P U B L I C N O T I C E

CHARLESTON DISTRICT, CORPS OF ENGINEERS
69A Hagood Avenue
Charleston, South Carolina 29403-5107

REGULATORY DIVISION
Refer to: SAC-2023-00691 December 19, 2023

Pursuant to the Final Rule on Compensatory Mitigation for Losses of Aquatic Resources (33 CFR Parts 325 and 332 and 40 CFR Part 230), Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403), and Sections 401 and 404 of the Clean Water Act (33 U.S.C. 1341) a prospectus for the proposed establishment of the Longlands Umbrella Mitigation Bank (LUMB) has been submitted to the Department of the Army and the South Carolina Interagency Review Team by

Acre Investment Management LLC
c/o Ecosystem Planning and Restoration, LLC
Attn: Kevin Tweedy, PE
1150 SE Maynard Road, Street 140
Cary, North Carolina 27511

The prospectus is for the establishment and operation of the LUMB and includes the proposed addition of a stream and wetland mitigation site called Gamble Mitigation Site. The proposed umbrella bank is located within the

Santee River and Black River Subbasins

at a location south of U.S. Highway 521 and north of the Santee River, in Williamsburg County, South Carolina (Latitude 33.539, Longitude: -80.015), St. Stephen and Greeleyville Quadrangle sheets.

In order to give all interested parties an opportunity to express their views

N O T I C E

is hereby given that written statements regarding the proposed work will be received by the **Corps** until

30 Days from the Date of this Notice,

from those interested in the activity and whose interests may be affected by the proposed work.

NOTE: This public notice and associated plans are available on the Corps' website at: http://www.sac.usace.army.mil/Missions/Regulatory/PublicNotices.

Applicant's Stated Purpose

As stated by the program sponsor, the purpose of this Prospectus is to establish guidelines and responsibilities for the establishment of the LUMB situated on property owned by Knollwood, Inc and located in Williamsburg County, South Carolina. The 7,481-acre multi-parcel property would be a privately held commercial bank used to provide compensatory mitigation for unavoidable adverse impacts to Waters of the United States, including streams and wetlands, which result from activities authorized under Sections 401 and 404 of the Clean Water Act, and Section 10 of the Rivers and Harbors Act. The intent of the Sponsor, in the development of the umbrella mitigation bank, is to eliminate redundancy in administration and focus review resources on technical issues related to the development, implementation, and success of site-specific mitigation plans for potential mitigation bank sites under the LUMB.

The overall goal of the LUMB is to responsibly address over 30 years of anthropogenic impacts from land alteration and drainage on stream and wetland systems. The objectives are to restore a naturally functioning ecosystem that includes the restoration of stream channels, wetlands, natural hydrology, and vegetation as they existed prior to drainage alterations, or to the extent practical with current and future intended land use practices. The Sponsor is proposing to meet these goals and objectives mainly through the identified objectives and associated changes in functional status as proposed below:

- Restore hydrology and vegetation in altered headwater stream and wetland systems
- Reduce sediment inputs
- Reduce nutrient inputs from lateral sources
- Reduce stream channel and stream bank instability
- Improve stream and wetland ecological habitats

Project Description

The proposed project consists of establishing a freshwater stream and wetland umbrella mitigation bank in the Santee River (HUC 03050112) and Black River (HUC 03040205) subbasins within the Middle Atlantic Coastal Plain Level III Ecoregion. The LUMB is located entirely within Williamsburg County and comprised of 4 individual

parcels: Gamble Tract (1,621,1 acres), Longlands Tract (2,295.7 acres), Mt. Hope Tract (1,890.6 acres) and Stoney Run Tract (1,673.6 acres).

The restoration design approach for all single thread stream reaches would involve reconnecting the stream to historical floodplains (Rosgen Priority Level I Restoration) to the extent practical. For any stream reaches that begin near a property line and are channelized, the grade of the stream would be raised over a distance to avoid potentially flooding the off-site property. A Rosgen Priority Level II restoration approach woud likely be used for these upstream transition reaches. This approach involves decreasing the stream bed slope, increasing the stream bed elevation, and excavating a floodplain bench at a lower elevation than the historic floodplain. Over these transition reaches, the excavated bench would become shallower, eventually ending when the grade of the restored stream reaches the historic floodplain elevation meet.

The channelized portions of existing stream reaches would be plugged and fully to partially filled, depending on design objectives and the availability of fill material. The Sponsor believes it is likely that most of the material excavated from the channels in the past was placed on the adjacent soil roads. The roads would be abandoned, allowing the fill material to be placed back into the channels. Plugs would be installed at regular intervals along the filled channels, constructed of compacted soil materials to prevent piping and movement of groundwater and drainage through the abandoned channels. Ponds would be more thoroughly analyzed during formal design development using detailed topographic information.

In its current condition, the LUMB contains numerous road crossings of the stream and wetland systems for access to the Property. Under the currently proposed conceptual mitigation design plan, it is anticipated that many of these roads and crossings would be permanently removed to maximize ecosystem connectivity and provide for a more natural flooding regime. Crossings that must remain would be excluded from mitigation credit calculations. New and upgraded crossings would be designed to maintain the design stream elevations and grades and promote the spreading of flood flows across the active floodplain through bridges, bottomless culverts, and low traffic ford crossings at the minimum width necessary for access.

Existing intact high-functioning riparian wetlands would be preserved and permanently protected. Wetland hydrology would be restored or enhanced by raising and reconnecting the restored stream beds to an active wetland floodplain, promoting higher water table conditions and more frequent overbank flooding. Native forested wetland buffer vegetation species would be planted that are appropriate for the region and expected hydrologic conditions.

Existing intact, high-functioning, nonriparian wetlands would be preserved and permanently protected when practicable. Wetland hydrology would be restored or enhanced by plugging and decommissioning ditch systems currently draining and otherwise impacting the wetlands, promoting higher water table conditions. Native forested wetland vegetation species would be planted that are appropriate for the region and expected hydrologic conditions.

Trees would be thinned and/or harvested from the bank sites prior to earthwork construction. If additional site preparation is needed to remove row beds, remnant slash or other disturbances, it would be undertaken following harvesting. Planting of wetland trees and shrubs would be implemented in all wetland mitigation areas following plantation removal and regrading activities, concentrating obligate wetland species in areas where longer hydroperiods are expected and more facultative plants in the riparian buffer where wetlands are not anticipated and higher elevation areas. Streambank stabilization plantings would include temporary and permanent seed mix, mulching, and coir fiber matting to protect disturbed soils and woody native species. Live-staking may be used to encourage woody vegetation grown on newly restored streambanks. The target plant communities, species lists, planting densities, and methods/materials would be detailed for all areas of the mitigation sites to be vegetatively restored. All augmented plants would be hand-planted.

According to the Sponsor invasive vegetation is currently limited within most of the mitigation sites, with a few occurrences of Chinese privet and Japanese honeysuckle, and these are treated periodically when discovered. During construction and the operational phase of each bank site, invasive vegetation would be aggressively suppressed using mechanical and herbicide methods.

The Sponsor is proposing to add the Gamble Mitigation Site (33.485, Longitude: -79.917) as the first site under the LUMB. Evaluations were completed at a watershed-scale to capture the full extent of mitigation potential for the Gamble Mitigation Site. These evaluations resulted in the estimated opportunity for approximately 13,950 linear feet of stream mitigation practices, representing approximately 7,410 functional feet, and approximately 56.4 acres of potential wetland mitigation practices for the Gamble Mitigation Site. For each of the Gamble Mitigation Site stream reaches, restoration activities would focus on reconnecting the streams to their historic floodplain elevations through plugging and/or filling the stream reaches in the conservation easement whenever feasible. Wetland hydrology would be restored or enhanced by reconnecting the restored stream beds to an active wetland floodplain by filling and/or plugging the existing channel in the conservation easement to the extent practical to safely convey overland flow outside the proposed conservation easement.

As proposed the Gamble Mitigation Site would provide in-kind compensatory mitigation for authorized impacts to aquatic resources within the proposed service areas in the Middle Atlantic Coastal Plain and Southern Coastal Plain Level III Ecoregion (as shown on the attached map). The work required to complete the proposed activities on the mitigation site would be reviewed under Department of the Army Nationwide Permit #27.

South Carolina Department of Health and Environmental Control

The District Engineer has concluded that the discharges associated with this

project, both direct and indirect, should be reviewed by the certifying authority, South Carolina Department of Health and Environmental Control, in accordance with provisions of Section 401 of the Clean Water Act (CWA). The CWA Section 401 Certification Rule (Certification Rule, 40 CFR 121), effective September 11, 2020, requires certification, or waiver, for any license or permit that authorizes an activity that may result in a discharge. The scope of a CWA Section 401 Certification is limited to assuring that a discharge from a Federally licensed or permitted activity would comply with water quality requirements. The applicant is responsible for requesting certification and providing required information to the certifying authority. In accordance with Certification Rule part 121.12, the Corps will notify the U.S. Environmental Protection Agency Administrator when it has received a Department of the Army (DA) permit application and the related certification. The Administrator is responsible for determining if the discharge may affect water quality in a neighboring jurisdiction. The DA permit may not be issued pending the conclusion of the Administrator's determination of effects on neighboring jurisdictions.

Essential Fish Habitat

This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. Implementation of the proposed project would not impact estuarine substrates and emergent wetlands utilized by various life stages of species comprising the shrimp, and snapper-grouper management complexes. The District Engineer's initial determination is that the proposed action would not have a substantial individual or cumulative adverse impact on EFH or fisheries managed by the South Atlantic Fishery Management Council and the National Marine Fisheries Service (NMFS). The District Engineer's final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the NMFS.

Endangered Species

Pursuant to Section 7(c) of the Endangered Species Act of 1973 (as amended), the District Engineer's final determination relative to site specific project impacts associated with individual site development plans would be subject to review by and coordination with the U.S. Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS), as appropriate. Each mitigation site proposed under the Umbrella Bank would be placed on public notice and consultation requirements of Section 7(c) of the Endangered Species Act of 1973 (as amended) would be met prior to any Corps authorizations, or approvals.

In regard to the proposed Gamble site included in the prospectus, pursuant to the Section 7 of the Endangered Species Act of 1973 (as amended), the Corps has reviewed the most recently available information and based on the location of the project the following federally threatened and/or endangered species may be present in the vicinity of the proposed work: Red-cockaded Woodpecker *(Picoides*

borealis), Northern-Long eared Bat (*Perimyotis* subflavus), Tri-colored bat (*Perimyotis subflavus*), West Indian Manatee (*Trichecus manatus*) Canby's Dropwort *(Oxypolis canbyi),* and American Chaffseed *(Schwalbea americana).*

Pursuant to the Section 7 of the Endangered Species Act of 1973 (as amended), the District Engineer has consulted the most recently available information and has made no determination of effect on any Federally endangered, threatened, or proposed species. This public notice serves as a request to the U.S. Fish and Wildlife Service and the National Marine Fisheries Service for any additional information they may have on whether any Federally listed or proposed to be listed endangered or threatened species and/or designated or proposed critical habitat may be present in the area which would be affected by the activity. The Corps will initiate consultation with the USFWS and/or NMFS as needed for any determinations other than No Effect. If necessary, a biological assessment (or other similar document) detailing our analysis of the potential effects of the action on these species will be provided to the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service at that time.

Cultural Resources

Pursuant to Section 106 of the National Historic Preservation Act (NHPA), this public notice also constitutes a request to Indian Tribes to notify the District Engineer of any historic properties of religious and cultural significance to them that may be affected by the proposed undertaking.

In accordance with the National Historic Preservation Act (NHPA), the District Engineer's final eligibility and effects determination for individual site development plans would be based upon coordination with the SHPO and/or THPO, as appropriate and with full consideration given to the proposed undertaking's potential direct and indirect effects on historic properties within the Corps-identified permit area. Each mitigation site proposed under the umbrella instrument would be placed on public notice and consultation requirements of the NHPA would be met prior to any Corps authorizations, or approvals.

In regard to the Gamble mitigation site included in the prospectus, in accordance with Section 106 of the NHPA, the District Engineer has consulted South Carolina ArchSite (GIS), for the presence or absence of historic properties (as defined in 36 C.F.R. 800.16)(*l*)(1)), and has initially determined that there are no historic properties present,; therefore, there will be no effect on historic properties. To ensure that other historic properties that the District Engineer is not aware of are not overlooked, this public notice also serves as a request to the State Historic Preservation Office and other interested parties to provide any information they may have with regard to historic properties. This public notice serves as a request for concurrence within 30 days from the SHPO (and/or Tribal Historic Preservation Officer).

The District Engineer's final eligibility and effect determination will be based upon coordination with the SHPO and/or THPO, as appropriate and required and with full consideration given to the proposed undertaking's potential direct and indirect effects on

historic properties within the Corps-identified permit area.

Corps' Evaluation

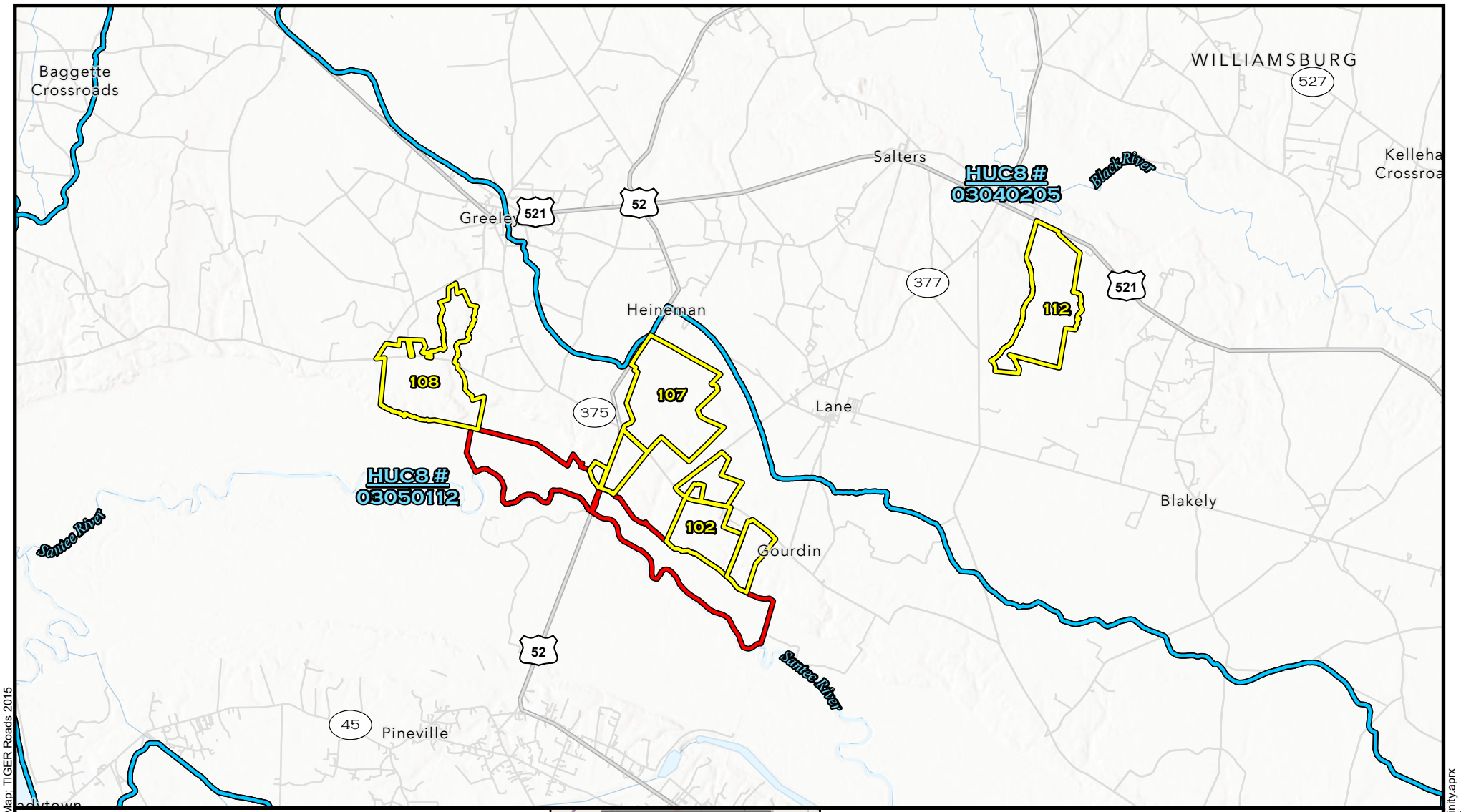
The decision whether to approve or deny the proposed mitigation bank will be based on an evaluation of the probable impact including cumulative impacts of the activity on the public interest. The benefit which reasonably may be expected to accrue from the project must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the project will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production and, in general, the needs and welfare of the people. In cases of conflicting property rights, the Corps cannot undertake to adjudicate rival claims.

