

PRELIMINARY INVESTIGATION FEASIBILITY REPORT

**Sandy Island
Georgetown, South Carolina**

**Prepared for
the USDA Natural Resources Conservation Service**



Above: View of School Bus Boat
Photo Credit: Libby Wiersema

Left: View of Sandy Island Road
Photo Credit: Michael Steward, USDA-NRCS

September 9, 2022

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USDA-NRCS
Sandy Island
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1.0 SUMMARY

The Georgetown County Government Stormwater Division requested planning assistance, dated January 18, 2022 (Appendix A), to improve the current access road for boat services to-and-from Sandy Island and the South Carolina mainland. The Georgetown County Government Stormwater Division would be the lead project sponsor and the Georgetown County Government Public Works & Construction Services Division, and the Georgetown Soil & Water Conservation District would be key partners and potential sponsors. The project area has a significant Environmental Justice Community.

The Sandy Island project purpose is to provide flooding protection to the only access road connecting the island with boat loading dock and improving the existing drainage system serving the Island's residents and citizens. During storm events and extreme high tides, ingress and egress to the island is made impossible due to the inability to reach boat services via the existing road. This makes it impossible to provide access to emergency services by way of the island taxi. The current roadbed is about 6 feet lower than the FEMA 100-year flood elevation and approximately at the normal high tide elevation. This project proposes to provide access to the boat services area during large storm and extreme high tidal events while preventing erosion of the current road and improving water quality of the adjacent rivers.

The Sandy Island project PL 83-566 purpose is Flood Prevention (Flood Damage Reduction). Sandy Island is located in Georgetown County, HUC 10 0304020610, approximately 70 miles northeast of Charleston, South Carolina.

The PL 83-566 flood prevention or flood damage reduction measures are installed to prevent or reduce damages caused by floodwater. Flood damage reduction is further defined as the control and disposal of surface water caused by abnormally high direct precipitation, stream overflow, or floods aggravated or caused by wind or tidal effects. Flood damage reduction and mitigation measures reduce or prevent floodwater damages by reducing runoff, erosion, and sediment; modifying the susceptibility of improvements in the floodplain to damage.

These issues are addressed by the alternatives presented in this report. Alternative 1 is defined as the 'No Action Alternative' and assumes that the sponsor will not implement any action with federal funds. Alternative 2 proposes to raise the roadbed above the FEMA base flood (100-year or 1% annual exceedance chance) elevation to provide an all-weather access for the boat services. Alternative 3 proposes to construct levees (dikes) to prevent flooding and erosion of

the road. Alternative 4 proposes to relocate the boat access by excavating a new channel from the Waccamaw River to an area above the 100-year flood elevation and to construct a new dock and parking area.

During storm events and extreme high tides, access to the boat services is prevented thereby eliminating access to emergency services via water routes. The absence of boat services prevents commerce and access to educational opportunities for school children, as well as isolates the inhabitants of the island.

2.0 APPLICABLE AGENCY AUTHORITY AND AUTHORIZED PURPOSES

The works of improvement to be carried out through this project are authorized under Public Law 83-566 Stat. 666 as amended (16 U.S.C. 1001 et. Seq.) 1954.

The Sandy Island Watershed Project is located just south of the Myrtle Beach area in the HUC10 0304020610 watershed named Outlet Waccamaw River – Atlantic Intracoastal Waterway Watershed. Sandy Island is the name of a small unincorporated community in Georgetown County, South Carolina. The HUC10 0304020610 watershed is 55,596 acres which is less than the PL83-566 program size limitation of 250,000 acres. The Sandy Island Project Area is defined as the confines of Sandy Island and is approximately 12,635 acres in size.

The table below provides documentation that the project is eligible for federal assistance and will meet statutory requirements.

Will the project area exceed 250,000 acres in size? ^{1,2}	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
If over 250,000 acres, will it be divided into sub-watersheds in one plan?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
Potential Project Area Size: 12,635 acres		
Will any single structure provide more than 12,500 acre-feet of floodwater detention capacity, or have 25,000 acre-feet of total capacity?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
How many recreational developments will be included in the project area?		NA
One development in a project area less than 75,000 acres	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Two developments in a project area between 75,000 and 150,000 acres	<input type="checkbox"/> YES	<input type="checkbox"/> NO

Three developments in a project area greater than 150,000 acres		<input type="checkbox"/> YES	<input type="checkbox"/> NO
Which authorized purposes will the project address? (Indicate only one purpose as primary):			
	Primary	Other	
Flood Prevention	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Watershed Protection	<input type="checkbox"/>	<input type="checkbox"/>	
Public Recreation	<input type="checkbox"/>	<input type="checkbox"/>	
Public Fish and Wildlife	<input type="checkbox"/>	<input type="checkbox"/>	
Agricultural Water Management	<input type="checkbox"/>	<input type="checkbox"/>	
Municipal or Industrial Water Supply	<input type="checkbox"/>	<input type="checkbox"/>	
Water Quality Management	<input type="checkbox"/>	<input type="checkbox"/>	
Will the project produce substantial benefits to the general public, to communities, and to groups of landowners?		<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO ³
Can the project be installed by individual or collective landowners under alternative cost-sharing assistance?		<input type="checkbox"/> YES ³	<input checked="" type="checkbox"/> NO
Will the project have strong local citizen and sponsor support through agreements to obtain land rights, permits, contribute the local cost of construction, and carry out operation and maintenance.		<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO ³
Will the project take place in a Special Designated Area? (If yes, check applicable area below.)		YES	<input checked="" type="checkbox"/> NO
Appalachia	<input type="checkbox"/>	Delaware River Basin	
		Susquehanna River Basin	<input type="checkbox"/>
		Tennessee Valley	<input type="checkbox"/>

1- For specific appropriations, the 250,000 acres is waived except for watershed projects with the flood prevention purpose.

2- Watersheds exceeding 250,000 acres can be broken up into smaller sub-watersheds.

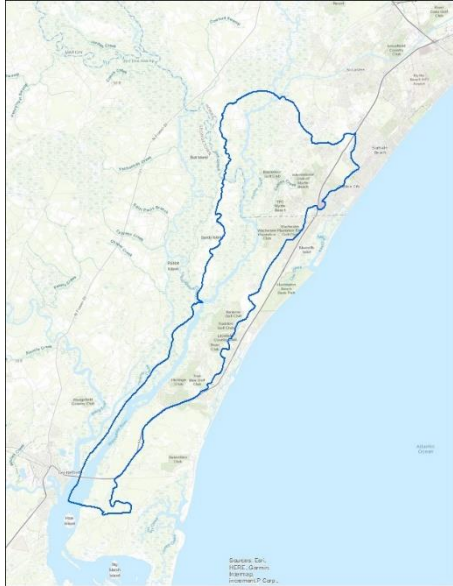
3- The project will not meet the statutory requirements

3.0 POTENTIAL FOR 20% AGRICULTURAL (RURAL) BENEFITS

PL-566 requires that projects have 20% agricultural (rural) benefits. Sandy Island is a rural community with 59 residents which is under the 50,000-population limit to meet the definition for rural benefits. The benefits of the project are 100% rural.

