Savannah Cruise Feasibility Study
CRUISE SHIP STAGING AREA STUDY

Phase I Report – May 10, 2013
Cover Letter
Marty Johnston, Assistant City Manager, City of Savannah, P.O. Box 1927, Savannah, GA. 31402

May 10, 2013

Re: Cruise Ship Staging Study – Event 411

Dear Marty,

BEA Architects, Inc is pleased to hereby submit to the City of Savannah the Cruise Ship Staging Study – Event 411 - Phase One: Study Report.

The BEA team collected, assembled and analyzed available information related to three potential sites that were identified and reviewed with the City of Savannah during the preparation of the study. The three alternative cruise terminal sites presented in the report include:

- SITE A: SILO/ATLANTIC CEMENT TRACT
- SITE B: POWELL DUFFERYN TRACT
- SITE C: SAVANNAH RIVER LANDING TRACT

The Phase One Report the study provides for an in-depth analysis of three sites identified as being potential locations for Cruise Terminal development and related vessel berthing facilities. In this phase of the study, the BEA Team analyzed natural environmental impacts, marine archeological impacts, navigational challenges, and site compatibility issues with local, state and federal agency requirements and identified other benefits and challenges associated with each of the three sites.

Each of the three sites under consideration presents both opportunities and challenges to the development and operation of a cruise terminal for Savannah. The pros and cons for each of the three sites were assessed by the BEA team members and ranked according to data and information analyzed in the report.

The highest ranking site recommended by our study is the Savannah River Landing Tract.

We look forward to reviewing the study findings, conclusions and recommendations with the City of Savannah in the near future.

Sincerely,

Bruno E Ramos AIA, GC, NCARB, LEED AP
Principal-in-Charge
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EXECUTIVE SUMMARY

In 2011, BEA Architects, Inc. (BEA) completed Phase I; a market analysis study for the City of Savannah. The results of the Phase I study concluded that the City is a viable and potential destination for cruise passenger tourism and identified 3 potential cruise terminal sites.

Presently, the City retained BEA to provide Phase II services, the Cruise Ship Staging Study – Event 411. The Event 411 study provides for an in-depth analysis of three sites as potential location of a Cruise Terminal and related docking/berthing facilities. During the course of this study, BEA has reviewed the environmental impacts, marine archeological impacts, navigational challenges, and compatibility issues with local, state and federal agency requirements and identified other potential challenges associated with each of the three sites.

Event 411 has been divided into two Phases; Phase I is limited to the investigation of navigation and waterside / marine conditions; and on the basis of such findings, BEA has ranked the three sites relative to their potential for a cruise terminal and related berthing facilities. Once the City has reviewed and approved the Phase I analysis and results for each of the three sites and selected one specific site for further consideration; upon receipt of Notice To Proceed from the City, BEA will proceed with services under Phase II of the Event 411 study. During Phase II, BEA will provide further evaluation of the selected site inclusive of the uplands areas, testing and development of Site Plans and related documents and exhibits to support efforts by the City to obtain a US Corps of Engineers approval and permits to develop and operate a cruise terminal and berthing facilities at the selected site on the Savannah River.

The attached Phase I report has taken into consideration and evaluated the waterside / marine conditions and general infrastructure existing at each of the three sites and provided a tabulation of ranking ranging from Most Desirable to Least Desirable. BEA’s report has been developed on the basis of information gathered and developed from meetings with and / or from information otherwise provided by the U.S. Army Corps of Engineers, Savannah Pilots Association, United States Coast Guard, U.S. Fish and Wildlife Service, National Marine Fisheries Service, Georgia Department of Natural Resources, Colonial Oil, and limited contact with Georgia Ports Authority, Georgia Archaeological Site File and Georgia’s Natural, Archaeological and Historic Resources GIS.

Each of the three sites under consideration presents both opportunities and challenges to the development and operation of the cruise terminal. The pros and cons for each of the three sites have been assessed by the BEA team members and ranked 1 for least desirable, 2 for less desirable and 3 for most desirable.

While the report does provide a ranking / score of each of the three sites under consideration, the salient challenge to any site considered along the Savannah River appears to be the need for cruise ships to use the Fig Island turning basin that can accommodate ships larger than 800 feet requiring them to travel under the Talmadge Memorial Bridge with a fixed air draft.
Also; another consideration that applies to all three sites is the Military Outload Division (MOD) use of the Ocean Terminal facilities and the Naval Vessel Protection Zone (NVPZ) in place and enforced by the US Coast Guard (CG) during the course of MOD operations. Due to the close proximity of the Silo / Atlantic Cement Tract to the Ocean Terminal site; should the Silo / Atlantic Cement Tract be selected for further consideration, the NVPZ restrictions may also apply while the cruise ship is docked.

Due to the channel width of the Savannah River and the location of the Ocean Terminal relative to the Fig Island turn basin, all cruise ships must pass through the NVPZ as they travel to the Fig Island turning basin. Thus, cruise ships using the proposal Savannah terminal may be subject to certain restrictions associated with the NVPD “intercept zone” during those periods of time the MOD is conducting operations at the Ocean Terminal facility. As cruise ship operations are tied to stringent schedules relative to land side tour operator requirements and vessel turn-around time, the NVPD restrictions must be taken into consideration into the operational requirements of the cruise vessel, the terminal and tour operators. While the CG did acknowledged that MOD use of the Ocean Terminal facilities is CURRENTLY infrequent, the CG cannot predict if frequency of MOD use will increase in the future.
Introduction
INTRODUCTION

In this next Phase I of the Savannah Cruise Feasibility Study – CRUISE SHIP STAGING AREA STUDY, The BEA team has assembled and analyzed available information related to three potential sites that were identified and reviewed with the City of Savannah during the preparation of the study. During the initial stage of this project start-up, the Study Team was advised by the City of Savannah that original Site B - The former Plant Riverside property owned by Georgia Power had been sold and that the new owners have advised that they are not interested to have their property included in the cruise terminal feasibility analysis. Subsequently, the City advised that the Study Team should include a different site to be considered in our study area and included in this study as Site B – Powell Dufferyn Tract.

The three alternative cruise terminal sites considered in this report include:

1) SITE A: SILO/ATLANTIC CEMENT TRACT
2) SITE B: POWELL DUFFERYN TRACT
3) SITE C: SAVANNAH RIVER LANDING TRACT

The Study Team in Phase 1 has in this report assembled and analyzed each the alternative sites’ for the following:

- Navigation and hydrographic information and data
- Preliminary dredge analysis
- Natural resources,
- Biological habitats,
- Underwater archeology

The report includes aerial photos, survey information and plats, zoning, governmental comprehensive plans, utility availability letters, utility maps, flood maps, accessibility assessment, and jurisdictional or municipal boundaries. Project Team members met with the relevant governmental officials to discuss their agencies regulations, and permitting requirements. The Study Team also met with other important stakeholder groups with valuable information required for the study analysis such as the Savannah River Pilots. We would like to acknowledge the and thank all the participants with whom we met and discussed the project in the course of our studies.
Alternative Sites’ Analysis
Location & Proximity to Major Highways

Level Of Service (LOS) rankings obtained from 2004 MPC traffic congestion study.
Site A: Silo / Atlantic Cement Tract

Site Area: +/- 21.5 Acres
Site A: Silo / Atlantic Cement Tract

Military Outload Division / MOD 100 Yard reaction zone per US Coast Guard DHS authority contained in 14 U.S.C. Par. 91 Naval Vessel Protection Zones within navigable waters of the United States.
SITE & INFRASTRUCTURE DATA:

**Project location:** Hutchinson Island, east side of the Talmadge Bridge, Chatham County, Georgia (Latitude 32.0823, Longitude -81.0877)

**Site Acreage:** ± 21.5 Acres. (It is assumed that only 10 – 15 Acres; subject to local parking requirements, are typically required for the development of a cruise terminal facility)

**Distance to Major Highway:** The distance to U.S. Highway 17; which has direct connection to Interstate 16, is approximately 1.2 miles.

**Water System:** There is an existing 16” water main that dead ends at the end of Hutchison Island Road. In order to provide service to the waterfront, a 12” watermain would need to be extended approximately 650 linear feet. Should this site be selected, costs associated with these improvements will be investigated further during the next Phase of the study.

**Sewer System:** There is an existing 10” gravity sewer main that dead ends at the end of Hutchison Island Road. In order to provide sewer service to the waterfront, a 6” to 8” "sewer gravity main would need to be extended approximately 650 linear feet. Depending on the flow volumes associated with the project downstream pump stations may need to be upgraded to handle the proposed flow volumes generated by the Cruise Ship and Cruise Terminal. Should this site be selected, costs associated with these improvements will be investigated further during the next Phase of the study.

**Electrical Service Availability:** 12 – 15 kV is typically required to service a cruise terminal development. GA Power does have 3 Phase - @ 25 kV overhead services available at this site. GA Power stated that unless the cruise terminal facility were to pull a very large load that required GA Power to re-conductor the existing overhead lines as may be necessary to serve the terminal transformer, GA Power does not foresee large charges to the city to serve electrical power to this location. Should this site be selected, costs associated with these improvements will be investigated further during the next Phase of the study.

1- NAVIGATION & HYROGRAPHIC INFORMATION

The Savannah Pilots Association (Pilots) report shoaling in the area of the Silo tract, and reference past issues with keeping it clean for barge use. The proposed use as cruise terminal may ameliorate shoaling in this area due to projected frequency (2x / week) use of cruise ship thrusters.

Pilots anticipate turning operations involving ships greater than 800 feet long would need to occur upriver in the Kings Island turning basin that currently accommodates vessels 1155 feet long.

Pilots anticipate a need for additional 100’ of mooring space forward and after of the docking vessel in order to efficiently maneuver cruise ship into mooring area. The Silo site appears to exhibit approximately 656 feet of river frontage. It appears additional land or waterfront access rights (riparian rights), adjacent
to the Silo property, may need to be acquired in order to accommodate the anticipated vessel length of 850 feet, and the additional 1,000 ft mooring length.

Pilots report they accompany all commercial vessels calling on the Savannah harbor area. They make recommendations for tug use when they feel it is necessary. Pilots report, vessel passage is on a first come first serve basis. Seasonality effects passage, such as in the spring when fog is common, limit vessel operations in the river.

CG reports that the regulations concerning LNG vessels could cause cruise ship delay in transit due to one of these LNG vessels transiting the area. Basically the regulations states that vessels can't pass or meet while the LNG vessel is underway. Furthermore, LNG vessels are tide restricted; therefore their window of operation is limited. These types of operational coordination requirements are common at most major ports.

2- WATER SIDE STRUCTURES

Existing in-water structure consists of 4 mooring structures each spaced approximately 125 feet apart. These structures are located approximately 50 feet from the shore and are connected by supported access ways that appear to be in good condition. There appears to be a conveyor system that was used for loading vessels directly from the silos. The in-water structures; in their as-is condition, cannot accommodate cruise ship berthing. Based on currently available data, it appears that new waterside mooring / berthing structures will have to be constructed.

3- PRELIMINARY DREDGE ANALYSIS

There is approximately 130 ft. from Federal Channel to the existing mooring structures. The berth length requirement is approximately 1000 ft. long and may require the acquisition of additional frontage (or a use agreement) from neighboring sites. To provide 34’ draft, approximately 34,800 cubic yards may need to be removed.

US Army Corps of Engineers (USACE) confirms that prior land use assessment will need to be defined to help evaluate potential source material / contributions to land side sediments and in-water potential dredge spoils.

One issue of concern for this site is the location of a dredging pipeline that is currently located in front of the mooring structure at this site. The Corps mentioned that the contractor could lower the pipeline or possible place it elsewhere if this site were chosen. Also, similar to the Savannah River Landing Site, and based upon USACE concerns, there may be contaminants in the soil from past use. Additionally, based on visual inspection, there may be an issue with potential shoreline wetlands / marsh fringe at this site. These issues will be investigated further during Phase II of this study should this site be selected.

USACE anticipates testing of marine sediments prior to any approved dredging operations. Use of any federal dredge spoil sites appears to be unlikely, so alternative dredge spoil management will be needed. If site is used, initial dredge and maintenance dredging will need to abide by the new draft dredging conditions document provided by USACE. It is anticipated that should the material be clean, the likelihood of gaining approval for initial and maintenance dredging is high.
It appears that unless no salt marsh fill impacts are needed, and that adequate river frontage is made available to accommodate the use, there is a high probability of obtaining a Section 10/404 permit for this site.

4- UP LANDS NATURAL RESOURCES

A review of the USFWS Chatham County list indicated that three (3) plant species as potentially occurring in Chatham County. Species identified to occupy habitats known to exist within Chatham County are listed in Table 1 of the HABITAT ASSESSMENT FOR THREATENED AND ENDANGERED SPECIES report, Appendix B. Potential impacts will have to be assessed during Phase II of the study; once a survey with tree information is available, should this site be selected.

5- MARINE BIOLOGICAL HABITATS

A review of the USFWS Chatham County list indicated that seventeen (17) animal species as potentially occurring in Chatham County. Species identified to occupy habitats known to exist within Chatham County are listed in Table 1 of the HABITAT ASSESSMENT FOR THREATENED AND ENDANGERED SPECIES report, Appendix B. Potential impacts will be further assessed during Phase II of the study should this site be selected. Although no listed species were observed during this study, due to the presence of potentially suitable habitat for the federally protected species, it cannot be guaranteed that listed species would not or could not use this site currently or in the future.

6- UNDERWATER ARCHEOLOGY

There is one submerged resource located within the Silo Tract (9CH742), which was recorded by Archaeological Research Associates, Inc. in 1984. This poorly preserved Twentieth Century wooden barge was recommended ineligible for inclusion in the NRHP (Wright 1984). The vessel is located along the south shore of Hutchinson Island approximately 150 meters southeast of the Talmadge Bridge, and is exposed during the low tide. U.S. Army Corps of Engineers, Savannah District has confirmed this site is not of underwater archeological concern. Based upon these findings, it does not appear further underwater investigations may be needed at this site.

7- OTHER ISSUES

The Silo / Atlantic Cement site has a total area of approximately 21.5 Acres and it is anticipated that a cruise terminal development would not require more than 10 – 15 Acres; subject to local parking requirements for the development of a cruise terminal facility. Therefore, the remainder of the site offers potential for ancillary mix-use development to serve cruise passengers and the general public.

Refueling at this site will likely result in the bunker barge potentially extending into the federal channel. CE prefers this not to happen, but if necessary, this activity would need to be part of the permit request and reviewed appropriately. Contacts with Colonial Oil, the primary refueling provider within the river, reveals that bunker barges are often extending into the federal channel and they coordinate these operations directly with the Savannah Pilots Association to address navigation, scheduling, as appropriate and necessary.

The Military Outload Division (MOD) uses the Ocean Terminal site (Blue area) to load / offload military equipment to and from vessels. During those periods of time the MOD is conducting its operations at Ocean Terminal, there is a Naval Vessel Protection Zone (NVPZ) in place that is layered for protection. The first 100 yards are considered the “reaction zone”, meaning nobody is supposed to be within that area. The second layer of protection is an area is
measured 500 yards from the bow and stern of the vessel, considered the “intercept zone”.

When any type of vessel enters this area, a US Coast Guard (CG) security unit greets, screens, then escorts vessels out of the area.

The Savannah River is less than 300 yards wide; thus, the Silo / Atlantic Cement Tract falls within the second layer of the NVPV, the “intercept zone”. Should this site be used for a cruise terminal, cruise ships calling at this facility; while the MOD is in operation at Ocean Terminal, are subject to restrictions associated with the NVPD “intercept zone” restriction.

CG did acknowledge that MOD use of the Ocean Terminal is CURRENTLY infrequent, but the CG cannot predict if frequency of use will increase in the future. CG indicated that normal MOD operations typically use the Joint Base Charleston - Weapons Station.
Site B: Powell Dufferyn Tract

Site Area: +/- 14.5 Acres
Site B: Powell Dufferyn Tract

Military Outload Division / MOD 100 Yard reaction zone per US Coast Guard DHS authority contained in 14 U.S.C. Par. 91 Naval Vessel Protection Zones within navigable waters of the United States.
Site B – Powell Dufferyn Tract

SITE & INFRASTRUCTURE DATA:

**Project location:** Hutchinson Island, east side of the Talmadge Bridge, Chatham County, Georgia (Latitude 32.0823, Longitude -81.0877)

**Site Acreage:** ± 14.5 Acres. (It is assumed that only 10 – 15 Acres; subject to local parking requirements, are typically required for the development of a cruise terminal facility)

**Distance to Major Highway:** The distance to Highway 17 which has a direct connection to Interstate 16 is approximately 1.4 miles.

**Water System:** There is an existing 16” water main stubbed out at the intersection of Wayne Shackleford Parkway and The Industrial Co. Road. In order to provide service to the waterfront, a 12” water main would need to be extended approximately 2,300 linear feet. Should this site be selected, costs associated with these improvements will be investigated further during the next Phase of the study.

**Sewer System:** There is an existing stubbed out 8” force main at the intersection of Wayne Shackleford Parkway and The Industrial Co. Road. In order to provide service to the waterfront, a pump station and approximately 2,300 linear feet of force main would need to be installed. Depending on the flow volumes associated with the project downstream pump stations may need to be upgraded to handle the proposed flow volumes generated by the Cruise Ship and Cruise Terminal. Should this site be selected, costs associated with these improvements will be investigated further during the next Phase of the study.

**Electrical Service Availability:** 12 – 15 kV is typically required to service a cruise terminal development. GA Power has 3 phase overhead available now at this site. GA Power has stated they will have to do some maintenance at this location to convert about 7-8 spans of overhead wire from 4 KV voltage to 25 kV voltage. Since GA Power is not sure how far off this potential job is, they are not sure if any of these conversion costs will be associated with the terminal or not. GA Power may convert these lines before the terminal ever becomes a confirmed project. Should this site be selected, costs associated with improvements required by GA Power will be investigated further during the next Phase of the study.

**1- NAVIGATION & HYROGRAPHIC INFORMATION**

Pilots report shoaling in this area, and reference past issues with keeping it clean for barge use. The proposed use as cruise terminal may ameliorate shoaling in this area due to proposed frequent (2x / week) use of cruise ship thrusters.

Also of particular concern to the Pilots, due to the site’s location within a turn in the river, there is potential for a “suction” effect on vessels that are moored in this area caused by passing vessels making the turn.
Pilots anticipate turning operations involving ships greater than 800 feet long would need to occur upriver in the Kings Island turning basin that currently accommodates vessels 1155 feet long.

Pilots report they accompany all commercial vessels calling on the Savannah harbor area. They make recommendations for tug use when they feel it is necessary. Pilots report, vessel passage is on a first come first serve basis. Seasonality effects passage, such as in the spring when fog is common, limit vessel operations in the river.

US Coast Guard (CG) reports that the regulations concerning LNG vessels could cause cruise ship delay in transit due to one of these LNG vessels transiting the area. The regulations states that vessels can't pass or meet while the LNG vessel is underway. Furthermore, LNG vessels are tide restricted; therefore their window of operation is limited. These types of operational coordination requirements are common at most major ports.

2- WATER SIDE STRUCTURES

Existing in-water structure consists of a center berthing area with 4 mooring structures (2 on each side). The two inner mooring structures are connected to the the berthing area with supported access. The two outer mooring structures appear to have been connected at one time by supported access but are no longer connected. Overall distance between outermost structures is approximately 825 linear feet. The structure appears to extend across the adjacent property boundaries according to riparian rights for the neighboring property, see aerial photo insert. Subject to further detailed engineering study, they may be able to be integrated (or not) into new berth structures to be constructed to accommodate cruise ships.

The Powell Duffryn site appears to exhibit approximately 602 feet of river frontage. Pilots anticipate a need for additional 199 Ft. mooring space forward and aft of the docking vessel in order to efficiently maneuver cruise ship into mooring area. It appears additional land, adjacent to this property, would need to be acquired or otherwise agreed to in order to accommodate the anticipated minimum vessel length of 850 feet, and the additional mooring length suggested by the Pilots. Based on current data, new mooring and berthing structures will have to be constructed.

3- PRELIMINARY DREDGE ANALYSIS

Distance of approximately 120 ft. from Federal Channel to existing mooring structures, approximately 1000 ft. long (with acquired river frontage from neighboring site(s) – in order to provide 34’ draft, approximately 24,300 cubic yards may need to be removed. The dredge quantity expressed is based on very limited survey data available for this site and remains subject to further review. This site is located on an inside curve of the river which is reported to experience excessive shoaling / silting. The excessive shoaling / silting may also be a concern for maintenance dredging.

US Army Corps of Engineers (USACE) confirms that prior land use assessment will need to be defined to help evaluate potential source material / contributions to land side sediments and in-water potential dredge spoils. Note adjacent land use to west was once a tank farm. As a result, and given the current unknown history of this site, sufficient time will be needed to evaluate this area.
USACE anticipates testing of marine sediments prior to any approved dredging operations. Use of any federal dredge spoil sites appears to be unlikely, so alternative dredge spoil management will be needed.

Should this site be selected, initial dredge and maintenance dredging will need to abide by the new draft dredging conditions document provided by USACE, Appendix A, Item A-1). It is anticipated that if the material results clean, the likelihood of gaining approval for initial and maintenance dredging is high.

It appears that unless no salt marsh fill impacts are needed, and that adequate river frontage is made available to accommodate the use, there is a moderate probability of obtaining a Section 10/404 permit for this site. Use of this site has Savannah Pilot Association concerns of the potential suction forces / currents at the berth due to the bend of the channel at the location of the site on the river with navigation which will be considered by USACE during the review process (from both directions).

4- UPLANDS NATURAL RESOURCES
A review of the USFWS Chatham County list indicated that three (3) plant species as potentially occurring in Chatham County. Species identified to occupy habitats known to exist within Chatham County are listed in Table 1 of the HABITAT ASSESSMENT FOR THREATENED AND ENDANGERED SPECIES report, Appendix B. Potential impacts will have to be assessed during Phase II of the study; once a survey with tree information is available, should this site be selected.

5- MARINE BIOLOGICAL HABITATS
A review of the USFWS Chatham County list indicated that seventeen (17) animal species as potentially occurring in Chatham County. Species identified to occupy habitats known to exist within Chatham County are listed in Table 1 of the HABITAT ASSESSMENT FOR THREATENED AND ENDANGERED SPECIES report, Appendix B. Potential impacts will be further assessed during Phase II of the study should this site be selected. Although no listed species were observed during this study, due to the presence of potentially suitable habitat for the federally protected species, it cannot be guaranteed that listed species would not or could not use this site currently or in the future.

6- UNDERWATER ARCHEOLOGY
The Powell Duffryn Tract, located east of the Silo Tract on Hutchinson Island was surveyed in 1984 for underwater archeological resources, and no sites were identified within the area of proposed impacts. USACE has confirmed this site is not of underwater archeological concern. Based upon these findings, it does not appear further underwater investigations may be needed at this site.

7- OTHER ISSUES
The Powell Duffryn site has a total area of approximately 14.5 Acres; and it is anticipated that a cruise terminal development would not require more than 10 – 15 Acres; subject to local parking requirements for the development of a cruise terminal facility. Therefore, if development can occur within the 10 Acre threshold, then the remainder of the site offers potential for certain ancillary mix-use development to serve cruise passengers and the general public.

Refueling at this site will likely result in the bunker barge extending into the federal channel. USACE prefers this not to happen, but if necessary, this activity would need to be part of the permit request and reviewed appropriately. Contact with Colonial Oil, the primary refueling provider within the river, reveals that bunker barges are often extending into the federal channel and they coordinate these operations.
directly with the Savannah Pilots Association to address navigation, scheduling, as appropriate and necessary.

The Military Outload Division (MOD) uses the Ocean Terminal site (in Blue) to load / offload military equipment to and from vessels. During those periods of time the MOD is conducting its operations at Ocean Terminal, there is a Naval Vessel Protection Zone (NVPZ) in place that is layered for protection. The first 100 yards are considered the “reaction zone”, meaning nobody is supposed to be within that area. The second layer of protection is an area that is measured 500 yards from the bow and stern of the vessel and is considered the “intercept zone”. When any type of vessel enters the “intercept zone”, a US Coast Guard (CG) security unit greets, screens, then escorts vessels out of the area.

Should the Powell Dufferyn site be used for a cruise terminal, cruise ships calling at this facility will be using the Fig Island turning basin. Thus, while the MOD is in operation at Ocean Terminal, cruise ships sailing upstream to access the Fig Island turning basin may be subject to the NVPD 100 and 500 yard zone restrictions.

CG did acknowledge that MOD use of the Ocean Terminal is CURRENTLY infrequent, but the CG cannot predict if frequency of use will increase in the future. CG indicated that normal MOD operations typically use the Joint Base Charleston - Weapons Station.
Site C: Savannah River Landing Tract

Site Area: +/- 55 Acres
Site C: Savannah River Landing Tract

Savannah River Landing Tract

Channel Width

1,000' Berth

+/- 500' Channel Width

+/- 500' Channel Width

+/- 800' Channel Width
Site C – Savannah River Landing Tract

SITE & INFRASTRUCTURE DATA:

**Project location:** East of the Talmadge Bridge, south side of the Savannah River, in the vicinity of the Marriott Hotel, near downtown Savannah, Chatham County, Georgia. (Latitude 32.0823, Longitude -81.0877).

**Site Acreage:** ± 55 Acres, includes entire site and existing road right of ways. (It is assumed that only 10 – 15 Acres; subject to local parking requirements, are typically required for the development of a cruise terminal facility)

**Distance to Major Highway:** The distance to The Truman Parkway is 0.6 miles and distance to Interstate 16 is approximately 2.0 miles from the Savannah River Landing site.

**Water System:** There is an existing 12” water main within the Savannah River Landing site (SRL); however, the existing line does not extend up to the Riverwall where the cruise ship would be docking. This would require the existing waterline to be extended approximately 1,000 linear feet to serve the cruise terminal and docking facility. The City is currently planning the extension of a 16” water main along the western property boundary of Bilbo Canal and it will connect the 24” IND water main to the existing 12” main in SRL. Should this site be selected, costs associated with these improvements will be investigated further during the next Phase of the study.

**Sewer System:** There is an existing sanitary sewer collection system within SRL. The system was never completed or accepted by the City of Savannah. There is an existing punch list of items that has yet to be completed prior to the City accepting the system. The installation of the final segment of sewer to connect SRL’s system to the City’s system on President Street is part of the recently bid President Street roadway and water and sewer relocation project. Should this site be selected, costs associated with these improvements will be investigated further during the next Phase of the study.

