

APPENDIX B

STAFF RESPONSES TO COMMENTS ON THE DRAFT EIS

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The Commission staff issued its draft environmental impact statement (draft EIS) for the proposed relicensing of the Santee Cooper Project on March 23, 2007. Staff requested comments on the draft EIS be filed within 60 days from the issuance date, or by May 22, 2007. The following entities and individuals filed comments:

<u>Commenting Entity</u>	<u>Date Filed</u>
South Carolina Department of Archives and History	April 27, 2007
U.S. Department of the Interior, Office of Environmental Policy and Compliance	May 17, 2007
South Carolina Public Service Authority	May 22, 2007
National Marine Fisheries Service	May 22, 2007
American Rivers/South Carolina Coastal Conservation League	May 22, 2007
Environmental Protection Agency	May 25, 2007
South Carolina Department of Natural Resources	May 29, 2007

Below, we summarize the substantive comments, provide responses to those comments, and explain how we modified the text of the draft EIS, as appropriate, to address the comments. Unless otherwise noted, changes addressing editorial comments were made to the final environmental impact statement (FEIS), but are not described below. The comments are grouped by topic for convenience.

General Comments

Comment: American Rivers and the South Carolina Coastal Conservation League (CCL) state that the draft Settlement Agreement (DSA) did not meet the criteria required for an offer of settlement as outlined in 18 C.F.R § 385.602 because the document did not contain a separate explanatory statement and copies of, or references to, any document, testimony, or exhibit, including record citations if there is a record, and any other matters that the offeror considers relevant to the offer of settlement.

Response: The final Settlement Agreement (FSA) was filed with the Commission on May 24, 2007. A separate Explanatory Statement was filed with the Commission on June 18, 2007. The completeness of specific filing requirements for a final agreement, however, does not preclude staff from analyzing the FSA as an alternative in the FEIS, which we have done.

Comment: On March 29, 2007, American Rivers and CCL filed a Motion to Set Matter for Hearing regarding the inclusion of the contract between SCPSA and the Corps into the license for the Santee Cooper Project. American Rivers and CCL assert that the FEIS should not be issued until the Motion to Set Matter for Hearing has been ruled on by the

Commission. American Rivers and CCL state that the Santee Cooper takeover of the St. Stephen development should be analyzed as a reasonable alternative in the FEIS. American Rivers and CCL also assert that non-operation of St. Stephen for extended periods of time must be evaluated in the FEIS.

Response: This matter is not appropriately addressed in an EIS and will be addressed in the licensing order.

Comment: SCPSA disagrees with the geographic scope of the draft EIS. SCPSA states that the geographic scope should not reach to the Atlantic Ocean and Charleston Harbor since these locations are approximately 86 miles and 50 miles downstream of the project, respectively. SCPSA contends that the tidal effects within these lower river reaches override the effects of project discharges.

Response: The geographic scope of the analysis in the EIS varies for each resource because the proposed action affects the resources differently. For water quality and diadromous fish resources, which are affected by project operations on a basin-wide scale, the geographic scope extends from the point upstream where the Santee River enters Lake Marion downstream to the Atlantic Ocean, and from Lake Moultrie down the Cooper River to Charleston Harbor. For other resources, the geographic scope is generally within the project area, including the 37-mile reach of the Santee River below Santee dam to the Rediversion Canal.

Comment: SCPSA recommends additional analysis with respect to temporal scope issues as they pertain to the additional electricity resources that SCPSA states will be needed within the near future based on anticipated urban growth in the Cooper River corridor and nearby areas.

Response: The need for power is a consideration in the EIS, which includes a discussion of power needs to year 2015 and an analysis of population growth patterns to year 2025. The EIS recognizes that the population in the project area is growing and peak demand for generation is projected to increase about 2.08 percent per year. As there are no proposals for a reduction in capacity at the project and adopted increased flows for Santee dam could be provided by an additional generating unit, we do not believe that additional analysis is necessary for this issue.

Comment: SCPSA requests that the measures outlined in the Executive Summary of the FEIS be clarified to more accurately reflect the findings of staff's analysis. Specifically, SCPSA suggests that the following two measures be worded as follows:

- Provide continuous minimum flows when available at St. Stephen during the fish passage season as described in the FSA;
- Formalize the implementation of fish attraction flows, installation of manatee

exclusion devices and modification of lock operations when manatees are present at Pinopolis Lock.

Response: The FEIS has been updated to reflect these changes.

Comment: SCPSA states that normal pool elevation is 75.0 feet msl not 74.0 feet.

Response: The FEIS has been updated to reflect these changes.

Water Resources

Comment: In its original section 10(j) recommendations, the U.S. Department of the Interior (Interior) recommended a year-round minimum flow of 1,600 cfs at Santee dam. Interior is not a signatory to the FSA (the U.S. Fish and Wildlife Service [FWS], an agency within Interior did sign the agreement), however it withdraws its previous section 10(j) instream flow recommendation and recommends the Commission adopt the terms of the FSA as the preferred alternative.

Response: We note that Interior, as well as FWS, have modified their section 10(j) recommendations, and the FEIS reflects those changes.

Comment: In Section III.A., of the FSA, FWS withdrew its previous section 4(e) conditions in favor of the terms of the FSA for improvements to the Santee NWR. In its comments on the draft EIS, Interior concurs with the FWS's withdrawal of the 4(e) conditions and recommends alternative measures outlined in appendix C of the FSA, which includes 12 provisions for the Santee National Wildlife Refuge.

Response: We recognize that FWS has now withdrawn its 4(e) conditions. We make no conclusions in the EIS as to whether FWS could legally impose the section 4(e) conditions, and we analyze those measures as agency recommendations in the FEIS.

The FSA lists 12 provisions for improvements to the Santee NWR. As explained in section 5.1 of the FEIS, we recommend 10 of these measures. We do not recommend two of these measures: soil irrigation options on the Bluff and Cuddo Units and the provision for a bluff observation structure. Neither the FSA, nor the record, provide sufficient information for staff to determine whether there is a nexus to the projects or assess why the measures are needed.

Comment: In its comments on the draft EIS, Interior states that the document "should explain why inflow data are presented for the period 1940-1999 when data continue to be collected at the Wateree and Congaree gages and are available through 2006 on the internet..."

Response: Staff utilized the flow data information presented in the license application for the draft EIS. Staff analyzed the flow data from the Wateree and Congaree gages and found that including flow data for the years 2000 through 2006 reduces average flows at each gage by 3 percent. Staff acknowledges that including the most recent flow data would result in a slight decrease in the average flow in the project area. However, staff concludes that this difference is minor and well within the accuracy limitations of the USGS flow gages and will not significantly affect the analysis or conclusions. Therefore, the FEIS analysis will utilize the same flow data as the draft EIS.

