

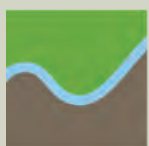


HALLS BAYOU MITIGATION BANK PROSPECTUS

BRAZORIA COUNTY, TEXAS

Prepared by:
Delta Land Services, LLC
1090 Cinclare Drive, Port Allen, Louisiana 70767

July 24, 2018



**Ecosystem
Investment
Partners**

*Sponsored by: EIP III Credit Co, LLC
5550 Newbury St., Ste B, Baltimore, Maryland 21209*

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PREPARED BY:

**DELTA LAND SERVICES, LLC
1090 CINCLARE DRIVE
PORT ALLEN, LOUISIANA 70767**

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1.0 INTRODUCTION

Delta Land Services, LLC (DLS) has prepared this Prospectus in accordance with 33 CFR § 332.8(d)(2)¹ to establish and operate the proposed 386.6-acre Halls Bayou Mitigation Bank (Bank). EIP III Credit Co, LLC (EIP) will serve as the Bank Sponsor and referenced as the Sponsor throughout this Prospectus, and DLS will serve as the agent. The Bank is estimated to provide approximately 340.1 acres of wetlands for compensatory mitigation of unavoidable, permitted impacts to “Waters of the United States”² per 33 CFR § 332.3 (a)(1) and 33 CFR § 332.3 (b)(1)³. Additionally, 3.8 acre of relatively permanent waters, 0.5 acre of other waters, 9.6 acres of pipeline rights-of-way/easements (ROWs), and 4.8 acres of firebreaks would be located within the Bank boundary.

2.0 REGIONAL DESCRIPTION AND SITE LOCATION

The Bank is 5.0 miles southwest of Santa Fe, Texas in Brazoria County (Attachment A, Figure 1), and depicted on the United States Geological Survey (USGS) “Mustang Bayou, Texas” maps (Attachment A, Figure 2). The approximate center point of the Bank is Latitude 29.305722° North and Longitude -95.146522° West⁴. The Bank is within the 16,365-square mile Gulf Coast Prairies Major Land Resource Area (MLRA 150A) of the 92,630-square mile Atlantic and Gulf Coast Lowland Forest and Crop Land Resource Region (Natural Resources Conservation Service [NRCS] 2006). MLRA 150A is characterized by nearly level plains and is dissected by rivers and streams flowing toward the Gulf of Mexico. The Bank lies within the West Galveston Bay Cataloguing Unit (West Galveston Bay; USGS Hydrologic Unit Code [HUC] 12040204), which is bounded by the Austin-Oyster Cataloguing Unit (Austin-Oyster; HUC 12040205) to the west, the Buffalo-San Jacinto Cataloguing Unit (Buffalo-San Jacinto; HUC 12040104) to the north, and the East Galveston Bay Cataloguing Unit (East Galveston Bay, HUC 12040202) to the east. The West Galveston Bay Cataloguing Unit is in the Western Gulf Coastal Plain Level III Ecoregion (Omernik 1987, Environmental Protection Agency [EPA] 2003; Attachment A, Figure 3).

Near the Gulf of Mexico coastline, the distinguishing characteristics are relatively flat topography and a prevalence of grassland vegetation. Inland, the plains become more irregular and forests become the predominant vegetation community. Recent urbanization and industrialization are changing the land use in this region and but historically many of the coastal prairies and associated forested areas have been converted to cropland, rangeland, pasture, or urban use. Additionally, abandoned cropland and pasture land are encroached upon by the common invader Chinese tallowtree (*Triadica sebifera*). As a result, many of these areas transition to a Chinese tallow-

¹ 33 CFR § 332.8 (d) (2) summarizes the information regarding a proposed mitigation bank at a sufficient level of detail to support informed public and IRT comment. Information included (but not limited too) in a prospectus are the objectives, establishment, operation, service area, general need, technical feasibility, ownership, long-term management, sponsor qualifications, ecological suitability, and water rights.

² 33 CFR § 328 defines waters of the United States as it applies to the jurisdictional limits of the authority of the Corps of Engineers under the Clean Water Act. Waters of the United States include those waters listed in 33 CFR § 328(a). The lateral limits of jurisdiction in those waters may be divided into three categories (i.e., territorial seas, tidal waters, and non-tidal waters, which are further described in 33 CFR § 328.4 (a), (b), and (c).

³ 33 CFR § 332.3 (a)(1) and 33 CFR § 332.3 (b)(1) described general compensatory mitigation requirements; resource types and location of compensatory mitigation; and watershed approach.

⁴ All geographic coordinates are based on the North American Datum of 1983 (NAD83).

dominated scrub-shrub forest.

In Brazoria County, the summers are long, hot, and humid and are frequently cooled by sea breezes, while the winters are warm and occasionally interrupted by cold frontal passages. The average summer temperature is 82° F with an average daily maximum temperature of 91° F with the highest recorded temperature of 107° F occurring in both September of 2000 and July of 2013. The average winter temperature is 55° F with an average daily minimum temperature of 47° F with the lowest recorded temperature of 7° F occurring in December of 1989 (NOAA 2018). Rainfall occurs throughout the year with an annual average precipitation of 52 inches of which approximately 29 inches falls from April through September (NRCS 2018). The elevation of Brazoria County ranges from 0 to 146 feet⁵. Typical Bank surface elevations range from 6 to 16 feet (Attachment A, Figure 4). The eastern portions of the Bank gently slope west to southwest towards Halls Bayou which borders the western portion of the bank. An unnamed tributary to Halls Bayou also carries water across the northern portion of the property. This tributary receives water from the Bank at several points before flowing to the west and into Halls Bayou. Flow in Halls Bayou flows south along the western Bank boundary. The western and the northern portions of the Bank are located within the mapped 100-year flood zone (Flood Zone X; Federal Emergency Management Agency [FEMA] 1989; Attachment A, Figure 5).

2.1 Ownership and Sponsorship

EIP will serve as the Sponsor, and DLS will serve as the property owner and agent. The Sponsor and Agent will oversee construction and establishment of the Bank and will serve as the long-term manager and steward but may appoint a long-term steward pursuant to 33 CFR § 332.7 (u)(2)⁶ subject to approval by the U.S. Army Corps of Engineers (USACE) Galveston District (CESWG). The anticipated long-term management will consist of activities such as monitoring, invasive species control, controlled burning, and boundary maintenance and protection. As a conservation area, the Bank will be protected by a perpetual conservation easement described in Section 7.4.

Table 1. Bank Sponsorship/Ownership

Name of Sponsor	Ecosystem Investment Partners	Agent	Chad Butler - Delta Land Services, LLC	Property Owner	Delta Land Services, LLC
Mailing Address	5550 Newbury St. Ste B Baltimore, MD21209	Mailing Address	1090 Cinclare Dr. Port Allen, LA 70767	Mailing Address	1090 Cinclare Dr. Port Allen, LA 70767
Phone Number	443-921-9441	Phone Number	713-397-7313	Phone Number	225-388-5151
Fax Number	410-235-1503	Fax Number	225-343-3200	Email Address	chad@deltaland-services.com
Email Address	david@ecosystempartn ers.com	Email Address	chad@deltaland- services.com		

⁵ All vertical elevations are based upon the North American Vertical Datum of 1988 (NAVD).

⁶ Transfer of long-term stewardship is defined in 33 CFR § 332.7 (u)(2) as *the instrument may contain provisions for the sponsor to transfer long-term management responsibilities to a land stewardship entity, such as a public agency, non-governmental organization, or private land manager.*

2.2 Driving Directions to the Site

From the U.S. Interstate Highway (IH) 45 / U.S. Highway 59 interchange in Houston, TX, proceed south on IH 45 for approximately 26.8 miles then turn right/west onto Farm-to-Market (FM) 517. Travel west for approximately 1.0 mile, turn left/south onto FM 646, proceed south for 3.5 miles then turn right/left onto FM 1764, proceed west for 1.6 miles then turn south/left onto State Highway (SH) 6 for 0.3 mile, and then turn south/left onto Avenue T. Continue approximately 2.8 miles southwest on Avenue T and turn south/right onto Vacek Street then proceed 2.3 miles to the access gate of the property. The center point of the Bank is Latitude 29.302696° North and Longitude -95.143514° West.

3.0 PROJECT GOALS AND OBJECTIVES

The goal is to restore⁷ (re-establish⁸ and rehabilitate⁹), enhance¹⁰, and preserve¹¹ riverine herbaceous/shrub and riverine forested wetland within the West Galveston Bay Cataloguing Unit (Attachment A, Figure 6; Attachment B, Table 1). The restoration of riverine herbaceous/shrub and forested habitats will provide additional wetland functions¹² and values not currently realized under the existing conditions and land use (e.g., flood storage and amelioration, migratory wildlife, habitat for threatened and endangered species or priority conservation species, outdoor recreation, etc.).

⁷ Restore is defined in 33 CFR § 332.2 as the *manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.*

⁸ Re-establishment is defined in 33 CFR § 332.2 as the *manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.*

⁹ Rehabilitate is defined in 33 CFR § 332.2 as the *manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function but does not result in a gain in aquatic resource area.*

¹⁰ Enhancement is defined in 33 CFR § 332.2 as the *manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s) but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.*

¹¹ Preservation is defined in 33 CFR § 332.2 as the *manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s) but may also lead to a decline in other aquatic resource function(s).*

¹² Wetland function is defined in 33 CFR § 332 as the *physical, chemical, and biological processes that occur in ecosystems.*

Wetland restoration will improve localized and downstream water quality by retiring the land from agricultural uses, increasing surface-water retention, and flood flow attenuation. In addition, habitat will improve for wildlife via afforestation¹³ and herbaceous cover maintenance.

Specifically, the project objectives are to restore and protect the physical, chemical, and biological functions of a wetland landscape that includes riverine herbaceous/shrub and riverine forested and:

- restoration of historic and self-sustaining surface hydrology (e.g., levee removal and backfilling artificial drainages);
- re-establishment of 236.5 acres of riverine herbaceous/shrub through site preparation;
- re-establishment of 43.4 acres of native riverine forested wetland through site preparation; reconnecting to jurisdictional wetlands, and afforestation with native forest species;
- reconnecting to jurisdictional wetlands, reseeding with native herbaceous species common to this area and native shrubs, and prescribed fire for habitat maintenance;
- rehabilitation of 24.6 acres of forested riparian creek buffer;
- rehabilitation of 11.3 acres of herbaceous/shrub wetland with native grasses, forbs, and shrubs on existing agricultural land adjacent to the riverine forested restoration areas;
- enhancement of 12.4 acres of riverine forested area through removal of invasive species (i.e. Chinese tallowtree), leveling existing rice berms, and planting of native tree species;
- preservation of 11.9 acres of mosaic native riverine forested wetland habitat adjacent to Halls Bayou ensuring an uninterrupted riparian corridor;
- preservation of 27.8 acres of mosaic non-wetland forested riparian habitat adjacent to Halls Bayou;
- ensuring long-term viability and sustainability by implementing specific management strategies such as active and adaptive management; establishment of financial assurances (i.e., construction, establishment) and long-term funding mechanisms; initial, intermediate, and long-term monitoring, maintenance, and invasive species control; and
- providing long-term protection through the execution of a perpetual-term conservation easement and establishment of a long-term fund to cover annual expenditures associated with maintenance and management of the Bank.

Table 2 below details the proposed mitigation restoration type by forested and herbaceous/shrub habitats.

¹³ The SAF (2012) defines afforestation (afforest) as *the establishment of a forest or stand in an area where the preceding vegetation or land use was not forest, whereas reforestation is the re-establishment of forest cover either naturally (by natural seeding, coppice, or root suckers) or artificially (by direct seeding or planting) [Note: reforestation usually maintains the same forest type and is done promptly after the previous stand or forest was removed; synonym for regeneration]*.

Table 2. Restoration by Resource Type

Resource Type	Re-establishment	Re-habilitation	Enhancement	Preserved
Riverine Herbaceous/Shrub	236.5 ac	11.3 ac	0.0 ac	0.0 ac
Riverine Forested	43.4 ac	24.6 ac	12.4 ac	11.9 ac
Non-wetland Forest	0.0 ac	0.0 ac	0.0 ac	27.8
Totals:	279.8 ac	35.9 ac	12.4 ac	39.7 ac

4.0 ECOLOGICAL SUITABILITY OF THE SITE

4.1 Historical Ecological Characteristics

Historically, the primary sources of surface water were precipitation, runoff, stream flooding, microrelief ponding, seasonally perched water tables, and predominance of hydric soils (NRCS 1981). The 1944 USDA aerial depicts the conditions of the Bank much the same as today except for the proposed riverine forested rehabilitation area being cleared for agricultural purposes (Attachment A, Figure 9). The 1965 USDA and 1977 TxDOT maps depict the Bank very similarly to the 1944 aerial with a noted increase of riparian vegetation along the unnamed tributary to Halls Bayou in 1977 and a pipeline corridor extending mid-property on the west side and proceeding to the north and then east along the boundary of the Bank (Attachment A, Figures 10 and 11). The 1996 CIR shows an increasing amount of vegetation in the proposed riverine forest rehabilitation area and the unnamed tributary to Halls Bayou appears to have been channelized and cleared. The 2012 and 2015 aerials are nearly identical with an increasing amount of presumed woody vegetation occurring in the northern corner of the Bank (Attachment A, Figure 14 and 15). A review of historical aerial imagery since 1944 indicates agricultural site development (e.g. rice cultivation [*Oryza* spp. L.]¹⁴ happened before the imagery was captured (Attachment A, Figures 9 through 15). However, just east of the site, historic imagery depicts the site as a wet coastal prairie, showing what likely was present prior to the rice farming. The NRCS Brazoria County soil survey 1972 aerial photograph depicts the Bank in an herbaceous/agricultural setting (NRCS 1981).

4.2 Current Ecological Characteristics

4.2.1 Soils

The Bank is mapped as Bacliff clay, 0 to 1 percent slopes, Bernard clay loam, 0 to 1 percent slopes, Edna fine sandy loam, 1 to 3 percent slopes, Lake Charles clay, 0-1% slopes, and Lake Charles clay, 2-5% slopes (Attachment A, Figure 18 and Attachment B, Table 2). The Bacliff, Bernard, and Edna soils are described as having a drainage classes of somewhat poorly drained to poorly drained. The Lake Charles soils have drainage classes of moderately well drained. These map units are all listed as having a hydrologic soil group rating of D (NRCS 2018^a). Of the 46 data points sampled, all 44 contained hydric soil indicators in accordance with USACE 2010. Common soil

¹⁴ The aforementioned and all subsequent plant scientific nomenclature is from Lichvar et al. (2016) and NRCS (2018^c).

indicators included: Depleted Matrix (F3), Redox Dark Surface (F6) and Coastal Prairie Redox (A16).

4.2.2 Vegetation

The Bank area consists of active agricultural lands and riparian areas in various states of management (Attachment C, Site Photographs). The Bank area remains in agricultural production (i.e., rice and soybean) to the current year where farmable; the Bank area has been used for agricultural production for at least 74 years (Attachment A, Figure 14).

The herbaceous wetlands occur primarily throughout the eastern portion of the Bank in areas that have been recently farmed. Dominant herbaceous wetland species include Vasey's grass (*Paspalum urvillei*), winter bentgrass (*Agrostis hyemalis*), deep-rooted sedge (*Cyperus entrerianus*), Brazilian vervain (*Verbena litoralis* var. *brevibracteata*), Hooker's eryngo (*Eryngium hookeri*), winged lythrum (*Lythrum alatum*), swamp sunflower (*Helianthus angustifolius*), blunt spikerush (*Eleocharis obtusa*), marsh flatsedge (*Cyperus pseudovegetus*), grassleaf rush (*Juncus marginatus*), Chokee sedge (*Carex cherokeensis*), sawtooth blackberry (*Rubus argutus*), mountain spikerush (*Eleocharis montana*), and shortbristle horned beaksedge (*Rhynchospora corniculata*). Shrubs are scattered along the edges of the herbaceous wetland areas and primarily consist of Chinese tallow (*Triadica sebifera*), eastern baccharis (*Baccharis halimifolia*), and wax myrtle (*Morella cerifera*).

The herbaceous upland portion of the Bank exists in the middle of the farmed area in one particular block. The dominant vegetation consists of the following herbaceous species Bermuda grass (*Cynodon dactylon*), soybean (*Glycine max*), bahiagrass (*Paspalum notatum*), annual ragweed (*Ambrosia artemisiifolia*), and peppervine (*Nekemias arborea*).

Common species observed within the riparian preservation portion of the Bank included the following species Cherokee sedge, yaupon (*Ilex vomitoria*), Chinese privet (*Ligustrum sinense*), sugarberry (*Celtis laevigata*), green ash (*Fraxinus pennsylvanica*), water oak (*Quercus nigra*), and Chinese tallow. Common vine species found in this habitat are trumpet creeper (*Campsis radicans*), Japanese honeysuckle (*Lonicera japonica*), muscadine (*Vitis rotundifolia*).

4.2.3 Hydrology

Within the Bank, changes in topographic elevation create sheet flow drainage toward Halls Bayou and to a lesser degree the unnamed tributary in the immediate vicinity of the channel. The unnamed tributary exhibits evidence of past channelization and modification to remove water from the Bank. Channel evidence suggests that the unnamed tributary dimensions on site were altered from excavation and channelization having the effect of reducing flood events, often limiting those events to the stream channel. A surface or subsurface accumulation of clay throughout the property impedes the downward movement of water and produces periods of saturation and inundation in the upper parts of the soil surface, especially in areas of concave microtopography.

Original hydrologic modifications involved controlled flooding of select fields through the construction of levees to produce rice crops. However, much of the Bank does remain saturated for periods sufficient to support wetland hydrology in those areas identified as wetland. Of the 46 data

points, 43 points had wetland hydrology indicators. Oxidized Rhizospheres on Living Roots (C3), while common secondary indicators were Surface Soil Cracks (B6), Crawfish Burrows (C8), Geomorphic Position (D2), and the FAC-Neutral Test (D5).

The mitigation features map (Attachment A, Figure 6) is based on the approved Jurisdictional Determination (JD) dated March 1, 2018 (SWG-2016-00700; Attachment E). The JD conducted by SWG encompassed a larger tract of land than the proposed Bank; the Bank is located within 332.04 acres of wetlands of which, 70.12 were determined to be jurisdictional. Per the JD, jurisdictional wetlands were determined to be adjacent to a Section 10 TNW (Halls Bayou) and a relatively permanent water (RPW) flowing to a TNW. Non-jurisdictional wetlands within the proposed bank were determined to be isolated in due to their location outside the floodplain and the connection to existing jurisdictional features has been severed by relic rice berms.