Solicitation of Public Comment

The Corps is soliciting comments from the public; Federal, state, and local agencies, and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this activity. Any comments received will be considered by the Corps to determine whether to approve or deny the proposed mitigation bank. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the activity. **Please submit comments by email, identifying the project of interest by public notice number (SAC-2023-00691), to Erica.L.Stone@usace.army.mil or in writing to the following address:**

U.S. Army Corps of Engineers
Conway Regulatory Office
1949 Industrial Park Road, Room 140
Conway, South Carolina 29526

A complete copy of the prospectus is available online in the Regulatory In-Lieu Fee and Bank Information Tracking System (RIBITS) at https://ribits.ops.usace.army.mil/ and can be provide for review upon request. If there are any questions concerning this public notice, please contact Erica Stone, project manager, at (843) 817-7188 or by email at Erica.L.Stone@usace.army.mil.



- Tract Boundary
- Existing Conservation Easement Held by Cogaree Land Trust
- 8-Digit HUC Boundary

Tract Code	Owner	Tract	TID	Acres
102	Knollwood, Inc. (Longlands Plantation)	Gamble/Gourdin	10024102	1621.1
107	Knollwood, Inc. (Longlands Plantation)	Longlands	10024107	2295.7
108	Knollwood, Inc. (Longlands Plantation)	Mt. Hope	10024108	1890.6
112	Knollwood, Inc. (Longlands Plantation)	Stoney Run	10024112	1673.6

Longlands Umbrella Mitigation Bank

Vicinity Map

Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

N

0 6,000 12,000 Feet

1:170,000

FIGURE 1

DATE: November 2023

Sources: ESRI Human Geography Map; Open Street Map; TIGER Roads 2015

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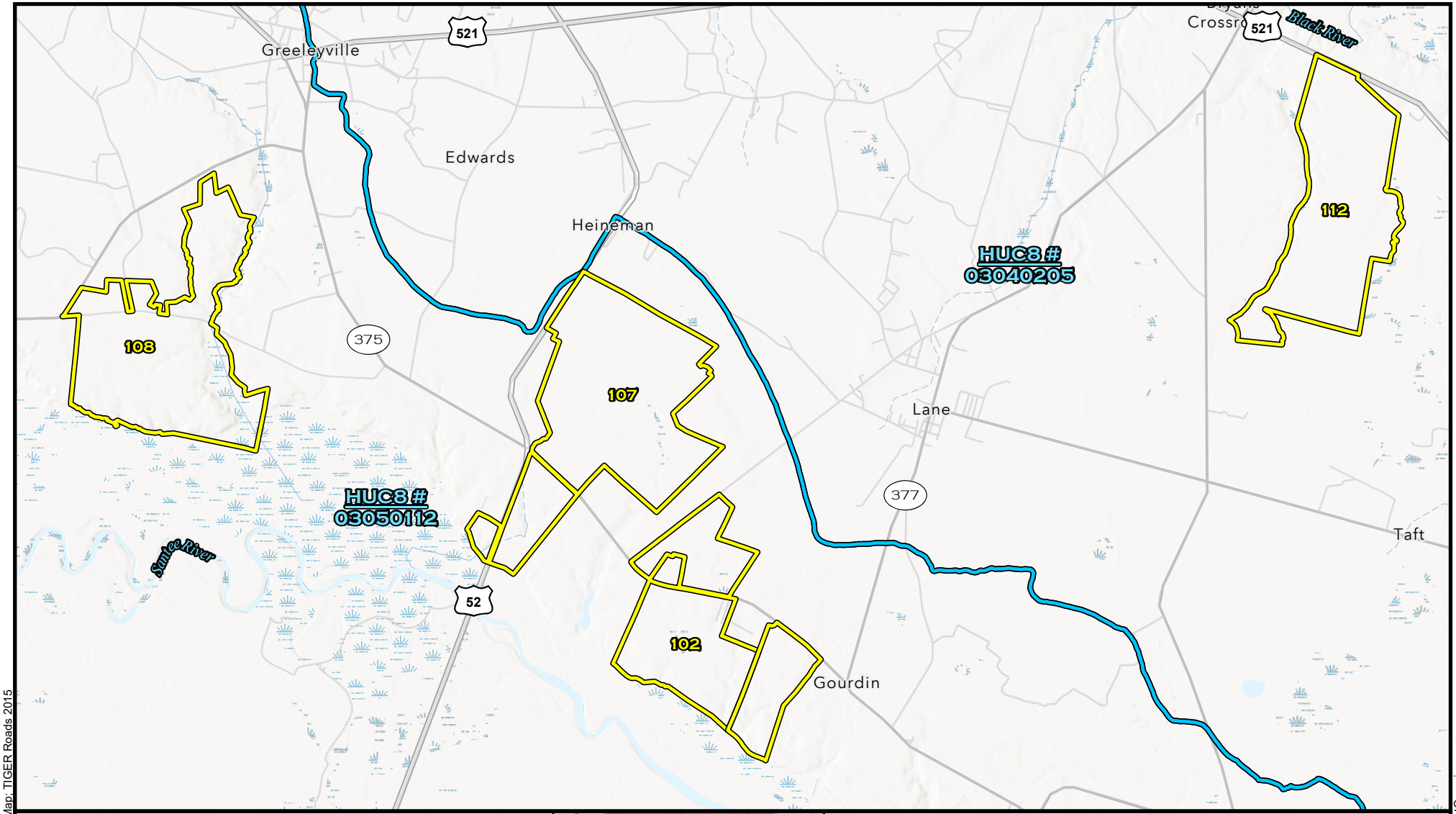
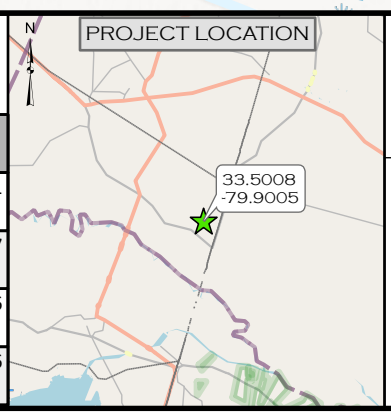


Tract Boundary
8-Digit HUC Boundary

Tract Code	Owner	Tract	TID	Acres
102	Knollwood, Inc. (Longlands Plantation)	Gamble/Gourdin	10024102	1621.1
107	Knollwood, Inc. (Longlands Plantation)	Longlands	10024107	2295.7
108	Knollwood, Inc. (Longlands Plantation)	Mt. Hope	10024108	1890.6
112	Knollwood, Inc. (Longlands Plantation)	Stoney Run	10024112	1673.6



Longlands Umbrella Mitigation Bank

Tract Overview Map

Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

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1:90,000

FIGURE 2

DATE: November 2023

Sources: ESRI Human Geography Map; Open Street Map; TIGER Roads 2015

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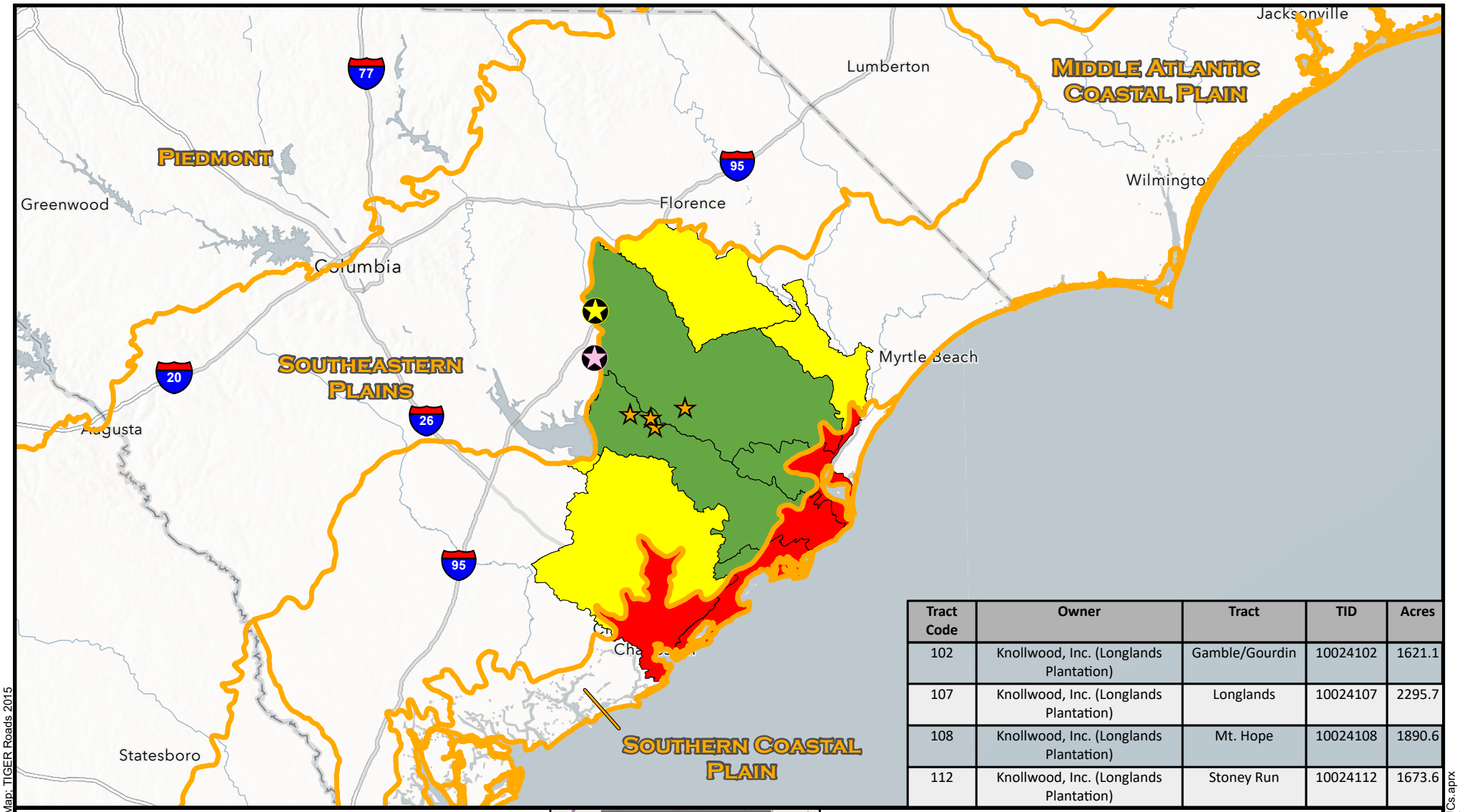
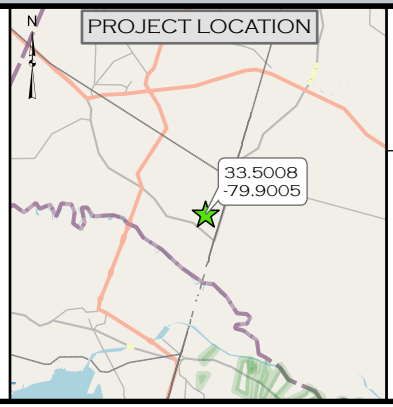


Tract Code	Owner	Tract	TID	Acres
102	Knollwood, Inc. (Longlands Plantation)	Gamble/Gourdin	10024102	1621.1
107	Knollwood, Inc. (Longlands Plantation)	Longlands	10024107	2295.7
108	Knollwood, Inc. (Longlands Plantation)	Mt. Hope	10024108	1890.6
112	Knollwood, Inc. (Longlands Plantation)	Stoney Run	10024112	1673.6

- Tract Locations
- Level III Ecoregions
- Primary Service Area
- Secondary Service Area
- Tertiary Service Area

Approved and Pending Mitigation Banks

- Pocotaligo Swamp Mitigation Bank
- SCDOT Black River



Longlands Umbrella Mitigation Bank

Service Area Map

Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

N

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1:1,900,000

FIGURE 3

DATE: November 2023

Sources: ESRI Human Geography Map; Open Street Map; TIGER Roads 2015

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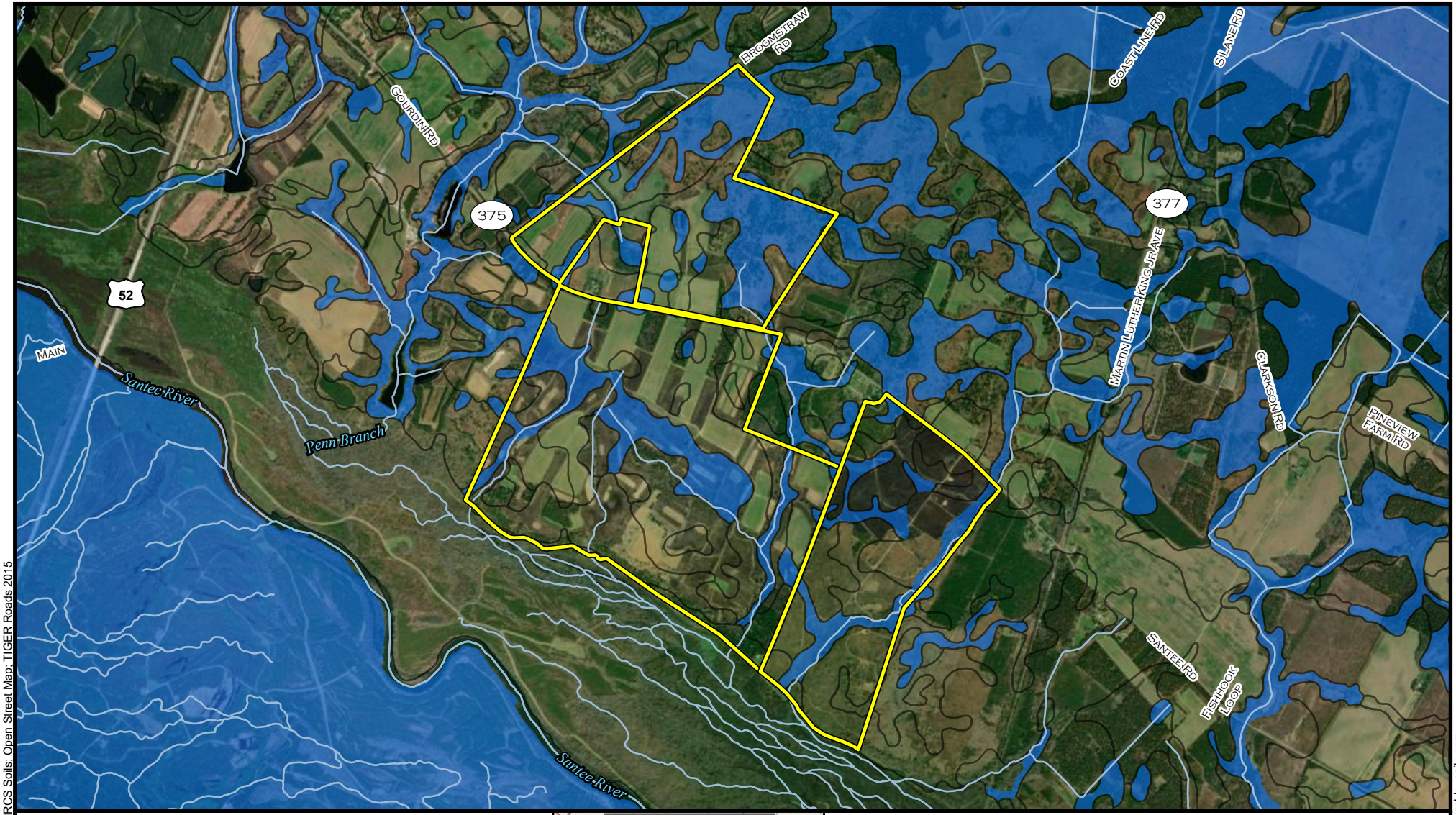


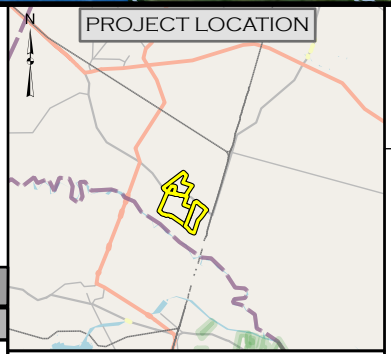
Tract Boundary

NHD Streams

Soil Hydric Class (Per NRCS Mapping)

Hydric

Non-Hydric



Map Center: 33.492, -79.917

Target Parcel Summary

Tract Code	Owner	Tract	8-Digit HUC
102	Knollwood, Inc. (Longlands Plantation)	Gamble/Gourdin	03050112

Longlands Umbrella Mitigation Bank

Mitigation Potential Map

Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

N

0 1,000 2,000 Feet

1:35,000

FIGURE 4A
Tract Code: 102

DATE:
November 2023

Sources: ESRI Imagery 2022; USGS NHD Streams; NRCS Soils; Open Street Map; TIGER Roads 2015

