Environmental Considerations Report

Pioneer Homes – East Lake 44
Keystone Road Project

Prepared For:

Pioneer Developers of America, Inc.
c/o George Stamas (President)
46 West Lemon Street
Tarpon Springs, FL 34689

Submitted to:

Southwest Florida Water Management District
c/o Cliff Ondercin
7601 Highway 301 North
Tampa, FL 33637

February 13, 2018

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Keystone Road Project
Pinellas County, Florida

Table of Contents

Tables

Figures

Exhibits

Attachments

Contributors

Project Scientists:	Matthew P. Miller, M.S., P.W.S. Joshua C. Kohlbecker
Project Engineer:	Joe Cimino, P.E.

PROJECT DESCRIPTION

The approximately 43.3 acres Pioneer Homes – East Lake 44 Project (Project) Site is located within Pinellas County, FL and can be identified through the Pinellas County Property Appraiser's Parcel ID(s): 05-27-16-00000-440-0300 & 09-27-16-00000-220-0100. These two parcels are located within Sections 5, 9 and 8, Township 27S, Range 16E. The Project site is located south of N. Highland Avenue, north of Keystone Road and west of East Lake Drive within the city of Tarpon Springs, FL. To produce a project consistent with the surrounding land uses and to meet the needs of the housing market, the developer is proposing a site with a minimum one (1) acre lot size. The surrounding land uses consist of a mix of agriculture and residential to the west and south, residential to the north and a mix of residential/golf course community to the east. Please reference **Exhibits 1 & 2** for project location.

This Conceptual Environmental Resource Permit (ERP) application shall memorialize the wetland boundary and functionality of the on-site wetlands; memorialize the wetland impacts allowable (design meets avoidance and minimization criteria) and the mitigation required to development the site in accordance with the permitted site plan. The allowable impacts will be authorized under future SWFWMD ERP Construction permits, as long as the project site plan remains largely consistent with the proposed site plan. Mitigation may utilize a wetland mitigation bank, although off-site permitee responsible or other on-site mitigation alternatives may be proposed during construction permitting without affecting the allowable impacts or avoidance and minimization.

The following assumptions were used in designing the Project and the Stormwater Management System. The proposed development plan includes a post development contributing basin of 38 acres draining to approximately 7.5 acres of ponds, or 20%. An estimate of 20% required ponds is reasonable as it is slightly conservative (above the typical 15% to 18%) to account for existing wetland storage that attenuates runoff in pre-development conditions. Ponds have been placed in logical locations that are in lower lying portions of the Project, specifically along the north perimeter adjacent to Wetland 1 and the offsite wetland north of the property. Per a pre-application meeting with SWFWMD staff on September 19, 2017, the site is not impaired and presumptive criteria may be used. However, the treatment function of the pre-existing wetlands must be recreated in post development conditions, thereby warranting 20% pond area over the more typical 15 to 18%.

ENVIRONMENTAL CONSIDERATIONS

Soils

A USDA Soil Survey Map from Pinellas County, Florida (**Exhibit 3 – USDA – NRCS Soils Map**) was used in reference to the soil data below.

Astatula soils and Urban land, 0 to 5% slopes (4), (approx. 4.7 ac.)

This soil unit is characterized as having excessively drained soils commonly found on broad ridges. This soil type is associated with high-density residential developments, commercial buildings, streets, highways, parking lots, and other types of impervious ground cover. Slopes can range from 0 to 1 percent. Under natural conditions, the depth to seasonal high water table is usually more than 6 feet. Ecological communities typical of this soil type include longleaf pine-turkey oak hills.

Astatula soils and Urban land, 5 to 12% slopes (5), (approx. 0.1 ac.)

This soil unit is characterized as having excessively drained soils commonly found on broad ridges. This soil type is associated with high-density residential developments, commercial buildings, streets, highways, parking lots, and other types of impervious ground cover. Slopes can range from 5 to 12 percent. Under natural conditions, the depth to seasonal high water table is usually more than 6 feet. Ecological communities typical of this soil type include longleaf pine-turkey oak hills.

Myakka soils and Urban land (17), (approx. 11.4 ac.)

This soil unit is characterized as having poorly drained soils commonly found within flatwood communities. This soil type is associated with high-density residential developments, commercial buildings, streets, highways, parking lots, and other types of impervious ground cover. Slopes can range from 0 to 1 percent. Under natural conditions, the depth to seasonal high water table is apparent at a depth of ½ to 1 ½ feet from June through November. Ecological communities typical of this soil type include South Florida flatwood habitats.

Paola and St. Lucie soils and Urban land (20), (approx. 4.4 ac.)

This soil unit is characterized as having excessively drained soils commonly found on ridges. This soil type is associated with high-density residential developments, commercial buildings, streets, highways, parking lots, and other types of impervious ground cover. Under natural conditions, the depth to seasonal high water table is usually more than 6 feet. Ecological communities typical of this soil type include sand scrub.

Paola and St. Lucie soils and Urban land, 5 to 12% slopes (21), (approx. 9.1 ac.)

This soil unit is characterized as having excessively drained soils commonly found on ridges and side slopes. This soil type is associated with high-density residential developments, commercial buildings, streets, highways, parking lots, and other types of impervious ground cover. Slopes can range from 5 to 12 percent. Under natural conditions, the depth to seasonal high water table is usually more than 6 feet. Ecological communities typical of this soil type include sand scrub.

Samsula muck, frequently ponded, 0 to 1% slopes (27), (approx. 13.6 ac.)

This soil unit is characterized as having very poorly drained soils commonly found within swamps and depressional areas. This soil type is associated with high-density residential developments, commercial buildings, streets, highways, parking lots, and other types of impervious ground cover. Slopes can range from 0 to 1 percent. Under natural conditions, the depth to seasonal high water table is apparent from 2 feet above the surface to a depth of 1 foot from June through October. Ecological communities typical of this soil type include freshwater marshes and ponds.

Land Use

The land use categories reviewed on this project area were evaluated by WRA using the Florida Land Use, Cover and Forms Classification System (FLUCCS) (Florida Department of Transportation, January 1999) as a guideline. **The wetlands and uplands located on-site have been disturbed by legal historical uses both on-site and adjacent activities. Additionally, since the site is located in close proximity to existing residential development, there is little opportunity for land management to attempt to restore these areas to high quality uplands. Therefore, we have classified these wetlands and uplands habitats as**

moderate/low quality based on the disturbances and presence of invasive/exotic vegetation that is found throughout. See below land use description for details.

Additionally, due to a lack of significant cover of pine trees and the dominance of hardwood trees (specifically oaks) throughout these habitats, these areas are classified as Mixed Hardwoods instead of Hardwood-Conifer Mixed.

A WRA Environmental Scientist used the Southwest Florida Water Management District's (SWFWMD) 2011 Land Use Map as a baseline combined with field verified, ground-truthed habitat types observed during the wildlife survey. The boundaries that are shown on the Land Use map contain estimated acreages (**Exhibit 4 – Land Use Map**).

The land use/communities identified within the project site are: *Residential Low Density (FLUCCS 110), Open Land (FLUCCS 190), Mixed Hardwoods (FLUCCS 438), Ditch/OSW (FLUCCS 5110), Reservoir (FLUCCS 534), Mixed Wetland Hardwoods (FLUCCS 617)* and *Freshwater Marsh (FLUCCS 641)*.

Residential Low Density (FLUCCS 110), (approx. 3.1 ac.)

This area of the Project site is located in the northwest portion of the property. The area consists of approximately 3.1 acres of maintained, upland grass vegetation types that make up the adjacent properties residential yards. Multiple large, well-established live oak (*Quercus virginiana*) are scattered throughout the area as well as several non-native, ornamental species previously installed for landscape purposes.

Open Land (FLUCCS 190), (approx. 9.4 ac.)

Located throughout the west-central and southern portions of the property, this community type primarily consists of large portions of open areas with minimal canopy species such as live oak and/or cabbage palms (*Sabal palmetto*). The shrub layer density is minimal, with sporadic wax myrtle (*Myrica cerifera*) and saw palmetto (*Serenoa repens*) specie(s) occurrences throughout. The herbaceous layer, when present, consists of small areas of upland grasses, such as bahia grass (*Paspalum notatum*) scattered throughout areas of bare sand. Observations made, particularly to the south, confirmed that these areas are being used as dirt paths/routes for recreational off-road activities.

Mixed Hardwoods (FLUCCS 438), (approx. 23.7 ac.)

The Mixed Hardwood community type observed throughout the Project site make up the largest portion(s) within the Project boundaries. These communities are found throughout the west, central, eastern and southern portions of the site. Dominated by large canopy species such as live oak, laurel oak (*Quercus laurifolia*) and cabbage palm. The shrub stratum is occupied by several vegetative species typical of this community such as wax myrtle and saw palmetto. Brazilian pepper (*Schinus terebenthifolia*) dominates the majority of these areas, particularly within the central portions and the areas directly adjacent to the onsite wetlands. The herbaceous/ground cover vegetative layers were minimal in species diversity, primarily due to the dense over-story of the Brazilian pepper. Groundcover consisted primarily as leaf debris/litter with sparse occurrences of St. Augustine grass (*Stenotaphrum secundatum*), saw palmetto and/or cabbage palm saplings.

Ditches (FLUCCS 510), (approx. 0.1 ac.)

Located in the east-central vicinity of the Project and continuing offsite to the south, a small upland cut

drainage ditch was observed. The ditch starts in the south and flows north, eventually discharging into Wetland 3. Several drainage related structures, particularly drainage pipe connections were observed along/throughout the ditch. The fringe and canopy growth located along the entirety of the ditch is dominated by a highly dense coverage of Brazilian pepper with some minimal occurrences of torpedo grass (*Panicum repens*).

Reservoir (FLUCCS 534), (approx. 0.1 ac.)

