



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
WASHINGTON, D.C. 20314-1000

REPLY TO
ATTENTION OF:

CECW-PM

31 OCT 2002

MEMORANDUM FOR Commander, South Atlantic Division (CESAD-CM-P)

SUBJECT: Savannah Harbor Expansion Project, Georgia & South Carolina – General
Reevaluation Scoping Meeting Project Guidance Memorandum

1. Reference: Pre-Conference Materials, Savannah Harbor Expansion Project, Georgia & South Carolina, General Reevaluation Scoping Meeting dated June 2002.
2. The subject scoping meeting was 7-8 August 2002 in Savannah, Georgia. Participants included representatives from ASA(CW), HQUSACE, CESAD, CESAS, non-Federal sponsor (Georgia Port Authority), resource agencies and the public. A list of attendees is provided as Enclosure 1. The scoping meeting was held to bring together the Headquarters, Division and District staffs, the non-Federal sponsor, and resource agencies to focus the study on key alternatives, to further define the depth of analysis required and to refine study constraints. The scoping meeting culminated in discussions and actions required for the resolution of issues raised by the district. Documentation of comments and concerns, discussions, and resolution of issues, including required actions is provided as Enclosure 2.
3. The Draft General Reevaluation Report (GRR) with Environmental Assessment should be completed in accordance with the guidance provided in this memorandum.

FOR THE COMMANDER:

JAMES F. JOHNSON
Chief, Planning and Policy Division
Directorate of Civil Works

Encl

**SAVANNAH HARBOR EXPANSION PROJECT
GEORGIA & SOUTH CAROLINA
NAVIGATION PROJECT**

**GENERAL REEVALUATION SCOPING MEETING
PROJECT GUIDANCE MEMORANDUM
(meeting held 7-8 August 2002)**

I. BACKGROUND.

A. Existing Federal Project.

- 1) The current navigation entrance channel is 44 feet deep and 600 feet wide across the ocean bar extending approximately 1.3 miles long; the inner harbor channel is 42 feet deep and 500 feet wide to the Georgia Ports Authority Terminal in Garden City, Georgia. From there, it is 36 feet deep and 400 feet wide to the vicinity of the Savannah Sugar Refinery of Savannah Foods and Industries, Inc. about 22.6 miles.
- 2) The remainder of the channel is 30 feet deep and 200 feet wide to a point 1,500 feet below the Atlantic Coastal Highway Bridge, about 1.5 miles, a total length of 31.1 miles.
- 3) Turning Basins:
 - a) Port Wentworth and Argyle Island Turning Basins; 600 feet wide, 600 feet long, and 30 feet deep;
 - b) Kings Island Turning Basin; 1,500 feet wide, 1,600 feet long and 50 feet deep;
 - c) Marsh Island and Fig Island Turning Basins; 900 feet wide, 1,000 feet long, and 34 feet deep;
 - d) Elba Island Tuning Basin; 1,500 feet wide, 2,000 feet long, and 38 feet deep;
 - e) Oyster Bed Island Turning Basin; 1,050 feet wide, 1,200 feet long, and 40 feet deep
- 4) Sediment Basin – Tide Gate Structure. Sediment control works consists of a tide gate structure across the Back River; sediment basin 40 feet deep, 600 feet wide, about 2 miles long with entrance channel 38 to 40 feet deep and 300 feet wide; control works and channels for supplying fresh water to the Savannah National Wildlife Refuge; and facilities to mitigate damages to presently improved areas other than refuge lands. The tide gate structure across Back River was taken out of operation in March 1991. Although the tidegate was taken out of operation, the sediment control works are still effective in trapping sediments off the main channel where it is easy and cheaper to remove them. The drainage canal across Argyle Island was closed as of April 1992 by the New Cut closure project under the Section 1135 program.

B. Plan to Modify Existing Federal Project. A feasibility study, completed by the non-Federal sponsor, recommends a plan to modify the existing Federal navigation project for Savannah Harbor. The plan of improvement consists of the following:

- 1) deepening the existing entrance channel up to -50 feet MLW from the ocean to Station -14B+000, up to -48 feet MLW from Station -14B+000 Station 0+000 and, the inner harbor up to -48 feet MLW from Station 0+000 to Station 103+000;
- 2) widening bends in the entrance channel at 2 locations and in the inner harbor channel at 10 locations;
- 3) enlarging the Kings Island Turning Basin to a width of 1,676 feet;
- 4) raising the dikes from 2.6 feet up to 5.5 feet in disposal areas 12A, 14B and Jones/Oysterbed Island; and
- 5) mitigation plan that includes a cultural resource mitigation plan, a natural resources mitigation plan and an impact avoidance plan.

The recommended plan of improvement would require dredging and subsequent placement of a maximum of up to 27 million cubic yards of sediments. Sediments excavated from the inner harbor would be deposited in confined disposal facilities (CDFs) presently used by the existing Federal navigation project. Dike raising would be performed to accommodate the sediments deposited in those CDFs to regain lost disposal capacity. Sediments excavated from the entrance channel would be deposited in the approved ocean dredged material disposal site. Further consideration of nearshore and/or beach placement of excavated sediments would be made during the engineering and design phase of the project.