Comment: The NMFS recognizes that Commission staff attempted to address the interrelated operations of the Santee Cooper and St. Stephen projects in the draft EIS. It is NMFS's position, however, that the effects of the St. Stephen Project and their influence on the development of the staff recommended alternative are difficult to follow throughout the EIS and require clarification.

Response: In the FEIS, staff attempts to clarify the effects of interrelated operations on project-related resources. Although the St. Stephen Project is owned by the Corps, we have analyzed certain components of the interrelated operations of the Santee Cooper and St. Stephen projects for those resources affected by such operations.

Comment: It is NMFS's understanding that the additional 2,500 cfs above the 4,500 cfs mean weekly flow that is occasionally released from the Pinopolis development is required during late summer periods when the closed-cycle cooling system for the Jefferies Steam-Electric Power Plant is inadequate to allow continued generation, resulting in potential shutdown of the plant. It is NMFS's contention that the Jefferies plant's cooling water needs during the hotter summer months could be addressed by alternatives, without further reducing the supply of water for other critical instream habitat needs for aquatic resources. NMFS states that alternatives to this release should be explored in the FEIS.

Response: Staff acknowledges that there may be alternatives to the 2,500 cfs augmented flow release to provide cooling water to the Jefferies Plant. However, NMFS does not suggest any alternatives for analysis, nor would it be appropriate for staff to independently develop alternatives for the operation of the non-jurisdictional Jefferies Steam-Electric Plant. Only specific measures recommended for the Jefferies Plant are analyzed in the FEIS.

Comment: American Rivers and CCL state that staff's assertion that it cannot make a recommendation regarding proposed flows for the St. Stephen development is inconsistent with their obligations under NEPA to analyze cumulative impacts, and under the FPA to assure the license is best suited to a comprehensive plan of development.

Response: In 1968, Congress enacted Public Law 90-483, which, among other things, authorized the construction and operation of the Cooper River Rediversion Project (St. Stephen Project). The flow requirements, as well as other pertinent operational considerations that impact the entire Santee Cooper Project flows, are outlined in a contract between Santee Cooper and the Corps, referred to as the Cooper River Rediversion Project Contract, No. DACW60-7-C-0005. As a federal project, the St. Stephen development is outside of the Commission's jurisdiction. While analysis of flows at St. Stephen is included in the draft and FEIS, Commission staff will not make recommendations for flows at a non-jurisdictional project.

Comment: American Rivers and CCL reiterate the information requests made by the SCDHEC during the CWA section 401 water quality certification process, including those for sediment transport studies. American Rivers and CCL encourage Commission staff to require development of the information that has been identified as necessary by SCDHEC.

Response: Any information requests and requirements made by SCDHEC under CWA section 401 are expected to be addressed by SCPSA through the water quality certification process. SCPSA resubmitted its application for a 401 Water Quality Certification Permit effective April 12, 2007. SCDHEC action on this request is currently pending.

Comment: American Rivers and CCL suggest that Commission staff use the analysis presented in the SCDNR 2004 study, "Flow and Salinity Characteristics of the Santee River Estuary," to determine how operation of the Santee-Cooper Project would affect salinity in the estuary and how potential operational impacts can be mitigated by increased minimum flow requirements.

Response: The SCDNR 2004 flow and salinity study is used as a basis for our analysis in the EIS with respect to the effects of project operations on salinity levels downstream of the project.

Comment: American Rivers and CCL state that the effects of Santee-Cooper project operation on salinity, especially during periods of low flow and limited release from the St. Stephen development, should be part of the NEPA analysis. They also state that such analysis should include project effects on the 1,825-acre Wambaw Creek Wilderness in the Francis Marion National Forest. American Rivers and CCL further state that the draft EIS summarily concludes that 20,000 cfs would be necessary to keep the salinity wedge away from the National Forest. American Rivers and CCL do not agree with this finding.

Response: The draft and FEIS discuss the effects of project operations on salinity in the Santee and Cooper rivers, including the Francis Marion National Forest and the Bushy Park Industrial Complex. The statement regarding flow levels necessary for salinity

abatement in the National Forest was taken directly from the SCDNR 2004 flow and salinity study.

Comment: American Rivers and CCL recommend that the FEIS evaluate specific low flow measures necessary to balance the power and nonpower uses of water during low flow periods.

Response: The FEIS includes an evaluation of all specific low flow measures and minimum flow recommendations made in this proceeding. In their comments on the draft EIS, American Rivers and CCL do not provide any specific low flow measures to analyze. As a result, no changes to the analysis of American Rivers and CCL recommended measures in the FEIS have been made.

Comment: American Rivers and CCL state that the draft EIS makes no mention of higher flows that provide significant ecological benefits. American Rivers and CCL provide a list of these instream flow thresholds (1,600, 2,600, 5,000, 8,000, 10,000, 15,000, and 20,000 cfs).

Response: The EIS analyzes all the flow recommendations made by agencies and stakeholders. This included analysis of a 1,600, 2,600, and 5,000 cfs flow recommendations. No recommendations made by agencies or interested parties correspond to flows higher than 5,000 cfs. We considered the results of the “Instream Flow Mesohabitat Study” and others in our analysis and found that the seasonal higher flow levels that exceed the hydraulic capacities of the Santee Cooper and St. Stephen projects would continue to occur in the Santee River, providing the ecological benefits cited by American Rivers and CCL such as navigation, aquatic habitat and floodplain inundation.

Comment: American Rivers and CCL states that the trend of declining DO below the spillway indicates a flow of 600 cfs is too low to protect water quality in the Santee River downstream of the Santee dam.

Response: The EIS includes an analysis of alternative flow recommendations made by agencies and stakeholders. Staff recommends higher instream flow releases consistent with the settlement agreement. These higher instream flows are expected to provide water quality benefits in the Santee River.

Comment: EPA reiterates that the draft EIS states that discharges from Lake Marion into the Santee River, downstream of the Santee station, do not meet state water quality standards for DO during mid to late summer. EPA asserts that it is their interest to ensure that discharges from both project developments meet state water quality standards. EPA recommends that the FEIS (a) identify how and when water quality standards will be met and (b) address the water quality implications, specifically related to DO levels, of

providing higher minimum flows through a new minimum flow turbine. Further, EPA supports the need for enhancement measures to increase DO concentrations.

Response: To date, EPA has made no specific recommendations for enhancement measures or higher minimum flows to increase DO concentrations and improve water quality. However, as we responded above, the higher instream flows proposed to be released into the Santee River are expected to improve water quality in the river. Water quality monitoring, as part of the agency-recommended and staff-adopted adaptive management program, would identify excursions from state standards for DO, as well as identify operational and other measures to remediate this water quality issue. The potential for providing higher minimum flows through a new minimum flow turbine has been acknowledged in the FEIS.

