# ENVIRONMENTAL IMPACT STATEMENT APPENDIX E: US Fish and Wildlife Service Final Fish and Wildlife Coordination Act Report

SAVANNAH HARBOR EXPANSION PROJECT

Chatham County, Georgia and Jasper County, South Carolina

## January 2012

**US Army Corps of Engineers**
*Savannah District*
*South Atlantic Division*

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# USACE Responses
# Final Fish and Wildlife Coordination Act Report
# March 2011

## Recommendations:

**Recommendation #1:** Determine project impact and formulate mitigation by comparing predicted with-project conditions immediately after construction (rather than an average annual) to base year conditions.

**USACE Response:** Concur. ER 1105-2-100 states "Ecosystem outputs are not discounted, but should be computed on an average annual basis taking into account the outputs achieved are likely to vary over time". The District has requested a waiver of the requirements of ER 1105-2-100, and approval is expected. Mitigation would then be based on the impacts that would occur at the time of construction.

**Recommendation #2:** Eliminate the "advance mitigation" proposal by the Corps for acquisition and additional restoration on site 1S. Restoration of Site 1S could be limited to the amount needed to offset construction.

**USACE Response:** Restoration of 40.3 acres of marsh within Disposal Area 1S exceeds the construction project's mitigation requirements (28.75 acres). Periodically, operation of the existing Savannah Harbor Federal Navigation Project adversely impacts small amounts of brackish and saltmarsh wetlands through activities conducted at the project's confined disposal facilities. When such instances are anticipated, the District develops mitigation to compensate for the impacts. Coordination with the USFWS and the Wetland Interagency Coordination Team have identified the potential for restoration of roughly 40.3 acres of brackish marsh at Disposal Site 1S. Such restoration agrees with the goals of the USFWS and the Savannah National Wildlife Refuge to restore Refuge lands to more ecologically valuable conditions, when possible. Restoration of Disposal Site 1S is the best potential brackish marsh restoration activity in the estuary. In the future, the Corps would likely request approval from the Service to complete the remaining restoration of the site if it does not complete that work if/when harbor deepening occurs. Restoration of the entire site at one time would be better for the environment (and the Refuge) than would construction in that area on multiple occasions. The Corps proposes to restore the entire site at one time and considers the acreage that it restores beyond the project's initial mitigation requirement as advance mitigation solely for the Savannah Harbor Federal Navigation Project. Performing mitigation in advance of an impact is generally preferred by natural resource agencies. The Corps is required to perform its mitigation prior to, or at the same time as the activity that causes the impact. Since the Corps would use the advance mitigation to compensate for future impacts resulting from the same overall project - the Savannah Harbor Navigation Project - this would not be a mitigation bank. The advance mitigation acreage would not be available for use by others or for other projects. Instead, it would be reserved for Federal Government use as wetland mitigation solely for the Savannah Harbor Navigation Project. Outside interests could not purchase the advance mitigation. As a result, the 11.55 acres to be restored at Disposal Area 1S that exceed the requirements of the Savannah Harbor Expansion Project are not a mitigation bank.

**Recommendation #3:** Complete repair of the Savannah NWR freshwater supply system prior to harbor deepening construction.

**USACE Response:** Concur. The repairs on the Federal lands are underway and are scheduled to be complete in 2012, well before harbor deepening would occur.

**Recommendation #4:** Initiate mitigation land acquisition no later than initiation of harbor construction in a timely manner (within two years of start).

**USACE Response:** Concur. The project would begin acquiring the preservation lands the first year that Congress provides construction funds. It is the Corps' and GPA's intent to complete the acquisition within the first two years, but that may not be possible because of a number of actions that would need to be completed. The acquisition requirements include completing various real estate actions such as appraisals, Environmental Baseline Surveys, etc. Discussion to this effect has been added to the Mitigation Plan (EIS-Appendix C).

**Recommendation #5:** Install a fish passage facility at the New Savannah Bluff Lock and Dam or remove the dam to restore the river. Continue coordination with resource agencies to optimize design of any fish passage facility.

