**LAKEWOOD RANCH 1000**

**MANATEE COUNTY**

**PRELIMINARY SITE PLAN/FINAL SITE PLAN**

**APPLICATION**

**ENVIRONMENTAL ASSESSMENT REPORT**

**Prepared for:**

**Taylor Morrison of Florida, Inc.**

**551 North Cattleman Road, Suite 200**

**Sarasota, Florida 34232**

**Prepared by:**



***1191 Sarasota Center Boulevard***

***Sarasota, Florida 34240***

**ECT No. 170835-0400**

**Updated September 2018**

**DOCUMENT REVIEW**

The dual signatory process is an integral part of Environmental Consulting & Technology, Inc’s (ECT’s) Document Review Policy No. 9.03. All ECT documents undergo technical/peer review prior to dispatching these documents to any outside entity.

This document has been authored and reviewed by the following employees:

Kerri A. MacNutt Tammy Lyday

Author Peer Review





Signature Signature

September 26, 2018 September 26, 2018

Date Date

**TABLE OF CONTENTS**

Section Page

1.0 introduction 1-1

2.0 HISTORIC USES 2-1

3.0 SOILS 3-1

4.0 HABITATS AND LAND USES 4-1

4.1 ONSITE HABITATs and LAND USES 4-1

4.1.1 UPLANDS 4-1

4.1.2 WETLANDS AND SURFACE WATERS 4-3

4.2 ADJACENT HABITATS and LAND USES 4-9

5.0 IMPACTS TO NATIVE HABITATS 5-1

5.1 WETLAND IMPACTS 5-1

5.1.1 DIRECT WETLAND IMPACTS 5-1

5.1.2 TEMPORARY WETLAND IMPACTS 5-2

5.1.3 AVOIDANCE AND MINIMIZATION 5-3

5.1.4 WETLAND IMPACT ANALYSIS 5-4

5.1.5 WETLAND MITIGATION 5-5

5.1.6 WETLAND BUFFER IMPACTS 5-17

4.2 IMPACTS TO NATIVE UPLAND HABITAT 5-18

4.3 OPEN SPACE REQUIREMENTS 5-19

6.0 listed WILDLIFE species 6-1

APPENDICES

APPENDIX A - SWFWMD PETITION NO. 42043286.000

APPENDIX B - SWFWMD MSSW PERMIT NO. 42043286.000

APPENDIX C - PHOTOGRAPHS

APPENDIX D - UMAM SUMMARY

APPENDIX E - UMAM FORMS

APPENDIX F - BUFFER PLANTING SPECIFICATIONS

**LIST OF TABLES**

Table 3-1. Soil Types Occurring on LWR 1000 Site

Table 4-1. Summary of Wetlands and Surface Waters Associated with the LWR 1000 Site

Table 5-1. Summary of Wetland and Surface Water Impacts Associated with the LWR 1000 Site

Table 5-2. Temporary Wetland Impact Planting Specifications for LWR 1000 Site

Table 6-1. Listed Wildlife Species Associated with the LWR 1000 Site

**LIST OF FIGURES**

FIGURE 1. VICINITY MAP

FIGURE 2. WATERSHED MAP

FIGURE 3. 1940 AERIAL

FIGURE 4. 1977 AERIAL

FIGURE 5. SOILS MAP

FIGURE 6. SWFWMD WETLAND MAP

FIGURE 7. LAND USE MAP

FIGURE 8. OBSERVED LISTED SPECIES MAP

FIGURE 9. DATABASE LISTED SPECIES MAP

# 

# introduction

Environmental Consulting and Technology, Inc. (ECT) has prepared this environmental narrative in support of a Preliminary Site Plan (PSP)/ Final Site Plan (FSP) Application to obtain Manatee County approval for Lakewood Ranch 1000 which is a large-scale residential development proposed by Taylor Morrison of Florida, Inc. in the Northeast Sector of Lakewood Ranch. A General Development Plan (GDP) Application has already been submitted to Manatee County and is currently under review for this site (PDR-17-34(Z)(G)). This PSP/FSP application includes construction plans for Phase 1 of the proposed development and mass grading for the remainder of the site.

The Project Site encompasses 991 acres (+/-) located east of Lorraine Road, south of State Road 64 and west of Uihlein Road, in Sections 2, 3, 10, and 11, Township 35 South, Range 19 East, Bradenton, eastern Manatee County, Florida (Figure 1). The site is currently owned by Schroeder Manatee Ranch (SMR) and is part of a major agricultural operation that extends east and south of the project site. The majority of the project occurs in the Lake Manatee subbasin of the Manatee Watershed (Figure 2). The entire site drains into Mill Creek (on the south side of the site) which drains west under Lorraine Road and then north into the upper reaches of the Manatee River.

This narrative focuses on the existing site conditions and environmental criteria required for Final Site Plan approval under Section’s 705 and 706 of Manatee County’s Land Development Code (LDC) to address protection of habitats, wildlife, listed species and wetlands. To assist with this application, ECT evaluated the site for native habitats (uplands and wetlands) and listed wildlife species that are subject to protection under state, federal, and/or local government regulations. Field work to support this ecological assessment was conducted in the fall of 2017 (October through December) through spring of 2018 (May). Specific tasks completed during the field reviews include: habitat assessment and mapping and listed species surveys to identify potential threatened and endangered species occurring on or near the site. In addition to field reviews, ECT reviewed publicly available data such as: high resolution aerial photographs and historic aerials, National Wetlands Inventory (NWI), Southwest Florida Water Management District (SWFWMD) Land Use data, Manatee County’s Hotspot of Biodiversity Map, the Natural Resource Conservation Service (NRCS) Soil Survey, and a number of listed species databases published by the Florida Fish and Wildlife Conservation Commission (FWC) and the United States Fish and Wildlife Service (USFWS). Formal wetland delineations and seasonal high water (SHW) determinations were also conducted and approved by SWFWMD as discussed in Section 4.0 below.

# HISTORIC USES

A review of historic aerial photographs from the 1940’s indicate the site was mostly characterized by pine flatwoods, but also contained isolated wetlands and the creek system which still runs through the property (Figure 3). The landscape changed significantly in the early 1970’s when the entire site was converted to agriculture and used for either sod production or citrus as shown in the 1977 aerial (Figure 4).

# SOILS

The *Soil Survey of Manatee County* (1983) shows that six (6) soil types occur on the property. As shown on the NRCS Soils Map (Figure 5), the majority of the site was characterized by Myakka fine sands, 0 to 2 percent slopes (030) which is considered uplands soils by the state. Similarly, Ona fine sand, Orstein substratum (035) occurs north of Mill Creek, and a small band of Cassia fine sand (011) occurs in the southwest corner of the property. Areas of hydric soils were characterized by Delray Complex (016), Felda-Wabasso Association, Frequently Flooded (024), and Floridana-Immokalee-Okeelanta soils (026). These hydric soil areas similarly tract the wetland habitats that have been identified for the site. However, with the intense agricultural activities and ditching, the wetland areas appear to be slightly smaller than contained in the original soils units.