Comment: If a new turbine is used to provide minimum flows, EPA recommends consideration of installation of the unit higher in the water column to avoid DO problems or utilize "through-the-blade" aeration technology (e.g., installation of aerating runners) in the new turbine to increase DO levels.

Response: SCPSA has not yet formally proposed installation of a new turbine-generator, so the design of any such unit is not known at this time. Any future proposal to install a new turbine at the project would be evaluated and analyzed under a separate license amendment proceeding, including any design considerations associated with downstream DO levels. The FEIS recognizes the potential for providing flows through a new turbine and has acknowledged this option in its analysis. In addition, the staff-recommended Adaptive Management Plan, would be expected to be modified based on any facility or operational changes made at the project.

Comment: EPA states that it is interested in continuing long-term water quality monitoring in the project area, including rigorous continuous DO and temperature monitoring, to determine compliance with state water quality standards and that monitoring should be utilized to determine the effectiveness of the new flow releases and other project changes on improving water quality. EPA asserts that it is unclear from the draft EIS if the proposed Project Operations and Flow Monitoring Plan or Adaptive Management Plan will include any water quality monitoring to support such an objective.

Response: The Adaptive Management Plan analyzed in the draft EIS outlines general ecological and navigational objectives, such as fish staging and spawning, sandbar and floodplain inundation, salinity abatement, and aquatic habitat maintenance. However, specific measures to be implemented were not recommended, nor were measurable indicators to assess the benefits of providing higher minimum flows defined. The staff recommended Adaptive Management Plan would be developed in consultation with FWS, NMFS, SCDNR, and SCDHEC. This plan would identify methodologies and describe measurable indicators for assessing the environmental objectives of higher

minimum flows in the bypassed reach, with respect to improved water quality, habitat suitability, and recreational navigation. We would expect water quality monitoring to be part of this plan. Moreover, the water quality certifying agency (SCDHEC) would be consulted on the Adaptive Management Plan. Therefore, we expect EPA's concerns to be addressed through this process.

Comment: EPA recommends that the EIS include a commitment from SCPSA to participate in future South Carolina Total Maximum Daily Load (TMDL) processes for water bodies that are within the project boundary or directly affected by project operations during the term of the new license. EPA recommends that many of these water quality issues be addressed in the 401 water quality certifications developed by SCDHEC and subsequently included in the new license.

Response: Information requests and recommendations made by EPA pertaining to any future TMDL for project waters are more appropriately addressed by SCPSA through SCDHEC's implementation of the CWA. Additional requirements for the Santee Cooper Project that come out of such a process may be added to the license through the license amendment process.

Comment: SCDNR recommends that the licensee be required to conduct a post-relicensing study of the impacts of the rule curve on waterfowl habitat and public recreation utilization of this resource, and identify operational measures that would mitigate these impacts.

Response: The FEIS has been updated to include analysis of this measure.

Comment: SCPSA notes that Commission staff recommended a separate adaptive management program to assess the effectiveness of flow releases in providing aquatic habitat and navigation. SCPSA disagrees with staff's finding that an Adaptive Management Plan would provide an assurance of improved downstream water quality and enhancement of aquatic habitat. SCPSA asserts that the provision of the FSA would adequately address the monitoring and evaluation process for flows and on a more frequent basis. Consequently, SCPSA proposes that the provisions of staff's adaptive management program be part of the comprehensive plan for instream flows outlined in appendix B of the FSA.

Response: Because the comprehensive plan outlined in the FSA does not include specific measures, measurable indicators, or monitoring provisions for such issues as sandbar and floodplain inundation, salinity abatement, water quality, and recreational navigation, staff continues to recommend the licensee develop and implement a more comprehensive Adaptive Management Plan than that reflected in the settlement. This plan would be developed in consultation with FWS, NMFS, SCDNR, and SCDHEC, and would include

methodologies and measurable indicators for assessing the environmental objectives of higher minimum flows in the bypassed reach.

Comment: SCPSA states that the primary reason 600 cfs is discharged from the Santee dam is to assure compliance with the 500 cfs license requirement.

Response: The FEIS has been updated to reflect this statement.

Comment: SCPSA recommends caution in using the maximum flow figure of 27,436 cfs from St. Stephen in staff's evaluations, as this figure routinely exceeds the maximum design flow.

Response: In estimating the effects of flow allocations on project operations, only the maximum design flow of the St. Stephen facility was used. Although the maximum flow is reported in the draft EIS, this figure is not used in any analysis of environmental effects.

Comment: SCPSA provides updated locking operations information for Pinopolis Lock (2001 through 2006).

Response: The analysis of locking events in the FEIS has been augmented with this updated information.

Comment: SCPSA states that the draft EIS contains contradictory statements with respect to the benefits of the Adaptive Management Plan.

Response: This has been clarified in the FEIS. The actual benefits to water quality would be realized from increased minimum flows and not from the implementation of a monitoring plan. Thus, we agree that the Adaptive Management Plan would not provide any *additional* benefit above and beyond what increased minimum flows would achieve. However, implementing an Adaptive Management Plan for monitoring minimum flows in the Santee River would provide a means to ensure that downstream water quality and aquatic habitat enhancement occurs. This would be accomplished by establishing a process that includes a schedule for regular review of effectiveness, and a mechanism to implement changes, if warranted.

Comment: SCPSA points out that it is contractually and statutorily obligated to provide flows and operate its facilities in a manner that is in keeping with the federal government mandate.

Response: The Commission recognizes the Congressional mandate associated with the St. Stephen Project and SCPSA's contractual obligations contained therein. SCPSA is also obligated to provide flows and operate their facilities in compliance with the terms of

any Commission license issued. Staff has an obligation, under NEPA, to analyze all project effects, including the interrelated operations of the St. Stephen Project. Staff has and will continue to take into consideration the obligations SCPSA has to the St. Stephen development in any recommendations for flows and project operations. Any new license issued for the Santee Cooper Project would include only those measures the Commission deems appropriate and that can be enforced under the Commission's jurisdiction.

Comment: SCPSA recommends that the FEIS appropriately reflect the complexity of the hydrologic conditions within the Santee River bypassed reach. SCPSA recommends the FEIS acknowledge the difficulty of any level of study to accurately reflect and assess project-related impacts versus those imposed by the federal government's project operations. SCPSA suggests that the FEIS recognize and acknowledge the effects of project-related impacts relative to naturally occurring conditions associated with the project's proximity to both tidal and coastal influences.

Response: Our analysis in the EIS addresses effects of project operations. It also recognizes naturally occurring conditions and obligations for minimum flows at the St. Stephen development.

