Received 24 January 2022

Landmark Industries, LLC

827.8-acre Landmark Tract
Harris County, Texas

Alternatives Analysis

BGE, Inc.
10777 Westheimer Road
Suite 400
Houston, Texas 77042

January 2022

Received 24 January 2022

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List of Appendices

Acronyms and Abbreviations

404(b)(1) guidelines	*Guidelines for Preparation of Analysis of Section 404 Permit Applications Pursuant to the Section 404(b)(1) Guidelines of the Clean Water Act* (40 Code of Federal Regulations § 230)
FEMA	Federal Emergency Management Agency
FM 529	Farm to Market Road 529
IH 10	Interstate Highway 10
Landmark	Landmark Industries, LLC
NWI	National Wetland Inventory
PRM	permittee-responsible mitigation
Project	Landmark's proposed 827.8-acre mixed-use development
SH 99	State Highway 99
US 290	U.S. Highway 290
USACE	U.S. Army Corps of Engineers

Received 24 January 2022

Section 1
Introduction

1.1 Introduction

An integral part of the U.S. Army Corps of Engineers' (USACE) Section 404 permitting process is the analysis of project alternatives. A key provision of the Guidelines for Preparation of Analysis of Section 404 Permit Applications Pursuant to the Section 404(b)(1) Guidelines of the Clean Water Act (40 Code of Federal Regulations § 230), hereinafter referred to as the 404(b)(1) guidelines, is the "practicable alternative test."

The practicable alternative test requires that "no discharge of fill material shall be permitted if there is a practicable alternative to the proposed fill which would have a less adverse impact on the aquatic ecosystem." When the basic purpose of the proposed project is not water dependent, the applicant must clearly demonstrate that there are no alternatives available that would avoid impacts on aquatic resources. For an alternative to be considered "practicable," the land must be available for use, the alternative must meet the purpose of the project, and the alternative must be feasible after taking into consideration cost, existing technology, and logistics. Practicability, or screening, criteria used in this alternative evaluation are discussed in Section 2.1 and listed in Table 1.

Landmark Industries, LLC (Landmark) proposes to develop an 827.8-acre property into a mixed-use development, complete with single- and multi-family housing, nearby commercial amenities, light and industrial facilities; the proposed development will require onsite floodplain mitigation. The proposed development (project) will impact 10.61 acres of waters of the U.S., per the verified USACE Approved and Preliminary Jurisdictional Determinations (SWG-2019-00234). The alternative analysis below reviews Landmark's preferred alternative, the no action alternative, offsite alternatives, and onsite alternatives.

1.2 Purpose and Need

The primary purpose of the project is to construct a mixed-use development in western Harris County to meet local demand for housing, community services, employment opportunities, shopping and other commercial entities. Harris County has grown approximately 15.2 percent between 2010 and 2019 (U.S. Census Bureau 2019), with increases in population occurring year over year (U.S. Census Bureau 2020). With this population increase, the strain on housing has become evident. As the population continues to expand, so do development needs, much of which is happening on the west and northwest side of Houston. The project will provide single- and multi-family residences, along with other community facilities and commercial spaces, to meet housing demands in this portion of the Houston Metropolitan Area.

The Houston Metropolitan area's economic vitality continues to be strong. The Greater Houston Partnership reports the strong U.S. economy, expanding global trade, the increases in energy consumption and consumer demand post-pandemic, local population growth, and the ongoing housing boom help to drive job growth in the region (Greater Houston Partnership 2021). Between

2018 and 2019 the number of households added to the area outpaced the growth of new housing units, meeting about 80 percent of the need in Harris County (Sherman et al. 2021).

Living within the city has proven to be more expensive, crowded, and less safe. Home prices are rising faster than incomes, forcing people out of the city. Moving out of the city gives residents greater options for varied housing prices, larger spaces, and safer areas to live and raise families. With more people moving out of the city, coupled with the supply chain deficiencies due to the pandemic, lot deliveries have fallen behind resulting in a housing shortage. Landmark is proposing to develop this project to counteract this housing shortage and provide a desirable place to live.

The proposed project is not water dependent.

Section 2
Alternatives Analysis

The proposed general location for the project was selected because it represents the most environmentally protective, technologically and logistically feasible, and economically viable option for meeting the project's stated purpose and need. Within this general location, Landmark used several GIS applications created by BGE to identify parcels that may fit the needs of the project, then screened these parcels to determine which would be practicable alternatives. Several pre-screening criteria included parcel size, number of property owners, and location in relation to northwest Harris County.

Landmark evaluated these practicable alternatives to determine whether any may have substantial environmental or other advantages compared to the proposed project and evaluated potential onsite layouts to determine whether environmental impacts could be avoided or minimized. In Sections 2.2 through 2.4 below, Landmark evaluates the no action alternative, project site alternatives, and onsite layout alternatives, which inform the reasonable and practicable avoidance, minimization, and mitigation measures discussed in Section 3.

2.1 Evaluation of Screening Criteria

The 404(b)(1) guidelines consider an alternative to be practicable "if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." The screening criteria used to assess the practicability of identified alternatives and the screening criteria definitions are outlined in **Table 1** below. The screening criteria include the size of the alternative sites, the proximity of the alternative sites to the target market, and the proximity of the alternative sites to existing utilities (particularly municipal utility districts and electric transmission lines). Each of the identified alternatives were evaluated using the screening criteria and the results are provided in **Table 2**. The alternative sites considered are shown on **Exhibits 1** and **2** in **Appendix A**.

Table 1. Screening Criteria for Evaluation of Alternatives

Criterion	Definition	Basis for Criterion
Project Size	Meets the size required for the project. Alternative sites should be between 700 and 1,000 acres in size.	Alternative sites must be large enough to accommodate the mixed-use development, but not more than design requirements.
Proximity to Target Market	Located in northwestern Harris County, but between 20 and 30 miles from downtown Houston, Texas.	Project site alternatives must be located near the target market, but within a reasonable commuting distance.
Proximity to Major Thoroughfare	Located no more than 5 miles from State Highway 99 and/or another limited access freeway-type roadway.	Alternatives sites must be within a maximum distance from the major thoroughfare State Highway 99 to ease commuter access to and from the development.
Proximity to Utilities	Distance from project location to established utilities (e.g., municipal utility districts, electric transmission lines). Alternative sites must have utilities onsite or adjacent to the site.	Project site alternatives must be within a maximum distance to accessible utilities. Alternatives without access to utilities would raise costs.

Table 2. Summary Table for Site Screening Selection Criteria

Site Screening Selection Criteria	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6 [a]
Size	Yes	Yes	Yes	Yes	Yes	Yes
Proximity to Target Market	No	Yes	No	Yes	No	Yes
Proximity to Major Thoroughfare	No	Yes	No	Yes	Yes	Yes
Proximity to Utilities	No	Yes	No	Yes	Yes	Yes
Practicable Site	No	**Yes**	No	**Yes**	No	**Yes**

[a] Alternative 6 is the preferred alternative site.

Alternatives 2, 4, and 6 meet all screening criteria and are considered practicable alternatives. These three alternatives are further evaluated in Section 2.3. Alternatives 1, 3, and 5 do not meet the screening criteria and are, therefore, not considered further in this analysis.

Alternative 1 is 850.8 acres located in western Harris County at the boundary between Harris and Waller Counties. It is approximately 9.9 miles north of Interstate Highway 10 (IH 10), 5.4 miles west of State Highway 99 (SH 99), and 7.2 miles south of U.S. Highway 290 (US 290). Alternative 1 is located approximately 35.5 miles northwest of downtown Houston. In the screening review, Landmark discovered this property is protected under an easement through the Farm and Ranch Lands Protection Program with the Natural Resources Conservation Service. In addition, utilities required for a mixed-use development are not located within or adjacent to the site boundary of Alternative 1. Due to its conservation status, as well as its location relative to the target market and

utilities, Alternative 1 is not considered a practicable alternative and is not carried forward for additional evaluation.

Alternative 2 is 831.5 acres and located in western Harris County. It is approximately 5.7 miles north of IH 10, 3 miles west of SH 99, and 9.6 miles south of US 290. Alternative 2 is located approximately 27.3 miles northwest of downtown Houston and has utilities adjacent and through the site. This alternative meets the selection criteria to be considered a practicable alternative and is carried forward for additional evaluation.

Alternative 3 is 917.1 acres and located in eastern Waller County. It is approximately 10.6 miles north of IH 10, 9.2 miles west of SH 99, and 7.8 miles south of US 290. Alternative 3 is located approximately 35.5 miles from downtown Houston and utilities are not located within or adjacent to the site boundary. Based on the distance from downtown Houston and the lack of utilities on or adjacent to the site, Alternative 3 is not considered a practicable alternative and is not carried forward for additional evaluation.

Alternative 4 is 765.8 acres and located in western Harris County. It is approximately 9.1 miles north of IH 10, 0.8 mile west of SH 99, and 5.3 miles south of US 290. Alternative 4 is located approximately 27.2 miles from downtown Houston and has utilities adjacent or through the site. Alternative 4 meets the selection criteria to be considered a practicable alternative and is carried forward for additional evaluation.

Alternative 5 is 868.7 acres and located in northwestern Harris County. It is approximately 18.2 miles north of IH 10, 4.7 miles west of SH 99, and 0.2 mile north of US 290, and is located approximately 31 miles northwest from downtown Houston. Alternative 5 has access to utilities adjacent or through the site. Due to its location relative to the target market, Alternative 5 is not considered a practicable alternative and is not carried forward for additional evaluation.

Alternative 6 (Landmark's preferred alternative) is 827.8 acres and located in western Harris County. It is approximately 5.5 miles north of IH 10, bordered by SH 99 to the west, and 6 miles south of US 290. Alternative 6 is located approximately 25 miles northwest of downtown Houston and has access to utilities adjacent or through the site. Alternative 6 meets the selection criteria to be considered a practicable alternative and is carried forward for additional evaluation.

2.2 No Action Alternative

Under the No Action Alternative, the project would not be constructed. If the project is not constructed, the land would remain in its current state and there would be no adverse environmental impacts. However, the No Action Alternative would not satisfy the purpose of the project or meet the stated needs for housing reflected in (Sherman et al. 2021). If the project is not constructed, the project will not assist in alleviating housing needs in the Houston region. The demand for housing would continue and may result in the development of other sites, which could have fewer or more environmental impacts than the proposed project. Therefore, Landmark does not consider the No Action Alternative to be a practicable alternative; the No Action Alternative has been eliminated from further consideration.

2.3 Evaluation of Site Alternatives

This section further assesses the alternatives determined to be practicable as identified in **Table 2**; the results of this assessment are shown in **Table 3**. These alternatives include Alternative 2, Alternative 4, and Alternative 6 (Preferred Alternative).