**Electrical Service availability:** 12 – 15 kV is typically required to service a cruise terminal development. At this time, GA Power does not have underground distribution lines existing on this property – only customer owned underground manhole and duct system exists. GA Power indicated it would be a complex process getting power to a terminal on this site; before GA Power can assess costs, GA Power must inspect the condition of manholes and existing infrastructure on the site. Based on the information available at this time, GA Power has stated this site would have the largest projected costs of the three (3) under consideration. GA Power stated without knowing the size of the terminal and the estimated yearly revenue, they are not sure how much of these potential costs would be offset by the terminal’s revenue. Should this site be selected, costs associated with improvements required by GA Power will be investigated further during the next Phase of the study. An alternative would be to install / provide the power through the private site system. Should this site be selected for further consideration, the benefits of this site for GA Power may be such that peak hour reductions and other power consumption strategies could be implemented during Phase II of the study.
Savannah Cruise Ship Staging Study – Event 411

1- NAVIGATION & HYROGRAPHIC INFORMATION

The Pilots expressed a concern about steering large vessels in the area of the Savannah River Landing site due to the curve in the river. However, they preferred this site over the others due to less surrounding berthing facilities which makes maneuvering large vessels a little easier in this area. Subject to further engineering study, it appears that the location of a new cruise berth may be best located at the eastern portion of the site’s waterfront.

Pilots anticipate turning operations involving ships greater than 800 feet long would need to occur upriver in the Kings Island turning basin that currently accommodates vessels 1155 feet long.

Pilots report they accompany all commercial vessels calling on the Savannah harbor area. They make recommendations for tug use when they feel it is necessary. Pilots report, vessel passage is on a first come first serve basis. Seasonality effects passage, such as in the spring when fog is common, limit vessel operations in the river.

CG reports that the regulations concerning LNG vessels could cause cruise ship delay in transit due to one of these LNG vessels transiting the area. Basically the regulations states that vessels can’t pass or meet while the LNG vessel is underway. Furthermore, LNG vessels are tide restricted; therefore their window of operation is limited. These types of operational coordination requirements are common at most major ports.

2- WATER SIDE STRUCTURES

Existing in-water structure consists of approximately 1,984 linear feet of bulkhead and riverwalk. Starting at the west end of the Riverwalk, and moving east for +/- 1,500 linear feet, the design depth of the existing bulkhead is to elevation -34 feet. The remaining +/- 484 linear feet of existing bulkhead along the east end of the Riverwalk has a design depth to elevation -52 feet. The existing Riverwalk along the Savannah River Landing site is concrete pile supported pedestrian walkway with a landside steel sheet pile bulkhead. There are no mooring structures or mooring hardware installed along the Riverwalk. On the west end of the Riverwalk, there is a floating dock system limited to providing mooring facilities for recreational vessels. The existing Riverwalk and floating dock facilities are not suitable for berthing and servicing cruise ships and would require structural enhancements such as submerged knee wall or other mooring dolphins and fender systems will have to be added; but existing infrastructure can be re-used.

3- PRELIMINARY DREDGE ANALYSIS

There are approximately 150 ft. from Federal Channel to existing structure (from narrowest point), approximately 1200 ft. long – in order to provide 34’ draft, approximately 38,500 cubic yards may need to be removed. The dredge quantity expressed is based on very limited survey data available for this site and remains subject to further review.

It appears, from information on the records, that Sligh Environmental Consultants acquired a Section 10 permit from the US Army Corps of Engineers (USACE) to fill wetlands / marsh along the river for the City
of Savannah River Street Riverwalk Extension project in 2007. Based upon aerial review, and discussions with the USACE, the Riverwalk project has been extended.

USACE stated that a review of the prior land uses will need to be performed in order to determine if a prior land use had the potential to contribute to land side and/or in-water soil contamination. Based upon this assessment, USACE will define what level of dredge spoil testing will be needed prior to approving any dredge operations. The results of this testing will also affect the handling requirements associated with the dredge spoils. Use of any federal dredge spoil sites appears to be unlikely, so alternative dredge spoil management will be needed.

USACE anticipates testing of marine sediments prior to any approved dredging operations. Use of any federal dredge spoil sites appears to be unlikely, so alternative dredge spoil management will be needed.

Should this site be selected, initial dredge and maintenance dredging will need to abide by the new draft dredging conditions document provided by USACE, Appendix A, Item A-1. It is anticipated that should the material result clean, the likelihood of obtaining approval for initial and maintenance dredging is high.

The Savannah River Landing site does provide adequate river frontage to accommodate the berthing requirements associated with cruise terminal use. Based upon the newly constructed Riverwalk and other waterside improvements at this site, there is a high probability of obtaining a Section 10/404 permit for this site as it applies to a proposed cruise terminal. Although this site has been permitted as a mixed use project, use of this site or portion of this site as a cruise terminal would need to be re-evaluated in a new permitting process. However, issuance of prior permits, and implementation of work along the river frontage have resulted in a site that may be much easier to redevelop now than it would be should these improvements not exist.

4- UPLANDS NATURAL RESOURCES

A review of the USFWS Chatham County list indicated that three (3) plant species as potentially occurring in Chatham County. Species identified to occupy habitats known to exist within Chatham County are listed in Table 1 of the HABITAT ASSESSMENT FOR THREATENED AND ENDANGERED SPECIES report, Appendix B. Potential impacts will have to be assessed during Phase II of the study; once a survey with tree information is available, should this site be selected.

5- MARINE BIOLOGICAL HABITATS

A review of the USFWS Chatham County list indicated that seventeen (17) animal species as potentially occurring in Chatham County. Species identified to occupy habitats known to exist within Chatham County are listed in Table 1 of the HABITAT ASSESSMENT FOR THREATENED AND ENDANGERED SPECIES report, Appendix B. Potential impacts will be further assessed during Phase II of the study should this site be selected. Although no listed species were observed during this study, due to the presence of potentially suitable habitat for the federally protected species, it cannot be guaranteed that listed species would not or could not use this site currently or in the future.

6- UNDERWATER ARCHEOLOGY

Sligh Environmental Consultants (SEC) acquired a permit from USACE to fill wetlands / marsh along the river for the City of Savannah River Street Riverwalk Extension project in 2007. Part of the work undertaken at that time included an archaeological survey of the in-water and land side of the property. There were historic resources encountered and at least some portion of that work has been completed.

Extensive work was conducted within the Savannah River Landing parcel as part of the Savannah Riverwalk Extension. A Programmatic Agreement between the City of Savannah, The Corps of
Engineers, and the Georgia State Historic Preservation Officer (Georgia SHPO), was signed in January 2007 detailing the required cultural resource studies for the Riverwalk project. Those studies included a Reconnaissance Survey, a Phase I Marine Cultural Resource Study, A Phase I Terrestrial Archaeological Study, Phase II excavations of shipwreck remains, and a Data Recovery Mitigation at Site 9CH1160 (the Eastern Wharves Site, presently the Savannah River Landing site).

This site is eligible for the National Register and contains multiple components, including approximately 2000 feet of submerged 19th century wharves along the river front. The brick and wood remains were mapped and recorded by Brockington, but submittal of the Final Mitigation Report is pending. The mitigation was approved by Army Corps of Engineers Archaeologists and the Georgia SHPO for the purpose of building the Riverwalk. This proposed project area is identified as “archaeologically sensitive” due to the presence of those archaeological resources.

The Georgia SHPO has indicated it does not have several of the documents that would verify the work completed on site by SEC. Furthermore, during the USACE meeting, the USACE archaeologist verbalized some displeasure with the previous work, but could not provide details. That said, should this site proceed to the next step, additional clarity will need to be acquired regarding prior archeological work at this site. This is relative to the selection of this site because some of the historic resources encountered; which includes remnants of a wharf structure along with that of a ship wreck. It is not clear at this time if those resources still partially remain and were required to be preserved in place or not. The status of these resources remains important to the cruise terminal project due to the need to dredge to accommodate a cruise vessel. Further work on additional components at 9CH1160 may be required in order to accommodate a cruise terminal at this site.

7- OTHER ISSUES

The Savannah River Landing total site area consists of approximately 55 Acres inclusive of road right of ways. It is anticipated that a cruise terminal development will not require more than 10 – 15 Acres; subject to local parking requirements, are typically required for the development of a cruise terminal facility. Therefore, the remainder of the Savannah River Landing site offers potential for ancillary mix-use development to serve cruise passengers and the general public. Locating the development of the cruise terminal and berthing facilities towards the north-east quadrant of the site, adjacent to the Savannah River, will allow remaining acreage of this site to retain the approved Civic Master Plan for the East Riverfront.

Direct access for all bus and truck traffic may be achieved by routing such traffic to a roadway running north to south along the east boundary of the property to access President Street as well as Truman Pky.

Cruise vessels refueling at this site may accommodate the bunker without extending into the federal channel. This site currently has linear distance from the existing wharf to the federal channel but facility design will ultimately dictate these distances. As mentioned other two sites, USACE prefers for the bunker barge not to extend the federal channel therefore this site provides a better alternative regard. Contact with Colonial Oil, the primary refueling provider the river, reveals that bunker barges are often extending into the
The Military Outload Division (MOD) uses the Ocean Terminal site (Blue area) to load / offload military equipment to and from vessels. During those periods of time the MOD is conducting its operations at Ocean Terminal, there is a Naval Vessel Protection Zone (NVPZ) in place that is layered for protection. The first 100 yards are considered the “reaction zone”, meaning nobody is supposed to be within that area. The second layer of protection is an area that is measured 500 yards from the bow and stern of the vessel and is considered the “intercept zone”. When any type of vessel enters the “intercept zone”, a US Coast Guard (CG) security unit greets, screens, then escorts vessels out of the area.

Should the Savannah River Landing site be used for a cruise terminal, cruise ships calling at this facility will be using the Fig Island turning basin. Thus, while the MOD is in operation at Ocean Terminal, cruise ships sailing upstream to access the Fig Island turning basin may be subject to the NVPD 100 and 500 yard zone restrictions.

CG did acknowledge that MOD use of the Ocean Terminal is CURRENTLY infrequent, but the CG cannot predict if frequency of use will increase in the future. CG indicated that normal MOD operations typically use the Joint Base Charleston - Weapons Station.
# Site Ranking Score Card

**Savannah Cruise Ship Staging Study – Event 411**
**Tract Rankings**

<table>
<thead>
<tr>
<th>Location Considerations</th>
<th>Site A</th>
<th>Site B</th>
<th>Site C</th>
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<tr>
<td>Site Acreage</td>
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<tr>
<td>Navigational Access</td>
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<td>2</td>
<td>3</td>
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<tr>
<td>Water Side Structures *</td>
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<tr>
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<td>Water System Availability</td>
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<tr>
<td>Electrical System Availability</td>
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<tr>
<td>Ancillary Development Opportunities</td>
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**Site Development Potential:**

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<th>Site B</th>
<th>Site C</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>31</td>
<td>31</td>
<td>38</td>
</tr>
</tbody>
</table>

(Most Desirable - 3) (Less Desirable - 2) (Least Desirable - 1)

* Weighted double as large capital costs are typically associated with the permitting and construction of waterside structures.
Conclusions and Recommendations
Conclusions and Recommendations

The BEA team collected, assembled and analyzed available information related to three potential sites that were identified and reviewed with the City of Savannah during the preparation of the study. The three alternative cruise terminal sites presented in the report include:

- SITE A: SILO/ATLANTIC CEMENT TRACT
- SITE B: POWELL DUFFERYN TRACT
- SITE C: SAVANNAH RIVER LANDING TRACT

This Phase One Report the study provides an in-depth analysis and summary of critical information relevant to the potential of cruise terminal development at each of the study sites.

The study team in this Phase 1 study scope of work assembled and analyzed each the three alternative sites’ for the following:

- Navigation and hydrographic information and data
- Preliminary dredge analysis
- Natural resources,
- Biological habitats,
- Underwater archeology

The study identifies that each of three sites have issues and concerns that would need to be addressed for the site should it be chosen as the preferred site by the City of Savannah to move forward to the next stage of the pre-development/permitting stage. While each site’s issues and concerns are identified in the Alternative’s Sites’ Analysis section of the report, none of the three sites had identified a highly significant negative factor that the study team considered as a “fatal flaw” that would have effectively eliminated that site from further consideration. It is noted that this analysis is limited to the critical factors identified and studied for the alternative sites.

To best quantify the comparative factors and data differences between the sites, the study team utilized a numerical ranking system and applied their professional judgment to recommend a preferred ranking for the three sites. The ranking of the sites is presented in the Site Ranking Score Card section of the report.
Using this method for ranking the different sites, the top ranking site recommended as the preferred site for further analysis is the SAVANNAH RIVER LANDING (SRL) TRACT. This site ranked highest in most categories compared with the other sites. Particularly of note is the potential for significant development cost savings in the category of the required marine (water side) berthing structures to adequately provide for the docking of a cruise ship vessel at the terminal location. This potential cost saving may be affected by the final cost associated with the acquisition of the property in comparison with the values of the other sites. Property cost acquisition analysis is not part of the scope of this study.

We would like to point out two key technical issues that remain to be resolved with the SRL site. Firstly, we were informed that there is a private conduit and manhole electrical distribution systems which are yet to be accepted by GA Power and conductors are yet to be pulled. Therefore the question is how much will it cost for GA Power to service the cruise terminal. Secondly, should the SRL site be selected for further study, the City and the current owner must reach an understanding so that our team may have full access to all work performed to permit and develop the existing river walk and uplands improvements.

While the two remaining sites have differing issues of critical concern to developing a cruise terminal facility, the other sites were very similar in the final ranking of their potential so are considered as tied for second in our ranking.
Appendix A
Due Diligence Report

Information on all 3 sites regarding meetings with U.S. Corps of Engineers and U.S. Coast Guard
DUE DILIGENCE

Savannah Cruise Ship Staging Areas
Chatham County, Georgia

Prepared for:

[City of Savannah logo]

Prepared by:

[Environmental Services, Inc. logo]
131 Hutchinson Island Road, Suite 100
PO Box 2383
Savannah, Georgia 31402
Note:

ESI has prepared the following information for use by the project team in final reporting to the City of Savannah. Because BEA is responsible for final report preparation, the information below addresses each site individually. You will find that portions of this information are duplicative, while other portions are very specific to a given site. Without having a report format, we addressed each site individually as it pertains to our investigations and data collection.

The information below follows coordination with the U.S. Army Corps of Engineers, Savannah Pilots Association, United States Coast Guard, U.S. Fish and Wildlife Service, National Marine Fisheries Service, Georgia Department of Natural Resources, Colonial Oil, and limited contact with Georgia Ports Authority.

Please note that Georgia Department of Natural Resources discussion provided on Page 9 is not specific to any one site, but instead relative to the Savannah River. Therefore, the information contained in this section remains consistent to all three site locations.
**Silo Site**

Background: ESI has previously completed wetland delineation work, and Corps of Engineers (CE) nationwide permitting on this site. Previous work has expired, but represents good base information for planning purposes. This base information was provided to BEA digitally earlier.

**CE Meeting: (2.15.2013)**

No apparent archeology issues associated with in-water component. Refer to ESI underwater archaeology review.

CE confirms that prior land use assessment will need to be defined to help evaluate potential source material / contributions to land side sediments and in-water potential dredge spoils. CE anticipates testing of marine sediments prior to any approved dredging operations. Use of any federal dredge spoil sites appears to be unlikely, so alternative dredge spoil management will be needed.

If site is used, initial dredge and maintenance dredging will need to abide by the new draft dredging conditions document provided by CE (see attached). ESI anticipates that if the material is clean, the likelihood of gaining approval for initial and maintenance dredging is high.

Refueling at this site will likely result in the bunker barge extending into the federal channel. CE prefers this not to happen, but if necessary, this activity would need to be part of the permit request and reviewed appropriately. Contact with Colonial Oil, the primary refueling provider within the river, reveals that bunker barges are often extending into the federal channel and they coordinate these operations directly with the Savannah Pilots Association to address navigation, scheduling, as appropriate and necessary.

As the project scope only addresses in-water project details, the CE wanted to and spoke about the “single and complete” project, which includes the land side of the development as well. The project team members reiterated that our discussion was currently limited to the in-water activities.

In our opinion, and assuming no salt marsh fill impacts are needed, there is a high probability of obtaining a Section 10/404 permit for this site, if adequate river frontage is available to accommodate the use.

**Savannah Pilots Association Meeting: (2.14.2013)**

Please refer to notes provided by Coastline Consulting Services, Inc. for additional information.

Silo site ranks #2 of the three sites discussed.

Pilots report shoaling in this area, and reference past issues with keeping it clean for barge use. The proposed use as cruise terminal may ameliorate shoaling in this area due to frequent (2x / week) use of cruise ship thrusters.

Pilots anticipate turning operations involving ships greater than 800 feet long would need to occur upriver in the Kings Island turning basin that currently accommodates vessels 1155 feet long.
Pilots anticipate a need for additional 100’ of mooring space forward and after of the docking vessel in order to efficiently maneuver cruise ship into mooring area. The Silo site appears to exhibit approximately 600 feet of river frontage. It appears additional land, adjacent to the Silo property, may need to be acquired in order to accommodate the anticipated vessel length of 850 feet, and the additional mooring length suggested by the Pilots.

Pilots report they accompany all commercial vessels calling on the Savannah harbor area. They make recommendations for tug use when they feel it is necessary.

Pilots report, vessel passage is on a first come first serve basis. Seasonality effects passage, such as in the spring when fog is common, limit vessel operations in the river.

**U.S. Coast Guard Meeting: (3.12.2013)**

CG reports there is an average of 14 commercial vessels moving within the Savannah River per day.

CG members are checking with additional contacts to determine if the location of the Silo site, in proximity to the Ocean Terminal site located southwest and often used by military vessels, correlates to significant security concerns. We await this information and will provide it upon receipt.

CG reports that commercial vessels normally use 2 tugs to aid in Kings Island turning basin operations, even the smaller cruise vessels currently calling on Savannah.

CG anticipates that the Pilots will suggest use of tugs through river passage due to significant vessel traffic, and extreme tidal ranges.

CG reports that the regulations concerning LNG vessels could cause cruise ship delay in transit due to one of these LNG vessels transiting the area. Basically the regulations states that vessels can't pass or meet while the LNG vessel is underway. Furthermore, LNG vessels are tide restricted; therefore their window of operation is limited. *(See attached § 165.756 Regulated Navigation Area; Savannah River, Georgia; Pages 737-740)*

CG will be involved in all aspects of the project as it proceeds. This will include normal security, safety and quick response plans that would be normal to cruise terminal operations.

**Powell Duffryn Site**

Background: ESI has not completed any previous work on this site. Thomas & Hutton has provided limited site information pertaining to site topography and potential wetland information. It appears, based upon this information, that some prior wetland fill, primarily in the northern one-third of the site, has been filled. The information provided by T&H appears to represent good base information for planning purposes. This base information was provided to BEA digitally earlier. Additional observations of this area reveal a tidal wetland system extending from the southwest to the north side of the parcel. This area has the potential to limit access to the site without additional wetland and salt marsh filling. Acquisition of permits involving salt marsh is challenging and should be considered early in the site feasibility process.
CE Meeting: (2.15.2013)

No apparent archeology issues associated with in-water component. Refer to ESI underwater archaeology review.

CE confirms that prior land use assessment will need to be defined to help evaluate potential source material / contributions to land side sediments and in-water potential dredge spoils. Note adjacent land use to west was once a tank farm. As a result, and given the current unknown history of this site, sufficient time will be needed to evaluate this area.

CE anticipates testing of marine sediments prior to any approved dredging operations. Use of any federal dredge spoil sites appears to be unlikely, so alternative dredge spoil management will be needed.

If site is used, initial dredge and maintenance dredging will need to abide by the new draft dredging conditions document provided by CE (see attached). ESI anticipates that if the material is clean, the likelihood of gaining approval for initial and maintenance dredging is high.

Refueling at this site will likely result in the bunker barge extending into the federal channel. CE prefers this not to happen, but if necessary, this activity would need to be part of the permit request and reviewed appropriately. Contact with Colonial Oil, the primary refueling provider within the river, reveals that bunker barges are often extending into the federal channel and they coordinate these operations directly with the Savannah Pilots Association to address navigation, scheduling, as appropriate and necessary.

As the project scope only addresses in-water project details, the CE wanted to and spoke about the “single and complete” project, which includes the land side of the development as well. The project team members reiterated that our discussion was currently limited to the in-water activities.

In our opinion, and assuming no salt marsh fill impacts are needed, there is a moderate probability of obtaining a Section 10/404 permit for this this site, if adequate river frontage is available to accommodate the use. Use of this site has Savannah Pilot Association concerns with navigation which will be considered by CE during the review process.

Savannah Pilots Association Meeting: (2.14.2013)

Please refer to notes provided by Coastline Consulting Services, Inc. for additional information.

Powell Duffryn site ranks #3 of the three sites discussed. This is primarily due to the site location within a turn in the river and the potential for a “suction” effect on vessels in this area caused by passing vessels making the turn.

Pilots report shoaling in this area, and reference past issues with keeping it clean for barge use. The proposed use as cruise terminal may ameliorate shoaling in this area due to frequent (2x / week) use of cruise ship thrusters.

Pilots anticipate turning operations involving ships greater than 800 feet long would need to occur upriver in the Kings Island turning basin that currently accommodates vessels 1155 feet long.
Pilots anticipate a need for additional 100’ of mooring space forward and aft of the docking vessel in order to efficiently maneuver cruise ship into mooring area. The Powell Duffryn site appears to exhibit approximately 720 feet of river frontage. It appears additional land, adjacent to this property, would need to be acquired or otherwise agreed to be obstructed by the cruise vessel in order to accommodate the anticipated vessel length of 850 feet, and the additional mooring length suggested by the Pilots. Survey data provided by T&H for this site has been provided to BEA earlier.

Pilots report they accompany all commercial vessels calling on the Savannah harbor area. They make recommendations for tug use when they feel it is necessary.

Pilots report, vessel passage is on a first come first serve basis. Seasonality effects passage, such as in the spring when fog is common, limit vessel operations in the river.

**U.S. Coast Guard Meeting: (3.12.2013)**

CG reports there is an average of 14 commercial vessels moving within the Savannah River per day.

CG reports that commercial vessels normally use 2 tugs to aid in Kings Island turning basin operations, even the smaller cruise vessels currently calling on Savannah.

CG anticipates that the Pilots will suggest use of tugs through river passage due to significant vessel traffic, and extreme tidal ranges.

CG reports that the regulations concerning LNG vessels could cause cruise ship delay in transit due to one of these LNG vessels transiting the area. Basically the regulations states that vessels can't pass or meet while the LNG vessel is underway. Furthermore, LNG vessels are tide restricted; therefore, their window of operation is limited. (See attached § 165.756 Regulated Navigation Area; Savannah River, Georgia; Pages 737-740)

CG will be involved in all aspects of the project as it proceeds. This will include normal security, safety and quick response plans that would be normal to cruise terminal operations. The CG did not specify any fatal flaws pertaining to use of this site.

**Savannah River Landing Site**

**Background:** ESI has not completed any previous work on this site. Thomas & Hutton was authorized by the owner’s representative to provide limited in-water site information pertaining to prior work completed. It appears, based upon this information, that Sligh Environmental Consultants acquired a Section 10 permit from the Corps of Engineers to fill wetlands/marsh along the river for the City of Savannah River Street Riverwalk Extension project in 2007. Based upon aerial review, and discussions with the CE, the riverwalk project has been extended. Part of this work included an archaeological survey of the in-water and land side of the property. There were historic resources encountered and at least some portion of that work has been completed. The state does not have several of the documents that would verify the work completed on site which is a little unusual. Furthermore, during the CE meeting, the CE archaeologist verbalized some displeasure with the previous work, but could not provide
details. That said, if this site proceeds to the next step, additional clarity will need to be acquired regarding this prior work. This is relative to this discussion because some of the historic resources encountered were a wharf structure along the river and ship wreck. It is not clear at this time if those resources still partially remain and were required to be preserved in place or not. The City of Savannah entered into a three party Programmatic Agreement with CE, and the State Historic Preservation Officer; therefore, they may be in position to verify these questions directly. The status of these resources remains important to the project due to the need to dredge to accommodate a cruise vessel. Additionally, the structural integrity of this area has caused previous issues with the construction of the aforementioned riverwalk extension. From an engineering perspective, attention should be given to the question of dredging this site and what affect that would have on the newly constructed riverwalk.

CE Meeting: (2.15.2013)

The current archeology issues associated with the in-water component remain unclear. Refer to ESI underwater archaeology review.

CE confirms that prior land use assessment will need to be defined to help evaluate potential source material / contributions to land side sediments and in-water potential dredge spoils. Note CE reports that nearby land use included a battery manufacturer. As a result, and given the current unknown history of this site, sufficient time will be needed to evaluate this area.

CE anticipates testing of marine sediments prior to any approved dredging operations. Use of any federal dredge spoil sites appears to be unlikely, so alternative dredge spoil management will be needed.

If site is used, initial dredge and maintenance dredging will need to abide by the new draft dredging conditions document provided by CE (see attached). ESI anticipates that if the material is clean, the likelihood of gaining approval for initial and maintenance dredging is high.

Refueling at this site may accommodate the bunker barge without extending into the federal channel. This site currently has more linear distance from the existing wharf to the federal channel but final facility design will ultimately dictate these distances. As mentioned on the other two sites, CE prefers for the bunker barge not to extend into the federal channel therefore this site provides a better alternative in this regard. Contact with Colonial Oil, the primary refueling provider within the river, reveals that bunker barges are often extending into the federal channel and they coordinate these operations directly with the Savannah Pilots Association to address navigation, scheduling, as appropriate and necessary.

As the project scope only addresses in-water project details, the CE wanted to and spoke about the “single and complete” project, which includes the land side of the development as well. The project team members reiterated that our discussion was currently limited to the in-water activities.

In our opinion, and assuming no salt marsh fill impacts are needed, there is a high probability of obtaining a Section 10/404 permit for this this site. This site provides adequate river frontage to accommodate the use. CE confirmed that although the site was permitted earlier for the existing project, use of this site as a cruise terminal would need to be re-evaluated in a new permitting process. That said, issuance of the
previous permit, and implementation of work along the river frontage has resulted in a site that is much easier to redevelop now than it would be if these improvements did not exist.

Savannah Pilots Association Meeting: (2.14.2013)

Please refer to notes provided by Coastline Consulting Services, Inc. for additional information.

Savannah River Landing site ranks #1 of the three sites discussed. This is primarily due to the site location within a wider section of the river and in an area where vessels normally do not pass.

Pilots anticipate turning operations involving ships greater than 800 feet long would need to occur upriver in the Kings Island turning basin that currently accommodates vessels 1155 feet long.

Pilots anticipate a need for additional 100’ of mooring space forward and aft of the docking vessel in order to efficiently maneuver cruise ship into mooring area. This site can accommodate the additional mooring area as suggested by the pilots.

Pilots report they accompany all commercial vessels calling on the Savannah harbor area. They make recommendations for tug use when they feel appropriate.

Pilots report, vessel passage is on a first come first serve basis. Seasonality effects passage, such as in the spring when fog is common, limit vessel operations in the river.

U.S. Coast Guard Meeting: (3.12.2013)

CG reports there is an average of 14 commercial vessels moving within the Savannah River per day.

CG reports that commercial vessels normally use 2 tugs to aid in Kings Island turning basin operations, even the smaller cruise vessels currently calling on Savannah.