C. General Reevaluation Scoping Meeting. Savannah District completed a PMP in May 2002. On 13 June 2002, the District requested a General Reevaluation Scoping Meeting (GRSM) to discuss and obtain guidance on the direction of the Expansion Project's Tier II activities. The District provided the PMP and a notebook of "Read-Ahead" materials prior to the meeting, including an identification of issues that are important in the Project and those where decisions are needed.

The policy concerns to be discussed at the GRSM includes the GPA (sponsor) desire to limit depth investigations at the 48-foot alternative. Since authorization of the last deepening project in 1992, two significant actions have occurred. First, larger vessels are calling sooner than expected and second cargo growth is greater than expected. For example, the design vessel for the 1992 project (4,200 Twenty foot Equivalent Units (TEUs)) is calling on a regular basis 8 years sooner than expected. Vessels as large as 6,000 TEU's have called on the harbor.

1. Verification of Container Information. HQUSACE is concerned that the tonnage and container information needs to be verified. A TEU unit is usually 20-feet long and has a maximum weight limit of 20 tons. For the years 1993 to 1999 the tonnage limit exceeds the 20-ton maximum. The substantial decline in tons per container from 27.9 in 1993 to 19.3 in 2000 could be the reason TEU's grew by almost 90% while

tonnage increased by 32%. The real change in containerized commodities would be 4% per year rather than 9.6%. See table below.

SAVANNAH HARBOR

	Tons	Percent Change	TEU's	Percent Change	Tons Per TEU
1993	14,963,000		536,362		27.90
1994	15,905,000	6.30%	562,266	4.83%	28.29
1995	17,380,000	9.27%	626,151	11.36%	27.76
1996	17,598,000	1.25%	650,253	3.85%	27.06
1997	17,929,000	1.88%	734,724	12.99%	24.40
1998	17,711,000	-1.22%	761,000	3.58%	23.27
1999	18,156,000	2.51%	849,000	11.56%	21.39
2000	19,670,000	8.34%	1,018,000	19.91%	19.32
7-Year Growth Rate Per Year		31.46%		89.80%	
		4.00%		9.60%	

Source: Enclosure 9 Plan Formulation Framework Page 3

Discussion:

The District explained that the tons were for all commodities not just container tons. The Waterborne Commerce statistics support the district's statement. GPA pointed out that the containerized trade through Savannah is highly diversified and any projections of future trade cannot be based on any individual commodity. The reality in the modern containerized trade is that shippers and ports are no longer tied to individual commodities as pre-containerization shipping once was. Shipping is done in containers and the volume of shipping at individual container ports is based not on what is in the containers, but rather how well the particular port is positioned with respect to broad-based markets, with respect to their ability to move containers through the port, with respect to intermodal connections, and with respect to their ability to provide satisfactory service to their customers.

II. DISCUSSION ISSUES.

A. DESIGN VESSEL.

During Tier I, the design vessel was the **Regina Maersk**, an “M” class 6,000 TEU containership launched in 1996 that is 1,040 feet long, 138 feet wide, with a design draft of 47.6 feet. Only 6 of this size vessel were produced. Since that time, Savannah District, GPA and the SEG’s Economics Working Group have been identifying what vessels characteristics are being ordered for construction in the world fleet. Based on that information, and in consultation with ERDC and the Savannah Pilots Association, Savannah District has determined that the engineering design vessel for Tier II should be the **S Class (Susan or Sovereign) Maersk**, an “S” class 6,600 TEU containership that is 1,138 feet long, 140.4 feet wide, with a design draft of 47.6 feet. Maersk has built 36 of this size vessel from the period 1997 to 2002. While Maersk vessels are being used, other lines have similar ship building trends and Maersk is used as a ship typical of containership trends. The critical difference between these two vessels is an increase in length of nearly 100 feet. We are having ERDC conduct ship simulations to determine if any alterations to the channel are required for this vessel to efficiently transit the harbor.

Discussion: During Tier I, the design vessel was the Regina Maersk, an “M” class 6,000 TEU containership launched in 1996 that is 1,040 feet long, 138 feet wide, with a design draft of 47.6 feet. Only 6 of this size vessel were produced. The design vessel for Tier II should be the S Class (Susan or Sovereign) Maersk, an “S” class 6,600 TEU containership that is 1,138 feet long, 140.4 feet wide, with a design draft of 47.6 feet. Maersk has built 36 vessels of this size from 1997 to 2002. The critical difference is the 100-foot difference in length. ERDC is conducting ship simulations to determine if any alterations to the channel are required for this vessel to efficiently transit the harbor.

The GPA explained that all their cranes were post panamax capacity and that the infrastructure can currently accommodate a vessel with 1,800 moves. It was suggested that the fleet forecast include larger vessels. Currently, there are a large percentage of vessels that cannot call at their design depths. Current container cranes can reach to 131 feet. Two new container cranes are to be delivered that can unload the 144 foot wide design vessels.

Required Action: The General Reevaluation Report (GRR) must contain clear documentation regarding selection of the design vessel. The District also should take a critical look at landside facilities and future trends of the world fleet.

B. AQUIFER.

Potential project impacts to the drinking water aquifer are of substantial concern to the public. Drinking water is pumped from the Florida aquifer, which ranges from about 100 to 200 feet below the surface. The concerns stem from two sources of potential impact: (1) removal of a portion of the clay layer (confining unit) above the aquifer that prevents

salt water from migrating down into the aquifer, and (2) exposure of additional potential vertical pathways in the Miocene clay layer above the aquifer, thereby increasing the rate of downward movement of saltwater into the aquifer. Under a Support For Others agreement with GPA, CESAS investigated this issue during Tier I and determined the project is not likely to have an adverse effect on the aquifer. Since Tier I was completed, public concern has markedly increased. To address these concerns, additional field investigations will be performed during Tier II. We recognize that these studies may not appease all interests, but we intend to perform the studies we believe are necessary to reasonably address all the technical issues.