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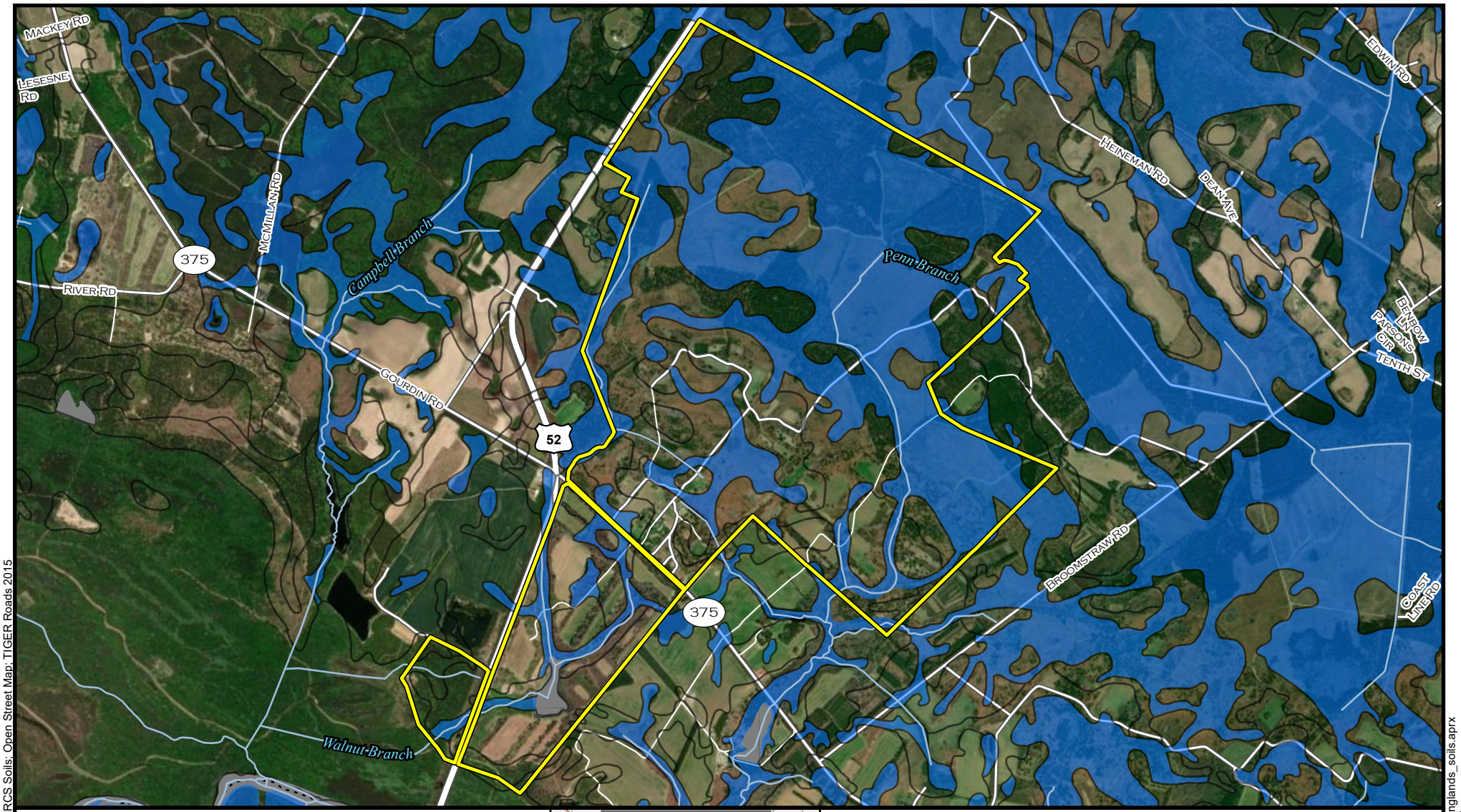
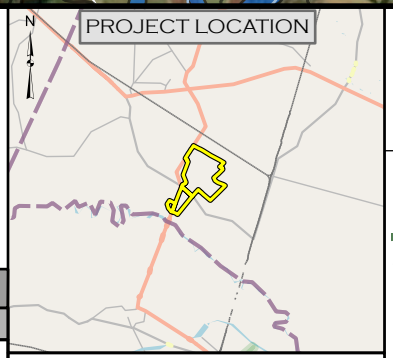


Tract Boundary
NHD Streams

Soil Hydric Class (Per NRCS Mapping)

Hydric
Non-Hydric



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Target Parcel Summary			
Tract Code	**Owner**	**Tract**	**8-Digit HUC**
107	Knollwood, Inc. (Longlands Plantation)	Longlands	03050112

Longlands Umbrella Mitigation Bank

Mitigation Potential Map

Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

N

0 1,000 2,000 Feet

1:35,000

FIGURE 4B
Tract Code: 107

DATE:
November 2023

Sources: ESRI Imagery 2022; USGS NHD Streams; NRCS Soils; Open Street Map; TIGER Roads 2015

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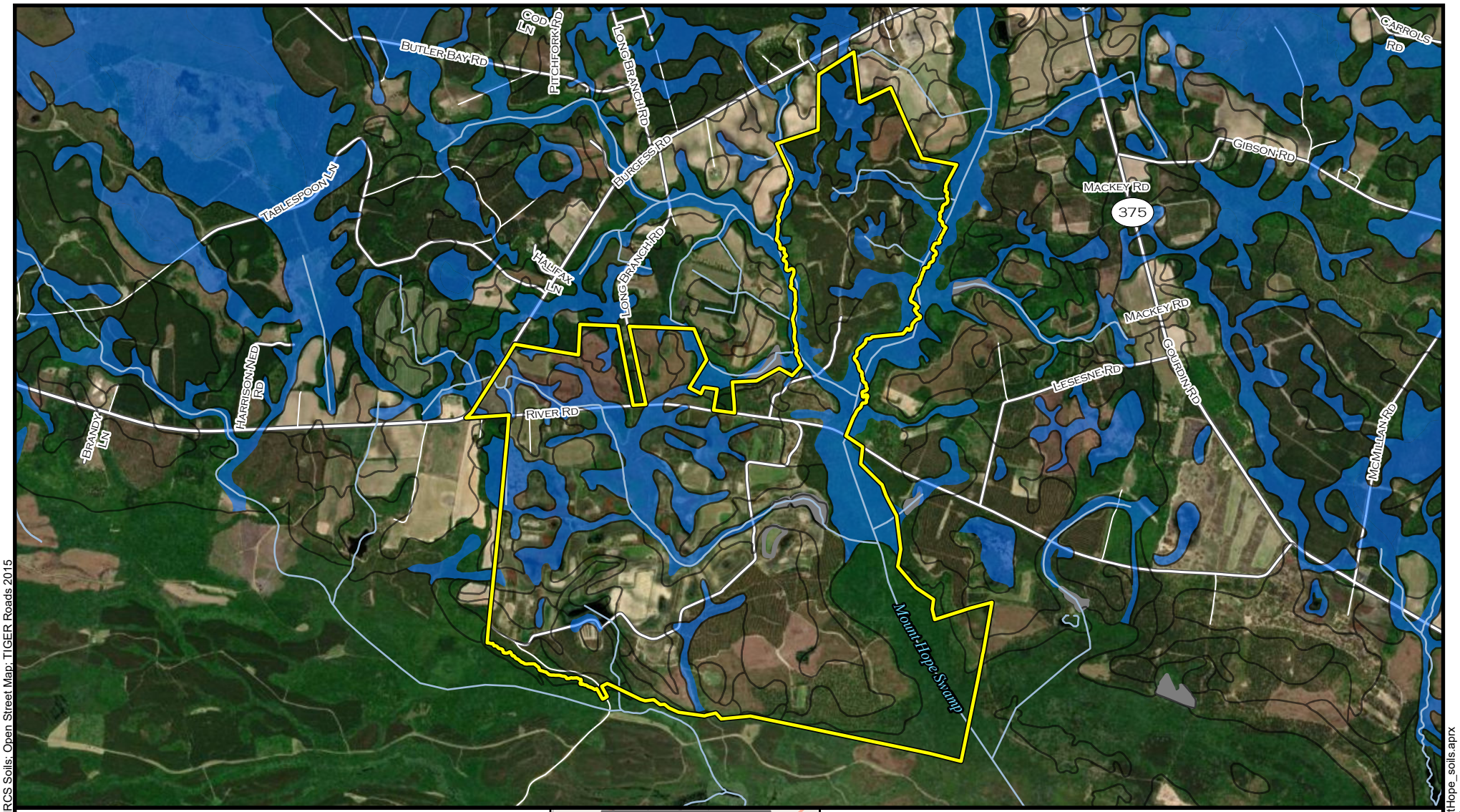


Tract Boundary

NHD Streams

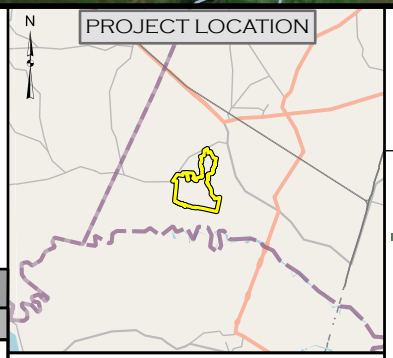
Soil Hydric Class (Per NRCS Mapping)

Hydric

Non-Hydric

Target Parcel Summary

Tract Code	Owner	Tract	8-Digit HUC
108	Knollwood, Inc. (Longlands Plantation)	Mt. Hope	03050112



Map Center: 33.539, -80.015

Longlands Umbrella Mitigation Bank

Mitigation Potential Map

Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

N

0 1,000 2,000 Feet

1:35,000

FIGURE 4C
Tract Code: 108

DATE:
November 2023

Sources: ESRI Imagery 2022; USGS NHD Streams; NRCS Soils; Open Street Map; TIGER Roads 2015

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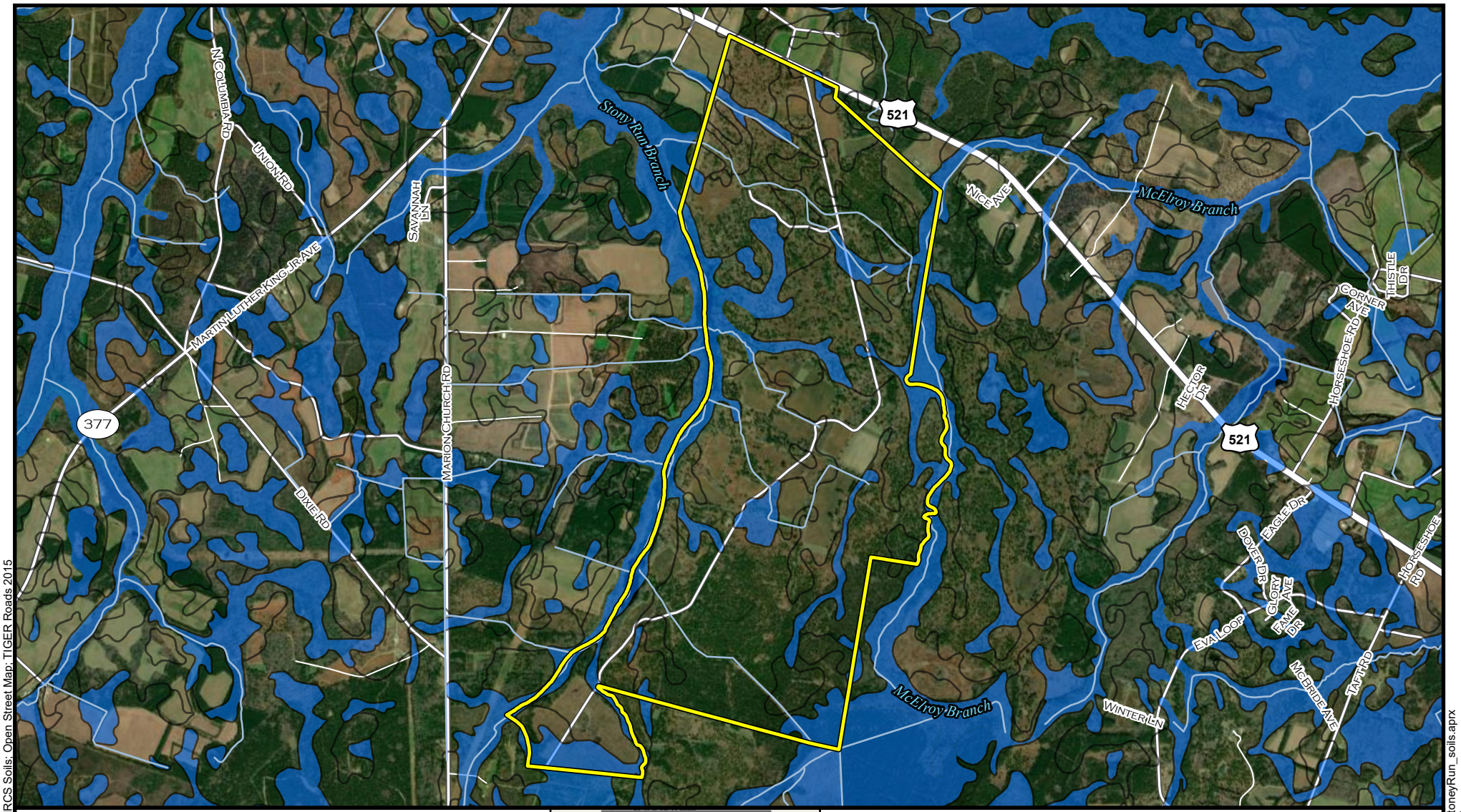


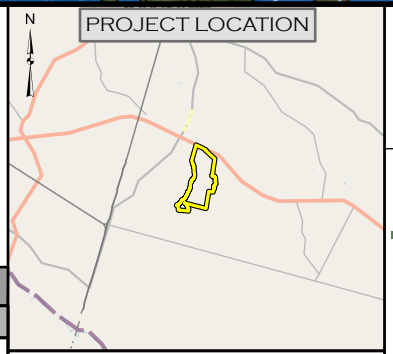
Tract Boundary

NHD Streams

Soil Hydric Class (Per NRCS Mapping)

Hydric

Non-Hydric



Map Center: 33.554, -79.809

Target Parcel Summary			
Tract Code	**Owner**	**Tract**	**8-Digit HUC**
112	Knollwood, Inc. (Longlands Plantation)	Stoney Run	03040205

Longlands Umbrella Mitigation Bank

Mitigation Potential Map

Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

N

0 1,000 2,000 Feet

1:35,000

Figure 4D
Tract Code: 112

Date:
November 2023

Sources: ESRI Imagery 2022; USGS NHD Streams; NRCS Soils; Open Street Map; TIGER Roads 2015

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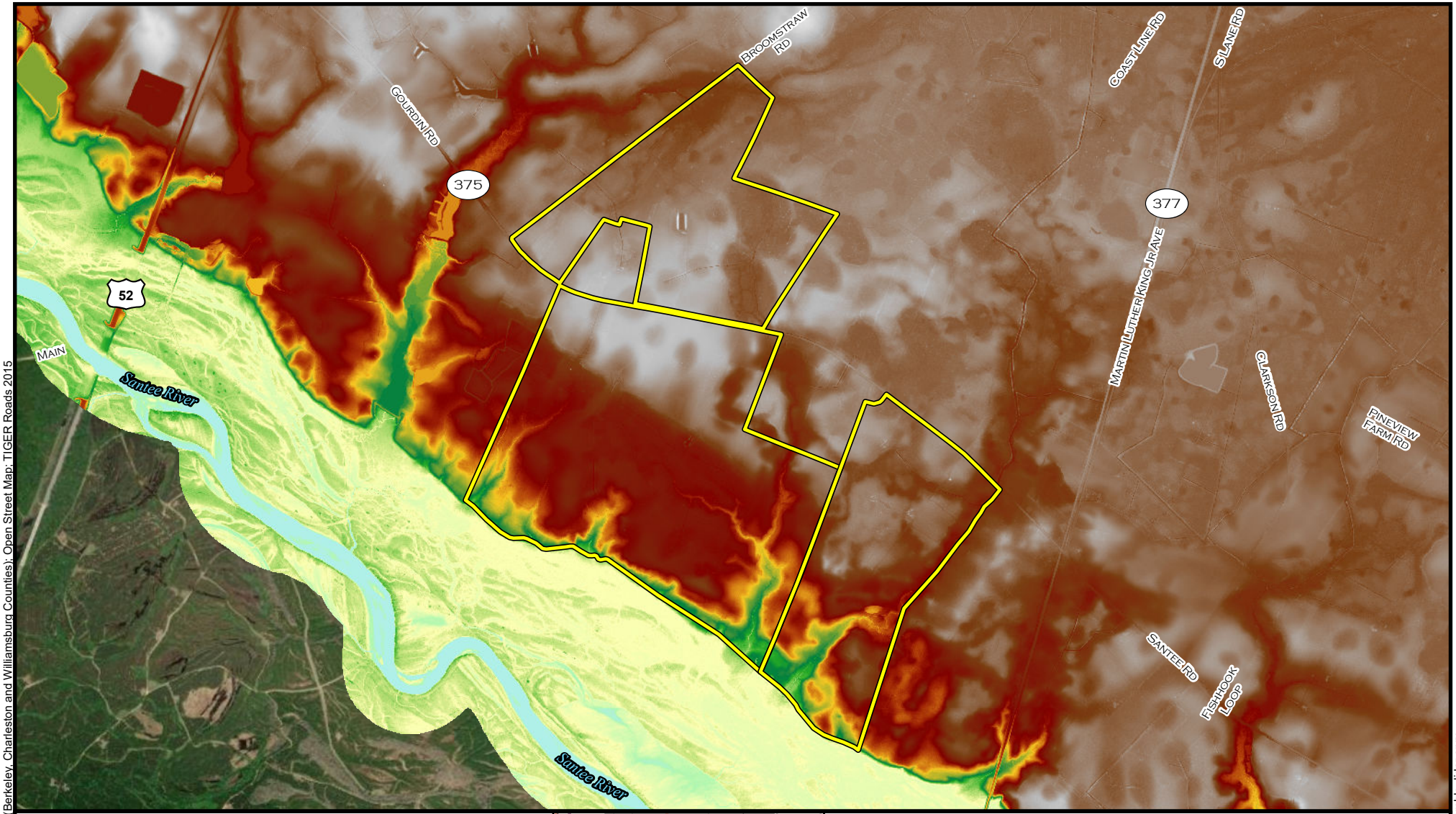
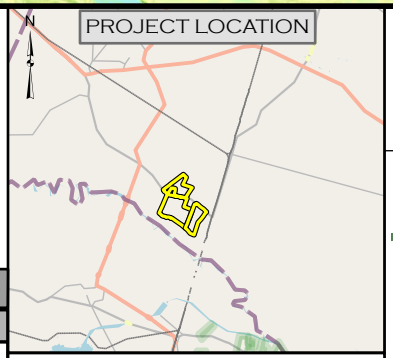


