

GIBBS BROTHERS MITIGATION BANK
Prospectus
July 2016



**ADVANCED
ECOLOGY**
enhancing natural resource value

Table of Contents

| | |
|--|----|
| 1.0 OBJECTIVES | 3 |
| 2.0 ESTABLISHMENT AND OPERATION | 4 |
| 2.1 SITE PROTECTION INSTRUMENT | 4 |
| 2.2 FINANCIAL ASSURANCES | 4 |
| 2.3 QUANTIFICATION OF FUNCTION | 4 |
| <i>Baseline Assessment of Function</i> | 4 |
| 2.4 MITIGATION WORK PLAN | 4 |
| <i>Preservation</i> | 4 |
| <i>Restoration</i> | 5 |
| 3.0 PROPOSED SERVICE AREA | 6 |
| 4.0 TECHNICAL FEASIBILITY AND GENERAL NEED | 7 |
| 4.1 TECHNICAL FEASIBILITY | 7 |
| 4.2 GENERAL NEED | 7 |
| 5.0 OWNERSHIP ARRANGEMENTS AND LONG-TERM MANAGEMENT STRATEGIES | 9 |
| 6.0 SPONSOR QUALIFICATIONS | 10 |
| 7.0 ECOLOGICAL SUITABILITY | 11 |
| 7.1 PROJECT LOCATION | 11 |
| 7.2 BASELINE CONDITIONS | 11 |
| <i>Historic Land Use</i> | 11 |
| <i>Baseline Characterization</i> | 11 |
| 7.3 ASSURANCE OF WATER RIGHTS | 11 |
| 8.0 LITERATURE CITED | 13 |
| APPENDICES | 14 |

Prospectus

1.0 Objectives

Advanced Ecology, LTD (AEL), on behalf of MML SAN JAC BASIN (Sponsor or MML) is proposing to develop a mitigation bank to be known as the Gibbs Brothers Mitigation Bank (GBMB), in Walker County, Texas. The Bank will be established in accordance with the requirements specified in CMLAR §332.8(d)(6) in collaboration with the United States Army Corps of Engineers (USACE) and the Interagency Review Team (IRT).

Purpose: To restore, enhance and preserve approximately 378.6 acres of riverine forested wetland communities along the West Fork of the San Jacinto River.

Goal: Generation of Functional Capacity Units (FCUs) to be used to satisfy compensatory mitigation requirements of Department of the Army permittees for permitted impacts in the Service Area in accordance with Section 404 of the Clean Water Act (Federal Water Pollution Control Act) and/or Section 10 of the Rivers and Harbors Act (Rivers and Harbors Appropriation Act of 1899). This goal specifically pertains to providing compensation for losses of aquatic resource functions and services within the geographic extent of the Service Area.

Objectives: To provide USACE permit applicants 1) greater flexibility in compensating for adverse impacts to the aquatic ecosystem and 2) more extensive, higher quality, and more cost-effective methods of protection of waters of the U.S. and other aquatic resources than are typically achieved by other forms of compensatory mitigation.

2.0 Establishment and Operation

The process for developing and establishing a mitigation bank outlined in the CMLAR will be followed. This process will result in the development of a Mitigation Banking Instrument (MBI) that details the specific terms and conditions by which the bank will be operated by the Sponsor and utilized by clients of the Department of the Army.

The Draft MBI will be developed after consultation with agencies representing the IRT and the interested general public after the Prospectus has been reviewed, as outlined by CMLAR. Bank-specific details incorporating local district policies regarding mitigation bank development, in place at the time of submission of this Prospectus, will be incorporated in a Draft MBI, when appropriate.

2.1 Site Protection Instrument

The Sponsor shall dedicate the Bank in perpetuity as an aquatic ecosystem preserve using a conservation easement held by a third party. The Texas Land Conservancy holds the conservation easement on the adjacent Spellbottom Mitigation Bank and they have preliminarily agreed to hold the conservation easement on the proposed Bank (Appendix C).

2.2 Financial Assurances

The Sponsor shall establish both short term and long term financial assurance mechanisms (FAMs) in accordance with local district policies, to be detailed in the MBI.