Discussion: Potential project impacts to the drinking water aquifer are of substantial concern to the public. Drinking water is pumped from the Florida aquifer, which is roughly 200 feet below the surface.

Since the Tier I investigation, extensive studies of the aquifer have been completed, state of the art techniques have been developed and public concern has increased. Therefore, additional verification is needed during this phase, which will also increase funding needs. The states of South Carolina and Georgia are both in agreement with the District's plan of action and items of work needed. It was agreed that long term monitoring would be performed.

It was explained that this is a critical issue to the overall project. If deepening the harbor will severely impact the aquifer, GPA indicated that they would not pursue the project.

Required Action: The District will perform additional studies during Tier II, which will provide information required to identify project impacts. The District will also include long term monitoring into the PED activities.

C. HYDRODYNAMIC MODEL.

Many of the project impact evaluations are dependent upon predictions of project-induced hydrodynamic changes. These include potential changes to water levels, salinity, dissolved oxygen, and velocity. During Tier I, GPA had a contractor develop a 3-dimensional hydrodynamic computer model that would simulate conditions in the estuary. Tier II efforts have included another round of data collection and extensive improvements to the model. Representatives from Federal and state resource agencies, as well as the Savannah Chamber of Commerce's Harbor Committee, have advised GPA's modelers during Tier II through the SEG Modeling Technical Review Group. In 2001, the Federal agencies began meeting separately to provide specific performance goals for the model before they would consider it acceptable for use in identifying impacts for this project. GPA provided an Approval Package in April 2002 that documents that model's performance. We are reviewing the model's performance and expect to receive letters from EPA and the USFWS on their views at the end of May. ERDC is assisting us in our review and is performing an ITR for this component of the project.

The Hydrodynamic Model will serve as the foundation for four separate follow-on computer models: (1) a Dissolved Oxygen Model, (2) a Chloride Model, (3) a Sediment Model, and (4) a Wetland Succession Model. Development of the Dissolved Oxygen Model has begun and a draft calibration is expected to be complete at the end of May. Development of the Chloride Model will begin later in 2002. Linkage to a development of the Wetland Succession Model will begin after the wetland field investigations are complete this fall. EPA intends to use the Hydrodynamic and Dissolved Oxygen Models as the basis for their development of a Dissolved Oxygen TMDL for the harbor in 2002. Use of these models by both agencies will greatly enhance interagency agreement of project-induced impacts and ease concerns by harbor industries about potential impacts from regulatory changes or the Expansion Project.

Discussion: Many of the project impact evaluations are dependent upon predictions of project-induced hydrodynamic changes. These include potential changes to water levels, salinity, dissolved oxygen and velocity. Tier II efforts have included another round of data collection and extensive improvements to the Tier I Model.

During Tier I, a 3-D model of the estuary was developed by GPA to predict the impacts due to deepening of the channel. Some questions regarding how the model was calibrated have been raised. Simultaneous reviews of the models performance are underway by the three cooperating agencies (FWS, EPA and NMFS). The agencies will send formal acceptance or non acceptance with comments to the Corps who will in turn notify GPA whether the model is acceptable or not. Model review will be performed by several individuals, internal and external to the team (i.e. Georgia Department of Natural Resources, Skidaway Marine Institute, University of North Carolina, Law Engineering). Upon completion, EPA will use the Hydrodynamic and Dissolved Oxygen Models as the basis for their development of a Dissolved Oxygen TMDL for the harbor in 2002.

Required Action: The District will continue to coordinate model development with FWS, EPA and NMFS. A list of individuals from the respective agencies will be generated and provided to SAD/HQUSACE detailing the levels of review.

D. General Reevaluation Report (GRR) vs Limited Reevaluation Report (LRR)

The Expansion Project was authorized contingent upon additional analyses being performed and a Tier II EIS prepared. The Chief's Report state: *"When the findings and conclusions of these additional evaluations are complete, a special report and Tier II environmental impact statement will be prepared and received full public review. Review of the Tier II EIS and the GRR documents would serve as the basis for obtaining the required approvals, certifications, and permits, as appropriate, from the natural resource agencies for the channel improvement that would be implemented."* GPA questioned whether a LRR would be sufficient to re-evaluate the project's feasibility. They questioned whether the Tier II work should focus on validating what was conducted in

the Feasibility Report and Tier I EIS, and adding information required to achieve the specific requirements of the authorization.

ER 1105-2-100, pages G-1 and G-2 state, “The scope for Limited Reevaluation Studies is limited when compared to the General Reevaluation Study. For example, a Limited Reevaluation Study may address only economic justification, environmental effects, effects of revised policy or (more rarely) project formulation. Limited Reevaluation Studies would ordinarily require only modest resources and documentation. If any part of the reevaluation will be complex, or will require substantial resources, or if the recommended plan will change in any way, a General Reevaluation is required.” Since these post-authorization efforts do require substantial resources and the hydrodynamic and water quality modeling is complex, Savannah District’s position is that a General Reevaluation Study and report is required. This is in addition to the wording of the Chief of Engineers Report that states that a GRR and Tier II EIS will be prepared to serve as the basis for decisions on project implementation. Adherence to the ruling in the SELC lawsuit also leads one to conduct a full GRR. The position given in court documents by the Department of Justice and the wording of the Judge’s decision commit the Corps to address all issues raised during the Tier II NEPA scoping process, rather than limiting the evaluations to only those plans surviving Tier I.

