BUCKSPORT MARINE PARK

MASTER PLAN REPORT

MAY 24, 2012 | moffatt & nichol

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BUCKSPORT, SOUTH CAROLINA

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1.0 INTRODUCTION

1.1 PURPOSE OF STUDY

The purpose of this master plan report is to provide a clear conceptualized plan for the development of the Bucksport Marine Park facility. This is a project being developed through the efforts and resources of several groups including Horry County, Myrtle Beach Regional Economic Development Corporation (MBREDC), Grand Strand Water & Sewer Authority (property owner), and Santee Cooper to provide an industrial development capable of supporting various marine dependent industries. Possible industrial operations the marine park should be designed to accommodate include: boat building enterprises and supporting industry, bulk cargo industry, and heavy transport barge operations that could utilize the Intracoastal Waterway and access to the Atlantic Ocean.

This report provides a narrative and associated planning documents that lay out a preliminary design meant to show the future potential of the site along with the flexibility needed to accommodate the varying requirements of the potential industries that could utilize the site.

The project site is located in Bucksport, South Carolina in Horry County, adjacent to the Waccamaw River, approximately 3 miles south of US 701. The tract of land is owned by Grand Strand Water & Sewer Authority who will lease the land in divided lots to private industry tenants. The site, with future improvements, will provide excellent vehicular access via US 701 and marine access via the Waccamaw River and the Atlantic Intracoastal Waterway. The site will provide approximately 141 acres of potential industrial development and 8 acres of common industrial marine. Figure 1.1 is an aerial image of the proposed Bucksport Marine Park site (image courtesy of Google Earth; January 1, 2012 imagery date).

1.2 CLIENT GOALS

The goal in developing this site is primarily economic development for the community and the state of South Carolina through private industry. This project presents an opportunity for greater economic output in Bucksport and the surrounding area by providing: undeveloped land for new industry, opportunity for the regional labor force, as well as improved infrastructure.

To reach this goal, it is desirable that this tract be developed in a cost-effective and efficient manner. This requires a high degree of flexibility in the master plan for the facilities so that improvements can be instituted as needed for an existing or prospective tenant. The requirements for development of the site as an industrial marine facility are: improvement of site access, improvement of onsite infrastructure, and improvement of marine access. This report and associated figures present a master plan for the facility's development to maximize flexibility in accommodating multiple tenants having various operational requirements while strategically investing resources, time, and capital necessary to serve

tenants as the facilities are developed and utilized. This is an important concept and design feature because it allows for the onsite infrastructure to be modified in order to meet the tenants' specific needs, which is necessary due to the wide diversity in operational and facility requirements tenants will have based on the various marine industries that can potentially utilize this facility.

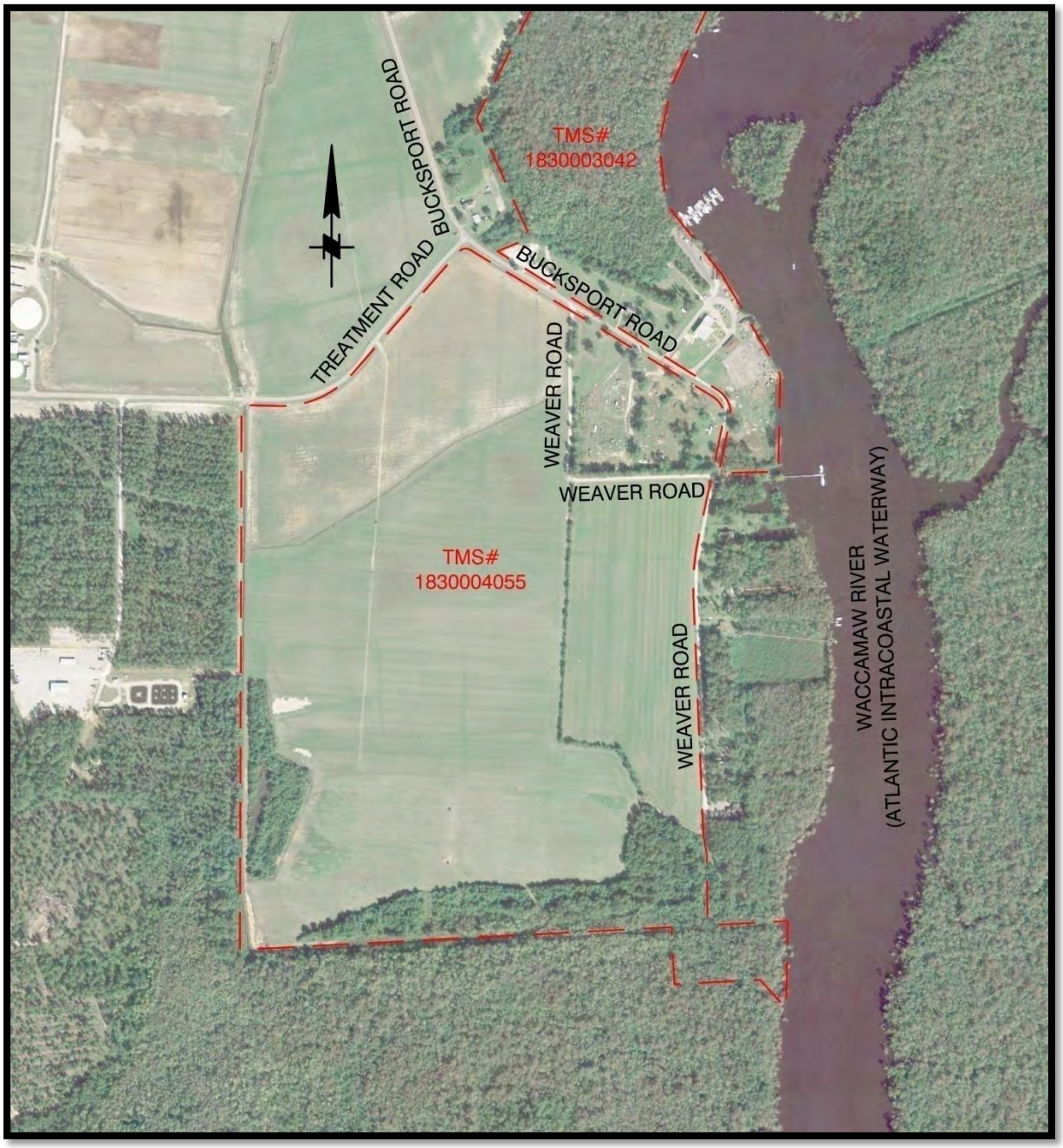


Figure 1.1 Aerial View of Proposed Bucksport Marine Park Site

2.0 SITE INVENTORY

2.1 STUDY AREA LOCATION AND GENERAL DESCRIPTION

The tract for development is owned by the Grand Strand Water & Sewer Authority (GSWSA), whom intends to lease parcels to industrial tenants, and is located adjacent to Bucksport, South Carolina in Horry County south of and adjacent to the intersection of Bucksport Road and Treatment Road. A portion of the east side of the site is bounded by the Waccamaw River which provides direct access to the Atlantic Intracoastal Waterway. The site is approximately 3 miles south of US Highway 701 and is currently accessed by Bucksport Road. A vicinity map of the site is shown in Figure 2.1.

In the site's current configuration it consists of two distinct parcels divided by Bucksport Road. The first parcel is located on the west side of Bucksport Road and to the south of Treatment Road, which will be referred to as the "lease area" in this report. This is a cleared, relatively flat parcel, primarily used as a sod farm, measuring approximately 205 acres and is bordered on the south and west by forested wetlands and to the east by a public road and residential parcels. The second parcel is located between Bucksport Road and the Waccamaw River with a total area of approximately 117 Acres, 80 acres of which is wetlands and forested wetlands. This parcel will be referred to as the "marine common area" in this report. The Bucksport Marina and a restaurant associated with the marina are currently located on this parcel. This parcel is instrumental in the development of the marine park as it has roughly 1,600 linear feet of frontage to the Waccamaw River.