4.0 PROJECT OVERVIEW

4.1 Project Overview

Proposed Project Name	Sandy Island Flood Protection
State	South Carolina
County/Parrish	Georgetown County
Congressional District	District 7
USGS Hydrological Unit Code (HUC) and Watershed Name	<p>Outlet Waccamaw River – Atlantic Intracoastal Waterway Watershed</p>  <p>HUC10 0304020610 55,596 acres See also Appendix B</p>
General Coordinates of the Watershed	-79.115993, 33.53186 is the centroid of the HUC Watershed. -79.128155, 33.517368 is location of Sandy Island Road.

4.2 Project Setting

The Sandy Island Flood Protection Project area, henceforth referred to as Sandy Island Project is the geographic area known as Sandy Island, South Carolina, which is bordered by the Pee Dee River on the west and the Waccamaw River on the east. Sandy Island has an area of approximately 12,635 acres and is located in Georgetown County, along the north coast of South Carolina. It is just south of the Myrtle Beach area. The eastern side of Sandy Island is in the

HUC10 watershed named Outlet Waccamaw River – Atlantic Intracoastal Waterway Watershed, which covers 55,596 acres.

Coastal or lowland South Carolina's climate is humid sub-tropical. During the summer, South Carolina's weather is dominated by a maritime tropical air mass known as the Bermuda high, which brings warm, moist air inland from the ocean. Average summer temperatures are in the mid-70 degrees Fahrenheit. Average winter temperatures are in the in the low-50 degrees Fahrenheit.

The growing season typically begins March 31 and ends November 7; Plant Hardiness Zone is 8b with an average annual extreme low temperature between 15 and 20 degrees Fahrenheit.

Average annual precipitation is 51- 54 inches and there typically is not any snowfall. There is no wet or dry season. At least one tropical storm or hurricane affects the coast most years.

The land cover in the Outlet Waccamaw River – Atlantic Intracoastal Waterway Watershed is 25% developed land. The largest land cover is 45% wetlands, followed by 16% forested and 10% open water, agricultural lands are just over 1%. The geology is described as a 5- to 10-meter thick layer of unconsolidated Quaternary marine and fluvial deposits, which lie on semi-lithified Tertiary sediments, with continuing active deposition of fluvial sand, muds and beach sand.

Most of Sandy Island, 9,165 acres, is a wildlife reserve called Sandy Island Preserve owned by the Nature Conservancy since 2011. It is co-managed with the US Fish and Wildlife Service (USFWS), as the Waccamaw National Wildlife Refuge. It is protected for its diverse coastal river ecosystems, long leaf pine forests, rare species and biodiversity. Additional conservation easements on Sandy Island are held by Ducks Unlimited, Brookgreen Gardens, and the Low Country Open Land Trust.

History and culture of the inhabitants of Sandy Island is important. Sandy Island is home to a Gullah community who descended from enslaved Africans who live in an area called Mount Rena. A distinctive Creole culture evolved and continued due to the geographic isolation of the island both before and after the Civil War. They have their own language, fishing and farming culture, food, stories and songs heavily influenced by multiple African traditions. After the Civil War, the enslaved people of Sandy Island obtained both their freedom and ownership of some land they had worked. They grew and sold rice, the first African American owned business, in South Carolina. Today residents sustain and celebrate this culture, but also commute by boat to the mainland for work and school.

The water features of the Waccamaw River and its associated wetlands dominate this watershed. The Waccamaw River drains into the Great Pee Dee River.

There is pressure for residential and commercial development in towns east of River: Bucksport, Surfside Beach, and Murrells Inlet. Similar development pressure would likely occur on Sandy

Island if it was more easily accessible. A primary reason a 1990's proposal to construct a bridge to the island was opposed and stopped was to prevent development.

The land limitations in the watershed are predominately due to depth to the saturated soil zone and flooding. Approximately 20% of land in watershed has no soil limitations. An estimated, 14% is somewhat limited for residential and small commercial buildings.

4.3 Potential Project Area Size

As previously described, the Sandy Island Project area is defined as the confines of Sandy Island and is approximately 12,600 acres in size. See Appendix C for the project area map. The Alternatives Site Plan (Appendix D) for the potential works of improvement is defined within a 500-foot buffer around all 4 alternatives on the southeast edge of the island.

5.0 RESOURCE INFORMATION

5.1 Soils

The soil map units in the area of the Alternative Site Plan area are Levy silty silt loam and Lakeland fine sand. The Levy soil is very poorly drained with very frequent flooding, parent materials are fluviomarine deposits. Lakeland soil is excessively drained, derived from sandy marine deposits. There are no prime soils present.

5.2 Water

Outlet Waccamaw River – Atlantic Intracoastal Waterway Watershed: The watershed follows the Waccamaw River for about 25 miles from Horry County southerly through Georgetown County to Winyah Bay near the City of Georgetown. It is approximately 3 miles inland of the coast. The Waccamaw River in both North and South Carolina is a designated National Water Trail: Waccamaw River Blue Trail, by the National Park Service. It is a coastal blackwater river with rare plants and animals.

A 2015 report from South Carolina Department of Health and Environmental Control (SCDHEC) notes the following water quality facts about this watershed. There are 5 SCDHEC monitoring stations; for all stations, aquatic life and recreational uses are fully supported. There are trends in data showing increasing dissolved oxygen, increasing turbidity, and increasing pH at various stations. Data also shows reductions in phosphorus. There is a Fish and Shellfish consumption advisory for impairments noted for mercury. There are 7 sites with National Pollutant Discharge Elimination System (NPDES) permits and 2 municipal separate storm sewer systems (MS4s) that discharge into the river.

5.3 Air

Georgetown County is not in an EPA designated nonattainment area.

5.4 Plants

The dominant wetland types for the Alternative Site Plan are Tidal Bald Cypress-Tupelo Gum Swamp, Pocosin, Bay Forest and Bottomland Hardwoods using John B. Nelson's Classifications. The uplands are noted for the Long Leaf Pine Forest.

There are 3 Federally Listed Threatened (T) or At Risk (AR) plant species in Georgetown County (this information was obtained using South Carolina Department of Natural Resources (DNR) county lists).

- Dwarf Amaranth (T)
- Venus Fly Trap (AR)
- Wireleaf Dropseed (AR)

There are many plants identified in the state wildlife management plan. It is not known if these species are present within the Alternative Site Plan area.

Invasive plant species are also a threat to native and agricultural ecosystems. The lists of invasive species are available at a state-wide level and are constantly being updated.

Clemson University's official plant pest list for the State of South Carolina (accessed in 2022) included 106 invasive plant species. This list includes terrestrial plants, wetland and aquatic.

The State Prohibited Species, Aquatic and Wetland Plants on the South Carolina Noxious Weed List (2008) recognizes 26 prohibited plant species, not including upland plants. Of these 26, 14 plants are listed on the Federal Noxious Weed list.

The USGS Nonindigenous Aquatic Species List in South Carolina (2022) identified 39 nonindigenous wetland or aquatic plants.

5.5 Animals

The diverse freshwater wetland provide habitat for many migratory birds, for amphibians, reptiles, and fish.

There are 11 federally listed animals identified in the Threatened and Endangered Species Act and 8 state regulated animal species identified for Georgetown County. Another 19 species in Georgetown County are protected by the Migratory Bird Treaty Act or the Bald & Golden Eagle Protection Act.

Many are likely to use the habitats found on Sandy Island, but it is not known if these species are present within the Alternative Site Plan area. There are not significant numbers of livestock on the island.

Invasive animal species are a threat to native ecosystems. The lists of invasive species are available on a state-wide level and are constantly being updated.