Within the northwestern portion of the Project and immediately adjacent to the south of N. Highland Avenue, a small portion of an upland cut pond/landscape feature is present within the Project's boundaries. The pond consists entirely of open surface waters with an absence of any vegetation established within the interior or along the perimeter of the pond. The surrounding adjacent community type (Residential Low Density) is considered to be a portion of the current residence's yard/lawn. Observations made on site confirm that the pond and the surrounding area has been regularly mowed and maintained for aesthetic value. Since the pond was constructed after 1984, it is assumed to either be exempt from permitting or a part of a permitted Stormwater Management (SWM) System.

Mixed Wetland Hardwoods (FLUCCS 617), (approx. 4.3 ac.)

Throughout the northern and central portions of the site, four (4) low quality wetland communities were observed and are present within the Project's boundaries. Over time, these wetland areas have been significantly altered as evident by the various types of fill material found while conducting exploratory soil pits during the assessments. This randomly placed fill and other disturbances were created prior to permitting, and likely have resulted in creating these wetland areas. Additionally, the adjacent bay swamp system has been altered since at least 1941 due to clearing activities for the installation of large transmission lines and roadways.

These 4 mixed wetland hardwood communities all share similar vegetative compositions dominated primarily in the canopy layers by red maple (*Acer rubrum*), laurel oak, cabbage palm and multiple bay tree species. Similar to the upland mixed hardwoods previously described, the shrub layer is largely dominated by a Brazilian pepper understory with minimal to moderate amounts of wax myrtle, saltbush (*Baccharis halmifolia*) and saw palmetto. Due to the overshadowing caused by the dense Brazilian pepper within the shrub stratum, minimal to no presence of groundcover species was observed. In areas where groundcover has emerged, observations of several rushes (*Juncus spp.*), sedges (*Carex spp.*) and lizard's tail (*Saururus cernuus*) were present within the low quality wetlands.

Freshwater Marsh (FLUCCS 641), (approx. 2.6 ac.)

This moderate quality freshwater marsh community is located in the northwestern portion of the Project site and is clearly shown as a depressional lake in the 1941 aerial (please reference **Figure 1.0 – 1941 Historical Aerial**). Even as early as 1941, the Project site, and specifically the freshwater marsh, were impacted, being severed by the construction of an unpaved roadway.

Figure 1.0 – 1941 Historical Aerial

Sourced from: ***http://ufdc.ufl.edu/aerials/map***

The interior of this wetland is dominated by Virginia willow (*Itea virginica*) with moderate amounts of cinnamon fern (*Osmundastrum cinnamomeum*), cattails (*Typha spp.*), red maple and common duckweed (*Lemna minor*). The fringe and surrounding adjacent communities of the freshwater marsh are dominated by laurel oak, Virginia willow, cinnamon fern and Brazilian pepper. Minimal portions of the marsh, particularly to the south, were inhabited by several sedge species such as white-top sedge (*Dichromena colorata*). Minimal observations of torpedo grass and several rush species were present, however, these observations were in low abundance.

FISH, WILDLIFE, LISTED SPECIES AND THEIR HABITAT

A WRA Environmental Scientist conducted a desktop review of available published information from federal and state online database. Data collection consisted of literature review of existing sources for information useful in identifying the occurrence or potential occurrence of wildlife species listed as T, E or SSC (collectively recognized as listed species), as defined by U.S Fish and Wildlife Service (USFWS) and/or the Florida Fish and Wildlife Conservation Commission FWC. In addition, the presence of designated critical habitat and/or vegetative communities and land uses with the potential to support listed species was evaluated. The literature review included, but was not limited to, the following sources SWFWMD FLUCCS, USDA NRCS Web Soil Survey, FWC Bald Eagle and Waterbird Colony databases, and the Florida Natural Areas Inventory (FNAI) Pinellas County Tracking List. Additional resources, such as the FNAI Field Guides and Rare and Endangered Biota of Florida Series, were used to evaluate habitat and vegetative community requirements for those species potentially occurring within the proposed project corridor.

On the dates of January 16, 17, 26 and 29 of 2018, WRA scientists performed onsite habitat assessments of the Project site that included conducting meandering pedestrian and vehicular transects of at least 15% of each of the habitat types present throughout the site. These assessments and surveys were performed in order to determine the presence, and/or lack of, of protected wildlife species (**Attachment A – Listed Species Occurrence in Pinellas County, Florida**) and their associated habitat types occurring in close proximity and/or within the Project boundaries. Based on the data researched and obtained from the desktop analysis, the following species, in particular, were to be surveyed for on the property; gopher tortoise (*Gopherus polyphemus*), Eastern indigo snake (*Drymarchon corais couperi*), Short-tailed snake (*Lampropeltis extenuata*), Sherman's fox squirrel (*Sciurus niger shermani*), wood stork (*Mycteria*

americana), bald eagle (*Haliaeetus leucocephalus*) and other wading birds, though all appropriate species were considered. A species action determination has been established for each of the species based on the guidelines presented within the **Species Action Determination Key** below. Please also reference **Exhibits 5 & 6** regarding the locations of any known listed species documented onsite and/or within close proximity to the Project.

Species Action Determination Key	
No effect	The appropriate conclusion when a proposed action will not affect a listed species or its habitat, typically due to a lack of suitable on-site habitat.*
May affect, not likely to adversely affect (MANLAA)	The appropriate conclusion when effects on listed species are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur. Based on best judgment, a person would not: (1) be able to meaningfully measure, detect, or evaluate insignificant effects; or (2) expect discountable effects.**
May affect	The appropriate conclusion when a proposed action may pose any effects on listed species or designated critical habitat. This determination is reduced to a MANLAA if the reviewing wildlife agency determines mitigation activities are appropriate.*
Jeopardy	The appropriate conclusion when a proposed action would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.
Determinations derived from "A Working Glossary for Practitioners of Consultation under Section 7 of the Endangered Species Act", USFWS Mountain-Prairie Region, 2015	
* "Endangered Species Consultation Handbook: Procedures for Conducting Consultation and Conference Activities Under Section 7 of the Endangered Species Act", p. xvi	
**Endangered Species Act, 50 CFR 402.13(a)	
*** Endangered Species Act, 50 CFR 402.01	

<u>Gopher Tortoise and Eastern Indigo Snake</u>

The gopher tortoise is listed as threatened by FWC. The gopher tortoise occurs in sandhill (*pine-turkey oak associations*), sand pine scrub, xeric hammock, pine flatwoods, dry prairie, coastal grasslands and dunes and mixed hardwood pine communities. These burrows are known to serve as refuge to many species, some of which are protected (eastern indigo snake, Florida mouse, gopher frog, and Florida pine snake).

Gopher tortoise habitat was observed within the project area, and therefore, will need to be permitted for to be removed and relocated if any burrows are located within and will be impacted due to construction activities. Prior to any type of ground moving/construction activities occurring onsite, a 100% FWC gopher tortoise transect survey should be conducted to begin the permitting processes with the FWC. In addition, the contractor should contact WRA throughout the entirety of the Project should a gopher tortoise be identified on the Project site prior, and/or during construction.

The eastern indigo snake is listed by the USFWS as threatened. The species inhabits a wide variety of habitats, including pine flatwoods, hardwood forests, forested wetlands, as well as wet and dry prairies. The nearest recorded eastern indigo snake observations were documented in 2009 and are approximately 10 miles south of the property.

No eastern indigo snakes were observed during general wildlife surveys, however, the applicant is still committed to implementing the “Standard Protection Measures for the Eastern Indigo Snake”. These

measures include posting informational posters about the indigo snake on the construction site and the verbal educational instruction to construction personnel prior to commencing land clearing activity.

To determine the impact this permit might have on this species, a WRA ES used the Indigo Snake Programmatic Effect Determination Key. Use of the Key for the Eastern Indigo Snake resulted in the following sequential determination (A>B>C>D>E): A (The project is not located in open water or salt marsh.) >B (The permit will be conditioned for use of the Service's Standard Protection Measures for the Eastern Indigo Snake during site preparation and protection construction.) >C (The project will impact less than 25 acres of xeric habitat (scrub, sandhill, or scrubby flatwoods) or less than 25 active and inactive gopher tortoise burrows.) >D (The project has known holes, cavities, active or inactive gopher tortoise burrows, or other underground refugia where a snake could be buried, trapped and/or injured during project activities) >E (Any permit will be conditioned such that all gopher tortoise burrows, active or inactive, will be evacuated prior to site manipulation in the vicinity of the burrow. If an indigo snake is encountered, the snake must be allowed to vacate the area prior to additional site manipulation in the vicinity.) The use of this key has resulted in an "NLAA" determination meaning the Project is "**not likely to adversely affect**" the eastern indigo snake.

Bald Eagle

The bald eagle was delisted by USFWS and FWC in August 2007 as a result of positive recovery of the species. Although the bald eagle was delisted, it continues to be protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act.

The FWC database research of bald eagle nest location database containing information from the Florida Fish and Wildlife Conservation Commission (FWC) identified no active nests within the Project's boundaries. One documented nest site (Nest PI007) was identified and located within approximately one (1) mile radius of the Project to the south. This nest was last known to be active in 2005 and was last surveyed in 2013. Two additional nests approximately 1.2 and 1.4 miles to the northeast and northwest (Nests PI003 & PI041) were identified and surveyed as active nests in 2013 also.

Federal and state guidelines for the bald eagle require that certain activities may be conducted outside a 660-foot radius distance outward from a nest tree (FWS 2007). Per the 2007 FWS Bald Eagle Monitoring Guidelines, monitoring of the active nest is required if construction activities are to take place within the 660-foot radius during the nesting season (October 1 – May 15). An updated bald eagle survey should be performed prior to construction.

Based on the researched data obtained during the desktop analysis, combined with the conditions observed during the site assessments, the Project will have "**no effect**" on the bald eagle.

