnic table each, and restrooms. The site also has a gravel parking lot with space for up to 25 vehicles with trailers. Additional supported activities include primitive camping and bank fishing. This site is unstaffed and open year round to the public without fee. A map of Heller's Creek Recreation Site that displays existing amenities at the site is in Appendix B.

4.2.2.2 PROPOSED ENHANCEMENTS

SCE&G is not proposing any enhancements to the Heller's Creek Recreation Site.

4.3 PROPOSED NEW PROJECT RECREATION SITES

4.3.1 PARR SHOALS DAM CANOE PORTAGE

4.3.1.1 SITE DESCRIPTION AND EXISTING AMENITIES

During relicensing, SCE&G built an experimental canoe portage on the western side of the Parr Shoals Dam (Photo 3). An approximately 1,600 ft. trail was cleared and appropriate signage was

installed. The portage, located in Newberry County, is currently partially inside and outside of the Project boundary. GPS coordinates for the take-out area, located upstream of the Parr Shoals Dam, are 34.2592, -81.3389. GPS coordinates for the put-in area, located downstream of the Parr Shoals Dam, are 34.2575, -81.3358.

PHOTO 3 PARR SHOALS DAM CANOE PORTAGE



Due to positive feedback from stakeholders, SCE&G plans to formalize the canoe portage by bringing it into the Project boundary and including it on the new Exhibit G drawings that will be filed with the new license application. SCE&G owns all of the land on which the proposed portage is located.

4.3.1.2 PROPOSED ENHANCEMENTS

During relicensing, SCE&G agreed to formalize the canoe portage by bringing it into the Project boundary and maintaining it as an additional recreation facility. Formalization will occur upon license issuance. A map of the Parr Shoals Dam Canoe Portage is in Appendix B. This amenity will be unstaffed and open year round to the public without fee.

4.3.2 HIGHWAY 34 RECREATION SITE

4.3.2.1 SITE DESCRIPTION AND EXISTING AMENITIES

The Highway 34 Recreation Site, currently known as the Informal Highway 34 Boat Ramp or the Highway 34 Primitive Ramp, is an informal recreation site situated partially inside and outside of the Project boundary (Photo 4). It is located in Fairfield County on the eastern side of Parr Reservoir. GPS coordinates for the recreation site are latitude 34.3898 and longitude -81.3950. SCE&G owns the land on which the informal recreation site is located. SCE&G is proposing to formalize the site following issuance of the new license and include the entire recreation site inside the Project boundary as shown on Exhibit G drawings filed with the new license application. The formal Project recreation site will be renamed the Highway 34 Recreation Site.



PHOTO 4 HIGHWAY 34 RECREATION SITE

Currently the only amenities located at the site are an earthen boat ramp and an informal, gravel parking lot with space for up to five vehicles. Located adjacent to the existing informal recreation site and partially inside of the Project boundary is a non-project sand mining operation. The operator of the sand mine is currently seeking FERC approval for non-project use

of project lands and waters (Docket No. P-1894-209) under Article 23 of the current Project license issued August 28, 1974 and Article 63 issued December 8, 2011 (Standard Land Use Article).

4.3.2.2 PROPOSED ENHANCEMENTS

During relicensing, SCE&G agreed to formalize the recreation site and implement the enhancements listed below. Enhancements will be completed according to the schedule found in Section 3.2. A map of Highway 34 Recreation Site that displays existing and proposed amenities is in Appendix B. This site will be unstaffed and open year round to the public without fee.

- Improve the boat ramp – install geogrid and stabilize the bank
- Grade and gravel to improve the parking area
- Remove large trees that hinder vehicle access to the ramp
- Install a Recreation Sign on Highway 34 per FERC regulations
- Bring into the Project boundary, properties 211 parcel E (8.23 acres) and 285 parcel C (9.9 acres west of Railroad tracks) as identified in Appendix B. Through this proposed action, the existing non-project sand mine (Docket No. P-1894-209) will be completely located within the Project boundary. However, the sand mine is expected to have no effect on recreation at the Highway 34 Recreation Site, due to its distance from existing and proposed recreation facilities.

4.3.3 ENOREE RIVER BRIDGE RECREATION SITE

4.3.3.1 SITE DESCRIPTION AND EXISTING AMENITIES

The Enoree River Bridge Recreation Site is currently an informal, non-Project recreation site that is located on U.S. Forest Service lands, primarily outside of the Project boundary⁸ (Photo 5). SCE&G has flowage rights for the portion of USFS land inside the Project boundary. The recreation site is in Newberry County near Maybinton, SC. GPS coordinates for the recreation site are latitude 34.4230 and longitude -81.4669.

⁸ The Project boundary is located at elevation 274.6' NGVD88 at this site; therefore, only a small portion of the primitive ramp is located within the Project boundary.



PHOTO 5 ENOREE RIVER BRIDGE RECREATION SITE

Currently, the only amenity located at this site is an undeveloped bank area on the Enoree River, which is used to access the river with small watercraft, such as a canoe or kayak.

4.3.3.2 PROPOSED ENHANCEMENTS

During relicensing, SCE&G agreed to enhance the portion of the small watercraft access area that is located within the Project boundary. Enhancements will be completed according to the schedule found in Section 3.2⁹. A map of Enoree River Bridge Recreation Site that displays existing and proposed amenities is in Appendix B. This site will be unstaffed and open year round to the public without fee.

- Build canoe/kayak step down access within the Project boundary
- Install Recreation Sign on Maybinton Road per FERC regulations

4.4 NON-PROJECT RECREATION SITES

The following recreation sites are within the Project boundary; however, SCE&G is not responsible for operating and maintaining the following facilities. These Waterfowl Management Areas were previously approved by the FERC in response to Article 44 in the license issued

⁹ Completion of this recreation site enhancement is dependent upon approval from the US Forest Service.

August 28, 1974, by FERC Order dated June 6, 1979, Order Approving Exhibit R Revisions and Related Changes in Land Rights, and shown on the latest version of Exhibit R-3 (FERC No. 1894-99) associated with the August 28, 1974 license.

4.4.1 BROAD RIVER WATERFOWL MANAGEMENT AREA

4.4.1.1 SITE DESCRIPTION AND EXISTING AMENITIES

The Broad River Waterfowl Management Area (WMA) (part of which was formerly known as Terrible Creek Waterfowl Sub-impoundment) is located south of Highway 34 in Fairfield County near the town of Blair, South Carolina. GPS coordinates for the waterfowl area are latitude 34.371 and longitude -81.381. SCE&G owns the land on which the Broad River WMA is located and currently leases the property to the SCDNR. Under the new license SCE&G will offer to lease the lands at Broad River WMA to SCDNR for continued use and management under the WMA Program.

SCDNR manages the site as a Category I waterfowl area, which means hunts are conducted on selected Saturdays during the waterfowl season. Only hunters selected by the SCDNR lottery system are allowed to hunt at this site. This site is closed to the public during waterfowl season, and it is open to the public from February 2 through October 31. Recreation opportunities outside of the waterfowl season include bird watching, bank fishing, deer hunting, and small game hunting.

4.4.2 ENOREE RIVER WATERFOWL MANAGEMENT AREA

4.4.2.1 SITE DESCRIPTION AND EXISTING AMENITIES

The Enoree River WMA (part of which was formerly known as Suber Creek Waterfowl Sub-impoundments) is in Newberry County near the town of Whitmire, South Carolina. GPS coordinates for the waterfowl area are latitude 34.432 and longitude -81.422. The USFS and SCE&G own the land on which the Enoree River WMA is located and SCE&G holds flowage rights for the portion owned by the USFS. The USFS and SCDNR manage the WMA cooperatively. Under the new license SCE&G will offer to lease the lands owned by SCE&G at Enoree River WMA to SCDNR for continued use and management under the WMA Program.

SCDNR manages the site as a Category II waterfowl area, which means it is open to the public for waterfowl hunting. Waterfowl hunting is permitted here on Saturdays until 12 p.m. during the hunting season. Outside of the waterfowl season, the area is open to visitors for activities including bird watching, deer hunting, and small game hunting.

5.0 MONTICELLO RESERVOIR PUBLIC RECREATION SITES

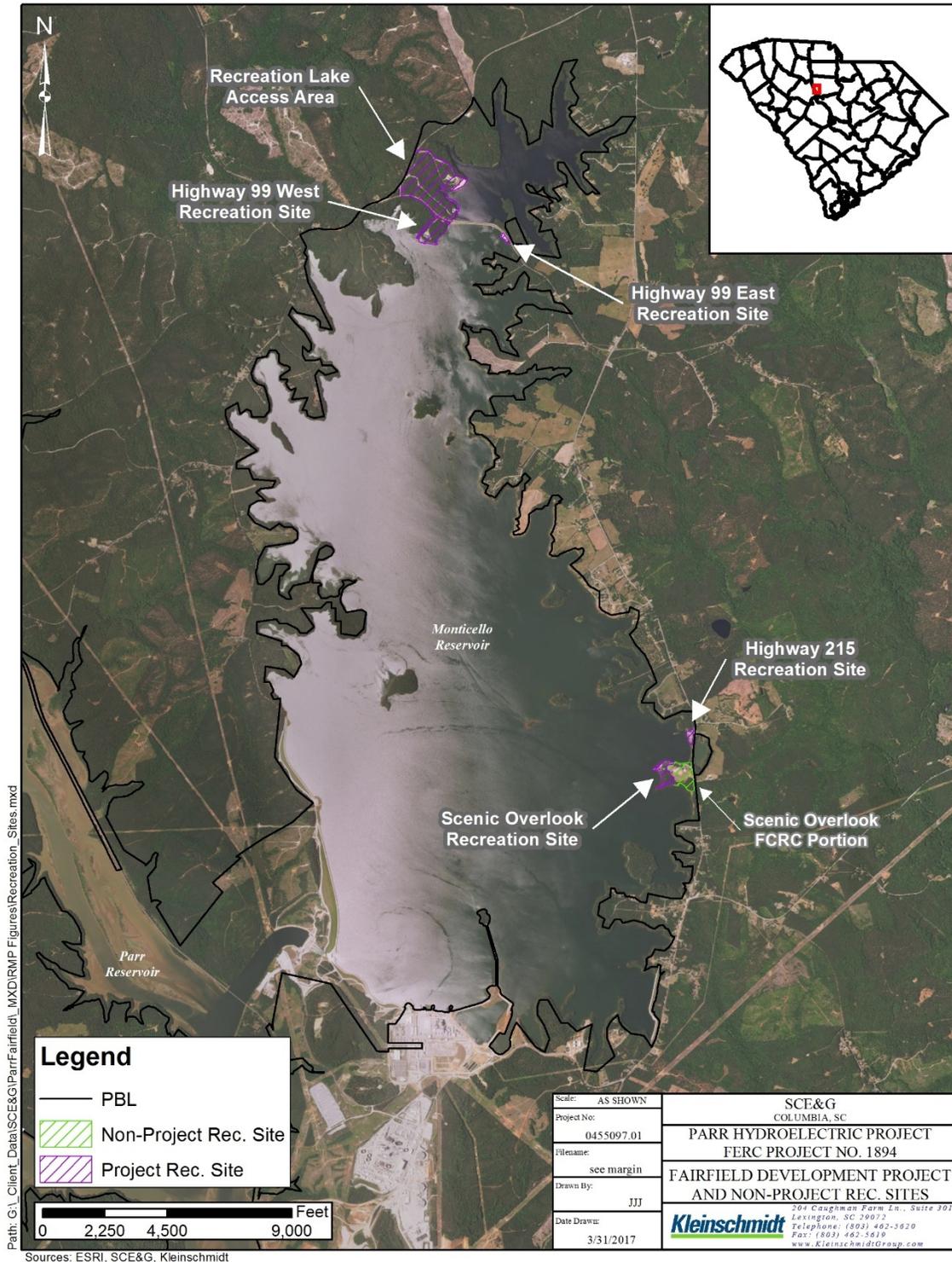
5.1 OVERVIEW

Monticello Reservoir currently provides the public with several existing Project and Non-Project recreation sites. In addition, SCE&G is proposing to enhance one informal recreation site at Monticello Reservoir, making it a formal Project Recreation Site. SCE&G owns, or has flowage rights over, all land on which the existing and proposed Project recreation sites are located. Existing and proposed new public recreation sites (both Project and Non-Project) are listed below in Table 5-1 and shown in Figure 5-1. Recreation facility and amenities tables are included in appendices C and D. In addition to the designated public recreation sites at the Project, lands within the Project boundary have been set aside for future recreational development. These lands are shown on land classification maps included in the Monticello Reservoir Shoreline Management Plan.

TABLE 5-1 PUBLIC RECREATION SITES AT MONTICELLO RESERVOIR

EXISTING PUBLIC RECREATION SITES	PROPOSED NEW PUBLIC RECREATION SITES
Scenic Overlook Recreation Site (Project and Non-Project portions)	Highway 99 East Recreation Site
Highway 215 Recreation Site	
Highway 99 West Recreation Site	
Recreation Lake Access Area	

FIGURE 5-1 PUBLIC RECREATION SITES AT MONTICELLO RESERVOIR



5.2 EXISTING PROJECT RECREATION SITES

5.2.1 SCENIC OVERLOOK RECREATION SITE

5.2.1.1 SITE DESCRIPTION AND EXISTING AMENITIES

The Scenic Overlook, formerly known as the Overlook, is a Project Recreation Site located on the eastern shore of Monticello Reservoir in Fairfield County, South Carolina (Photo 6). GPS coordinates for the site are 34.3239, -81.2894. The entire site is owned by SCE&G and is within the Project Boundary, however only a portion is operated and maintained by SCE&G as a Project Recreation Site. The remaining portion of the site is operated and maintained by the Fairfield County Recreation Commission (FCRC). The FCRC operated portion of this site is discussed under Section 5.4, Non-Project Recreation Sites.



PHOTO 6 SCENIC OVERLOOK RECREATION SITE

The portion of the site operated by SCE&G offers amenities including eight picnic tables, one picnic shelter, a scenic overlook and a fishing pier. Visitors can partake in activities such as

picnicking, dock fishing, and bank fishing. Restrooms and gravel parking areas are also available. The site is unstaffed and free to visitors year round.

5.2.1.2 PROPOSED ENHANCEMENTS

During relicensing, SCE&G agreed to improve the site by implementing the enhancements listed below. Enhancements will be completed according to the schedule found in Section 3.2. A map of the Scenic Overlook Recreation Site that displays existing and proposed amenities is in Appendix B.

- Add one (1) light at existing fishing pier
- Modify the existing fishing pier for barrier free use
- Pave two (2) barrier free parking spaces near the fishing pier and pave an access path to the fishing pier
- Add two (2) new picnic tables
- Build one (1) barrier free picnic shelter with one (1) barrier free picnic table
- Pave one (1) barrier free parking space and an access path near the new barrier free picnic table

5.2.2 HIGHWAY 215 RECREATION SITE

5.2.2.1 SITE DESCRIPTION AND EXISTING AMENITIES

The Highway 215 Recreation Site, also known as the Highway 215 Boat Ramp or Ramp 1, is located on the eastern side of Monticello Reservoir, off Highway 215, in Fairfield County, South Carolina (Photo 7). GPS coordinates for the site are 34.3273, -81.2853. This Project Recreation Site is owned and operated by SCE&G.



PHOTO 7 HIGHWAY 215 RECREATION SITE

This site is primarily used as a boat ramp. A courtesy dock and two concrete boat ramps are located at this site. The site also includes a paved parking area with space for 30 vehicles with trailers and a picnic shelter with two picnic tables. The site is unstaffed, free, and open to the public year round. A map of the Highway 215 Recreation Site that displays existing amenities is included in Appendix B.

5.2.2.2 PROPOSED ENHANCEMENTS

During relicensing, SCE&G agreed to improve the site by implementing the enhancements listed below. Enhancements will be completed per the schedule found in Section 3.2.

- Add at least one (1) interpretive display on the cultural and historic resources of the area prior to issuance of the new license in accordance with the Historic Properties Management Plan and Programmatic Agreement.

5.2.3 HIGHWAY 99 WEST RECREATION SITE

5.2.3.1 SITE DESCRIPTION AND EXISTING AMENITIES

The Highway 99 West Recreation Site is currently known as the Highway 99 Public Access Area, the Highway 99 Boat Ramp, or Ramp 2. The site is located on the northern side of Monticello Reservoir off Highway 99 in Fairfield County, South Carolina (Photo 8). GPS coordinates for the site are 34.3764, -81.3174. This Project Recreation Site is owned and operated by SCE&G.

PHOTO 8 HIGHWAY 99 WEST RECREATION SITE



Existing amenities at the site include three concrete boat ramps, one courtesy dock, two picnic shelters, five picnic tables, one grill, restrooms and primitive tent camping. The site also has a paved parking area with space for 80 vehicles with trailers. This site is unstaffed, free and open to the public year round.

5.2.3.2 PROPOSED ENHANCEMENTS

During relicensing, SCE&G agreed to improve the site by implementing the enhancements listed below. Enhancements will be completed according to the schedule found in Section 3.2. As mentioned, this site is being renamed the Highway 99 West Recreation Site. A map of the Highway 99 West Recreation Site that displays existing and proposed amenities is in Appendix B.

- Add one (1) fishing pier
- Improve boat ramp located in the cove to improve boat access and minimize or eliminate drop-off
- Change two (2) existing lights, one (1) near boat ramp/courtesy dock and one (1) near new proposed fishing pier from standard to flood type lights
- Pave access paths or build ramps and platforms to provide barrier free access to the courtesy dock, new fishing pier and restrooms
- Convert four (4) existing parking spaces into two (2) barrier free parking spaces
- Modify restrooms to allow year round access – add heat to restroom and/or water pump room

5.2.4 RECREATION LAKE ACCESS AREA

5.2.4.1 SITE DESCRIPTION AND EXISTING AMENITIES

The Recreation Lake Access Area, also known as the Monticello Sub-Impoundment or Ramp 3, is located on the Recreation Lake, adjacent to Lake Monticello, off Highway 99 in Fairfield County, South Carolina (Photo 9). GPS coordinates for the site are 34.3821, -81.3134. The site is owned and operated by SCE&G.



PHOTO 9 RECREATION LAKE ACCESS AREA – BEACH AREA

The site is composed of two distinct areas, including a boat ramp area that is open to the public year round and a beach area that is open to the public from April 1 through September 30. Amenities at the beach area include two picnic shelters, 24 picnic tables, seven grills, a beach, restrooms, and a 0.3-mile long hiking trail that connects the beach area and the boat ramp area. The beach area has a gravel parking lot with space for approximately 95 vehicles, including several unpaved, barrier free parking spaces. The boat ramp area includes a concrete boat ramp, a picnic table, restrooms and a gravel parking area with space for 10 vehicles with trailers. Both areas are unstaffed and free to the public.

5.2.4.2 PROPOSED ENHANCEMENTS

During relicensing, SCE&G agreed to implement the enhancements listed below at the boat ramp area of the Recreation Lake Access Area. Enhancements will be completed per the schedule found in Section 3.2. A map of the Recreation Lake Access Area that displays existing and proposed amenities is in Appendix B.