**Table 3-1. Soil Types Occurring on the LWR 1000 Project Site.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Soil Type** | **Mapping**  **Unit** | **Hydric**  **Soils** | **Natural Vegetation Associations Referenced in the Soil Survey of Manatee County (1983)** |
| Cassia Fine Sand | 011 | No | This soil type is indicative of sandy ridges of scrub habitat. Vegetation includes scrub oaks, gall berry, saw palmetto, wiregrass, and various other grasses. |
| Delray Complex | 016 | Yes | Vegetation associated with these soil types include sawgrass, maidencane, willow, cypress, maidencane, St. Johnswort, various bluestems, smooth cordgrass and sedges. |
| Felda-Wabasso Association, Frequently Flooded | 024 | Yes | Vegetation associated with these soil types include sawgrass, maidencane, willow, cypress, maidencane, St. Johnswort, various bluestems, smooth cordgrass and sedges. |
| Floridana- Immokalee-Okeelanta Soils | 026 | Yes | Vegetation associated with these soil types include sawgrass, maidencane, willow, cypress, maidencane, St. Johnswort, various bluestems, smooth cordgrass and sedges. |
| Myakka Fine Sand, 0-2 percent slope | 030 | No | South Florida flatwoods habitat Slash pine, wax myrtle, saw palmetto, gallberry, pineland threeawn, bluestem, panicum and various other grasses. |
| Ona Fine Sand, Orstein Substratum | 035 | No | South Florida flatwoods habitat includes slash pine, wax myrtle, saw palmetto, gallberry, pineland threeawn, bluestem, panicum and various other grasses. |

# HABITATS AND LAND USES

ECT conducted habitat assessments on the subject property to evaluate the extent of native habitats as required under Section 705 and 706 of Manatee County’s LDC. As part of the habitat assessments, ECT confirmed that onsite wetlands and surface waters were delineated and approved by SWFWMD as part of a formal wetland determination (SWFWMD Petition No. 42043286.000) that was issued on November 16, 2017 (Appendix A) for this site and the balance of the NE Sector Plan. As part of these efforts, wetlands and surface waters on the property were delineated (by others) in accordance with state wetland delineation methodology outlined in *Chapter 62-340, F.A.C. Delineations of the Landward Extent of Wetlands and Surface Waters*. The approved wetland lines are depicted on the jurisdictional survey that was issued by SWFWMD (Appendix A) and are also reflected on the enclosed Wetland Map (Figure 6). SHW elevations were also established for onsite wetlands and field verified by SWFWMD as part of the jurisdictional determination as reflected in Appendix A.

## ONSITE HABITATs and LAND USES

Overall, the site contains 40.92 acres of jurisdictional wetlands and 38.51 acres of surface waters. The site also contains another 9.48 acres of non-jurisdictional reservoirs that are used for stormwater attenuation and treatment. The remainder of the site (902.93 acres) is considered upland, most of which is now under agricultural use. Habitats and land uses were mapped based on the *Florida Land Use Cover and Forms Classification System*[[1]](#footnote-1) (FLUCFCS) as reflected on the enclosed Land Use Map (Figure 7). A summary of uplands and wetlands/surface waters is provided below with a brief description of each habitat type reflected on the Land Use Map.

### UPLANDS

The majority of upland habitats onsite were cleared historically and have been in agricultural use since the early 1970’s (or earlier). The site contains a total of approximately 902.93 acres of uplands, most of which has been converted to sod (FLUCFCS 242), citrus (FLUCFCS 221), or tree nursery operations (FLUCFCS 241). The only remaining upland habitat onsite is characterized by a mixed hardwood (FLUCFCS 438) community that abuts the north and south side of the creek system (Wetland 35). The few other upland land uses include areas of open land (FLUCFCS 260) that were once in crop production, an abandoned race track (FLUCFCS 183), abandoned citrus (FLUCFCS 242), and Brazilian pepper (FLUCFCS 422).

*Citrus* *(FLUCFCS 221; 305.47 acres)*

The south and east side of the site contains areas that are still in active citrus production.

*Sod (FLUCFCS 242; 389.68 acres)*

The majority of the site contains large fields that are in active sod production and provide a variety of turf grasses including bahia grass (*Paspalum notatum*), Bermuda grass (*Cynodon dactylon*), and St. Augustine (*Stenotaphrum secundatum*).

*Tree Nurseries (FLUCFCS 241; 72.30 acres)*

This land use type is associated with two areas located on the north side of Mill Creek abutting Lorraine Road. This area appears to be tree crop production of planted live oaks (*Quercus virgniana*) and cypress trees (*Taxodium* sp.).

*Mixed Hardwood Community (FLUCFCS 438; 53.89 acres)*

This native habitat consists of mixed hardwood community that buffers most of the creek system (WL-35), but primarily occurs on the north side of Mill Creek abutting Lorraine Road. The community is dominated by live oak (*Quercus virgniana*) and laurel oak (*Quercus laurifolia*), but also contains scattered cabbage palm (*Sabal palmetto*), red maple (*Acer rubrum*), swamp bay (*Persea palustris*), slash pine (*Pinus elliotti*) and melaleuca (*Melaleuca quinquenervia*). The understory is dominated by saw palmetto (*Serenoa repens*), but also contains heavy Brazilian pepper (*Schinus terebinthifolius*) coverage in some areas along with wax myrtle (*Myrica cerifera*), cogon grass (*Imperata cylindrica*), caesarweed (*Urena lobata*), blackberry (*Rubus* sp.), catbrier (*Smilax* sp.), and grapevine (*Vitus rotundifolia*). Portions of the understory are also highly disturbed as a result of land silviculture and land management practices (i.e., roller chopping) and hog rooting. Evidence of tree die off was also observed.

*Other Open Land (FLUCFCS 260; 70.47 acres)*

This land use type is associated with various agricultural lands throughout the site that either support ranch maintenance facilities or open lands that once supported crops, silviculture or citrus before being harvested and abandoned. Most of these areas are now fallow.

*Abandoned Citrus (FLUCFCS 224; 2.55 acres)*

This land use type is associated with an abandoned citrus grove located on the south side of the site (west side of the creek system).

*Abandoned Racetrack (FLUCFCS 183; 6.63 acres)*

This area is located on the south side of the property and was in silviculture use in 2006 based on historic aerials. This area was harvested in 2006 and then abandoned in which case it became heavily overgrown. In 2013, the area was cleared and converted to a racetrack which is no longer in use.

*Brazilian pepper (FLUCFCS 422; 1.95 acres)*

This land use type is associated with vegetated areas that line the ditches at top of bank on the edge of the sod field (around Wetlands 25 and 26). The areas are dominated by Brazilian pepper but also contain scattered oaks and pines, cabbage palms, wax myrtle, elderberry, cogon grass, dog fennel, and overgrowth of vines.

### WETLANDS AND SURFACE WATERS

The site contains 40.92 acres of wetlands, 9.57 acres of which are associated isolated wetlands and 31.35 acres of wetlands are associated with the Mill Creek slough system that runs through the site as shown on the Wetland Map (Figure 6). The site also contains 38.51 acres of jurisdictional surface waters designated as Other Surface Waters (OSWs), most of which are associated with a network of agricultural ditches (37.77 acres total) and two (2) small cattle ponds totaling 0.74 acres. The site also contains two (2) man-made reservoirs totaling 9.48 acres that are considered non-jurisdictional since they were permitted by SWFWMD as part of Management of Surface Water Permit (MSSW Permit 403052) issued to SMR in 1988. A copy of the MSSW permit (and drawings) are enclosed (Appendix B). Since these reservoirs are man-made systems that were permitted by SWFWMD for stormwater treatment and storage purposes, they are considered exempt from SWFWMD jurisdiction under Chapter 62-340.700(5), F.A.C. and were not claimed as part of the formal wetland determination that was recently issued (Appendix A).