There are 123 species included on the Nonindigenous Aquatic Species list from the USGS (accessed in 2022) including: Amphibians, Coelenterates, Crustaceans, Fishes, Mollusks, Reptiles.

The South Carolina Prohibited Fish list identifies 11 species (2008).

5.6 Energy

Implementation of the works of improvement will not change energy consumption or production in the area.

5.7 Humans

Demographics: Sandy Island has 59 residents mostly located in a community called Mount Rena. The population ranks as highly susceptible according to the EPA Environmental Justice categories for low income and minorities. Sandy Island is home to people who are part of the Gullah/Geechee culture which extends along the coast from North Carolina to Florida.

Transportation: Sandy Island Road, a dirt road, is one of 4 mapped roads on the entire island. The only way to access Sandy Island is by private boat. There are landings on the Waccamaw River at Mount Rena, Bull Creek and Vaux Creek, and access to the Pee Dee River by Thoroughfare Creek. The most direct access, and most used by residents, is from the residential area called Mount Rena where the main dock has been recently rebuilt. From this new dock, boats cross the Waccamaw river, then follow a straight line cutting through Oaks Island and the bordering wetlands on the mainland via a constructed channel to a dock at Alston Road on the mainland (also called Sandy Island Road).

Recreation: The Nature Conservancy and USFWS partner in managing the Sandy Island Preserve which covers about 9,000 acres. The Preserve offers passive recreation such as hiking, fishing, birdwatching, wildlife observation, photography, and limited archery hunting activities.

5.8 Resources of Special Concern

5.8.1 Clean Air Act

The project is not expected to increase the emission rate of any air pollutants.

The project is not located in a designated EPA nonattainment area.

The construction itself may temporarily increase emissions from construction vehicle and equipment. Permits may be needed for SC Regulation No. 62.6 Control of Fugitive Particulate Matter. Dust and all fugitive particulate matter from construction will need to be controlled to meet regulation.

5.8.2 Clean Water Act

The project alternatives will likely result in fill material being placed in waters of the US. A representative from the US Army Corp of Engineers reviewed the proposed road project measure and stated that it would fall under a nationwide permit.

Consultation with US Army Corp of Engineers is required during planning.

The project is located near sections of the Waccamaw River that are listed as impaired under section 303d of CWA for Fish due to mercury.

5.8.3 Coastal Zone Management

The entire county is a Coastal Zone Management Area; thus, the project is located in a Coastal Zone Management area. Consultation with the state's Coastal Zone Program Office is required.

5.8.4 Coral Reefs

Coral Reefs are not present according to EPA's website on America's Coral Reefs.

5.8.5 Cultural Resources

The Area of Potential Effect (APE) has not yet been determined. Ground disturbance is expected for all alternatives.

The National Register of Historic Places identified 2 Historic Districts on or near Sandy Island: The Pee Dee River Rice Planters Historic District, Brookgreen Gardens Historic District.

The State Historic Preservation Office SC ArchSite Map Public View Map shows 3 Historic Structures on Sandy Island; however, they are not in the Alternative Site Plan area.

Local Federally Recognized Tribe: Waccamaw Indian People

Consultation with State Historical Preservation Office (SHPO) and Tribal Historic Preservation Office (THPO) is required.

5.8.6 Endangered & Threatened Species

Species are listed below for presence at a county level. It will need to be determined during planning if any species are present at the Alternative Site Plan area, including any needed mitigation. There is a possibility of short-term adverse effects with long-term beneficial effects.

Three (3) Federally Listed Endangered Species:

- Red Cockaded Woodpecker
- Shortnose Sturgeon
- Atlantic Sturgeon

Five (5) Federally Listed Threatened Species:

- Black Rail
- Florida Manatee
- Loggerhead Sea Turtle
- Dwarf Amaranth
- Wood Stork

Six (6) Federally Listed At-Risk Species:

- American Bumble Bee
- Carolina Macbridea
- Spotted Turtle
- Tricolored Bat
- Venus Flytrap
- Wireleaf Dropseed

Two (2) State Listed Threatened Species:

- Carolina Pygmy Sunfish
- Southern Hog-nosed Snake

One (1) State Listed Endangered Species:

- Rafinsque's Big-eared Bat

Five (5) State Listed Regulated Species:

- Chicken Turtle
- Diamond Back Terapin
- Eastern Box Turtle
- Eastern Mud Turtle
- Eastern Musk Turtle

Consultation with USFWS and South Carolina Department of Natural Resources is required.

5.8.7 Environmental Justice

There are low-income, minority, and possibly tribal populations within the Sandy Island project area. The EPA Environmental Justice Demographic Index for this community is 90% for state and 86% for nation.

Proposed Actions will benefit Environmental Justice populations healthcare access, and quality of life.

5.8.8 Essential Fish Habitat

Essential Fish Habitat (EFH) is present as identified for Atlantic Sturgeon in the Waccamaw River. The area is mapped as EFH for South Atlantic EFH Species and for Highly Migratory Species EFH.

Consultation with National Marine Fisheries Service to determine presence at the Alternative Site Plan area is required.

5.8.9 Floodplain Management

The project is in the FEMA 100-year flood zone. This area has not been used for agriculture in the past 5 years. The action is not likely to result in an increased flood hazard over the short- or long-term. It will protect essential existing infrastructure which facilitates ingress and egress to the island.

5.8.10 Invasive Species

Chinese Privet and Water Hyacinth are known invasives along the island exterior and in the water.

Clemson University's official plant pest list for the State of South Carolina (accessed in 2022) included 106 invasive plant species. This includes terrestrial, wetland and aquatic plants.

The State Prohibited Species, Aquatic and Wetland Plants on the South Carolina Noxious Weed List (2008) recognizes 26 prohibited plant species.

There are 123 animal species included on the Nonindigenous Aquatic Species list from the USGS (accessed in 2022,) including: Amphibians, Coelenterates, Crustaceans, Fishes, Mollusks, Reptiles.

The list of invasive species is available at the state level. The invasive species present at the project site will be identified during planning and field investigations.

All tools, techniques, and management strategies to the prevent the introduction, control, and spread of invasive and noxious species will be considered in planning.

5.8.11 Migratory Birds/Bald & Golden Eagle Protection Act

Species listed below are known to exist within the county. It will need to be determined during planning phase if they are present in the Alternative Site Plan area, including any mitigation strategies that may be required.

One (1) Bald and Golden Eagle Protection Act Listed Species:

- *Haliaeetus leucocephalus*; Bald Eagle

Fifteen (15) Migratory Bird Treaty Act Listed Species:

- Anhinga, Bachman's Sparrow
- Baltimore Oriole
- Barn Owl
- Black-Crowned Night-Heron
- Glossy Ibis, Great Blue Hero
- Great Egret
- Least Tern
- Little Blue Heron
- Macgillivray's Seaside Sparrow
- Painted Bunting
- Roseate Spoonbill
- Snowy Egret
- Swallow-tailed Kite
- Tricolored Heron
- Wilson's Plover

Consultation with USFWS is required.

5.8.12 Natural Areas

There are natural areas on Sandy Island and immediately adjacent to the proposed alternatives area. These include Sandy Island Preserve/Waccamaw National Wildlife Refuge and Brookgreen Gardens. The Waccamaw River itself is valued as natural area by NPS National Water Trial designation.