CG anticipates that the Pilots will suggest use of tugs through river passage due to significant vessel traffic, and extreme tidal ranges.

CG reports that the regulations concerning LNG vessels could cause cruise ship delay in transit due to one of these LNG vessels transiting the area. Basically the regulations state that vessels can't pass or meet while the LNG vessel is underway. Furthermore, LNG vessels are tide restricted; therefore, their window of operation is limited. (See attached § 165.756 Regulated Navigation Area; Savannah River, Georgia; Pages 737-740)

CG will be involved in all aspects of the project as it proceeds. This will include normal security, safety and quick response plans that would be normal to cruise terminal operations. The CG did not specify any fatal flaws pertaining to use of this site.
Environmental Services, Inc.

Georgia Department of Natural Resources – Coastal Resources Division (GADNR-CRD): (3.14.2013)

ESI made contact with CRD staff to discuss permitting a terminal project in the Savannah River. Similar to the Federal – Corps of Engineers permitting, CRD will also need to review and permit any terminal facilities within the Savannah River.

CRD operates within the Coastal Marshlands Protection Act (CMPA) for in-water projects pursuant to O.C.G.A. § 12-5-280.

In recent years, the DNR went through an amendment process and developed new Rules associated with Chapter 391-2-3-.03 Regulation of Marinas, Community Docks, and Commercial Docks (See attached).

The recent discussions with CRD dealt with permitting avenues within the Rules in order to help predict potential issues, obstacles, and success of acquiring the necessary state permits.

In the Rule, Commercial Docks are defined in part as being less than 500 feet of mooring length. Marinas, on the other hand are defined in part as being more than 500 feet of mooring length. Pursuant to both sections of the Rule however, dredging is not allowed with either permitted use.

The Act contemplates dredging for Industrial Dock projects, which leaves the current language in the Rule a bit cumbersome to satisfy this project at any of the three locations. In the end, we anticipate being able to define a means to permit the project through the state; however, pre-application discussions will be needed in order to define the most appropriate permitting avenue to use.

The Rule also requires the applicant prepare a “Needs Assessment” for the project. The Rule does not specify what criteria need to be addressed to adequately complete this assessment. Therefore, thorough support and substantive information should be used to clearly define the need for this project.

It should be noted that permitting any project within the CMPA involves a public review process. Unlike the Federal programs however, the State program is more susceptible to appeal which has the potential to create a time and legal burden on the project. Controversial projects are often followed closely by parties not supporting the permit action and have been found to utilize language in the Rule or the Act to legally debate the appropriateness of the permit. The appeals can result in time delays and increased project costs needed to navigate through the legal system. Upfront and early coordination with project stakeholders and opposing parties will help to avoid this burden.
Appendix A

Item A-1

U.S. Coast Guard DHS

Chapter 165.756

Regulated Navigation Area

Savannah River, Georgia
Oil dock or the Catano Oil dock in approximate position 18° 25.8' N, 65° 06.8' W. All coordinates referenced use datum: NAD 83.

(2) The waters around Liquefied Petroleum Gas ships departing San Juan Harbor in an area one half mile around each vessel beginning at either the Gulf Refinery Oil dock or Catano Oil dock in approximate position 18° 25.8' N, 65° 06.8' W when the vessel gets underway, and continuing until the stern passes the San Juan Harbor #1 Sea Buoy, in approximate position 18° 25.8' N, 65° 07.6' W. All coordinates referenced use datum: NAD 83.

(3) The following area is established as a safety zone:

(a) The following area is established as a safety zone during the specified conditions:

(1) A 100 yard radius surrounding a vessel carrying Liquefied Natural Gas (LNG) while transiting north of Latitude 17°58.0' N in the waters of the Caribbean Sea, on approach to or departure from the Eco-Electrica waterfront facility in Guayanilla Bay, Puerto Rico. The safety zone remains in effect until the LNG vessel is docked at the Eco-Electrica waterfront facility or south of Latitude 17°58.0' N.

(b) The waters within 150 feet of a LNG vessel when the vessel is alongside the Eco-Electrica waterfront facility in Guayanilla Bay, at position 17°58.55' N, 66°45.3' W. This safety zone remains in effect while the LNG vessel is docked with product aboard or is transferring LNG.

§165.756 Safety Zone; Guayanilla, Puerto Rico

(a) The following area is established as a safety zone during the specified conditions:

(1) A 100 yard radius surrounding a vessel carrying Liquefied Natural Gas (LNG) while transiting north of Latitude 17°58.0' N in the waters of the Caribbean Sea, on approach to or departure from the Eco-Electrica waterfront facility in Guayanilla Bay, Puerto Rico. The safety zone remains in effect until the LNG vessel is docked at the Eco-Electrica waterfront facility or south of Latitude 17°58.0' N.

(b) The waters within 150 feet of a LNG vessel when the vessel is alongside the Eco-Electrica waterfront facility in Guayanilla Bay, at position 17°58.55' N, 66°45.3' W. This safety zone remains in effect while the LNG vessel is docked with product aboard or is transferring LNG.

§165.756 Safety Zone; Savannah River, Georgia

(a) Regulated Navigation Area (RNA).

The Savannah River between Fort Jackson (33°04.98' N, 81°02.19' W) and the Savannah River Channel Entrance Sea Buoy is a regulated navigation
area when an LNG tankship in excess of heel is transiting the area or moored at the LNG facility. All coordinates are North American Datum 1983.

(b) Definitions. The following definitions apply to this section:

Bare steaming way means the minimum speed necessary for a ship to maintain control over its heading.

Bollard pull means an industry standard used for rating tug capabilities and is the pulling force imparted by the tug to the towline. It means the power that an escort tug can apply to its working line(s) when operating in a direct mode.

Direct mode means a towing technique defined as a method of operation by which a towing vessel generates towline forces by thrust alone at an angle equal to or nearly equal to the towline, or thrust forces applied directly to the escorted vessel's hull.

Fire Wire means a length of wire rope or chain hung from the bow and stern of a vessel in port to allow the vessel to be towed away from the pier in case of fire; also called fire warp or emergency towing wire.

Heel means the minimum quantity of liquefied natural gas (LNG) retained in an LNG tankship after unloading at the LNG facility to maintain temperature, pressure, and/or prudent operations. A quantity of LNG less than five percent (5%) of the LNG tankship's carrying capacity shall be presumed to be heel.

Indirect mode means a towing technique defined as a method of operation by which an escorting towing vessel generates towline forces by a combination of thrust and hydrodynamic forces resulting from a presentation of the underwater body of the towing vessel at an oblique angle to the towline. This method increases the resultant bollard pull, thereby arresting and controlling the motion of an escorted vessel.

LNG tankship means a vessel as described in 49 CFR 104.

Made-up means physically attached by cable, towline, or other secure means in such a way as to be immediately ready to exert force on a vessel being escorted.

Make-up means the act of, or preparations for becoming made-up.

Operator means the person who owns, operates, or is responsible for the operation of a facility or vessel.

Savannah River Channel Entrance Sea Buoy means the aid to navigation labeled R W "T" Mo (A) WHS on the National Oceanic and Atmospheric Administration's (NOAA) Nautical Chart 11512.

Standby means readily available at the facility and equipped to provide a ready means of assistance to maintain a safe zone around LNG tankships, provide emergency firefighting assistance, and aid the LNG tankship in the event of an emergency departure.

Underway means that a vessel is not at anchor, not made fast to the shore, or not aground.

(c) Applicability. This section applies to all vessels operating within the RNA, including naval and other public vessels, except vessels that are engaged in the following operations:

(1) Law enforcement, security, or search and rescue;

(2) Servicing aids to navigation;

(3) Surveying, maintenance, or improvement of waters in the RNA; or

(4) Actively engaged in escort, maneuver, or support duties for an LNG tankship.

(d) Regulations—(1) Requirements for vessel operations while a LNG tankship, carrying LNG in excess of heel, is underway within the RNA. (i) Except for a vessel that is moored at a marina, wharf, or pier, and remains moored, no vessel 1,600 gross tons or greater may come within two nautical miles of a LNG tankship, carrying LNG in excess of heel, which is underway within the Savannah River shipping channel without the permission of the Captain of the Port (COTP).

(ii) All vessels less than 1,600 gross tons shall keep clear of transiting LNG tankships.

(iii) The owner, master, or operator of a vessel carrying liquefied natural gas (LNG) shall:

(A) Comply with the notice requirements of 33 CFR part 180. The COTP may delay the vessel's entry into the RNA to accommodate other commercial traffic.

(B) Obtain permission from the COTP before commencing the transit into the RNA.

33 CFR Ch. I (7-1-12 Edition)
(2) Requirements while an LNG tankship is moored outside of the LNG facility slip. (i) An LNG tankship moored outside of the LNG facility slip shall have on-scene a minimum of two escort towing vessels each with a minimum of 100,000 pounds of bollard pull, 4,000 horsepower and capable of safely operating in the indirect mode in order to escort transiting vessels 1,600 gross tons or greater past the moored LNG tankship. At least one of these towing vessels shall be FIFI Class 1 equipped.

(ii) In addition to the two towing vessels required by paragraph (d)(2)(i) of this section, the LNG tankship moored outside of the slip shall have at least one standby towing vessel with a minimum of 50,000 pounds of bollard pull to take appropriate action in an emergency as directed by the LNG vessel bridge watch required in paragraph (d)(5) of this section.

(3) Requirements while LNG tankships are moored inside the LNG facility slip. (i) An LNG tankship moored inside the LNG facility slip shall have two standby towing vessels with a minimum capacity of 100,000 pounds of bollard pull, 4,000 horsepower, and the ability to operate safely in the indirect mode. At least one of these towing vessels shall be FIFI Class 1 equipped. The standby towing vessels shall take appropriate action in an emergency as directed by the LNG vessel bridge watch required in paragraph (d)(5) of this section.

(ii) If two LNG tankships are moored inside the LNG facility slip, each vessel shall provide a standby towing vessel that is FIFI class 1 equipped with a minimum capacity of 100,000 pounds of bollard pull and 4,000 horsepower that is available to assist as directed by the LNG vessel bridge watch required in paragraph (d)(5) of this section.

(4) Requirements while LNG tankships are moored both inside and outside the LNG facility slip. (i) When one LNG tankship is moored inside and one LNG tankship is moored outside of the LNG facility slip, the LNG tankship moored outside of the LNG facility slip shall have on-scene a minimum of two escort towing vessels each with a minimum of 100,000 pounds of bollard pull, 4,000 horsepower and capable of safely operating in the indirect mode in order to escort transiting vessels 1,600 gross tons or greater past the moored LNG tankship. At least one of these towing vessels shall be FIFI Class 1 equipped. In addition, the LNG tankship moored inside of the slip shall have at least one standby towing vessel with a minimum of 100,000 pounds of bollard pull, 4,000 horsepower and FIFI Class 1 equipped to take appropriate actions in an emergency as directed by the LNG vessel bridge watch required in paragraph (d)(5) of this section.

(ii) When one LNG tankship is moored outside and two LNG tankships are moored inside the LNG facility slip, the LNG tankship moored outside of the LNG facility slip shall have on-scene a minimum of two escort towing vessels each with a minimum of 100,000 pounds of bollard pull, 4,000 horsepower and capable of safely operating in the indirect mode in order to escort transiting vessels 1,600 gross tons or greater past the moored LNG tankship. At least one of these towing vessels shall be FIFI Class 1 equipped. In addition, the LNG tankships moored inside of the slip shall have at least one standby towing vessel between the two ships with a minimum of 100,000 pounds of bollard pull, 4,000 horsepower and FIFI Class 1 equipped to take appropriate actions in an emergency as directed by the LNG vessel bridge watch required in paragraph (d)(5) of this section.

(iii) In the event of an actual emergency, escort towing vessels can be utilized as stand-by towing vessels to take appropriate actions as directed by the LNG vessel bridge watch required in paragraph (d)(5) of this section.

(5) Requirements for moored LNG tankships. (i) While moored within the RNA,
§ 165.756  

(33 CFR Ch. I (7-1-12 Edition))

each LNG tankship shall maintain a bridge watch consisting of a docking pilot or licensed deck officer who shall monitor all vessels transiting past the LNG facility. In addition, the LNG Bridge Watch shall communicate with the pilots of vessels greater than 1600 gross tons at the points identified in section (d)(6)(ii) of this section prior to passing the LNG facility in order to take actions of the towing vessel(s) required in paragraphs (d)(2) through (4) of this section.

(ii) While moored within the RNA, LNG tankships shall have emergency towing wires (fire wire) positioned one meter above the waterline, both on the off-shore bow and quarter of the ship. LNG vessels equipped with waterline bollards are exempt from this requirement.

(6) Requirements for other vessels while within the RNA. (i) Transiting vessels 1,600 gross tons or greater, when passing an LNG tankship moored outside of the LNG facility slip, shall have a minimum of two towing vessels with a minimum capacity of 100,000 pounds of pull, 4,000 horsepower, and the ability to operate safely in the indirect mode, made-up in such a way as to be immediately available to arrest and control the motion of an escorted vessel in the event of steaming, propulsion or other casualty. At least one of the towing vessels shall be FiFi Class 1 equipped. While it is anticipated that vessels will utilize the towing vessel services required in paragraphs (d)(2)(i) and (d)(4)(i) of this section, this section does not preclude escort vessel operators from providing their own towing vessel escorts, provided they meet the requirements of this part.

(A) Outbound vessels shall be made-up and escorted from Elba Island Light 4f until the vessel is safely past the LNG dock.

(B) Inbound vessels shall be made-up and escorted from Elba Island Light 37 until the vessel is safely past the LNG dock.

(ii) The requirements in paragraph (d)(6)(i) of this section do not apply when one or more LNG tankships are moored in the LNG facility slip and no LNG tankship is moored at the pier outside of the LNG facility slip.

(iii) Vessels 1,600 gross tons or greater shall make a broadcast on channel 13 at the following points on the Savannah River:

(A) Buoy “39” in the vicinity of Fields Cut for inbound vessels;

(B) Buoy “93” in the vicinity of Port Jackson for outbound vessels.

(iv) Vessels 1,600 gross tons or greater shall at a minimum, transit at bare steerageway when within an area 1,000 yards on either side of the LNG facility slip to minimize potential wake or surge damage to the LNG facility and vessel(s) within the slip.

(v) Vessels 1,600 gross tons or greater shall not meet nor overtake within an area 1,000 yards on either side of the LNG facility slip when an LNG tankship is present within the slip.

(vi) All vessels less than 1,600 gross tons shall not approach within 70 yards of an LNG tankship, carrying LNG in excess of heel, without the permission of the Captain of the Port.

(vii) Except for vessels involved in those operations noted in paragraph (c) of this section entitled Applicability, no vessel shall enter the LNG facility slip at any time without the permission of the Captain of the Port.

(e) Waivers. (1) The COTP may waive any requirement in this section, if the COTP finds that it is in the best interest of safety or in the interest of national security. Such waivers may be verbal or in writing.

(2) An application for a waiver of these requirements must state the compelling need for the waiver and describe the proposed operation and methods by which adequate levels of safety are to be obtained.

(2) Enforcement. Violations of this section should be reported to the Captain of the Port, Savannah, at (912) 652-4963. In accordance with the general regulations in §165.18 of this part, no person may cause or authorize the operation of a vessel in the regulated navigation area contrary to the provisions of this section.

[CGD7-05-138, 72 FR 2163, Jan. 18, 2007]
Appendix A

Item A-2

Georgia Department of Natural Resources
Chapter 391-2-3
Coastal Marshlands Protection
AMENDMENTS TO THE RULES OF THE GEORGIA DEPARTMENT OF NATURAL RESOURCES
COASTAL RESOURCES DIVISION
RELATING TO
COASTAL MARSHLANDS PROTECTION, CHAPTER 391-2-3

The Rules of the Department of Natural Resources, Chapter 391-2-3, Coastal Marshlands Protection, are hereby amended and added to, as hereinafter explicitly set forth in the attached amendments and additions for specific rules, or such subdivisions thereof as may be indicated.

391-2-3-.03 Regulation of Marinas, Community Docks and Commercial Docks

(1) **Purpose.** The purpose of these Rules is to implement the authority of the Board of Natural Resources to promulgate rules and regulations for permitting under and enforcement of the Coastal Marshlands Protection Act. This Chapter establishes standards and procedures to be applied by the Coastal Marshlands Protection Committee when reviewing applications for a permit to construct or modify a marina, commercial dock, or community dock on or over marshlands within the estuarine area of the state.

(2) **Definitions used in this Rule.**

(a) "303(d) listed stream" means a stream, stream segment, or other surface waterbody identified on a list submitted biannually to the US Environmental Protection Agency by the Georgia Environmental Protection Division, known as the 303(d) list. Inclusion on the 303(d) list denotes the waterbody segment as impaired because it does not meet one or more designated uses (i.e. Fishing, Recreation, etc.) and for which one or more total maximum daily loads needs to be developed.

(b) "Approved Disposal System" means an on-site wastewater disposal system suitable for domestic or other sewage approved by the Georgia Environmental Protection Division and/or local sanitation regulatory authority, as applicable.

(c) "Commercial Dock" means a dock providing 500 linear feet or less of docking space for vessels inclusive of commercial vessels.

(d) "Committee" means Coastal Marshlands Protection Committee.
(e) "Community dock" means a dock providing 500 linear feet or less of docking space which is a subdivision or community recreational amenity providing water access for residents, and which may or may not entail a fee. A dock meeting this definition, but providing more than 500 feet of docking space shall be treated as a marina, as defined in these rules.

(f) "Department" means the Georgia Department of Natural Resources.

(g) "Effective shading" means the amount of shading realized by utilizing alternative walkway decking material or alternative walkway design when compared to shading associated with traditional planking construction.

(h) "Fixed dock," means a dock, constructed on pilings, that is fixed in elevation, i.e., that does not float on the water.

(i) "Fixed terminal platform," means the platform constructed on pilings at the terminal, waterward end of a dock.

(j) "Floating dock" means a dock that floats on the water to which watercraft are tied for mooring.

(k) "Heritage preserve marshlands" means those marshlands that have been dedicated as a heritage preserve by the Governor pursuant to OCGA 12-3-75.

(l) "Impaired water" means a stream, stream segment, or other surface waterbody that does not meet water quality standards and that is identified in the most recent 303(d) list as an "Impaired Water."

(m) "Improvements" means additions to or enhancements of raw land or structures that normally increase its usefulness and/or value, which are constructed in accordance with applicable legal requirements at the time of such construction and are intended to remain attached to or associated with the project."

(n) "Live-aboard" means a floating vessel or other watercraft which is moored to a dock, tree, or piling or anchored in the estuarine waters of the state and is utilized as a human or animal abode. Live-aboards include but are not limited to monohulls, multihulls, houseboats, floating homes, and other floating structures, which are used for human or animal habitation.

(o) "Manatee Basics for Boaters" means a 3' by 4' manatee educational display sign referenced in certain leases or permits, which contains standardized content pre-approved by the Wildlife Resources Division Nongame Conservation Section.

(p) "Manatee Travel Corridor" means channel(s) or waterway(s) that manatees are known to frequent and/or travel through, as determined by telemetry studies,
aerial surveys and the Wildlife Resources Division’s Nongame Conservation Section’s public sightings database.

(q) “Marina” means any dock facility which has any one or more of the following:
1. Includes fueling, maintenance or repair services (regardless of dock length);
2. Is greater than 500 linear feet of dock space; or
3. Has dry storage for boats in an upland storage yard or vertical rack system.

(r) “Minor alteration” means any change in the marshlands which, taken singularly or in combination with other changes, involves less than 0.10 acres.

(s) “Model Ordinance within the Guide for Molluscan Shellfish Control in the National Shellfish Sanitation Program” means the requirements which are minimally necessary for the sanitary control of molluscan shellfish, as established by the National Shellfish Sanitation Program, a voluntary and cooperative program established in 1925 and comprised of federal, state and municipal authorities and representatives of the shellfish industry.

(t) “Modification” means a structural change to a community dock, commercial dock, or marina facility, whether existing but not permitted, existing and permitted, or permitted and yet to be constructed.

(u) “Project” means the proposed construction or maintenance activity identified in an application for a marshlands permit within the contemplation of the Coastal Marshlands Protection Act. A project may consist of two components: a marshlands component and an upland component, as defined in Rule 391-2-3-.02 (I).

(v) “Serviceability” means useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

(w) “Tier One Community Crab Dock” means a community dock consisting of a single fixed walkway and an “L” or “T” shaped fixed terminal platform, supported on pilings, lacking floats, and from which water dependent activities such as fishing may be conducted.

(x) “Tier Two Community Dock” means a community dock consisting of a single fixed walkway and terminal fixed platform, supported on pilings, connecting ramp(s), and floating dock(s), and from which water dependent activities such as boating and fishing may be conducted.

(y) “Tier Three Community Dock” means a community dock consisting of a single fixed walkway and terminal fixed platform, supported on pilings, connecting ramp(s), and floating dock(s), and which does not qualify under a Tier One Community Crab
Dock or a Tier Two Community Dock, and from which water dependent activities such as boating and fishing may be conducted.

(3) **Tier One Community Crab Dock.**

(a) To qualify for the permitting procedures as set out in paragraph (c) below, a proposed Tier One Community Crab Dock project must comply with the following standards or conditions:

1. There shall be no improvements on the upland component of the project, other than for pedestrian access to the marsh component and driveways and parking area landward of the 50' marshlands buffer, all of which must be pervious.
2. The community dock must be for water-dependent activities that access a channel with defined banks and not ponded areas or mudflats.
3. The community dock must terminate at the first channel that is 10 feet wide grass to grass.
4. If the community dock walkway spans a tributary that can be bridged (a tributary less than 10 feet wide), it must have a minimum clearance of six feet above the mean high water line to the bottom of the walkway bridge. Piling spacing must provide for safe navigation in the channel.
5. A single "L" or "T" shaped fixed terminal platform up to 180 square feet is allowed.
6. The width of the fixed terminal platform may not exceed 6 feet.
7. The fixed terminal platform may not extend more than one-third of the width of the creek at mean high water.
8. The fixed terminal platform may not be enclosed but may be covered and screened with wainscotting not higher than three feet.
9. The fixed terminal platform may be roofed; provided, however, the roof may not exceed a maximum height of 12 feet above the fixed terminal platform decking at the lowest deck height.
10. A second deck, attic, or ceiling storage is not allowed on any roofed section of the fixed terminal platform.
11. The community dock walkway may not exceed 4 feet in width and may not exceed 500 feet maximum length. The walkway is measured from the delineated marshlands jurisdiction line as determined or verified by the Department, channelward to the fixed terminal platform.
12. The community dock walkway decking shall be of same material for its entire length, and standardized materials must be used when grating is used.
13. The community dock walkway must be constructed at a height above all vegetation, but not more than six feet above grade.
14. No floating dock or docks are allowed as part of the marshland component of the project.
15. No hoists or lift davits are allowed as part of the marshland component of the project.
16. No boats are allowed except for kayaks and canoes.
17. The community dock may not have fish cleaning stations, restrooms, retail or commercial activity.
18. Lighting if used must be shielded and on a timer.
19. No dredging is allowed in association with the community dock project.
20. The community dock may not be located in heritage preserve marshlands.
21. The applicant must operate and maintain the dock in a manner that will not unreasonably obstruct navigation to and from neighboring properties.

(b) Professional drawings of the project are required to be submitted as a part of the application. The drawings must be stamped by a Registered Land Surveyor, Professional Engineer, or Architect licensed to do business in Georgia.

(c) Upon receipt of a substantially complete project application and application fee, an abbreviated review and processing period shall apply.

1. Staff to the Committee shall have 21 days to review the project permit application.
2. The Committee shall provide Public Notice of the application for 15 days.
3. Upon a determination that the project application is complete (including staff review and public notice) and the project meets all requirements of the Coastal Marshlands Protection Act and these rules, the Commissioner may issue a Coastal Marshlands Protection Act permit unless a Committee member requests the application be brought to a Coastal Marshlands Protection Committee meeting for broader consideration.
4. Provided the project application is not called to a Coastal Marshlands Protection Committee meeting, total processing time of a Tier One Community Crab Dock shall not exceed 45 days following a preliminary determination by staff of completeness.

(d) No construction or alteration of a Tier One Community Crab Dock may commence until the expiration of 30 days following the date on which the application is approved; provided, however, that if a timely appeal is filed, no construction or alteration may commence until all administrative and judicial proceedings are terminated.

(e) The applicant/permittee must demonstrate the capacity to establish sufficient power and authority to enforce the conditions of the permit.

(f) Any modification to a Tier One Community Crab Dock is subject to review pursuant to the appropriate Tier criteria.

(g) If a proposed project does not qualify as a Tier One Community Crab Dock the application will be processed using the review and processing protocol for a Tier Two Community Dock, Tier Three Community Dock and Commercial Dock, or Marinas, using the lowest tier review and processing protocol for which the proposed
project meets the standards. An application for multiple dock structures automatically defaults to the review and processing protocol for a Tier Three Community Dock and Commercial Dock.

(h) Permittee must provide a post-construction survey that locates the Tier One Community Crab Dock as indicated in the application materials. Such survey shall comply with the Georgia Plat Act, O.C.G.A. § 15-6-67 et. seq.

(4) Tier Two Community Dock.

(a) To qualify for the permitting procedures as set out in subparagraph (c) below, a proposed Tier Two Community Dock project must comply with the following standards or conditions:

1. The upland component of the project is limited to pedestrian access and pervious parking landward of the 50’ marshland buffer.
2. There shall be no commercial activity at the community dock.
3. The community dock shall provide mooring space on a first come, first served basis and is open to all in the community served by the dock.
4. Live-aboard vessels may not be occupied for more than 30 days during any calendar year, without the grant of an extension by the Commissioner. The permittee is responsible for precluding from the dock anyone occupying a vessel for more than 30 days during any calendar year. Floating homes, abodes, or dwellings are specifically prohibited.
5. The community dock does not require a water bottoms lease, i.e., the dock has 500 linear feet or less of mooring space.
6. The community dock walkway shall not exceed 6 feet in width, 750 feet in length, and 3000 square feet of effective shading impact. The walkway is measured from the delineated marshlands jurisdiction line as determined or verified by the Department, channelward to the fixed terminal platform.
7. The community dock walkway decking shall be of same material for its entire length, and standardized materials must be used when grating is used.
8. The community dock walkway must be constructed at a height above all vegetation, but not more than six feet above grade.
9. The community dock must be for water-dependent activities that access the first channel with defined banks and not ponded areas or mudflats.
10. The creek on which the community dock is located must be a minimum of 25 feet in width mean low water to mean low water.
11. A community dock located in a creek 25 feet to 39 feet width mean low water to mean low water may occupy a maximum of one-fourth of the creek width mean low water to mean low water.
12. A community dock located in a creek 40 feet wide or greater mean low water to mean low water may occupy a maximum of one-third of the creek width mean low water to mean low water.
13. If the community dock walkway spans a tributary that can be bridged (a tributary less than 10 feet wide, grass to grass), it must have a minimum clearance of six feet above the mean high water line to the bottom of the walkway bridge. Piling spacing must provide for safe navigation in the channel.