2.3 Quantification of Function

Baseline Assessment of Function

In accordance with Galveston District Policy, the SWG Forested Riverine HGM Interim model (iHGM), was used to quantify the baseline conditions of the potentially creditable acreage of the proposed Bank. It is anticipated that FCUs for restoration areas will be determined by subtracting the baseline **FCU's from the** ten (10) year projected FCUs anticipated to be achieved as a result of a site specific mitigation work plan. In addition, FCUs produced by preservation areas will be calculated by quantifying the anticipated loss of function that would otherwise result from non-404 regulated activities (specifically, timber harvest).

2.4 Mitigation Work Plan

Ecological function within the watershed can be optimized by protection of this extensive riparian wetland system. Due to ecological value and the nature of the extant communities, a restoration/preservation management strategy is currently proposed for the site in order to both increase the acreage of forested wetlands and maintain a diverse, contiguous, riverine/riparian wetland conservation area. These strategies are generally discussed in the following section.

Preservation

WAAs 1-2 (112.1 acres) provide a very high level of wetland function (Appendix B). Preservation of these areas will contribute to maintaining valuable forested wetland resources in the watershed. Such resources are at risk due to habitat degradation, fragmentation, and transformation through non-404 regulated activities. The threat of loss and/or adverse modification of such forested

resources is more apparent than ever, as demand for forest wood products to support an ever expanding human population (both domestically and globally) continues to increase exponentially. Therefore, recognition of these trends is among the factors included in the site selection process.

These resources meet the requirements for preservation for the following reasons (CMLAR 2008):

- 1) The preserved resource provides critical physical, chemical, and biological functions to the watershed,
- 2) The preserved resource significantly contributes to the ecological sustainability of the watershed,
- 3) The preserved resource is under direct threat of destruction or adverse modification, and
- 4) The preserved resource will be permanently protected using a conservation easement that is held by a third party.

Restoration

WAAs 3-4 (250.1 acres), provide excellent opportunities for the restoration of forested wetland habitat on agricultural lands previously converted from forested to emergent/herbaceous communities in the **1940's/1950's** (Appendix B). Restoration of woody species native to the area that are adapted to the range of hydrologic and soil conditions of the site will be a primary objective of the mitigation work plan (to be described in the Draft MBI). Restoration of WAAs 3-4 will be complemented by preservation of the existing high quality forested wetland communities (WAAs 1-2) and increase habitat connectivity between the proposed Bank and the Spellbottom Mitigation Bank (i.e. conservation of a continuous forested riparian corridor along over 5 miles of the West Fork of the San Jacinto River).

3.0 Proposed Service Area

The proposed service area for the Bank is depicted in Appendix A, Figure 1 and described below (state land holdings are excluded from service area coverage).

- Primary Service Area – West Fork of the San Jacinto 8-digit HUC (12040101)
- Secondary Service Area – Includes portions of the following sub-basins (8-digit HUCs) adjacent to the primary service area AND within the South Central Plains Level III Ecoregion.
 - a. East Fork of the San Jacinto 8-digit HUC (12040103),
 - b. Spring 8-digit HUC (12040102), and
 - c. Buffalo-San Jacinto 8-digit HUC (12040104), ALL wholly encompassed within the USACE Galveston District.

4.0 Technical Feasibility and General Need

This site was carefully evaluated and strategically selected for a number of reasons which can be generally categorized into 1) landscape scale/watershed needs, and 2) site specific characteristics conducive to fulfilling the stated objectives. Collectively, both the landscape scale/watershed needs and site specific characteristics represent a focused, watershed-oriented, landscape approach espoused by CMLAR (2008).

In this approach, direct consideration is given to 1) the restoration and preservation of high quality riparian forested wetland habitat in a rapidly developing part of the state and nation, 2) the acknowledgment that these habitat types represent unique and hard-to-replace aquatic resources worthy of restoration and preservation, 3) the frequency of occurrence of this habitat type within the watershed as relates to its historic extent, 4) the compatibility of this proposed conservation project with existing watershed plans or conservation initiatives, 5) land use and development trends within the watershed and 6) the limited availability of suitable mitigation sites within the watershed.

4.1 Technical Feasibility

The proposed Bank was identified as an ecologically suitable site for providing the desired aquatic resource functions to effectively mitigate impacts to aquatic resource functions within the proposed service area. Through several evaluation processes (including financial feasibility studies) and subsequent on-site studies, the Sponsor evaluated the hydrological conditions, soil characteristics, existing vegetative communities, potential for sustainability, opportunities for preserving quantified wetland function, and watershed-scale features of the proposed Bank (including aquatic habitat diversity, habitat connectivity, and other landscape scale functions). These evaluations led to the determination that an economically viable and ecologically sustainable project could be implemented on the GBMB.

