

SAVANNAH BOATHOUSE

PROJECT DESCRIPTION AND SUPPORT DOCUMENTATION FOR THE JOINT APPLICATION FOR THE

SAVANNAH BOATHOUSE

Chatham County, Georgia

1. BASIC PROJECT DETAILS

3 Sea Sons, LLC. proposes the re-development of a ~4.91-acre site located west of Highway 80 and south of the Bull River in Chatham County, Georgia (Appendix A; Figure 1 and Appendix B, Sheet 1). The ~4.91-acre site includes ~2.38-acres of upland and ~2.53-acres of marsh. The property was formally owned by the Williams family who operated various commercial uses for the past 90-years. Included in the prior use was the Williams Seafood Restaurant, shrimping operations, and most recently the site was leased for the operation of a casino cruise ship company. The proposed project is a re-development of the ~2.38-acre upland portion of the site to a full-service marina operation. The materials in this application provide specific details of prior use, existing site conditions, and proposed improvements to re-establish a viable business to serve the community.

The proposed project is named **Savannah Boathouse**. The project will consist of a full-service marina facility to be constructed along the south bank of the Bull River. The general scope of the project includes the construction of 8 finger docks to accommodate 25 permanent wet slips, mooring for transient vessels and staging areas for daily use, installation of a dry rack facility to accommodate 108 dry slips, a forklift launch facility to deploy and recover vessels, and an office / store building to accommodate daily business operations. A portion of the marina facility (forklift launch, gangways, finger docks, etc.) will be constructed over the existing river bottom. The dry rack, office/store, parking, underground fuel tanks, and wash racks will be constructed in the uplands.

The following information and attached materials are provided to pursue Coastal Marshlands Protection Act (CMPA) and Section 10 of the Rivers and Harbors Act permits.

1.1 *Existing Site Conditions:*

General information pertaining to the existing site conditions for the ~4.91-acre site can be found in Appendix A; Figures 1 through 6. Included in this Appendix are Figure 1 Vicinity Map,

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Figure 2 USGS Topographic Image, Figure 3 NRCS Soil Survey, Figure 4 National Wetland Inventory, Figure 5 FEMA Flood Zone Data, and Figure 6 LiDAR Digital Elevation Model data.

The existing conditions, both current and within the past 25 years are detailed via the attached - SAGIS Pictometry Photo Sheets 1-8, Google Earth Photo Essay 1994 through 2019, and at grade existing site conditions Photo Sheets 1 through 3 (Appendix A).

Close attention should be given to these aerials to help understand that this is a *re-development of a prior commercial site* and as such, much of proposed development is to occur on previously used, hardened structures of one form or another. Additionally, Photo Sheets 4 through 5 provide examples of at grade photos of the anticipated finished site improvements. These photographs were taken at the nearby Turners Creek Boat Ramp in Chatham County, Ga (Appendix A). Where possible, otherwise none existent storm water management tools will be installed to improve site conditions.

In addition to those items above, as depicted in Appendix B, Sheet 2 and in greater detail Sheet 5, there are numerous in-water structures remaining from the prior permitting and past uses. Combined, these existing features represent ~4,360 sf of unused in-water structures. The project will removal all these structures except for the fixed walkway and covered structure located off the western side of the peninsula. During the demolish of these features, the contactor will also clean up other marine debris in and around the area and dispose of these materials in an appropriate manner.

1.2 Jurisdictional Determination:

In early 2019, Environmental Services, Inc. (ESI) delineated the ~4.91-acre site to assess and define any aquatic resources that may be regulated by the Corps of Engineers. As a result of this review, no freshwater wetlands have been located within the project boundary and a salt marsh wetland boundary was established around the perimeter of the upland peninsula. In April 2019, ESI and the Corps of Engineers staff completed a field visit to verify the recent delineation. The 2019 salt marsh boundary has been surveyed and is depicted on the survey prepared by Dale E.

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Yawn March 30, 2019. The Corps verified the above referenced delineation in a letter dated April 18, 2019. (Appendix K).

