

**HIDDEN LAKE**  
**Environmental Assessment Report**

June 2022

Prepared for  
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Peacock Consulting Group, LLC has completed a preliminary environmental assessment of approximately 206.16 acres of land in eastern Nassau County, Florida for a project to be known as Hidden Lake. The purpose of this assessment was to determine the approximate extent of wetlands and other surface waters and to determine the presence and potential presence of protected species. The results of this assessment are summarized in the following report.

## **I. Location of Property**

The property is located in Section 31, Township 2 North and Range 28 East (Figure 1). The project site is south of the Amelia National Golf and Country Club at the northern end of Karen Walk and Hendricks Road (Figure 2). The project comprises three real estate parcels: 31-2N-28-0000-0002-0000, 31-2N-28-0000-0002-0010, and 31-2N-28-0000-0002-0040. The project is bordered to the north by the Amelia Concourse residential development, to the west by the Amelia Walk residential development, and to the east and south by other residential development and some undeveloped land (Figures 3A, 3B and 3C).

## **II. Soils**

The *Soil Survey of Nassau County, Florida* (U.S. Department of Agriculture, Soil Conservation Service 1991) identifies 9 soil types on the property as described below and depicted on Figure 4A and 4B).

### **A. Uplands**

#### **1. Ortega fine sand**

The property contains an area of Ortega fine sand (approximately 7.78 acres) located north of the intersection of Karen Walk and Richard Road. This is a nearly level to gently sloping, moderately well drained soil that naturally occurs on narrow to broad ridges and isolated knolls. The depth to the seasonal high water table ranges from 42 to 60 inches.

#### **2. Hurricane – Pottsburg fine sands**

The property contains eight areas (totaling approximately 8.14 acres) of Hurricane and Pottsburg fine sand. The largest area (approximately 8.63 acres) is located in the northwest corner of the property. Both soils are nearly level to gently sloping and naturally occur on narrow to broad ridges and isolated knolls.

Pottsburg fine sand is poorly drained with a seasonal high water table at a depth ranging between 12 and 24 inches below the ground surface. This soil has a layer of weakly cemented, dark colored sand known as a spodic horizon that starts between 51 and 79 inches below the ground surface.

Hurricane fine sand is somewhat poorly drained with a seasonal high water table at a depth ranging between 24 and 42 inches below the ground surface. This soil has a spodic horizon starting from 51 to 80 inches below the ground surface.

3. Ridgewood fine sand

The property contains several areas (totaling approximately 5.43 acres) of Ridgewood fine sand. This is a nearly level to gently sloping, somewhat poorly drained soil that naturally occurs on narrow to broad ridges and isolated knolls. The depth to the seasonal high water table is 18 to 42 inches.

4. Mandarin fine sand

One area in the northwest corner of the property (approximately 2.29 acres) is mapped as Mandarin fine sand. This is a nearly level, somewhat poorly drained soil that naturally occurs on narrow to broad ridges in the adjacent pine flatwoods. The depth to the seasonal high water table ranges from 18 to 42 inches. This soil has a spodic horizon starting within 30 inches of the ground surface.

5. Leon fine sand

A large percentage of the property (approximately 88.53 acres) is mapped as Leon fine sand. This soil is a nearly level, poorly drained soil that naturally occurs in upland pine flatwoods. The depth to the seasonal high water table ranges from 6 to 18 inches below the ground surface. This soil has a spodic horizon starting within 30 inches of the ground surface.

B. Wetlands

1. Lynn Haven – Wesconnett – Leon fine sand

Two areas in the northern half of the property (totaling approximately 23.83 acres) are mapped as Lynn Haven – Wesconnett fine sand. These two soil types are nearly level and very poorly drained and naturally occur in depressional areas in the pine flatwoods. In an undrained condition, the seasonal high water table is above the ground surface for 6 to 9 months during most years.

Lynn Haven fine sand has a surface layer of black sand that ranges in thickness from 8 to 15 inches. This soil also has a spodic horizon that starts within 25 inches of the ground surface.

Wesconnett fine sand may have a surface layer of muck up to 7 inches in thickness. This soil also has a spodic horizon that starts within 25 inches of the ground surface.

2. Kingsferry fine sand

The northeast corner of the property contains an area (approximately 3.60 acres) of Kingsferry fine sand. This is a nearly level, very poorly drained soil that naturally occurs on broad, low flats. The seasonal high water table is within 6 inches of the ground surface. This soil has a spodic horizon that starts within 30 to 50 inches of the ground surface.

3. Rutlege mucky fine sand

The property contains several areas (totaling approximately 15.16 acres) of Rutlege mucky fine sand. This is a nearly level, very poorly drained soil that naturally occurs along narrow drainageways. The water table is at or near the ground surface much of the year and may become frequently flooded for brief periods of time. The upper layer of soil comprises very dark colored fine sand approximately 16 inches in thickness.