All the wetlands on the subject property were historically isolated systems that are now heavily drained from ditching with the exception of the creek system that runs through the site. The creek system is still a high functioning system, but all other wetlands are highly disturbed from the ditching and intensive agricultural uses which have altered hydrology and resulted in heavy nuisance/exotic infestation.

Table 4-1 below provides a summary of the wetlands and surface waters associated with the site followed by a description of each area. The wetlands are characterized by a variety of vegetative communities including exotic hardwood wetland (FLUCFCS 619), disturbed freshwater marsh (FLUCFCS 641 N/E 4), wetland forested mixed (FLUCFCS 630), stream and lake swamp (FLUCFCS 615), and exotic hardwood wetland (FLUCFCS 619). The surface waters include a portion of Mill Creek (mapped as FLUCFCS 511) and a series of agricultural ditches (FLUCFCS 513), two (2) isolated farm ponds (FLUCFCS 525), and two (2) reservoirs (FLUCFCS 534) which are upland-cut and non-jurisdictional.

Table 4-1. Summary of Wetlands and Surface Waters Associated with the LWR 1000 Project Site.

| Wetland/OSW ID | FLUCFCS Code | Habitat Name | Acreage |
| --- | --- | --- | --- |
| **Wetlands** | | | |
| NE-W19 | 641 N/E4 | Freshwater Marsh, Disturbed | 0.76 |
| NE-W20 | 619 | Exotic Hardwood Wetland | 2.40 |
| NE-W21 | 641 N/E4 | Freshwater Marsh, Disturbed | 0.67 |
| NE-W22 | 619 | Exotic Hardwood Wetland | 1.44 |
| NE-W23 | 641 N/E4 | Freshwater Marsh, Disturbed | 0.57 |
| NE-W24 | 641 N/E4 | Freshwater Marsh, Disturbed | 0.36 |
| NE-W25 | 619 | Exotic Hardwood Wetland | 1.17 |
| NE-W26 | 619 | Exotic Hardwood Wetland | 1.64 |
| NE-W31 | 630 | Wetland Forested Mixed | 0.39 |
| NE-W31A | 641 N/E4 | Freshwater Marsh, Disturbed | 0.17 |
| NE-W35 | 615 | Stream and Lake Swamp | 31.32 |
| NE-W35A | 511 | Creek | 0.03 |
| **Wetland Total** | | | **40.92 acres** |
| OSW-ditches | 513 | Agricultural Ditch | 37.77 |
| OSW-P1 | 525 | Cattle Pond | 0.24 |
| OSW-P2 | 525 | Cattle Pond | 0.50 |
| **OSW Total** | | | **38.51 acres** |
| **Total** | | | **79.43 acres** |

*Wetland 19 (FLUCFCS 641 N/E 4; 0.76 acres)*

Wetland 19 is located near the northeast corner of the property and directly abuts the north property boundary. This wetland is ditched and surrounded by sod farming operations. It is a disturbed freshwater marsh that is primarily vegetated with primrose willow (*Ludwigia peruviana*) in the center and is surrounded by Brazilian pepper. The wetland contains a lot of nuisance and exotic species (approximately 80%) including Brazilian pepper, torpedo grass (*Panicum repens*), West Indian marsh grass (*Hymenachne amplexicaulis*), carrotwood (*Cupaniopsis anacardioides*), cogon grass, guinea grass (*Urochloa maxima*), and primrose willow. A few native species include maidencane (*Panicum hemitomon*), beakrush (*Rhyncospora* sp.), elderberry (*Sambucus canadensis*), scattered laurel oak, swamp fern (*Blechnum serrulatum*), dog fennel (*Eupatorium capillifolium*), and coinwort (*Centella asiatica*). The wetland is shown as a marsh system based on historic aerials (Figure 4), but is highly degraded relative to historic condition as a result of altered hydrology and the intensive agricultural uses that surround the wetland. Representative photographs of this wetland are included in Appendix C.

*Wetland 20 (FLUCFCS 619; 2.40 acres)*

Wetland 20 is located near the north property boundary and is surrounded by sod farming operations. The vegetation of the wetland consists of mostly exotic or invasive species (75%) such as Brazilian pepper, primrose willow, torpedo grass, and guinea grass. Native vegetation includes red maple, laurel oak, Carolina willow (*Salix caroliniana*), fetter bush (*Lyonia lucida*), salt bush (*Baccharis halimifolia*), wax myrtle (*Myrica cerifera*), and understory of swamp fern and sword fern (*Polystichum munitum*). The wetland is clearly shown as a marsh system based on the 1977 aerial (Figure 4), but has transitioned into an exotic forested wetland as a result of altered hydrology (from ditching) and the intensive agricultural uses that surround the wetland. The wetland is connected to agricultural network of ditches to the north. Representative photographs of this wetland are included in Appendix C.

*Wetland 21 (FLUCFCS 641 N/E4; 0.67 acres)*

This wetland is located near the north-central portion of the property that is a depressional marsh completely surrounded by sod farming operations. The vegetation in the wetland consists of pasture grasses and exotic or invasive species such as torpedo grass, primrose willow, West Indian marsh grass, and guinea grass. Native vegetation included caesarweed, broomsedge (*Andropogon virginicus*), and foxtail (S*etaria* sp.). This wetland is shown as a marsh system based on historic aerials (Figure 4), but is highly degraded relative to historic condition as a result of the intensive agricultural uses that surround the wetland. Representative photographs of this wetland are included in Appendix C.

*Wetland 22 (FLUCFCS 619; 1.44 acres)*

Wetland 22 is a poor-quality wetland dominated by Brazilian pepper (80% coverage) and limited amount of red maple, saltbush, primrose willow, and caesarweed. The west side of the wetland is adjacent to a pond and agricultural ditch and contains cattail (*Typha* sp.), primrose willow, cogon grass, torpedo grass, and various sedges (*Cyperus* sp.) The wetland is clearly shown as a marsh system based on the 1977 aerial (Figure 4), but has transitioned into an exotic forested wetland as a result of ditching and the surrounding agricultural uses. Representative photographs of this wetland are included in Appendix C.

*Wetland 23 (FLUCFCS 641 N/E4; 0.57 acres)*

This wetland is located near the west side of the property that is located south of the farming operation buildings. The north side of the wetland consists of 80% of Brazilian pepper, and a few forested wetland species such as red maple, laurel oak, and bays with an understory of ferns. The south side is most indicative of an herbaceous wetland and contains torpedo grass, elderberry, primrose willow, and scattered salt bush. The wetland is shown as a marsh system based on the 1977 aerial (Figure 4), but now contains some trees and heavy coverage of Brazilian pepper which indicates hydrology has been altered relative to historic condition. Representative photographs of this wetland are included in Appendix C.

*Wetland 24 (FLUCFCS 641 N/E4; 0.36 acres)*

This is a small wetland surrounded by sod farming to the north and citrus groves to the south. The south side of the wetland has also been ditched. The wetland is very disturbed and a predominance of nuisance and exotic species including Brazilian pepper, guinea grass, and primrose willow. A few native species include wax myrtle, caesarweed, and sword fern. The wetland is shown as a marsh system on the 1977 aerial (Figure 4), but has transitioned into a disturbed exotic hardwood wetland as a result of ditching and the surrounding agricultural uses. Representative photographs of this wetland are included in Appendix C.