Table 3. Evaluation of Practicable Alternatives

Parameter	Alternative 2	Alternative 4	Alternative 6 (Preferred Alternative)
Total Area (acres)	831.5	765.8	827.8
Market Availability	Potentially available	Not likely available (owned by competing development company)	Owned by Landmark
Public Land (acres)	0	0	0
Shortest distance to major thoroughfare (miles)	3	0.8	0
Land Cover and Land Use (acres) [a]			
Hay/Pasture	802.6	658.1	552.6
Evergreen Forest	0	0	197.0
Herbaceous	0	0	9.2
Developed/Open Space	5.0	3.4	4.5
Shrub/Scrub	0	0	3.8
Deciduous Forest	0	0	2.9
Mixed Forest	0	0	1.8
Developed, Low Intensity	7.1	2.7	1.6
Developed, Medium Intensity	1.2	0.9	0.8
Developed, High Intensity	0	0	0.6
Barren Land	0	0	0.7
National Wetlands Inventory (acres)			
PEM	86.5	227.3	24.0
PSS	0	0	0.9
PFO	2.2	0	1.9
PUB/PAB	1.6	0	6.5
Riverine	7.3	17.2	3.1
Total	97.6	244.4	36.4
Detailed Wetland Evaluation (acres)			
Aerially Interpreted [b]	101.1	63.5	33.7
Verified	0	0	12.3
Total	101.1	63.5	46.0
Detailed Wetlands in FEMA 100-year Floodplain (acres)	71.8	57.6	11.83[c]

Waterbodies (linear feet) [d]	17,772	28,697	11,100
FEMA 100-year Floodplain (acres)	592.2	706.2	352.4
TXNDD EOID	Egret, Heron, and Anhinga Rookery (EOID 4221) Mountain Plover (EOID 5972)	None	None

[a] Does not include land use/land cover wetlands because NWI data are also included herein.
[b] Does not include Verified Jurisdictional and Non-jurisdictional Wetlands (USACE Project Number SWG-2019-00234).
[c] Verified Jurisdictional Wetlands (USACE Project Number SWG-2019-00234).
[d] Waterbodies identified from USGS National Hydrography Dataset

EOID = element occurrence identifier; FEMA = Federal Emergency Management Agency; NWI = National Wetlands Inventory; PEM = palustrine emergent wetland; PFO = palustrine forested wetland; PSS = palustrine scrub-shrub wetland; PUB/PAB = palustrine unconsolidated bottom/palustrine aquatic bed; TxNDD = Texas Natural Diversity Database

Sources: FEMA 2021; TxNDD 2021; USFWS 2021; USGS 2020; USGS 2018; USGS 2016.

2.3.1 Alternative 2

Alternative 2 is located at the intersection of Farm to Market Road 529 (FM 529) and Katy Hockley Road in far western Harris County, Texas (**Appendix A**, **Exhibit 3a-3b**). It is 3 miles west of SH 99 and may be available for purchase. Most of the site is hay/pasture and, according to National Wetland Inventory (NWI) data, contains approximately 98 acres of wetlands. Approximately 71 percent of the total NWI wetland acreage is considered farmed, PEM. About 71 percent of the site is located in the Federal Emergency Management Agency (FEMA) 100-year floodplain. The aerial interpretation of wetlands on the site included 101.1 acres of wetlands, 71.8 acres within the FEMA 100-year floodplain. This site may contain an Anhinga rookery and may also support Mountain Plover, which is not federally or state-listed but has a Texas state conservation status of S2[1].

2.3.2 Alternative 4

Alternative 4 is located near the intersection of House Hahl Road and Katy Hockley Road in western Harris County, Texas (**Appendix A**, **Exhibit 4a-4b**). It is 0.8 mile west of SH 99; however, it is owned by Bridgeland Development LP and is not likely available for purchase. Most of the site is hay/pasture and, according to NWI data, contains approximately 244.5 acres of wetlands. Approximately 93 percent of the total NWI wetland acreage is considered farmed PEM. About 92 percent of the site is located in the FEMA 100-year floodplain. The aerial interpretation of wetlands on the site included 63.5 acres of wetlands, 57.6 acres within the FEMA 100-year floodplain. No previously recorded protected species have been documented with the Texas Parks and Wildlife Department at Alternative 4.

2.3.3 Alternative 6 (Preferred Alternative)

Alternative 6 (Preferred Alternative) is located at the intersection of SH 99 and FM 529 in western Harris County, Texas (**Appendix A**, **Exhibit 5a-5b**). It is currently owned by Landmark. Most of

[1] S2 status means imperiled, which is defined as, “Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province” (TPWD 2011).

the site is hay/pasture. For comparison purposes, **Table 3** contains NWI data to describe potential impacts on wetlands from Alternative 6; however, during the field survey BGE ecologists delineated 11.8 acres of wetlands within the southern portion of the project area south of Freeman Road. NWI data notes about 9.8 acres of wetlands in the northern portion between Freeman Road and West Road, for a total of 21.6 acres of wetlands within Alternative 6. Approximately 47 percent of the total NWI wetland acreage is considered farmed, PEM. About 43 percent of the site is located in the FEMA 100-year floodplain. The aerial interpretation of wetlands on the site identified 33.7 acres of wetlands. A verified Approved Jurisdictional Determination and Preliminary Jurisdictional Determination (USACE Permit Number SWG-2019-00234) determined an additional 12.31 acres of verified wetlands, 11.83 of which are jurisdictional wetlands. No previously recorded protected species have been documented with the Texas Parks and Wildlife Department at this site. Alternative 6 is the Preferred Alternative.

2.3.4 Site Alternative Conclusion

Of the three alternatives evaluated in detail, Alternative 4 would have the greatest impact on wetlands and the 100-year floodplain due to the acreage of NWI wetlands and the amount of the site in the floodplain. Alternative 2 could have the greatest impact on protected species due to the documented presence of an Anhinga rookery and Mountain Plover. Both Alternatives 2 and 4 have a higher percentage of FEMA 100-year floodplain within the site boundaries than Alternative 6, and Alternative 6 would have fewer impacts on other resources such as wetlands. Alternative 6 is the least environmental damaging practicable alternative, having accounted for cost, existing technology, and logistics of developing a mixed-use community on the west side of Houston.

2.4 Evaluation of Onsite Alternatives

This section reviews the various onsite alternatives considered for the Preferred Alternative (i.e., Alternative 6). Onsite alternatives were evaluated based on environmental impact avoidance, minimization, and mitigation. Aquatic resources that were considered include only verified jurisdictional features.

2.4.1 Site Layout 1

Site Layout 1 would result in full use of the entirety of the site, whereby the whole site would be graded and filled as necessary (**Appendix A**, **Exhibits 6** and **7**). This would result in the permanent loss of 11.83 acres of wetlands, including 5.91 acres of herbaceous wetlands and freshwater pond, 1.91 acres of freshwater pond, 0.06 acres of scrub-shrub wetlands, and 3.95 acres of forested wetlands. Also impacted would be 11,552 linear feet of stream including one perennial, one intermittent and three ephemeral streams. Site Layout 1 does not account for the avoidance or minimization of impacts on waters of the U.S. or any other resource; therefore, mitigation costs would make this alternative not economically viable.

2.4.2 Site Layout 2 (Preferred Alternative)

Landmark developed Site Layout 2 to maximize avoidance and minimization measures while still meeting the purpose of the project in a practicable manner (**Appendix A**, **Exhibits 6** and **8**). Site Layout 2 will result in total permanent impacts on 10.61 acres of wetlands, including 4.83 acres of

herbaceous wetlands, 1.91 acres of freshwater pond, 0.06 acre of scrub-shrub wetland, and 3.81 acres of forested wetland. This alternative will not impact any streams within the project area. Compared to Site Layout 1, this layout will avoid and minimize impacts to the greatest extent practicable. Site Layout 2 is the least environmentally damaging practicable alternative.

Section 3
Avoidance, Minimization, and Mitigation

3.1 Avoidance and Minimization

Based on the foregoing analysis, Site Layout 2 will result in the least amount of impacts on waters of the U.S. by avoiding and minimizing development in wetlands and streams to the extent practicable, while still meeting the purpose and need of the project. Site Layout 2 (Preferred Alternative) results in the most optimal layout and best use of space within the project area and will avoid impacts to 1.08 acres of PEM wetlands and 0.14 acres of PFO wetlands. The wetlands that will be avoided include W-11, W-12, W-13, and W-22. In addition, Site Layout 2 will avoid impacts below the ordinary high water mark of all delineated streams within the project area. A 500-foot reserved corridor along Bear Creek will be avoided. Site Layout 2 avoids and minimizes impacts as much as possible and is the least environmentally damaging practicable alternative.

3.2 Mitigation

While Landmark is proposing to avoid and minimize impacts to the extent practicable, the Preferred Alternative will result in some unavoidable impacts. These impacts will be mitigated through permittee-responsible mitigation (PRM), for which Landmark has developed a detailed plan (**Attachment VII**). The 17.36-acre PRM Site is located 7 miles from the proposed project site and is in the heart of the Katy Prairie and the Cypress Creek Watershed. The PRM objective is to provide compensatory mitigation for the permanent impacts to 10.61 acres of wetlands. The compensation will be based on replacement of functions and will result in the restoration of the following physical, biological, and chemical wetland functions, including the temporary storage and detention of surface water, maintenance of plant and animal communities, and the removal and sequestration of elements and compounds. The PRM Plan calls for establishment of 4.7 acres of forested wetlands and re-establishment of 7.8 acres of herbaceous wetland and prairie depressional wetland. The expected increase in wetland functional values to be provided through the implementation of the PRM Plan would meet or exceed the decrease in functional values expected to result from the proposed project.

The PRM is designed to restore longer hydroperiods to the PRM site such as are believed to have existed prior to anthropogenic manipulations by the degradation of ditches that currently drain the site, installation of low berms, and the addition of landscape depressions and microtopography/roughness to the landscape. The PRM Plan then calls for establishment and re-establishment of forested and emergent wetlands throughout the PRM site. Vegetation restoration will occur through direct planting and/or seeding, natural recruitment, and active invasive plant management. The tree species to be planted will consist of natives adapted to floodplain

environments within the Western Gulf Coastal Plain. The target herbaceous plant community will be similar to the herbaceous vegetation found in nearby wetlands and wetland complexes.

The PRM Plan contains performance standards against which the PRM site will be monitored and evaluated on a yearly basis for 10 years or until all performance standards are achieved (whichever is later).