The adverse impacts to these natural areas as a result of road improvements is likely to be minimal loss of land to the road edges. In the long-term the road improvements should have positive impacts for aquatic wildlife by reducing erosion and providing passage for aquatic wildlife and water flow. The levees will have a larger impact on these natural areas, taking up more land for the construction and the final structures. Animal passage is likely to be restricted by the levees. Channel development will result in conversion of wetlands to open water and require maintenance that could have negative impacts

5.8.13 Prime and Unique Farmlands

There are approximately 5,300 acres of Prime Farmland in the watershed. Additionally, there are approximately 8,314 acres of Farmland of Statewide importance.

There are approximately 76 acres of Farmland of Statewide importance on Sandy Island with a map unit listed as Rutlege sand. It is a very poorly drained soil found in depressions, flood plains, and drainage ways. This soil is not mapped within the project site. There will be no conversion of farmland to non-agricultural use.

5.8.14 Riparian Area

The project is in the wetland buffer to the riparian area of the Waccamaw River. The adverse impacts to this area as a result of road improvements will be a minimal loss at road edges. In the long-term, the road improvements should reduce erosion and provide better aquatic wildlife passage and water flow.

The levees will have a larger impact, due to construction needs. Animal passage is likely to be restricted.

Channel development will result in conversion of wetlands to open water and require maintenance which could have negative impacts. Construction and maintenance activities will include removal of vegetation which also functions as shelter and food sources for wildlife. Dredging to create a navigable channel could result in the release of sediment.

5.8.15 Scenic Beauty

The scenic beauty of the area will be impacted due to the removal of green vegetation from the landscape. The road alternative (Alternative 2) will produce the least impact when compared to Alternatives 3 and 4.

5.8.16 Wetlands

The National Wetland Inventory records approximately 56 acres of wetlands within the Alternative Site Plan area of 85 acres. There are 20 acres (36%) of Freshwater Emergent Wetland, 22 acres (39%) of Freshwater Forested/Shrub Wetlands and 14 acres (25%) of Riverine waters.

There are Freshwater Forested/Shrub Wetland on both sides of Sandy Island Road. The adverse impacts to these wetlands as a result of road improvements is likely to be minimal loss of wetland to improved road edges. In the long-term, the road improvements should reduce erosion and provide better aquatic wildlife passage and water flow. The levees will have a larger impact on these natural areas, taking up more land for the construction and the final structures. Animal passage is likely to be restricted. Channel development will result in conversion of Freshwater Emergent Wetlands to open water and require maintenance that could have negative impacts. Construction and maintenance activities will include removal of vegetation which also functions as shelter and food sources for wildlife. Dredging to create a navigable channel could result in the release of sediment. However, thin-layer placement of sediment (TLP) is a strategy to restore or maintain a tidal marsh's elevation relative to sea level. The approach leverages a marsh's natural ability to withstand large, storm-driven sediment deposits. TLP mimics this natural process by applying layers of sediment, often dredged material, to the marsh's surface. TLP has been applied in Louisiana for decades and is now being tested in different regions.¹

Consultation with US Army Corps of Engineers is required.

5.8.17 Wild and Scenic Rivers

There are no designated Wild and Scenic Rivers in the project area.

6.0 PROPOSED PROJECT PURPOSE AND NEED STATEMENT

The Sandy Island project PL 83-566 purpose is Flood Prevention (Flood Damage Reduction). The project purpose is to provide flood protection of critical ingress/egress infrastructure for Sandy Island or provide an alternative ingress/egress method.

Need: During large storm events and extreme high tides, residents can't access boat services preventing them to go to school, work inland. In addition, emergency services cannot access the island. All commerce on the island is prevented. Some erosion of the existing road occurs when it is overtopped resulting in sediment deposition in wetlands. The project would reduce erosion of the access road and improve water quality of the adjacent wetlands. Sponsors noted that this area of Georgetown County, within the period from 1993 to 2020, was exposed to 50 total flood events which varied between flash floods, coastal floods, and river floods. Severe erosion occurred of the access road preventing residents from getting to the boat dock for periods at a time.

7.0 RESOURCE CONCERNS AND OPPORTUNITIES

7.1 Resource Concerns

This section describes the resource concerns that may potentially be impacted by implementation of the proposed project. The effects of the proposed project can be either negative or positive. Generally, the 3 proposed improvement alternatives have the same positive or no impact effects. However, constructing dikes or constructing a new channel has a negative effect on plants and animals. Raising the road is anticipated to have a positive effect on plants and animals.

A summary of the resource concerns and opportunities information is shown in the following Potential Effects of Proposed Alternatives on SWAPA + E + H Resources and Resources of Special Concern Table:

+ -Positive Impact - - Negative Impact 0 – No Impact

Resource Concerns: SWAPA + Energy + Human				
	Alternative 1 The sponsor does not implement flood protection measures using Federal funds.	Alternative 2 Raise the roadbed to prevent flooding and erosion of the road. SCDOT Standards	Alternative 3 Construct levees (dike) to prevent flooding and erosion of the road. NRCS Practice Standard 356	Alternative 4 Relocate the dock for boat access by excavating a new channel from the Waccamaw River to an area above the 100-year flood elevation. NRCS Practice Standard 584
Soil	-	0	0	0
Water	-	+	+	0
Air	0	0	0	0
Plants	-	+	-	-
Animals	-	+	-	-
Energy	0	0	0	0
Human	-	+	+	+
Resources of Special Concern				
Clean Air Act	0	0	0	0
Clean Water Act/ Waters of the U.S.	-	+	-	-
Coastal Zone Management	0	0	0	0
Coral Reefs	0	0	0	0
Cultural Resources/Historic Properties	-	0	0	0
Endangered & Threatened Species*	0	0	0	0

Resource Concerns: SWAPA + Energy + Human				
	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Environmental Justice	-	+	+	+
Essential Fish Habitat	0	0	0	0
Floodplain Management	-	+	-	+
Invasive Species	0	0	0	0
Migratory Birds/Bald and Golden Eagle Protection Act	-	+	0	+
Natural Areas	0	0	0	0

*There has not been any data found at the PIFR stage to confirm presence of Endangered and Threatened Species in the area of impact for each alternative. Therefore “0” no impact was identified

7.2 Opportunities

During storm events and extreme high tides, ingress and egress to the island is made impossible due to the inability to reach boat services via the existing road. This makes it impossible to provide access to emergency services by way of the island taxi. All commerce is prevented. The sponsors and residents within the watershed are willing to participate in the PL-566 program, allowing NRCS to implement flood protection measures designed to provide critical ingress/egress infrastructure for Sandy Island. Improvement measures will be located on public property or land purchased by the sponsor.