- Add one (1) courtesy dock

5.3 PROPOSED NEW PROJECT RECREATION SITES

5.3.1 HIGHWAY 99 EAST RECREATION SITE

5.3.1.1 SITE DESCRIPTION AND EXISTING AMENITIES

The Highway 99 East Recreation Site is currently an informal recreation site known as the Highway 99 Informal Access Area or the Highway 99 Informal Fishing Area. This site is located on the north side of Monticello Reservoir, off Highway 99 in Fairfield County, South Carolina (Photo 10). GPS coordinates for this site are 34.3766, -81.3077. SCE&G is proposing to formalize this site, making it an official Project Recreation Site, and rename it the Highway 99 East Recreation Site. SCE&G owns the proposed recreation site land, which is currently within the Project Boundary.



PHOTO 10 HIGHWAY 99 EAST RECREATION SITE

Currently, the informal recreation site is used primarily for bank fishing. The site provides a gravel parking area for approximately 20 vehicles, as well as shoreline access for bank fishing. Swimming is prohibited at this site and there are no tables or other amenities available. This site is unstaffed, free to the public and open year round.

5.3.1.2 PROPOSED ENHANCEMENTS

During relicensing, SCE&G agreed to formalize this site and implement the enhancements listed below. Enhancements will be completed per the schedule found in Section 3.2. A map of Highway 99 East Recreation Site that displays existing and proposed amenities is in Appendix B.

- Add one (1) fishing pier
- Add two (2) benches
- Add two (2) picnic tables
- Add two (2) lights on one pole, with one (1) light directed at the fishing pier and one (1) light directed at the parking area

5.4 NON-PROJECT RECREATION SITES

The following recreation sites are within the Project boundary; however, SCE&G is not responsible for operating and maintaining the following facilities. Under the new license, SCE&G will continue under its current lease or offer a new lease to the Fairfield County Recreation Commission (FCRC) for continued operation and management of a portion of the lands at the Scenic Overlook Recreation Site. However, SCE&G may elect to upgrade certain site facilities, as determined through relicensing stakeholder consultation and as discussed below.

5.4.1 SCENIC OVERLOOK – FCRC PORTION

5.4.1.1 SITE DESCRIPTION AND EXISTING AMENITIES

The FCRC operated and maintained portion of the Scenic Overlook is a non-Project recreation site located adjacent to the SCE&G-maintained portion of the Scenic Overlook, discussed in Section 5.2.1. This area is located on the eastern shore of Monticello Reservoir in Fairfield County, South Carolina. GPS coordinates for the site are 34.3240, -81.2856.

The FCRC-maintained site offers many amenities to the public, including tennis courts, a baseball field, a playground area, additional picnic shelters, a 1-mile hiking trail, and a community center. Additional gravel parking areas are available throughout the recreation site.

5.4.1.2 **SCE&G-PROPOSED ENHANCEMENTS TO THE FCRC SITE**

During relicensing, SCE&G agreed to improve certain facilities at the FCRC site, as listed below. Enhancements will be completed according to the schedule found in Section 3.2. A map of entire Scenic Overlook Recreation Site that displays existing and proposed amenities is in Appendix B.

- Pave one (1) barrier free parking space and access path at the restroom area (SCE&G will coordinate this improvement with the FCRC)

6.0 SUMMARY

Parr Reservoir and Monticello Reservoir support a wide range of public recreation activities through their Project Recreation Sites, including boat and bank fishing, swimming, camping, hunting, and picnicking. In the 2016 RUN Study, most people surveyed reported being satisfied with the condition, number and type of recreation facilities located at the Project.

As part of Project relicensing and after the issuance of the new license, SCE&G will continue to work to maintain and enhance the Project Recreation Sites. SCE&G plans to meet with stakeholders at regular intervals throughout the term of the new license to reevaluate recreation needs at the Project. Table 6-1 summarizes the proposed enhancements for each Project Recreation Site.

TABLE 6-1 SUMMARY OF PROPOSED ENHANCEMENTS FOR PROJECT RECREATION AREAS

PROJECT RECREATION SITE	PROPOSED ENHANCEMENTS
<i>Parr Reservoir</i>	
Cannon's Creek Recreation Site (existing site)	Install one (1) fishing pier
	Install one (1) courtesy dock
	Install two (2) additional lights, one (1) near road and one (1) near restroom
	Pave two (2) barrier free parking spaces and access paths to picnic area, fishing pier and restrooms, upgrade restroom to barrier free standards with new handle on men's room door and install new proper height toilet seats
	Install at least one (1) interpretive display on the cultural and historic resources of the Project area.
	Bring 4.43 acres of land into the Project Boundary.
Parr Shoals Dam Canoe Portage (proposed new facility)	SCE&G built an experimental canoe portage on the Newberry side of the Parr Shoals Dam. An approximately 1,600 ft. trail was cleared and appropriate signage was installed. Depending on usage and feedback from the agencies, SCE&G plans to formalize the canoe portage by bringing it into the Project boundary and maintaining it as an additional recreation facility.
Highway 34 Recreation Site (proposed new site)	Improve boat ramp - install geogrid and stabilize bank
	Grade and gravel to improve parking area
	Remove large trees that hinder vehicle access to ramp
	Install Recreation Sign on Highway 34 per FERC regulations

PROJECT RECREATION SITE	PROPOSED ENHANCEMENTS
	Bring into Project boundary, properties 211 parcel E (8.23 acres) and 285 parcel C (9.9 acres west of Railroad tracks) on Exhibit K-14 drawing
Enoree River Bridge Recreation Site (proposed new site)	Build canoe/kayak step down access within the PBL Install Recreation Sign on Maybinton Road per FERC regulations
<i>Monticello Reservoir</i>	
Scenic Overlook Recreation Site (existing site)	Add one (1) light at existing fishing pier
	Modify existing fishing pier for barrier free use, pave two (2) barrier free parking spaces and access path(s) to fishing pier
	Add two (2) new picnic tables
	Build one (1) barrier free shelter with one (1) barrier free picnic table, pave one (1) barrier free parking space and access path to new barrier free shelter
	Pave one (1) barrier free parking space and access path (SCE&G will need to coordinate this improvement with County)
Highway 215 Recreation Area (existing site)	Install at least one (1) interpretive display on the cultural and historic resources of the Project area.
Highway 99 West Recreation Site (existing site)	Add one (1) fishing pier
	Improve boat ramp in cove so it doesn't drop off
	Change two (2) existing lights, one (1) near boat ramp/courtesy dock and one (1) near new proposed fishing pier from standard to flood type lights
	Pave access paths or build ramps and platforms to courtesy dock, fishing pier & restrooms; and convert four (4) existing parking spaces into two (2) barrier free parking spaces
	Modify restrooms to allow year-round access - electricity exists in restrooms, so heat could be added in restroom and/or water pump room
Recreation Lake Access Area (existing site)	Install one (1) courtesy dock
Highway 99 East Recreation Site (proposed new site)	Add one (1) fishing pier
	Add two (2) benches
	Add two (2) picnic tables
	Add two (2) lights on one pole, one (1) light for fishing pier and one (1) light for parking area

APPENDIX A
CONSULTATION RECORD

MEETING NOTES

**SOUTH CAROLINA ELECTRIC & GAS COMPANY
Recreation TWC Meeting**

October 6, 2016

Final ACJ 10-28-16

ATTENDEES:

Bill Argentieri (SCE&G)
Ray Ammarell (SCE&G)
Beth Trump (SCE&G)
Brandon Stutts (SCANA)
Caleb Gaston (SCANA)
Randy Mahan (SCE&G)
Dan Adams (SCE&G)
Brandon McCartha (SCE&G)

Bill Marshall (SCDNR)
Dick Christie (SCDNR)
Gerrit Jobsis (American Rivers)
Jeff Carter
Billy Hendrix
Alison Jakupca (Kleinschmidt)
Henry Mealing (Kleinschmidt)

These notes are a summary of the major points regarding the Recreation Use and Needs Study presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Alison Jakupca opened the meeting and noted the following goals for the TWC meeting:

- Review the results of the 2015/2016 Recreation Use and Needs Study (RUNS) as presented in the draft RUNS report.
- Review any TWC comments necessary to finalize the RUNS report.
- Create a list of measures, supported by RUNS study results, the TWC feels that SCE&G should consider as PM&E measures for the Settlement Agreement.

Alison provided the group with a presentation reviewing the Parr and Monticello RUNS study results. The presentation has been attached to these meeting notes for reference. The group discussed each recreation area included in the study and the use and user opinions documented for each site. Dick Christie noted that the use numbers documented in the study report appear to be higher than what may actually be occurring at the Project. Alison noted that the recreation days reported in the RUNS report were likely over-estimates due to the FERC-accepted methodology used to estimate recreation days. Traffic counter data, which was used to estimate recreation days, counts every vehicle that enters a site, even if that vehicle is just passing through and the individual(s) is not staying to recreate at the facility. This has the potential to provide high “use” numbers, especially at the sites with easy road access or double entrances/exits. Dick also added that there was very little detail in the report regarding the ADA/barrier free status of the facilities. Barrier free access information will be added into the RUNS report prior to finalizing it (action item). Several other TWC members provided additional report edits that will be captured in the final report.

Although each recreation site was discussed and assessed for potential enhancement needs as presented below, there was extended discussion regarding the Enoree River Bridge Informal Access Area. This area is, in large part, located outside the Project boundary. TWC members emphasized the importance of this site for paddlers and the poor condition of this site as it currently exists. TWC members asked SCE&G to consider ways to support the effort to improve this site. SCE&G stated that development of this site would have to involve agreement by the U.S. Forest Service. Individual site recommendations by the TWC are further detailed below:

Monticello Reservoir:

Scenic Overlook:

- Lighting
- Additional Fishing Pier
- Additional Picnic Tables

Highway 215 Boat Ramp:

- Lighting on/near the dock and boat ramp
- Improve or repair existing boat dock

Highway 99 Informal Access Area:

- Fishing Pier
- Benches
- Picnic Tables
- Restroom (? - may not be possible due to access to utilities)
- Lighting (?)

Highway 99 Boat Ramp

- Improvement to boat ramp in cove – lower end of boat ramp drops off
- Year-round access to restrooms
- Lighting on ramp
- Fishing pier (SCDNR recommendation)

Recreation Lake:

- Regular maintenance and upkeep
- No new facilities or improvements recommended

Parr Reservoir:

Cannon's Creek:

- Boat ramp expansion and/or improvement
- Restroom improvements
- Fishing pier
- Courtesy dock
- Additional lighting

Heller's Creek:

- Boat ramp expansion or improvement to make more useful at low water
- Restroom improvements
- Fishing pier
- Courtesy dock
- Additional lighting

Highway 34 Primitive Ramp:

- Improve grading and boat launch
- Parking area improvements
- Remove large trees that hinder vehicle access to ramp

Enoree River Bridge Informal Access Area (non-Project):

- SCE&G to determine where Project boundary ends and work with the USFS to see if there are ways to improve access
- Non-motorized boat access - canoe/kayak step down facility
- Turn-around area
- Parking for 6 vehicles

Broad and Enoree River Waterfowl Areas:

- No new facilities or improvements recommended

Although not included in the RUNS study, the TWC discussed plans to bring the temporary downstream canoe portage around Parr Shoals Dam into the Project boundary as a formal facility. Bill noted that SCE&G plans to include the canoe portage in the Recreation Management Plan submitted to FERC as part of the new license.

SCE&G staff noted that they would review the list of PM&E measures developed for each recreation site to determine feasibility. Subsequent discussions on site improvements will take place with the TWC after SCE&G's review. Kleinschmidt will incorporate a "barrier free" assessment into the final RUNS report, along with other edits provided by the TWC. Once edits are incorporated a final report will be issued to the TWC and RCG.

The meeting adjourned and action items are listed below.

ACTION ITEMS:

- Kleinschmidt will prepare meeting notes for distribution to the TWC.
- SCE&G to review list of TWC recommended enhancement measures to determine feasibility.
- Kleinschmidt will include "barrier free" assessment in the final RUNS report.
- Kleinschmidt will incorporate edits provided by TWC members into RUNS report and finalize.

Parr Hydroelectric Project – Recreation Use and Needs Study

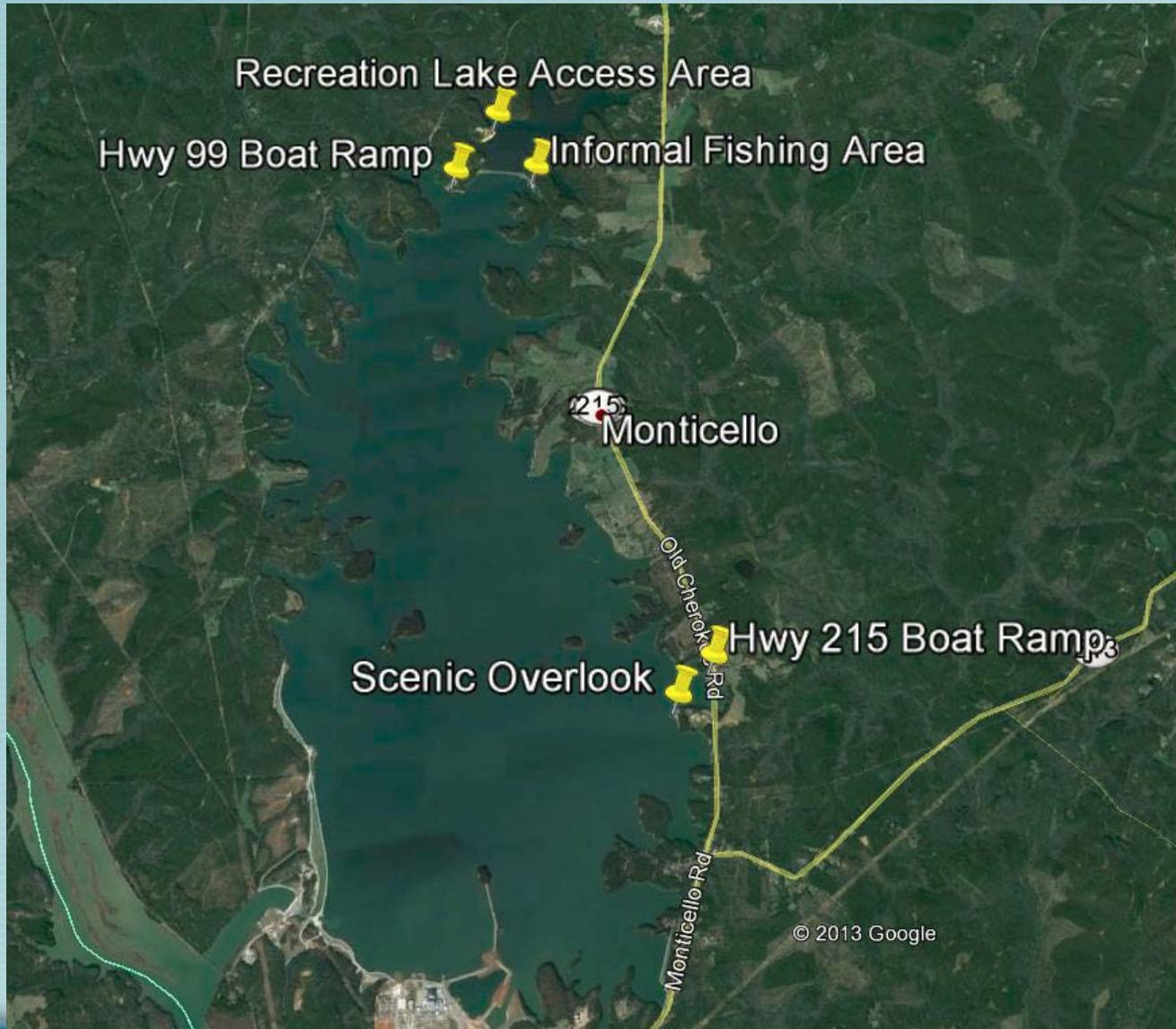
Draft Study Report Review Meeting

October 6, 2016

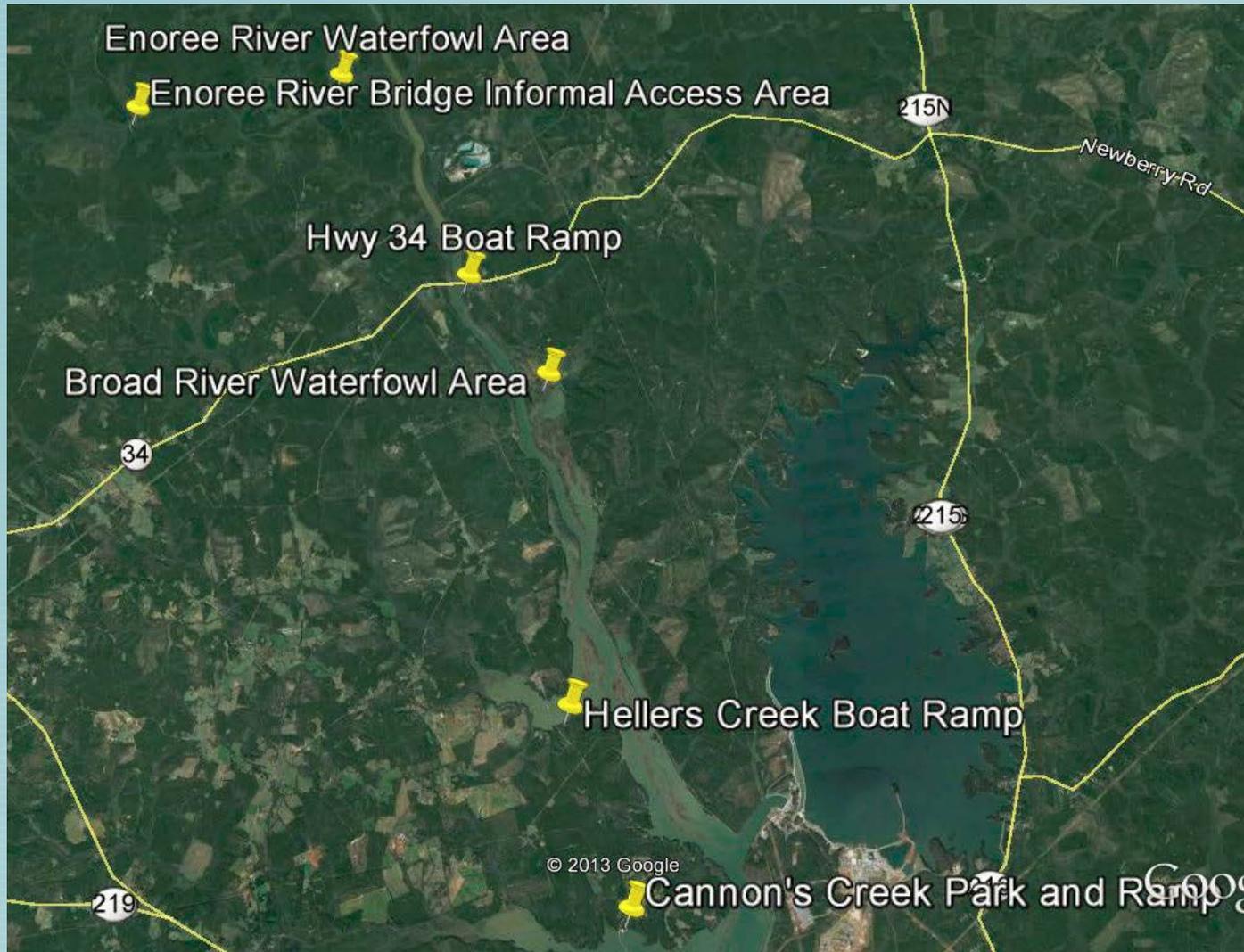
Study Objectives

- Characterize the existing recreation use of the Project recreation sites (type, volume, daily patterns).
- Characterize use of waterfowl areas and SCE&G recreation lands by hunters.
- Identify future recreation needs at the Project.