In early 2019, ESI delineated the ~4.91-acre site to perform a formal delineation of the subject property to establish the extent of the **salt marsh boundary**. The 2019 salt marsh delineation was performed in accordance with the *Coastal Marshlands Protection Act of 1970*. On March 14, 2019 ESI and DNR staff completed a field visit to verify the recent delineation. The 2019 salt marsh boundary has been surveyed and is depicted on the survey prepared by Dale E. Yawn March 30, 2019. DNR verified the above referenced delineation in a letter dated April 9, 2019. (Appendix J).

1.3 Proposed Impacts:

The project will result in no freshwater wetland impacts. Impacts associated with work located within tidal waters is limited to the shading footprint and pile installation of the floating docks, fixed walkways, forklift pier, and gangways associated with the marshland component of the project. Additional impacts are associated with placement of additional rip-rap on top of the existing rip-rap along the north side of the project and south bank of the Bull River.

Details of this work can be found in Appendix B and in the table below.

Table 1.

Area Name	Activity Type	Habitat	Area of Impact (Acres)	Impact Type
Marshland Component	<ul style="list-style-type: none"> Pile and floating dock installation Gangway Forklift Pier 	OW/WB RR VM	~12,950 sf. total ~12,470 sf. ~380 sf. ~100 sf.	<ul style="list-style-type: none"> Shading Floating dock Fixed forklift pier river piles into rip rap & water bottoms
Bank Stabilization	<ul style="list-style-type: none"> Supplemental Rip Rap installation 	RR/VM	~2,385 sf. Or ~265 sy.	<ul style="list-style-type: none"> Placement of rip rap on top of the existing revetment

** *OW/WB = Open Water/Water Bottoms, RR = Existing Rip Rap within Jurisdiction, MF = Mud Flat, VM = Vegetated marsh*

2. SITE PLANS

Appendix B, Sheets 1-14; dated 05/30/19 prepared by EMC Engineering Services, Inc. provide specific details associated with the project.

2.1 *Marshlands Component of Project:*

The marshlands component for this project is graphically defined in Appendix C; Figure 1. Attention should be given to this figure to comprehend how the proposed project relates to the current site conditions. Essentially, the entire landmass has been developed for prior purposes in the past. The marshland component, generally defined as the part of the project in an estuarine area requiring a permit under The Coastal Marshlands Protection Act, generally includes the portion of the fixed forklift launch facility waterward of the jurisdictional boundary, (2) gangways, the finger docks and attendant features, and supplemental rip rap placed upon the surface of the existing revetment. Refer to Appendix N for details pertaining to the “*draft*” Marina Operations and Maintenance Manual. Details associated with the marshlands component of the project are graphically defined in Appendix B; Sheets 1 - 23 and discussed further below:

- **Forklift Pier:** A fixed concrete forklift pier will be constructed starting landward of the jurisdictional boundary and extending into the Bull River. This structure will be constructed upon piles. The southern portion of this structure (*within the jurisdictional area*) is oriented parallel to the river and measures approximate 12’ wide and 40’ long (** note the southern end of the forklift pier measures in total 20’x 40’, only a portion of which is in jurisdiction, ~510sq.ft.*). The pier then narrows to 16’ wide by 40’ long extending northeast into the river to a point where vessel recovery and launch can be accommodated at any tide. Refer to Appendix B; Sheets 6, 9, 10, & 11 for further detail.
- **Floating Dock Facility:** Leading from the above referenced forklift pier, the western floating docks begin at a 5’ wide by 40’ long gangway. The western gangway lands onto a 10’ wide x 200’ long launch float that has four total finger docks, consisting of (3) 8’ wide x 120’ long finger docks and one additional 10’ wide x 120’ long finger dock located furthest to the northwest. Similarly, leading from the above referenced forklift pier, the