Section 4
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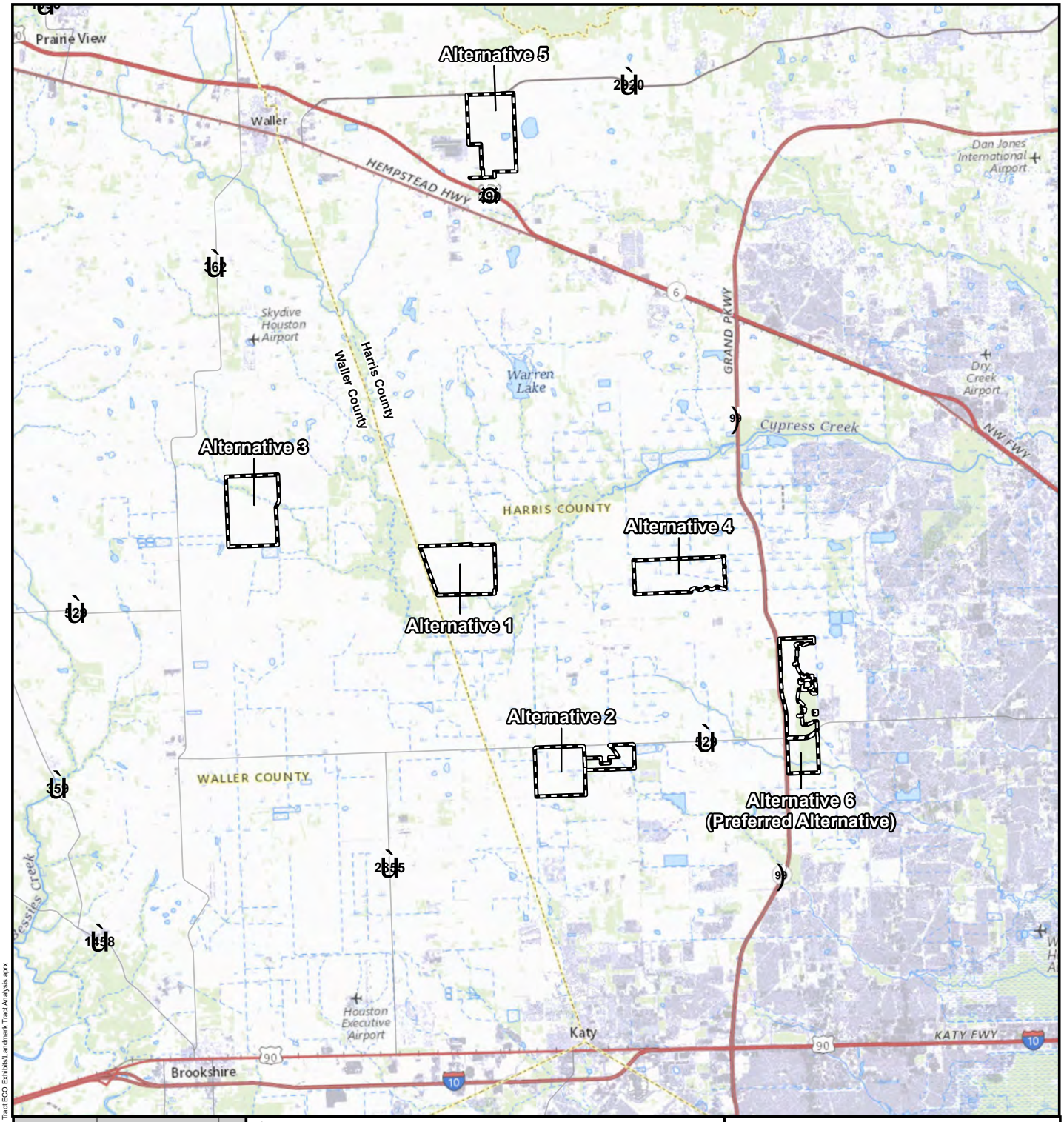
Received 24 January 2022

Appendix A

Exhibits

Exhibit 1: Vicinity – Topographic Map
Exhibit 2: Vicinity – Aerial Map
Exhibit 3a: Alternative 2 – Site Analysis
Exhibit 3b: Alternative 2 – Aquatic Resource Analysis
Exhibit 4a: Alternative 4 – Site Analysis
Exhibit 4b: Alternative 4 – Aquatic Resource Analysis
Exhibit 5a: Preferred Alternative – Site Analysis
Exhibit 5b: Preferred Alternative – Aquatic Resource Analysis
Exhibit 6: Site Layout – Sheet Index
Exhibit 7: Site Layout 1
Exhibit 8: Site Layout 2 (Preferred Alternative)

Received 24 January 2022



Site Boundary

Datum: NAD 1983
Projection: State Plane
Texas South Central
Zone: 14 North
Units: Feet
Basemap: USGS Topo Map Service

0 2.6 5.2 Miles

0 4 8 Kilometers

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Exhibit 1
Vicinity – Topographic Map
Alternatives Analysis
Landmark Industries, LLC
Harris and Waller Counties, Texas

Prepared By: BGE	Scale: 1 IN = 2.6 MI
Job No.: 6021-01	Date: December 2021

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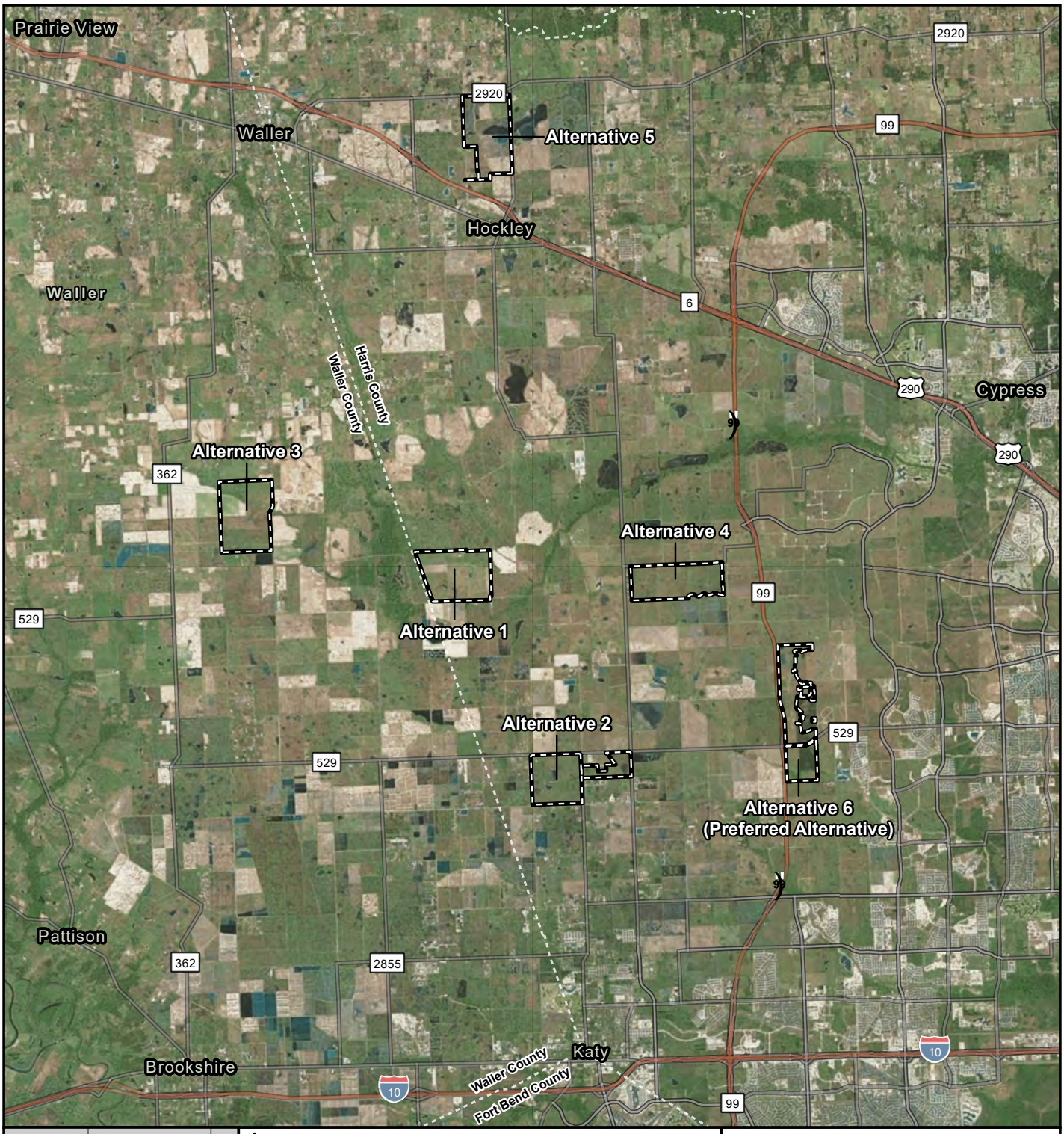

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Exhibit 2
Vicinity – Aerial Map
Alternatives Analysis
Landmark Industries, LLC
Harris and Waller Counties, Texas

Prepared By: BGE	Scale: 1 IN = 2.6 MI
Job No.: 6021-01	Date: December 2021

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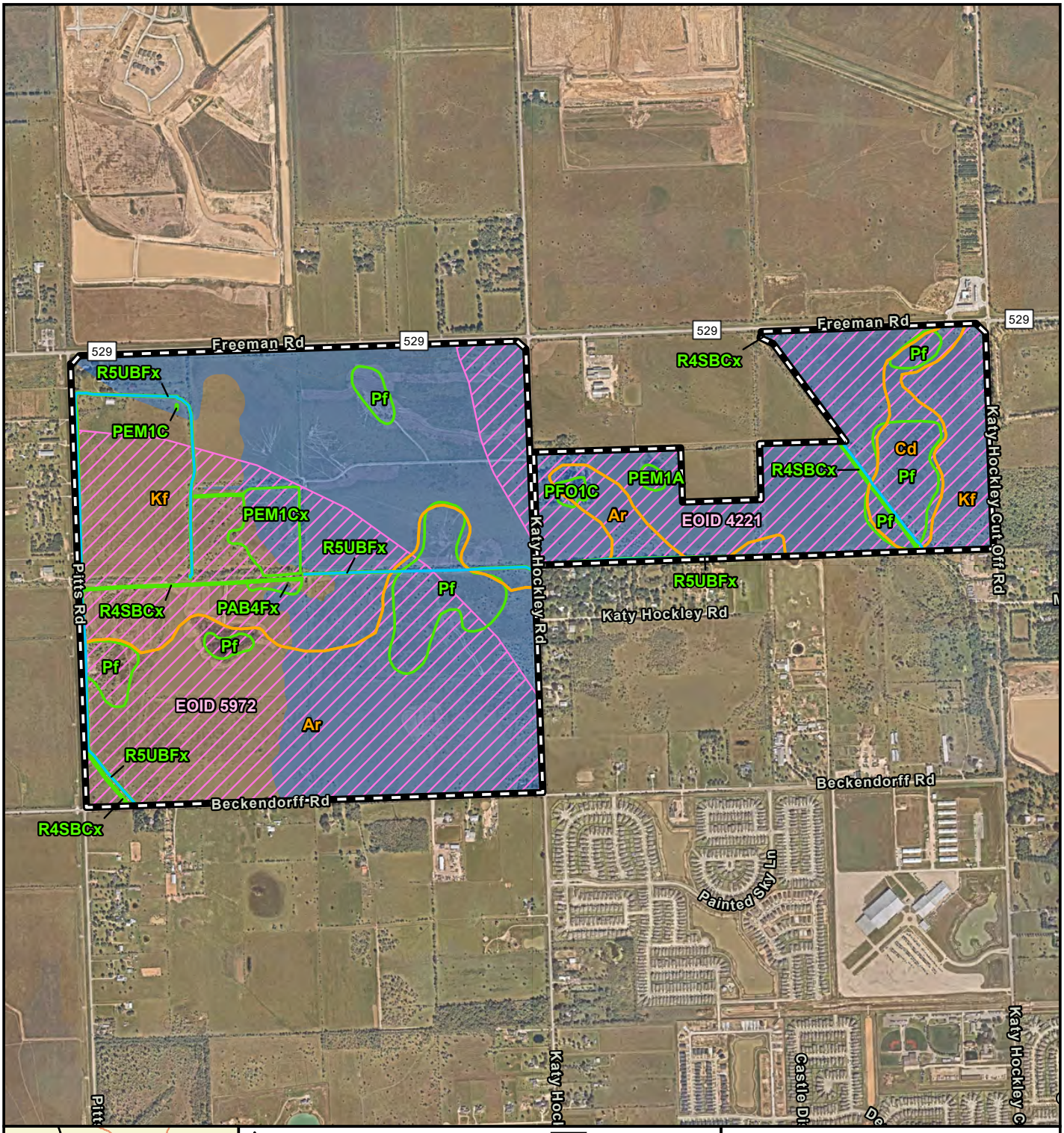