14. The community dock may have a single fixed terminal platform at the end of the walkway, which is limited to a maximum of 400 square feet, including screened and/or roofed sections.

15. The fixed terminal platform or floating docks shall not be constructed over vegetation.

16. The fixed terminal platform may not be enclosed but may be covered and screened with wainscotting not higher than three feet.

17. The fixed terminal platform may be roofed; provided, however, the roof may not exceed a maximum height of 12 feet above the fixed terminal platform decking at the lowest deck height.

18. A second deck, attic, or ceiling storage is not allowed on any roofed section of the fixed terminal platform.

19. The community dock may have floating docks, which shall be limited in size to that which is reasonable for the documented, intended use, not to exceed 800 sq. feet maximum floating dock structure. Documentation of need must be submitted to justify the size of the proposed floating dock.

20. Floating docks may not rest on the waterbottom at low tide and must be supported on pilings or by cradle at least two feet above the mud.

21. No fish cleaning station, fueling, restrooms, pump out, or retail activities are allowed.

22. No dredging is allowed in association with the community dock project.

23. Lighting if used must be shielded and on a timer.

24. The community dock may not be located in heritage preserve marshlands.

25. The community dock or its operation shall not cause or create a measurable adverse water quality impact to the waterbody in which it is built, as measured by dissolved oxygen, fecal bacteria, or nutrient enrichment. At a minimum, the community dock must not be in a body of water listed on Georgia EPD's most recent 303(d) list as an "Impaired Water."

26. If the Department determines through its own water quality sampling or other resource analyses that there are environmental impacts of concern associated with the project, the Department may require the applicant/permittee at the applicant/permittee's expense, to have water, substrate, and/or tissue samples collected and analyzed for metals, petroleum hydrocarbons, or other constituents.

   (i.) Sample collection and analyses must be according to methods approved by the Department.

   (ii.) All results from such sampling results must be provided to the Department as obtained and may be used by the Department to further restrict the dock to reduce water quality impacts.
27. The permittee must operate and maintain the dock in a manner that will not unreasonably obstruct navigation to and from neighboring properties.

28. The applicant/permittee must post temporary manatee awareness signage during construction of the facility and permanent posting and maintenance of the informational display signage, "Manatee Basics for Boaters" post-construction.

(b) Professional drawings of the project are required to be submitted as a part of the application. The drawings must be stamped by a Registered Land Surveyor, Professional Engineer, or Architect licensed to do business in Georgia.

(c) Upon receipt of a substantially complete Tier Two Community Dock project application and application fee, an abbreviated review and processing period shall apply.

1. Staff to the Coastal Marshlands Protection Committee shall have 60 days to review the project permit application.

2. The Committee shall provide Public Notice of the application for 15 days, which period shall be concurrent with the staff review.

3. Staff to the Coastal Marshlands Protection Committee shall have 15 days to review the public comment received.

4. If the Tier Two Community Dock project is a minor alteration, Committee members shall have 10 days to request broader consideration of the project at a meeting of the Coastal Marshlands Protection Committee.

(i.) Upon a determination that the project application is complete (including staff review and public notice) and the project meets all requirements of the Coastal Marshlands Protection Act and these rules, the Commissioner may issue a Coastal Marshlands Protection Act permit for a Tier Two Community Dock which is a minor alteration unless a Coastal Marshlands Protection Committee member requests that the project be heard at a Coastal Marshlands Protection Committee meeting for broader consideration.

(ii.) If no Committee member requests the application receive broader consideration at a Coastal Marshlands Protection Committee meeting, the application shall be processed to the Commissioner of Natural Resources for his review and action within 15 days.

(iii.) Provided the project application is not called to a Coastal Marshlands Protection Committee meeting, total processing time of a Tier Two Community Dock shall not exceed 115 days following a preliminary determination by staff of completeness.

5. Upon determination that a Tier Two Community Dock project application that is not a minor alteration is complete (including staff review and public notice), the project application shall be placed on the meeting agenda of the Coastal Marshlands Protection Committee.

6. If a second public notice is issued, an additional 15 days would be added to the processing time.
(d) No construction or alteration of a Tier Two Community Dock may commence until the expiration of 30 days following the date on which the application is approved; provided, however, that if a timely appeal is filed, no construction or alteration may commence until all administrative and judicial proceedings are terminated.

(e) The "Minor Alteration" acreage provision of the Coastal Marshlands Protection Act shall not take into consideration any reduction in acreage calculation for the effective shading impact reduction attributable to alternative walkway decking material or alternative walkway design.

(f) The applicant/permittee must demonstrate the capacity to establish sufficient power and authority to enforce the conditions of the permit.

(g) Any modification to a Tier Two Community Dock is subject to review pursuant to the appropriate Tier criteria.

(h) If a proposed project does not qualify as a Tier Two Community Dock the application will be processed using the review and processing protocol for a Tier Three Community Dock and Commercial Dock, or Marinas, using the lowest tier review and processing protocol for which the proposed project meets the standards. An application for multiple dock structures automatically defaults to the review and processing protocol for a Tier Three Community Dock and Commercial Dock.

(i) Permittee must provide a post-construction survey that locates the Tier Two Community Dock as indicated in the application materials. Such survey shall comply with the Georgia Plat Act, O.C.G.A. § 15-6-67 et. seq.

(5) Tier Three Community Dock or Commercial Dock.

(a) To qualify for the permitting procedures as set out in subparagraph (d) below, a proposed Tier Three Community Dock or Commercial Dock project must comply with the following standards or conditions:

1. The community dock walkway or commercial dock walkway shall not exceed 6 feet in width, 1000 feet in length, and not exceed 3000 square feet of effective shading impact. The walkway is measured from the delineated marshlands jurisdiction line as determined or verified by the Department, channelward to the fixed terminal platform.

2. The Coastal Marshlands Protection Committee may provide for an exception to the limitations on maximum walkway length and square footage. Documentation of need must be submitted to justify an exception, which shall be granted or denied in the sole discretion of the Committee.
3. The community dock or commercial dock walkway decking shall be of same material for its entire length, and standardized materials must be used when grating is used.

4. The community dock or commercial dock walkway must be constructed at a height above all vegetation, but not more than six feet above grade.

5. Live-aboard vessels may not be occupied for more than 30 days during any calendar year, without the grant of an extension by the Commissioner. The permittee is responsible for precluding from the dock anyone occupying a vessel for more than 30 days during any calendar year. Floating homes, abodes, or dwellings are specifically prohibited.

6. If the community or commercial dock walkway spans a tributary that can be bridged (a tributary less than 10 feet wide, grass to grass), it must have a minimum clearance of six feet above the mean high water line to the bottom of the walkway bridge.

7. The fixed terminal platform may not be enclosed but may be covered and screened with wainscoting not higher than three feet.

8. A second story or deck is not allowed on any roofed section of the fixed terminal platform.

9. Floating docks may not rest on the waterbottom at low tide and must be supported on pilings or by cradle at least two feet above the mud.

10. No dredging is allowed in association with the initial community or commercial dock project.

11. The applicant must operate and maintain the dock in a manner that will not unreasonably obstruct navigation to and from neighboring properties.

12. The community dock or its operation shall not cause or create a measurable adverse water quality impact to the waterbody in which it is built, as measured by dissolved oxygen, fecal bacteria, or nutrient enrichment.

13. If the Department determines through its own water quality sampling or other resource analyses that there are environmental impacts of concern associated with the project, the Department may require the applicant/permittee at applicant/permittee's expense, to have water, substrate, and/or tissue samples collected and analyzed for metals, petroleum hydrocarbons, or other constituents.

   (i.) Sample collection and analyses must be according to methods approved by the Department.

   (ii.) All results from such sampling results must be provided to the Department as obtained and may be used by the Department to further restrict the dock to reduce water quality impacts.

14. The applicant/permittee must post temporary manatee awareness signage during construction of the facility and permanent posting and maintenance of the informational display signage, "Manatee Basics for Boaters" post-construction.
(b) Professional drawings of the project are required to be submitted as a part of the application. The drawings must be stamped by a Registered Land Surveyor, Professional Engineer, or Architect licensed to do business in Georgia.

(c) A needs assessment must be submitted to justify the size of the proposed community dock or commercial dock. The Coastal Marshlands Protection Committee may opt for phased build out based on demonstrated need. If the permit requires a phased build out based on demonstrated need, the permit may be extended for an additional five years upon a showing that all due efforts and diligence have been made toward completion of the phases authorized to date based on demonstrated need.

(d) Upon receipt of a substantially complete Tier Three Community Dock or Commercial Dock project application and application fee, the application shall be reviewed and processed subject to a higher degree of examination and scrutiny and longer review times than a Tier One Community Crab Dock or a Tier Two Community Dock.

1. The Coastal Marshlands Protection Committee shall provide Public Notice of the application for 30 days.
2. An application is complete when it contains substantially all of the written information, documents, forms, fees, and materials required by the Coastal Marshlands Protection Act, and such additional information as is required by the Committee to properly evaluate the application.
3. The Coastal Marshlands Protection Committee shall act upon an application for a permit within 90 days after the application is complete; provided, however, that this provision may be waived upon the written request of the applicant.

(e) No construction or alteration of a Tier Three Community Dock or Commercial Dock may commence until the expiration of 30 days following the date on which the application is approved; provided, however, that if a timely appeal is filed, no construction or alteration may commence until all administrative and judicial proceedings are terminated.

(f) The "Minor Alteration" acreage provision of the Coastal Marshlands Protection Act shall not take into consideration any reduction in acreage calculation for the effective shading impact reduction attributable to alternative walkway decking material or alternative walkway design.

(g) The applicant/permittee must demonstrate the capacity to establish sufficient power and authority to enforce the conditions of the permit.

(h) Permitee must provide a post-construction survey that locates the Tier Three Community Dock or Commercial Dock as indicated in the application materials. Such survey shall comply with the Georgia Plat Act, O.C.G.A. § 15-6-67 et. seq.
(6) Marinas.

(a) The Coastal Marshlands Protection Committee may issue a permit for a marina in accordance with the requirements of the Coastal Marshlands Protection Act. Unless otherwise determined by the Committee in accordance with subparagraph (h) below, a marina must comply with the following standards or conditions:

1. The marina launch pier shall not exceed 1000 feet in length. The marina launch pier is measured from the delineated marshlands jurisdiction line as determined or verified by the Department, channelward to the boat launching area.

2. The marina pedestrian walkway shall not exceed 1000 feet in length and shall not exceed 3000 square feet of effective shading impact. The walkway is measured from the delineated marshlands jurisdiction line as determined or verified by the Department, channelward to the fixed terminal platform.

3. The Coastal Marshlands Protection Committee may provide for an exception to the limitations on maximum marina launch pier length, and to the limitations on marina pedestrian walkway length and square footage. Documentation of need must be submitted to justify an exception, which shall be granted or denied in the sole discretion of the Committee.

4. The marina may not be sited within 1,000 feet of waters classified as approved for shellfish harvesting by the Coastal Resources Division, or located where its presence or operation would cause a closing of waters classified for shellfish harvest based on the Model Ordinance within the Guide for Molluscan Shellfish Control in the National Shellfish Sanitation Program.

5. A marina to be located on open water must be sited at the first navigable creek that has a defined channel, adequate width and depth for the intended use, and established history of navigational access or use.

6. Any marina component proposed to be constructed on or over coastal marshlands must be for water dependent activities. No restaurants or structures for non-water dependent uses may be constructed on or over coastal marshlands.

7. Floating docks may not rest on the waterbottom at low tide and must be supported on pilings or by cradle at least two feet above the mud.

8. A marina proposed to be located in a manatee travel corridor or on a waterway where manatees may be found must have protective measures to minimize manatee/boat interactions to include:
   (i.) An education plan for boaters using the marina;
   (ii.) Regular monthly maintenance of dock facilities' hoses, faucets, or any apparatus or equipment capable of producing a stream of fresh water in close proximity to the access of the facility;
   (iii.) A contingency plan for emergency repair of freshwater sources;
(iv.) Temporary manatee awareness signage during construction of the facility and permanent posting and maintenance of the informational display sign, "Manatee Basics for Boaters" post-construction; and
(v.) Speed zones may be required if the marina is in a manatee travel corridor.

9. No dredging of tidal waterbottoms or vegetated coastal marshlands is allowed in association with the initial marina project.

10. If the marina could require maintenance dredging in the future, a permanent, dedicated spoil site with the capacity for the initial dredge volume and anticipated maintenance needs must be identified at the time of application.

11. Dry boat storage is encouraged as a supplement or alternative to in-water mooring, to the extent feasible.

12. Live-aboard vessels may not be occupied for more than 30 days during any calendar year, without the grant of an extension by the Commissioner. The permittee is responsible for precluding from the dock anyone occupying a vessel for more than 30 days during any calendar year. Floating homes, abodes, or dwellings are specifically prohibited.

13. The marina should provide onshore restrooms, shower and laundry facilities in the upland component of the project. The applicant/permittee must take specific measures (such as, but not limited to, signs or dock regulations) to encourage boaters to use the washrooms, laundromat and restrooms onshore, if any.

14. A marina must have an approved disposal system for disposal of wastewater generated by boats and upland facilities at the marina.

15. A marina must install, for collection of solid wastes, trashcans, dumpsters or other suitable containers in compliance with The Act to Prevent Pollution from Ships (33 USCA 1901 and 33 CFR 158). Adequate separate containers for toxic substances shall be available.

16. A marina shall not allow any person to operate a marine toilet at a marina at any time so as to cause or permit to pass or to be discharged into the waters adjacent to the marina any untreated sewage or other waste matter or contaminant of any kind.

(i.) A marina must have a working pump-out facility and dockside wastewater collection system for sanitary wastes from vessels, adequate for the capacity of the marina (number and size of vessels) and require their use by boats using the marina, unless specific exceptions are allowed by the Coastal Marshlands Protection Committee.

(ii.) Pump-out facility maintenance logs must be kept.

(iii.) The marina must prominently display signage showing the location of the nearest pump out facility.

17. The Coastal Marshlands Protection Committee may permit marina fueling facilities which conform to US Environmental Protection Agency and GADNR Environmental Protection Division laws and regulations, and which meet the following requirements:
(i.) Fuel storage tanks and fuel lines between tank, dock, and vessels shall be equipped with emergency shut off valves.

(ii.) Dispensing nozzles shall be the automatic closing type without a hold-open latch.

(iii.) A marina must have adequate booms available either on-site or under contract to contain any oil spill.

(iv.) The marina shall have a current ‘Operations Manual’ containing the following:

(I.) Description of how the applicant meets the conditions of this permit,

(II.) The geographic location of the dock,

(III.) A physical description of the facility showing mooring areas, fuel storage and dispensing areas, and locations of safety equipment,

(IV.) A description and the location of each emergency shut-off system,

(V.) The names and telephone numbers of the facility, U.S. Coast Guard Marine Safety Office, Environmental Protection Division Emergency Response Center, and other personnel who may be called by employees of the facility in an emergency, including fire and police, and

(VI.) The names and telephone numbers of available hazardous spill clean-up contractors nearest the dock.

18. All components of a marina must be designed, installed, operated and maintained in a manner that will not unreasonably obstruct navigation to and from neighboring properties.

19. The marina or its operation shall not cause or create a measurable adverse water quality impact to the waterbody in which it is built, as measured by dissolved oxygen, fecal bacteria, or nutrient enrichment.

20. If the Department determines through its own water quality sampling or other resource analyses that there are environmental impacts of concern associated with the marina project, the marina may be required to have at applicant’s/permittee’s expense, water, substrate, and/or tissue samples collected and analyzed for metals, petroleum hydrocarbons, or other constituents.

(i.) Sample collection and analyses must be according to methods approved by the Department.

(ii.) All results from such sampling must be provided to the Department as obtained and may be used by the Department to further restrict the dock to reduce water quality impacts.

(b) Professional drawings of the marina project are required to be submitted as a part of the application. The drawings must be stamped by a Registered Land Surveyor, Professional Engineer, or Architect licensed to do business in Georgia.
(c) A needs assessment must be submitted to justify the size of the proposed marina. The Coastal Marshlands Protection Committee may opt for phased build out based on demonstrated need. If the permit requires a phased build out based on demonstrated need, the permit may be extended for an additional five years upon a showing that all due efforts and diligence have been made toward completion of the phases authorized to date based on demonstrated need.

(d) Upon receipt of a substantially complete marina project application and application fee, the application shall be reviewed and processed subject to a higher degree of examination and scrutiny and longer review times than a Tier One Community Crab Dock or a Tier Two Community Dock.

1. The Coastal Marshlands Protection Committee shall provide Public Notice of the application for 30 days.
2. An application is complete when it contains substantially all of the written information, documents, forms, fees, and materials required by the Coastal Marshlands Protection Act, and such additional information as is required by the Committee to properly evaluate the application.
3. The Coastal Marshlands Protection Committee shall act upon an application for a permit within 90 days after the application is complete; provided, however, that this provision may be waived upon the written request of the applicant.

(e) No construction or alteration of a marina may commence until the expiration of 30 days following the date on which the application is approved; provided, however, that if a timely appeal is filed, no construction or alteration may commence until all administrative and judicial proceedings are terminated.

(f) The applicant/permittee must demonstrate the capacity to establish sufficient power and authority to enforce the conditions of the permit.

(g) Permittee must provide a post-construction survey that locates the marina as indicated in the application materials. Such survey shall comply with the Georgia Plat Act, O.C.G.A. § 15-6-67 et. seq.

(h) Nothing in these rules shall be construed to preclude the Committee from developing or issuing permits suitable to the circumstances of a particular application.

(7) Community Dock, Commercial Dock, or Marina Modification.

(a) A permit modification may be issued by the Committee in accordance with subparagraph (c) below for a community dock, commercial dock, or marina modification that complies with all the following standards or conditions:
1. The project modification entails no improvements to the upland component of the project; and
2. The project is a modification or addition to an existing dock facility permitted by the Coastal Marshlands Protection Committee for water-dependent activities; and
3. The project modification involves less than 0.1 acre of new impacts to coastal marshlands; and
4. The project modification will not effect a change in use of the originally permitted community dock or marina; and
5. The project modification does not necessitate the issuance of an initial marina lease for the facility undergoing modification; and
6. No fueling is allowed in association with the community dock, commercial dock, or marina modification; and
7. No fish cleaning station may be located on or over coastal marshlands in association with the community dock, commercial dock, or marina modification; and
8. No dredging is allowed in association with the community dock, commercial dock, or marina modification.

(b) Professional drawings of the project are required to be submitted as a part of the application. The drawings must be stamped by a Registered Land Surveyor, Professional Engineer, or Architect licensed to do business in Georgia.

(c) Upon receipt of a substantially complete Community Dock, Commercial Dock, or Marina Modification project application and application fee that meets the standards of subparagraph (a), above, an abbreviated review and processing period shall apply.

1. Staff to the Committee shall have 21 days to review the project permit application.
2. The Committee shall provide Public Notice of the application for 15 days.
3. Upon a determination that the project application is complete (including staff review and public notice), the Commissioner may issue a Coastal Marshlands Protection Act permit unless a Committee member requests the application be brought to a Coastal Marshlands Protection Committee meeting for consideration.
4. Provided the project application is not called to a Coastal Marshlands Protection Committee meeting, total processing time of a community dock modification, commercial dock modification, or marina modification meeting the standards of subparagraph (a), above, shall not exceed 45 days following a preliminary determination by staff of completeness.

(d) No construction or alteration of a community dock or marina modification may commence until the expiration of 30 days following the date on which the application is approved; provided, however, that if a timely appeal is filed, no
construction or alteration may commence until all administrative and judicial proceedings are terminated.

(e) The applicant/permittee must demonstrate the capacity to establish sufficient power and authority to enforce the conditions of the permit.

(f) Any modification not meeting the standards of subparagraph (a) above, shall be reviewed and processed subject to a higher degree of examination and scrutiny applying the standards and review times of the tier that would apply if it were a new project.

(g) Permittee must provide a post-construction survey that locates the Community Dock, Commercial Dock, or Marina Modification indicated in the application materials. Such survey shall comply with the Georgia Plat Act, O.C.G.A. § 15-6-67 et seq.

Authority O.C.G.A. Title 12; O.C.G.A. 12-5-285
Appendix A

Item A-3

Savannah District
US Army Corps of Engineers
2012 Special Permit Conditions
Infrequent dredger
1. The permittee shall assign a permanent maintenance dredging point of contact for the authorized berth facility (Berth POC). Within 30 days of the date of permit issuance the permittee shall submit the name, phone number, mailing address, and email address of the Berth POC to the Savannah District, US Army Corps of Engineers (Corps) and to the Georgia Department of Natural Resources, Environmental Protection Division (Georgia EPD). The permittee shall notify the Corps and the Georgia EPD of any change in the Berth POC. Corps and Georgia EPD POC contact information is listed below. The Corps and Georgia EPD will inform the permittee of any POC changes. The preferred method of information exchange, dredging request, report submission, etc., is electronic.

US Army Corps of Engineers
Operations Division, Navigation Branch
Attention: Berth Maintenance Point of Contact
100 West Oglethorpe Avenue
Savannah, Georgia  31412
(912) 652-5219
Ryan.M.Lanier@usace.army.mil

US Army Corps of Engineers
Regulatory Division, Coastal Branch
Attention: Berth Maintenance Point of Contact
100 West Oglethorpe Avenue
Savannah, Georgia  31412
(912) 652-5550
Sara.E.Wise@usace.army.mil

Georgia Department of Natural Resources
Environmental Protection Division, Coastal District
Attention: Berth Maintenance Point of Contact
400 Commerce Center Drive
Brunswick, Georgia  31523-8251
(912) 261-3924
Dale.Caldwell@dnr.state.ga.us

2. The permittee is authorized to use agitation, hydraulic and/or clamshell dredging in the identified berth/slip for the removal of accumulated sediments to maintain the facility at its authorized depth, as follows:

A. Agitation dredging by dragging an I-beam or other similar device behind a tug for the purpose of re-suspending accumulated sediment. Re-suspended sediment is removed from the berth/slip by the tide.
B. **Hydraulic dredging** with a 14-inch or smaller discharge pipeline. The general location for positioning of the discharge end of the dredge pipeline shall be near the landward edge of the Federal Navigation Channel, and near the river bottom. For the specific location for placement of the discharge end of the dredge pipeline, the permittee shall contact the Corps Navigation Branch Berth Maintenance Point of Contact (Navigation POC). The Corps will consider a request from the permittee for use of a larger than 14-inch dredge discharge pipe on a case-by-case basis. The permittee shall submit a written request to the Corps at least 30 days prior to the planned hydraulic dredge event. This request shall include the specific measures to be employed to ensure that the discharge flow rate and volume from a larger than 14-inch dredge discharge pipe would be limited to that of a 14-inch discharge pipe.

C. **Clamshell dredging** with a closed environmental bucket. All clamshell dredged material shall be placed in an approved confined upland disposal facility. The permittee shall submit a written request to the Navigation POC at least 30 days prior to the planned clamshell dredge event. This request shall identify the location the material will be placed.

D. **Debris removal** with a clamshell bucket. All debris removed from a berth/slip shall be placed in an approved confined upland disposal facility. Debris includes any sediment removed during the operation. No debris or other clamshell dredged material shall be discharged into the river, berth, slip or other open water area once it has been removed.

3. No sooner than 7 days and at least 48 hours in advance of a planned maintenance dredging event, the permittee shall contact the Navigation POC for prior verbal approval. The permittee will be informed whether the proposed dredging can be conducted as scheduled. The permittee's proposed dredging event may be subject to postponement, modification and/or a tidal cycle restriction (i.e., ebb or flood). The permittee is responsible for resolving scheduling conflicts.

4. The following harbor conditions will be considered by the Navigation POC when scheduling a dredging event, and will typically result in event postponement, modification and/or a tidal cycle restriction:

   A. An approved or ongoing agitation or clamshell dredging event is within 3000' upstream or downstream of a berth where a agitation or clamshell dredging event is proposed.

   B. An approved or ongoing hydraulic dredging event with the end of the discharge pipe located within 5000’ of a berth where an agitation or clamshell dredging event is proposed.

   C. An approved or ongoing maintenance dredging event is within 5000' upstream or downstream of the proposed location for placement of the end of a discharge pipe associated with a hydraulic dredging event.

   D. Agitation, hydraulic and/or clamshell dredging in any berth that is located within 2000' upstream or downstream of a shoal in the Federal channel.

   E. Ongoing or scheduled dredging in the Federal channel within 3000' upstream or downstream of a berth where an agitation or clamshell dredging event is proposed.
F. Ongoing or scheduled dredging in the Federal channel within 5000' upstream or downstream of a berth where an hydraulic dredging event is proposed.

5. With prior Navigation POC approval, two adjacent berths/slips may be simultaneously agitation, clamshell or hydraulically dredged using the same piece of dredging equipment. Under no circumstances shall approval be granted for two adjacent berths to be simultaneously dredged using multiple pieces of dredging equipment.

6. The permittee shall perform required hydrographic surveys in accordance with criteria and procedures contained in the “US Army Corps of Engineers Hydrographic Surveying Manual,” EM 110-2-1003. Required hydrographic surveys shall be provided to Navigation POC as plan views and shall include the shoreline and berthing facilities, stationed to match the Corps' annual Savannah Harbor Survey.

7. The permittee shall conduct a hydrographic survey of the berth/slip no more than 15 days before and no more than 7 days after each maintenance dredging event. An event includes all maintenance dredging work performed during one or more ebb and/or flood tides, in the accomplishment of one maintenance dredging cycle. In instances where a post dredging survey is not performed within 7 days of completing the dredging event, the permittee shall calculate the volume of material dredged by using the pre-event survey and the authorized berth depth (i.e., the Corps will assume that the berth was dredged to its authorized depth).

8. The permittee shall also conduct a hydrographic survey in the Federal channel before and after every hydraulic dredging event. Channel surveys shall be performed within 24 hours of initiating and within 24 hours of completing the event. Surveys are required of the Federal channel for a distance of approximately 2000' upstream and/or downstream of the point where dredged material is discharged. The permittee is only required to survey 50% of the Federal channel, as measured from the channel centerline to the edge of the channel adjacent to the point of discharge. The required survey areas are as follows: hydraulic dredging during ebb tide(s) only requires a survey 2000' downstream of the point of discharge; hydraulic dredging during flood tide(s) only requires a survey 2000' upstream of the point of discharge; and hydraulic dredging during ebb and flood tide(s) requires a survey 2000' upstream and downstream of the discharge point.