*Wetland 25 and 26 (FLUCFCS 619; 1.17 acres and 1.64 acres, respectively)*

These wetlands are surrounded by citrus groves and similar in community structure and overall condition. Agricultural ditches surround the wetlands. The vegetation consists of 80% Brazilian pepper with limited forested species including laurel oak, cabbage palm (*Sabal palmetto*), and red maple. The interior of these wetlands are mostly vegetated with Carolina willow, primrose willow, and understory of various ferns. These wetlands are shown as herbaceous systems on the 1977 aerial (Figure 4), but have transitioned into disturbed exotic hardwood wetlands as a result of altered hydrology from the perimeter ditches and the surrounding agricultural uses. Representative photographs of this wetland are included in Appendix C.

*Wetland 31 (FLUCFCS 619; 0.39 acres)*

Wetland 31 is a disturbed forested wetland that is predominantly vegetated with laurel oak, cabbage palm, sweet bay (*Magnolia virginiana*), swamp bay, and Brazilian pepper. Most of the trees have died off relative to historic conditions likely due to ditching which has altered the hydrology. The understory consists of castorbean (*Ricinus communis*), dog fennel, primrose willow, and caesarweed. The wetland has a disturbed buffer that has been ditched around the perimeter resulting in hydrologic impacts to the wetland. This wetland is shown as a forested system on the 1977 aerial (Figure 4), but has very few trees remaining as a result of ditching and impacts from the surrounding agricultural uses. Representative photographs of this wetland are included in Appendix C.

*Wetland 31A (FLUCFCS 641 N/E4; 0.17 acres)*

Wetland 31A is bisected from Wetland 31 by a ditch and berm. This portion of the wetland is characterized as freshwater marsh. It is ditched and has a limited vegetated buffer. Therefore, it is very disturbed and contains a lot of nuisance and exotic species including dog fennel, primrose willow, and caesarweed. Although this wetland was historically a forested wetland (Figure 4), it only has a few native trees that remain (cabbage palm and laurel oak) as a result of impacts from ditching and the surrounding agricultural uses. Representative photographs of this wetland are included in Appendix C.

*Wetland 35 and Wetland 35A (FLUCFCS 615/ FLUCFCS 511; 31.35 acres)*

This wetland is a high quality forested slough system that runs through the property and serves as the headwaters for Mill Creek. The bottom of the channel is mostly sandy, with steep side banks which get steeper at the western downstream limits. The creek channel is generally intact. Several historical agricultural crossings are present, with some agricultural drainage outfalls draining to the Mill Creek tributary and some channelization observed. It is vegetated with a variety of hardwoods including red maple, laurel oak, American elm (*Ulmus americana*), swamp bay, and scattered pines. The understory contains cabbage palm, pop ash (*Fraxinus caroliniana*), wild citrus (Citrus aurantium), wax myrtle, wild coffee (*Psychotria nervosa*), buttonbush (*Cephalanthus occidentalis*), and a variety of ferns including chain fern, swamp fern, and royal fern (*Osmunda regalis*). The wetland also contains a stream that runs through the middle of the wetland and flows to the east (into Mill Creek). This stream was flowing during the site review and is designated as a perennial stream (Figure 2) based on the USGS database. Representative photographs of this wetland are included in Appendix C.

*Ditches (FLUCFCS 513; 37.77 acres)*

The site contains an extensive ditch network that is interconnected with culverts and used for drainage purposes. The ditches are deeply incised and heavily vegetated with cattail, primrose willow, and rattlebox (*Sesbania* sp.). Representative photographs of these ditches are included in Appendix C.

*Farm Ponds (FLUCFCS 525; 0.74 acres)*

Two very small farm ponds are located on the property. One pond abuts the north side of Mill Creek (WL-35A) and the other pond is located on the west side of Wetland 22. Both ponds are vegetated with cattail and primrose willow and are hydrologically connected to ditches.

*Reservoirs (FLUCFCS 534; 9.48 acres)*

As discussed above, the site contains two (2) man-made reservoirs which were entirely constructed in uplands based on historic imagery (Figure’s 3 and 4) and the soils survey (Figure 5). These reservoirs were permitted by SWFWMD as part of MSSW Permit 403052 issued to SMR in 1988 (Appendix B). Since these reservoirs are man-made systems that were permitted by SWFWMD for stormwater treatment and storage purposes, they are considered exempt from SWFWMD jurisdiction under Chapter 62-340.700(5), F.A.C.

## ADJACENT HABITATS and LAND USES

Habitats and land uses within 500 feet of the property boundary are also identified on the Land Use Map (Figure 7). These areas were primarily mapped through aerial interpretation relying on current aerial photographs, NWI data, SWFWMD land use data, and the NRCS Soils Survey. Limited ground truthing was conducted for areas where public access was available. Formal wetland lines were also used (where available) using the surveyed linework that approved by SWFWMD as part of the NE Sector Plan (Appendix A).

As shown on the Land Use Map (Figure 7), most surrounding land uses are associated with SMR’s agricultural operations and consist of sod farms (FLUCFCS 242), citrus groves (FLUCFCS 221), and pasture (FLUCFCS 211). The adjacent lands abutting the north and west side of the project site are mostly characterized by a few rural residential properties or small farm operations that support pasture or tree nurseries (FLUCFCS 241).

# IMPACTS TO NATIVE HABITATS

As discussed in Section 4.0, most native habitats were cleared historically and converted to agriculture use so the site only contains 94.81 acres of native habitat (< 10% of total project area). The GDP that is under review for this project was carefully designed to avoid wetlands to the maximum extent practicable and also minimized impacts to upland habitats abutting the creek system to provide for an expanded buffer along Mill Creek. Minimum thirty (30) foot buffers will also be maintained around the preserved wetlands in accordance with Manatee County’s LDC and Comprehensive Plan to ensure both wetland and overall watershed protection. Below is a detailed discussion on the proposed wetland impacts and mitigation proposed to compensate for the impacts followed by a summary of native habitat preservation and open space requirements.

## WETLAND IMPACTS

**5.1.2 DIRECT WETLAND IMPACTS**

The project will result in a total of 2.25 acres of impacts to wetlands and 38.51 acres of surface waters (ditches and farm ponds) as summarized in Table 4-1 below. All wetlands on the property are being preserved with the exception of 2.25 acres which will be impacted to accommodate necessary roadway infrastructure. The impacts are reflected on the as shown on the PSP/FSP Construction Drawings prepared by Waldrop Engineering, P.A. and include 0.76 acres of impact for a road crossing over the creek system (Wetland 35) and 1.49 acres of impacts to small, disturbed wetlands (Wetland’s NE WL-23, 24, 31, 31A) that are unlikely to be viable systems long-term if preserved.

With the exception of the road crossing over Mill Creek, all wetland impacts are restricted to small disturbed wetlands that are considered low quality based on their size, predominance of nuisance and exotic vegetation coverage, altered hydrology (from ditching), and surrounding agricultural uses. The degrading condition of these systems is evident when comparing the existing condition to historic aerials which show many of the wetlands have transitioned from herbaceous systems to exotic hardwood wetlands. These wetlands are also completely surrounded by citrus or sod fields, have virtually no native buffer and no connectivity with the creek corridor or other native habitats. With the exception of Wetland 35, all of these wetlands are considered non-viable since they are isolated and highly disturbed. Based on Section 706.5A of the LDC, no avoidance and minimization is required for non-viable wetlands that are less than half an acre in size, and although Wetland 23 is 0.57 acres in size, it is also considered to be a non-viable given it’s poor condition.