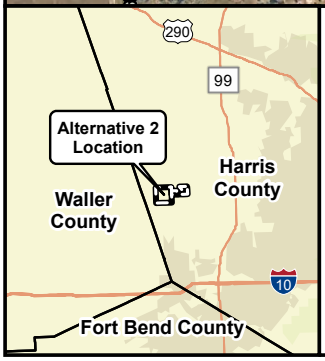

Datum: NAD 1983
Projection: State Plane
Texas South Central
Zone: 14 North
Units: Feet
Basemap: Nearmap 2021

0 1,500 3,000
US Feet

0 450 900
Meters

- Site Boundary
- FEMA 100-Year Floodplain
- Stream (NHD)
- Soil (SSURGO)
- National Wetland Inventory Wetland
- TXNDD Element Occurrence

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Exhibit 3a
Alternative 2 - Site Analysis
Alternatives Analysis
Landmark Industries, LLC
Harris County, Texas

Prepared By: BGE	Scale: 1 IN = 1,500 FT
Job No.: 6021-01	Date: December 2021

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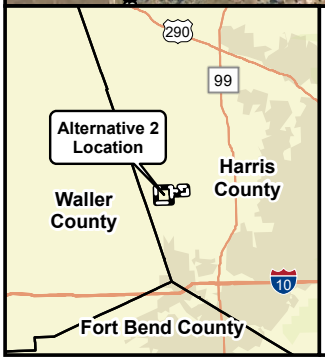

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Datum: NAD 1983
Projection: State Plane
Texas South Central
Zone: 14 North
Units: Feet
Basemap: Nearmap 2021

0 1,500 3,000
US Feet

0 450 900
Meters

- Site Boundary
- FEMA 100-Year Floodplain
- Aerially Interpreted Wetland

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Exhibit 3b
Alternative 2 – Aquatic Resource Analysis
Alternatives Analysis
Landmark Industries, LLC
Harris County, Texas

Prepared By: BGE	Scale: 1 IN = 1,500 FT
Job No.: 6021-01	Date: December 2021

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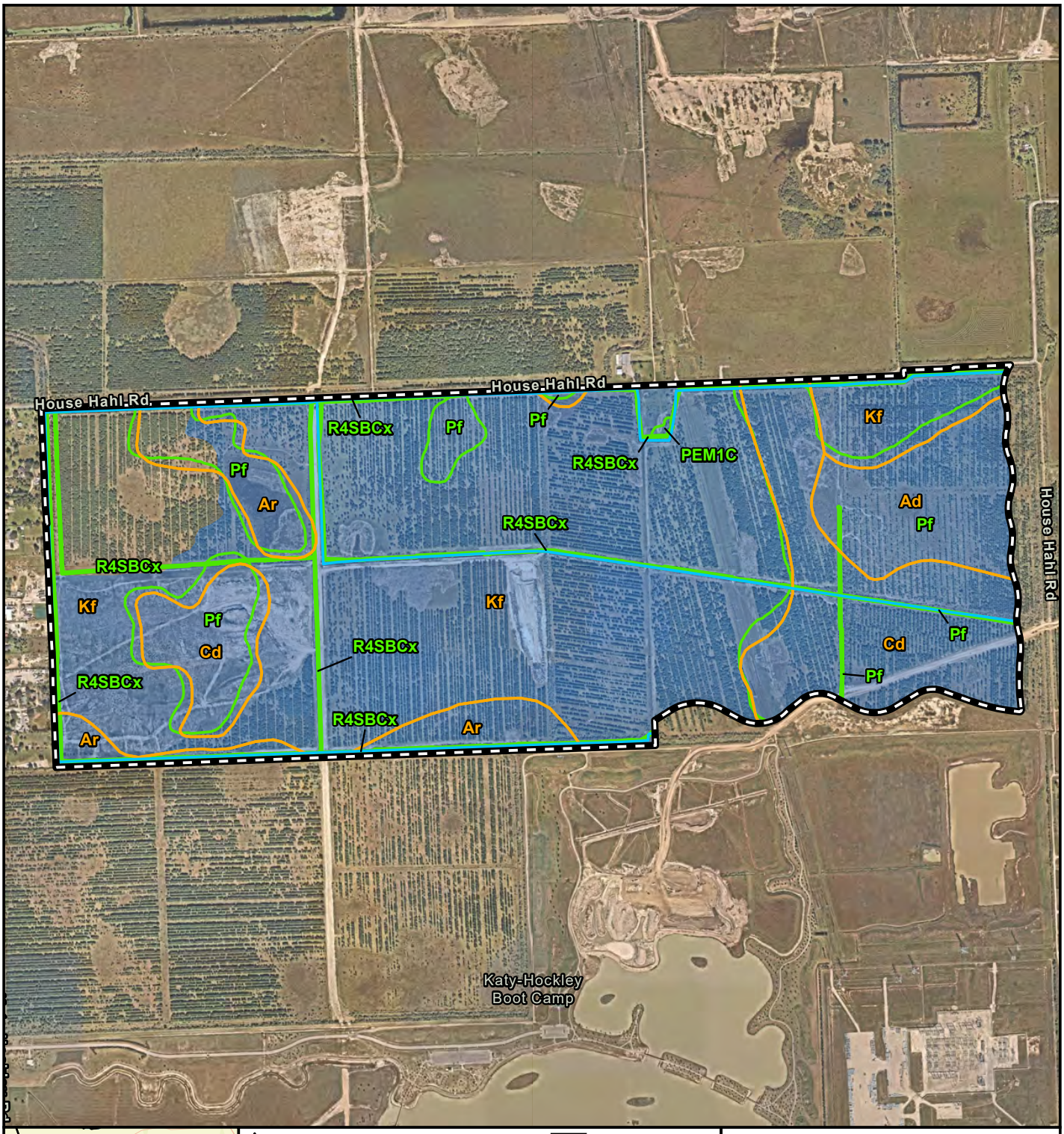

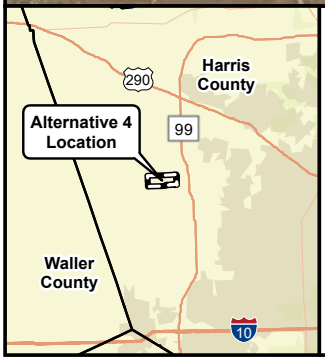

Datum: NAD 1983
Projection: State Plane
Texas South Central
Zone: 14 North
Units: Feet
Basemap: Nearmap 2021

0 1,300 2,600
US Feet

0 400 800
Meters

- Site Boundary
- FEMA 100-Year Floodplain
- Stream (NHD)
- National Wetland Inventory Wetland
- Soil (SSURGO)

BGE, Inc.
10777 Westheimer, Suite 400, Houston TX 77042
Tel: 281-558-8700 Fax: 281-558-9701

Exhibit 4a
Alternative 4 - Site Analysis
Alternatives Analysis
Landmark Industries, LLC
Harris County, Texas

Prepared By: BGE	Scale: 1 IN = 1,300 FT
Job No.: 6021-01	Date: December 2021

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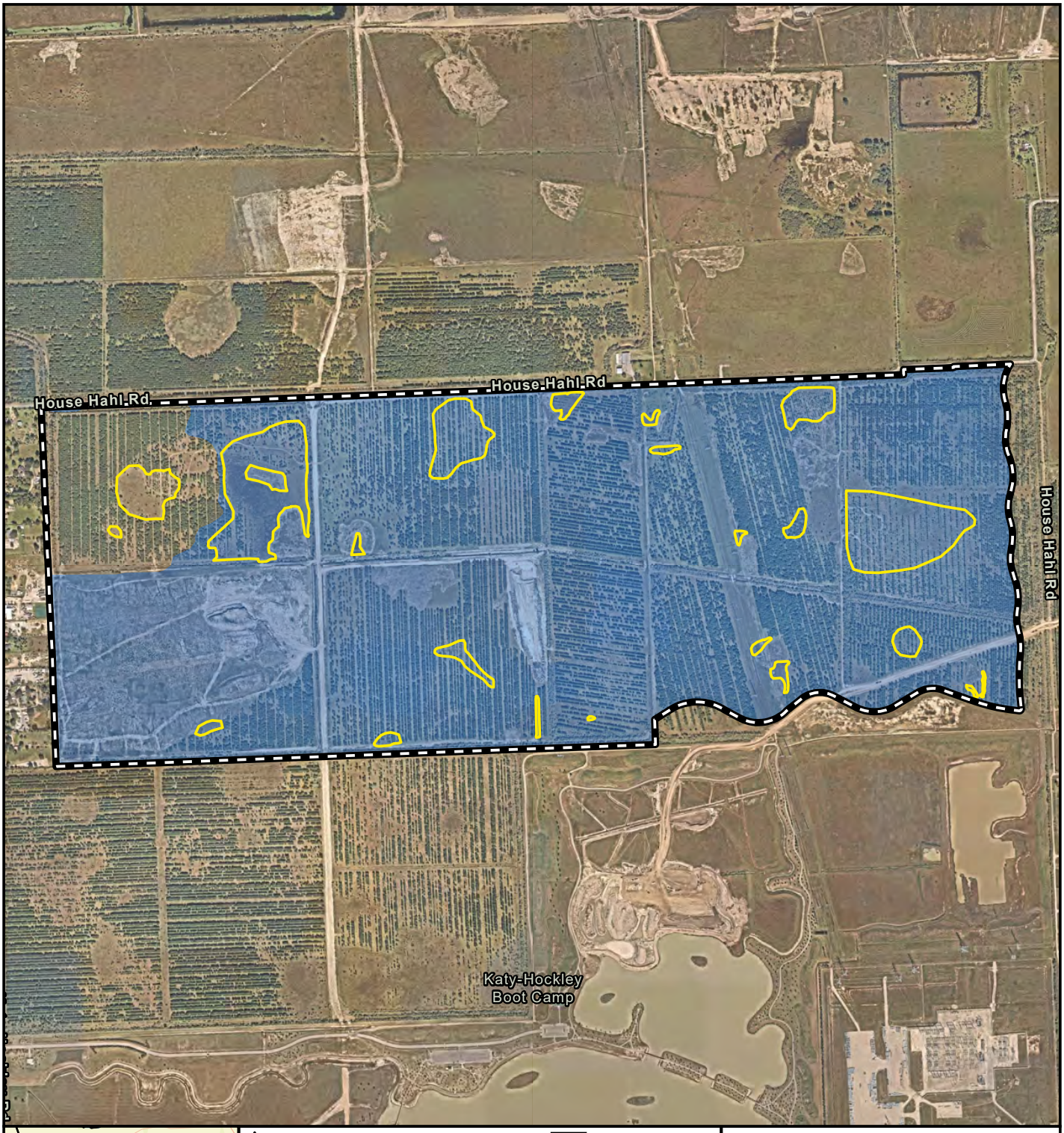