Sherman's Fox Squirrel

Sherman's fox squirrel is classified by the state of Florida as "Species of Special Concern". No Sherman's fox squirrels were observed on-site during any of the site inspections. Although the mixed hardwoods communities located within the Project may have potential for the fox squirrel to inhabit, due to the high density of shrub coverage and a lack of preferable habitat conditions, it has been determined that the site does not contain suitable fox squirrel nesting habitat. While there are no specific guidelines for

permitting, if during construction activities an active nest is identified, construction should avoid the nest by providing a 125 foot buffer during the nesting season.

Based on the conditions observed during the site assessments, the Project will have "**no effect**" on the Sherman's fox squirrel.

Wood Stork

The wood stork (*Mycteria americana*) is listed at the state and federal levels as a Threatened species. USFWS and FWC database research identified no documented active nest sites within a one (1) mile radius of the project. The closest documented wood stork nest is approximately 4.2 miles northeast (Name: Heron Island) of the Project site. The Project area is, therefore, located within Wood Stork Core Foraging Areas. However, no wood storks or wood stork colonies were observed onsite during any of the multiple site inspections. Due to a lack of preferred, onsite forested/canopy tree species types commonly utilized by wood storks for nesting activities, the likelihood of impacts relating to wood stork habitat is significantly low.

Based upon review of the Wood Stork Determination Key, the proposed project resulted in the following sequential determination: A (The project is more than 2,500 feet from a colony site) > B (The project does not affect suitable foraging habitat (SFH) = "No effect".

Because there are no proposed impacts to suitable habitat associated with this Project, pursuant to the 2008 USFWS/ACOE programmatic key, the Project will have "**no effect**" towards wood stork communities.

Wading Birds

Listed wading birds protected under the federal and state ESA that were considered in this study include the reddish egret (*Egretta rufescens*), snowy egret (*Egretta caerulea*), little blue heron (*Egretta thula*), tri-colored heron (*Egretta tricolor*), roseate spoonbill (*Platalea ajaja*), and wood stork. The closest active wading bird rookery is Atlas number 611026 and is located approximately 3.1 miles west of the Project site. Although the site does contain wading bird nesting and foraging habitat, no wading birds were observed on-site during the site inspections. Therefore, the proposed Project will have "**no effect**" on these species.

Prior to construction, an updated nesting survey conducted during the breeding season (March to August) will be required to determine if listed wading birds are nesting within project wetlands. If nesting is identified, further coordination with FWC may be required and per the FWC imperiled species management plan for wading birds, the project may be required to maintain a 328 foot buffer around the nest.

Short-tailed Snake

The short-tailed snake has been known to occur and is commonly found burrowed below the sandy soils that are known to occur mainly within longleaf pine and xeric oak sandhill communities, however, the short-tailed snake has also been observed as occupying the sandy soils commonly present within scrub and xeric hammock habitats. Although similar habitat characteristics of these preferred communities can occasionally be found within the mixed hardwood portions of the Project site, the proximity to adjacent

wetlands has contributed to the soil characteristics of the mixed hardwood communities, and therefore, with the presence of hydrology and hydric soil designations throughout the Project, preferred short-tailed snake habitat is minimal to non-existent.

Therefore, it has been determined that the proposed Project will have "**no effect**" on the short-tailed snake.

ELIMINATION AND REDUCTION OF IMPACTS

During the due diligence process, WRA conducted numerous site visits to determine and locate sensitive environmental features to avoid in designing a project, including the delineation of wetland areas and performing wetland functional assessments to determine which systems should be avoided. The proposed development was designed to conserve the moderate quality freshwater marsh (Wetland 1) located within the western portion of the Project. Based on the conditions observed during the multiple site assessments, the additional wetlands identified onsite (Wetlands 2, 3, 4 and 4A) have been deemed wetlands of low quality due to several key characteristics. The baseline factors that have led to these disturbances and alterations have originated from historical impacts that have occurred either within, or in close proximity to the Project. These historical impacts include, but are not limited to, activities associated with the creation of adjacent roadways, creation of recreational paths/dirt roads throughout the southern portion(s) of the Project site, installation of telephone power transmission lines, and the introduction of unpermitted fill, as evident by the numerous soil pits dug and analyzed during the site assessments. Based on the characteristics of the site presented within the 1940s aerials, Wetlands 2, 3 and 4 were not evident, and likely were created from the combined effects of the seepage slope and the previously mentioned alterations. These alterations led to further disturbances within the site, such as the high density of nuisance, exotic vegetation, specifically Brazilian pepper, which is currently present throughout all of the mixed wetland hardwood communities.

Therefore, any direct or secondary impacts proposed to occur within and associated with these low-quality wetlands are expected to result in minimal to no effect(s) associated with any of the adjacent, offsite and/or downstream connections to other wetlands/other surface waters. Also to note, the direct or indirect connections proposed to occur to the higher quality freshwater marsh (Wetland 1) will be minimized to the least extent possible in order to preserve the quality and functionality as it functions currently.

Therefore, the current, proposed construction activities with their associative site plans have been designed with the main focal objective of preserving the higher quality conditions (including wetland hydro-period with potential stormwater attenuation and community structure) present within Wetland 1. All construction activities have been designed to minimize and avoid as best as possible any impacts to the freshwater marsh, and instead, impact areas of lower importance, such as uplands, low-quality wetlands, and upland cut features (northwest pond/reservoir and the drainage ditch located south of Wetland 3). These onsite impacts associated with the Project have been determined to be necessary and unavoidable due to the need to incorporate all relative construction activities to ensure the project is economically feasible.

WETLAND IMPACTS

Wetland 1 (please reference Table 1: Project Wetland & Other Surface Water Impact Summary), is classified as a freshwater marsh. To accommodate the minimum number of 1 acre lots, the associated roadways, and the stormwater management system needed for the Project, approximately 0.15 acres of Wetland 1 will be impacted (please reference **Exhibit 7- Construction Site Plan**). Wetlands 2, 3 and 4 are classified as low-quality mixed wetland hardwood communities and will be impacted in their entirety. Wetland 4A is classified as an isolated low-quality wetland that will be impacted in its entirety, however, because this wetland is isolated and the size/area is less than 0.5 acres, no wetland mitigation is required for impacts proposed to occur.

In addition, two upland cut features (ditch & pond) are also proposed to be impacted in their entirety, however due to their classification(s) as upland cut other surface waters (OSW), mitigation will not be required in relation to any impacts to these features.

TABLE 1: PROJECT WETLAND (WL) AND OTHER SURFACE WATER (OSW) IMPACT SUMMARY

WL & SW ID	UMAM ASSESSMENT AREA NAME(S)	WL & SW TYPE	WL & SW SIZE (acres)	WL & SW NOT IMPACTED (acres)	TEMPORARY WL & SW IMPACTS		PERMANENT WL & SW IMPACTS		MITIGATION ID
					IMPACT SIZE (acres)	IMPACT TYPE	IMPACT SIZE (acres)	IMPACT TYPE	
Wetland 1 (W1)	N/A	641	2.64	2.38	N/A	N/A	0.26	Fill	Credit purchase
Wetland 2 (W2)	N/A	617	0.35	0.0	N/A	N/A	0.35	Fill	Credit purchase
Wetland 3 (W3)	N/A	617	1.45	0.0	N/A	N/A	1.45	Fill	Credit purchase
Wetland 4 (W4)	N/A	617	2.82	0.0	N/A	N/A	2.82	Fill	Credit purchase
Wetland 4A (W4A)	N/A	617	0.04	0.0	N/A	N/A	0.04	Fill	N/A; isolated & < 0.5 acres
Ditch	N/A	510	0.06	0.0	N/A	N/A	0.06	Fill	N/A; upland-cut ditch
PROJECT TOTALS:			**7.36**	**2.38**	**N/A**		**4.98**		

Based on the information and calculations explained above and represented within Table 1, approximately 4.46 acres of direct impacts are proposed to occur within the Project's boundaries. To compensate for these impacts, a total of 1.65 credits are to be purchased as mitigation compensation. Please reference **Table 2: UMAM Summary Table** and **Attachment B – UMAM Sheets Part(s) I & II**.

TABLE 2: UMAM SUMMARY TABLE

Impact	FLUCCS	Acres	AA Acres	L/L	WE	CS	Delta	FL
Wetland 1	641	2.64	0.15	5	5	5	0.50	0.08

Wetland 2	617	0.35	0.35	5	5	4	0.47	0.14
Wetland 3	617	1.45	1.45	5	3	3	0.37	0.40
Wetland 4	617	2.82	2.82	5	3	3	0.37	1.03
							TOTAL:	**1.65**

SECONDARY AND CUMULATIVE IMPACTS

SECONDARY IMPACTS

Secondary impacts will be reduced to the greatest extent practicable. The 25-foot average and 15 foot minimum width buffer zones will be provided along the perimeter boundaries of the freshwater marsh wetland (Wetland 1). A buffer planting plan will be proposed along the Wetland 1 impact in order to avoid any potential, secondary wetland impacts.

The proposed Project is not anticipated to cause water quality violations or exacerbate existing violations of water quality standards. Best Management Practices (BMPs) will be utilized to ensure that off-site wetlands are also not affected by the construction activities associated with the Project. Therefore, all secondary impacts will be avoided to the greatest extent practicable. Much of the secondary impacts to wetlands adjacent to the project area have already occurred from prior usage including herbicides, mowing, and long term drainage via ditch construction.

Likewise, additional impacts to the communities outside the construction area are not anticipated since BMP measures (silt fences, staked turbidity barriers, floating turbidity barriers) will be implemented for the project. These BMPs will be in place prior to construction and their appearance will be a deterrent in preventing accidental encroachments by all personnel and machinery.

The proposed activities will also provide treatment and improve water quality through the construction and installation of storm water conveyance infrastructure and treatment in those areas where none presently exists. The wetland hydro-period will be maintained in the post developed condition, however, the system may be utilized for attenuation in the Construction permit. Therefore, it is anticipated that a net improvement in water quality will result from the proposed activities.