9. The permittee shall also conduct a hydrographic survey in the Federal channel before and after every agitation event of a slip. Channel surveys shall be performed within 24 hours of initiating and within 24 hours of completing the event. Surveys are required of the Federal channel for a distance of approximately 2000' upstream and/or downstream of the point where dredged material is discharged. The permittee is only required to survey 50% of the Federal channel, as measured from the channel centerline to the edge of the channel adjacent to the point of discharge. The required survey areas are as follows: agitation dredging during ebb tide(s) only requires a survey 2000' downstream of the point of discharge; agitation dredging during flood tide(s) only requires a survey 2000' upstream of the point of discharge; and agitation dredging during ebb and flood tide(s) requires a survey 2000' upstream and downstream of the discharge point.
10. The permittee shall direct placement of hydraulically dredged material into deeper sections of the federal channel, as designated by the Navigation POC. The general location of the discharge end of the dredge pipeline shall be positioned near the landward edge of the Federal navigation channel, and near the river bottom. For the specific placement of the dredge pipeline, the permittee shall contact the Navigation POC. The permittee shall ensure that hydraulically dredged material that is deposited in the authorized dimensions of the Federal channel is spread in a thin, uniform layer. The permittee shall ensure that dredged material does not form peaks or mounds of more than one foot above the Federal channel elevation identified by the required pre-dredging event hydrographic survey. The permittee shall ensure that dredged material does not form a peak, mound or shoal above the authorized project depth of the Federal channel. The permittee shall immediately notify the Navigation POC of the formation of any identified peak, mound and/or shoal within the Federal channel.

11. **Record Keeping.** The permittee shall maintain accurate records of maintenance dredging events. The permittee’s event log(s) shall include the following minimum information: berth location and authorized depth; type of dredging; begin and end date(s) and time(s); tidal cycle (ebb and flood) for event begin and end time(s); total hours of dredging during ebb and/or flood tidal cycle(s); calculated volume of material removed from berthing facility/slip; copies of both pre and post dredging hydrographic surveys of the berth/slip; and if hydraulic dredging is performed, copies of required federal channel hydrographic surveys. The event log(s) shall also include the following information to be taken from the two US Geological Survey (USGS) Savannah River gages located at Garden City (USGS gage no. 021989715) the Corps Dock (USGS gage no. 021989773): minimum, maximum and average dissolved oxygen levels; minimum, maximum and average water temperature; minimum, maximum and average salinity; and minimum, maximum and average turbidity readings.

12. **Reporting.** Within 15 days of the completion of an approved dredging event, the permittee shall submit information contained in the above event log to the Corps and Georgia EPD by posting, an “Excel Spreadsheet Event Log Report Form (Report Form)” (attached) to the Savannah Harbor Berth Maintenance Website, https://savannahdredging.sharefile.com/. The permittee shall complete and post a Report Form for continuous and non-continuous dredging events. A continuous event involves maintenance dredging that does not stop moving sediment for more than one hour for the duration of the scheduled event. A non-continuous maintenance dredging event is when dredging stops for a period of more than one hour and re-starts.

13. The permittee shall post a quarterly (quarters end on the last day of March, June, September and December of each year) Report Form, summarizing the volume of maintenance material dredged during the preceding quarter. The information provided in quarterly Report Forms will be used by permittee and the Navigation POC for the purposes of compliance with Special Condition Number 16, below. If no maintenance dredging occurs in a berth/slip during a quarter the permittee shall post a negative quarterly Report Form within 15 days of the end of the quarter, confirming that no dredging occurred during the preceding quarter.

14. To obtain approval from the Navigation POC to conduct a maintenance dredging event, the permittee must be in compliance with all permit conditions; and specifically the permittee must be in compliance with the reporting requirements listed in Special Conditions 11, 12 and 13.
Failure by the permittee to maintain accurate maintenance dredging event logs, to post accurate and timely dredging event Report Forms and/or to submit timely quarterly Report Forms will result in disapproval by the Navigation POC of a request to conduct a maintenance dredging event. If the permittee is found to be non-compliant with reporting requirements, the Navigation POC will not grant approval for a requested maintenance dredging event until after the permittee has posted delinquent Report Forms and is found to be compliant with reporting requirements.

15. The permittee shall maintain records necessary to document that the authorized depth of the berthing facility/slip is adequate to support the intended use of the facility, and that the frequency of routine maintenance dredging is adequate to support facility operations. Specifically, the permittee shall ensure that under normal circumstances the authorized facility depth and routine maintenance dredging frequency will allow the berth to accumulate sediments for a minimum of 90 days without the need for a maintenance dredging event.

16. Prior to conducting maintenance dredging, the permittee shall make advance payment to the Corps. These funds will be placed in an advanced payment account to be used for the sole purpose of reimbursing the Corps for removal of agitation and/or hydraulic dredged material from the Savannah Harbor Federal channel. Within 30 days of receiving written advance payment instructions from the Corps, the permittee shall make payment of the specified dollar amount to the advanced payment account. Upon the permittee posting of the quarterly Report Form, the Corps will calculate the amount of material dredged and deduct the corresponding dollar amount from the advanced payment account. The rate of payment is $1.78 per cubic yard for agitation dredging, and $2.23 per cubic yard for hydraulic dredging. The Corps will give 120 days prior notice to permittees when a change in these rates is anticipated.

17. The Water Quality Certification issued by Georgia EPD for the authorized activity included the following conditions, which are hereby included as special conditions to the permit:

A. The applicant must notify Georgia EPD of any modifications to the proposed permitted activity.

B. No oils, grease, materials or other pollutants will be discharged from the permitted activities that reach public waters.

C. All work performed will be done in a manner so as not to violate applicable water quality standards.

D. Between March and May of each year, a 2 to 4-week striped bass spawning event will occur in which no dredging is allowed. The Georgia Department of Natural Resources Wildlife Resources Division (WRD) Fisheries Section will monitor the Savannah River annually and through coordination with the Georgia EPD, will notify berth operators via e-mail of estimated and actual spawning windows that will identify this 2 to 4-week restrictive window. Berth operators are encouraged to plan accordingly by assuring that berth depths are acceptable as the March and April months approach. Any request for a variance must be coordinated through Georgia EPD and Georgia WRD and will be considered in light of salinity levels in the berth area and all reasonable efforts made to provide adequate berth depths prior to the striped bass spawning event. Any request for a variance must be coordinated through Georgia EPD and Georgia WRD and will be considered in light of salinity levels in the berth area and all reasonable efforts made to provide adequate berth depths prior to the striped bass spawning event.
spawning period.

E. The berth operator shall monitor dissolved oxygen (DO) conditions at the continuous water quality gage operated by the US Geological Survey (USGS) in the Savannah River at the Corps dock (USGS gage no. 021989773). The critical DO period is defined as any period during which the instantaneous DO levels measure less than 4.0 mg/L, as measured at the gage. The following protocols shall apply during the critical DO period:

(1) No maintenance dredging activities shall be conducted during the critical DO period.

(2) The berth operator is expected to prepare for the critical DO period by conducting maintenance dredging prior to that period.

(3) Georgia EPD will consider granting a variance to this restriction only when the berth operator can demonstrate that they have operated their berth in accordance with the restrictions listed under Special Condition 15 of the 404 permit. Specifically, the berth operator must demonstrate that every reasonable effort has been made to avoid dredging during the critical DO period, and that every reasonable effort has been made to maintain the berth at a depth adequate to accumulate sediments for a minimum of 90 days without the need for maintenance dredging under normal circumstances. In no case shall a variance be granted where the instantaneous DO levels measure less than 3.0 mg/L.

(4) Where a variance is granted, the berth operator shall post maintenance dredging Report Forms, in accordance with Special Conditions 11 and 12, regarding maintenance dredging activities conducted during the variance period.

F. The berth operator’s maintenance dredging may be periodically reviewed by the Georgia EPD and the Corps to consider new dredging technologies, water quality conditions, other environmental conditions, laws, regulations, and any other changes to the construction, maintenance and operation of the Savannah River Harbor as it may effect this certification. The certification will be modified as appropriate. Georgia EPD and the Corps will meet annually to review the status of these Water Quality Certification conditions.

18. A copy of this permit, including the approved drawings and plans; special conditions; and any amendments shall be maintained at the work site whenever work is being performed. The permittee(s) shall assure that all contractors, subcontractors, and other personnel performing the permitted work are fully aware of the permit's terms and conditions.

19. All work will be performed in accordance with the following attached plans and drawings which are incorporated in and made part of the permit:

A. Location Map

B. Existing Conditions Profile and Cross Sections
20. The permitted activity must not interfere with the public's right to free navigation on the Savannah River, a navigable water of the United States.

21. This permit does not authorize the interference with any existing or proposed Federal Project and the permittee shall not be entitled to compensation for damage or injury to the structures or work authorized herein, which may be caused by or result from existing or future operations undertaken by the United States in the public interest.

22. All work conducted under this permit shall be located, outlined, designed, constructed and operated in accordance with the minimal requirements as contained in the Georgia Erosion and Sedimentation Control Act of 1975, as amended. Utilization of plans and specifications as contained in the "Manual for Erosion and Sediment Control, (Latest Edition)," published by the Georgia Soil and Water Conservation Commission or their equivalent, will aid in achieving compliance with the aforementioned minimal requirements.

23. If you or your contractors discover any federally listed threatened or endangered species and/or their habitat while accomplishing the activities authorized by this permit, you must immediately STOP work in the area and notify the issuing office of what you have found. We will initiate the Federal and state coordination required to determine if the species and/or habitat warrant further consultation with the US Fish and Wildlife Service or the National Marine Fisheries Service.

24. Regarding the present and future protection of the West Indian Manatees that have the potential to be within the project vicinity, the following conditions must be fully implemented by the applicant:

   A. The permittee agrees that all personnel associated with the project will be advised that there are civil and criminal penalties for harming, harassing or killing manatees, which are protected under the Endangered Species Act of 1973 and the Marine Mammal Protection Act of 1972. The permittee and contractor will be held responsible for any manatee harmed, harassed or killed as a result of construction activities.

   B. Siltation barriers will be made of material in which manatees cannot become entangled, are properly secured, and are regularly monitored to avoid manatee entrapment. Barriers must not block manatee entry to or exit from essential habitat.

   C. All vessels associated with the project will operate at "no wake/idle" speeds at all times while in the project area. All vessels will follow routes of deep water whenever possible.

   D. All on-site project personnel are responsible for observing water-related activities for the presence of manatees. All work in open water will cease upon sighting of manatees within 50 feet of the project area. Work will not resume until the manatees have left the project area for at least 30 minutes.

   E. Extreme care will be taken in lowering equipment or materials, including, but not limited to I-beams, spuds, anchors, cutter-heads, piles, etc., below the water surface; taking any
precaution not to harm any manatee(s) that may have entered the project area undetected. All such equipment or materials will be lowered at the lowest possible speed.

F. The permittee agrees that any collision with a manatee shall be reported immediately to the US Army Corps of Engineers (912-652-5347), the US Fish and Wildlife Service, Ecological Services Field Office, (912-832-8739), and Georgia Department of Natural Resources (GADNR) (Weekdays 8:00 a.m.-4:30 p.m.: 912-264-7218 or 1-800-272-8363; (nights and weekends: 1-800-241-4113). Any dead manatee(s) found in the project area must be secured to a stable object to prevent the carcass from being moved by the current before the authorities arrive. In the event of injury or mortality of a manatee, all aquatic activity in the project area must cease pending section 7 consultation under the Endangered Species Act with the US Fish and Wildlife Service and the lead Federal agency.

G. The permittee agrees that the contractor shall keep a log detailing sightings, collisions, or injury to manatees, which have occurred during the contract period.

H. The permittee agrees that following project completion, a report summarizing the above incidents and sightings will be submitted to the US Fish and Wildlife Service, Ecological Services Field Office, Coastal Georgia Sub-Office, 4980 Wildlife Drive, NE Townsend, Georgia 31331.
Appendix B
Habitat Assessment for Threatened & Endangered In-water Species

Information on all 3 sites gathered from the following sources:
U.S. Fish & Wildlife Service (USFWS)
National Marine fisheries Service (NMFS)
Georgia Dept. of Natural Resources (GADNR)
HABITAT ASSESSMENT FOR THREATENED AND ENDANGERED SPECIES

Savannah Cruise Ship Staging Areas
Chatham County, Georgia

Prepared for:

CITY OF

savannah

Prepared by:

ENVIRONMENTAL SERVICES, INC.
131 Hutchinson Island Road, Suite 100
PO Box 2383
Savannah, Georgia 31402
I. INTRODUCTION

A. Purpose
Environmental Services, Inc., (ESI) was contracted to perform a due diligence assessment for protected species and habitats essential to these species for the above-referenced project. The primary purpose of the assessment was to determine whether habitat suitable for any species currently listed or proposed for listing as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), or Georgia Department of Natural Resources (GADNR) was present within the project areas. Because the scope of this work is restricted to the in-water component of the project, ESI addresses the project area as the Savannah River in proximity to the three proposed terminal sites; however consideration is also made for species that exist within near shore and off shore habitats. Based upon prior site knowledge and or current site conditions, ESI has also provided some information pertaining to the land side of the three sites where possible.

B. Project Location
This assessment was conducted at three possible staging areas along the Savannah River, near downtown Savannah, in Chatham County, Georgia (Latitude 32.0823, Longitude -81.0877). As depicted in the attached Figure 1, the first area, Silo Tract is located on Hutchinson Island and east side of the Talmadge Bridge, the second, Powell Duffryn Tract is located on Hutchinson Island approximately .35 miles east of the Silo Tract, and the last, Savannah River Landing Tract is located on the south side of the Savannah River near the Marriott Hotel.

II. SITE OVERVIEW

A. Existing Conditions and Habitats
Through prior site work, and general knowledge of the Savannah River corridor, ESI personnel have conducted vehicular and/or pedestrian assessments of the Silo and Powell Duffryn Tracts. The Savannah River Landing site has been effectively filled or modified in recent years, removing most native habitats that once existed. The various general habitats found within the areas were identified to assist in determining the potential for habitation by any listed species. The following habitats, along with the associated flora and fauna, were observed in the areas:

Mixed Pine /Mixed Hardwood Uplands
The vast majority of the uplands on any of the three sites have experienced various levels of
development and disturbance in years past. Any remnant vegetation remaining on these sites can be characterized as disturbed, early successional, with occasional more mature species intermixed, primarily along the property boundaries. Any canopy vegetation in these areas consists primarily of loblolly pine (Pinus taeda) and sweetgum (Liquidambar styraciflua). A majority of the smaller live hardwood component consists of water oak (Quercus nigra), live oak (Quercus virginiana), and eastern red cedar (Tsuga Canadensis). The understory vegetation consists of sparse sweetgum, gallberry (Ilex Sp.), red maple (Acer rubrum), blackberry (Rubus spp.), and wax myrtle (Myrica cerifera). The fringe areas between the uplands and wetlands consisted mainly of fetter-bush (Lyonia lucida), horse sugar (Symplocos tinctoria), dog fennel (Eupatorium compositifolium), and giant cane (Arundinaria gigantea). The herbaceous layer includes greenbrier (Smilax spp.), and bracken fern (Pteridium aquilinum).

**Freshwater Depressional / Hardwood/Pine Wetlands**

Wetlands exist on or around each of the three sites. Generally speaking though, these wetlands are of varying successional age, are located on hydric soils, and are seasonally flooded.

The canopy of these wetland vegetative communities are predominately composed of black gum (Nyssa sylvatica), bald cypress (Taxodium distichum), red maple (Acer rubrum), sweetgum (Liquidambar styraciflua), water oak (Quercus nigra), ironwood (Carpinus caroliniana), loblolly bay (Gordonia lasianthus), red bay (Persea borbonia), and wax myrtle (Myrica cerifera). The majority of the understories within these wetlands were comprised of gallberry (Ilex coriacea), fetter bush (Lyonia lucida), giant cane (Arundinaria gigantea), and plume grass (Erianthus giganteus). The herbaceous layer includes sphagnum moss (Sphagnum spp.), Virginia chain-fern (Woodwardia areolata), and blackstem chainfern (Woodwardia virginica).

**Jurisdictional Salt Marsh**

Jurisdictional salt marsh flank the western and northern portions of the Silo Tract, exist off-site to the north of the Powell Duffryn Tract, and are not likely a concern at the Savannah River Landing Tract. However, ESI has not been able to investigate that site specifically. Because all three tracts abut the Savannah River, if any salt tolerant vegetation exists along the river frontage that too would be classified as jurisdictional marsh. The salt marsh areas are tidally influenced. The vegetative community of the salt marsh areas are comprised of silverling (Baccharis halimifolia), saltgrass (Distichlis spicata), needle rush, (Juncus roemerianus), smooth marshgrass (Spartina alterniflora),
and rough marshgrass (*Spartina cynosuroides*).

**Open Water**
Given the nature of this project, the most prominent habitat that exists is the open water habitats associated with the Savannah River and Atlantic Ocean. As observed in the data search, many of the species outlined are contained within these areas, and will ultimately be considered during any permitting process associated with initial dredging, maintenance dredging, or terminal construction. All tidal waters are considered Essential Fish Habitat within NOAA National Marine Fisheries Service (NMFS) preview.

**III. ASSESSMENT METHODOLOGY**
The methodologies used to determine the potential occurrence of listed species within the project sites include a review of existing literature, coordination with wildlife regulatory agencies, and limited field assessments to investigate habitat types that could potentially accommodate listed Threatened and Endangered species. This assessment is a Habitat Assessment, and not a species specific survey of listed species. Given the need to spend additional man-hours on site during wetland and state water delineation exercises, cultural resource assessments, hazardous waste assessments, and interagency field visits, ESI utilizes these opportunities to observe habitats and wildlife in an effort to increase on-site assessment frequencies thereby enhancing our site knowledge needed to address potential site use.

**A. Field Studies**
ESI biologists have conducted limited habitat assessments on the Silo and Powell Duffryn Tracts in the past. No land based assessment has been made at the Savannah River Landing site by ESI, however given the previous permitting completed on that site, it remains unlikely any significant habitat or species where encountered. The general site studies consisted of vehicular and pedestrian surveys throughout the properties to identify available habitat types. Major community types were identified and observations concerning dominant vegetation, condition, and habitat quality were noted. A portion of these reviews were conducted during the formal wetland delineation on site, while additional investigations were completed while investigating area specific site conditions and species specific observations.

**B. Literature Review and Agency Coordination**
In addition to our field investigations and subsequent review of available printed material for current
listed species, we also provided notice of our investigation to USFWS, NMFS, and GADNR. Through these notifications, we requested that the agencies provide us with any information regarding the known presence of any listed endangered / threatened species on or within the vicinity of the project areas. Attachment A contains copies of the wildlife regulatory agency coordination letters and specific responses from these agencies.

IV. LISTED SPECIES

For the purposes of this report, it should be noted that protection of listed species is provided by the Endangered Species Act for both private and public lands, regardless of permitting needs. For species listed by the State of Georgia as rare, unusual, or in danger of extinction under the Endangered Wildlife Act, the state's jurisdiction is limited to the capture, killing, selling, and protection of suitable habitat of protected species on public land. For plants listed by the state as rare, unusual, or in danger of extinction under the Wildflower Preservation Act, jurisdiction is also limited to those species found on public land. Species of Management Concern (SMC) are being evaluated to determine population trends and threats. Although SMC have no federal listing, they may currently be listed by the state or may be listed in the future.

Listed species that are federally and/or state classified as Threatened or Endangered that have a documented range encompassing Chatham County are compiled in the following Table 1 along with a brief description and statement about their potential for occurrence. Several of the species listed as potentially occurring in Chatham County are not anticipated to occur within the project sites due to habitat requirements and distribution. A review of the USFWS Chatham County list indicated that seventeen (17) animal species and three (3) plant species as potentially occurring in Chatham County. Species identified to occupy habitats known to exist within Chatham County are listed below in Table 1.

Table 1.0 Federal and State protected species for Chatham County

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Federal Status</th>
<th>State Status</th>
<th>Habitat Requirements</th>
<th>Available Habitat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertebrates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humpback whale</td>
<td><em>Megaptera novaeangliae</em></td>
<td>E</td>
<td>E</td>
<td>Coastal waters during migration</td>
<td>Yes</td>
</tr>
<tr>
<td>Right Whale</td>
<td><em>Eubalaena glacialis</em></td>
<td>E</td>
<td>E</td>
<td>Mate and calve in shallow coastal waters</td>
<td>Yes</td>
</tr>
<tr>
<td>Common Name</td>
<td>Scientific Name</td>
<td>Federal Status</td>
<td>State Status</td>
<td>Habitat Requirements</td>
<td>Available Habitat</td>
</tr>
<tr>
<td>--------------------------</td>
<td>------------------------------</td>
<td>----------------</td>
<td>--------------</td>
<td>-----------------------------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>West Indian Manatee</td>
<td>Trichechus manatus</td>
<td>E</td>
<td>E</td>
<td>Coastal waters, estuaries, and warm outfalls</td>
<td>Yes</td>
</tr>
<tr>
<td>Bachman’s warbler</td>
<td>Vermivora bachmanii</td>
<td>E</td>
<td>E</td>
<td>Probably extinct</td>
<td>--</td>
</tr>
<tr>
<td>Bald eagle</td>
<td>Haliaeetus leucocephalus</td>
<td>De-listed</td>
<td>E</td>
<td>Inland waterways and estuarine areas in Georgia</td>
<td>Yes</td>
</tr>
<tr>
<td>Gull-billed tern</td>
<td>Sterna nilotica</td>
<td>--</td>
<td>T</td>
<td>Nest in colonies on sandy sites</td>
<td>Yes</td>
</tr>
<tr>
<td>Piping plover</td>
<td>Charadrius melodus</td>
<td>T</td>
<td>T</td>
<td>Winter on Georgia’s coast; prefer areas with expansive sand or mudflats (foraging) in close proximity to a sand beach (roosting)</td>
<td>Yes</td>
</tr>
<tr>
<td>Red-cockaded woodpecker</td>
<td>Picoides borealis</td>
<td>E</td>
<td>E</td>
<td>Nest in mature pines with low understory vegetation; forage in pines and pine hardwood stands &gt; 30 years of age, preferably &gt; 10” dbh</td>
<td>No</td>
</tr>
<tr>
<td>Wood stork</td>
<td>Mycteria Americana</td>
<td>E</td>
<td>E</td>
<td>Primarily feed in fresh and brackish wetlands and nest in cypress or other wooded swamps</td>
<td>Yes</td>
</tr>
<tr>
<td>Eastern indigo snake</td>
<td>Drymarchon corais couperi</td>
<td>T</td>
<td>T</td>
<td>During Winter, den in xeric sandridge habitat and forage in creek bottoms, upland forests, and ag fields</td>
<td>No</td>
</tr>
<tr>
<td>Gopher tortoise</td>
<td>Gopherus polyphemus</td>
<td>--</td>
<td>T</td>
<td>Well-drained sandy soils in forest and grassy areas; associated with pine overstory, open understory with grass and groundcover, and sunny areas for nesting</td>
<td>No</td>
</tr>
<tr>
<td>Green sea turtle</td>
<td>Chelonia mydas</td>
<td>T</td>
<td>T</td>
<td>Migrates through Georgia’s coastal waters; rarely nests in Georgia</td>
<td>Yes</td>
</tr>
<tr>
<td>Hawksbill sea turtle</td>
<td>Eretmochelys imbricata</td>
<td>E</td>
<td>E</td>
<td>Migrates through Georgia’s coastal waters</td>
<td>Yes</td>
</tr>
<tr>
<td>Kemp’s ridley sea turtle</td>
<td>Lepidochelys kempi</td>
<td>E</td>
<td>E</td>
<td>Migrates through Georgia’s coastal waters</td>
<td>Yes</td>
</tr>
<tr>
<td>Leatherback sea turtle</td>
<td>Dermochelys coriacea</td>
<td>E</td>
<td>E</td>
<td>Migrates through Georgia’s coastal waters; rarely nests in Georgia</td>
<td>Yes</td>
</tr>
</tbody>
</table>
### Environmental Services, Inc.

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Federal Status</th>
<th>State Status</th>
<th>Habitat Requirements</th>
<th>Available Habitat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loggerhead sea turtle</td>
<td><em>Caretta caretta</em></td>
<td>T</td>
<td>T</td>
<td>Nests on Georgia’s barrier island beaches; forages in warm ocean waters and river mouth channels</td>
<td>Yes</td>
</tr>
<tr>
<td>Flatwoods salamander</td>
<td><em>Ambystoma cingulatum</em></td>
<td>T</td>
<td>T</td>
<td>Open mesic pine/wiregrass flatwoods</td>
<td>No</td>
</tr>
<tr>
<td>Shortnose sturgeon</td>
<td><em>Acipenser brevirostrum</em></td>
<td>E</td>
<td>E</td>
<td>Atlantic seaboard rivers</td>
<td>Yes</td>
</tr>
<tr>
<td>Atlantic sturgeon</td>
<td><em>Acipenser oxyrinchus oxyrinchus</em></td>
<td>E</td>
<td>E</td>
<td>Spawn in freshwater and migrate to estuarine and marine waters for majority of life.</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### Vascular Plants

<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Scientific Name</th>
<th>Federal Status</th>
<th>State Status</th>
<th>Habitat Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climbing buckthorn</td>
<td><em>Sageretia minutiflora</em></td>
<td>--</td>
<td>T</td>
<td>Calcareous rocky bluffs, forested shell middens on barrier islands, and evergreen hammocks along stream banks and coastal marshes</td>
</tr>
<tr>
<td>Narrowleaf obedient plant</td>
<td><em>Physostegia leptophylla</em></td>
<td>--</td>
<td>T</td>
<td>Wet muck or peat in shallow waters of river swamps in the margins of both fresh and brackish (tidal) marshes</td>
</tr>
<tr>
<td>Pondberry</td>
<td><em>Lindera melissifolia</em></td>
<td>E</td>
<td>E</td>
<td>Shallow depression ponds of sandhills, margins of cypress ponds, and in seasonally wet low areas among bottomland hardwoods</td>
</tr>
</tbody>
</table>

### NOTES:

E - Endangered. A taxon which is in danger of extinction throughout all or a significant portion of its range.

T - Threatened. A species that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

### A. Animals

Many of the animals that are listed species for Chatham County are marine species. Because the project involves cruise ships traversing river, in shore and off shore habitats, all species are considered in this review. Although the current assessment work does not specifically address the landward portion of any of the three sites, ESI has attempted to provide insight concerning the potential parcels where possible.
**Humpback whale** (*Megaptera novaeangliae*)

The Federally and State listed Humpback whale is a stout, thick-bodied whale weighing an average of 33 tons up to 52 tons. It is approximately 46-feet long. The top of its body is dark blue-black. The color of its bottom surface varies widely, from all black to all white through various degrees of marbling. Its dorsal fin is variable in shape, from almost flat to tall and triangular. Humpback whales are commonly found in coastal or shelf waters in high-latitude areas in summer, feeding in the cold, productive waters. In winter, they migrate to mating and calving grounds in tropical or subtropical waters. The humpback whale travels off the coast of Georgia during these migrations.

The humpback whale is a pelagic species size constrained and dependent upon the larger waters of the Atlantic for feeding, calving, and migration. Terminal construction activities within the Savannah River will not have a direct effect on the Humpback whale; however, ships utilizing the terminal facility will transit through off shore habitats suitable for use by Humpback whales. By utilizing the existing best management protocols designed to limit whale strikes, the project may affect, but is not likely to adversely affect this species.