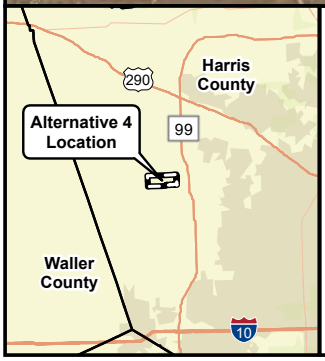

Datum: NAD 1983
Projection: State Plane
Texas South Central
Zone: 14 North
Units: Feet
Basemap: Nearmap 2021

0 1,300 2,600
US Feet

0 400 800
Meters

- Site Boundary
- FEMA 100-Year Floodplain
- Aerially Interpreted Wetland

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Exhibit 4b
Alternative 4 - Aquatic Resource Analysis
Alternatives Analysis
Landmark Industries, LLC
Harris County, Texas

Prepared By: BGE	Scale: 1 IN = 1,300 FT
Job No.: 6021-01	Date: December 2021

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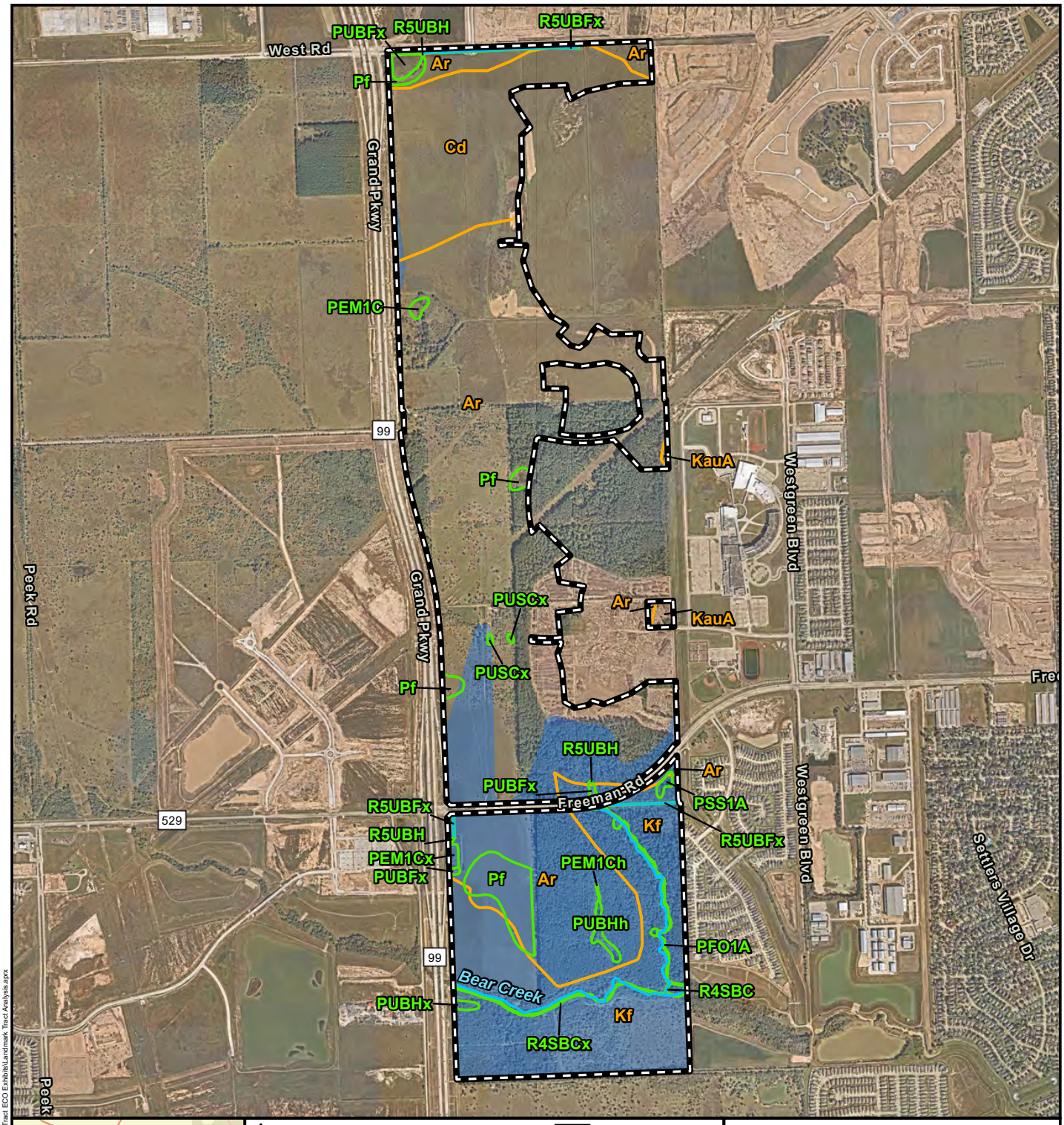

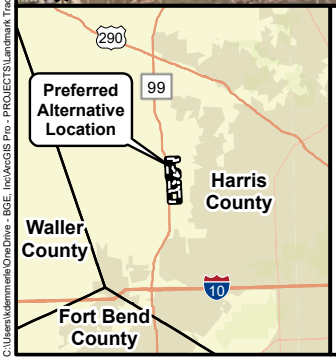

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Datum: NAD 1983
Projection: Texas State Plane
Zone: South Central
Units: Feet
Basemap: Nearmap 2021

0 1,800 3,600
US Feet

0 550 1,100
Meters

- Site Boundary
- FEMA 100-Year Floodplain
- Stream (NHD)
- Soil (SSURGO)
- National Wetland Inventory Wetland

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Exhibit 5a
Preferred Alternative - Site Analysis
Alternatives Analysis
Landmark Industries, LLC
Harris County, Texas

Prepared By: BGE	Scale: 1 IN = 1,800 FT
Job No.: 6021-01	Date: December 2021

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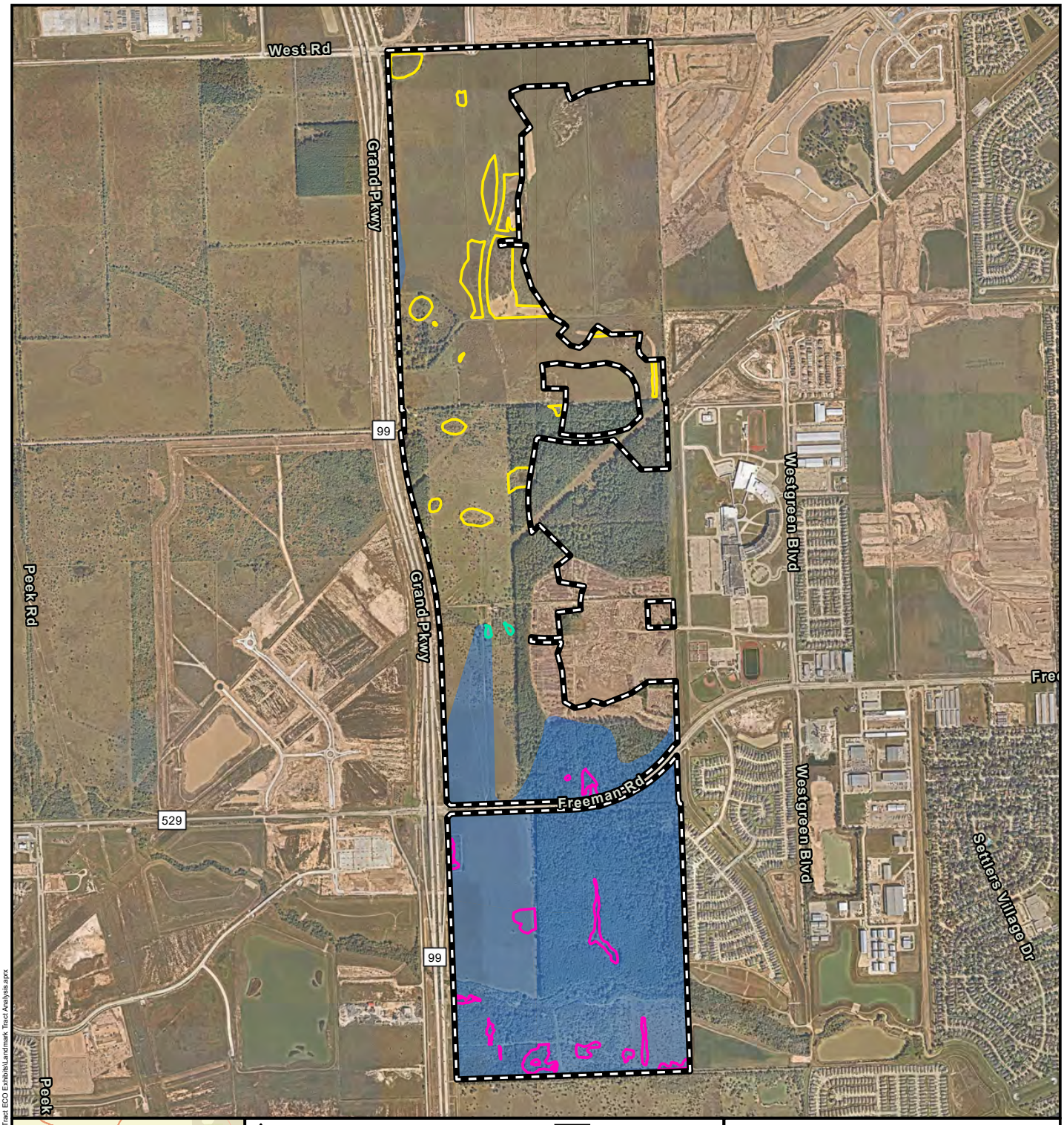

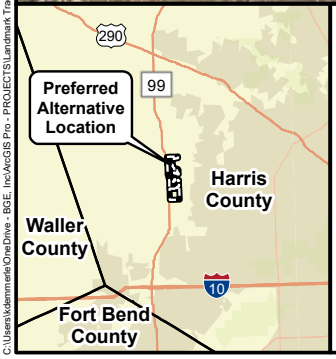

N

Datum: NAD 1983
Projection: Texas State Plane
Zone: South Central
Units: Feet
Basemap: Nearmap 2021

0 1,800 3,600
US Feet

0 550 1,100
Meters

- Site Boundary
- FEMA 100-Year Floodplain
- Aerially Interpreted Wetland
- Verified Jurisdictional Wetland
- Verified Non-Jurisdictional Wetland

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Exhibit 5b
Preferred Alternative -
Aquatic Resource Analysis
Alternatives Analysis
Landmark Industries, LLC
Harris County, Texas