4.2 General Need

The proposed mitigation bank is located within close proximity to the Sam Houston National Forest Wildlife Management Area (WMA), a 323,016-acre land holding owned by the US Forest Service (USFS) and managed by Texas Parks and Wildlife Department (TPWD) (Appendix A, Figure 2). In the TPWD document, Ecologically Significant River and Stream Segments - Region H, the West Fork of the San Jacinto is considered an ecologically significant stream segment due to its high fish biodiversity and ground water recharge potential for the Chicot Aquifer (Norris et al 2008). In addition, the Bank is located near a US Fish and Wildlife Service (USFWS) Priority Five area, West Fork of the San Jacinto, an 8,192-acre area. In general, the area in the vicinity of the project is in imminent threat of habitat loss due to home-site development (USFWS 1984). This fact is substantiated by the projected population growth and development trends described below. Finally, the proposed bank is immediately north of, and adjacent to, the IRT approved Spellbottom Mitigation Bank, an approximately 852-acre riparian and wetland conservation site along the West Fork of the San Jacinto.

As previously mentioned, there are few approved mitigation banks within the proposed service area of the proposed Bank. Mitigation credit availability can be highly variable based on timing of credit releases and rates of accrual of function. As such, the establishment of the proposed mitigation bank

in an area where mitigation bank credits may not always be readily available serves to fulfill statutory requirements to **"maximize available credits and opportunities for mitigation"** (CMLAR 2008).

Population growth trends and urban development currently are increasing at an unprecedented rate. This threatens surrounding natural areas lying directly outside the suburban fringe of the Houston-Galveston Metropolitan Area.

- Using migration rates from 2000-2010, the population of the state of Texas is projected to increase to 54.4 million in 2050 (Potter and Hoque 2014), most of which is expected to occur in and around the Houston metropolitan area, the fastest growing city in the US (Forbs 2015).
- Montgomery County alone (just south of Walker County) is projected to grow 352.4% by 2050, and is the 13th fastest growing County in the US (Theis 2015).

Because the GBMB is an important wetland resource, its protection is compatible with, and conducive to, accomplishing the purpose, goals, or objectives of state and regional watershed initiatives, including the 2017 State Water Plan (Authorized for publication on March 3, 2016), the Texas Wetlands Conservation Plan, the TPWD Texas Conservation Action Plan, the East Texas Wetlands Project, and the Comprehensive Sabine Watershed Management Plan. The purpose of these state and local watershed protection initiatives can principally be summed up as this: to promote efficiency **and sustainability between human uses of Texas' natural resources and to preserve the integrity of those resources through various conservation measures for the benefit of all future users of Texas' ecosystem services and values.** Whether express or implied, wetlands banking or compensation projects are included as conservation projects in such initiatives. More specifically:

- ✦ **TPWD's Texas Wetlands Conservation Plan includes: "Encourage broader application on private lands of mitigation banking programs to compensate for wetland losses in the same watershed."**
 - Inform landowners of mitigation options.
 - Encourage cooperative private banks between adjacent landowners
 - Enhance interagency mitigation banking programs to better conserve existing natural wetland habitats.

Texas Conservation Action Plan states: "...purpose is to provide a statewide 'roadmap' for research, restoration, management, and recovery projects addressing Species of Greatest Conservation Need (SGCN) and important habitats."

5.0 Ownership Arrangements and Long-term Management Strategies

All real property to be included within the Bank is contracted by the Sponsor, and will be pledged for use in the Bank consistent with an approved MBI. The conservation values of the site will be protected by a conservation easement held by an accredited land trust. Any site-specific long-term management activities will be identified in a draft instrument, when appropriate, and will be funded via long term financial assurances (to be approved by the USACE) payable to a beneficiary and/or a long-term steward (if different from the Sponsor). Provisions for transfer of long-term management responsibilities from the sponsor to another entity, to be approved by the USACE, will also be included within a draft MBI.