4. Evergreen – Leon mucks

The southern half of the property contains an area (approximately 23.49 acres) of Evergreen – Leon mucks. These are nearly level, very poorly drained soils that naturally occur in depressional areas. They hold standing water for 9 to 12 months during most years.

Evergreen fine sand has a surface layer of muck that ranges from 6 to 14 inches in thickness. This soil also has a spodic horizon starting approximately 26 inches below the ground surface.

Leon muck has a surface layer of muck up to 8 inches in thickness and a spodic horizon starting within 50 inches of the ground surface.

5. Open Water

The northern half of the property contains an existing man-made lake that is approximately 15.74 acres in size. The approximate extent of the original soils mapped within the lake has been subtracted from the total extent of these soils listed in this section.

### III. Existing Vegetative Communities and Land Uses

The existing vegetative communities and land uses have been characterized pursuant to the Florida Department of Transportation publication *Florida Land Use, Cover and Forms Classification System* (FLUCFCS) as described below and depicted on Figures 5A, 5B and 5C. The extent of wetlands and other surface waters have been flagged and located by GPS and are depicted on the enclosed graphics.

A. Uplands	125.73 acres
1. Pine Plantation (FLUCFCS 441)	44.90 acres

Relatively large areas of the property are managed as commercial pine plantation. The canopy in these areas comprises rows of even-aged planted slash pine (*Pinus elliottii*). The ground cover vegetation includes such species as saw palmetto (*Serenoa repens*), bitter gallberry (*Ilex glabra*) and bracken fern (*Pteridium aquilinum*).

2. Pine Flatwoods (FLUCFCS 411) 41.80 acres

Relatively large portions of the northern half of the property comprise pine flatwoods. The canopy is dominated by slash pine along with lesser amounts of loblolly pine (*Pinus taeda*), longleaf pine (*P. palustris*), water oak (*Quercus nigra*), laurel oak (*Q. laurifolia*), and southern magnolia (*Magnolia grandiflora*). The ground cover vegetation is similar to that of the pine plantation.

3. Longleaf Pine – Xeric Oak (FLUCFCS 412) 27.86 acres

The driest portions of the property are sandhills that have a canopy dominated by longleaf pine, turkey oak (*Quercus laevis*), bluejack oak (*Q. incana*), and live oak (*Q. virginiana*). The ground cover vegetation is more open as compared to the pine flatwoods and lacks bitter gallberry.

4. Hardwood – Coniferous Mixed (FLUCFCS 434) 4.24 acres

The southern half of the property contains areas that have a canopy dominated by various oaks and scattered pines.

5. Open Land (FLUCFCS 190) 2.19 acres

The northern half of the property contains an area of old field vegetated with such species as broomsedge (*Andropogon* sp.), blackberry (*Rubus* sp), Spanish needles (*Bidens alba*), and ragweed (*Ambrosia artemisiifolia*).

6. Single Family Residential (FLUCFCS 110) 4.74 acres

The southern half of the property contains two single family residences with areas of adjacent yard.

B. Wetlands and Other Surface Waters 80.43 acres

1. Inland Ponds and Sloughs (FLUCFCS 616) 41.51 acres

Most of the wetlands comprise sloughs. The canopy in these areas is dominated by such species as pond cypress (*Taxodium ascendens*), blackgum (*Nyssa sylvatica* var. *biflora*), sweet bay (*Magnolia virginiana*), loblolly bay (*Gordonia lasianthus*), and red maple (*Acer rubrum*). The ground cover vegetation includes such species as fetterbush (*Lyonia lucida*), buttonbush (*Cephalanthus occidentalis*), royal fern (*Osmunda regalis*), and Virginia chain fern (*Woodwardia virginica*). These areas regularly hold standing water during the rainy season.

2. Wet Pine Plantation (FLUCFCS 441 W) 14.64 acres

The property contains a number of areas of wet pine plantation. The canopy in these areas comprises rows of even-aged planted slash pine mixed with varying amounts of loblolly bay. The understory vegetation includes such species as fetterbush, bitter gallberry, cinnamon fern

(*Osmunda cinnamomea*), and netted chain fern (*Woodwardia areolata*). These areas are saturated to the ground surface during the rainy season.

3. Hydric Pine Flatwoods (FLUCFCS 625) 6.37 acres

The northern half of the property contains several areas of hydric or wet pine flatwoods. The canopy in these areas is dominated by slash pine mixed with loblolly bay. The ground cover vegetation includes such species as fetterbush and cinnamon fern. These areas are saturated to the ground surface during the rainy season.

