# JOINT PUBLIC NOTICE

February 11, 2019

United States Army
Corps of Engineers
New Orleans District
Regulatory Branch
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New Orleans, La. 70118

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Project Manager
Brandon Gaspard
Permit Application Number
MVN-2018-00715-MG

State of Louisiana
Department of Environmental Quality
Post Office Box 4313
Baton Rouge, La. 70821-4313
Attn: Water Quality Certifications

(225) 219-3225 FAX (225) 325-8250
Elizabeth.Hill@la.gov
Project Manager
Elizabeth Hill
WQC Application Number
WQC # 190205-01

Interested parties are hereby notified that a permit application has been received by the New Orleans District of the U.S. Army Corps of Engineers pursuant to: [ ] Section 10 of the Rivers and Harbors Act of March 3, 1899 (30 Stat. 1151; 33 USC 403); and/or [ X ] Section 404 of the Clean Water Act (86 Stat. 816; 33 USC 1344).

Application has also been made to the Louisiana Department of Environmental Quality, for a Water Quality Certification (WQC) in accordance with statutory authority contained in Louisiana Revised Statutes of 1950, Title 30, Chapter 11, Part IV, Section 2074 A(3) and provisions of Section 401 of the Clean Water Act (P.L.95-17).

## MOCCASIN MITIGATION BANK IN ST. TAMMANY PARISH

**NAME OF APPLICANT**: SEG Environmental L.L.C., obo D&H Investment Properties, L.L.C.; Attn: Matt Conn; 224 Rue De Jean, Lafayette, Louisiana 70508.

**LOCATION OF WORK**: The 342.9 acre site is located approximately 4.5 miles to the north of Lacombe, Louisiana, as shown on attached drawings.

Center of Location: Latitude: 30.382969° N, Longitude:–89.940192° W.
Hydrologic Unit Code: 08090201 – Liberty Bayou-Tchefuncta.

**CHARACTER OF WORK**: Moccasin Mitigation Bank is proposing the removal of 302.4 acres of man-made timber bedding and undesirable timber species for the establishment of pine savanna habitat. Additional site restoration activities will consist of prescribed burning and planting of desirable vegetation. Of the 342.9 acres proposed for Moccasin Mitigation Bank, 293.2 acres are wetland rehabilitation, and 9.2 acres are wetland re-establishment, and 40.4 acres are wetland preservation.

The comment period for the Department of the Army Permit and the Louisiana Department of Environmental Quality WQC will close **30 days** from the date of this joint public notice. Written comments, including suggestions for modifications or objections to the proposed work, stating reasons thereof, are being solicited from anyone having interest in this permit and/or this WQC request and must be mailed so as to be received before or by the last day of the comment

period. Letters concerning the Corps of Engineers permit application must reference the applicant's name and the Permit Application Number, and be mailed to the Corps of Engineers at the address above, ATTENTION: REGULATORY BRANCH. Similar letters concerning the Water Quality Certification must reference the applicant's name and the WQC Application number and be mailed to the Louisiana Department of Environmental Quality at the address above.

The application for this proposed project is on file with the Louisiana Department of Environmental Quality and may be examined during weekdays between 8:00 a.m. and 4:30 p.m. Copies may be obtained upon payment of costs of reproduction.

## Corps of Engineers Permit Criteria

The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal 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, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.

The U.S. Army Corps of Engineers 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 proposed activity. Any comments received will be considered by the U.S. Army Corps of Engineers to determine whether to make, modify, condition, or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and 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 proposed activity.

The New Orleans District is unaware of properties listed on the National Register of Historic Places near the proposed work. The possibility exists that the proposed work may damage or destroy presently unknown archeological, scientific, prehistorical, historical sites, or data. Issuance of this public notice solicits input from the State Archeologist and State Historic Preservation Officer regarding potential impacts to cultural resources. After receipt of comments from this public notice the Corps will evaluate potential impacts and consult with the State Historic Preservation Officer and Native American Tribes in accordance with Section 106 of the national Historic Preservation Act, as appropriate.

Our initial finding is that the proposed work would neither affect any species listed as endangered, nor affect any habitat designated as critical to the survival and recovery of any endangered species listed by the U.S. Department of Commerce,

Utilizing Standard Local Operating Procedure for Endangered Species in Louisiana (SLOPES), dated October 22, 2014, between the U.S. Army Corps of Engineers, New Orleans and U.S. Fish and Wildlife Service, Ecological Services Office, the Corps has determined that

the proposed activity would have no effect on any species listed as endangered by the U.S. Department of the Interior.

This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. The applicant's proposal would result in the destruction or alteration of N/A acre(s) of EFH utilized by various life stages of red drum and penaeid shrimp. Our initial determination is that the proposed action would not have a substantial adverse impact on EFH or federally managed fisheries in the Gulf of Mexico. Our final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the National Marine Fisheries Service.

If the proposed work involves deposits of dredged or fill material into navigable waters, the evaluation of the probable impacts will include the application of guidelines established by the Administrator of the Environmental Protection Agency. Also, a certification that the proposed activity will not violate applicable water quality standards will be required from the Department of Environmental Quality, before a permit is issued.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing.

The applicant has certified that the proposed activity described in the application complies with and will be conducted in a manner that is consistent with the Louisiana Coastal Resources Program. The Department of the Army permit will not be issued unless the applicant received approval or a waiver of the Coastal Use Permit by the Department of Natural Resources.

You are requested to communicate the information contained in this notice to any other parties whom you deem likely to have interested in the matter.

for Martin S. Mayer
Chief, Regulatory Branch

Enclosure

# Prospectus for the Proposed Moccasin Mitigation Bank

MVN-2018-00715-MG

St. Tammany, Louisiana

February 5, 2019

Sponsor: D&H Investment Properties, LLC

Agent: SEG Environmental, LLC
224 Rue De Jean
Lafayette, LA 70508

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# 1. Introduction

This prospectus was prepared by SEG Environmental, LLC in accordance with 33 CFR § 332.8(d)(2) to establish and operate the proposed Moccasin Mitigation Bank (Pine Flatwoods/Savanna) (MMB). The proposed bank contains 342.9 acres of primarily degraded pine forested wetlands and uplands in two (2) tracts, which after rehabilitation and repairing of the physical, chemical and biological aquatic functions will provide pine wetland credits for unavoidable permitted impacts to "Waters of the United States" per 33 CFR § 332.3 (1)(a) and 33 CFR § 332.3 (1)(b). The property is in the south-central portion of St. Tammany Parish located approximately 1 mile north of Interstate 12 and 1.3 miles west of Bayou Lacombe. The property is located within the "Saint Tammany" United State Geological Survey (USGS) 7.5-minute quadrangle.

## 1.1 Site Location

The proposed MMB is located in St. Tammany Parish approximately 4.5 miles north of Lacombe, LA. From LA Hwy190 in Lacombe drive north on LA Hwy 434 for 3 miles to Krentel Rd., the first road on the left after crossing I-12. Travel west then northward on Krentel Rd. for 1.6 miles to Fish Hatchery Rd. From the intersection of Krentel Rd. and Fish Hatchery Rd., travel 1.6 miles to arrive at the southeast corner of the southernmost tract, and 1.1 miles to arrive at the southwest corner of the northernmost tract. The southern tract for the proposed Bank encompasses 219.2 acres and the northern tract 123.7 acres. The approximate center coordinates of the property are 30.382969 N latitude and 89.940192 W longitude. The southern tract is located in Section 36 of Township 7 South, Range 12 East, Section 1 of Township 8 South, Range 12 East, and Section 6 of Township 8 South, Range 13 East, while the northern tract is located in Section 31, Township 7 South, Range 13 East (Figure 1).

# 2. Project Goals and Objectives

The primary goal of the MMB project is to restore the degraded and highly altered timberland consisting of primarily monoculture slash pine (Pinus elliottii), to a functioning longleaf pine savanna consisting of mesic pine flatwoods, slash pine-pond cypress/hardwood forest, and bayhead swamps typical of pre-settlement historical ecology. Additionally, we anticipate some areas that are currently "upland" but positioned in areas of relatively low elevation may revert to wetlands after restoration and management activities are completed. Some of these areas are currently bedded so we suspect these particular areas were naturally wet at some point in time. Secondary goals include enhancement and preservation of existing pine/hardwood flatwood forest and Bayhead Swamp.

More precisely, the goal of the MMB is the restoration of historical ecosystems through re-establishment of 9.2 acres of wet pine savanna, rehabilitation of 293.2 acres of wet pine savanna, and preservation of 40.5 acres of existing acid swamp

(slash pine-pond cypress woodland and bayhead swamp) within the Liberty Bayou-Tchefuncta United States Geological Service (USGS) Hydrologic Catalog Unit (HUC) 08090201 (see Table 1). The successful restoration of pine flatwoods/savanna wetlands will provide additional wetland functions and values not currently realized under the current land use practices. Hence, the objectives of the MMB are to improve water quality by: eliminating the current land use practices (i.e. tree farming and logging); prolong the hydro period by reducing ditching, downgrade rutting, and tree bedding that increase runoff time and restrict lateral sheet flow, and by reducing greatly the number of trees on the property and thereby reducing transpiration rates; increased sediment retention times and the value of the property for wildlife via restoration to an eastern pine flatwoods/savanna, a floristically rich, herb-dominated wetland that will improve sediment filtration and one that is known to support as many as thirty-seven (37) wildlife species of conservation concern (LDWF 2005). Additionally, the establishment of the MMB will restore and rehabilitate the unique wetland functions associated with the pine flatwoods/savanna ecosystems that once existed on the property and increase opportunities for outdoor recreational activities (i.e. camping, hiking and hunting).

## 3. Ecological Suitability of the Site/Baseline Conditions

### 3.1 Land Use

#### 3.1.1 Historical Land Use

Historically, longleaf pine forest dominated the eastern Florida Parishes of Louisiana. More specifically, Smith (1999) documented the predominance of longleaf pine flatwoods/savanna pre-settlement days in the flatwoods region of southern St. Tammany Parish and along the western flank of the Pearl River. Additionally, historical survey data notes collected by Clinch Gray in April of 1820 and March of 1822 indicate the sections of land the Bank property is located in, as well as those in the surrounding area, were predominantly pine woods. Terms used to describe the woods included poor level pine woods, poor flat wet pine, poor pine woods, and white bay and pines. And Joseph Troskolawski in July of 1957 included notes of low flat pine woods, poor pine woods, and low flat land subject to overflow with pine and some cypress in the southeast corner of the northern tract (LOSL 2008).

However, with the completion of the East Louisiana Railroad throughout much of St. Tammany Parish by the early 1890s and the development of steam-powered logging and mill equipment, the logging industry flourished throughout the south as the demand for lumber increased after the civil war (Sumptner 2008; Foster 1912). The high demand for lumber coupled with an endless supply of labor and mechanized equipment would soon drastically reduce the supply of virgin longleaf pine (Sumptner 2008; Foster 1912). Ellis (1981) in Sumpter (2008) stated “And did they cut the timber, and cut and cut, until, by the 1920s, it was all gone. The

rolling hills of northwest St. Tammany Parish and the flats of the south presented the same unbroken vista of stumps, as far as the eye could see." Louisiana's first state forester, R.D. Forbes, said in 1923 "the plain truth of the matter is that in county after county, in State after State of the South, the piney woods are not passing but have passed" (in Barnett and Carter 2017).

With virgin longleaf timber disappearing at an alarming rate, Henry E. Hardtner, a German immigrant who settled in Pineville, LA began experimenting in 1915 with pine regeneration on his property in Urania, LA. His techniques along with research and contributions from others led to the beginning of sustainable forestry practices throughout the south, and the beginning of loblolly and slash pine plantations. The earliest records of reforestation efforts in the area of the proposed MMB property during this time period were initiated by the Great Southern Lumber Company in Bogalusa, LA. However, Great Southern was only able to plant some 2,700 acres of pine seedlings before the Great Depression halted the planting operations in 1933 and World War II in the 1940s further depressed the market for southern pine. However, the initial regeneration success had by that time already spawned further research into the mass production of loblolly and slash pine seedlings in nurseries. With the American post war economic boom in full swing, the first scientific nation-wide forestry inventory was conducted in 1953 and found that only 3 million acres of plantations had been planted in the south by 1953 (Barnett and Carter 2017).

With that history mind, historical imagery of the Moccasin property acquired in May of 1952 show that the property is without mature timber. The imagery is black and white so it is difficult to determine exactly which stage of growth trees were in at the time. Imagery acquired in May of 1969 do however show tree coverage throughout the northern tract and in all but about 54 acres of the southern tract, and trees do not appear to be planted in rows. The most recent indication of logging activity on the property appears to have been around the time of the January 1998 DOQQ imagery acquisition. The northern area consisting of 123.9 acres was logged entirely and approximately 113.24 acres of the southern tract was logged.

### 3.1.2 Existing/Current Land Use

ArcMap, Google Earth Pro with 2017 aerial imagery, and the St. Tammany Parish Assessors GIS Parcel Viewer were used to generate Land Use maps for the MMB property and surrounding area within 1 mile of the proposed Bank.

The proposed Bank property currently consist of approximately 342.9 acres of timberland, specifically 302.4 acres of slash pine plantation and 40.5 acres of bayhead swamp. There is also a pipeline running through the southern tract of the property and the ROW consist of approximately 5.2 acres. The pipeline will not be included in the bank boundaries. Portions of the tracts have been forested/logged at different time intervals and nearly all of the property is bedded. In some areas

the bedding has degraded somewhat but in other areas very high prominent bedding was observed during the wetland delineation of this property. It is very apparent that water is trapped between some bedded areas. And the direction of the bedding varies across the property. It is our opinion that on such flat terrain that the bedding is still a hindrance to natural passive hydrologic flow across the property.

Land use within 1 mile of the Bank boundaries is comprised of the following: Farmland = 79.7 acres; Major Roads (Interstate - 12) = 25.5 acres; Mine = 8.2 acres; Pipeline ROW = 36.5 acres; Residential/Commercial = 162.0 acres; Timberland (predominantly pine) = 4,468.5 acres; and Wireline ROW = 53.4 acres (Figure 2).

## 3.2 Soils

According to USDA Natural Resources Conservation Service (NRCS 2017), the proposed MMB property is comprised of 52.5% (179.7 ac.) of Myatt fine sandy loam, 0 to 1 percent slopes (Mt), a soil with a hydric rating of 90%, 0.5 % (1.6 ac.) of Myatt fine sandy loam, frequently flooded (My), a soil with a hydric rating of 85%, 46.9 % (160.8 ac.) of Stough fine sandy loam, 0 to 1 percent slopes (St), a soil with a hydric rating of 10%, and 0.7 ac. (0.2%) of water (Figure 3). Note that while Stough soil is listed with a hydric rating of only 10%, the Nature Conservancy and others quote John Bruza, a retired CEMVN wetland scientist, as saying that Stough (St) soils in many areas of St. Tammany Parish supports wetlands.