On 21 May 2002, CESAS provided a letter to GPA stating that a GRR is required for implementation of this project. The Tier II Plan of Study and Project Management Plan provided for the GRSM are structured around the need to prepare a full GRR.

Discussion: Issue was resolved prior to scoping meeting. Per ER 1105-2-100, pages G-1 and G-2, “If any part of the reevaluation will be complex, or will require substantial resources, or if the recommended plan will change in any way, a General Reevaluation Report (GRR) is required.” Since these post-authorization efforts do require substantial resources and the hydrodynamic and water quality is complex, the Savannah District is correct that a GRR is required.

Please note, due to authorization, this will be more than the basic GRR. We recognize that there is a tremendous effort to coordinate with all that are involved.

Required Action: The District will prepare a GRR.

E. ECONOMIC STUDY OPTIONS.

In an effort to clearly define our approach for the economic evaluation we began by formulating 8 options with varying degrees of effort. During and extended evaluation and discussion process, we narrowed the list of options to 3 detailed approaches, all of which will require significant levels of effort to accomplish. The final 3 options are listed below. The District will base our Economic Evaluation on Option C. The purpose of including this subject in the GRSM is to inform the group of our decision and to secure group buy in and support for our approach.

Assumptions

Cost numbers will be recalculated based on current work for all options

Multi-port analysis is required for each option (Estimated cost: \$100,000)

ITR required for all options (Estimated cost: \$50,000)

Economic analysis costs funded by USACE

Economic analysis must be done by USACE personnel

Analysis Options

a. Re-examine feasibility study economics conclusions – (Estimated cost: \$250,000)

1. Starts from economic appendix from Feasibility Study Report (FSR)
2. Compare the trade forecast to actual trade
Determine the following:
 - Zero future growth from historic point
 - FSR projected curve with origin adjusted to actual growth point
 - Assumed growth rate between (a) and (b)
 - Multiple assumed rates might be used
3. Compare fleet forecast to actual fleet
Update both world and Savannah fleet to actual
Use the actual fleet growth (change in fleet mix) and reset the projected fleet mix curve with origin adjusted to actual growth point
Use the actual fleet mix with no future change
4. Calculate B/C ratios for trade and fleet scenarios.
Evaluate the degree of inaccuracy or risk inherent in results
 - If B/C ratio is high – use modified trade and fleet mix for determining benefits
 - If B/C ratio is marginal – use new trade and/or fleet mix forecast for determining benefits
5. Recalculate benefits using the selected trade and fleet scenarios
6. Revise the FSR economic appendix, adding new information

b. Re-examine feasibility study economics conclusions with new trade forecast and either updated or new fleet forecast (Estimated cost: \$325,000 - \$450,000)

1. New trade forecast
2. Compare fleet forecast to actual fleet
Update both world and Savannah fleet to actual
Use the actual fleet growth (change in fleet mix) and reset the projected fleet mix curve with origin adjusted to actual growth point
Use the actual fleet mix with no future change
3. Calculate B/C ratios using the new trade forecast and each fleet scenario
Evaluate the degree of inaccuracy or risk inherent in results
 - If B/C ratio is high – use modified fleet mix for determining benefits
 - If B/C ratio is marginal – use new fleet mix forecast for determining benefits
4. Recalculate benefits using the new trade forecast and selected fleet scenario
5. Revise the FSR economic appendix, adding new information

c. Re-examine feasibility study economics conclusions using new trade and fleet forecasts (Estimated cost - \$450,000 - \$475,000)

1. Recalculate benefits using new trade and fleet forecasts
2. Prepare the report of the analysis – either:
 - Revise the FSR economic appendix, adding new information or,
 - Prepare an entirely new report
3. The selection of the report type will be based on range and depth of difference between new analysis conclusions and FSR Economic appendix

Evaluation factors

Option A

Provides a logical decision process to determine the scope of work
Provides decision points at all key junctions
Provides a clear sequence of the reasoning
Allows evaluation of the value added by work elements
Could result in work evaluating actual conditions that may not be needed if new forecasts are chosen
Builds on a body of work that has undergone extensive review and been accepted
Avoids creating a perception that FSR was flawed

Option B

Same general factors as Option A, plus ...
New trade forecast would ensure most recent changes in commodity flows are incorporated into the analysis
Could result in some additional time and expense if changes in approach are required after some initial work has been performed

Option C

Same general factors as Option B, plus ...
New fleet forecast would ensure most recent changes in vessel size and rotation are incorporated into the analysis
Likely to avoid potential internal or external opposition
Likely to be less costly, when considering the total cost in \$\$\$ and time performing the analysis and defending it
Most objective approach to reanalysis of the Project's economics

Discussion:

The District believes that Option C is the necessary level of effort. Total tonnage for all commodities has not grown as fast as the commodities within containers. Growth of containers (TEUs) has been greater than non-containerized commodities. Recent overall trends for the South Atlantic have not been as robust as the past. DRI-WEFA World Trade Service Forecast July 2002 shows a 2-3% growth while the previous feasibility study assumed 4.8%. The District stated that this is being reevaluated. An explanation is needed if there is any variance between our forecast and DRI-WEFA of South Atlantic and US for containerized traffic. Shifts in trade area and ratio of empties to full

containers, should also be taken into account. Traffic passing through the Suez Canal can take advantage of the project deepening and should be documented.