4.3 General Need

The Bank will restore riverine herbaceous/shrub and riverine forested wetlands along with preserve mosaic riverine forested wetlands on land impacted by agricultural improvements. These restoration efforts will provide a natural flow of water into the restored portions of the wetlands and Halls Bayou receiving water from the Bank. The dominant land cover type within the service area is agricultural/grazing (i.e. open land) (Attachment B, Table 3), which generally equates to herbaceous habitat being the most common wetland and most opportunity for impact. The Bank will provide wetland mitigation credit to compensate for permitted losses of Waters of the U.S. (i.e., riverine herbaceous/shrub and riverine forested wetlands). Many of these impacts will result from the construction of oil and gas transmission pipelines, ancillary facilities (e.g. meter stations), and expansion of facilities such as refineries (INGAA 2018) within the watersheds of the Primary and Secondary Service Areas described in Section 6.1. The watersheds in which the Bank would service include Brazoria, Chambers, Fort Bend, Harris, Jefferson, Galveston, and Liberty Counties which have experienced tremendous growth and are projected to keep growing due to their close proximity to the City of Houston (HGAC 2018). The proposed service area encompasses a major east-west energy transportation corridor paralleling that transports products from Eagle Ford formation and Permian Basin to refineries and terminals along the Gulf Coast.

Future oil and gas transmission lines will service various fossil fuel processing facilities within this region. It is estimated that between 2018 and 2035, the Southwest, which includes Texas, will receive capital expenditures of \$193 billion and account for 24% of the overall U.S. and Canada investments into infrastructure development. Crude oil pipeline capacity is expected to increase by 4.8 million barrels per day by 2035 in the Southwest Region (Arkansas, Louisiana, New Mexico, Oklahoma, and Texas; INGAA 2018). The establishment of transmission lines and processing facilities will likely be complimented by localized, development activities such as industrial, residential, retail, and public works that may require wetland mitigation. The Bank will offset the cumulative effect of spatially fragmented impacts and consolidate the mitigation into a single, strategic location within the service area. The following parameters were considered in selecting the site for wetland restoration:

- Location – the site is suitable for restoring jurisdictional wetlands.
- Mitigation need - the increasing requests for riverine herbaceous/shrub and riverine forested

and within the primary and secondary service areas, which established a need for the mitigation

- Mitigation availability - the limited availability of riverine herbaceous/shrub and riverine forested wetland credits within the primary and secondary service areas.
- Landscape positioning - the relative low elevation of the site and connection to Halls Bayou.
- Hydric soils -the field documented presence of hydric soils.
- Historic evidence - the historical presence of herbaceous and riverine forested as evidenced by historical topographic maps and aerial photography.
- Compatibility - the surrounding land uses consist of grazing, coastal prairies, and forest lands.
- Continuity - restoring and protecting the mitigation area will reduce fragmentation and reconnect wildlife habitats as stipulated in the Texas Coastal and Estuarine Land Conservation Program (National Oceanic and Atmospheric Administration (NOAA 2010).
- Long-term protection and habitat connectivity - the site is approximately 8.5 miles from the Gulf of Mexico. The area between the site and the Gulf consists of a complex of various tidal marshes and coastal prairies. Restoration and protection of this site provides connectivity and buffers to these types of habitat which is one of the goals of the Texas Coastal and Estuarine Land Conservation Program (NOAA 2010).
- Impairment – Halls Bayou has been listed as an impaired water by the EPA in 2014 for bacteria, dioxins, and PCBs.
- Significance – Halls Bayou is recognized by the State of Texas as an Ecologically Significant Stream Segment.

4.4 Technical Feasibility

The construction work required to develop the Bank is routine and feasible. Site preparation will consist of backfilling artificial drains, degrading remnant historic rice levees, afforesting with native shrub/tree species, and distributing native herbaceous seeds. The relatively flat landscape, location of the Bank, and existing wetland hydrology implies that the Bank is a prime site for wetland re-establishment, rehabilitation, preservation, and enhancement.

The current existence of riverine herbaceous/shrub wetlands within the Bank site and the existence of riverine mosaic forested wetlands indicate a high potential for successful restoration. Similarly situated fields adjacent to the Bank contain palustrine emergent semipermanently flooded (PEMf) designated wetland areas. Forested riparian areas adjacent to Halls Bayou contain PFO designated wetland areas. The National Wetland Inventory (NWI; Attachment A, Figure 5) and current Google Earth imagery depicts these existing wetland habitats or wetland signatures within or adjacent to the Bank (Cowardin et al. 1979, USFWS 2014). Additionally, the designated 100-year flood zone (Zone A) occurs on the western and northern edges of the Bank (Attachment A, Figure 20).

Within one mile of the Bank perimeter, approximately 99.8% of the surrounding land use is comprised of agricultural land (pasture/hay), forest, scrub/shrub, grassland, and wetlands. There are residential areas, but these occur sporadically and are not highly concentrated. Given the low level of disturbance anticipated from these compatible land uses, wetland restoration will be

complementary in this landscape setting (Attachment A, Figure 18).

The historical aerial photographs in the soil survey depict the site being nearly the same as it today. Land practices have not changed in the Bank since before 1943 with only small portions of the property being allowed to revert to forest. Currently, a majority of the site proposed to be restored for wetland credits currently exhibits riverine herbaceous/shrub wetland characteristics. Since the majority of the proposed site has functioned as degraded riverine herbaceous/shrub wetland for over 74 years, the site exhibits the potential for successful riverine herbaceous/shrub restoration in combination with riverine forested restoration. The riverine herbaceous/shrub restoration efforts will be primarily located on the Bacliff and Lake Charles series with a small inclusion of the Bernard series. The riverine forested restoration areas will be split between the Bacliff, Lake Charles, and Edna Series. The riverine forested preservation component of the Bank is split evenly between the Lake Charles series and the Edna series. Based on current site conditions, the goal would be to establish a successional path from a degraded farmed wetland to a native herbaceous/shrub wetland with a riverine forested wetland riparian corridor.

5.0 ESTABLISHMENT OF THE MITIGATION BANK

5.1 Site Restoration Plan

Ecological site restoration will be accomplished through cessation of all agricultural practices (e.g., artificial drainage and crop production), returning the soil surface to natural topography, site planting preparation, and planting native wetland species. Hydrologic restoration will increase surface water retention and soil saturation, reduce nonpoint source runoff, and improve water quality through nutrient immobilization (uptake) by vegetation. The plant communities will be restored as riverine herbaceous/shrub and riverine forested communities. The riverine herbaceous/shrub mitigation areas will be seeded with a mixture of commercially available, coastal prairie species (i.e., grasses, graminoids, and forbs) and planted with suitable shrub species. Physical, chemical, or mechanical means will be used to eliminate existing pasture grasses and invasive/exotic vegetation (e.g., Chinese tallowtree and other species currently listed by the Texas Invasives Database (TexasInvasives.org¹⁵). The riverine forested mitigation area will be planted with an assemblage of native, wetland tree, and shrub species. The Sponsor anticipates that no short or long-term structural management requirements will be required to sustain wetland hydrology. The preservation area will be managed for invasive/exotic vegetation.

5.1.1 Hydrology Restoration

The majority of the site proposed for wetland credits (93.5%) currently exhibits wetland hydrology. The site existing hydrology modifications primarily consist of small agricultural drainage ditches around the perimeter and small remnant levees. Hydrology restoration of the Bank will filling agricultural drainages with *in-situ*, earthen material, and degrading any remnant agricultural levees to reconnect the natural drainage to the 100-year flood plain of Halls Bayou Bayou (Attachment D, Figures D-1 through D-4). Any above grade roads will be returned to natural grade to allow for natural flow of water across the landscape. A detailed description of

¹⁵ http://www.texasinvasives.org/invasives_database/.

hydrologic restoration plans, including drawings, will be included in the subsequent Draft Mitigation Banking Instrument (MBI). A large component of the restoration includes removing relic rice berms and reconnecting non-jurisdictional wetlands to jurisdictional wetlands.

5.1.2 Site Preparation

The riverine herbaceous/shrub areas will be prepared by herbicide application on areas with high densities of invasive species. The soil will not be ripped or disked to minimize soil disturbance and reduce invasive species seed germination.

Preparation for seedling planting within the riverine forested areas will be accomplished by herbicide applications, controlled burns, and sub-soiling (Allen et al. 2001). Herbicides will be applied by licensed applicators in accordance with state and federal law to control invasive species. Following the herbicide application, a controlled burn will be applied where necessary to remove dead plant material. Within the forested areas during dry conditions in the late summer-fall, a tractor-pulled, sub-soiling implement will cut 18-inch deep furrows into the soil surface at approximately 9-foot intervals. With the onset of typical late-fall, early-winter rains, the rows formed along the furrows will settle into the furrow and create ideal seedling planting beds without interrupting surface sheet flow.

5.1.3 Riverine Forested Community Restoration

The proposed plant species for afforestation have a wetland indicator status of facultative (FAC), facultative wetland (FACW), or obligate (OBL) per the Atlantic and Gulf Coastal Plain Region (AGCPR) (Lichvar et al. 2016)¹⁶ (Attachment B, Table 4). Species selected either occur in or have a native range encompassing Brazoria County or adjacent counties based on NRCS (2018^a) and Burns et al. (1990). The planting effort will integrate fast-growing soft mast species with slower-growing hard mast species to allow for greater vertical structural diversity, which is necessary habitat for forest breeding birds (Twedt et al. 1999). The integration of fast growing soft mast species mimics succession and provides nursery habitat for late successional hard mast species (hard mast; Twedt and Portwood 2003, Gardiner and Hodges 1998). The development of an early successional community will promote abiotic and biotic environmental conditions for increasing hard mast seedling survival and growth (Harper et al. 1965, Twedt and Portwood 2003). Hard mast species will account for approximately 40-60% of the stem plantings with the remaining percentage accounted for by soft mast tree species. The exact species and quantities for planting will be determined by the availability of such species from commercial nurseries providing localized ecotype seedlings. Stem planting density will be at a rate of at least 538 stems per acre.

Single stem planting of riverine forested species will occur the first planting season (December through February) following site preparation. Selected species will be site-appropriate for habitat design, soil-moisture regime, species richness, and commercially available (Attachment B, Table 4). Ten or more species may be represented and distributed in the planting assemblage with no species comprising more than 25% of the assemblage. To enhance species planting diversity

¹⁶ 2016 National Wetland Plant List (NWPL).

and avoid monotypic plantings, seedlings will be mixed at an offsite facility prior to planting (Twedt and Best 2004).

For management and monitoring purposes, open space (e.g. access trails and a 30-foot wide perimeter buffer) will be maintained directly outside the bank boundary. The open space is designed in conjunction with the existing rights-of-way (ROW) described in Section 5.2, which the ROW acreage accounts for approximately 9.6 acres of the project area. Additionally, 30-foot fire lanes (totaling 4.8 acres) will be established between the riverine forested and riverine herbaceous/shrub wetlands. This fire lane could also be used as access. All access trails will be maintained at grade and will not interfere with surface hydrology. No mitigation credits will be generated from the access trail, fire lane, or pipeline ROW acreage. However, should any of these areas be restored in the future (e.g., ROW relinquishment, trail closure, etc.), the Sponsor may request that additional credits be granted to applicable acreage. No adverse effects are anticipated by the continued existence of these open space features.

5.1.4 Monitoring and Management

The Sponsor will maintain the Bank following construction and throughout the initial, interim and long-term monitoring and management periods. The Sponsor will use all prudent efforts, physical, chemical, or mechanical, to eliminate existing noxious and/or invasive vegetation present (i.e., noxious and invasive species listed in the most current Texas Invasives Database; www.texasinvasives.org). In addition to invasive plants species, the Sponsor will control nuisance, invasive wildlife species such as feral hogs (*Sus scrofa*). Following completion of construction activities, the Bank will be monitored and inspected annually for invasive species colonization and biotic and abiotic factors that may affect tree growth. Monitoring will determine if adaptive management measures, such as replanting, need to be considered. The Sponsor anticipates that invasive species control measures will be implemented as-needed (annually if necessary) over the first 5 years following construction and again at Year 10. The Sponsor will continue to monitor the Bank through annual inspections to document the following:

- the effectiveness of control efforts;
- the extent and degree of invasive species present;
- the extent and degree of any herbivory or insect damage;
- the extent and degree of adverse climate impacts (i.e., drought); and
- the condition and functionality of any earthen structures (i.e., *in situ* earthen fill or plugs).

Following such monitoring, invasive species control will be implemented as necessary. The boundaries will be inspected, and it is anticipated that boundary maintenance will take place at five year intervals (e.g., gates, signage, fencing, boundary marking, etc.).

5.2 Mortgages, Easements and Encumbrances

A Summary of Title Matters is being prepared and will be provided with the MBI. Two pipeline ROWs (i.e., DOW Chemical, Shell, BASF, and Air Products) emanate from the western boundary of the Bank with one traveling to the northeast along the northern boundary and the second

traveling southeast (Attachment A, Figure 6). The acreage associated with these encumbrances is considered as non-mitigation acreage meaning no mitigation credit will be generated from this acreage. The Sponsor intends that the conservation easement described in Section 7.4 will cover the easement and ROW areas described above but will not be subordinate to these easements. However, should any of these easements be terminated or relinquished, the conservation easement will become dominate insuring site protection.

5.3 Current Site Risks

The Sponsor does not foresee any hindrances in restoring the existing hydrological disturbances on the Bank. In addition, the Sponsor does not foresee any adverse impacts to the Bank resulting from the continued existence and operation of the neighboring land uses or from the continued use of easement described in Section 5.2. The site is bordered by agricultural land, forest land, and few rural residences. Adjacent landownership and management will not affect the establishment and long-term success of the Bank.

5.4 Long-term Sustainability

Based on the current, approved Jurisdictional Determination and wetland delineation, the existing hydrology is sustaining the wetland areas of the Bank as jurisdictional wetlands. Long-term viability and sustainability of the Bank is assured by enhancing the current hydrologic conditions through hydrologic restoration and active, adaptive management including, but not limited to, invasive species control, appropriate monitoring, and long-term maintenance. With regard to surface hydrology, the Sponsor will restore the hydrology by removing existing agricultural drainage improvements, restoring natural drainage patterns, riverine herbaceous/shrub restoration, and riverine forested restoration. Long-term surface hydrology of the Bank will be maintained by localized rainfall and a shallow, seasonally perched high-water table. Non-wetland areas will benefit from regrowth of native vegetation to lower evaporation and the aforementioned means to increase hydrology throughout the site. The Sponsor does not foresee any adverse impacts on neighboring properties resulting from the Bank.

5.5 Water Rights

Per review of the Texas Commission on Environmental Quality's (TCEQ) water rights database, water use is not listed for the proposed Bank (TCEQ 2018) and water use data recorded from 2000 through 2014¹⁷ did not indicate any water purchases. Furthermore, as restored, functional riverine herbaceous/shrub and forested wetlands, the Bank will not require the use of public water or a TCEQ Water Use Permit since the wetlands restored by the Bank will not create a reservoir or off-channel reservoirs that artificially store, hold, retain or divert water from state water sources (i.e., surface or subsurface). Furthermore, there will not be any construction features on the Bank that direct, divert, or cause the retention of flood waters (i.e., all berms, dikes, ditches, will be removed). The hydrologic restoration of the Bank includes filling and leveling of internal agricultural drainage and road features to natural elevation. Any water that may naturally flow

¹⁷ The Water Use data from 2000 through 2014 is accessible from the URL: https://www.tceq.texas.gov/assets/public/permitting/watersupply/water_rights/applications/WRWaterUseData2000Through2014.xlsx (accessed July 9, 2018).

onto or through the flood plain will not be diverted or retained by any constructed surface features. As such, long-term hydrology maintenance will not depend on the utilization of water captured from irrigation wells or a Texas public water system; therefore, water rights will not be required.

6.0 PROPOSED GEOGRAPHIC SERVICE AREA AND CREDIT USE¹⁸

6.1 Primary and Secondary Service Areas

The primary and secondary service areas are located within the Western Gulf Coastal Plain Level III Ecoregion (Attachment A, Figure 20). The proposed service area does not extend beyond the administrative boundaries of the CESWG and is entirely within the state of Texas. The primary service area consists of the West Galveston Bay Cataloging Unit (West Galveston Bay; HUC 12040204). The secondary service area consists of the Austin-Oyster Cataloging Unit (Austin-Oyster; HUC 12040205) and East Galveston Bay Cataloging Unit (East Galveston Bay, HUC 12040202). The primary and the secondary service areas are approximately 893.3 square miles and 1,106.75 square miles, respectively.

6.2 Credit Use

The riverine forested habitats will provide credits for forested impacts, and the riverine herbaceous/shrub mitigation areas will provide credits for herbaceous/shrub, non-tidal wetland impacts (non-forested). The following habitats/areas will be excluded from the service areas: Mid-coastal Barrier Islands/coastal marshes barrier islands (Matagorda and Galveston Island), the area south of the Gulf Intracoastal Waterway (GIWW), and the estuaries associated with the Brazos River, Chocolate Bay, Christmas Bay, and West Galveston Bay. Exclusion of these Level IV Ecoregions excludes wetlands mapped as Estuarine per the U.S. Fish and Wildlife (FWS) National Wetland Inventory (NWI). The Bank shall not be utilized to compensate for any impacts which occur on properties or facilities managed by Texas Parks and Wildlife Department (TPWD).

Unavoidable impacts to wetland function within the primary service area will be replaced at a 1:1 ratio while those impacts within the secondary service area will be debited at a 1.5:1 ratio. Any out-of-kind, or use beyond the service area will be considered by the CESWG on a case-by-case basis.

7.0 OPERATION OF THE PROPOSED MITIGATION BANK

The Sponsor will comply with all conditions required by the CESWG. The Bank will be established and operated through mitigation bank procedures outlined in 33 CFR § 332.8. This includes, but is not limited to, review process, modifications, permit coordination, project implementation, financial assurance determination and mechanisms, credit determination, accounting procedures, credit withdrawals, and the use of credits. Details on the operation of the Bank will be further described in the Draft MBI per 33 CFR § 332.8 (6).