CUMULATIVE IMPACTS

Impacts to the low-quality wetland communities will occur for this Project, and therefore, will be properly mitigated for within the Upper Coastal Watershed to compensate for any losses of wetland habitat(s). Mitigation may be performed at the Old Florida or Upper Coastal Mitigation Bank; or during the Construction Permitting processes, the Applicant may propose offsite Permittee responsible mitigation within the Upper Coastal Watershed, through onsite mitigation, or any combination of the two.

MITIGATION

Mitigation has been proposed and will be required for the direct and impacts set to occur within Wetland 1 as well as all impacts proposed to occur within the low-quality wetlands present onsite. Mitigation will be achieved through the permitting and purchasing of wetland habitat-specific credits issued and available from the applicable Mitigation Bank within the Upper Coastal Watershed.

However, future Construction ERPs may be proposed, and could include other forms of type for type mitigation within the watershed, such as, but not limited to, onsite wetland creation or Permittee responsible offsite mitigation.

WATER QUALITY

Water quality will not be adversely affected by the proposed project. The proposed Project, in combination with past, present and future activities, is not anticipated to result in a violation of state water quality standards. The treatment of storm water runoff associated with impervious surfaces will be designed so that it meets water quality standards and does not degrade ambient water quality in accordance with SFWMD and other state rules.

Short-term water quality considerations will be addressed through the installation of silt fencing, at a minimum, surrounding the upland buffer preservation areas, as directed by the state licensed Project Engineer. This shall be the minimum requirement and additional protection may be required to provide assurance that state water quality standards will not be violated. Side slopes will be seeded or stabilized with sod as soon as possible following construction in accordance with standard BMPs.

Long-term water quality considerations are addressed in the drainage analysis, which is included under separate cover as part of this application. The proposed surface water management system will provide for treatment of storm water runoff from the proposed development.

PUBLIC INTEREST CRITERIA

The Project was designed and will be constructed using BMPs for residential development. Using such criteria, it is anticipated that the project will not cause any adverse effects to human health, safety, welfare or property of others.

HEALTH, SAFETY AND WELFARE

The purpose of the project is to develop/construct a residential/housing community within the northern portion of Pinellas County. A professionally licensed engineer in the State of Florida has designed the proposed project using BMPs. It is not anticipated that any hazardous, radioactive or solid waste material(s) is present onsite, or will be encountered during construction. In the event these materials are discovered during the developmental phase, construction will cease immediately and the appropriate authorities will be contacted for further guidance and direction. The Project's construction activities are not anticipated to affect the flow of water, and therefore, no alteration to the safety or welfare of the surrounding properties, both upstream and/or downstream, is to occur.

CONSERVATION OF FISH AND WILDLIFE

Please see the Fish, Wildlife, Listed Species and Their Habitat section above.

NAVIGATION/FLOW OF WATER

The proposed project is not anticipated to adversely affect navigation or the flow of water, cause harmful erosion or cause shoaling as a result of construction. The proposed project will be designed so that erosion or shoaling downstream of the project does not occur. In addition, BMPs will be installed, maintained and monitored throughout construction to ensure erosion and shoaling does not occur as a result of the proposed project.

FISHING, RECREATIONAL AND MARINE PRODUCTIVITY

The proposed project is not anticipated to adversely affect the fishing, recreational and/or marine productivity in the vicinity of the project. The proposed project is completely inland of any marine, estuarine or tidally influenced areas.

TEMPORARY OR PERMANENT IN NATURE

The proposed project will be permanent in nature.

HISTORICAL AND/OR ARCHAEOLOGICAL RESOURCES

The proposed project is not anticipated to adversely affect historical and/or archaeological resources within the project and project vicinity. In the event that any historical and/or archaeological resources are discovered during construction, construction activities will cease immediately and the appropriate resource and regulatory agencies, including the State Historical Preservation Office, will be contacted.

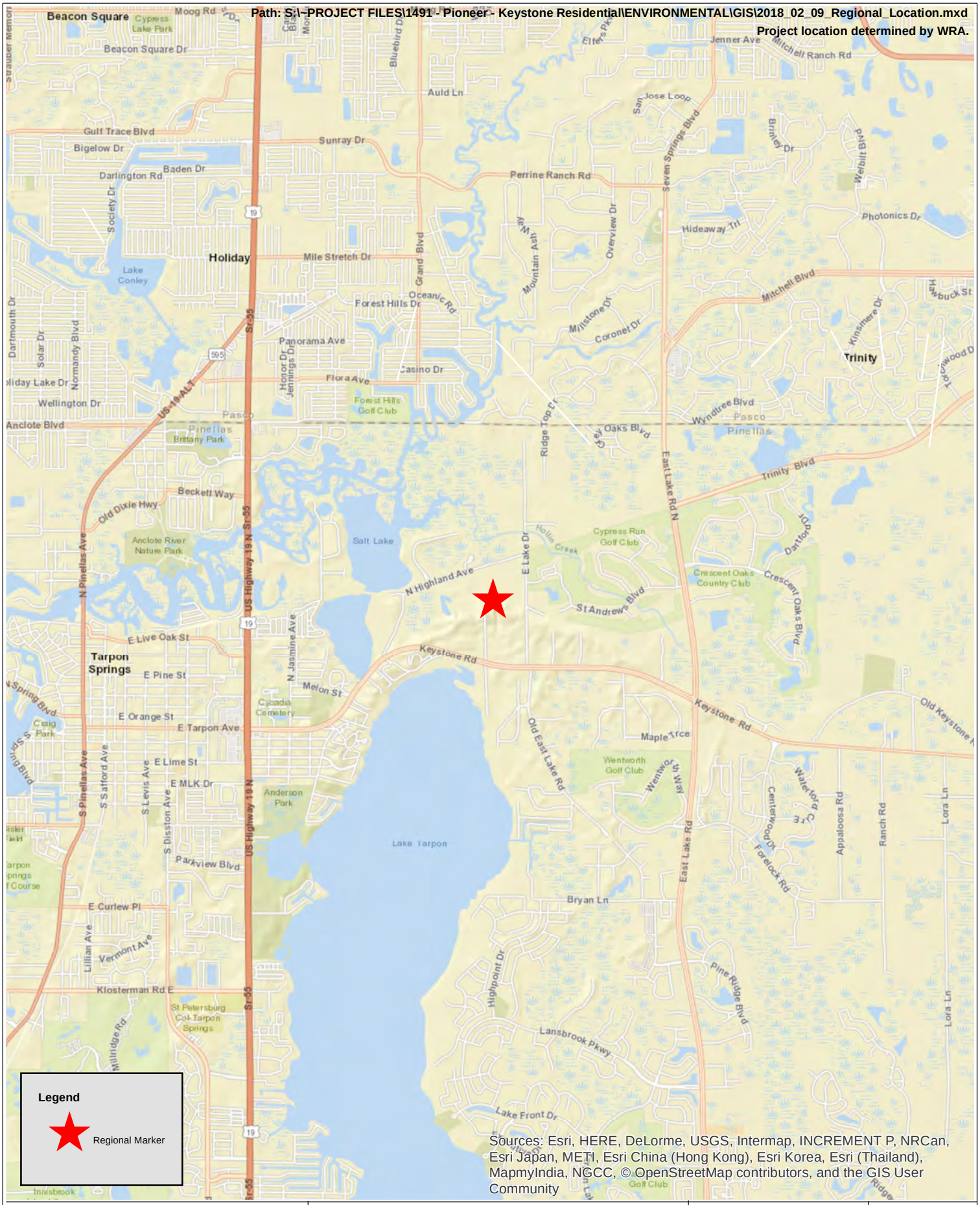
CURRENT CONDITION AND RELATIVE VALUE OF FUNCTIONS

The proposed project is not anticipated to adversely affect the current condition and/or relative value of functions currently being provided by the on-site wetland systems. The flow of water will be maintained throughout the construction of the project. In addition, storm water runoff from the project will be captured and routed to appropriate treatment facilities prior to discharging back to the adjacent wetlands as described above. Currently there is little to no treatment of storm water in the project area.

Exhibit 1. Regional Location Map

Path: S:\~PROJECT FILES\1491 - Pioneer - Keystone Residential\ENVIRONMENTAL\GIS\2018_02_09_Regional_Location.mxd

Project location determined by WRA.



Water Resource Associates, LLC.
Engineering ~ Planning ~ Environmental Science
4260 W. Linebaugh Ave.
Tampa, FL 33624
Phone: 813-265-3130
www.wraengineering.com

PROJECT: Pioneer Homes - Keystone Road

Pioneer Homes - Keystone Road
Regional Location Map
Pinellas County, FL

ORIGINAL DATE: 02/09/2018
REVISION DATE:
JOB NUMBER: 1491
FILE NAME: Regional Location Map
GIS OPERATOR: JK

N W E S

1 inch = 4,000 feet

Exhibit 2. Aerial Location Map

Water Resource Associates, LLC.
Engineering ~ Planning ~ Environmental Science
4260 W. Linebaugh Ave.
Tampa, FL 33624
Phone: 813-265-3130
www.wraengineering.com

PROJECT: Pioneer Homes - Keystone Road

Pioneer Homes - Keystone Road
Aerial Map
Pinellas County, FL

ORIGINAL DATE: 02/09/2018
REVISION DATE:
JOB NUMBER: 1491
FILE NAME: Aerial Map
GIS OPERATOR: JK

N W E S

1 inch = 300 feet

Exhibit 3. USDA-NRCS Soil Map

Water Resource Associates, LLC.
Engineering ~ Planning ~ Environmental Science
4260 W. Linebaugh Ave.
Tampa, FL 33624
Phone: 813-265-3130
www.wraengineering.com