Aquatic Resources

Comment: Interior supports the modifications to the section 18 fishway prescriptions outlined in the FSA.

Response: Changes to the fishway prescriptions outlined in the FSA include changes to the timeline for the Santee dam Phase I Baseline Monitoring Study, modifications to the operational timing of the Santee dam Phase II Trap and Sort facility, the removal of the recommendation for an attraction flow of 600 cfs at Pinopolis Dam, and modifications to downstream passage recommendations. These changes have been reflected in our analysis and recommended alternative in the FEIS.

Comment: Interior notes that the licensee has already installed manatee exclusion devices on the drain ports of the Pinopolis Lock.

Response: The FEIS has been clarified to reflect this comment.

Comment: Interior states that the NMFS should be removed from the list of agencies identified in table 20 of the draft EIS (analysis of fish and wildlife agency section 10(j) recommendations for the Santee Cooper Project) since NMFS was not a signatory to the DSA.

Response: Table 20 has been updated to include the FSA and NMFS's revised 10(j) recommendations filed on July 20, 2007.

Comment: NMFS recommends the inclusion of an Essential Fish Habitat Assessment and record of consultation in a separate section of the FEIS.

Response: The FEIS has been revised to include a discussion of Essential Fish Habitat.

Comment: NMFS maintains that additional passage capability, potentially requiring less than 5,600 cfs flow, is needed at the St. Stephen development during mid- to low-inflow conditions when anadromous fish runs are in progress. NMFS states that the attraction flow augmentation system installed during 2000 does not appear to be adequate for establishing effective passage when the St. Stephen development is not operating. NMFS also states that a secondary benefit of the Santee/Wilson Dam fishway would be to provide an alternative passage route during lower flow conditions when passage is not possible at St. Stephen, and this secondary benefit should be highlighted in the FEIS.

Response: Fish passage improvements required at the St. Stephen development are the responsibility of the Corps and are beyond the scope of the Santee Cooper relicensing. However, we agree that providing fish passage at Santee dam would provide passage benefits for anadromous fishes that bypass the re-diversion channel and approach Santee dam and recommend the fish passage measures outlined in the FSA and provided by NMFS for Santee dam.

Comment: NMFS notes that a commercial shad fishery exists in the bypassed reach of the Santee River, which suggests that substantial harvestable numbers of American shad ascend this reach. When St. Stephen operations are suspended, shad and herring (and other species) tend to ascend the bypassed reach in substantial numbers in an unsuccessful attempt to reach upstream habitats (NMFS staff observation). NMFS states that such delay or interruption of spawning runs may have an adverse effect on successful spawning and recruitment resulting from lack of alternative passage mechanisms when St. Stephen is not operating.

Response: As we noted above, providing fish passage at Santee dam would provide passage benefits for anadromous fishes that bypass the re-diversion channel and approach Santee dam. The staff recommended measures include adoption of fish passage prescriptions outlined in the FSA and provided by NMFS.

Comment: NMFS states that it is conducting a reanalysis of the available instream flow assessments and model criteria to support development of final instream flow recommendations. As part of this reanalysis, NMFS plans to evaluate the adequacy of the flows recommended in the FSA, and additional flows. NMFS expects the study to be completed by December 2007 and requests the Commission delay issuing a FEIS until the flow study is completed.

Response: Staff has adequate information to evaluate a range of instream flow recommendations in the FEIS. Additional flow recommendations resulting from NMFS's flow study could be addressed in any license order which may be issued for the project. We have analyzed NMFS's revised instream flow recommendation, and conclude that the minimum flow releases recommended for Santee dam may conflict with the public interest and comprehensive planning standard of sections 4(e) and 10(a) of the FPA.

Comment: NMFS states that Commission staff note the following in the draft EIS: “. . . it is not clear that fish runs are sufficient to justify passage facilities at this time.” NMFS disagrees with staff on this point. NMFS states that it will consider the recommendations made by staff as part of its alternatives analysis and preparation of modified fishway prescription. NMFS notes that it made a preliminary determination that upstream and downstream fish passage is warranted at the Santee dam for certain identified target diadromous species. NMFS recommends that the draft EIS clearly affirm the full selection of diadromous species targeted for passage by NMFS, including American shad, blueback herring, American eel, shortnose sturgeon, and Atlantic sturgeon.

Response: The FEIS includes an analysis of the modified section 18 fishway prescription filed by NMFS, and includes an assessment for all the targeted species identified by NMFS. Based on this analysis, staff continues to recommend the fish passage provisions of the FSA. However, we recognize that any license issued must contain provisions consistent with the NMFS final fishway prescription.

Comment: American Rivers and CCL state that SCPSA has not conducted the additional fish passage studies to evaluate alternative operations that may improve the passage of sturgeon.

Response: SCPSA filed information regarding the effectiveness of the Pinopolis Lock at attracting and passing shortnose sturgeon, in response to an additional information request, with the Commission on April 29, 2005. In addition, fish passage studies are inherent to fish passage measures included in the FSA and prescribed by NMFS. We include analysis of such studies in the FEIS.

Comment: American Rivers and CCL state that the draft EIS does not contain sufficient information because SCPSA has not adequately responded to various information requests from the Commission, SCDHEC, and others pertaining to shortnose sturgeon spawning and passage, diadromous fish passage, instream flows, channel maintenance, and other topics. American Rivers and CCL assert that analysis of the full action area, including the St. Stephen development, is necessary to determine whether the project can operate without taking sturgeon and thus be eligible for certification under Section 401 of the Clean Water Act.

Response: Information regarding the adequacy of flow regimes for shortnose sturgeon habitat, the effectiveness of the Pinopolis Lock to attract and pass sturgeon, sturgeon spawning and egg development in the project area and information on shortnose sturgeon kills in the project area was filed with the Commission on April 29, 2005, in response to an additional information request and included in the aquatic resources and RTE analysis of the draft EIS and FEIS. In addition, the FSA includes a Baseline Diadromous Fish Monitoring Study, Passage Operations Plan, Lock Passage Effectiveness Evaluation, and Downstream Passage Evaluation Study as components of the FSA, which are adopted as part of staff's recommended alternative.

Regarding information needs and requirements under the CWA, SCDHEC is expected to determine whether the project is eligible for certification. We expect SCDHEC to include conditions it deems appropriate in its certification. Such conditions will become requirements of the license.

Comment: American Rivers and CCL note that the draft EIS characterizes the vegetation change in the Santee Delta due to project operations as minor. American Rivers and CCL submit that the consistent shift of the Santee Delta to increasingly saline tolerant, monotypical vegetation is not minor. American Rivers and CCL recommend that mitigation alternatives for ongoing project impacts to wetlands vegetation through the next license term should be included in the FEIS.