Prepared By: BGE	Scale: 1 IN = 1,800 FT
Job No.: 6021-01	Date: December 2021

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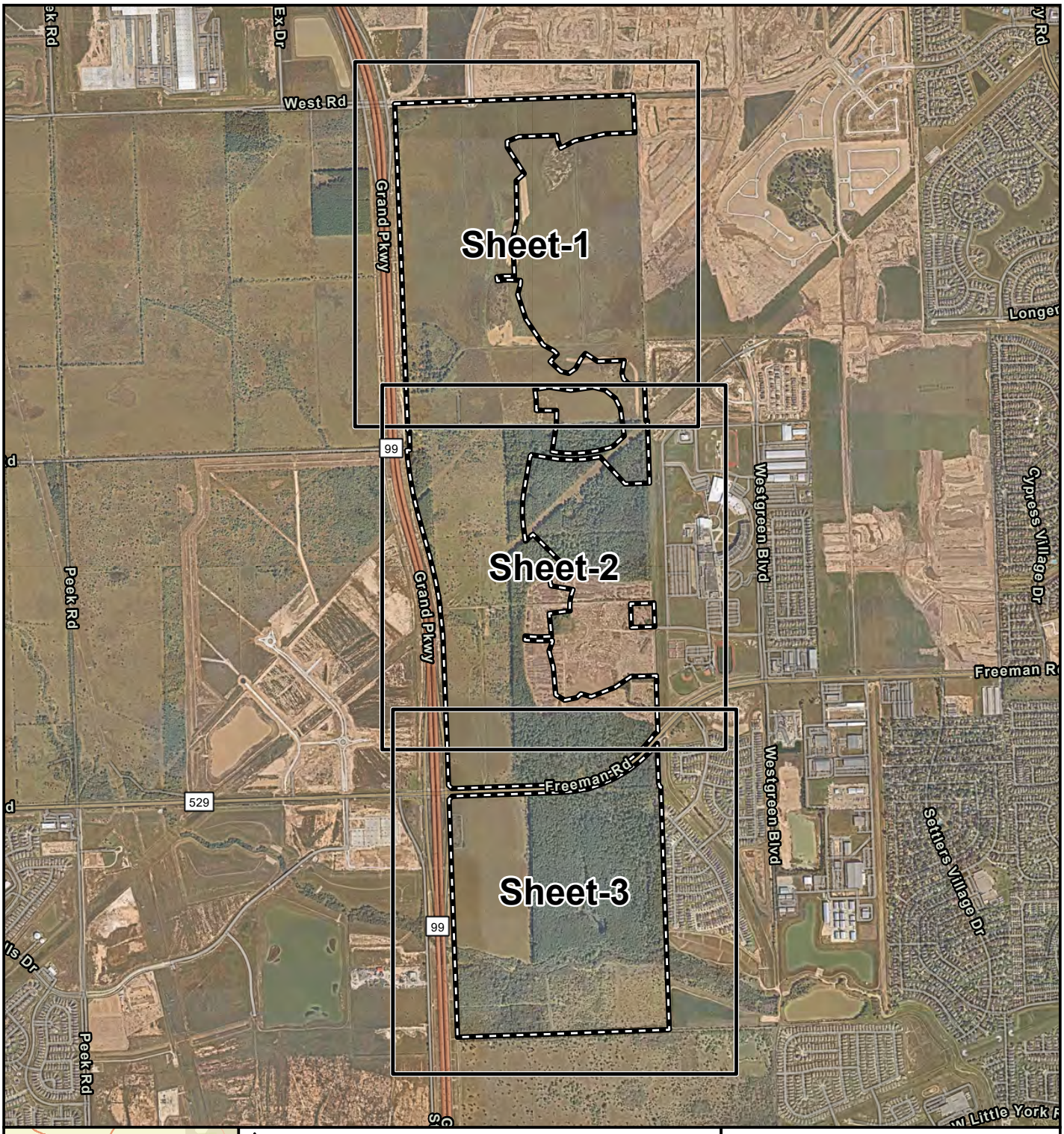

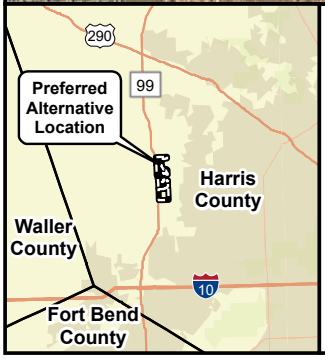

3

Site Boundary
Sheet Index

Datum: NAD 1983
Projection: State Plane
Texas South Central
Zone: 14 North
Units: Feet
Basemap: Nearmap 2021

0 2,000 4,000
US Feet

0 600 1,200
Meters

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Exhibit 6
Site Layout – Sheet Index
Alternatives Analysis
Landmark Industries, LLC
Harris County, Texas

Prepared By: BGE	Scale: 1 IN = 2000 FT
Job No.: 6021-01	Date: December 2021

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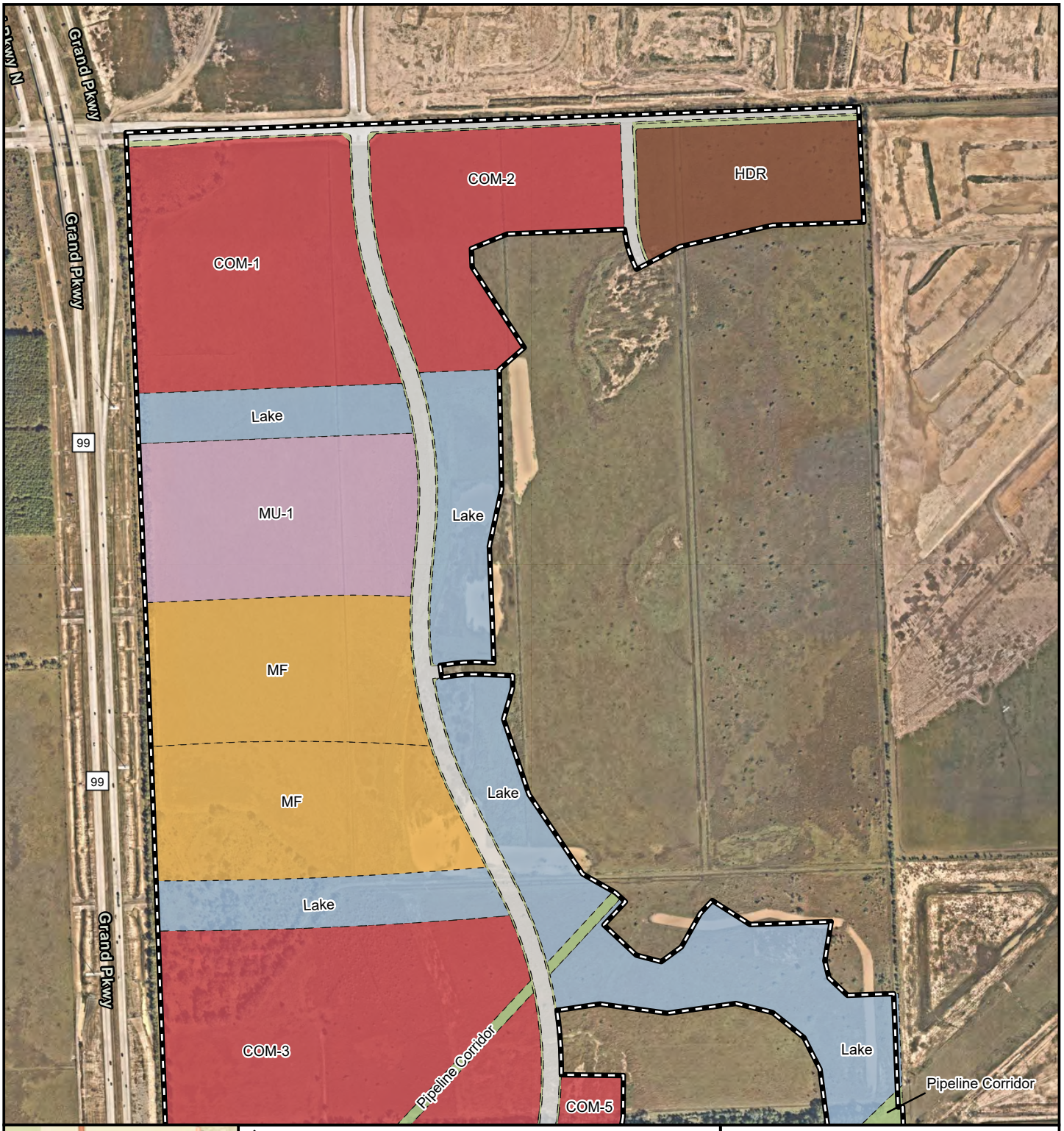

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Datum: NAD 1983
Projection: State Plane
Texas South Central
Zone: 14 North
Units: Feet
Basemap: Nearmap 2021

0 650 1,300
US Feet

0 200 400
Meters

Site Boundary
Impacted Verified Jurisdictional Stream
Impacted Verified Jurisdictional Wetlands

Land Use Classification
Commercial (COM)
Multi-Family (MF)
Mixed Use (MU)
High Density Retail (HDR)
Drainage / Detention / Floodplain Mitigation
Roadways
Utilities
Landscape / Open Space / Lake
Pipeline Corridor

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Tel: 281-558-8700 Fax: 281-558-9701

Exhibit 7
Site Layout 1
Alternatives Analysis
Landmark Industries, LLC
Harris County, Texas
Sheet 1 of 3

Prepared By: BGE	Scale: 1 IN = 650 FT
Job No.: 6021-01	Date: December 2021

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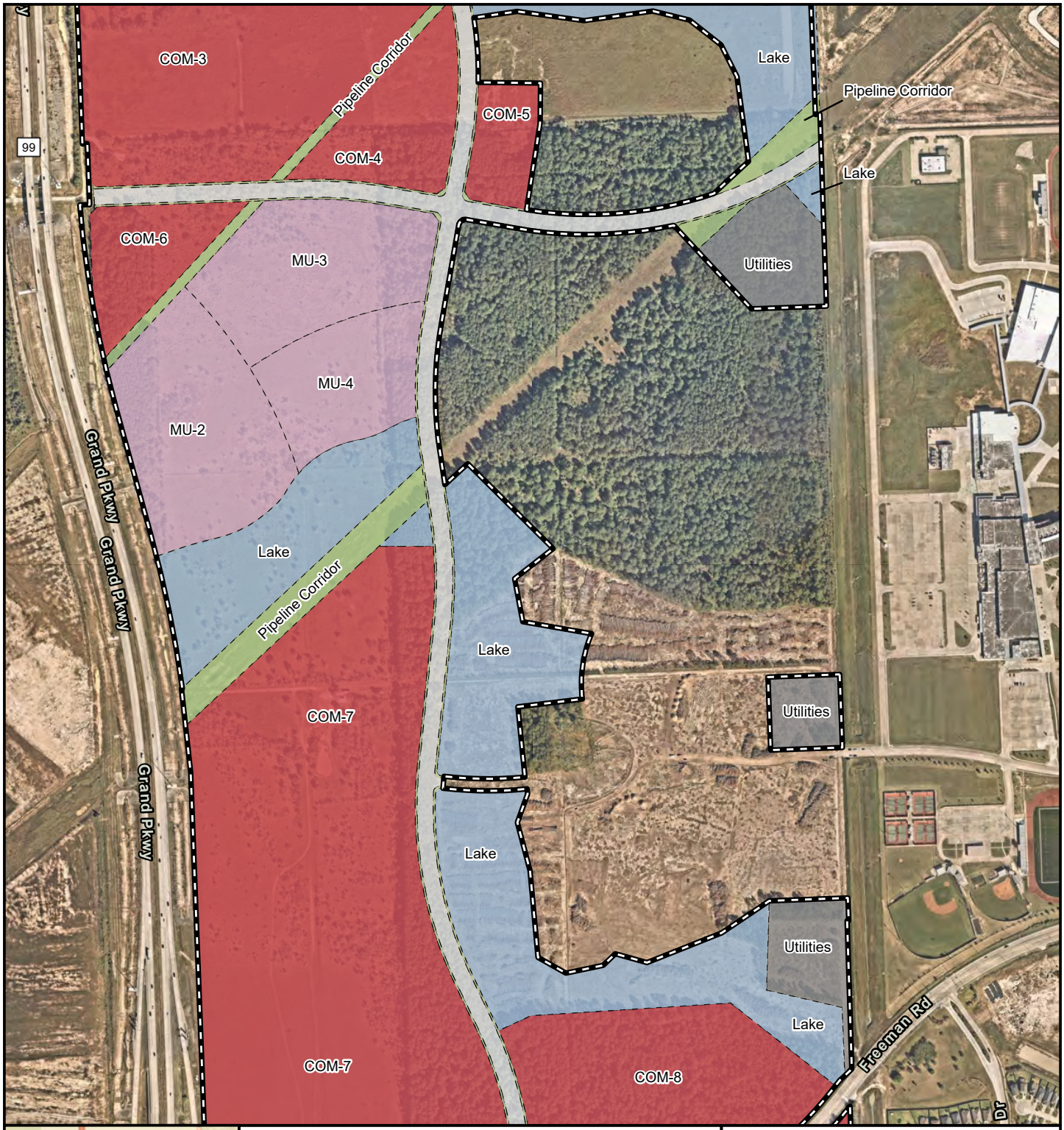