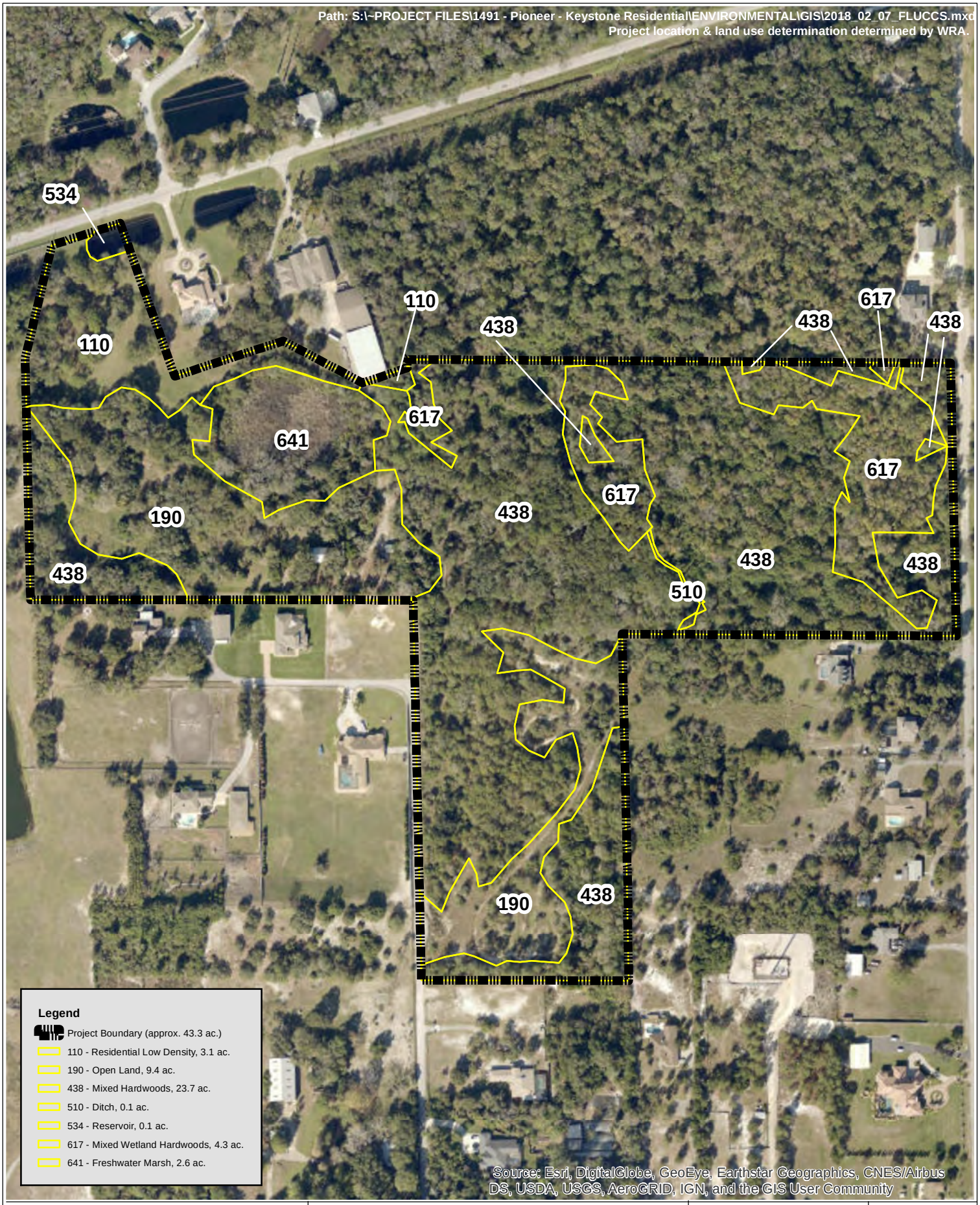
PROJECT: Pioneer Homes - Keystone Road

Pioneer Homes - Keystone Road
USDA - NRCS Soils Map
Pinellas County, FL

ORIGINAL DATE: 02/07/2018
REVISION DATE:
JOB NUMBER: 1491
FILE NAME: USDA-NRCS Soils Map
GIS OPERATOR: JK

N W E S
1 inch = 300 feet

Exhibit 4. Florida Land Use Cover and Forms Classification (FLUCCS) Map



Water Resource Associates, LLC.
Engineering ~ Planning ~ Environmental Science
4260 W. Linebaugh Ave.
Tampa, FL 33624
Phone: 813-265-3130
www.wraengineering.com

PROJECT: Pioneer Homes - Keystone Road

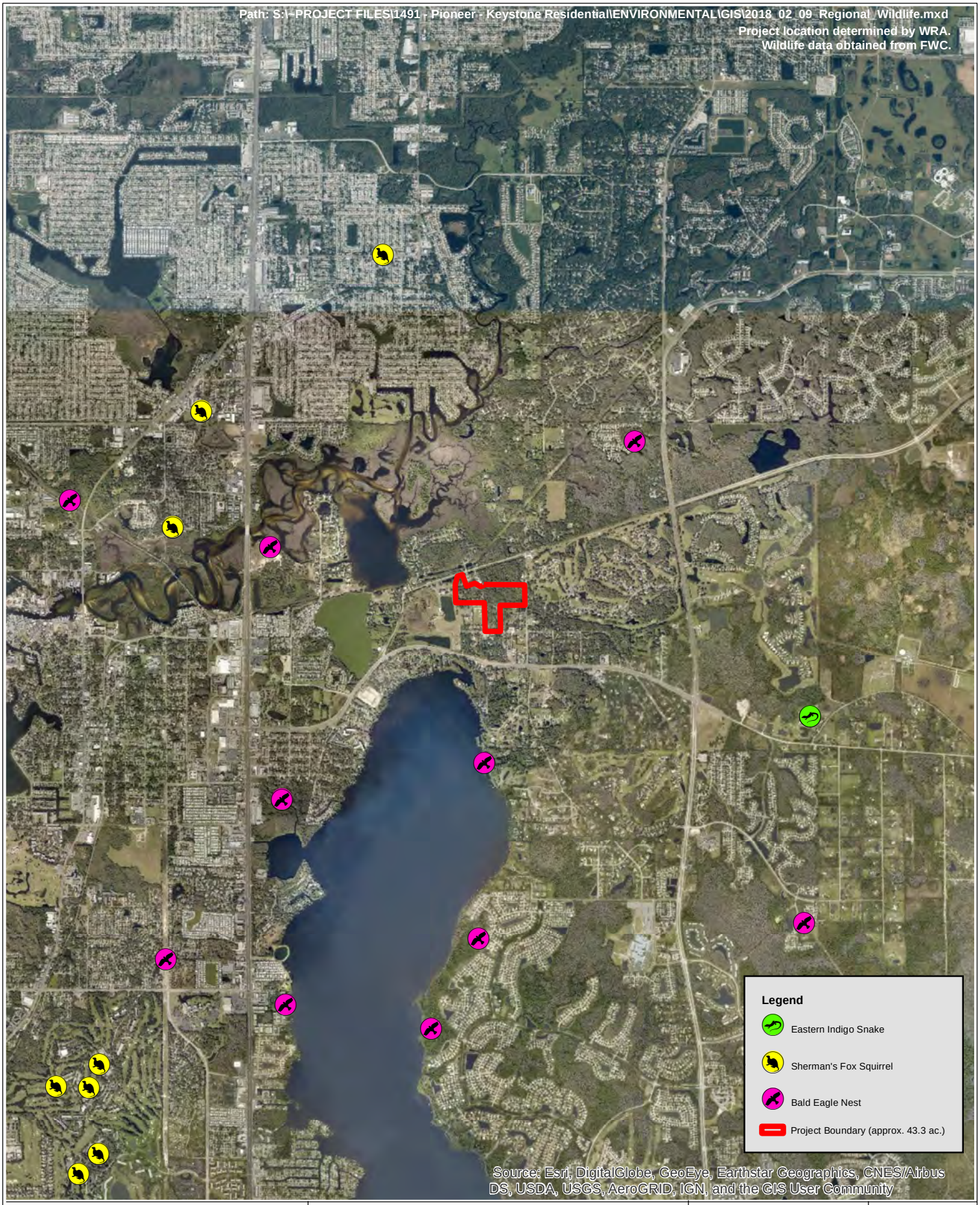
Pioneer Homes - Keystone Road
Land Use Map
Pinellas County, FL

ORIGINAL DATE: 02/09/2018
REVISION DATE:
JOB NUMBER: 1491
FILE NAME: FLUCCS Map
GIS OPERATOR: JK

N W E S

1 inch = 300 feet

Exhibit 5. Regional Wildlife Map



Water Resource Associates, LLC.
Engineering ~ Planning ~ Environmental Science
4260 W. Linebaugh Ave.
Tampa, FL 33624
Phone: 813-265-3130
www.wraengineering.com