Study Area - Monticello



Study Area - Parr



Assessment Metrics

Recreation Sites and Informal Areas	Project Facility	Site Inventory	Vehicle Counts	Exit Interviews	Mail-in Surveys	Spot Counts
Monticello Reservoir						
Scenic Overlook (SCE&G-maintained portion)						
Highway 215 Boat Ramp						
Highway 99 Boat Ramp						
Recreation Lake Access Area						
Highway 99 Informal Fishing Area						
Parr Reservoir						
Cannon's Creek Public Access Area						
Heller's Creek Public Access Area						
Highway 34 Primitive Ramp						
Broad River Waterfowl Area						
Enoree River Waterfowl Area						
Enoree River Bridge Informal Access Area						

Study Season

	Monticello Reservoir	Parr Reservoir/Enoree Waterfowl
Primary Site User Interviews	April 1 - September 7, 2015	April 1 - September 7, 2015
Waterfowl Mail-in Survey Distribution: Early Teal Season and Goose	September 11 - September 26, 2015	September 11 - September 26, 2015
Waterfowl Mail-in Survey Distribution: Duck and Canada Geese Seasons	November 21 – 28, 2015, December 12, 2015 - January 31, 2016	November 21 – 28, 2015, December 12, 2015 - January 31, 2016
Waterfowl Mail-in Survey Distribution: Late Canada Geese Season	February 14- February 29, 2016	
Early Crappie Season Site User Interviews	February 1 - March 31, 2016	

Overview: Monticello

- Use by local residents (Fairfield, Lexington, Newberry, Richland).
- Reason for choosing Monticello:
 - Close to home
 - Good fishing
- Island Use (15% of water recreators): bank fishing and camping.
- Early crappie season – March weekdays.

Monticello: Scenic Overlook





Monticello Reservoir: Scenic Overlook

- Amenities: Swimming, Restrooms, Barrier-free dock fishing, Bank fishing, Picnicking.
- Primary Activities: Bank fishing and pier fishing.
- Condition Rating: 4.42
- Crowdedness Rating: 2.08
- Density Rating: 8%(wd); 17%(we)

Monticello Reservoir: Scenic Overlook



- Facility/Amenity and Improvement Requests:
 - Fishing pier/dock
 - Picnic tables/shelter
 - Grills
- Other findings:
 - Monticello site receiving greatest amount of use.
 - High use during early crappie season.

Monticello: Highway 215 Boat Ramp



Monticello Reservoir: Highway 215 Boat Ramp



- Amenities: Boat Ramps; Courtesy Dock; Picnic Shelter.
- Primary Activity: Boat fishing
- Condition Rating: 4.44
- Crowdedness Rating: 2.42
- Density Rating: 62%(wd); 138%(we)

Monticello Reservoir: Highway 215 Boat Ramp



- Facility/Amenity and Improvement Requests:
 - Restrooms
 - Lighting
 - Dock improvements
- Other findings:
 - Monticello site receiving highest condition rating.
 - Supports high level of bank fishing (17% of use).

Monticello: Highway 99 Access Area





Monticello Reservoir: Highway 99 Access Area

- Amenities: Boat ramps (3); Restrooms; Courtesy dock; Picnic shelters, Picnic tables; Grill.
- Primary Activity: Boat Fishing.
- Condition Rating: 4.17
- Crowdedness Rating: 2.70
- Density Rating: 28%(wd); 49%(we)



Monticello Reservoir: Highway 99 Access Area

- Facility/Amenity and Improvement Requests:
 - Lighting
 - Restroom improvements/year-round access
- Other findings:
 - Overall, respondents did not feel any additional facilities were needed.
 - Highest crowdedness rating of all sites.
 - Waterfowl hunter access area.

Monticello: Recreation Lake Access Area





Monticello Reservoir: Recreation Lake Access Area

- Amenities: Boat Launch; Beach Area; Picnic Shelters; Grills; Hiking Trail; Restrooms.
- Primary Activity: Swimming, Boat Fishing.
- Condition Rating: 4.0
- Crowdedness Rating: 2.05
- Density Rating: 12%(wd); 38%(we)

Monticello Reservoir: Recreation Lake Access Area



- Facility/Amenity and Improvement Requests:
 - Picnic tables/shelters, parking
 - Restroom improvements/year-round access
 - Ice/vending/concessions
- Other findings:
 - Overall, respondents did not feel any additional facilities were needed.

Monticello: Hwy 99 Informal Fishing Area





Monticello Reservoir: Hwy 99 Informal Fishing Area

- Amenities: Shoreline access and parking area
- Primary Activity: Bank fishing
- Condition Rating: 4.24
- Crowdedness Rating: 1.90
- Density Rating: 62%(wd); 81%(we)



Monticello Reservoir: Hwy 99 Informal Fishing Area

- Facility/Amenity and Improvement Requests:
 - Restrooms
 - Picnic tables/shelters, Trash cans, Water fountain
 - Fishing pier/dock
 - Benches/seating
 - Lighting
- Other findings: High use during early crappie season.

Overview: Parr

- Use by local residents (Newberry)
- Reason for choosing Parr:
 - Good fishing
- Water-based recreation activities (boat fishing and bank fishing)

Parr: Cannon's Creek Public Access Area





Parr Reservoir: Cannon's Creek Public Access Area

- Amenities: Boat launch; Picnic shelters; Grill; Restrooms.
- Primary Activity: Boat fishing
- Condition Rating: 3.95
- Crowdedness Rating: 1.93
- Density Rating: 28%(wd); 51%(we)



Parr Reservoir: Cannon's Creek Public Access Area

- Facility/Amenity and Improvement Requests:
 - Boat dock/Fishing pier, Boat launch
 - Lighting
 - Restroom improvements
 - Boat ramp improvements
- Other findings: Received highest use of Parr facilities.

Parr: Heller's Creek Public Access Area





Parr Reservoir: Heller's Creek Public Access Area

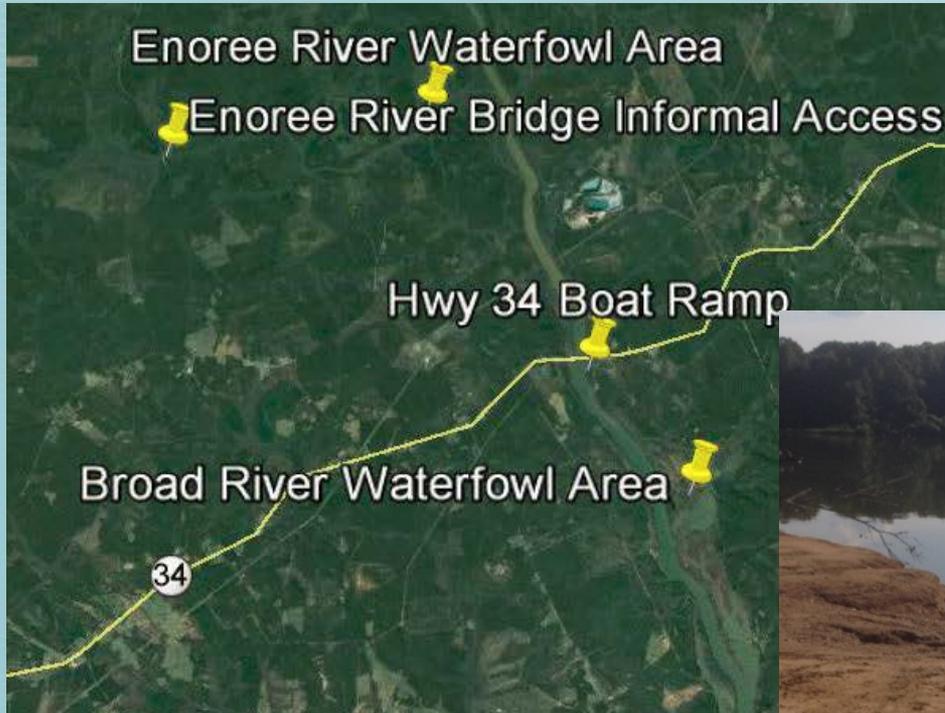
- Amenities: Boat launch; Picnic Shelters/tables; Restrooms.
- Primary Activity: Boat fishing
- Condition Rating: 3.81
- Crowdedness Rating: 2.31
- Density Rating: 18%(wd); 35%(we)



Parr Reservoir: Heller's Creek Public Access Area

- Facility/Amenity and Improvement Requests:
 - Boat dock/Fishing pier
 - Boat launch (44%)
 - Lighting
 - Restroom improvements
 - Boat ramp repairs
- Other findings:
 - Quite a few comments regarding access limitations (siltation).

Parr: Hwy 34 Primitive Ramp

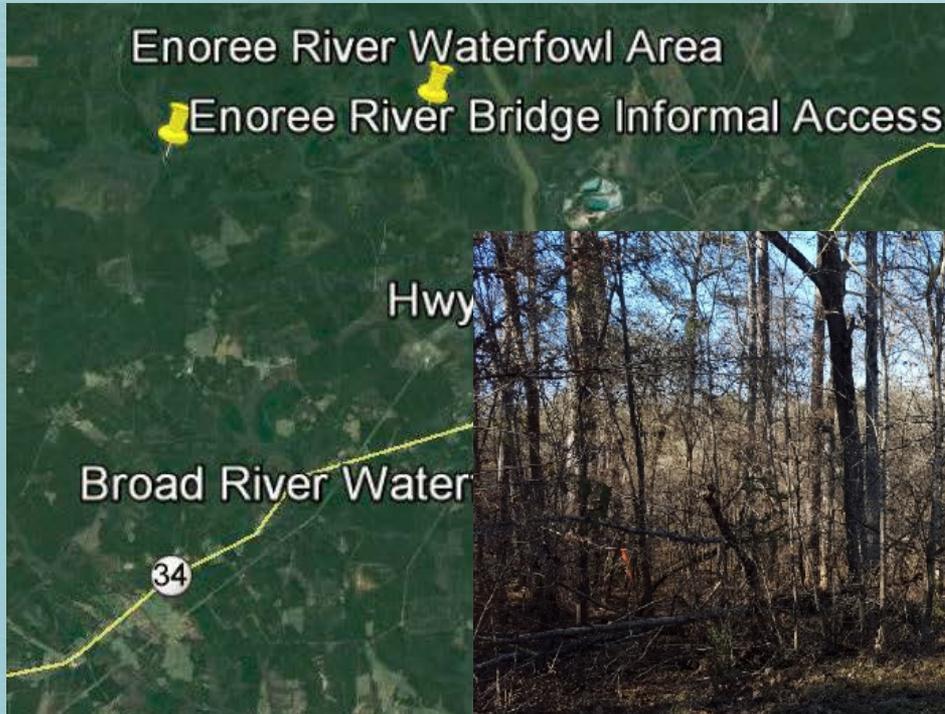




Parr Reservoir: Hwy 34 Primitive Ramp

- Amenities: Parking and gravel/earthen boat ramp.
- Received approximately 16% of total use at Parr development sites.
- Other findings: Highly utilized by waterfowl hunters. Focus group attendees noted that they would like for this site to remain primitive.

Non-Project: Enoree River Bridge



Non-Project: Enoree River Bridge



- Amenities: Primitive ramp on USFS property.
- Estimated 1,342 recreation days based on vehicle traffic and an estimated 2.15 people per vehicle.
- April was the highest use month.
- Other findings: One of the primary sites used by waterfowl hunters (focus group results).
- Received approximately 5% of use experienced at three SCE&G maintained access areas.

Waterfowl Management Areas

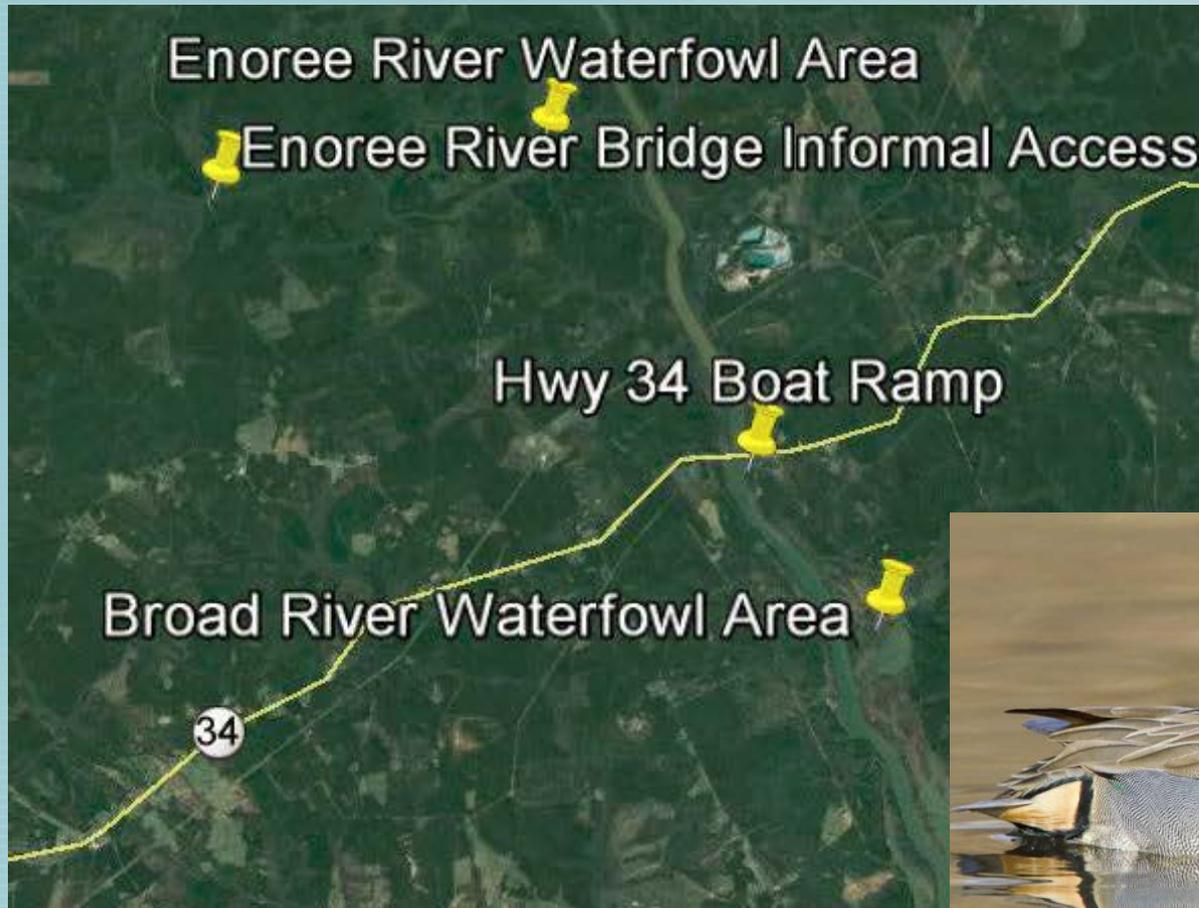


Photo credit: Audubon.org

Waterfowl Management Areas:

Monticello Reservoir

- Site Characteristics: Waters of Monticello Reservoir considered WMA; Available for hunting on Wednesdays and Saturdays.
- Use: Primarily Saturday use.
- Additional Findings: In general, no additional facilities or improvements were requested by Monticello Reservoir waterfowl hunters at focus group. Survey respondents requested additional lighting, bathrooms, deeper boat landing.

Waterfowl Management Areas:

Parr Reservoir

- Site Characteristics: Portions of Parr designated as WMA and available for hunting Monday through Saturday.
- Use: Primarily Saturday use; Highway 34 and Enoree River Bridge Informal Access (focus group attendees).
- Additional Findings: High reporting of crowding. Requests for days/times to be limited.

Waterfowl Management Areas: Enoree River Waterfowl Management Area

- Site Characteristics: Category II, Saturday AM only.
- Use: Estimated 263 recreation days during waterfowl season based on vehicle traffic and an estimated 2.15 people per vehicle.
- Additional Findings: DNR's estimated use was 131 people, which could indicate that people are traveling to the site individually.

Waterfowl Management Areas: Broad River Waterfowl Management Area

- Site Characteristics: Category I WMA: draw-hunt site.
- Use: 7 lottery hunts and 1 youth hunt held in 2015/2016.
- Additional Findings: In general, users are pleased with this site. No additional facility/improvement needs noted.

Data Summary & Future Use

- Project is well used (152,709 recreation days).
- Populations projected to increase by 12.9 percent from 2015 to 2030 – Primary recreation activities anticipated to remain the same.
- Project recreation sites in good to very good condition (average Project rating of 4.17).
- Crowdedness ratings low to moderate.

Data Summary & Future Use

- Monticello:
 - Water-based recreation activities (boat fishing).
 - Island Use (15% of water recreators): bank fishing and camping.
 - Facility/Amenity requests: picnic tables, shelters, lighting, restroom improvements/access and fishing piers or docks.

Data Summary & Future Use

- Parr:
 - Water-based recreation activities (boat fishing and bank fishing).
 - Facility/Amenity requests: boat launching/docking facilities, additional lighting and restroom improvements.

Data Summary & Future Use

- Waterfowl Hunting Areas:
 - Project area well used by waterfowl hunters.
 - Primarily local residents (Monticello); residents of surrounding counties – Richland and Lexington (Parr).
 - Hunting pressure noted as the primary concern at Enoree Waterfowl Area and Parr Reservoir by waterfowl hunters.

PM&E Discussion

- What is requested?
- What is possible?
- What is appropriate?

MEETING NOTES

**SOUTH CAROLINA ELECTRIC & GAS COMPANY
Recreation TWC Meeting**

January 4, 2017

Final KMK 2-2-17

ATTENDEES:

Bill Argentieri (SCE&G)
Ray Ammarell (SCE&G)
Beth Trump (SCE&G)
Brandon Stutts (SCANA)
Caleb Gaston (SCANA)
Randy Mahan (SCE&G)
Dan Adams (SCE&G)
Brandon McCartha (SCE&G)
Tommy Boozer (SCE&G)

Bill Marshall (SCDNR)
Dick Christie (SCDNR)
Gerrit Jobsis (American Rivers)
John Fantry (Town of Winnsboro)
Henry Mealing (Kleinschmidt)
Alison Jakupca (Kleinschmidt)
Kelly Kirven (Kleinschmidt)

These notes are a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Alison opened the meeting and stated that the goal of the meeting is to review SCE&G's proposed recreation enhancements and move closer to a final proposal of enhancements for inclusion in the Recreation Management Plan (RMP). Prior to the meeting, Alison distributed a list of SCE&G's proposed recreation enhancements for the TWC to review. This list is attached to the end of these notes.