**USACE Response:** Concur. Removal of the New Savannah Bluff Lock and Dam cannot be recommended at this time. Although the Lock and Dam is no longer used to support navigation on the Savannah River, most recent direction from Congress was for the Corps to rehabilitate the structure and convey it to local interests. As a result of additional coordination with the natural resource agencies, the Corps has revised its proposal for passage of Shortnose sturgeon at the New Savannah Bluff Lock and Dam. The mitigation identified in the FEIS is the construction and operation of an Off-Chanel Rock Ramp that would provide access around the dam to historic spawning areas upriver at the Augusta Shoals.

**Recommendation #6:** Transfer Corps striped bass stocking program funding to GADNR when harbor construction is initiated in order to provide enough lead time to develop stocking capacity.

**USACE Response:** The schedule has been revised to reflect that funding for Striped bass stocking would be made available to the Georgia DNR before dredging occurs in the inner harbor. The Corps believes this meets the intent of the recommendation by providing time for GA DNR to expand its stocking capacity before the impacts would occur and the additional stocking is needed.

**Recommendation #7:** Continue coordination with the USFWS to define the scope of vegetation, wildlife activity and bird tissue monitoring in the CDFs 14 A and 14B.

**USACE Response:** Concur. The Corps has coordinated extensively with the USFWS after the DEIS to refine the monitoring that the Corps would perform at CDFs 14 A and 14B. The plan included in the FEIS reflects the agreements made between the Corps and the Service.

As an overview, the District would perform the following actions:

All cadmium-laden sediment from Stations 6+375 to 45+000, 51+000 to 57+000, and 80+125 to 90+000 would be placed in CDF's 14A and 14B. Material would be placed so that it remains covered with water until after placement of the cover is complete. This material would not be allowed to dewater and/or desiccate until after the cover has been placed and cadmium levels in the surface sediments of the CDF are less than 4 mg/kg. Samples would be taken of the inflow (head section of dredge discharge pipe) during placement and analyzed for cadmium. The Corps would perform monthly biological sampling (wildlife and avian use abundance surveys) in CDFs 14A and 14 B. This monitoring would be performed during and after (for 3 years) sediment placement to provide a record of wildlife and bird use of these CDFs.

Following placement of all the cadmium-laden sediments within a CDF, grab samples would be collected to characterize the cadmium levels of the surface sediments. This would occur prior to placement of the sediment cover. Eighty-six (86 grab) samples would be collected from a depth of 15 cm. Samples would be evenly spaced across the CDF and analyzed for cadmium concentration on a dry weight basis.

A cap/cover of sediments obtained from areas of the channel where concentrations of cadmium are believed to be 4 mg/kg or less would be placed on the sediments in the CDFs. Following placement of the cover, eighty-six (86) grab samples would be taken from a depth of 30 cm and analyzed for cadmium. If the analysis of the sediment samples taken from the cover indicates that concentrations of cadmium are less that 4 mg/kg, monitoring of the cover would be complete.

If the analysis of the sediment samples taken from the cover indicates that concentrations of cadmium are equal to or exceed 4 mg/kg in a cumulative area of 25 acres or more of the capping/covering layer, then three actions would be initiated. **First**, the CDF would be kept flooded to keep the sediments wet/moist. Second, the CDF would receive a cover of O&M sediments at the earliest possible time. The **second** action is the sampling (86 grab samples) of the CDF surface sediments (to depth of 30 cm) and their analysis for cadmium. The process of placing O&M sediments into the CDF and testing for cadmium would be repeated until cadmium concentrations in the surface sediments are less than 4 mg/kg.

**Third**, biological monitoring would be conducted (monthly) to determine which avian and wildlife species are frequenting the CDFs. If there is concern about the number of birds or animals or a particular species using the CDFs, then some type of hazing may be appropriate. Vegetation sampling would be conducted on a quarterly basis. Vegetation sampling would be conducted in defined "hot spots" to determine the potential for cadmium uptake by plants. Samples collected from CDFs 14A and 14B would be compared to control samples from other, cadmium-free environments found in adjacent CDFs. If

vegetation samples have significantly elevated cadmium concentrations, then efforts would be initiated to eradicate vegetation.

Independent of the concentrations of cadmium on the cap/cover, the Corps would perform monthly biological monitoring of birds that use CDFs 14A and 14B during and after sediment placement. Cadmium levels in tissue samples would be evaluated. Blood or feather samples may be used as an alternate procedure if this procedure appears practicable and the Corps and the USFWS both agree. Appendix M describes the plan for bird sampling protocols which take into account the hydrologic condition of the CDFs (wet or dry) and the season (since these conditions greatly influence the avian species that use the CDFs). A reference CDF would also be sampled as background. This sampling would continue during dredged material placement activities and for 3 years after placement is complete.