Response: This information cited by American Rivers and CCL was taken from The Nature Conservancy's 2005 report, "Floodplain Forest Typing and Hydrology in the Lower Santee River." This report characterizes the vegetation changes along the Santee River as minor. Also, American Rivers and CCL suggest that alternatives to project operations be considered in the FEIS to mitigate effects to wetlands. However, they offer no recommended measures to analyze. Therefore, we made no changes to the FEIS to address this concern.

Comment: SCPSA states that the Santee-Cooper Basin Diadromous Fish Passage Restoration Plan is flawed, has been corrected in an agency issued "Errata" and in association with the trial-type hearings, and should not be relied upon in the analysis of the FEIS.

Response: We are aware of the potential criticisms of this plan, but must assess this plan because it is filed with the Commission as a comprehensive plan. We have therefore analyzed the fish passage and protection measures in the FEIS as they pertain to the overall restoration goals of the plan by interpreting the plan as general planning documents for setting out a framework for fish restoration.

Comment: SCPSA states that from a fisheries perspective, the draft EIS does not address the effects of introduced species to native populations or the possibility that

implementation of the recommended structural and operational modifications to project works could be negated by these ongoing effects. SCPSA asserts that the FEIS would benefit from an analysis of the effect of non-native large predators (such as blue and flat-head catfish) on target species. Furthermore, SCPSA states that these introductions of non-native fishes and development throughout the Cooper River Basin likely altered the Cooper River assemblage.

Response: We agree that introduction of non-native species and development in the basin has likely had some effect on native species, but there is insufficient information in the record or publicly available in the literature to conduct such a basin-wide assessment. Such an assessment would go beyond assessing the effects of the Santee Cooper Project.

Comment: SCPSA states that the draft EIS does not address the existing commercial gill net fishery in the Santee River, which is a source of incidental catch for shortnose sturgeon. SCPSA suggests that ongoing effects associated with the commercial fishery would preclude most benefits from the NMFS section 18 and section 10(j) recommendations for species restoration and fish passage.

Response: We agree that there is the potential for incidental catch of shortnose sturgeon in the existing gill net fishery. However, there is insufficient information available to conduct an analysis suggested by SCPSA. Therefore, we made no changes to the FEIS to address this concern.

Comment: SCPSA states that the draft EIS makes many references to the 200 adult inhabitants of shortnose sturgeon. SCPSA points out that no extensive or accurate population estimate has been conducted in the watershed.

Response: We agree sturgeon estimates can be widely variable and that there may be a need for a better sturgeon population estimate for the basin. However, we can only use the information that is currently available.

Comment: SCPSA states that during the locking events for fish passage, the upstream miter gates are opened for the purpose of reducing or eliminating the double counting of fish existing over the hydro acoustic array. SCPSA also states that the draft EIS implies that fishing locking occurs for only 48 minutes per day (6 lock events x 8 minutes per day). SCPSA clarifies that the downstream gates are open and, thus, the lock passes fish constantly between lockages during the daytime operation period.

Response: The FEIS has been revised to reflect this clarification.

Comment: SCPSA states that the title for table 7, "Hydroacoustic counts of fish (herring units), biomass, the number of lock operations conducted per season, and annual average herring units per lock, for the Pinopolis lock, 1975-2005," incorrectly implies that counts

of fish were made when the biomass measurement is converted to obtain an estimate of the number of fish of herring size that passed through the lock.

Response: The FEIS has been revised to reflect this clarification.

Comment: SCPSA states that staff's analysis of the agency alternative flow releases on aquatic resources uses information from the Santee River Model. SCPSA recommends that staff require the author(s) of the report to provide a calibration report.

Response: In the draft and FEIS, staff analyzes the recommendations made by the agencies and interested parties that were based on the results of the Santee River Model. This does not imply that staff accepts all the results of the Santee River Model. As evidence, staff recommends flow releases consistent with the FSA, not those based on the Santee River Model.

Comment: SCPSA notes that the draft EIS erroneously states that passage at the project would provide access to 831 river miles and 77,000 acres of habitat. To clarify, SCPSA states that suitable upstream habitat is already available through the existing fishways on the Santee and Cooper rivers. Moreover, SCPSA notes that the agencies have modified the acreage identified in the 2001 Santee Cooper Diadromous Fish Passage Plan to approximately 31,000 acres.

Response: While fish passage may exist at the project, staff has determined that there are some deficiencies with existing facilities. Such deficiencies include: (1) that the St. Stephen fish lift primarily attracts upper water column species and is not designed to attract or pass bottom oriented shortnose sturgeon, Atlantic sturgeon or American eel; and (2) the absolute effectiveness of current Pinopolis lock operations as an upstream fish passage system is not known, because the existing hydroacoustic monitoring system is out-of-date and does not provide species-specific data. Therefore, suitable habitat upstream of the project may not, in fact, be fully available for all species through the existing fish passage facilities. The FEIS has been revised to include the amount of estimated available upstream habitat provided by SCPSA.

Comment: SCPSA recommends that the following sentence, "Existing fish passage facilities at the project combined with the St. Stephen station are partially successful in allowing recruitment of anadromous fish to pass into both the Cooper and Santee rivers and the project lakes." be changed to "Existing fish passage facilities at the project combined with the St. Stephen station support the largest self-sustaining shad and herring populations on the East Coast."

Response: We agree that the Santee Cooper system supports a large shad and herring population. However, SCPSA provides no substantiation for its statement, nor is it clear if SCPSA considered rivers such as the Delaware and Hudson rivers, where no fish

passage counts are made. We continue to maintain that passage facilities at the Santee Cooper Project are only partially successful in the passage of anadromous fish.

Comment: SCPSA states that fish passage effectiveness studies conducted in 2002 and 2003 resulted in 73% shad passage effectiveness, as 93 of the 127 tagged shad available in the Jefferies station tailrace passed into Lake Moultrie. Thus, SCPSA does not agree with the statement that passage facilities are “partially successful.”

Response: Staff acknowledges that the cited shad passage efficiencies for 2002 and 2003 are relatively high. However, the statement in the draft EIS that existing facilities are “partially successful” pertains to all diadromous fish species and is not specific to shad only.

Comment: SCPSA states that the Commission should consider the validity of the Santee Cooper Diadromous Fish Passage Plan goals when evaluating the environmental effects of enhancing migratory fish populations. SCPSA finds the goals of the Passage Plan overly optimistic and lacking proper factual basis for the specified objectives. SCPSA suggests that the expectation should be much lower than the restoration goals of the Passage Plan and be closer to existing population sizes, with redistribution of the populations further up in the basin as the potential result.

Response: We are aware that such plans often set goals that are based on “questionable science.” We typically interpret such plans as general planning documents for setting out a framework for fish restoration, which can be later refined as more information becomes available. Our analysis of fish passage needs is based more on the potential for providing additional spawning and rearing habitat, instead of keying into estimated target population sizes that are approximate at best.