eastern floating docks begin at a 5' wide x 40' long gangway. The east gangway lands onto a 10' wide x 200' long launch float that has (3) 8' wide x 80' long finger docks and one additional 10' wide x 80' long finger dock which is located furthest to the northeast. The fuel dispensers and sewer pumpout will be available in multiple locations on the outer docks. Additionally, on the inboard side of the two launch floating docks, there are two boat access floats to assist staff launch and recover vessels from the forklift. These floats have a mid-section that is 4' wide x 20' long and each end transitions back to the launch float at a 45-degree angle. A 4' wide x 16' long bait float is situated on the east side of the eastern most gangway and inboard of the southeastern most floating dock. Lastly, on the east side of the eastern 10' wide x 200' launch float a 4' wide x 50' long float is situated to accommodate pedestrian traffic should an ADA gangway be needed in the future. The above docks provide ~1,600 lf of side-tie mooring. The applicant anticipates 25 in-water slips, with the balance of mooring area to accommodate staging of boats, day use, and transient vessel accommodations. Refer to Appendix B; Sheets 6, 9, 10, and 14 for further detail. Please note, as defined on Sheet 14, some floats may have rub rails along the perimeter of the docks that would add an additional 2" of width on both sides of the above referenced floats. **Additional support structures, often shown as 45 degree bracing on Sheet 9, are included in the total area of structure located in jurisdiction.**

- **Existing Structure to Remain:** As depicted throughout the documents presented in Appendix A, there are numerous in-water structures associated with the current site. One structure that will remain is the ~21' x ~21' existing concrete/wood structure and the ~6' wide x 50' long fixed walkway. As also defined in Appendix B; Sheets 2, 5, 6, 9, and 11 this structure will serve several purposes to accommodate pedestrian safety and educational opportunities.

First and foremost, safety in association with pedestrians near to the forklift launch and recovery operations is a priority. As defined on the plans and more specifically in Appendix B; Sheets 8 & 9 as the forklift pavement extends north toward the river, the width of the upland peninsula narrows. As such, the plan accommodates pedestrian traffic along the east side of the forklift travel way. Once at the river, the forklift needs to launch or

recover a vessel, then back out and turn around 180-degrees to proceed to the south. As depicted on Sheet 9, the swing radius of the forklift carrying a vessel results in the bow swinging out further to the west during this operation. The above referenced existing structure will provide a safe location for marina patrons to avoid forklift operation while gaining access to or from the floating docks on the western side of the marina facility.

Similarly, considering this is a covered structure, it provides refuge for marina patrons to escape inclement weather conditions and a potential point for kiosks to enhance and strengthen educational opportunities in association with Appendix M – “Sample” Educational Materials.

- The applicant intends to seek federal funding from the Boating Infrastructure Grant (BIG) Program to offset the construction costs associated with portions of this facility. The Sportfishing and Boating Safety Act of 1998 established BIG to provide funding to States, the District of Columbia, Commonwealths, and territories for the development and maintenance of facilities for transient non-trailerable recreational vessels. Through the program’s intent and eligibility criteria, BIG-funded facilities provide many benefits to the communities in which they are located, such as:
 - Inter-state commerce and economic impact
 - ADA accessible boating facilities
 - State-of-the-art marina design and construction
 - Durable, long-lasting facilities
 - Environmental quality and sustainability
 - Vibrant and active marinas and waterfront destinations
- **Bank Stabilization:** The northern end of the upland peninsula has been subjected to a haphazard placement of revetment materials during the use of this property and commercial operations over the last 90-years. The current materials are unstable in places and need supplemental enhancement. Appendix B; Sheet 10 provides a profile view and Sheet 11 defines cross-sections F-F, G-G, & H-H views of this activity. This area measures ~110’ long x ~20’ wide (~0.05-acres / ~2,385 sf. / ~265 sy.). The current revetment is a sparsely vegetated bank. The purpose and need for this additional bank stabilization are to enhance

the current rip-rap and further fortify this portion of the bank to protect the new improvements.

2.2 Upland Component of the Project:

The upland component for this project is graphically defined in Appendix C; Figure 1. Attention should be given to this figure to comprehend how the proposed project relates to the current site conditions. Essentially, the entire upland parcel has experienced some form of development over the years with residual material/debris left across the site. The upland component, generally defined as all those service areas, amenities, and recreational areas located inland of the Coastal Marshlands Protection Act jurisdictional line, that serve or augment the functioning of the marshlands component of the project, generally include installation of a dry rack facility to accommodate 108 dry slips, the upland portion of a forklift launch facility to deploy and recover vessels, an office / store building to accommodate daily business operations, staff and patron parking, underground fuel tanks, wash racks and other attendant features.