¹⁸ The Service Area is defined in 33 CFR § 332.2 as the *geographic area within which impacts can be mitigated at a specific mitigation bank or in-lieu fee program, as designated in its instrument.*

7.1 Project Representatives

The project Sponsor and Point of Contact is as follows:

Sponsor

EIP III Credit Co
5550 Newbury Street Suite B
Baltimore, MD 21209
Attn: Mr. David Urban
Phone: 443.921.9441
Electronic Mail: David@ecosystempartners.com

Point of Contact

Delta Land Services, LLC
1090 Cinclare Drive
Port Allen, LA 70767
Attn: Mr. Chad Butler \Mr. Stephen Ross
Phone: 713.397.7313\ 361.522.8989\ 337.274.1680
Electronic Mail: chad@deltaland-services.com \ stephen@deltaland-services.com

7.2 Qualifications of the Sponsor and Agent

Per 33 CFR § 332.8(d)(2)(vi.), this section describes the Sponsor's qualifications to successfully complete the proposed Bank.

Formed in 2007, Ecosystem Investment Partners (EIP) has developed 39 mitigation banks and other restoration projects in nine states totaling over 75,000 acres, including over 30,000 acres of wetland restoration and 63 miles of stream restoration completed with another 3,800 acres of wetland restoration and 117 miles of stream mitigation under permitting and construction in 2018. EIP does business within the mitigation banking context as either EIP Credit Co, LLC or EIP III Credit Co, LLC. Of the restoration built as non-mitigation bank projects, the work includes permittee responsible mitigation for large power companies, nutrient offsets for the State of Maryland, and tidal marsh restoration for the State of California.

EIP currently operates 39 approved wetland and stream mitigation banks and two Permittee-Responsible Mitigation (PRM) projects within 11 USACE Districts totaling 415,555 linear feet of restored stream and 28,975 acres of restored wetland. Districts in which these banks reside include the Norfolk (CENAO), New Orleans (CEMVN), Philadelphia (CENAP), Louisville (CELRL), St. Paul (CEMVP), Pittsburgh (CELRP), Jacksonville (CESAJ), Vicksburg (CEMVK), Huntington (CELRH), Fort Worth (CESWF), and Galveston (CESWG).

DLS will serve as the Sponsor's agent. DLS is a land management and restoration company whose technical staff includes Certified Wildlife Biologists, Professional Wetland Scientists, and Certified Foresters. In addition, DLS has construction specialists on staff that are experienced in wetland construction activities such as heavy equipment operation, vegetation establishment, herbicide application, and contractor management.

The Mitigation Agent, Delta Land Services, LLC (Delta) is a land management and restoration company whose technical staff includes Certified Wildlife Biologists, Ecological Restoration Practitioners, Foresters, and Professional Wetland Scientists. In addition, Delta has construction specialists well-versed in wetland construction activities such as contractor management, earth work, heavy equipment operation, herbicide application, safety, and vegetation restoration. Delta currently operates 15 approved wetland mitigation banks and 4 approved amendments within the New Orleans (CEMVN), Vicksburg (CEMVK), Fort Worth (CESWF), and Galveston Districts (CESWG), totaling 7,743.9 mitigation acres and 43,044.9 linear feet of stream restoration. Delta is currently in the process of permitting 11 pending mitigation banks and 2 pending addendums totaling 4,407.2 mitigation acres and 10,348.7 linear feet of stream, all of which are under review within the CEMVN, CEMVK, and CESWG Districts. In addition to mitigation banking, Delta serves as the responsible party for the establishment and maintenance of 20 approved PRM projects consisting of 3,308.7 mitigation acres and 8,251.0 linear feet of stream. The Galveston District is also in the process of reviewing 3 additional PRM plans developed by Delta comprising another 118.9 permitted mitigation acres in Texas.

7.3 Proposed Long-term Ownership and Management Representatives

EIP intends to serve as the sponsor, long-term manager, and steward of the Bank. The Sponsor may appoint a long-term steward if such appointment is approved by the CESWG per 33 CFR § 332.7 (u)(2). The anticipated long-term management will consist of monitoring, invasive species control, prescribed fire, boundary maintenance, and site protection.

7.4 Site Protection

The Owner, or its heirs, assigns or purchasers shall be responsible for protecting lands contained within the Bank in perpetuity. To provide such protection, the Owner shall execute a perpetual conservation easement (Texas Law, Natural Resources Code, Title 8 Chapter 183 Subchapter A) on all acreage identified as the Bank and the conservation easement will be recorded in the Title Records of Brazoria County, Texas. The conservation easement will be held by a qualified, non-profit organization (Holder) whose mission is to retain or protect the land's natural habitat, wildlife, open-space, scenic, educational, recreational, historical, or cultural values. In accordance with 33 CFR 332.7 (a)(3), the easement shall contain a provision requiring a 60-day advance notification to the CESWG before action is taken to void or modify the easement including transfer of title.

Delta (the land owner and Agent) will grant a perpetual conservation easement in accordance with Texas Law, Natural Resources Code, Title 8 Chapter 183 Subchapter A and record the easement in the real estate title records of Brazoria County (Texas Legislature 2005). The conservation easement will protect the Bank from activities inconsistent with the purpose of preserving the conservation values of the restored area. The Owner, its heirs, assigns or purchasers and the Sponsor/Land Steward Entity shall be responsible for protecting lands contained within the Bank in perpetuity in accordance with the terms of the conservation easement. The conservation easement will protect the Bank from development or any other activity contrary to its use as a wetland mitigation bank.

The Holder will be accredited by the National Land Trust Alliance or a credible non-profit conservation organization that is a member of the Texas Land Trust Council. The Holder will conduct annual inspections to verify that there are no activities occurring on the Bank that are inconsistent with the purpose of preserving the conservation values of the restored area. Texas Land Conservancy has preliminarily agreed to hold the conservation easement.

7.5 Long-term Strategy

A long-term management plan will be included with the draft MBI and will detail long-term management needs, costs and identify a funding mechanism in accordance with 33 CFR § 332.7 (d). The Sponsor (or Long-term Steward) and the Owner (or its heirs, assigns or purchasers) shall be responsible for protecting lands contained within the Bank in perpetuity. The Sponsor will establish the “Long-term Land Management and Maintenance” (LTMM) endowment to insure adequate funding is available to cover future LTMM costs. The Sponsor will enter into a Mitigation Bank Endowment Agreement with the National Fish and Wildlife Foundation (NFWF) to ensure sufficient long-term funding is available for perpetual maintenance and protection of the Bank. Long-term management will consist of monitoring, vegetation management, invasive species control, controlled burning, boundary maintenance (approximately 4.1 miles), site protection, and the funding of such activities. Invasive species control efforts will continue as part of long-term management.

The riverine herbaceous/shrub mitigation area will be managed to maintain or increase the biological, chemical, and physical wetland functions. The improvement from pasture grasses to wet coastal prairie herbaceous species (i.e., grasses, graminoids, and forbs) will provide habitat capable of supporting populations of native wildlife, Nearctic-neotropical migrants, and insects (pollinators). Additionally, TPWD lists several rare wildlife species that utilize grassland habitats such as Henslow’s Sparrow (*Ammodramus henslowii*), Sprague’s Pipit (*Anthus spragueii*), White-faced Ibis (*Plegadis chihi*), Wood Stork (*Mycteria americana*), and plains spotted skunk (*Spilogale putorius interrupta*). Prescribed fire is the primary best management practice to sustain diversity and control invasive species. As a fire successional community, prescribed fire will increase plant species diversity (e.g., grasses, graminoids, and forbs), remove invasive exotic herbaceous species (e.g., Brazilian vervain and Vasey’s grass) and control encroaching hardwoods (e.g., Chinese tallowtree and eastern baccharis). The riverine herbaceous/shrub restoration adjacent to mature forested habitat along with its developing riparian forested buffer will provide foraging opportunities for bats and other wildlife species.

The riverine forested mitigation area will be managed to maintain or increase the biological, chemical, and physical wetland functions of the Bank, which will provide wetland habitat capable of supporting populations for priority wildlife species (e.g., native wildlife, Nearctic-Neotropical migrants and bats). An example of suitable riverine forested management for such purposes are activities which that encourage the development of snags and coarse woody debris (CWD). Snags and CWD (i.e. deadwood) serve as microhabitat for various many species of herpetofauna, insects, beetles and termites which are an important food source for Nearctic-Neotropicals and various other wildlife species. Additionally, snags are also beneficial to various several species of cavity-

nesting birds such as downy woodpeckers (*Picoides pubescens*), hairy woodpeckers (*Picoides villosus*), red-bellied woodpeckers (*Melanerpes carolinus*), and white-breasted nuthatches (*Sitta canadensis*). The encouragement of habitat which supports these bird species is beneficial for long-term forest health, as studies show these species are beneficial in slowing the spread of emerald ash borers (*Agrilus planipennis*), an invasive species which could pose a risk to ash species (*Fraxinus* spp.) in the near future (Koenig et al. 2013). Deadwood is an important component for various wetland functions such as nutrient cycling and provides habitat for various species of invertebrates, amphibians, and reptiles (Brinson et al. 1995, NRCS 2003). Loeb (2013) states that snags, particularly those large in size and located in positioned in clusters, are important in providing roosting habitat for various tree bats.

8.0 CONCLUSION

In summary, the Bank has a high potential for successfully restoring 247.8 acres of riverine herbaceous/shrub wetlands, 92.3 acres of riverine forested wetland, , and 11.9 acres of riverine forested wetland preservation. The cessation of agricultural land use, restoration of natural hydrology, and rehabilitation and re-establishment of riverine forested habitats, riverine herbaceous/shrub habitats, and preservation of native riparian habitat will improve watershed quality by reducing non-point source runoff, increasing ecosystem plant diversity, and increasing habitat for native and migratory wildlife species.

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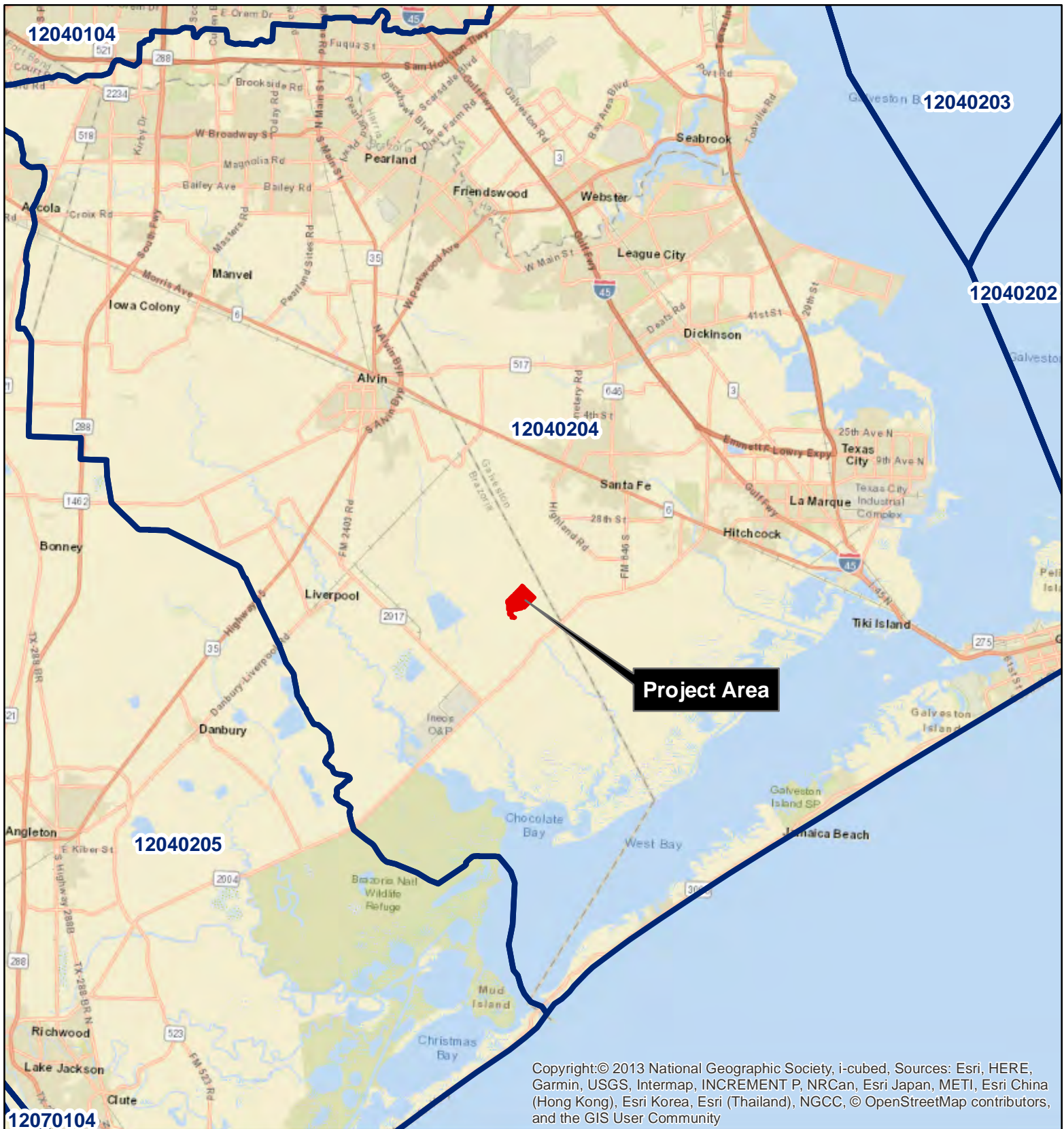
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Map M-1, various scales.

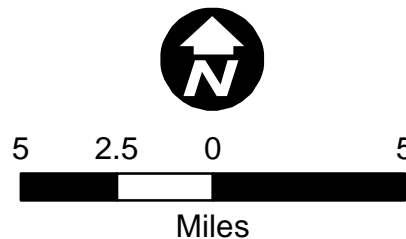
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Attachment A. Figures



- Project Area (386.6 ac)
- USGS 8-Digit HUC



Proposed Halls Bayou Mitigation Bank

VICINITY MAP

Brazoria County, TX

Created : TSC/ArcView10

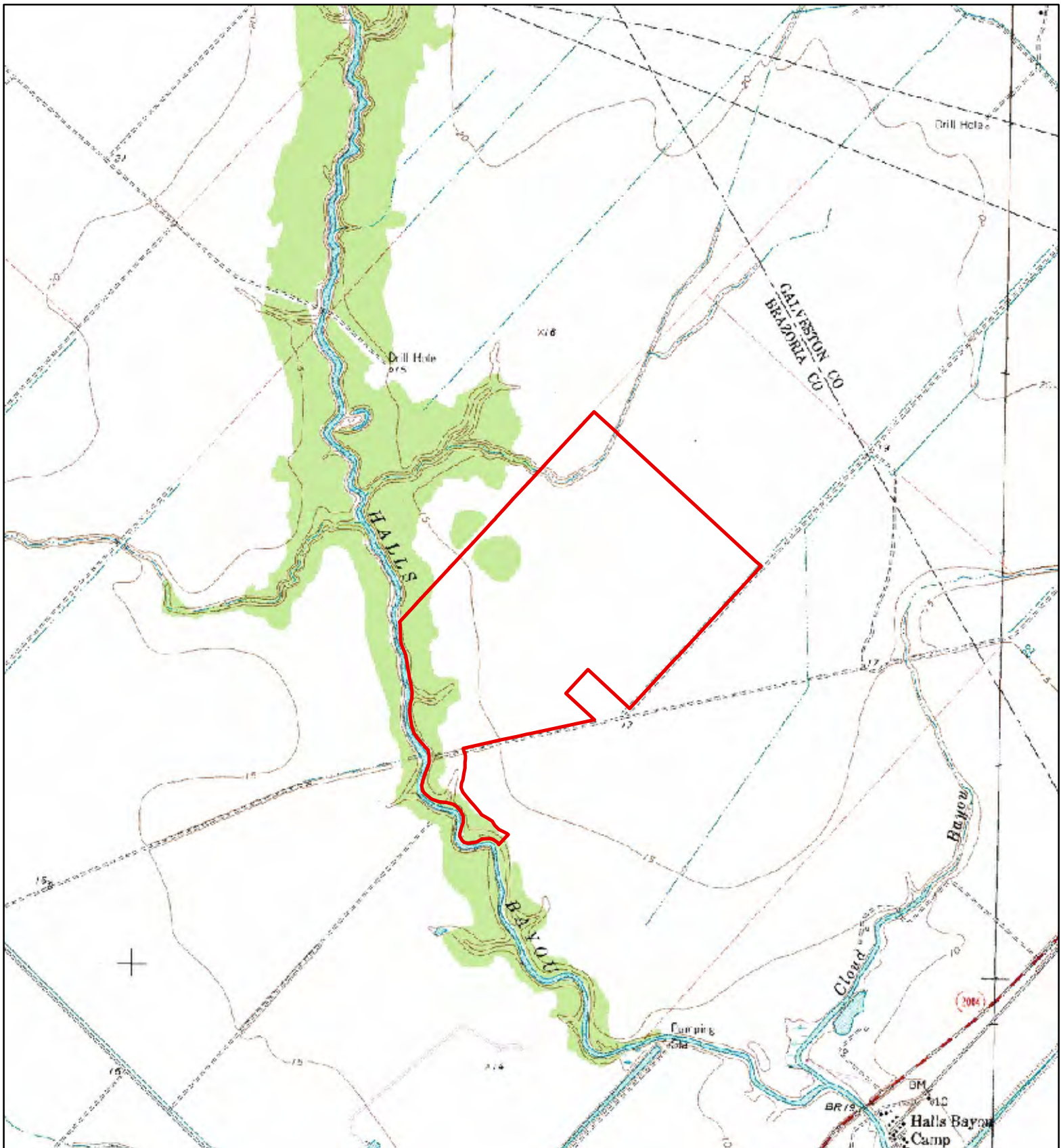
Approved : SR

Date : 6/12/2018

Map # : F01_VicinityMap.mxd



FIGURE 1



 Project Area (386.6 ac)