Comment: SCPSA recommends that Commission staff include information from the SCDNR eel study in its assessment of eel passage. As evidence, SCPSA states that the presence of a large commercial eel fishery upstream and downstream of the project suggests that eels successfully move through the project area.

Response: Our analysis in the FEIS concludes that, based on available study information that while eels are passing the project likely through the lock or by other routes, juvenile eels more effectively pass obstructions such as dams by utilizing very low flow migratory routes. Based on our analysis in the FEIS, we recommend that upstream eel ladder be constructed at Pinopolis/Jefferies as a condition of the license, to ensure that juvenile eels are able to effectively move upstream to habitat in the project lakes and in the upper river. We also recommend that studies be conducted to determine the most appropriate location of such facilities to ensure that effective upstream passage for juvenile eels is determined prior to installation.

Comment: SCPSA states that downstream passage cannot be provided by spill at the Pinopolis dam and Jefferies station, as configured.

Response: Gomez and Sullivan (2005) state that downstream passage occurs through the turbines at the Jefferies, Santee and the St. Stephen powerhouses, through a downstream passage facility at the St. Stephen development, and via Santee dam spill gates during spillage events. We understand that Pinopolis dam and Jefferies station do not currently have spill gates, but future downstream passage options could include spillage through a new gate constructed for that purpose.

Comment: SCPSA recommends that Commission staff remove the recommendation for outmigration studies, since any such outmigration study would: (1) provide no information to describe progress in achieving upstream passage targets; and (2) have such high variance that it would be of little value for management decisions. Also, there will be little, if any, species identification information that can be collected in a reasonable manner. SCPSA suggests that quantifying outmigration is not necessary, as there is no connection to the metrics within the Santee Cooper Basin Diadromous Fish Passage Plan (which is based on upstream passage numbers). Also, SCPSA points out that, for alosines, stock-recruitment relationships can be unreliable.

Response: Post-licensing outmigration studies, developed in consultation with the resource agencies, can be a valuable tool for assessing the relative magnitude of entrainment survival/mortality, as well as to determine if such mortality could be a factor in the restoration of diadromous species to the basin. Such studies have been conducted on hydroelectric projects in several other river basins in the U.S. Although the results may not be directly linked to the number of adult returns, project owners have been willing to provide protective measures for downstream passage if the studies indicate high entrainment mortality. In many cases, however, survival was judged to be high enough to indicate that no special protective measures were required.

Comment: SCPSA asserts that, historically, blueback herring did not ascend the Santee River above mile 60, below Santee dam. In addition, SCPSA claims that the Cooper River was a tidal estuary that did not exist above mile 50.

Response: We have considered this information in our analysis as well as the species-specific passage prescriptions made by NMFS and FWS and those proposed in the FSA. Based on the information available, we cannot validate these statements regarding the historic range of blueback herring. The historic range of this species may also have little relevance to the agencies' current restoration goals. As discussed in section 3.3.2.1, the MesoHABSIM study and the 2002 anadromous fish utilization study both found blueback herring to be present in the Santee River bypass. The Santee Cooper Basin Diadromous Fish Passage Restoration Plan developed by state and federal agencies is being implemented to restore diadromous fishes (including blueback herring) to the

basin, including restoration of access to historical spawning habitat and continued passage of target species on the Cooper River. The restoration plan also includes an objective of providing blueback herring access to habitat in the Broad River, which is a tributary to the Santee River.

Comment: SCPSA asserts that the technology for successfully passing shortnose sturgeon both upstream and downstream does not exist and the draft EIS should be modified to state "...until adequate fish passage technology is developed and facilities provided for sturgeon."

Response: As we stated above, we understand that the technology for sturgeon passage is not "well developed," and should not be an over-riding factor in the design of any additional fish passage facilities at the project. Because the alosid species would continue to be the dominant species (in numbers) using the project's fish passage facilities, any new fish passage facilities should be designed with alosids in mind. The passage needs of other species, such as sturgeon, should be considered as appropriate.

Comment: SCPSA recommends that the phrase "and continue to be taken today as a result of by-catch associated with that shad fishery (Collins, et al., 1996)" be added to the end of the following sentence, "Prior to endangered species listing in 1967, shortnose sturgeon were commonly taken in the commercial fishery for Atlantic sturgeon, and as incidental catch in the riverine American shad fishery."

Response: We have reviewed the source cited and made appropriate revisions in the FEIS.

Comment: SCPSA points out that the draft EIS states that, "Cooper River SNS were documented in what is now metro Charleston in the late 1800's..." SCPSA states that it is their understanding that historical records of that time period do not appear to differentiate between shortnose sturgeon and Atlantic sturgeon.

Response: We reviewed this statement and made appropriate revisions in the FEIS. Specifically, the qualification of "shortnose" was removed from the description of the sturgeon in this instance.

Comment: SCPSA asserts that upstream passage of fish, with ineffective means for downstream passage, puts the shortnose sturgeon population at risk in at least two ways: (1) post-spawned adult mortality during downstream passage; and (2) fragmenting the spawning group each year.

Response: We have considered this information in preparing the FEIS. The FSA includes a provision to develop a shortnose sturgeon enhancement plan, which we recommend be developed in consultation with NMFS to ensure that the goals and

objectives of its shortnose sturgeon protection and recovery plan are addressed. We assume that the two issues identified by SCPSA would be discussed with agencies as part of the consultation process for developing the enhancement plan and as part of fish passage implementation plan.

Comment: SCPSA does not agree with the belief that shortnose sturgeon do not successfully spawn in the Cooper River. SCPSA states that such a statement is speculation, in that there has been a persistent population in the Cooper River for the last 65 years.

Response: We have considered this information in preparing the FEIS. Regardless of the historical success rate of shortnose sturgeon in the Cooper River, future success rates are one of the many considerations taken into account as part of restoration efforts. We assume that this factor will be considered by SCPSA and agencies in developing the proposed and staff's recommended shortnose sturgeon enhancement plan, as well as implementing fish passage measures at the project.

Comment: SCPSA recognizes the draft EIS's portrayal that shortnose sturgeon collected in the project lakes are less robust than comparable fish in nearby riverine systems. However, SCPSA clarifies that additional SCDNR sampling, which has not yet been reported, documents an improvement in the condition of shortnose sturgeon in the project lakes.

Response: This statement was based on information available to us at the time and may be revised at such time that recent sampling data is provided in the record or made publicly available.

Comment: SCPSA points out that the draft EIS describes mortality for shortnose sturgeon that could exceed 20 to 30 percent. SCPSA suggests that the FEIS reference Cooke (2003), which indicates that the actual mortality of tagged and released shortnose sturgeon into the Santee Cooper reservoirs was less than 10 percent.