Tract Boundary

Elevation(ft)

84.7009

10.7997



Map Center: 33.492, -79.917

Target Parcel Summary

Tract Code	Owner	Tract	8-Digit HUC
102	Knollwood, Inc. (Longlands Plantation)	Gamble/Gourdin	03050112

Longlands Umbrella Mitigation Bank

Lidar Map

Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

N

0 1,000 2,000 Feet

1:35,000

Figure 5A
Tract Code: 102

Date:
November 2023

Sources: 2017 SC DNR Lidar DEM: Coastal Counties (Berkeley, Charleston and Williamsburg Counties); Open Street Map; TIGER Roads 2015

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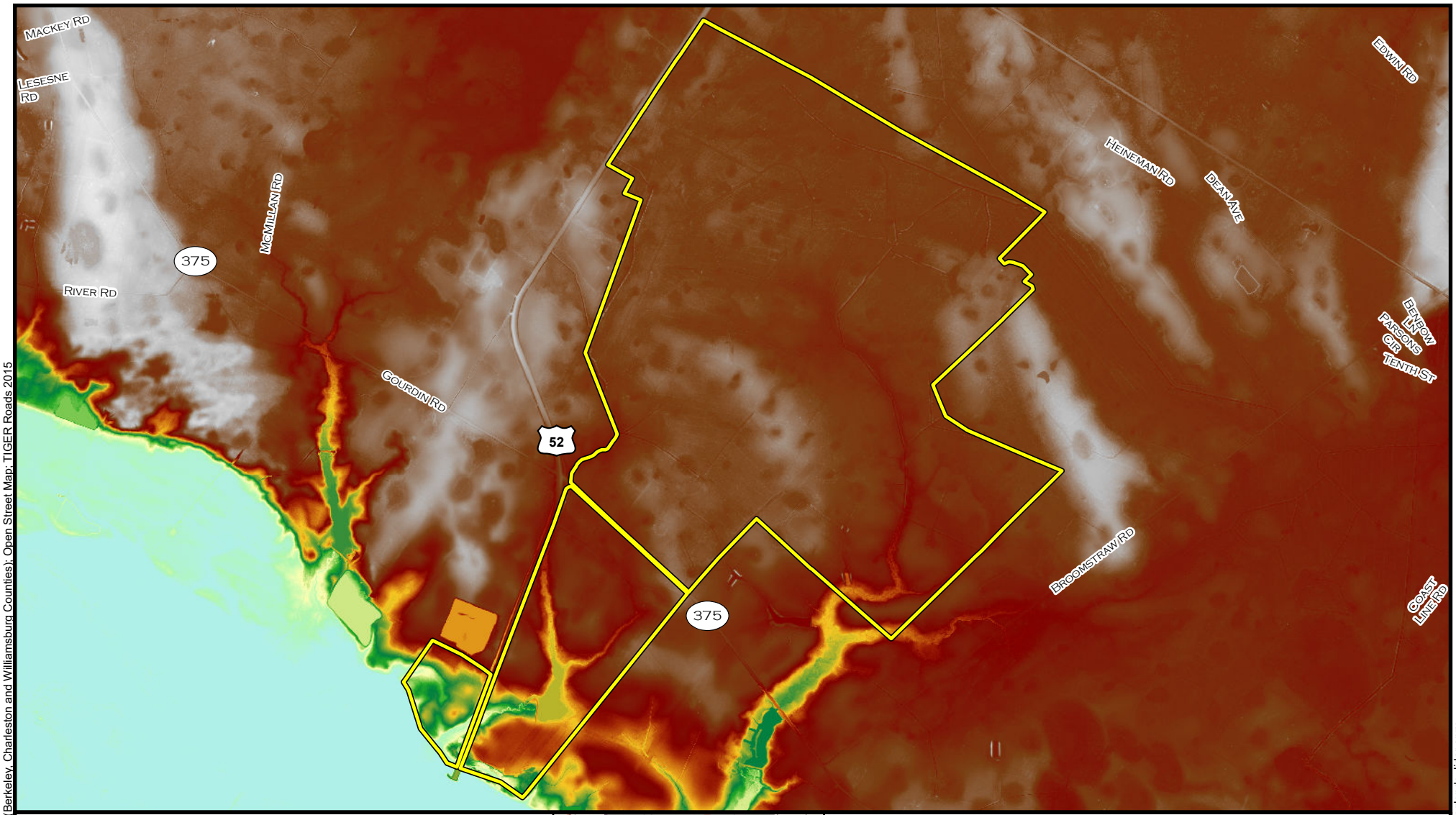
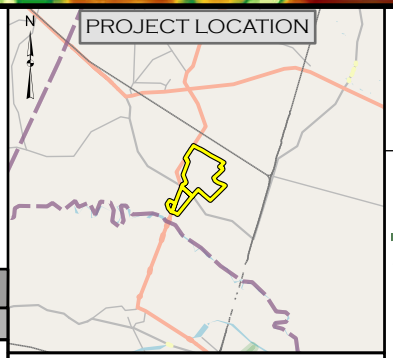


Tract Boundary

Elevation(ft)

89.9783

11.4



Map Center: 33.522, -79.938

Longlands Umbrella Mitigation Bank

Lidar Map

Williamsburg County, SC

Target Parcel Summary

Tract Code	Owner	Tract	8-Digit HUC
107	Knollwood, Inc. (Longlands Plantation)	Longlands	03050112

Prepared By:

Ecosystem Planning & Restoration

N

0 1,000 2,000 Feet

1:35,000

FIGURE 5B
Tract Code: 107

DATE:
November 2023

Sources: 2017 SC DNR Lidar DEM: Coastal Counties (Berkeley, Charleston and Williamsburg Counties); Open Street Map; TIGER Roads 2015

Path: C:\Users\chibbard\Desktop\LUMB\LUMB\fig5b_longlands_lidar.aprx
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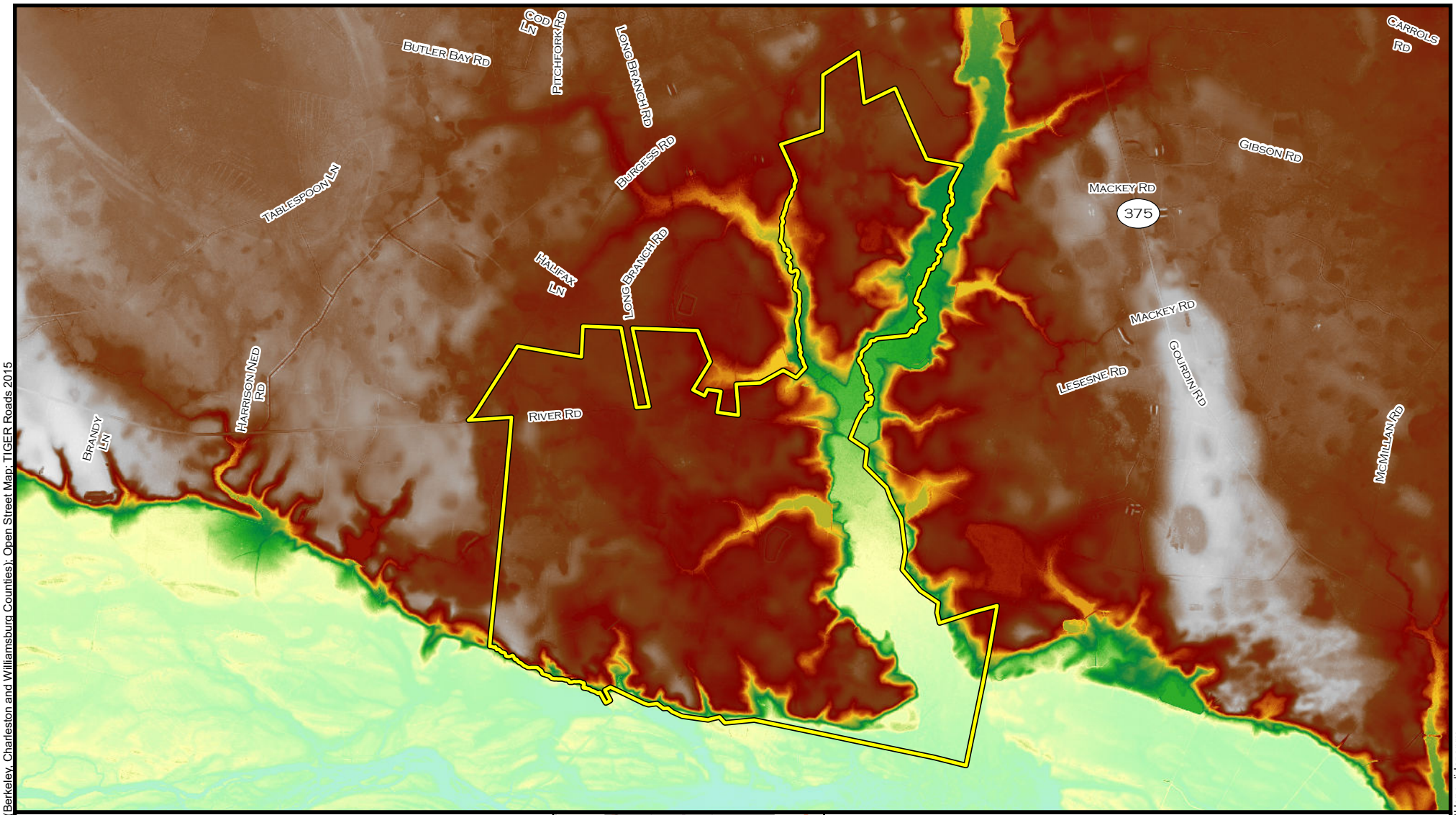


Tract Boundary

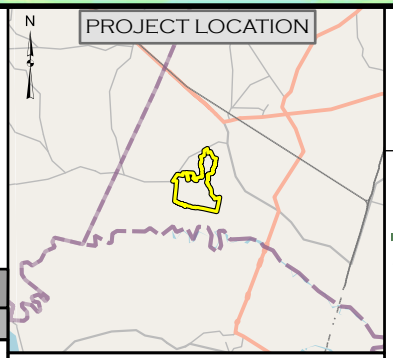
Elevation(ft)

92.894

25.5601

Target Parcel Summary

Tract Code	Owner	Tract	8-Digit HUC
108	Knollwood, Inc. (Longlands Plantation)	Mt. Hope	03050112



Map Center: 33.539, -80.015

Longlands Umbrella Mitigation Bank

Lidar Map

Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

N

0 1,000 2,000 Feet

1:35,000

FIGURE 5C
Tract Code: 108

DATE:
November 2023

Sources: 2017 SC DNR Lidar DEM: Coastal Counties (Berkeley, Charleston and Williamsburg Counties); Open Street Map; TIGER Roads 2015

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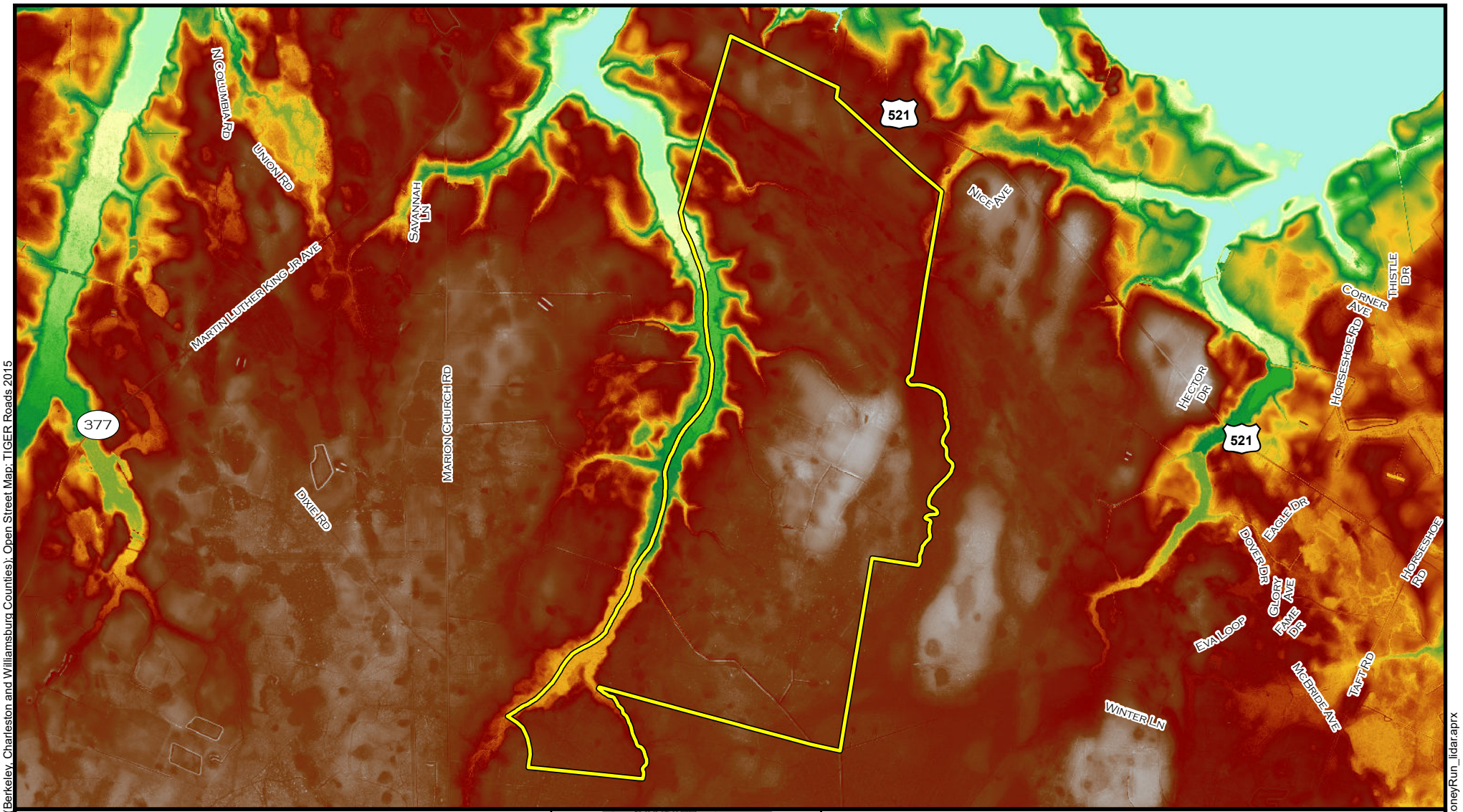


Tract Boundary

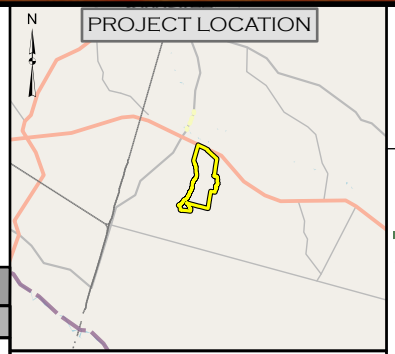
Elevation(ft)

75.6294

20.124

Target Parcel Summary

Tract Code	Owner	Tract	8-Digit HUC
112	Knollwood, Inc. (Longlands Plantation)	Stoney Run	03040205



Map Center: 33.554, -79.809

Longlands Umbrella Mitigation Bank

Lidar Map

Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

N

0 1,000 2,000 Feet

1:35,000

FIGURE 5D
Tract Code: 112

DATE:
November 2023

Sources: 2017 SC DNR Lidar DEM: Coastal Counties (Berkeley, Charleston and Williamsburg Counties); Open Street Map; TIGER Roads 2015