Refer to Appendix N for details pertaining to the “*draft*” Marina Operations and Maintenance Manual. Details associated with the upland component of the project are graphically defined in Appendix 2; Sheets 6 thru 8 and discussed further below:

Dry Slip Marina (using open dry stack racks):

The proposed 108 dry slips are located at the southern portion of the site. The dry slip vessels will be housed in three rack systems: each 35’ wide x 150’ long. Each rack system will be rooved and may be enclosed on three sides. The dry stack operation will also include an office, restrooms, temporary washdown racks, and an upland fuel-dispensing station. The fuel system will be designed with appropriate leak detection and safety shut-off technology. The dry stack operations area will be graded so that all wash down water is collected via a single storm drain. The wash down water will pass through an oil and water separator prior to being discharged.

Marine Fuel System

Fueling stations will be provided at two locations in the marina facility: one at the dry stack, and one on the northeast dock.

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The fuel system will be designed in accordance with the National Fire Protection Association's (NFPA) Automotive and Marine Service Station Code (NFPA 30A) and will feature appropriate leak detection, safety shut-off technology and fire protection. A Spill Prevention Control and Containment (SPCC) Plan will be prepared for the (2) 7,500-gallon Underground Storage Tanks (USTs) located north of the parking and dry stack operations area.

When possible, vessels stored in the dry stack will be fueled while they on the forklift in the operations area. All other vessels will be fueled in the water while they are securely berthed at the respective fuel dock.

An experienced operator will oversee vessel fueling at each fueling station. Fuel spill response equipment (e.g. absorbent booms, pads, etc.) will be stored and easily accessible at each fueling station.

Marine Sewage Pumpout System

Marine sewage pumpout station will be installed at the Savannah Boathouse in an effort to protect water quality in the Bull River. Fixed pumpout stations will be provided at various locations of the floating docks. Sewage pumpout "hydrants" are installed along the edge of the dock "trees" (similar to utility pedestals and fire suppression standpipes). The pumpout system will connect and discharge to the existing Chatham County municipal wastewater collection and treatment system. The marine sewage pumpout system will be available to vessels berthed at the marina (short and long-term) as well as to the general boating public.

The applicant intends to seek Clean Vessel Act funding to offset a portion of the costs of the marine sewage pumpout system. The Clean Vessel Act (CVA) of 1992 was signed into law to reduce pollution from vessel sewage discharges, prohibiting the discharge of raw sewage into fresh water or within coastal salt-water limits. The act established a federal grant program administered by the U.S. Fish and Wildlife Service, which to date has awarded nearly \$150 million for states to install thousands of sewage pumpout stations.

2.3 Marshlands Buffers for Upland Component:

As previously discussed, this project is a redevelopment of a prior restaurant / shrimp dock / casino boat facility; therefore, there are no undisturbed buffers adjacent to the Bull River nor the saltmarsh located along the west side of the project area. Appendix A is provided to document the existing site conditions and the photo essay is used to observe progression of the site over the years. Appendix A also provides examples of the how the finished development will look within areas adjacent to the marsh. Appendix B; Sheets 7 & 8 defines the 50' upland buffer measured from the jurisdictional boundary. Note, given the configuration of the landform, retaining or reestablishing a 50' buffer measured from the jurisdictional boundary would preclude any ability to redevelop this site. The current upland buffer regulations were generally developed in consideration of undeveloped "green" sites, and currently don't necessarily accommodate challenges associated with the redevelopment of prior developed sites.

Pursuant to CMPA, Chapter 391-2-3.02(4) the following discussion is offered:

(4)(a): As mentioned earlier, all of the upland component has been developed and utilized in years past. Therefore, there are no undisturbed, natural upland buffers on this site (*See Appendix A & B*).

(4)(b): The applicant and project team certify adherence to appropriate soil and erosion control responsibilities as appropriate and available for use of this site (*See Appendix D*).

(4)(b)(1): As noted above, this is a redevelopment of a prior used site with no undisturbed upland buffers. Where possible, and more specifically as the development extends southwest, available upland will be retained and used as upland buffer. Enhancements will occur to include additional clean up of prior uses, supplemental plantings, and introduction of stormwater management tools.

(4)(b)(2)(i): Construction and maintenance of temporary structures will be limited to those necessary for construction of the marshland component.