2,000 1,000 0 2,000



Feet

**Proposed Halls Bayou
Mitigation Bank
2008 USGS
7.5' QUADRANGLE MAP
Brazoria County, TX**

Created : TSC/ArcView10

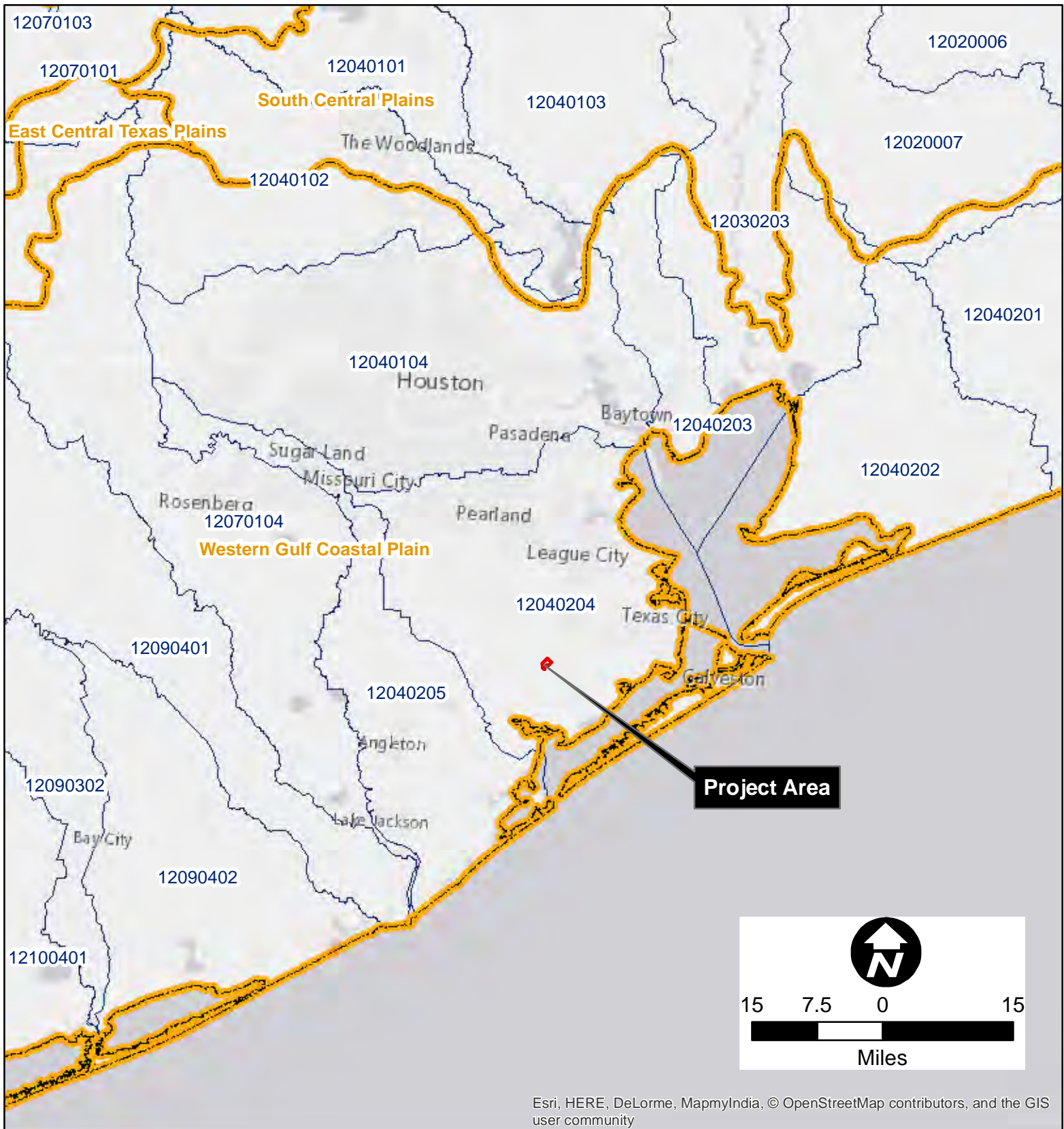
Approved : SR

Date : 6/12/2018

Map # : F01_VicinityMap.mxd



FIGURE 2



Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

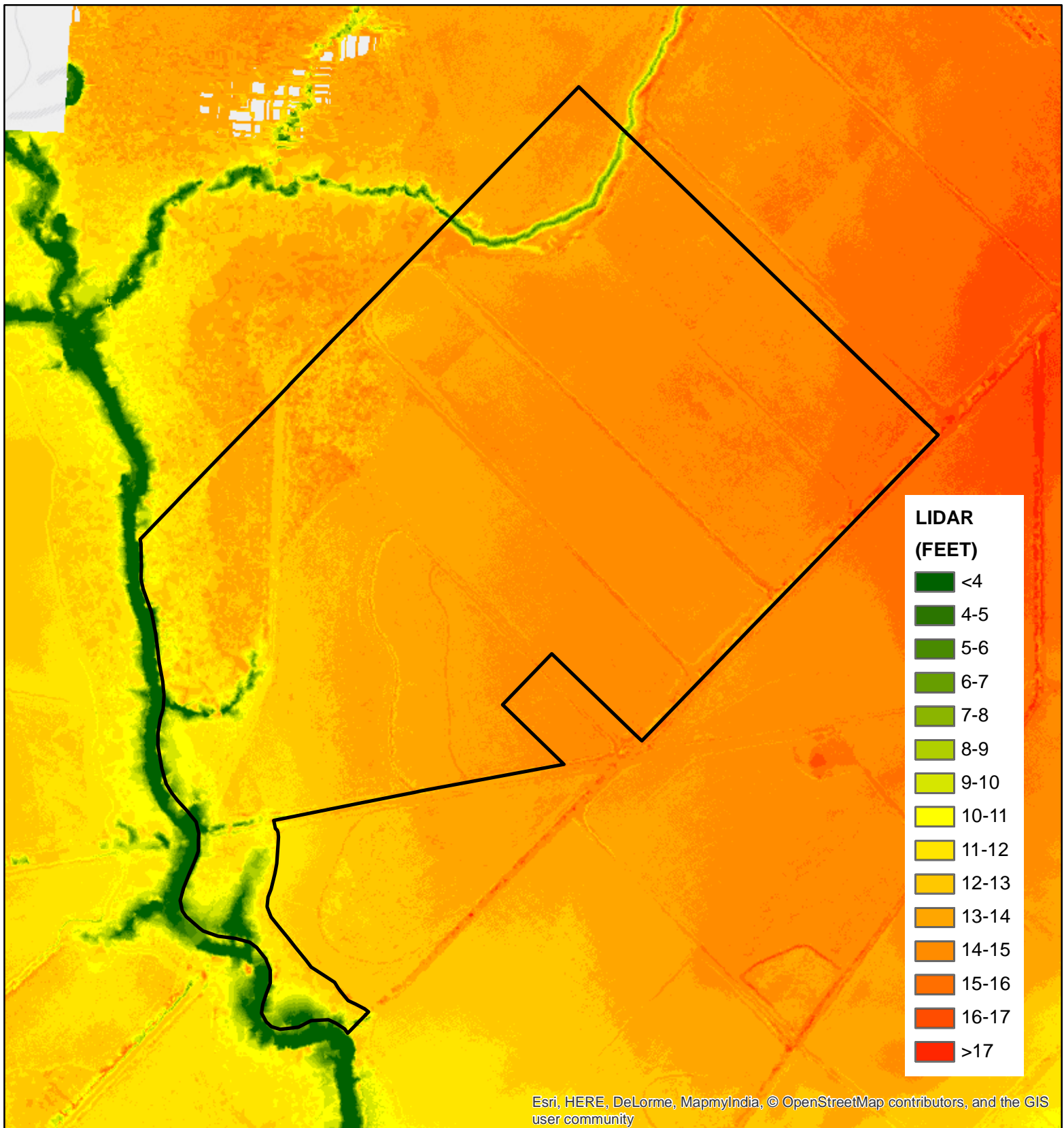
- Project Area (386.6 ac)
- Level III Ecoregion
- USGS 8-Digit HUC

**Proposed Halls Bayou
Mitigation Bank
LEVEL III ECOREGION MAP
Brazoria County, TX**

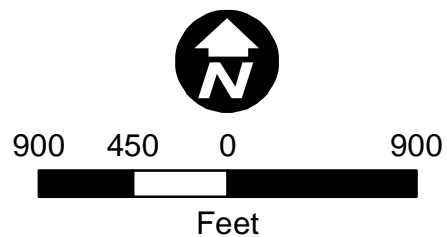
Created : TSC/ArcView10
Approved : SR
Date : 6/12/2018
Map # : F03_Ecoregion.mxd



FIGURE 3



 Project Area (386.6 ac)



**Proposed Halls Bayou
Mitigation Bank
LIDAR DIGITAL
ELEVATION MODEL
Brazoria County, TX**

Created : TSC/ArcView10

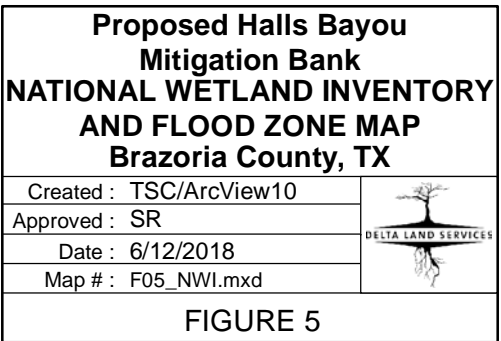
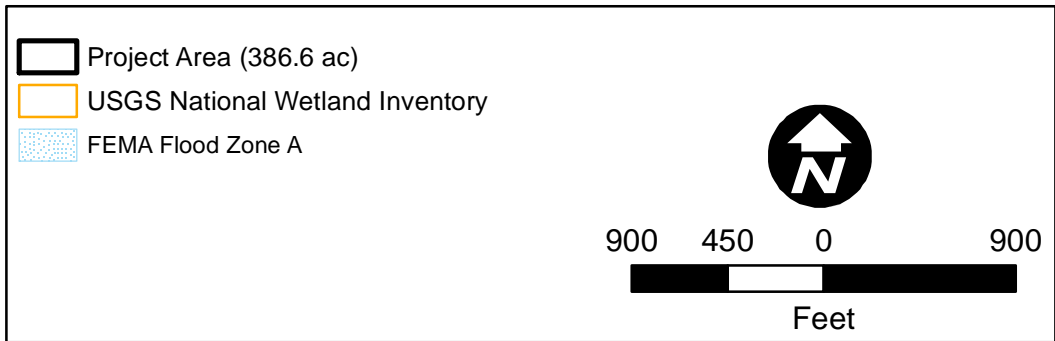
Approved : SR

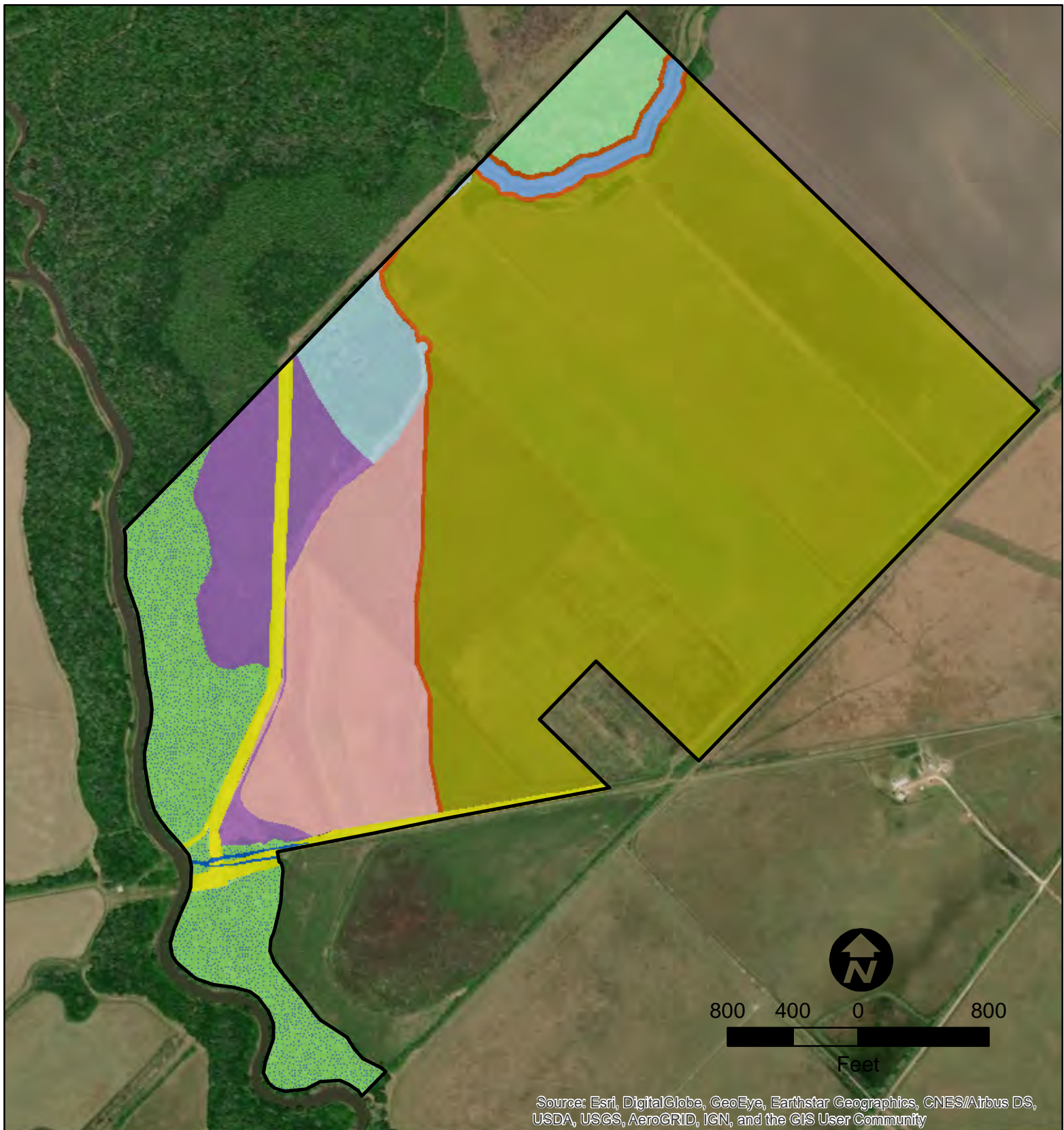
Date : 6/12/2018












Map # : F04_Lidar.mxd




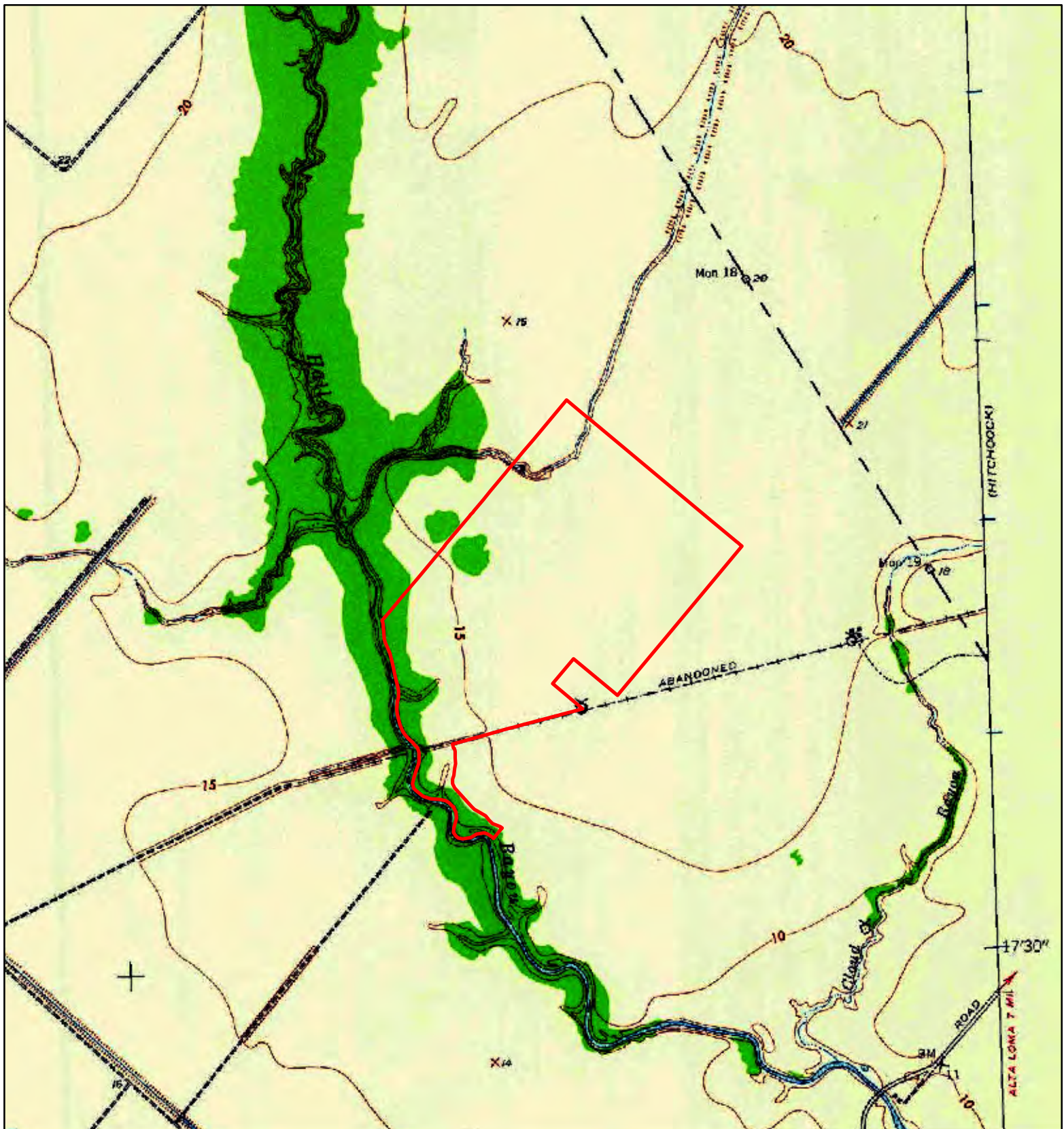
FIGURE 4



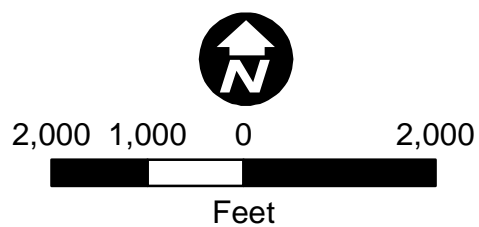



	Project Area (386.6 ac)		RF Enhancement (12.4 ac)
	RHS Re-establishment (236.5 ac)		RPW (3.8 ac)
	RHS Rehabilitation (11.3 ac)		Other Waters (0.5 ac)
	RF Re-establishment (43.4 ac)		Fire Lane (4.8 ac)
	RF Preservation (30% Mosaic- 11.9 acres) (39.7 ac)		Access/Easement (9.6 ac)
	RF Rehabilitation (24.6 ac)		