The property is located on the Pleistocene Terraces of southeastern Louisiana (Weindorf 2008), and more specifically are ideal for eastern longleaf pine savannahs since they are hydric, very strongly acidic, nutrient-poor fine sandy loams and silt loams, and are low in organic matter. Some common soils in these habitat types are Myatt fine sandy loam, Guyton silt loam, and Stough fine sandy loam (LDWF 2005).

Aerial imagery dating back to 1998 show that past logging activities produced ruts and swales on skid trails. Site visits on numerous occasions have confirmed that many of these trails are ponded for extended periods of time. Additionally, bedding was established at some point in time in some areas but it is difficult to determine the extent given to the density vegetation of the understory in many areas.

## 3.3 Hydrology

### 3.3.1 Contributing Watershed

The proposed primary service area is the Lake Pontchartrain Basin consisting of approximately 5,693,980.4 acres and consist of the following seven (7) USGS HUC: Amite (08070202); Tickfaw (08070203); Lake Maurepas (08070204); Tangipahoa (08070205); Liberty Bayou-Tchefuncta (08090201); Lake

Pontchartrain (08090202); and Eastern Louisiana Coastal (08090203). See Figure 4.

### 3.3.2 Historical Hydrology and Drainage Patterns

Historically, precipitation, high water tables, and periodic back flooding from Bayou Lacombe tributaries were the source of hydrology for the site. The relatively flat terrain, poorly-drained soils and high water table characteristic of the MMB likely supported a predominantly wetland landscape consisting of longleaf pine savanna.

The Bayou Lacombe Basin drains approximately 41,600 acres so heavy area rainfall coupled with high tides and south winds in Lake Pontchartrain can greatly impede or completely stop Bayou Lacombe flow to the Lake (LDWF 2013). Historically, the Bank site drained through pine flatwoods/savanna and cypress and gum bottoms naturally via gravity into Bayou Lacombe tributaries, into the Bayou itself, into Lake Pontchartrain, and then in to Chandeleur Sound after via Lake Borne (Figure 5).

Skidder ruts and swales along logging trails and bedded pine in some areas currently impact drainage on the site. Ruts have been created in the woods over time from logging activities beginning after the 1950s but these impacts along with bedding rows can be reversed during site preparation for planting.

### 3.3.3 Existing/Current Hydrology and Drainage Patterns

Today, precipitation, high water tables and saturation on poorly drained soils, runoff from adjacent lands at higher elevations, and hindered draining in to Bayou Lacombe tributaries during high water events are the source of hydrology for the site. Average annual rainfall in nearby Covington, LA based on 1961–1990 normals is 63.6 inches per year, with rainfall averages highest in March with 6.4 inches and lowest in October with 3.4 inches (US Climate Data 2018).

The sites 181.3 acres of Myatt fine sandy loam soil, 0-1% slopes (Mt) and Myatt fine sandy loam soil, frequently flooded (My) soils, are nearly level, poorly drained, hold water in low places for long periods of time, and have seasonally high-water tables between the surface and 1 foot below ground from November to April. Myatt frequently flooded (My) is also subject to brief periods of flooding in the winter and spring. The sites 160.8 acres of Stough (St) fine sandy loam, 0-1 slopes is a somewhat poorly drained soil. Water and air move through this soil at a moderately low rate and water stands in low places for short periods of time during periods of heavy rain. These soils have seasonally high-water tables from 1 to 1.5 feet below the surface from January to April (NRCS 1990).

While these soils are all well suited for woodlands (NRCS 1990), the density at which they are currently stocked likely increases evapotranspiration rates greatly. Edwards et al. (2012) and McLaughlin et al. (2013) have shown a correlation

between a reduction in surface and ground water with increased tree density stockings in pine woodlands in the southeastern U.S. Given the area of the Bank property was historically part of an extensive long leaf pine savanna (Barnett and Carter 2017, LOSL 2008, Daigle et. al. 2006, and Foster 1912) with a canopy cover that averaged much less than 50% (Smith 1999), hydrologic restoration goals are achievable with a drastic reduction in the number of slash pines, removal of rutting and bedding developed from past logging activities, and the replanting of longleaf pine at historical densities. Portions of the tracts have been forested/logged at different time intervals and nearly all of the property is bedded. In some areas the bedding has degraded somewhat but in other areas very high prominent bedding was observed during the wetland delineation of this property. It is very apparent that water is trapped between some bedded areas. And the direction of the bedding varies across property. It is our opinion that on such flat terrain that the bedding is still a hindrance to natural passive hydrologic flow across the property. Existing hydrology at the MMB is depicted in Figure 6.

### 3.3.4 Jurisdictional Wetlands

An ACOE preliminary jurisdictional determination dated 11 October 2018 on the bank property is included as Appendix B. The determination concluded that the property currently consists of 9.2 acres of uplands in slash pine plantation, 293.2 acres of wetlands which are also in slash pine plantation, and 40.5 acres of wetlands that are currently in deciduous bottomland species (Appendix B).

## 3.4 Vegetation

### 3.4.1 Historical Plant Community

Historically longleaf pine forest dominated the eastern Florida Parishes of Louisiana. More specifically, Smith (1999) documented the predominance of longleaf pine flatwoods/savanna pre-settlement days in the flatwoods region of southern St. Tammany Parish and along the western flank of the Pearl River. Smith (1996) described these habitats as a very open "forest" (canopy cover averaged much less than 50%), with a scattering of trees consisting of almost exclusively of longleaf pine prior to human alteration of the last 100 years or so. Additionally, few shrubs or hardwood tree species were encountered with the exception of wetter depressional acid swamps (e.g., slash pine-pond cypress/ hardwood forest and bayhead swamp) and the margins along creek bottoms bisecting flatwood regions.

Additionally, historical survey data notes collected by Clinch Gray in April of 1820 and March of 1822 indicate the sections, townships and ranges the Bank property is located in, as well as those in the surrounding area, were pine woods. Terms used to describe the woods included poor level pine woods, poor flat wet pine, poor pine woods, and white bay and pines. And Joseph Troskolawski in July of 1857 included notes of low flat pine woods, poor pine woods, and low flat land

subject to overflow with pine and some cypress in the southeast corner of the northern tract (LOSL 2008).

More specifically, these habitats are floristically rich and support a diverse number of grasses and sedges as well as numerous herb species indigenous to longleaf pine savanna/flatwoods. Many of the common woody species include P. palustris (longleaf pine, usually predominant tree species), Pinus elliottii (slash pine, in EGCP), Magnolia virginiana (sweet bay), Nyssa sylvatica (blackgum), Quercus virginiana (live oak), Q. marilandica (blackjack oak), Q. laurifolia (laurel oak), Cyrilla racemiflora (swamp cyrilla), Morella spp. (waxmyrtles), Hypericum spp. (St. John's worts), and Styrax americana (littleleaf snowbell). Grasses and sedges dominant the herbaceous coverage and common species include Andropogon spp. (broomsedges), Schizachyrium scoparium and S. tenerum (little and slender bluestem), Panicum spp. (panic grasses), Aristida spp. (three-awn grasses), Ctenium aromaticum (toothache grass), Muhlenbergia capillaris (hairawn muhly), Erianthus spp. (plume-grasses), Coelorachis spp. (jointgrasses), Rhynchospora spp. (beak-rushes) including Rhynchospora chapmanii (S2) and Rhynchospora compressa (S1S2), Xyris spp. (yellow-eyed grasses), Fuirena spp. (umbrella grasses), Scleria spp. (nut-rushes), Dichromena latifolia (giant white top sedge), Eriocaulon spp. (pipeworts), Lachnocaulon spp. (bog buttons), and Fimbristylis spp. (fimbry-sedge). And some forbs of the common forbs in the herb community include Sarracenia spp. (pitcherplants) including Sarracenia psittacina (parrot pitcherplant, S3), Agalinis spp. (gerardias), Lobelia spp. (lobelias), Rhexia spp. (meadow beauties), Eryngium integrifolium (bog thistle), Oxypolis filiformis (narrow-leaved hog-fennel), Polygala spp. (milkworts), Liatris spp. (blazing-stars), Sabatia spp. (rose-gentians), Drosera spp. (sundews), Pinguicula spp. (butterworts) including Pinguicula lutea (S2), Utricularia spp. (bladderworts), and Platanthera spp. (fringed-orchids). Various additional species belonging to the lily family (Liliaceae) including Aletris lutea (yellow colic-root) and Tofieldia racemosa (coastal false-asphodel, S2S3), species from the sunflower family (Asteraceae) including Carphephorus pseudoliatris (chaffhead), and members of the orchid family (Orchidaceae) including Cleistes bifaria (spreading pogonia, S1) are prominent. Lycopodium spp. (club-mosses) and sphagnum moss are often abundant (Smith 1996, LNHP 1986-2004).

However, with the completion of the East Louisiana Railroad throughout much of St. Tammany Parish by the early 1890s and the development of steam-powered logging and mill equipment, the logging industry flourished throughout the south as the demand for lumber increased after the civil war (Sumptner 2008; Foster 1912). By this time there were as many as 1,300 saw mills in operation in Louisiana alone and production was steady since steam-powered logging skidders collected the timber at a rapid rate and logs and lumber could be shipped quickly by rail. The high demand for lumber coupled with an endless supply of labor and mechanized equipment would soon drastically reduce the once thought endless supply of virgin longleaf pine (Sumptner 2008; Foster 1912). Ellis (1981) in Sumpter (2008) stated “And did they cut the timber, and cut and cut, until, by the

1920s, it was all gone. The rolling hills of northwest St. Tammany Parish and the flats of the south presented the same unbroken vista of stumps, as far as the eye could see." Louisiana's first state forester, R.D. Forbes said in 1923 "the plain truth of the matter is that in county after county, in State after State of the South, the piney woods are not passing but have passed" (in Barnett and Carter 2017).

With virgin longleaf timber disappearing at an alarming rate, Henry E. Hardtner, a German immigrant who settled in Pineville, LA and invested $1,000 in a small sawmill in Pineville, LA, began experimenting in 1915 with pine regeneration on his property in Urania, LA. In a natural stand of loblolly pine he began leaving behind various numbers of seed trees per acre when logging as opposed to clear cutting. His techniques along with research and contributions from others led to the beginning of sustainable forestry practices throughout the south, and the beginning of loblolly and slash pine plantations. The earliest records of reforestation efforts in the area of the Moccasin Mitigation Bank property during this time period were initiated by the Great Southern Lumber Company in Bogalusa, LA. When convinced Hardtner's techniques for replanting cutover lands were viable, the Great Southern forestry operation began to plow and direct seed 800 acres of land with loblolly pine seeds. However, Great Southern was only able to plant some 2,700 acres of pine seedlings before the Great Depression halted the planting operations in 1933. But their efforts and collaboration with others spawned further research into mass the production of loblolly and slash pine seedlings in nurseries throughout Louisiana but the Great Depression in the 1930s and World War II in the 1940s further depressed the market for southern pine. With the American post war economic boom in full swing, the first scientific nation-wide forestry inventory was conducted in 1953 and found that only 3 million acres of plantations had been planted in the south by 1953 (Barnett and Carter 2017).

With that history mind, historical imagery of the MMB property acquired in May of 1952 show that the property is without mature timber. The lowest area of the southwest tract that is currently occupied by bottomland species appears to be vegetated with brush or trees at the time. The imagery is black and white, so it is difficult to determine exactly which stage of growth trees were in at the time. Imagery acquired in May of 1969 do however show tree coverage throughout the northern tract and in all but about 54 acres of the southern tract, and trees do not appear to be planted in rows. The most recent indication of logging activity on the property appears to have been around the time of the January 1998 DOQQ imagery acquisition. The northern area consisting of 125.03 acres was logged entirely and approximately 113.24 acres of the southern tract was logged. Imagery since then show that all of the MMB is forested except a 6.1-acre pipeline ROW that runs through the southwest tract.

### 3.4.2 Existing Plant Community

There are two (2) distinct plant communities on the Bank property, a predominantly slash pine plantation community with pockets of young sparse bald cypress trees

which occupies approximately 302.4 acres and 40.5 acres of Bayhead swamp located within the southwest tract of the property. Table 3 summarizes dominant species found within each plant community, the maximum dbh of trees and shrub species, percent of each within the overstory, midstory, and understory, and Figure 7 depicts the location and extent of the 2 plant communities (see Tables 2 & 3).

### 3.5 General Need for the Project in this Area

Establishment of the MMB will result in the following benefits:

1. The project will provide high-quality mitigation options for permitted activities within the proposed primary service area of the Lake Pontchartrain Basin. St. Tammany Parish is currently one of the fastest growing parishes in Louisiana and one of the fastest growing communities in the country (St. Tammany Economic Development Foundation 2014). Much of the growth is in the southern portion of the parish in the wet “flatwoods” region which requires pine savanna mitigation credits, and pine savanna mitigation banks.

2. Additional mitigation banking credits in the Basin should increase competition for credits and thus potentially reduce credit prices for mitigation applicants.

3. While small in size, the Bank is within the USDAs Natural Resources Conservation Service (NRCS) Louisiana Longleaf Pine Initiative (LPI) Priority Area and will help provide habitat for at least 122 endangered or threatened plant and animal species (NRCS 2011). The 342.9 ac MMB project is located about 6.6 miles south of Mossy Hill Mitigation Bank and Bayou Lacombe Mitigation Bank, two pine flatwoods/savanna banks totaling more than 6,000 acres, and 2.3 miles northeast of the proposed Cane Bayou Mitigation Bank, a pine flatwoods/savanna restoration project totaling 1,110 acres. Additionally, the LDWFs Louisiana Comprehensive Wildlife Conservation Strategy (Wildlife Action Plan) has identified longleaf pine uplands and wetlands in the EGCP ecoregion as a conservation priority (Lester et al. 2005).

4. Numerous conservation, watershed, estuary, Lake and land-use plans have been developed for the Lake Pontchartrain Basin, which includes St. Tammany Parish and the MMB. Some of those include the Comprehensive Habitat Management Plan for the Lake Pontchartrain Basin (LPBF 2006), Conservation Area Plan for the Lake Pontchartrain Estuary (The Nature Conservancy 2004), New Directions 2025 Critical and Sensitive Areas Plan (St. Tammany Parish Gov. 2003a), New Directions 2025 Land Use Plan (St. Tammany Parish Gov. 2003b), Northern Gulf of Mexico Ecoregional Plan (The Nature Conservancy 2000), and East Gulf Coastal Plain Ecoregional Plan (The Nature Conservancy 1999).