Alison directed the group to look at the first recreation site on the list, Cannon's Creek, and its associated proposed enhancements. The group also looked at Google maps to see where the proposed enhancements would be located at the site. Dick said that he noticed that boat ramp expansion, which was requested by the TWC, was not proposed by SCE&G at Cannon's Creek and at Heller's Creek and he wanted to know their reasoning for this. Ray said that it didn't look like a boat ramp expansion would be feasible at Heller's Creek because the cove is very shallow. Tommy added that the existing boat ramps are functional and in good shape at Cannon's Creek, so there didn't seem to be a need to upgrade. Alison said this request came from the open ended questions on the Recreation Use and Needs Study (RUNS) surveys. Some people suggested boat ramp expansion at all sites. Dick asked why a courtesy dock was not proposed by SCE&G at Cannon's Creek. Tommy said that part of the reason is due to the fluctuation in the reservoir. Due to flooding and fluctuations, a stationary or floating dock would be hard to manage and make durable. Bill M. said he has heard from the public that they are interested in seeing a courtesy dock at Cannon's Creek. Tommy said a courtesy dock could also introduce safety issues and in particular, might encourage kids to swim in the area although swimming isn't allowed at the site. Alison asked if the fishing pier could be used as a courtesy dock – a problem experienced at SCE&G dock sites on other reservoirs. And the dangers associated with jumping and diving from docks is especially

significant on reservoirs with frequent and significant water level fluctuations, as would be the case here. Henry said the fishing pier is going to be stationary and will have rails for safety, making it difficult to use as a courtesy dock. Dick said the fishing pier might be a good test for installing a stationary courtesy dock in the future and can be revisited 10 or 15 years down the road. Dick said he thinks the ADA proposals at Cannon's Creek are good.

Henry reminded the group that all of the proposed enhancements were the results of the RUNS survey findings. All of the enhancements suggested by the public were listed and then SCE&G visited each site and looked to see what made sense to add. They also made sure enhancements would be consistent with their safety plans.

The group then discussed the Heller's Creek site. SCE&G is not proposing any enhancements at this site. Bill M. asked if SCE&G had difficulty maintaining the boat ramp at this site. Tommy said the ramp extends a long way into the water, but the end stays covered in muck.

The group then discussed the proposed recreation enhancements at the Highway 34 primitive site. Alison said this site served purposes including providing access to duck hunters, canoers and kayakers. SCE&G is proposing to install all enhancements that were suggested by the public. Gerrit asked if graveling the parking lot after grading it is part of the plan. Tommy said yes. Gerrit asked that a gravel parking area be added to the list of enhancements. He also asked how much of the area around the recreation site is subject to fluctuations. He is concerned that the site remain accessible when the reservoir is down. Bill A. said they will need to bring more land into the Project boundary, since the site currently extends beyond the Project boundary line (PBL). This will also ensure that should the site be expanded in the future, the land already will be within the PBL, thereby avoiding having to make a separate application to FERC, potentially delaying plans to implement an expansion. Gerrit mentioned that this site would be a good location for primitive camping, especially with the additional land added to the PBL. This area would provide a place where people canoeing or kayaking down the Broad River could pull off and camp.

The group then discussed the Enoree River Informal Access Area. SCE&G is proposing to install all of the suggested enhancements except the turn-around area and parking for 6 vehicles. The area needed for these enhancements is outside of the PBL and SCE&G would need to gain permission from the US Forest Service and Department of Transportation to bring this land into the PBL for building the parking area. Henry added that should FERC approve the site and require a parking area, SCE&G might consider a phased approach, installing the step-down area first, and then working on parking later during the new license.

Gerrit asked if part of the proposal for the Enoree River and Hwy 34 informal sites is to install signage. He said that many people don't know the sites are there, especially Enoree. Henry said that these sites would become "formal" sites and Part 8 signage would likely be required by FERC at all of the recreation sites.

At the Broad River and Enoree River Waterfowl Areas, no changes are being proposed. These sites are largely outside of SCE&G's control, since they are managed by SCDNR.

The group then discussed the proposed enhancements at the Scenic Overlook. Alison said SCE&G plans to modify the existing fishing pier to make it ADA compliant. Bill A. said that a principal reason SCE&G isn't building an additional fishing pier is that the existing one already is quite large

and thus able to accommodate more usage than presently occurs. SCE&G believes the better direction to go is towards making the pier ADA accessible. Henry noted that as part of the Monticello Reservoir Fish Habitat Enhancement Plan, fish attractors will be added in that area of the reservoir, in an effort to enhance fishing opportunities at the pier. Dick said that he was pleased with these suggested improvements. Ray noted that the pier would be altered to include ADA improvements.

At the Hwy 215 site, Bill said that although the addition of lighting was suggested by the public through the RUNS surveys, lighting is already installed at the site. Therefore, they are not suggesting any improvements at this site.

At the Hwy 99 Informal Access Area, SCE&G is proposing to install a fishing pier, benches, picnic tables and lights but not a restroom. Through the Monticello Reservoir Habitat Enhancement Program, fish attractors will also be installed in this area of the reservoir in an effort to enhance fishing opportunities.

At the Hwy 99 boat ramp, SCE&G is proposing to install all of the suggested improvements, including a fishing pier, improvements to the existing boat ramp, lighting on the boat ramp, and year round access to the restrooms. The group agreed that all of these proposed enhancements were sufficient.

SCE&G is not proposing any improvements at the Recreation Lake. This site is already well used and provides many facilities to the public. When the public was questioned about the need for additional facilities at this site, they indicated that no additional facilities were needed.

Henry said that ADA improvements will be made at Cannon's Creek, the Hwy 99 boat ramp and the Scenic Overlook. He said that ADA improvements will be made according to current ADA guidelines.

The group discussed the need to develop a schedule for installing the enhancements and maps that indicate where the proposed enhancements will be installed. This information will be used in the Recreation Management Plan. SCE&G suggested that since they are proposing to enhance 6 sites, they would like to be able to enhance one site every two years, resulting in all site enhancements being completed in 12 years. SCE&G proposes that the stakeholders decide site enhancement priority. Dick said he would also like to see another RUNS completed at some point during the new license, and if not a full RUNS, then a recreation study more thorough than the data collection associated with the FERC Form 80.

The group took a break and the stakeholders met separately to discuss the enhancements, schedule and site priority.

When the group reconvened, Dick said that they agree with everything that SCE&G has proposed, but in addition, they would like SCE&G to reconsider adding a courtesy dock to Cannon's Creek. Gerrit said that Rosewood Landing, located on the Congaree River, has a floating dock that accommodates changing elevations and flows. Something similar to that dock could be implemented at Cannon's Creek. Henry said that there is still the safety issue with the courtesy dock at this location – with fluctuating water levels and people potentially jumping or diving off the

end of the dock into an unknown depth of water, to tragic effect. It might also be difficult to keep in place and protect from significant damage during high water events.

The group then discussed the stakeholders suggested schedule and priority ranking. Dick said the stakeholders agree to completing one site every two years but would like to see the Enoree River site and Hwy 34 site be completed at the same time. Their site priority is as follows:

1. Hwy 34 and Enoree River
2. Cannon's Creek
3. Hwy 99 Boat Ramp
4. Hwy 99 Informal Site
5. Scenic Overlook

Dick said that if SCE&G does not agree to completing Hwy 34 and Enoree River at the same time, then Hwy 34 would be priority 1 and Enoree River would be priority 2. (After the meeting, Gerrit stated in an email that American Rivers does not support SCE&G completing these sites separately.)

Dick said they would also like to see a new RUNS be completed approximately 12 years after the license is issued. It will take 10 years to complete all of the site enhancements and the study can be initiated two years after that. When SCE&G does the RUNS, Dick suggests that a stakeholder group convene and discuss the results and the RMP. He suggested that this cycle repeat itself every 12 years, synching up with the Form 80 cycle, throughout the license term.

Bill A. said that they currently do a Recreation Assessment at the Neal Shoals Project, which is a slightly less intense study than a RUNS. The license states that a Recreation Assessment be performed on year 10 and year 20 of the 40 year license. Is this something the stakeholders think could work for the Parr Project? Dick said that the most recent RUNS was completed at Parr in 2015 and he would like to limit how long it will be before another RUNS is done. The group discussed the timing of the next RUNS and how it would depend on how long it takes to receive the new license from FERC. They also discussed the need for a RUNS versus a Recreation Assessment. Dick suggested that a Recreation Assessment be completed soon after the enhancements are completed and then a bigger RUNS be completed further into the license term. The group agreed to perform a Recreation Assessment 2 years after the final improvements are implemented and include an Adaptive Management Plan (AMP) section in the RMP including a second and possibly third assessment depending on the length of the license.

Gerrit asked that a maintenance schedule be created to ensure the proposed Hwy 34 improvements are maintained. He said this site can be greatly affected by flooding events and he wants to ensure that the site remain operational throughout the new license term. Tommy said that it will be added to the list of other sites that are monitored each month. Gerrit said he would like for the site studied beyond just monthly monitoring. He would like to see data collected, including measuring sediment buildup with a rod and documenting the site with pictures. Henry said this could be addressed in the site design and within the first year after construction to determine if there are going to be problems maintaining this site.

SCE&G and Kleinschmidt will develop a strawman of the RMP for the group to review. The strawman will include the proposed recreation enhancements, timeline, draft maps of each site with proposed enhancements, maintenance schedule for each site, and AMP wording.

Henry asked, if SCE&G management does not approve building a courtesy dock at Cannon's Creek - will this be a "deal breaker" for SCDNR. Bill M. said they just want the improvement to be reconsidered because he believes the public could find use in this addition, however he doesn't see it as a deal breaker.

After discussion of the recreation enhancements wrapped up, Alison said there were a few outstanding items regarding the Project Shoreline Management Plans that she would like to discuss. Alison said that she would incorporate wording into the Parr SMP on camping at recreation sites. She also asked if SCDNR had come to a decision regarding the parcel of land adjacent to the Fairfield tailrace. Bill M. and Dick said they have discussed this piece of land and between the two of them, they are okay keeping this parcel classified as future recreation. There would be no public hunting on this land, but it would continue to be classified as future recreation. They said they would need to get a final decision from Bob Perry however and Bill M. said he would try to get an answer from him by the end of January.

Alison said she would also edit the SMP maps to include the Enoree River Informal Access Area. Gerrit asked if there should be an exclusion zone for camping at the recreation sites. He thought that camping should not be done near parking lots or boat ramps. Alison said she would add wording to the SMPs to limit camping at the sites to not longer than 7 days and not within 100 feet of a boat ramp.

Action items from the meeting are listed below.

ACTION ITEMS:

- Kleinschmidt will prepare meeting notes for distribution to the TWC.
- Alison will add a gravel parking area to the list of proposed enhancements for the Hwy 34 site.
- Kleinschmidt and SCE&G will work together to develop a strawman RMP to include the proposed recreation enhancements, timeline, draft maps of each site with proposed enhancements, maintenance schedule for each site, and AMP wording for periodic assessments.
- SCE&G will discuss with their management adding a courtesy dock at Cannon's Creek and combining the Enoree River Informal Site and Hwy 34 site for improvements during the same year.
- Alison will edit the Parr SMP to include wording on camping at the recreation sites, including how long camping is allowed (no longer than 7 days) and how far camp sites must be from boat ramps (100 feet).
- Alison will edit the Parr SMP map to include the Enoree River Informal Access site.

MEETING NOTES

**SOUTH CAROLINA ELECTRIC & GAS COMPANY
Joint RCG Meeting**

March 28, 2017

Final KMK 05-02-17

ATTENDEES:

Bill Argentieri (SCE&G)	Dick Christie (SCDNR)
Ray Ammarell (SCE&G)	Bill Marshall (SCDNR)
Randy Mahan (SCE&G)	Ron Ahle (SCDNR)
Beth Trump (SCE&G)	Lorianne Riggin (SCDNR)
Caleb Gaston (SCE&G)	Gerrit Jobsis (American Rivers)
Pace Wilber (NOAA) via conf. call	Bill Stangler (Congaree Riverkeeper)
Melanie Olds (USFWS)	Henry Mealing (Kleinschmidt)
Rusty Wenerick (SCDHEC)	Alison Jakupca (Kleinschmidt)
David Eargle (SCDHEC)	Kelly Kirven (Kleinschmidt)
Alex Pellett (SCDNR) via conf. call	

These notes are a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Henry opened the meeting with a safety moment and introductions. The purpose of the meeting was to review the Protection, Mitigation and Enhancement (PME) measures identified thus far throughout relicensing, and to discuss any new PME measures that stakeholders may propose. Specifically, the purpose of this meeting was to discuss environmentally related PMEs; a second meeting was scheduled for March 30th to discuss recreation and shoreline related PMEs. Henry said that SCE&G's goal is to file a settlement agreement with FERC at the same time that the Final License Application (FLA) is filed. Also, when the Draft License Application (DLA) is filed with FERC later this summer, SCE&G would like to include as many PMEs as possible, so that stakeholders have an opportunity to comment on them.

A PME memo was distributed to stakeholders prior to the meeting that listed all of the previously identified PME measures and SCE&G proposed response. The PowerPoint presentation that was used during the meeting is attached to the end of these notes.

Monticello Fish Habitat Enhancements

Due to poor habitat along the shoreline and reservoir fluctuations, stakeholders requested that SCE&G make efforts to enhance aquatic habitat in Monticello Reservoir. SCE&G is proposing to enhance spawning, juvenile and adult fish habitat in the reservoir. This will also help to offset entrainment losses by increasing fish recruitment and attracting fish to another area of the reservoir, away from the intake area. Bill M. asked if there were plans for a long term maintenance of the

program. Juvenile and adult enhancements are made of materials that will last for 40 years and will have no long term monitoring, but spawning enhancements will be monitored and adjusted as needed during the first 5 to 10 years of the new license. Bill A. said that after the enhancement is installed, for compliance purposes, the PME will be complete. He said that we won't be putting in trees or other substances that will decay fairly quickly over time, so maintenance shouldn't be needed. He added that if SCDNR wants to add trees to the reservoir, they are welcome to do so. Henry said that this enhancement plan was included in the Final Reservoir Fluctuation Report. He noted that this and other Adaptive Management Plans (AMPs) will be sent back out to the TWCs this summer to revisit and approve.

West Channel Water Quality Enhancements

Low dissolved oxygen (DO) was found to occur in areas within the west channel downstream of Parr Shoals Dam, so SCE&G is developing an AMP to address this issue. The AMP will be provided to the Water Quality TWC within the next month for review and comment. Gerrit asked about the success criteria for monitoring. Henry said that from SCE&G's standpoint, success would be to meet the state standard for DO. Gerrit asked to see the locations for monitoring DO in the west channel. Henry said that Ron Ahle stated in a previous meeting that he would provide a grid of random sampling locations for monitoring. When SCE&G receives this, it will be included in the AMP. Generally, monitoring will occur at the upper and middle portions of the west channel, but not at the lower section, where the west channel converges with the east channel.

Turbine Venting Plan

Rare occurrences of low DO were identified in the tailrace of Parr Shoals Dam. SCE&G determined that venting the turbines could increase DO slightly, so they developed a plan to vent turbines during the low DO season, generally from June 15 through August 31. Dick asked if there will be an AMP component the Turbine Venting Plan. He said that the window has already been extended through August and it may need to be extended even further if the low DO season shifts over the next 30-50 years. Henry said we will add a line into the Turbine Venting Plan to allow for the possibility of extending or adjusting the venting window if low DO becomes an issue outside of the existing window.

David Eargle asked if venting caused any issues within the Project. Bill A. said that venting does create a loss in efficiency and maybe some additional wear and tear on the turbines. He added that SCE&G is replacing the bearings on the turbines to make them more durable, which may actually allow for more air intake and thus making venting unnecessary.

American Eel Monitoring

During the American eel study that was conducted as part of relicensing, a small number of eels were caught/observed downstream of Parr Shoals Dam. NOAA Fisheries asked SCE&G to conduct monitoring during the term of the new license to see if eels were moving up the Broad River to the base of the Parr Shoals Dam. Monitoring will be based on the number of eels passed at the St. Stephen Fish Lift and will only include electrofishing methods.

Melanie said that she is concerned about the frequency of monitoring. She said that 10 years might be too long between studies, and there is the possibility that the trigger to increase monitoring to

every 5 years could be hit soon after the 10 year monitoring mark. She said that the first 10 year interval may be okay, but after that waiting another 10 years may be too much. Bill A. said that this plan hasn't been completely drafted yet, so we can adjust the frequency. Melanie suggested that the plan allow for monitoring every 10 years or after "X" amount of eel passage occurs at a downstream dam.

Gerrit questioned the method of using only electrofishing to survey eels. Is electrofishing alone enough to accurately document the population? Henry said that in our studies, other gear types weren't effective and electrofishing was the only successful method downstream of the dam. The goal is to detect an increase in numbers of eel that justify passage upstream. Melanie suggested that open wording be used in the plan to allow for the use of new technology that may be available in the next 30-50 years.

Dick noted that the new license for Santee Cooper (issuance is pending) includes a fish passage component that might change things. Maybe this could be used as a check point. After fish passage is installed at Santee Cooper, revisit the eel monitoring efforts at Parr.

Kleinschmidt will draft up an American eel monitoring plan and send it to stakeholders for review.

Downstream Flow Fluctuations

Stakeholders requested that SCE&G work to reduce downstream flow fluctuations year round and during spring spawning. SCE&G has identified several ways to accomplish this and will develop an AMP for this issue. Bill A. said he would like the AMP to account for a meeting each year to discuss the spring spawning flow stabilizations and a second meeting to discuss the year round flow stabilizations. He asked the group if this would be too many meetings. Dick said the meetings could be combined and that the AMP can be written to allow for flexibility with meeting. Melanie added that a two week window in the January timeframe should be included each year for agencies to give input on monitoring. SCE&G plans to have someone on site 24 hours a day for the two 14-day monitoring events to make hourly adjustments to the crest gates as needed.

Generator Upgrade at Parr Shoals Development

SCE&G plans to upgrade the generators so that the turbines can pass more than 4,800 cfs, which is currently the maximum amount of water they can pass with current generator limitations. Ray said SCE&G would like to be able to increase this to 6,000 cfs, and also pass higher inflow through the turbines and reduce downstream flow fluctuations due to crest gate operation. Ray said they are still evaluating this, but they should have a decision on this by the time the DLA is issued.

Gerrit asked about the timeframe for making a definite decision on generator upgrades. Bill A. said this has to be in the FLA, so 2018 at the latest. Gerrit asked if there will be a net generation benefit. Ray said, yes, they should be able to pass more water through the powerhouse instead of spilling it.

Santee Basin Accord

SCE&G is a signatory to and active participant in the Santee River Basin Accord for Diadromous Fish Protection, Restoration, and Enhancement (Accord) and will continue to be involved in this program. Bill S. asked how the flooding issues at the Columbia Hydro Project will affect the

Accord, since fish passage at Parr is based on passage numbers from Columbia. The City of Columbia could forfeit their license and the project could be decommissioned. What would happen to the license requirement of monitoring the fish passage facility? If there is no monitoring, would new triggers for fish passage at Parr be developed? Dick said that monitoring is a big responsibility and so is keeping the fishway operating, and he doesn't know if a state agency could take on this responsibility. No one knows exactly what will happen at Columbia in the future.