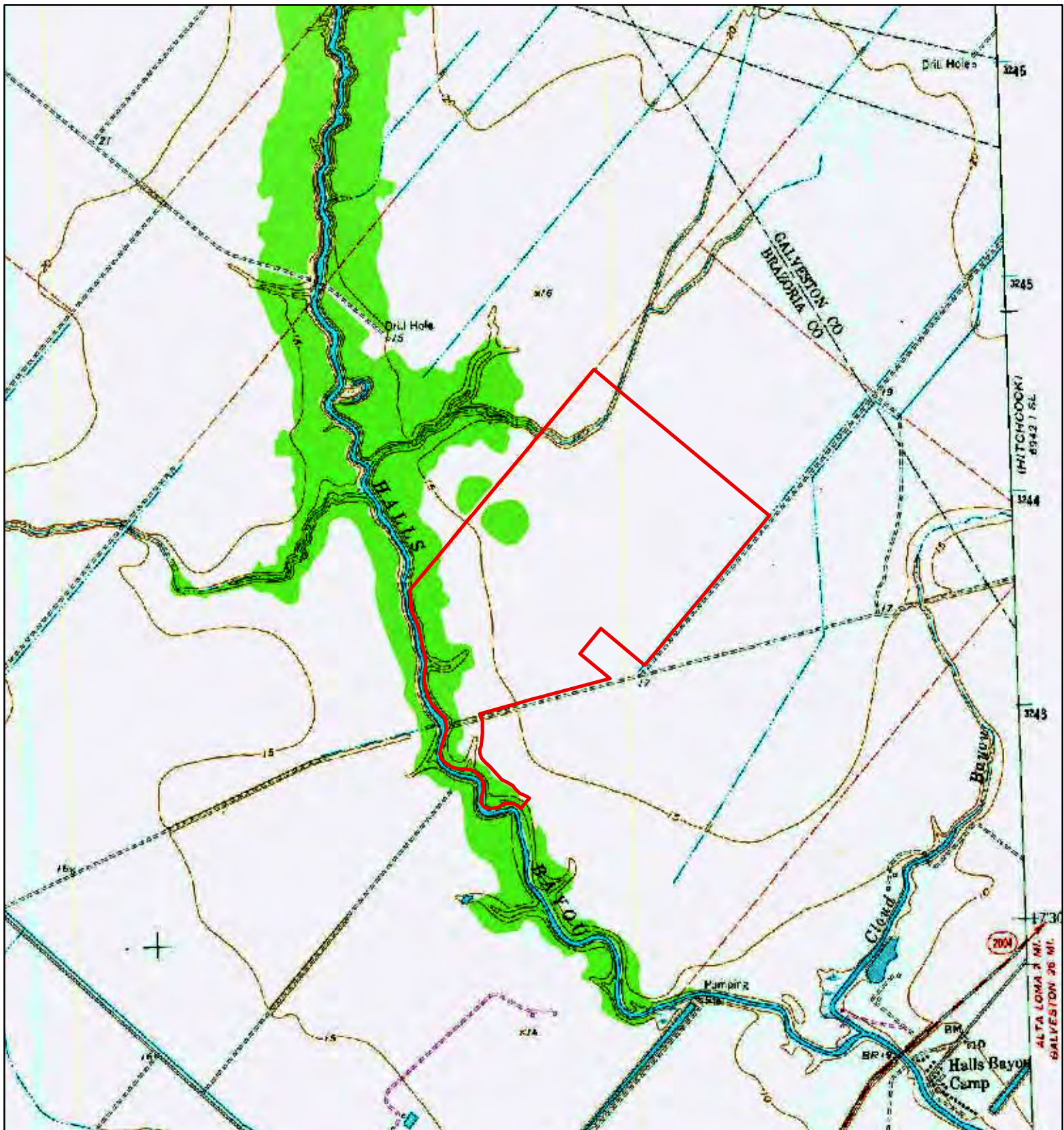
Proposed Halls Bayou Mitigation Bank	
MITIGATION FEATURES	
Brazoria County, TX	
Created : TSC/ArcView10	
Approved : SR	
Date : 7/17/2018	
Map # : F06_Features.mxd	
FIGURE 6	




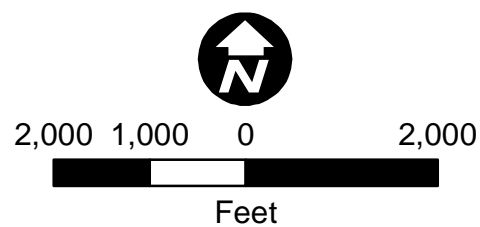
Project Area (386.6 ac)




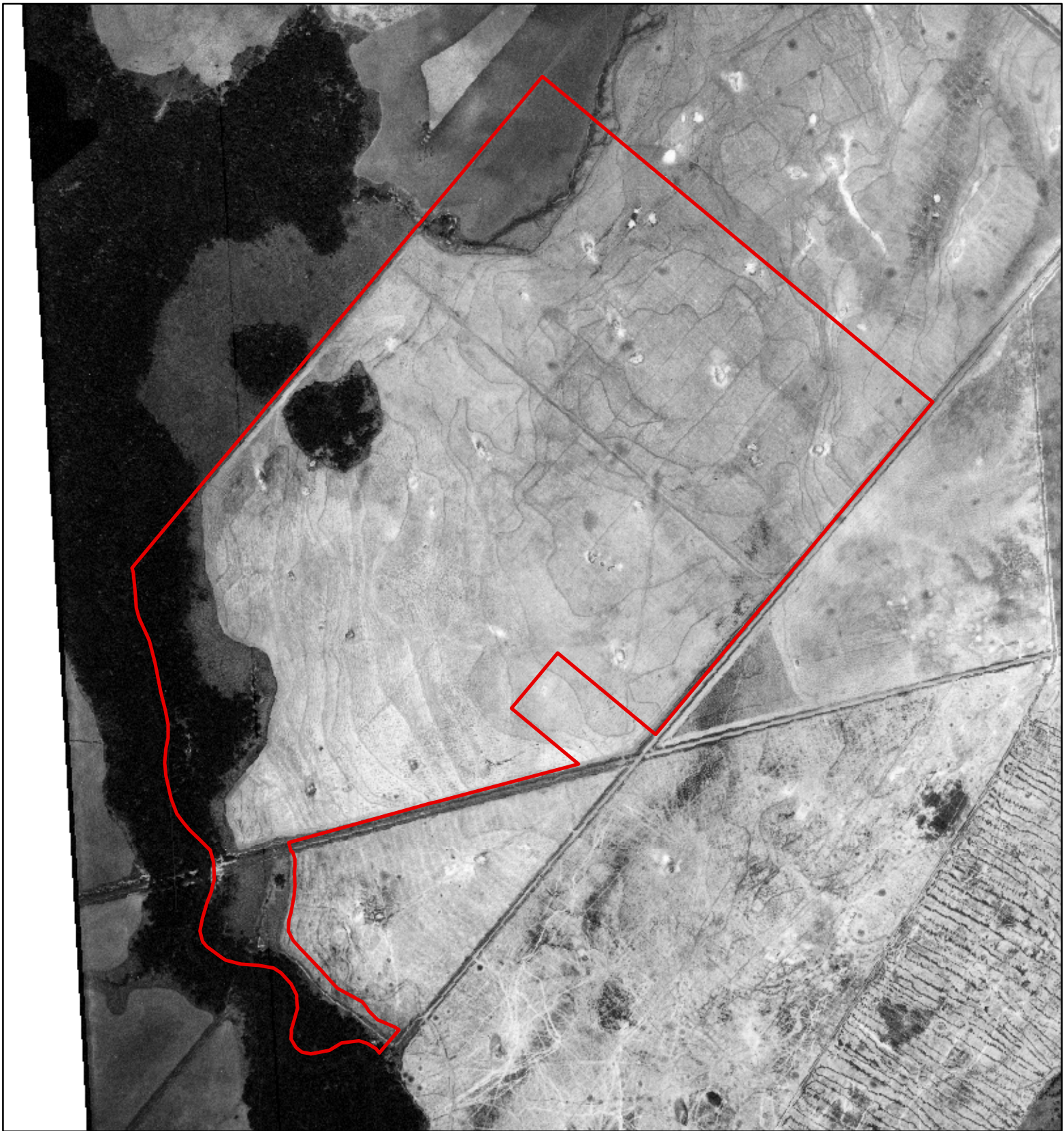
Proposed Halls Bayou Mitigation Bank	
1943 USGS QUADRANGLE MAP	
Brazoria County, TX	
Created : TSC/ArcView10	
Approved : SR	
Date : 6/12/2018	
Map # : F07_1943quad.mxd	
FIGURE 7	



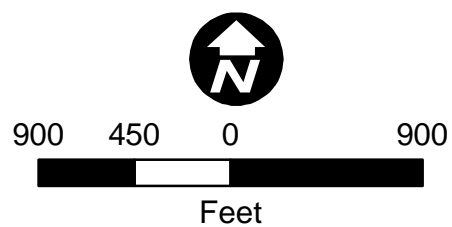
 Project Area (386.6 ac)



Proposed Halls Bayou Mitigation Bank	
1974 USGS QUADRANGLE MAP	
Brazoria County, TX	
Created : TSC/ArcView10	
Approved : SR	
Date : 6/12/2018	
Map # : F08_1974quad.mxd	
FIGURE 8	



 Project Area (386.6 ac)



**Proposed Halls Bayou
Mitigation Bank
1944 AERIAL PHOTOGRAPHY
Brazoria County, TX**

Created : TSC/ArcView10

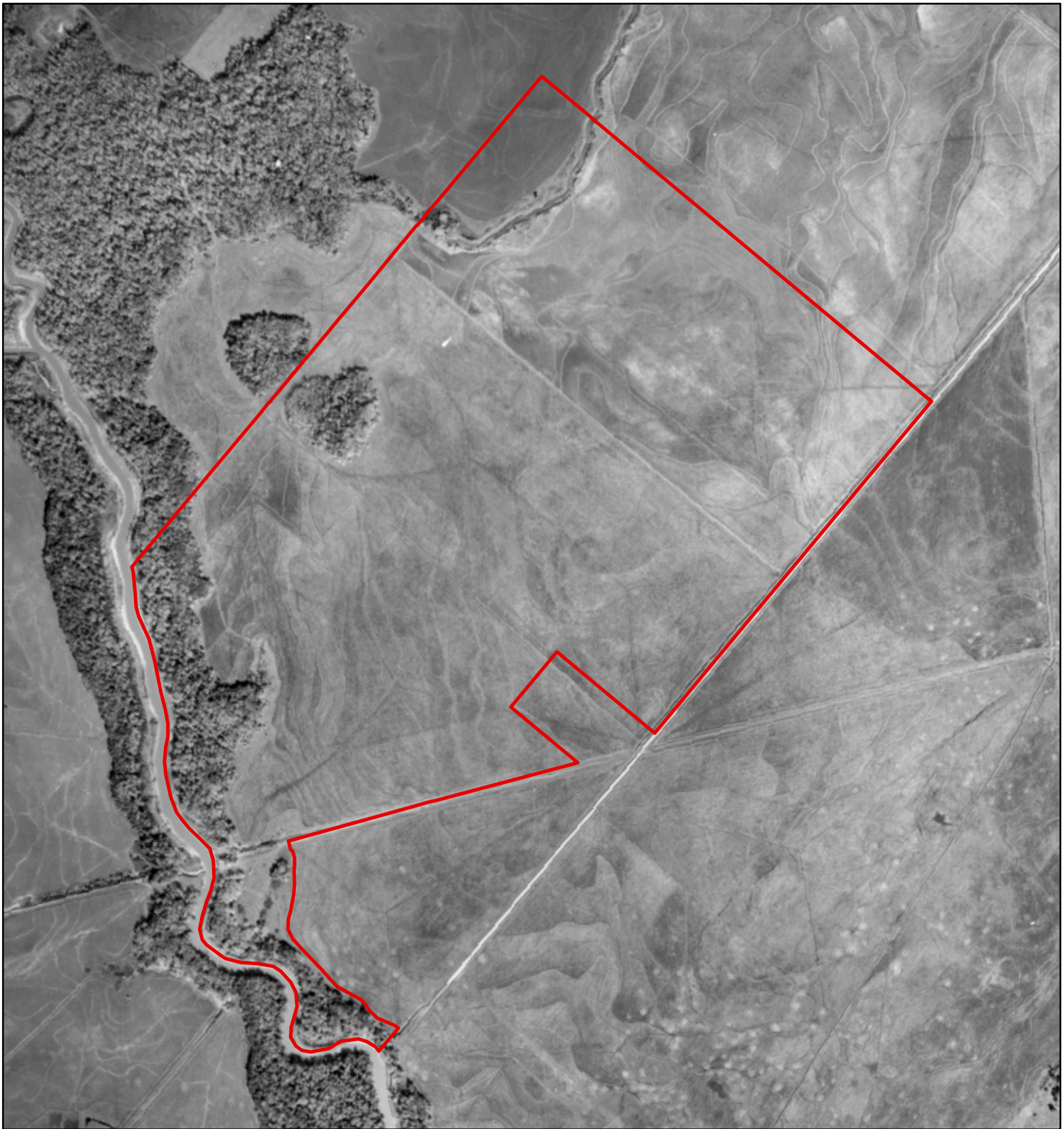
Approved : SR

Date : 6/12/2018

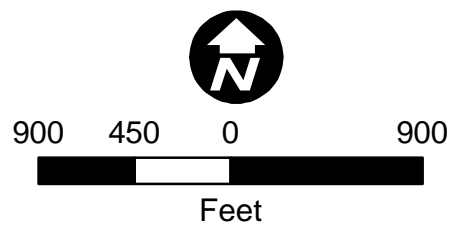
Map # : F09_1944.mxd



FIGURE 9



 Project Area (386.6)



**Proposed Halls Bayou
Mitigation Bank
1965 AERIAL PHOTOGRAPHY
Brazoria County, TX**

Created : TSC/ArcView10

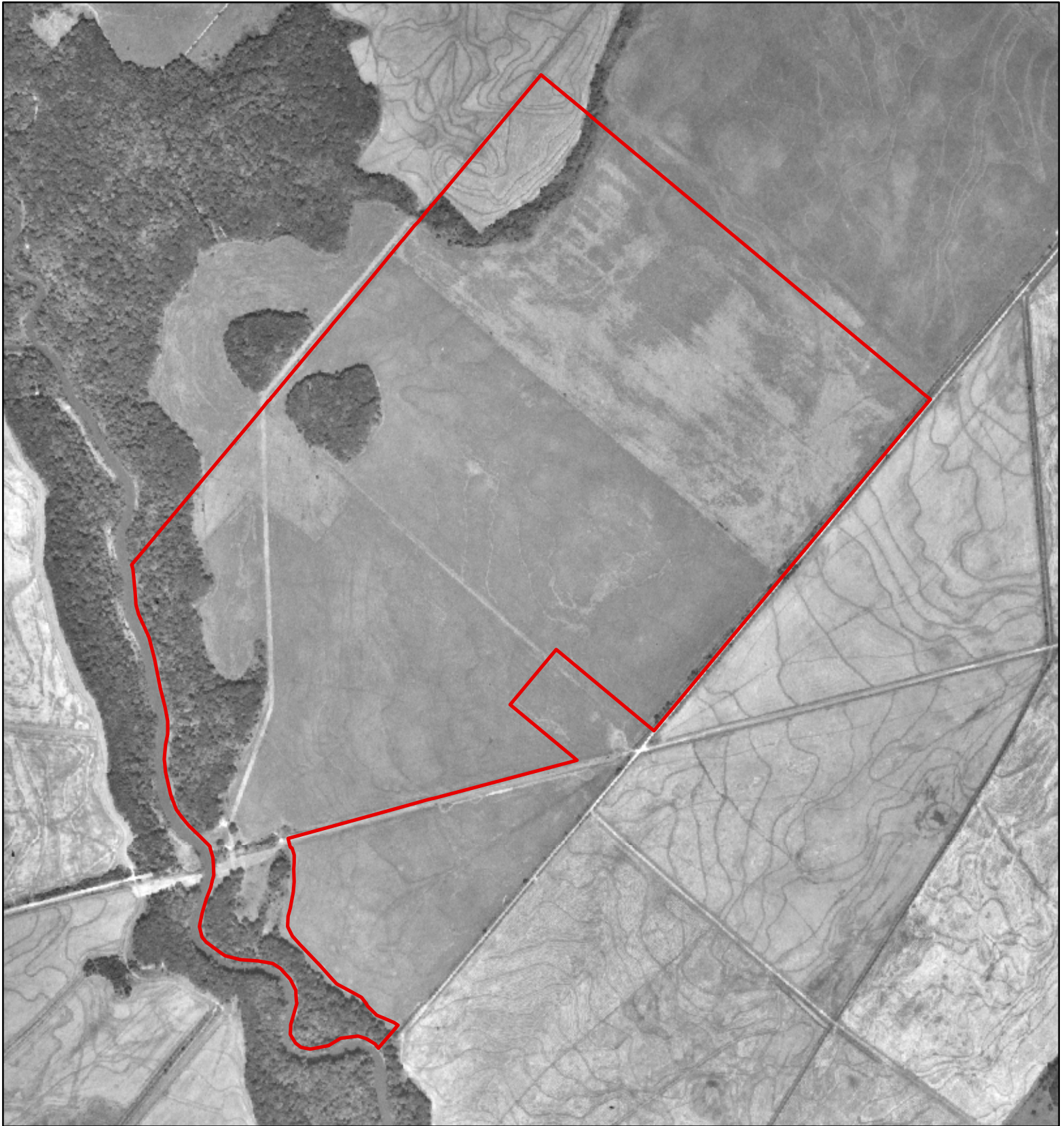
Approved : SR

Date : 6/12/2018

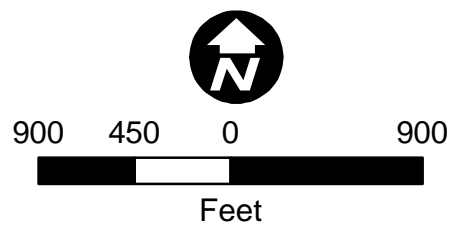
Map # : F10_1965.mxd



FIGURE 10



 Project Area (386.6 ac)



**Proposed Halls Bayou
Mitigation Bank
1977 AERIAL PHOTOGRAPHY
Brazoria County, TX**

Created : TSC/ArcView10

Approved : SR


Date : 6/12/2018

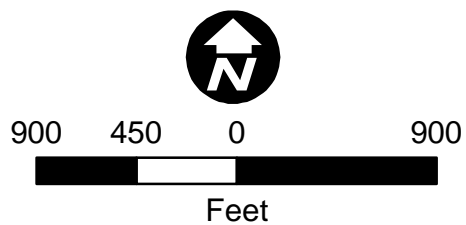
Map # : F11_1977.mxd



FIGURE 11



 Project Area (386.6 ac)