5. Surface waters from the Bank property drain into Bayou Lacombe, hence establishment of the bank will provide a rich assemblage of vegetation that will increase surface water retention time and reduce sediment runoff into Lake Pontchartrain. Some of the aquatic species to benefit from these water quality improvements include the following species of conservation concern: Gulf sturgeon (Acipenser oxyrinchus desotoi), paddlefish (Polyodon spathula), flagfin shiner (Pteronotropis signipinnis), river redhorse (Moxostoma carinatum), and the Gulf logperch (Percina suttkusi; (Lester et al. 2005).

## 4. Establishment of a Mitigation Bank

The work to be performed to establish the MMB is technically feasible given it is very similar in nature to many of pine flatwoods/savanna restoration projects already performed in the Lake Pontchartrain Basin. The altered pine habitat is not unlike many of those in the Eastern Gulf Coastal Plains that have been successfully restored in the recent past by TNC and others. Site prep will include but is not limited to: Standard forestry tree removal/harvest of all planted species from silviculture (Slash, Loblolly and other species), removal, degradation or gapping of existing bedding patterns, clearing the site of non-indigenous species along with various combinations of prescribed fire , minor surface hydrologic remediation (leveling of timber harvest ruts and skidder trail depressions and mounds), invasive species control, and replanting of native Pine Savanna Species (Figure 8). The technique to restore such sites have been performed and documented to be successful at other pine flatwood/savanna wetland mitigation banks and other conservation lands in the area over the past 20 years, and the Sponsors have the financial resources to appoint managers with the experience and technical expertise to properly implement this project. SEG Environmental will be tasked with managing all Ecological oversight, setup, and monitoring.

### 4.1 Site Restoration Plan

#### 4.1.1 Soils/Hydrologic Work

Rutting, skid trails and bedding from multiple successional forestry iterations interrupts lateral surface flow and creates ponding in many areas of the property. Restoration of surface hydrology will take place during and immediately following removal of existing plantation trees and some brush. After areas of rutting have been cleared of trees, brush and debris, mechanized equipment will be used to smooth surface topology as a remedial action. All bedding will be removed to the greatest extent possible so as to allow for unfettered passive surface flow (LDWF Comment).

The Plan View detailing the work required to rehabilitate hydrology on the Bank is located in Appendix C, which includes the Plan View showing the location of ruts requiring tilling and filling.

### 4.1.2 Vegetative Work

Aggressive restoration methods using a combination of mechanized forestry equipment, prescribed burning, and herbicide treatments will be used to remove undesirable pine, and brush and then prep the site for vegetative planting the winter after site clearing has been completed. Given the wet conditions of the site, the forestry clearing process may take 2-3 years to complete.

#### Site Prep

At the beginning of year 1 mechanized equipment will be used to begin clearing the site of timber and removing it from the property in all areas except the 40.5 acre existing bayhead swamp in the southwest tract. To avoid further rutting in the area surrounding the swamp, mechanized equipment will not be operated within 50-80 feet of the bottom margin during wet periods. After undesirable trees and brush have been removed from both tracts, each will be treated with wetland approved chemicals to eliminate undesirable vegetation and further prepare the site for prescribed burning. Herbicide application protocols will be established and followed to ensure desired vegetation remains and adverse environmental impacts are minimized. When site conditions permit, mechanized equipment will then be used to shear, rake and pile debris, and prescribed burn(s) will be used to eliminate/reduce debris piles. Follow-up chemical and burn applications may be required to fully remove undesirable vegetation before the site is fully prepared for vegetative planting.

#### Vegetative Planting

In order to restore the site as a longleaf pine flatwoods/savanna, containerized longleaf pine genotypically compatible for growth in southeast Louisiana will be planted on the site to insure desired survival and growth rates. The winter following completion of site preparation activities, i.e. December thru February, longleaf pine seedlings will be planted at a rate of approximately 300 trees per acre. The desired density of trees will be those numbers that provide for a final canopy coverage of between 10-80% on any given acre. Herbicides will be used to target individual trees if thinning is required at any point to reach the desired longleaf canopy coverage.

#### Prescribed Burns (Post-Restoration)

The primary management tool for controlling undesirable vegetation in the restored longleaf pine flatwoods/savanna will be prescribed fire. The desired goal is to eventually mimic the historical naturally occurring, or native Indian induced,

frequency of burning every 1-4 years. However, fire may be used more frequently as needed in the early stages of the restoration effort to maintain a predominantly open savanna understory free of undesirable woody vegetation.

Mechanized equipment, chemicals, of a combination thereof may be used to establish fire breaks around the bank perimeter where needed. Damage to bottomland species in the wet bottom of the southwest tract is not anticipated because it is normally too wet for fire to encroach too far into the margins.

The prescribed fire regime will ultimately depend on species composition of the bank and the frequency of use will be adjusted accordingly. A rigorous monitoring program coupled with timely prescribed burns will assure restoration goals and objectives are met. A certified burn manager pursuant to the State of Louisiana Requirements for such certification with forestry experience will plan and conduct all burns on the MMB.

Invasive and Undesirable Species Control

Chinese tallow trees (Triadica sebifera), along with privet (Ligustrum sp.) and other undesirable shrubs and trees, will be controlled with chemicals in areas where fire has been unsuccessful. The margins around the bottom in the southeastern tract will be continuously monitored for undesirable vegetation and treated on an as needed basis.

## 4.2 Technical Feasibility

The work required to restore the bank property to longleaf pine flatwoods/ savanna is feasible and has been documented extensively over the past 20 years in southeast Louisiana. Experienced consultants hired by the Sponsors along with the restoration activities will be funded through the sale of existing timber on the site.

Soils required to support longleaf pine savanna and hydrology required to support wetlands have been documented on the relatively flat landscape of the property. Additionally, the historical accounts of “wet pine woods” and “poor wet pines” in historical survey notes for portions of the property and surrounding, indicate a high potential for success for the restoration project.

## 4.3 Current Site Risks

Given that St. Tammany Parish is one of the fastest growing Parishes in the State there is a chance that prescribed burning related to site maintenance may present some smoke management challenges. However, drainages and wetlands along the northwestern, western, and southwestern boundary of the southwest tract and northern, eastern, and southern boundary of the northeast tract should hinder development into the future. Additionally, Louisiana statute LA. R.S. §3:17, HB773

defines prescribed burning as a management tool and one that benefits the safety of the public, the environment, and the economy of Louisiana, and one that land owners have a right to perform if appropriate precautionary measures are taken in the company of at least one “Certified Burn Manager.” Fish Hatchery Road are no State Hwy burn restrictions on the property in the immediate vicinity of the road. The northeastern tract of the Bank is along the southwestern boundary of Fire District 7 in St. Tammany Parish and the Chief does not anticipate any issues with prescribed burning as long as State regulations are strictly adhered to. The chief stated that fire is used widely as a forest management tool by large timber companies in the immediate vicinity of the property (ACOE comments).

The MMB site is zoned as low-density suburban district A-3, similar to much of the surrounding area (St. Tammany Parish 2017 and 2018). Future development in the form of rural subdivisions or planned unit development is anticipated in the area but as discussed earlier is unlikely immediately adjacent to the Bank in many directions due to wetlands and drainages. Logging is likely to occur adjacent to the Bank but should not present long-term risk to the operation and maintenance of the MMB.

### 4.4 Long-Term Sustainability of the Site

Long-term issues related to the sustainability of the site are not anticipated. Hydrology for the pine savanna wetland will be provided via direct rainfall so once hydrologic restoration work has been completed, long-term hydrologic maintenance will not be required.

The responsible agent for the long-term management of the MMB will be the Bank Sponsor, unless a third-party entity is given authority to maintain the Bank in perpetuity through written approval of the IRT. A conservation servitude will be placed on the MMB property to insure the long-term viability of the project and independent monitoring to ensure success will be supported by the sponsor. Monitoring and maintenance required by the mitigation agreement will be documented and reported to CEMVN in a timely manner. Deficiencies found will be immediately reported and the Sponsor agrees to develop and implement corrective measures after consultation and approval of the IRT. And, the Sponsor agrees to provide financial assurances to ensure that long-term stewardship needs will be met per the 2008 Compensatory Mitigation Rule (US Army Corps of Engineers 2008).

## 5. Proposed Service Area

The Primary Service area for the Bank for permitted impacts to pine flatwood/savanna wetlands is the Lake Pontchartrain Basin, which includes USGS HUCs 08070202, 08070203, 08070204, 08070205, 08090201, 08090202, and 08090203.

## 6. Operation of the Mitigation Bank

The MMB will be owned and operated by D&H Investment Properties, LLC, the Sponsor. A conservation servitude that encumbers all of MMB will be established pursuant to the Louisiana Conservation Servitude Act (LA Rev Stat § 9:1271) and will be held by an approved third party conservation organization, such as Land Trust for Louisiana or the Nature Conservancy.

The Sponsor agrees to seek technical assistance for land restoration and management from the Sponsor's agent/consultant listed below, one that has extensive experience establishing, restoring, managing, and monitoring mitigation bank lands throughout south Louisiana.

### 6.1 Project Representatives

| | |
|---|---|
| Sponsor: | D&H Investment Properties, LLC<br>110 Moores Road<br>Mandeville, LA, 70471<br>1-985-624-2644 |
| Agent: | SEG Environmental, LLC<br>224 Rue De Jean<br>Lafayette, LA, 70508<br>mconn@segenviro.com<br>337-347-6777 |
| Landowner: | D&H Investment Properties, LLC<br>110 Moores Road<br>Mandeville, LA, 70471<br>1-985-624-2644<br>Phone Number |

### 6.2 Qualifications of the Sponsor

MMB will be responsible for administrative duties and management of the Bank land. The owners of MMB have the financial assurances required for such an endeavor and have hired SEG Environmental, LLC (SEG) of Lafayette, LA as their Environmental Agent, a company with over 20 years of combined experience in the environmental and mitigation banking industry. SEG mitigation bank establishment and management experience includes but is not limited to: wetlands determinations, Section 404 permitting, prospectus development, MBI development, site preparation, site planting, monitoring, reporting and management related duties.

## 6.3 Proposed Long-Term Ownership and Management Representatives

D&H Investment Properties, LLC will be responsible for the Long-Term Ownership and Management of the MMB.

## 6.4 Site Protection

The Sponsor/Owner shall be responsible for protecting all lands within the entire Bank. The entire 342.9 acre site will be protected by a perpetual Louisiana conservation servitude and held by a 501c(3) entity (holder) in accordance with the Louisiana Conservation Servitude Act (LA Rev Stat § 9:1271, et seq.)(ACOE comment). The conservation servitude shall be recorded in the Mortgage and Conveyance Records of St. Tammany Parish.

## 6.5 Long-Term Strategy

The Sponsor will ensure the long-term success and sustainability of the MMB by restoring the surface hydrology of the entire bank area where needed, thence by such mechanisms as vegetative plantings, maintenance, invasive species control, site monitoring, establishment of financial assurances and perpetual protection through the establishment of a Louisiana conservation servitude. A long-term management plan will be included in the Mitigation Banking Instrument that will address long-term management requirements, costs and the identification of a funding mechanism in accordance with 33 CFR §332.7(d).

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**Table 1. Proposed habitat types, mitigation types, and acreage of each for Mocassin Mitigation Bank.**

| Proposed Habitat Types | Mitigation Type | Acres |
|---|---|---|
| Pine Savanna Flatwoods | Re-establishment | 9.2 |
| Pine Savanna Flatwoods | Rehabilitation | 293.2 |
| Bayhead/Acid Swamp | Preservation | 40.5 |
| | **Total** | **342.9** |

**Table 2. Existing conditions for the Moccasin Mitigation Bank.**

| Plant Community | Acres |
|---|---|
| Predominantly Slash Pine Plantation | 302.4 |
| Acid Swamp | 40.5 |
| **Total** | **342.9** |

**Table 3. Plant communities, dominant species, and percentages of each within the overstory, midstory & understory.**

**Slash Pine Plantation Plant Community**

| Tree Overstory | Indicator Status | % Cover | Max DBH |
|---|---|---|---|
| Slash Pine (Pinus elliottii) | FACW | 50% | 10.50 |
| Swamp Tupelo (Nyssa biflora) | OBL | 35% | 30.00 |
| Black Tupelo (Nyssa sylvatica) | FAC | 30% | 8.00 |
| Quercus laurifolia (Laurel Oak) | FACW | 30% | 36.00 |
| Quercus virginia (Live Oak) | FACU | 20% | 18.00 |
| Magnolia virginiana (Sweet-Bay) | FACW | 17% | 5.00 |
| American Plum (Prunus americana) | UPL | 10% | 2.50 |
| Bald Cypress (Taxodium distichum) | OBL | 2% | 3.00 |

| Sapling/Shrub Midstory | Indicator Status | % Cover | Max DBH |
|---|---|---|---|
| Slash Pine (Pinus elliottii) | FACW | 25% | 2.5 |
| Black Tupelo (Nyssa sylvatica) | FAC | 15% | 2.50 |
| Large Gallberry (Ilex coriacea) | FACW | 33% | 0.75 |
| Red Chokeberry (Aronia arbutifolia) | FACW | 30% | 1.50 |
| Bald Cypress (Taxodium distichum) | OBL | 15% | 2.50 |
| Woolly Huckleberry (Gaylussacia mosieri) | FACW | 22% | 0.50 |
| Southern Bayberry (Morella cerifera) | FAC | 18% | 0.31 |
| Shinyleaf (Lyonia lucida) | FACW | 15% | 0.25 |
| Youpon (Ilex vomitoria) | FAC | 15% | 0.25 |
| American Plum (Prunus americana) | UPL | 10% | 2.50 |

| Herbaceous Vegetation Understory | Indicator Status | % Cover | Max DBH |
|---|---|---|---|
| Large Gallberry (Ilex coriacea) | FACW | 18% | 0.13 |
| Woolly Huckleberry (Gaylussacia mosieri) | FACW | 7% | 0.50 |
| Southern Bayberry (Morella cerifera) | FAC | 5% | 0.31 |
| Shinyleaf (Lyonia lucida) | FACW | 5% | 0.13 |
| Youpon (Ilex vomitoria) | FAC | 5% | 0.13 |
| Northern Bracken Fern (Pteridium aquilinum) | FACU | 60% | |
| Broom-Sedge (Andropogon virginicus) | FAC | 30% | |
| Small-Fruit Spike-Rush (Eleocharis microcarpa) | OBL | 23% | |
| Needle Spike-Rush (Eleocharis acicularis) | OBL | 20% | |
| Fringed Nut-Rush (Scleria ciliata) | FAC | 15% | |
| Woolly Rosette Grass (Dichanthelium scabriusculum) | OBL | 13% | |
| Coastal-Plain St. John's-Wort (Hypericum brachyphyllum) | FACW | 5% | |

| Woody Vines | Indicator Status | % Cover |
|---|---|---|
| Laurel-leaf Greenbrier (Smilax laurifolia) | FACW | 11% |
| Sawbrier (Smilax glauca) | FAC | 8% |
| Horsebrier (Smilax rotundifolia) | FAC | 5% |