Impacts to these small, disturbed wetlands (Wetlands NE WL-23, 24, 31, 31A) total 1.49 acres, most of which are necessary for roadway alignments. The remaining wetlands have been avoided by shifting residential lots or incorporated as a feature into the proposed golf course. The proposed road crossing through Wetland 35 is necessary to link the north and south side of the development. Since the creek spans the entire site, no other practical alternative exists to accommodate a road crossing without impacting wetlands which is consistent with wetland impact criteria outlined in Section 706.5B of Manatee County’s LDC. The proposed crossing has been sited to overlap an existing farm road crossing to minimize the impact footprint. The width of the crossing will also be reduced (relative to the typical road profile) to minimize impacts. A box culvert will be placed at ordinary high water (OHW) elevation to maintain existing surface water flow and hydrology. The remainder of the creek system (Wetland 35 and 35A) will be preserved and protected with a minimum 30-foot buffer, although expanded buffer will be provided by the upland preservation areas that are maintained along the creek corridor as depicted on the PSP/FSP.

All other wetlands have been avoided by shifting residential lots or incorporating them as a features of the golf course in which case minimum 30-foot buffers will also be provided. Overall, a total of 38.67 acres of wetlands will be preserved and the surrounding buffers will be maintained and restored to comply with Section 706.7 of Manatee County’s LDC.

Table 5-1. Wetland and Surface Water Impacts Associated with the LWR 1000 Project Site.

| Wetland/  OSW ID | Habitat Type | FLUCFCS Code | Permanent Impacts | | Total Impact Acreage |
| --- | --- | --- | --- | --- | --- |
| Dredge | Fill |
| **Wetland Impacts** | | | | | |
| NE WL-23 | H | 641N/ E4 | - | 0.57 | 0.57 |
| NE WL-24 | F | 641N/ E4 | - | 0.36 | 0.36 |
| NE WL-31 | F | 630 | - | 0.39 | 0.39 |
| NE WL-31A | H | 641N/ E4 | 0.03 | 0.14 | 0.17 |
| NE WL-35 | F | 615 | - | 0.76 | 0.76 |
| **Total Wetland Impacts** | | | **0.03** | **2.22** | **2.25** |
| **OSW Impacts** | | | | | |
| OSW-ditches | Ditch | 513 | 5.36 | 32.41 | 37.77 |
| OSW-Pond | Cattle Pond | 525 | - | 0.50 | 0.50 |
| OSW-P2 | Cattle Pond | 525 | - | 0.24 | 0.24 |
| **Total OSW Impacts** | | | **5.36** | **33.15** | **38.51** |
| **GRAND TOTAL IMPACTS** | | | **5.39** | **35.37** | **40.76** |

## 5.1.2 TEMPORARY WETLAND Impacts

Minor temporary impacts (0.32 acres) are proposed on either side of the Mill Creek road crossing as shown on the PSP/FSP Construction Drawings provided by Waldrop Engineering, Inc. These temporary impacts will occur from minor encroachments and construction activities associated with the road crossing. Supplemental plantings will be installed in the temporary impact areas on either side of the proposed roadway crossing (Wetland 35) to alleviate concerns for secondary wetland impacts. Planting details are included in Table 5-2 below.

**Table 5-2. Temporary Wetland Impact Planting Specifications for LWR 1000 Project Site.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Plant Species1** | **Common Name** | **Size** | **Spacing** | **WL-35 Planting Area2**  **(0.32 AC.)** |
| *Spartina bakeri* | Sand cordgrass | 2 quart  or bare root | 3-foot | 774 |
| *Eleocharis interstincta* | Knotted spikerush | 2 quart  or bare root | 3-foot | 774 |
| *Myrica cerifera* | Wax myrtle | 3 gallon | 10-foot | 70 |
| *Cephalanthus occidentalis* | Buttonbush | 3 gallon | 10-foot | 70 |
| *Nyssa sylvatica* | Black gum | 3 gallon | 20-foot | 17 |
| *Fraxinus caroliniana* | Pop ash | 3 gallon | 20-foot | 17 |

1Other Florida native species may be substituted where appropriate

# 

# 5.1.3 AVOIDANCE AND MINIMIZATION

A primary principle of the environmental design of this project has been the preservation of the environmental corridor associated with Mill Creek that runs through the property. The site plan has also been designed to avoid the larger wetlands located within the agricultural field with the understanding that these wetlands will be enhanced post-development to improve wetland function and habitat value for wildlife.

During the site design process, different site plan alternatives were explored to reduce and eliminate wetland impacts. Prioritization of impacts to low quality wetland and preservation of the high-quality systems (both uplands and wetlands) were the focus of the site design. Most of these wetlands are non-viable systems that do not require avoidance and minimization based on Section 706.5A of the LDC. Regardless, avoidance and minimization efforts were made to shift lots and realign roadways and other infrastructure to avoid wetlands. Effort was also made to minimize impacts to the creek system by limiting it to one roadway crossing and utilizing the footprint of the existing farm road crossing. Any unavoidable wetland impacts will be appropriately mitigated in accordance with state and federal permitting criteria and Manatee County’s LDC.

Each of the proposed wetland impacts results from design constraints dictated by the points of origin for the roadway extensions, the design characteristics of the roadways, such as design speed and associated turning radii, placement of residential neighborhoods, and attempts to avoid or minimize wetland impacts and other native habitats to the greatest extent practicable while preserving significant areas of open space. The proposed roadway alignments and residential neighborhoods are the best compromise for providing access within the project site while minimizing impacts to environmental features.

The alignment of the future roadways are currently under design and permitting for this area and include the extension of 44th Avenue along the south boundary of this parcel and improvements to Uihlein Road along the east boundary. These roadway alignments have dictated the configuration of the parcel boundary and have also established entry points for the development to coordinate with adjacent developments.

As the roads were aligned, its location also attempted to avoid the larger, higher quality wetlands. However, due to road geometry and the configuration of the wetlands, it is difficult to avoid all wetland impacts while siting the roadway and the associated development pods. The site plan has undergone several modifications over the past year of planning efforts to minimize impacts which has allowed for more wetland preservation.

Under the current site plan, no impacts are proposed to the large, forested wetland located in the central portion of the site with the exception of the road crossing over Mill Creek which is necessary to link the north and south sides of the development. This crossing has been minimized since it is sited along an existing farm road as the alignment. Proposed impacts are limited to the agricultural ditch systems and low-quality wetlands that are small in size and more isolated from other habitats as a result of the agricultural uses. Given the degraded condition of these smaller wetlands (relative to historic conditions), they are unlikely to maintain ecological function long-term and would not be viable systems if they are preserved in an urban setting.

Approximately 2.25 acres of wetlands impacts are proposed. Most of the impact areas are previously disturbed marshes located within the agricultural farm fields which provide minimal wetland function and value in their current state. All wetland impacts will be mitigated to replace lost ecological functions and values. Overall, 38.67 acres of wetlands will be preserved, and 8.08 acres of these wetlands will be enhanced for mitigation purposes.

**5.1.4 WETLAND IMPACT ANALYSIS**

A wetland impact assessment was conducted in accordance with the Uniform Mitigation Assessment Method[[2]](#footnote-2) (UMAM) which is the State and County-accepted methodology for evaluating wetlands impacts and mitigation needs. The UMAM to quantify existing functions and values provided by these wetlands to estimate the functional loss associated with impacts and the amount of mitigation needed to compensate for the loss. A UMAM summary is enclosed (Appendix D) which shows the scores assigned for these wetlands in their *current* and *with project* condition and the functional loss quantified for the proposed impacts. Wetlands NE WL 23, 24, 31, and 31A provide very minimal value in terms of wetland functions and habitat considering the majority of these wetlands are dominated by nuisance and exotic vegetation. Although the Mill creek system is high quality, the area of Wetland NE WL-35 being impacted already has an existing farm road crossing and therefore provides moderate wetland function and habitat.