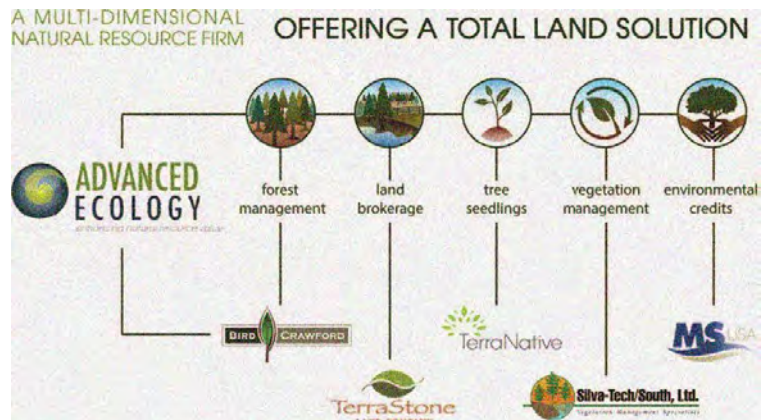
6.0 Sponsor Qualifications

AEL is a unique family of companies with a diverse pool of talented ecologists and business professionals. The firm has been in the natural resource management business since 1979 and has established and managed more than 20 successful mitigation banks and approximately 35 permittee-responsible mitigation projects involving wetland, stream, and endangered species in multiple states, multiple USACE districts, and across a wide range of habitat types. Mitigation Management, LLC, is the mitigation asset and real estate holding entity created by Advanced Ecology, Ltd.

Our Story

The history of AEL actually began with the creation of Bird Forestry Services (BFS) in 1979, which developed as a traditional forestry consulting business. In 1994, AEL was created in the form of an affiliated business to focus solely on environmental and wildlife consulting. In 2006, the two businesses reorganized so that BFS became a wholly owned subsidiary of AEL. At that same time, the owners of AEL also made a decision to forego traditional environmental consulting and focus instead on creating a portfolio of company owned and operated mitigation and conservation projects.

As of 2016, that number of projects has increased to more than 20 successful mitigation banks and approximately 35 permittee-responsible mitigation projects. Since that time the forestry component of the business has grown to currently manage more than 150,000 acres and has extensive experience in restoring and managing forest systems, particularly hardwood communities. Most recently, AEL further expanded its forest management expertise by consolidating with another forestry consulting firm formerly known as Crawford Forestry. The forestry group now operates as Bird/Crawford Forestry Consultants.



Essential elements of the AEL Story also include the development of other integral business units or specialized companies. Siva-Tech South is a firm specializing in vegetation management including site restoration, tree planting, and invasive species control. In addition to supporting AEL projects, Silva-Tech has conducted over 50,000 acres of habitat management on private and public lands. In 2007, AEL also developed Mitigation Solutions USA (MSUSA), which has become a national leader in the marketing and selling environmental credits. In 2011, AEL partnered with TerraNative, an expert in using native seedlings to improve the outcomes of environmental restoration projects. The partnership has resulted in the creation of a hardwood nursery in Huntsville, Texas with a priority of conducting project-site specific seed collections and producing custom grown seedlings for each AEL project. In an effort to produce the highest quality project sites, AEL has also created TerraStone Land Company. **The company's primary goal is to locate and secure the necessary real-estate in each of AEL's ecological target markets.**

Collectively these firms all work together in a capacity and process unique to the ecosystem marketplace.

7.0 Ecological Suitability

7.1 Project Location

The proposed Bank (approximately 378.6 acres) is part of a larger tract of land (approximately 3,000 acres) located north of FM 1791 in Walker County, Texas. The project site is approximately 8 miles southwest of the city of Huntsville, Texas. The approximate coordinates for the bank are Lat 30° 39' 24.78" N, Long 95° 40' 17.38" W. This landholding is within the floodplain of the West Fork of the San Jacinto River within the South Central Plains ecoregion (Griffith et al. 2004) (Appendix B).

7.2 Baseline Conditions

The primary land use for the proposed bank is hay and cattle production/grazing. Surrounding lands are predominantly timber and cattle management, with the notable exception being the approved Spellbottom Mitigation Bank immediately to the south (Appendix A, Figure 2).