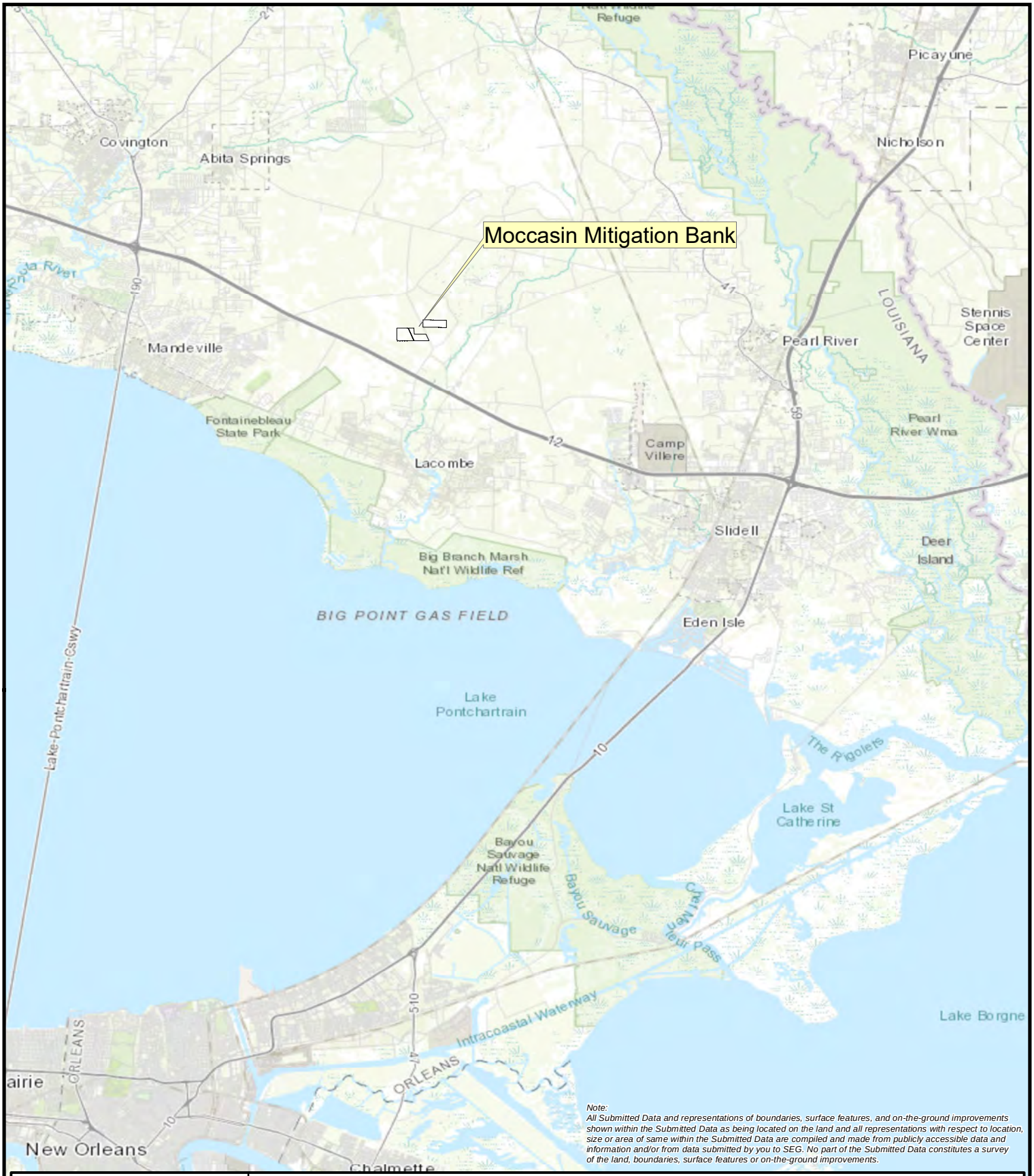
**Acid Swamp Plant Community**

| Tree Overstory | Indicator Status | % Cover | Max DBH |
|---|---|---|---|
| Swamp Tupelo (Nyssa biflora) | OBL | 35% | 30.00 |
| Quercus laurifolia (Laurel Oak) | FACW | 30% | 36.00 |

| Sapling/Shrub Midstory | Indicator Status | % Cover | Max DBH |
|---|---|---|---|
| Swamp Tupelo (Nyssa biflora) | OBL | 40% | 4.00 |
| Shinyleaf (Lyonia lucida) | FACW | 15% | 0.50 |

| Herbaceous Vegetation Understory | Indicator Status | % Cover |
|---|---|---|
| Northern Bracken Fern (Pteridium aquilinum) | FACU | 60% |
| Broom-Sedge (Andropogon virginicus) | FAC | 30% |
| Small-Fruit Spike-Rush (Eleocharis microcarpa) | OBL | 23% |
| Needle Spike-Rush (Eleocharis acicularis) | OBL | 20% |
| Fringed Nut-Rush (Scleria ciliata) | FAC | 15% |
| Woolly Rosette Grass (Dichanthelium scabriusculum) | OBL | 13% |
| Coastal-Plain St. John's-Wort (Hypericum brachyphyllum) | FACW | 5% |

# FIGURES




*Note:*
*All Submitted Data and representations of boundaries, surface features, and on-the-ground improvements shown within the Submitted Data as being located on the land and all representations with respect to location, size or area of same within the Submitted Data are compiled and made from publicly accessible data and information and/or from data submitted by you to SEG. No part of the Submitted Data constitutes a survey of the land, boundaries, surface features or on-the-ground improvements.*

MFMB

Bank Boundaries = 342.9 ac.

Page 1 of 1

**FIGURE 1: LOCATION MAP**

Moccasin Mitigation Bank
D&H Investment Properties, LLC

St. Tammany Parish, Louisiana

May 22, 2018

0 19,500 39,000 78,000 Feet

Coordinate System: NAD83 StatePlane LA South 1702 Ft • Projection: Lambert Conformal Conic • Units: Feet

Prepared By:

SEG ENVIRONMENTAL

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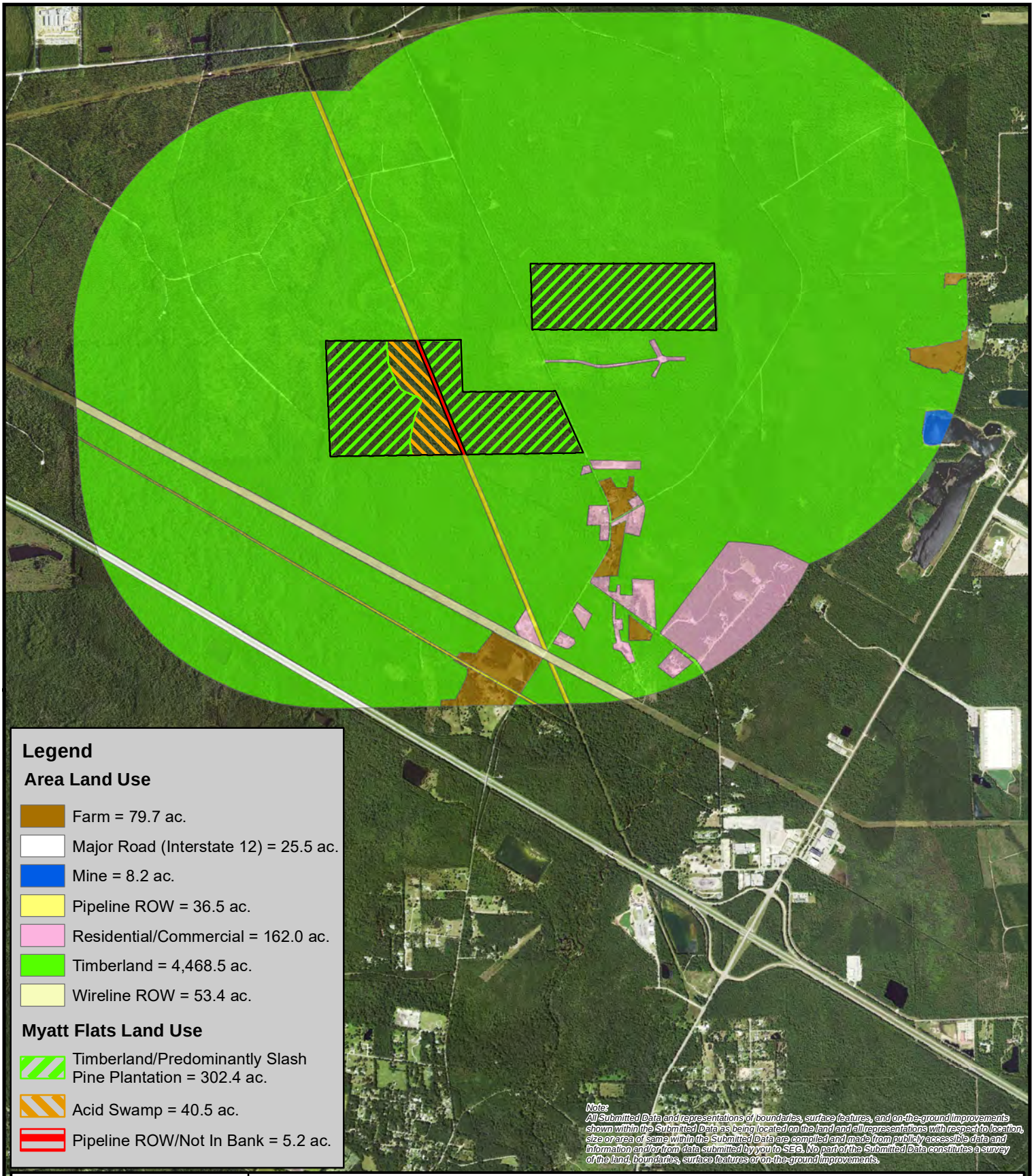
281-822-2121 fax

Path: R:\seg-enviro\land venture partners-Heath R\Myatt Flat\Prospectus\MXDs\Figure 1 Location Map.mxd




MFMB

Bank Boundaries = 342.9 ac.

Page 1 of 1

## FIGURE 2: LAND USE MAP

Moccasin Mitigation Bank
D&H Investment Properties, LLC

St. Tammany Parish, Louisiana

May 29, 2018

0 2,150 4,300 8,600 Feet

Coordinate System: NAD83 StatePlane LA South 1702 Ft • Projection: Lambert Conformal Conic • Units: Feet

N

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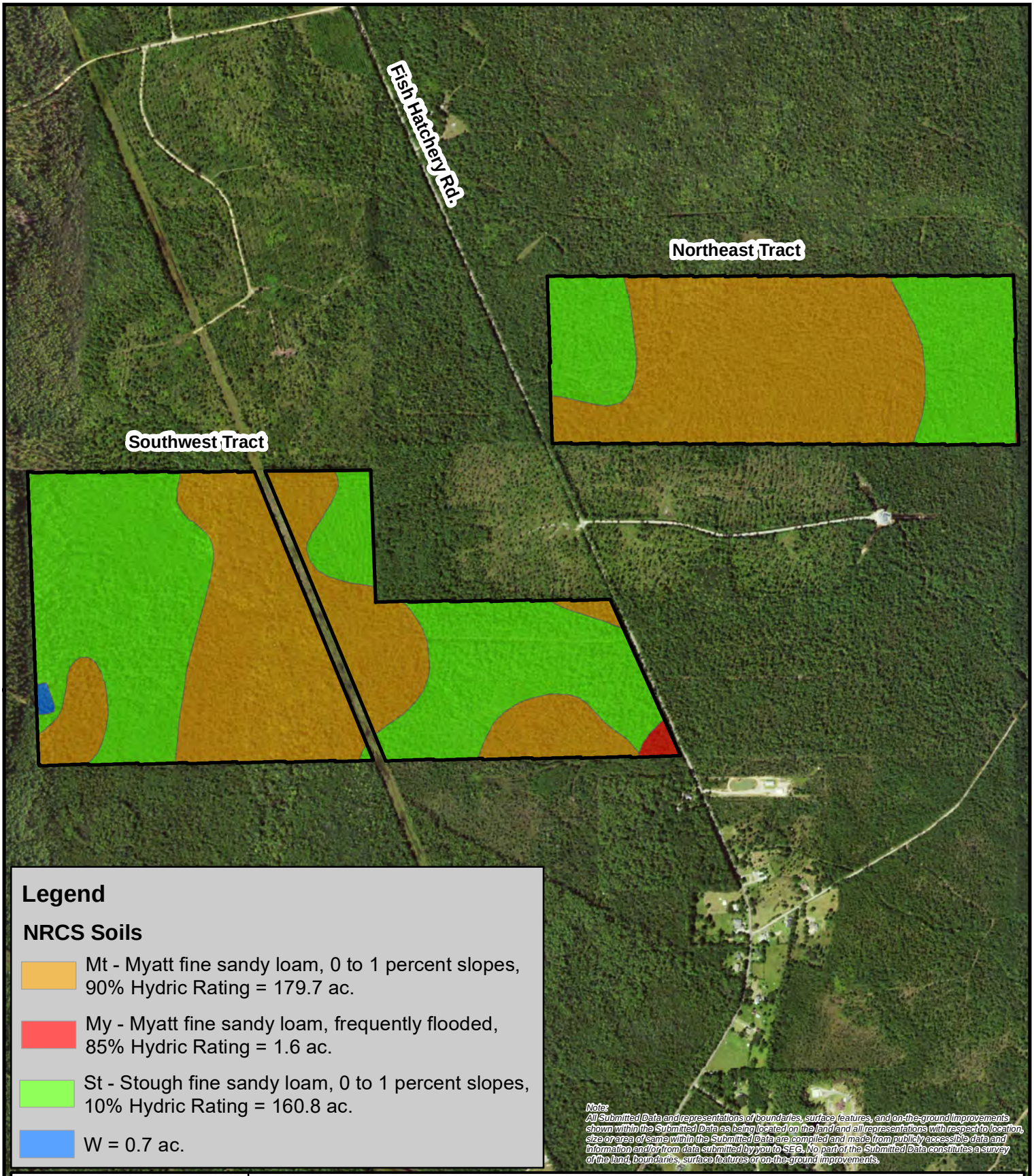
Path: R:\seg-enviro\land venture partners-Heath R\Myatt Flat\Prospectus\MXDs\Figure 2 Land Use Map.mxd




## Legend

### NRCS Soils

- Mt - Myatt fine sandy loam, 0 to 1 percent slopes, 90% Hydric Rating = 179.7 ac.
- My - Myatt fine sandy loam, frequently flooded, 85% Hydric Rating = 1.6 ac.
- St - Stough fine sandy loam, 0 to 1 percent slopes, 10% Hydric Rating = 160.8 ac.
- W = 0.7 ac.