**Proposed Halls Bayou
Mitigation Bank
1996 AERIAL PHOTOGRAPHY
Brazoria County, TX**

Created : TSC/ArcView10

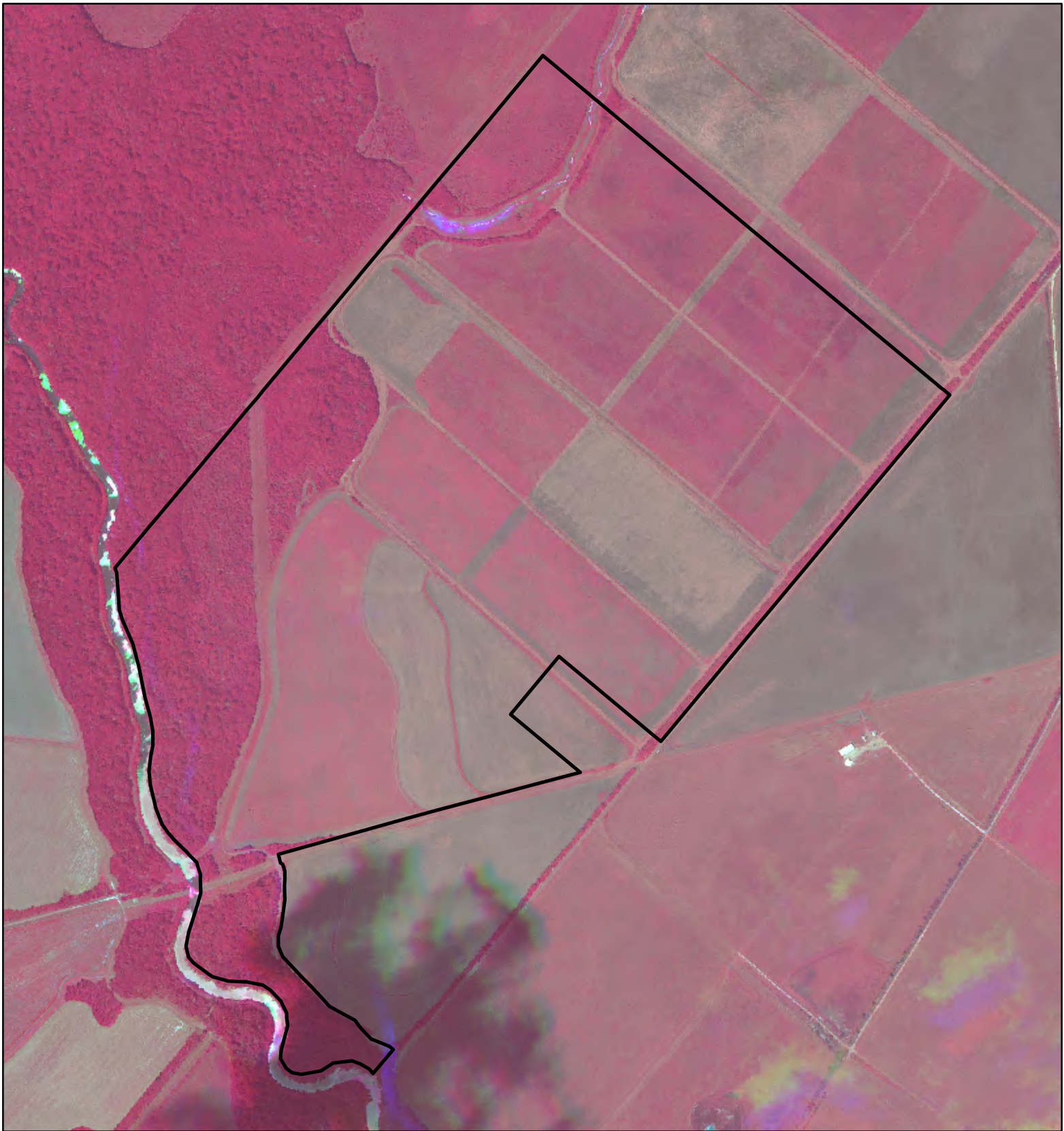
Approved : SR

Date : 6/12/2018

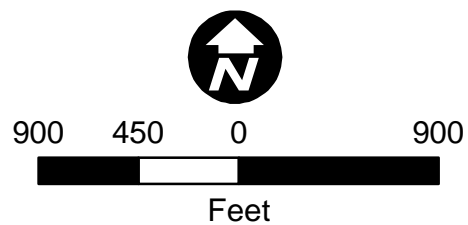
Map # : F12_Aerial.mxd



FIGURE 12



 Project Area (386.6 ac)



**Proposed Halls Bayou
Mitigation Bank
2004 AERIAL PHOTOGRAPHY
Brazoria County, TX**

Created : TSC/ArcView10

Approved : SR

Date : 6/12/2018

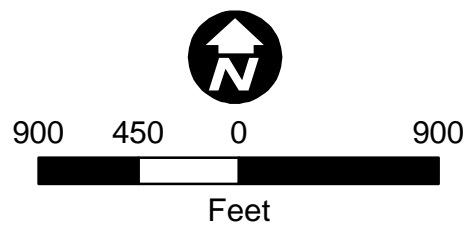
Map # : F13_Aerial.mxd



FIGURE 13



 Project Area (386.6 ac)



**Proposed Halls Bayou
Mitigation Bank
2012 AERIAL PHOTOGRAPHY
Brazoria County, TX**

Created : TSC/ArcView10

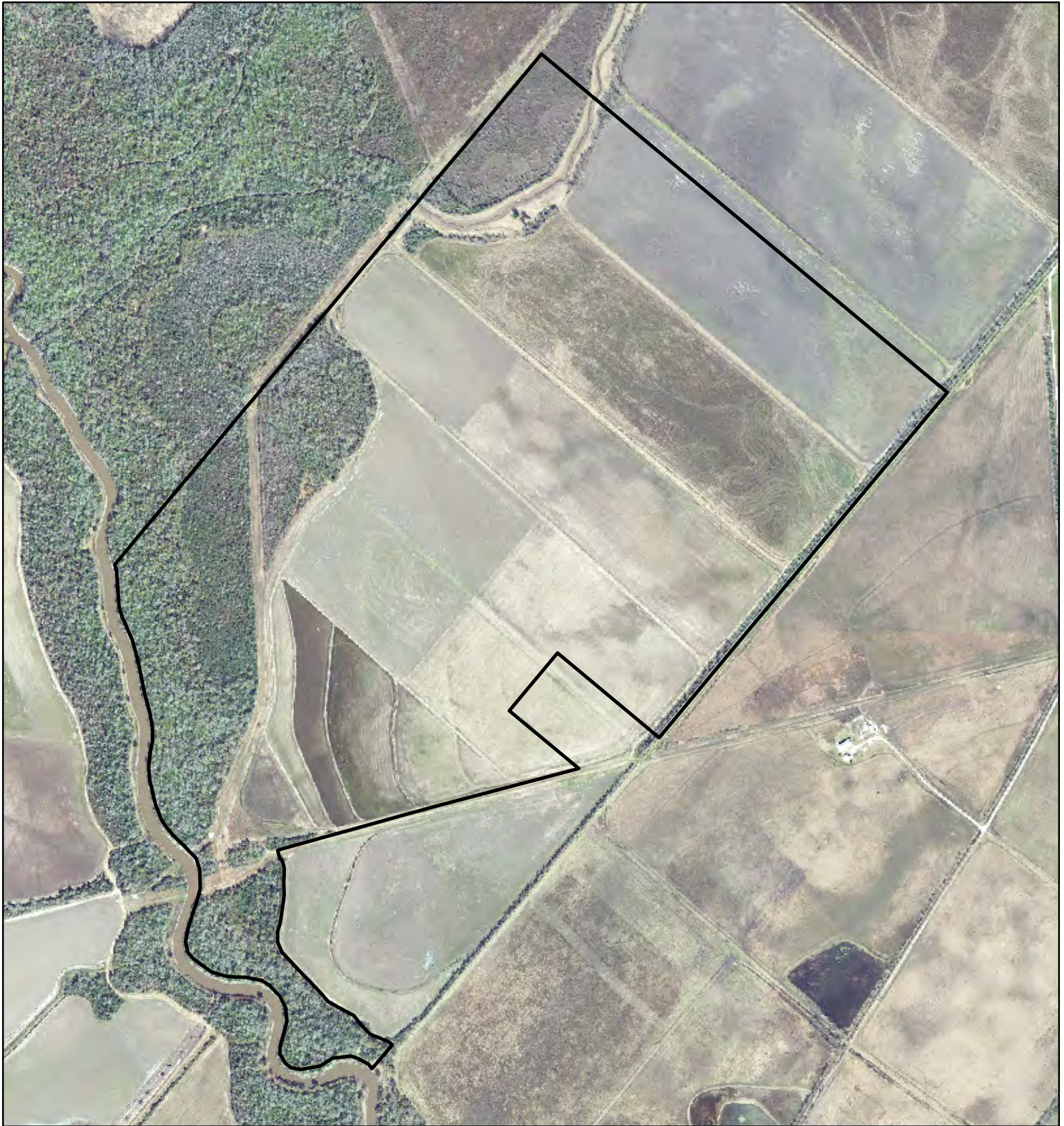
Approved : SR

Date : 6/12/2018

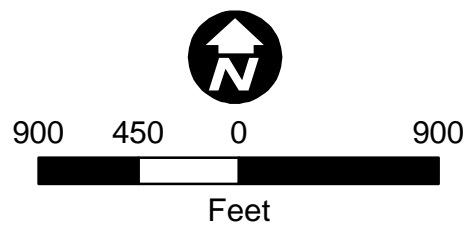
Map # : F13_Aerial.mxd



FIGURE 13



 Project Area (386.6 ac)



**Proposed Halls Bayou
Mitigation Bank
2015 AERIAL PHOTOGRAPHY
Brazoria County, TX**

Created : TSC/ArcView10

Approved : SR

Date : 6/12/2018


Map # : F13_Aerial.mxd

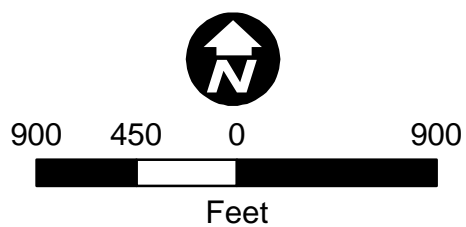


FIGURE 14



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

 Project Area (386.6 ac)



**Proposed Halls Bayou
Mitigation Bank
2017 AERIAL PHOTOGRAPHY
Brazoria County, TX**

Created : TSC/ArcView10

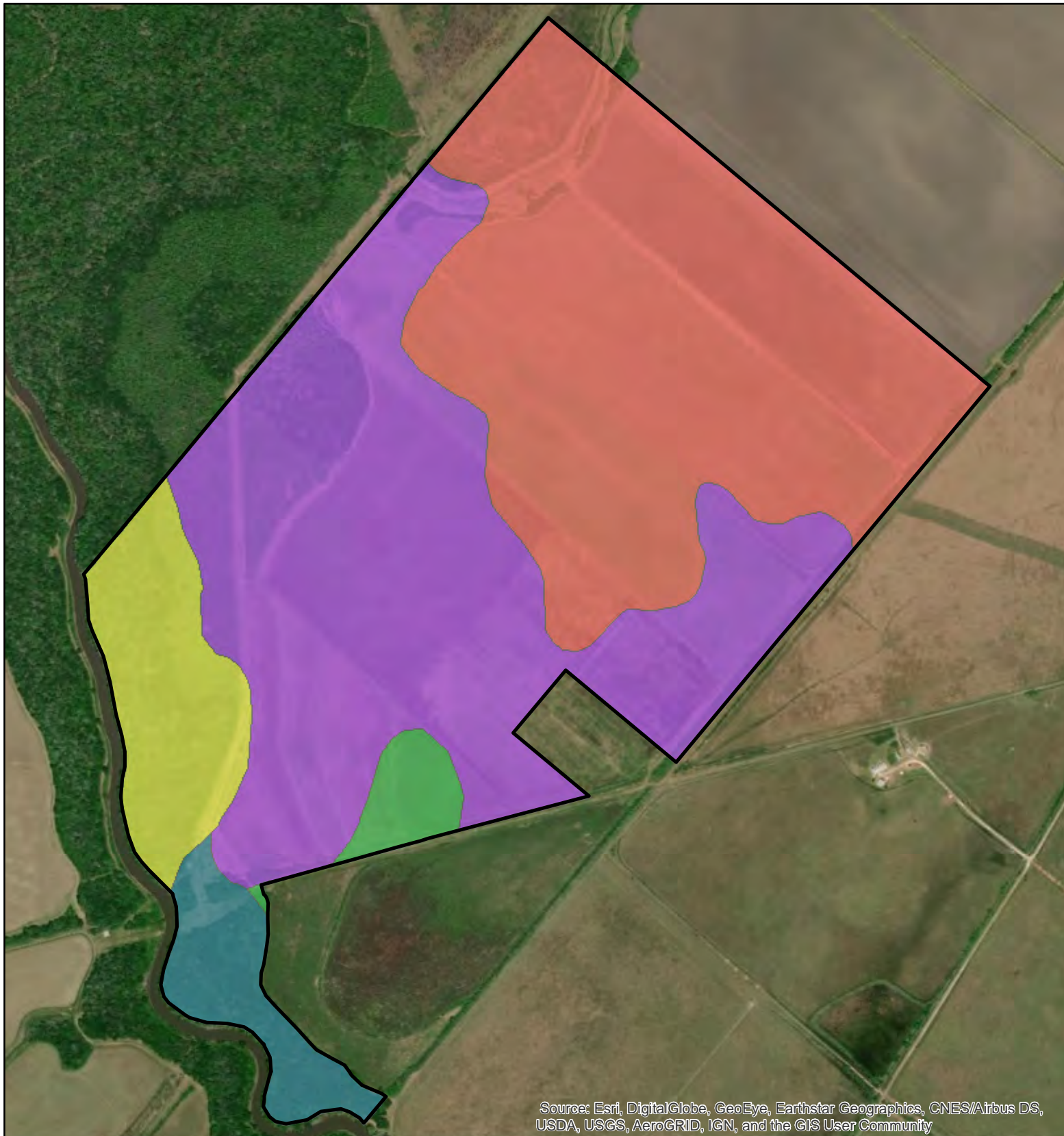
Approved : SR

Date : 6/12/2018

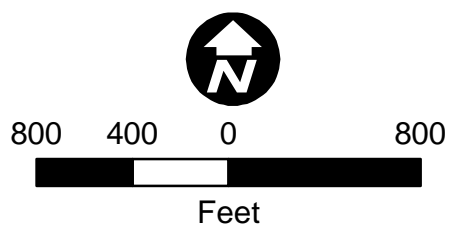
Map # : F16_Aerial.mxd



FIGURE 16



- Project Area (386.6 ac)
- Bacliff Clay, 0 to 1% slope
- Bernard Clay Loam
- Edna Fine Sandy Loam, 1 - 5% slope
- Lake Charles Clay, 0 to 1% slope
- Lake Charles Clay, 2 to 5% slope

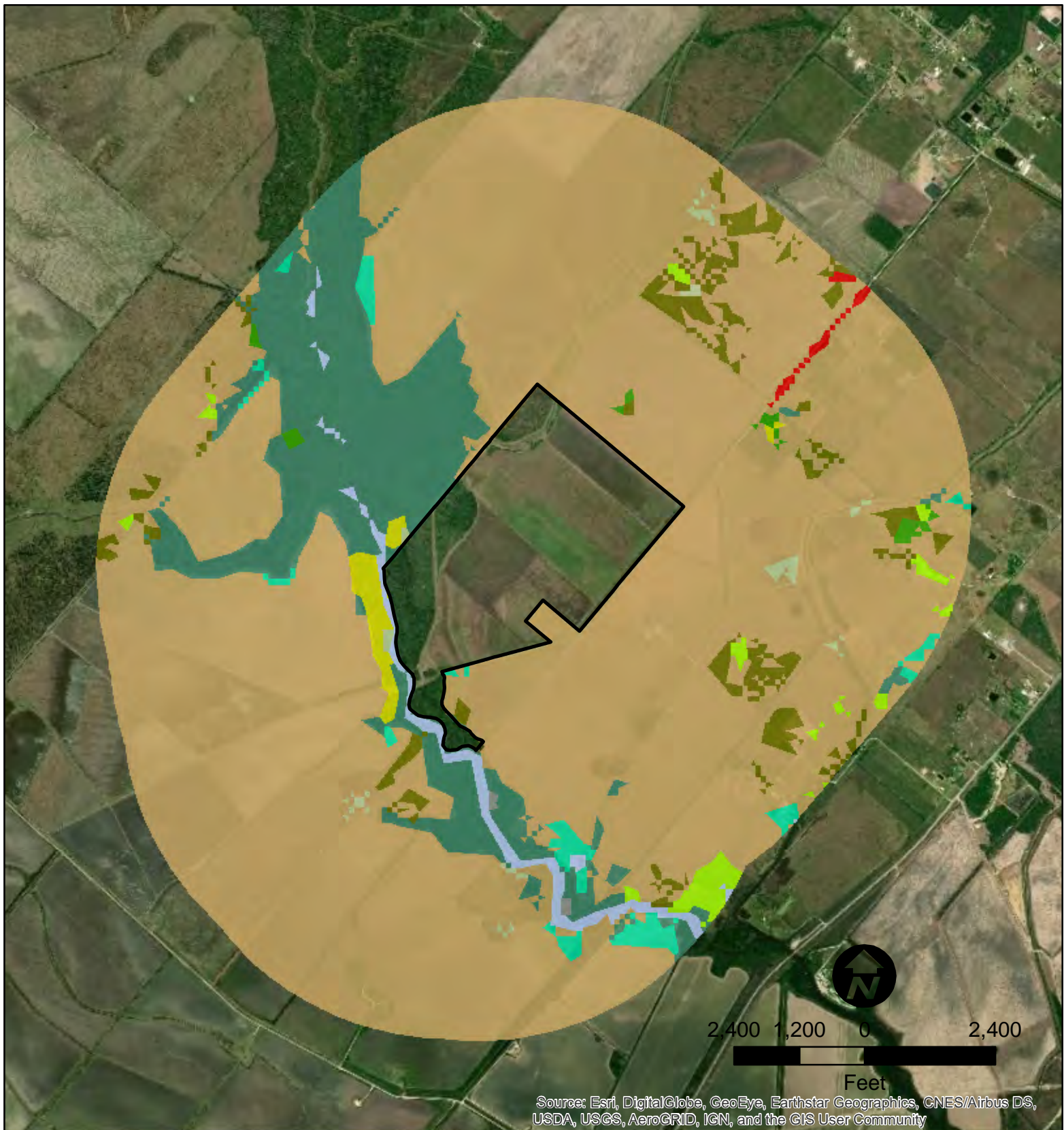


**Proposed Halls Bayou
Mitigation Bank
SSURGO SOILS MAP
Brazoria County, TX**

Created : TSC/ArcView10
Approved : SR
Date : 6/12/2018
Map # : F17_soils.mxd



FIGURE 17



Project Area (386.6 ac)	Water (1.2%)
Pasture/Hay (79.9%)	Grassland/Herbaceous (0.9%)
Woody Wetlands (12.2%)	Mixed Forest (0.7%)
Developed, Open Space (0.2%)	Deciduous Forest (0.4%)
Shrub/Scrub (3.0%)	Evergreen Forest (0.3%)
Emergent Herbaceous Wetlands (1.2%)	Barren (<0.1%)