PROJECT: Pioneer Homes - Keystone Road

Pioneer Homes - Keystone Road
Regional Wildlife Map
Pinellas County, FL

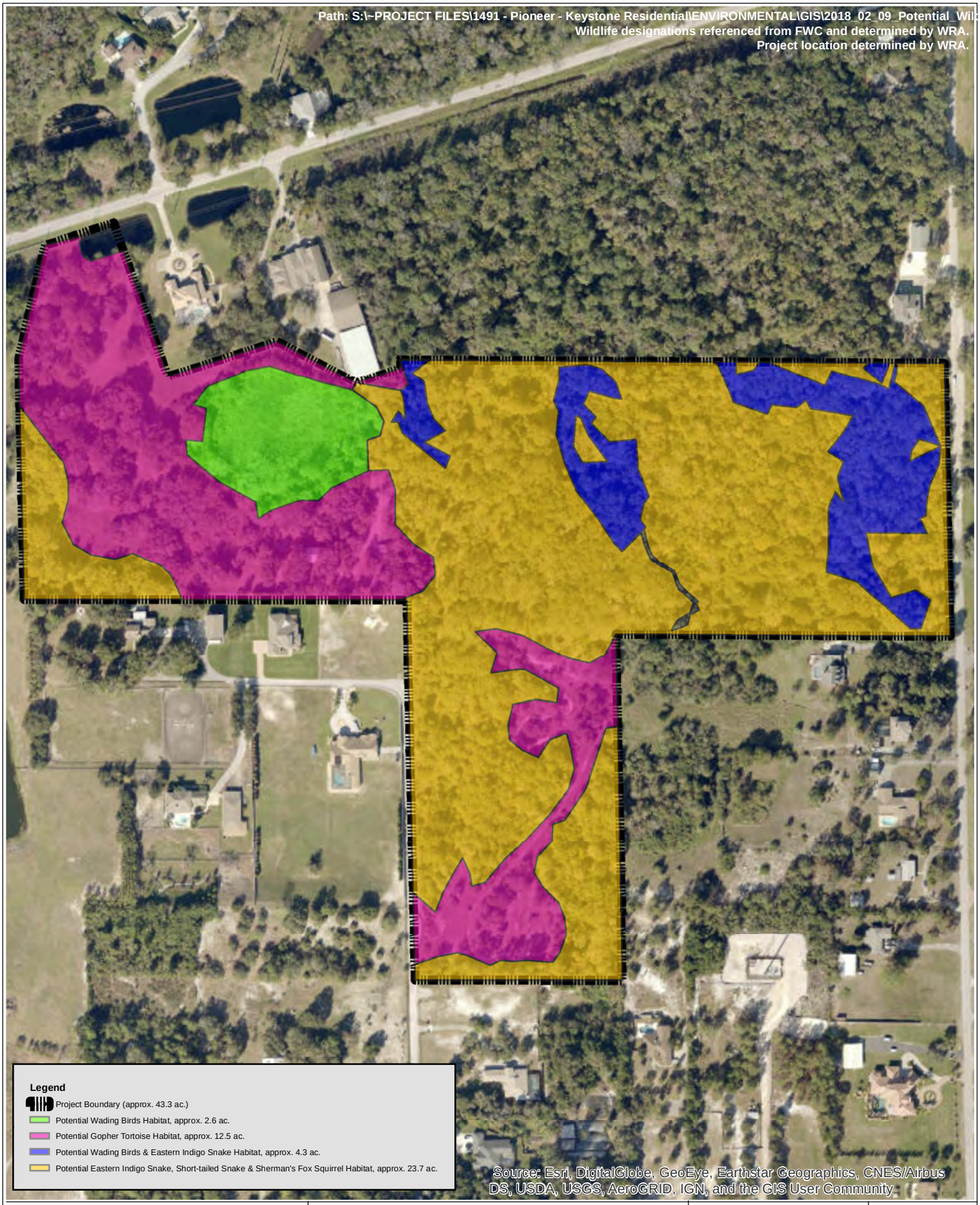
ORIGINAL DATE: 02/09/2018
REVISION DATE:
JOB NUMBER: 1491
FILE NAME: Regional Wildlife Map
GIS OPERATOR: JK

N W E S

1 inch = 4,000 feet

Exhibit 6. Wildlife Map

Path: S:\~PROJECT FILES\1491 - Pioneer - Keystone Residential\ENVIRONMENTAL\GIS\2018_02_09_Potential_Wil
Wildlife designations referenced from FWC and determined by WRA.
Project location determined by WRA.



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Engineering ~ Planning ~ Environmental Science
4260 W. Linebaugh Ave.
Tampa, FL 33624
Phone: 813-265-3130
www.wraengineering.com

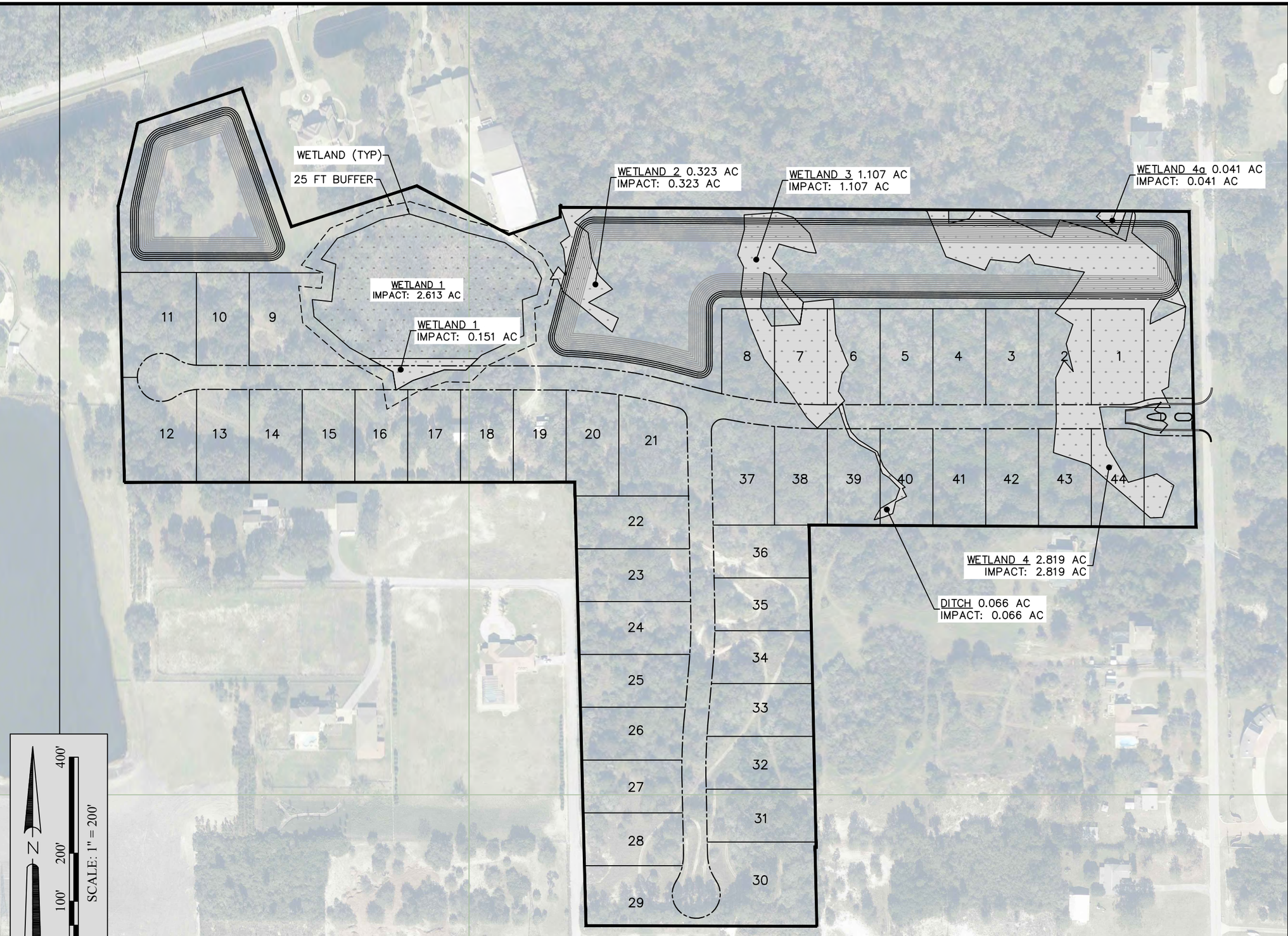
PROJECT: Pioneer Homes - Keystone Road

Pioneer Homes - Keystone Road
Potential Wildlife Habitat Map
Pinellas County, FL

ORIGINAL DATE: 02/09/2018
REVISION DATE:
JOB NUMBER: 1491
FILE NAME: Potential Wildlife Habitat Map
GIS OPERATOR: JK

N W E S
1 inch = 300 feet

Exhibit 7. Construction Site Plan



Engineering ~ Water Resources
Environmental Science
4260 West Linebaugh Ave.
Tampa, Florida 33624
Phone: 813-265-3130
www.wraengineering.com CA 00007652

WETLAND IMPACT MAP

PIONEER HOMES
KEYSTONE RESIDENTIAL

Date: 02-12-2018

SHEET
1 of 1

Attachment A – Listed Species Occurrence(s) in Pinellas County, FL

Table 1: Listed Species Occurrences - Pinellas County, Florida			
Table 1: Summary table of those federal and state listed species known to be present in Pinellas County			
County, Florida as documented by the FWS and FWC. Code Key: E = Endangered, T = Threatened, P = Proposed, SSC= Species of Special Concern S/A = Similar in Appearance			
Amphibians			
Scientific Name	**Common Name**	**FWS Status (Federal)**	**FWC Status (State)**
Lithobates capito	Gopher Frog	N/A	SSC
Reptiles			
Scientific Name	**Common Name**	**FWS Status (Federal)**	**FWC Status (State)**
Alligator mississippiensis	American Alligator	T(S/A)	T(S/A)
Caretta caretta	Loggerhead Sea Turtle	T	T
Chelonia mydas	Green Sea Turtle	T	T
Dermochelys coriacea	Leatherback Sea Turtle	E	E
Drymarchon corais couperi	Eastern Indigo Snake	T	T
Gopherus polyphemus	Gopher Tortoise	N/A	T
Lampropeltis extenuata	Short-tailed Snake	N/A	ST
Lepidochelys kempii	Kemp's Ridley Sea Turtle	E	E
Birds			
Aphelocoma coerulescens	Florida Scrub-Jay	T	T
Athene cunicularia floridana	Florida Burrowing Owl	N/A	ST
Charadrius melodus	Piping Plover	T	T
Charadrius nivosus	Snowy Plover	N/A	T
Egretta caerulea	Little Blue Heron	N/A	T
Egretta rufescens	Reddish Egret	N/A	T
Egretta tricolor	Tricolored Heron	N/A	T
Falco sparverius paulus	Southeastern American Kestrel	N/A	T
Haematopus palliates	American Oystercatcher	N/A	T
Haliaeetus leucocephalus	Bald Eagle	N/A	N/A
Mycteria americana	Wood Stork	T	T
Pandion haliaetus	Osprey	N/A	SSC
Picoides borealis	Red-cockaded Woodpecker	E	E
Platalea ajaja	Rooseate Spoonbill	N/A	T
Rynchops niger	Black Skimmer	N/A	T
Sterna antillarum	Least Tern	N/A	T
Fish			
Acipenser oxyrhynchus desotoi	Gulf Sturgeon	T	T
Microphis brachyurus	Opossum Pipefish	SSC	N/A
Mammals			
Sciurus niger shermani	Sherman's Fox Squirrel	N/A	SSC
Trichechus manatus	West Indian Manatee	E	E

Data Source: URL: http://www.fnai.org/bioticssearch.cfm. & https://www.fws.gov/northflorida/CountyList/Pinellas.htm

*Last modified in February, 2018.