The effluent from all CDFs would be monitored during dredging operations. The effluent from CDFs 14A and 14B would be specifically monitored for cadmium. Sampling (weekly) would be conducted to determine the cadmium concentrations in the effluent discharged from CDFs 14A and 14B. Monitoring of the effluent from CDFs 14A and 14B would continue as long as a discharge occurs and until all sediments have been covered, dewatered, and stabilized. Following the installation of a clean cover, cadmium would be monitored in the effluent on a monthly basis for one year.

**Recommendation #8:** Add station 021989784, located at the intake of the freshwater supply system on Savannah NWR, as a long-term monitoring station.

**USACE Response:** Operation of the continuous water quality monitoring station at the intake to the SNWR is already funded by the Georgia Ports Authority.

**Recommendation #9:** Continue coordination with resource agencies to develop a data analysis and information system delivery plan as part of the monitoring program.

**USACE Response:** Concur.

**Recommendation #10:** Increase post-construction wetland and continuous water quality monitoring from five years to ten years and prepare a consolidated report of the various monitoring programs at the end of five years, and again at the end of ten years following project construction.

**USACE Response:** Concur. The post-construction monitoring period has been extended to ten years, with a focus on critical natural resources. The wetland monitoring aspects of the post-construction monitoring plan have been extended from five years to ten years. Monitoring of the wetland aspects of the project (12 marsh sites) would be extended to ten years, although sampling would not occur every year. Reports would be prepared on the monitoring of the 12 marsh sites at the end of the fifth year and again at the end of ten years. The final report would be a comprehensive report that discusses the entire monitoring period. Annual reports would be prepared to discuss the results of the marsh restoration effort in Disposal Site 1S. A comprehensive report would be prepared at the end of monitoring year 7 to

discuss the overalls success of the marsh restoration efforts in Disposal Area 1S, including any measures recommended to complete the project.

The post-construction monitoring plan has also been revised to provide for operation of the continuous hydrologic and hydraulic data recorders for ten years. This monitoring data would be used along with the hydrodynamic and water quality models to assess how the project and its mitigation features are performing. The performance (accuracy) of the models would be assessed during pre-construction monitoring and post-construction monitoring and recalibrated, as necessary. This repetition in modeling assessment/recalibration would improve their predictive accuracy by decreasing their range of uncertainty. The Corps and the natural resource agencies would use the modeling data (after the post-construction assessment/calibration) and compare it to actual field results to evaluate whether the project is performing as expected. This assessment would be conducted once per year during the ten years of post-construction monitoring.

**Recommendation #11:** In the adaptive management plan, describe in greater detail how baseline conditions will be developed for the various monitoring parameters. Make maximum use of existing long-term water quality stations and all planning biological studies. If construction is delayed for more than 1 year after a decision for harbor expansion, continue pre-construction monitoring until construction begins.

**USACE Response:** Concur. The Corps would use all available data in establishing the pre-construction database. The compilation of a Savannah Harbor data base has been added as an element of the pre-construction monitoring. One year of monitoring would be conducted before dredging starts in the inner harbor.

**Recommendation #12:** Modify the monitoring and adaptive management plan to include a striped bass habitat assessment during the fourth year of post-project monitoring. If the post-project impacts are higher than pre-construction predicted habitat impacts then increase funding for striped bass stocking in proportion to the impact.

**USACE Response:** Concur. The Corps agrees that a post-project assessment of Striped bass habitat using the most recent water quality monitoring data and updated water quality simulations would be appropriate. This assessment would be conducted during years 2, 4 and 9 of post-construction monitoring.

**Recommendation #13:** Modify the adaptive management plan to specify that establishment of native wetland plants is necessary for successful restoration. Include specific monitoring and management protocols to detect and control exotic and invasive species. Continue coordination with USFWS and other interested agencies during planning, construction and monitoring of restoration site 1S.