Historic Land Use

The proposed GBMB was predominantly forested in 1952. By 1960, the vast majority of the proposed Bank was devoid of forested habitat. Between 1973 and 1983, areas with encroaching woody vegetation appear within the middle to upper portion of the bank, along the West Fork of the San Jacinto. By 1989, these areas were clearly evident. Then between 2002 and 2004, efforts to maintain open fields in the middle section were apparently discontinued as depicted in the 2004 aerial. All open areas have been utilized for cattle grazing or hay production since original clearing. Cattle are not currently restricted from the existing forested areas; however, cattle use is concentrated in the open areas with better grazing (Appendix B).

Baseline Characterization

Please review Appendix B for details regarding the baseline characterization and wetland delineation of the GBMB.

7.3 Assurance of Water Rights

Texas surface water is owned and held by the State in trust for public use. The right to utilize this **public resource (a "water right") is governed by a dual-doctrine system**; created from a merging of the riparian and prior-appropriation doctrines. Since 1913, surface water rights (both perpetual and limited-term) are granted by permits awarded by the Texas Commission on Environmental Quality (TCEQ). In 2007, the 80th Texas Legislature created the Environmental Flows Advisory Group. The group was tasked with establishing appropriate environmental flow standards for each river basin and bay system in the state. Texas Parks and Wildlife Department, Texas Commission on Environmental Quality, and the Texas Water Development Board jointly administer the Instream Flow Program. Currently, Texas State law prohibits the issuance of water rights permits for instream flows for environmental needs (§ 11.0237, TX Senate Bill 3, Texas Water Code). Rather, "the TCEQ is required by the Texas Water Code to consider and provide for freshwater inflows necessary to maintain the viability of Texas bay and estuary systems in **TCEQ's regular granting of permits for the use of state waters...**" These considerations are directly relevant to determining, on a case by case basis, the applicability of a water rights requirement for mitigation projects in Texas. Importantly, a distinction should be made between projects relying on artificial methods (e.g. irrigation/lift pumping) or highly managed systems for establishing and/or maintaining wetland hydrology versus

those relying on existing hydrologic regimes resulting from naturally occurring outbanking events, direct precipitation, or overland flows.

Specific to the proposed GBMB:

- 1) Current and historic wetland hydrology is a result of a) naturally occurring outbanking events of the West Fork of the San Jacinto River and tributaries, b) direct precipitation, and c) overland flows;
- 2) little to no perpetual water rights are available in the West Fork of the San Jacinto Basin above Lake Conroe (TCEQ 2012);
- 3) based on water rights availability data obtained from TCEQ, there are no authorized water rights or diversion points upstream of the proposed Bank (TCEQ 2013).
- 4) The San Jacinto River Authority and the City of Houston, as well as many other municipal, commercial, and/or industrial entities possess senior water rights within Lake Conroe and Lake Houston downstream of the Bank, ensuring downstream flows to and through the GBMB lands to these senior water rights holders.

Finally, the Bay and Basin Expert Science Team (BBEST), appointed by the state Environmental Flows Advisory Group, has specified base flows and pulse flows to maintain a natural instream flow regime within the Trinity and San Jacinto River Basins. Future water rights permitting in these river basins are recommended to be subject to the suggested instream flow requirements. In summary, the **BBEST states, "We believe that overbank flows will continue to be produced as a result of natural occurrences.... In many locations, return flow contributions can reasonably be expected to continue to be available for the foreseeable future (BBEST 2009)."**

As such, future water rights permitting in these river basins are subject to the established subsistence, base, and high flow pulse requirements. Therefore, it is expected that the existing hydrologic regime in the West Fork of the San Jacinto River will remain, at a minimum, at its present state.

In conclusion, potentially jurisdictional wetlands within the GMBM are a result of natural hydrologic regimes and are anticipated to persist for the long-term for the Bank. Restoration activities currently planned for the site consist of reforestation of native woody species; therefore, AEL is of the opinion that the acquisition and protection of surface water rights are unnecessary to ensure the long-term sustainability of wetland hydrology for the proposed Bank.