(4)(b)(2)(ii): Construction and maintenance of permanent structures will be limited to those features that are required for the functionality of and/or provide permanent access to the marshland component.

(4)(b)(2)(iii): Planting and grading with vegetated materials within the marshlands buffer will be completed to enhance stormwater management (*See Appendix A; Site Improvement Examples Figures A-4 & A-5*).

(4)(c): As outlined in Appendix A and Appendix D – post construction installation, restoration, and maintenance of the new stormwater management techniques and supplemental plants will provide for a more protective buffer than currently exists on site.

(4)(d): As defined in Appendix A and Appendix B – already existing impervious surfaces are present across most of the site. Where necessary to accommodate the proposed project, these existing features will remain as is or replaced with the current proposed structures. Where possible, these existing features will be removed, and site improvements implemented to result in a more protective conditions on site than currently exist.

(4)(e): As previously mentioned and outlined in Appendix D, the proposed site improvements will meet or exceed standards outlined in the Coastal Stormwater Supplement.

2.4 Storm water Management Plan of the Upland Component:

Refer to Appendix D for details relating to the storm water management summary, and existing conditions.

2.5 Pervious / Impervious Surface Calculations of the Upland Component:

Refer to Appendix D for details relating to the storm water management summary, and existing conditions.

3. DEED INFORMATION

Appendix F provides the property deed information for this site.

4. ADJOINING LANDOWNERS

A list of adjoining landowners and their addresses is attached in Appendix G.

5. ZONING AND LANDFILL/HAZARDOUS WASTE STATEMENT

On 30 May 2019 ESI submitted letters to contact the appropriate Chatham County officials regarding zoning and hazardous waste / landfills in the project area. **In a response letter dated June**

20, 2019 Mr. Clifford Bascombe, Assistant Director, Building Safety & Regulatory Services for Chatham County confirmed the project is in accordance with the approved zoning ordinance. In a response letter June 14, 2019 Mr. Nick Milionis, Sr. Development Services Engineer for Chatham County Public Works reports site conditions are unknown about any landfills or hazardous waste site exist on site. (Appendix 10 & 11 respectively). On June 28, 2019 ESI provided supplemental information to GADNR-CRD revealing GADNR-EPD and Chatham County hazardous site inventory mapping documents no known landfill or hazards on site.

6. DESCRIPTION OF ALTERNATIVES & MINIMIZATION OF IMPACT MEASURES

6.1 Alternatives:

The project team has prepared several earlier site plans conceptualizing this project. Each plan is generally similar in that the limited upland acreage dictates that the southern portion of the tract will have to accommodate dry rack storage and parking, and narrow peninsula leading the river will primarily be used for vessel and pedestrian access to the river and a small ~30' wide x 60' long footprint to accommodate the ship store, retail, and office facilities needed to operate a full service marina. The width and depth of the Bull River and the width of the parcel and extended property boundaries afford sufficient in-water dockage options which are best accomplished by the proposed plan defined above and elsewhere in this application. Considering the existing site conditions, no freshwater wetlands exist on site; therefore, the project represents complete avoidance of any wetlands regulated by the Clean Water Act.

Where possible, minimization efforts have been employed which include limiting permanent impacts to the previously utilized 50' upland component buffer and limiting the supplemental rip rap to only that needed to protect the new site improvements.

No additional minimization options exist that would also allow the project to be constructed as proposed.

6.2 No-Build Alternative:

A no-build alternative would result in the subject site remaining in the abandoned, underutilized condition as it has been since the restaurant burned down in 2005. A no-build alternative does not meet the purpose and need for this project.

7. **EROSION AND SEDIMENTATION STATEMENT**

Pursuant to CESAS Form 19; Question 16, B: 1,2,3.

- 1) All activities will be performed in a manner to minimize turbidity into river.
- 2) No oils or other pollutants will be released from the proposed activities which will reach the river.
- 3) All work will be performed in a manner necessary to avoid interference with any legitimate water uses.