Required Action: The District will proceed with necessary studies described under Option C. All agreed that an extensive multi-port analysis, in association with IWR, is critical to the project. The District is urged to select independent entities (external to the team/Corps) to perform Independent Technical Review. The District should ensure that models are as flexible as possible, environmental impacts and other concerns are included into the formulation of project depth, a sensitivity analysis is performed, and the model is the property of the Corps. The District will explain any variance between our forecast and DRI-WEFA of South Atlantic and U.S. for Containerized Traffic. The District will also ensure that there is vertical communication at critical decision points during the economic analysis.

III. DECISION ISSUES.

A. SCOPE OF STUDIES.

The Project Management Plan contains a Scope of Studies (Appendix H) that defines the work to be performed during Tier II. CESAD/HQ concurrence in the Scope of Studies will ensure agency agreement that the issues have been properly identified and that adequate effort will be expended in all areas necessary for reevaluation of the project.

Discussion:

The PMP has been signed by all involved and will be revised to incorporate any changes and updates. It will also be posted on the District website. OMB expects submission of the report prior to the Secretary's decision. It was suggested that 3 months be provided for Secretaries of Interior and Commerce, Administrator of EPA and OMB approval.

Required Action: The District will incorporate a line item for the Secretary of the Army's approval of the GRR following approval by other Secretaries/Administrator and OMB. Also in-progress reviews will be incorporated into the PMP. The District will ensure that an Alternative Formulation Briefing (AFB) will occur prior to plan selection.

B. DEEPENING TO 50-FEET.

In Tier I, GPA conducted detailed analyses on the existing 42-foot navigation channel depth and a proposed 50-foot depth. After public review of the draft documents, the selected plan was deepening to a 48-foot depth. In light of Congressional authorization of up to a 48-foot depth, GPA no longer wants to pursue deepening to a depth beyond 48-feet. The costs of such construction exceed the amount it is willing to expend. Therefore, GPA does not want the Tier II activities to include consideration of deepening to a channel depth greater than 48-feet.

Savannah District is somewhat concerned that not evaluating beyond a 48-foot depth plan may fail to identify the National Economic Development (NED) plan. If incremental net

benefits continue to increase with a 48-foot deepening, further deepening would be a more cost effective solution to the identified shipping problems. In addition, natural resource agencies have repeatedly stated a desire to examine the long term needs of the harbor. They would like the full needs for navigation improvements to be considered at this time, rather than having to make repeated piecemeal decisions every few years. One of the Cooperating Agencies – EPA – has stated that they thought the study should look beyond the 48-foot depth authorized in Tier I.

The PMP and Tier II Plan Formulation Document include deepening only up to a 48-foot depth. Concurrence in that position is desired.

Discussion: GPA no longer wants to pursue deepening to a depth beyond 48-feet. The costs of such construction exceed the amount it is willing to spend. Reference is made to ER 1105-2-100 pages 3-4, paragraph 3-2 b. (10), “Categorical Exemption to NED Plan. For harbor and channel deepening studies, where the non-Federal sponsor has identified constraints on channel depths, it is not required to analyze project plans greater (deeper) than the plan desired by the sponsor. For example, if a sponsor only desires to deepen a channel to -40 feet and it is determined that the -40 foot channel is economically justified and has higher net benefits than a -39 foot or -38 foot channel, etc., then the -40 foot channel can be recommended without having to analyze deeper channel plans to identify the NED Plan. The recommended plan must have greater net benefits than smaller scale plans, and a sufficient number of alternatives must be analyzed to insure that net benefits do not maximize at a scale smaller than the recommended plan. If the plan proposed to be recommended contains uneconomical increments, an exception from the ASA(CW) must be obtained. An essential element of the analysis of the recommended plan is the identification of trade-offs and opportunities foregone as a result of implementation of the smaller scope plan. The analysis of alternatives must be comprehensive enough to meet the requirements of NEPA.” Limiting the scope of investigations to a maximum depth of 48-feet is consistent with ER 1105-2-100.

Required Action: As proposed by the District, the District will evaluate deepening up to a 48-foot depth.

C. FULL MITIGATION.

The Tier I documents commit to fully address all impacts to dissolved oxygen. In addition, GPA has verbally committed to fully address all impacts to natural resources. This would negate a need to place economic values on those impacts. The Cooperating Agencies would like the selected plan to have a net beneficial effect on natural resources, in addition to its beneficial effect on the port community. The Congressionally established approval over this project by the Secretaries of those Federal departments means that the Corps needs to integrate the views of those agencies on what constitutes an acceptable plan.

Traditional Corps' incremental analyses may result in an increment of environmental impact not being implemented because its costs are judged as too high in comparison to other increments or those experienced on other projects. This approach may result in less than full mitigation for project impacts.

The Corps' recently released Environmental Operation Principles discuss "environmental sustainability" and state that we must "balance economic and environmental concerns". The local public and Federal natural resource agencies would like to the project to benefit both economic and environmental interests, not one at the expense of the other.