**Right whale** (*Eubalaena glacialis*)

The Right whale is the rarest of all large whale species. Right whales are large baleen whales with adults ranging between 45 and 55 feet in length and weighing up to 70 tons. Distinguishing features for right whales include a stocky body, generally blue-black to light brown in color (although some individuals have white patches on their undersides), lack of a dorsal fin, a large head (about ¼ of the body length), strongly bowed margin of the lower lip, and callosities (raised patches of roughened skin covered with white whale lice) on the head region. The eyes are very small, the lips are large, and there are 2 blowholes. The tail is broad, deeply notched, and all black with a smooth trailing edge.

The right whale is a pelagic species size constrained and dependent upon the larger waters of the Atlantic for feeding, calving, and migration. Terminal construction activities within the Savannah River will not have a direct effect on the right whale; however, ships utilizing the terminal facility will transit through off shore habitats suitable for use by right whales. By utilizing the existing best management protocols designed to limit whale strikes, the project may affect, but is not likely to adversely affect this species.

**West Indian manatee** (*Trichechus manatus*)

The West Indian manatee is a massive fusiform-shaped animal that averages about 9.8 feet in length
and 2,200 pounds in weight; but may reach lengths of up to 15 feet and weigh as much as 3,570 pounds. The nostrils, located on the upper snout, open and close by means of muscular valves as the animal surfaces and dives and are often the only part of the animal that is visible. Manatees are known to occupy the waterways within the vicinity of the project, most notably during the warmer months of the year. In general, manatees can be found along the Georgia coast from March through November.

Habitats commonly utilized by the species are found throughout the Georgia coast and therefore are present within the proposed terminal areas. The proposed project may alter existing shoreline and or existing vessel mooring facilities; however, with the implementation of BMP’s during construction and by using appropriate design techniques the project may affect, but is not likely to adversely affect this species.

**Bachman’s warbler** (*Vermivora bachanii*)

This species is thought to be extinct and was last seen in Georgia in 1976. The Bachman’s warbler nested in low, wet forested areas containing variable amounts of water, usually with some water that was permanent. This species breeds in the Southeastern United States and winters in western Cuba and the Isle of Pines.

No observation of this species was made nor, given the potential extinct status of this species, do we expect this species to occur on site.

**Bald Eagle** (*Haliaeetus leucocephalus*)

Bald Eagles were removed from the federal list of threatened and endangered species on June 28, 2007. The bald eagle is still federally protected by the provisions of the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. The state of Georgia lists the bald eagle as endangered. Bald eagles find habitat along inland waterways and estuarine areas in Georgia, selecting areas with low human disturbance, suitable forest structure, and abundant prey. The bald eagle likes to nest mainly in the largest tree in its chosen territory and to have many available perching sites. Nest sites along rivers are typically close to the shores with large aquatic areas and little forest edge. Lake nest sites are usually near water with super-dominant trees and little overall human disturbance. This species prefers nesting within 0.5 miles of water and a clear path to that water, and usually forages within approximately 1.0 mile of its nest site.

No bald eagles or nests were identified during the field habitat survey; however, they may utilize the area for feeding. The presence of foraging habitat for this species within coastal Georgia is not uncommon as they often forage throughout the extensive Georgia saltmarsh
system. The presence of nearby development, major roadways and bridges adjoining the project areas, and the proximity to similar and vast habitats that are not as impacted by development pressures, decreases the likelihood that these site are used for nesting and/or feeding. ESI does not believe that the proposed project will result in any impacts that threaten the continued existence of this species.

**Gull-billed tern** (*Gelochelidon nilotica*)

The Gull-billed tern is a state Threatened species that is a fairly large tern with a short thick gull-like bill, broad wings, and long legs. The color varies by season from grey upper parts, white under parts, a black cap, black bill and black legs in the summer and in the winter the black cap is lost. They breed on gravely or sandy beaches and can winter in saltmarsh, estuaries, lagoons and plowed fields.

Suitable breeding habitat does not exist within any of the potential project sites. There are saltmarsh and estuarine areas within the project vicinities; therefore, wintering grounds are present in the area but very limited on any of the potential sites. The project may affect, but is not likely to adversely affect this species.

**Piping plover** (*Charadrius melodus*)

The piping plover is a small sparrow-sized shorebird that nests and forages along coastal sand and gravel beaches. Adults have orange legs and a black band across the forehead from eye to eye and a black ring around the neck. The habitat outlined above is typically used as early as the end of July and through April as the birds migrate from their nesting grounds.

Suitable breeding habitat does not exist within any of the potential project sites. There are saltmarsh and estuarine areas within the project vicinities; therefore, wintering grounds are present in the area but very limited on any of the potential sites. The project may affect, but is not likely to adversely affect this species.

**Red-cockaded woodpecker** (*Picoides borealis*)

The Red-cockaded woodpecker (RCW) is a cardinal sized black and white bird that is associated with mature or old-growth pine stands. The preferred nesting habitat is old-growth pine trees that are 60 years or older with a relatively thin understory. Preferred RCW foraging habitat is described as pine or pine/hardwood stands 30 years of age or older.

There is no suitable nesting or foraging habitat on any of the proposed sites. Furthermore, there are no known RCW colonies in the vicinity; therefore, the project will have no effect on
this species.

**Wood stork** (*Mycteria americana*)
The wood stork is a large white bird with a black tail and grey neck and head that typically inhabits freshwater and brackish wetlands in the southeast. This species usually nests in cypress or mangrove swamps, and forages in freshwater marshes, narrow tidal creeks, or flooded tidal pools. Ideal feeding habitats are those that have flooded and then dried, creating pools with high concentrations of fish trapped by falling water levels.

No wood storks or associated rookeries were identified during the field habitat survey; however, wood storks may forage within certain portions or near to the potential site locations. The presence of foraging habitat for this species within coastal Georgia is not uncommon as they primarily forage throughout the extensive Georgia saltmarsh system. Suitable breeding habitat does not exist within any of the potential project sites. The project may affect, but is not likely to adversely affect this species.

**Eastern indigo snake** (*Drymarchon corais couperi*)
The Eastern indigo snake is a large, docile, non-poisonous snake growing to a maximum length of about 8 feet. The color in both young and adults is shiny bluish-black, including the belly, with some red or cream coloring about the chin and sides of the head. During the winter months, the Eastern indigo snake tend to den in xeric sand ridge habitat preferred by gopher tortoises. The Eastern indigo snake commonly cohabitates in gopher tortoise dens or utilizes inactive/abandoned dens. During warm months, Eastern indigo snakes commonly forage in creek bottoms, upland forests, and agricultural fields.

No indigo snakes were visually observed by ESI personnel during the previous field work conducted within Silo and Powell Duffryn study areas. Based upon the prior work completed on the Savannah River Landing site, it is unlikely indigo snakes utilize that site. Potentially suitable habitats do not exist within any of the potential project sites. The high traffic volumes on the adjacent roadway infrastructures and the highly developed nature of the uplands within the project study areas and adjoining lands make the use of these sites by this species extremely unlikely. ESI does not believe that the proposed project will result in impacts that threatened the continued existence of this species.

**Gopher tortoise** (*Gopherus polyphemus*)
The Gopher tortoise is a state Threatened species and typically occurs in well drained, sandy soils in relatively open grassy areas with a sparse pine over story. Gopher tortoises dig burrows, typically ranging in size from 20 to 30 feet long and from six to eight feet deep, with their shovel-like front legs. The burrows are found in dry places such as sandhills, flatwoods, prairies and coastal dunes or in human-made environments such as pastures, grassy road sides and old fields.

No Gopher tortoises were visually observed by ESI personnel during the previous field work conducted within Silo and Powell Duffryn study areas. Based upon the prior work completed on the Savannah River Landing site, it is unlikely Gopher tortoises utilize that site. Potentially suitable habitats, consisting of well-drained sandy areas do not exist within any of the potential project sites. The high traffic volumes on the adjacent roadway infrastructures and the highly developed nature of the uplands within the project study areas and adjoining lands make the use of these sites by this species extremely unlikely. ESI does not believe that the proposed project will result in impacts that threatened the continued existence of this species.

**Green sea turtle** (*Chelonia mydas*)

An adult green sea turtle may reach a size of 1 meter long and 180 kg mass. The carapace is smooth and is colored gray, green, brown and black. The plastron is yellowish white. Hatchlings weigh about 25 grams, and are about 50 mm long. Hatchlings are black on top and white on the bottom. In the southeastern United States, green turtles are found around the U.S. Virgin Islands, Puerto Rico, and the continental U.S. from Texas to Massachusetts. The primary nesting sites in U.S. Atlantic waters are along the east coast of Florida, with additional sites in the U.S. Virgin Islands and Puerto Rico.

The Green sea turtle is known to use the Georgia coastal waters, primarily during migration and rarely uses Georgia’s inland waters. More importantly as it relates to long-term viability of the population, they rarely choose to nest on Georgia beaches. No suitable nesting habitat exists within any of the potential project sites. Terminal construction activities within the Savannah River will not have a direct effect on the Green sea turtle; however, ships utilizing the terminal facility will transit through off shore habitats suitable for use by this species. By utilizing the existing best management protocols designed to limit interaction with this species, the project may affect, but is not likely to adversely affect this species.

**Hawksbill sea turtle** (*Eretmochelys imbricate*)

The hawksbill sea turtle is a small to medium-sized sea turtle. The following characteristics distinguish the hawksbill from other sea turtles: two pairs of prefrontal scales; thick, posteriorly
overlapping scutes on the carapace; four pairs of coastal scutes; two claws on each flipper; and a beak-like mouth. The carapace is heart-shaped in very young turtles, and becomes more elongated with maturity. Carapacial scutes are often richly patterned with irregularly radiating streaks of brown or black on an amber background. It is a solitary nester, utilizing different habitats at different stages of their life cycle from the pelagic environment, coral reefs, and both low- and high-energy beaches for nesting in tropical oceans of the world.

The hawksbill sea turtle is known to use the Georgia coastal waters, primarily during migration and rarely uses Georgia’s inland waters. More importantly as it relates to long-term viability of the population, they rarely choose to nest on Georgia beaches. No suitable nesting habitat exists within any of the potential project sites. Terminal construction activities within the Savannah River will not have a direct effect on the hawksbill sea turtle; however, ships utilizing the terminal facility will transit through offshore habitats suitable for use by this species. By utilizing the existing best management protocols designed to limit interaction with this species, the project may affect, but is not likely to adversely affect this species.

Kemp’s ridley sea turtle (*Lepidochelys kempii*)

Kemp’s ridley sea turtle is the smallest of all existing sea turtles. Coloration changes significantly during development from the grey-black carapace and plastron of hatchlings to the lighter grey-olive carapace and cream-white or yellowish plastron of adults. There are two pairs of prefrontal scales on the head, five vertebral scutes, five pairs of coastal scutes and generally twelve pairs of marginals on the carapace. The major nesting beach for Kemp's ridley is on the northeastern coast of Mexico. This location is near Rancho Nuevo in southern Tamaulipas. The species occurs mainly in coastal areas of the Gulf of Mexico and the northwestern Atlantic Ocean.

The Kemp’s ridley sea turtle is known to use the Georgia coastal waters, primarily during migration and rarely uses Georgia’s inland waters. More importantly as it relates to long-term viability of the population, they rarely choose to nest on Georgia beaches. No suitable nesting habitat exists within any of the potential project sites. Terminal construction activities within the Savannah River will not have a direct effect on the Kemp’s ridley sea turtle; however, ships utilizing the terminal facility will transit through offshore habitats suitable for use by this species. By utilizing the existing best management protocols designed to limit interaction with this species, the project may affect, but is not likely to adversely affect this species.

Leatherback sea turtle (*Dermochelys coriacea*)

Savannah Cruise Ship Terminal
The leatherback sea turtle is the largest living turtle, and is so distinctive as to be placed in a separate taxonomic family. The carapace is distinguished by a rubber-like texture and made primarily of tough, oil-saturated connective tissue. No sharp angle is formed between the carapace and the plastron, resulting in the animal being somewhat barrel-shaped. The leatherback turtle range extends from Cape Sable, Nova Scotia, south to Puerto Rico and the U.S. Virgin Islands. Critical habitat for the leatherback includes the waters adjacent to Sandy Point, St. Croix, U.S. Virgin Islands, up to and inclusive of the waters from the hundred fathom curve shoreward to the level of mean high tide with boundaries at 17°42'12" N and 64°50'00" W. Nesting occurs from February through July with sites located from Georgia to the U.S. Virgin Islands. During the summer, leatherbacks tend to be found along the east coast of the U.S. from the Gulf of Maine south to the middle of Florida.

The leatherback sea turtle is known to use the Georgia coastal waters, primarily during migration and rarely uses Georgia’s inland waters. More importantly as it relates to long-term viability of the population, they rarely choose to nest on Georgia beaches. No suitable nesting habitat exists within any of the potential project sites. Terminal construction activities within the Savannah River will not have a direct effect on the leatherback sea turtle; however, ships utilizing the terminal facility will transit through off shore habitats suitable for use by this species. By utilizing the existing best management protocols designed to limit interaction with this species, the project may affect, but is not likely to adversely affect this species.

**Loggerhead sea turtle** (*Caretta caretta*)

Adults and sub-adults have a reddish-brown carapace. Scales on the top and sides of the head and top of the flippers are also reddish-brown, but have yellow borders. The neck, shoulders and limb bases are dull brown on top and medium yellow on the sides and bottom. The plastron is also medium yellow. Loggerheads are circumglobal, inhabiting continental shelves, bays, estuaries, and lagoons in temperate, subtropical, and tropical waters. In the Atlantic, the loggerhead turtle's range extends from Newfoundland to as far south as Argentina. During the summer, nesting occurs in the lower latitudes. The primary Atlantic nesting sites are along the east coast of Florida, with additional sites in Georgia, the Carolinas, and the Gulf Coast of Florida.

The loggerhead sea turtle is known to use the Georgia coastal waters and beaches. There are no beaches located within the potential project sites that would constitute adequate nesting habitats for the loggerhead sea turtle. Nearly all of the coastal Georgia estuarine system is considered potential habitat for use by the loggerhead sea turtle. Terminal construction activities within the Savannah River will not have a direct effect on the loggerhead sea turtle;
however, ships utilizing the terminal facility will transit through off shore habitats suitable for use by this species. By utilizing the existing best management protocols designed to limit interaction with this species, the project may affect, but is not likely to adversely affect this species.

**Flatwoods salamander (Ambystoma cingulatum)**

The flatwoods salamander is a small elongated species of salamander. It has a small, indistinct head, short legs, and a long, rounded tail. The typical coloration consists of a background of brownish black to purplish black overlaid with narrow gray or silvery white net-like markings, bands, or diffuses spotting. Flatwoods salamanders are typically found in open mesic pine/wiregrass flatwoods, dominated by longleaf or slash pine and maintained by frequent fire. During the breeding season (October-December) isolated, shallow, small depressions (forested with emergent vegetation) that dry completely on a cyclic basis will be utilized.

No open pine/wiregrass flatwoods or isolated depressional wetlands are present on the potential project areas. Therefore, habitat commonly utilized by the flatwoods salamander will not be impacted as a result of this project.

**Shortnose sturgeon (Acipenser brevirostrum)**

The shortnose sturgeon is the smallest of the three species found in the Eastern US and Canada. All sturgeon shares the same general characteristics of having an elongated, slightly depressed body covered with bony plates called scutes. Their fleshy, toothless mouths are located under the snout allowing them to easily feed on other benthic organisms such as insects, worms, mollusks and crustaceans. The range of this species reaches from the St. John River in Canada to the St. Johns River in Florida and habitat extends throughout the rivers of the Atlantic seaboard. In Georgia, the shortnose sturgeon is found in the Altamaha, Ogeechee, St. Marys and Savannah Rivers.

Terminal construction activities within the Savannah River are not likely to have direct impact to the shortnose sturgeon. Impacts would be minimal to the river bottom associated with mooring dolphin and or bank stabilization activities. Disturbance to these areas would be short term and minimal. All three project sites currently have varying amounts of in-water structures which have altered the river bottom and shorelines in the past. Short term impacts could occur during initial berth dredging and future maintenance dredging activities. Based upon similar activities within the Savannah River, this impact will likely be considered short term and minor. By utilizing the existing best management protocols designed to limit
interaction with this species, the project may affect, but is not likely to adversely affect this species.

**Atlantic sturgeon** (*Acipenser oxyrinchus oxyrinchus*)

The Atlantic sturgeon attains lengths up to 14 feet and can weigh more than 800 pounds. The Atlantic sturgeon is the largest of the three species found in the Eastern US and Canada. All sturgeons share the same general characteristics of having an elongated, slightly depressed body covered with bony plates called scutes. Their fleshy, toothless mouths are located under the snout allowing them to easily feed on other benthic organisms such as insects, worms, mollusks and crustaceans. Historically, Atlantic sturgeons were present in approximately 38 rivers in the United States from St. Croix, ME to the Saint Johns River, FL, of which 35 rivers had spawning populations. Atlantic sturgeon are currently in 32 of these rivers and spawning in 20 of them.

Terminal construction activities within the Savannah River are not likely to have direct impact to the Atlantic sturgeon. Impacts would be minimal to the river bottom associated with mooring dolphin and or bank stabilization activities. Disturbance to these areas would be short term and minimal. All three project sites currently have varying amounts of in-water structures which have altered the river bottom and shorelines in the past. Short term impacts could occur during initial berth dredging and future maintenance dredging activities. Based upon similar activities within the Savannah River, this impact will likely be considered short term and minor. By utilizing the existing best management protocols designed to limit interaction with this species, the project may affect, but is not likely to adversely affect this species.

Note: The National Marine Fisheries Service has several restrictions on agitation dredging in the existing permits that would likely carry over to any new permits, such as the proposed cruise terminal project. These restrictions are noted below:

1. A seasonal restriction on dredging to reduce impacts to striped bass eggs and larvae (April 1 to May 15). NMFS believes this seasonal restriction will also benefit small, juvenile sturgeon because they are not as strong swimmers and cannot cover as much territory in a short time as their older counterparts. Hence, they would have to work harder to avoid any disturbances that may be associated with dredging. Additionally, Mark Collins (SCDNR, pers. Comm.) has also previously stated that the spring closure likely benefits sturgeon.
2. Prohibitions of dredging for berths needing infrequent dredging would be imposed when ambient dissolved oxygen levels are below state standards. The Georgia water quality standard is a daily average of 5 mg/L and no less than 4 mg/L at any time.

3. Prohibitions of dredging when any of the following conditions are met for a particular berth: (1) I-beam agitation dredging is already occurring at another berth within 3,000 feet, (2) hydraulic dredging and open-water disposal is occurring within 5,000 feet, and (3) dredging of the federal navigation channel is occurring within 3,000 feet.

4. Restricting the berths near the confluence of Front River and Back River to perform agitation dredging only during a flooding tide in an attempt to not impact waters of South Carolina, which opposes open-water disposal.

B. Plants

**Climbing buckthorn** (*Sageretia minutiflora*)
The climbing buckthorn is a state Threatened species, and a shrub growing up to 9 feet tall. Climbing buckthorn has sprawling and climbing stems with somewhat leathery leaves with conspicuously netted veins and toothed margins. It has small white flowers and a rounded purplish berry. It is found on calcareous rocky bluffs, forested shell middens on barrier islands, and evergreen hammocks along stream banks and coastal marshes.

No unique habitat for this species exists within any of the project study areas.

**Narrowleaf obedient plant** (*Physostegia angustifolia*)
The narrowleaf obedient plant is a state Threatened species. It is a perennial herb with a quadrangular stem with opposite leaves in 7-15 pairs. It produces numerous flowers that are deep lavender to reddish-violet with purplish splotches which produce brown angled nutlets. Narrowleaf obedient plant habitat is primarily in wet muck or peat in shallow water of river swamps and in margins of both freshwater and brackish tidal marshes.

Brackish tidal marshes are found within the project study areas. The small section of freshwater wetlands found within the project study areas is a thick false-willow/wax myrtle dominated scrub/shrub wetland and therefore not suitable habitat for the narrowleaf obedient plant. No habitat for narrowleaf obedient plant exists within any of the project study areas.

**Pondberry** (*Lindera melissifolia*)
Pondberry is a perennial, deciduous shrub that grows 1 ½ to 6 ½ feet tall. This shrub produces pale yellow flowers in February or March before it’s leaves emerge. Pondberry leaves are long, oval,
untoothed and droop from the branches with a slightly hairy lower surface of the leaf. Pondberry produces bright red elliptical fruits during late summer; fruits mature during the fall. It is typically found in shallow depression ponds of sandhills, margins of cypress ponds, and in seasonally wet low areas among bottomland hardwoods.

There were no freshwater depressional ponds/cypress ponds or bottomland hardwood wetlands found within the project study areas. Therefore, there is no habitat for pondberry within the project study areas.

V. CRITICAL HABITAT

The project sites were reviewed for the presence of areas designated as “critical habitat” for protected species by the USFWS. Critical habitat is a term in the Endangered Species Act referring to specific areas that contain physical or biological features essential to the conservation of a threatened or endangered species. No critical habitats exist near to or within the project areas within the Savannah River. There is critical habitat for the North Atlantic Right Whale, beginning at the Altamaha River and extending south to Melbourne Beach, Florida (See attached critical habitat map, Appendix B). Additionally, there are Mid-Atlantic U.S. Seasonal Management Areas that result in vessel speed reductions for the migratory routes along the east coast during the period of November 1 through April 30 (See attached Compliance Guide for Right Whale Strike Reduction Rule (50 CFE224.105), Appendix B). Commercial vessels greater than 65 feet in overall length are mandated to abide by these regulations. The cruise industry should be intimately aware of these regulations and the presence of this critical habitat and seasonal management areas should not affect the feasibility of permitting a cruise terminal in the Savannah area.

VI. CONCLUSION

Based on visual surveys of the sites, extensive literature search, resource agency coordination, and knowledge of the habitat ranges of threatened and endangered species in the project areas, it is the opinion of ESI that there are habitats on/within the project areas that meet certain species specific criteria.

Potentially suitable habitat for federally protected species is present for the all marine species. This determination is primarily based upon the extremely broad habitat descriptions favored by these species, and the fact that the project involves terminal specific construction and use of that facility by
cruise vessels transiting larger areas. Therefore, based upon the regulatory requirements, the scope of this review encompassed in-shore, near shore, and off-shore habitats and species. Please remain aware that although no listed species were observed during this study, due to the presence of potentially suitable habitat for the federally protected species, ESI cannot guarantee that listed species would not nor could not use these sites currently or in the future. We have ascertained that those species that have habitat requirements similar to those found in the project areas can also find similar suitable habitat elsewhere within Chatham County and coastal Georgia.

Twenty-two state and/or federally listed species are documented to have ranges known to extend into Chatham County. Sixteen listed species have been identified as having potential suitable habitat associated with the project areas, most specifically associated with the marine environments. Twelve of these species are federally listed and all sixteen are state listed. Impact and alteration to any of the potential project sites is not likely to adversely affect any listed species. Use of the marine environments by the proposed cruise ships will be regulated as with all commercial vessel traffic in the area. Given the regulatory guidance currently in place, this use may affect, but will not likely adversely affect any listed species, in our opinion.

Please keep in mind, that this assessment is addressing three potential project areas within the Savannah River. Based upon current scope approval by our client, ESI was to address in-water marine impacts only. However, given our prior experience on or near the project sites, we have attempted to include as much data as possible concerning the landward side of the three project sites as well. Furthermore, until the proposed project is presented formally to the regulatory agencies, this information remains our opinion for planning purposes only.
Figure 1: Location Map
Silo Tract

Powell Dufferyn

Savannah River Landing

Staging Areas
City of Savannah Cruise Ship
Chatham County, Georgia
VII. Appendix A
Agency Letters
7 February 2013

Ms. Trina Morris
Georgia Department of Natural Resources
Nongame Conservation Section
2065 US Hwy 278 SE
Social Circle, Georgia 30025

RE: Request for Known Occurrences of Endangered or Threatened Species:
Cruise Ship Terminal; Chatham County, Georgia
ESI Project No.: ES12031.00

Dear Mr. Colwell:

Environmental Services, Inc., (ESI), as an authorized agent for City of Savannah, is currently conducting an endangered species evaluation for the above referenced project.

Generally speaking, we are in the early stages of evaluating three sites for the potential development of a cruise ship staging area. All three sites have been previously developed for various uses. The proposed project would anticipate redevelopment of the high ground area for cruise ship terminal operations, while the in-water component would be typical berthing facilities for cruise ship mooring. The Silo and Dufferyn sites have a series of mooring dolphins in place currently. The Savannah River Landing site contains a newly constructed river walk and a parallel floating dock structure. As this time, we do not know if these existing structures are suited for the proposed use. Additionally, in order to accommodate the draft of the cruise ships, some dredging may be needed.

We are currently reviewing the list of Federal Endangered and Threatened Species and State of Georgia Endangered and Threatened Species for Chatham County. Through this notification we respectfully request that you review your files and provide ESI with any information regarding the known presence of any endangered or threatened species on or in the vicinity of the proposed project areas. Figure 1 is attached for orientation purposes. Given the nature of this project, any information you can provide that addresses in-shore, near shore, and off shore issues associated with the cruise ship industry will also be valuable.

Please submit this information to ESI at the address shown at the top of this letter. You may also provide information to me digitally via e-mail if that is more efficient for you. Should you have any questions regarding this project, please do not hesitate to call me at (912) 236-4711, or e-mail mdemell@esinc.cc.

Sincerely yours,

Michael J. DeMell
Vice President and Operations Manager
March 14, 2013

Michael DeMell
Vice-President and Operations Manager
Environmental Services, Inc.
PO Box 2383
Savannah, GA 31402

Subject: Known occurrences of natural communities, plants and animals of highest priority conservation status on or near Cruise Ship Terminal, Savannah, Chatham County, Georgia

Dear Mr. DeMell:

This is in response to your request of February 8, 2013. According to our records, within a three-mile radius of the project area there are the following Natural Heritage Database occurrences:

Savannah Rivre Landing (-81.07773, 32.07809; NAD27):
- **GA Clemmys guttata** (Spotted Turtle) approx. 3.0 mi. SW of site
- **Crotalus adamanteus** (Eastern Diamond-backed Rattlesnake) [HISTORIC] approx. 2.5 mi. E of site
- **Pseudacris brimleyi** (Brimley's Chorus Frog) approx. 2.0 mi. SW of site
- **GA Sarracenia minor var. minor** (Hooded Pitcherplant) approx. 2.0 mi. S of site
- **Schoenoplectus americanus - Spartina patens** Herbaceous Vegetation (Transitional Tidal Marsh) approx. 1.5 mi. E of site
- **Schoenoplectus americanus - Spartina patens** Herbaceous Vegetation (Transitional Tidal Marsh) approx. 2.0 mi. E of site
- **Spartina cynosuroides** Herbaceous Vegetation (Atlantic Giant Cordgrass Marsh) approx. 2.0 mi. E of site
- **US Trichechus manatus** (Manatee) on site in tidal waters
- Savannah River [High Priority Stream] on site

Silo Tract & Powell Dufferyn (-81.09513, 32.08656; NAD27):
- **US Acipenser oxyrinchus oxyrinchus** (Atlantic Sturgeon) approx. 2.5 mi. NW of site in the Savannah River
- **Liquidambar styaciflua - Acer rubrum - (Nyssa biflora) / Woodwardia virginica** Forest approx. 2.0 mi. SW of site
- **GA Sterrula antillarum** (Least Tern) approx. 1.0 mi. N of site
- **US Trichechus manatus** (Manatee) on site in tidal waters
- **Wading Bird Colony** (Wading Bird Colony) approx. 3.0 mi. NW of site
Wading Bird Colony (Wading Bird Colony) approx. 3.0 mi. SW of site
Savannah River [High Priority Stream] approx. 2.5 mi. NW of site

* Entries above proceeded by “US” indicates species with federal status (Protected, Candidate or Partial Status). Species that are federally protected in Georgia are also state protected; “GA” indicates Georgia protected species.