8. **PUBLIC INTEREST STATEMENT**

The proposed construction, outlined elsewhere in these materials, has been designed to meet the specific project purpose, while minimizing adverse impacts to the surrounding ecosystems wherever possible. In this application, documentation has been provided to discuss how the project is not contrary to the public interest, and the following public interest considerations are discussed:

Pursuant to the Coastal Marshland Protection Act 12-5-286. (12)(g):

- a. *Whether or not unreasonably harmful obstruction to or alteration of the natural flow of navigational water within the affected area will arise as a result of the proposal.*

Site data collected and used in this application clearly defines the existing site conditions. The river at the project location ranges between ~740 to ~783' wide. The proposed dock occupies ~ 32% of the waterway. Appendix B; Sheets 6, 9 & 10 provide detail of the docks in association with the current bathymetric survey, provided by Bottom Line Echo, of the Bull River. As depicted, the depth of the river at the dock location satisfy depth requirements for this project. As depicted, the depth of the river north of the outboard

docks range between -25' to -30' deep. Proceeding across the river to the north, depths remain greater than -11' deep for at least ~370. These conditions provide ample room for safe navigation past the proposed project. Therefore, there will be no unreasonable harmful obstruction to or alteration of the natural flow of navigational waters.

- b. *Whether or not unreasonable harmful or increased erosion, shoaling of channels or stagnant areas of water will be created.*

The project is located along the outside bend of a slight curved section of the Bull River. The configuration of the docks and piles allow the current to continue to run parallel to the shoreline. Furthermore, most of the proposed structures will begin at least 25' north of the existing rip-rapped shoreline. Therefore, no unreasonable harmful or increased erosion, shoaling of channels or stagnant areas of water will be created.

- c. *Whether or not the granting of a permit and the completion of the applicant's proposal will unreasonably interfere with the conservation of fish, shrimp, oysters, crabs, clams, or other marine life, wildlife, or other resources, including but not limited to water and oxygen supply.*

The proposed project will employ Best Management Practices in accordance with local, state, and federal regulations.

As outlined in the Conservation Measures Section 11 in this document, and the "Sample" education materials defined in Appendix M, conservation of marine life and other resources will be employed and made part of the daily operations of this project.

Therefore, using appropriate redevelopment standards consistent with BMP's and regulatory obligations, this project as proposed will not unreasonably

interfere with the conservation of fish, shrimp, oysters, crabs, clams, or other marine life, wildlife, or other resources, including but not limited to water and oxygen supply.

9. LISTED SPECIES

Protection of listed animal 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 not being evaluated, because they have no federal listing, so therefore are not legally protected. Since this parcel does not contain public lands, the listed species review focused only on the federally listed species with ranges in Chatham County, Georgia.

The total site consists of 4.91-acres, of which 2.38-acres are upland and 2.53-acres are marsh. As discussed earlier, most of the upland was formerly part of Williams Seafood Restaurant which burnt down in 2004. Due to the site's current condition containing urban debris and its prior use as a restaurant followed by commercial use as a casino cruise ship facility, upland dependent listed species are not anticipated to occur within the project site. These prior uses significantly limited the habitat types on site. For this reason, several of the species listed as potentially occurring in Chatham County are not anticipated to occur within the project site, including eastern indigo snake (*Drymarchon corais couperi*), frosted flatwoods salamander (*Ambystoma cingulatum*), red-cockaded woodpecker (*Picoides borealis*), and Pondberry (*Lindera melissifolia*).

ESI has spent a substantial amount of time on site and have reviewed available printed material for current listed species. Refer to Appendix L for U.S. Fish and Wildlife IPaC data. Compilation of this data revealed the list of species identified to occupy habitats similar to those found on or near the project site as listed below in Table 2, along with a brief description and statement about their potential for occurrence.

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Table 2. Listed species classified as Threatened or Endangered for Chatham County, GA

