Waters of the U.S. Delineation Report

South Gosling Future Park
Harris County, Texas

Prepared for

The Woodlands Township

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Executive Summary

The Woodlands Township retained Halff to perform a delineation of aquatic resources (e.g., wetlands, streams, ponds) and jurisdictional assessment pursuant to Section 404 of the Clean Water Act (Section 404) as part of the South Gosling Future Park project in Harris County, Texas. Halff conducted the delineation of aquatic features on October 17-18, November 9 and 21, 2023.

A total of 15 aquatic features were observed within the study area, including one perennial stream (PS-1), three ephemeral streams (ES-1, ES-2, and ES-3), four emergent wetlands (W-1, W-2, W-3, and W-6), three forested wetlands (W-4, W-5, and W-7), and four open water ponds (OW-1, OW-2, OW-3, and OW-4).

Spring Creek (P-1) is a perennial stream that is considered to be a relatively permanent water (RPW) that exhibits direct surface water connection to the West Fork San Jacinto River, a traditional navigable water (TNW) according to the United States Army Corps of Engineers (USACE). USACE would likely consider Spring Creek jurisdictional under Section 404.

ES-1, ES-2, ES-3, OW-1, OW-2, W-2, and W-3 are connected within the same drainage system, located in the southeastern portion of the study area. ES-1 flows northward in the southeastern portion of the study area and drains into OW-1. OW-1 is an open water pond that is located between ES-1 and ES-2 and directly abuts W-2. W-2 is located at the confluence of ES-1 and OW-1. ES-2 flows northward from OW-1 and drains into OW-2. OW-2 is surrounded by an emergent wetland feature (W-3) and is connected to ES-3. ES-3 is an ephemeral stream that flows westward from OW-2 and drains directly into Spring Creek, which is located along the eastern boundary of the study area.

W-1 is a large emergent wetland-freshwater marsh complex located in the southeastern portion of the study area within low-lying floodplain that receives drainage from two forested wetland (W-4, W-5) areas and one open water pond (OW-3). W-1, W-4, W-5, and OW-3 flow to a small man-made drainage canal located just across the study area's southern boundary that connects these features to ES-1, and ultimately to Spring Creek. W-6 is an emergent wetland that directly abuts the banks of Spring Creek.

W-7 is a forested wetland-freshwater pond complex located in the northern portion of the study area in a concave position within the floodplain and is depicted on topographic maps as a meandering tributary to Spring Creek. W-7 appears to be frequently inundated from cross-drainage underneath the Gosling Road bridge to the west, allowing water to collect at a frequency to support hydric soils and hydrophytic plant species.

For the purposes of the Clean Water Act, 33 U.S.C. 1251 et seq. and current implementing regulations, all aquatic features located within the study area appear to exhibit a direct surface water connection with Spring Creek and, therefore, would likely be considered jurisdictional under Section 404.

On August 29, 2023, the Environmental Protection Agency (EPA), and Department of the Army (the agencies) issued a final rule amending the 2023 definition of "waters of the U.S." to conform with the recent Supreme Court decision in *Sackett v. EPA*. As of this report, the agencies are interpreting WOTUS consistently with *Rapanos v. United States* and *Carabell v. United States* (EPA 2008) (i.e., pre-2015 regulatory regime), in addition to key revisions to the definition of WOTUS under the *Sackett* ruling.

Under a review of jurisdiction based on the pre-2015 regulatory regime and the *Sackett* decision, it is Halff's professional opinion that all aquatic features within the study area would likely be considered WOTUS due

to their locations within the Spring Creek regulatory floodway; therefore, the USACE would likely consider these features to be jurisdictional under Section 404.

Demonstrations of jurisdiction herein are based on a preliminary jurisdictional assessment conducted by Halff for consideration by the USACE and are provided as an information tool for the permittee. Changes to current effective rules and/or regulatory practices may result in changes to Halff's jurisdictional opinion. The actual designation will rest with the USACE Galveston District and the EPA, the agencies with regulatory authority for jurisdictional determinations of aquatic features within the study area.

1.0 PROJECT DESCRIPTION

The proposed South Gosling Future Park project includes the development of the study area into a public park in Harris County, Texas. The study area measures approximately 201 acres bound by Gosling Road to the west, Spring Creek Drive to the east, undeveloped land to the north, and Spring Valley Golf Club to the south. **Figure 1** and **Figure 2** depict the general study area location in relation to the greater Houston area and local road network, respectively.

2.0 METHODS

This document meets wetland delineation guidelines published by the U.S. Army Corps of Engineers (USACE) and serves as supporting documentation for an analysis of potential permitting requirements under Section 404 of the Clean Water Act. Halff reviewed the following supporting documents prior to conducting field investigations:

- U.S. Department of Agriculture (USDA) Land Resource Region (LRR) and Major Land Resource Area (MLRA) data
- U.S. Geological Survey (USGS) quadrangle maps
- Aerial imagery
- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) data
- USGS National Hydrography Dataset (NHD) information
- USDA Natural Resource Conservation Service (NRCS) soil survey data
- Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL) data
- Light Detection and Ranging (LiDAR) digital elevation data.

Halff conducted field investigations within the study area on October 17-18, November 9 and 21, 2023, to determine the extent of aquatic features with the potential to be regulated as jurisdictional waters of the United States (WOTUS). Aquatic feature limits were assessed using the presence of the ordinary high water marks (OHWM) for open water features or the presence of USACE-defined wetland indicators, where applicable. Limits of aquatic features were measured during the field investigations using a Bad Elf GNSS Flex Global Positioning System (GPS) receiver capable of sub-meter accuracy, based on the World Geodetic System (WGS) 1984 Web Mercator Projection. Survey data were then converted and analyzed using ArcGIS Geographic Information System (GIS) software. Survey data and figures were projected to State Plane Central Texas Zone 4204 North American Datum (NAD 1983), with latitude and longitude coordinates reported in Global Coordinate System NAD 1983.

Trained Halff wetland scientists collected data points (DPs) for unique vegetation communities encountered within the study area. Data collection was consistent with the USACE guidelines for wetland delineations prescribed in the "1987 Corps of Engineers Wetlands Delineation Manual" and the "Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0)." **Figure 3.0** depicts the location of wetland data points and all mapped aquatic resources found within the study area.

3.0 RESULTS

Supporting information for this report includes a USDA MLRA/LRR map, historical and recent USGS topographic maps, historical and recent aerial imagery, an NWI and NHD map, a USDA soil survey map, a floodplain map, and a LiDAR map, all of which are located in **Appendix A**. A discussion of these maps is provided in **Section 3.1**. Results of the field investigations are provided in **Section 3.2**.

3.1 Supporting Information

3.1.1 Ecological Setting Information

USDA MLRA/LRR data were reviewed to determine which location-dependent soil and hydrology indicators are applicable. MLRAs are geographically associated land resource units that aid in agricultural planning by utilizing physiography, geology, climate, water, soils, biological resources, and land use data unique to each region. LRRs are geographically associated MLRAs which approximate broad agricultural market regions.

As depicted in **Appendix A**, **Figure A-1**, the study area is located within the LRR South Atlantic and Gulf Slope Cash Crops, Forest, and Livestock Region (P) in the MLRA Western Coastal Plain (133B) which is an area located in east Texas and northern Louisiana that encompasses approximately 44,975 square miles. Elevation within this MLRA ranges from 80 to 650 feet, increasing gradually from southeast to northwest. Most of this MLRA consists of level to steep uplands that are dissected by streams, which are sometimes surrounded by broad floodplains and terraces. The average annual precipitation in the area is 39 to 63 inches, with rainfall greatest in the southeast. The precipitation mostly occurs during frontal storms in spring and early summer. The average annual temperature is 61 to 68 degrees Fahrenheit. The dominant soil orders in the 133B MLRA are Alfisols and Ultisols. Soils are well drained to poorly drained and loamy or clayey in texture. This area supports pine-hardwood vegetation. Dominant tree species are loblolly pine, shortleaf pine, sweetgum, southern red oak, white oak, flowering dogwood, and post oak. Little bluestem and pinhole bluestem are the dominant herbaceous species. The dominant land-uses in this area are lumber, pasture, and agriculture.

3.1.2 Topographic Map Information

Halff assessed historical and recent USGS topographic quadrangle maps for “Tomball, Texas,” “Oklahoma, Texas,” “Tamina, Texas,” and “Spring, Texas” prior to field reconnaissance to identify development, elevation contours, drainage patterns, and hydrography associated with study area and assist in determining the presence and characteristics of associated aquatic resources. See **Table 1** for a description of reviewed topographic maps (**Appendix A**, **Figures A-2** through **A-4**).

Table 1: Topographic Map Descriptions

Year	Figure	Map Description
1962	A-2	• The majority of the study area is depicted as undeveloped land with two wetland features located near the center of the study area (white and blue polygons). • Land surrounding the study area is depicted as undeveloped. • As indicated by a bold black line feature, a linear perennial stream (Spring Creek) is depicted within a small section of the study area at the northern project limits and along the eastern boundary of the study area, which also depicts the county boundary between Harris and Montgomery counties. • As indicated by a black line-dotted line feature, a linear tributary to Spring Creek is depicted meandering through the far northern portion of the study area, just south of Spring Creek.

		• As indicated by green shading, woodland vegetation is depicted throughout the majority of the study area.
2013	A-2	• The study area is surrounded by residential and commercial developments. • Spring Creek and the meandering tributary to Spring Creek follow the same present-day course within the study area and along the eastern boundary as they do in the 1962 topographic map. • One open water feature (blue polygon) is depicted in the southeastern portion of the study area. • Multiple aquatic features (blue polygons) are depicted along the southern boundary of the study area.
2022	A-3	• Spring Creek and the meandering tributary to Spring Creek follow the same present-day course within the study area and along the eastern boundary as they do in the 2022 topographic maps. • Additional green shaded, woodland vegetation is present throughout the study area. • Three wetland/swamp features are depicted in the center and southwestern portions of the study area by blue and green line features. • One large open water feature (blue polygon) is depicted to be located along the southwestern boundary of the study area.

3.1.3 Aerial Imagery Information

Halff analyzed aerial images to assist in identifying habitat characteristics, signs of inundation and saturation, and color signatures indicative of saturated soils or changes in vegetative communities that may suggest an area supports and/or functions as wetland or stream systems. A description of each aerial imagery map (**Appendix A**, **Figures A-5** through **A-10**) is detailed in **Table 2**.

Table 2: Aerial Imagery Descriptions

Year	Figure	Map Description
1978	A-5	• The study area is depicted as undeveloped land comprised of woodlands. • Potential inundation and wetland signatures are visible in the southwestern portion of the study area. • The present-day pond in the southeast portion of the study area is visible. • Land to the north and south of the study area is primarily undeveloped. • Gosling Road and Spring Creek Drive follow the same present-day course. • One open water feature is located along the southern boundary of the study area.
1989	A-6	• Landcover within the study area and on adjacent land appears relatively unchanged compared to the 1978 aerial image.
2002	A-7	• Landcover within the study area appears relatively unchanged compared to the 1989 aerial image. • Linear drainage features are visible in the southwest corner of the study area that appear to originate from present-day culverts underneath Gosling Road. • Land south of the study area appears to be more developed with sidewalks and herbaceous landcover.
2008	A-8	• Landcover within the study area appears relatively unchanged compared to the 2002 aerial image. • Land to the north and west of the study area appears to be more developed with open gravel lots and buildings.
2015	A-9	• Landcover within the study area appears relatively unchanged compared to the 2002 aerial image. • Land surrounding the study area appears more developed with more roads, gravel lots, and buildings surrounding the study area.

2022	A-10	• Landcover within the study area appears relatively unchanged compared to the 2002 aerial image. • The present-day emergent wetland-freshwater marsh complex and U-shaped drainage feature in the southwestern section of the study area are visible. • Land east of the study area appears to be developed with residential and commercial buildings.

3.1.4 NWI and NHD Information

Features mapped on the USFWS' NWI were identified from stereoscopic analysis of historical aerial imagery and are infrequently updated. Furthermore, USFWS expressly states that there is no attempt to define the limits of jurisdiction of any Federal, State, or local government, or to establish the geographic scope of the regulatory programs of any government agency. However, the NWI can be useful as background information to identify potential wetland areas prior to conducting field investigations. The USGS' NHD represents the most up-to-date and comprehensive hydrography dataset of the U.S. water drainage network. The NWI and NHD databases were reviewed to identify potential wetland areas and other aquatic resources within the study area.

The NWI data depicts one riverine feature, one scrub/shrub wetland, 10 forested/shrub wetlands, three freshwater emergent wetlands, and one freshwater pond scattered throughout the study area (**Appendix A, Figure A-11**). The NHD database identified one stream feature (Spring Creek), one pond feature, and two swamp/marsh features that coincide with NWI features. **Table 3** defines the NWI features mapped within the study area.

Table 3: NWI Features within the Study Area

NWI Code[1]	NWI Description	Occurrence within Study Area
R2UBH	Riverine, lower perennial, unconsolidated bottom, permanently flooded	1
PSS1A	Palustrine scrub/shrub wetland, broad-leaved deciduous, temporarily flooded	1
PFO1A	Palustrine forested/shrub wetland, broad-leaved deciduous, temporarily flooded	4
PFO1C	Palustrine forested/shrub wetland, broad-leaved deciduous, seasonally flooded	6
PEM1C	Palustrine emergent wetland, herbaceous, temporarily flooded	3
PUBH	Palustrine, unconsolidated bottom, permanently flooded	1

Note:
1. Cowardin classification coding system

3.1.5 Soil Survey Information

Halff obtained soil data for the study area from the USDA NRCS Web Soil Survey Geographic Database (SSURGO), which is derived from the USDA Soil Survey for Harris County. Soil data provide insight on soil profiles, settings, properties, and hydric characteristics.

As detailed in **Table 4**, the study area is composed of four soil units, none of which contain known/mapped hydric components. The soil units derived from the USDA GIS data are shown atop recent aerial imagery in **Appendix A**, **Figure A-12**.

Table 4: Soil Map Unit Descriptions

Soil Unit Symbol	Map Unit Name	Drainage Class	Frequency of Ponding	Hydric Components (yes/no)	Acreage of Study Area	Percent of Study Area
Br	Bruno loamy fine sand	Excessively drained	None	No	0.1	<1%
HatA	Hatliff-Pluck-Kian complex, 0 to 1 percent slopes, frequently flooded	Well drained	None	Yes	38.7	19.3%
Kn	Kenney loamy find sand, 0 to 1 percent slopes	Well drained	None	Yes	160.2	79.8%
SegB	Segno fine sandy loam, 1 to 3 percent slopes	Well drained	None	No	1.7	<1%

3.1.6 Floodplain Information

According to the FEMA NFHL dataset, the Spring Creek corridor is located within the regulatory floodway. Additionally, the majority of the study area is located within regulatory floodway. The western portion of the study area is located within the 1.0% percent annual chance flood hazard (100-year floodplain) zone. A small portion of the study area is located within the 0.2% annual chance flood hazard (500-year floodplain) along the western boundary. The National Flood Hazard Map (**Appendix A**, **Figure A-13**) depicts the floodplain limits within and around the study area.

3.1.7 LiDAR Information

The digital elevation model (**Appendix A**, **Figure A-14**) from the Texas Natural Resources Information System (TNRIS) 2022 5-foot LiDAR depicts the study area located at an elevation between 28 to 49 feet. Discernable depressional areas noted throughout the study area include all of Spring Creek and its tributaries throughout the study area. A small, linear feature was noted just south of the study area that appears to be a man-made drainage canal that provides the surface water connection from aquatic features identified in the western portion of the study area to Spring Creek. Analysis of LiDAR elevation data was consistent with observations made on topographic maps, aerial imagery, NWI, and NHD maps.

3.1.8 Wetland Hydrologic Index

Determining the jurisdictional status of certain waterbodies is informed by an understanding of the hydrologic flows and surface water connections that occur under normal climatic conditions (i.e., precipitation and climatic variables within the normal periodic range of an area based on a rolling 30-year period). The USACE Antecedent Precipitation Tool (APT) is utilized to compare antecedent or recent rainfall conditions for a location to the range of normal rainfall conditions that occurred during the preceding 30 years. Utilization of the APT assists to complete wetland delineations by streamlining the evaluation of precipitation normalcy and other climatic variables and assisting with determining whether observations are representative of normal climatic conditions when evaluating the jurisdictional status of aquatic resources. Furthermore, the APT can be utilized to assess presence of drought conditions, as well as the approximate dates of the wet and dry season for a given location.

According to the APT, the study area was experiencing drier than normal hydrologic conditions during the field investigations. **Table 5** summarizes the APT data derived from the date of the field investigations. The APT models, representative of conditions during the field investigations and for the rolling 30-year period, are included in **Appendix B**.

Table 5: APT Data from Field Investigations

Date	Latitude	Longitude	PDSI[1] Value	PDSI Class	Season	ARC Score[2]	Antecedent Precipitation Condition
10/17/2023	30.1352177	-95.5008754	-3.61	Severe Drought	Wet season	9	Drier than Normal
10/18/2023	30.1352177	-95.5008754	-3.61	Severe Drought	Wet season	9	Drier than Normal
11/09/2023	30.1352177	-95.5008754	-3.61	Severe Drought	Wet season	11	Normal Conditions
11/21/2023	30.1352177	-95.5008754	-3.61	Severe Drought	Wet season	11	Normal Conditions

Notes:
1. Palmer Drought Severity Index – attempts to measure duration and intensity of long-term drought-inducing circulation patterns. Intensity of drought during the current month is dependent on current weather conditions plus the cumulative patterns of previous months.
2. The final precipitation normalcy index score is the summed weighted condition value across the three 30-day periods.

3.2 Field Conditions

Halff collected a total of 41 DPs to characterize the land cover and identify aquatic features within the study area. Detailed descriptions of aquatic features are included below and are summarized in **Table 6**. Refer to **Figures 3.1** and **3.2** for a depiction of the boundaries of each waterbody/wetland feature, as well as the location within the study area where sample point data were collected. Refer to **Appendix C - Wetland Data Forms** for the completed wetland determination data forms for the project. Refer to **Appendix D – Representative Photographs** for photographs of vegetation communities and waterbody/wetland features observed within the study area. During the field investigation, Halff observed four dominant vegetation communities within the study area: riparian woodland, upland woodland, emergent wetland, and forested wetland.

3.2.1 Linear Features

One perennial stream (Spring Creek) (PS-1) and three ephemeral streams (ES-1, ES-2, ES-3) were delineated within the study area during the field investigations.

Spring Creek flows eastward approximately 764 through the northernmost portion of the study area before turning southeast across the approximately 1.2-mile length the study area's eastern boundary. At the time of the field visit, the stream was fast-flowing and Halff observed moderate depth for Spring Creek within the study area. Boulders, cobble, gravel, and loamy clay substrates with overhanging vegetation, deep pools, emergent vegetation, undercut banks, logs/brush, and variable substrate composition were observed within Spring Creek**.**

ES-1 is an ephemeral stream flowing south to north approximately 210 feet within the southeastern portion of the study area with an average OHWM of 20 feet. ES-2 is an ephemeral stream that connects to two open water ponds (OW-1, OW-2) in the southeast portion of the study area. ES-2 flows south to north for approximately 168 feet with OHWM width ranging from 6 feet to 22 feet. Average OHWM for ES-2 is approximately 14 feet. ES-3 is an ephemeral stream that flows west to southeast for approximately 444 feet from OW-2 and drains into Spring Creek in the southeast portion of the study area. The OHWM width of ES-3 ranges from 8 feet to 38 feet, with an average OHWM width of 23 feet. Review of aerial imagery,

topographic maps, NWI/NHD data, and conditions observed during the field investigation suggest that ES-1, ES-2, and ES-3 flow ephemerally within the study area.

3.2.2 Wetlands

As noted in **Section 2.0**, Halff collected a total of 41 data points to characterize the land cover and identify aquatic features within the study area. Data point locations and aquatic features located within the study area can be seen overlaid on recent aerial imagery in **Figure 3.**

Emergent Wetland

Four emergent wetland features (W-1, W-2, W-3, W-6) were observed within the study area. W-1 was observed in a low-lying floodplain in the southwestern portion of the study area. W-2 was observed directly abutting the vertex of an ephemeral stream (ES-1) and an open water pond (OW-1). W-3 was also observed directly abutting the northern and southern boundaries of OW-2. W-4 is located in the northeastern portion of the study area where the banks of Spring Creek become wider with shallow water depths. These features were dominated by hydrophytic herbaceous vegetation including dotted smartweed (*Persicaria punctata*), soft rush (*Juncus effusus*), hempvine (*Mikania scandens*), alligator weed (*Alternanthera philoxeroides*), eastern common buttonbush (*Cephalanthus occidentalis*), and creeping jenny (*Lysimachia nummularia*). Soils within the forested wetlands exhibited the hydric soil indicator *sandy redox* (S5). Hydrology indicators observed within the wetlands include *surface water* (A1), *high water table* (A2), *saturation* (A3), *water marks* (B1), *water-stained leaves* (B9), *drainage patterns* (B10), *crayfish burrows,* (C8), *geomorphic position* (D2) and *FAC-neutral test* (D5).

Forested Wetland

Three forested wetland features (W-4, W-5, and W-7) were observed within the study area. W-4 is located in a low-lying floodplain area spreading north from W-1 into the western portion of the study area. W-5 is located in a concave depression directly abutting an open water pond (OW-3). These features both abut W-1 and all flow southward toward a man-made canal adjacent to the southern study area boundary, and ultimately to Spring Creek. These features were dominated by hydrophytic canopy and herbaceous vegetation including lobolly pine (*Pinus taeda*), deer-tongue witchgrass (*Panicum clandestinum*), swamp smartweed (*Persicaria hydropiperoides*), raven's foot sedge (*Carex crus-corvi*), and dotted smartweed Soils within the forested wetlands exhibited the hydric soil indicator *sandy redox* (S5). Hydrology indicators observed within the wetlands include (A1), *high water table* (A2), and *saturation* (A3).

3.2.3 Open Water Features

Halff identified a total of four open water features (OW-1, OW-2, OW-3, and OW-4) within the study area. Generally, these features are impoundments of the surface tributary system located in shallow depressional areas within the floodplain that allow a relatively static water level to persist. OW-1, OW-2, and OW-3 are all located directly adjacent to wetlands (W-2, W-3, W-5). OW-1 and OW-2 are on channel impoundments of ephemeral streams (ES-1, ES-2, ES-3). OW-4 is an on-channel impoundment within the W-7 forested wetland-pond complex at the far northern portion of the study area and flows drains directly into Spring Creek. Refer to **Table 7** for the limits of the open water features that are depicted on the Aquatic Features Map (**Figure 3.1** and **3.2**).

Table 6: Wetland Determination Data Form Summary

Vegetation Community	Data Points	Dominant Vegetation[1]	Hydric Soil Indicators	Wetland Hydrology Indicators
Riparian Woodland	DP15, DP18 DP34	*Betula nigra (FACW)* *Liquidambar styraciflua (FAC)* *Ulmus pumila (FACU)* *Triadica sebifera (FAC)* *Quercus phellos (FACW)* *Symphyotrichum ericoides (UPL)* *Elephantopus carolinianus (FACU)* *Ilex vomitoria (FAC)* *Ulmus crassifolia (FAC)*	Sandy Redox (S5)	FAC Neutral Test (D5)
Upland Woodland	DP01, DP02, DP04, DP07, DP09, DP10, DP11, DP12, DP14, DP17, DP21, DP22, DP24, DP26, DP27, DP28, DP30, DP31, DP33, DP35, DP37, DP39, DP41	*Nyssa sylvatica (FAC)* *Ulmus alata (FACU)* *Pinus taeda (FAC)* *Callicarpa americana (FACU)* *Ilex vomitoria (FAC)* *Schizachyrium scoparium (FACU)* *Ilex opaca (FAC)* *Triadica sebifera (FAC)* *Morella cerifera (FACU)* *Quercus nigra (FAC)*	Sandy Redox (S5)	FAC Neutral Test (D5)
Emergent Wetland	DP03 DP05 DP06 DP08 DP13 DP16 DP19	*Persicaria punctata (OBL)* *Juncus effusus (OBL)* *Mikania scandens (FACW)* *Alternanthera philoxeroides (OBL)* *Cephalanthus occidentalis (OBL)* *Lysimachia nummularia* (FACW)	Sandy Redox (S5)	Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Water-Stained Leaves (B9) Drainage Patterns (B10) Crayfish Burrows (C8) Geomorphic Position (D2) FAC Neutral Test (D5)
Forested Wetland	DP23, DP25, DP36, DP38, DP40	*Pinus taeda (FAC)* *Quercus nigra (FAC)* *Panicum clandestinum (FAC)* *Persicaria hydropiperoides (OBL)* *Carex crus-corvi (OBL)* *Persicaria punctata (OBL)*	Depleted Matrix (F3) Sandy Redox (S5)	Surface Water (A1) High Water Table (A2) Saturation (A3)

Note:
1. FAC: Facultative Plant; FACU: Facultative Upland Plant; FACW: Facultative Wetland Plant; OBL: Obligate Wetland Plant; UPL: Upland Plant

3.2.4 Summary of Aquatic Features

A summary of the mapped aquatic features within the study area can be found in **Table 7**.

Table 7: Summary of Aquatic Features

Name	Type	Data Point	Latitude, Longitude	Area within Study Area (acres)	Length (linear feet)	Average OHWM Width (feet)	Water of the U.S. (yes/no)
PS-1 (Spring Creek)	Perennial Stream	N/A	30.144533, -95.503403	1.88	764	42	Yes
ES-1	Ephemeral Stream	N/A	30.130476, -95.498575	0.12	210	20	Yes
ES-2	Ephemeral Stream	N/A	30.131289, -95.498336	0.31	89	14	Yes
ES-3	Ephemeral Stream	N/A	30.131462, -95.497094	0.27	444	23	Yes
W-1	Emergent Wetland	DP03, DP05, DP06, DP08	30.131885, -95.503329	12.46	N/A	N/A	Yes
W-2	Emergent Wetland	DP13	30.130745, -95.498671	0.01	N/A	N/A	Yes
W-3	Emergent Wetland	DP16	30.132115, -95.497714	0.04	N/A	N/A	Yes
W-4	Forested Wetland	DP23	30.133204, -95.501802	0.13	N/A	N/A	Yes
W-5	Forested Wetland	DP25	30.134674, -95.504180	2.4	N/A	N/A	Yes
W-6	Emergent Wetland	DP19	30.135508, -95.498045	0.13	N/A	N/A	Yes
W-7	Forested Wetland	DP36 DP38 DP40	30.143694, -95.503571	0.51	N/A	N/A	Yes
OW-1	Pond	N/A	30.130948, -95.498514	0.14	N/A	45	Yes
OW-2	Pond	DP16	30.131771, -95.497959	0.52	N/A	95	Yes
OW-3	Pond	DP22	30.133438, -95.501323	0.07	N/A	32	Yes
OW-4	Pond	N/A	30.143888, -95.503400	0.05	N/A	20	Yes
Total Emergent Wetland				**12.64**	**N/A**	-	-
Total Forested Wetland				**3.04**	**N/A**	-	-
Total Stream				**2.58**	**1,507**	-	-
Total Pond				**0.78**	**N/A**	-	-
Total Waterbodies and Wetlands				**19.04**	**1,507**	-	-

4.0 CONCLUSION

Federal regulations (33 Code of Federal Regulations Section 328.3(a)) note that WOTUS may include intrastate rivers and streams, including impoundments and other waters. In response to a Supreme Court decision (*Rapanos v. U.S.*, 547 S. Ct. 715 [2006]) addressing the limits of federal jurisdiction, the USACE and EPA have issued further guidance and require additional documentation to support jurisdiction. Per joint USACE/EPA guidance documents issued after the *Rapanos* decision, the regulatory agencies continue to assert jurisdiction over the following waters:

- Traditionally navigable waters (TNWs)
- Wetlands adjacent to TNWs
- Non-navigable tributaries of traditionally navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months)
- Wetlands that directly abut such tributaries

A total of 15 aquatic features were observed within the study area, including one perennial stream (PS-1), three ephemeral streams (ES-1, ES-2, and ES-3), four emergent wetlands (W-1, W-2, W-3, and W-6), three forested wetlands (W-4, W-5, and W-7), and four open water ponds (OW-1, OW-2, OW-3, and OW-4).

Spring Creek (P-1) is a perennial stream that is considered to be a relatively permanent water (RPW) that exhibits direct surface water connection to the West Fork San Jacinto River and ultimately to the Gulf of Mexico, which is considered a traditional navigable water (TNW) by the USACE; therefore, the USACE would likely consider Spring Creek jurisdictional under Section 404.

ES-1, ES-2, ES-3, OW-1, OW-2, W-2, and W-3 are connected within the same drainage system, located in the southeastern portion of the study area. ES-1 flows south to north from a man-made canal adjacent to the study area's southern boundary and drains into OW-1. This drainage system then flows through ES-2, OW-2, and ES-2 that ultimately drains the southern half of the study area into Spring Creek.

W-1 is a large emergent wetland-freshwater marsh complex located in the southeastern portion of the study area within low-lying floodplain that receives drainage from two forested wetland (W-4, W-5) areas and one open water pond (OW-3). W-1, W-4, W-5, and OW-3 flow to a small man-made drainage canal located just across the study area's southern boundary that connects these features to ES-1, and ultimately to Spring Creek. W-6 is an emergent wetland that directly abuts the banks of Spring Creek.

W-7 is a forested wetland-freshwater pond complex located in the northern portion of the study area in a concave position within the floodplain and is depicted on topographic maps as a meandering tributary to Spring Creek. W-7 appears to be frequently inundated from cross-drainage underneath the Gosling Road bridge to the west, allowing water to collect at a frequency to support hydric soils and hydrophytic plant species.

On August 29, 2023, the EPA, and Department of the Army (the agencies) issued a final rule amending the 2023 definition of "waters of the U.S." to conform with the recent Supreme Court decision in *Sackett v. EPA*. As of the date of completion of this report, the agencies are interpreting WOTUS consistent with *Rapanos v. United States* and *Carabell v. United States* (EPA 2008) (i.e., pre-2015 regulatory regime), in addition to key revisions to the definition of WOTUS under the Sackett ruling.

Under a review of jurisdiction based on the pre-2015 regulatory regime and the *Sackett* decision, it is Halff's professional opinion that all aquatic features observed within the study area exhibit a direct surface water connection to Spring Creek and are located within the regulatory floodway of Spring Creek; therefore, the USACE would likely consider these features to be jurisdictional under Section 404.

Demonstrations of jurisdiction herein are based on a preliminary jurisdictional assessment conducted by Halff for consideration by the USACE and are provided as an information tool for the permittee. Changes to current effective rules and/or regulatory practices may result in changes to Halff's jurisdictional opinion. The actual designation will rest with the USACE Galveston District and the EPA, the agencies with regulatory authority for jurisdictional determinations of aquatic features within the study area.

5.0 REFERENCES

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_____. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0), ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-10-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

Figures

N

0 2.5 5 10

Miles

Legend

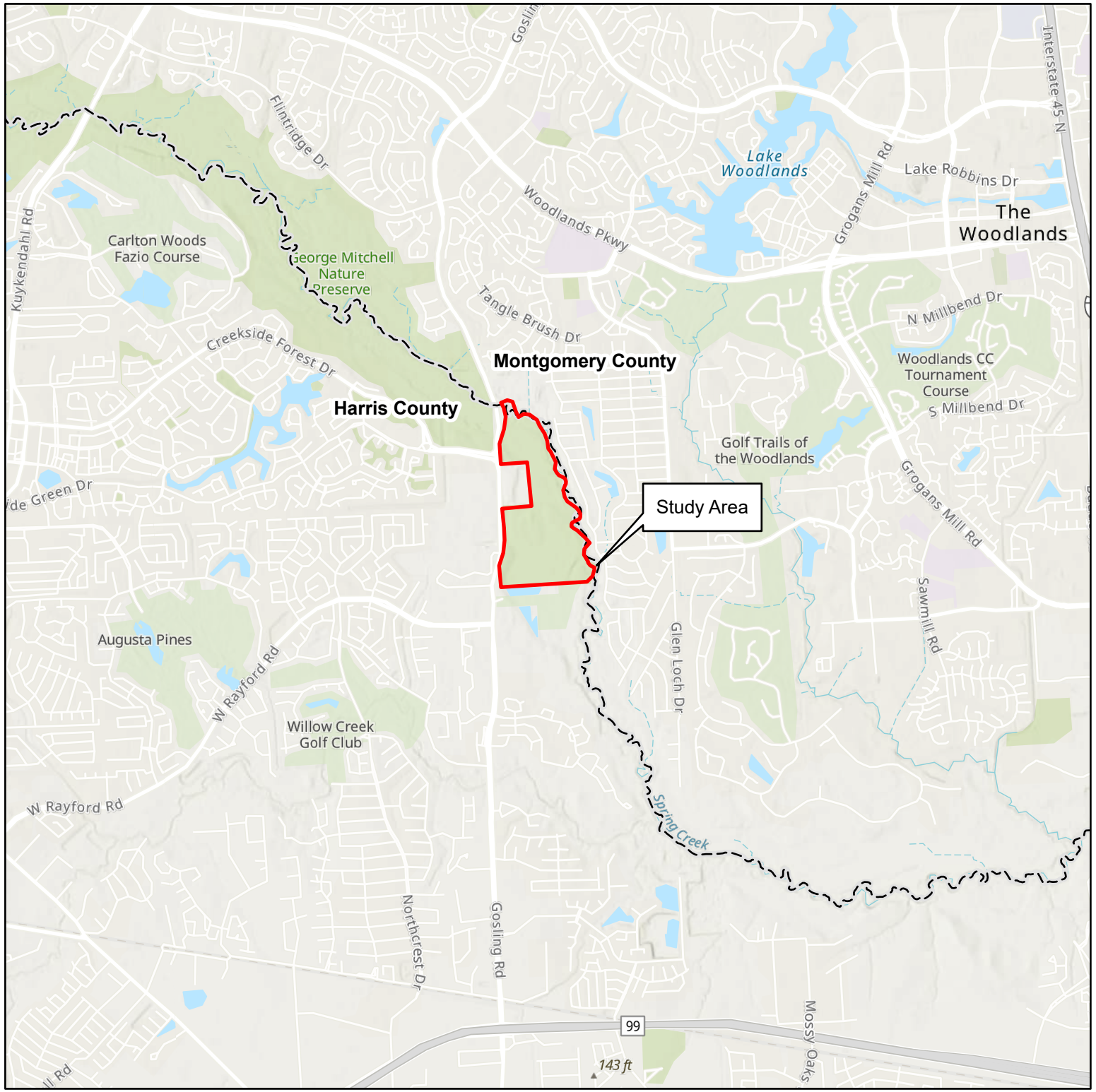
- Study Area
- County Boundary

Notes:
1. Map Center: 95.51389°W 30.13303°N
2. World Street Map: Baylor University, City of Houston, HPB, Montgomery County, TX GIS Office, Texas Parks & Wildlife, CONANP, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS

South Gosling Future Park
Harris County, Texas
Date: 11/7/2023

Figure 1
Location Map

halff



N

0 2,000 4,000 8,000

Feet

Legend

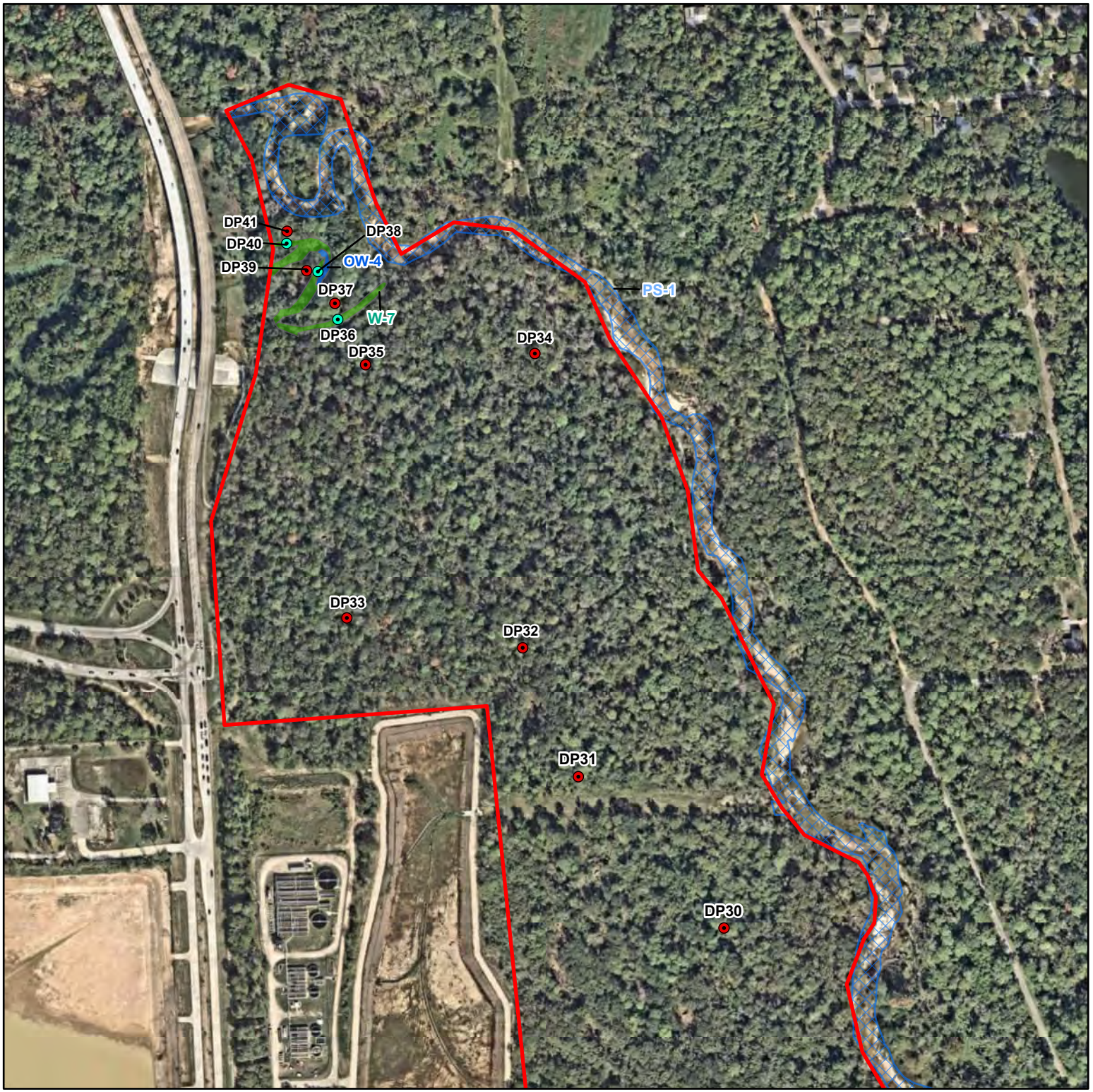
- Study Area
- County Boundary

Notes:
1. Map Center: 95.50047°W 30.13341°N
2. World Topographic Map: Baylor University, City of Houston, HPB, Montgomery County, TX GIS Office, Texas Parks & Wildlife, CONANP, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA
World Hillshade: Esri, NASA, NGA, USGS, FEMA

South Gosling Future Park
Harris County, Texas
Date: 11/7/2023

Figure 2
Vicinity Map

halff



N

0 200 400 800

Feet

Legend

Study Area

Data Point Type

- Wetland Data Point
- Non-Wetland Data Point

Aquatic Features

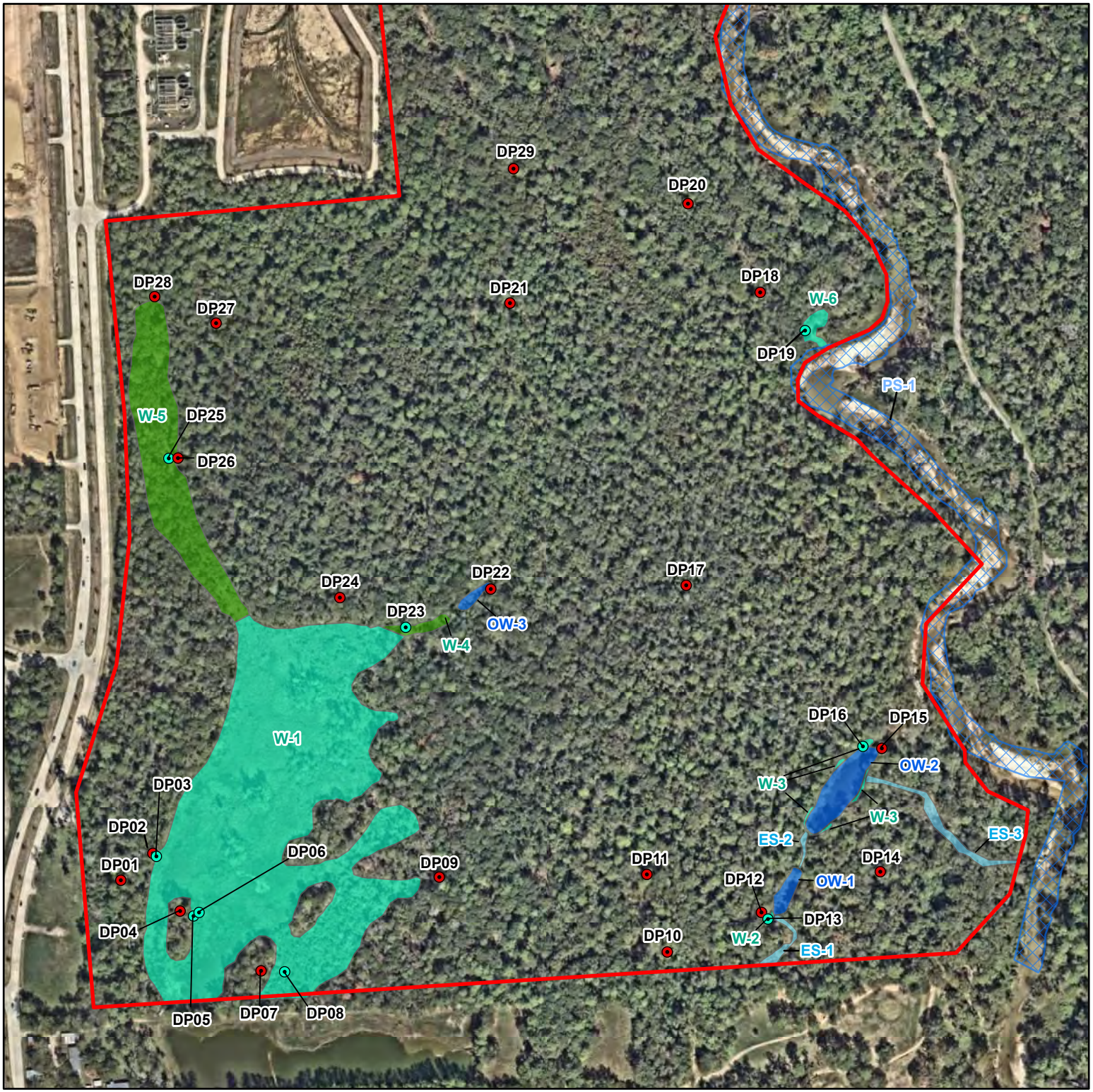
- Forested Wetland
- Open Water Pond
- Perennial Stream

Notes:
1. Map Center: 95.50146°W 30.14156°N
2. Nearmap WMS Server: [2023]

South Gosling Future Park
Harris County County, Texas
Date: 12/1/2023

Figure 3.1
Aquatic Features Map

halff



N

0 200 400 800

Feet

Legend

Study Area

Data Point Type

- Wetland Data Point
- Non-Wetland Data Point

Aquatic Features

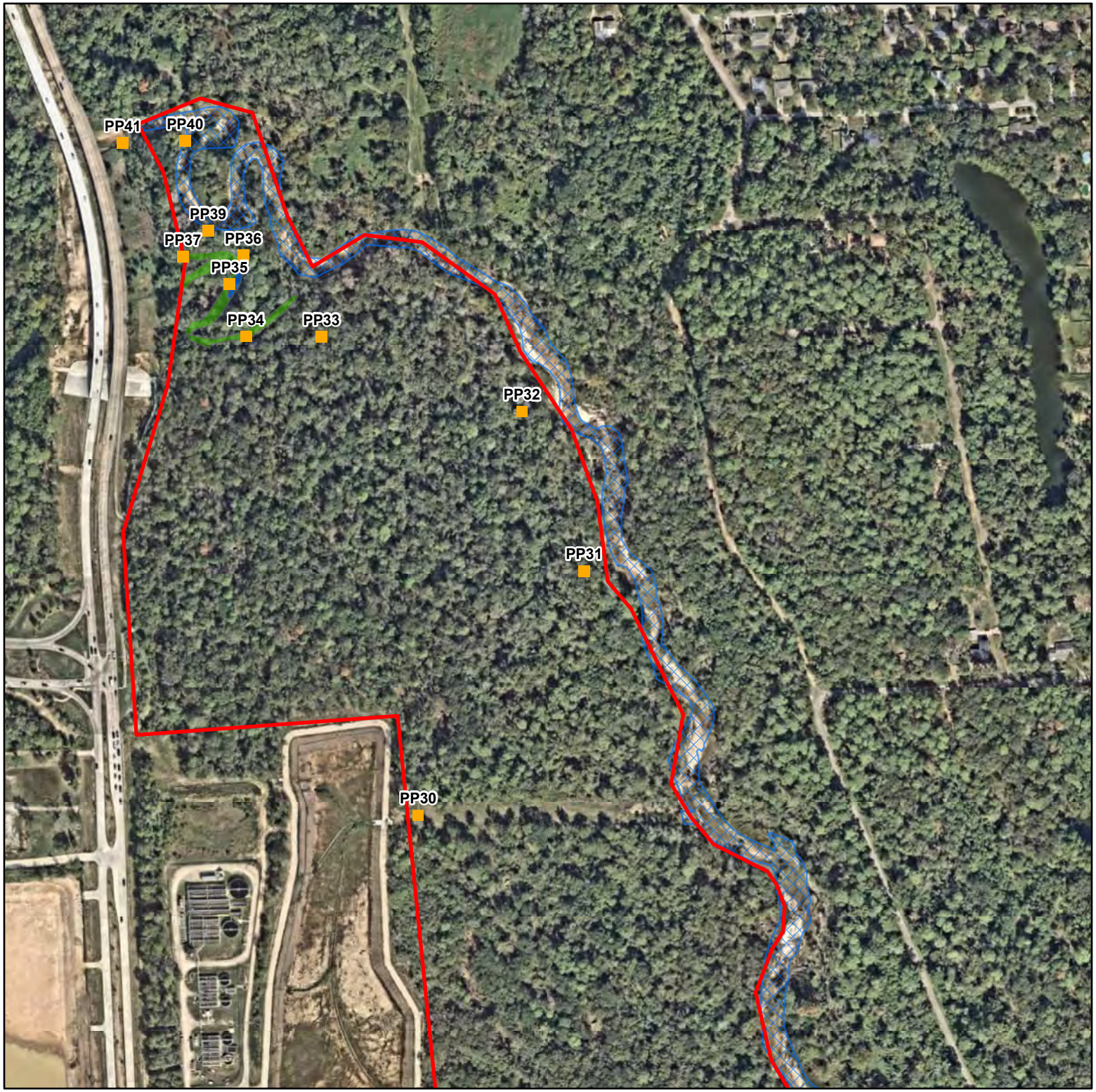
- Emergent Wetland
- Forested Wetland
- Ephemeral Stream
- Open Water Pond
- Perennial Stream

Notes:
1. Map Center: 95.50061°W 30.13383°N
2. Nearmap WMS Server: [2023]

South Gosling Future Park
Harris County County, Texas
Date: 12/1/2023

Figure 3.2
Aquatic Features Map

halff



N

0 200 400 800

Feet

Legend

- Study Area
- Photo Point

Aquatic Features

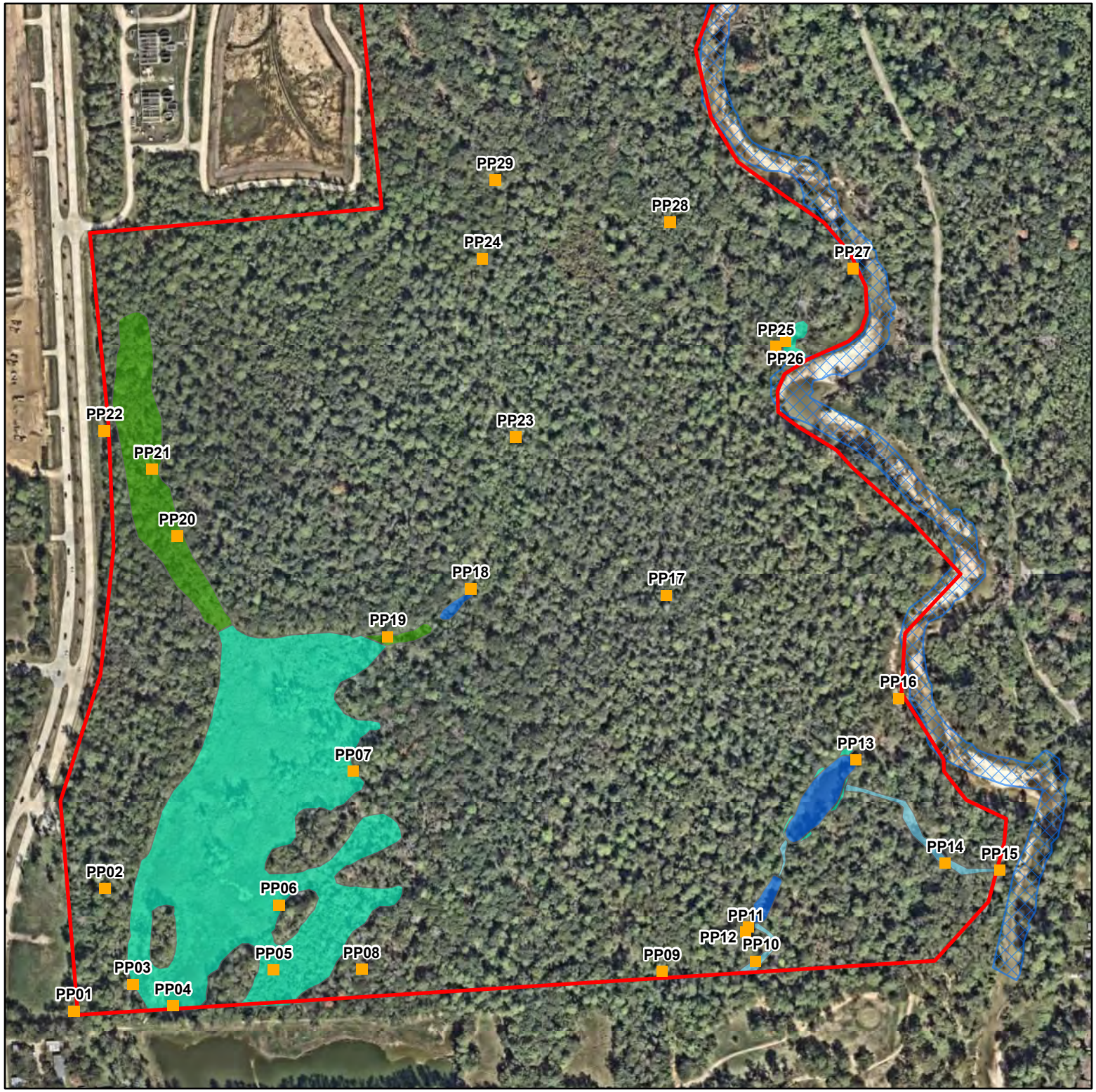
- Forested Wetland
- Open Water Pond
- Perennial Stream

Notes:
1. Map Center: 95.50059°W 30.14162°N
2. Nearmap WMS Server: [2023]

South Gosling Future Park
Harris County, Texas
Date: 12/1/2023

Figure 4.1
Photo Point Location Map

halff



N

0 200 400 800

Feet

Legend

- Study Area
- Photo Point

Aquatic Features

- Emergent Wetland
- Forested Wetland
- Ephemeral Stream
- Open Water Pond
- Perennial Stream

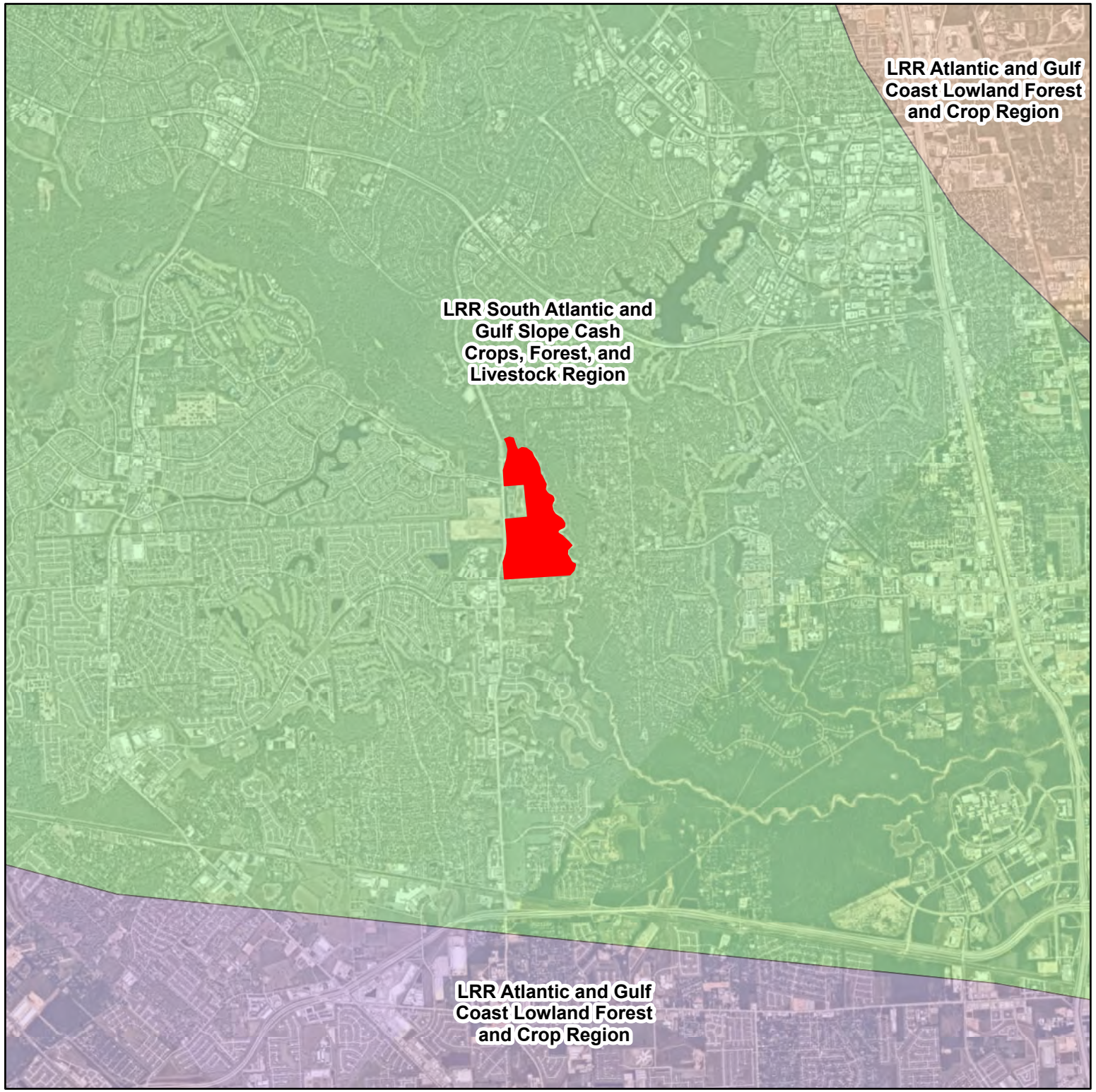
Notes:
1. Map Center: 95.50041°W 30.13391°N
2. Nearmap WMS Server: [2023]

South Gosling Future Park
Harris County, Texas
Date: 12/1/2023

Figure 4.2
Photo Point Location Map

halff

Appendix A: Supporting Documentation



N

0 0.5 1 2

Miles

Legend

Study Area

MLRA Unit

150A - Gulf Coast Prairies

133B - Western Coastal Plain

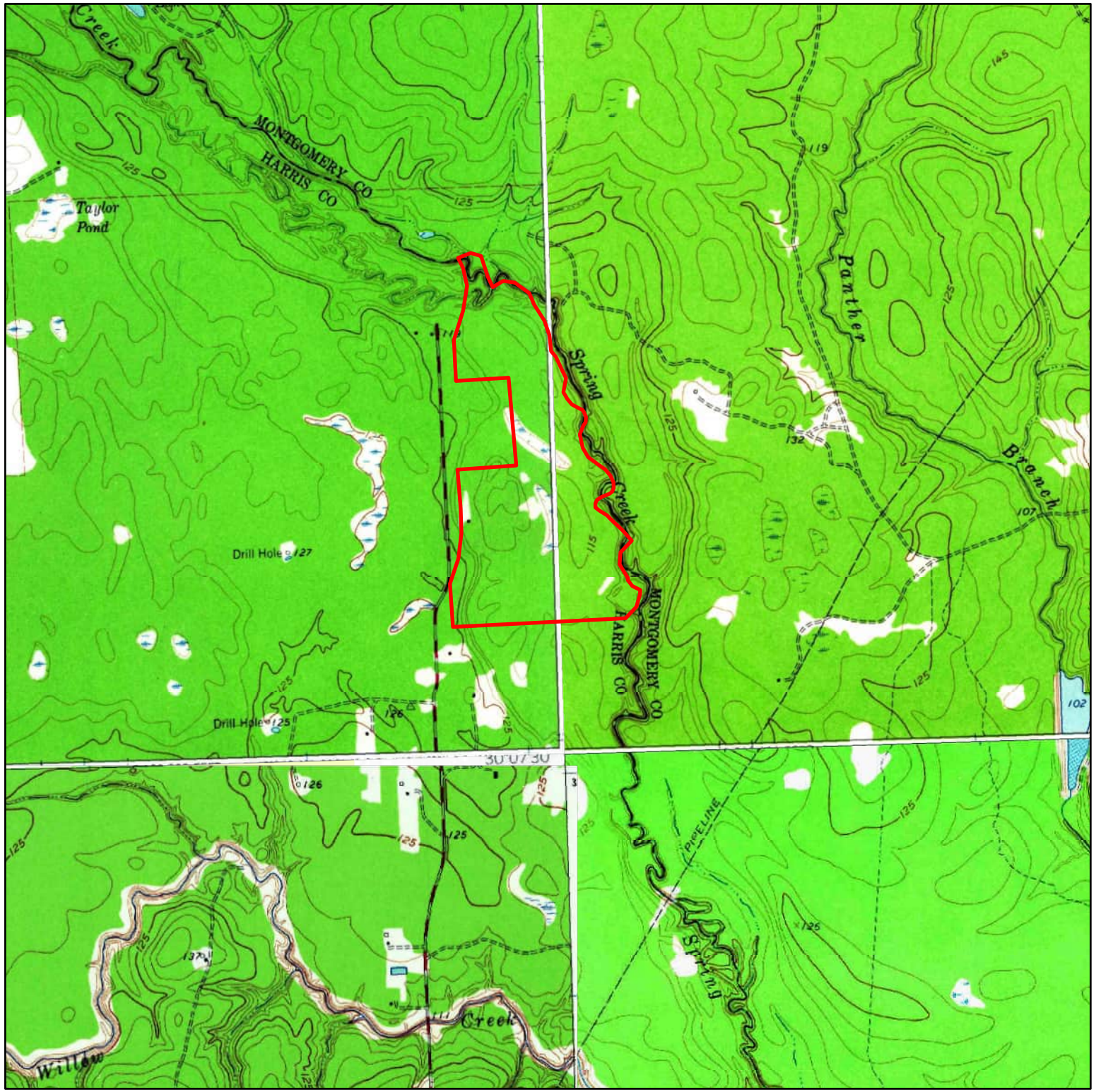
152B - Western Gulf Coast Flatwoods

Notes:
1. Map Center: 95.4995°W 30.13354°N
2. Nearmap WMS Server:
3. USDA Land Resource Regions and Major Land Resource Areas Geographic Database

South Gosling Future Park
Harris County, Texas
Date: 11/6/2023

Figure A-1
MLRA and LRR Map

halff



N

0 1,000 2,000 4,000

Feet

Legend

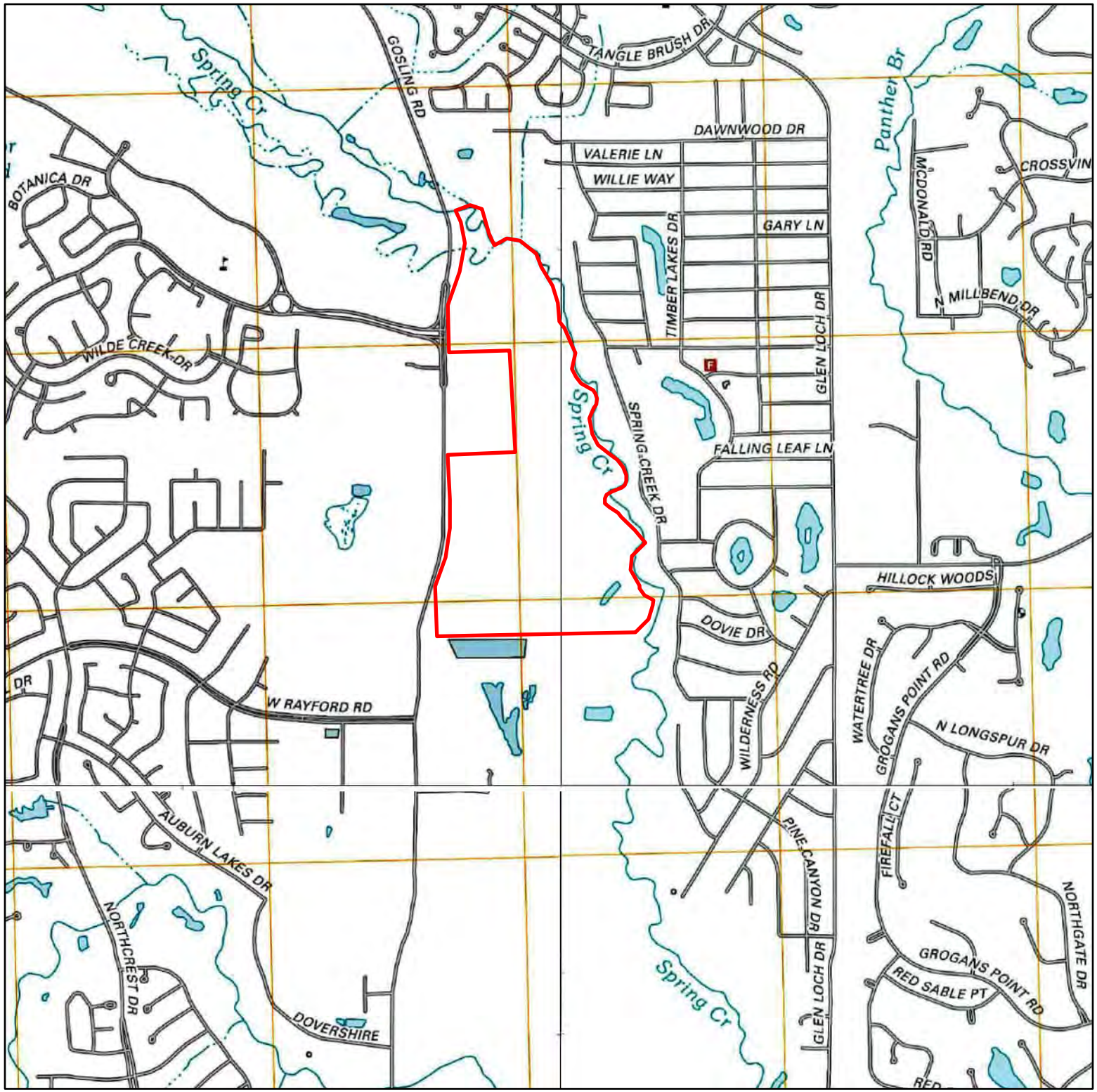
Study Area

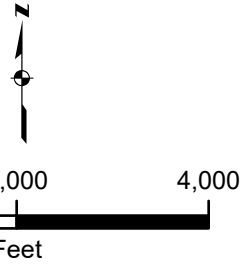
Notes:
1. Map Center: 95.50047°W 30.13341°N
2. USGS topoView: "Tomball, Texas" 7.5 minute quadrangle, 1962 (1964 edition)
3. USGS topoView: "Oklahoma, Texas" 7.5 minute quadrangle, 1962 (1980 edition)
4. USGS topoView: "Tamina, Texas" 7.5 minute quadrangle, 1962 (1980 edition)
5. USGS topoView: "Spring, Texas" 7.5 minute quadrangle, 1962 (1980 edition)

South Gosling Future Park
Harris County, Texas
Date: 11/6/2023

Figure A-2
1962 USGS Topographic Map

halff





Legend

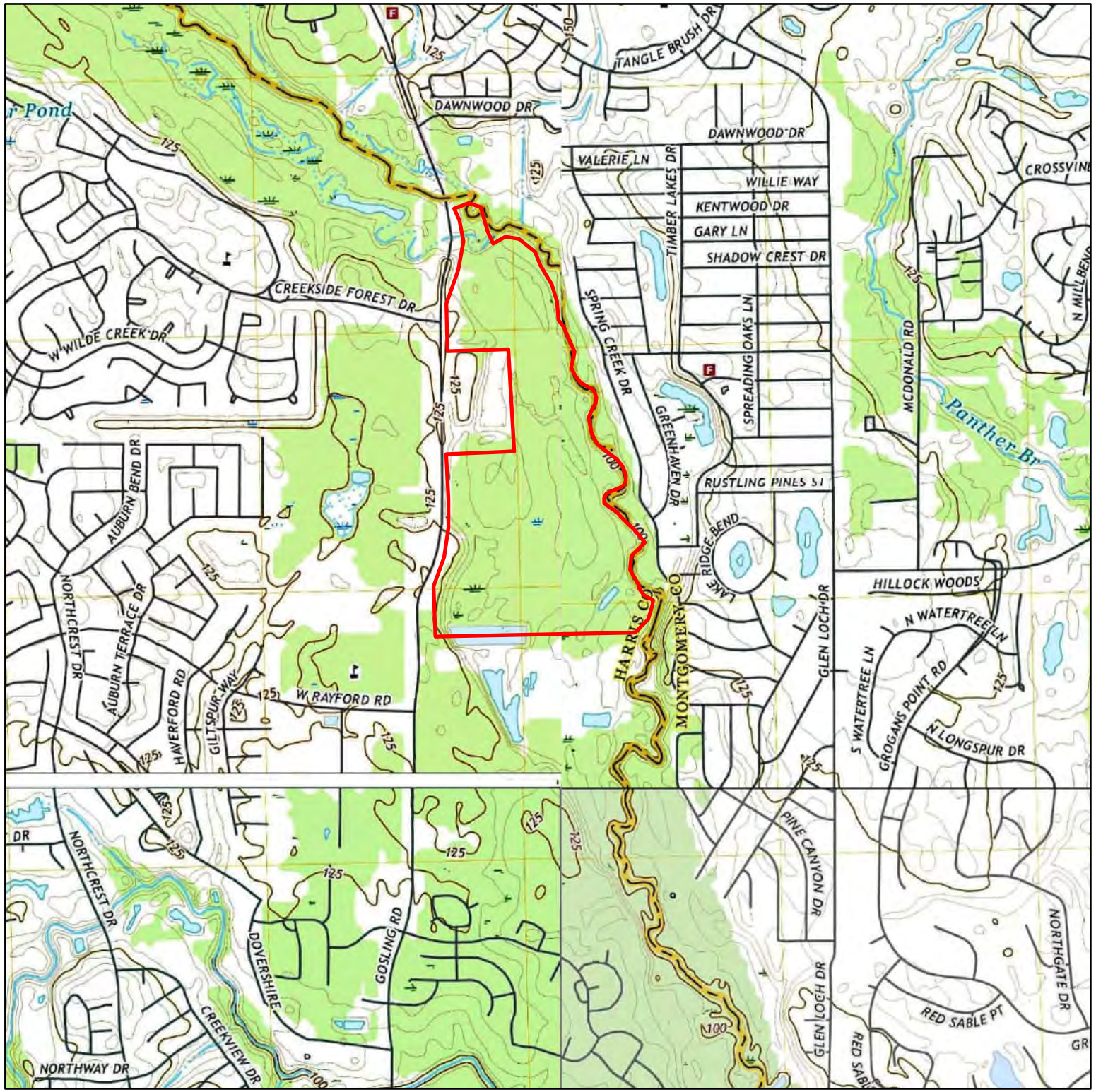
Study Area

Notes:
1. Map Center: 95.50048°W 30.13341°N
2. USGS topoView: "Tomball, Texas" 7.5 minute quadrangle, 2013
3. USGS topoView: "Oklahoma, Texas" 7.5 minute quadrangle, 2013
4. USGS topoView: "Tamina, Texas" 7.5 minute quadrangle, 2013
5. USGS topoView: "Spring, Texas" 7.5 minute quadrangle, 2013

South Gosling Future Park
Harris County, Texas
Date: 11/6/2023

Figure A-3
2013 USGS Topographic Map

halff



N

0 1,000 2,000 4,000

Feet

Legend

Study Area

Notes:
1. Map Center: 95.50048°W 30.13341°N
2. USGS topoView: "Tomball, Texas" 7.5 minute quadrangle, 2022
3. USGS topoView: "Oklahoma, Texas" 7.5 minute quadrangle, 2022
4. USGS topoView: "Tamina, Texas" 7.5 minute quadrangle, 2022
5. USGS topoView: "Spring, Texas" 7.5 minute quadrangle, 2023

South Gosling Future Park
Harris County, Texas
Date: 11/6/2023

Figure A-4
2022 USGS Topographic Map

halff

N

0 400 800 1,600

Feet

Legend

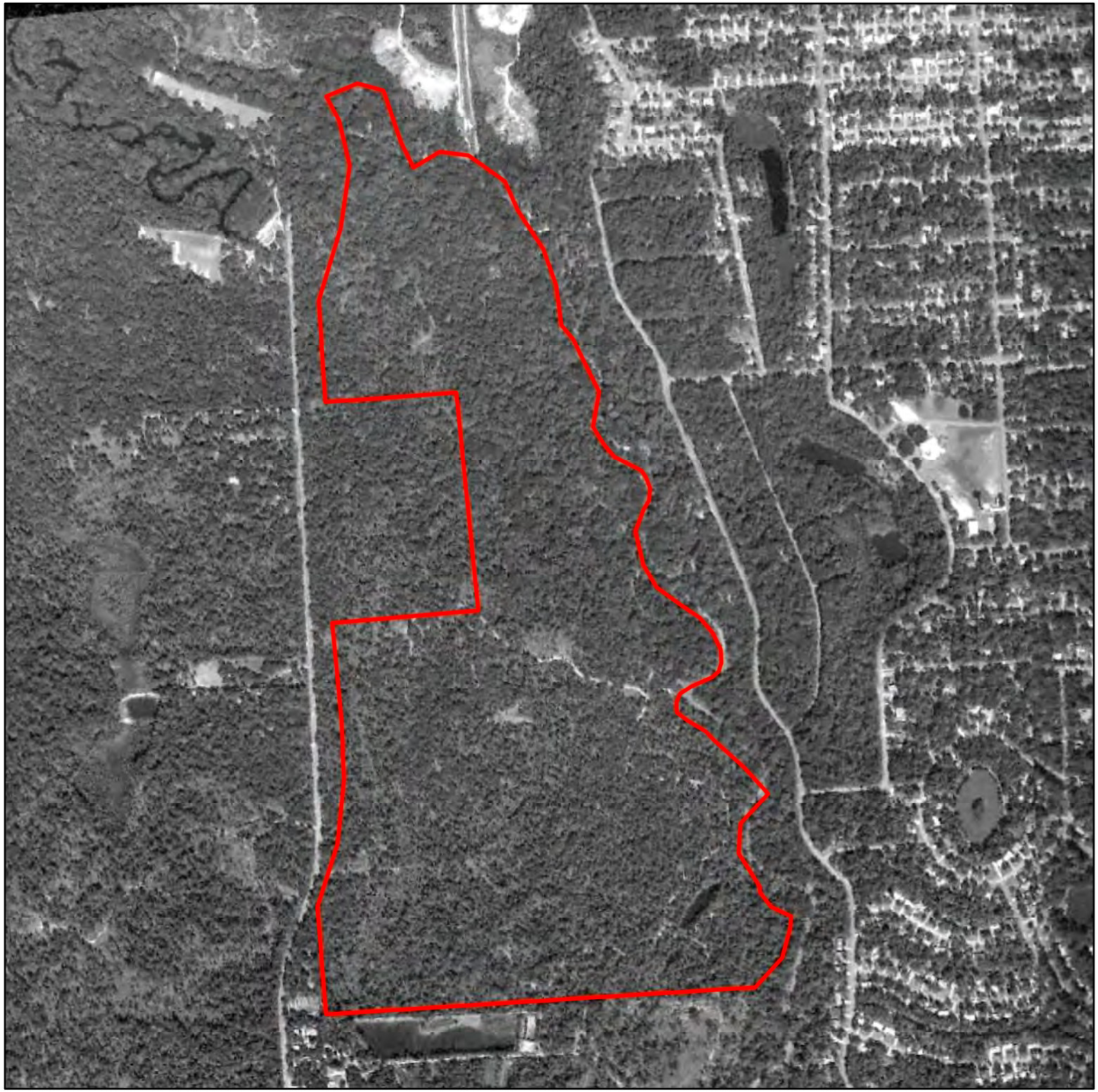
Study Area

Notes:
1. Map Center: 95.50151°W 30.1373°N
2. Google Earth, USDA/FPAC/GEO (1978)

South Gosling Future Park
Harris County, Texas
Date: 11/6/2023

Figure A-5
1978 Aerial Imagery Map

halff



N

0 400 800 1,600

Feet

Legend

Study Area

Notes:
1. Map Center: 95.50045°W 30.13772°N
2. Google Earth, USDA/FPAC/GEO (1978)

South Gosling Future Park
Harris County, Texas
Date: 11/6/2023

Figure A-6
1989 Aerial Imagery Map

halff

N

0 400 800 1,600

Feet

Legend

Study Area

Notes:
1. Map Center: 95.50045°W 30.13772°N
2. Google Earth, USDA/FPAC/GEO (2002)

South Gosling Future Park
Harris County, Texas
Date: 11/6/2023

Figure A-7
2002 Aerial Imagery Map

halff

N

0 400 800 1,600

Feet

Legend

Study Area

Notes:
1. Map Center: 95.50045°W 30.13772°N
2. Google Earth, USDA/FPAC/GEO (2008)

South Gosling Future Park
Harris County, Texas
Date: 11/6/2023

Figure A-8
2008 Aerial Imagery Map

halff

N

0 400 800 1,600

Feet

Legend

Study Area

Notes:
1. Map Center: 95.50045°W 30.13772°N
2. Google Earth, USDA/FPAC/GEO (2015)

South Gosling Future Park
Harris County, Texas
Date: 11/6/2023

Figure A-9
2015 Aerial Imagery Map

halff

N

0 400 800 1,600

Feet

Legend

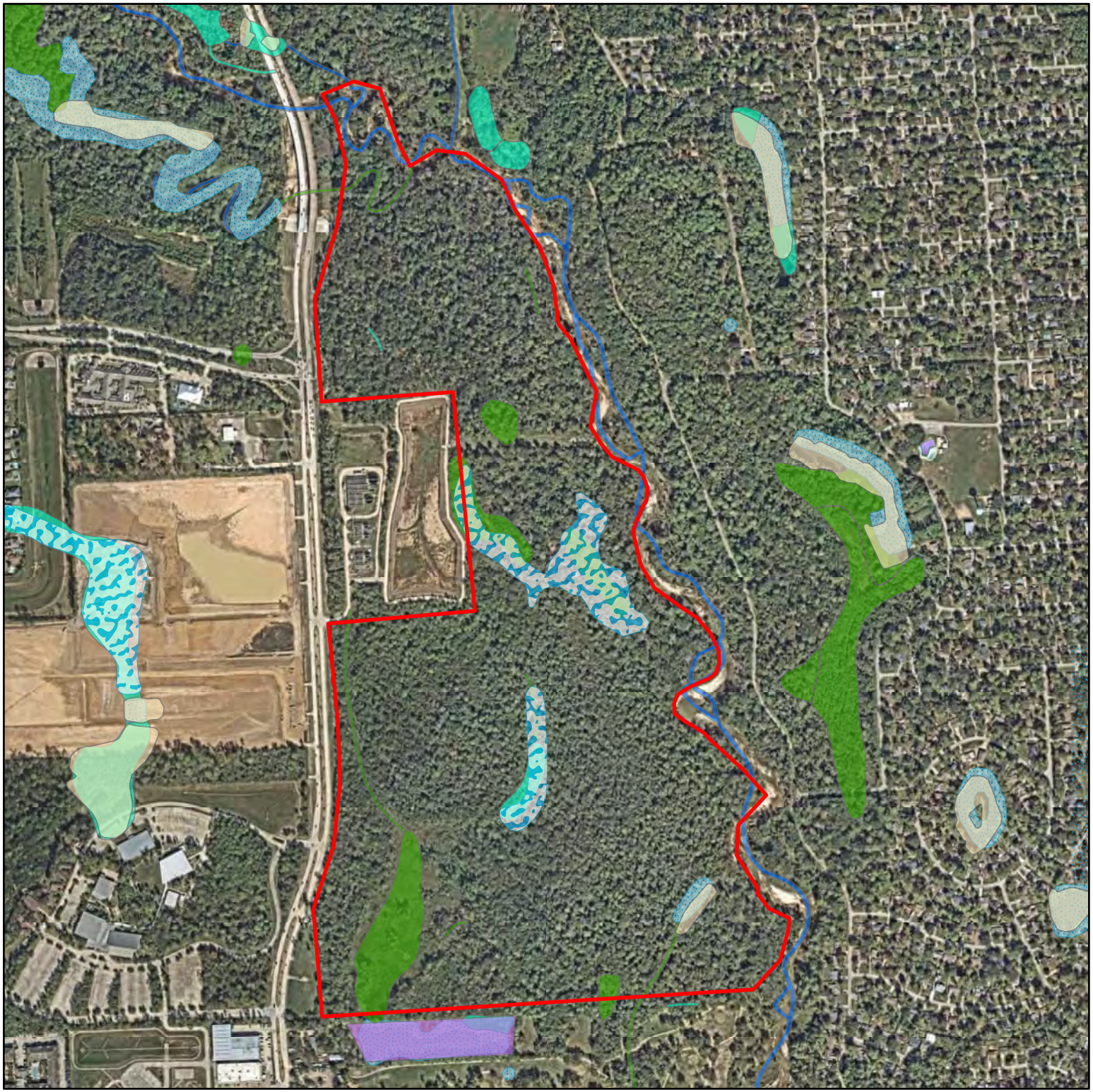
Study Area

Notes:
1. Map Center: 95.50045°W 30.13772°N
World Imagery: Maxar
Hybrid Reference Layer: Esri Community Maps Contributors, Baylor University, City of Houston, HPB, Montgomery County, TX GIS Office, Texas Parks & Wildlife, CONANP, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA [Insert imagery year]

South Gosling Future Park
Harris County, Texas
Date: 11/6/2023

Figure A-10
2022 Aerial Imagery Map

halff



N

0 400 800 1,600

Feet

Legend

StudyArea

NHD Feature Type

- Lake/Pond
- Reservoir
- Swamp/Marsh

NWI Feature Type

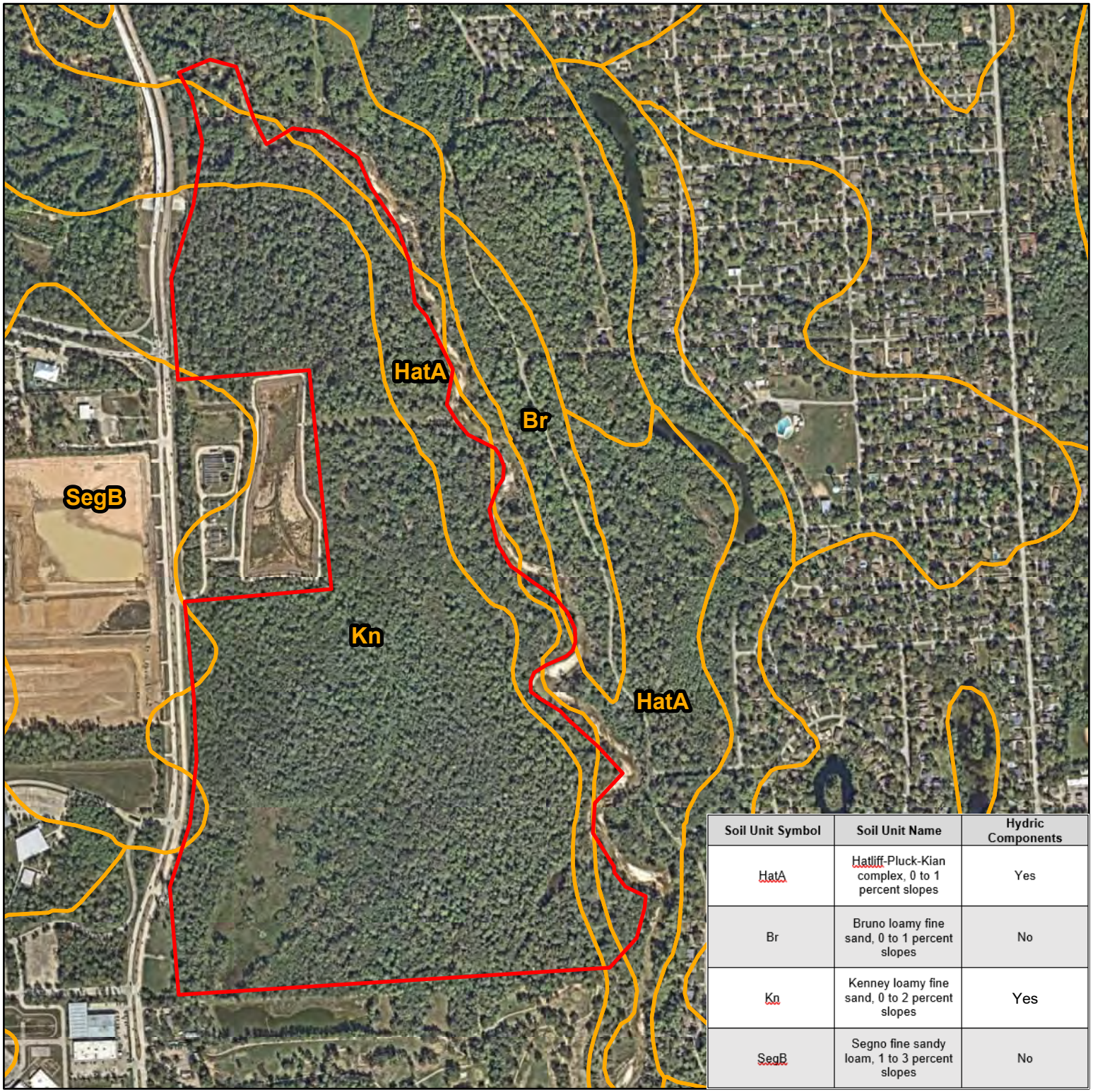
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

Notes:
1. Map Center: 95.50045°W 30.13772°N
Nearmap WMS Server Current: [Insert imagery year]
2. USFWS National Wetlands Inventory
3. USGS National Hydrography Dataset

South Gosling Future Park
Harris County, Texas
Date: 11/6/2023

Figure A-11
NWI and NHD Map

halff



Soil Unit Symbol	Soil Unit Name	Hydric Components
HatA	Hatliff-Pluck-Kian complex, 0 to 1 percent slopes	Yes
Br	Bruno loamy fine sand, 0 to 1 percent slopes	No
Kn	Kenney loamy fine sand, 0 to 2 percent slopes	Yes
SegB	Segno fine sandy loam, 1 to 3 percent slopes	No

N

0 400 800 1,600

Feet

Legend

Study Area

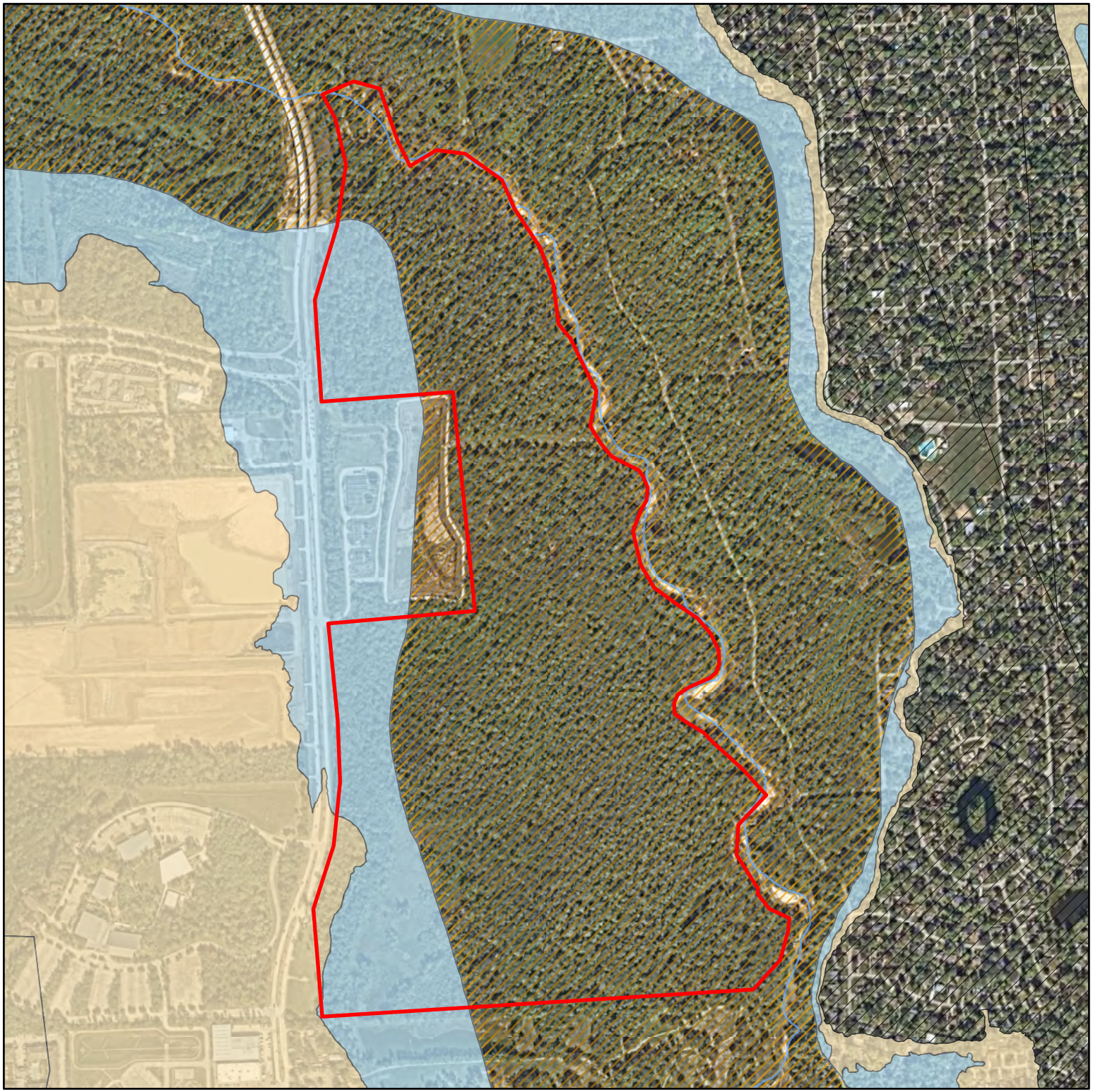
SSURGO Soil Unit

Notes:
1. Map Center: 95.49779°W 30.13727°N
2. Nearmap WMS Server: [2023]
3. USDA NRCS Web Soil Survey

South Gosling Future Park
Harris County, Texas
Date: 11/6/2023

Figure A-12
Soil Map

halff



N

0 400 800 1,600

Feet

Legend

- Study Area

FEMA NFHL

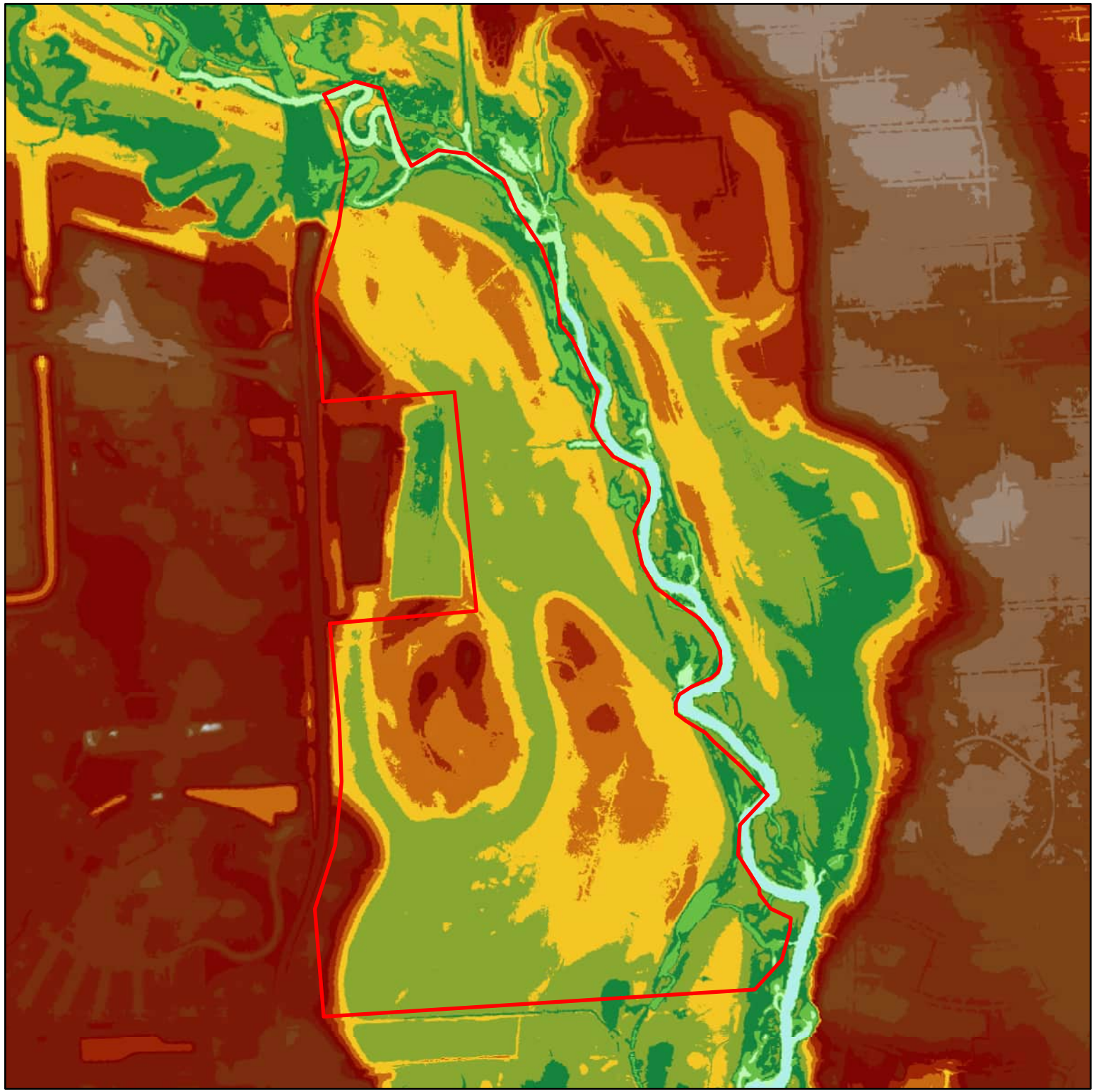
- Floodway
- 100-Year Floodplain
- 500-Year Floodplain
- Area of Minimal Flood Hazard

Notes:
1. Map Center: 95.50045°W 30.13772°N
Nearmap WMS Server Current: 2023
2. FEMA National Flood Hazard Layer

South Gosling Future Park
Harris County, Texas
Date: 11/6/2023

Figure A-13
FEMA Floodplain Map

halff



N

0 400 800 1,600

Feet

Legend

Study Area

LiDAR Value (feet)

Value

49

28

Notes:
1. Map Center: 95.50045°W 30.13772°N

2. TNRIS Datahub, 2018, Oklahoma SE I Tamina SW

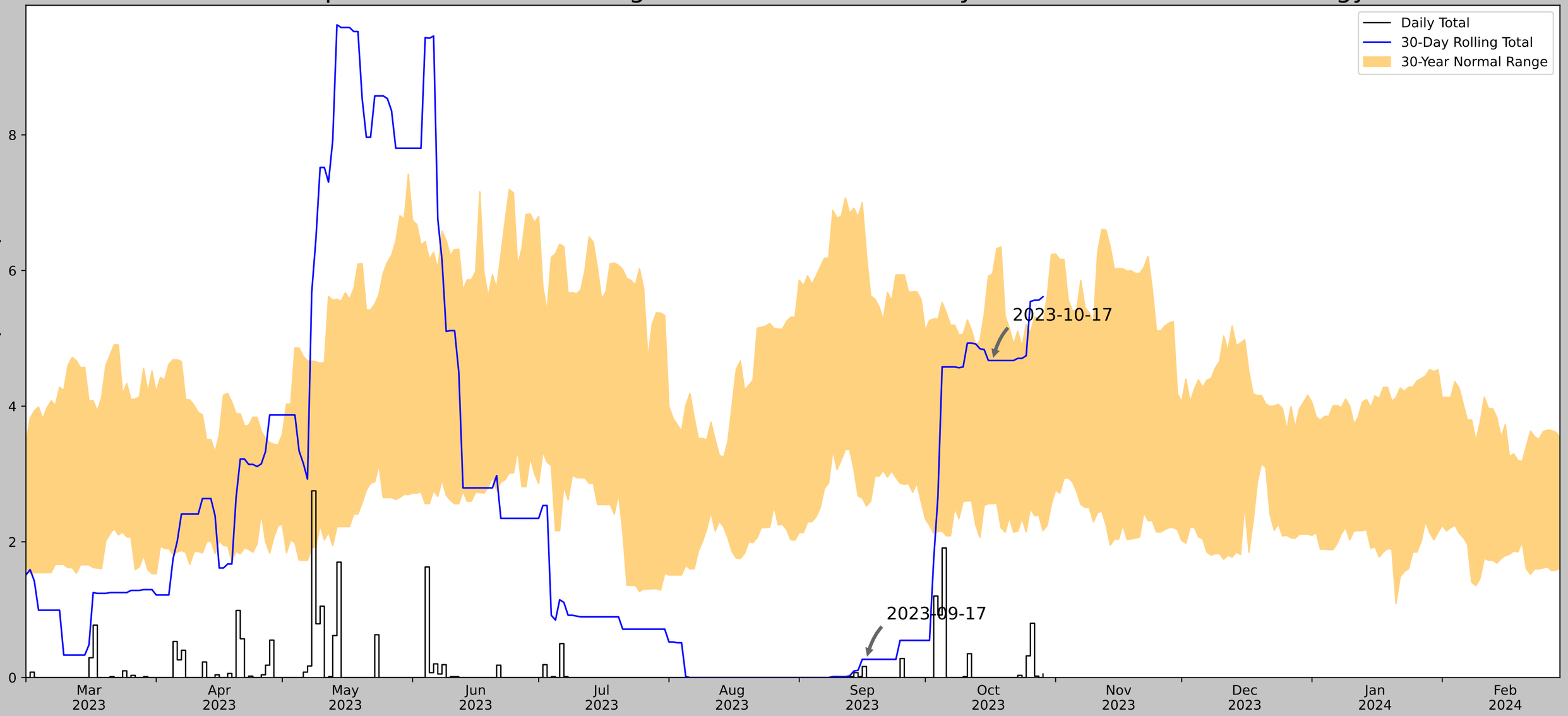
South Gosling Future Park
Harris County, Texas
Date: 11/7/2023

Figure A-14
LiDAR Map

halff

Appendix B: APT Model

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	30.1352177, -95.5008754
Observation Date	2023-10-17
Elevation (ft)	110.661
Drought Index (PDSI)	Severe drought (2023-09)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2023-10-17	2.561811	5.95315	4.673228	Normal	2	3	6
2023-09-17	2.527953	6.233858	0.267717	Dry	1	2	2
2023-08-18	1.752756	4.666929	0.0	Dry	1	1	1
Result							Drier than Normal - 9

US Army Corps of Engineers

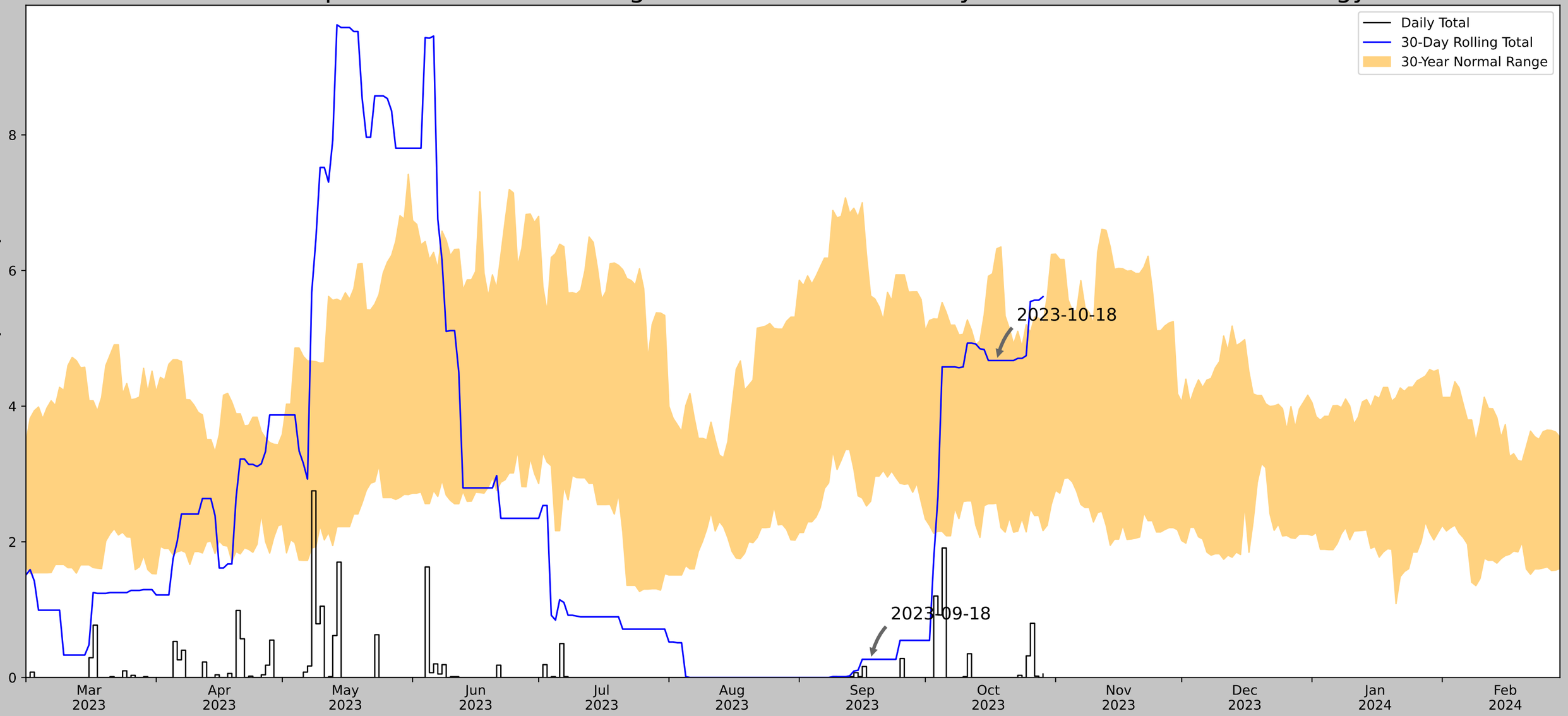
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
HOUSTON HOOKS MEM AP	30.0681, -95.5564	152.887	5.703	42.226	2.807	9308	90
TOMBALL	30.1003, -95.6114	209.974	3.97	57.087	2.013	2044	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	30.1352177, -95.5008754
Observation Date	2023-10-18
Elevation (ft)	110.661
Drought Index (PDSI)	Severe drought (2023-09)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2023-10-18	2.570079	6.320473	4.673228	Normal	2	3	6
2023-09-18	2.598819	5.625197	0.267717	Dry	1	2	2
2023-08-19	1.830709	4.238583	0.0	Dry	1	1	1
Result							Drier than Normal - 9

US Army Corps of Engineers

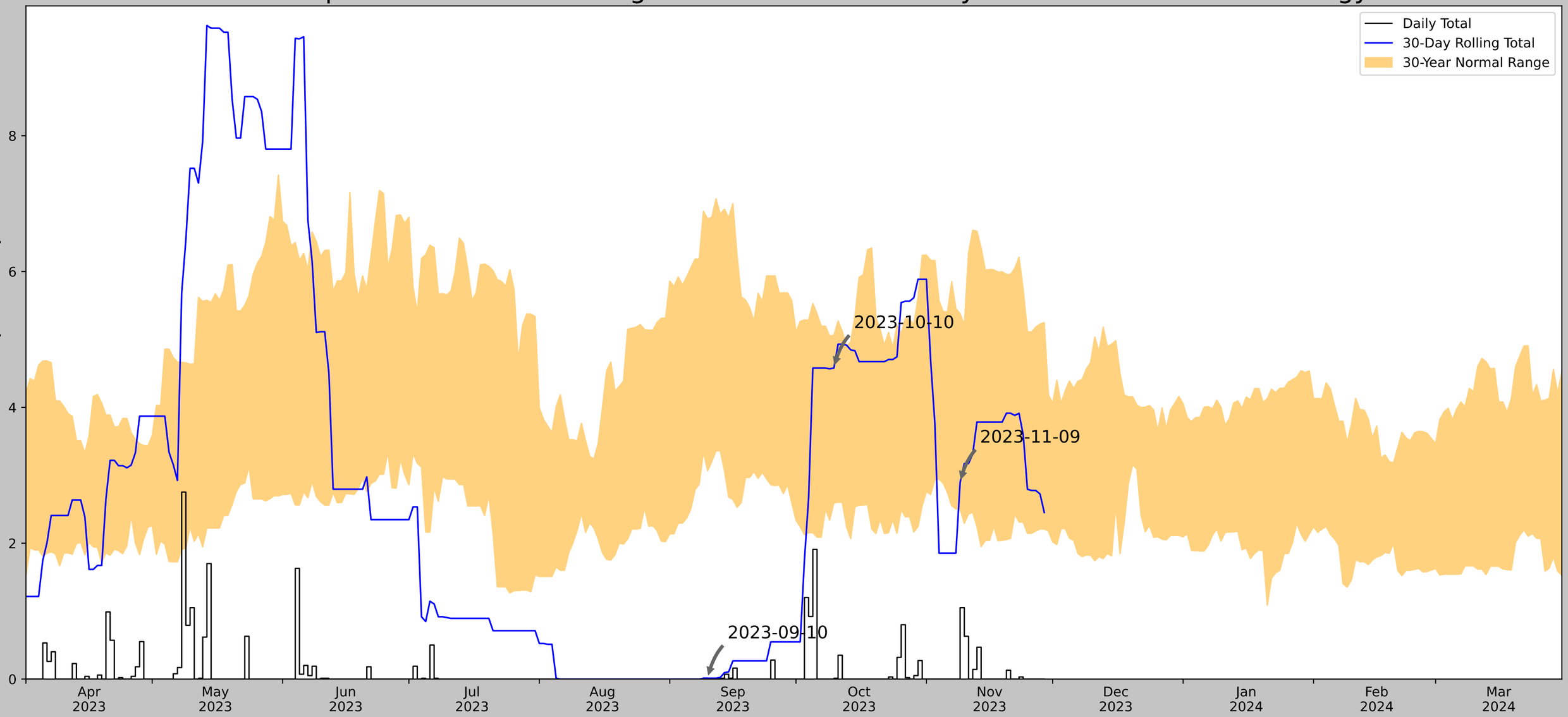
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
HOUSTON HOOKS MEM AP	30.0681, -95.5564	152.887	5.703	42.226	2.807	9308	90
TOMBALL	30.1003, -95.6114	209.974	3.97	57.087	2.013	2044	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	30.1352177, -95.5008754
Observation Date	2023-11-09
Elevation (ft)	110.661
Drought Index (PDSI)	Severe drought (2023-10)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2023-11-09	2.505512	5.37874	2.893701	Normal	2	3	6
2023-10-10	2.594882	5.059055	4.57874	Normal	2	2	4
2023-09-10	3.066142	6.774016	0.011811	Dry	1	1	1
Result							Normal Conditions - 11

US Army Corps of Engineers

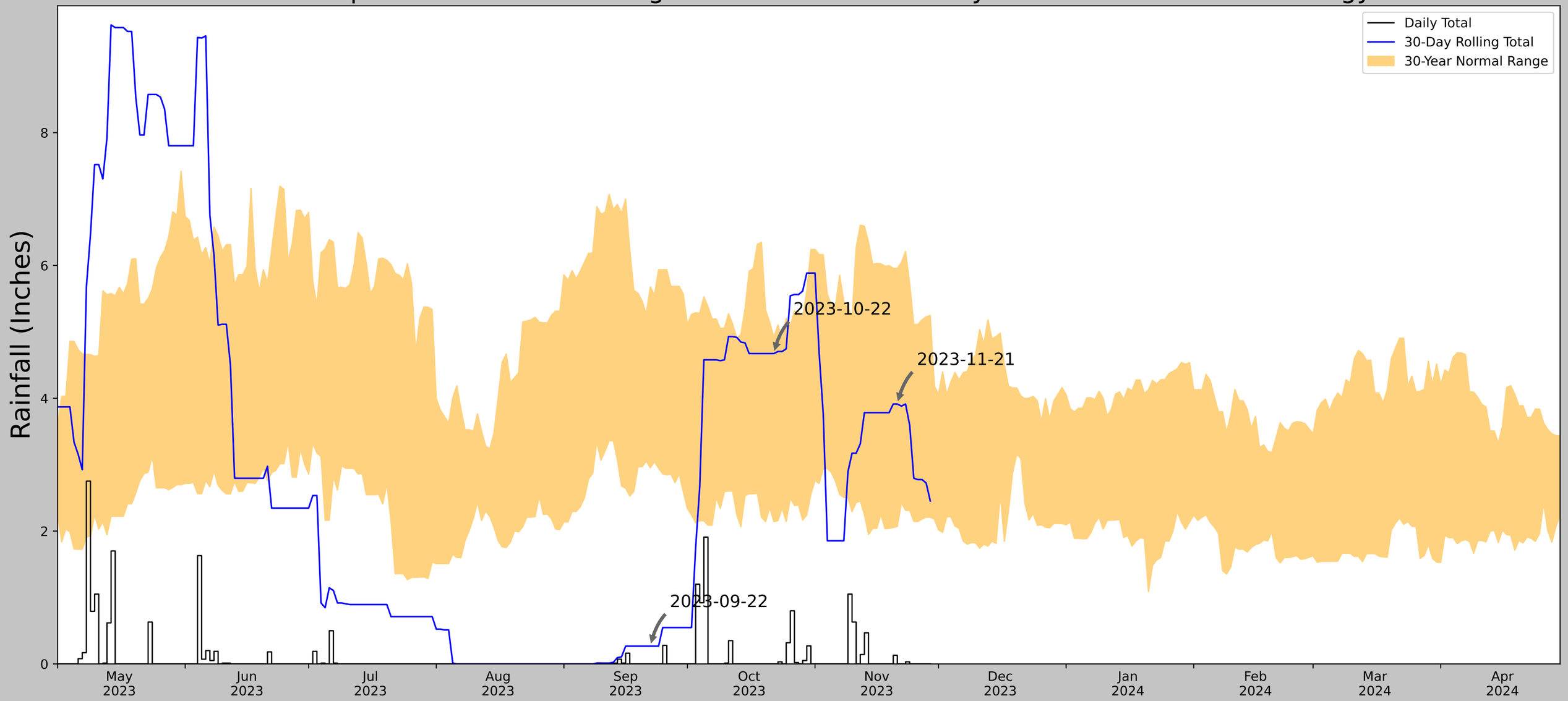
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
HOUSTON HOOKS MEM AP	30.0681, -95.5564	152.887	5.703	42.226	2.807	9308	90
TOMBALL	30.1003, -95.6114	209.974	3.97	57.087	2.013	2044	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	30.1352177, -95.5008754
Observation Date	2023-11-21
Elevation (ft)	110.661
Drought Index (PDSI)	Severe drought (2023-10)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2023-11-21	2.070866	5.957481	3.913386	Normal	2	3	6
2023-10-22	2.142126	4.914173	4.673228	Normal	2	2	4
2023-09-22	2.954331	5.678347	0.267717	Dry	1	1	1
Result							Normal Conditions - 11

US Army Corps of Engineers

ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
HOUSTON HOOKS MEM AP	30.0681, -95.5564	152.887	5.703	42.226	2.807	9308	90
TOMBALL	30.1003, -95.6114	209.974	3.97	57.087	2.013	2044	0

Appendix C: Wetland Data Forms

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-17

Applicant/Owner: The Woodland Township State: Texas Sampling Point: DP-01

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 5

Subregion (LRR or MLRA): P 133B Lat: 30.13126225 Long: -95.50470837 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland woodland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-01

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Nyssa sylvatica	20	✔	FAC
2. Ulmus alata	20	✔	FACU
3. Pinus taeda	15	✔	FAC
4.			
5.			
6.			
	55	= Total Cover	
50% of total cover: 27.50	20% of total cover: 11.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Callicarpa americana	20	✔	FACU
2. Ilex vomitoria	20	✔	FAC
3.			
4.			
5.			
6.			
	40	= Total Cover	
50% of total cover: 20.00	20% of total cover: 8.00		
Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		
Herb Stratum (Plot size: 30 ft r)			
1. Schizachyrium scoparium	5	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5	= Total Cover	
50% of total cover: 2.50	20% of total cover: 1.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	55	x 3 =	165
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals:	100 (A)		345 (B)

Prevalence Index = B/A = 3.45

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ____

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 4/2	100					Loamy Sand	
12 - 18	10YR 6/3	100					Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

Hydric soil criteria is not met.

Data Point: 01	**Wetland:** No	**Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-17

Applicant/Owner: The Woodland Township State: Texas Sampling Point: DP-02

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2

Subregion (LRR or MLRA): P 133B Lat: 30.13147061 Long: -95.50440142 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Upland woodland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-02

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda	20	✔	FAC
2. Ilex opaca	10	✔	FAC
3. Nyssa sylvatica	10	✔	FAC
4. Quercus nigra	10	✔	FAC
5.			
6.			
	50	= Total Cover	
50% of total cover: 25.00	20% of total cover: 10.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Pinus taeda	15	✔	FAC
2. Triadica sebifera	10	✔	FAC
3.			
4.			
5.			
6.			
	25	= Total Cover	
50% of total cover: 12.50	20% of total cover: 5.00		
Shrub Stratum (Plot size: 30 ft r)			
1. Morella cerifera	60	✔	FAC
2. Pteridium aquilinum	5		FACU
3.			
4.			
5.			
6.			
	65	= Total Cover	
50% of total cover: 32.50	20% of total cover: 13.00		
Herb Stratum (Plot size: 30 ft r)			
1. Leersia oryzoides	30	✔	OBL
2. Carex crus-corvi	15	✔	OBL
3. Panicum capillare	15	✔	FAC
4. Eupatorium capillifolium	5		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65	= Total Cover	
50% of total cover: 32.50	20% of total cover: 13.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 10 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	45	x 1 =	45
FACW species	0	x 2 =	0
FAC species	150	x 3 =	450
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	205 (A)		535 (B)

Prevalence Index = B/A = 2.61

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL Sampling Point: DP-02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 3/2	100					Loamy Sand	
4 - 12	10YR 5/2	100					Loamy Sand	
12 - 18	10YR 7/1	98	10YR 6/6	2	C	PL	Sand	
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ✔ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil criteria is met.

Data Point: 02	**Wetland:** No	**Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-17

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-03

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Marsh Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): P 133B Lat: 30.13145314 Long: -95.50436294 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Emergent wetland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes ✔	No _____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-03

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda	5	✔	FAC
2.			
3.			
4.			
5.			
6.			
	5 = Total Cover		
50% of total cover: 2.50	20% of total cover: 1.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Liquidambar styraciflua	5	✔	FAC
2.			
3.			
4.			
5.			
6.			
	5 = Total Cover		
50% of total cover: 2.50	20% of total cover: 1.00		
Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			OBL
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0.00	20% of total cover: 0.00		
Herb Stratum (Plot size: 30 ft r)			
1. Panicum clandestinum	40	✔	FAC
2. Persicaria hydropiperoides	30	✔	OBL
3. Carex crus-corvi	10		OBL
4. Persicaria punctata	10		OBL
5. Typha latifolia	10		OBL
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50.00	20% of total cover: 20.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0.00	20% of total cover: 0.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	x 1 =	60
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	110 (A)		210 (B)

Prevalence Index = B/A = 1.91

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 4/2	100					Loamy Sand	
6 - 18	10YR 4/2	95	10YR 4/6	5	C	PL	Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ✔ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil criteria is met.

Data Point: 03	**Wetland:** Yes	**Community:** Emergent Wetland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-17

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-04

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 5 Long: 9 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland woodland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-04

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda	50	✔	FAC
2. Quercus nigra	20	✔	FAC
3. Carpinus caroliniana	15		FAC
4.			
5.			
6.			
	85	= Total Cover	

50% of total cover: 42.50 20% of total cover: 17.00

Sapling Stratum (Plot size: 30 ft r)			
1. Liquidambar styraciflua	10	✔	FAC
2.			
3.			
4.			
5.			
6.			
	10	= Total Cover	

50% of total cover: 5.00 20% of total cover: 2.00

Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	

50% of total cover: 0.00 20% of total cover: 0.00

Herb Stratum (Plot size: 30 ft r)			
1. Schizachyrium scoparium	15	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15	= Total Cover	

50% of total cover: 7.50 20% of total cover: 3.00

Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	

50% of total cover: 0.00 20% of total cover: 0.00

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	95	x 3 =	285
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	110 (A)		345 (B)

Prevalence Index = B/A = 3.14

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 4/2	100					Loamy Sand	
4 - 18	10YR 5/3	100					Loamy Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) **(MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) **(LRR O)**
___ 2 cm Muck (A10) **(LRR S)**
___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

Hydric soil criteria is not met.

Data Point: 04	**Wetland:** No	**Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-17

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-05

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Marsh Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.13095218 Long: -95.50410715 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
Emergent wetland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ✔	No ____	Depth (inches): 0.5
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-05

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda	20	✔	FAC
2. Ilex opaca	10	✔	FAC
3.			
4.			
5.			
6.			
	30	= Total Cover	
50% of total cover: 15.00	20% of total cover: 6.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Triadica sebifera	60	✔	FAC
2.			
3.			
4.			
5.			
6.			
	60	= Total Cover	
50% of total cover: 30.00	20% of total cover: 12.00		
Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		
Herb Stratum (Plot size: 30 ft r)			
1. Juncus effusus	60	✔	OBL
2. Alternanthera philoxeroides	15		OBL
3. Persicaria punctata	10		OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85	= Total Cover	
50% of total cover: 42.50	20% of total cover: 17.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	85	x 1 =	85
FACW species	0	x 2 =	0
FAC species	90	x 3 =	270
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	175 (A)		355 (B)

Prevalence Index = B/A = 2.03

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-05

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 3/2	100					Loamy Sand	
2 - 18	10YR 5/2	90	10YR 5/6	10	C	PL	Loamy Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ✔ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil criteria is met.

Data Point: 05	**Wetland:** Yes	**Community:** Emergent Wetland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-17

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-06

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Marsh Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.13099546 Long: -95.50400346 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:

Emergent wetland. Hydric soil criteria is met.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✔	No ____	Depth (inches): 6	
Water Table Present?	Yes ✔	No ____	Depth (inches): 0	
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 0	**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is met.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-06

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Triadica sebifera	10	✔	FAC
2.			
3.			
4.			
5.			
6.			
	10 = Total Cover		
50% of total cover: 5.00	20% of total cover: 2.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Triadica sebifera	10	✔	FAC
2.			
3.			
4.			
5.			
6.			
	10 = Total Cover		
50% of total cover: 5.00	20% of total cover: 2.00		
Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0.00	20% of total cover: 0.00		
Herb Stratum (Plot size: 30 ft r)			
1. Persicaria punctata	80	✔	OBL
2. Juncus effusus	20	✔	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50.00	20% of total cover: 20.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1. Mikania scandens	10	✔	FACW
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5.00	20% of total cover: 2.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	100	x 1 =	100
FACW species	10	x 2 =	20
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	130 (A)		180 (B)

Prevalence Index = B/A = 1.38

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-06

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 3/2	100					Loamy Sand	
2 - 18	10YR 5/2	90	10YR 5/6	10	C	PL	Loamy Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ✔ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

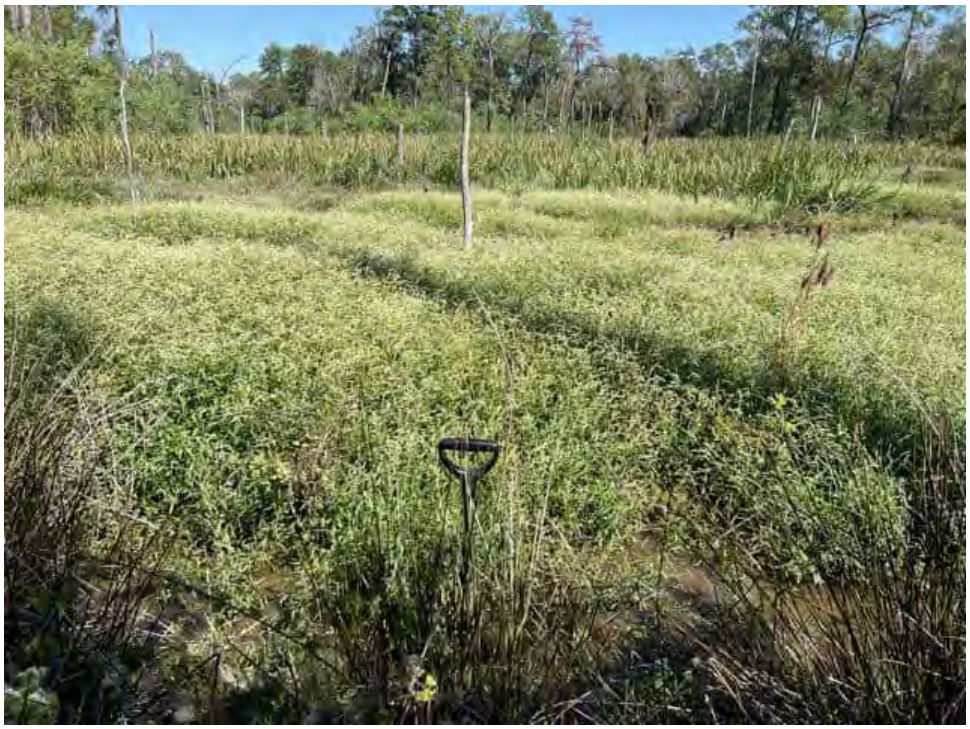
Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil criteria is met.

Data Point: 06	**Wetland:** Yes	**Community:** Emergent Wetland



WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-17

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-07

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.13049532 Long: -95.5034463 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ____	No ✔	

Remarks:
Upland woodland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-07

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus nigra	40	✔	FAC
2. Liquidambar styraciflua	10	✔	FAC
3.			
4.			
5.			
6.			
	50	= Total Cover	
50% of total cover: 25.00	20% of total cover: 10.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Triadica sebifera	10	✔	FAC
2. Pinus taeda	5	✔	FAC
3. Quercus phellos	5	✔	FACW
4.			
5.			
6.			
	20	= Total Cover	
50% of total cover: 10.00	20% of total cover: 4.00		
Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		
Herb Stratum (Plot size: 30 ft r)			
1. Schizachyrium scoparium	80	✔	FACU
2. Carex crus-corvi	10		OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90	= Total Cover	
50% of total cover: 45.00	20% of total cover: 18.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	5	x 2 =	10
FAC species	65	x 3 =	195
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals:	160 (A)		535 (B)

Prevalence Index = B/A = 3.34

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-07

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 3/2	100					Loamy Sand	
2 - 18	10YR 5/2	95	10YR 5/6	5	C	PL	Loamy Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ✔ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil criteria is met.

Data Point: 07	**Wetland:** No	**Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-17

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-08

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): P 133B Lat: 30.13047695 Long: -95.50323115 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
Emergent wetland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ✔	No ____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-08

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			FAC
	0 = Total Cover		
50% of total cover: 0.00	20% of total cover: 0.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Triadica sebifera	20	✔	FAC
2.			
3.			
4.			
5.			
6.			
	20 = Total Cover		
50% of total cover: 10.00	20% of total cover: 4.00		
Shrub Stratum (Plot size: 30 ft r)			
1. Sabal minor	10	✔	FACW
2.			
3.			
4.			
5.			
6.			
	10 = Total Cover		
50% of total cover: 5.00	20% of total cover: 2.00		
Herb Stratum (Plot size: 30 ft r)			
1. Persicaria punctata	40	✔	OBL
2. Alternanthera philoxeroides	30	✔	OBL
3. Juncus effusus	30	✔	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50.00	20% of total cover: 20.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0.00	20% of total cover: 0.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	100	x 1 =	100
FACW species	10	x 2 =	20
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	130 (A)		180 (B)

Prevalence Index = B/A = 1.38

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-08

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 3/2	100					Loamy Sand	
2 - 18	10YR 5/2	90	10YR 4/6	10	C	PL	Loamy Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ✔ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil criteria is met.

Data Point: 08 **Wetland:** Yes **Community:** Emergent Wetland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-17

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-09

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.13119361 Long: -95.50174773 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ____	No ✔	

Remarks:

Upland woodland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-09

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus nigra	30	✔	FAC
2. Pinus taeda	15	✔	FAC
3. Carya illinoinensis	10		FACU
4. Liquidambar styraciflua	10		FAC
5.			
6.			
	65 = Total Cover		
50% of total cover: 32.50	20% of total cover: 13.00		
Sapling Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0.00	20% of total cover: 0.00		
Shrub Stratum (Plot size: 30 ft r)			
1. Sabal minor	10	✔	FACW
2.			
3.			
4.			
5.			
6.			
	10 = Total Cover		
50% of total cover: 5.00	20% of total cover: 2.00		
Herb Stratum (Plot size: 30 ft r)			
1. Oryzopsis asperifolia	10	✔	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
50% of total cover: 5.00	20% of total cover: 2.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1. Brunnichia ovata	2		FACW
2. Rubus trivialis	2		FACU
3.			
4.			
5.			
	4 = Total Cover		
50% of total cover: 2.00	20% of total cover: 0.80		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	12	x 2 =	24
FAC species	55	x 3 =	165
FACU species	12	x 4 =	48
UPL species	0	x 5 =	0
Column Totals:	79 (A)		237 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-09

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 4/2	100					Loamy Sand	
2 - 18	10YR 5/2	90	10YR 5/6	10	C	PL	Loamy Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ✔ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil criteria is met.

Data Point: 09	**Wetland:** Yes	**Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-18

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-10

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): P 133B Lat: 30.13052221 Long: -95.4996406 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: PFO1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ____	No ✔	

Remarks:
Upland woodland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-10

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Liquidambar styraciflua	20	✔	FAC
2. Triadica sebifera	15	✔	FAC
3.			
4.			
5.			
6.			
	35	= Total Cover	
50% of total cover: 17.50		20% of total cover: 7.00	

Sapling Stratum (Plot size: 30 ft r)			
1. Triadica sebifera	20	✔	FAC
2.			
3.			
4.			
5.			
6.			
	20	= Total Cover	
50% of total cover: 10.00		20% of total cover: 4.00	

Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0.00		20% of total cover: 0.00	

Herb Stratum (Plot size: 30 ft r)			
1. Oryzopsis asperifolia	40	✔	
2. Persicaria punctata	40	✔	OBL
3. Carex buxbaumii	10		OBL
4. Oryzopsis asperifolia			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90	= Total Cover	
50% of total cover: 45.00		20% of total cover: 18.00	

Woody Vine Stratum (Plot size: 30 ft r)			
1. Smilax bona-nox	10	✔	FAC
2.			
3.			
4.			
5.			
	10	= Total Cover	
50% of total cover: 5.00		20% of total cover: 2.00	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	0	x 2 =	0
FAC species	65	x 3 =	195
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	115 (A)		245 (B)

Prevalence Index = B/A = 2.13

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 4/2	98	10YR 5/6	2	C	PL	Loamy Sand	
3 - 18	10YR 6/2	80	5YR 4/6	20	C	PL	Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ✔ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil criteria is met.

Data Point: 10	**Wetland:** No	**Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-18

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-11

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.13114637 Long: -95.49980549 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Upland woodland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-11

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda	20	✔	FAC
2. Quercus nigra	15	✔	FAC
3.			
4.			
5.			
6.			
	35 = Total Cover		
50% of total cover: 17.50	20% of total cover: 7.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Ilex vomitoria	15	✔	FAC
2.			
3.			
4.			
5.			
6.			
	15 = Total Cover		
50% of total cover: 7.50	20% of total cover: 3.00		
Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0.00	20% of total cover: 0.00		
Herb Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0.00	20% of total cover: 0.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1. Vitis rotundifolia	5	✔	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.50	20% of total cover: 1.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	55	x 3 =	165
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	55 (A)		165 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 3/2	100					Loamy Sand	
3 - 18	10YR 5/2	90	10YR 4/6	10	C	PL	Loamy Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ✔ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil criteria is met.

Data Point: 11	**Wetland:** No	**Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-18

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-12

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Terrace/floodplain Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR or MLRA): P 133B Lat: 30.13079123 Long: -95.49876716 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland woodland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-12

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Carpinus caroliniana	20	✔	FAC
2. Quercus nigra	15	✔	FAC
3.			
4.			
5.			
6.			
	35 = Total Cover		
50% of total cover: 17.50	20% of total cover: 7.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Carpinus caroliniana	5	✔	FAC
2. Ilex vomitoria	5	✔	FAC
3. Quercus virginiana	5	✔	FACU
4. Persea borbonia	2		FACW
5.			
6.			
	17 = Total Cover		
50% of total cover: 8.50	20% of total cover: 3.40		
Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0.00	20% of total cover: 0.00		
Herb Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0.00	20% of total cover: 0.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1. Smilax glauca	2		FAC
2.			
3.			
4.			
5.			
	2 = Total Cover		
50% of total cover: 1.00	20% of total cover: 0.40		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	2	x 2 =	4
FAC species	47	x 3 =	141
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	54 (A)		165 (B)

Prevalence Index = B/A = 3.06

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 4/2	100					Loamy Sand	
4 - 18	10YR 6/4	100					Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

Hydric soil criteria is not met.

Data Point: 12	**Wetland:** No	**Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-18

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-13

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Channel Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): P 133B Lat: 30.13073751 Long: -95.498694 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
Emergent wetland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ✔	No ____	Depth (inches): 8
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is met.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-13

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Liquidambar styraciflua	15	✔	FAC
2. Quercus nigra	15	✔	FAC
3.			
4.			
5.			
6.			
	30	= Total Cover	
50% of total cover: 15.00	20% of total cover: 6.00		
Sapling Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		
Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		
Herb Stratum (Plot size: 30 ft r)			
1. Persicaria punctata	60	✔	OBL
2. Triadenum virginicum	20	✔	
3. Cephalanthus occidentalis	10		OBL
4. Lysimachia nummularia	10		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
50% of total cover: 50.00	20% of total cover: 20.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70	x 1 =	70
FACW species	10	x 2 =	20
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	110 (A)		180 (B)

Prevalence Index = B/A = 1.64

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 2	10YR 3/2	100					Loamy Sand	
2 - 10	10YR 5/2	90	10YR 5/6	10	C	PL	Loamy Sand	
10 - 18	10YR 6/1	80	10YR 5/6	20	C	PL	Loamy Sand	
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ✔ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil criteria is met.

Data Point: 13	**Wetland:** Yes	**Community:** Emergent Wetland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-18

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-14

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.13108053 Long: -95.49765688 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Upland woodland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-14

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda	20	✔	FAC
2. Quercus nigra	15	✔	FAC
3.			
4.			
5.			
6.			
	35 = Total Cover		
50% of total cover: 17.50	20% of total cover: 7.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Ilex vomitoria	15	✔	FAC
2.			
3.			
4.			
5.			
6.			
	15 = Total Cover		
50% of total cover: 7.50	20% of total cover: 3.00		
Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0.00	20% of total cover: 0.00		
Herb Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0.00	20% of total cover: 0.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1. Vitis rotundifolia	5	✔	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.50	20% of total cover: 1.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	55	x 3 =	165
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	55 (A)		165 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 3/2	100					Loamy Sand	
3 - 18	10YR 5/2	90	10YR 4/6	10	C	PL	Loamy Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ✔ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil criteria is met.

Data Point: 14	**Wetland:** No	**Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-18

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-15

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Terrace/floodplain Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR or MLRA): P 133B Lat: 30.13208579 Long: -95.49757055 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Riparian woodland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-15

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Betula nigra	15	✔	FACW
2. Liquidambar styraciflua	15	✔	FAC
3. Ulmus pumila	10	✔	FACU
4.			
5.			
6.			
	40	= Total Cover	
50% of total cover: 20.00	20% of total cover: 8.00		

Sapling Stratum (Plot size: 30 ft r)			
1. Liquidambar styraciflua	15	✔	FAC
2. Triadica sebifera	10	✔	FAC
3. Quercus phellos	5		FACW
4.			
5.			
6.			
	30	= Total Cover	
50% of total cover: 15.00	20% of total cover: 6.00		

Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Herb Stratum (Plot size: 30 ft r)			
1. Symphyotrichum ericoides	20	✔	UPL
2. Elephantopus carolinianus	10	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30	= Total Cover	
50% of total cover: 15.00	20% of total cover: 6.00		

Woody Vine Stratum (Plot size: 30 ft r)			
1. Brunnichia ovata	15	✔	FACW
2.			
3.			
4.			
5.			
	15	= Total Cover	
50% of total cover: 7.50	20% of total cover: 3.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 62.50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	40	x 3 =	120
FACU species	20	x 4 =	80
UPL species	20	x 5 =	100
Column Totals:	115 (A)		370 (B)

Prevalence Index = B/A = 3.22

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 10	2.5YR 8/2	100					Sand	
10 - 18	2.5YR 8/2	80	10YR 5/8	20	C	M	Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

Hydric soil criteria is not met.

Data Point: 15	**Wetland:** No	**Community:** Riparian Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-18

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-16

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): P 133B Lat: 30.13210354 Long: -95.49774242 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: PUBH

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
Emergent wetland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present? Yes ____ No ✔ Depth (inches): ____

Water Table Present? Yes ✔ No ____ Depth (inches): 8

Saturation Present? (includes capillary fringe) Yes ✔ No ____ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is met.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-16

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Liquidambar styraciflua	10	✔	FAC
2. Triadica sebifera	10	✔	FAC
3. Ulmus crassifolia	10	✔	FAC
4.			
5.			
6.			
	30	= Total Cover	
50% of total cover: 15.00	20% of total cover: 6.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Triadica sebifera	10	✔	FAC
2. Cephalanthus occidentalis	5	✔	OBL
3. Ulmus crassifolia	5	✔	FAC
4.			
5.			
6.			
	20	= Total Cover	
50% of total cover: 10.00	20% of total cover: 4.00		
Shrub Stratum (Plot size: 30 ft r)			
1. Zizania latifolia	20	✔	
2.			
3.			
4.			
5.			
6.			
	20	= Total Cover	
50% of total cover: 10.00	20% of total cover: 4.00		
Herb Stratum (Plot size: 30 ft r)			
1. Persicaria punctata	30	✔	OBL
2. Carex vulpinoidea	20	✔	FACW
3. Chasmanthium latifolium	20	✔	FAC
4. Carex crus-corvi	10		OBL
5. Cyperus erythrorhizos	10		OBL
6.			
7.			
8.			
9.			
10.			
11.			
	90	= Total Cover	
50% of total cover: 45.00	20% of total cover: 18.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 9 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	55	x 1 =	55
FACW species	20	x 2 =	40
FAC species	65	x 3 =	195
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	140 (A)		290 (B)

Prevalence Index = B/A = 2.07

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 3/2	100					Loamy Sand	
3 - 10	10YR 5/2	90	10YR 3/6	10	C	PL	Loamy Sand	
10 - 18	10YR 6/1	80	10YR 5/6	20	C	PL	Loamy Sand	
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ✔ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil criteria is met.

Data Point: 16	**Wetland:** Yes	**Community:** Emergent Wetland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-18

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-17

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.1334752 Long: -95.49932529 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland woodland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-17

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda	60	✔	FAC
2. Ilex vomitoria	20	✔	FAC
3.			
4.			
5.			
6.			
	80	= Total Cover	
50% of total cover: 40.00		20% of total cover: 16.00	
Sapling Stratum (Plot size: 30 ft r)			
1. Ilex vomitoria	40	✔	FAC
2. Callicarpa americana	10	✔	FACU
3.			
4.			
5.			
6.			
	50	= Total Cover	
50% of total cover: 25.00		20% of total cover: 10.00	
Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0.00		20% of total cover: 0.00	
Herb Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0	= Total Cover	
50% of total cover: 0.00		20% of total cover: 0.00	
Woody Vine Stratum (Plot size: 30 ft r)			
1. Bignonia capreolata	2		FAC
2.			
3.			
4.			
5.			
	2	= Total Cover	
50% of total cover: 1.00		20% of total cover: 0.40	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	122	x 3 =	366
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	132 (A)		406 (B)

Prevalence Index = B/A = 3.08

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 3/2	100					Loamy Sand	
8 - 16	10YR 5/4	100					Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

Hydric soil criteria is not met.

Data Point: 17	**Wetland:** No	**Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-18

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-18

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Terrace/floodplain Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR or MLRA): P 133B Lat: 30.13581554 Long: -95.4985257 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Riparian woodland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-18

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ilex opaca	60	✔	FAC
2. Ilex vomitoria	20	✔	FAC
3. Quercus nigra	10		FAC
4. Celtis laevigata	5		FACW
5.			
6.			
	95	= Total Cover	

50% of total cover: 47.50 20% of total cover: 19.00

Sapling Stratum (Plot size: 30 ft r)			
1. Ilex vomitoria	40	✔	FAC
2. Callicarpa americana	10		FACU
3. Celtis laevigata	5		FACW
4.			
5.			
6.			
	55	= Total Cover	

50% of total cover: 27.50 20% of total cover: 11.00

Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	

50% of total cover: 0.00 20% of total cover: 0.00

Herb Stratum (Plot size: 30 ft r)			
1. Schizachyrium scoparium	20	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20	= Total Cover	

50% of total cover: 10.00 20% of total cover: 4.00

Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	

50% of total cover: 0.00 20% of total cover: 0.00

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	130	x 3 =	390
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	170 (A)		530 (B)

Prevalence Index = B/A = 3.12

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 3/2	100					Loamy Sand	
8 - 18	10YR 5/4	100					Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

Hydric soil criteria is not met.

Data Point: 18	**Wetland:** No	**Community:** Riparian Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-18

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-19

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): P 133B Lat: 30.13549445 Long: -95.49811762 Datum: WGS 84

Soil Map Unit Name: Hatliff-Pluck-Kian complex, 0 to 1 percent slopes, frequently flooded (HatA) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:

Emergent wetland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is met.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-19

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Triadica sebifera	5	✔	FAC
2.			
3.			
4.			
5.			
6.			
	5 = Total Cover		
50% of total cover: 2.50	20% of total cover: 1.00		
Sapling Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0.00	20% of total cover: 0.00		
Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0.00	20% of total cover: 0.00		
Herb Stratum (Plot size: 30 ft r)			
1. Persicaria punctata	60	✔	OBL
2. Chasmanthium latifolium	15		FAC
3. Coleataenia anceps	10		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85 = Total Cover		
50% of total cover: 42.50	20% of total cover: 17.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1. Brunnichia ovata	25	✔	FACW
2.			
3.			
4.			
5.			
	25 = Total Cover		
50% of total cover: 12.50	20% of total cover: 5.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	x 1 =	60
FACW species	25	x 2 =	50
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	115 (A)		200 (B)

Prevalence Index = B/A = 1.74

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-19

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 3/2	100					Loamy Sand	
3 - 18	10YR 6/2	80	10YR 5/8	20	C	PL	Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ✔ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil criteria is met.

Data Point: 19	**Wetland:** Yes	**Community:** Emergent Wetland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-18

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-20

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.13656123 Long: -95.49914529 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: PFO1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ____	No ✔	

Remarks:

Upland woodland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-20

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ulmus crassifolia	60	✔	FAC
2.			
3.			
4.			
5.			
6.			
	60 = Total Cover		
50% of total cover: 30.00	20% of total cover: 12.00		
Sapling Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0.00	20% of total cover: 0.00		
Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0.00	20% of total cover: 0.00		
Herb Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0.00	20% of total cover: 0.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1. Brunnichia ovata	10	✔	FACW
2. Campsis radicans	10	✔	FAC
3.			
4.			
5.			
	20 = Total Cover		
50% of total cover: 10.00	20% of total cover: 4.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	70	x 3 =	210
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	80 (A)		230 (B)

Prevalence Index = B/A = 2.88

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-20

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 3/2	100					Loamy Sand	
3 - 18	10YR 6/2	95	10YR 5/6	5	C	PL	Loamy Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ✔ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil criteria is met.

Data Point: 20	**Wetland:** No	**Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-18

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-21

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.13582031 Long: -95.50085505 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Upland woodland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-21

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Liquidambar styraciflua	30	✔	FAC
2. Quercus nigra	20	✔	FAC
3. Pinus taeda	10		FAC
4. Ilex vomitoria	5		FAC
5.			
6.			
	65	= Total Cover	
50% of total cover: 32.50	20% of total cover: 13.00		

Sapling Stratum (Plot size: 30 ft r)			
1. Triadica sebifera	20	✔	FAC
2. Liquidambar styraciflua	20	✔	FAC
3. Ilex vomitoria	10		FAC
4. Callicarpa americana	5		FACU
5.			
6.			
	55	= Total Cover	
50% of total cover: 27.50	20% of total cover: 11.00		

Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Herb Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Woody Vine Stratum (Plot size: 30 ft r)			
1. Bignonia capreolata	5	✔	FAC
2.			
3.			
4.			
5.			
	5	= Total Cover	
50% of total cover: 2.50	20% of total cover: 1.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	120	x 3 =	360
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	125 (A)		380 (B)

Prevalence Index = B/A = 3.04

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-21

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 3/2	100					Loamy Sand	
3 - 18	10YR 6/2	95	10YR 5/6	5	C	PL	Loamy Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ✔ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil criteria is met.

Data Point: 21	**Wetland:** No	**Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-18

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-22

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Terrace/floodplain Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.1335251 Long: -95.50116023 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Upland woodland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-22

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Liquidambar styraciflua	30	✔	FAC
2. Quercus nigra	20	✔	FAC
3. Pinus taeda	10		FAC
4. Ilex vomitoria	5		FAC
5.			
6.			
	65	= Total Cover	
50% of total cover: 32.50	20% of total cover: 13.00		

Sapling Stratum (Plot size: 30 ft r)			
1. Triadica sebifera	20	✔	FAC
2. Liquidambar styraciflua	20	✔	FAC
3. Ilex vomitoria	10		FAC
4. Callicarpa americana	5		FACU
5.			
6.			
	55	= Total Cover	
50% of total cover: 27.50	20% of total cover: 11.00		

Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Herb Stratum (Plot size: 30 ft r)			
1. Panicum dichotomiflorum	15	✔	FACW
2. Carex crus-corvi	5	✔	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20	= Total Cover	
50% of total cover: 10.00	20% of total cover: 4.00		

Woody Vine Stratum (Plot size: 30 ft r)			
1. Bignonia capreolata	5	✔	FAC
2.			
3.			
4.			
5.			
	5	= Total Cover	
50% of total cover: 2.50	20% of total cover: 1.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	15	x 2 =	30
FAC species	120	x 3 =	360
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	145 (A)		415 (B)

Prevalence Index = B/A = 2.86

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-22

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 3/2	100					Loamy Sand	
3 - 18	10YR 6/2	95	10YR 5/6	5	C	PL	Loamy Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ✔ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil criteria is met.

Data Point: 22	**Wetland:** No	**Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-18

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-23

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Channel Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): P 133B Lat: 30.13324502 Long: -95.50197699 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
Forested wetland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ✔	No ____	Depth (inches): 3
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-23

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda	30	✔	FAC
2. Liquidambar styraciflua	30	✔	FAC
3. Ilex vomitoria	10		FAC
4. Quercus nigra	10		FAC
5.			
6.			
	80	= Total Cover	
50% of total cover: 40.00	20% of total cover: 16.00		

Sapling Stratum (Plot size: 30 ft r)			
1. Triadica sebifera	20	✔	FAC
2. Liquidambar styraciflua	15	✔	FAC
3.			
4.			
5.			
6.			
	35	= Total Cover	
50% of total cover: 17.50	20% of total cover: 7.00		

Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Herb Stratum (Plot size: 30 ft r)			
1. Persicaria hydropiperoides	40	✔	OBL
2. Panicum clandestinum	30	✔	FAC
3. Carex crus-corvi	10		OBL
4. Persicaria punctata	10		OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90	= Total Cover	
50% of total cover: 45.00	20% of total cover: 18.00		

Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	x 1 =	60
FACW species	0	x 2 =	0
FAC species	145	x 3 =	435
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	205 (A)		495 (B)

Prevalence Index = B/A = 2.41

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-23

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 3/2	100					Loamy Sand	
3 - 18	10YR 6/2	80	10YR 5/8	20	C	PL	Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ✔ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil criteria is met.

Data Point: 23	**Wetland:** Yes	**Community:** Forested Wetland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-18

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-24

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.1335189 Long: -95.50258017 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland woodland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-24

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ulmus crassifolia	60	✔	FAC
2. Ilex vomitoria	10		FAC
3. Callicarpa americana	5		FACU
4.			
5.			
6.			
	75	= Total Cover	
50% of total cover: 37.50	20% of total cover: 15.00		

Sapling Stratum (Plot size: 30 ft r)			
1. Ilex vomitoria	10	✔	FAC
2. Callicarpa americana	10	✔	FACU
3.			
4.			
5.			
6.			
	20	= Total Cover	
50% of total cover: 10.00	20% of total cover: 4.00		

Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Herb Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Woody Vine Stratum (Plot size: 30 ft r)			
1. Rubus trivialis	10	✔	FACU
2. Smilax bona-nox	5	✔	FAC
3.			
4.			
5.			
	15	= Total Cover	
50% of total cover: 7.50	20% of total cover: 3.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	85	x 3 =	255
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	110 (A)		355 (B)

Prevalence Index = B/A = 3.23

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL Sampling Point: DP-24

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 3/2	100					Loamy Sand	
4 - 18	10YR 5/2	100					Loamy Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

Hydric soil criteria is not met.

Data Point: 24	**Wetland:** No	**Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-18

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-25

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.13467159 Long: -95.50411097 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Forested wetland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-25

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda	40	✔	FAC
2. Liquidambar styraciflua	20	✔	FAC
3. Triadica sebifera	10		FAC
4. Ulmus crassifolia	5		FAC
5.			
6.			
	75	= Total Cover	
50% of total cover: 37.50	20% of total cover: 15.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Liquidambar styraciflua	15	✔	FAC
2. Triadica sebifera	10	✔	FAC
3.			
4.			
5.			
6.			
	25	= Total Cover	
50% of total cover: 12.50	20% of total cover: 5.00		
Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		
Herb Stratum (Plot size: 30 ft r)			
1. Persicaria hydropiperoides	30	✔	OBL
2. Persicaria punctata	30	✔	OBL
3. Carex crus-corvi	10		OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70	= Total Cover	
50% of total cover: 35.00	20% of total cover: 14.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70	x 1 =	70
FACW species	0	x 2 =	0
FAC species	100	x 3 =	300
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	170 (A)		370 (B)

Prevalence Index = B/A = 2.18

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-25

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 4/2	100					Loamy Sand	
6 - 18	10YR 6/2	95	10YR 4/6	5	C	PL	Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ✔ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil criteria is met.

Data Point: 25	**Wetland:** Yes	**Community:** Forested Wetlands

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-18

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-26

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.13467909 Long: -95.50400839 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland woodland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-26

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ulmus crassifolia	60	✔	FAC
2. Pinus taeda	20	✔	FAC
3. Ilex vomitoria	10		FAC
4. Callicarpa americana	5		FACU
5.			
6.			
	95	= Total Cover	
50% of total cover: 47.50	20% of total cover: 19.00		

Sapling Stratum (Plot size: 30 ft r)			
1. Callicarpa americana	10	✔	FACU
2. Ilex vomitoria	10	✔	FAC
3.			
4.			
5.			
6.			
	20	= Total Cover	
50% of total cover: 10.00	20% of total cover: 4.00		

Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Herb Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Woody Vine Stratum (Plot size: 30 ft r)			
1. Rubus trivialis	10	✔	FACU
2. Smilax bona-nox	5	✔	FAC
3.			
4.			
5.			
	15	= Total Cover	
50% of total cover: 7.50	20% of total cover: 3.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	105	x 3 =	315
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	130 (A)		415 (B)

Prevalence Index = B/A = 3.19

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-26

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 4	10YR 3/2	100					Loamy Sand	
4 - 18	10YR 5/2	100					Loamy Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

Hydric soil criteria is not met.

Data Point: 26 **Wetland:** No **Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-18

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-27

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.13577234 Long: -95.50359563 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland woodland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-27

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda	60	✔	FAC
2. Ilex vomitoria	20	✔	FAC
3.			
4.			
5.			
6.			
	80	= Total Cover	
50% of total cover: 40.00	20% of total cover: 16.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Ilex vomitoria	40	✔	FAC
2. Callicarpa americana	20	✔	FACU
3.			
4.			
5.			
6.			
	60	= Total Cover	
50% of total cover: 30.00	20% of total cover: 12.00		
Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		
Herb Stratum (Plot size: 30 ft r)			
1. Rubus trivialis	10	✔	FACU
2. Bignonia capreolata	10	✔	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20	= Total Cover	
50% of total cover: 10.00	20% of total cover: 4.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	130	x 3 =	390
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	160 (A)		510 (B)

Prevalence Index = B/A = 3.19

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL Sampling Point: DP-27

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 18	10YR 3/2	100					Loamy Sand	
-								
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** ✔

Remarks:

Hydric soil criteria is not met.

Data Point: 27	**Wetland:** No	**Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-10-18

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-28

Investigator(s): P. Van Zandt, A. Zen Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.13599069 Long: -95.50416514 Datum: WGS 84

Soil Map Unit Name: Segno fine sandy loam, 1 to 3 percent slopes (SegB) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland woodland. APT tool indicates drier than normal climatic conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-28

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda	30	✔	FAC
2. Liquidambar styraciflua	20	✔	FAC
3. Ulmus crassifolia	20	✔	FAC
4.			
5.			
6.			
	70 = Total Cover		
50% of total cover: 35.00	20% of total cover: 14.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Liquidambar styraciflua	10	✔	FAC
2. Ilex vomitoria	10	✔	FAC
3.			
4.			
5.			
6.			
	20 = Total Cover		
50% of total cover: 10.00	20% of total cover: 4.00		
Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0.00	20% of total cover: 0.00		
Herb Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0.00	20% of total cover: 0.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1. Rubus trivialis	5	✔	FACU
2. Smilax bona-nox	5	✔	FAC
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5.00	20% of total cover: 2.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 85.71 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	95	x 3 =	285
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	100 (A)		305 (B)

Prevalence Index = B/A = 3.05

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-28

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 18	10YR 3/2	100						
-								
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

Hydric soil criteria is not met.

Data Point: 28	**Wetland:** No	**Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: 52417 - South Gosling Extended City/County: Harris County Sampling Date: 2023-11-09

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-29

Investigator(s): B Fournier, Austin Z Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.13691836 Long: -95.50072887 Datum: WGS 84

Soil Map Unit Name: Kn - Kenney loamy fine sand, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ____	No ✔	

Remarks:
Upland Woodland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-29

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Liquidambar styraciflua	50	✔	FAC
2. Pinus taeda	20	✔	FAC
3. Fraxinus americana	20	✔	FACU
4. Quercus nigra	10		FAC
5.			
6.			
	100	= Total Cover	
50% of total cover: 50.00	20% of total cover: 20.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Ilex vomitoria	20	✔	FAC
2. Liquidambar styraciflua	20	✔	FAC
3. Quercus nigra	15	✔	FAC
4.			
5.			
6.			
	55	= Total Cover	
50% of total cover: 27.50	20% of total cover: 11.00		
Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		
Herb Stratum (Plot size: 30 ft r)			
1. Chasmanthium laxum	25	✔	FACW
2. Sabal minor	20	✔	FACW
3. Lygodium japonicum	15	✔	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60	= Total Cover	
50% of total cover: 30.00	20% of total cover: 12.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 88.89 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	45	x 2 =	90
FAC species	150	x 3 =	450
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	215 (A)		620 (B)

Prevalence Index = B/A = 2.88

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-29

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 4/3	95	10YR 4/6	5	C	M	Loamy Sand	
6 - 16	10YR 6/3	95	10YR 5/6	5	C	PL	Loamy Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ✔ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil criteria is met.

Data Point: 29	**Wetland:** No	**Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: 52417 - South Gosling Extended City/County: Harris County Sampling Date: 2023-11-09

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-30

Investigator(s): B Fournier, Austin Z Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.13841053 Long: -95.49995678 Datum: WGS 84

Soil Map Unit Name: Kn - Kenney loamy fine sand, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ____	No ✔	
Wetland Hydrology Present?	Yes ____	No ✔	

Remarks:
Upland Woodland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-30

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Fagus grandifolia	15	✔	FACU
2. Pinus taeda	15	✔	FAC
3. Quercus nigra	15	✔	FAC
4. Persea borbonia	10		FACW
5.			
6.			
	55	= Total Cover	
50% of total cover: 27.50	20% of total cover: 11.00		

Sapling Stratum (Plot size: 30 ft r)			
1. Ilex vomitoria	55	✔	FAC
2.			
3.			
4.			
5.			
6.			
	55	= Total Cover	
50% of total cover: 27.50	20% of total cover: 11.00		

Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Herb Stratum (Plot size: 30 ft r)			
1. Chasmanthium laxum	20	✔	FACW
2. Lygodium japonicum	15	✔	FAC
3. Oxalis violacea	10		FAC
4. Sabal minor	10		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55	= Total Cover	
50% of total cover: 27.50	20% of total cover: 11.00		

Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	110	x 3 =	330
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	165 (A)		470 (B)

Prevalence Index = B/A = 2.85

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-30

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 4/2	100					Loam	
6 - 16	10YR 5/3	100						
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

Hydric soil criteria is not met.

Data Point: 30	**Wetland:** No	**Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: 52417 - South Gosling Extended City/County: Harris County Sampling Date: 2023-11-09

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-31

Investigator(s): B Fournier, Austin Z Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.139714 Long: -95.501392 Datum: WGS 84

Soil Map Unit Name: Kn - Kenney loamy fine sand, 0 to 2 percent slopes NWI classification: PFO1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ____	No ✔	
Wetland Hydrology Present?	Yes ____	No ✔	

Remarks:
Upland Woodland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-31

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus nigra	60	✔	FAC
2. Liquidambar styraciflua	15		FAC
3. Carya aquatica	10		OBL
4.			
5.			
6.			
	85 = Total Cover		
50% of total cover: 42.50	20% of total cover: 17.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Quercus nigra	15	✔	FAC
2.			
3.			
4.			
5.			
6.			
	15 = Total Cover		
50% of total cover: 7.50	20% of total cover: 3.00		
Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0.00	20% of total cover: 0.00		
Herb Stratum (Plot size: 30 ft r)			
1. Cyperus retrorsus	25	✔	FACU
2. Cyperus virens	20	✔	FACW
3. Chasmanthium laxum	15	✔	FACW
4. Sabal minor	15	✔	FACW
5. Phanopyrum gymnocarpon	10		OBL
6. Persicaria capitata	5		FACU
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45.00	20% of total cover: 18.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0.00	20% of total cover: 0.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	50	x 2 =	100
FAC species	90	x 3 =	270
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	190 (A)		510 (B)

Prevalence Index = B/A = 2.68

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-31

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 4/2	100					Loam	
3 - 16	10YR 5/3	95	10YR 5/6	5	C	PL / M	Silt Loam	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

Hydric soil criteria is not met.

Data Point: 31	**Wetland:** No	**Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: 52417 - South Gosling Extended City/County: Harris County Sampling Date: 2023-11-09

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-32

Investigator(s): B Fournier, Austin Z Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.14076077 Long: -95.50172078 Datum: WGS 84

Soil Map Unit Name: Kn - Kenney loamy fine sand, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ____	No ✔	

Remarks:
Upland Woodland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-32

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda	25	✔	FAC
2. Quercus nigra	25	✔	FAC
3. Liquidambar styraciflua	15	✔	FAC
4.			
5.			
6.			
	65	= Total Cover	
50% of total cover: 32.50	20% of total cover: 13.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Ilex vomitoria	15	✔	FAC
2.			
3.			
4.			
5.			
6.			
	15	= Total Cover	
50% of total cover: 7.50	20% of total cover: 3.00		
Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		
Herb Stratum (Plot size: 30 ft r)			
1. Chasmanthium laxum	50	✔	FACW
2. Callicarpa americana	15		FACU
3. Conoclinium coelestinum	15		FAC
4. Phanopyrum gymnocarpon	5		OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85	= Total Cover	
50% of total cover: 42.50	20% of total cover: 17.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	50	x 2 =	100
FAC species	95	x 3 =	285
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	165 (A)		450 (B)

Prevalence Index = B/A = 2.73

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-32

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 3/2	99	10YR 5/4	1	C	PL	Loam	
3 - 16	10YR 5/3	98	10YR 5/6	2	C	PL / M	Silt Loam	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil criteria is met.

Data Point: 32	**Wetland:** No	**Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: 52417 - South Gosling Extended City/County: Harris County Sampling Date: 2023-11-09

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-33

Investigator(s): B Fournier, Austin Z Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.14109709 Long: -95.50337994 Datum: WGS 84

Soil Map Unit Name: Kn - Kenney loamy fine sand, 0 to 2 percent slopes NWI classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ____	No ✔	

Remarks:
Upland Woodland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-33

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus nigra	30	✔	FAC
2. Liquidambar styraciflua	15	✔	FAC
3. Triadica sebifera	15	✔	FAC
4. Carya aquatica	5		OBL
5.			
6.			
	65	= Total Cover	
50% of total cover: 32.50	20% of total cover: 13.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Sporobolus pyramidatus	20	✔	FAC
2.			
3.			
4.			
5.			
6.			
	20	= Total Cover	
50% of total cover: 10.00	20% of total cover: 4.00		
Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		
Herb Stratum (Plot size: 30 ft r)			
1. Persicaria capitata	40	✔	FACU
2. Hygrophila lacustris	10	✔	OBL
3. Liquidambar styraciflua	10	✔	FAC
4. Lycopus virginicus	10	✔	OBL
5. Conoclinium coelestinum	5		FAC
6. Sabal minor	5		FACW
7.			
8.			
9.			
10.			
11.			
	80	= Total Cover	
50% of total cover: 40.00	20% of total cover: 16.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 87.50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	25	x 1 =	25
FACW species	5	x 2 =	10
FAC species	95	x 3 =	285
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	165 (A)		480 (B)

Prevalence Index = B/A = 2.91

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-33

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 4/2	100					Sandy Loam	
6 - 16	10YR 4/2	95	10YR 6/3	5	C	PL	Sandy Loam	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil criteria is met.

Data Point: 33	**Wetland:** No	**Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: 52417 - South Gosling Extended City/County: Harris County Sampling Date: 2023-11-09

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-34

Investigator(s): B Fournier, Austin Z Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.14313054 Long: -95.50148955 Datum: WGS 84

Soil Map Unit Name: HatA - Hatliff-Pluck-Kian complex, 0 to 1 percent slopes, frequently flooded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland Woodland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: DP-34

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus nigra	30	✔	FAC
2. Liquidambar styraciflua	15	✔	FAC
3. Triadica sebifera	15	✔	FAC
4. Carya aquatica	5		OBL
5.			
6.			
	65	= Total Cover	
50% of total cover: 32.50	20% of total cover: 13.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Sporobolus pyramidatus	20	✔	FAC
2.			
3.			
4.			
5.			
6.			
	20	= Total Cover	
50% of total cover: 10.00	20% of total cover: 4.00		
Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		
Herb Stratum (Plot size: 30 ft r)			
1. Persicaria capitata	40	✔	FACU
2. Hygrophila lacustris	10	✔	OBL
3. Liquidambar styraciflua	10	✔	FAC
4. Lycopus virginicus	10	✔	OBL
5. Conoclinium coelestinum	5		FAC
6. Sabal minor	5		FACW
7.			
8.			
9.			
10.			
11.			
	80	= Total Cover	
50% of total cover: 40.00	20% of total cover: 16.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 87.50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	25	x 1 =	25
FACW species	5	x 2 =	10
FAC species	95	x 3 =	285
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	165 (A)		480 (B)

Prevalence Index = B/A = 2.91

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-34

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 4/2	100					Sandy Loam	
4 - 16	10YR 6/6	95	10YR 6/6	5	C	PL	Sandy Loam	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) **(MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) **(LRR O)**
___ 2 cm Muck (A10) **(LRR S)**
___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

Hydric soil criteria is not met.

Data Point: 34	**Wetland:** No	**Community:** Riparian Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-11-21

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-35

Investigator(s): P. Van Zandt Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.14310431 Long: -95.50307943 Datum: WGS 84

Soil Map Unit Name: Kenney loamy fine sand, 0 to 2 percent slopes (Kn) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland Woodland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-35

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda	40	✔	FAC
2. Carpinus caroliniana	20	✔	FAC
3. Ulmus americana	20	✔	FAC
4.			
5.			
6.			
	80	= Total Cover	
50% of total cover: 40.00	20% of total cover: 16.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Ilex vomitoria	25	✔	FAC
2. Triadica sebifera	10	✔	FAC
3.			
4.			
5.			
6.			
	35	= Total Cover	
50% of total cover: 17.50	20% of total cover: 7.00		
Shrub Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		
Herb Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	115	x 3 =	345
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	115 (A)		345 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-35

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 3/2	100					Loamy Sand	
8 - 16	10YR 8/2	100					Sand	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) **(MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) **(LRR O)**
___ 2 cm Muck (A10) **(LRR S)**
___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

Hydric soil criteria is not met.

Data Point: 35	**Wetland:** No	**Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-11-21

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-36

Investigator(s): P. Van Zandt Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Channel Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.143476 Long: -95.50331415 Datum: WGS 84

Soil Map Unit Name: Hatliff-Pluck-Kian complex, 0 to 1 percent slopes, frequently flooded (HatA) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Forested Wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✔ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes ✔	No _____	Depth (inches): 8
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-36

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus nigra	40	✔	FAC
2. Liquidambar styraciflua	20	✔	FAC
3.			
4.			
5.			
6.			
	60	= Total Cover	
50% of total cover: 30.00	20% of total cover: 12.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Triadica sebifera	10	✔	FAC
2.			
3.			
4.			
5.			
6.			
	10	= Total Cover	
50% of total cover: 5.00	20% of total cover: 2.00		
Shrub Stratum (Plot size: 30 ft r)			
1. Zizania latifolia	10	✔	FACW
2.			
3.			
4.			
5.			
6.			
	10	= Total Cover	
50% of total cover: 5.00	20% of total cover: 2.00		
Herb Stratum (Plot size: 30 ft r)			
1. Panicum clandestinum	70	✔	FACW
2. Alternanthera philoxeroides	20	✔	OBL
3. Chasmanthium latifolium	10		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
50% of total cover: 50.00	20% of total cover: 20.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	80	x 2 =	160
FAC species	80	x 3 =	240
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	180 (A)		420 (B)

Prevalence Index = B/A = 2.33

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-36

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 5/3	100					Sandy Loam	
6 - 18	10YR 4/1	90	5YR 4/6	10	C	PL	Sandy Loam	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil criteria is met.

Data Point: 36	**Wetland:** No	**Community:** Forested Wetland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-11-21

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-37

Investigator(s): P. Van Zandt Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Terrace/floodplain Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.14359541 Long: -95.50333619 Datum: WGS 84

Soil Map Unit Name: Hatliff-Pluck-Kian complex, 0 to 1 percent slopes, frequently flooded (HatA) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland woodland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-37

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda	60	✔	FAC
2. Liquidambar styraciflua	20	✔	FAC
3. Quercus nigra	20	✔	FAC
4.			
5.			
6.			
	100 = Total Cover		
50% of total cover: 50.00	20% of total cover: 20.00		
Sapling Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0.00	20% of total cover: 0.00		
Shrub Stratum (Plot size: 30 ft r)			
1. Sabal minor	10	✔	FACW
2.			
3.			
4.			
5.			
6.			
	10 = Total Cover		
50% of total cover: 5.00	20% of total cover: 2.00		
Herb Stratum (Plot size: 30 ft r)			
1. Arundinaria gigantea	50	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25.00	20% of total cover: 10.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0.00	20% of total cover: 0.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	100	x 3 =	300
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	160 (A)		420 (B)

Prevalence Index = B/A = 2.63

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-37

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 3/2	100					Clay Loam	
6 - 18	10YR 4/2	100					Clay Loam	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

Hydric soil criteria is not met.

Data Point: 37	**Wetland:** No	**Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-11-21

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-38

Investigator(s): P. Van Zandt Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Channel Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.14388119 Long: -95.50346587 Datum: WGS 84

Soil Map Unit Name: Hatliff-Pluck-Kian complex, 0 to 1 percent slopes, frequently flooded (HatA) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Forested Wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✔ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 0
Water Table Present?	Yes ✔	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-38

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus nigra	40	✔	FAC
2. Liquidambar styraciflua	20	✔	FAC
3.			
4.			
5.			
6.			
	60	= Total Cover	
50% of total cover: 30.00	20% of total cover: 12.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Triadica sebifera	10	✔	FAC
2.			
3.			
4.			
5.			
6.			
	10	= Total Cover	
50% of total cover: 5.00	20% of total cover: 2.00		
Shrub Stratum (Plot size: 30 ft r)			
1. Zizania latifolia	10	✔	
2.			
3.			
4.			
5.			
6.			
	10	= Total Cover	
50% of total cover: 5.00	20% of total cover: 2.00		
Herb Stratum (Plot size: 30 ft r)			
1. Panicum clandestinum	70	✔	FACW
2. Alternanthera philoxeroides	20	✔	OBL
3. Chasmanthium latifolium	10		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
50% of total cover: 50.00	20% of total cover: 20.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	70	x 2 =	140
FAC species	80	x 3 =	240
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	170 (A)		400 (B)

Prevalence Index = B/A = 2.35

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-38

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 5/3	100					Sandy Loam	
6 - 18	10YR 4/1	90	5YR 4/6	10	C	PL	Sandy Loam	
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil criteria is met.

Data Point: 38	**Wetland:** No	**Community:** Forested Wetland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-11-21

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-39

Investigator(s): P. Van Zandt Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Terrace/floodplain Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.14387783 Long: -95.50358282 Datum: WGS 84

Soil Map Unit Name: Hatliff-Pluck-Kian complex, 0 to 1 percent slopes, frequently flooded (HatA) NWI classification: PFO1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland Woodland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-39

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Liquidambar styraciflua	15	✔	FAC
2. Quercus nigra	15	✔	FAC
3. Carpinus caroliniana	5		FAC
4.			
5.			
6.			
	35	= Total Cover	
50% of total cover: 17.50	20% of total cover: 7.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Ilex vomitoria	10	✔	FAC
2.			
3.			
4.			
5.			
6.			
	10	= Total Cover	
50% of total cover: 5.00	20% of total cover: 2.00		
Shrub Stratum (Plot size: 30 ft r)			
1. Sabal minor	10	✔	FACW
2.			
3.			
4.			
5.			
6.			
	10	= Total Cover	
50% of total cover: 5.00	20% of total cover: 2.00		
Herb Stratum (Plot size: 30 ft r)			
1. Carex cherokeensis	15	✔	FACW
2. Chasmanthium latifolium	15	✔	FAC
3. Elephantopus carolinianus	5		FACU
4. Symphyotrichum lateriflorum	5		FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40	= Total Cover	
50% of total cover: 20.00	20% of total cover: 8.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	65	x 3 =	195
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	95 (A)		265 (B)

Prevalence Index = B/A = 2.79

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-39

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 18	10YR 5/4	100					Sandy Loam	
-								
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

Hydric soil criteria is not met.

Data Point: 39	**Wetland:** No	**Community:** Upland Woodland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-11-21

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-40

Investigator(s): P. Van Zandt Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Channel Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): P 133B Lat: 30.14402893 Long: -95.50386624 Datum: WGS 84

Soil Map Unit Name: Hatliff-Pluck-Kian complex, 0 to 1 percent slopes, frequently flooded (HatA) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
Forested wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✔ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ✔	No ____	Depth (inches): 8
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-40

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Carya illinoinensis	20	✔	FACU
2. Liquidambar styraciflua	20	✔	FAC
3. Triadica sebifera	15	✔	FAC
4.			
5.			
6.			
	55	= Total Cover	
50% of total cover: 27.50	20% of total cover: 11.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Quercus nigra	5	✔	FAC
2. Ulmus americana	5	✔	FAC
3.			
4.			
5.			
6.			
	10	= Total Cover	
50% of total cover: 5.00	20% of total cover: 2.00		
Shrub Stratum (Plot size: 30 ft r)			
1. Sabal minor	5	✔	FACW
2.			
3.			
4.			
5.			
6.			
	5	= Total Cover	
50% of total cover: 2.50	20% of total cover: 1.00		
Herb Stratum (Plot size: 30 ft r)			
1. Panicum clandestinum	60	✔	FACW
2. Chasmanthium latifolium	20	✔	FAC
3. Carex cherokeensis	15		FACW
4. Persicaria punctata	2		OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	97	= Total Cover	
50% of total cover: 48.50	20% of total cover: 19.40		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 87.50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	x 1 =	2
FACW species	80	x 2 =	160
FAC species	65	x 3 =	195
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	167 (A)		437 (B)

Prevalence Index = B/A = 2.62

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-40

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 5/3	90	10YR 4/6	10	C	PL	Clay Loam	
6 - 12	10YR 4/2	80	10YR 5/6	20	C	PL	Clay	
12 - 18	10YR 5/1	75	5YR 4/6	25	C	PL	Clay	
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil criteria is met.

Data Point: 40	**Wetland:** No	**Community:** Forested Wetland

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: South Gosling Future Park City/County: Harris County Sampling Date: 2023-11-21

Applicant/Owner: The Woodlands Township State: Texas Sampling Point: DP-41

Investigator(s): P. Van Zandt Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Terrace/floodplain Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): P 133B Lat: 30.14420422 Long: -95.50373551 Datum: WGS 84

Soil Map Unit Name: Hatliff-Pluck-Kian complex, 0 to 1 percent slopes, frequently flooded (HatA) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✔ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland Woodland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Vis ble on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is not met.

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-41

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Liquidambar styraciflua	15	✔	FAC
2. Quercus nigra	15	✔	FAC
3. Carpinus caroliniana	5		FAC
4.			
5.			
6.			
	35	= Total Cover	
50% of total cover: 17.50	20% of total cover: 7.00		
Sapling Stratum (Plot size: 30 ft r)			
1. Ilex vomitoria	10	✔	FAC
2.			
3.			
4.			
5.			
6.			
	10	= Total Cover	
50% of total cover: 5.00	20% of total cover: 2.00		
Shrub Stratum (Plot size: 30 ft r)			
1. Sabal minor	10	✔	FACW
2.			
3.			
4.			
5.			
6.			
	10	= Total Cover	
50% of total cover: 5.00	20% of total cover: 2.00		
Herb Stratum (Plot size: 30 ft r)			
1. Carex cherokeensis	15	✔	FACW
2. Chasmanthium latifolium	15	✔	FAC
3. Elephantopus carolinianus	5		FACU
4. Symphyotrichum lateriflorum	5		FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40	= Total Cover	
50% of total cover: 20.00	20% of total cover: 8.00		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0.00	20% of total cover: 0.00		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	65	x 3 =	195
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	95 (A)		265 (B)

Prevalence Index = B/A = 2.79

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is present.

SOIL

Sampling Point: DP-41

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 18	10YR 5/4	100					Sandy Loam	
-								
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

Hydric soil criteria is not met.

Data Point: 41	**Wetland:** No	**Community:** Upland Woodland

Appendix D: Representative Photographs

Photo Point (PP)01: Representative view of western study area tree line boundary and adjacent undeveloped field; facing north.

PP02: Representative view of upland woodland on southwestern section of the study area; facing east.

PP03: View of emergent wetland-freshwater marsh complex (W-1) on southwestern portion of the study area; facing northeast.

PP04: View of emergent wetland-freshwater marsh complex (W-1) on southwestern portion of the study area; facing north.

PP05: View of emergent wetland (W-1) transition area between marsh and upland on southwestern portion of the study area; facing north.

PP06: View of emergent wetland-freshwater marsh complex (W-1) on southwestern portion of the study area; facing west.

PP07: View of emergent wetland-freshwater marsh complex (W-1) on southwestern portion of the study area; facing south.

PP08: Representative view of upland woodland near southern study area boundary; facing east.

PP09: View of NWI wetland location near southern study area boundary; facing south.

PP10: View of ephemeral stream feature (ES-1); facing northeast.

PP11: View of ephemeral stream feature (ES-1) at confluence with pond (OW-1); facing northeast.

PP12: View of fringe emergent wetland (W-2) at pond (OW-1); facing north.

PP13: View of pond (OW-2) and fringe emergent wetland (W-3); facing southeast.

PP13a: View of fringe emergent wetland (W-3) along pond (OW-2); facing west.

PP14: View of ephemeral stream feature (ES-3); facing north.

PP15: Representative view of Spring Creek from eastern study area boundary; facing southeast.

PP16: Representative view of Spring Creek from eastern study area boundary; facing north.

PP17: Representative view of upland woodland in southern-central portion of the study area; facing south.

PP18: View of pond (OW-3) and surround upland woodland; facing south.

PP19: View of forested wetland (W-4) between pond (OW-3) and emergent wetland (W-1); facing west.

PP20: View of forested wetland (W-5) in southwestern portion of the study area north of emergent wetland (W-1); facing north.

PP21: View of forested wetland (W-5) in southwestern portion of the study area north of emergent wetland (W-1); facing south.

PP22: View of Gosling Road culverts and primary source of wetland hydrology in southwestern portion of the study area; facing west.

PP23: Representative view of upland woodland in southern-central portion of the study area; facing north.

PP24: Representative view of upland woodland near the center of the study area; facing south.

PP25: View of emergent wetland (W-6) abutting Spring Creek (PS-1); facing northeast.

PP26: View of emergent wetland (W-6) abutting Spring Creek (PS-1); facing south.

PP27: Representative view of Spring Creek from eastern study area boundary; facing southeast.

PP28: View of upland woodland and NWI wetland location near the center of the study area; facing north.

PP29: View of upland woodland and NWI wetland location near the center of the study area; facing west.

PP30: View of clearing from Harris County MUD facility to Spring Creek; facing east.

PP31: Representative view of riparian woodland and drainage patterns near Spring Creek; facing north.

PP32: Representative view of riparian woodland and drainage patterns near Spring Creek; facing south.

PP33: Representative view of upland woodland on northern portion of the study area; facing north.

PP34: View of forested wetland (W-7) on northern portion of the study area near Spring Creek; facing east.

PP35: View of forested wetland (W-7) on northern portion of the study area near Spring Creek; facing west.

PP36: View of forested wetland (W-7) and pond (W-4) on northern portion of the study area near Spring Creek; facing west.

PP37: View of forested wetland (W-7) on northern portion of the study area near Spring Creek; facing east.

PP38: View of forested wetland (W-7) on northern portion of the study area near Spring Creek; facing east.

PP39: Representative view of Spring Creek within the study area near the northern project limits; facing northeast.

PP40: Representative view of Spring Creek within the study area near the northern project limits; facing northeast.

PP41: Representative view of western study area tree line boundary, Spring Creek, adjacent undeveloped field, and the Gosling Road bridge; facing southwest.