Response: We revised the FEIS to include this information in section 3.3.4.2.

Comment: SCPSA argues that the fish kill documented in the draft EIS, which was attributed to project operations, is inaccurate. SCPSA states that the fish kill occurred below the Corp's St. Stephen hydro facility and that it was caused by the loss of flow associated with large quantities of *Hydrilla* being impinged and entrained at the facility during a summer die off of the non-native aquatic plant.

Response: The fish kill described in the draft EIS refers to a documented shortnose sturgeon kill that occurred during a low dissolved oxygen event downstream of Santee dam, where 20 specimens were recovered in the Santee dam tailrace. This event, in

addition to the event identified by SCPSA as occurring at St. Stephen, were both described in NMFS' Final Recovery Plan for Shortnose Sturgeon (1998), therefore we have retained this discussion in the FEIS.

Comment: SCPSA comments that it is unlikely that shortnose sturgeon movements up and down the river are limited by depth at the current 500 cfs minimum flow, given the substantial backwater effect associated with the Corps' St. Stephen facility. Spillage at Santee dam in the spring also contributes to exceedance of the minimum flow requirements.

Response: Based on our review of the information provided in the report characterizing the operations of the St. Stephens project, it appears that the statements about the backwater effect are anecdotal and no supporting data is provided. Therefore we feel there is insufficient information to make a conclusion in the FEIS relative to how the backwater effect may contribute to the ability of shortnose sturgeon to navigate the reach below Santee dam.

Comment: SCPSA recommends that the FEIS point out that, relative to nearly all other fishways along the East Coast, the Santee Cooper/St. Stephen facilities are one of the two or three most effective facilities for alosines. SCPSA states that this is evidenced by the fact that the system supports one of the largest self-sustaining populations of American shad and blueback herring, with one of the most intensive commercial fisheries for these species, on the East Coast.

Response: As stated previously, we agree that the Santee Cooper system supports a large population of shad and blueback herring. However, it is not clear how the system compares to other river systems where no fishway counts are available.

Comment: SCPSA notes that the FEIS should say that increased flows in the Santee dam bypassed reach may increase the number of upstream migrating fish. However, SCPSA comments that a fishway may not necessarily be needed. SCPSA asserts that it is possible that adequate spawning habitat, especially for alosines, would be created in the bypassed reach by increased flow. SCPSA states that the timing for installing fish passage at the Santee dam fishway should be based on spawning habitat saturation in the bypassed reach.

Response: We agree that increased flows in the bypassed reach would likely increase the number of alosids migrating into and spawning in the reach. As we note in the FEIS, population monitoring in the bypassed reach would provide a mechanism to determine when spawning habitat "saturation" occurs. The numbers of fish approaching Santee dam would be another indicator of whether fish passage facilities are needed, and construction of a fish trap at the dam would provide that information.

Terrestrial Resources

Comment: SCPSA recommends that the FEIS include a statement that reflects the negative impact that a full-pool rule curve would have on waterfowl impoundments located downstream of the project. SCPSA contends that a full-pool rule curve would cause by the larger flooding events on a more frequent basis that will destroy dikes and impoundments associated with the Santee Delta Wildlife Refuge.

Response: We agree that a year-round full-pool rule curve would reduce the flood control capacity of the project. High lake levels experienced during the spring and summer have historically increased ground-leaching and prevented full drawdown of the NWR impoundments. This problem would be exacerbated if a full-pool were implemented at the project. Higher water levels in the winter do provide benefits to wetlands and wildlife habitats in the Santee NWR. However, a large change in the hydroperiod, such as would result from the full pool rule curve, would likely have some negative effects on existing wetland habitats and wildlife, which are accustomed to the current hydroperiod.

Comment: SCPSA states that the analysis of flows in the Santee bypassed reach is incorrect. SCPSA points out that the current flow regime results in a backwater effect from the St. Stephen hydro plant equivalent to a continuous flow of approximately 2,000 cfs. SCPSA continues that during normal spring flows, full operation of the St. Stephen development would produce backwater effects greater than 20 feet near the confluence of the Rediversion canal and the Santee River and also results in water levels of several feet higher at the base of Santee dam. SCPSA states that this condition has begun to reverse riparian encroachment of upland hardwood species caused by lower flows and the upland hardwoods are slowly being replaced by vegetation more typical to a coastal flood plain.

Response: We have reviewed the “Characterization of St. Stephen Operation Patterns and Its Effect on River Stage in the Santee River Upstream of the Confluence of the Rediversion Canal and the Santee River” report that SCPSA cites as evidence for the above statements. This report does not provide any data concerning vegetation of the floodplain nor vegetation changes over time. The backwater effects referenced were recorded primarily at the Russellville gage. Long duration peak discharges from St. Steven were also reported to backwater up to Riffle 5. However, the statement regarding higher stage level at the dam is personal observation by Santee Cooper staff during 2003, a documented wet year. As a result, this was likely an unusual period of high duration operation from St. Steven. Therefore, we made no changes to the FEIS to address this concern.

Rare, Threatened, and Endangered Species

Comment: Interior recommends SCPSA develop a protected species management plan for the red-cockaded woodpecker for the entire project. Interior states that protective measures need to be implemented immediately following license issuance.

Response: This recommendation was considered as part of our section 10(j) analysis in the FEIS. Rare, threatened and endangered species management plans are still considered as part of SCPSA's proposed action as a component of the project's Comprehensive Land Management Plan (CLMP). We conclude that protective measures for protection of red-cockaded woodpecker habitat are necessary and can also be included in a protected species management plan for the species.

Comment: Interior states that the DSA does not address protected species management plans. Interior also states that the FWS provided 10(j) recommendations for protected species in their May 9, 2006, letter to the Commission.

Response: The May 9, 2006 letter to the Commission recommends that the "licensee shall develop in coordination with the Service protection and enhancement plans for rare, threatened, and endangered species near the project or affected by project operations within 90 days of license issuance." This recommendation is considered under section 10(j) in the draft and FEIS. The draft EIS does incorrectly state, however, that this measure was a part of the DSA, which it was not. We have corrected the FEIS accordingly.

Comment: American Rivers and the CCL note that the draft EIS discusses the coordinated operation of the St. Stephen development at length, but does not address the impacts of St. Stephen on endangered species. American Rivers and CCL assert that the draft EIS does not contain adequate information to identify the habitat requirements of shortnose sturgeon, does not assess the potential project impacts on the sturgeon, or determine appropriate mitigation that would eliminate or minimize the potential adverse impacts. American Rivers and CCL claim that this information is necessary to satisfy ESA section 7 obligations.