HQ concurrence is desired for the Corps to attempt to provide full mitigation for each affected natural resource, and agreement in the PDT's intent to recommend a plan that provides incidental net benefits to natural resources.

Discussion:

The Tier I documents commit to fully address all impacts to dissolved oxygen. In addition, GPA has verbally committed to fully address all impacts to natural resources. GPA believes this would negate a need to place economic values on those impacts. However, traditional Corps incremental analysis may result in an increment of environmental impact not being implemented because its costs are judged as too high in comparison to other increments. This approach may result in less than full mitigation for project impacts.

Per 1105-2-100 pages 1-2, "Appropriate mitigation of adverse effects is to be an integral part of each alternative plan." Also per page 2-5, "Protection of the Nation's environment from adverse effects of each alternative plan, in missions other than ecosystem restoration, is to be provided by mitigation (as defined in 40 CFR 1508.20) of those effects. Each alternative plan shall include mitigation as determined appropriate. Mitigation to address effects on fish and wildlife and their habitat should be determined in consultation with the Federal and State fish and wildlife agencies in accordance with the Fish and Wildlife Coordination Act of 1958. Mitigation to address other adverse effects should be determined in accordance with applicable laws, regulations and Executive Orders. (See Appendix C). Mitigation measures determined to be appropriate should be planned for concurrent implementation with other major project features, where practical. Cost of mitigation measures are part of total project costs and are included in the benefit-cost analysis of alternative plans."

Per page C-5, "The determination that the combined monetary and non-monetary value of the last increment of benefits realized from an ecosystem or a fish and wildlife management action or feature (hereafter actions are included under management features) exceeds the combined monetary and non-monetary costs of the last added increment so as to reasonably maximize overall project benefits. For mitigation, "benefits" shall be interpreted as being the same as "losses prevented or replaced". " Per page C-6, "Resource categorization consists of describing and assigning values and significance to resources. Ecological resource categorization is used to determine if ecosystem

restoration opportunities exist, if losses warrant mitigation considerations, and for making decisions to either mitigate losses in-kind, or to allow for substitute resource trade-offs.”

For mitigation purposes do not simply consider costs equal to outputs (natural resource/environmental), and mitigation actions would not eliminate the need to place economic costs on those actions. Mitigation costs need to be fully developed analyzed and included as a determining factor of plan selection. In other words - a bigger or deeper project may get to the point where mitigation costs render it uneconomic. Also, "mitigation determined to be appropriate" does not mean just up to the point where the recommended plan is still feasible - then halt any further mitigation efforts! HQ does not concur with providing “full” mitigation for each affected natural resource. “Full” mitigation implies zero project impact. Appropriate mitigation of adverse effects is an integral part of each project, which may or may not result in “full” mitigation for project impacts.

Required Action: The District will provide a justified level of mitigation that has been coordinated with the resource agencies.

D. SHIP WAKES.

Under certain circumstances, wakes produced by moving vessels can erode the adjacent shorelines. Under the doctrine of navigational servitude, the Corps has traditionally taken the position that such erosion was the fault of the pilots of the vessels transiting the channel too fast, rather than the fault of the design of the channel itself.

Bank erosion is occurring at several locations along the lower Savannah River. Many landowners have armored their riverbanks to protect from further loss of land. The non-Federal sponsor of the Savannah Harbor Navigation project is one such owner, having constructed several bank protection projects to protect dikes required for containment of maintenance dredged sediments. The District has received several complaints recently concerning erosion of the shoreline as a result of passing deep-draft vessels. This issue was also raised in the Tier II NEPA scoping process. The public identified two particular areas experiencing this problem, Fort Pulaski (National Monument) and North Beach at Tybee Island.

Vessels must move at a certain speed to maintain adequate steerage. Due to the tidal nature of this harbor, vessels will typically travel at an apparent speed that is much greater when they are moving with the tide. Due to the riverine nature of this harbor, flows are restricted to a relatively narrow channel rather than being dispersed across a wide bay. This tends to increase water velocities in the lower river.

The winding nature of the navigation channel also results in a similar problem that leads to erosion of the riverbank. As vessels maneuver around a turn, the stern sometimes swings close to the edge of the channel. When this occurs, much of the thrust produced by the ship’s propellers is directed toward the shoreline. This results in erosive forces

being experienced by the bank. A cupped appearance in the riverbank can be noticed at several locations along the lower river where ships maneuver around large turns.

The District believes that all the effects (direct and secondary) of a proposed navigation improvement should be identified and disclosed. As part of the analysis for this issue, the Expansion Project will examine whether the existing shoreline erosion is caused by vessel transits at speeds that exceed what are required to safely navigate through those reaches. If we determine that the vessels are operating at speeds required for safe handling and maneuvering and causing bank erosion, then the proposed project would be required to address whatever (if any) incremental increases in erosion that it would produce.

Discussion: The District believes that all the effects (direct and secondary) of a proposed navigation improvement should be identified and disclosed. As part of the analysis for this issue, the Expansion Project will examine whether the existing shoreline erosion is caused by vessel transits at speeds that exceed what is required to safely navigate through those reaches. If we determine that the vessels are operating at speeds required for safe handling and maneuvering and causing bank erosion, then the proposed project would be required to address whatever (if any) incremental increases in erosion that it would produce.