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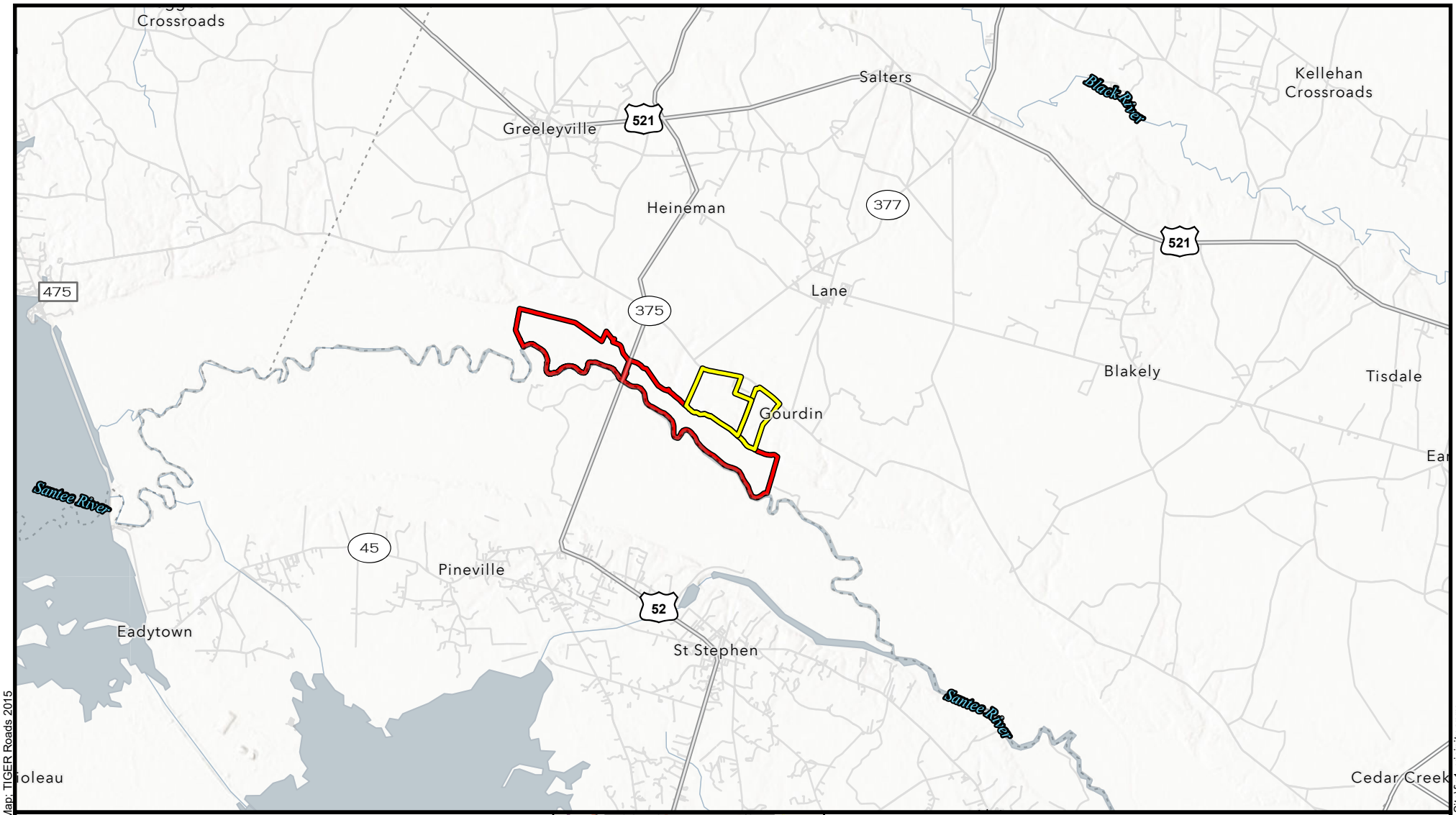
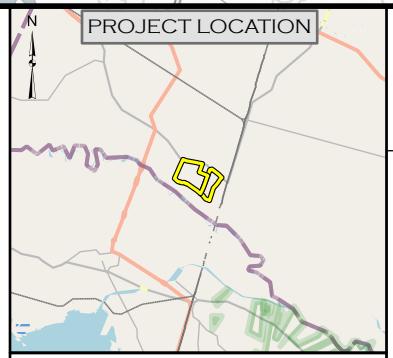


GAMBLE MITIGATION SITE

EXISTING CONSERVATION EASEMENT HELD BY COGAREE LAND TRUST



MAP CENTER: 33.485, -79.917

LONGLANDS UMBRELLA MITIGATION BANK
GAMBLE MITIGATION SITE
VICINITY MAP
WILLIAMSBURG COUNTY, SC

PREPARED BY:

ECOSYSTEM PLANNING & RESTORATION

N

0 5,000 10,000 Feet

1:200,000

FIGURE A-1

DATE: NOVEMBER 2023

Sources: ESRI Human Geography Map; Open Street Map; TIGER Roads 2015

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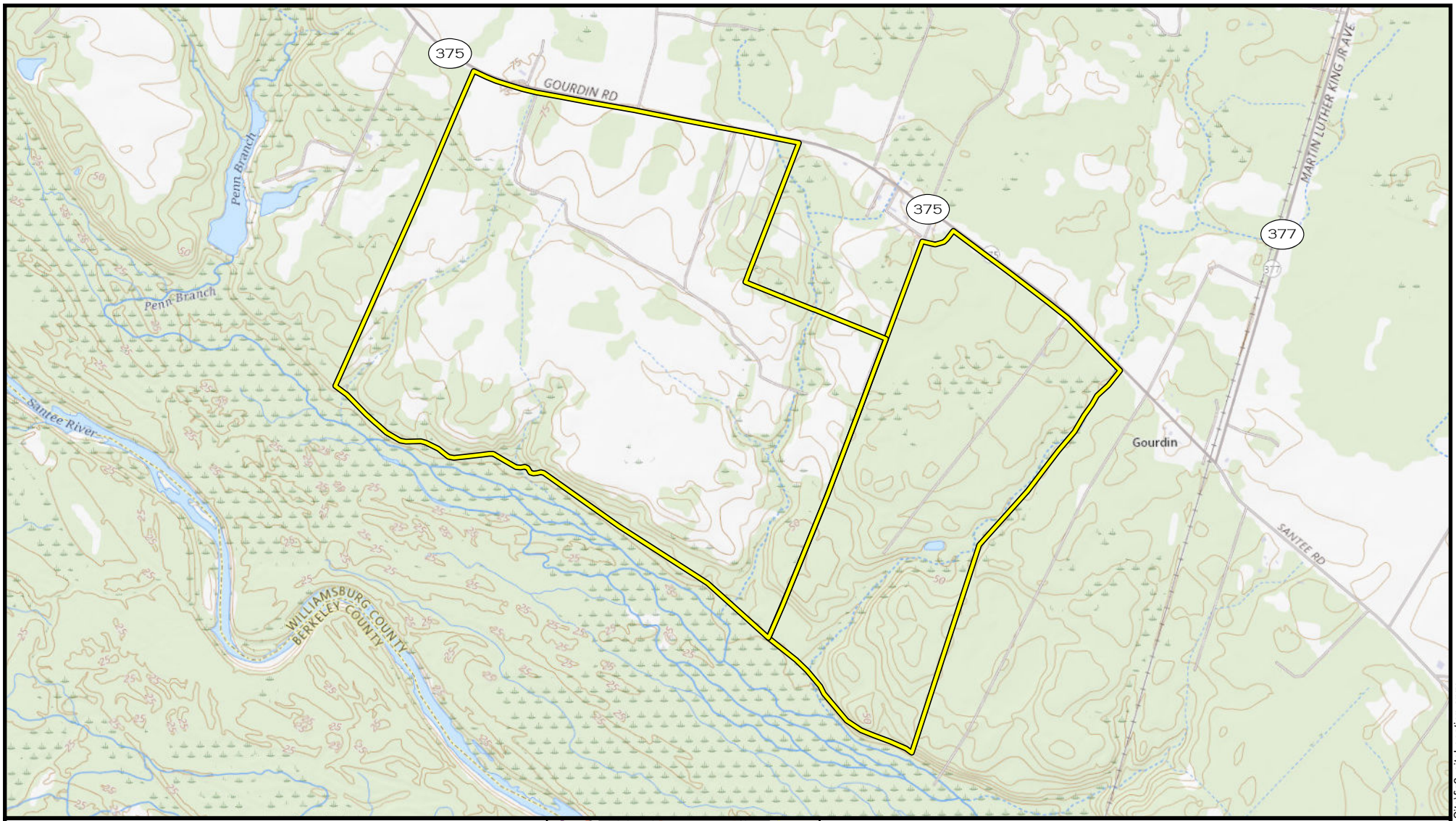
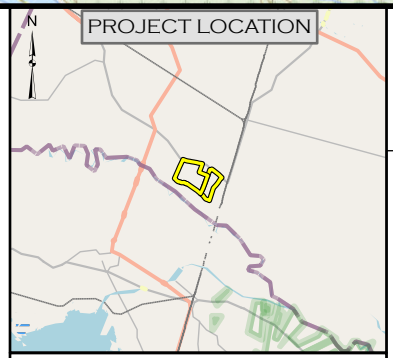


GAMBLE MITIGATION SITE

USGS 24K QUADRANGLE



MAP CENTER: 33.485, -79.917

LONGLANDS UMBRELLA MITIGATION BANK
GAMBLE MITIGATION SITE
SITE LOCATION MAP
WILLIAMSBURG COUNTY, SC

PREPARED BY:

ECOSYSTEM PLANNING & RESTORATION

N

0 720 1,440 Feet

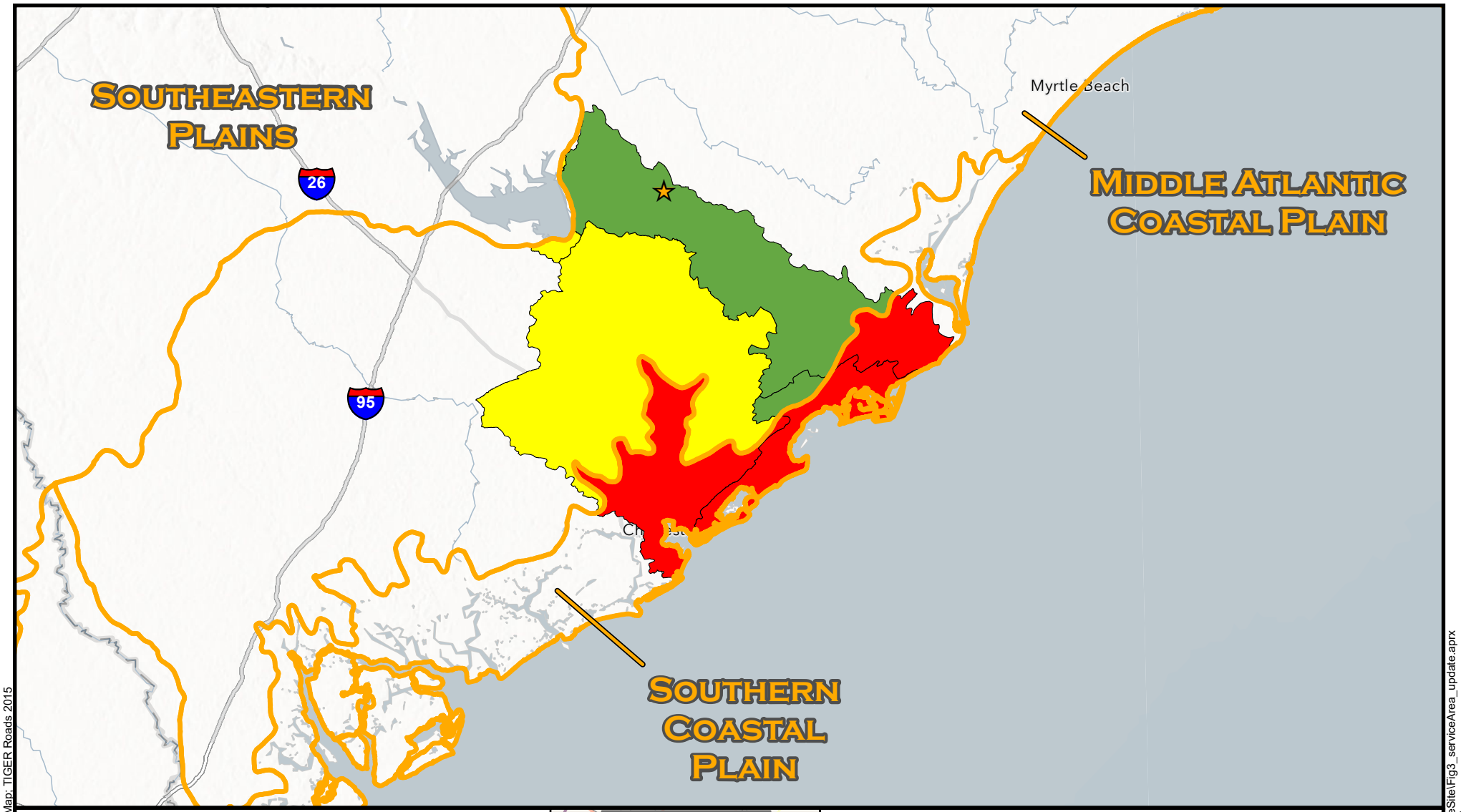
1:24,000

FIGURE A-2

DATE: NOVEMBER 2023

Sources: USGS National Map; Open Street Map

Path: C:\Users\chibbard\Desktop\LUMB\LUMB_GambleSite\fig2_siteLocation.aprx
Date: 11/3/2023 | Time: 4:25 PM | User Name: chibbard



Gamble Mitigation Site
Level III Ecoregions
Primary Service Area
Secondary Service Area
Tertiary Service Area

Map Center: 33.041, -79.766

Longlands Umbrella Mitigation Bank

Service Area Map

Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

N

0 50,000 100,000 Feet

1:1,250,000

FIGURE A-3

DATE: November 2023

Sources: ESRI Human Geography Map; Open Street Map; TIGER Roads 2015

Path: C:\Users\chibbard\Desktop\LUMB\LUMB_GambleSite\Fig3_serviceArea_update.aprx
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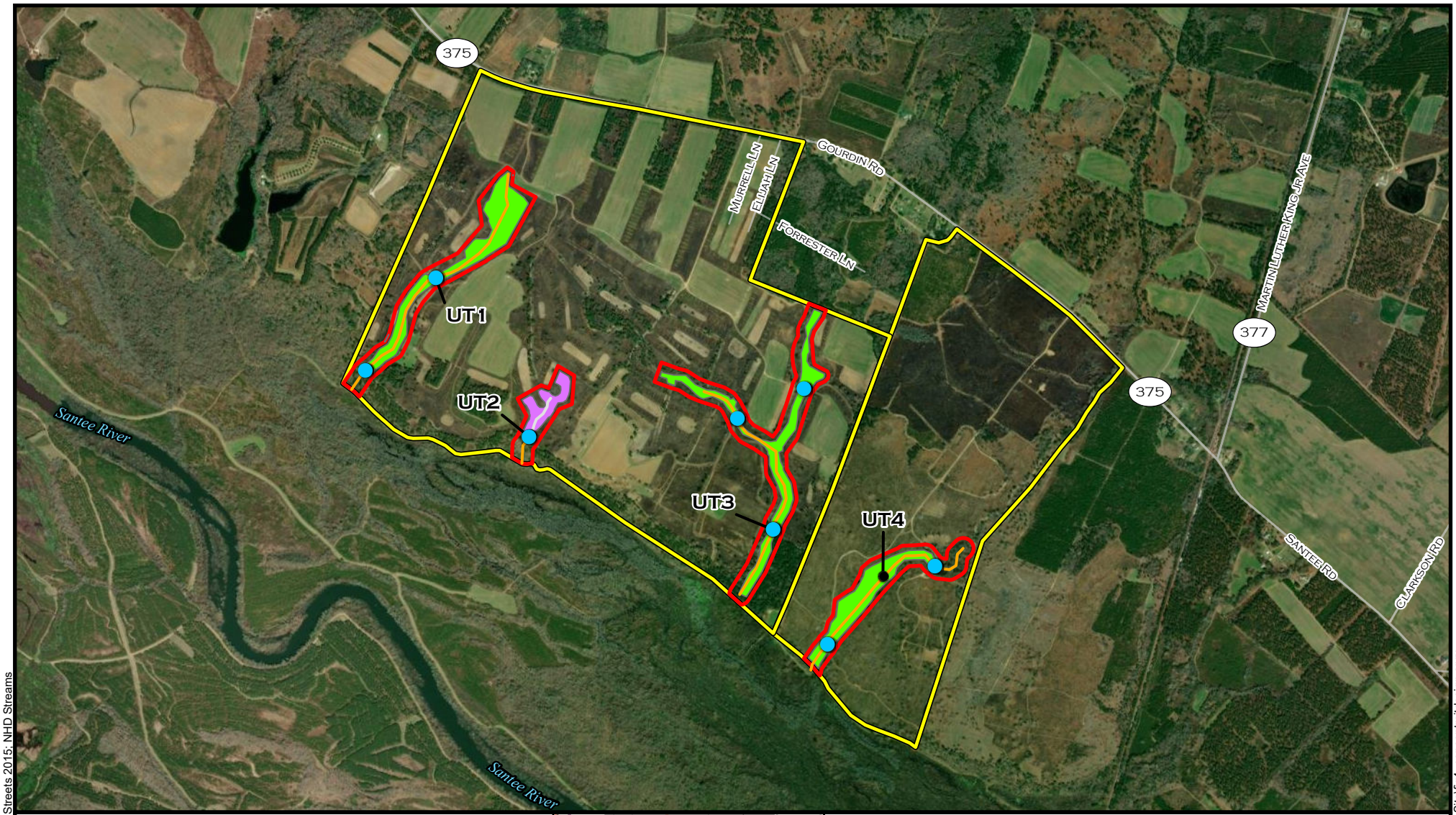