2.2 STUDY AREA PLANNING CONSIDERATIONS

2.2.1 Jurisdiction Patterns

This development is located adjacent to Bucksport in Horry County, South Carolina. Bucksport is a Census Designated Place and therefore will fall under the local governance of Horry County. It is also adjacent to a Traditional Navigable Water (TNW), the Waccamaw River. The site also incorporates or is adjacent to areas of jurisdictional wetlands. Based on the project location and site characteristics, the agencies that will have regulatory control and/or project input include but may not be limited to:

- South Carolina Department of Health and Environmental Control (SCDHEC)
- SCDHEC – Offices of Ocean and Coastal Resource Management (OCRM)
- US Army Corps of Engineers (USACE)
- US Fish and Wildlife Service
- South Carolina Dept. of Archives and History – State Historic Preservation Office (SHPO)
- Horry County

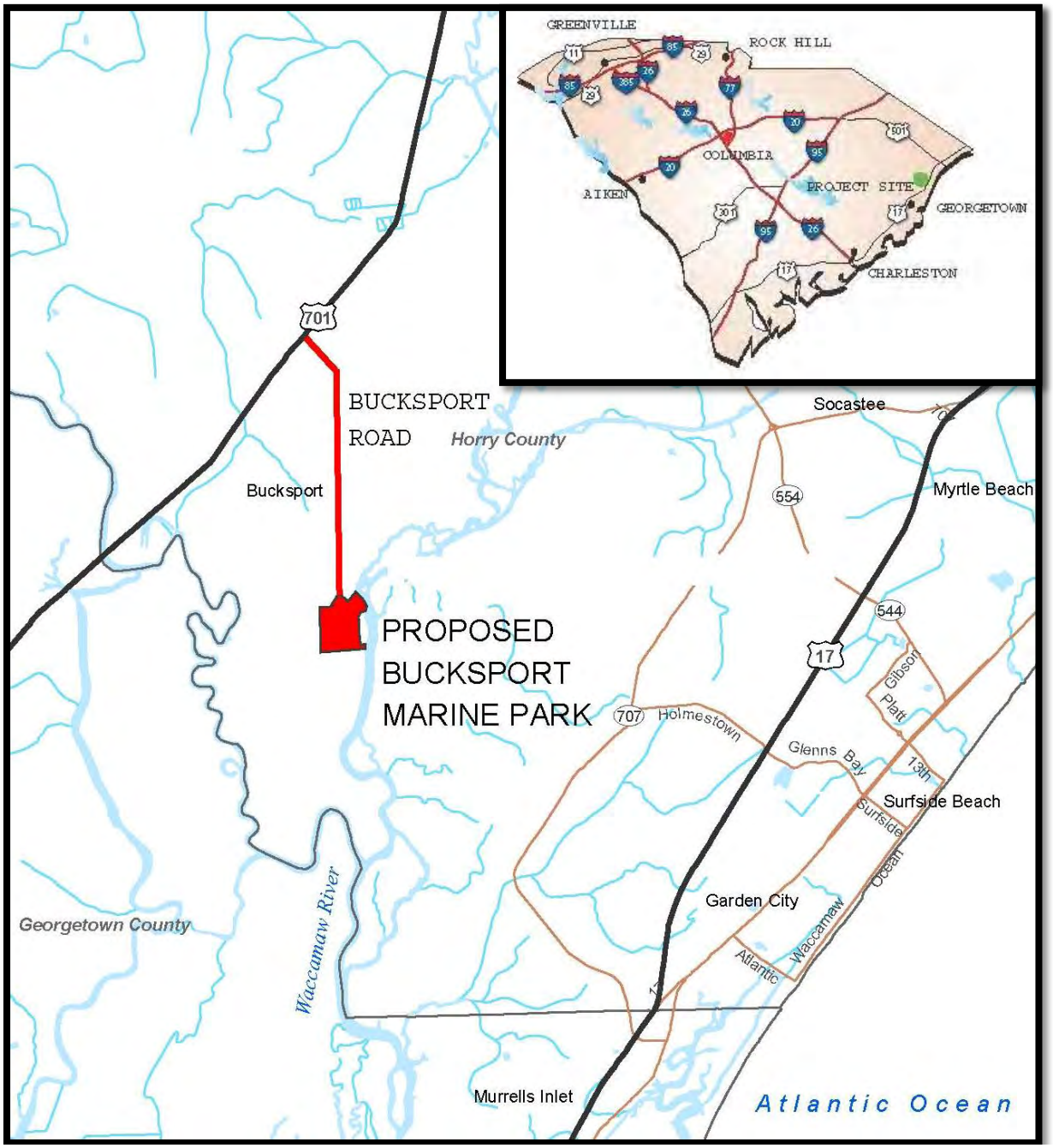


Figure 2.1 Vicinity Map

2.2.2 Existing Zoning

Currently the study site encompasses four zoning categories. The large parcel on the west side of Bucksport Road (TMS# 1830004055) is zoned Limited Forest Agriculture (LFA), Section 701. The parcel located on the southern border of the site (TMS# 1890001015) is zoned Forest Agriculture (FA). The proposed Marina expansion area (TMS# 1830003042)

and the area located to the east of Weaver Road (TMS# 1830003042), designated as Phase 1 in the Master Plan, are zoned Resort Commercial (RC), Section 711, and the existing Bucksport Marina area is zoned Destination Park (DP), Section 720, within the RC zoning of the large parcel. The proposed future land use will not be permitted under these zoning classifications. A rezoning petition will have to be filed for both parcels. Both areas will need to be rezoned for a General Manufacturing and Industrial District (MA2), Section 738, to accommodate future heavy industrial and bulk operations. The General Manunfacturing and Industrial District (MA2) allows for truck terminals, warehouse and open air storage, and the wholesale distribution of durable and non-durable goods as defined by SIC 50 & 51. SIC 50 & 51 include but are not limited to logs, pulpwood, roundwood, timber products, wood chips, industrial machinery, coal and other mineral and ores, industrial supplies, scrap and waste materials and construction materials. The General Manufacturing and Industrial District will not cover manufacturing processes such as chemical, landfill, paper, rubber or textiles, but it will cover throughput operations of a bulk cargo handling facility. While a zoning change to Boating/Marine Commercial District (BO1) would allow for boat builders and associated industries, this designation would provide much less flexibility for future uses of the site.

The adjacent parcels are zoned Commercial Recreation (CR), Forest and Agriculture (FA), and Residential (MSF10 and RC). GSWSA currently operates the Bucksport Wastewater Treatment Plant on one adjacent parcel. The Master Plan includes the construction of a landform that will serve as a barrier between the site and the surrounding Recreational and Residential areas. The parcel across the Waccamaw River from the proposed marine park is currently zoned Commercial Forest/Agriculture (CFA) that is intended to be reserved and utilized for agriculture, forestry, residential, commercial, social, cultural, recreational, and religious uses. This allows a wide range of permitted uses included but not limited to; commercial and recreational fishing and marinas, farms, office buildings, golf courses, railroad depots, restaurants, churches, as well as various conditional uses.

The rezoning request will be filed with the Horry County Planning and Zoning Department located in the Government and Justice Center, 1301 Second Avenue, Conway, SC 29526; (843) 915-5340. It is anticipated that approval of a rezoning request would require 90-120 days to obtain.

2.2.3 Existing Land Use Patterns

The study site is surrounded by a varying mix of uses and densities of development. The Grand Strand Water & Sewer Authority owns parcels immediately adjacent and on the opposite side of Treatment Road that are utilized as sod farm operations. These facilities are bounded by tree farms and agricultural operations. The existing, operational Bucksport Marina is located within the site along the Waccamaw River. The marina includes a boat ramp, docks, piers, a restaurant and other support buildings. There are twenty-three (23) lots on the east side of Weaver Road between the study site and the Waccamaw River comprised of a mix of undeveloped land, residential properties, and residential rental properties which includes nine (9) residential houses and a local community center.

The land on the opposite bank of the Waccamaw River is a parcel owned by the South Carolina Department of Natural Resources, zoned CFA, that is currently operated as a wildlife refuge. The site encompasses approximately 5,585 Acres comprised of freshwater forested/shrub wetlands. This tract is part of the larger Waccamaw National Wildlife Refuge. The WNWR encompasses approximately 23,000 Acres with plans to increase the total area to 50,000 Acres, all of which are maintained by the U.S. Fish and Wildlife Service.

2.2.4 Proposed Land Use Patterns

The intent is to develop the study site as a marine commercial/industrial area. The site is intended for use by boat building and supporting industry as well as heavy industrial and bulk handling operations that would utilize the navigable waterway access associated with the site. The location of the existing marina and the area directly south will be developed for use as marine access/operations by boat building and heavy industrial tenants and be operated as a common marine access area for tenants. It is anticpated that the existing Bucksport Marina will be relocated north of the marine park as the site is developed. New docks and piers as well as two travel lift wells are proposed for the boat building operations. A new bulkhead and barge slip area is proposed to serve the heavy industrial and bulk handling operations. The current access for the residential lots on Weaver Road will be rerouted through the park on a new road originating from Treatment Road. To address the desire to provide separation between adjacent landowners from the industrial uses, landscaping and other design elements will be incorporated to maximize the screening effect of the industrial operations. One such feature is a 50-foot wide landform that will be constructed along Weaver Road which will serve to screen the road frontage of residential properties. It will be necessary to design these elements so that they are integral with the specific site needs of the industrial tenants while minimizing visual and auditory impacts to adjacent property owners.