8.0 Literature Cited

- CMLAR. Thursday, April 10, 2008. Compensatory Mitigation for Losses of Aquatic Resources; Final Rule; Federal Register: April 10, 2008 (Volume 73, Number 70). U.S. Government Printing Office, Washington, D.C.
- Griffith, G.E., S.A. Bryce, J.M. Omernik, J.A. Comstock, A.C. Rogers, B. Harrison. 2004. Reston, Virginia, U.S. Geological Survey (Map Scale 1:2,500,000).
- BBEST 2009. Environmental Flows Recommendations Report: Final Submission to the Sabine and Neches Rivers and Sabine Lake Bay Basin and Bay Area Stakeholder Committee, Environmental Flows Advisory Group, and Texas Commission on Environmental Quality. November 30, 2009. Accessed: April 2, 2014.
<http://www.tceq.state.tx.us/assets/public/permitting/watersupply/water_rights/eflows/sn_bbest_recommendationsreport.pdf>
- TCEQ 2012. Texas Commission on Environmental Quality. Chapter 298 – Environmental Flow Standards for Surface Water. Subchapter C: Sabine and Neches Rivers, and Sabine Lake Bay. Effective August 30, 2012. Accessed April 2, 2014.
<http://www.tceq.texas.gov/assets/public/legal/rules/rules/pdflib/298c.pdf>
- TCEQ 2013. Accessed http://www.tceq.state.tx.us/permitting/water_rights/wr_technical-resources/wam.html
- Theis 2015. <http://www.bizjournals.com/austin/news/2015/03/09/map-texas-suburbs-not-cities-to-grow-the-fastest.html> [accessed 6/22/15] Michael Theis
- Potter and Hogue 2014. http://osd.state.tx.us/Publications/2014-11_ProjectionBrief.pdf
- Forbes 2015. <http://www.forbes.com/sites/erincarlyle/2015/01/27/americas-fastest-growing-cities-2015/>
- Norris et al 2008. Norris, Chad W., and Gordon W. Linam. "Ecologically Significant River and Stream Segments - Region H." Texas Parks and Wildlife Department. Texas Parks and Wildlife Department. 24 June 2008
<http://www.tpwd.state.tx.us/publications/pwdpubs/pwd_rp_t3200_1059c/list_of_tables.phtml>. Path: <http://www.tpwd.state.tx.us/publications/>.
- USFWS 1984. U.S Fish and Wildlife Service. Texas Bottomland Hardwood Preservation Program Category 3; Department of the Interior Final Concept Plan. U.S. Fish and Wildlife Service Albuquerque, New Mexico, USA.

Appendices

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| A. Figures | <input type="checkbox"/> |
| B. Baseline Report | <input type="checkbox"/> |
| C. TLC Letter of Intent | <input type="checkbox"/> |