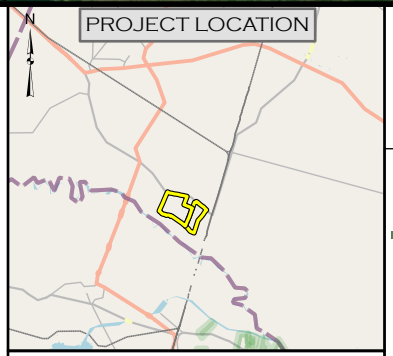
- Gamble Mitigation Site
- Proposed Gamble Easement
- Upgraded Stream Crossings

Wetland Mitigation

- Enhancement
- Restoration

Stream Mitigation

- Enhancement
- Restoration



Map Center: 33.485, -79.917

Longlands Umbrella Mitigation Bank
Gamble Mitigation Site
Conceptual Mitigation Design Map
Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

N

0 720 1,440 Feet

1:24,000

FIGURE A-4

DATE: November 2023

Sources: ESRI Imagery 2022; Open Street Map; Tiger Streets 2015; NHD Streams

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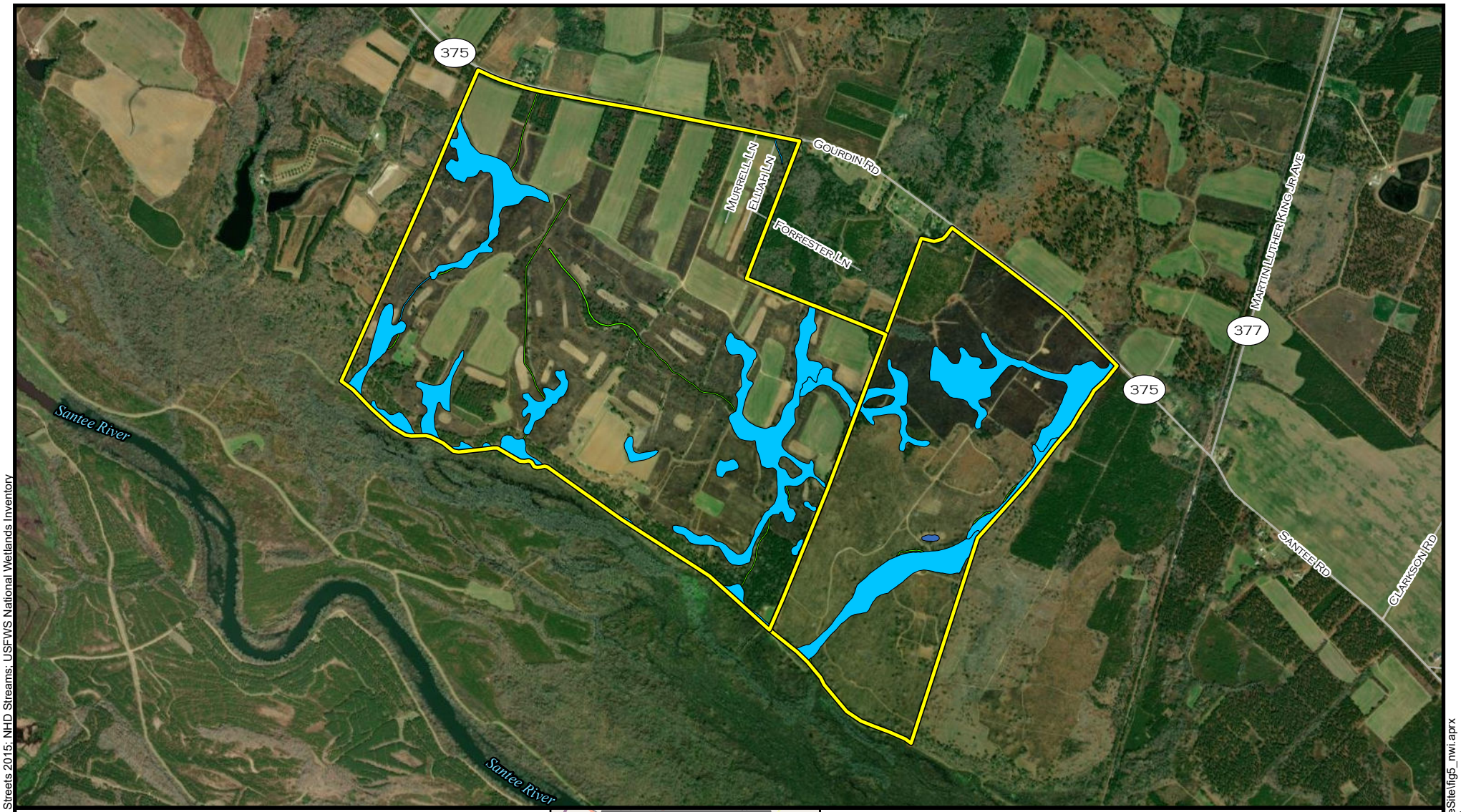
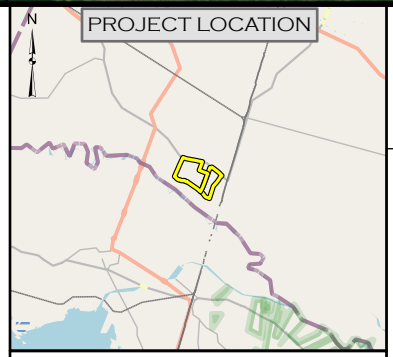


Gamble Mitigation Site

Wetland Type

- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine



Map Center: 33.485, -79.917

Longlands Umbrella Mitigation Bank
Gamble Mitigation Site
National Wetlands Inventory Map
Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

N

0 720 1,440 Feet

1:24,000

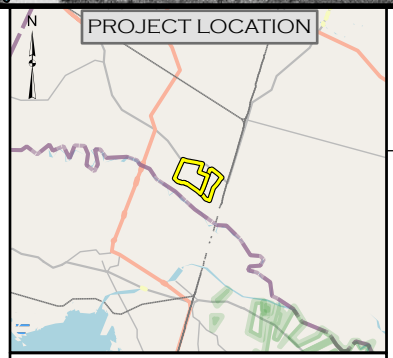
FIGURE A-5

DATE: November 2023

Sources: ESRI Imagery 2022; Open Street Map; Tiger Streets 2015; NHD Streams; USFWS National Wetlands Inventory

Path: C:\Users\chibbard\Desktop\LUMB\LUMB_GambleSite\fig5_nwi.aprx
Date: 11/3/2023 | Time: 4:26 PM | User Name: chibbard

Gamble Mitigation Site



Map Center: 33.485, -79.917

Longlands Umbrella Mitigation Bank
Gamble Mitigation Site
1958 Aerial Photography Map
Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

N

0 720 1,440 Feet

1:24,000

FIGURE A-6a

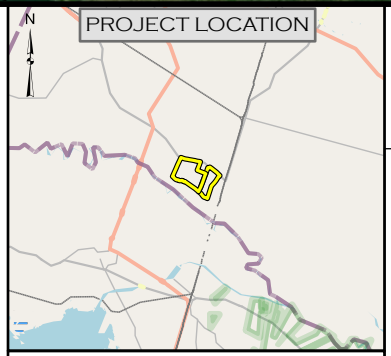
DATE: November 2023

Sources: USGS Earth Explorer 1958 Imagery; Open Street Map; Tiger Streets 2015;

Path: C:\Users\chibbard\Desktop\LUMB\LUMB_GambleSite\fig6a_1958_img.aprx
Date: 11/3/2023 | Time: 4:26 PM | User Name: chibbard

Gamble Mitigation Site

PROJECT LOCATION



Map Center: 33.485, -79.917

Longlands Umbrella Mitigation Bank
Gamble Mitigation Site
1968 Aerial Photography Map
Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

N

0 720 1,440 Feet

1:24,000

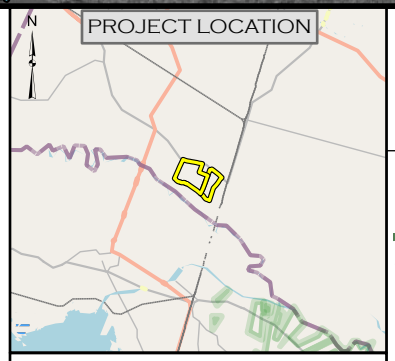
FIGURE A-6b

DATE: November 2023

Sources: USGS Earth Explorer 1968 Imagery; Open Street Map; Tiger Streets 2015;

Path: C:\Users\chibbard\Desktop\LUMB\LUMB_GambleSite\fig6b_1968_img.aprx
Date: 11/3/2023 | Time: 4:27 PM | User Name: chibbard

Gamble Mitigation Site



Map Center: 33.485, -79.917

Longlands Umbrella Mitigation Bank
Gamble Mitigation Site
1980 Aerial Photography Map
Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

N

0 720 1,440 Feet

1:24,000

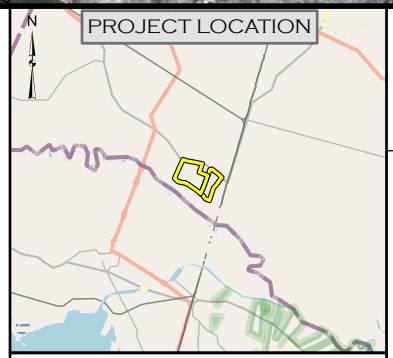
FIGURE A-6c

DATE: November 2023

Sources: USGS Earth Explorer 1980 Imagery; Open Street Map; Tiger Streets 2015;

Path: C:\Users\chibbard\Desktop\LUMB\LUMB_GambleSite\fig6c_1980_img.aprx
Date: 11/3/2023 | Time: 4:27 PM | User Name: chibbard

Gamble Mitigation Site



Map Center: 33.485, -79.917

Longlands Umbrella Mitigation Bank
Gamble Mitigation Site
1995 Aerial Photography Map
Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

N

0 720 1,440 Feet

1:24,000

FIGURE A-6D

DATE: November 2023

Sources: USGS Earth Explorer 1995 Imagery; Open Street Map; Tiger Streets 2015;

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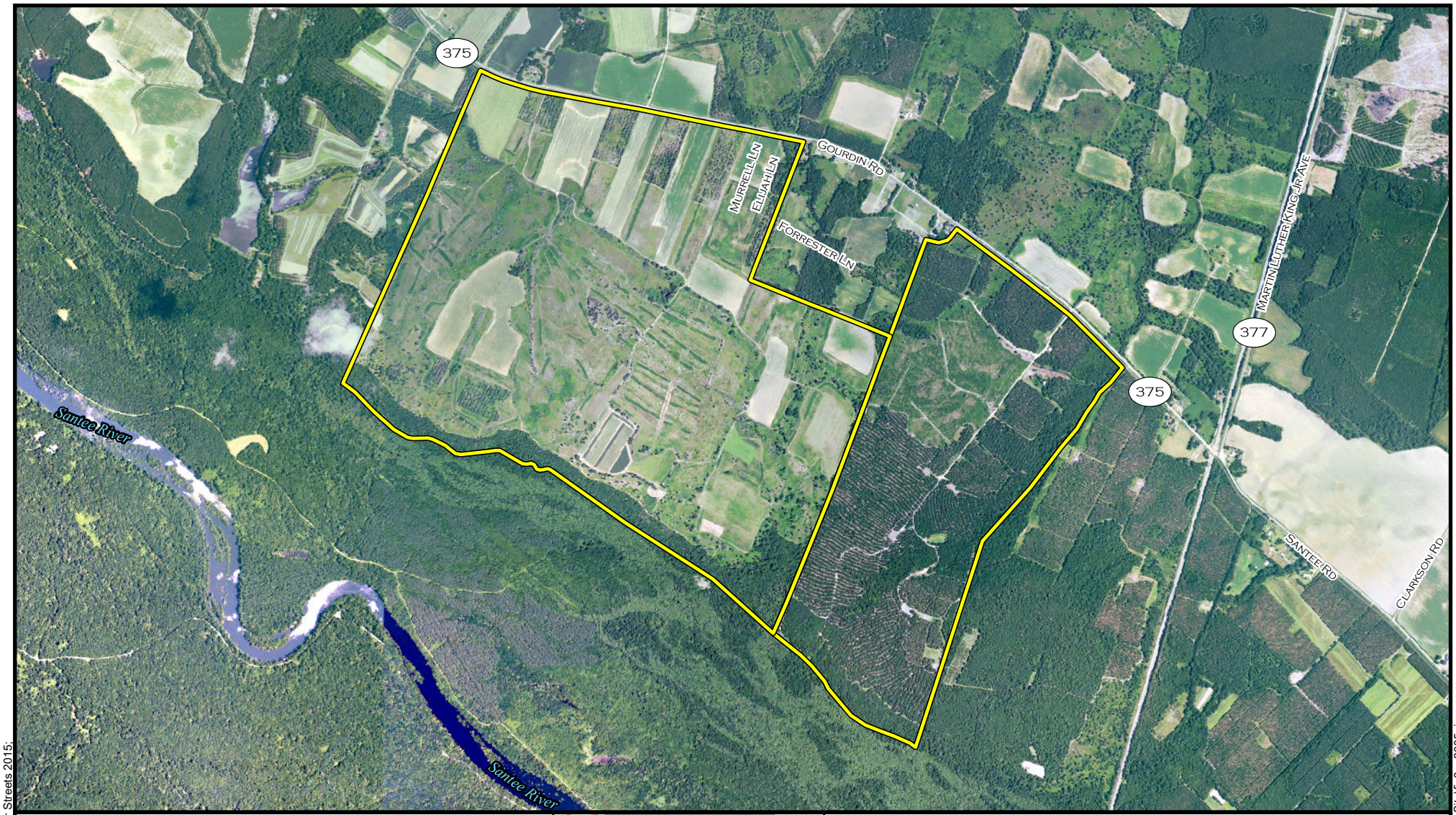
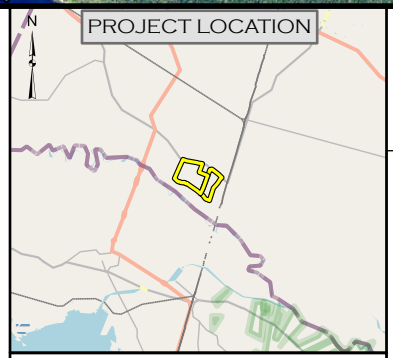
Date: 11/3/2023 | Time: 4:27 PM | User Name: chibbard



Gamble Mitigation Site



Map Center: 33.485, -79.917

Longlands Umbrella Mitigation Bank
Gamble Mitigation Site
2005 Aerial Photography Map
Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

N

0 720 1,440 Feet

1:24,000

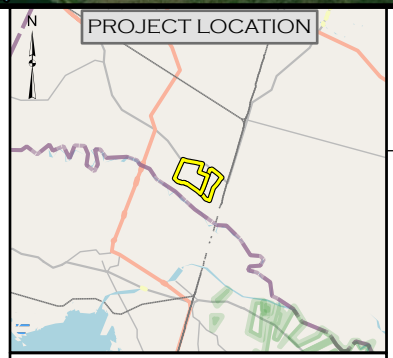
FIGURE A-6E

DATE: November 2023

Sources: USDA 2005 Imagery; Open Street Map; Tiger Streets 2015;

Path: C:\Users\chibbard\Desktop\LUMB\LUMB_GambleSite\fig6e_2005_img.aprx
Date: 11/3/2023 | Time: 4:28 PM | User Name: chibbard

Gamble Mitigation Site



Map Center: 33.485, -79.917

Longlands Umbrella Mitigation Bank
Gamble Mitigation Site
2022 Aerial Photography Map
Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