If project is inducing erosion then economic costs must be evaluated. If net effect shows that erosion is occurring due to project than the costs resulting from the loss of land needs to be accounted for in the Benefit-Cost Ratio (BCR). If mitigation measures were put in place, they would be considered general navigation features. It was determined that a legal opinion was needed to make this decision.

Required Action: The District will prepare and submit to SAD/HQUSACE a legal opinion regarding navigational servitude and the mitigation of erosion.

E. JASPER COUNTY TERMINAL.

Jasper County, SC would like to develop a container port on the north side of the river to receive more of the economic benefits of a deep draft harbor. Presently, the SC side of the river consists of saltmarshes, a small National Wildlife Refuge near the ocean, and confined dredged sediment disposal facilities (CDFs) that are used for O&M of the Savannah Harbor Federal Navigation Project. County officials see further development of those sites as a means to bring more jobs to the County and increase tax revenues.

The County has condemned two of the CDFs, amounting to nearly 1,800 acres. The property would provide sufficient land for development of several berths, including adequate marshalling areas. The present owner of the land, the State of Georgia, is challenging the condemnation in court. The State is presently appealing to the State Supreme Court a judge's decision that the County did have the authority to condemn the property and used its authority properly. The County would lease most of the land to a

private firm, Stevedoring Services of America, who would construct and operate the container terminal. At present, the proposed terminal would be called the South Atlantic International Terminal (SAIT).

The property is owned by the State of Georgia and is under the control of the Georgia Department of Transportation since they are the non-Federal sponsors for the O&M of the Savannah Harbor Federal Navigation Project. GADOT has provided easements to the Corps for deposition of harbor sediments, to meet their requirements under the Project Cooperating Agreement. Most of the Corps' easements are perpetual, although at least one is for 50 years. Our most recent harbor O&M document states that we will need all the CDFs for at least the next 20 years. At this point, the Corps needs these properties to continue to operate the harbor and, therefore, we do not consider those properties to be excess to our needs. Such a determination would have to be made before we could release our easements.

This issue affects the Expansion Project in several ways. The most important two avenues are that: (1) Development of these two CDFs into a container terminal would alter the movement of cargoes in the harbor, possibly reducing the volume of commodities reaching existing terminals, and (2) Deepening to only this location could result in fewer overall environmental impacts.

The question is what is the best way to include the potential development of this new terminal in the Tier II efforts.

One option (Option A) that will be followed is for this project to evaluate constructing a new terminal at that site as a way to meet the identified shipping needs. With this scenario, the costs of the constructing the terminal would be added to the costs of the harbor improvements. SSA has stated it would spend \$400 million to construct their terminal, so we would use those costs in evaluation of this option.

Another Option (Option B) is to assume that this new terminal will become operational soon after the Project's base year of 2005. Some cargo flows would be diverted to this terminal and some future growth in commodity volume would be allocated to this facility. We would assume that the costs and actions to construct the new terminal, using the existing channel depths, would be borne by others and would not be included in the costs of this scenario. This is the most conservative scenario in terms of economic justification for the Expansion Project. If deepening to the GPA facilities at the upper end of the harbor (Station 103) is still economically justified under this scenario, then one could state with certainty that the feasibility of the Expansion Projects would not be affected by development of a container terminal in Jasper County.

A third option (Option C) is a variation of Option B. In this scenario, we would again assume that this new terminal would be operational soon after the Project's base year of 2005. As in the previous option, the costs and actions to construct the new terminal would be borne by others and would not be included in the costs of this scenario. The difference from the previous option is that in this scenario, we would examine the

feasibility of deepening up to this terminal rather than to the GPA facilities located further upriver (Station 103). In this scenario, we would be examining deepening to an operating terminal in Jasper County. Evaluation of this alternative has been requested by others through the NEPA scoping process. GPA has indicated it does not want to expend substantial amounts of money to improve portions of the harbor where it does not have facilities located.

GPA believes that we should pursue Option B, but implementing it as a sensitivity analysis rather than as an alternative. If one assumes that some of the harbor's cargo is handled by a new terminal such as in Jasper County and deepening to GPA's facilities located further upstream is still found to be feasible, then the economic justification for the Expansion Project would be shown to be secure and no further detailed investigations into this issue would be necessary.

Savannah District believes that the Project needs to examine all reasonable alternatives and that all three options should be pursued.

Discussion:

Jasper County, SC would like to develop a container port on the north side of the river to receive economic benefits of a deep draft harbor. This county has condemned two of the confined dredged material disposal facilities (CDF's) that are used for O&M of the Savannah Harbor Federal Navigation project. The 1,800 acres would provide land for several berths and marshalling areas. The present owner of the land, the State of Georgia, is challenging the condemnation in court. The most recent Corps O&M document states that all the current CDF's are needed for at least the next 20 years. Deepening to only this location would result in fewer environmental impacts and reduce the volume going to existing terminals. Option A the cost to construct the terminal (\$400 million) would be added to the cost of harbor improvements. In the 1998 report the cost of the navigation project including mitigation was \$230 million. Therefore Option A is not the least cost site. Option B assumes that most of the channel costs have been incurred or sunk before terminal operation. Even with this option the required \$400 million investment exceeds the costs of the 1998 plan. Under Option C the feasibility of the South Carolina terminal would be compared to the feasibility of the Georgia sites in the 1998 analysis.