Species	Federal Status	Habitat	Threats	Potential Habitat Present	Project Potential for Impacts	Biological Opinion
Bird						
Wood Stork <i>Mycteria americana</i>	T	Primarily feed in fresh and brackish wetlands and nest in cypress or other wooded swamps.	Decline due primarily to loss of suitable feeding habitat, particularly in south Florida. Other factors include loss of nesting habitat, prolonged drought/flooding, raccoon predation on nests, and human disturbance of rookeries.	Yes, marsh on west side of site	None	No Effect
Piping Plover <i>Charadrius melodus</i>	T	Sandy upper beaches, especially where scattered grass tufts are present, and sparsely vegetated shores and islands of shallow lakes, ponds, rivers, and impoundments. Nests may also be built on sandy open flats among shells or cobble behind foredunes	human activity; disturbance by humans, predation, and development pressure are pervasive threats along the Atlantic coast; inappropriate water management a threat on the northern Great Plains. Current favorable population trends depend on intensive management.	Potential	Low ¹	May Affect – Not Likely to Adversely Affect
Red Knot <i>Calidris canutus rufa</i>	T	Uses different habitats for breeding, wintering, and migration. Breeding habitats are elevated and sparsely vegetated ridges or slopes. They are often adjacent to wetlands and lake edges for feeding. Wintering and migration habitats are often muddy or sandy coastal areas, such as the mouths of bays and estuaries, and tidal flats.	Nests in Arctic, winters mainly in southern South America; drastic decline in recent decades; population size now in the low 10,000s; overharvest and population declines of horseshoe crabs (the eggs of which are a critical food resource) probably major reason for red knot decline.	Potential	Low ¹	May Affect – Not Likely to Adversely Affect
Mammals						
West Indian Manatee	T	Live in marine, brackish, and freshwater systems in	Habitat loss, boat collision,	Yes	Low ¹	May Affect – Not Likely to Adversely Affect

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<i>Trichechus manatus</i>		coastal and riverine areas.	entanglements in fishing gear			
North Atlantic Right Whales <i>Eubalaena glacialis</i>	E	Mostly found along the Atlantic coast of North America. Nursery in shallow coastal waters	Ship collisions, fishing gear entanglement, habitat degradation, contaminants, climate change, noise	Yes	Low ¹	May Affect – Not Likely to Adversely Affect
Reptile						
Green Sea Turtle <i>Chelonia mydas</i>	T	Shallow waters inside reefs, bays, inlets; rarely found in open ocean. Nest in open beaches with minimal disturbance.	Loss of nesting habitat, commercial harvest, disease, marine pollution, watercraft strikes, incidental capture	Yes, Bull River	Low ¹	May Affect – Not Likely to Adversely Affect
Leatherback Sea Turtle <i>Dermochelys coriacea</i>	E	Open ocean, forage in coastal waters and offshore.	Incidental capture, marine pollution, commercial harvest	Potential, Bull River	Low ¹	May Affect – Not Likely to Adversely Affect
Loggerhead Sea Turtle <i>Caretta caretta</i>	T	Feed in coastal bars/estuaries and shallow water along the continental shelf.	Loss of nesting habitat, incidental capture	Yes, Bull River	Low ¹	May Affect – Not Likely to Adversely Affect
Hawksbill Sea Turtle <i>Eretmochelys imbricata</i>	E	This species uses a wide range of tropical and subtropical habitats, including shallow coastal waters with rocky bottoms, coral reefs, beds of sea grass or algae, mangrove-bordered bays and estuaries, and submerged mud flats	Heavy exploitation and decreased nesting grounds due to development.	Potential, Bull River	Low ¹	May Affect – Not Likely to Adversely Affect
Kemp's Ridley Sea Turtle <i>Lepidochelys kempii</i>	E	Habitat primarily includes shallow coastal and estuarine waters, often over sandy or muddy bottoms where crab are numerous.	Major threats include degradation of beach and coastal marine/estuarine habitats and mortality in commercial fisheries; vulnerable to oil spills.	Potential, Bull River	Low ¹	May Affect – Not Likely to Adversely Affect
Fish						
Shortnose Sturgeon	E	Hatch in freshwater rivers, and spend most of their time in coastal	Overharvesting, bycatch of sturgeon in fisheries targeting other species, poor	Yes	Low ¹	May Affect – Not Likely to Adversely Affect

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<i>Ambystoma cingulatum</i>		waters, spending little time in the ocean.	water quality, habitat degradation/loss from dams, dredging, etc.			
Atlantic Sturgeon <i>Acipenser oxyrinchus oxyrinchus</i>	E	Hatch in freshwater rivers, head out to sea as juveniles, and spend most of their time in coastal rivers. In Georgia, they return to their birthplace to spawn during later summer/fall. Adults migrate and forage along the coast in estuaries.	Overharvesting, bycatch of sturgeon in fisheries targeting other species, poor water quality, habitat degradation/loss from dams, dredging, etc.	Yes	Low ¹	May Affect – Not Likely to Adversely Affect