8.0 STATE, TRIBAL, FEDERAL STAKEHOLDER ENGAGEMENT

At the State government level potential stakeholders include:

- State Historic Preservation Office (SHPO)
- Department of Parks, Recreation and Tourism
- State Department of Transportation
- Georgetown Conservation District

The Indian tribes of South Carolina include:

- Tribal Historic Preservation Office (THPO)
- Federally Recognized Tribes:
 - Catawba Indian Nation

- State Recognized Tribes:
 - Beaver Creek Indians
 - Piedmont American Indian Association of Lower Eastern Cherokee
 - Eastern Band of Cherokee
 - Edisto Natchez Kusso Tribe
 - Pee Dee Indian Nation of Upper South Carolina
 - Pee Dee Indian Tribe
 - The Sumter Tribe of Cheraw
 - The Santee Indian Organization
 - The Waccamaw Indian People
 - The Wassamasaw Tribe of Varnertown Indians
- State Recognized Groups
 - Chaloklowa Chicksaw Indian People
 - Eastern Cherokee, Southern Iroquois and United Tribes of South Carolina
 - Natchez Tribe of South Carolina
 - Pee Dee Indian Nation of Beaver Creek

Federal stakeholders could include:

- United States Army Corps of Engineers
- United States Fish and Wildlife Service
- National Marine Fisheries Service
- National Oceanic Atmospheric Administration
- National Park Service (wild & scenic rivers)
- United States Environmental Protection Agency

Other non-government possible stakeholders that should be engaged during planning include:

- The Nature Conservancy (TNC)
- Brookgreen Gardens
- Ducks Unlimited

No engagement with these entities was carried out at this time. Engagement will occur during planning.

The Catawba Indian Nation (Catawba Tribe of South Carolina) and the Waccamaw Tribe are two of the eight Federally or State recognized tribes in South Carolina. It is not known if they ever used the Sandy Island project area.

9.0 POTENTIAL ALTERNATIVES

Alternatives	Possible Positive Impacts and Effects	Possible Adverse Impacts and Effects
<p>Alternative 1 No Action/Future Without Project <i>Description:</i> The sponsor does not implement flood protection measures using Federal funds</p> <p>Estimated Cost: \$0</p>	<p>Situation will remain as-is. No investments in infrastructure.</p>	<p>Current Conditions will continue with flooding: During storm events and extreme high tides, access to the school and emergency services boat is blocked creating a health and safety risk. There will be continued damage to infrastructure. Wetlands will continue to be impacted by sediment loading from the flooded road.</p>
<p>Alternative 2 <i>Description:</i> Raise the roadbed to prevent flooding and erosion of the road. Provide adequate water control structures for water and aquatic organisms to pass.</p> <p>Estimated Cost: \$4.7M</p>	<p>Reduced damage to road and provide access to school and emergency services boat during storm events and extreme high tides. Reduced health and safety risk to humans. Reduced operation and maintenance costs. Reduced sedimentation and improved habitat connectivity.</p>	<p>Loss of some wetlands to widen and raise road. Reduced scenic value to residents.</p>
<p>Alternative 3 <i>Description:</i> Construct levee (dike) to prevent flooding and erosion of the road.</p> <p>Estimated Cost: \$3.7M</p>	<p>Reduced damage to road and ensure access to the school and emergency services boat during storm events and extreme high tides. Reduced health and safety risk to humans. Reduced operation and maintenance, costs.</p>	<p>Loss of some wetlands to construct the levees (dike). Loss of habitat connectivity. Reduced scenic value to residents. High Construction cost.</p>
<p>Alternative 4 <i>Description:</i> Relocate the dock for boat access by excavating a new channel from the Waccamaw River to an area above the 100-year flood elevation.</p> <p>Estimated Cost: \$3M</p>	<p>Provides access for school and emergency services boat during storm events and extreme high tides. Reduces health and safety risk to humans. Reduced road operation and maintenance costs.</p>	<p>Loss of some wetlands to construct new channel, loss of some upland area for new road to new dock. Increased operation and maintenance cost to maintain minimum depth (remove silt and debris). Increased boat travel time to mainland. High Construction cost.</p>

10.0 FACILITATING FACTORS

The facilitating factors which will make going forward with the project smoother are:

- There is funding available for planning and implementation of the project through the USDA NRCS Watershed Program.
- There is not any public opposition to the proposed project.
- The USACE has already indicated the work will fall under a Nationwide Permit which makes the permitting process simpler.
- The project benefits an underserved community of low-income and minority residents.
- The project addresses a public safety issue related to ingress and egress from the island in times of emergency.
- The project facilitates commerce.
- There are not any known inhibiting environmental, historic site, or cultural concerns.

11.0 OBSTRUCTING FACTORS

The obstructing factors which need to be addressed are:

- The policy definition of “works of improvement” for flood prevention may need a broad interpretation for the scope of the Sandy Island Project to fall under the purpose of Flood Prevention (Flood prevention or flood damage reduction works of improvement are installed to prevent or reduce damages caused by floodwater).
- Solutions to address flooding of the critical ingress/egress infrastructure for Sandy Island may not be traditional flood damage prevention/reduction measures and may require a waiver of agency policies.
- The project area defined as Sandy Island is not defined in traditional hydrological terms and may require a waiver of agency policies.
- The cost/benefit ratio may be problematic; however, the project benefits an underserved and rural community. A waiver of agency policies may be required for NRCS to provide technical and financial assistance for installing works of improvement.

12.0 ENVIRONMENTAL DOCUMENT

The proposed project alternatives do not fall under any of the categorically excluded activities identified for the NRCS under 7 CFR 650.6.

There have not been any potentially significant effects to the human environment identified during this Preliminary Investigation/Feasibility review, therefore an Environmental Impact Statement is not required for the project. An Environmental Assessment will be written and the accompanying Finding of No Significant Impact (FONSI) will be prepared for the project.

13.0 SPONSORS

Sponsor will:	Assist in Planning	Land Rights / Eminent Domain	Local Cost Share	O/M Funds	Permits	Land Treatment	In-Kind MOU
Georgetown County Government	X	X	X	X	X		X
Georgetown Soil & Water Conservation District	X						

Sponsor responsibilities:

- Must arrange for and carry out activities that encourage the public to participate in the watershed project planning process.
- Show evidence of commitment for funding, installing, operating, and maintaining the project.
- Perform all contracting for construction of any structure, except that NRCS may perform contracting upon request.
- Assist in the locally led planning effort.
- Obtain needed land rights including the use of power of eminent domain, if necessary.
- Provide local cost-share funds and/or in-kind services to provide the required portion of total project costs.
- Obtain required permits and approvals at sponsor cost.
- Before being credited with the value of any in-kind contribution for any in-kind services and/or acquisition of land rights, sponsor will sign a Memorandum of Understanding (MOU) with NRCS.
- Use its powers and authority to ensure the installation, operation, and maintenance of the project as planned.

14.0 POTENTIAL COOPERATING AGENCIES

Agency	Contact Information	Type of Involvement
U.S. Army Corps of Engineers	U.S. Army Corps of Engineers Interagency & International Project Management Attn: Lisa Hreha 69A Hagood Ave Charleston, SC 29405	<input checked="" type="checkbox"/> Regulatory
		<input type="checkbox"/> Informed
		<input type="checkbox"/> Prepare permits or letters of permission document
		<input checked="" type="checkbox"/> Provide input
Office of South Carolina State Archaeologist	Jonathan M. Leader State Archaeologist Phone: 803- 576-6560 Email: leaderj@mailbox.sc.edu University of South Carolina SC Institute for Archaeology and Anthropology 1321 Pendleton Street Columbia, SC 29208	<input checked="" type="checkbox"/> Regulatory
		<input type="checkbox"/> Informed
		<input type="checkbox"/> Prepare permits or letters of permission document
		<input type="checkbox"/> Provide input
US Fish and Wildlife Service, Waccamaw National Wildlife Refuge	21424 N. Fraser St. Georgetown, SC 29440 Phone: 843-527-8069	<input checked="" type="checkbox"/> Regulatory
		<input type="checkbox"/> Informed
		<input type="checkbox"/> Prepare permits or letters of permission document
		<input checked="" type="checkbox"/> Provide input
South Carolina Dept of Natural Resources	Region 4 Charleston Mailing Address: PO Box 1255 Charleston, SC 29422-2559 Phone: 843-953-5291	<input checked="" type="checkbox"/> Regulatory
		<input type="checkbox"/> Informed
		<input type="checkbox"/> Prepare permits or letters of permission document
		<input checked="" type="checkbox"/> Provide input

15.0 POTENTIAL STAKEHOLDERS

The table below provides the typical list of stakeholders for a watershed project. It may be found that during planning additional stakeholders from the list in Section 8.0 would provide additional value to the list in the tables below.