**Recommendations:**

We have a record of a federally listed species, *Trichechus manatus* (Manatee) on site. Also, *Acipenser oxyrinchus oxyrinchus* (Atlantic Sturgeon) as well as several state listed species have been found within three miles of the proposed project. The Endangered Species Act states that taking or harming of a listed species is prohibited. We recommend all requestors with projects located near federally protected species consult with the United States Fish and Wildlife Service. For southeast Georgia, please contact Strant Colwell (912-265-9336, ext.30 or Strant_Colwell@fws.gov).

**Species Specific Recommendations:**

**West Indian Manatees**

Endangered manatees inhabit all tidal inshore waters in the proposed project area from April to November annually. Presence of manatees has been confirmed repeatedly through opportunistic sightings, photo-identification, tagging studies, carcass salvage and monitoring of industrial wastewater outfalls. Systematic manatee surveys have not been conducted in the specific project area. Accordingly, the abundance and density of manatees in the project area is unknown. Moreover, the potential that one of three sites may be used by manatees more or less than the other sites is unknown. Manatees may also be found in near-shore ocean waters (e.g., the Savannah entrance channel) during the same period, but likely in much lower numbers.

Vessel collisions are a leading cause of manatee mortality. Fourteen vessel-related mortalities have been documented in the Savannah River area since 2000, half of which were likely caused by large propellers such as those used on ships, tugs and large yachts. We recommend that cruise ships, tugs and harbor support vessels travel at slow speed in inshore waters from April 1 to November 30 to reduce the likelihood of manatee strikes. We also recommend that tugs and harbor support vessels be fitted with propeller guards designed to reduce manatee mortality. For example, the U.S. Navy reduced impacts to manatees at Kings Bay Submarine Base by retrofitting the Kort nozzles of C-tractor tugs with manatee guards. Once installed, it is imperative that vessels with manatee guards always operate at slow speeds, because risk of blunt force trauma from manatee guards increases at high speeds, thereby offsetting their conservation benefit.

Manatees may be attracted to warm water and freshwater from wastewater and storm water outfalls. Industrial and municipal wastewater outfalls with continuous high-volume flow pose the greatest attraction risk. Storm water outfalls with low volume or intermittent flow pose a lower attraction risk. We are aware of one industrial wastewater outfall that is utilized by manatees approximately 2 km east of the Savannah River Landing site (BASF Corporation,
NPDES ID# GA0048330, outfall position 31.078611N, 81.054444W). We are not aware of any outfalls used by manatees in close proximity to the three proposed sites, although it is possible that outfalls may exist at or near these sites. We recommend that each site be inspected for the presence of outfalls that may pose an attraction risk to manatees. We recommend that a port facility not be placed adjacent to such an outfall, or that the outfall be mitigated prior to operation to reduce the attraction risk to manatees. Doing so should reduce the co-occurrence of manatees and vessels, thereby lowering the risk of vessel-related mortality. Existing storm water outfalls located below mean high tide should be grated to prevent manatees from entering and becoming trapped. New storm water outfalls should be designed to minimize attraction to manatees. Efforts should be made to minimize emission of freshwater into the river during project construction and operational phase to minimize attraction to manatees.

To minimize the potential of manatees being crushed between vessels and wharfs, all wharfs used by vessels 100 feet or greater in length should be fitted with fenders that provide a 3 ft standoff under maximum compression between vessels and wharf structures (e.g., bulkheads, jetties, piers, pile faces and breasting dolphins). When feasible, fenders should be placed above waterline. Fenders along wall structures should be positioned so that the clear space between fenders does not exceed 50 ft. The 50 ft fender spacing is not necessary for pile structures or breasting dolphins where sufficient gaps exist for manatees to escape. Fenders providing a 3 ft standoff under maximum compression should be used when rafting vessels to one another, and between fueling vessels and receiving vessels. Fenders should be inspected at least every two years and repaired as necessary.

North Atlantic Right Whales

Endangered North Atlantic right whales inhabit Atlantic Ocean waters within 30 nautical miles (nmi) of shore from November 1 to April 30 annually. Vessel collisions are a leading cause of right whale mortality and serious injury. Federal regulations require non-sovereign vessels 65 ft or greater in length to travel at speeds of 10 kts or less within 20 nmi of the Savannah port entrance from November 1 to April 30 annually (50 CFR 224.105; hereafter “Ship Strike Rule”). The Ship Strike Rule is scheduled to expire in December 2013. It is unclear whether the rule will be reauthorized. If the rule expires, we recommend that cruise vessels continue to abide by the Ship Strike Rule on a voluntary basis to reduce potential impacts to right whales.

General Project Recommendations:

To protect these and other aquatic resources in the area, please minimize disturbance to stream banks, wetlands, and riparian zones during construction. Conduct activities from a stable stream bank or reinforced platform that does not cause degradation or destabilization of stream banks. Prohibit operation of equipment in the channel or use of the channel as a ford whenever possible. We recommend that stringent erosion control practices be used during construction activities and that vegetation is re-established on disturbed areas as quickly as possible. Silt fences and other erosion control devices should be inspected and maintained until soil is stabilized by vegetation. Please use natural vegetation and grading techniques (e.g., vegetated swales, turn-offs, vegetated buffer strips) that will ensure that the construction area does not serve as a conduit for storm water or pollutants into the stream during or after construction. No uncured concrete or water used to facilitate curing should be discharged directly into the stream; curing water should be
pumped into filter bags (i.e., "dirt bags") or detention basins before coffer dams or other
diversion structures are dismantled.
Monitor erosion control devices weekly until disturbed areas have been permanently stabilized
and give persons who monitor erosion control devices the authority to halt construction and/or
require immediate implementation of corrective measures at the construction site if they observe
failed erosion control measures associated with a visible increase in turbidity downstream of the
structure. These measures will help protect water quality in the vicinity of the bridge crossings
as well as downstream.

Please keep in mind that this project occurs on the Savannah River, a high priority stream. As
part of an effort to develop a comprehensive wildlife conservation strategy for the state of
Georgia, the Wildlife Resources division developed and mapped a list of streams that are
important to the protection or restoration of rare aquatic species and aquatic communities. High
priority waters and their surrounding watersheds are important for aquatic biodiversity
conservation, but do not receive any additional legal protections. We now have GIS ESRI
shapefiles of GA high priority waters available on our website
(http://www.georgiawildlife.com/node/1377). Please contact this office if you would like
additional information on high priority waters.

Disclaimer:

Please keep in mind the limitations of our database. The data collected by the Nongame
Conservation Section comes from a variety of sources, including museum and herbarium
records, literature, and reports from individuals and organizations, as well as field surveys by our
staff biologists. In most cases the information is not the result of a recent on-site survey by our
staff. Many areas of Georgia have never been surveyed thoroughly. Therefore, the Nongame
Conservation Section can only occasionally provide definitive information on the presence or
absence of rare species on a given site. Our files are updated constantly as new information is
received. Thus, information provided by our program represents the existing data in our
files at the time of the request and should not be considered a final statement on the species
or area under consideration.

If you know of populations of highest priority species that are not in our database, please fill out
the appropriate data collection form and send it to our office. Forms can be obtained through our
web site (http://www.georgiawildlife.com/node/1376) or by contacting our office. If I can be of
further assistance, please let me know.

Sincerely,

Katrina Morris
Environmental Review Coordinator
Data Available on the Nongame Conservation Section Website

- Georgia protected plant and animal profiles are available on our website. These accounts cover basics like descriptions and life history, as well as threats, management recommendations and conservation status. Visit [http://www.georgiawildlife.com/node/2721](http://www.georgiawildlife.com/node/2721).

- Rare species and natural community information can be viewed by Quarter Quad, County and HUC8 Watershed. To access this information, please visit our GA Rare Species and Natural Community Information page at: [http://www.georgiawildlife.com/conservation/species-of-concern?cat=conservation](http://www.georgiawildlife.com/conservation/species-of-concern?cat=conservation).

- Downloadable files of rare species and natural community data by quarter quad and county are also available. They can be downloaded from: [http://www.georgiawildlife.com/node/1370](http://www.georgiawildlife.com/node/1370).
7 February 2013

Mr. Strant Colwell
Assistant Field Supervisor
U.S. Fish and Wildlife Service
4980 Wildlife Drive NE
Townsend, GA 31331

RE: Request for Known Occurrences of Endangered or Threatened Species:
Cruise Ship Terminal; Chatham County, Georgia
ESI Project No.: ES12031.00

Dear Mr. Colwell:

Environmental Services, Inc., (ESI), as an authorized agent for City of Savannah, is currently conducting an endangered species evaluation for the above referenced project.

Generally speaking, we are in the early stages of evaluating three sites for the potential development of a cruise ship staging area. All three sites have been previously developed for various uses. The proposed project would anticipate redevelopment of the high ground area for cruise ship terminal operations, while the in-water component would be typical berthing facilities for cruise ship mooring. The Silo and Dufferyn sites have a series of mooring dolphins in place currently. The Savannah River Landing site contains a newly constructed river walk and a parallel floating dock structure. As this time, we do not know if these existing structures are suited for the proposed use. Additionally, in order to accommodate the draft of the cruise ships, some dredging may be needed.

We are currently reviewing the list of Federal Endangered and Threatened Species and State of Georgia Endangered and Threatened Species for Chatham County. Through this notification we respectfully request that you review your files and provide ESI with any information regarding the known presence of any endangered or threatened species on or in the vicinity of the proposed project areas. Figure 1 is attached for orientation purposes. Given the nature of this project, any information you can provide that addresses in-shore, near shore, and off shore issues associated with the cruise ship industry will also be valuable.

Please submit this information to ESI at the address shown at the top of this letter. You may also provide information to me digitally via e-mail if that is more efficient for you. Should you have any questions regarding this project, please do not hesitate to call me at (912) 236-4711, or e-mail mdemell@esinc.cc.

Sincerely yours,

ENVIRONMENTAL SERVICES, INC.

Michael J. DeMell
Vice President and Operations Manager
February 14, 2013

Mr. Michael J. DeMell  
Environmental Services, Inc.  
Post Office Box 2383  
Savannah, Georgia 31402

Re: FWS File Number 2013-0260

Dear Mr. DeMell:

Thank you for your letter requesting U. S. Fish and Wildlife Service (Service) review and information on threatened or endangered species on or in the vicinity of the project in the City of Savannah, Chatham County, Georgia. Three possible project sites are being evaluated on the Savannah River in a 1.3 mile area. In addition, you request information that addresses in-water issues associated with the cruise ship industry. The project is designated as Cruise Ship Terminal, Chatham County, Georgia, Environmental Services, Inc. project number: ES12031.00. These comments are provided by the Service in accordance with provisions of the Endangered Species Act of 1973 (ESA), as amended; (16 U.S.C. 1531 et seq.).

The West Indian manatee (Trichechus manatus) is documented in this area. Manatees are often attracted to docks and other in-water facilities because of the freshwater sources found there and to feed on algae that grow on dock structures and ships in the water. This attraction makes them particularly vulnerable to injury or death from blunt trauma, crushing between ship and mooring facilities, or from propeller strikes. We recommend manatee friendly terminal mooring that maintains a minimum of three feet between a vessel and dock structures in the water. We further recommend kiosks to inform and educate cruise ship passengers as to the...
above species in the local natural environment. We have no information that manatees are observed at one of the possible project sites more or less frequently than either of the other two sites.

Sturgeon, whales, and sea turtles, when in the water, are the responsibility of the National Marine Fisheries Service (Fisheries). All these are documented in the project area and/or the near shore and off shore areas, and may be affected by the project. We recommend you contact Fisheries for recommendations on these species.

The proposed project is near large areas of estuarine marsh and coastal brackish rivers and creeks. These provide food sources for the manatee. Additionally these marsh areas are essential in the food web, serving as habitat for post larval and juvenile red drum (Sciaenops ocellatus), white shrimp (Litopenaeus setiferus), and brown shrimp (Farfantepenaeus aztecus). The Service recommends generous naturally vegetated buffers between the land side components of the project and the river or any nearby wetlands. Buffers will protect the waterway and marsh from possible surface water runoff from increased impervious surfaces on the project site. Proper management of stormwater will be important to protect the coastal wetlands. We recommend minimizing impervious surfaces by using pervious materials in low traffic areas such as parking lots or spaces. Additionally, fueling facilities must have a comprehensive spill prevention plan to protect the natural resources mentioned above.

Your letter indicates you are reviewing the list of Federal Endangered and Threatened Species and the State of Georgia Endangered and Threatened Species for Chatham County. Please note, though the State’s database is an initial indicator of species occurrence within a given region, the omission of a species within a specified quarter quad does not, for survey purposes, eliminate that species from concern if the species is listed for that county and suitable habitat exists in the action area. Both databases are works in progress and not all areas in Georgia have been thoroughly surveyed. To our knowledge, a survey for protected species has not been conducted on your project site.

We appreciate the opportunity to comment during the planning stages of your project. If you have any further questions, please contact our Coastal Georgia Sub Office staff biologist, Bill Wikoff, at 912-832-8739 extension 5.

Sincerely,

[Signature]

Sandra S. Tucker
Field Supervisor
Mr. Pace Wilber, Ph.D.
HCD Atlantic Branch Supervisor
NOAA Fisheries Service
219 Ft Johnson Road
Charleston, SC 29412

RE: Request for Known Occurrences of Endangered or Threatened Species:
Cruise Ship Terminal; Chatham County, Georgia
ESI Project No.: ESI12031.00

Dear Mr. Wilber:

Environmental Services, Inc., (ESI), as an authorized agent for City of Savannah, is currently conducting an endangered species evaluation for the above referenced project.

Generally speaking, we are in the early stages of evaluating three sites for the potential development of a cruise ship staging area. All three sites have been previously developed for various uses. The proposed project would anticipate redevelopment of the high ground area for cruise ship terminal operations, while the in-water component would be typical berthing facilities for cruise ship mooring. The Silo and Dufferyn sites have a series of mooring dolphins in place currently. The Savannah River Landing site contains a newly constructed river walk and a parallel floating dock structure. As this time, we do not know if these existing structures are suited for the proposed use. Additionally, in order to accommodate the draft of the cruise ships, some dredging may be needed.

We are currently reviewing the list of Federal Endangered and Threatened Species and State of Georgia Endangered and Threatened Species for Chatham County. Through this notification we respectfully request that you review your files and provide ESI with any information regarding the known presence of any endangered or threatened species on or in the vicinity of the proposed project areas. Figure 1 is attached for orientation purposes. Given the nature of this project, any information you can provide that addresses in-shore, near shore, and off shore issues associated with the cruise ship industry will also be valuable.

Please submit this information to ESI at the address shown at the top of this letter. You may also provide information to me digitally via e-mail if that is more efficient for you. Should you have any questions regarding this project, please do not hesitate to call me at (912) 236-4711, or e-mail mdemell@esinc.cc.

Sincerely yours,

Michael J. DeMell
Vice President and Operations Manager
Mr. David Bernhart  
NOAA, National Marine Fisheries Service  
236 13th Avenue South  
St. Petersburg, Florida 33701

RE: Request for Known Occurrences of Endangered or Threatened Species:  
Cruise Ship Terminal; Chatham County, Georgia  
ESI Project No.: ES12031.00

Dear Mr. Colwell:

Environmental Services, Inc., (ESI), as an authorized agent for City of Savannah, is currently conducting an endangered species evaluation for the above referenced project.

Generally speaking, we are in the early stages of evaluating three sites for the potential development of a cruise ship staging area. All three sites have been previously developed for various uses. The proposed project would anticipate redevelopment of the high ground area for cruise ship terminal operations, while the in-water component would be typical berthing facilities for cruise ship mooring. The Silo and Dufferyn sites have a series of mooring dolphins in place currently. The Savannah River Landing site contains a newly constructed river walk and a parallel floating dock structure. As this time, we do not know if these existing structures are suited for the proposed use. Additionally, in order to accommodate the draft of the cruise ships, some dredging may be needed.

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Sincerely yours,

ENVIRONMENTAL SERVICES, INC.

Michael J. DeMell  
Vice President and Operations Manager

MDKC Feb 2013  
ES12031.00 TE Letters

FLORIDA • GEORGIA • NORTH CAROLINA • MARYLAND • OHIO
Mr. Clay George  
Georgia Department of Natural Resources  
One Conservation Way  
Brunswick, GA 31520

RE: Request for Known Occurrences of Endangered or Threatened Species:  
Cruise Ship Terminal; Chatham County, Georgia  
ESI Project No.: ES12031.00

Dear Mr. Colwell:

Environmental Services, Inc., (ESI), as an authorized agent for City of Savannah, is currently conducting an endangered species evaluation for the above referenced project.

Generally speaking, we are in the early stages of evaluating three sites for the potential development of a cruise ship staging area. All three sites have been previously developed for various uses. The proposed project would anticipate redevelopment of the high ground area for cruise ship terminal operations, while the in-water component would be typical berthing facilities for cruise ship mooring. The Silo and Dufferyn sites have a series of mooring dolphins in place currently. The Savannah River Landing site contains a newly constructed river walk and a parallel floating dock structure. As this time, we do not know if these existing structures are suited for the proposed use. Additionally, in order to accommodate the draft of the cruise ships, some dredging may be needed.

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Please submit this information to ESI at the address shown at the top of this letter. You may also provide information to me digitally via e-mail if that is more efficient for you. Should you have any questions regarding this project, please do not hesitate to call me at (912) 236-4711, or e-mail mdemell@esinc.cc.

Sincerely yours,
ENVIRONMENTAL SERVICES, INC.

Michael J. DeMell  
Vice President and Operations Manager
Disclaimer: The information depicted on this figure is for conceptual purposes only, serves to aid a licensed engineer or geologist in rendering professional services, and is subject to review and approval by appropriate regulatory agencies.

Source(s): 2010 NAIP Aerial
VII. Appendix B
Northern Right Whale Critical Habitat
Northern Right Whale Critical Habitat:
Southeast Atlantic

Georgia

Southeastern US Critical Habitat Area

Florida

Map Produced by Dwayne Meadows
NMFS, Office of Protected Resources
October 2007
YOU MUST SLOW TO SPEEDS OF 10 KNOTS OR LESS IN SEASONAL MANAGEMENT AREAS

Vessels may operate at a speed greater than 10 knots only if necessary to maintain a safe maneuvering speed in an area where conditions severely restrict vessel maneuverability as determined by the pilot or master.

If a deviation from the 10 knot speed restriction is necessary, the following information must be entered into the logbook:
- Reasons for deviation
- Speed at which vessel is operated
- Latitude and longitude at time of deviation
- Time and duration of deviation
- Master of the vessel shall sign and date the logbook entry

The rule does not apply to waters inshore of COLREGS lines.
Right Whale Ship Strike Reduction Rule expires on December 9, 2013

Voluntary Dynamic Management Areas (DMAs) may also be established by NOAA Fisheries Service. Mariners are encouraged to avoid these areas or reduce speeds to 10 knots or less while transiting through these areas. NOAA Fisheries Service will announce DMAs to mariners through its customary maritime communication media.

For more information, visit:
http://www.nmfs.noaa.gov/pr/shipstrike
http://nero.noaa.gov/shipstrike
http://rightwhalessouth.nmfs.noaa.gov

Migratory Route

November 1 through April 30
Vessel speed is restricted in the following areas:

• Block Island Sound waters bounded by:
  40°51'53.7" N 070°36'44.9" W
  41°20'14.1" N 070°49'44.1" W
  41°04'16.7" N 071°51'21.0" W
  40°35'56.5" N 071°38'25.1" W
  then back to starting point.

• Within a 20-nm (37 km) radius of the following (as measured seaward from the COLREGS lines):
  - Ports of New York/New Jersey:
    40°29'42.2"N 073°55'57.6"W
  - Entrance to the Delaware Bay (Ports of Philadelphia and Wilmington):
    38°52'27.4"N 075°01'32.1"W
  - Entrance to the Chesapeake Bay (Ports of Hampton Roads and Baltimore):
    37°00'36.9"N 075°57'50.5"W
  - Ports of Morehead City and Beaufort, NC:
    34°41'32.0"N 076°40'08.3"W

• Within a continuous area 20 nm from shore between Wilmington, NC, to Brunswick, GA, bounded by the following:
  
<table>
<thead>
<tr>
<th>Point</th>
<th>Latitude</th>
<th>Longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>34°10'30&quot;N</td>
<td>077°49'12&quot;W</td>
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<tr>
<td>B</td>
<td>33°56'42&quot;N</td>
<td>077°31'30&quot;W</td>
</tr>
<tr>
<td>C</td>
<td>33°36'30&quot;N</td>
<td>077°47'06&quot;W</td>
</tr>
<tr>
<td>D</td>
<td>33°28'24&quot;N</td>
<td>078°32'30&quot;W</td>
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<tr>
<td>E</td>
<td>32°59'06&quot;N</td>
<td>078°50'18&quot;W</td>
</tr>
<tr>
<td>F</td>
<td>31°50'00&quot;N</td>
<td>080°33'12&quot;W</td>
</tr>
<tr>
<td>G</td>
<td>31°27'00&quot;N</td>
<td>080°51'36&quot;W</td>
</tr>
</tbody>
</table>
  and west back to the shore.

Calving and Nursery Grounds

November 15 through April 30
Vessel speed is restricted in the area bounded to the north by latitude 31°27'N; to the south by latitude 29°45'N; to the east by longitude 080°51'36"W.

Southeast U.S. Seasonal Management Area

Voluntary Dynamic Management Areas (DMAs) may also be established by NOAA Fisheries Service. Mariners are encouraged to avoid these areas or reduce speeds to 10 knots or less while transiting through these areas. NOAA Fisheries Service will announce DMAs to mariners through its customary maritime communication media.

This serves as NOAA’s small entity compliance guide.
Appendix C
Underwater Archeological Evaluation

Information on all 3 sites gathered from the following sources:
Georgia Archeological Site File (GASF)
Georgia’s Natural, Archeological and Historic Resources GIS (NAHRGIS)
Georgia Statewide Shipwreck Inventory (GSSI)
Savannah District US Army Corps of Engineers (USACE)
Evaluation of Underwater Archaeological Impacts
Savannah Cruise Ship Staging Areas
Chatham County, Georgia

Prepared for:

Prepared by:

ENVIRONMENTAL SERVICES, INC.
131 Hutchinson Island Road, Suite 100
PO Box 2383
Savannah, Georgia 31402
Evaluation of Underwater Archaeological Impacts

Cultural resources can be defined as sites, structures, buildings, landscapes, districts, and objects that are significant in history, prehistory, architecture, archaeology, engineering and/or culture and are greater than 50 years old. Under the National Historic Preservation Act (NHPA), as amended, only cultural resources included in or eligible for inclusion in the National Register of Historic Places (NRHP) defined as ‘historic properties’, warrant consideration with regard to adverse impacts from a proposed action. To be considered eligible for the NRHP, cultural resources must meet one or more criteria as defined in the 36 CRFR 60.4. These four criteria include association with an important event (Criterion A), association with a significant person (Criterion B), embodiment of the distinctive characteristics of a type, period or method of construction (Criterion C), or the ability to yield information important in prehistory or history (Criterion D).

ESI submitted a request to the Georgia Archaeological Site File (GASF) on September 18, 2012 to gain information on the known and recorded cultural resources within one mile of the proposed project tracts. In addition to a site file search, a search of the Georgia’s Natural, Archaeological and Historic Resources GIS (NAHRGIS) website conducted and a request was submitted to Deputy State Underwater Archaeologist Chris McCabe to search the Georgia Statewide Shipwreck Inventory (GSSI). There is one cultural resource which is potentially eligible for listing in the NRHP located within one of the proposed project areas.

Multiple underwater surveys have been conducted along the Savannah River during the past thirty years as part of the Savannah Harbor Expansion Project as well as various studies along the river front for terrestrial developments. These studies were overseen by archaeologists at the Army Corps of Engineers Savannah District, including David Crampton. David Crampton has been consulted on the proposed Savannah Cruise Terminal Sites.

There is one submerged resource located within the Silo Tract (9CH742), which was recorded by Archaeological Research Associates, Inc. in 1984. This poorly preserved Twentieth Century wooden barge was recommended ineligible for inclusion in the NRHP (Wright 1984). The vessel is located along the south shore of Hutchinson Island approximately 150 meters southeast of the Talmadge Bridge, and is exposed during the low tide. David Crampton has confirmed that this site is not a concern (pers. communication). Based upon these findings, it does not appear additional underwater investigations will be needed at this site.

The Powell Duffryn Tract, located east of the Silo Tract on Hutchinson Island was surveyed in 1984 for underwater resources, and no sites were identified within the area of proposed impacts. David Crampton has confirmed that there is no concern of impact to archaeological sites within this area (pers. communication). Based upon these findings, it does not appear additional underwater investigations will be needed at this site.

Extensive work has been conducted within the Savannah River Landing parcel as part of the Savannah Riverwalk Extension. A Programmatic Agreement between the City of Savannah, The Corps of Engineers, and Georgia SHPO, was signed in January 2007 detailing the required cultural resource studies for the Riverwalk project. Those studies included a Reconnaissance
Survey, a Phase I Marine Cultural Resource Study, A Phase I Terrestrial Archaeological Study, Phase II excavations of shipwreck remains, and a Data Recovery Mitigation at Site 9CH1160 (the Eastern Wharves Site). This site is eligible for the National Register and contains multiple components, including approximately 2000 feet of submerged 19th century wharves along the river front. The brick and wood remains were mapped and recorded by Brockington, but submittal of the Final Mitigation Report is pending. The mitigation was approved by Army Corps of Engineers Archaeologists and the Georgia SHPO for the purpose of building the Riverwalk. This proposed project area is identified as “archaeologically sensitive” by Chris McCabe (pers. communication) due to the presence of those archaeological resources. Further work on additional components at 9CH1160 may be required in order to accommodate a cruise terminal at this site. ESI suggests additional coordination with the original Savannah River Landing site engineers to discuss if dredging along the above referenced Eastern Wharves Site will affect that structure.