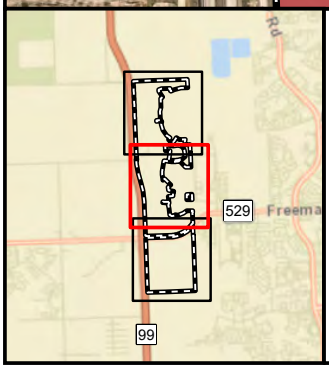

Datum: NAD 1983
Projection: State Plane
Texas South Central
Zone: 14 North
Units: Feet
Basemap: Nearmap 2021

0 650 1,300
US Feet

0 200 400
Meters

Site Boundary
Impacted Verified Jurisdictional Stream
Impacted Verified Jurisdictional Wetlands

Land Use Classification
- Commercial (COM)
- Multi-Family (MF)
- Mixed Use (MU)
- High Density Retail (HDR)
- Drainage / Detention / Floodplain Mitigation
- Roadways
- Utilities
- Landscape / Open Space / Lake
- Pipeline Corridor

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Exhibit 7
Site Layout 1
Alternatives Analysis
Landmark Industries, LLC
Harris County, Texas
Sheet 2 of 3

Prepared By: BGE	Scale: 1 IN = 650 FT
Job No.: 6021-01	Date: December 2021

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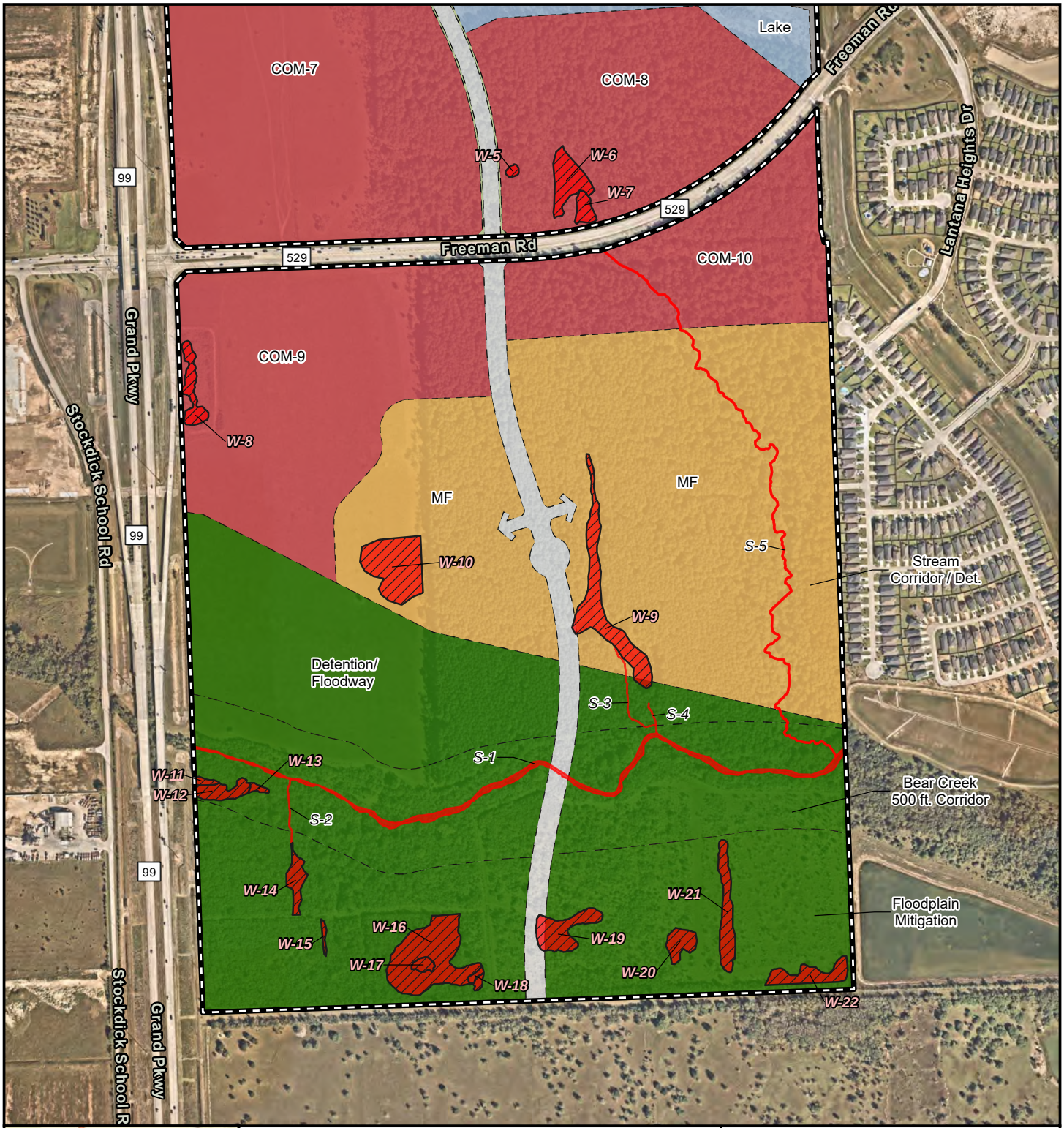

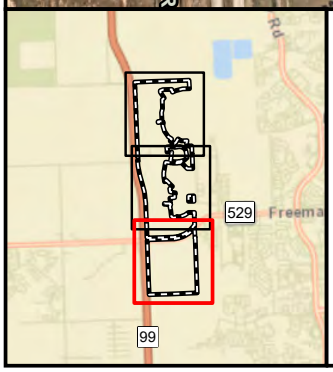

3

Site Boundary
Impacted Verified Jurisdictional Stream
Impacted Verified Jurisdictional Wetlands

Land Use Classification
Commercial (COM)
Multi-Family (MF)
Mixed Use (MU)
High Density Retail (HDR)
Drainage / Detention / Floodplain Mitigation
Roadways
Utilities
Landscape / Open Space / Lake
Pipeline Corridor

Datum: NAD 1983
Projection: State Plane
Texas South Central
Zone: 14 North
Units: Feet
Basemap: Nearmap 2021

0 650 1,300
US Feet

0 200 400
Meters

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Exhibit 7
Site Layout 1
Alternatives Analysis
Landmark Industries, LLC
Harris County, Texas
Sheet 3 of 3

Prepared By: BGE	Scale: 1 IN = 650 FT
Job No.: 6021-01	Date: December 2021

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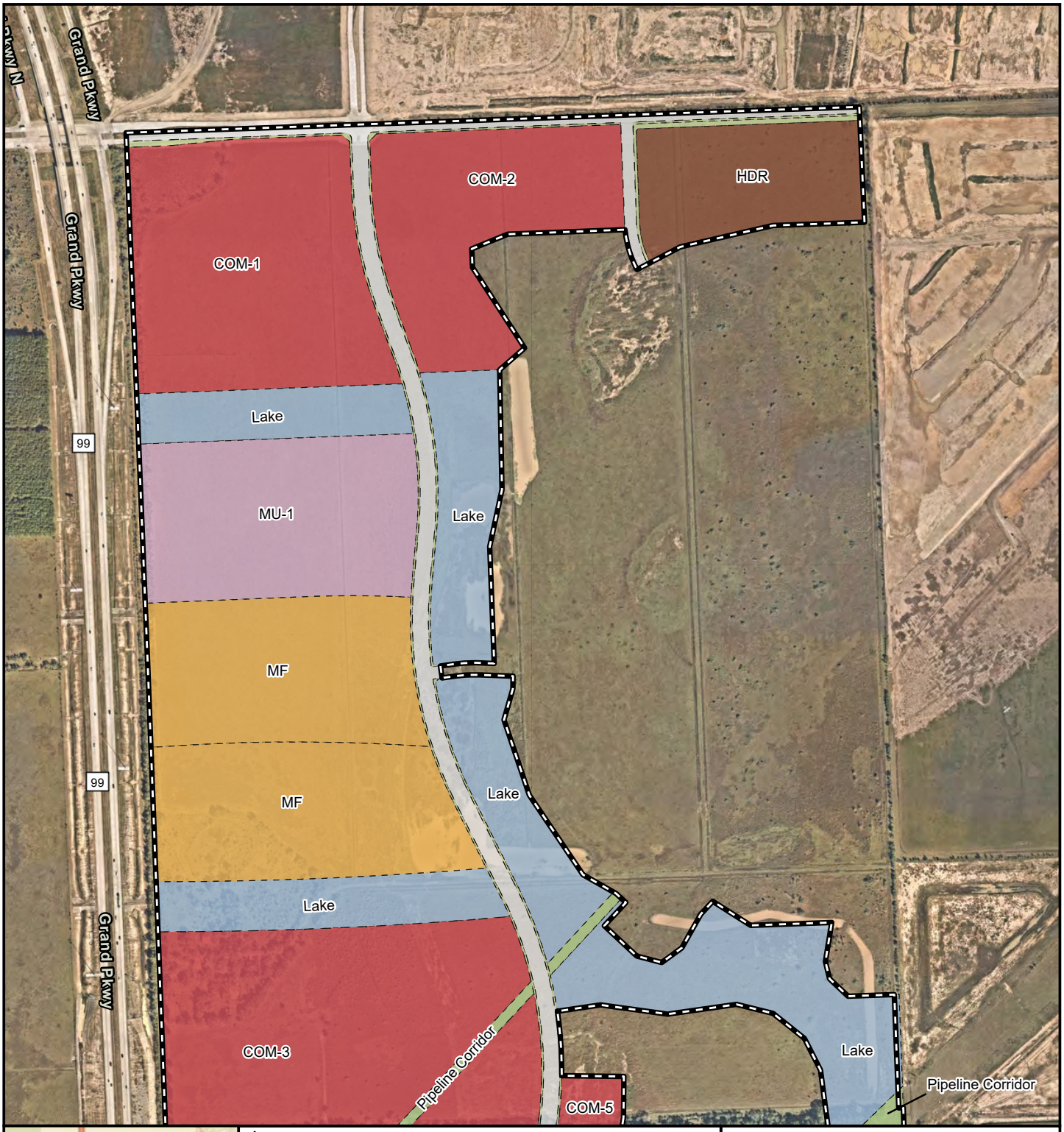