Stakeholder	Role	Resources	Contribution
The Nature Conservancy, Sandy Island Preserve	Provide input	Resource Inventories	Natural Resource information
Brookgreen Gardens	Provide input	Resource Inventories	Natural Resource information
State Recreation and Tourism	Information source	Island use data	Information
State Department of Transportation	Information source	Infrastructure use data	Road/ferry use data
US Army Corps of Engineers	Support	Guidance documents and personnel	Guidance

Principal Sponsors – Primary Stakeholders who will make financial and in-kind commitments to the project.	Regulatory – Entities involved in regulatory aspects of the project’s implementation.	Keep Informed – Stakeholders who should be kept informed of the projects progress.
Georgetown County Government	State Department of Transportation	Indian tribes of South Carolina that are stakeholders
Georgetown Soil & Water Conservation District	United States Army Corps of Engineers	The Nature Conservancy (TNC)
	United States Fish and Wildlife Service	Brookgreen Gardens
	National Marine Fisheries Service	Ducks Unlimited
	National Oceanic Atmospheric Administration	

Principal Sponsors	Regulatory	Keep Informed
	National Park Service (wild & scenic rivers)	
	United States Environmental Protection Agency	
	State Historic Preservation Office (SHPO)	
	Tribal Historic Preservation Office (THPO)	

16.0 NOTIFICATIONS

	Method and Date Notified
Governor: The Honorable Henry McMaster Governor South Carolina 1100 Gervais Street Columbia, SC 29201	Letter dated 07/20/2022
U.S. Fish and Wildlife Service South Carolina Ecological Service Field Office Attn: Melanie Olds, Regulatory Team Lead 176 Croghan Spur Road, Suite 200 Charleston, SC 29407-7558	Letter dated 07/21/2022
National Oceanic Atmospheric Administration National Marine Fisheries Service Southeast Regional Office Attn: Kelly Shotts, Interagency Branch Chief 263 13 th Avenue South St. Petersburg, FL 33701	Letter dated 7/25/2022
U.S. Army Corps of Engineers Interagency & International Project Management Attn: Lisa Hreha 69A Hagood Ave Charleston, SC 29405	Letter dated 08/01/2022

17.0 ESTIMATED PROJECT IMPLEMENTATION TIMELINE

Planning Start	February 2023
Planning End	February 2024
Design Start	September 2024
Design End	September 2025
Construction Start	March 2026
Construction End	December 2026

18.0 RECOMMENDATION

This preliminary investigation and feasibility report has been completed and submitted for approval to Ann English, State Conservationist.

Name: Carl J. Gustafson

Title: Senior Engineer

Date: September 9, 2022

Organization: Aterra-Schnabel Joint Venture

Contract No. 12SPEC18D0024

Task Order No. 12FPC322F0083

It has been determined that this potential PL83-566 watershed operations project:

Does	Does Not	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	... meet the statutory acreage, volume/capacity of structure and recreational limit requirements;
<input checked="" type="checkbox"/>	<input type="checkbox"/>	... meet the requirements of one or more Watershed Operations authorized purposes;
<input checked="" type="checkbox"/>	<input type="checkbox"/>	... have the potential for a minimum of 20% agricultural, or rural, benefits;
<input checked="" type="checkbox"/>	<input type="checkbox"/>	... have one or more viable alternatives;
<input checked="" type="checkbox"/>	<input type="checkbox"/>	... have potential project sponsor(s) that meet and agree to all terms of responsibilities;
<input type="checkbox"/>	<input checked="" type="checkbox"/>	... have apparent insurmountable obstacles.

Preparer Signature: Signature: *Carl J. Gustafson* Date: September 9, 2022

State Watershed Operations
 Program Manager: Signature: _____ Date: _____

State Technical Lead
 (SRC, SCE, Other): Signature: _____ Date: _____

<input type="checkbox"/>	Not recommended for planning funding
<input checked="" type="checkbox"/>	Accepted and recommended for Planning Funding

State Conservationist: Signature: _____ Date: _____

19.0 APPENDICES

Appendix A – Sponsor Letter of Request

Appendix B – Watershed Location Map

Appendix C – Watershed Project Area Map

Appendix D – Alternatives Site Plan

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APPENDIX A – SPONSOR LETTER OF REQUEST

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January 18, 2022

Ms. Ann English
State Conservationist
Natural Resources Conservation Service
1835 Assembly Street, Room 650
Columbia, SC 29201

Dear Ms. English:

We request NRCS Watershed Program planning assistance for a potential Public Law (PL) 566 project in Georgetown County 03040206-10 Wacamaw River-Atlantic Intracoastal Waterway. The project would improve the current access road and its drainage system serving the Island's residents and citizens. During storm events and extreme high tides, access to the boat services is blocked where emergency services cannot be provided. This project proposes to improve the road bed conditions and allow for larger storm events to drain while preventing erosion of the current road and improving water quality of the adjacent rivers.

We are a local government with a legal interest in or responsibility for the watershed project proposed. We understand, as sponsors of a PL 566 planning effort, that our responsibilities will include:

- Assisting in the locally led planning effort,
- Contributing a share of the project costs, as determined by NRCS, by providing funds or eligible services necessary to undertake the activity,
- Before being credited with the value of any in-kind contributions for in-kind services and/or acquisition of land rights, Sponsor will sign a Memorandum of Understanding (MOU) with NRCS,
- Obtaining any necessary real property rights, by eminent domain, if necessary,
- Obtaining any needed water rights, and regulatory permits at the Sponsor's cost,
- Agreeing to provide for any required operation and maintenance of the completed measures.

Office of the County Administrator
716 Prince Street • Georgetown, SC 29440
Phone: 843-545-3006 • Fax: 843-545-3121 • email: olewis@gtcounty.org

We look forward to working with NRCS staff to complete a Preliminary Investigation Feasibility Report (PIFR) to provide reasonable assurance that a potential watershed project can be developed that addresses a PL 566 purpose and that there are no apparent insurmountable obstacles to the completion of that project.

The names, addresses, and telephone numbers of the administrative and technical contact persons in our organization are as follows:

Ray C. Funnye, Director of Public Services rcfunnye@gtcounty.org 843-545-3325

Tracy D. Jones, P.E. Stormwater Division Manager tjones@gtcounty.org 843-545-3258

Please contact them for any additional information that you might need in assessing our request.

Sincerely,



Angela Christian, ICMA-CM
County Administrator



Attachments or Enclosures:

Sandy Island Road Access Drainage Improvement Area Map

Sandy Island Watershed Map

Office of the County Administrator

716 Prince Street • Georgetown, SC 29440

Phone: 843-545-3006 • Fax: 843-545-3121 • email: olewis@gtcounty.org



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Exhibit
Sandy Island Drainage Phase 2
Multiple
Horry County, SC
August 20, 2020



1" = 200'



Georgetown County
Department of Public Services
Innovative Leadership & Teamwork!