The visual impact of cruise ships on the Savannah River will be comparable to those of the cargo ships which pass along the historic riverfront on a regular basis. The cruise ship in Figure 1 is one of the vessels which may be docking in the proposed terminal. The Seven Seas Navigation has a height of 128 feet and length of 560 feet and a Gross Tonnage (GT) of 33,000. Cargo ships now calling on the port of Savannah have a recorded length of 1,100 with a GT capacity of over 90,000. The CMA CGM Figaro passed through the port of Savannah on August 27, 2010, and marked the largest vessel to call on the Georgia Ports (Figure 2). While the cruise ships will be visible from the downtown historic district and historic riverfront, it appears that the visual impact of cruise ships will be less than those already present by the shipping industry.
Figure 1. Image of Seven Seas Navigation Cruise Ship

Figure 2. Image of Figaro Cargo Ship

References Cited

DePratter, Chester B. and Roy R. Doyon
1984  *A Cultural Resource Survey of Springfield Canal, Chatham County, Georgia.* On file at GASF, Report No. 536

Wright, Newell O. 1984  *An Archaeological Investigation and Analysis of the Still-DeLoach Wreck, Savannah Harbor, Georgia.* On file at GASF, Report No. 558
Appendix D
Site Evaluation and Dredging Report

Information on all 3 sites gathered from the following sources:
Savannah River Pilots Association
Savannah District US Army Corps of Engineers
Site Recognizance
CRUISE SHIP TERMINAL STUDY
FOR THE CITY OF SAVANNAH

SITE EVALUATION REPORT PREPARED BY

March 6, 2013

Prepared for BEA Architects Inc.
INFORMATION FROM MEETING WITH SAVANNAH RIVER PILOTS ASSOCIATION

On February 14, 2013, Chace Holloway and Hank White of Coastline Consulting Services, Inc., and Mike DeMell of Environmental Services, Inc. met with 2 representatives from the Savannah River Pilots Association at their office in Savannah. We discussed general procedures for shipping traffic and asked some questions concerning the proposed Cruise Terminal traffic.

First of all, we discussed the current turning capacities at the existing turning basins in the Savannah River Harbor. The Fig Island turning basin, located at approximately Sta 68+00 to 69+00 (sheet 8 of 28 – USACE Savannah Harbor 2008 Survey) is capable of turning up to an 800 foot long vessel. The Kings Island turning basin which is located at approximately 98+00 to 101+00 (sheet 3 of 28 – USACE Savannah Harbor 2008 Survey) is capable of turning an 1155 foot long vessels. Since the Kings Island turning basin is also the most frequently used basin and is located further inland towards the Port berthing facilities, the Pilots pointed out that there could be a 3 to 5 hour delay for use of the basin. The Pilots mentioned that the turning queue is basically first come, first served, but stressed that Port labor is approximately $50,000 per hour for delays in loading and unloading, so it is likely that Georgia Ports Authority will seek priority over cruise vessels.

A few other general things to note from the Pilots: 1) Cruise ships will be required to employ the Pilots when navigating the Savannah River Harbor. 2) Fog can shut down all traffic along the Savannah River Harbor until it lifts. 3) There are no formal anchoring facilities / areas – Pilots will suggest locations offshore.

We presented the 3 recommended sites for the proposed cruise terminal to the Pilots and welcomed feedback from them. Concerning the Blue Circle Silo Site located on Hutchinson Island, they voiced concerns about the location of the site lying just beyond an inside curve of the river. This is of particular concern to them due to steering large vessels in the curve with the extreme tidal currents that exist in the Savannah River. This is compounded by the fact that there is another ship berthing facility directly across from this site just beyond the outer curve of the river. This site ranked #2 of the 3 sites discussed.

The next site discussed was the Powell Dufferyn Site. An item of note for this site is shoaling or siltation along the site. Because of its location along an inside curve of the river, it is a natural location for excessive silting. This could cause long term maintenance dredging issues at the berthing facility (to be discussed later). Also of particular concern to the Pilots, there is a suction action in this area as larger vessels navigate through this curve. This site ranked #3 of the 3 sites discussed.
Finally, we examined the Savannah River Landing Site. The Pilots expressed a similar concern about steering large vessels in this area due to the curve in the river. However, they preferred this site over the others due to less surrounding berthing facilities which makes maneuvering large vessels a little easier in this area.

The Pilots further suggested a possible location for the Cruise Facility at the east end of Fig Island (approx. Sta. 65+00 – USACE Savannah Harbor 2008 Survey). They preferred this site because it is located on a straight section of river, there are few berthing facilities located nearby, and the bank has already been notched out for a berthing facility.

**INFORMATION FROM MEETING WITH U.S. ARMY CORPS OF ENGINEERS – SAVANNAH DISTRICT**

Meeting 2/15/13 – U.S. Army Corps of Engineers – Cruise Ship Terminal Study

On February 15, 2013, Chace Holloway and Hank White of Coastline Consulting Services, Inc., and Mike DeMell of Environmental Services, Inc. met with the U.S. Army Corps of Engineers in Savannah. The purpose of our meeting was to discuss general concerns and procedures for providing a cruise ship terminal facility in the Savannah Harbor and also to gather information concerning permit requirements for USACE permitting. The point of contact for USACE for this project has been assigned as Mrs. Sarah Wise.

One of the first issues mentioned by the Corps was that upland (land based) components should be considered early in the project rather than simply looking at the marine (in water) aspects. They emphasized looking at the footprint of the facility, parking requirements, possible wetlands, etc.

Next, we began a discussion concerning each of the three specific sites. The first site discussed was the Savannah River Landing Site located just beyond the East end of River Street on the south side of the Federal Channel. It was noted that the Savannah River Landing Site has been permitted (USACE 404 permit), but would require re-permitting if the current use was changed (i.e. changing from mixed use development to cruise ship terminal). However, with that being said, it may still likely by easier to re-permit this site than to permit other sites because some issues have already been mitigated (wetlands, marsh barriers, etc.). It was noted that there may have been some hazardous waste on this site in the past and that the soils would require Tier 1 spoil testing and likely Tier 2 testing.
The second site discussed was the Blue Circle Silo Site located just east of the Talmadge Bridge on Hutchinson Island and north of the Federal Channel. One issue of concern for this site is the location of a dredging pipeline that is currently located in front of the mooring structure at this site. The Corps mentioned that the contractor could lower the pipeline or possible place it elsewhere if this site were chosen. Also, similar to the Savannah River Landing Site, it was mentioned that there could be contaminants in the soil from past use. Finally, it was mentioned that there may be an issue with possible shoreline wetlands / marsh fringe at this site.

The final site discussed was the Powell Dufferyn Site located on Hutchinson Island east of the Talmadge Bridge and on the north side of the Federal Channel. Like the other 2 sites, there is a concern about possible soil contaminants. Also similar to the Silo Site, it was noted that there could be possible shoreline wetlands / marsh fringe on this site as well.

The Corps mentioned that all 3 sites would need to be thoroughly tested to determine if any past uses could contribute to recognized environmental hazards. This involves both the high ground and dredge area of each site.

Finally, some non-site specific information was discussed. It was pointed out by USACE that any new permitting will require that fueling barges (if needed) must be kept out of the Federal Channel when fueling ships. It was also noted that currently fueling barges are constantly in the channel during fueling. According to USACE, these areas were “grandfathered” and no new permits will allow fueling barges in the channel. However, it was further stated that it would be dealt with case by case.

Another non-site specific topic discussed was initial dredging, siltation, and the need for maintenance dredging. It was acknowledged that all 3 sites would require initial dredging and also continuing maintenance dredging. The maintenance dredging will have to be addressed in the permit and a plan will have to be submitted. Some methods currently being used are turbo-scouring and agitation dredging. Turbo scouring uses devices that constantly stir up the water & silt at a particular site and the devices move up and down in the water with the changing tide. This keeps the silt suspended and moving along with the tide. The next method, agitation dredging uses tug boats with drags that stir up the bottom of the river and cause the silt to be re-suspended and move along with the tide. An estimated price for agitation dredging was quoted at $2.00 to $3.00 per cubic yard. It was further noted that dredging operations are not allowed during certain time periods (i.e. Striped Bass Window – March 15 thru April 30). Dredge spoil areas were discussed as well. It was re-emphasized that the USACE is currently preparing for the deepening project for the Savannah Harbor and they do not intend to allow USACE dredge spoil areas to be used for non-USACE work at this time. The possibility of
offshore disposal of dredge spoils was discussed briefly, but USACE commented that offshore disposal would require Tier 3 soil testing which would be extremely costly.

Concerning the Savannah Harbor deepening project that may happen in the near future, USACE confirmed that there will be no work on the side slopes outside of the Federal Channel. To clarify, the current side slopes will be carried out into the existing federal channel. Therefore, the deepened part of the channel will actually be slightly narrower than the full Federal Channel. Part of the reason for this is to preserve the stability of the structures outside of the Federal Channel. Changing the side slopes outside of the channel would threaten the structural integrity of many existing facilities.

The U.S. Army Corps of Engineers further suggested that we meet with the U.S. Coast Guard and possibly the Dept. of Homeland Security to discuss the project and get feedback from their agencies as well.

MEETING 3/12/13 – U.S. COAST GUARD – CRUISE SHIP TERMINAL STUDY

On March 12, 2013, Chace Holloway and Hank White of Coastline Consulting Services, Inc., and Mike DeMell of Environmental Services, Inc. met with the U.S. Coast Guard in Savannah. The purpose of our meeting was to discuss general concerns and procedures for providing a cruise ship terminal facility in the Savannah Harbor and also to gather information concerning safety and security measures pertaining to the U.S. Coast Guard. The point of contact for the Coast Guard for this project was Mr. William Franklin, MST1. The Department of Homeland Security was also invited but declined this meeting with the explanation that their agency would get involved once the project shifted to an actual planning stage for a facility.

Most of the discussion revolved around general concerns, maritime trade and traffic, and general advice pertaining to commercial vessels. The U.S. Coast Guard representatives present at the meeting did not offer any real particular site specific concerns or suggestions.

First, a few navigational items were discussed. It was noted that depending on in-port vessels (particularly military, LNG, etc.), tug boats could be required for docking the cruise vessels. It was further explained that in areas similar to the Savannah River (i.e. Mobile River, Jacksonville), 2 tug boats were generally used for turning cruise ships and for docking them as well. The USCG also mentioned that the maritime stakeholders would determine priority for vessel turning in the basin and general priority in the waterways. We brought up the idea mentioned by BEA that generally cruise ships get priority based on life safety issues and the number of people on board vs. freight and cargo ships. The Coast Guard commented that this
is only the case when a cruise vessel experiences a problem or has threatening issues that would be dealt with as needed.

A few other items to note:

- There is an LNG terminal at Elba Island just east of Hutchinson Island. LNG Carriers have restricted safety zones around them and cruise vessels would have to schedule around possible interference with them.

- Tide restricted vessels (larger ships, deeper draft) will get priority – they may already be waiting up to 12 hours for high tide.

- Fog will shut down maritime travel with the Savannah Harbor – happens frequently.

- The ports are evacuated during the threat of a tropical storm or hurricane.

- There are on average approximately 14 vessels a day moving through the Savannah Harbor.

- The U. S. Coast Guard will be responsible for inspection of facilities and vessels for the cruise industry.

- Savannah Spill Response Corporation – This is a cooperative effort responsible for clean up in case of oil spill or other environmental situation.

A few other items were discussed that would be examined in more detail once the project moves forward to the next phase. An item of concern was shore side waste disposal and insuring adequate facilities to handle it. They further stressed that the Coast Guard would get more involved during permitting and once a particular site was chosen so that they could further examine landside issues.

All together, this meeting with the U.S. Coast Guard provided some further helpful data concerning the general operation of cruise vessels along with other maritime traffic within the Savannah Harbor. It did not, however, provide any further insight on any of the proposed sites. With that in mind, the ranking of the recommended sites remains: 1) Savannah River Landing Site. 2) Blue Circle Silo Site. 3) Powell Dufferyn Site.
ESTIMATED DREDGING FOR 3 PROPOSED SITES – REV. FOR 34 FT DRAFT 3-5-13

Due to the limited hydrographic survey information available on the USACE 2008 Savannah Harbor Survey, we can only provide a very rough estimate for the dredging quantities for each of the sites. Survey points are only provided every 500 feet along the length of the River and every 25 feet along the width at each 500 ft. interval. Also, the survey points on this survey are used by USACE for maintaining the Federal Channel only and are dated 2008. The berthing locations that we are interested in are outside of the Federal Channel and therefore, the points are limited and even non-existent in some of these areas. Our calculations for dredging quantities show the following:

Blue Circle Silo Site – Approx. 130 ft. from Federal Channel to existing mooring structures, approx. 1000 ft. long (with acquired frontage from neighboring sites(s) – in order to provide 34’ draft, approx. 34,800 cubic yards need to be removed.

Powell Dufferyn Site – Approx. 120 ft. from Federal Channel to existing mooring structures, approx. 1000 ft. long (with acquired river frontage from neighboring site(s) – in order to provide 34’ draft, approx. 24,300 cubic yards need to be removed. ** We believe this calculation is misleading due to very limited survey data in this area combined with the fact that this site is located on an inside curve of the river which is reported to experience excessive shoaling/silting. This will also be a concern for maintenance dredging.**

Savannah River Landing Site – Approx. 150 ft. from Federal Channel to existing structure (from narrowest point), approx. 1200 ft. long – in order to provide 34’ draft, approx. 38,500 cubic yards need to be removed.
CONCLUSION

Based on the information gathered to date, it is our opinion that the Savannah River Landing Site is the best candidate of the three sites examined (among Blue Circle Silo Site, Powell Dufferyn Site, & Savannah River Landing Site). We concluded this for the following reasons: First, of the three sites, it is best suited by its location in the Savannah Harbor. Though it is in a curve, it is in a less congested portion of the river and has more frontage and more berthing room outside of the Federal Channel. Also, it is in the outer part of a curve so it has more erosion action which helps prevent excessive silting. This can minimize the frequency required for maintenance dredging. Even though this site appears to require more initial dredging than the other sites, it appears that the long term advantage of less frequent maintenance will outweigh the initial cost. Furthermore, since this site has already undergone USACE 404 permitting, some possible issues, such as fresh water wetlands and cultural resources, may already be mitigated. Though it will require re-permitting due to change in use, it may still be a more streamlined permitting process. For these reasons we believe the Savannah River Landing Site is the best choice of the three properties studied. The next best sites would be the Blue Circle Silo Site followed by the Powell Dufferyn Site.
Appendix E
Plats and Maps

Site A – Silo / Atlantic Cement Tract
Appendix E
Plats and Maps

Site B – Powell Dufferyn Tract
Appendix E
Plats and Maps

Site C – Savannah River Landing Tract
Compatible Buildings
Architectural standards should follow to the extent possible the Manual for Development in Savannah’s Historic District.

Build To Lines and Entrances: Continuity of building frontage produces a sense of defined space in the public realm. Build To Line are established within each block designating a range for required building placement according to the intended use. Buildings take access from the Build To Line with a required number of minimum entrances in each block. Blocks intended for retail use have the most permeable building forms with minimum access occurring every 50 feet, those intended for residential or larger commercial use provide minimum access every 50 to 100 feet.

Height and Mass: Consistency of building heights and mass creates visual continuity in the streetscape and the skyline. Maximum heights measured in stories have been established in each block, ranging from 8 to 10 stories. A parking level is counted as a story. Building facades over 60 feet in width should be broken down vertically to reduce their mass and create a human scale.

Horizontal articulation of buildings should include an identifiable base, body and cap.

Color and Texture: Building walls should be of traditional masonry materials such as brick or stone masonry. Surfaces should be detailed to provide visual texture and human scale. On older buildings fronting the water, the colors of surfaces above 4 stories shall be darker and visually recessive in order to not dominate the skyline from the street.

Mixed Uses & Subdivision of Blocks
Blocks should be subdivided to allow for a diverse range of building types and lot sizes. Primary uses may be mixed within blocks and within buildings. Freestanding lots may be subdivided within blocks in varied configurations. Subdivided blocks shall allow for each lot to have a minimum of 20 feet of frontage on a primary street or a lane and a minimum lot size of 1,000 square feet.

Block Plan
The single most important defining element of the Civic Master Plan is the street and block plan, connecting this large open property to the historic patterns of the City of Savannah. The street and block plan organizes the site, provides public access to the waterfront, respects view corridors, improves circulation, and creates small blocks to accommodate a range of uses and open spaces. It is the basis for the official mapping of streets, parks, and other public spaces that will shape the future of the public realm.

Streets and Parking
A network of interconnected streets provides circulation throughout the area. Street sections are compact with 30 foot travel lanes on most two-way streets and 12 foot travel lanes on one-way streets. Curbs radii are minimized to between 6 and 12 feet. Parallel parking is provided on all streets on one side or two sides. Parallel parking is accommodated in 8 x 20 foot bays. Additional off-street parking may be provided in surface lots with appropriate landscaping or in structured decks. Off-street parking may not front a build-to-line.

Sidewalks and Street Trees
A network of continuous sidewalks on all streets promotes connections and pedestrian-oriented development. Sidewalks are generally 5 to 6 feet in width, ranging up to 20 feet along small frontages. Street trees are provided in tree lanes along all primary and secondary streets. Tree lanes are 6 to 12 feet in width and are located between the sidewalk and the street. Regularly spaced and aligned street trees provide human scale, visual continuity, shade for pedestrians, and a barrier between moving traffic. Trees should be Live Oak at 40 to 50 foot intervals, or other species comparable to those found in the city center.

Public Spaces
A variety of parks are created with an emphasis on the waterfront. The extension of the river walk is an integral element in connecting these spaces. Parks should be designed to accommodate a variety of passive uses. Multiple focal points should be developed which may include a playground, amphitheater, fountain, or connection to water travel.

February 24, 2006

City of Savannah
Metropolitan Planning Commission
Savannah Development & Renewal Authority

Savannah River Landing, LLC
The Ambling Companies
Thomas & Hutson Engineering Co.
Sotelle & Sotelle Urban Design

Historic View of the East Riverfront
EASTERN WHARF - Savannah River Landing Tract
Site File Number 9CH1160
Appendix F
US Coast Guard Naval Vessel Protection Zone
WARNING!

Do not approach within 100 yards of any U.S. naval vessel. If you need to pass within 100 yards of a U.S. naval vessel in order to ensure a safe passage in accordance with the Navigation Rules, you must contact the U.S. naval vessel or the Coast Guard escort vessel on VHF-FM channel 16.

Operate at minimum speed within 500 yards of any U.S. naval vessel and proceed as directed by the Commanding Officer or the official patrol.

Violations of the Naval Vessel Protection Zone are a felony offense, punishable by up to 6 years in prison and/or up to $250,000 in fines.
Naval Vessel Protection Zone
Effective: September 14, 2001

• All vessels within 500 yards of a U.S. naval vessel shall operate at the minimum speed necessary to maintain a safe course and shall proceed as directed by the official patrol (a Coast Guard commissioned, warrant or petty officer; or the Commanding Officer of a U.S. naval vessel or his or her designee).
• No vessel is allowed within 100 yards of a U.S. naval vessel, unless authorized by the official patrol.
• Vessels requesting to pass within 100 yards of a U.S. naval vessel shall contact the official patrol on VHF-FM channel 16. The official patrol may permit vessels that can only operate safely in a navigable channel to pass within 100 yards of a U.S. naval vessel in order to ensure a safe passage in accordance with the Navigation Rules.
• Commercial vessels anchored in a designated anchorage area may be permitted to remain at anchor within 100 yards of passing naval vessels.

Regulatory Information
The Coast Guard has established temporary regulations for the safety and security of U.S. naval vessels in the navigable waters of the United States. The regulation is issued under the authority contained in 14 U.S.C. § 91. Naval Vessel Protection Zones will provide for the regulation of vessel traffic in the vicinity of U.S. naval vessels in the navigable waters of the United States.

These zones are necessary to provide for the safety and security of United States naval vessels in the navigable waters of the United States.

This rule, for safety and security concerns, controls vessel movement in a regulated area surrounding U.S. naval vessels. U.S. naval vessel means any vessel owned, operated, chartered, or leased by the U.S. Navy; and any vessel under the operational control of the U.S. Navy or a unified commander.

Violations of these regulations are punishable as a class D felony (imprisonment for not more than 6 years and a fine of not more than $250,000) and in rem liability against the vessel.

Assistance for Small Entities
We want to assist small entities in understanding this proposed rule so that they can better evaluate its effects on them and participate in the rulemaking. If the rule would affect your small business, organization, or governmental jurisdiction and you have questions concerning its provisions or options for compliance, please contact the address listed under ADDRESS.

If you wish to comment on actions by employees of the Coast Guard, call 1-888-REG-FAIR (1-888-734-3247).

ADDRESS
Commander (Amr)
Coast Guard Atlantic Area,
431 Crawford Street
Portsmouth, VA 23704-5004
(757) 398-6372.
Subpart G—Protection of Naval Vessels

Source: LANT AREA-02-001, 67 FR 31960, May 13, 2002, unless otherwise noted.

§ 165.2010 Purpose.

This subpart establishes the geographic parameters of naval vessel protection zones surrounding U.S. naval vessels in the navigable waters of the United States. This subpart also establishes when the U.S. Navy will take enforcement action in accordance with the statutory guidelines of 14 U.S.C. 91. Nothing in the rules and regulations contained in this subpart shall relieve any vessel, including U.S. naval vessels, from the observance of the Navigation Rules. The rules and regulations contained in this subpart supplement, but do not replace or supersede, any other regulation pertaining to the safety or security of U.S. naval vessels.
§ 165.2015Definitions.

The following definitions apply to this subpart:

Atlantic Area means that area described in 33 CFR 3.04-1 Atlantic Area.

Large U.S. naval vessel means any U.S. naval vessel greater than 100 feet in length overall.

Naval defensive sea area means those areas described in 32 CFR part 761.

Naval vessel protection zone is a 500-yard regulated area of water surrounding large U.S. naval vessels that is necessary to provide for the safety or security of these U.S. naval vessels.

Navigable waters of the United States means those waters defined as such in 33 CFR part 2.


Official patrol means those personnel designated and supervised by a senior naval officer present in command and tasked to monitor a naval vessel protection zone, permit entry into the zone, give legally enforceable orders to persons or vessels within the zone, and take other actions authorized by the U.S. Navy.

Pacific Area means that area described in 33 CFR 3.04-3 Pacific Area.

Restricted area means those areas established by the Army Corps of Engineers and set out in 33 CFR part 334.

Senior naval officer present in command is, unless otherwise designated by competent authority, the senior line officer of the U.S. Navy on active duty, eligible for command at sea, who is present and in command of any part of the Department of Navy in the area.

U.S. naval vessel means any vessel owned, operated, chartered, or leased by the U.S. Navy; any pre-commissioned vessel under construction for the U.S. Navy, once launched into the water; and any vessel under the operational control of the U.S. Navy or a Combatant Command.

Vessel means every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water, except U.S. Coast Guard or U.S. naval vessels.
§ 165.2020 Enforcement authority.

(a) Coast Guard. Any Coast Guard commissioned, warrant or petty officer may enforce the rules and regulations contained in this subpart.

(b) Senior naval officer present in command. In the navigable waters of the United States, when immediate action is required and representatives of the Coast Guard are not present or not present in sufficient force to exercise effective control in the vicinity of large U.S. naval vessels, the senior naval officer present in command is responsible for the enforcement of the rules and regulations contained in this subpart to ensure the safety and security of all large naval vessels present. In meeting this responsibility, the senior naval officer present in command may directly assist any Coast Guard enforcement personnel who are present.

Coast Guard, the senior naval officer present in command, or the official patrol on VHF-FM channel 16.

(f) When conditions permit, the Coast Guard, senior naval officer present in command, or the official patrol should:

1. Give advance notice on VHF-FM channel 16 of all large U.S. naval vessel movements; and
2. Permit vessels constrained by their navigational draft or restricted in their ability to maneuver to pass within 100 yards of a large U.S. naval vessel in order to ensure a safe passage in accordance with the Navigation Rules; and
3. Permit commercial vessels anchored in a designated anchorage area to remain at anchor when within 100 yards of passing large U.S. naval vessels; and
4. Permit vessels that must transit via a navigable channel or waterway to pass within 100 yards of a moored or anchored large U.S. naval vessel with minimal delay consistent with security.

Note to § 165.2025 paragraph (f):
The listed actions are discretionary and do not create any additional right to appeal or otherwise dispute a decision of the Coast Guard, the senior naval officer present in command, or the official patrol.
§ 165.2030 Pacific Area.

(a) This section applies to any vessel or person in the navigable waters of the United States within the boundaries of the U.S. Coast Guard Pacific Area, which includes the Eleventh, Thirteenth, Fourteenth, and Seventeenth U.S. Coast Guard Districts.

Note to paragraph (a):
The boundaries of the U.S. Coast Guard Pacific Area and the Eleventh, Thirteenth, Fourteenth, and Seventeenth U.S. Coast Guard Districts are set out in 33 CFR part 3.

(b) A naval vessel protection zone exists around U.S. naval vessels greater than 100 feet in length overall at all times in the navigable waters of the United States, whether the large U.S. naval vessel is underway, anchored, moored, or within a floating dry dock, except when the large naval vessel is moored or anchored within a restricted area or within a naval defensive sea area.

(c) The Navigation Rules shall apply at all times within a naval vessel protection zone.

(d) When within a naval vessel protection zone, all vessels shall operate at the minimum speed necessary to maintain a safe course, unless required to maintain speed by the Navigation Rules, and shall proceed as directed by the Coast Guard, the senior naval officer present in command, or the official patrol. When within a naval vessel protection zone, no vessel or person is allowed within 100 yards of a large U.S. naval vessel unless authorized by the Coast Guard, the senior naval officer present in command, or official patrol.

(e) To request authorization to operate within 100 yards of a large U.S. naval vessel, contact the Coast Guard, the senior naval officer present in command, or the official patrol on VHF-FM channel 16.

(f) When conditions permit, the Coast Guard, senior naval officer present in command, or the official patrol should:

1. Give advance notice on VHF-FM channel 16 of all large U.S. naval vessel movements;

2. Permit vessels constrained by their navigational draft or restricted in their ability to maneuver to pass within 100 yards of a large U.S. naval vessel in order to ensure a safe passage in accordance with the Navigation Rules; and

3. Permit commercial vessels anchored in a designated anchorage area to remain at anchor when within 100 yards of passing large U.S. naval vessels; and

4. Permit vessels that must transit via a navigable channel or waterway to pass within 100 yards of a moored or anchored large U.S. naval vessel with minimal delay consistent with security.

Note to paragraph (f):
The listed actions are discretionary and do not create any additional right to appeal or otherwise dispute a decision of the Coast Guard, the senior naval officer present in command, or the official patrol.

[PAC AREA-02-001, 67 FR 38394, June 4, 2002]