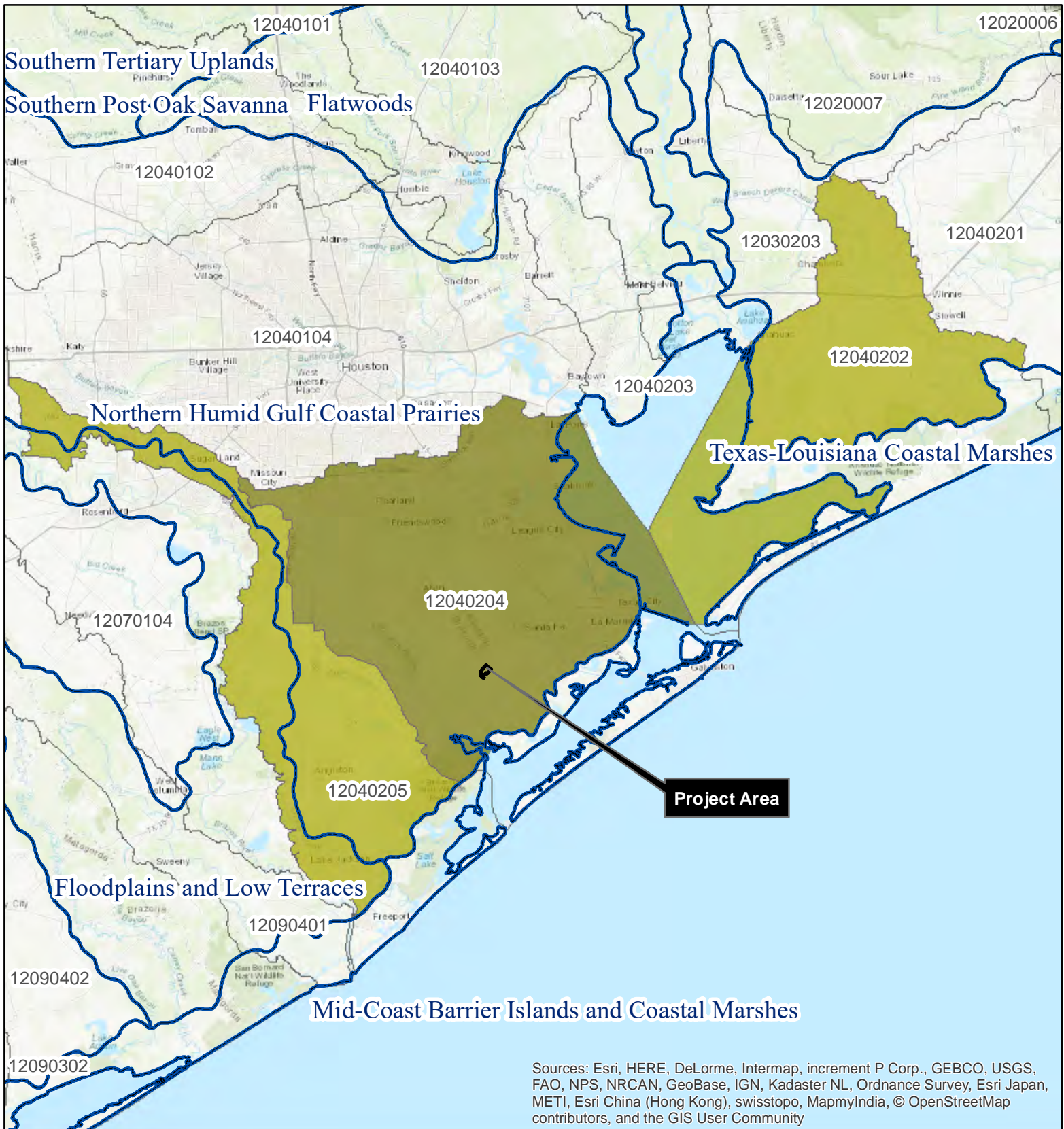
Note: National Land Cover Database 2011 (NLCD 2011)

Proposed Halls Bayou Mitigation Bank LAND USE WITHIN A ONE-MILE BUFFER Brazoria County, TX

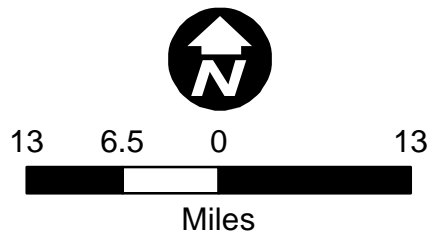
Created : TSC/ArcView10
Approved : SR
Date : 6/12/2018
Map # : F18_Landuse_1mile.mxd



FIGURE 18



- Project Area (386.6 ac)
- Level 3 Ecoregions
- Primary Service Area
- Secondary Service Area
- USGS 8-Digit HUC



Proposed Halls Bayou Mitigation Bank

SERVICE AREA MAP

Brazoria County, TX

Created : TSC/ArcView10

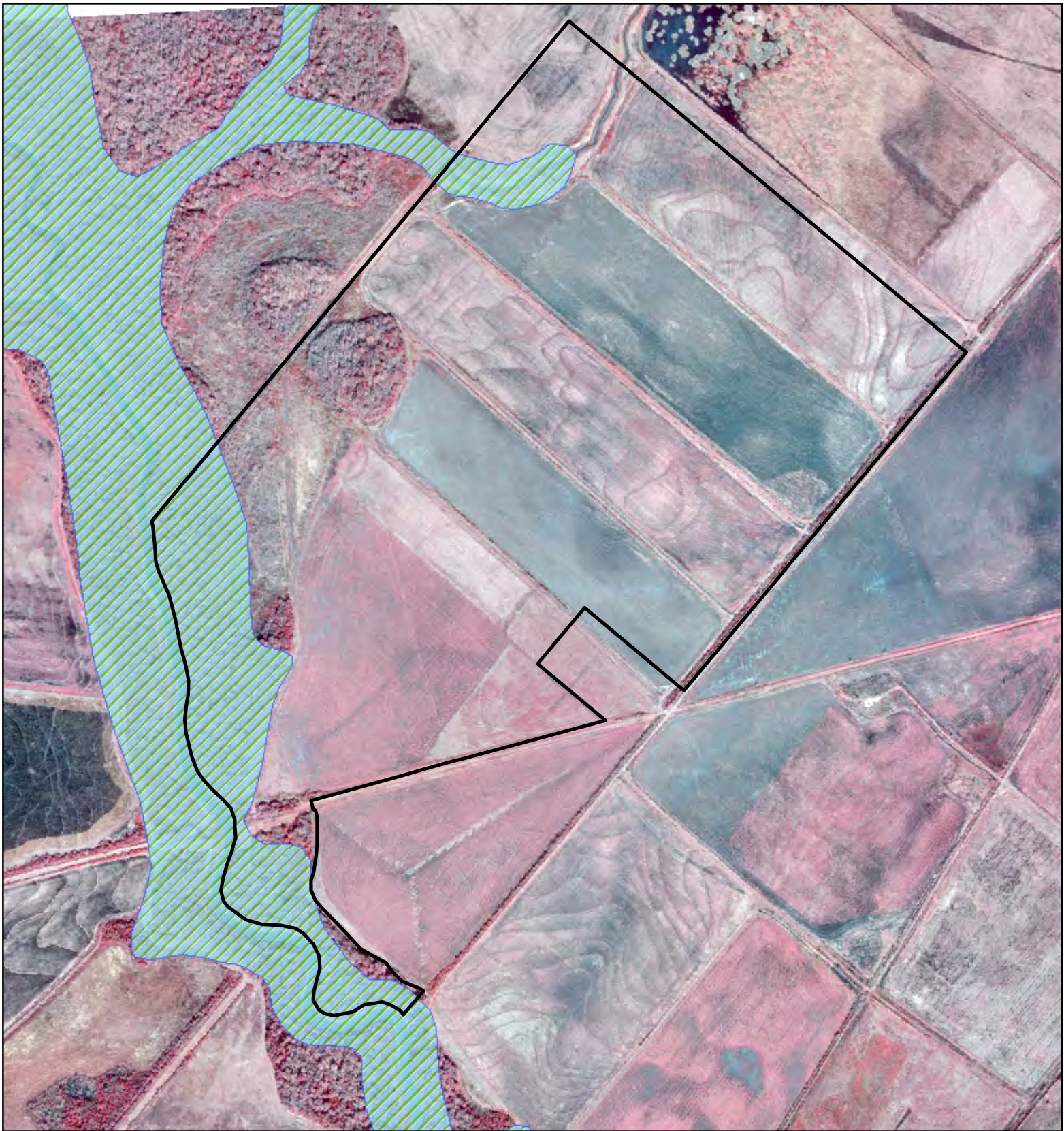
Approved : SR



Date : 6/12/2018

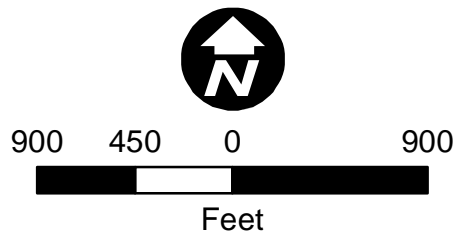
Map # : F19_ServiceArea.mxd



FIGURE 19



-  Project Area (386.6 ac)
 FEMA Flood Zone A



**Proposed Halls Bayou
Mitigation Bank
FLOODPLAIN MAP
Brazoria County, TX**

Created : TSC/ArcView10
Approved : SR
Date : 6/12/2018
Map # : F20_Floodplain.mxd



FIGURE 20

Attachment B. Tables

Table 1. Existing Condition and Restored Wetland Types for Halls Mitigation Bank, Brazoria County, Texas.

Existing Condition	Restoration Wetland Type	Acres
Non-Jurisdictional Herbaceous Wetland (Agriculture Field)	Re-establishment Riverine Herbaceous/shrub Wetland	236.5
Non-Jurisdictional Herbaceous/Shrub Wetland	Fire Lane (Maintained as Riverine Herbaceous)	4.8
Jurisdictional Riverine Herbaceous/shrub Wetland (Abandoned Agriculture Field)	Rehabilitation Riverine Herbaceous/shrub Wetland	11.3
Jurisdictional Herbaceous Wetlands (Agriculture Field)	Re-establishment Riverine Forested Wetland	43.4
Jurisdictional Riverine Forested Wetland (Tallow Forest)	Enhancement Riverine Forest Wetland	12.4
Jurisdictional Riverine Forested Wetland (Forest Remnant)	Rehabilitation Riverine Forested Wetland	24.6
Wetland/Upland Mosaic Forest (wetland portions)	Wetland/Upland Mosaic Forest (wetland portions)	11.9
Subtotal Acres		344.9
Jurisdictional Relatively Permanent Water	Relatively Permanent Water	3.8
Jurisdictional Other Waters (Ditch)	Other Waters	0.5
Access/Easement	Access/Easement	9.6
Wetland/Upland Mosaic Forest (upland portions)	Wetland/Upland Mosaic Forest (upland portions)	27.8
Non-wetland Acres		41.7
Total		386.6

Table 2. Soil map units identified within the Bank (NRCS 2018^b)

Symbol	Name	Drainage Class	Percent Hydric Components
6	Bacliff clay, 0 to 1 percent slopes, rarely flooded	Poorly Drained	90%
7	Bernard clay loam, 0 to 1 percent slopes	Somewhat Poorly Drained	1%
14	Edna fine sandy loam, 1 to 3 percent slopes	Somewhat Poorly Drained	5%
24	Lake Charles clay, 0 to 1% slopes	Moderately Well Drained	1%
25	Lake Charles clay, 2 to 5 percent slopes	Moderately Well Drained	0%

^b NRCS 2018

Table 4. Potential Species Planting List for Riverine Forested Wetland Restoration at the Halls Bayou Mitigation Bank, Brazoria County, Texas.

Common Name	Scientific Name	AGCP Wetland Indicator ¹
<i>Hard Mast (approximately 65-75 percent)</i>		
Willow oak	<i>Quercus phellos</i>	FACW
Water oak	<i>Quercus nigra</i>	FAC
Cherrybark oak	<i>Quercus pagoda</i>	FACW
Shumard's oak	<i>Quercus shumardii</i>	FAC
Texas Red Oak	<i>Quercus texana</i>	FACW
Laurel Oak	<i>Quercus laurifolia</i>	FACW
Overcup Oak	<i>Quercus lyrata</i>	OBL
Water Hickory	<i>Carya aquatica</i>	OBL
<i>Soft Mast (approximately 15-25 percent)</i>		
Sugarberry	<i>Celtis laevigata</i>	FACW
Green ash	<i>Fraxinus pennsylvanica</i>	FACW
Common persimmon	<i>Diospyros virginiana</i>	FAC
Ash-leaf Maple	<i>Acer negundo</i>	FAC
Red Maple	<i>Acer rubrum</i>	FAC
American elm	<i>Ulmus americana</i>	FAC
Cedar elm	<i>Ulmus crassifolia</i>	FAC
Green Hawthorn	<i>Crataegus viridis</i>	FACW
Deciduous holly	<i>Ilex decidua</i>	FACW

¹ Wetland plant indicator status for the Atlantic and Gulf Coastal Plain per the 2016 National Wetland Plant List (Lichvar et al. 2016).

Table 4. Potential Species Planting List for Herbaceous/shrub Wetland Restoration at the Halls Bayou Mitigation Bank, Brazoria County, Texas.*¹

Habit	Scientific Name²	Common Name	Wetland Indicator³
Forb/Herb	<i>Acalypha gracilens</i> (A. g. <i>gracilens</i>)	Slender Threeseed Mercury	FAC
Forb/Herb	<i>Acmella oppositifolia</i> var. <i>repens</i>	Opposite spotflower	FACW
Forb/Herb	<i>Agalinis fasciculata</i>	Beach Purple False Foxglove	FAC
Forb/Herb	<i>Anagallis minima</i>	Chaffweed	FACW
Forb/Herb	<i>Asclepias longifolia</i>	Longleaf Milkweed	FAC
Forb/Herb	<i>Boltonia diffusa</i>	Smallhead Doll's Daisy	FAC
Forb/Herb	<i>Bidens aristosa</i>	Beaded Beggar's Ticks	FACW
Forb/Herb	<i>Buchnera Americana</i>	American Blue Hearts	FAC
Forb/Herb	<i>Castilleja indivisa</i>	Indian Paintbrush	FAC
Forb/Herb	<i>Conoclinium coelestinum</i> (<i>Eupatorium coelestinum</i>)	Blue Mistflower	FAC
Forb/Herb	<i>Coreopsis tinctoria</i>	Golden Tickseed	FAC
Forb/Herb	<i>Eryngium yuccifolium</i>	Rattlesnake Master	FAC
Forb/Herb	<i>Euthamia gymnospermoides</i>	Texas Goldentop	FAC
Forb/Herb	<i>Euthamia leptcephala</i>	Bushy Goldenrod	FACW
Forb/Herb	<i>Evolvulus sericeus</i>	Silver Dwarf Morning Glory	FACW
Forb/Herb	<i>Fimbristylis puberula</i>	Vahl's Hairy Fimbry	OBL
Forb/Herb	<i>Galium tinctorium</i>	Stiff Marsh Bedstraw	FACW
Forb/Herb	<i>Helenium flexuosum</i>	Purplehead Sneezeweed	FACW
Forb/Herb	<i>Helianthus angustifolius</i>	SwampSunflower	FACW
Forb/Herb	<i>Hymenocallis liriosme</i>	Spring Spider Lilly	OBL
Forb/Herb	<i>Hypericum hypericoides</i>	St. Andrew's Cross	FAC
Forb/Herb	<i>Hypoxis hirsuta</i>	Common Goldstar	FACW
Forb/Herb	<i>Iris brevicaulis</i>	zigzag iris	OBL
Forb/Herb	<i>Justicia lanceolata</i>	Small Loose Flower Water-Willow	OBL
Forb/Herb	<i>Liatris acidota</i>	Sharp Blazing Star	FACW
Forb/Herb	<i>Linum medium</i>	Stiff Yellow Flax	FAC
Forb/Herb	<i>Lobelia puberula</i>	Downy Lobelia	FACW
Forb/Herb	<i>Ludwigia linearis</i>	Narrowleaf Primrose-Willow	OBL
Forb/Herb	<i>Lythrum alatum</i>	Winged Loosestrife	OBL
Forb/Herb	<i>Mecardonia acuminata</i>	Axilflower	FACW
Forb/Herb	<i>Neptunia pubescens</i>	Yellow Puff	FAC
Forb/Herb	<i>Penstemon laxiflorus</i>	Nodding Beardtongue	FAC
Forb/Herb	<i>Pluchea foetida</i>	Stinking Camphorweed	OBL
Forb/Herb	<i>Polygala incarnata</i>	Procession Flower	FAC
Forb/Herb	<i>Pycnanthemum tenuifolium</i>	Narrowleaf Mountainmint	FACW
Forb/Herb	<i>Rhexia mariana</i>	Maryland Meadow-Beauty	FACW
Forb/Herb	<i>Rudbeckia texana</i>	Shiney Coneflower	FACW
Forb/Herb	<i>Solidago sempervirens</i>	Seaside Goldenrod	FACW
Forb/Herb	<i>Spiranthes vernalis</i>	Ladies Tresses	FACW
Forb/Herb	<i>Symphyotrichum dumosom</i>	Rice Button Aster	FAC
Forb/Herb	<i>Symphyotrichum lateriflorum</i>	Calico Aster	FAC
Forb/Herb	<i>Vernonia gigantea</i>	Giant Ironweed	FAC
Graminoid	<i>Andropogon gerardii</i>	Big Bluestem	FAC
Graminoid	<i>Andropogon glomeratus</i>	Bushy Bluestem	FACW