Henry suggested that the agencies discuss this with the Accord members and see if they have a suggestion.

Downstream Navigation Flows

SCE&G completed navigation surveys at two ledge sites identified by the stakeholders as points of constriction in the Broad River. The surveys concluded that 700-1000 cfs is needed to safely navigate the two ledges. Gerrit said that American Rivers submitted written comments on this study and said that according to the navigation criteria included in the study plan, a flow of 1000 cfs is needed for navigation. Henry stated that the 700 cfs flow creates a channel over 60 feet wide and that a canoe, kayak, or jon boat should be able to navigate the most constricted ledge even if this doesn't strictly meet the criteria. Henry also noted that the criteria isn't a state statute but a recommendation from SCDNR.

Bill M. said that the Bookman Island complex is very complicated and navigation can be tricky. He asked if information is going to be provided that shows the best route to navigate the complex. Henry said that once minimum flows are settled, anyone who is interested will be invited to boat the area to verify navigation. He also said that a map that shows navigation routes will be developed and posted on SCE&G's website for public use.

Downstream Minimum Flows

SCE&G plans to propose a continuous minimum flow for the new license. The Instream Flows TWC is still actively discussing what the new minimum flows should be. The TWC has agreed that there should be three flows, including a spring spawning flow, a transitional flow, and a low flow for summer months. SCE&G has been gathering additional information since the last TWC meeting and will distribute this information to the stakeholders soon. Stakeholders will have an opportunity to meet outside of the TWC to discuss this information, and then the entire TWC will reconvene to discuss and hopefully negotiate and agree to the three flows.

Dick said that since the last TWC meeting, SCDNR has internally discussed the possibility of having target flows and compliance flows, and giving SCE&G an "incentive" to meet the target flows. If flows aren't met for a certain period of time and are off by a certain amount, SCE&G would have to provide some sort of mitigation.

Gerrit said that the real goal is not to put SCE&G in a compliance bind, but to implement flows that will benefit the river as much as possible. He said if rules are developed that provide better downstream flows, instead of hard numbers for flows that might be more beneficial. He agrees with SCDNR's idea to provide an incentive/mitigation for meeting target flows.

The TWC has discussed possibly using the daily average of the previous day's inflow to develop a target for the following day's minimum flow, as suggested by Melanie at the previous TWC meeting.

Bill M. asked if there would be a low inflow protocol (LIP). Bill A. said that part of the new minimum flow proposal would be to take the place of a LIP. Ray said the compliance flow would be adjusted down until it hits inflow. A LIP can be cumbersome and it would be easier if it is built into the daily flow. Gerrit said he is optimistic that minimum flows can be agreed on, especially looking at how well things worked out during the Saluda relicensing. Melanie said that compliance flows could be set and target flows could be very adaptive. And flows could be readjusted through meetings if habitat goals are not met. Ron said that could mean a lot of field work and Melanie said it doesn't have to be done on a yearly basis. Henry reminded the group that this Project does not have a storage reservoir to supplement low inflows so future adjustments of flows may be limited. He also noted that the biggest driver for annual flows would be the basin hydrology – high, medium, or low water years as this changes from year to year.

Gerrit said that the way he understands the state law, the minimum flow applies to a section of river downstream of the Project. If an entity is withdrawing water downstream, such as the Town of Winnsboro, the withdrawal could bring a section of the river out of compliance during low flow periods. Either the Town of Winnsboro can only withdraw water when river flow is above some minimum flow, or SCE&G must release more water to make up for the Town of Winnsboro's withdraws. This is something for SCDHEC to consider as they approve withdrawals.

Dam Removal in the Broad River Basin

Henry said that American Rivers presented the idea of SCE&G funding dam removals in the Broad River Basin early on in the relicensing. At this time, SCE&G is not proposing this as a PME measure.

Gerrit apologized for not providing information earlier, but is prepared to discuss this items further. He said that Parr Reservoir impounds 15 miles of the Broad River. Fluctuations in the reservoir and downstream cause impacts to aquatic habitat and recreation, and none of the proposed PMEs offset these impacts. He would like SCE&G to create a fund for dam removals, which would create riverine habitat in the basin to offset impacts to the Broad River. He would also like SCE&G to create new recreation resources to offset recreation impacts.

Gerrit provided the following requests to SCE&G:

- Recreation Enhancement – To offset impacts to water based recreation from the combined operation of FPSP and PSP, SCE&G will:
 - Provide funding and donate land for a non-motorize boat launch on the west bank of the Broad River in the vicinity of Haltiwanger Island;
 - Provide funding to develop a website that promotes recreation opportunities at the Broad and Enoree rivers in Richland, Lexington, Fairfield, Newberry, Laurens and Union counties;
 - Provide funding for developing, printing and distributing high quality, waterproof paddling maps for the Broad and Enoree rivers in Richland, Lexington, Fairfield, Newberry, Laurens and Union counties.

Decisions for how the funds are to be spent will be determined by a fiduciary board consisting of representatives of SCE&G, SCDNR, USFWS, Congaree Riverkeeper and American Rivers.

- Aquatic Habitat Enhancement - To offset impacts to aquatic habitat from the combined operation of FPSP and PSP, SCE&G will:
 - Provide funding for voluntary dam removals or floodplain restoration in the Broad, Congaree and lower Saluda watersheds
 - Fund at a rate of \$135,000 per year in 2017 dollars. This amount is based on an average cost of approximately \$410,000 per dam removal in 2017 dollars and the expectation to remove one dam for every three years of the license term.

Decisions for how the funds are to be spent will be determined by a fiduciary board consisting of representatives of SCE&G, SCDNR, USFWS, NMFS, Congaree Riverkeeper and American Rivers.

Henry mentioned that during the Recreation Use and Needs Study, the public did not indicate that there was a need for additional recreation opportunities downstream of the Project. Paddling enhancements were requested and are being addressed by enhancement of the Enoree River Bridge Recreation Site and Highway 34 Recreation Site. Alison J. said that only four people responded to the Recreation Flow Survey and the results didn't indicate a need or interest in additional downstream recreation. Bill A. said that if a recreation site were built outside of the PBL, FERC might want this land to be included in the PBL, and this is a concern for SCE&G. Bill A. asked Bill S. if he talked with SCE&G's Land Department to see if they would be interested in donating a piece of land for recreation, outside of the relicensing process or municipalities that would be interested in building and maintaining a recreation site. Bill S. said he hasn't talked with either of them yet.

Bill A. said that regarding the recreation maps, SCE&G is willing to develop these and house them on their existing website. Gerrit said that would be acceptable, or even house them on a separate website and just include a link on SCE&G's website. Gerrit said the maps could include information on safety, species in the area, and cultural connections in the area to educate recreators. Gerrit said he would provide examples.

Bill A. asked Gerrit if there are potentially 12 or more dams identified within the area that need to be removed. Gerrit said these are voluntary removals and approximately 40 dams have been identified in South Carolina. Once a dam is identified, American Rivers would approach the dam owner to see if they are interested in dam removal. He said they don't have any dams identified as ready for removal currently because there is no funding source. However, if funding becomes available, dams can be identified. Gerrit said he would provide a list of dams in the Broad River Basin and Congaree River tributaries that would be eligible for removal. Rusty said that maybe an application process could be implemented, where people can apply to have their dams removed. He said the SCDHEC dam safety program has lots of staff now, so they might be able to provide assistance.

Bill A. asked what is involved with a dam removal; what types of tasks would the money be used to fund? Gerrit said that the money would be used to fund things such as design engineering, in-channel work, planting, contaminant analysis with sediment sampling, construction/demolition, and permitting.

Ron said that if small dams are removed, there may not be a lot of benefit, but if there is one big dam removal, it might be more beneficial. He said there is so much variability in dam size, the rate of one dam removal for every three years can be confusing. Gerrit said he would like the funding level to be at one dam removal every three years, however, the program might not necessarily take out one dam every three years. A fiduciary committee would determine the best use of money. The committee may elect to save up for many years to provide funding for one large dam removal.

Other PME's

At the end of the meeting, Henry asked the group if there were any other PME's they would like to discuss that had not previously been brought to the table.

Ron said that on the Recreation Lake, the boat ramp is very narrow and is bordered with rip-rap, making it very hard to launch a boat. He said that you have to walk out on the rip-rap, which can be dangerous. Ron asked that a courtesy dock be constructed at this boat ramp.

Ron also said that he would start a baseline study on fisheries in the west channel. He will put together a study proposal with the intention of starting the study this year. He plans to conduct three samples per year for two years to establish the baseline, and repeat the study again as changes are made. He also said he will provide the grid for sampling DO in the west channel, as he indicated at a previous meeting.

Bill M. said that SCDNR has been considering the unavoidable impact to aquatic resources in Parr Reservoir and the unavoidable impacts to the downstream area from flow fluctuations. While SCE&G is trying to minimize flow fluctuations, there will still be some fluctuation that will never be completely eliminated. In response, the PME measure that SCDNR has considered is establishment of a funding mechanism for various programs. He said that SCE&G could provide funding for an existing mitigation and enhancement program such as the Broad River Mitigation Trust Fund or the Santee Accord, or create a new in-license habitat enhancement program that would focus on the entire watershed.

SCDNR is also considering the effects of entrainment. They will continue to discuss how to reduce the impacts of entrainment with SCE&G, including the presence of lights or other "bells and whistles" to scare fish away. Bill M. said that some entrainment studies at other projects have shown that one intake may draw more fish in than others, so making operational changes may help reduce entrainment.

Bill A. said that SCE&G is already planning to make operational changes to reduce downstream flow fluctuations. If SCE&G was to create a fund, would they then not need to implement the operational changes? SCDNR seeks to avoid or minimize impacts as the initial steps of mitigation, and the operational changes are expected to reduce impacts but not eliminate them. Bill M. said there will still be some unavoidable fluctuations that will happen, and the fund will be to address these unavoidable impacts.

Melanie said that she didn't see any PME's that would monitor changes downstream after new minimum flows and reduced flow fluctuations are implemented, such as the mussel population. She said that monitoring could be tied back to the fund that SCDNR is proposing.

Caleb said that requesting funding for external goals should not be considered. Instead, any amount of money contributed to a fund should be based on losses from the Project. Gerrit said that he believes his proposal for contributions to dam removal is reasonable. He estimated that habitat and other losses from the Project are approximately \$96 million due to the impoundment of 15 miles of the Broad River by Parr Reservoir. Henry said that number would be based on pre-Project impacts, for which SCE&G has already mitigated during the Project's re-development. Bill S. said that he thinks there is a benefit in the flexibility of having a fund that will address all of the various unavoidable impacts.

Bill A. suggested that the group hold a meeting to discuss these new PM&E measures, such as a habitat enhancement fund, future entrainment studies, and monitoring studies. The stakeholders need to provide specifics for each of these prior to the meeting so that they can be reviewed and considered with SCE&G management.

With that the meeting adjourned. Action items from this meeting are listed below.

ACTION ITEMS:

- Kleinschmidt will send out the Final Reservoir Fluctuation Report to the TWC for another review.
- Kleinschmidt will add wording to the Turbine Venting Plan to allow for an adjustment of the turbine venting window in the future, if determined as necessary.
- Stakeholders (specifically NOAA and USFWS) to provide comments on what they would like to see in the American Eel Monitoring Plan. Kleinschmidt will use these comments to develop a plan and distribute to Fisheries TWC for additional comments.
- Kleinschmidt will send out the West Channel AMP draft ASAP.
- Once minimum flows are established, SCE&G and Kleinschmidt will schedule demonstration flows, and invite stakeholders to boat the river to verify navigation.
- SCE&G and Kleinschmidt will distribute the additional information on minimum flows ASAP. Stakeholders are encouraged to meet separately and discuss this information. SCE&G will then schedule an Instream Flows TWC meeting to discuss minimum flows.
- Bill Stangler will talk to SCE&G's Land Department to discuss the donation of land and to municipalities for developing and maintaining a recreation site on the Broad River, downstream of the Project.
- Gerrit will send some example recreation maps, similar to what he would like SCE&G to develop for the Project. Gerrit will also send a fact sheet on dam removals, a list of dams identified for removal in South Carolina, and information on removed dams.
- Ron will provide the sampling grid for the West Channel AMP.
- SCDNR, USFWS and other stakeholders will send in specifics for a habitat enhancement fund, future entrainment studies, and monitoring studies prior to the next meeting.
 - USFWS to provide specifics for a Mussel Monitoring Plan – where, when, how, why, who and what is the goal?

MEETING NOTES

**SOUTH CAROLINA ELECTRIC & GAS COMPANY
Joint RCG Meeting**

March 30, 2017

Final KMK 05-02-17

ATTENDEES:

Bill Argentieri (SCE&G)
Ray Ammarell (SCE&G)
Randy Mahan (SCE&G)
Beth Trump (SCE&G)
Corbin Johnson (SCE&G)
Tommy Boozer (SCE&G)
Billy Chastain (SCE&G)
Dan Adams (SCE&G)
Brandon McCartha (SCE&G)
Caleb Gaston (SCANA)
Brandon Stutts (SCANA)

Melanie Olds (USFWS)
Dick Christie (SCDNR)
Bill Marshall (SCDNR)
Alex Pellett (SCDNR) via conf. call
Rusty Wenerick (SCDHEC)
David Eargle (SCDHEC)
Gerrit Jobsis (American Rivers)
Henry Mealing (Kleinschmidt)
Alison Jakupca (Kleinschmidt)
Kelly Kirven (Kleinschmidt)

These notes are a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Alison opened the meeting with a safety moment and introductions. The purpose of the meeting was to review the Protection, Mitigation and Enhancement (PME) measures identified thus far throughout relicensing, and to discuss any new PME measures that stakeholders may propose. Specifically, the purpose of this meeting was to discuss recreation and shoreline related PMEs; a meeting was held earlier in the week on Tuesday, March 28th to discuss environmentally related PMEs. Alison reminded the group that SCE&G's goal is to file a settlement agreement with FERC at the same time that the Final License Application (FLA) is filed (June 2018) and include as many PMEs as possible in the Draft License Application (DLA) when it is filed with FERC later this summer.

A PME memo was distributed to stakeholders prior to the meeting that listed all of the previously identified PME measures and SCE&G proposed response. The PowerPoint presentation that was used during the meeting is attached to the end of these notes.

Recreation Site Monitoring/Maintenance/Improvements at Parr Reservoir

Based on the results of the Recreation Use and Needs Study (RUNS), the Recreation TWC developed a list of proposed recreation enhancements for Parr Reservoir. The informal Highway 34 Recreation Site and the informal Enoree River Bridge Recreation Site will both be improved and formalized. The experimental canoe portage at Parr Shoals Dam will also be formalized. Cannon's

Creek Recreation Site will receive upgrades and improvements. A Recreation Management Plan (RMP) will also be developed for the Project.

David Eargle asked if the channel in Parr Reservoir will be marked for hazards and navigation. Bill A. asked David if he was thinking of marking a path from the Cannon's Creek and Heller's Creek recreation sites into the main reservoir and David said yes. Tommy said that SCDNR would have to do the hazard marking in the reservoir. Bill M. said that there is a Memorandum of Agreement (MOA) from 1979 between SCDNR and SCE&G that SCDNR would like to revisit and possibly update. Hazard markers were part of the original MOA and might need to be carried forward into a new agreement. SCDNR would install the markers with help from SCE&G. Henry said that SCE&G and SCDNR should review the MOA and decide if it needs to be included in the Settlement Agreement or if it should be a separate agreement.

Recreation Site Monitoring/Maintenance/Improvements at Monticello Reservoir

Results from the RUNS were used to develop a list of proposed recreation enhancements at Monticello Reservoir. SCE&G will improve the Project and non-Project portions of the Scenic Overlook. They will also make improvements at the Highway 99 "West" and "East" Recreation Sites. The Highway 99 "East" site is currently informal and it will be formalized after the new license is issued.

At the PME meeting on Tuesday, Ron Ahle asked that SCE&G construct a courtesy dock at the Recreation Lake boat ramp. Dick said he talked with Ron about this and agrees that it would be a good addition. There is a safety concern with walking on the rip-rap when launching a boat. Bill A. said he would talk to SCE&G management about this request.

Erosion Monitoring and Control on Parr and Monticello Reservoirs

Currently, SCE&G monitors the shoreline of Parr Reservoir for erosion annually and the shoreline of Monticello Reservoir bi-annually. Alison said that FERC likes to see formal plans for erosion monitoring and control. This plan will be formalized and included in the DLA.

Melanie asked why Parr is monitored annually and Monticello is monitored bi-annually. Ray said there has always been more concern around Monticello Reservoir for erosion and they wanted to monitor the shoreline more frequently because of this. At Monticello Reservoir, there are areas where the Project Boundary Line (PBL) is close to the shoreline. When there is the potential for encroachment on the PBL, SCE&G obtains a permit from the US Army Corps of Engineers and works with the property owner to get access to add rip rap. Bill A. said that Parr Reservoir doesn't have any significant areas of severe erosion but Monticello does mainly due to significant wind and wave action on the reservoir.

Shoreline Management Plans for Parr and Monticello Reservoirs

SCE&G updated the existing Shoreline Management Plan (SMP) for Monticello Reservoir and created a new SMP for Parr Reservoir. SCE&G also created a Permitting Handbook that will be distributed for public use.

Bill A. said there was land designated as Future Recreation next to the Fairfield tailrace and there was discussion with SCDNR about potentially reclassifying the land as Project Operations and

providing a different tract of land for Future Recreation. However, SCE&G has decided to keep the lands classified as Future Recreation.

Bill M. said SCDNR has some questions about the Broad River Waterfowl Area. The SCDNR boundaries (which are shown on maps sent to Ray A. by Bill M.) include some land that is outside of the PBL and not owned by SCE&G. The group reviewed the maps from Bill M. on the screen and Ray stated that SCE&G does not intend to change the PBL in that area and the original agreement in the 1970s was for the construction of the waterfowl sub-impoundment itself, with some of the surrounding property being denoted on the Exhibit K maps as “Game Management Area”, which is now called Wildlife Management Area. Bill M. said that some of the land that was offered by SCE&G in the potential trade for Future Recreation lands was land that SCDNR already occupies in the Broad River Waterfowl Area. Corbin said this land was offered to SCDNR to include in the waterfowl area so they could have more control over the land. SCE&G will discuss this issue and the Enoree River Waterfowl Area boundary further with SCDNR outside of the meeting.

Alison noted that the SMPs are scheduled for review every 10 years of the new license.

Cultural Resources

SCE&G worked with the State Historic Preservation Office (SHPO) to complete Phase I and Phase II cultural studies.

SCE&G also developed a Historic Properties Management Plan (HPMP) and filed it with FERC. FERC is developing a Programmatic Agreement (PA) which will take effect after the new license is issued. As part of the HPMP and PA two kiosks will be constructed at Cannon’s Creek and the Highway 215 boat ramp. One kiosk includes information on the Lyles Ford area that was impacted by Project operations and the other kiosk has a timeline history of the Project.