The economic feasibility of the Jasper County Terminal in South Carolina is dependent upon on the costs of the local service facilities (water interface) and the landside terminal associated costs required to move cargo from a Federal channel as compared to the total costs of cargo movement at the Georgia sites.

Required Action: The District should evaluate Jasper County as an alternate port facility, at the appropriate level of detail; then evaluate other best alternative sites for sensitivity analysis.

IV. OTHER ISSUES

A. PLAN FORMULATION.

Discussion: 1) Cooperating Agency Goals - The Cooperating Agencies have each defined a successful project from their viewpoint and from this have developed the goals outlined in the Tier II Plan Formulation Framework. Item f. *“If needed, recommend specific actions that should take place outside the context of the Expansion Project to improve the local environment and/or compensate for past harbor improvement projects. The report would identify the process and participants to accomplish those specific needed actions.”* The Corps has no restoration authority for this project and may be limited in what we can accomplish. Although the District may just identify spin-off studies where warranted, the concern is with expectations. The Corps may raise expectations regarding things we do not have the authority to accomplish.

2) Problem Statement – Environmental problems should also be reflected under this category.

3) Deepening alternatives are in two foot increments. One-foot increments are generally the case. Therefore, the District must maintain flexibility; if there are any major deviations then one-foot increments may be necessary.

Required Actions: It is recommended that the District not use this GRR as a vehicle to add ecosystem restoration to the existing authorization. Ecosystem restoration opportunities to address long-standing impacts of the existing project may be noted and discussed. Also, ecosystem restoration studies may be considered as spin off studies.

B. FUTURE WITHOUT PROJECT CONDITONS.

Discussion: Future without project conditions indicate that *“all physical and environmental conditions would generally remain as they are”*. The District needs to ensure adequate and reasonable consideration to future without project conditions remember that the baseline is 3-5 years into the future.

Required Actions: The District will schedule an Issue Resolution Conference (IRC) regarding Future without Project Conditions.

SHE GRSM ATTENDANCE ROSTER

	OFFICE	NAME	Main Table	Hotel or Lodging	Boat	Confirmed	Present
1	ASA(CW)	Jim Smyth	M	H	Y	Y	Y
2	CECW-P	Zoltan Montvai	M	H	Y	Y	Y
3	CECW-P	Robert McIntyre	M	H	Y	Y	Y
4	CECW-P	Cynthia Jester	M	H	Y	Y	Y
5	IWR	Ian Mathis	M	H	N	N	N
6	CESAD	Wilbert Paynes	M	L	Y	Y	Y
7	CESAD	Daniel Small	M	H	Y	Y	Y
8	CESAD	Frank McGovern	M	H	Y	Y	Y
9	CESAD	Gerald Melton	M	H	Y	Y	Y
10	CESAD	James Demby	M	H	Y	Y	Y
11	GPA	David Schaller	M	-	Y	Y	Y
12	GPA	Hope Moorner	S	-	Y	Y	Y
13	CESAS	Col Roger Gerber	M	-	N	Y	Y
14	CESAS	Wayne Urbine	M	-	N	Y	N
15	CESAS	Dan Parrott	S	-	Y	Y	Y
16	CESAS	David Schmidt	M	-	Y	Y	Y
17	CESAS	Bill Bailey	M	-	Y	Y	Y
18	CESAS	Terry Stratton	S	-	Y	Y	Y
19	CESAS	Anne Welch	S	-	Y	Y	Y
20	CESAS	Chip Nieman	S	-	-	Y	Y
21	CESAS	Steve Gill	S	-	-	Y	Y
22	CESAS	Wilbur Wiggins	S	-	-	Y	Y
23	CESAS	Card Smith	S	-	-	Y	Y
24	CESAS	Lyle Maciejewski	S	-	Y	Y	Y
25	CESAS	Kevin Ambrose	S	-	N	Y	Y
26	CESAS	Judy Wood	-	-	Y	Y	Y
27	CESAS	Susan Durden	S	-	N	Y	Y
28	CESAS	Leroy Crosby	S	-	N	Y	Y
29	CESAS	Joe Hudak	S	-	N	Y	Y
30	CESAS		S	-	N	Y	Y
31	USFWS	Donnie Browning	M	H	Y	Y	Y
32	USFWS	John Robinette	M	H	Y	Y	Y
33	SCDNR	Priscilla Wendt	S	H	Y	Y	Y
34	SCDNR	Mark Collins	S	H	Y	Y	Y
35	SCDHEC	Mark Giffen	S	H	Y	Y	Y
36	SCDHEC		S	H	Y	Y	Y
37	SCDHEC-OCRM	Rob Mikell	S	H	Y	Y	N
38	GADNR-WRD	Ted Will	S	L	Y	Y	Y
39	GADNR-WRD	Matt Thomas	S	L	Y	Y	Y
40	GADNR-CRD	John Pafford	S	H	Y	Y	Y
41	GADNR-CRD	Kelly Matrangos	S	L	Y	Y	Y
42	GADNR-EPD	Keith Parsons	S	-	Y	Y	Y
43	GADOT	John Phillips	S	H	Y	Y	Y
44	Lockwood-Greene	Larry Keegan	M	H	Y	Y	Y
45	ATM	Bo Ellis	S	L	Y	Y	Y
46	REES	Morgan Rees	S	H	Y	Y	Y
47	USN/NPS	Larry Murphy	-	H	Y	Y	N
48							
49							
50							
Total					35	44	43