Attachment B – UMAM Sheets Part(s) I & II

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
East Lake 44	NA	Wetland 1

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641 - Freshwater Marsh		Impact	0.15 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Upper Coastal	Class III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands
Wetland 1 connects to Wetland 2 only during extreme events and when the wetland is above seasonal high water elevation. There is a connection via a culvert under the dirt roadway.

Assessment area description
Located in the northeastern portion of the site, this freshwater marsh community is dominated within it's interior by open surface waters. The fringe and surrounding adjacent communities of the freshwater marsh are dominated by highly dense, well established Brazilian pepper. Minimal portions of the marsh, particularly to the south, were inhabitated by several sedge species such as white-top sedge. Minimal observations of torpedo grass and several rush species were present, however, these observations were in low abundance.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
The site is a large seepage slope which is hydrologically connected to Salt Lake, through culverts under Highlands Avenue	Not unique

Functions	Mitigation for previous permit/other historic use
Providing cover, substrate, and refuge; breeding, nesting, denning, and nursery areas; corridors for wildlife movement; food chain support; and natural water storage, natural flow attenuation, and water quality improvement, which enhances fish, wildlife, and listed species utilization.	N/A
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Typical animals may include cricket frog, pig frog, leopard frog, American alligator, eastern mud, snake, banded water snake, striped swamp snake, great blue heron, great egret, snowy egret, little blue heron, tricolored heron, black-crowned night-heron, yellow-crowned night-heron, northern harrier, sandhill crane, raccoon, and river otter (FNAI).	Little blue heron (ST); Tricolored heron (ST), Wood stork (FT), Rosseate spoonbill (ST)

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):
Wading birds, wood storks, small fish, amphibians, alligators and aquatic turtles may occur within the freshwater marsh. No observations of species utilization were made during site assessments.

Additional relevant factors:
N/A

Assessment conducted by:	Assessment date(s):
R.Bruce Williams/Josh Kohlbecker	January 16, 17, 26 & 29, 2018

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
East Lake 44	NA	Wetland 1
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact	RBW/JK	January 16, 17, 26 & 29, 2018

Scoring Guidance
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed

Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: 5 with: 0	a. Habitats outside the assessment area are available in sufficient quantity and variety to provide optimal support for most, but not all, of the wildlife listed in Part I, b. Some of the plant community composition in the proximity of the assessment area consists of moderate amounts of invasive, nuisance and/or exotic plant species. c. Wildlife access to and from habitats outside the assessment area is partially limited by the presence of roadways that impede wildlife movement. **Wetland 1 is regionally surrounded by low/medium density residential development, a major roadway (Tarpon Spring Road to the south) and Cypress Run Golf Course to the east and is also located between two large lakes (Salt Lake and Lake Tarpon). In the immediate vicinity, the AA is surrounded by low-density residential development and an undeveloped seepage slope that provides connection to an off-site bay swamp that eventually connects to Salt Lake.**
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: 5 with: 0	a. Water levels and flows are moderately higher or lower than appropriate, considering seasonal variation, antecedent weather and other climatic effects. b. Water level indicators are not as distinct or as consistent as expected for hydrologic conditions for the type of system being evaluated. **Wetland 1 has distinct biologic/hydrologic indicators which are indicitive of anaerobic conditions present within the system. The wetland is occupied by invasive vegetation (e.g. cattails) which are typically indicative of diminished water quality. This is likely due to the low density residential development (and associated stormwater runoff and nutrient input from fertilizers) adjacent to the north side of Wetland 1.**
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: 5 with: 0	I. Majority of plant cover is by appropriate and desirable plant species in the canopy, shrub, or ground stratum. II. Invasive exotic or other invasive plant species are present, but cover is at allowed limits. III. There is evidence of minimal to near-normal regeneration or natural recruitment. IV. Age and size distribution approximates some indications of permanent deviation from normal successional pattern with slightly greater than expected mortality pattern(s). **Wetland 1 vegetation consists of distinct community zonation that is typical of a freshwater marsh wetland, which suggests the wetland hydroperiod has been maintained despite significant changes to the adjacent uplands. However, the wetland is dominated by invasive vegetation (cattails) which are typically indicative of diminished water quality. This is likely due to the low density residential development (and associated stormwater runoff and nutrient input from fertilizers) adjacent to the north side of Wetland 1.**

Score = sum of above scores/30 (if uplands, divide by 20)

current or w/o pres	with
0.50	0.00

If preservation as mitigation,
Preservation adjustment factor = N/A
Adjusted mitigation delta = N/A

For impact assessment areas	
FL = delta x acres =	0.08

Delta = [with-current]
-0.50

If mitigation	
Time lag (t-factor) =	1
Risk factor = N/A	1

For mitigation assessment areas	
RFG = delta/(t-factor x risk) =	N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
East Lake 44	NA	Wetland 2

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
617 - Mixed Wetland Hardwoods		Impact	0.3 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Upper Coastal	Class III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Wetland 2 connects to Wetland 1 only during extreme events and when the wetland is above seasonal high water elevation. There is a connection via a culvert under the dirt roadway.

Assessment area description

Located in the north-central portion of the site, this low quality wetland community is dominated primarily in the canopy layers by red maple, laurel oak, cabbage palm and multiple bay tree species. The shrub layer is highly dominated by Brazilian pepper with minimal to moderate amounts of wax myrtle, saltbush and saw palmetto. Minimal to no presence of groundcover species was observed. In areas where groundcover has emerged, observations of several rushes and sedges were present within the low quality wetlands.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
The site is a large seepage slope which is hydrologically connected to Salt Lake, through culverts under Highlands Avenue	Not unique

Functions	Mitigation for previous permit/other historic use
Providing cover, substrate, and refuge; breeding, nesting, denning, and nursery areas; corridors for wildlife movement; food chain support; and natural water storage, natural flow attenuation, and water quality improvement, which enhances fish, wildlife, and listed species utilization.	N/A
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Typical animals may include cricket frog, pig frog, leopard frog, American alligator, eastern mud, snake, banded water snake, striped swamp snake, great blue heron, great egret, snowy egret, little blue heron, tricolored heron, black-crowned night-heron, yellow-crowned night-heron, northern harrier, sandhill crane, raccoon, and river otter (FNAI).	Little blue heron (ST); Tricolored heron (ST), Wood stork (FT), Rosseate spoonbill (ST), Eastern indigo snake (FT), Gopher tortoise (ST)

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Wading birds, wood storks, small fish, amphibians, alligators, snakes, armadillos and aquatic turtles may occur within the mixed wetland hardwoods. No observations of species utilization were made during site assessments.

Additional relevant factors:

N/A

Assessment conducted by:	Assessment date(s):
R.Bruce Williams/Josh Kohlbecker	January 16, 17, 26 & 29, 2018

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
East Lake 44	NA	Wetland 2
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	RBW/JK	January 16, 17, 26 & 29, 2018

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current	with
	5	0

a. Habitats outside the assessment area are available in sufficient quantity and variety to provide optimal support for most, but not all, of the wildlife listed in Part I,
b. Some of the plant community composition in the proximity of the assessment area consists of moderate amounts of invasive, nuisance and/or exotic plant species.
c. Wildlife access to and from habitats outside the assessment area is partially limited by the presence of roadways that impede wildlife movement.
Wetland 2 is regionally surrounded by low/medium density residential development, a major roadway (Tarpon Spring Road to the south) and Cypress Run Golf Course to the east and is also located between two large lakes (Salt Lake and Lake Tarpon). In the immediate vicinity, the AA is surrounded by low-density residential development and an undeveloped seepage slope that provides connection to an off-site bay swamp that eventually connects to Salt Lake.

.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current	with
	5	0

a. Water levels and flows are moderately higher or lower than appropriate, considering seasonal variation, antecedent weather and other climatic effects.
b. Water level indicators are not as distinct or as consistent as expected for hydrologic conditions for the type of system being evaluated.
Wetland 2 has distinct biologic/hydrologic indicators which are indicitive of anaerobic conditions present within the system. The wetland is dominated by invasive vegetation (Brazilian pepper) which are typically indicative of low quality/disturbed wetlands. This is likely due to the low density residential development (and associated stormwater runoff and nutrient input from fertilizers) adjacent to the north side of Wetland 2.

.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current	with
	4	0

I. Majority of plant cover is by inappropriate or undesirable plant species in the canopy, shrub, or ground stratum.
II. Invasive exotic or other invasive plant species are present, and consist of the majority of plant cover.
III. There is minimal evidence of near-normal regeneration or natural recruitment.
IV. Age and size distribution approximates conditions atypical and indicative of permanent deviation from normal successional pattern, with greater than expected mortality.
Wetland 2 vegetation consists of distinct community zonation that is typical of a mixed wetland hardwood weland, which suggests the wetland hydroperiod has been maintained despite significant changes to the adjacent uplands. However, the wetland is dominated by invasive vegetation (Brazilian pepper) which are typically indicative of disturbed lands and low quality wetlands. This is likely due to the low density residential development (and associated stormwater runoff and nutrient input from fertilizers) adjacent to the north side of Wetland 2.