As shown in the UMAM summary (Appendix D), the proposed wetland impacts will result in a total of 1.05 units of functional wetland loss. Part I and II UMAM forms are also enclosed (Appendix E) to support the UMAM scores. Mitigation required to compensate for wetland impacts is outlined in the section below.

### WETLAND Mitigation

Mitigation for unavoidable wetland impacts will be provided to compensate for any loss in ecological function or value. Mitigation requirements were evaluated through a UMAM analysis. Based on the UMAM analysis conducted for the wetland impacts, a minimum of 1.05 units of functional gain is needed to compensate for the functional loss.

Mitigation will be provided onsite to compensate for proposed wetland impacts and will consist of 8.08 acres of wetland enhancement (within Wetlands WL-19, 20, 21, 22, 25, and 26) which will provide approximately 1.27 units of functional gain based on the UMAM analysis. The assigned UMAM scores, time lag and risk factors used to assess mitigation lift is also reflected in the UMAM Summary (Appendix D) and Part 1 and 2 forms (Appendix E).

Wetland enhancement will be achieved through eradication of nuisance/exotic vegetation and the elimination of agricultural drainage ditches which have severely altered wetland hydrology. These wetlands will also benefit from the removal of agricultural runoff since all stormwater will be pre-treated in the stormwater ponds. These wetlands will also be replanted with native species to improve community structure and provide a seed source for natural recruitment following removal of invasive species.

As discussed in Section 4.0, Wetlands WL-19, 20, 21, 22, 25, and 26 all have heavy coverage of Brazilian pepper and other nuisance/exotic vegetation (i.e., primrose willow, West Indian marsh grass, and torpedo grass) and therefore will be targeted for enhancement through nuisance/exotic removal. Species targeted for removal are identified in 2011 Florida Exotic Pest Plant Council (FEPPC) nuisance/ exotic species list and maintained in accordance with the performance goals. Following nuisance/exotic removal, areas devoid of native vegetation will be assessed for supplemental planting of native vegetation.

These wetlands are located within the active farming operations and receive excess nutrients from the agricultural operations. In addition, the wetlands are highly drained because of the excessive ditches throughout the site. The majority of these wetlands are connected by a series of ditches that are designed to rapidly move water off the agricultural areas or are pumped to hold water throughout the year. This has significantly altered the duration of inundation and saturation and altered vegetative patterns within the wetlands. Most wetlands have shifted to shrub and exotic hardwood wetlands due to the altered hydrology. As part of the restoration efforts for the wetlands, the mitigation plan proposes to fill the agricultural ditches during development, thereby restoring wetland hydroperiods to more closely reflect historic conditions. Such restoration should re-establish vegetative patterns to these areas and reduce competition from invasive non-native species. Water levels will be stabilized based on approximate historic season high water levels to rehydrate the wetlands.

These mitigation areas will be monitored in accordance with Manatee County’s LDC criteria until they reach success and are released from monitoring. In addition to the proposed mitigation, an additional 30.59 acres of high-quality wetlands will be preserved for creek corridor. All of these preserved habitats will be subject to some level of enhancement in accordance with Manatee County’s LDC to remove nuisance/exotic vegetation and replant wetland buffers regardless of mitigation requirements. These enhancement efforts will assist in maintaining long-term function and value for all preserved wetlands.

**5.1.6 WETLAND BUFFER IMPACTS**

The site plan has been designed to maintain wetland buffers in accordance with Section 706.7 of Manatee County’s LDC and alleviate concerns for secondary wetland impacts. An average 30-foot buffer will be maintained between the proposed development and the wetlands located on the project consistent with Manatee County requirements, however, minor encroachments are proposed in some areas abutting the lots or stormwater ponds to accommodate either grading or the installation of outfall control structures. A total of 0.24 acres of permanent buffer encroachments and 0.09 acres of temporary buffer encroachments are proposed as shown on the PSP/FSP Construction Drawings provided by Waldrop Engineering, P.A. The encroachments will occur within the buffers surrounding Wetlands 19, 20, 25 and 26. Buffer compensation for the permanent buffer impacts (Wetland’s 19, 20 and 25) are being provided (at 1:1 ratio) to maintain 30-foot “average” buffers consistent with Manatee County’s variable buffer requirements outlined in Section 706.7c of the LDC. The temporary encroachments proposed for Wetland 26 will be regraded and replanted as part of the buffer restoration activities in accordance with Section 706.7d of the LDC. Buffer restoration will consist of the removal of nuisance/exotic vegetation and supplemental planting to reestablish native vegetation. Buffer restoration planting specifications are included as Appendix F which reflects plant species, size and spacing details. The quantity of plant material will not be determined until nuisance/exotic removal is completed in which case planting needs can be more readily assessed.

The site plan has also been designed to provide expanded buffers well beyond the 30-feet along the Mill creek system comprised of native upland habitats (FLUCFCS 438) as shown on the PSP/FSP Construction Drawings.

**5.2** **IMPACTS TO NATIVE UPLAND HABITATS**

The mixed hardwood community (FLUCFCS 438) is the only native upland habitat that exists on this site as most of the site has been converted to citrus and sod fields. As shown on the PSP/FSP Construction Drawings prepared by Waldrop Engineering, P.A., a minimum of 18.35 acres of this native upland habitat will be preserved along the creek corridor (Wetland’s 35 and 35A), which will provide additional buffer for the wetlands. As discussed in Section 4.0, this upland community is somewhat disturbed from hog rooting, silviculture and land management practices where portions of the understory have been cleared and roller chopped and tree die off is also evident. With the exception of it’s proximity to the creek, this upland community is not considered unique nor does it provide substantial habitat value based on findings from our preliminary wildlife survey. Regardless, this upland community is recognized as having ecological value given it’s connectivity to the creek which is likely used as a wildlife corridor. Preservation of this area also provides additional protection for the creek system beyond the minimum 30-foot buffers to ensure water quality is maintained in receiving waters and also provides increased protection for the watershed consistent with Conservation Element of Manatee County’s Comprehensive Plan.

**5.3 OPEN SPACE REQUIREMENTS**

Overall, a minimum of 57.02 acres of native habitats (18.35 acres of native uplands and 38.67 acres of wetlands) will be preserved as shown on the GSP and PSP/FSP Construction Drawings prepared by Waldrop Engineering, P.A. The site plan was designed to preserve native habitats where feasible to satisfy the open space requirements outlined in Section 402.6 of the Manatee County’s LDC. Portions of the native habitat occurring in planned open space areas were quantified to ensure that 75% of native habitats “in planned open space areas” are being preserved. A total of 76.03 acres of native habitat occurs in planned open space areas which includes greenbelts, perimeter buffers, stormwater ponds and other miscellaneous open space. A minimum of 57.02 acres (75%) of native habitat occurring in planned open space is being preserved consistent with the County’s 75% requirement outlined in Section 402.6 of the LDC. These preservation acreages do not take into account the wetland buffers (6.79 acres) that will be preserved and restored to comply with the Section 706.7d of the LDC. Since these buffers will be supplementally planted with native vegetation as part of the County buffer restoration requirements, they will be considered native habitat open space.