*Note:*
*All Submitted Data and representations of boundaries, surface features, and on-the-ground improvements shown within the Submitted Data as being located on the land and all representations with respect to location, size or area of same within the Submitted Data are compiled and made from publicly accessible data and information and/or from data submitted by you to SEG. No part of the Submitted Data constitutes a Survey of the land, boundaries, surface features or on-the-ground improvements.*

MFMB

Bank Boundaries = 342.9 ac.

Page 1 of 1

**FIGURE 3: NRCS SOILS MAP**

Moccasin Mitigation Bank
D&H Investment Properties, LLC

St. Tammany Parish, Louisiana

May 22, 2018

0 850 1,700 3,400 Feet

Coordinate System: NAD83 StatePlane LA South 1702 Ft • Projection: Lambert Conformal Conic • Units: Feet

N

Prepared By:

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281-822-2121 fax

Path: R:\seg-enviro\land venture partners-Heath R\Myatt Flat\Prospectus\MXDs\Figure 3 NRCS Soils.mxd


*Note:*
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MFMB

Bank Location = 342.9 ac.

Page 1 of 1

## FIGURE 4: CONTRIBUTING WATERSHEDS AND PROPOSED SERVICE AREA

Moccasin Mitigation Bank
D&H Investment Properties, LLC
St. Tammany Parish, Louisiana
May 22, 2018

0 95,000 190,000 380,000 Feet

Coordinate System: NAD83 StatePlane LA South 1702 Ft • Projection: Lambert Conformal Conic • Units: Feet

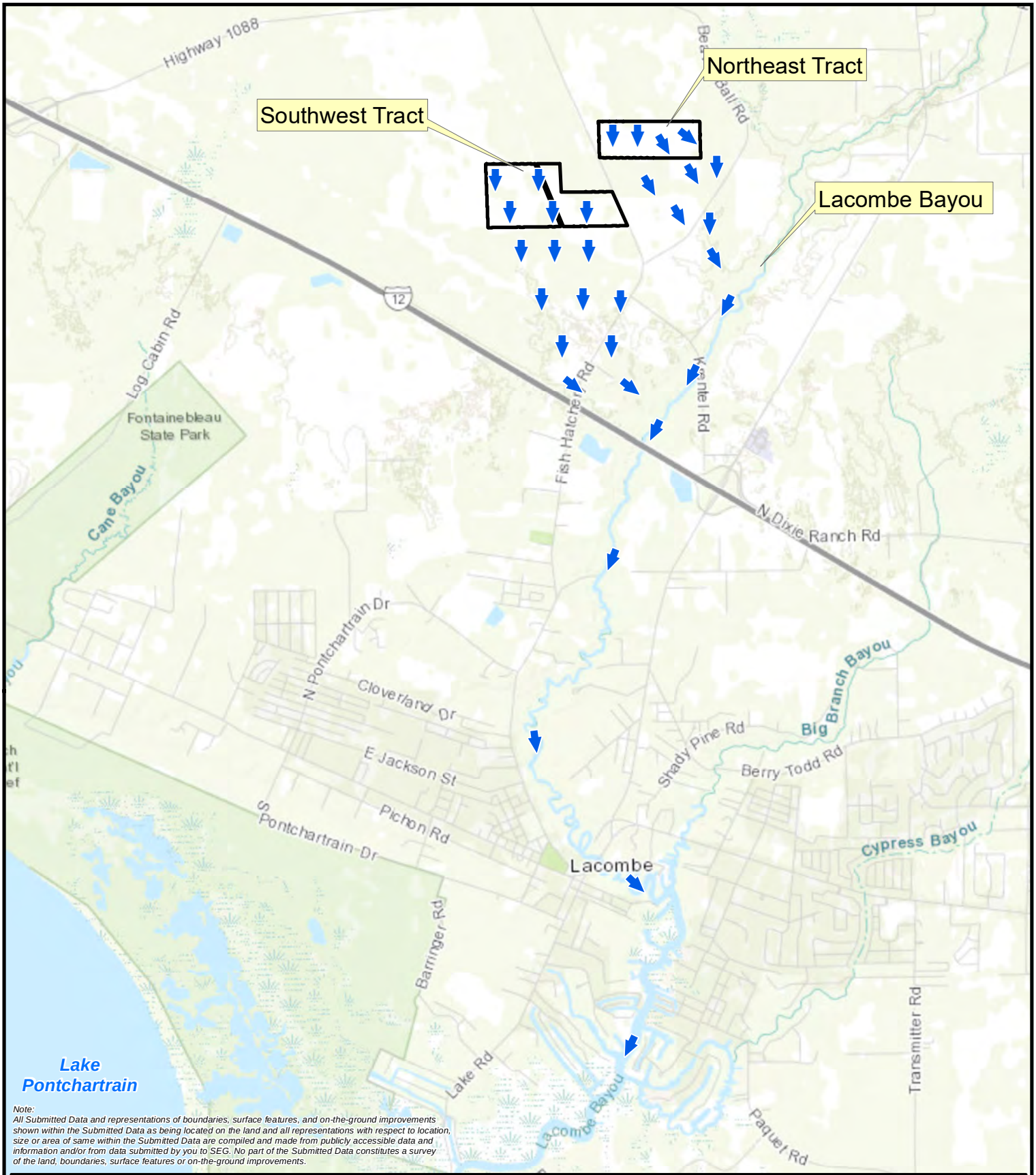
Prepared By:

SEG ENVIRONMENTAL

Louisiana Office
224 Rue De Jean
Lafayette, LA 70508
337-232-1122
337-232-1372 fax

Texas Office
7155 Old Katy Rd. Suite 225
Houston, Tx 77024
281-822-2120
281-822-2121 fax

Path: R:\seg-enviro\land venture partners-Heath R\Myatt Flat\Prospectus\MXDs\Figure 4 Contributing Watershed.mxd

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# MFMB

Historical Drainage Patterns

Bank Boundaries = 342.9 ac.

Page 1 of 1

## FIGURE 5: HISTORICAL DRAINAGE PATTERNS

Moccasin Mitigation Bank
D&H Investment Properties, LLC

St. Tammany Parish, Louisiana
May 22, 2018

0 3,950 7,900 15,800 Feet

Coordinate System: NAD83 StatePlane LA South 1702 Ft • Projection: Lambert Conformal Conic • Units: Feet

Prepared By:

SEG ENVIRONMENTAL

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224 Rue De Jean
Lafayette, LA 70508
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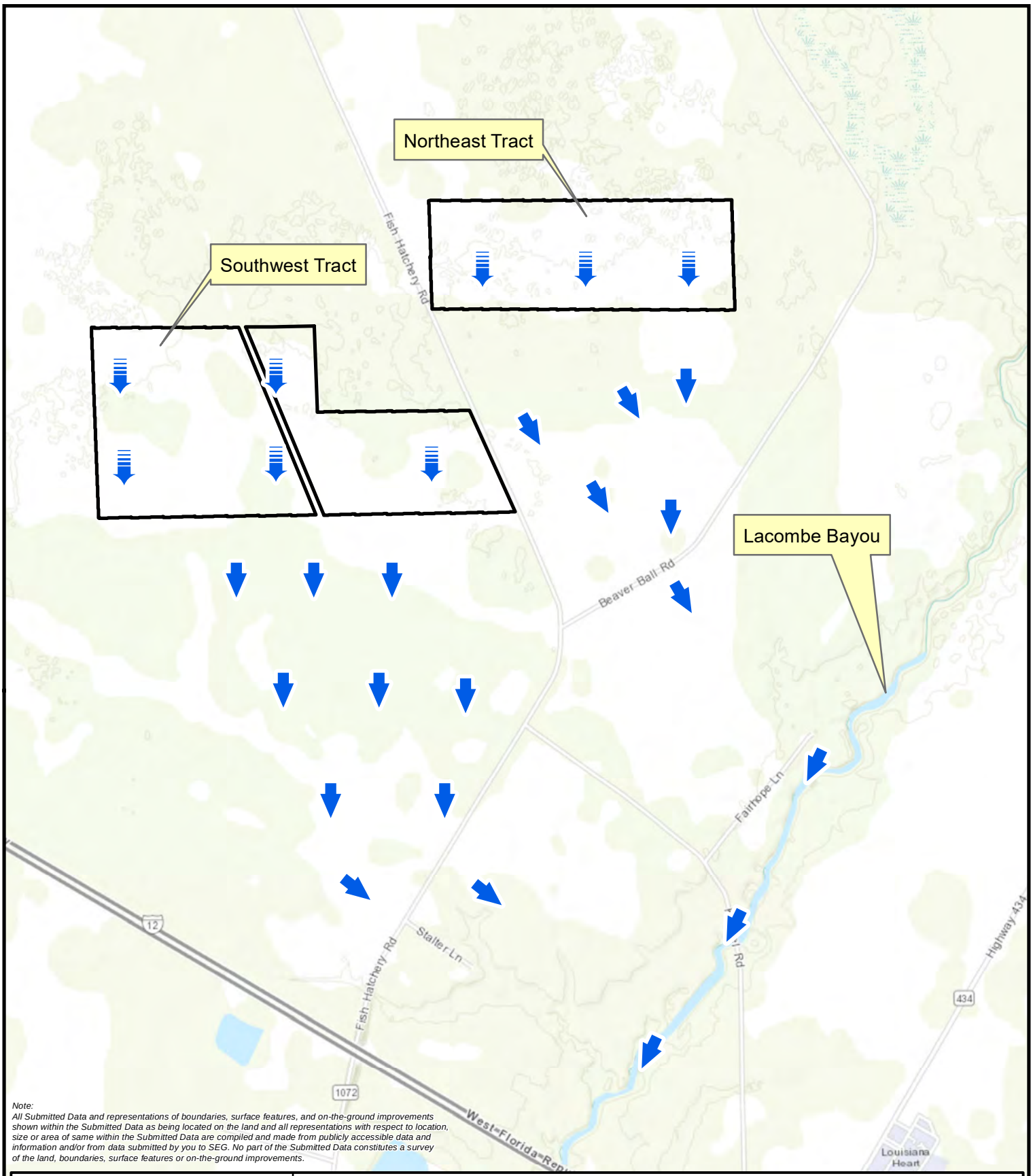
Houston, Tx 77024
281-822-2120
281-822-2121 fax

Path: R:\seg-enviro\land venture partners-Heath R\Myatt Flat\Prospectus\MXDs\Figure 5 Historical Drainage Patterns.mxd




*Note:*
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MFMB

Interrupted Surface Flow Patterns Due to Bedding & Skidder Ruts

Normal Surface Flow Patterns

Bank Boundaries = 342.9 ac.



## FIGURE 6: EXISTING DRAINAGE PATTERNS

Moccasin Mitigation Bank
D&H Investment Properties, LLC
St. Tammany Parish, Louisiana

May 22, 2018

0 1,050 2,100 4,200 Feet

Coordinate System: NAD83 StatePlane LA South 1702 Ft • Projection: Lambert Conformal Conic • Units: Feet

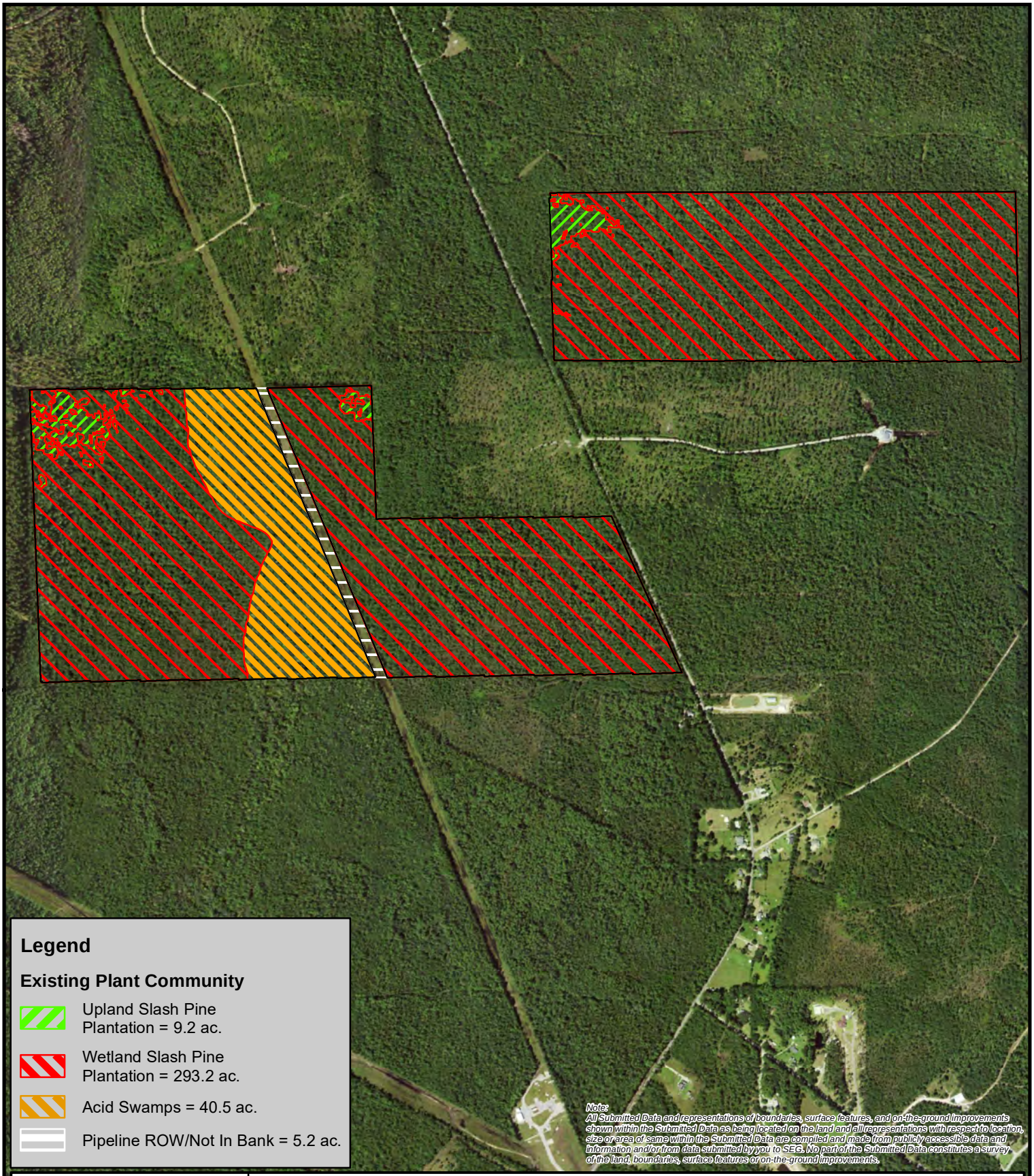
Prepared By:

SEG ENVIRONMENTAL

Louisiana Office
224 Rue De Jean
Lafayette, LA 70508
337-232-1122
337-232-1372 fax

Texas Office
7155 Old Katy Rd. Suite 225
Houston, Tx 77024
281-822-2120
281-822-2121 fax

Path: R:\seg-enviro\land venture partners-Heath R\Myatt Flat\Prospectus\MXDs\Figure 6 Existing Drainage Patterns.mxd




MFMB

Bank Boundaries = 342.9 ac.