Response: The draft and FEIS include discussion of the coordinated operation of St. Stephen only as it relates to how the prioritization of flows to the St. Stephen development affects the flow requirements and environmental resources of the Santee Cooper Project, including RTE species such as the shortnose sturgeon and West Indian manatee. We expect that protective measures for shortnose sturgeon will be further addressed through formal consultation, with the NMFS, under the ESA, which is ongoing.

Comment: SCPSA clarifies that Persanti Island is located within a natural area. SCPSA states that the island is included in a lease to the SCDNR and is designated as part of their Wildlife Management Area Program.

Response: We have revised the FEIS to reflect this clarification.

Cultural Resources

Comment: South Carolina Department of Archives and History (SCDAH) concurs with the proposal for a Programmatic Agreement (PA) and Historic Properties Management Plan (HPMP). SCDAH recommends that the HPMP: (1) address consultation needs for development along the shoreline of the project; (2) establish an erosion monitoring process for archaeological sites; (3) address any potential effects on historic properties in the lower Saluda River; and (4) describe any measure(s) proposed for public education on the history of the project area.

Response: The PA will be prepared by Commission staff in consultation with SCPSA, the SHPO, and the Advisory Council. Implementation of the PA would be required as a condition of any license issued for the project, and would include a requirement that SCPSA develop the HPMP for the management of historic properties with the Project's APE, and file the HPMP with the Commission for approval. SCPSA would be required to prepare the HPMP in consultation with the SHPO, so we expect this consultation process to result in the inclusion of the SCDAH's recommended items in the HPMP prior to finalization.

Recreation Resources

Comment: SCDNR states that the draft EIS is unclear as to whether their recommended recreation improvements are to be provided during the first 10 years of the new license.

Response: We have clarified the FEIS to reflect staff's support for the recreation improvements recommended by SCDNR. We have revised the FEIS and staff's alternative to say that these improvements would be implemented in the first 10 years of license issuance.

Socioeconomic Resources

Comment: SCPSA states that it does not disagree with the proposition that increases in the basin's fishery would have some positive economic effect. However, SCPSA points out that the specific amount previously implied by NMFS and FWS is no longer supported by those agencies. SCPSA cites NMFS and FWS preliminary section 18 fishway prescriptions that reported annual economic benefits of at least \$25 to \$37 million, based on a study from the Susquehanna River. SCPSA clarifies that these

agencies subsequently entered into a stipulation wherein they agreed that: (1) the actual economic benefits of restored fish populations have not been quantified and thus were not known; (2) the agencies were unaware of any report or economic analysis that quantifies such economic benefits; and (3) they would not rely upon the study pertaining to the Susquehanna River when formulating their modified prescriptions.

Response: We appreciate the above information from SCPSA. However, we provided no quantification of the economic benefits of fish passage in the socioeconomics analysis of the draft EIS. The FEIS retains a general statement that economic benefits would be expected as a result of improvements to the basin's fishery, but does not quantify these benefits.

Developmental Analysis

Comment: Interior states that the draft EIS recommendations and cost estimates for three eel fishways at Pinopolis/Jefferies Dam and two eel fishways at the Santee dam are premature. Interior comments that the modified section 18 fishway prescription, included in the FSA, provides measures for the licensee to evaluate at the dams, including the most efficient numbers and locations for American eel elver fishways. Results of those studies may or may not reflect the findings in the draft EIS.

Response: The draft EIS included staff's assessment of the number and potential costs for fish passage facilities at the project, so that cost comparisons could be made among the various alternatives. The FEIS considers the modified section 18 fishway prescription, which was filed as part of the FSA. Our costs were developed based on site-specific considerations and conceptual designs using industry average costs for engineering design, materials, and construction, which we feel are reasonable for the purposes of our cost analysis. We recognize that actual costs, once plans are finalized, may be substantially different.

Comment: Interior comments that the cost estimate of \$2,198,000 for a permanent fish lift facility at the Santee dam is erroneous. It estimates that an interim Trap and Sort facility would cost approximately \$4-6 million and an additional \$4 million to convert to a permanent lift.

Response: As we stated above, the draft EIS included staff's assessment of the number and potential costs for fish passage facilities at the project, so that cost comparisons could be made among the various alternatives. However, we have reassessed the estimated costs for fish passage presented in the draft EIS to be more consistent with those identified by FWS and SCPSA.

Comment: SCPSA does not agree with the estimated cost for construction of an upstream fish lift/elevator at Santee dam for alosids and sturgeon of only \$2,198,000. SCPSA

states that a preliminary review of similar passage facilities for equivalent height dams indicates that costs could be between \$10 and \$15 million for upstream passage only.

Response: We acknowledge that actual costs, once plans are finalized, may be substantially different.

Comment: Interior states that manatee exclusion devices have already been installed by SCPSA on the Pinopolis Lock.

Response: The FEIS has been updated to reflect this statement. We removed this item from the cost estimate table in the FEIS.

Comment: SCPSA disagrees with the cost estimate of \$500,000 over 10 years for the implementation of an Adaptive Management Plan. SCPSA comments that the cost is closer to \$1 to \$1.5 million.

Response: We have considered SCPSA's cost estimate for this measure in the FEIS. We note that there are additional costs items that we consider to be components of the adaptive management program but are not included in our \$500,000 estimate. These items include water quality monitoring to assess the effects of increased minimum flows in the Santee bypass (\$250,000) and the Drought Contingency Plan (\$100,000).

Comment: SCPSA disagrees with the cost estimate for adding dedicated fish passage for alosines and sturgeon at the Jefferies powerhouse. SCPSA comments that the cost would be approximately \$15 to \$25 million. Further, SCPSA points out that this estimate does not consider the cost implications of having to develop a technology with no assurance that objectives can be met or that the overall impact to the existing population may be detrimental rather than beneficial.

Response: As outlined in our responses above, we have revised our costs in FEIS which are more consistent with those identified by SCPSA and FWS.

Comment: SCPSA finds that the estimate of downstream fish passage and protection to be substantially underestimated. Full-length louvered bar racks at the Jefferies powerplant (excluding the bar racks at Santee dam) could easily exceed twice the estimate costs specified for downstream passage in the draft EIS. Moreover, SCPSA states that the estimate does not clarify whether the estimate includes re-directing downstream migrating fish to a collection and passage area.

Response: See our previous response.

Comment: On August 14, 2007 (letter dated August 8, 2007) the FWS filed a supplemental explanatory statement regarding their 10(j) instream flow recommendations

and the FSA. The letter provides additional justification their recommended flows in the Santee River.

Response: FWS's letter was received too late to be addressed in detail in the FEIS, however, staff recommends the flows in the FSA and finds the discussion in FWS's letter to be consistent with staff's discussion in the FEIS.