Appendix A

Figures

Figure 1: Proposed Service Area Map
Gibbs Brothers Mitigation Bank

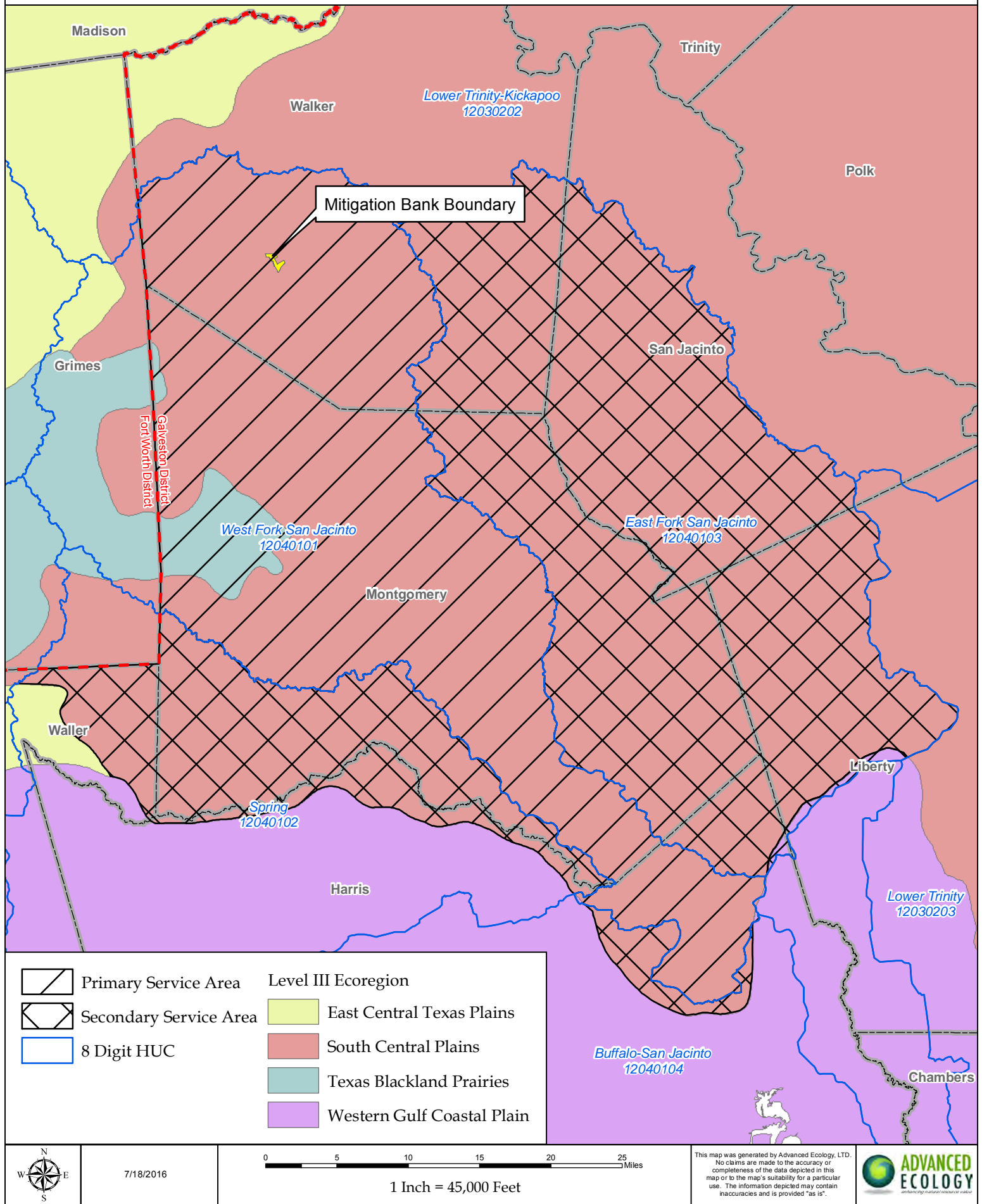
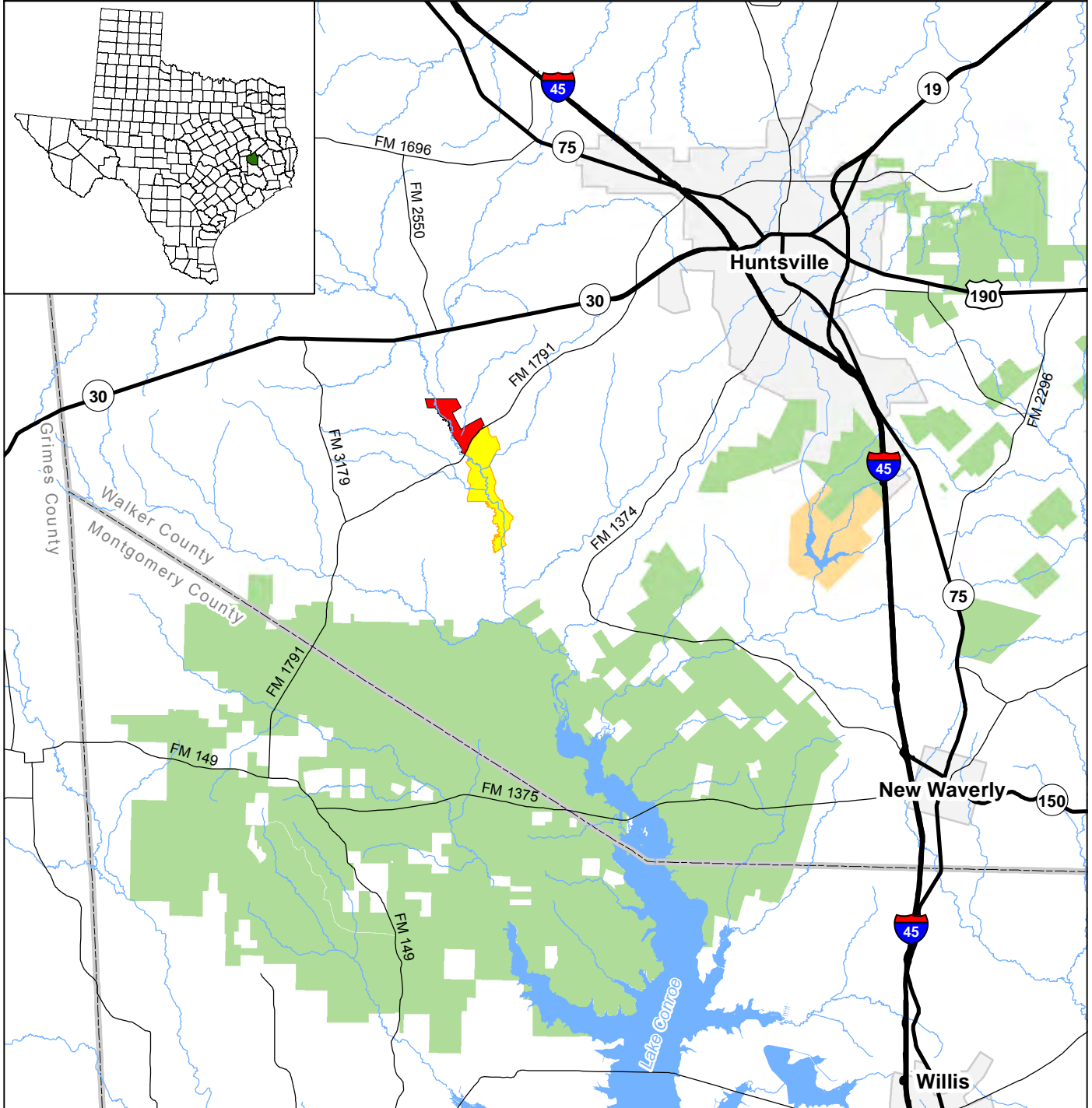
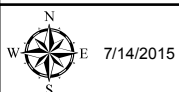