Bill A. said that one site is being impacted by erosion from Project operations and SCE&G will do stabilization to prevent further erosion or will complete a data recovery at the site. They have not decided which mitigation they will complete yet. Bill M. mentioned that SCE&G should put the kiosk information on their website as well and Bill A. said they will do that as part of the HPMP requirements.

Recreation Resource Maps

During relicensing, stakeholders requested that SCE&G develop a map that displays recreation areas downstream of Parr Shoals Dam, along with navigation points and Rocky Shoals Spider Lily (RSSL) locations. SCE&G would like to complete this as an off-license agreement. Gerrit said he would like to see recreation information from Neal Shoals through the Parr Reservoir and downstream to Columbia Hydro, including locations of recreation sites on the Enoree River and Cannon’s and Heller’s creeks. SCE&G will develop a draft of the map and send it to the stakeholders to review.

RSSL Outreach and Education

During previous meetings, the Congaree Riverkeeper requested that SCE&G make efforts to educate the public on the RSSL. SCE&G has agreed to do this as an off-license agreement and will provide information on the RSSL on the recreation maps and on their website.

Melanie asked why SCE&G is not doing periodic monitoring of the RSSL. Bill A. said the populations are located downstream outside of the PBL. Henry added that they were never identified as a “driver” for setting minimum flows, so monitoring wasn’t warranted.

Melanie asked if signs are located in the area of the RSSL populations that ask people not to pick the flowers. Bill A. said the flowers are in the middle of the river and he doesn’t know where they would put signs. Melanie said they could put signs on the access points on the Broad River. Bill A. said the access points aren’t owned by SCE&G and the signs could be vandalized. Henry said maybe they could develop a brochure that also includes information on bald eagles and other species in the area to educate the public. It was also mentioned that this information could be included on the recreation resource maps. Dick said it would be nice if the brochure could be posted to SCE&G’s website before the license comes out. The group looked at a similar brochure developed for Saluda Hydro Relicensing on the screen.

Downstream Recreation Flows

Alison said that SCE&G did a study to determine if there was an interest in recreation flows that included a focus group and an online survey. The survey did not provide much feedback, as only four responses were received. The flows that were requested during the summer months are typically during times of low inflow. This Project does not have a storage reservoir, so providing recreation flows when inflow is low is not possible. Recreation flows would only be available during wet summers.

Alison said that when the downstream minimum flows are tested, stakeholders will be able to boat the flows and see how they would work for recreation and navigation. The Recreation TWC will be notified when the demonstration flows are scheduled so they can plan to participate.

Gerrit said that setting the flows for navigation only doesn’t provide for a high quality canoe/kayak experience. He said that there is a huge storage reservoir in Monticello Reservoir that could release water for recreation for short periods of time. Henry reminded the group that Monticello is not a storage reservoir. It is used for the pumped storage facility only. Ray said that releasing water from Monticello and then releasing that water from Parr Shoals Dam for recreation purposes is a loss to the pumped storage system and is counter to the way SCE&G needs to operate Fairfield to meet the needs of the electric system. Ray said that changing the minimum flow from a daily average to a continuous flow should help with recreation.

Palmetto Trail Contributions

Stakeholders requested that SCE&G contribute to the Palmetto Trail, however SCE&G already provides funding, easements, and volunteer labor through the V.C. Summer Facility, and they do not plan to make additional donations as part of Parr Relicensing.

Other PME Requests

SCDNR said that there is currently an informal agreement with SCE&G to coordinate the draining and flooding of the waterfowl impoundments. SCDNR would like this agreement to be formalized and included in the Settlement Agreement. Dick said the agreement needs to be adaptive to changing conditions and focus on communications. This should be discussed each year so SCDNR and SCE&G can come up with a mutually agreeable way to drain and flood the impoundments.

Bill M. and Dick said that they have discussed different ways that SCE&G can mitigate for unavoidable impacts particularly to aquatic resources. There should be something in the PME package that encourages stakeholders to support long term licenses. SCDNR would like to see additional land conservation and protection, particularly riparian lands or wetlands since they are important to aquatic species. Other important lands are those that provide public access and recreation benefits. Bill M. said that SCDNR is also interested in Wildlife Management Area (WMA) property enhancements and large parcels of land that provide public benefits. Henry asked if they had identified any land or if they have an idea of how much land they would want. Bill M. identified 14 parcels of land owned by SCE&G that SCDNR might be interested in. These lands could be put into a conservation easement or a WMA. SCE&G could commit to protect and not develop these lands for the term of the new license. Bill A. asked if it would be okay with SCDNR if SCE&G maintained timber and mineral rights. Bill M. said that probably would be fine. Dick said lands that allow for habitat and species protection are valuable. Lands that also provide public access have an increased value. And lands that, in addition to protecting habitat and species and providing public access, also provide value to SCDNR have the highest value. These lands could be protected for the term of the license instead of in perpetuity.

Melanie asked if the funds that were discussed in Tuesday's PME meeting for dam removal and habitat enhancements could be combined into one fund that provided for all these things. Henry said SCE&G would need details on how much money should go in the fund and exactly what the money would be used for including habitat enhancement, land acquisition, dam removal and floodplain restoration. Gerrit said American Rivers' priority is to use the money on dam removal, but since it is impossible to predict when those projects will come up, they have to be flexible. Gerrit agreed with SCDNR that developing a fund to mitigate for unavoidable adverse impacts is important. There should be a lower priority on studies and a higher priority on actions. Studies don't offset impacts. Rusty said that from a SCDHEC perspective they would place a priority on any improvements or changes that the stakeholders are proposing that would have a positive impact on water quality or quantity of the resource.

Henry asked if the enhancements that SCE&G has already agreed to, including fish habitat enhancements in Monticello Reservoir and recreation enhancements, could be financed through the fund. Gerrit said that those enhancements are minimizing effects and the fund should be separate and used for mitigation.

Alison reviewed the timeline for the remainder of relicensing with stakeholders. SCE&G plans to file the DLA in May 2017. Stakeholders will have 90 days to review and comment. SCE&G hopes to submit the RMP to the TWC for review prior to submitting the DLA. The Settlement Agreement development and discussion will occur from August through October 2017. SCE&G will revise the license application from March through April 2018 and will file the Final License Application in June 2018.

Henry asked Rusty when SCDHEC wants SCE&G to file the 401 water quality certificate application. Could SCE&G file early? Rusty said he would talk with his management. If SCE&G filed early, it could be ready for implementation when FERC issues the new license.

The meeting adjourned. Action items are listed below. After the meetings, American Rivers and SCDNR submitted additional information. This information is attached to the end of the notes.

ACTION ITEMS:

- SCE&G and SCDNR will review the 1979 MOA and explore the channel marking/hazard marking in Parr Reservoir further.
- SCE&G and SCDNR will discuss the land issue at the Broad River Waterfowl Area.
- SCE&G and Kleinschmidt will develop a draft recreation resource map and send it to stakeholders for review and comment.
- Stakeholders need to decide how much money they would like for a mitigation fund and how the fund would be used.
- Rusty will talk to his managers at SCDHEC about the possibility of SCE&G filing an application for the 401 water quality certificate early.
- SCDNR to provide more information and details on a Land Protection Plan.

MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY Joint RCG Meeting

July 18, 2017

Final KMK 08-21-17

ATTENDEES:

Bill Argentieri (SCE&G)	Dick Christie (SCDNR)
Ray Ammarell (SCE&G)	Bill Marshall (SCDNR)
Randy Mahan (SCE&G)	Ron Ahle (SCDNR)
Caleb Gaston (SCE&G)	Bill Stangler (Congaree Riverkeeper)
Brandon Stutts (SCE&G)	Henry Mealing (Kleinschmidt)
Beth Trump (SCE&G)	Alison Jakupca (Kleinschmidt)
Melanie Olds (USFWS)	Kelly Kirven (Kleinschmidt)
Fritz Rohde (NOAA) via conf. call	Jordan Johnson (Kleinschmidt)
Alex Pellett (SCDNR)	

These notes are a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Henry opened the meeting with a safety moment and introductions. The purpose of the meeting was to review the remaining Adaptive Management Plans (AMPs) and Monitoring Plans that were not discussed at the previous AMP meeting on July 13, 2017. Specifically, stakeholders discussed the West Channel AMP, the Monticello Habitat Enhancement Plan, the Erosion Monitoring Plan, the Entrainment/Hydroacoustics study plan, the Turbine Venting Plan, and the revisions made to the Recreation Management Plan.

West Channel AMP

The group began with a discussion of the West Channel AMP, starting with the randomized sampling grid that Ron developed for the plan. Henry said that Kleinschmidt modified the grid by removing areas that stay de-watered due to higher elevations. Henry also said that Kleinschmidt added a line in the text to specify that sampling could occur anywhere within a chosen grid, not necessarily at the mid-point.

Ron said he would like to simplify the goals and objectives section of the AMP. He stated that he believes the goal of the AMP is to enhance aquatic habitat by increasing flows and improving oxygen levels. Henry said that SCE&G's goal is to increase the dissolved oxygen (DO) to a level that is acceptable to SCDHEC. Henry said that in order to accomplish that goal flows would need to be increased in the west channel. Increased flows and increased DO would create improved habitat. Ron said that he believes the health of the aquatic ecosystem is the overall goal and, while increased DO is an important part of that goal, it is not the overall goal. Bill A. said that his concern is if DO is improved but species abundance and diversity doesn't increase, does that mean

the objective has failed. Ron said that he doesn't think that would indicate failure because the habitat was still improved. Henry noted that SCDNR's goal all along is to improve the aquatic habitat in the west channel. The reason that SCE&G pursued the issue is because SCDHEC said the DO in the area would be an issue for obtaining a 401 water quality certification. Dick said that the goals and objectives are not very well defined in the AMP. He said if SCE&G could agree that the overall goal of the AMP is to enhance aquatic habitat, the objectives could be to try to meet state DO standards specifically during the summer months and to maintain and/or enhance flows to the area.

Ron said that transects for the IFIM study were picked in the west channel area to see what flows are best for certain species. Henry said that other stakeholders have expressed concern over how much flow is going to be removed from the east channel to the west channel and how this will affect the species in the east channel. Henry also stated that he believes the habitat in the west channel is never going to be as good as that in the east channel. Ron asked why. Henry said that 70 percent of the west channel area is a long deep pool area. Ron said he believes there is a lot of potential habitat in the west channel that could be improved.

Henry said when channel modifications to admit more water to the west channel begin, it should be done incrementally and in consultation with the Review Committee, to determine how the modifications affect the east and west channels. Melanie said that the USFWS is interested in improving the west channel, but they don't want those improvements to negatively affect the east channel.

The group agreed to revise the goals and objectives section. Henry said that the plan should be clear and concise so that it isn't misconstrued later. Ron said that he doesn't believe meeting the state standard for water quality and DO is what should indicate success in the west channel. He believes that increased WUA is important and the AMP shouldn't focus solely on water quality. The group reached consensus on the revised goals and objectives for the AMP.

In the AMP, wording was added to explain that channel modifications are contingent upon US Army Corps of Engineers permitting. Brandon said that these permits are good for two years. Henry said that other considerations for the timing of channel modifications should include spawning seasons and potential future critical habitat designations in the area – Atlantic sturgeon for example.

The group discussed additional modifications to the DO random sampling grid. Melanie said that the grids where the continuous sampling will occur should be removed. The grids should also be renumbered.

Melanie said that the plan should specify the minimum number of random samples that will be taken in the west channel and at what frequency. The group agreed that 10 percent of the sites should be sampled. The sites should be chosen randomly and should be stratified, with a greater number of samples being taken upstream of the 213 bridge. The group agreed that a study plan will need to be developed and submitted to FERC after the license is issued. The group also agreed to change the title of this AMP to "Adaptive Management Plan: Enhancements to the West Channel Downstream of Parr Shoals Dam."

Monticello Reservoir Habitat Enhancement Plan

Henry said that the group should focus specifically on Section 5.0 of this plan, where the protection, mitigation and enhancement (PME) measures are spelled out. Henry said he believes that after SCE&G files this plan, FERC will ask for a study plan explaining how enhancements will be implemented.

Melanie said that the wording included in the plan regarding no long term monitoring was confusing and seemed to imply that short term monitoring would take place. This wording was changed to specify that no monitoring would occur. Dick said that SCDNR may do some monitoring with grad students. Melanie also asked if any maintenance of the structures would occur. Caleb said that SCDNR requested the installation of the structures and assured the group that the structures are effective, based on past studies. These structures are also permanent and will not fall apart over time, so maintenance shouldn't be necessary.

Ron said that the structures should be fitted with labels that include owner information. Signs should also be installed at each public boat ramp informing the public that a habitat enhancement program is underway and not to disturb the structures if they encounter them.

Erosion Monitoring Plan

The group discussed the comments that Bill M. submitted on the Erosion Monitoring Plan. Bill M. asked that more details be included within each erosion category. Ray said that vegetation was included as part of each erosion category description because it is used to visually indicate how much erosion is occurring. If trees are downed along the shoreline, then the area is likely eroding. Bill M. asked where they are looking for vegetation. Ray said they look in areas with scarp. If root balls are visible and if trees have recently fallen at the base of the scarp, this indicates erosion. Ray said that the categories are subjective, so they try to have the same person perform the monitoring every year to reduce variability.

Bill M. said he would like the category descriptions to be more measureable. He said that at the Keowee-Toxaway Project, scarp height was used to indicate erosion. Ray edited the plan to specify that if an area of active shoreline erosion is identified, measurements will be taken or reference pins will be installed to verify the severity of the erosion quantitatively. Bill A noted that the revised wording will need to be agreed to by the Dam Safety Department prior to finalization.

Entrainment/Hydroacoustic Study Plan

Henry told the group that SCE&G and Kleinschmidt performed additional analysis as part of the Entrainment Study using information that Bill M. sent over from previous Duke Energy studies. Dick said that the additional analysis wasn't completed exactly how SCDNR expected.

Henry said that SCE&G has committed to performing a hydroacoustic study in August, to examine species composition and how lights at the Project intake areas affect entrainment. Don Degan with Aquacoustics, Inc. will be working with Kleinschmidt and SCE&G to perform the study. Dick asked if Don has done a similar type of "lights on/lights off" evaluation previously. Henry said yes, at Lake Russell. Dick asked if there was an idea of the number of hours or the amount of effort that was going to be dedicated to the "lights on/lights off" experiment. Ray said operations will be off

each night for approximately three hours. Dick said he was a little concerned about a snap shot approach, but it sounds like that will be covered. Henry said that he talked with Don about timing of the study, and he indicated that August is the best time of year to examine how lights affect shad. Dick said if data is collected that shows what he thinks is happening (a relationship between entrainment and lights), improving entrainment will be a matter of modifying the lighting at the Project. However, if the data doesn't verify this relationship, the question is raised as to whether a relationship exists or is more data needed.

Henry said that stakeholders can observe the study if they are interested. An email will be sent out closer to the study to see if anyone is interested.

Melanie asked if the enhancements that are planned for Monticello Reservoir are located far away from the intakes. Henry said yes, that was taken into account when the enhancements areas were chosen. Melanie said that if entrainment is an issue for the reservoir, why would you want to enhance habitat and produce more fish? Henry said the habitat enhancement is being completed to help offset entrainment, but it could also encourage entrainment. The enhancements will be used to increase densities of fish higher in the lake, away from the intakes. Information on how site selection was made is included in the Monticello Habitat Enhancement Plan. This information will also be reflected in the analysis section of the Final License Application.

Turbine Venting Plan

All stakeholders indicated they were fine with this plan as it stands.

Recreation Management Plan

Alison explained that the land on which the Enoree River Bridge Recreation Site sits is owned by the US Forest Service (USFS). So before enhancements are completed at this site, SCE&G will need to gain approval for these enhancements from the USFS. Two footnotes were added to the Recreation Management Plan indicating this. Alison said that the USFS will likely need to complete the NEPA process and contact the SHPO about these enhancements, which will affect how long it will take to implement the enhancements. Alison said that the USFS may want to categorically exclude this from NEPA. They will still need to consult with SHPO, however, this process should be fairly straightforward.

Alison also discussed the existing sand-mining operation located in the Parr Reservoir, near the Highway 34 Recreation Site. She said that some of the stakeholders may be aware of a similar operation at the Duke Energy 99 Islands Project. Duke is in the process of obtaining a license amendment from FERC to allow the sand-mining operation to continue. SCE&G will likely have to do something similar to address sand-mining in the Parr Reservoir. Bill S. told the group that he receives phone calls every few months regarding the oil sheen from fuel spills/leaks from the sand-mining operation. Bill A. said that he spoke with the contractor who runs the sand-mining operation and he indicated that he would like to continue to operate in the area. Bill A. said he spoke with FERC and they asked him to write a letter explaining the situation. FERC will then respond by asking SCE&G to either file a request for non-Project use of Project lands and waters, or shut down the operation. SCE&G will need to consult with the agencies on this matter. SCE&G will also include this issue in the Final License Application.

Following this discussion, the meeting adjourned. Action items are listed below.