**USACE Response:** Concur. The wetland mitigation plan has been revised to include monitoring of invasive species at the restoration site on Disposal Site 1S and an invasive species control program that could be implemented, if required. The details of these plans would be developed (in coordination with the USFWS) during the preparation of plans and specifications for the project. The Cooperating Agencies and the natural resource agencies would all have access to the monitoring reports for this site.

**Recommendation #14:** Compress the adaptive management decision making process so that final decisions on corrective actions are reached within 1 year after the monitoring period.

**USACE Response:** The Corps concurs that decisions on the need to implement adaptive management measures should be made in a timely manner. As proposed, the Corps would have one year from the end of the post-construction monitoring period to prepare a report that summarizes the results of all of the monitoring reports, analyzes and discusses what the results of the monitoring data mean, assesses the need for the implementation of any adaptive management measures, and identifies the exact modifications that should be made to the mitigation features, if required. While the Corps will make every effort to prepare this report as expeditiously as possible, it is doubtful that a report of this nature and scope can be prepared in a much shorter timeframe.

**Recommendation #15:** In the adaptive plan, modify the performance goal for salinity in the range of 1-5 ppt to +/-10% (not =/-0.5ppt) to make it more consistent with other goals and triggers for adaptive management.

**USACE Response:** Appendix D was revised to include the suggested goal for salinity predictions. While this goal may not be achievable, modelers would strive to achieve this objective.

**Recommendation #16:** Perform three years of post-construction monitoring of any implemented adaptive management actions.

**USACE Response:** The document has been revised to indicate that two years (versus one) of monitoring would be conducted for any adaptive management action. The Corps believes that two years of monitoring would generate sufficient data to determine the performance of the adaptive management measure.

## Positions:

**Position #1:** The USFWS's preferred alternative for deepening Savannah Harbor is the 45-foot alternative. This alternative 1) minimizes the loss of already limited freshwater tidal wetlands; 2) minimizes impacts to Savannah NWR; and 3) minimizes risk and uncertainty of impacts on fish and wildlife resources.

**USACE Response:** The Corps recognizes the USFWS's preference for the 45-foot project alternative because it would result in fewer adverse environmental impacts.

**Position #2:** Any additional economic benefits resulting from the LPP relative to the NED Plan would represent local benefits. By contrast, the additional environmental impacts associated with the LPP, and in particular the loss of an additional 114 acres of already scarce and declining freshwater tidal wetlands, would occur on a national resource, the Savannah NWR. The additional 114 acre of impact to freshwater tidal wetlands associated with the LPP represents a 50% increase in impacts over the NEDs plan's depth. For this reason, the USFWS does not support the LPP.

**USACE Response:** Additional Federal economic benefits would be gained with the 48-foot alternative over what would be gained with the 47-foot alternative. The Corps recognizes the USFWS's opposition to the 48-foot project based on the additional impacts to tidal freshwater marsh and the SNWR.

**Position #3:** As currently proposed, Corps funding for adaptive management activities that may be required will be dependent upon the Corp' annual appropriations process. Because these adaptive management actions may be essential to correct mitigation deficiencies and insure that impacts to fish and wildlife trust resources are offset, contingency funding for any required adaptive management activities needs to be assured, and not dependent upon annual appropriations.

**USACE Response:** The Corps' budget process does not permit requesting funds for contingencies. Construction funds (including monitoring and adaptive management activities) would be appropriated by Congress as the need is identified and the funds can be spent. The Corps would obtain funds for the SHEP through its established budget process. The Corps considers monitoring and adaptive management to be mitigation features, so they would be treated as "general navigation features" and budgeted along with the funds for channel deepening. The Corps would consider the project to still be in "Construction" until the end of the monitoring and adaptive management period. The Corps expects the Record of Decision to state that approval of the project is conditioned on performance of the monitoring and adaptive management aspects of the project. That procedure is a method identified by CEQ in their 14 January 2011 guidance titled "Appropriate Use of Mitigation Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact" as being sufficient for a Federal agency to ensure that the monitoring and adaptive management would be performed.

The State of Georgia has indicated that it would place its share of the Adaptive Management costs in an escrow account so they would be available if/when needed. The District intends to obtain its share of the Adaptive Management costs at the same time as the funds for the dredging work are obtained. By obtaining the funds as the construction progresses, they would be available to make adjustments to the project's mitigation if/when needed. In this way, all the funds identified in the final project documents for Adaptive Management would be obtained by the time the dredging is complete.