2.3 STUDY AREA PHYSICAL CHARACTERISTICS

2.3.1 Existing Vegetation & Geology

Other than the wetland areas the site does not have any significant vegetation. Aerial photographs indicate the site has been clear since at least 1994. The surrounding areas consist mainly of tree farms and other minor agricultural operations and large areas of contiguous forested wetlands.

The Waccamaw River is generally bordered by wetlands on both banks. These wetlands can extend several hundred feet inland. The proposed site contains two areas of wetlands, one to the south that is a small portion of a larger area and one to the north of the marina expansion area. The project does not appear to significantly impact wetlands: however, the permitting process will identify any impacts and determine mitigation measures, if necessary. The permitting process should be initiated as soon as possible.

The site is generally characterized by Eulonia loamy fine sand at the surface, which is characterized by moderately slow permeability, being moderately well drained. The general soil stratigraphy consists of the loamy fine sand overtop of sandy clayey soil that is underlain by a marl consisting of hard cemented sands with interlayers of soil. A geotechnical investigation of the development site, including both the land area as well as in the river, has been completed.

2.3.2 Archaeological & Historical Influences

The following sites have been identified through information publicly available from the SHPO as eligible for the National Register of Historic Places:

- Buck's Barn
- Bucksville Plantation
- Henry Lee Buckhouse
- Buck's Middle Mill Chimney

There is no evidence that these sites are near the proposed project site or would in any way be impacted by the industrial operations associated with the site development. However, it is recommended that a cultural resource survey be conducted to determine if there are any archaeological and/or historical resources associated with the project site and, if discovered, assess any potential negative impacts on those resources.

2.3.3 Roadway Site Access & Transportation Issues

The proposed Bucksport Marine Park site is located approximately 14 miles south southwest of Conway, South Carolina off of US 701 and is approximately 63 miles from the I-95 and SC 38 interchange. From US 701 the site is currently accessed by taking Bucksport Road, the main road through the community, south; the site is located at the end of Bucksport Road. Bucksport Road (S-48) is currently maintained by SCDOT to the marina site not including the loop road, located within the existing marina, nor any section of the road south of the existing marina. Any work that impacts the SCDOT maintained portion of Bucksport Road will require a permit and the approval of SCDOT. The SCDOT Statewide Transportation Improvement Program does not currently show any improvement projects located in the immediate vicinity of the study site.

There is no current average daily trip (ADT) data available for Bucksport Road but there are very few trip generators in the immediate area. North and west of the site is the GSWSA Bull Creek Surface Water Treatment Plan and the Bucksport Wastewater Treatment Plant. The additional surrounding land is used for tree farming and sod farming.. The additional surrounding land is used for tree and sod farming. Weaver Road intersects with Bucksport Road along the north boundary of the project site and extends through the site providing access to the twenty-three parcels that include nine home sites and a local community center. Bucksport Road terminates at the existing marina, which is the major trip generator in the area.

There are two key localized transportation issues associated with the site development. The first is limiting the confluence of the marine park industrial traffic and the public access marina traffic. As previously mentioned, the marina operations will be relocated to the north as the marine park operations are developed. Additionally, the proposed marine park entrance will be at the intersection of a new Weaver Road alignment and Treatment Road thereby segregating the industrial traffic from the public marina traffic. The second key issue is strictly limiting the traffic associated with the marine park development from using the portion of Weaver Road in front of the residential tracts. The proposed roadway infrastructure internal to the project site is developed to service all lots internally. The only potential need to use Weaver Road would be maintenance vehicles requiring access to the bulk cargo facilities to the south.

There are several changes planned to the existing roadway infrastructure that would serve to reduce potential impacts to the surrounding community and provide more direct access for industrial traffic associated with the marine park development. A new road planned for the Bucksport community will originate approximately 2 miles south of Bucksport Road and terminate at Bucksport Road approximately 1/2 mile north of the site, effectively by-passing the Bucksport community. Figure 2.2 is a conceptual layout of this proposed new road. Proposed improvements at the project site include improving the intersection of Bucksport Road and Treatment Road to better accommodate larger trucks with larger turning requirements. Additionally, it is proposed that Weaver Road be realigned to facilitate greater flexibility in lease area development.

Figure 2.2 Conceptual Alignment of Proposed New Road

2.3.4 Site Marine Access

One of the greatest commodities of this site is its direct access to the Atlantic Intracoastal Waterway (ICWW). The proposed site is located on the Waccamaw River approximately thirty nautical miles from Winyah Bay in Georgetown and thirty nautical miles from the Little River Inlet at the North Carolina-South Carolina border. This location provides serviceable water depth for recreational boaters as well as industrial barges as the ICWW is maintained at a minimum water depth of 12 feet. The site is also located approximately 7.5 miles inland of the coast providing a relatively safe harbor during major storm events. It is anticipated that industrial vessels will likely operate along the southern route to Winyah Bay for goods transport to the Port of Georgetown or other destinations. This route generally has

greater channel width and only one bridge crossing, Hwy 17 in Georgetown. The navigable clearances associated with this bridge are 65-foot vertical clearance and 120-foot horizontal clearance. It is anticipated that the northern route will be the primary route utilized by recreational boaters. It passes through the more densely populated area of Myrtle Beach, having numerous docking facilities connected with the waterway. This route has nine bridge crossings with at least three of them being swing span or lift span bridges. Figure 2.3 is an aerial image depicting the marine route along the ICWW to access the Atlantic Ocean from the proposed Bucksport Marine Park