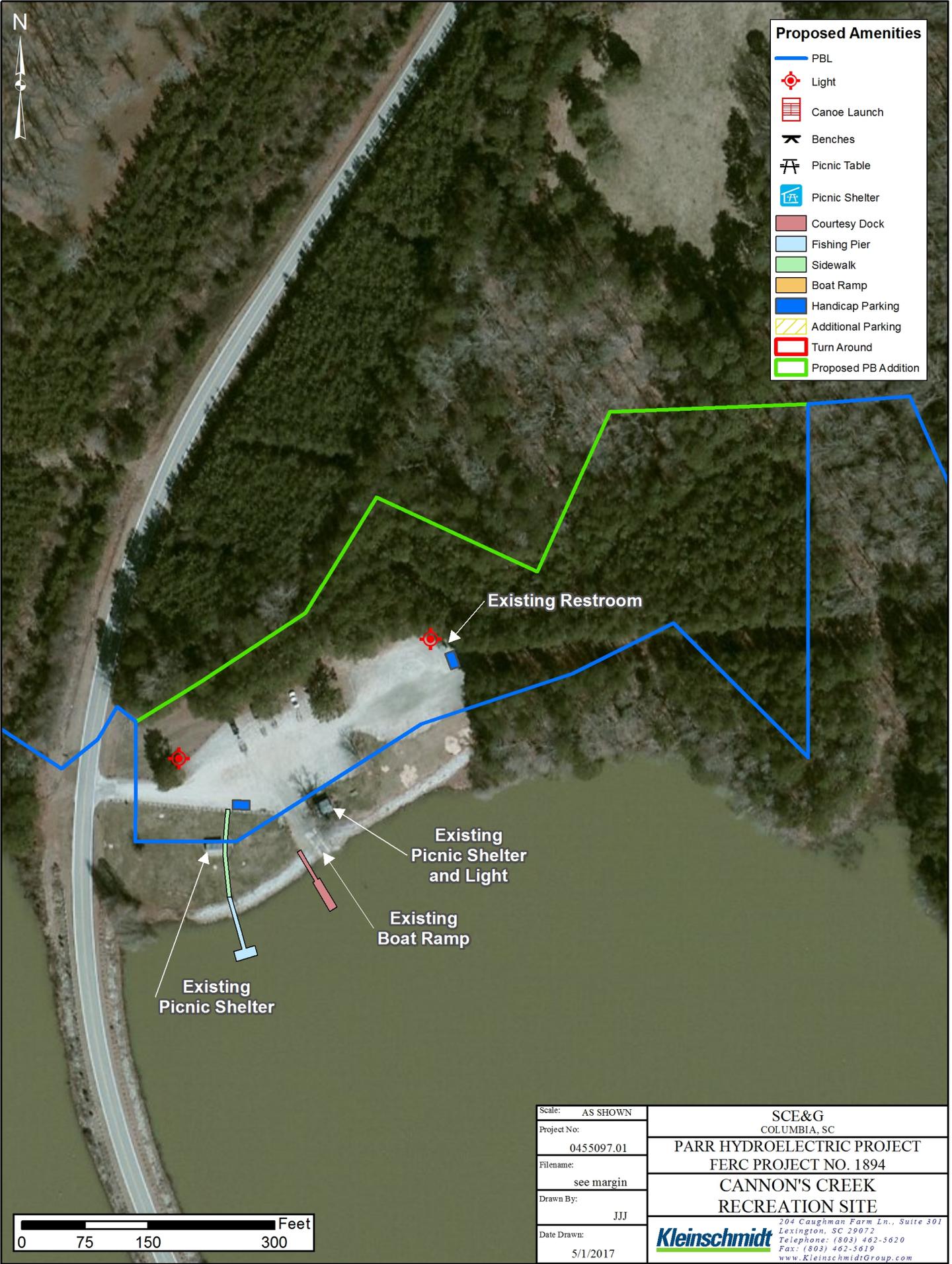
ACTION ITEMS:

- SCE&G and Kleinschmidt will make all of the edits to the West Channel AMP, Monticello Habitat Enhancement Plan, and Erosion Monitoring Plan that were discussed in the meeting.
 - West Channel AMP - the grids where the continuous sampling will occur should be removed
 - West Channel AMP - the grids should also be renumbered
 - West Channel AMP - ten percent of the sites should be sampled.
 - West Channel AMP - the sites should be chosen randomly and should be stratified, with a greater number of samples being taken upstream of the 213 bridge
 - Monticello Reservoir Habitat Enhancement Plan - the structures should be fitted with labels that include owner information
 - Monticello Reservoir Habitat Enhancement Plan - Signs should also be installed at each public boat ramp informing the public that a habitat enhancement program is underway and not to disturb the structures if they encounter them
 - Erosion Monitoring Plan – changes were incorporated during the meeting
- Kleinschmidt will send an email to stakeholders prior to the hydroacoustic study to see if anyone is interested in observing.
- SCE&G Dam Safety Department will need to approve changes to Erosion Monitoring Plan.
- Kleinschmidt will include write-up of the mining operation in the Final License Application.

APPENDIX B

PROJECT RECREATION SITE FIGURES

Path: G:\Client_Data\SCE&G\ParrFairfield\MXD\RMP Figures\Rec_Enhancements_CannonsCreek.mxd



Proposed Amenities	
	PBL
	Light
	Canoe Launch
	Benches
	Picnic Table
	Picnic Shelter
	Courtesy Dock
	Fishing Pier
	Sidewalk
	Boat Ramp
	Handicap Parking
	Additional Parking
	Turn Around
	Proposed PB Addition

Scale:	AS SHOWN
Project No:	0455097.01
Filename:	see margin
Drawn By:	JJJ
Date Drawn:	5/1/2017

SCE&G COLUMBIA, SC	
PARR HYDROELECTRIC PROJECT FERC PROJECT NO. 1894	
CANNON'S CREEK RECREATION SITE	
 <small>204 Caughman Farm Ln., Suite 301 Lexington, SC 29072 Telephone: (803) 462-5620 Fax: (803) 462-5619 www.KleinschmidtGroup.com</small>	

Source: SCE&G, Kleinschmidt, ESRI



Proposed Amenities

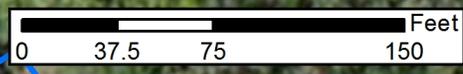
-  PBL
-  Light
-  Canoe Launch
-  Benches
-  Picnic Table
-  Picnic Shelter
-  Courtesy Dock
-  Fishing Pier
-  Sidewalk
-  Boat Ramp
-  Handicap Parking
-  Additional Parking
-  Turn Around

Existing Boat Ramp

Existing Restroom

Existing Picnic Shelter

Existing Picnic Shelter



Scale:	AS SHOWN	SCE&G COLUMBIA, SC
Project No:	0455097.01	
Filename:	see margin	PARR HYDROELECTRIC PROJECT FERC PROJECT NO. 1894
Drawn By:	JJJ	HELLER'S CREEK RECREATION SITE
Date Drawn:	4/26/2017	<i>204 Caughman Farm Ln., Suite 301 Lexington, SC 29072 Telephone: (803) 462-5620 Fax: (803) 462-5619 www.KleinschmidtGroup.com</i>



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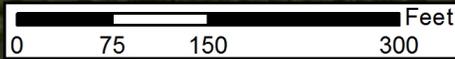


Legend

- PBL
- Canoe Portage



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Scale:	AS SHOWN	SCE&G COLUMBIA, SC
Project No:	0455097.01	
Filename:	see margin	PARR HYDROELECTRIC PROJECT FERC PROJECT NO. 1894
Drawn By:	JJJ	PARR SHOALS DAM CANOE PORTAGE
Date Drawn:	3/21/2017	<i>204 Caughman Farm Ln., Suite 301 Lexington, SC 29072 Telephone: (803) 462-5620 Fax: (803) 462-5619 www.KleinschmidtGroup.com</i>

Source: SCE&G, Kleinschmidt, ESRI



Proposed Amenities

- PBL
- Light
- Canoe Launch
- Benches
- Picnic Table
- Picnic Shelter
- Courtesy Dock
- Fishing Pier
- Sidewalk
- Boat Ramp
- Handicap Parking
- Additional Parking
- Turn Around
- Proposed PB Addition

Parking for 12 vehicles

Property 211
Parcel E

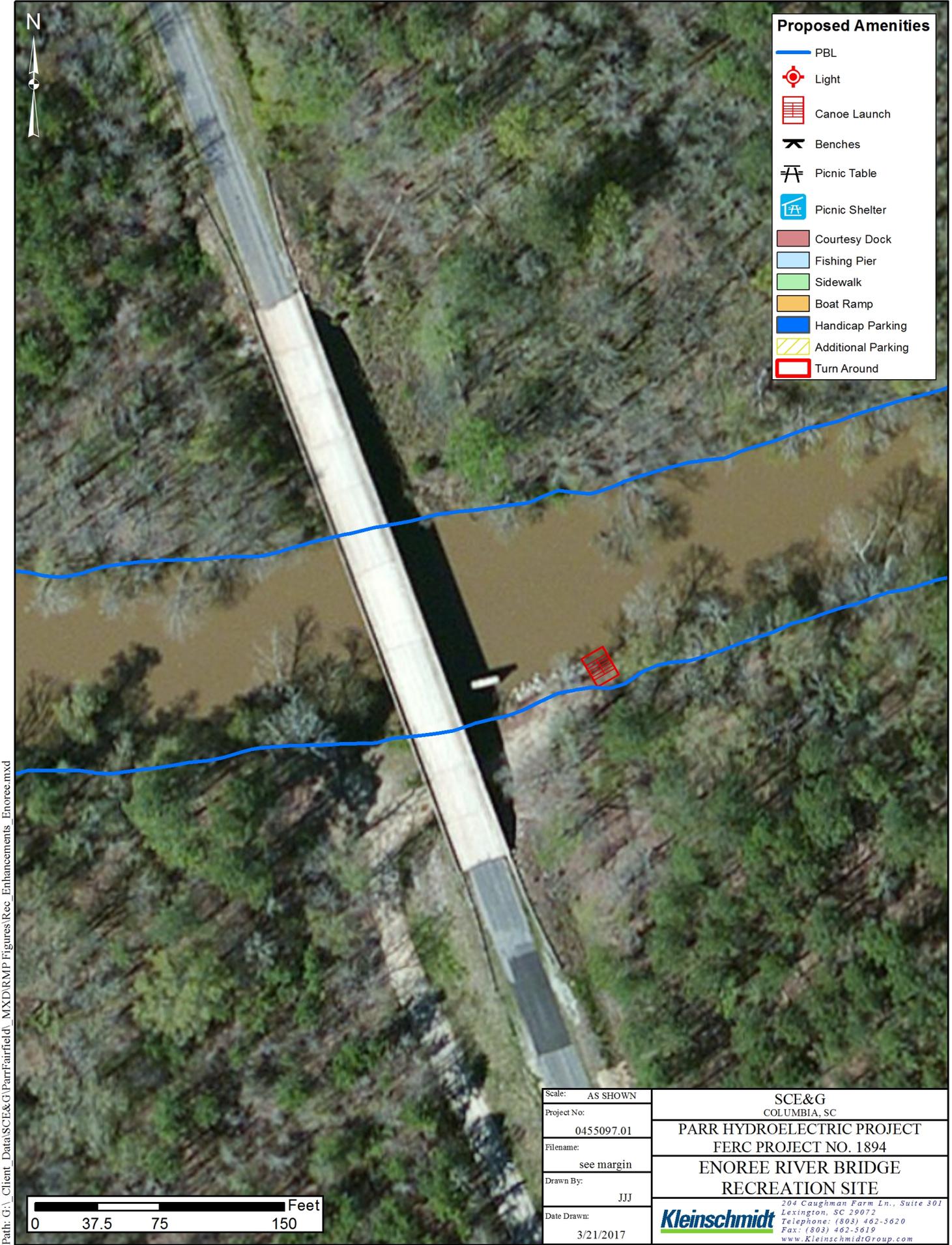
Property 285
Parcel C



Scale:	AS SHOWN
Project No:	0455097.01
Filename:	see margin
Drawn By:	JJJ
Date Drawn:	4/27/2017

SCE&G COLUMBIA, SC
PARR HYDROELECTRIC PROJECT FERC PROJECT NO. 1894
HIGHWAY 34 RECREATION SITE
<i>Kleinschmidt</i> 204 Caughman Farm Ln., Suite 301 Lexington, SC 29072 Telephone: (803) 462-5620 Fax: (803) 462-5619 www.KleinschmidtGroup.com

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Proposed Amenities

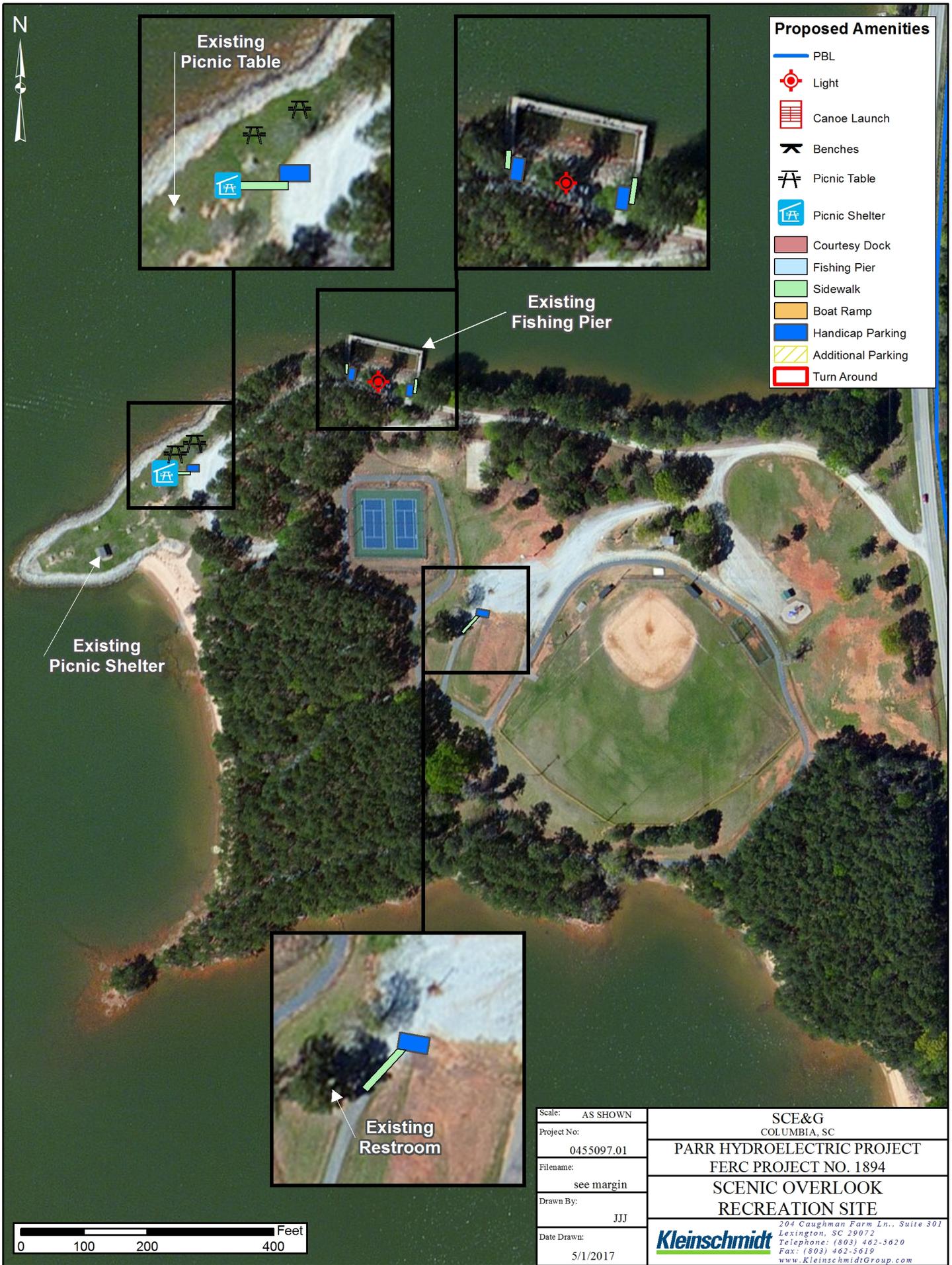
-  PBL
-  Light
-  Canoe Launch
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-  Picnic Table
-  Picnic Shelter
-  Courtesy Dock
-  Fishing Pier
-  Sidewalk
-  Boat Ramp
-  Handicap Parking
-  Additional Parking
-  Turn Around



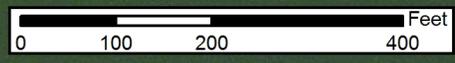
Scale:	AS SHOWN
Project No:	0455097.01
Filename:	see margin
Drawn By:	JJJ
Date Drawn:	3/21/2017

SCE&G COLUMBIA, SC	
PARR HYDROELECTRIC PROJECT FERC PROJECT NO. 1894	
ENOREE RIVER BRIDGE RECREATION SITE	
<i>204 Caughman Farm Ln., Suite 301</i> <i>Lexington, SC 29072</i> <i>Telephone: (803) 462-5620</i> <i>Fax: (803) 462-5619</i> <i>www.KleinschmidtGroup.com</i>	





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 - Courtesy Dock
 - Fishing Pier
 - Sidewalk
 - Boat Ramp
 - Handicap Parking
 - Additional Parking
 - Turn Around



Scale:	AS SHOWN	SCE&G COLUMBIA, SC
Project No:	0455097.01	
Filename:	see margin	PARR HYDROELECTRIC PROJECT FERC PROJECT NO. 1894
Drawn By:	JJJ	SCENIC OVERLOOK RECREATION SITE
Date Drawn:	5/1/2017	Kleinschmidt 204 Caughman Farm Ln., Suite 301 Lexington, SC 29072 Telephone: (803) 462-5620 Fax: (803) 462-5619 www.KleinschmidtGroup.com

Path: G:\Client_Data\SCE&G\ParrFairfield\MXD\RMP Figures\Highway_215.mxd



Proposed Amenities

- PBL
- Light
- Canoe Launch
- Benches
- Picnic Table
- Picnic Shelter
- Courtesy Dock
- Fishing Pier
- Sidewalk
- Boat Ramp
- Handicap Parking
- Additional Parking
- Turn Around



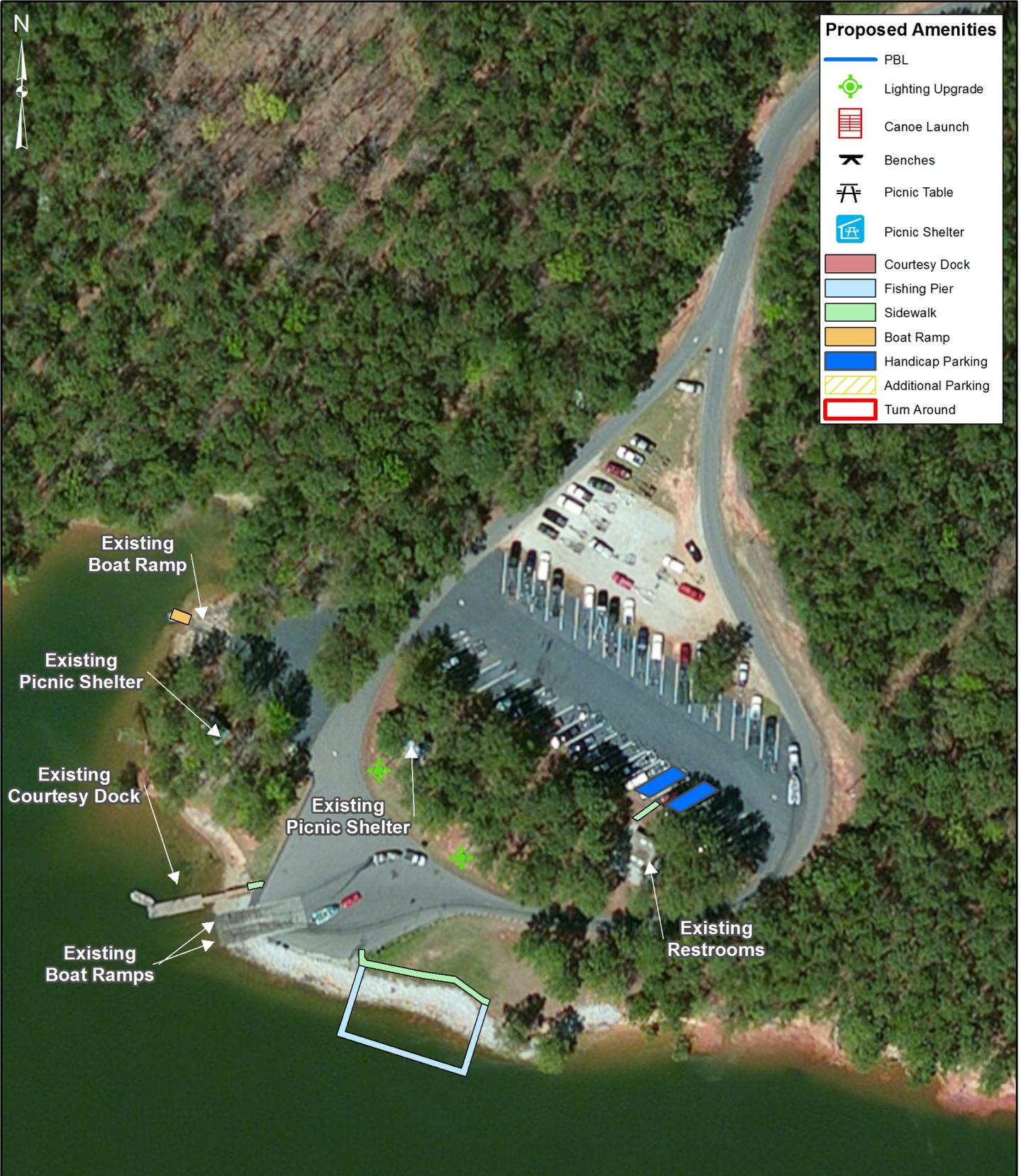
Scale:	AS SHOWN
Project No:	0455097.01
Filename:	see margin
Drawn By:	JJJ
Date Drawn:	5/1/2017