N

0 720 1,440 Feet

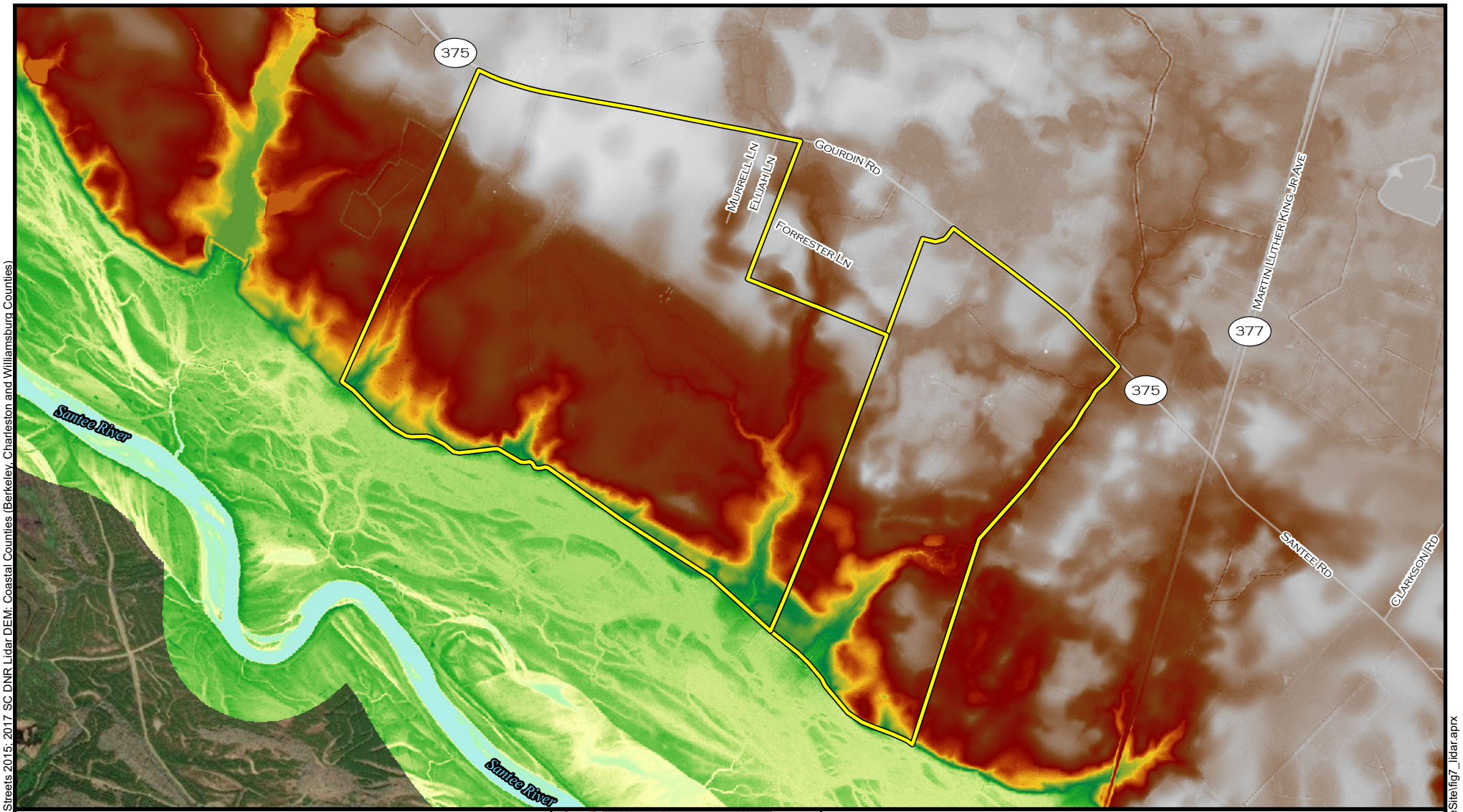
1:24,000

FIGURE A-6F

DATE: November 2023

Sources: ESRI 2022 Imagery; Open Street Map; Tiger Streets 2015;

Path: C:\Users\chibbard\Desktop\LUMB\LUMB_GambleSite\fig6f_2022_img.aprx
Date: 11/3/2023 | Time: 4:28 PM | User Name: chibbard

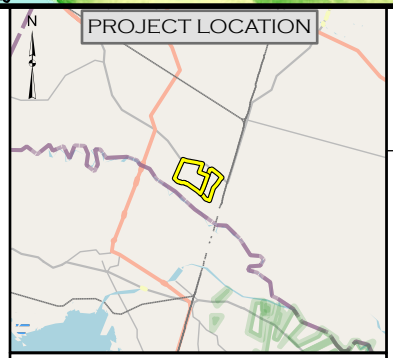


Gamble Mitigation Site

Elevation(ft)

80.6888

10.7997



Map Center: 33.485, -79.917

Longlands Umbrella Mitigation Bank
Gamble Mitigation Site
Lidar Map
Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

N

0 720 1,440 Feet

1:24,000

FIGURE A-7

DATE: November 2023

Sources: ESRI Imagery 2022; Open Street Map; Tiger Streets 2015; 2017 SC DNR Lidar DEM: Coastal Counties (Berkeley, Charleston and Williamsburg Counties)

Path: C:\Users\chibbard\Desktop\LUMB\LUMB_GambleSite\fig7_lidar.aprx
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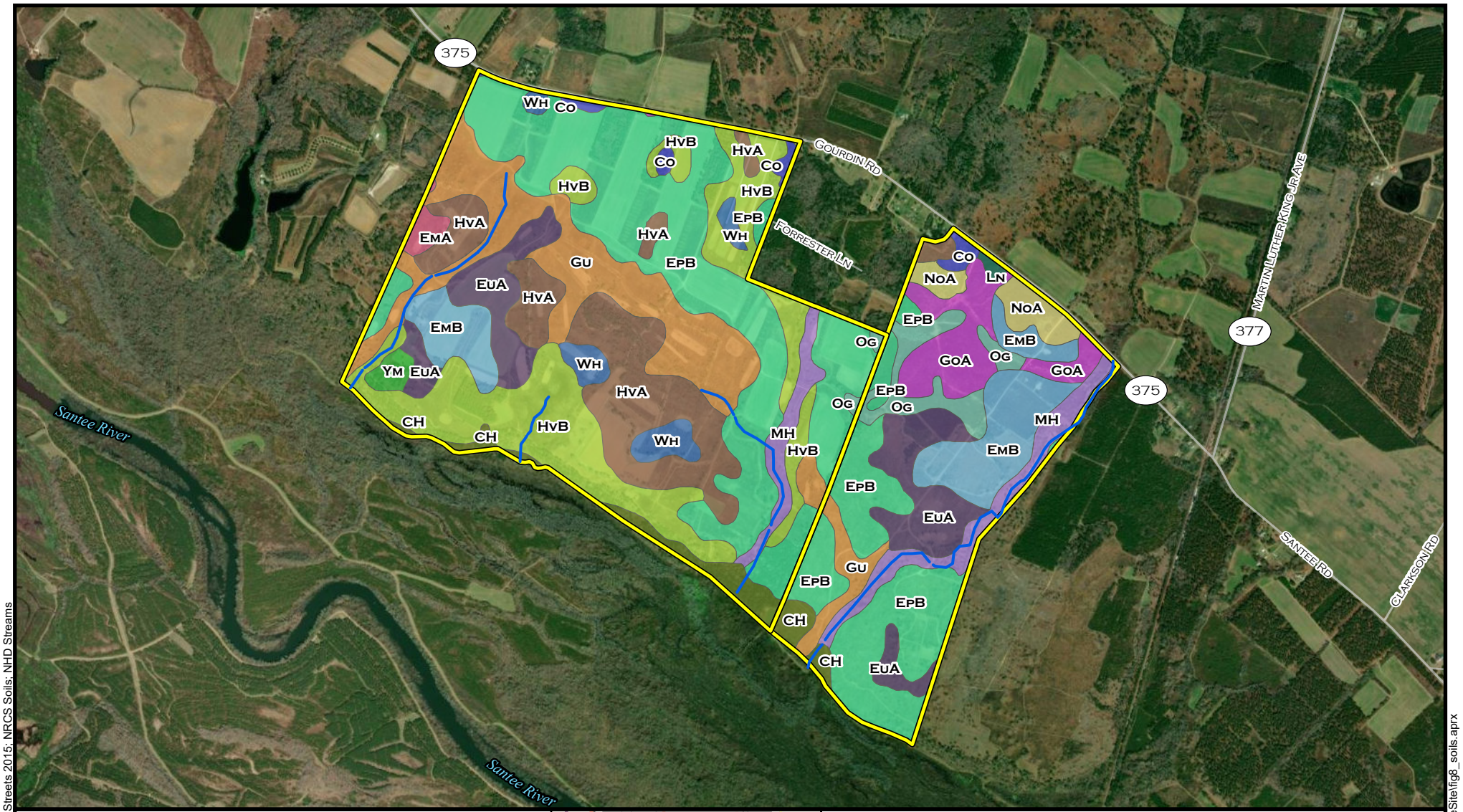
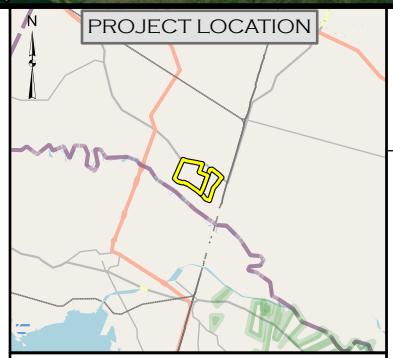


Gamble Mitigation Site

Existing Streams

Soils

- Chastain and Tawcaw soils, frequently flooded
- Coxville loam
- Emporia loamy sand, 0 to 2 percent slopes
- Emporia loamy sand, 2 to 6 percent slopes
- Emporia loamy sand, gently undulating
- Eunola loamy sand, 0 to 2 percent slopes
- Goldsboro loamy fine sand, 0 to 2 percent slopes
- Gourdin loam
- Hornsville sandy loam, 0 to 2 percent slopes
- Hornsville sandy loam, 2 to 6 percent slopes
- Lynchburg fine sandy loam, 0 to 2 percent slopes
- Mouzon and Hobcaw soils, frequently flooded
- Noboco loamy fine sand, 0 to 2 percent slopes
- Ogeechee fine sandy loam
- Wahee sandy loam
- Yemassee sandy loam



Map Center: 33.485, -79.917

Longlands Umbrella Mitigation Bank
Gamble Mitigation Site
NRCS Soils Map
Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

N

0 720 1,440 Feet

1:24,000

FIGURE A-8

DATE: November 2023

Sources: ESRI Imagery 2022; Open Street Map; Tiger Streets 2015; NRCS Soils; NHD Streams

Path: C:\Users\chibbard\Desktop\LUMB\LUMB_GambleSite\fig8_soils.aprx
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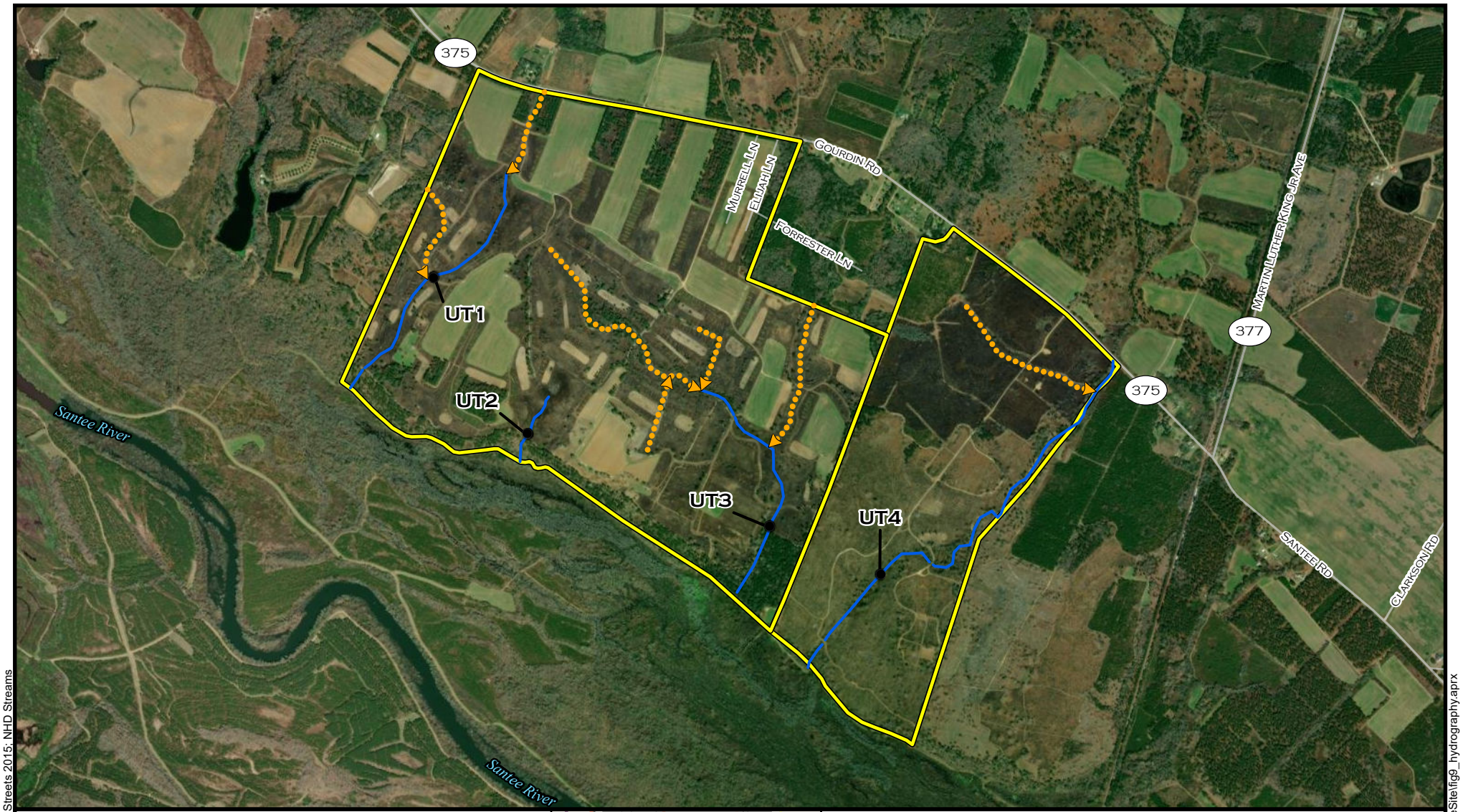


Gamble Mitigation Site
Existing Streams
Ditches

PROJECT LOCATION

Map Center: 33.485, -79.917

Longlands Umbrella Mitigation Bank
Gamble Mitigation Site
Hydrography Map
Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

N

0 720 1,440 Feet

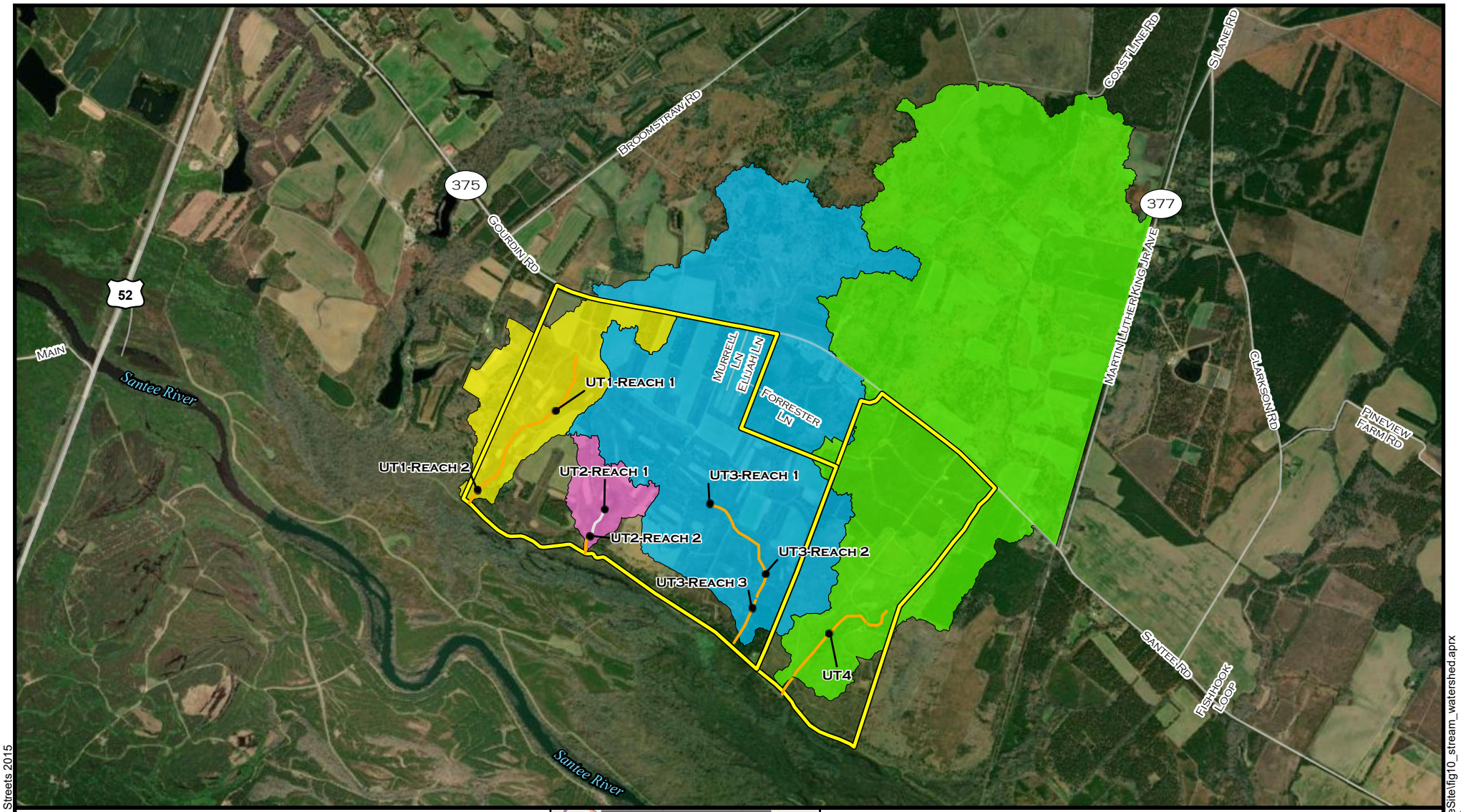
1:24,000

FIGURE A-9

DATE: November 2023

Sources: ESRI Imagery 2022; Open Street Map; Tiger Streets 2015; NHD Streams

Path: C:\Users\chibbard\Desktop\LUMB\LUMB_GambleSite\fig9_hydrography.aprx
Date: 11/3/2023 | Time: 4:29 PM | User Name: chibbard