Table 4. Potential Species Planting List for Herbaceous/shrub Wetland Restoration at the Halls Bayou Mitigation Bank, Brazoria County, Texas.*¹

Habit	Scientific Name ²	Common Name	Wetland Indicator ³
Graminoid	<i>Andropogon virginicus</i>	Broomsedge Bluestem	FAC
Graminoid	<i>Aristida purpurascens</i>	Arrowleaf Threeawn	FACW
Graminoid	<i>Carex longii</i>	Long's Sedge	OBL
Graminoid	<i>Carex microdonta</i>	Littletooth Sedge	FACW
Graminoid	<i>Carex tirangularis</i>	Easter Fox Sedge	FACW
Graminoid	<i>Coelorachis cylindrica</i>	Cylinder Jointtail Grass	FAC
Graminoid	<i>Cyperus acuminatus</i>	Tapertip Flatsedge	OBL
Graminoid	<i>Cyperus echinatus</i>	Globe Flatsedge	FAC
Graminoid	<i>Cyperus haspan</i>	Sheathed Flatsedge	OBL
Graminoid	<i>Cyperus cephalanthus</i>	Buttonbush Flatsedge	NR
Graminoid	<i>Dichanthelium accuminatum</i>	Tapered Rosette Grass	FAC
Graminoid	<i>Dichanthelium dichotomum</i>	Cypress Panicgrass	FAC
Graminoid	<i>Eragrostis lugens</i>	Mourning Lovegrass	FAC
Graminoid	<i>Eragrostis refracta</i>	Coastal Lovegrass	FACW
Graminoid	<i>Juncus dichotomus</i>	Forked Rush	FACW
Graminoid	<i>Juncus elliotii</i>	Elliott's Rush	OBL
Graminoid	<i>Juncus marginatus</i>	Bog Rush	FACW
Graminoid	<i>Muhlenbergia capillaris</i>	Hairawn Muhly	FAC
Graminoid	<i>Panicum rigidulum</i>	Red Top Panicgrass	FACW
Graminoid	<i>Panicum virgatum</i>	Switchgrass	FAC
Graminoid	<i>Paspalum floridanum</i>	Florida Paspalum	FACW
Graminoid	<i>Paspalum plicatulum</i>	Brownseed Paspalum	FAC
Graminoid	<i>Paspalum praecox</i>	Early Crown Grass	OBL
Graminoid	<i>Rhynchospora caduca</i>	Angle Stem Beaksedge	OBL
Graminoid	<i>Rhynchospora globularis</i>	Globe Beaksedge	FACW
Graminoid	<i>Rhynchospora harveyi</i>	Harvey's Beaksedge	FACW
Graminoid	<i>Scleria ciliata</i> var. <i>elliotti</i>	Fringed Nutrush	FAC
Graminoid	<i>Scleria pauciflora</i>	Few-Flowered Nutrush	FAC
Graminoid	<i>Setaria parviflora</i>	Knotroot Brisltegrass	FACW
Graminoid	<i>Steinchisma hians</i>	Gaping Panicum	OBL
Graminoid	<i>Tridens strictus</i>	Longspike Tridens	FACW
Graminoid	<i>Tripsacum dactyloides</i>	Eastern Gamagrass	FAC
Graminoid	<i>Agrostis hyemalis</i>	Winter Bentgrass	FAC

* Targeted plant list based on the following citations

Jason Singhurst Checklist of the flora of Deer Park Prairie in Deer Park, Harris County, Texas; Observation dates 12/15/11, 04/09/12, 05/10/12, 09/07/12, 2/19/13, 10/16/13, 4/1/14, 4/5/14.

Rosen, D.J. (2007) The Vascular Flora of Nash Prairie: A Coastal Prairie Remnant in Brazoria County, Texas. Journal of the Botanical Research Institute of Texas, Inc. Accessed Jul 19, 2018. Available URL <http://www.jstor.org/stable/41971466>.

Rosen, D.J. (2010) The Vascular Plants of Mowotony Prairie: A small remnant Coastal Grassland in Brazoria County Texas. Journal of the Botanical Research Institute of Texas. Accessed July 19, 2018. Available URL <http://www.jstor.org/stable/41972031>.

¹ The origin and species of wild seeds will be determined prior to harvesting or in the event commercial seeds are

² Scientific names are from USDA, PLANTS Database (<https://plants.sc.egov.usda.gov/java/>). Accessed July 19,

³ Wetland plant indicator status for the Atlantic and Gulf Coastal Plain per the 2016 National Wetland Plant List

Attachment C. Site Photographs

Bird's-Eye View of Proposed Halls Bayou Mitigation Bank



General View Looking North.

General View of Halls Bayou



Looking Northwest.

Area of Proposed Riverine Forested Wetland Re-establishment



General View Looking East.

Area of Proposed Riverine Herbaceous/Shrub Wetland Re-establishment



General View Looking Southeast.

Area of Proposed Riverine Herbaceous/Shrub Wetland Rehabilitation



General View Looking North.

Area of Proposed Riverine Forested Mosaic Wetland Preservation



General View Looking West.

Area of Proposed Riverine Forested Wetland Re-establishment



General View Looking West.

Area of Proposed Riverine Forest Wetland Rehabilitation (WET 11)



General View Looking Northeast.

Area of Proposed Riverine Forested Wetland Enhancement



General View Looking North.

Area of Proposed Riverine Forested Wetland Rehabilitation



General View Looking Northwest.

Area of Proposed Riverine Herbaceous/Shrub Wetland Re-establishment



General View Looking East.

**Attachment D. Jurisdictional Determination and Delineation Verification
(SWG-2016-00700)**



DEPARTMENT OF THE ARMY
GALVESTON DISTRICT, CORPS OF ENGINEERS
P. O. BOX 1229
GALVESTON, TEXAS 77553-1229

March 1, 2018

Compliance Branch

SUBJECT: **SWG-2016-00700**; Delta Land Services, LLC., Approved Jurisdictional Determination, Proposed Halls Bayou Mitigation Bank on a 456.6-Acre Tract, Located Approximately 9,000 Feet Northwest of the FM 2004 and Halls Bayou Intersection, Brazoria County, Texas

Mr. Jace Jarreau
Delta Land Services, LLC.
1090 Cinclare Drive
Port Allen, Louisiana 70767

Dear Mr. Jarreau:

This letter is in response to your August 1, 2016, request for an Approved Jurisdictional Determination and wetland delineation verification of waters of the United States on an approximate 456.6-acre site. The project site is a proposed mitigation bank located approximately 9,000 feet northwest of the FM 2004 and Halls Bayou intersection in Brazoria County, Texas (map enclosed).

Navigable waters are subject to Section 10 of the Rivers and Harbors Act of 1899 (Section 10). Section 10 requires Department of the Army (DA) authorization for any work and/or structures in/or affecting any navigable waters of the United States (which include all waters subject to the ebb and flow of the tide). Under Section 404 of the Clean Water Act (Section 404), a Department of the Army (DA) Permit is required prior to the discharge of any dredged and/or fill material into any waters of the United States (including adjacent wetlands). Wetlands with a surface hydrologic connection to a Traditional Navigable Waterway (TNW) are adjacent and are waters of the United States subject to Section 404.

Based on the review of the information provided, off-site data and information gathered during our March 22, 2017 site visit, we determined that the 456.6-acre project area contains approximately 75.56 acres of waters of the United States. Specifically, the project area contains 5.43 acres (5,774 linear feet) of Halls Bayou, 2.29 acres (1,905 linear feet) of an unnamed tributary to Halls Bayou, and 67.84 acres of wetlands adjacent to Halls Bayou. Halls Bayou is subject to the ebb and flow of the tide and is a traditional navigable water of the United States subject to Section 10 and Section 404. The acreage of navigable waters includes a drainage ditch located between WetMos18 and WetMos19 that extends the mean high water line of Halls Bayou approximately 650 feet. The unnamed tributary to Halls Bayou is a relatively permanent water and is a water of the United States subject to Section 404. The adjacent wetlands are

neighboring and, therefore, adjacent to Halls Bayou and are waters of the United States subject to Section 404. The 456.6-acre project area also contains approximately 264.3 acres of isolated wetlands that have no known nexus to interstate commerce and are not waters of the United States and are not subject to Section 404. Therefore, any work or structures in Halls Bayou or the discharge of fill material into the adjacent wetlands, the unnamed tributary to Halls Bayou and/or Halls Bayou requires a Department of the Army permit. The discharge of fill material into the isolated wetlands does not require a Department of the Army permit. The wetlands on site were identified using the Regional Supplement to the 1987 Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0), which requires under normal circumstances, a predominance of hydrophytic vegetation, wetland soils, and sufficient hydrology at/or near the surface for adequate duration and frequency to support this aquatic ecosystem.

In addition, we have determined the delineation survey is a reasonable depiction of the approximate locations of the aquatic resources in the project area (see map enclosure). The listing of the features identified and their jurisdictional status is included in the second enclosure (see Final Resources Table enclosure). All features identified as waters of the United States within the project area will require a Department of the Army permit prior to any discharge of dredged or fill material into waters of the United States, including adjacent wetlands.

This determination has been conducted to identify the limits of the Corps' Clean Water Act jurisdiction for the particular site identified in this request. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

This letter contains an approved jurisdictional determination for your subject site, which is valid for 5 years from the date of this letter unless new information warrants a revision prior to the expiration date. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeals Process (NAP) fact sheet and Request for Appeal (RFA) form. If you request to appeal this determination, you must submit a completed RFA form to the Southwestern Division Office at the following address:

Mr. Elliott Carman
Regulatory Appeals Officer
Southwestern Division, USACE, CESWD-PD-O
1100 Commerce Street, Suite 831
Dallas, Texas 75242-1317
Telephone: 469-487-7061; FAX: 469-487-7199

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete; that it meets the criteria for appeal under 33 CFR Part 331.5, and that it has been received by the Division Office within **60 days** of the date of the NAP. It is not necessary to submit an RFA form to the Division office if you do not object to the determination in this letter

If you have any questions concerning this jurisdictional determination, please reference file number **SWG-2016-00700** and contact Ms. Diana Stevens at the letterhead address or by telephone at 409-766-6380. To assist us in improving our service to you, please complete the survey found at http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0 and/or, if you would prefer a hard copy of the survey form, please let us know, and one will be mailed to you.

Sincerely,



John Davidson
Team Lead, Compliance Branch

Enclosures

SWG-2016-00700 Delta, Halls Bayou Mitigation Bank AJD
Final Resource Table

USACE Name	Consultant Initial ID	Latitude	Longitude	Cowardin	Area/Acres	Jurisdiction
WetMos18	Wet1_30%	29.30415866	-95.15291884	PFO	26.02x0.30= 7.80	TNW Adj Section 404
WetMos19	Wet2_30%	29.29915094	-95.15126173	PFO	16.98 x0.30=5.09	TNW Adj Section 404
WetMos20	Wet3_30%	29.30107500	-95.15180000	PFO	0.24 x0.30=0.07	TNW Adj Section 404
Wet16	JWet1	29.31415151	-95.14562128	PSS	13.91	TNW Adj Section 404
Wet17	JWet2	29.30778913	-95.15094521	PFO	38.59	TNW Adj Section 404
Wet14	JWet3	29.31255581	-95.14554726	PEM	0.02	TNW Adj Section 404
Wet15	JWet4	29.31265864	-95.14549424	PEM	0.02	TNW Adj Section 404
TNW1	OW1	29.30585500	-95.15432500	RUB	~5,774 LF/5.43ac	Section 10 Tidal Extent of Bayou
RPW2	OW2	29.31312800	-95.14506800	RUB	~1,905 LF/2.29ac	Section 404
Wet1	NJwet1	29.31125616	-95.14084463	PEM	~53.7	Isolated
Wet2	NJwet2	29.30965222	-95.14301770	PEM	~57.2	Isolated
Wet3	NJwet3	29.3061759	-95.14574091	PEM	~39.4	Isolated
Wet4	NJwet4	29.30491195	-95.14748759	PEM	~38.8	Isolated
Wet5	NJwet5	29.30266576	-95.14686831	PEM	~1.2	Isolated
Wet6	NJwet6	29.30294787	-95.14793642	PEM	~5.7	Isolated
Wet7	NJwet7	29.303388	-95.14921383	PEM	~10.3	Isolated
Wet8	NJwet8	29.30390352	-95.15019125	PEM	~7.2	Isolated
Wet9	NJwet9	29.30382452	-95.15075609	PEM	~4.7	Isolated
Wet10	NJwet10	29.30230536	-95.15113355	PEM	~3.3	Isolated
Wet11	NJwet11	29.30167100	-95.15182900	PEM	2.34	TNW Adj Section 404
Wet12	NJwet12	29.30054701	-95.14752723	PEM	~31.0	Isolated
Wet13	NJwet13	29.29945100	-95.15045300	PEM	~11.7	Isolated

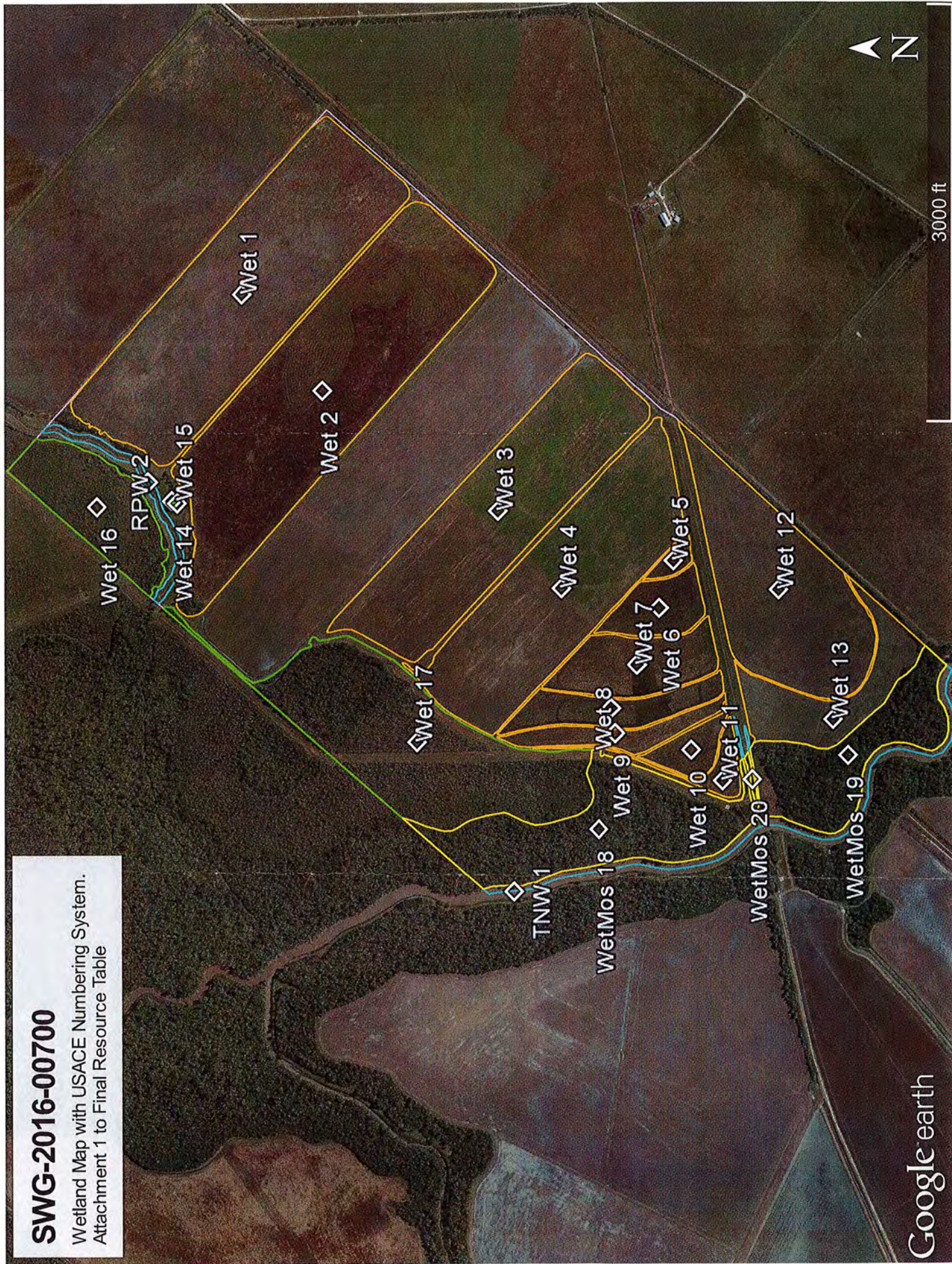
Three JD forms completed with the following groupings:

1. TNW1 (~ 5,774 LF, or 5.43 acres) and Adj Wets: WetMos18-20 & Wet 11 & 14-17 (67.84 acres).
2. RPW2 (~ 1,905 LF, or 2.29 acres)
3. Isolated Wetlands – Wet1-10, 12 & 13 total ~264.3 acres

The site contains a total of 75.56 acres of waters of the United States

SWG-2016-00700

Wetland Map with USACE Numbering System.
Attachment 1 to Final Resource Table



NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: DELTA LAND SERVICES, LLC	File Number: SWG 2016-00700	Date: 03/01/29/2018
Attached is:		See Section below
<input type="checkbox"/>	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
<input type="checkbox"/>	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
<input type="checkbox"/>	PERMIT DENIAL	C
<input checked="" type="checkbox"/>	APPROVED JURISDICTIONAL DETERMINATION	D
<input type="checkbox"/>	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/appeals.aspx> or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

Ms Diana Stevens
Project Manager CESWG-RD-C
U.S. Army Corps of Engineers
P.O. Box 1229
Galveston, Texas 77553-1229
409-766-6380 FAX: 409-766-3931

If you only have questions regarding the appeal process you may also contact:

Mr. Elliott Carman
Administrative Appeals Review Officer (CESWD-PD-O)
U.S. Army Corps of Engineers
1100 Commerce Street, Suite 831
Dallas, Texas 75242-1317
469-487-7061

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent.

Date:

Telephone number: