



ENVIRONMENTAL ASSESSMENT

**Materials Recovery Facility (50.00± acres)
STRAP No. 36-44-25-00-00001.7000
Folio ID 10254968**

September 2023

Prepared for:

**LEE COUNTY BOARD OF COUNTY COMMISSIONERS
1500 Monroe Street
Fort Myers, FL 33901**

Prepared by:

**JOHNSON ENGINEERING, INC.
2122 Johnson Street
Fort Myers, Florida 33901**

Introduction

Johnson Engineering, Inc. was contracted to conduct an environmental assessment for a parcel of land owned by Gulf Disposal, Inc., c/o Waste Management. The subject parcel is located south of Colonial Boulevard and west of SR-82 in Section 36, Township 44 South, Range 25 East, just outside of the Fort Myers city limits, in Lee County, Florida. The parcel is a portion of Lee County STRAP No. 36-44-25-00-00001.7000 and is approximately 50.00 acres. A project location map is provided as **Attachment 1**. The purpose of the environmental assessment is to summarize existing habitat types onsite, including potential jurisdictional wetlands and surface waters, identify listed species that may affect future site development plans, and outline potential future environmental permitting requirements.

Methodology

Information contained in the environmental assessment is based on a review of available local, state, and federal GIS data and online resources, as well as site observations by Johnson Engineering, Inc. ecologists on August 11 and 15, 2023. Information and GIS data reviewed include the following sources: Florida Fish and Wildlife Conservation Commission (FWC), Florida Department of Environmental Protection (FDEP), U.S. Fish and Wildlife Service (USFWS), Natural Resources Conservation Service (NRCS), U.S. Army Corps of Engineers (USACE), South Florida Water Management District (SFWMD), and Lee County.

Habitat Types and Land Uses

In general, the site has been highly disturbed over the past 70+ years, including the removal of the majority of native vegetation from the site, ditching/diking to facilitate agricultural row crop production, use as a sanitary landfill, and excavation of fill material. As a result, few native habitats remain on the property. Habitat types were delineated using a combination of digital aerial photographs, the NRCS Soil Survey for Lee County (**Attachment 2**), and field observations. The habitat mapping was conducted in accordance with Levels III and IV of the Florida Land Use, Cover and Forms Classification System (FLUCFCS) [Florida Department of Transportation (FDOT), 1999]. **Attachment 3** includes two alternative FLUCFCS Maps (Alternative 1 & Alternative 2) for the property. Note that FLUCFCS map alternatives 1 and 2 are further discussed in the Wetland Assessment section below and referenced throughout this report, as the map alternatives have ramifications on future wetland and listed species mitigation requirements. The habitat and wetland mapping shown is approximate and intended for planning purposes only. Agency review of habitat types and jurisdictional wetland and surface water limits will ultimately be conducted as part of the future environmental resource permitting process.

Wetland Assessment

The subject property was reviewed for the potential presence of jurisdictional wetlands and surface waters using the “Delineation of the Landward Extent of Wetlands and Surface Waters” (Chapter 62-340, Florida Administrative Code) and the “Regional Supplement to the Army Corps of Engineers Wetland Delineation manual: Atlantic and Gulf Coastal Plain Region (Version 2.0) (Supplement). In general, the FDEP and SFWMD will exert jurisdiction over areas with a dominance of hydrophytic vegetation, the presence of hydric soils, and evidence of wetland hydrology. Subject to agency verification, disturbed upland habitats comprise approximately 20% of the site, while disturbed wetlands and man-made surface waters with varying levels of invasive vegetation comprise the other 80%.

As referenced above, two alternative FLUCFCS maps (Alternatives 1 and 2) are provided in Attachment 3. In both alternatives, the estimated acreage of uplands does not change. The difference between the two map alternatives lies with the classification of the two excavated areas labeled as SW-3 (FLUCFCS Code 534; 9.99± acres) and SW-4 (FLUCFCS Code 534; 1.08± acres) on sheet 3 (Alternative 1) as jurisdictional “surface waters” or “wetlands”. FLUCFCS Map Alternative 1 identifies the two excavated areas as jurisdictional “surface waters” with a combined acreage of 10.07-acres, since they are man-made and not natural wetlands (even though they may resemble a natural wetland habitat). FLUCFCS Map Alternative 2 labels these same areas as jurisdictional “wetlands” based on recent experience on another site where FDEP staff classified a man-made borrow pit that had been excavated for fill approximately 60 years ago as a “wetland”. Regarding the other project, FDEP stated the area had “reverted to a wetland” based on the time elapsed and presence of emergent herbaceous and woody vegetation that had naturally recruited over time. FDEP staff is also requiring compensatory wetland mitigation for impacts to the excavated borrow pit they classified as a “wetland”. Therefore, the potential exists that regulatory agency staff may similarly classify SW-3 and SW-4 as wetlands and require mitigation should impacts, such as dredging or filling, be proposed to these areas. Based on the presence of water management structures in the reservoir labeled as SW-5 (1.62± acres) on sheet 3, it is believed this area will not be classified as a wetland, although this too is subject to agency review/verification.

FLUCFCS tables for FLUCFCS Map Alternatives 1 and 2 discussed above are shown in the table below and on the maps in **Attachment 3**.

Table 1. FLUCFCS Table for Alternative 1

FLUCFCS Code	Description	Status	Approximate Area (Acres)
211H	Hydric pasture	W	4.81
514	Ditch	SW	3.03
534	Reservoir	SW	12.69
630E4	Wetland Forested Mixed (76-100% Exotics)	W	19.26
743	Spoil	N	10.21
Total Non-wetlands			10.21
Total Surface Waters			15.72
Total Wetlands			24.07
Grand Total			50.00

Table 2. FLUCFCS Table for Alternative 2

FLUCFCS Code	Description	Status	Approximate Area (Acres)
211H	Hydric pasture	W	4.81
514	Ditch	SW	3.03
543	Reservoir	SW	1.62
630E4	Wetland Forested Mixed (76-100%)	W	19.26
641E	Freshwater Marsh (Excavated)	W	11.07
743	Spoil	N	10.21
Total Non-wetlands			10.21
Total Surface Waters			4.65
Total Wetlands			35.14
Grand Total			50.00

SFWMD Environmental Resource Permitting

One prior SFWMD Environmental Resource Permit (ERP) (Permit No. 36-00334-S) was identified for the site during the desktop review. On July 8, 1982, ERP No. 36-00334-S was issued and authorized construction and operation of a water management system serving 274 acres of sanitary landfill discharging sheetflow onto adjacent property in Six Mile Cypress Slough. Several permit modifications were authorized in the mid-1980s, including 1984 (authorization of 156.6 acres of additional Class I sanitary landfill and drainage), 1987 (modification of control structure locations and relocation of the project outfall), and 1988 (construction of a 0.5-acre employee parking lot, access drive, and associated dry retention).

As outlined above, uplands comprise approximately 10.2± acres onsite (±20% of the site) and wetlands and surface waters make up the remaining 39.8± acres (±80%). The breakdown of wetland versus surface water acreages will be verified by the regulatory agencies during the environmental permitting process. However, it is estimated that the acreage of wetlands onsite will be between 24.07-acres (FLUCFCS Map

Alternative 1) and 35.14-acres (FLUCFCS Map Alternative 2), depending on how regulatory reviewers classify several excavated areas onsite.

Any future site development will require either a modification of the existing SFWMD ERP or possibly a new ERP. The regulatory agencies will require that any proposed future site development avoid and minimize wetland impacts to the extent practicable.

UMAM Assessment

If future site development results in impacts to jurisdictional wetlands, the regulatory agencies will require compensatory mitigation as part of the environmental permitting process. The amount of wetland mitigation required is determined using the Uniform Mitigation Assessment Method (UMAM), as per Chapter 62-345, FAC, which evaluates the following wetland criteria: location/landscape support, water environment, and community structure. Based on a hypothetical development scenario of impacting all wetlands onsite, UMAM was utilized to assess the functional values of the impacted wetlands and associated mitigation requirements. Because all wetlands onsite were considered impacted under this scenario, the existing functional value of the wetlands equates to the total functional loss requiring mitigation. **Attachment 4** provides the preliminary UMAM analysis and estimated mitigation requirements for the two FLUCFCS Map alternatives (Alternatives 1 and 2) outlined above.

Location and Landscape Support – The location and landscape support for the proposed wetland impacts were given a score of “5” out of 10 for their current conditions. This is based on their overall geographic location as well as their proximity to major roadways and adjacent developments.

Water Environment – The water environment scores for the wetland impacts were scored between “5” and “7” out of 10 for their current conditions. Large swales exist along the northern and eastern boundaries of the parcel, which alter natural sheet flows onsite. However, the hydrologic regime is still sufficient to support the sustenance of wetland vegetation.

Community Structure – The community structure criteria scored between “5” and “7” out of 10. These scores were based on the degree of invasive exotic vegetation, appropriateness of plant species observed for the specific habitat type, plant conditions, topographic features, and evidence of regeneration/recruitment and land management practices or lack thereof.

Based on the preliminary UMAM analysis, the wetlands onsite provide between 12.04 to 19.05 “functional units”. These functional units represent the number of mitigation bank credits that would need to be purchased under the hypothetical development scenario of impacting all wetlands onsite. As of September 2023, the cost of one wetland credit at the two nearest mitigation banks, Corkscrew Regional Mitigation

Bank and Panther Island Mitigation Bank, is \$190,000 and is subject to change based on market conditions. For planning/budgeting purposes, the estimated mitigation cost for this hypothetical scenario of impacting all wetlands onsite and purchasing mitigation bank credits may range from \$2,300,000± (FLUCFCS Alternative 1; 24.07 acres of wetland impacts) to \$3,700,000± (FLUCFCS Alternative 2; 35.14 acres of wetland impacts). Typically, SFWMD does not require mitigation for impacts to man-made surface waters. Another potential mitigation option if this is a Lee County sponsored project may be to utilize existing mitigation credits available at one of Lee County's established mitigation sites, such as the Section 33 Regional Mitigation Site. The cost of this mitigation option is unknown but may result in considerable cost savings.

Based on recent experience with similar projects, it is estimated that the ERP review process may take between eight (8) to twelve (12) months once a permit application is submitted. Actual review times may vary based on regulatory agency workload/staffing levels, the extent of wetland impacts proposed, potential listed species issues that must be addressed, extent of public opposition, and other variables.

Section 404 Wetland Permitting

In December 2020, the FDEP assumed Section 404 wetland permitting authority from the USACE for certain wetlands and Waters of the United States (WOTUS). The subject site is within an area of assumed jurisdiction by FDEP. Therefore, FDEP will be the regulatory agency responsible for the review of any future WOTUS determination requests or Section 404 permit applications.

Regulations pertaining to the definition of jurisdictional wetlands and WOTUS under the Clean Water Act (CWA) of 1972 have been changing for decades. Most recently, on August 29, 2023, the U.S. Environmental Protection Agency (EPA) and the USACE issued a final rule to amend the final "Revised Definition of WOTUS" rule, published in the Federal Register on January 18, 2023. This amended rule conforms the definition of WOTUS to the U.S. Supreme Court's May 25, 2023, decision in the case of *Sackett v. Environmental Protection Agency*. The conforming rule will become effective upon publication in the Federal Register. While the 2023 *Sackett* Supreme Court ruling generally reduces the extent of jurisdictional WOTUS and wetlands that fall under federal purview, recent experience with regulatory permitting staff in south Florida reveals inconsistencies among individual permit reviewers at the local level with regard to the implementation of State 404 rules related to WOTUS determinations (i.e., which wetlands are classified as jurisdictional WOTUS). Based on the location of the site and its distance and lack of surface connection to traditional navigable waters and tributaries, a Section 404 application requesting verification of a "No Permit Required" (NPR; that any wetlands and surface waters onsite are not WOTUS) may be appropriate.

Lee County Permitting

Prior to the initiation of construction activities, a vegetation clearing permit will need to be obtained from Lee County. A Protected Species Survey (PSS) will also be required within one year of the commencement of construction in accordance with Lee County Land Development Code, Chapter 10, Article 3, Division 8 (Protection of Habitat). Field surveys covering a minimum of 80% of each habitat within the project area will need to be conducted utilizing pedestrian belt transects and performed in all vegetation associations (FLUCFCS) listed by the Lee County Protected Species Ordinance, which may be inhabited by listed flora or fauna.

Potential Listed Species Involvement

Along with the site visits, a review of GIS data and online resources was conducted to determine potential threatened and endangered species utilization within the project area. Use of the site by listed species is limited by the urbanized nature of the area and the degree of exotic vegetation onsite. Based on the presence of suitable habitat and review of available GIS data, the following listed species may utilize the site or immediate vicinity.

Florida Panther (*Puma concolor coryi*)

The Florida panther is designated as federally endangered by the USFWS. The project site is within the secondary zone of the USFWS Florida panther Focus Area. According to the February 2007 USFWS Florida Panther Effect Determination Key (Panther Key), projects within the Focus Area that are greater than one acre in size “may affect” the species and consultation with the USFWS is requested. Under Section 7 of the ESA, the FDEP (for projects with State “Assumed” wetland impacts) must consult with the USFWS to ensure their actions, including wetland permit decisions, do not result in the take of a listed species or destruction or adverse modification of their habitat. For projects that do not require a Section 404 permit from the FDEP, developers may conduct technical assistance with the USFWS to informally coordinate regarding a project’s effects on a listed species or its habitat.

The USFWS has established a panther habitat assessment methodology (Methodology) to evaluate project effects to the panther and its habitat. Impacts to panther habitat and compensatory mitigation requirements are expressed in panther habitat units (PHUs). **Attachment 5** provides preliminary PHU calculations for FLUCFCS Map Alternatives 1 and 2. Based on the USFWS Methodology and a future development scenario that impacts the entire site, compensation for impacts to panther habitat may require the purchase of between 175± PHUs (FLUCFCS Map Alternative 1) to 246± PHUs (FLUCFCS Map Alternative 2). One PHU

at a panther conservation bank currently costs about \$850 per PHU as of September 2023. Therefore, the cost of panther mitigation may range from \$149,000 (Alternative 1) to \$210,000 (Alternative 2). Because wetland credits at various wetland mitigation banks contain varying numbers of PHUs (depending on which bank is selected), some of the PHUs required as mitigation for panther habitat may be able to be offset through the wetland mitigation requirements. Based on the preliminary panther calculations, it is clear that wetland mitigation requirements represent the bigger factor for budgetary planning compared to panther mitigation.

Florida Bonneted Bat (*Eumops floridanus*)

Effective November 2, 2013, the USFWS listed the Florida bonneted bat (FBB) as endangered under the ESA. The property is located within the USFWS Consultation Area for this species. FBBs forage in a variety of habitats including wetlands, open water, upland forests, shrub, and urban areas that provide food sources such as beetles and flies as well as drinking water sources. Known roosting habitats include forested natural areas, stands of tall, mature trees, dead trees, tree cavities, and man-made structures such as bridges, buildings, and bat houses.

The USFWS 2019 Consultation Guidelines (Guidelines) for the FBB indicate that project sites with potential roosting habitat that are greater than 5-acres in size should conduct full acoustic and roost surveys to assess the extent of FBB usage onsite and whether the proposed project may affect the species. FBB acoustic and roost surveys will therefore likely be required as part of the environmental permitting process. Acoustic surveys are not considered valid when overnight temperatures fall below 65° Fahrenheit during the first five hours after sunset. Therefore, acoustic surveys in Southwest Florida should generally be conducted between April and November to avoid unfavorable weather conditions.

Audubon's Crested Caracara (*Caracara cheriway*)

The Florida population of caracara is designated as federally threatened by the USFWS. Caracaras primarily nest in cabbage palms and prefer open dry or wet prairie habitats with short-stature vegetation and a low density of trees that can be used for nesting. Nesting season for crested caracaras is from November to April. No critical habitat has been designated for the species by the USFWS. The project site is located near the western limits of the USFWS consultation area for this species. The urbanized nature of the areas surrounding the property and the degree of exotic vegetation present onsite limits the suitability of the site for nesting and foraging by this species. Although no sign of this species was observed during the site surveys, the regulatory agencies may require species-specific nesting season surveys for this species as

part of the environmental permitting process. If required, nesting season surveys must be carried out from January through April 30 to constitute a valid survey according to USFWS guidelines.

Bald Eagle (*Haliaeetus leucocephalus*)

The bald eagle was removed from the federal list of threatened and endangered species in 2007, though it is still afforded protection through the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. The USFWS has established a standard 660-foot protective buffer zone around a bald eagle nest for this region (USFWS, 2017). No bald eagle sightings or evidence of bald eagle nests were observed during the site visit. A review of bald eagle nest GIS data from Lee County's database did not identify any bald eagle nest sites within 660 feet of the property. Unless a new nest is established within 660 feet of the site, future development activities are not expected to adversely affect this species.

Eastern Indigo Snake (*Drymarchon corais couperi*)

The eastern indigo snake is listed as federally threatened and suitable habitat exists onsite for this species. It has a large range that can encompass areas of 125 to 150± acres. In August 2021, the USFWS updated standard protection measures (SPMs) for indigo snakes, which if implemented during construction, are typically acceptable by the regulatory agencies to ensure construction activities do not adversely affect the species. SPMs for the indigo snake include education of construction personnel who will be performing clearing activities, posting educational signs onsite, and providing instruction to construction personnel on what to do if they should encounter a living or dead indigo snake.

American Alligator (*Alligator mississippiensis*)

American alligators are listed as federally threatened by the USFWS due to their similarity in appearance to the American crocodile (*Crocodylus acutus*). There are no standard protection measures or designated critical habitat for the American alligator. Alligators can be found in a variety of wetland habitats, rivers, ponds, lakes, and swamps. Based on the presence of suitable habitats offsite and the likelihood that suitable habitat will remain for this species onsite postconstruction, future development of the site is not expected to adversely affect this species.

Everglade Snail Kite (*Rostrhamus sociabilis plumbeus*)

The project area is located within the USFWS consultation area for the federally endangered Everglades snail kite and 44± miles southwest of federally designated critical habitat near Lake Okeechobee. Snail kite habitat consists of freshwater marshes and the shallow vegetated edges of lakes (natural and man-made) where apple snails can be found. Nesting season for snail kites is

primarily January through July, although nesting may occur year-round. Although habitat for this species may be present within the reservoirs and vegetated excavation areas onsite, habitat values are limited by the urbanized nature of the surrounding areas and expected flashy nature of onsite hydrologic regimes, which may adversely affect apple snail (*Pomacea* sp.; preferred food of snail kites) productivity. Future development activities are not expected to adversely affect this species.

Eastern Black Rail (*Laterallus jamaicensis ssp. jamaicensis*)

Effective November 9, 2020, the eastern black rail was designated as federally threatened by USFWS. This secretive marsh bird species occurs in a variety of salt, brackish, and freshwater marsh habitats and requires dense vegetative cover with shallow water or moist soil conditions. Nests by this species may be dome shaped and are typically well hidden and positioned over moist soil or shallow water. Although suitable foraging and nesting habitat is present onsite, no sign of this species was observed during the field surveys.

Red-cockaded Woodpecker (*Leuconotopicus borealis*)

The RCW is designated federally endangered according to USFWS and requires large open areas of mature, live pine trees (60+ years old) for nesting. The project site is located within the red cockaded woodpecker (RCW) consultation area, although no suitable habitat exists onsite. Potential RCW habitats onsite have been cleared as part of past agricultural and sanitary landfill land uses. No evidence of RCW usage was observed during the August 2023 surveys. Further, no RCWs have been documented in this portion of Lee County since 1990. The possibility exists that regulatory agencies may request RCW species-specific surveys during the environmental permitting process for future site development. However, the likelihood that RCWs occur in this geographic area any longer is small and thus future development of the site is not expected to adversely affect the species.

Wading birds

Little blue herons (*Egretta caerulea*) and tri-colored herons (*Egretta tricolor*) are listed as State-threatened by FWC and were observed during the site visit. Other protected wading bird species, such as the roseate spoonbill (*Platalea ajaja*) may also occasionally utilize the site for foraging purposes. Mitigation for wetland impacts will offset any lost foraging opportunities that may be associated with proposed future site development plans. Additionally, any creation of stormwater management areas onsite will likely provide higher quality foraging habitat compared to the ditches and swales currently onsite.

Wood Stork (*Mycteria americana*)

The wood stork is designated as federally threatened by the USFWS. Pursuant to the May 2010 Programmatic Wood Stork Effect Determination Key (Key), the USFWS recognizes an 18.6-mile Core Foraging Area (CFA) around all active wood stork colonies in south Florida. The property is located within the wood stork CFA. If future development requires impacts to surface waters and/or wetlands considered by USFWS to be suitable foraging habitat for this species, mitigation may be required. Mitigation for impacts to wood stork foraging habitat is typically offset by the wetland impact mitigation (i.e., purchase of wetland mitigation credits) during the environmental permitting process.

Summary

Future development of the site will likely require impacts to wetlands and surface waters. The SFWMD will likely require a modification of the original ERP or a new ERP permit to address surface water management and environmental issues. A State 404 permit through the FDEP is not expected to be required based on the presumed absence of jurisdictional WOTUS onsite, subject to agency verification. It is however recommended that an application be made with FDEP for a No Permit Required (NPR) verification, or for a State 404 permit if deemed necessary. Jurisdictional wetland determinations and associated verifications of wetland delineations/acreages onsite will be confirmed by the SFWMD and FDEP during the environmental permitting process.

Under a hypothetical future development scenario of impacting all wetlands onsite, wetland mitigation will be required by SFWMD (and possibly FDEP if they determine WOTUS exist onsite that are proposed to be impacted). Options for accomplishing wetland mitigation may include purchasing wetland mitigation credits from a permitted wetland mitigation bank or using available credits at one of Lee County's established mitigation sites, such as the Section 33 Regional Mitigation Site. The estimated cost range for wetland mitigation is between \$2,300,000 to \$3,700,000 based on the two FLUCFCS Map alternatives discussed in this report and use of a wetland mitigation bank (costs may be reduced if mitigation is accomplished using one of Lee County's established mitigation sites). Further, wetland mitigation requirements and associated costs may be reduced if wetland impacts are minimized. This estimate is subject to change based on agency verification of wetland acreages onsite, UMAM scores, mitigation bank prices at time of development, and other factors. Cost estimates discussed herein are intended for general planning purposes only and are subject to change.

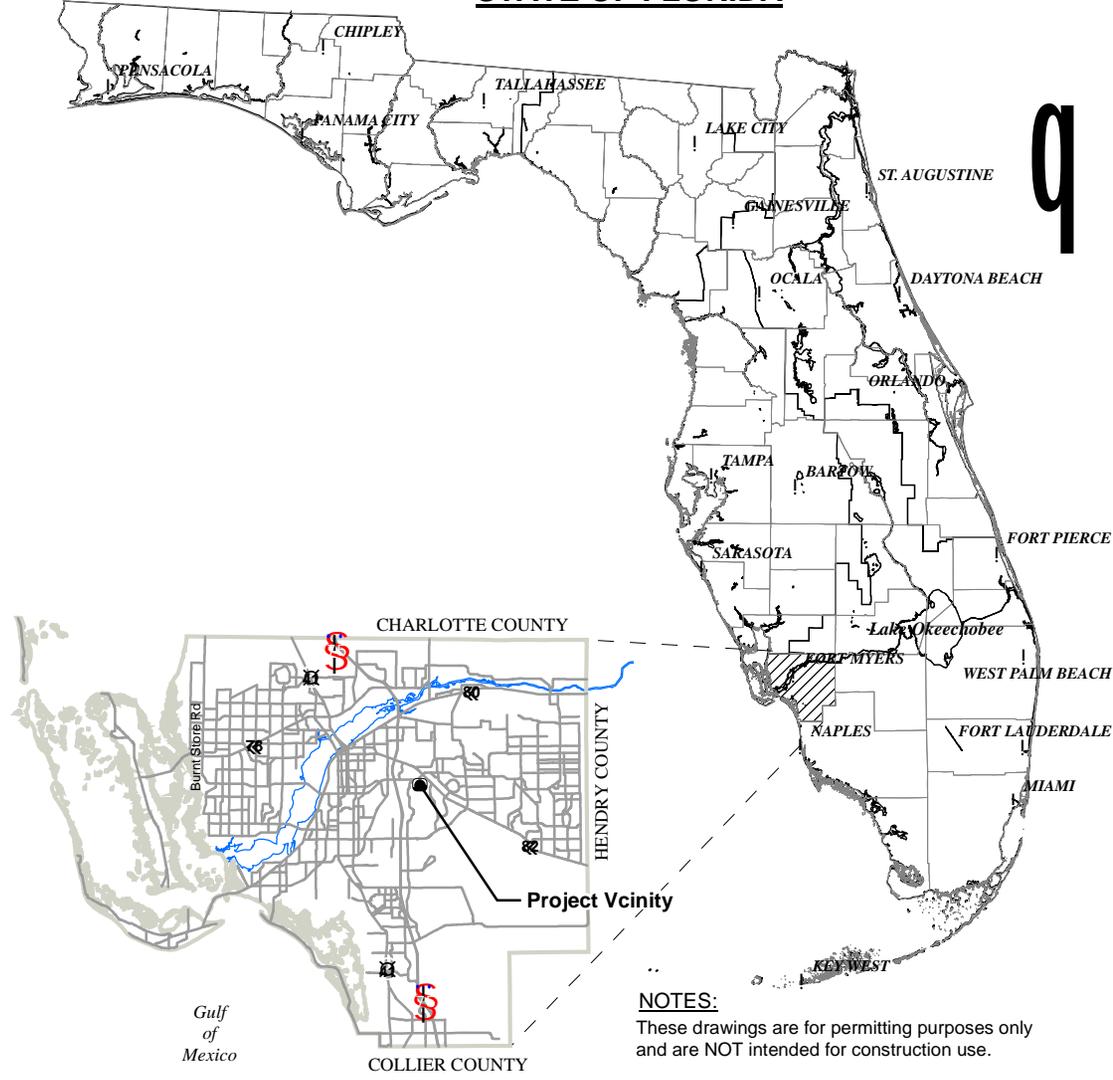
A generalized protected species survey, and possibly species-specific surveys such as for the Florida bonneted bat, will be required as part of any future environmental permitting process. Mitigation may be required for impacts to listed species habitat, primarily related to the Florida panther. Should mitigation

be required for impacts to Florida panther habitat, PHU costs are estimated to range from \$149,000 to \$210,000 based on the two FLUCFCS Map Alternatives discussed and development of the entire project site. A portion of the panther mitigation requirements may be offset by the wetland mitigation program. The regulatory agencies may also require implementation of Best Management Practices (BMPs) and Standard Protection Measures (SPMs) to ensure protection of listed species during construction.

Attachment 1
Location Map

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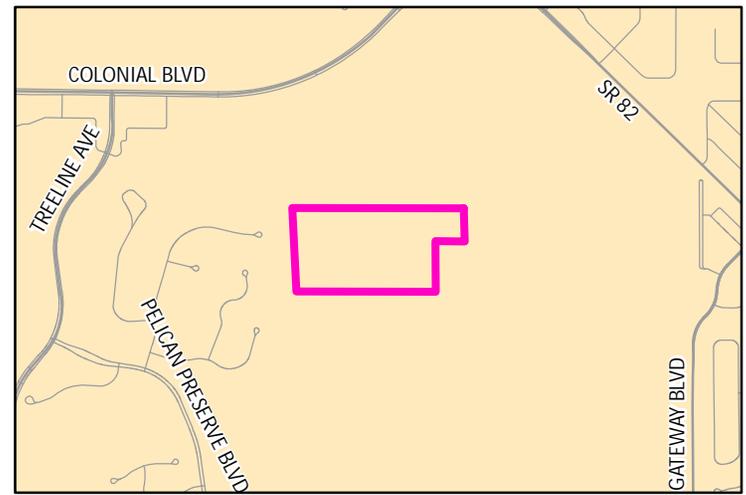
STATE OF FLORIDA



LEE COUNTY
N.T.S.

Section 36, Township 44 South, Range 25 East
Latitude: 26° 36' 25" N, Longitude: 81° 46' 14" W

NOTES:
These drawings are for permitting purposes only
and are NOT intended for construction use.



STREET MAP
N.T.S.



VICINITY AERIAL
N.T.S.

Notes: Aerial
Photo 2023

Lee County MRF Prop. Acquisition
Lee County, Florida

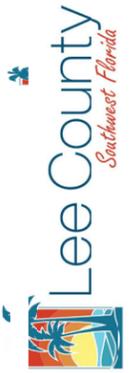


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Location Map

DATE September 2023	PROJECT NO. 20203303-016	FILE NO.	SCALE Not to Scale	SHEET 1
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Attachment 2
NRCS Soil Survey



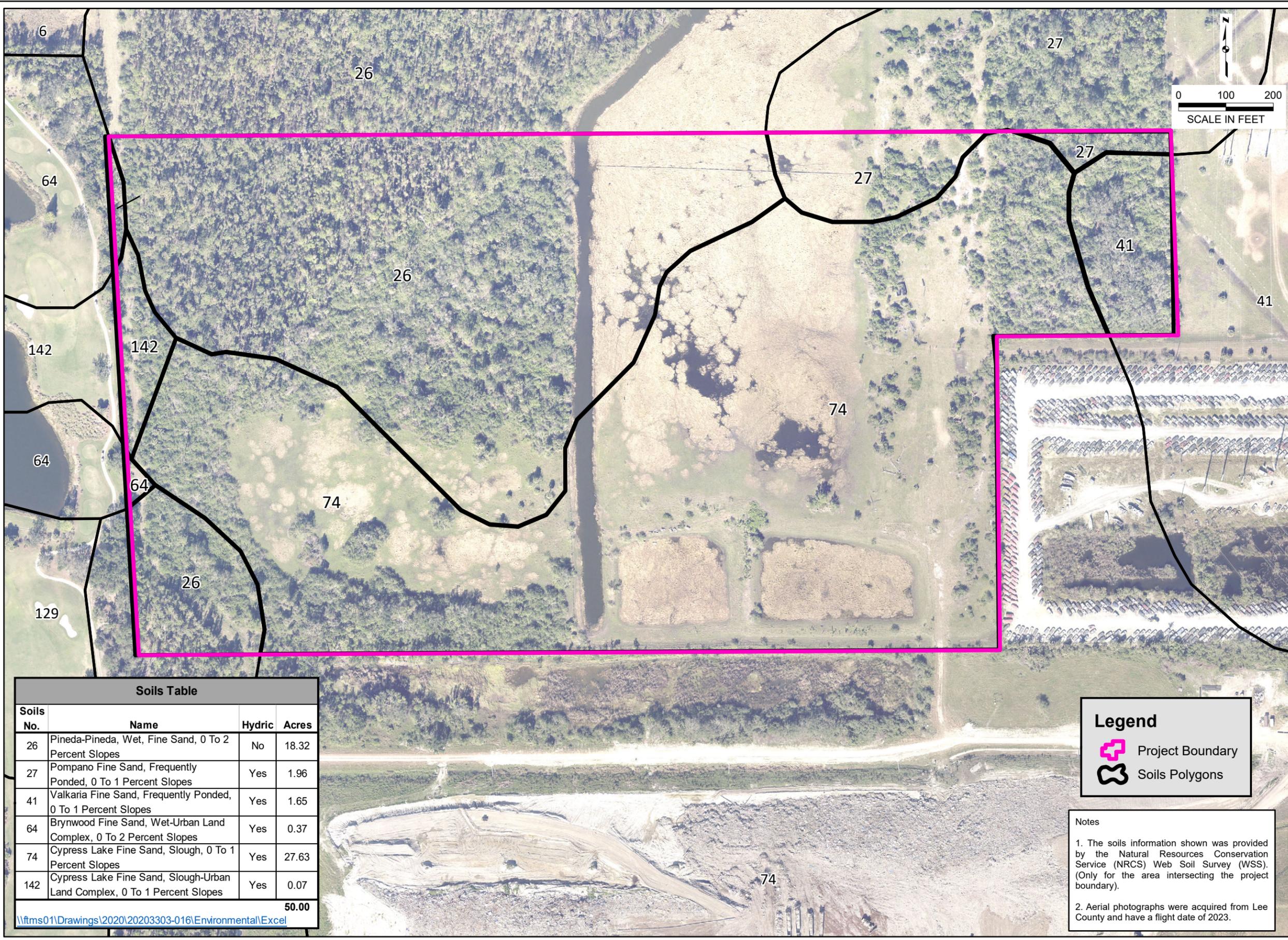
Lee County MRF Prop. Acquisition
 Lee County, Florida

NO.	DESCRIPTION	DATE

DATE: September 2023
 PROJECT NO. 20203303-016
 FILE NO. 00-00-00
 SCALE: As Shown

Soils Map

SHEET NUMBER



Soils Table			
Soils No.	Name	Hydric	Acres
26	Pineda-Pineda, Wet, Fine Sand, 0 To 2 Percent Slopes	No	18.32
27	Pompano Fine Sand, Frequently Pondered, 0 To 1 Percent Slopes	Yes	1.96
41	Valkaria Fine Sand, Frequently Pondered, 0 To 1 Percent Slopes	Yes	1.65
64	Brynwood Fine Sand, Wet-Urban Land Complex, 0 To 2 Percent Slopes	Yes	0.37
74	Cypress Lake Fine Sand, Slough, 0 To 1 Percent Slopes	Yes	27.63
142	Cypress Lake Fine Sand, Slough-Urban Land Complex, 0 To 1 Percent Slopes	Yes	0.07
			50.00
\\ftms01\Drawings\2020\20203303-016\Environmental\Excel			

Legend

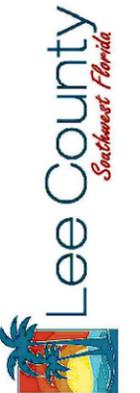
- Project Boundary
- Soils Polygons

Notes

- The soils information shown was provided by the Natural Resources Conservation Service (NRCS) Web Soil Survey (WSS). (Only for the area intersecting the project boundary).
- Aerial photographs were acquired from Lee County and have a flight date of 2023.

Attachment 3

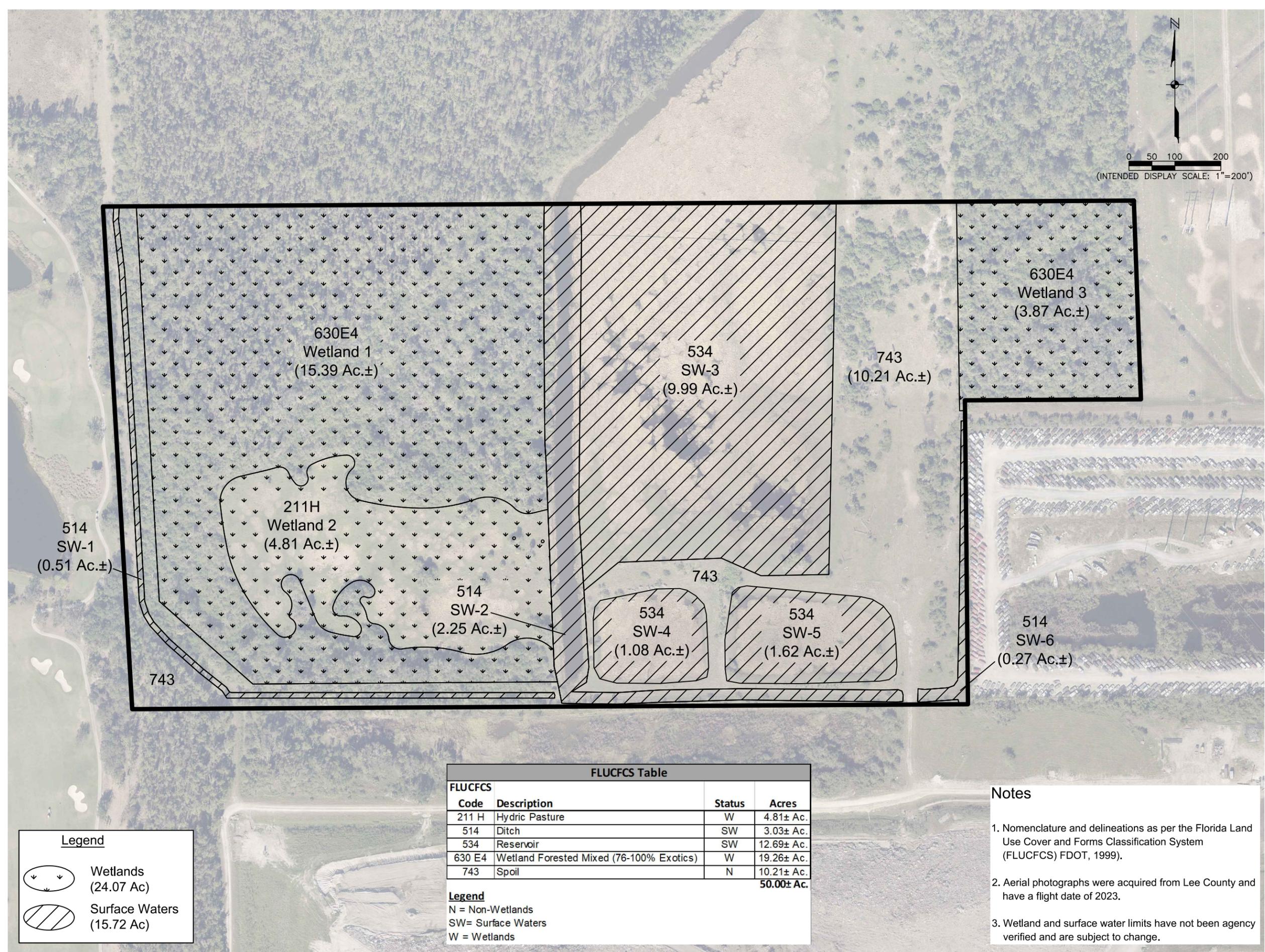
FLUCFCS Map for Alternatives 1 & 2



Lee County MRF Property
 Acquisition
 Lee County, Florida

NO.	REVISIONS DESCRIPTION	DATE

DATE: September 2023
 PROJECT NO.: 20203303-016
 FILE NO.: 36-44-25
 SCALE: As Shown



Legend

Wetlands (24.07 Ac)

Surface Waters (15.72 Ac)

FLUCFCS Table			
Code	Description	Status	Acres
211 H	Hydric Pasture	W	4.81± Ac.
514	Ditch	SW	3.03± Ac.
534	Reservoir	SW	12.69± Ac.
630 E4	Wetland Forested Mixed (76-100% Exotics)	W	19.26± Ac.
743	Spoil	N	10.21± Ac.
			50.00± Ac.

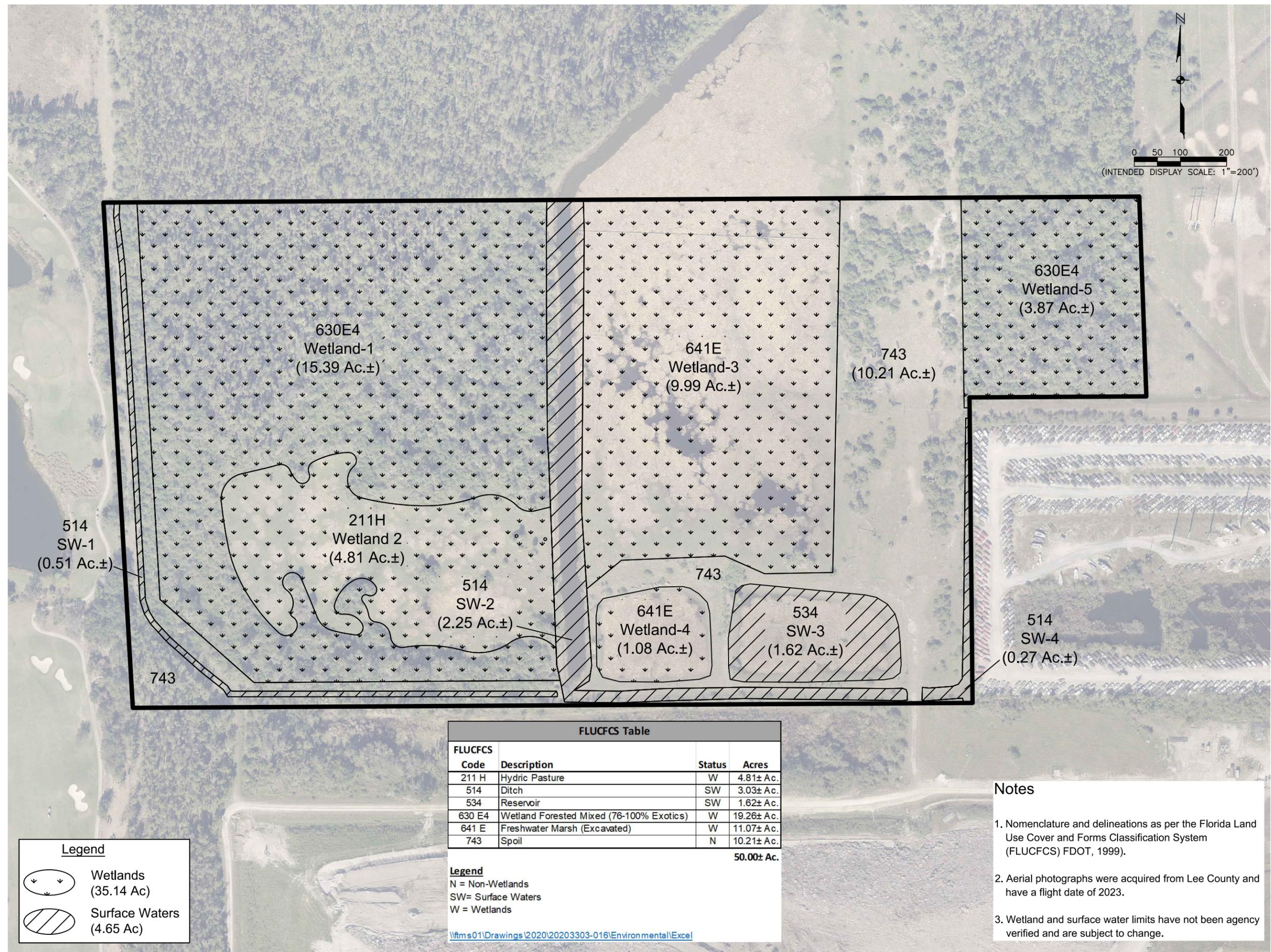
Legend
 N = Non-Wetlands
 SW= Surface Waters
 W = Wetlands

Notes

- Nomenclature and delineations as per the Florida Land Use Cover and Forms Classification System (FLUCFCS) FDOT, 1999).
- Aerial photographs were acquired from Lee County and have a flight date of 2023.
- Wetland and surface water limits have not been agency verified and are subject to change.

NO.	REVISIONS DESCRIPTION	DATE

DATE: September 2023
 PROJECT NO.: 20203303-016
 FILE NO.: 36-44-25
 SCALE: As Shown



Legend

	Wetlands (35.14 Ac)
	Surface Waters (4.65 Ac)

FLUCFCS Table

FLUCFCS Code	Description	Status	Acres
211 H	Hydric Pasture	W	4.81± Ac.
514	Ditch	SW	3.03± Ac.
534	Reservoir	SW	1.62± Ac.
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641 E	Freshwater Marsh (Excavated)	W	11.07± Ac.
743	Spoil	N	10.21± Ac.
			50.00± Ac.

Legend
 N = Non-Wetlands
 SW= Surface Waters
 W = Wetlands

[\\ftms01\Drawings\2020\20203303-016\Environmental\Excel](#)

- Notes**
1. Nomenclature and delineations as per the Florida Land Use Cover and Forms Classification System (FLUCFCS) FDOT, 1999).
 2. Aerial photographs were acquired from Lee County and have a flight date of 2023.
 3. Wetland and surface water limits have not been agency verified and are subject to change.

Attachment 4

Preliminary UMAM Calculations for Alternatives 1 & 2

Attachment 4 - Preliminary UMAM Calculations

FLUCFCS MAP ALTERNATIVE #1

Direct Assessment Area	FLUCFCS	(A) Acres	(=AxB) Existing Functional Units		(B) Existing Composite Score ¹	UMAM Sub-Score Category		
						Location and Landscape Support	Water Environment	Community Structure
W-1	630E4	15.39	7.70		0.50	5.0	5.0	5.0
W-2	211H	4.81	2.41		0.50	5.0	5.0	5.0
W-3	630E4	3.87	1.94		0.50	5.0	5.0	5.0
Assessment Acres		24.07	12.04	Total Functional Units				

Alternative 1: 12.04 mitigation bank credits required to offset impacts.



FLUCFCS MAP ALTERNATIVE #2

Direct Assessment Area	FLUCFCS	(A) Acres	(=AxB) Existing Functional Units		(B) Existing Composite Score ¹	UMAM Sub-Score Category		
						Location and Landscape Support	Water Environment	Community Structure
W-1	630E4	15.39	7.70		0.50	5.0	5.0	5.0
W-2	211H	4.81	2.41		0.50	5.0	5.0	5.0
W-3	641E	9.99	6.33		0.63	5.0	7.0	7.0
W-4	641E	1.08	0.68		0.63	5.0	7.0	7.0
W-5	630E4	3.87	1.94		0.50	5.0	5.0	5.0
Assessment Acres		35.14	19.05	Total Functional Units				

Alternative 2: 19.05 mitigation bank credits required to offset impacts.

Notes:

¹ Existing composite score = sub-score category sum divided by 30

Attachment 5

Preliminary PHU Calculations for Alternatives 1 & 2

PROJECT WORKSHEET

<i>Habitat Type</i>	<i>Assigned value</i>	Habitat types of land to be developed				Habitat types of land after development			
		Primary/d Zone	Secondary Zone	Other Zone	Primary Equivalent Habitat Units	Primary/d Zone	Secondary Zone	Other Zone	Primary Equivalent Habitat Units
Pine forest	9.5				0				0
Hardwood-Pine	9.3				0				0
Cypress swamp	9.2				0				0
Hardwood swamp	9.2		2.31		15				0
Hardwood Forest	9				0				0
Dry prairie	6.3				0				0
Unimproved pasture	5.7				0				0
Shrub swamp/brush	5.5				0				0
Improved pasture	5.2		4.81		17				0
Cropland	4.8				0				0
Orchards/groves	4.7				0				0
Marsh/ wet prairie	4.7		11.07		36				0
Xeric scrub	4.5				0				0
Exotic/Nuisance plants	3		16.95		35				0
Coastal wetlands	3				0				0
Barren/Disturbed lands	3		10.21		21				0
Water	0		4.65		0				0
Urban	0				0				0
Reservoirs*					0				0
STA*					0				0
TOTAL		0.00	50.00	0.00	124.04	0.00	0.00	0.00	0.00

CONTINUE

CLEAR SHEET

COMPENSATION
TO OFF-SET
246
Habitat Units

***NOTE: The assigned value for Reservoirs and STAs varies by size, proposed future management, and their position in the landscape. See the associated methodology document for guidance on starting values and considerations.**