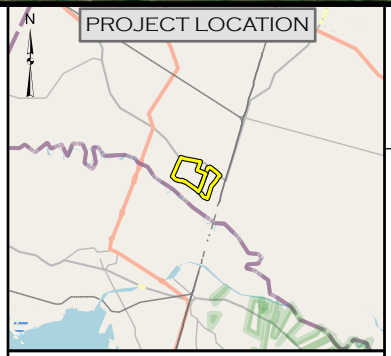
Gamble Mitigation Site

Stream Mitigation

- Enhancement
- Restoration

Watershed

- UT1
- UT2
- UT3
- UT4



Map Center: 33.492, -79.917

Longlands Umbrella Mitigation Bank
Gamble Mitigation Site
Stream Reach & Watershed Map
Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

N

0 1,000 2,000 Feet

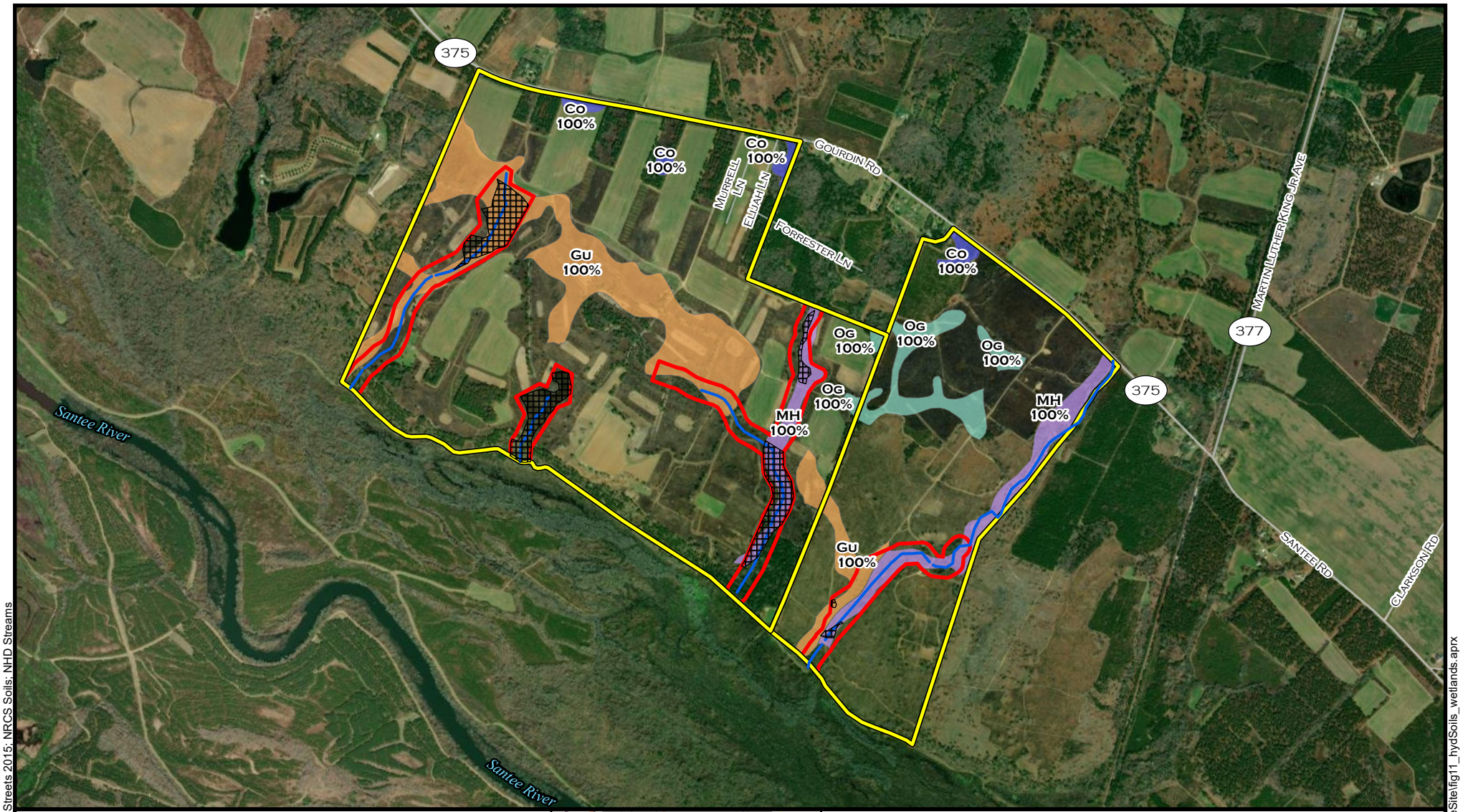
1:35,000

Figure A-10

Date: November 2023

Sources: ESRI Imagery 2022; Open Street Map; Tiger Streets 2015

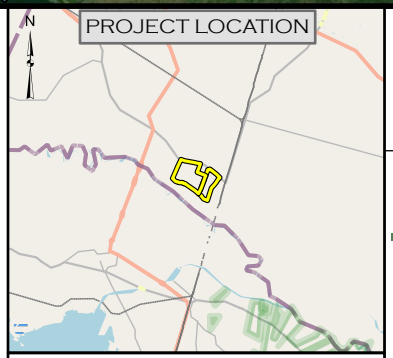
Path: C:\Users\chibbard\Desktop\LUMB\LUMB_GambleSite\fig10_stream_watershed.aprx
Date: 11/3/2023 | Time: 4:23 PM | User Name: chibbard



- Gamble Mitigation Site
- Estimated Existing Wetlands in Proposed Gamble Easement
- Proposed Gamble Easement
- Existing Streams

Hydric Soils

- Coxville loam
- Gourdin loam
- Mouzon and Hobcaw soils, frequently flooded
- Ogeechee fine sandy loam



Map Center: 33.485, -79.917

Longlands Umbrella Mitigation Bank
Gamble Mitigation Site
Hydric Soils & Estimated Wetlands Map
Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

N

0 720 1,440 Feet

1:24,000

FIGURE A-11

DATE: November 2023

Sources: ESRI Imagery 2022; Open Street Map; Tiger Streets 2015; NRCS Soils; NHD Streams

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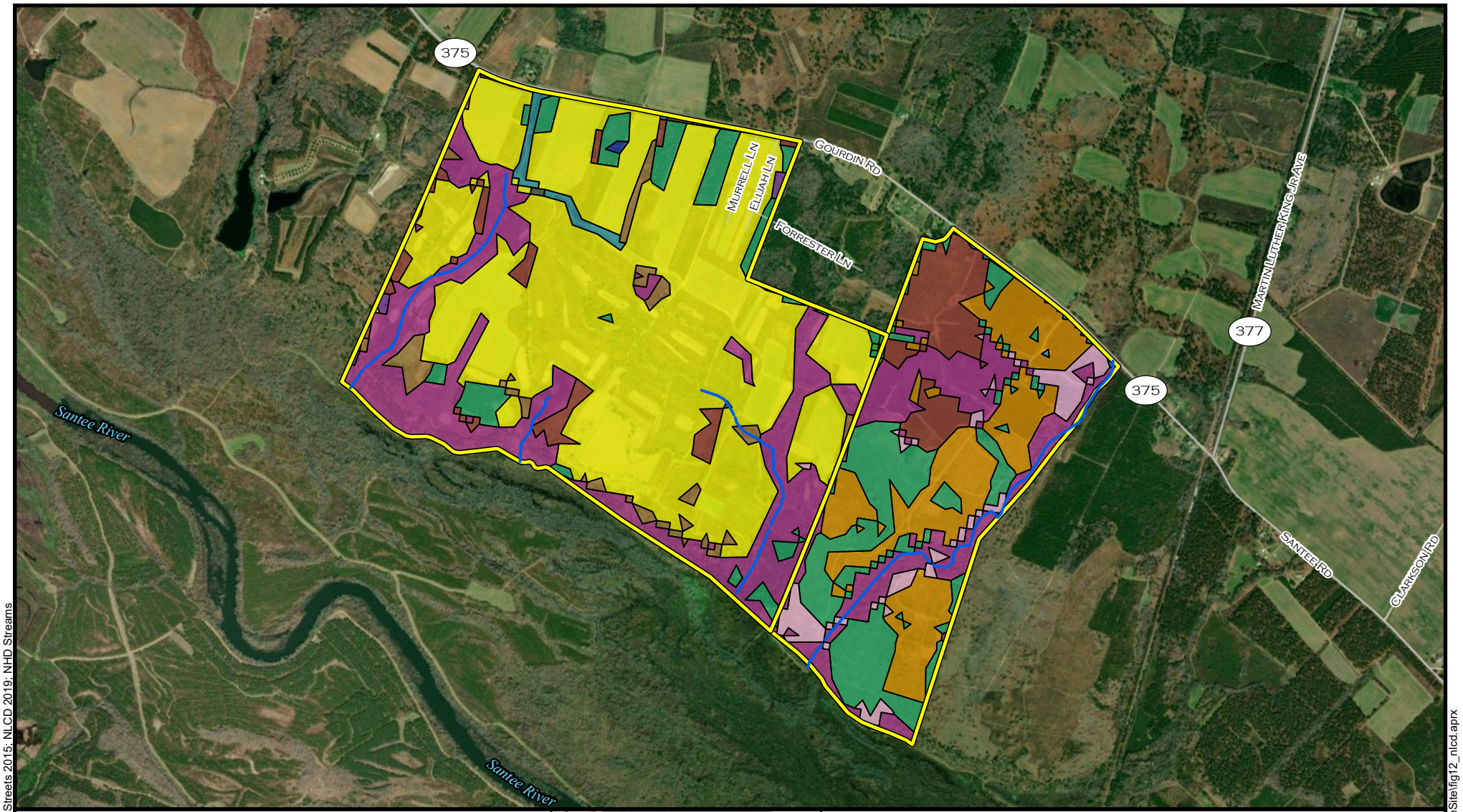
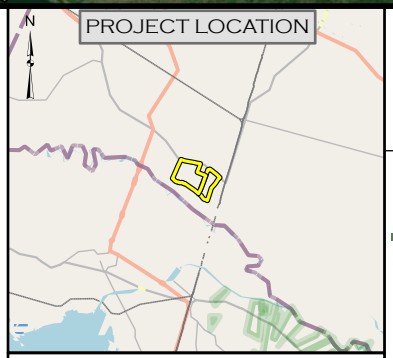


Gamble Mitigation Site
Existing Streams

Land Cover Type

- Cultivated Crops
- Deciduous Forest
- Developed, Low Intensity
- Developed, Open Space
- Emergent Herbaceous Wetlands
- Evergreen Forest
- Hay/Pasture
- Herbaceous
- Mixed Forest
- Open Water
- Shrub/Scrub
- Woody Wetlands



Map Center: 33.485, -79.917

Longlands Umbrella Mitigation Bank
Gamble Mitigation Site

Land Cover Map
Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

N

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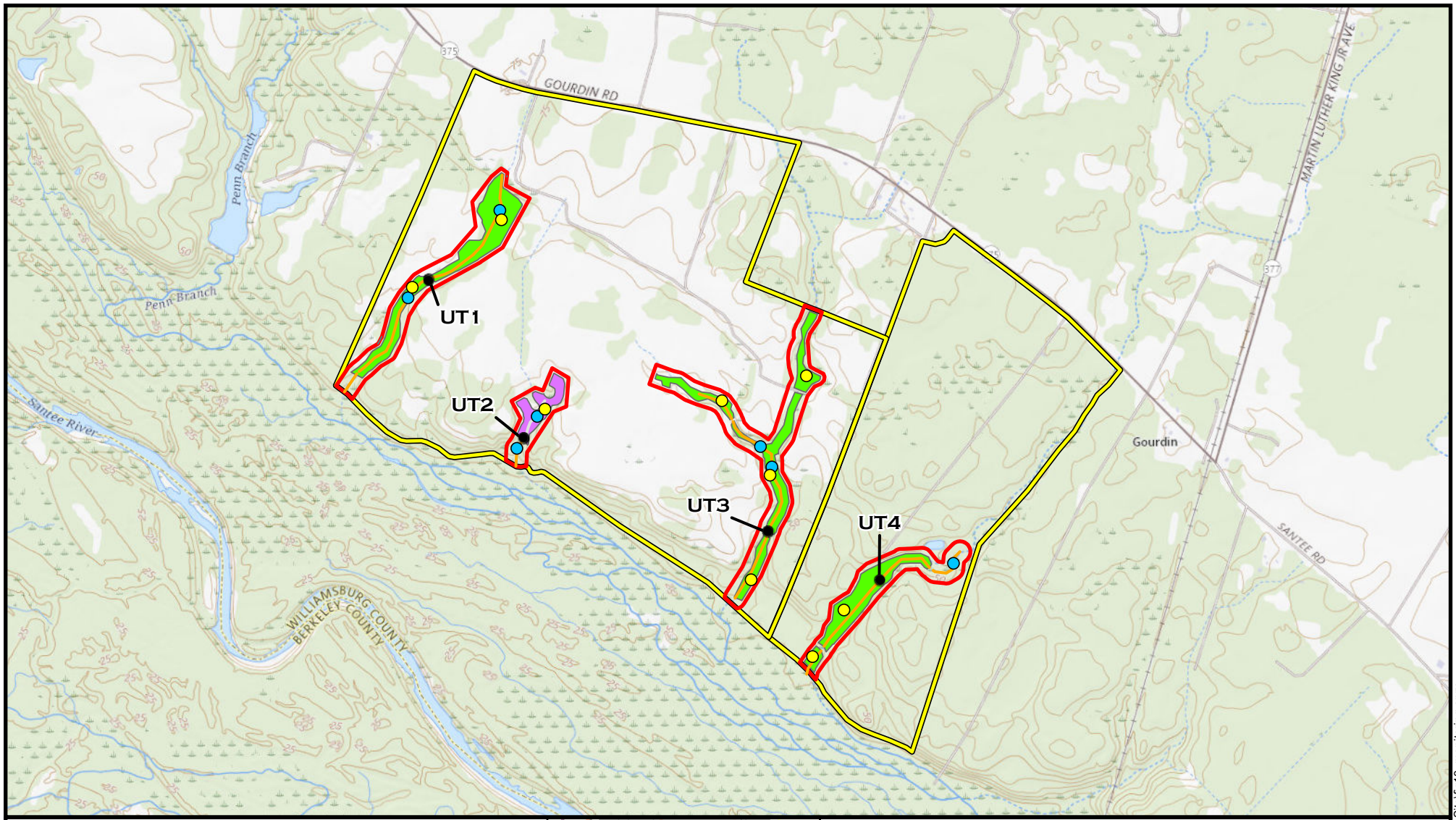
FIGURE A-12

DATE:
November 2023

Sources: ESRI Imagery 2022; Open Street Map; Tiger Streets 2015; NLCD 2019; NHD Streams

Path: C:\Users\chibbard\Desktop\LUMB\LUMB_GambleSite\fig12_nlcd.aprx
Date: 11/3/2023 | Time: 4:24 PM | User Name: chibbard



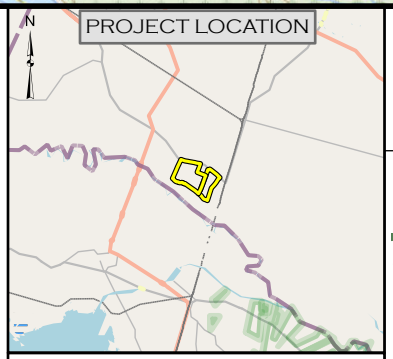
- Gamble Mitigation Site
- Proposed Gamble Easement
- USGS 24k Quadrangle
- Stream Gauges
- Wetland Gauges

Wetland Mitigation

- Enhancement
- Restoration

Stream Mitigation

- Enhancement
- Restoration



Map Center: 33.485, -79.917

Longlands Umbrella Mitigation Bank
Gamble Mitigation Site
Monitoring Network Map
Williamsburg County, SC

Prepared By:

Ecosystem Planning & Restoration

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0 720 1,440 Feet

1:24,000

FIGURE A-13

DATE: November 2023

Sources: USGS National Map: Open Street Map

Path: C:\Users\chibbard\Desktop\LUMB\LUMB_GambleSite\fig13_monitoring.aprx
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