# listed WILDLIFE species

ECT conducted wildlife surveys to evaluate the site for listed wildlife species considered Endangered, Threatened, or of Special Concern by the FWC under Chapter 68A-27 of the Florida Administrative Code (F.A.C.) or as Endangered or Threatened by the USFWS under 50 CFR 17 and 23. The wildlife surveys included a desktop review of relevant literature and databases including the FWC online wading birds and bald eagles (*Haliaeetus leucocephalus*) databases, the Florida Natural Areas Inventory (FNAI), and the Florida Committee on Rare and Endangered Plants and Animals texts. The surveys also focused on species that have potential to occur in Manatee County and also took into consideration the habitats that were identified onsite (Figure 7). Following the desktop analysis, ECT conducted field surveys in the fall/winter of 2017 (October through December) and winter/spring of 2018 (January through May) to comply with Policy 3.3.2.1 of the Comprehensive Plan which requires an updated survey prior to Final Site Plan approval. Surveys were conducted following general guidelines and methodologies provided in the Florida Wildlife Conservation Guide[[3]](#footnote-3) (2011) and also included a 20% survey for gopher tortoises (*Gopherus polyphemus*) in accordance with FWC’s *Gopher Tortoise Permitting Guidelines* (Revised January 2017). The field surveys focused on observations of all listed species, as well as physical features that may indicate the presence of these species; such as tracks, scat, nests, burrows, and cavity trees.

As discussed, most native upland habitats were previously converted to farmland and are being actively maintained in sod and citrus production or pasture. Furthermore, much of the native upland habitat that does remain is routinely managed as part of the ranch’s land management practices. The wetlands are also highly drained, overgrown with nuisance/ exotic vegetation and grazed by cattle which has limited wildlife use. Therefore, the site provides little habitat for wildlife and even less opportunity for listed species which typically require more suitable habitats. During the recent listed species surveys, ECT observed a Florida Sandhill Cranes[[4]](#footnote-4) (*Antigone canadensis pratensis*), little blue herons5 (*Egretta caerulea*) and American alligators[[5]](#footnote-5) (*Alligator mississippiensis)* as shown on the Listed Species Map (Figure 8).

Table 6-1 below includes a summary of listed species that were evaluated during the wildlife survey based on geographic occurrence, but most species are not expected to occur onsite given the major land conversions and lack of suitable habitat. Immediately following the table is a summary of our findings for key listed species.

| Table 6-1. | | Listed Wildlife Species Associated with The Lakewood Ranch 1000 Site in Manatee County, Florida | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| Common Name | | Scientific Name | Legal Status | | Preferred Habitat | Probability of Occurrence |
| USFWS | FWC |
| Reptiles | | | | | | |
| American Alligator | | *Alligator mississippiensis* | T (S/A) | FT  (S/A) | Inhabits freshwater and brackish waters including marshes, rivers, lakes, and ponds. | Observed |
| Eastern Indigo Snake | | *Drymarchon couperi* | T | FT | Occupies a wide range of habitat types including pine flatwoods, scrubby flatwoods, scrub and sandhill, hammocks, wetlands, coastal dunes and human-altered habitats. Often found as commensal species associated with gopher tortoise burrows. | Low |
| Gopher Tortoise | *Gopherus polyphemus* | C | ST | Inhabits sandhills, xeric oak scrub, sand pine scrub, and scrubby flatwoods. | Low to Moderate |
| Florida Pine Snake | *Pituophis melanoleucus mugitus* | ----- | ST | Inhabits sandhill, scrub, xeric hammock, scrubby flatwoods. Also inhabits mesic pine flatwoods and dry prairie with dry soils. Inhabits underground retreats. | Very Low |
| **Mammals** | | | | | |
| Sherman’s Fox Squirrel | *Sciurus niger shermani* | ----- | SSC | Inhabits sandhills with some pines and mesic flatwoods with low ground cover. | Low - Moderate |
| **Birds** | | | | | |
| Florida Scrub-jay | *Aphelocoma coerulescens* | T | FT | Inhabits low, open xeric oak scrub in peninsular Florida. | Very Low |
| Florida Grasshopper Sparrow | *Ammodramus savannarum floridanaus* | E | FE | Inhabits dry palmetto prairie | Very Low |
| Burrowing Owl | *Athene cunicularia floridana* | ----- | ST | Inhabits sandhills, ruderal communities, and dry prairies. | Low |
| Little Blue Heron | *Egretta caerulea* | ----- | ST | Inhabits marshes, swamps, ponds, estuaries, and rivers. Nests in shrubs and small trees. | Observed |
| Tricolored Heron | *Egretta tricolor* | ----- | ST | Inhabits marshes, swamps, ponds, estuaries, and rivers. Nests in shrubs and small trees. | Moderate |
| Roseate spoonbill | *Platalea ajaja* | ----- | ST | Inhabits marshes, swamps, ponds, estuaries, and rivers. Nests in shrubs and small trees. | Low |
| Southeastern American Kestrel | *Falco sparverius paulus* | ----- | ST | Inhabits open lands and nests in natural cavities of dead trees and abandoned woodpecker nests. | Low |
| Florida Sandhill Crane | *Grus canadensis pratensis* | ----- | ST | Breeds in emergent palustrine wetlands and forages in pastures. Utilizes open grassy areas and pasture for foraging and loafing. | Observed |
| Bald Eagle | *Haliaeetus leucocephalus* | \* | ----- | Nests in trees or structures along coasts, rivers and lakes. | Low to Moderate |
| Wood Stork | *Mycteria americana* | T | FT | Inhabits estuarine or freshwater wetlands; nest in tops of trees in cypress or mangrove swamps. | Moderate |
| Audubon’s Crested Caracara | *Polyborus plancus audobonii* | T |  | Nests in scattered cabbage palms or cabbage palm hammocks surrounded by pasture or dry/wet prairie. | Moderate |

\*Bald eagles are afforded protection under the federal Bald and Golden Eagle Protection Act.

E: Endangered FE: Federal Endangered FT: Federal Threatened FT(S/A): Federally Threatened due to similarity of appearance

SSC: Species of Special Concern ST: State Threatened T: Threatened

C: Candidate for Listing T(S/A): Threatened due to similarity of appearance

*Gopher Tortoises (Gopherus polyphemus)*

During the surveys, ECT specifically evaluated upland habitats for the State-Threatened gopher tortoise and only observed a few armadillo (*Dasypus novemcinctus*) burrows. No gopher tortoise burrows were observed. ECT specifically focused on the mixed hardwood community since it is the only upland habitat that remains on the property and the rest of the uplands are under intensive agricultural uses. There is still potential that gopher tortoises occur onsite, but populations are expected to be low density given the limited native upland habitat for this species. Prior to development, a 100% gopher tortoise survey will be conducted for all uplands in accordance with FWC’s *Gopher Tortoise Permitting Guidelines* (Revised January 2017) to locate all tortoises and their burrows in the development footprint. Appropriate authorizations will be obtained from FWC prior to construction to relocate tortoises offsite to an approved recipient site.