Score = sum of above scores/30 (if uplands, divide by 20)		
current r w/o pres		with
0.47		0.00

If preservation as mitigation,
Preservation adjustment factor = N/A
Adjusted mitigation delta = N/A

For impact assessment areas	
FL = delta x acres =	0.14

Delta = [with-current]
-0.47

If mitigation	
Time lag (t-factor) =	1
Risk factor = N/A	1

For mitigation assessment areas	
RFG = delta/(t-factor x risk) =	N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
East Lake 44	NA	Wetland 3

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
617 - Mixed Wetland Hardwoods		Impact	1.1 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Upper Coastal	Class III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Wetland 3 connects to a small, upland-cut ditch to the south that drains into the wetland. There is a connection via a culvert within the southern portion of the wetland boundary. The northern portion of the wetland is bound by a significant upland ridge and low density residential land use. The eastern and western adjacent habitats consist of mixed upland hardwood communities.

Assessment area description

Located in the central portion of the site, this low quality wetland community is dominated primarily in the canopy layers by red maple, laurel oak, cabbage palm and multiple bay tree species. The shrub layer is highly dominated by Brazilian pepper with minimal to moderate amounts of wax myrtle, saltbush and saw palmetto. Minimal to no presence of groundcover species was observed. In areas where groundcover has emerged, observations of several rushes and sedges were present within the low quality wetlands.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
The site is a large seepage slope which is hydrologically connected to Salt Lake, through culverts under Highlands Avenue	Not unique

Functions	Mitigation for previous permit/other historic use
Providing cover, substrate, and refuge; breeding, nesting, denning, and nursery areas; corridors for wildlife movement; food chain support; and natural water storage, natural flow attenuation, and water quality improvement, which enhances fish, wildlife, and listed species utilization.	N/A
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Typical animals may include cricket frog, pig frog, leopard frog, American alligator, eastern mud, snake, banded water snake, striped swamp snake, great blue heron, great egret, snowy egret, little blue heron, tricolored heron, black-crowned night-heron, yellow-crowned night-heron, northern harrier, sandhill crane, raccoon, and river otter (FNAI).	Little blue heron (ST); Tricolored heron (ST), Wood stork (FT), Rosseate spoonbill (ST), Eastern indigo snake (FT), Gopher tortoise (ST)

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Wading birds, armadillos, wood storks, small fish, amphibians, alligators, snakes, armadillos and aquatic turtles may occur within the mixed wetland hardwoods. Observations of species utilization (armadillo holes) were made during site assessments.

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
R.Bruce Williams/Josh Kohlbecker	January 16, 17, 26 & 29, 2018

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
East Lake 44	NA	Wetland 3
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	RBW/JK	January 16, 17, 26 & 29, 2018

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 5	with: 0

a. Habitats outside the assessment area are available in sufficient quantity and variety to provide optimal support for most, but not all, of the wildlife listed in Part I,
b. Some of the plant community composition in the proximity of the assessment area consists of moderate amounts of invasive, nuisance and/or exotic plant species.
c. Wildlife access to and from habitats outside the assessment area is partially limited by the presence of roadways that impede wildlife movement.
Wetland 3 is regionally surrounded by low/medium density residential development, a major roadway (Tarpon Spring Road to the south) and Cypress Run Golf Course to the east and is also located between two large lakes (Salt Lake and Lake Tarpon). In the immediate vicinity, the AA is surrounded by low-density residential development and an undeveloped seepage slope to the north that provides connection to an off-site bay swamp that eventually connects to Salt Lake.

.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 3	with: 0

a. Water levels and flows are moderately higher or lower than appropriate, considering seasonal variation, antecedent weather and other climatic effects.
b. Water level indicators are not distinct and not consistent with expected hydrologic conditions for the type of system being evaluated.
The land surface at Wetland 3 has been significantly altered over time, as evidenced by the disturbed soils identified in nearly all exploratory soil pits dug during the wetland delineation.

.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 3	with: 0

I. Majority of plant cover is by inappropriate or undesirable plant species in the canopy, shrub, or ground stratum.
II. Invasive exotic or other invasive plant species are present, and consist of the majority of plant cover.
III. There is minimal evidence of near-normal regeneration or natural recruitment.
IV. Age and size distribution approximates conditions atypical and indicative of permanent deviation from normal successional pattern, with greater than expected mortality.
Wetland 3 vegetation consists of distinct community zonation that is typical of a mixed wetland hardwood weland, which suggests the wetland hydroperiod has been maintained despite significant changes to the adjacent uplands. However, the wetland is dominated by invasive vegetation (Brazilian pepper) which are typically indicative of disturbed lands and low quality wetlands. This is likely due to the low density residential development (and associated stormwater runoff and nutrient input from fertilizers) adjacent to the north side of Wetland 3, as well as roadway development to the east and immediaetly adjancent upland communities to the south and west.

Score = sum of above scores/30 (if uplands, divide by 20)	current r w/o pres: 0.37	with: 0.00

If preservation as mitigation,
Preservation adjustment factor = N/A
Adjusted mitigation delta = N/A

For impact assessment areas	
FL = delta x acres =	0.40

Delta = [with-current]
-0.37

If mitigation	
Time lag (t-factor) =	N/A
Risk factor = N/A	NA

For mitigation assessment areas	
RFG = delta/(t-factor x risk) =	N/A

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
East Lake 44	NA	Wetland 4

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
617 - Mixed Wetland Hardwoods		Impact	2.8 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Upper Coastal	Class III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Wetland 4 shows no indications of offsite connectivity to other wetlands and/or other surface waters. The wetland is bounded to the east and south by roadways and to the north by residential developments. The eastern portion of the wetland is adjacent to an upland mixed hardwood community.

Assessment area description

Located along the eastern portion of the site, this low quality wetland community is dominated primarily in the canopy layers by red maple, laurel oak, cabbage palm and multiple bay tree species. The shrub layer is highly dominated by Brazilian pepper with minimal to moderate amounts of wax myrtle, saltbush and saw palmetto. Minimal to no presence of groundcover species was observed. Groundcover within the low quality wetlands is overshadowed by leaf litter and tree debris.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
The site is a large seepage slope which is hydrologically connected to Salt Lake, through culverts under Highlands Avenue	Not unique

Functions	Mitigation for previous permit/other historic use
Providing cover, substrate, and refuge; breeding, nesting, denning, and nursery areas; corridors for wildlife movement; food chain support; and natural water storage, natural flow attenuation, and water quality improvement, which enhances fish, wildlife, and listed species utilization.	N/A
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Typical animals may include cricket frog, pig frog, leopard frog, American alligator, eastern mud, snake, banded water snake, striped swamp snake, great blue heron, great egret, snowy egret, little blue heron, tricolored heron, black-crowned night-heron, yellow-crowned night-heron, northern harrier, sandhill crane, raccoon, and river otter (FNAI).	Little blue heron (ST); Tricolored heron (ST), Wood stork (FT), Rosseate spoonbill (ST), Eastern indigo snake (FT), Gopher tortoise (ST)

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Wading birds, armadillos, wood storks, small fish, amphibians, alligators, snakes, armadillos and aquatic turtles may occur within the mixed wetland hardwoods. Observations of species utilization (armadillo holes) were made during site assessments.

Additional relevant factors:

N/A

Assessment conducted by:	Assessment date(s):
R.Bruce Williams/Josh Kohlbecker	January 16, 17, 26 & 29, 2018

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
East Lake 44	NA	Wetland 4
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	RBW/JK	January 16, 17, 26 & 29, 2018

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 5	with: 0
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 3	with: 0
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 3	with: 0

a. Habitats outside the assessment area are available in sufficient quantity and variety to provide optimal support for most, but not all, of the wildlife listed in Part I,
b. Some of the plant community composition in the proximity of the assessment area consists of moderate amounts of invasive, nuisance and/or exotic plant species.
c. Wildlife access to and from habitats outside the assessment area is partially limited by the presence of roadways that impede wildlife movement.
Wetland 4 is regionally surrounded by low/medium density residential development, a major roadway (Tarpon Spring Road to the south) and Cypress Run Golf Course to the east and is also located between two large lakes (Salt Lake and Lake Tarpon). In the immediate vicinity, the AA is surrounded by low-density residential development and associated roadways.

a. Water levels and flows are moderately higher or lower than appropriate, considering seasonal variation, antecedent weather and other climatic effects.
b. Water level indicators are not distinct and not consistent with expected hydrologic conditions for the type of system being evaluated.
The land surface at Wetland 4 has been significantly altered over time, as evidenced by the disturbed soils identified in nearly all soil pits dug during the wetland delineation.

I. Majority of plant cover is by inappropriate or undesirable plant species in the canopy, shrub, or ground stratum.
II. Invasive exotic or other invasive plant species are present, and consist of the majority of plant cover.
III. There is minimal evidence of near-normal regeneration or natural recruitment.
IV. Age and size distribution approximates conditions atypical and indicative of permanent deviation from normal successional pattern, with greater than expected mortality.
Wetland 4 vegetation consists of distinct community zonation that is typical of a mixed wetland hardwood, suggesting the wetland hydroperiod has been maintained despite significant changes to the adjacent uplands. However, the wetland is dominated by invasive vegetation (Brazilian pepper) which are typically indicative of disturbed lands and low quality wetlands. This is likely due to the associated stormwater runoff and nutrient input from fertilizers adjacent to the north, as well as from the south and east coming directly from the adjacent roadways and the recreational golf course to the east.

Score = sum of above scores/30 (if uplands, divide by 20)	
current r w/o pres: 0.37	with: 0.00

Delta = [with-current]
-0.37

If preservation as mitigation,
Preservation adjustment factor = N/A
Adjusted mitigation delta = N/A

If mitigation	
Time lag (t-factor) =	N/A
Risk factor = N/A	NA

For impact assessment areas	
FL = delta x acres =	1.03

For mitigation assessment areas	
RFG = delta/(t-factor x risk) =	N/A