Figure 2
Location Map
Gibbs Brothers Mitigation Bank



- | | | | | | |
|--|--------------------------------|--|-----------------------------|--|----------|
| | Gibbs Brothers Mitigation Bank | | Sam Houston National Forest | | Cities |
| | Spellbottom Mitigation Bank | | Huntsville State Park | | Counties |
| | | | Major Water Bodies | | Highways |
| | | | Streams | | FM Roads |



This map was generated by Advanced Ecology, LTD. using GIS (Geographical Information System) software. No claims are made to the accuracy or completeness of the data depicted in this map or to the map's suitability for a particular use. The information depicted may contain inaccuracies and is provided "as is".



Appendix B

Baseline Report

The Gibbs Brothers Mitigation Bank Baseline Report Parts I & II, dated April 2016, was submitted to the USACE-SWG on April 15, 2016

Appendix C

Easement Holder Letter of Intent



TEXAS LAND CONSERVANCY

Protecting the Nature of Texas.

July 19, 2016

J. Mike Bird
2557 State Highway 7 East
Center, TX 75935

Re: Letter of Intent for Holding a Conservation Easement

Dear Mr. Bird,

Thank you for the opportunity to collaborate on being a partner on the Gibbs Mitigation Bank in Walker County, Texas. This proposed project is an excellent opportunity to establish a conservation area that will benefit future generations of Texans. Please accept this non-binding Letter of Intent by the Texas Land Conservancy ("TLC") to work toward placing a conservation easement on this property in conjunction with the creation of the Gibbs Mitigation Bank, being approximately 400 acres of land in Walker County, Texas (the "Property"), subject to the approval of TLC's Board of Directors.

The required due diligence for this project would be as follows:

1. **Baseline Documentation Report:** Grantor to obtain a qualified baseline documentation report at its cost.
2. **Survey:** Grantor to obtain a current survey at its cost, which will be used to determine the total acreage and legal description of the Property.
3. **Title Policy:** Grantor to pay for the Title Policy premium.
4. **Title Review & Property Inspection:** Adequate time shall be permitted for title review and inspection of the property.
5. **Approval:** The completion of the conservation easement is subject to approval of TLC's Board of Directors.

This is a Letter of Intent and is not a binding agreement. This Letter of Intent represents the good faith intention of TLC to work towards the execution of a perpetual conservation easement in conjunction with the creation of the mitigation bank.

Thank you for your consideration, and please do not hesitate to contact me if you have any questions.

Sincerely,

Mark Steinbach
Executive Director