American alligators (*Alligator mississippiensis*)

American alligators are a common species that is only listed due to their similarity in appearance to the American crocodile. They can be expected to occur on nearly any site that contains suitable habitat including wetlands, rivers, lakes, and ponds. A couple alligators were observed in the deeper portions of the man-made reservoirs as shown on Figure 8. They are not expected to occur in most of the ditches onsite since they are mostly heavily overgrown with vegetation and do not support open water habitat, but the reservoirs have deep perimeter ditches and canals that provide more suitable habitat for this species. The wetlands are also too drained to support habitat for this species, but alligators may use the more open water portions of the creek on the west side of the site. This species will not be adversely affected by development and will likely benefit from habitat provided by the proposed stormwater ponds.

Eastern Indigo Snakes (*Drymarchon corais couperi*)

Eastern indigo snakesare listed as a Federally Threatened species and prefer xeric habitats including scrub, sandhill or scrubby flatwoods but can also be found in nearly any wooded upland habitat throughout Florida. They are also a commensal species commonly associated with gopher tortoise burrows. Given there was no evidence of tortoises (during the 20% gopher tortoise survey) and no xeric habitat occurs onsite, this species is unlikely to occur on the property. Regardless of the low probability of indigo snakes, a 100% gopher tortoise survey will be conducted prior to development in accordance with FWC’s *Gopher Tortoise Permitting Guidelines* (Revised January 2017), in which case indigo snake habitat will also be evaluated. The Applicant will also follow the USFWS’s *Standard Protection Measures for the Eastern Indigo Snake* (August 2013) to minimize concerns for indigo snakes during future construction.

Florida Scrub-Jays (*Aphelocoma coerulescens*)

No Florida scrub-jays[[6]](#footnote-6) were observed nor does the site contain any suitable scrub habitat to support this species. Consequently, the project is not anticipated to adversely affect Florida scrub-jays.

Bald Eagles (*Haliaeetus leucocephalus*)

While no longer listed as Threatened by USFWS, bald eagles continue to be protected by state and federal laws under the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act. Based on the FWC Eagle Nest Locator database, the three closest known bald eagle nests are located approximately 2 miles from the project site (Figure 9). ECT inspected some large pines that occur along the creek corridor to evaluate for potential nests, but no eagle activity or nests have been observed.

Florida Sandhill Cranes (*Grus canadensis pratensis*)

Florida Sandhill Cranesare state listed as Threatened and typically nest in shallow, freshwater marsh wetlands between February and April. They also utilize open grassy areas and pasture for foraging. During the surveys, ECT observed sandhill cranes foraging in the sod fields on the north side of the property as shown on Figure 8. The sod fields are maintained regularly (low ground cover) which provides ideal foraging habitat for this species. Therefore, sandhill cranes are expected to utilize this site for foraging purposes only. The creek system and drained wetlands do not provide suitable nesting habitat for this species since they prefer freshwater marshes with an average water depth of 5-13 inches. Therefore, the proposed wetland impacts will not result in a loss of sandhill crane habitat. Although some foraging grounds (sod fields) will be impacted from development, the proposed golf course will provide substantial foraging opportunity for this species. To ensure no impacts to this species, the project will also follow the FWC *Species Conservation Measures and Permitting Guidelines for Florida Sandhill Cranes[[7]](#footnote-7)* to ensure no adverse impacts occur to this species.

Listed Wading Birds

Wading birds are expected to utilize this site for foraging and loafing given the habitat provided by onsite wetlands and ditches. Based on the USFWS database, the closest known wood stork (*Mycteria americana*)[[8]](#footnote-8) colony is located approximately nine (9) miles northwest of the site at the confluence of the Braden River and Manatee River (Figure 9). Therefore, wood storks can also be expected to utilize the site since it falls within the Core Foraging Area[[9]](#footnote-9) (CFA) of this colony. During the surveys, only two species of listed wading birds were directly observed including Florida Sandhill Cranes (discussed above) and a little blue heron which are state listed as Threatened. Other wading birds observed onsite were non-listed species including great egret (*Ardea alba*) and cattle egret (*Bubulcus ibis*).

Although the site provides foraging opportunity for wading birds, no evidence of wading bird nesting was observed nor is it expected given the poor hydrology in the wetlands. Development of this site will not result in loss of wading bird habitat since mitigation will be provided for wetland impacts, which in turn, will provide for enhanced wading bird habitat. The proposed stormwater ponds will also provide a substantial increase in wading bird habitat. Development of this site will also remove the ditch system which will improve wetland hydrology and provide for enhanced wading bird habitat within the wetlands. Therefore, no adverse impacts are anticipated for listed wading birds.

Southeastern American Kestrels *(Falco sparverious paulus)*

Two species of kestrels occur in Florida: the American Kestrel (*Falco sparverious*), which is the wintering migratory species, and the Southeastern American Kestrel[[10]](#footnote-10), which is the protected resident species. Both species are identical and easily confused with each other. Kestrels prefer areas that have both suitable nesting habitat (i.e., utility poles, pines, snags) and foraging habitat with open understories where prey can be easily detected, including sandhills, open pine savannah, pastures, and open wooded lots. No kestrels were observed during the fall or recent spring surveys.

Burrowing Owls (*Athene cunicularia floridana*)

Burrowing owls are state listed as Threatened and inhabit sandhills, ruderal communities, dry prairies, and pasture with minimal groundcover vegetation. No burrows were observed onsite nor are they expected to utilize this site given the intensive agricultural uses.

Audubon’s Crested Caracara (*Polyborus plancus audobonii*)

As shown on Figure 9, the project site is located in the consultation area for caracaras but does not contain any suitable nesting habitat (cabbage palm hammock). Therefore, potential for caracara nesting on this site is low given there is no suitable nesting habitat. ECT did conduct surveys during the caracara nesting season (January – April) recognized by USFWS[[11]](#footnote-11) and did not observe any caracaras or habitat that would be considered suitable for nesting. As such, the project is not likely to adversely affect this species.

Sherman Fox Squirrel (*Sciurus niger shermani*)

Sherman fox squirrels are state listed as a Species of Special Concern and inhabits sandhills, oak hammocks, and mesic flatwoods. They nest in trees but prefer open areas with low ground cover for foraging. The mixed hardwood community (FLUCFCS 438) buffering the creek is the only upland habitat that could potentially be used by fox squirrels, but is too disturbed to be considered suitable habitat for this species. No Sherman fox squirrels were observed on the property during the surveys.

Florida Grasshopper Sparrow (*Ammodramus savannarum floridanus*)

The project is located within the consultation area for the Florida grasshopper sparrow which is federally listed as an Endangered species. The site was evaluated for dry grass prairies which is the preferred habitat for grasshopper sparrows, but the site does not contain any suitable habitat for this species. Since no grasshopper sparrows or suitable habitat was observed, the project is not likely to adversely affect this species.

1. Florida Department of Transportation, January 1999 [↑](#footnote-ref-1)
2. Chapter 62-345, F.A.C. [↑](#footnote-ref-2)
3. Developed by FWC and USFWS [↑](#footnote-ref-3)
4. State Listed as Threatened [↑](#footnote-ref-4)
5. Federally Listed as Threatened due to similarity of appearance to the American Crocodile [↑](#footnote-ref-5)
6. Federally Threatened [↑](#footnote-ref-6)
7. *Species Conservation Measures and Permitting Guidelines for Florida Sandhill Cranes* (FWC, 2017) [↑](#footnote-ref-7)
8. Listed as Federally Threatened [↑](#footnote-ref-8)
9. 15-mile radius [↑](#footnote-ref-9)
10. Listed as State-Threatened [↑](#footnote-ref-10)
11. USFWS Crested Caracara Draft Survey Protocol – Additional Guidance (2016-2017 Breeding Season). [↑](#footnote-ref-11)