Sandy Island Drainage Improvement

Sandy Island is located in Georgetown County, South Carolina, nestled between the Waccamaw and the PeeDee Rivers. Sandy Island is made up of 9000 acres of prehistoric sand dunes that comprise this refuge. The Island's students and residents may only travel to and from the island by boat. As such, Sandy Island must protect this service entrance from weathering, erosion, and storm events.

The Island's unincorporated community is connected to the Island's sole resource boat dock by a dilapidated access road. This socially disadvantaged area originally created a foot path with boards to access the area the service side of the island. Over time, the foot path was widened to allow service vehicles to travel to get to its residents. This access road has been patched and put back together over the years from exposure due to extreme storm events and high tides. This area of Georgetown County, within the period from 1993 to 2020, was exposed to 50 total flood events varies between flash floods, coastal floods and river floods. Severe erosion occurred of the access road where residents couldn't navigate to the boat dockage for periods at a time. Erosion also effects the quality of water in the vicinity creeks, canals, channels, and the ultimate discharge to the adjacent rivers. The 2400 linear feet dirt access road is located in the flood plain of the PEE River according to the U.S. Geological Survey, 2019, National Hydrography Dataset.

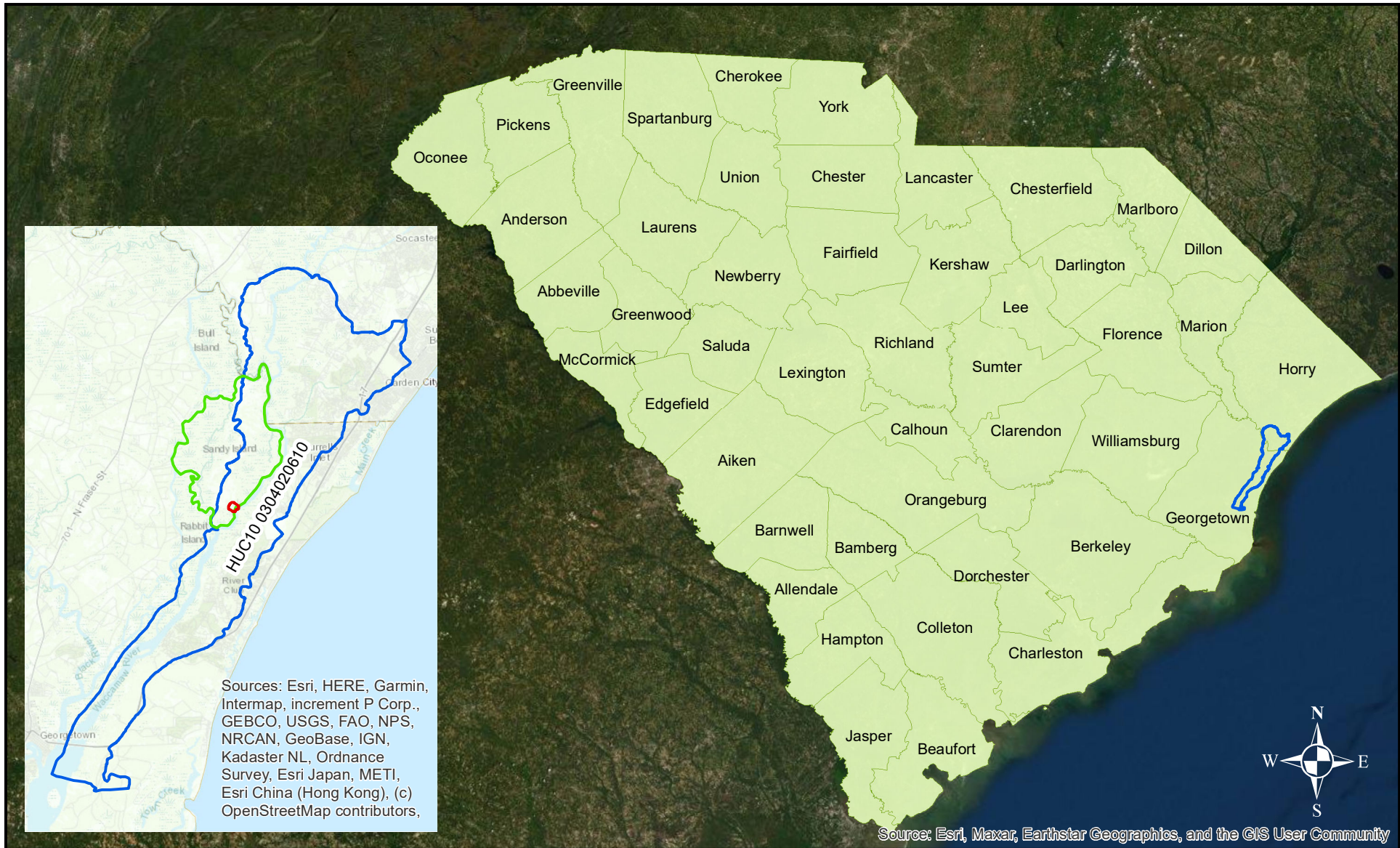
Georgetown County plans to do improvements to the access road and its drainage system to ensure that the residents have a road to traverse in all cases, especially in the case of emergencies. Additionally, the improvements shall serve as a means to prevent erosion and improve water quality in this area. As a first step, Georgetown County sought the input of the Army Corps of Engineers (ACOE) for the guidance and assistance with this type of proposed project. An on-site field visit with an ACOE representative yielded an advised non-reporting permit that allows for fill in an upland area under the Nationwide Permit 14. This would potentially allow for a design to raise the road bed above the highest flood elevation recorded and add the appropriately designed stormwater drainage appurtenances. At this time, the County estimates the cost to design, permit, bid, and construct this proposed project to be \$500,000.

Stormwater

129 Screven Street • PO Drawer 421270 • Georgetown, SC 29440
 Phone: 843-545-3524 • Fax: 843-545-3005 • email: stormwater@gtcountysc.org

APPENDIX B – WATERSHED LOCATION MAP

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Legend

	Project Site
	Sandy Island
	HUC10 Waccamaw River-Atlantic Intercoastal Waterway
	South Carolina Counties