Page 1 of 1

## FIGURE 7: EXISTING PLANT COMMUNITIES

Moccasin Mitigation Bank
D&H Investment Properties, LLC

St. Tammany Parish, Louisiana

May 29, 2018

0 850 1,700 3,400 Feet

Coordinate System: NAD83 StatePlane LA South 1702 Ft • Projection: Lambert Conformal Conic • Units: Feet

Prepared By:

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Louisiana Office
224 Rue De Jean
Lafayette, LA 70508
337-232-1122
337-232-1372 fax

Texas Office
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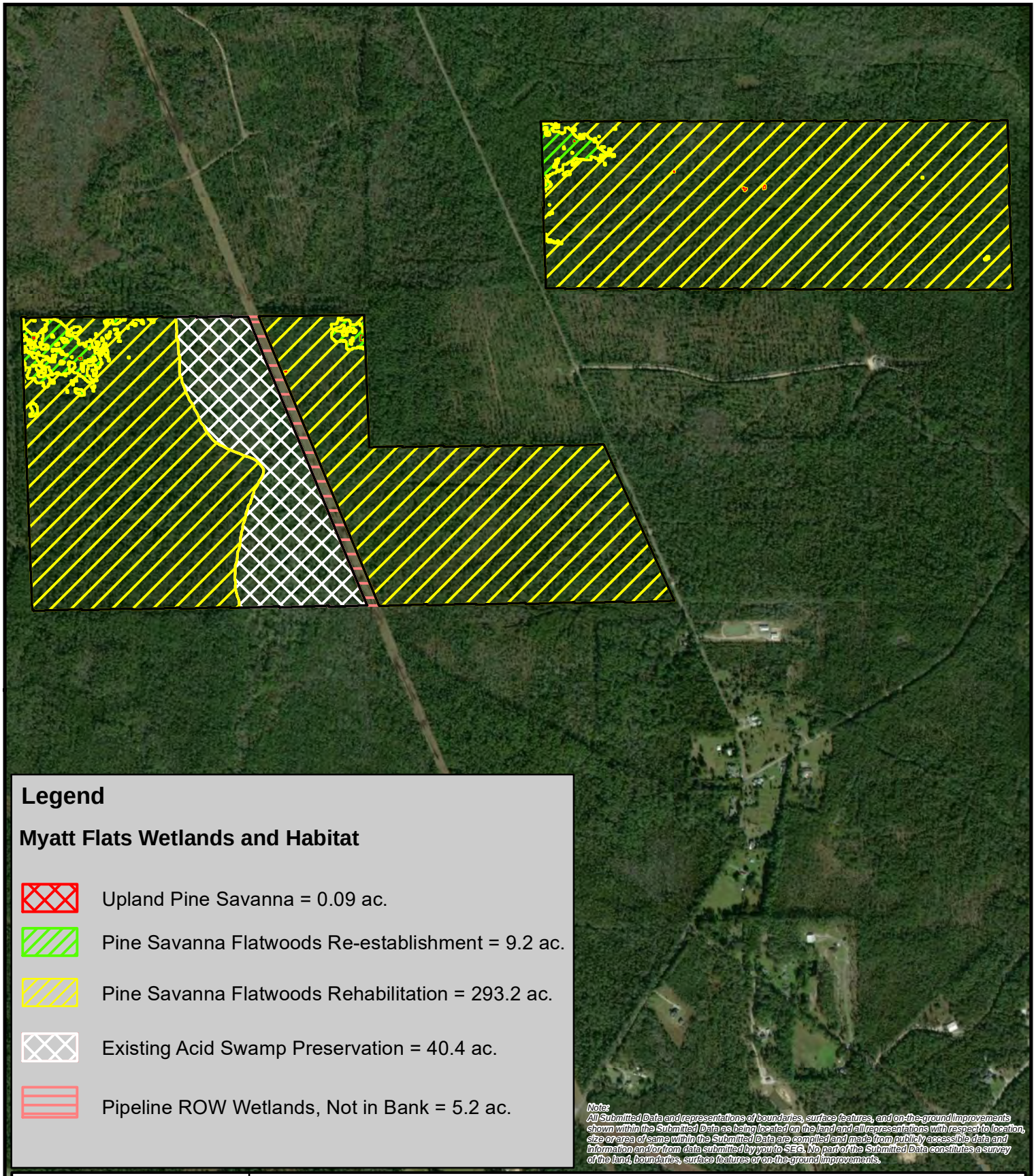
Houston, Tx 77024
281-822-2120
281-822-2121 fax

Path: R:\seg-enviro\land venture partners-Heath R\Myatt Flat\Prospectus\MXDs\Figure 7 Existing Plant Communities.mxd



## Legend

### Myatt Flats Wetlands and Habitat

- Upland Pine Savanna = 0.09 ac.
- Pine Savanna Flatwoods Re-establishment = 9.2 ac.
- Pine Savanna Flatwoods Rehabilitation = 293.2 ac.
- Existing Acid Swamp Preservation = 40.4 ac.
- Pipeline ROW Wetlands, Not in Bank = 5.2 ac.

*Note:*
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MFMB

Bank Boundaries = 342.9 ac.

Page 1 of 1

# FIGURE 8: HABITAT RESTORATION PLAN

Moccasin Mitigation Bank
D&H Investment Properties, LLC

St. Tammany Parish, Louisiana

January 28, 2019

0 850 1,700 3,400 Feet

Coordinate System: NAD83 StatePlane LA South 1702 Ft • Projection: Lambert Conformal Conic • Units: Feet

N

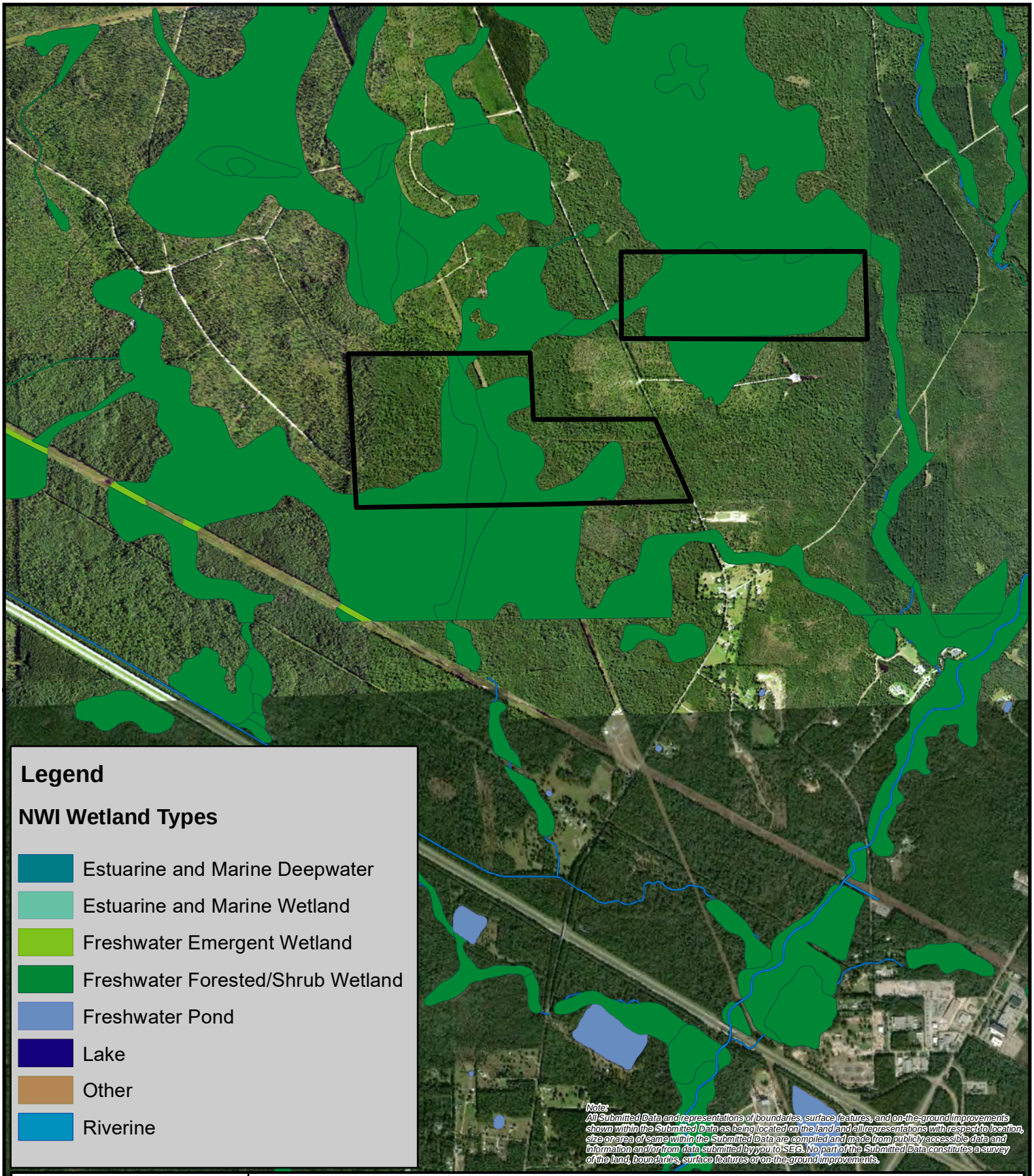
Prepared By:

SEG ENVIRONMENTAL

Louisiana Office
224 Rue De Jean
Lafayette, LA 70508
337-232-1122
337-232-1372 fax

Texas Office
7155 Old Katy Rd. Suite 225
Houston, Tx 77024
281-822-2120
281-822-2121 fax

Path: R:\seg-enviro\land venture partners-Heath R\Myatt Flat\Prospectus\MXDs\Figure 8 Habitat Restoration Plan.mxd




MFMB

Bank Boundaries = 342.9 ac.

Page 1 of 1

**FIGURE 9: NWI WETLANDS TYPES**

Moccasin Mitigation Bank
D&H Investment Properties, LLC

St. Tammany Parish, Louisiana

January 15, 2019

0 1,650 3,300 6,600 Feet

Coordinate System: NAD83 StatePlane LA South 1702 Ft • Projection: Lambert Conformal Conic • Units: Feet

N

Prepared By:

SEG ENVIRONMENTAL

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224 Rue De Jean
Lafayette, LA 70508
337-232-1122
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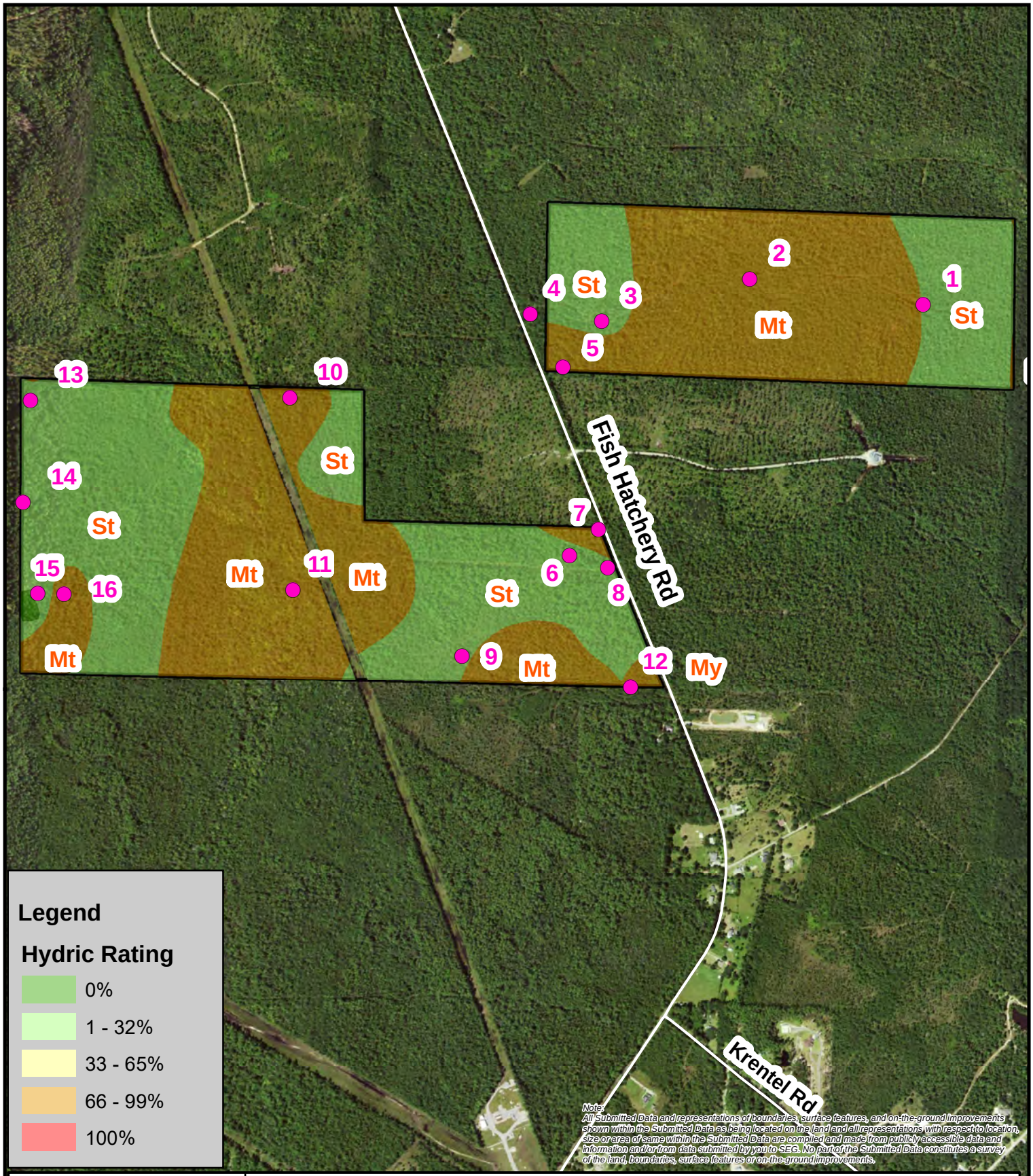
Houston, Tx 77024
281-822-2120
281-822-2121 fax

Path: R:\seg-enviro\land venture partners-Heath R\Myatt Flat\Prospectus\MXDs\Figure 9 NWI Wetlands Map.mxd

# APPENDICES




# DHIP

Wetland Determination Sampling Sites

Property Boundaries = 348.1 ac.