SCE&G COLUMBIA, SC
PARR HYDROELECTRIC PROJECT FERC PROJECT NO. 1894
HIGHWAY 215 RECREATION SITE
204 Caughman Farm Ln., Suite 301 Lexington, SC 29072 Telephone: (803) 462-5620 Fax: (803) 462-5619 www.KleinschmidtGroup.com



Source: SCE&G, Kleinschmidt, ESRI

Path: G:\Client_Data\SCE&G\ParrFairfield\MXD\RMP Figures\Rec Enhancements Highway99West.mxd



- ### Proposed Amenities
-  PBL
 -  Lighting Upgrade
 -  Canoe Launch
 -  Benches
 -  Picnic Table
 -  Picnic Shelter
 -  Courtesy Dock
 -  Fishing Pier
 -  Sidewalk
 -  Boat Ramp
 -  Handicap Parking
 -  Additional Parking
 -  Turn Around

Existing Boat Ramp

Existing Picnic Shelter

Existing Courtesy Dock

Existing Boat Ramps

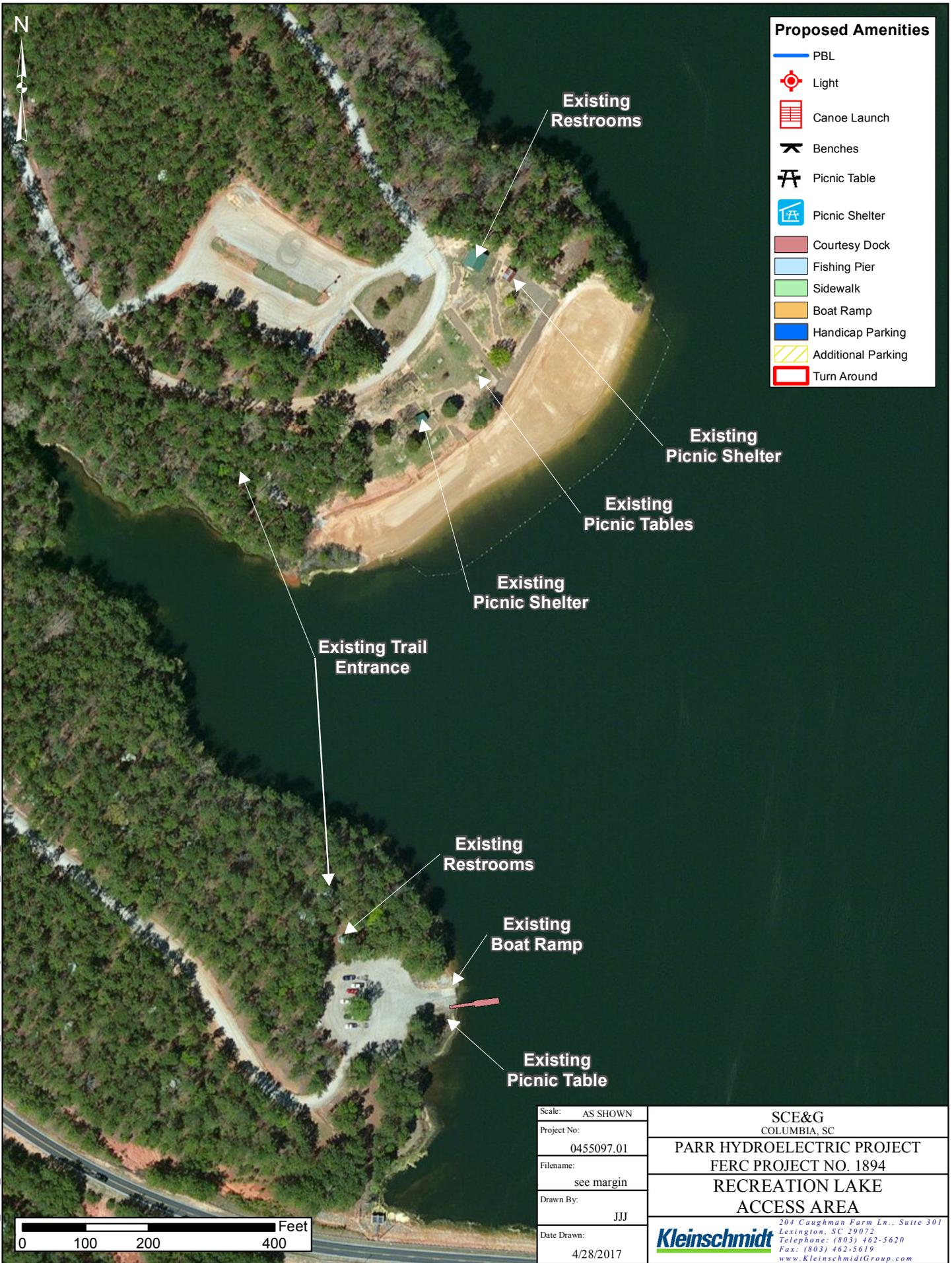
Existing Picnic Shelter

Existing Restrooms



Scale:	AS SHOWN	SCE&G COLUMBIA, SC PARR HYDROELECTRIC PROJECT FERC PROJECT NO. 1894 HIGHWAY 99 WEST RECREATION SITE <small>204 Caughman Farm Ln., Suite 301 Lexington, SC 29072 Telephone: (803) 462-5620 Fax: (803) 462-5619 www.KleinschmidtGroup.com</small>
Project No:	0455097.01	
Filename:	see margin	
Drawn By:	JJJ	
Date Drawn:	5/1/2017	
Kleinschmidt		

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Proposed Amenities	
	PBL
	Light
	Canoe Launch
	Benches
	Picnic Table
	Picnic Shelter
	Courtesy Dock
	Fishing Pier
	Sidewalk
	Boat Ramp
	Handicap Parking
	Additional Parking
	Turn Around



Scale:	AS SHOWN	SCE&G COLUMBIA, SC PARR HYDROELECTRIC PROJECT FERC PROJECT NO. 1894 RECREATION LAKE ACCESS AREA
Project No:	0455097.01	
Filename:	see margin	
Drawn By:	JJJ	
Date Drawn:	4/28/2017	 <small>204 Caughman Farm Ln., Suite 301 Lexington, SC 29072 Telephone: (803) 462-5620 Fax: (803) 462-5619 www.KleinschmidtGroup.com</small>

Source: SCE&G, Kleinschmidt, ESRI

Path: G:\Client_Data\SCE&G\ParrFairfield\MXD\RMP Figures\Rec Enhancements Highway99East.mxd



- Proposed Amenities**
-  PBL
 -  Light
 -  Canoe Launch
 -  Benches
 -  Picnic Table
 -  Picnic Shelter
 -  Courtesy Dock
 -  Fishing Pier
 -  Sidewalk
 -  Boat Ramp
 -  Handicap Parking
 -  Additional Parking
 -  Turn Around



Scale:	AS SHOWN	SCE&G COLUMBIA, SC
Project No:	0455097.01	
Filename:	see margin	PARR HYDROELECTRIC PROJECT FERC PROJECT NO. 1894
Drawn By:	JJJ	HIGHWAY 99 EAST RECREATION SITE
Date Drawn:	3/21/2017	<i>204 Caughman Farm Ln., Suite 301 Lexington, SC 29072 Telephone: (803) 462-5620 Fax: (803) 462-5619 www.KleinschmidtGroup.com</i>



Source: SCE&G, Kleinschmidt, ESRI

APPENDIX C

RECREATION FACILITY TABLE

TABLE 1 FERC-APPROVED RECREATION FACILITIES AT THE PARR HYDROELECTRIC PROJECT

RECREATION SITE NAME	RECREATION FACILITIES^{10 11}
Cannon’s Creek Recreation Site (<i>previously known as Cannon’s Creek Site</i>)	30 vehicle w/trailer parking (<i>including 2 barrier free spaces</i>), 2 restrooms (<i>barrier free</i>), 1 boat ramp, 1 fishing pier, 1 courtesy dock, 2 picnic shelters, 2 picnic tables, 2 grills, primitive camping, interpretive display, accessible routes
Heller’s Creek Recreation Site (<i>previously known as Heller’s Creek Site</i>)	25 vehicle w/trailer parking, 2 restrooms, 1 boat ramp, 2 picnic shelters, 2 picnic tables, primitive camping
Scenic Overlook Recreation Site (<i>previously known as Overlook</i>)	Gravel parking areas (<i>including 3 paved barrier free spaces</i>), 2 restrooms (<i>barrier free</i>) 1 fishing pier (<i>barrier free</i>), 11 picnic tables (<i>including 1 barrier free picnic table</i>), 2 picnic shelters (<i>including 1 barrier free shelter</i>), overlook, accessible routes
Highway 215 Recreation Site (<i>previously known as Ramp 1</i>)	30 vehicle w/trailer parking spaces, 2 boat ramps, 1 courtesy dock, 2 picnic tables, 1 picnic shelter, interpretive display
Highway 99 West Recreation Site (<i>previously known as Ramp 2</i>)	80 vehicle w/trailer parking spaces (<i>including 2 barrier free spaces</i>), 2 restrooms, 3 boat ramps, 1 fishing pier, 1 courtesy dock, 5 picnic tables, 2 picnic shelters, 1 grill, primitive camping, accessible routes
Recreation Lake Access Area (<i>previously known as Ramp 3</i>)	105 parking spaces (<i>including 2 unpaved barrier free spaces</i>), 4 restrooms, 1 boat ramp, 26 picnic tables, 2 picnic shelters, 7 grills, beach, 1/3 mile hiking trail, 1 courtesy dock

TABLE 2 PROPOSED RECREATION FACILITIES AT THE PARR HYDROELECTRIC PROJECT

RECREATION SITE NAME	RECREATION FACILITIES
Parr Shoals Dam Canoe Portage	<i>Canoe portage</i>
Highway 34 Recreation Site	5 vehicle parking, geogrid boat ramp
Enoree River Bridge Recreation Site	<i>Canoe/kayak step-down access facility</i>
Highway 99 East Recreation Site	20 parking spaces, 1 fishing pier, 2 picnic tables, overlook with 2 benches

¹⁰ Proposed facilities are denoted in italics.

¹¹ Highlighted recreation amenities are included in the Recreation Amenities Table included in Appendix D.

APPENDIX D

RECREATION AMENITIES TABLE

TABLE 1 RECREATION AMENITIES FOR THE PARR HYDROELECTRIC PROJECT (FERC No. 1894)

PROJECT No.	DEVELOPMENT NAME	RECREATION AMENITY NAME	RECREATION AMENITY TYPE	AMENITY STATUS	LATITUDE	LONGITUDE	FERC CITATION & DATE	NOTES
P-1894	Parr Shoals Development	Cannon's Creek Recreation Site	Boat Ramp Area	Constructed	34.2867028°	-081.3625722°	52 F.P.C. 537 (1974) – 08/28/1974	1 boat ramp – 1 lane
P-1894	Parr Shoals Development	Cannon's Creek Recreation Site	Reservoir Fishing	Unconstructed	##.####	-##.####	### FERC ¶ ##,### MM/DD/YYYY	Fishing Pier
P-1894	Parr Shoals Development	Cannon's Creek Recreation Site	Picnic Area	Constructed	34.2868806°	-081.3625583°	52 F.P.C. 537 (1974) – 08/28/1974	2 picnic shelters, 2 picnic tables, 2 grills
P-1894	Parr Shoals Development	Cannon's Creek Recreation Site	Campsites	Constructed	34.2869778°	-081.3624333°	52 F.P.C. 537 (1974) – 08/28/1974	Primitive camping
P-1894	Parr Shoals Development	Cannon's Creek Recreation Site	Interpretive Display	Unconstructed	##.####	-##.####	### FERC ¶ ##,### MM/DD/YYYY	Industry Evolution on the Broad River
P-1894	Parr Shoals Development	Heller's Creek Recreation Site	Boat Ramp Area	Constructed	34.3193889°	-081.3746556°	52 F.P.C. 537 (1974) – 08/28/1974	1 boat ramp – 1 lane
P-1894	Parr Shoals Development	Heller's Creek Recreation Site	Picnic Area	Constructed	34.3191833°	-081.3739389°	52 F.P.C. 537 (1974) – 08/28/1974	2 picnic shelters, 2 picnic tables

PROJECT NO.	DEVELOPMENT NAME	RECREATION AMENITY NAME	RECREATION AMENITY TYPE	AMENITY STATUS	LATITUDE	LONGITUDE	FERC CITATION & DATE	NOTES
P-1894	Parr Shoals Development	Heller's Creek Recreation Site	Campsites	Constructed	34.3195139°	-081.3744611°	52 F.P.C. 537 (1974) – 08/28/1974	Primitive camping
P-1894	Parr Shoals Development	Parr Shoals Dam Canoe Portage	Canoe Portage Take-out	Unconstructed	##.####	-##.####	### FERC ¶ ##,### MM/DD/YYYY	Approx. 1,600-foot portage trail
P-1894	Parr Shoals Development	Parr Shoals Dam Canoe Portage	Canoe Portage Put-in	Unconstructed	##.####	-##.####	### FERC ¶ ##,### MM/DD/YYYY	Take-out and put-in counted as 1 canoe portage on Form 80
P-1894	Parr Shoals Development	Highway 34 Recreation Site	Boat Ramp Area	Unconstructed	##.####	-##.####	### FERC ¶ ##,### MM/DD/YYYY	1 boat ramp – 1 lanes
P-1894	Parr Shoals Development	Enoree River Bridge Recreation Site	Canoe Put-in	Unconstructed	##.####	-##.####	### FERC ¶ ##,### MM/DD/YYYY	Canoe/kayak step-down access facility
P-1894	Fairfield Development	Scenic Overlook Recreation Site	Reservoir Fishing	Constructed	34.3246639°	-081.2876972°	52 F.P.C. 537 (1974) – 08/28/1974	Fishing Pier

PROJECT NO.	DEVELOPMENT NAME	RECREATION AMENITY NAME	RECREATION AMENITY TYPE	AMENITY STATUS	LATITUDE	LONGITUDE	FERC CITATION & DATE	NOTES
P-1894	Fairfield Development	Scenic Overlook Recreation Site	Picnic Area	Unconstructed	##.####	-##.####	### FERC ¶ ##,### MM/DD/YYYY	8 picnic tables and 1 picnic shelter (constructed); 3 tables and 1 shelter (unconstructed).
P-1894	Fairfield Development	Scenic Overlook Recreation Site	Overlooks/Vistas	Constructed	34.3238028°	-081.2897111°	52 F.P.C. 537 (1974) – 08/28/1974	Monticello Reservoir Overlook
P-1894	Fairfield Development	Highway 215 Recreation Site	Boat Ramp Area	Constructed	34.3275250°	-081.2856639°	52 F.P.C. 537 (1974) – 08/28/1974	2 boat ramps – 2 lanes
P-1894	Fairfield Development	Highway 215 Recreation Site	Picnic Area	Constructed	34.3265333°	-081.2852750°	52 F.P.C. 537 (1974) – 08/28/1974	1 picnic shelter, 2 picnic tables
P-1894	Fairfield Development	Highway 215 Recreation Site	Interpretive Display	Unconstructed	##.####	-##.####	### FERC ¶ ##,### MM/DD/YYYY	Industry Evolution on the Broad River
P-1894	Fairfield Development	Highway 99 West Recreation Site	Boat Ramp Area	Unconstructed	34.3762778°	-081.3178722°	### FERC ¶ ##,### MM/DD/YYYY	3 boat ramps, 3 lanes (constructed); 1 boat ramp to be extended (unconstructed)

PROJECT No.	DEVELOPMENT NAME	RECREATION AMENITY NAME	RECREATION AMENITY TYPE	AMENITY STATUS	LATITUDE	LONGITUDE	FERC CITATION & DATE	NOTES
P-1894	Fairfield Development	Highway 99 West Recreation Site	Reservoir Fishing	Unconstructed	##.####	-##.####	### FERC ¶ ##,### MM/DD/YYYY	Fishing Pier
P-1894	Fairfield Development	Highway 99 West Recreation Site	Picnic Area	Constructed	34.3766083°	-081.3175222°	52 F.P.C. 537 (1974) – 08/28/1974	2 picnic shelters, 5 picnic tables, 1 grill.
P-1894	Fairfield Development	Highway 99 West Recreation Site	Campsites	Constructed	34.3764472°	-081.3175639°	52 F.P.C. 537 (1974) – 08/28/1974	Primitive camping.
P-1894	Fairfield Development	Recreation Lake Access Area	Boat Ramp Area	Constructed	34.3793306°	-081.3133972°	52 F.P.C. 537 (1974) – 08/28/1974	1 boat ramp, 1 lane
P-1894	Fairfield Development	Recreation Lake Access Area	Picnic Area	Constructed	34.3818528°	-081.3135444°	52 F.P.C. 537 (1974) – 08/28/1974	2 picnic shelters, 26 picnic tables, 7 grills
P-1894	Fairfield Development	Recreation Lake Access Area	Beach Area	Constructed	34.3816556°	-081.3130639°	52 F.P.C. 537 (1974) – 08/28/1974	Beach Area
P-1894	Fairfield Development	Recreation Lake Access Area	Trails	Constructed	34.3828333°	-081.3144917°	52 F.P.C. 537 (1974) – 08/28/1974	1/3-mile hiking trail
P-1894	Fairfield Development	Highway 99 East	Reservoir Fishing	Unconstructed	##.####	-##.####	### FERC ¶ ##,### MM/DD/YYYY	Fishing Pier

PROJECT NO.	DEVELOPMENT NAME	RECREATION AMENITY NAME	RECREATION AMENITY TYPE	AMENITY STATUS	LATITUDE	LONGITUDE	FERC CITATION & DATE	NOTES
		Recreation Site						
P-1894	Fairfield Development	Highway 99 East Recreation Site	Picnic Area	Unconstructed	##.####	-##.####	### FERC ¶ ##,### MM/DD/YYYY	2 picnic tables
P-1894	Fairfield Development	Highway 99 East Recreation Site	Overlooks/Vistas	Unconstructed	##.####	-##.####	### FERC ¶ ##,### MM/DD/YYYY	Monticello Reservoir Overlook with 2 benches