¹ Low was assigned to all those species that could not be completely eliminated as potentially utilizing the property or nearby waters in some regard. In this case all of these species were assigned a Biological Opinion of May Affect – Not Likely to Adversely

Potential suitable foraging for wood storks may exist in the marsh located on the west side of the project area. This marsh area is not unique to support wood stork foraging in the area, but generic by nature. Although wood storks could fly over the site, given the fact that this site does not offer any unique habitat for this species, the likelihood of the project negatively affecting this species is low. Activities associated with this project are not anticipated to affect this species.

The marine species listed in Table 2, can/do occupy the waterways proximate to the project and within the Atlantic Ocean located ~9.3 river miles to the east. Boats originating from the marina have a potential for encountering these marine species during their trips. Therefore, several general mitigative measures are being discussed to avoid unreasonable interference with wildlife conservation. These concepts include but are not limited to:

- Coordination with the resource agencies to access the current educational materials and develop a project specific education plan to be used by the patrons. Examples of such plans, signs, and brochures can be found in Appendix N.
- Initial construction of the facility will employ normal Best Management Practices (BMPs)

10. CULTURAL RESOURCE ASSESSMENT

ESI consulted the University of Georgia Archaeological Site File in May 2019. Based upon this inquire, there are 11 projects and two sites (9CH763, 9CH1509) found within a

1-mile radius of the project area. Site 9CH763 was located on the east side of Hwy 80 in 1986, in preparation for development of the Bull River Yacht Club facility. The site included architectural debris, historic ceramic, aboriginal ceramic, glass, and bone. The site was not recommended for preservation and the project proceeded. Site 9CH1509 was observed during a 2018 assessment performed for GDOT as part of the Bull River bridge replacement. The site represents the old Hwy 80 bridge remains consisting of (5) extant support structures exposed at hightide. The site file materials are provided in Appendix O of this application.

11. CONSERVATION MEASURES

As noted elsewhere in this application, the applicant has taken various steps to minimize environmental impacts and create a development that is a viable business venture as well as a project that would complement Chatham County.

These measures include:

- a) Re-development of an already impacted waterfront with a reduced footprint.
- b) Limit marsh shading where possible by removing dilapidated in-water structures and replacing them with new.
- c) Use of construction material suitable to the environment for which they are proposed.
- d) The implementation of standard threatened and endangered species educational materials, both temporarily during construction and permanently after construction.
- e) If necessary, utilize pile driving techniques that decrease potential disturbance to threatened and endangered species.
- f) The implementation of an education program to inform users of local resources.
- g) Provide public access.
- h) Improve existing revetment to prevent future erosion.
- i) Restoration of the upland fringe where possible and enhancing the buffer where none currently exists.
- j) Compilation of a Marina Operations and Maintenance Manual.
- k) Implement Clean Marina Best Management Practices and other Best Management Practices during the construction of the water access structures and associated development, to avoid turbidity and siltation in adjacent marshes and waterways.

- l) Implement monthly maintenance of dock apparatus' capable of producing a stream of fresh water and have a contingency plan for emergency repairs of any freshwater source.
- m) Provide pump out stations.

12. PURPOSE AND NEED STATEMENT

The Purpose and Need Statement is to satisfy 404 (b) (1) Guidelines and public interest review (33 CFR 320.4). The purpose of the project is to construct a full-service marina facility to serve public and private interests. The need for this project is driven by several factors, these include:

- Residents in Chatham County have limited facilities that provide for public access to the water and suitable wet and dry storage. Recent Hurricanes Matthew and Irma have decimated the in-water public and private facilities located in and around Chatham County, further limiting suitable water access and use.
- Transient boaters will be provided additional opportunities for mooring while visiting the Savannah area.
- The proposed project stimulates economic development in this area.

13. Needs Assessment

Pursuant to The Rules of the Department of Natural Resources, Chapter 391-2-3-.03(6)(c.), Coastal Marshlands Protection, the applicant has prepared the Savannah Boathouse Needs Assessment found in Appendix E.