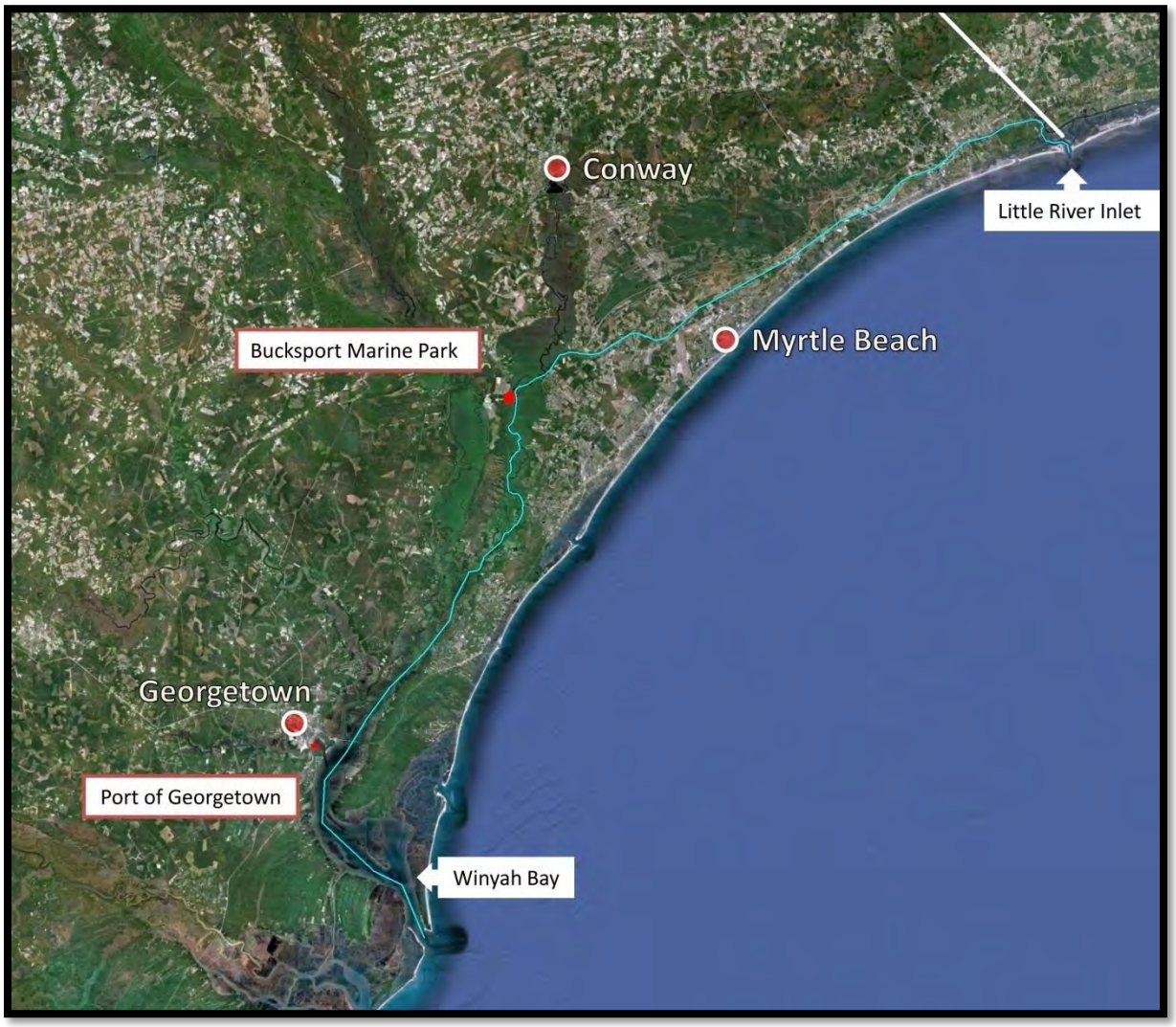


Figure 2.3 Site Marine Access Routes to the Atlantic Ocean

2.3.5 Existing Site Drainage

The study site is located on the Waccamaw River and is part of the Pee Dee Drainage Basin. The existing topography ranges from elevation +19 (+/-) to +2 (+/-) NAVD 88. The interior of the lease area is relatively flat with slopes ranging from 0.25% to 0.50% with the slopes becoming steeper towards the site boundary at approximately 1.50%. The site contains a series of natural drainage ditches that convey stormwater off site to the south. One drainage ditch conveys from east to west where it intersects a larger ditch on the western boundary.

The marine common area slopes are generally steeper in the range of 2% to 2.5% towards the Waccamaw River. There is one drainage outfall at the northern end of the marine facility area that conveys stormwater runoff north to a large area of wetlands located outside of the proposed site boundaries.

The wetlands areas adjacent to the site are subject to the regulations of the SCDHEC Office of Ocean and Coastal Management (OCRM) and the U.S. Army Corps of Engineers (USACE). Figure 2.4 is a reference map which shows the approximate existing contour elevations, the existing drainage patterns and the existing wetland areas.

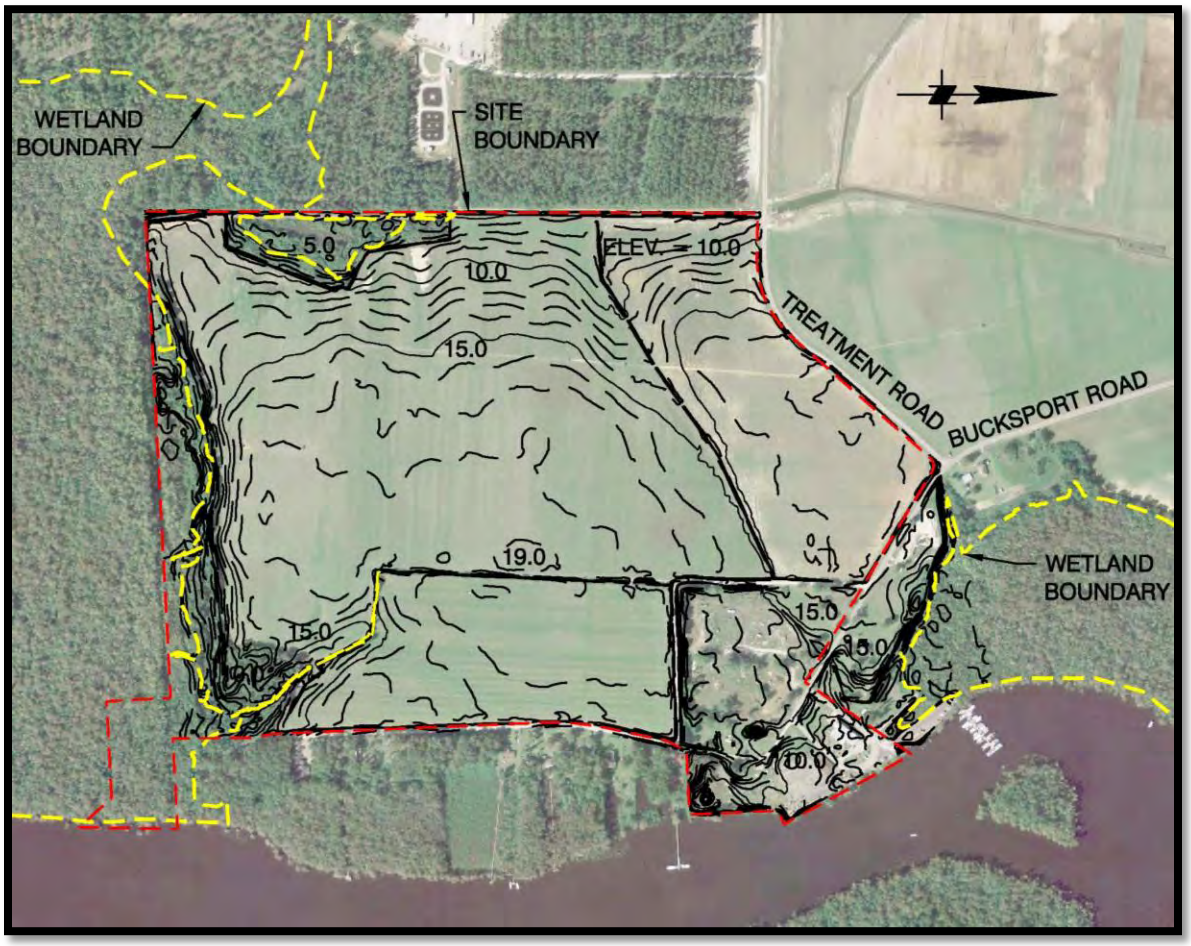


Figure 2.4 Existing Site Drainage

2.3.6 Jurisdictional Wetlands

The wetland delineation was mapped by Spartina Land Surveying, LLC in 2011. The letter specifying the certification from the USACE is dated June 13, 2011 and the delineation is considered valid for five (5) years from the date of the letter. A copy of this letter is provided in Appendix B and a copy has also been sent to SCDHEC OFFICE of Ocean and Coastal Resource Management. A total of approximately 10.5 acres of wetlands have been delineated within the lease area. The USACE approved Jurisdictional Determination Form indicates that all of the wetlands on site will be considered jurisdictional due to either:

- The wetlands are adjacent to Traditional Navigable Water (TNW), in this case the Atlantic Intracoastal Waterway/Waccamaw River.
- The wetlands are directly abutting Relatively Permanent Waters (RPW) that flow directly or indirectly to TNW.

The proposed site plan impacts approximately 1.3 acres of these wetlands. These impacts do not include the bulk cargo loading facilities, proposed at the southern limits of the site, which is to be constructed in forested wetlands. This construction is proposed to be pile-supported structure to minimize wetlands impacts.

2.3.7 Potential Developable Land

The total tract area, including both the lease area and the marine common area, as indicated on the survey performed for GSWSA, by Spartina Land Surveyors, LLC and dated June 24, 2011 revised August 8, 2011 is approximately 206 acres. Of this area 10.5 acres have been identified as wetlands, as stated in Section 2.3.6.

This leaves approximately 195 acres of land that can potentially be developed. Approximately 141 acres of the total has been identified as possible lease area and is labeled “Backlands” on the site plan figure. The area identified for “Marine Facilities”, or the marine common area, is a total of 8 acres. The remainder of the area, approximately 46 acres, is along the south and southwest boundary of the site and is either proposed to be used for stormwater retention or is not incorporated into the proposed site plan.

2.3.8 Existing Utility Infrastructure

The existing water service to the marina and surrounding residences is currently provided by the local water provider, Bucksport Rural Water Company via a 6” water main along Bucksport Rd. Sanitary sewer service is provided by GSWSA via a 6” gravity sewer system to a pump station adjacent to the marina, where it is pumped to the Bucksport Wastewater Treatment Plant (WWTP) via a 6”/8” sewer force main. The site has access to existing water and sewer utilities provided by GSWSA. There is an existing 30-inch low-pressure transmission main waterline within the site. GSWSA has expressed the anticipation that a new water tower will be required, which would be supplied by the 30-inch waterline, to serve

the marine park to provide adequate flow and pressures for fire protection and service to tenants. It is anticipated that the Marine Park will be constructed with a new conventional gravity collection system and pump station that would discharge the sanitary sewer to the Bucksport WWTP. A site plan showing the existing water and sanitary sewer service in the vicinity of the site is provided in Figure 2.5.

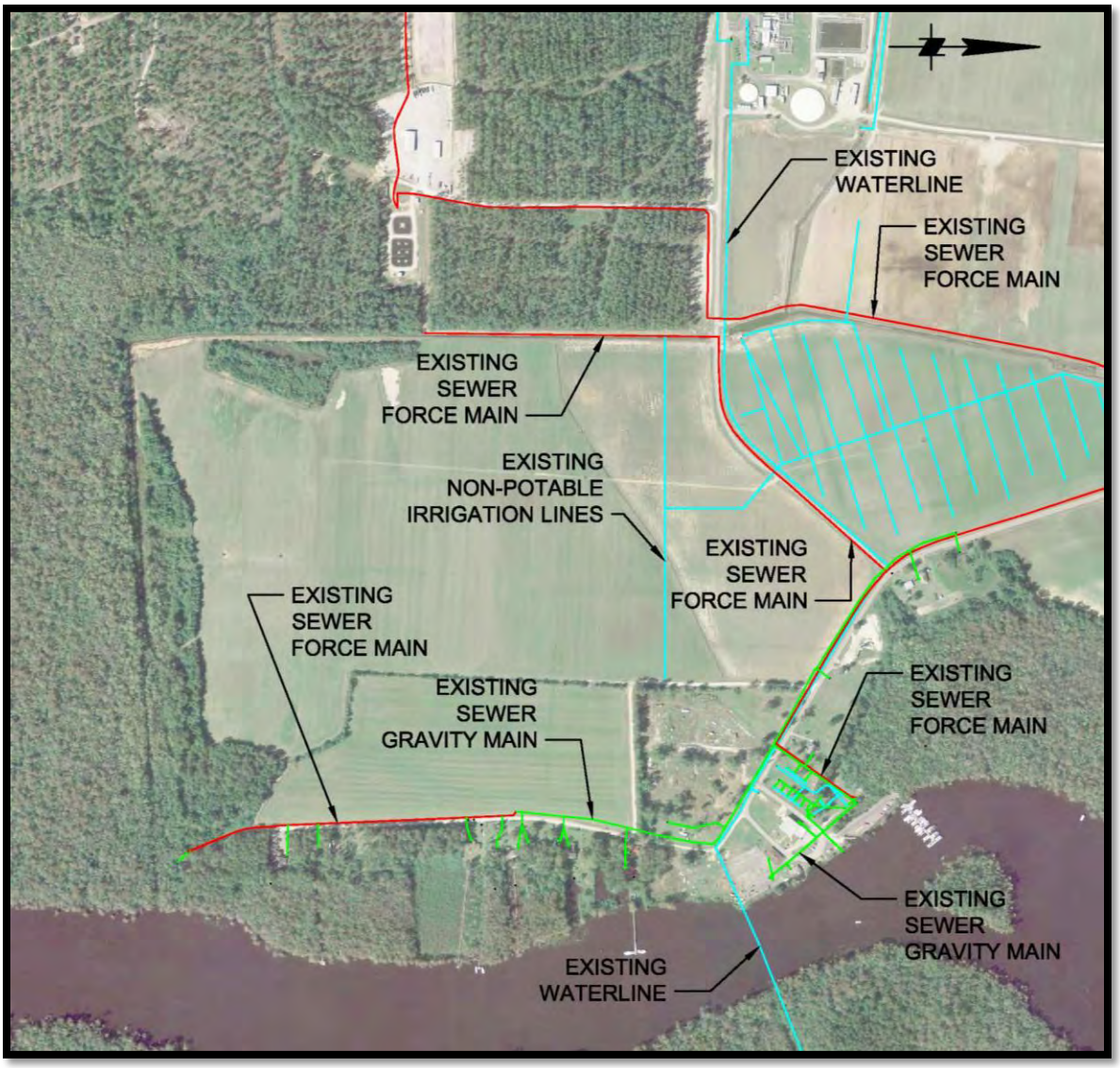


Figure 2.5 Water and Sanitary Sewer Service

Electrical service to the site is provided by Santee Cooper. Santee Cooper estimates that the current service to Bucksport has sufficient capacity for Phase 1 of the marine park development as shown on the proposed site plan. Subsequent phases will result in the need for a new substation. Santee Cooper has previously acquired property for expansion of service in this area and will construct the new substation when warranted by demand. Santee Cooper should be included in development schedule discussions to ensure proper coordination of service expansion.

3.0 MASTER PLAN

3.1 MARKET DEMAND

In December 2007 an economic and market analysis study of the boat building industry as it relates to the potential development of a marine industrial park at the proposed site was completed. That analysis found that, given the boating market at that time and market pressures in other states such as Florida and Massachusetts, the greatest potential market for boat building would be yachts 80 feet in length or greater. There have been drastic economic changes within the U.S. since the time of that report that impact those findings. However, recreational boating remains a viable industry and the greatest potential for this site. In addition to boat building, there is also the potential that tenants in the manufacturing and goods movement industry can utilize this site. The manufacturing industry would consist of an operation in which modular construction/assembly would be completed at the facility and then transferred to barges for transport to either an assembly facility or a specific site for completion. This type of manufacturing would consist of over-sized excessive load cargos that cannot be transported by road or rail making waterway the only viable means of transport. The transport of bulk materials is also a potential operation for the proposed site. However, given the regional port facilities (Georgetown and Charleston to the south and Wilmington to the north) and the lack of rail access to the site, this would most likely be a local/regional product that would be stored at the site for transport. Without further investigation it is not known if there is a regional commodity economically viable for this facility.

3.2 DEVELOPMENT STRATEGY

As stated in the introduction, the goal in developing this site is economic development for the community and the state of South Carolina through private industry. In order to achieve this goal it is instrumental that the master plan accommodates a high degree of flexibility so that improvements can be instituted as needed for prospective tenants who, as it is demonstrated by the potential market demand, may have broad ranging operational requirements. In addition to accommodating flexibility, the Master Plan has been developed in a manner that allows for the strategic investment of resources, time and capital, as the facility is utilized by taking a phased approach to the development of the site.

3.3 SITE DEVELOPMENT

The proposed site plan, provided as Figure 3.1 below (an 11”x17” plot of the proposed site plan is provided in Appendix A), in this Master Plan report is meant to be a general layout and a guide for future development. Lot areas have been delineated within the lease area at sizes ranging from 10 acres to 36 acres that can be divided or combined in various configurations of lots as necessary to suit the needs of the tenants. Boat building operations can typically utilize as little as 5 acres or as much 30 acres for a large operation. An area of 30 acres would be sufficient for a single manufacturing operation or a large dry bulk

operation specializing in dry bulk cargoes such as feed, grain, sand/gravel or scrap metal. This area could also accommodate up to 3 smaller break bulk operations that could handle a larger variety of cargo utilizing a combination of warehouse and outside storage. The proposed layout provides flexibility in the development of the facility allowing for the possibility of smaller lots being combined or larger lots being subdivided, all based on the specific demands of the tenant.

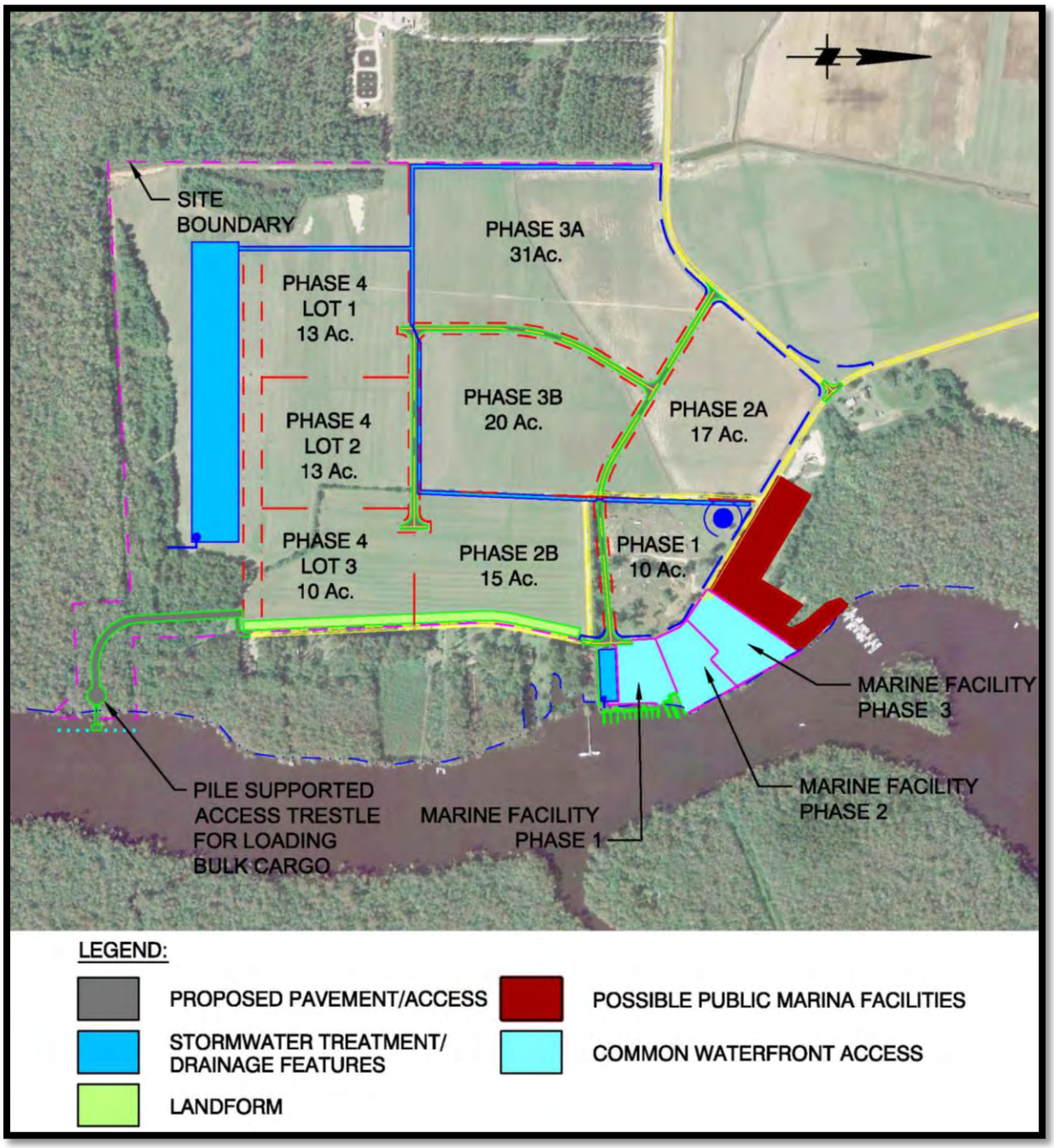


Figure 3.1 Proposed Site Plan

The proposed marine facilities, shown on Figure 3.2, have likewise been developed to offer the maximum amount of flexibility to future tenants. The dual travel lift pier will facilitate the operation of a 100-ton and a 300-ton travel lift simultaneously. The construction of a new bulkhead, approximately 700 feet in length, will accommodate heavy industrial operations for barge and bulk cargo access. The marine common area facilities can be divided into multiple areas to separate the different industrial uses or maintained as one large common area. Finally, an access trestle and T-head dock at the south end of the site can support either liquid or dry bulk cargo operations.

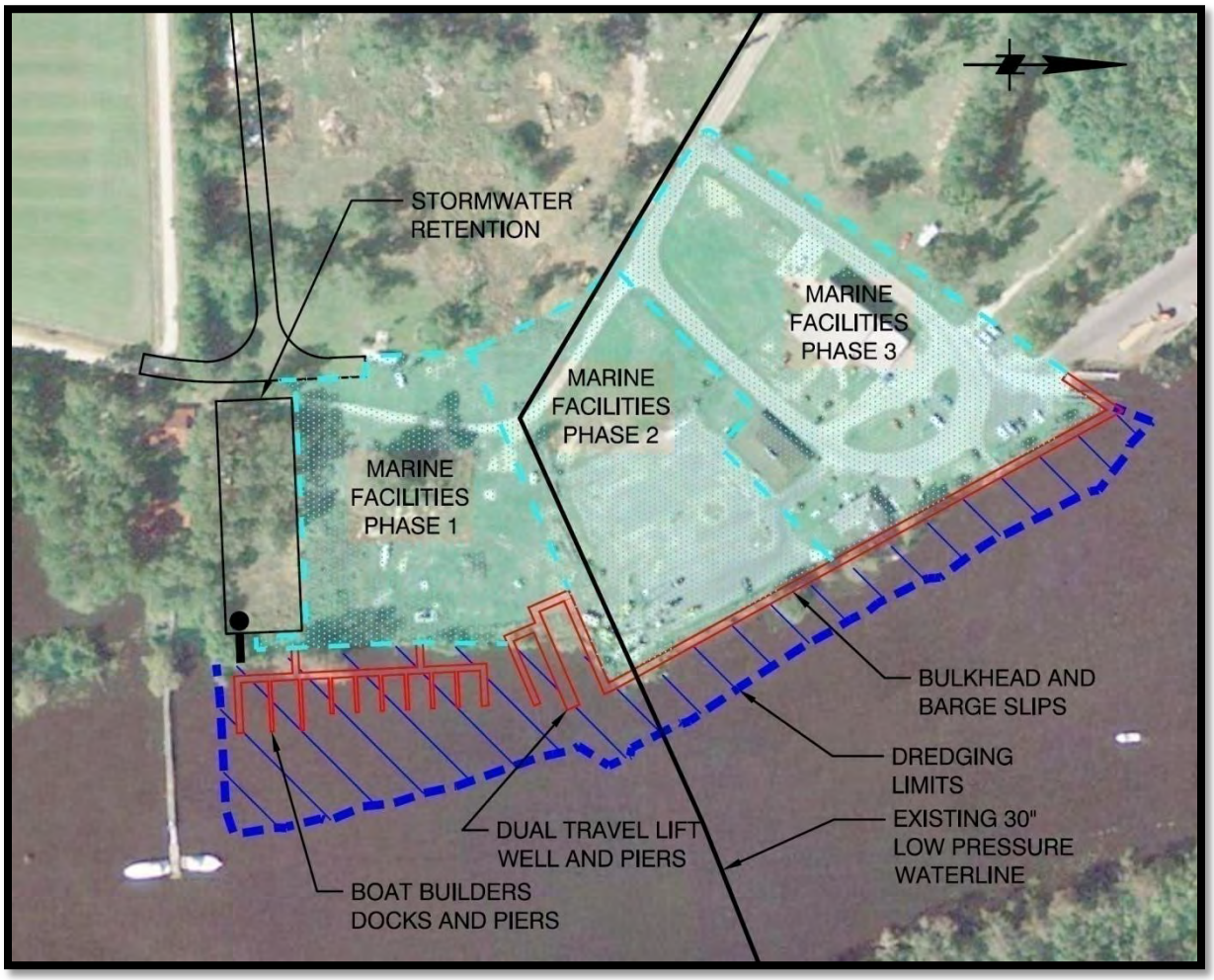


Figure 3.2 Proposed Marine Facilities

3.3.1 Stormwater

The approach to treating stormwater in the proposed plan is to use the existing drainage patterns for future stormwater collection and treatment to the greatest extent possible. For the lease area, a combination of existing drainage ditches and new ditches will collect stormwater runoff and direct it to a new treatment pond located on the south end of the site.

The pond will be designed to retain stormwater as required by the National Pollutant Discharge Elimination System (NPDES) permitting requirements and release it via an outfall indirectly into the wetlands that border the site and eventually into the Waccamaw River, all while maintaining the existing drainage patterns at the site. A smaller treatment pond will be located in the marine common area south of the marine facilities to accomplish the same goal. This concept is based on maintaining current drainage patterns and treating any runoff before it is released into the surrounding watersheds.

The location of the drainage ditches in the proposed site plan can easily be revised to accommodate a revision to the lease lot lines or as necessary for specific requirements of individual tenants. The main retention pond has been sized for full build-out assuming a 75% impervious area, allowing great flexibility to the tenants as they develop and build-out the lots. There are two possible approaches to the construction and incorporation of stormwater treatment as the site is developed. The first approach is to construct the stormwater treatment ponds, sized to accommodate the entire site at final build-out, early in the site development. A second, more economical approach would be to utilize stormwater best-management-practices (BMP) options, such as dry swales and modifications or improvements to existing drainage ditches, to treat only specific smaller areas and complete the stormwater pond as the site progression of development warrants it.

3.3.2 Utilities

At the current stage of site planning it is not practical to make a conclusion about the future utility demands, given the broad range of industries the site could support. A bulk material handling operation would require very different utility services than a boat builders operation, and different bulk commodities can require varying levels of service from different utility providers. The existing water and sewer utilities are shown on Figure 2.5.

The proposed site plan includes the construction of a new, dedicated water tower to provide water service to the site. This new water tower has been located on the proposed site plan, however the appropriate location of the water tower can be determined in the future based on the lot layouts and utility infrastructure.

It is anticipated that the existing water and sewer transmission systems in the area will be adequate for future demands. Additionally, due to the proximity of the water treatment facilities, increasing the existing services, if necessary, will not be a significant cost.

The proposed marine park development will require the construction of a new substation by Santee Cooper for the anticipated service demands of the industrial tenants beyond Phase 1. Service within the park is anticipated to be underground distribution lines, switchgear, and junction enclosures due to the anticipated transport operations. These underground lines are typically installed just outside the road right-of-way (1' minimum). The distribution equipment (excluding transformers) would be strategically placed at appropriate lot corners and intersections to provide a nearby "tap point" for the extension of service lines to each tenant. A transformer up to a maximum size of 2500kVA (2.5MVA) would be installed as

close as practical to the tenant's desired service point for each building. Transformer sizes and quantities will ultimately be contingent on the actual load requirements. Installation of site lighting will required the installation single-phase transformers and small fiberglass pedestals at various locations.

3.3.3 Marine Facilities

With the acquisition of the existing Bucksport Marina site, numerous configurations of the marine facilities have been considered through the planning process in an attempt to accommodate a broad range of possible operations. The marine facilities depicted in the proposed plan were originally developed in an effort to utilize the existing permit for the construction of a single travel lift well and the desire to construct a portion of the facilities as a minor modification to that permit. Since that time the permitting agencies have indicated that a new permit will be required due to the intent of the overall site development. However, after re-evaluating the other possible layouts considered, this configuration remains the most advantageous. In this layout a boat building operation can be accommodated initially in the southern portion of the marine common area without impact to the existing marina facilities. This layout maximizes the possible length of straight bulkhead line at the widest portion of the river for barge operations. Furthermore, as the marine facilities are expanded the division between operations can be adjusted to accommodate tenant needs. So, as the facility expands to the north, this can either accommodate industrial operations or expanded boat building operations. The bulk cargo operations, if determined to be viable, will be located along the southern boundary of the site with its own dedicated docking facilities. The bulk cargo berthing facilities will be accessed via a pile-supported access trestle proposed to originate from new roads internal to the marine park development. The portion of Weaver Road that is parallel to the river and fronts the residential and public property will be restricted from use for park operations.

The entire marine common area will be designed for heavy industrial loading. The area utilized by boat builders will facilitate the operation of heavy-lift marine travel lifts as well as trailers and/or boat transports that transport the vessels between the boat builders lease area and the marine common area. These types of operations are associated with design loadings on the order of 750 to 1,000 pounds-per-square-foot. The bulkhead associated with the Phase 2 and 3 Marine Facilities expansion is intended for either bulk cargo or heavy lift industrial operations such as modular construction and/or assembly. These are extremely heavy operations and will be associated with design loadings on the order of 2,000 pounds-per-square-foot. These design loadings will impact the design of all features associated with the entire marine park development from the pavement design to the utilities to the marine structures. It should be noted that the existing 30-inch low-pressure water main traversing the marine common area is an HDPE pipe that transitions to PVC near the existing road. M&N recommends that the length of waterline within the site limits be replaced with ductile iron due to the heavy industrial loading associated with the anticipated operations to avoid future damage and maintenance issues.

3.3.4 Dredging & Pond Excavation

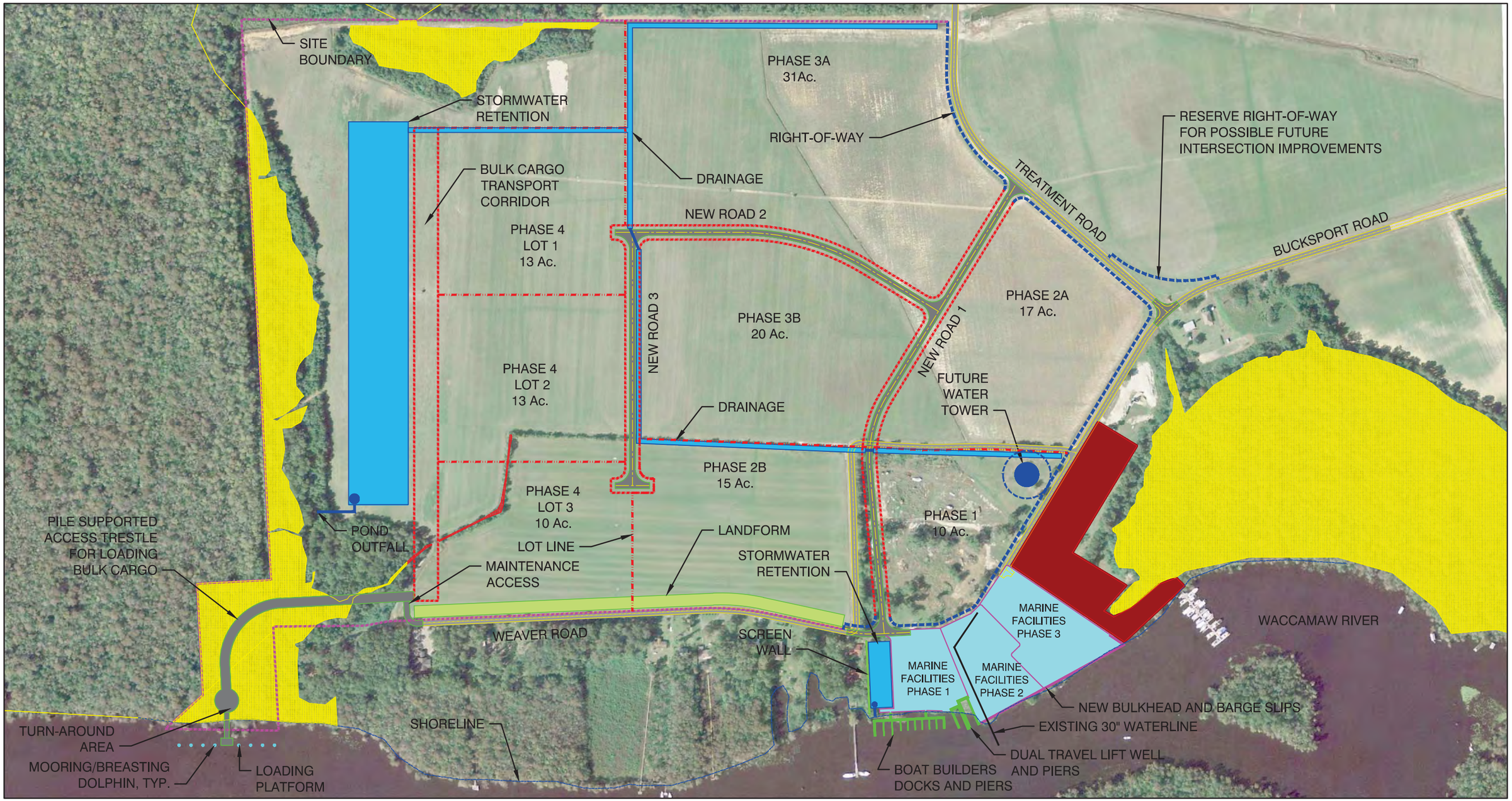
With the construction of the marine facilities and the site stormwater system there will be a large volume of soil material to be utilized or disposed of in some manner. Disposal of dredged material can be especially challenging and costly requiring sediment testing and disposal in an approved disposal site if contaminants are found. The simplest, most cost-effective way of dredge disposal is to use the material on the site. This will minimize the transportation costs and eliminate disposal charges. Initial estimates find that the quantity of dredging required for the completed marine facilities, the limits of which are shown on Figure 3.2, is approximately 37,000 cubic yards. It is anticipated that this dredging will be completed with consideration to phasing to allow for the most economical construction of the marine facilities and the bulk cargo berth to the south. So that the initial dredging for Phase 1 of the marine facilities will only consist of the area associated with the travel lift wells and floating docks and likewise for the remaining marine facilities. This material would have to be stored onsite within a containment area until the material was suitably dry for use. Another, source of excavated material will be the stormwater pond excavations. Initial estimates find that this will generate a quantity of approximately 53,000 cubic yards, 50,000 for the large stormwater pond at the south end of the site and 3,000 cubic yards for the small stormwater pond by the marine facilities.

There will certainly be an opportunity to use the majority of this material in grading the site. There will be a need for some fill in the marine common area to reduce the slope from west to east for the marine travel lift operation as well as other possible equipment used for the various operations. Another use of the material will be the 50-foot wide screening landform along the west side of Weaver Road. These uses are expected to consume 40,000 to 50,000 cubic yards of material. The remaining excavation/dredging surplus could be spread over the lease area. This, however, could lead to phasing issues requiring the stormwater pond excavation be completed, at least in part, prior to leasing any portion of the site. Alternatively, this material could be trucked from the site, stockpiled on-site west of the stormwater retention pond, or potentially spread over the adjacent sod farms, also owned by Grand Strand Water & Sewer. Effectively dealing with the dredge and excavation material will be a challenge but with proper planning and preparation it can be addressed in an efficient, cost-effective manner.

APPENDIX

A

PROPOSED SITE PLAN (11”x17”)



PURPOSE:
CONSTRUCT NEW MARINE INDUSTRIAL PARK FACILITY

DATUM: TO BE DETERMINED

ADJACENT PROPERTY OWNERS:
TO BE DETERMINED

SITE MAP

0 400' 800'

GRAND STRAND WATER & SEWER AUTHORITY

BUCKSPORT MARINE PARK
MASTER PLAN SITE LAYOUT

AUTHORIZED AGENT:
DRAWN BY: MOFFATT & NICHOL
SHEET 1 OF 1 DATE: 3-12-12

LEGEND:

- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- WETLANDS
- WETLAND IMPACT
- STORMWATER TREATMENT/ DRAINAGE FEATURES
- POSSIBLE PUBLIC MARINA FACILITIES
- COMMON WATERFRONT ACCESS

APPENDIX

B

USACE WETLANDS DELINEATION LETTER

DEPARTMENT OF THE ARMY
CHARLESTON DISTRICT, CORPS OF ENGINEERS
1949 INDUSTRIAL PARK, ROOM 140
CONWAY, SOUTH CAROLINA 29526

REPLY TO
ATTENTION OF

RECEIVED
JUN 14 2011
00489 ~~10088~~

June 13, 2011

Regulatory Division

Grand Strand Water & Sewer
c/o The Brigman Company
Britt Feldner
PO Box 1532
Conway SC 29528

Re: SAC 1989-09259-3JY

Dear Mr. Feldner:

This is in response to your letter of January 6, 2011, requesting a wetland determination, on behalf of Grand Strand Water & Sewer, for a 322.7 acre tract, located at the end of Bucksport Road, Bucks Township, Horry County, South Carolina. The project area is depicted on the enclosed sketch entitled "Wetland Delineation of / Bucksport Marine / Industrial Park / Bucks Township, Horry County, SC / TMS# 183-00-03-042, 036 & 183-00-04-055" and dated November 24, 2010.

Based on an on-site inspection a review of aerial photography, topographic maps, National Wetland Inventory maps and soil survey information, it has been concluded that the boundaries shown on the referenced sketch are a reasonable approximation of the location and boundaries of the wetlands found on this site. The property in question contains approximately 90.6 acres of federally defined freshwater wetlands, approximately 4500 linear feet of Traditionally Navigable Waters (TNWs), and approximately 3925 linear feet of tributaries subject to the jurisdiction of this office. However, you are cautioned that this delineation is approximate, subject to change, and should be used for planning purposes only. This office should be contacted prior to performing any work in or around these approximated wetlands or other waters of the United States. In order for a more accurate delineation to be provided, these areas should be located and marked on-site, and surveyed and platted on a map (in order for the wetland line to be reproduced in the future based solely on the platted map). Upon receipt of such a plat, this office can then issue a letter verifying the accuracy of the actual jurisdictional boundaries. You should also be aware that the areas identified as wetlands or other waters of the United States may be subject to restrictions or requirements of other state or local government entities.

Please note that the actual boundary of wetlands is approximate and, therefore, is subject to change and not appealable; however, the determination of jurisdiction over these wetlands is final and this approved jurisdictional determination is an appealable action under the Corps of Engineers administrative appeal procedures defined at 33 CFR 331. The administrative appeal options, process and appeals request form is attached for your convenience and use. If a permit application is forthcoming as a result of this delineation, a copy of this letter, as well as the verified sketch should be submitted as part of the application. Otherwise, a delay could occur in confirming that a delineation was performed for the permit project area.

Please be advised that this determination is valid for five (5) years from the date of this letter unless new information warrants revision of the delineation before the expiration date. All actions concerning this determination must be complete within this time frame, or an additional determination and delineation must be conducted.

In future correspondence concerning this matter, please refer to SAC-1989-09259-3JY. A copy of this letter is being forwarded to the South Carolina Department of Health and Environmental Control Office of Ocean and Coastal Resource Management for their information.

If you have any questions concerning this matter, please contact me at 843-365-0848. In order to assist us in improving our service to you, please complete the survey found at http://per2.nwp.usace.army.mil/survey.html.

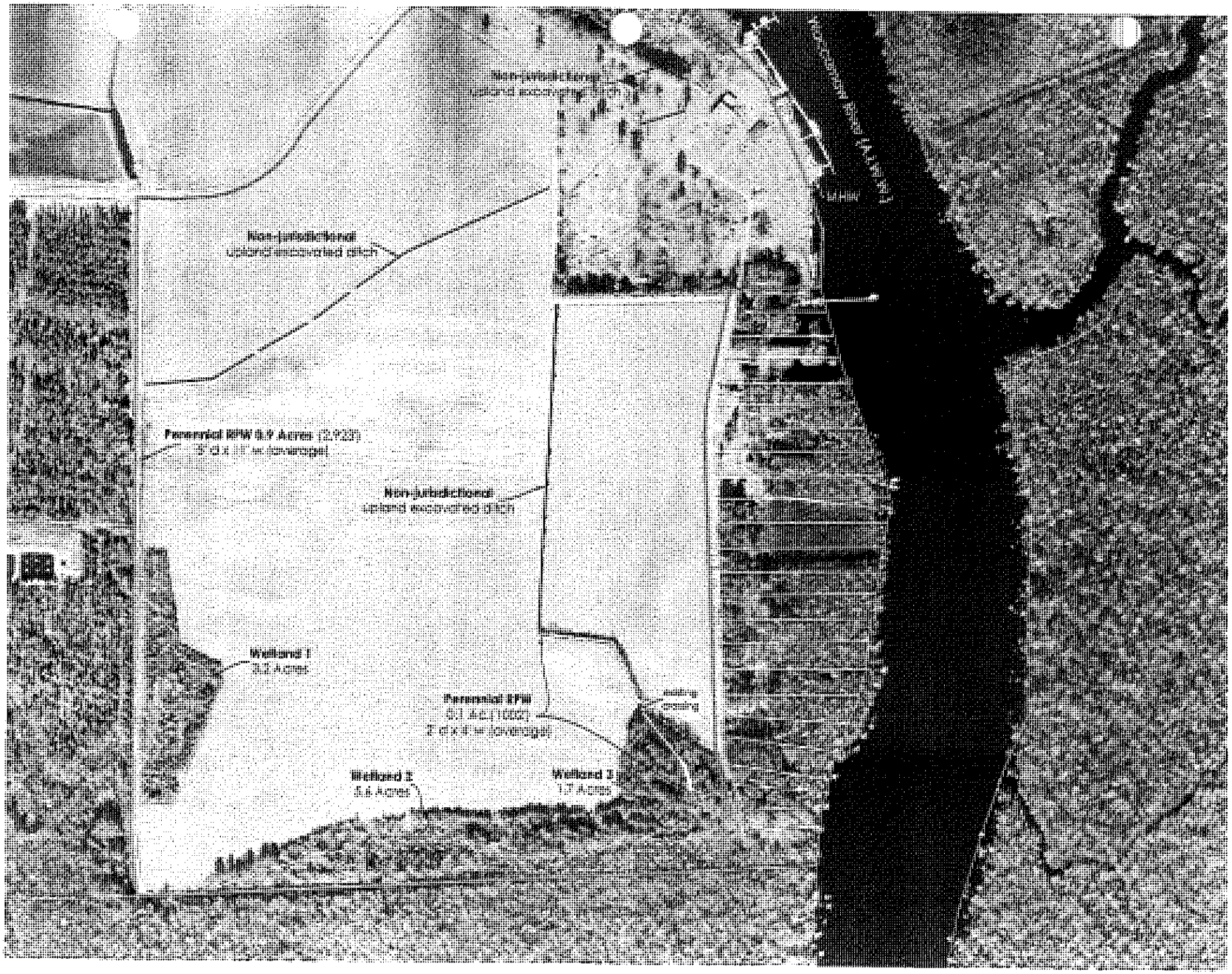
Sincerely,

T. Brian Hardee
Biologist

Enclosures:
Approved Jurisdictional Determination Form
Notification of Appeal Options
Approximate Sketch / "Wetland Delineation of / Bucksport Marine / Industrial Park / Bucks Township, Horry County, SC / TMS# 183-00-03-042, 036 & 183-00-04-055"

Copy Furnished:

South Carolina Department of Health
and Environmental Control
Office of Ocean and Coastal
Resource Management
1362 McMillan Avenue, Suite 400
Charleston, South Carolina 29405


Non-jurisdictional
upland excavated ditch
Non-jurisdictional
upland excavated ditch
Wetland 1
Wetland 2
Wetland 3

moffatt & nichol

4975 Lacross Road, Suite 151, North Charleston, SC 29406
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