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Datum: NAD 1983
Projection: State Plane
Texas South Central
Zone: 14 North
Units: Feet
Basemap: Nearmap 2021

0 650 1,300
US Feet

0 200 400
Meters

Site Boundary
Non-Impacted Verified Jurisdictional Stream
Impacted Verified Jurisdictional Wetlands
Non-Impacted Verified Jurisdictional Wetlands

Land Use Classification
Commercial (COM)
Multi-Family (MF)
Mixed Use (MU)
High Density Retail (HDR)
Drainage / Detention / Floodplain Mitigation
Roadways
Utilities
Landscape / Open Space / Lake
Pipeline Corridor

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Exhibit 8
Site Layout 2 (Preferred Alternative)
Alternative Analysis
Landmark Industries, LLC
Harris County, Texas
Sheet 1 of 3

Prepared By: BGE	Scale: 1 IN = 650 FT
Job No.: 6021-01	Date: December 2021

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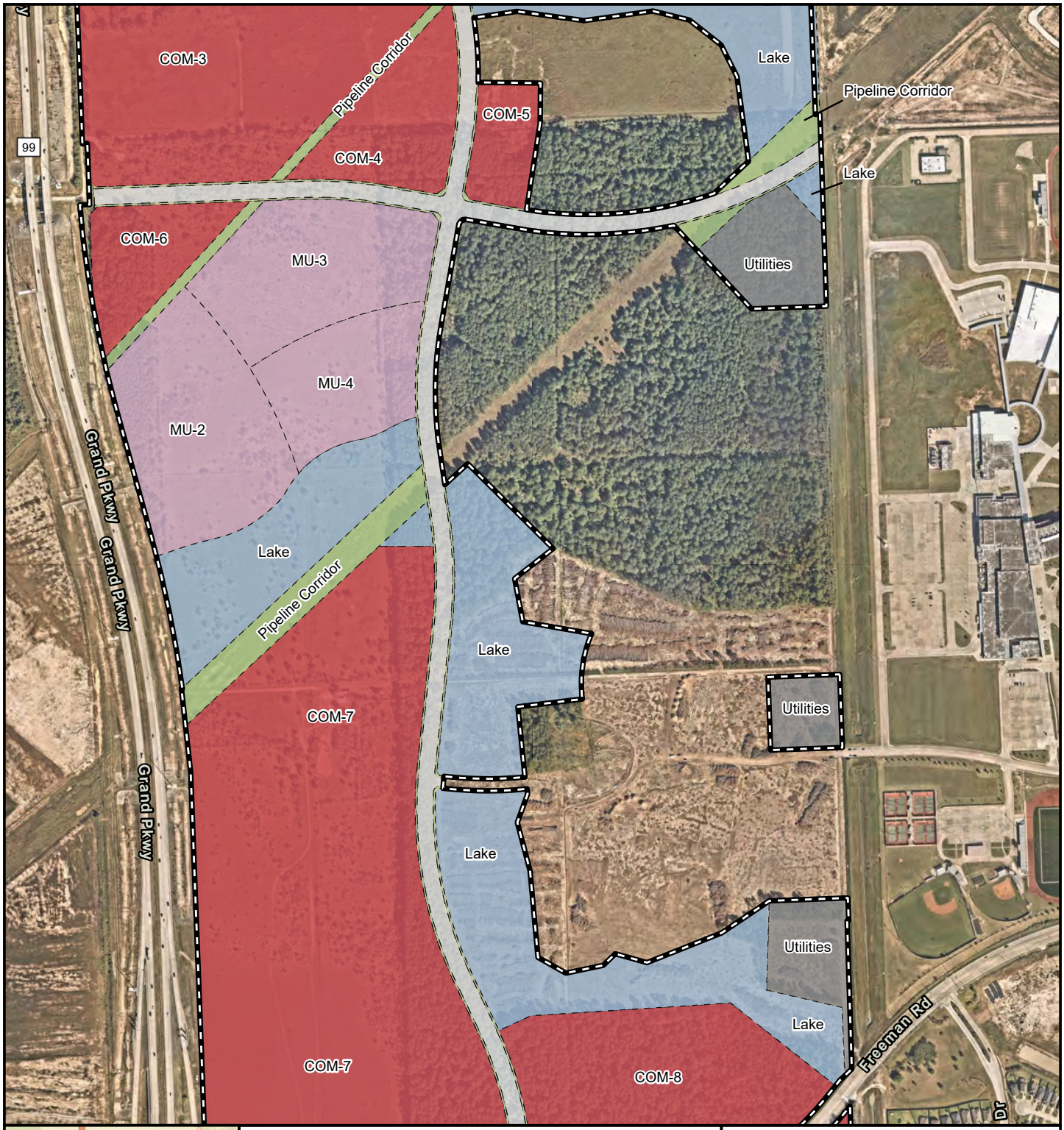

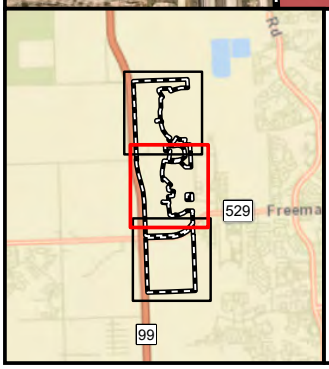

Datum: NAD 1983
Projection: State Plane
Texas South Central
Zone: 14 North
Units: Feet
Basemap: Nearmap 2021

0 650 1,300
US Feet

0 200 400
Meters

Site Boundary
Non-Impacted Verified Jurisdictional Stream
Impacted Verified Jurisdictional Wetlands
Non-Impacted Verified Jurisdictional Wetlands

Land Use Classification
Commercial (COM)
Multi-Family (MF)
Mixed Use (MU)
High Density Retail (HDR)
Drainage / Detention / Floodplain Mitigation
Roadways
Utilities
Landscape / Open Space / Lake
Pipeline Corridor

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Exhibit 8
Site Layout 2 (Preferred Alternative)
Alternative Analysis
Landmark Industries, LLC
Harris County, Texas
Sheet 2 of 3

Prepared By: BGE	Scale: 1 IN = 650 FT
Job No.: 6021-01	Date: December 2021

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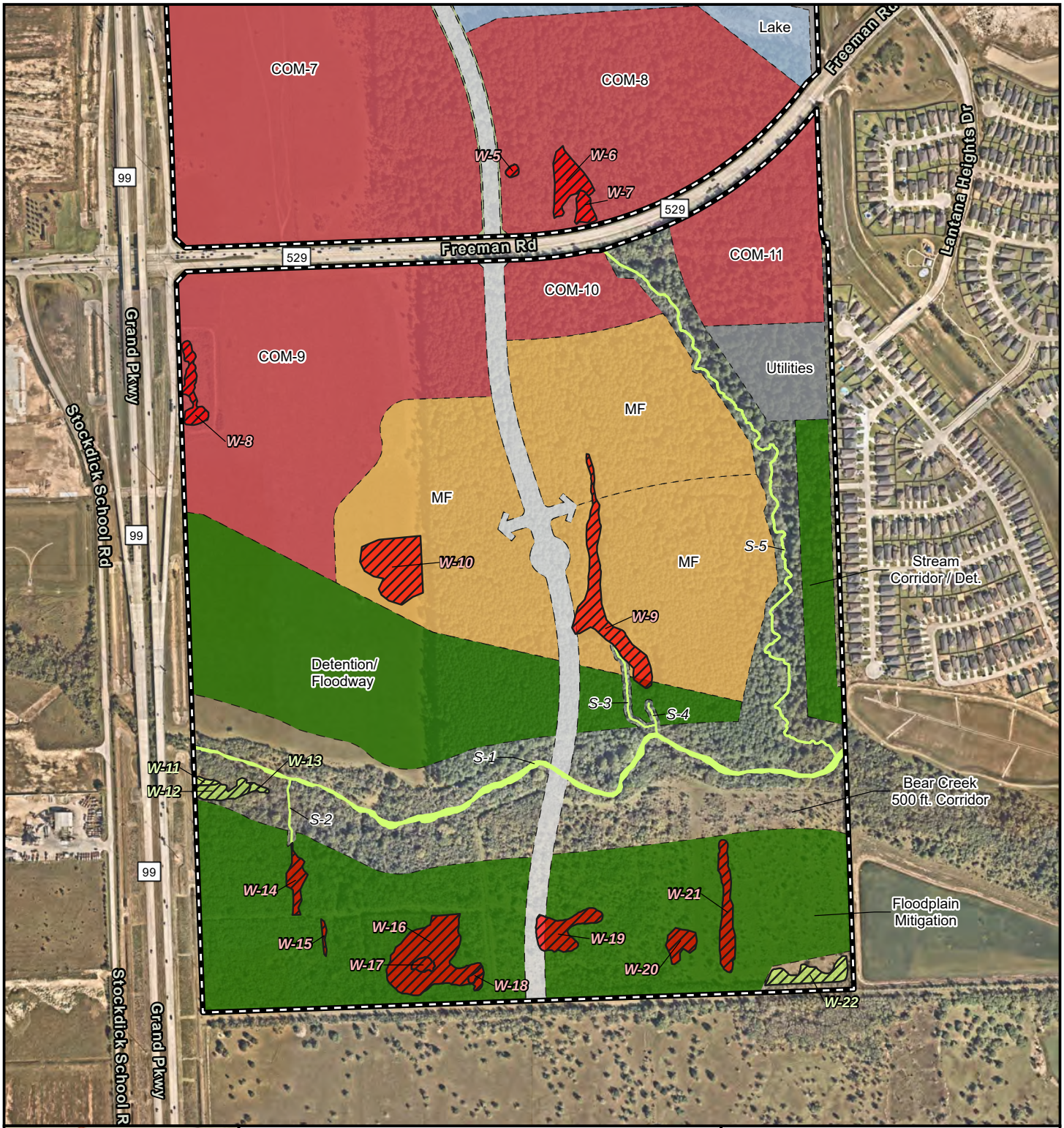

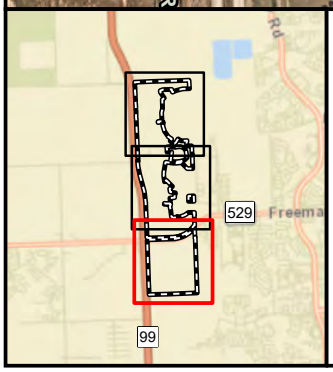

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Datum: NAD 1983
Projection: State Plane
Texas South Central
Zone: 14 North
Units: Feet
Basemap: Nearmap 2021

0 650 1,300
US Feet

0 200 400
Meters

Site Boundary
Non-Impacted Verified Jurisdictional Stream
Impacted Verified Jurisdictional Wetlands
Non-Impacted Verified Jurisdictional Wetlands

Land Use Classification
Commercial (COM)
Multi-Family (MF)
Mixed Use (MU)
High Density Retail (HDR)
Drainage / Detention / Floodplain Mitigation
Roadways
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Exhibit 8
Site Layout 2 (Preferred Alternative)
Alternative Analysis
Landmark Industries, LLC
Harris County, Texas
Sheet 3 of 3

Prepared By: BGE	Scale: 1 IN = 650 FT
Job No.: 6021-01	Date: December 2021

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