Appendix B

Watershed Location Map

Georgetown County, South Carolina

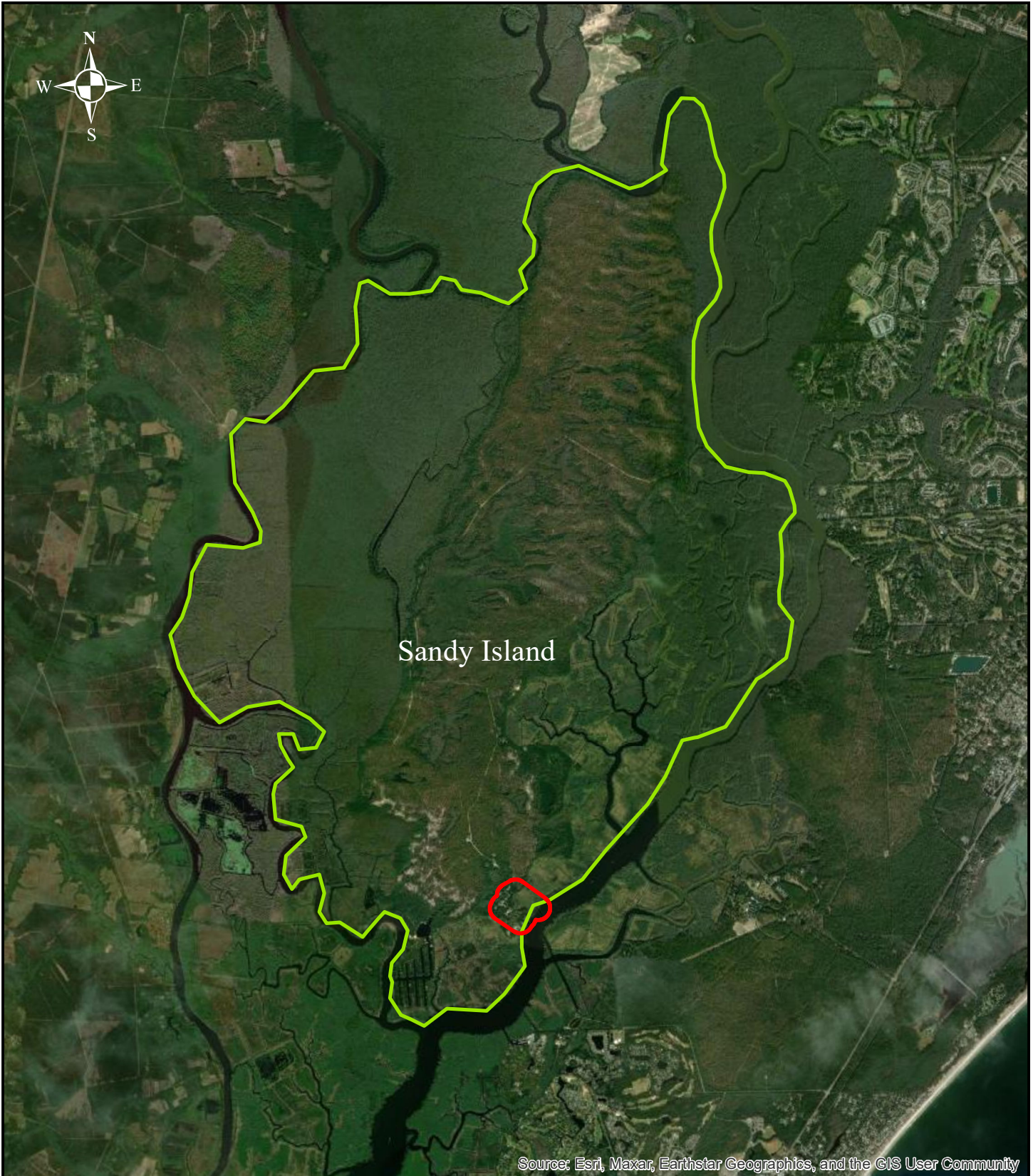
0 10 20 40 60 80 Miles

|
 Aterra-Schnabel Joint Venture

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APPENDIX C – WATERSHED PROJECT AREA MAP

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Legend

- Project Site
- Sandy Island

Appendix C
Watershed Project Area Map
Sandy Island, South Carolina

Note: Sandy Island is approximately 12,000 acres

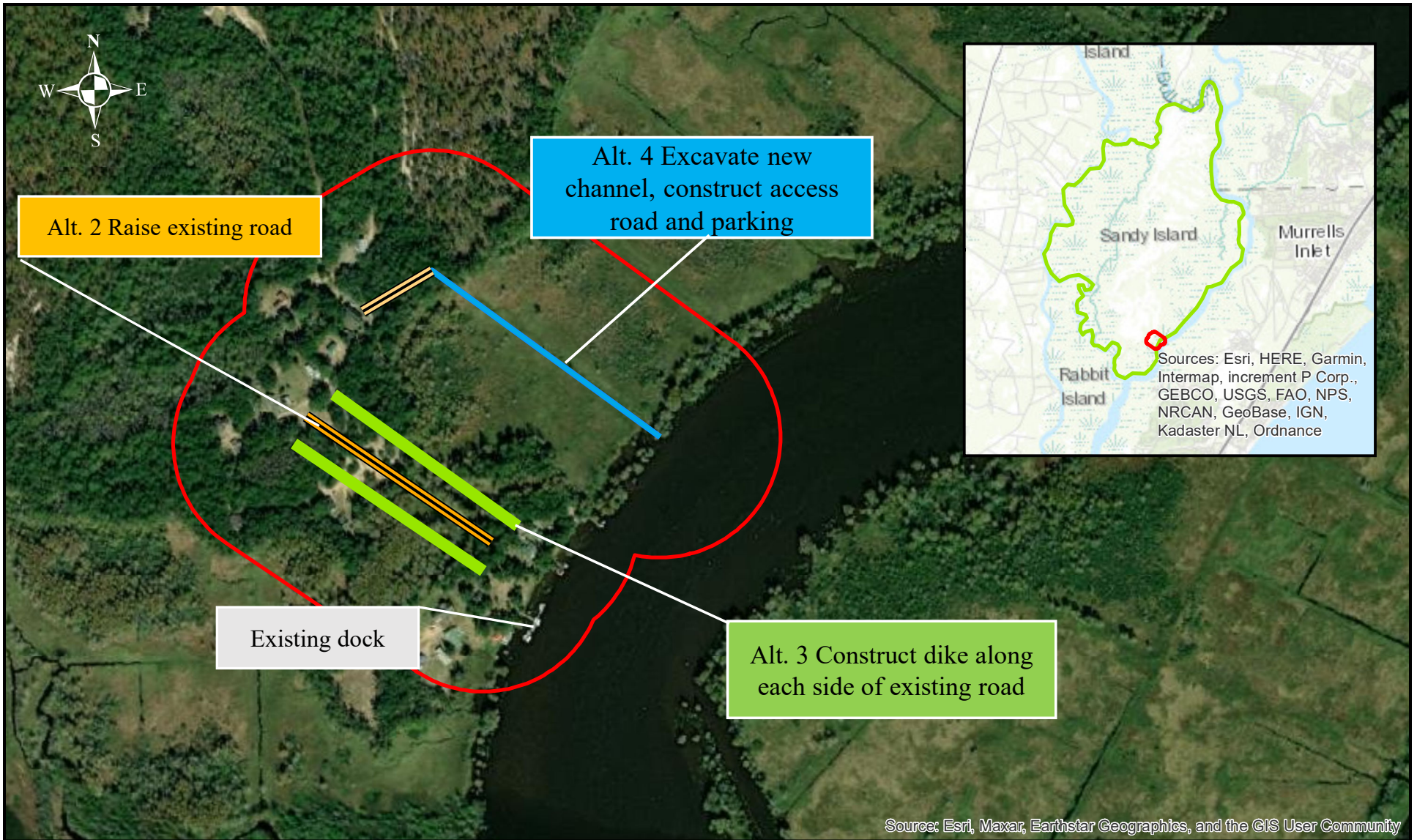


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APPENDIX D – ALTERNATIVES SITE PLAN

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Legend

- Project Site
- Sandy Island

Appendix D Alternatives Site Plan Sandy Island, South Carolina

Note: Project Site Area is approximately 85 acres



Aterra-Schnabel Joint Venture