## Appendix A(a): Sampling Map

D & H Investment Properties

St. Tammany Parish, Louisiana

April 03, 2018

0 750 1,500 3,000 Feet

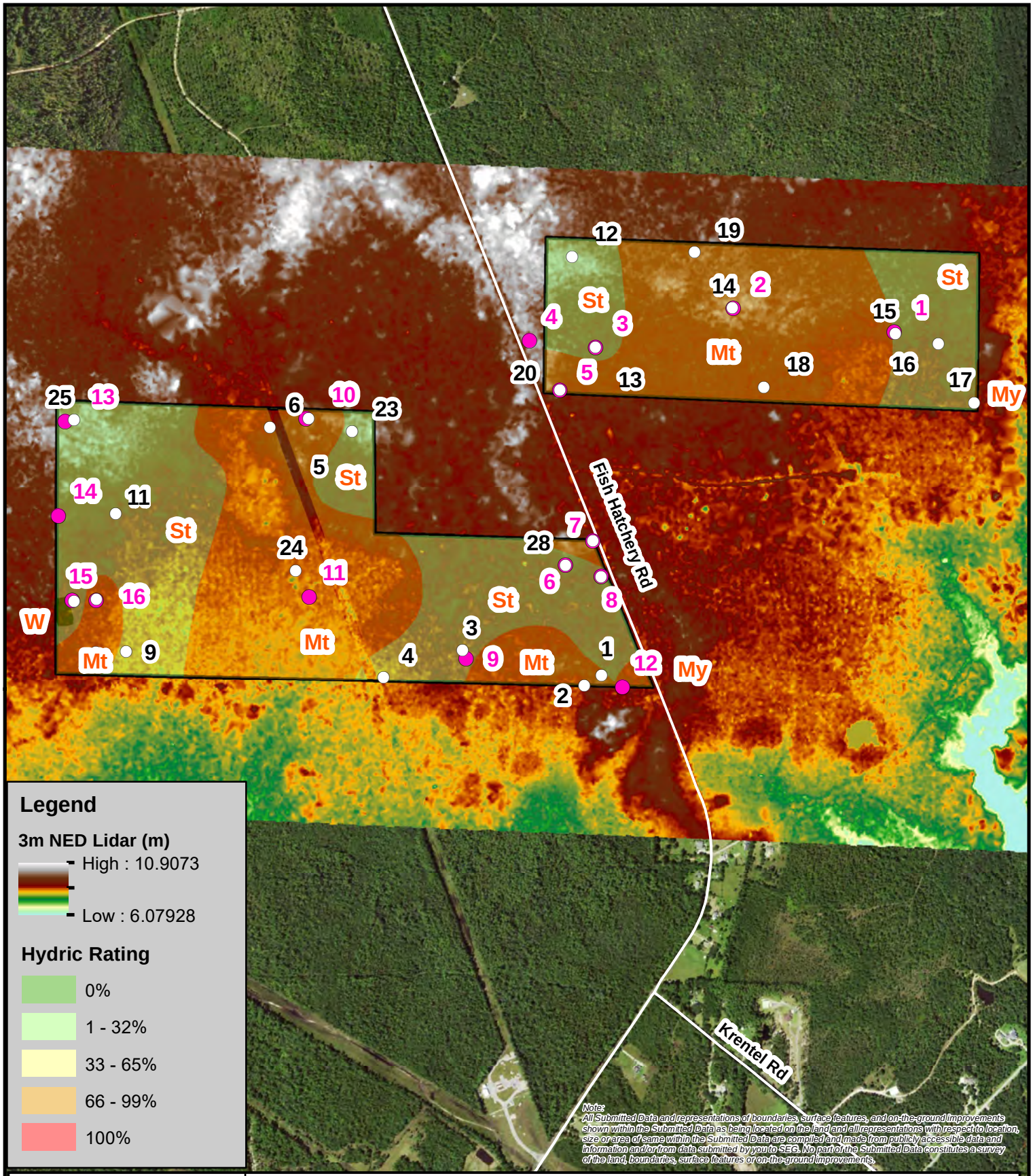
Coordinate System: NAD83 UTM Zone 16N • Projection: Transverse Mercator • Units: Meters

Prepared By:
SEG ENVIRONMENTAL

Louisiana Office
224 Rue De Jean
Lafayette, LA 70508
337-232-1122
337-232-1372 fax

Texas Office
7155 Old Katy Rd. Suite 225
Houston, Tx 77024
281-822-2120
281-822-2121 fax

Path: R:\seg-enviro\land venture partners-Heath R\Myatt Flat\Wetland Determination\MXDs\Attachment D Soils and Sampling Map.mxd




DHIP

**Legend**

- Original Desk Top Sampling Sites
- Wetland Determination Sampling Sites
- Property Boundaries = 348.1 ac.

Page 1 of 1

# Appendix A(b): Sampling Map

St. Tammany Parish, Louisiana

April 03, 2018

0 800 1,600 3,200 Feet

Coordinate System: NAD83 UTM Zone 16N • Projection: Transverse Mercator • Units: Meters

N


Prepared By:

SEG ENVIRONMENTAL

Louisiana Office
224 Rue De Jean
Lafayette, LA 70508
337-232-1122
337-232-1372 fax

Texas Office
7155 Old Katy Rd. Suite 225
Houston, Tx 77024
281-822-2120
281-822-2121 fax


Path: R:\seg-enviro\land venture partners-Heath R\Myatt Flat\Wetland Determination\MXDs\Attachment E Sampling Sites and Elevation Map.mxd

**Myatt Flats is the D&H Investment Properties - property**

**Site 1**


SITE 1 Soil Sample.

SITE 1 Soil Pit.

SITE 1 Looking North

SITE 1 Looking South.

SITE 1 Looking Eastward.

SITE 1 Looking Westward.

**Site 2**


SITE 2 soil sample

SITE 2 soil pit

SITE 2 looking northward.

SITE 2 looking southward.

SITE 2 looking east.

SITE 2 looking west.

**Site 3**


SITE 3 - No soil sample collected, soil very fluid.

SITE 3 looking north.

SITE 3 looking south.

SITE 3 looking east.

SITE 3 looking west.

**Site 4**


SITE 4 soil sample.

SITE 4 soil pit.

SITE 4 looking north.

SITE 4 looking south.

SITE 4 looking east.

SITE 4 looking westward.

**Site 5**


SITE 5 soil sample.

SITE 5 soil pit.

SITE 5 looking northward.

SITE 5 looking south.

SITE 5 looking east.

SITE 5 looking west.

**Site 6**


SITE 6 soil sample.

SITE 6 soil pit.

SITE 6 looking northward.

SITE 6 looking south.

Site 6 looking east.

Site 6 looking west.

**Site 7**


SITE 7 soil sample.


SITE 7 soil pit.

SITE 7 looking north.

SITE 7 looking south.

SITE 7 looking east.

Site 7 looking west.

**Site 8**


SITE 8 soil sample.

SITE 8 soil pit.

SITE 8 looking northward.

SITE 8 looking south.

SITE 8 looking east.

SITE 8 looking west.

**Site 9**


SITE 9 soil sample.

SITE 9 soil pit.

SITE 9 looking north.

SITE 9 looking south.

SITE 9 looking east.

Site 9 looking west.

**Site 10**


SITE 10 soil sample.

SITE 10 soil pit.

SITE 10 looking northward.

SITE 10 looking south.

SITE 10 looking east.

SITE 10 looking westward.

**Site 11**

SITE 11 No soil sample, flooded bottoms.

SITE 11 No soil pit, flooded bottoms.


SITE 11 looking north.

SITE 11 looking south.

SITE 11 looking east.

SITE 11 looking west.

**Site 12**


SITE 12 soil sample.

SITE 12 No soil pit picture.

SITE 12 looking north.

SITE 12 looking south.

SITE 12 looking eastward.

SITE 12 looking west.

**Site 13**


Site 13 No soil pit picture.

Looking northward.

Looking southward.

SITE 13 looking east.

SITE 13 looking westward.

**Site 14**


SITE 1**4** soil sample.

SITE 14 soil pit.

SITE 1**4** looking northward.

SITE 1**4** looking south.

SITE 1**4** looking eastward.

SITE 1**4** looking west.

**Site 15**


SITE 15 soil sample.

SITE 15 soil pit.

SITE 15 looking north.

SITE 15 looking south.

SITE 15 looking eastward.

SITE 15 looking westward.

**Site 16**


SITE 16 soil sample.

SITE 16 soil pit.

SITE 16 looking north.

SITE 16 looking south.

SITE 16 looking east.

SITE 16 looking west.

**DEPARTMENT OF THE ARMY**
**CORPS OF ENGINEERS, NEW ORLEANS DISTRICT**
**7400 LEAKE AVE**
**NEW ORLEANS LA 70118-3651**

October 11, 2018

Operations Division
Surveillance and Enforcement Section

Mr. Matt Conn
SEG Environmental LLC
224 Rue De Jean
Lafayette, LA 70503

Dear Mr. Conn:

Reference is made to your request, on behalf of D & H Investment Properties, for a U.S. Army Corps of Engineers' (Corps) jurisdictional determination on property located in Section 36, Township 7 South, Range 13 East, St. Tammany Parish, Louisiana (enclosed map). Specifically, this property is identified as a 348 acres site east and west of Fish Hatchery Road in Lacombe known as the proposed Moccasin Mitigation Bank.

A field inspection of the property was conducted on October 2, 2018. Based on the results of this investigation and the information provided with your request, we have determined that part of the property is wetland and may be subject to Corps' jurisdiction. The approximate limits of the wetland are designated in red on the map. A Department of the Army permit under Section 404 of the Clean Water Act will be required prior to the deposition or redistribution of dredged or fill material into wetlands that are waters of the U.S.

You and your client are advised that this preliminary jurisdictional determination is valid for a period of 5 years from the date of this letter unless new information warrants revision prior to the expiration date. Additionally, this determination is valid for the identified proposed project only and is not to be used in decision-making for any other project.

Should there be any questions concerning these matters, please contact Mr. Jeffrey Linville at (504) 862-2227 and reference our Account No. MVN-2018-00767-SL. If you have specific questions regarding the mitigation banking process or your mitigation bank proposal, please contact Mr. Brandon Gaspard of our Special Projects/Policy and Mitigation Section at (504) 862-1280.

Sincerely,

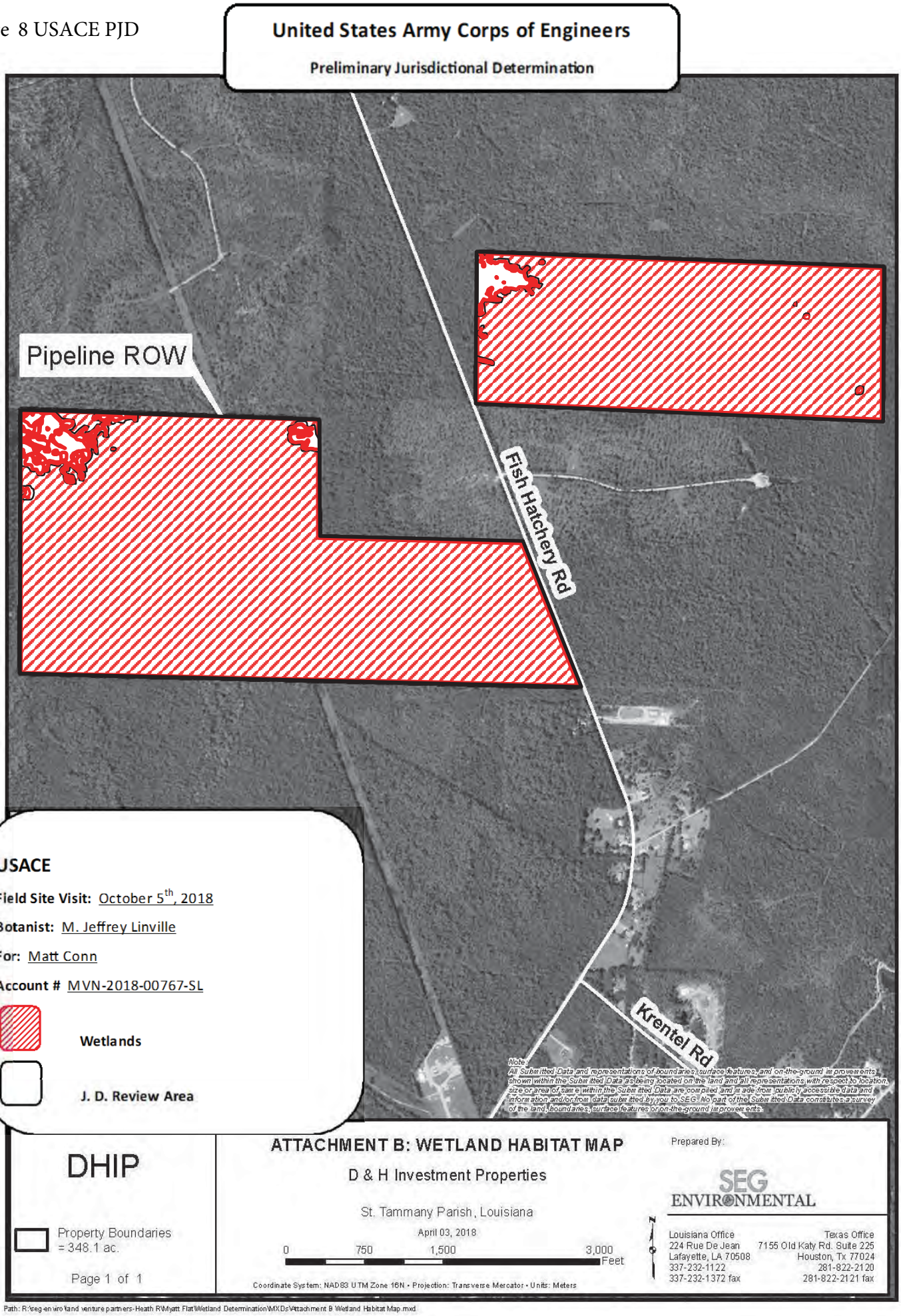
GUARISCO.BRAD.ANTHONY.1376421941

Digitally signed by GUARISCO.BRAD.ANTHONY.1376421941
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=GUARISCO.BRAD.ANTHONY.1376421941
Date: 2018.10.11 15:42:21 -05'00'

for Martin S. Mayer
Chief, Regulatory Branch

Enclosures

Figure 8 USACE PJD



## PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

**BACKGROUND INFORMATION**

**A. REPORT COMPLETION DATE FOR PJD:** October 11, 2018

**B. NAME AND ADDRESS OF PERSON REQUESTING PJD:**

Mr. Matt Conn
SEG Environmental LLC
224 Rue De Jean
Lafayette, LA 70503

**C. DISTRICT OFFICE, FILE NAME, AND NUMBER:** MVN-2018-00767-SL

**D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:**
**(USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)**

State: Louisiana County/parish/borough: St. Tammany City: Lacombe

Center coordinates of site (lat/long in degree decimal format):

Lat.: 30.382969° Long.: -89.940192°

Universal Transverse Mercator: 15N

Name of nearest waterbody: Bayou Lacombe

**E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

☒ Office (Desk) Determination. Date: 9/25/2018

☒ Field Determination. Date(s): 10/02/2018

**TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION.**

| Site number | Latitude (decimal degrees) | Longitude (decimal degrees) | Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable) | Type of aquatic resource (i.e., wetland vs. non-wetland waters) | Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404) |
|---|---|---|---|---|---|
| 1 | 30.383328 | -89.945123 | ±293.2 acres | Wetland | Section 404 |
| 2 | 30.383294 | -89.941222 | ±45.7 acres | Wetland | Section 404 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

**SUPPORTING DATA. Data reviewed for PJD (check all that apply)**

Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

☒ Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
Map: D & H Investment Property Attachment A-E.

☒ Data sheets prepared/submitted by or on behalf of the PJD requestor.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report. Rationale: _____.

☐ Data sheets prepared by the Corps: _____.

☐ Corps navigable waters' study: _____.

☒ U.S. Geological Survey Hydrologic Atlas: 08090201.
☐ USGS NHD data.
☒ USGS 8 and 12 digit HUC maps.

☒ U.S. Geological Survey map(s). Cite scale & quad name: 1:24K St. Tammany.

☒ Natural Resources Conservation Service Soil Survey. Citation: LA103 St. Tammany.

☒ National wetlands inventory map(s). Cite name: USFWS: PFO4A, PFO1C, PFO2/4C.

☐ State/local wetland inventory map(s): _____.

☐ FEMA/FIRM maps: _____.

☐ 100-year Floodplain Elevation is: ____. (National Geodetic Vertical Datum of 1929)

☒ Photographs: ☒ Aerial (Name & Date): CIR '98, '04, '05, '08, '12; NAIP '10, '13, '15.
or ☒ Other (Name & Date): LiDAR, Google Earth Pro, Bing Maps, DigitalGlobe.

☐ Previous determination(s). File no. and date of response letter: _____.

☐ Other information (please specify): _____.

**IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.**

LINVILLE.MICHAEL.JEFFREY.1537772880
Digitally signed by LINVILLE.MICHAEL.JEFFREY.1537772880
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=LINVILLE.MICHAEL.JEFFREY.1537772880
Date: 2018.10.04 07:05:52 -05'00'

Signature and date of Regulatory staff member completing PJD

Signature and date of person requesting PJD (REQUIRED, unless obtaining the signature is impracticable)[1]

[1] Districts may establish timeframes for requestor to return signed PJD forms. If the requestor does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.


*Note:*
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Bank Boundaries = 342.9 ac.

Page 1 of 3

# Moccasin Mitigation Bank
## D&H Investment Properties, LLC

Sec 36 T7S-R12E, Sec 31 T7S-R13E,
Sec 1 T8S-R12E, & Sec 6 T8S-R13E
St. Tammany Parish, Louisiana

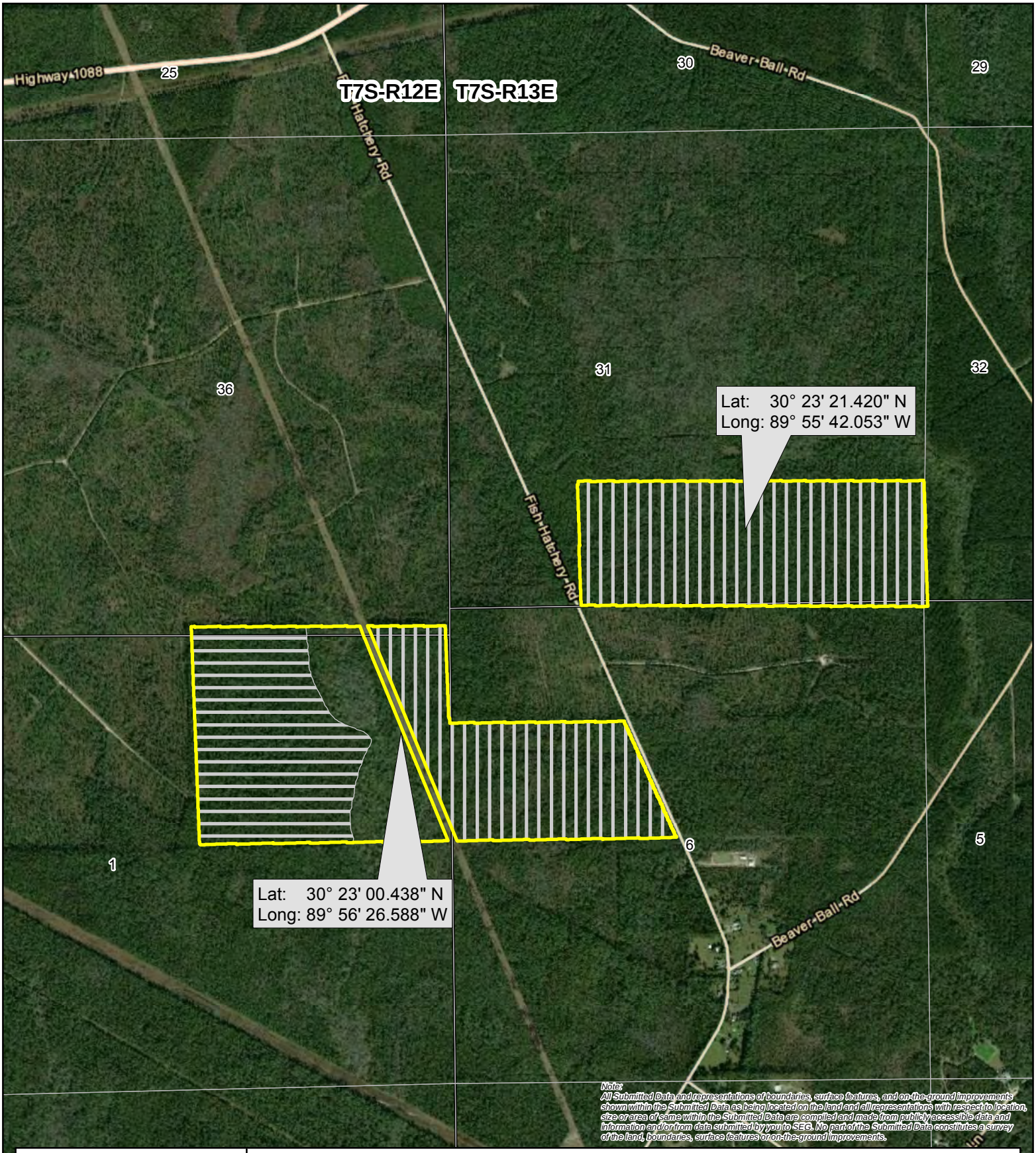
February 01, 2019

0 2 4 8 Miles

Coordinate System: NAD83 StatePlane LA South 1702 Ft • Projection: Lambert Conformal Conic • Units: Feet

Prepared By:
SEG ENVIRONMENTAL
224 Rue De Jean
Lafayette, LA 70508
337-232-1122 | 337-232-1372 fax

S:\GIS-Mapping\SEG-Enviro\Land Venture Partners\Moccasin\COE_a.mxd

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Bank Boundaries = 342.9 ac.

Approximate Rows & Furrows to be Graded

Page 2 of 3

# Moccasin Mitigation Bank
## D&H Investment Properties, LLC

Sec 36 T7S-R12E, Sec 31 T7S-R13E,
Sec 1 T8S-R12E, & Sec 6 T8S-R13E
St. Tammany Parish, Louisiana

February 05, 2019

0 750 1,500 3,000 Feet

Coordinate System: NAD83 StatePlane LA South 1702 Ft • Projection: Lambert Conformal Conic • Units: Feet

N

Prepared By:
SEG ENVIRONMENTAL
224 Rue De Jean
Lafayette, LA 70508
337-232-1122 | 337-232-1372 fax

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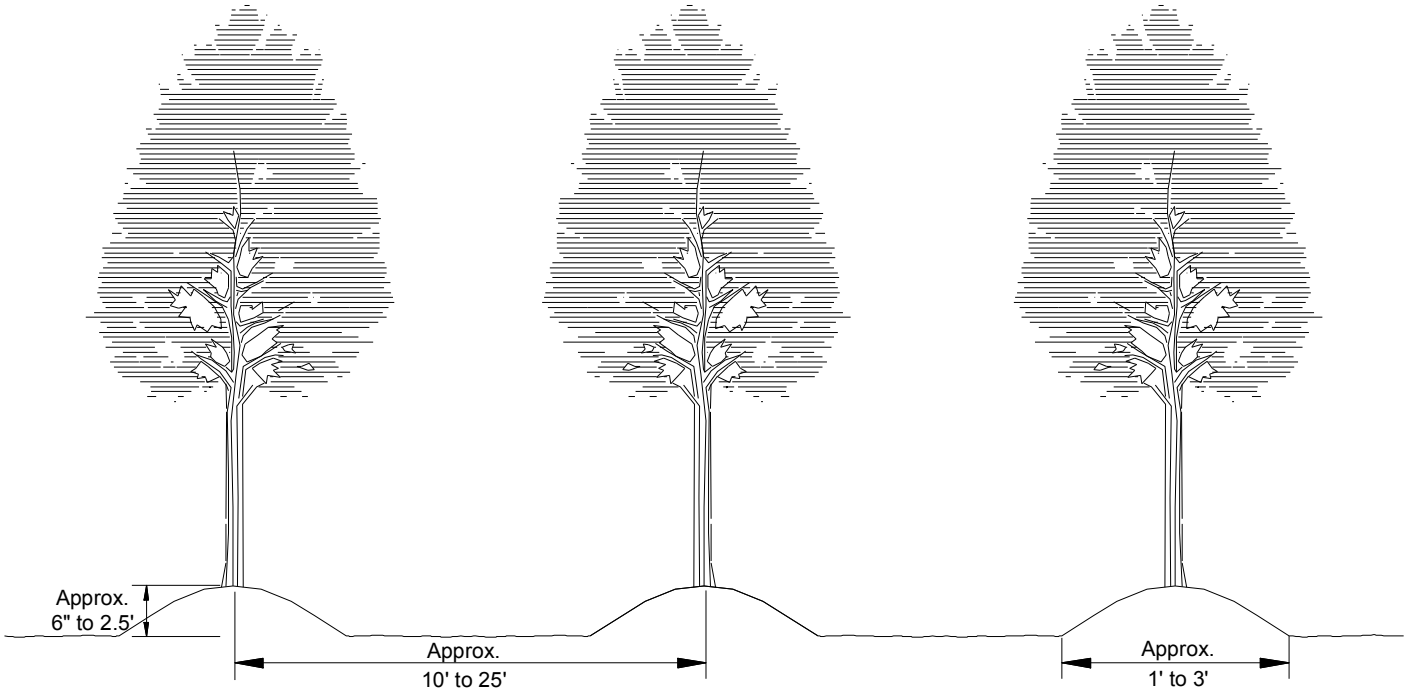
## TYPICAL FORESTRY ROWS & FURROWS

NOT TO SCALE




## TYPICAL ROW DEGRADATION AFTER TREE REMOVAL

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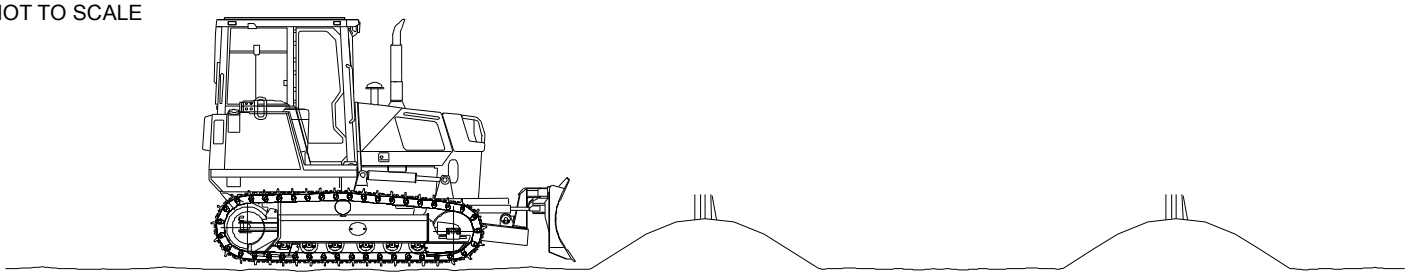
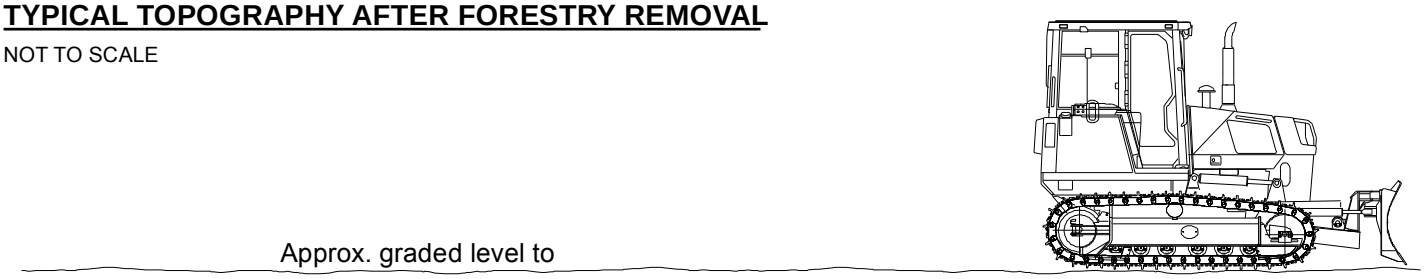


## TYPICAL TOPOGRAPHY AFTER FORESTRY REMOVAL

NOT TO SCALE




NOTES:
•APPROXIMATELY 9,486 CUBIC YARDS OF ROW MATERIAL TO BE DISPLACED BY DEGRADING ACTIVITY.
•APPROXIMATELY 5.87 ACRES OF ROWS TO BE LEVELED BY DEGRADING ACTIVITY.

Moccasin Mitigation Bank
D&H Investment Properties, LLC

Sec 36 T7S-R12E, Sec 31 T7S-R13E,
Sec 1 T8S-R12E, & Sec 6 T8S-R13E
St. Tammany Parish, Louisiana

February 01, 2019

Prepared By:
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Lafayette, LA 70508
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Coordinate System: NAD83 StatePlane LA South 1702 Ft • Projection: Lambert Conformal Conic • Units: Feet

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