4. Hydric Pine Flatwoods/Wet Field (625/640) 1.83 acres

Wetland 7A is slightly lower in elevation as compared to the adjacent areas of wet pine plantation. The pine seedlings that had been planted in this area appear to have died. As a result this area lacks a canopy and is currently vegetated with such species as Virginia chain fern, broomsedge, and yellow-eyed grass (*Xyris* sp.). This area will hold shallow standing water during the rainy season.

5. Wet Field (FLUCFCS 640) 0.34 acre

Wetlands 1D and 1E are currently wet fields vegetated with such species as broomsedge and yellow-eyed grass.

6. Man-made Lake (FLUCFCS 524) 15.74 acres

The property contains four man-made borrow pits. The largest pit, P1, is 15.61 acres in size. The other three pits (P2, P3 and P4) are each very small.

#### IV. Protected Species

The property has been inspected for the presence and potential presence of species listed as protected by the Florida Fish and Wildlife Conservation Commission (FWC) and the U.S. Fish and Wildlife Service (FWS) as listed in the FWC publication *Florida's Endangered and Threatened Species, Updated June 2021*. Biologists with Peacock Consulting Group, LLC inspected the property in October 2021 and March and May 2022. The only protected species observed onsite is the gopher tortoise.

FWS lists the following protected species as occurring in Nassau County:

West Indian Manatee ( <i>Trichechus manatus latirostris</i> )	FWS – endangered, FWC – endangered
Green Sea Turtle ( <i>Chelonia mydas</i> )	FWS – endangered, FWC – endangered
Hawksbill Sea Turtle ( <i>Eremochelys imbricata</i> )	FWS – endangered, FWC – endangered
Leatherback Sea Turtle ( <i>Dermochelys coriacea</i> )	FWS – endangered, FWC – endangered
Kemp's Ridley Sea Turtle ( <i>Lepidochelys kempii</i> )	FWS – endangered, FWC – endangered
Loggerhead Sea Turtle ( <i>Caretta caretta</i> )	FWS – threatened, FWC – threatened
Red-cockaded Woodpecker ( <i>Picoides borealis</i> )	FWS – endangered, FWC – endangered
Wood Stork ( <i>Mycteria americana</i> )	FWS – endangered, FWC – endangered

Eastern Indigo Snake (*Drymarchon corais couperi*)      FWS – threatened, FWC – threatened

A.      Aquatic Species

The property does not contain any suitable habitat for any of the sea turtles. Development of the property is not anticipated to adversely impact any sea turtles or the manatee.

B.      Red-cockaded Woodpecker

The red-cockaded woodpecker (*Picoides borealis*) requires mature old growth pine forests that are very open and typically fire-maintained. The average size of such habitat required for a population of woodpeckers ranges from 125 to 200 acres. This species excavates nest cavities in mature live pines located in open stands with little or no hardwood mid-story and few or no canopy size hardwoods. Abundant foraging habitat must be present in the immediate vicinity of the nest tree. Suitable foraging habitat comprises stands of mature pines with an open canopy, low densities of young pines, little or no hardwood or pine mid-story, few or no canopy size hardwoods, and an abundant groundcover of native bunch grasses and forbs. Fire suppression, logging of mature pines and habitat fragmentation degrade or eliminate otherwise suitable habitat.

None of the existing vegetative communities onsite provide suitable habitat for the red-cockaded woodpecker. No red-cockaded woodpeckers have been observed or are known to utilize the property or adjacent properties. Development of the project site is not anticipated to adversely impact this species.

C.      Wood Stork

The subject property is located within the core foraging areas of a wood stork nesting colony. The primary diet of the wood stork is small fish that range from 1 to 6 inches in length, particularly top minnows and sunfish, although other prey such as crayfish and tadpoles may be eaten as well. The wood stork forages in water that ranges from 6 to 10 inches deep. They feed in freshwater marshes, narrow tidal creeks, and flooded tidal pools. Favored foraging areas are depressions in marshes and swamps where prey becomes concentrated during periods of falling water levels. The wood stork will not forage in areas with dense undergrowth vegetation and will typically not forage in areas with a closed canopy.

No wood stork rookeries are located onsite. No wood storks have been observed foraging on the subject property. The main borrow pit is relatively steep sided and does not provide suitable foraging habitat for wood storks. The deepest wetlands (inland ponds and sloughs) will hold shallow water during the rainy season. However, these forested wetlands have a dense canopy cover which tends to discourage use by wood storks. Development of the property is not anticipated to adversely impact the wood stork.

#### D. Eastern Indigo Snake

The eastern indigo snake (*Drymarchon corais couperi*) requires relatively large areas of undeveloped land and are often associated with gopher tortoises (*Gopherus polyphemus*), as they will utilize tortoise burrows as refugia. The subject property has been surveyed for the presence of the eastern indigo snake. No eastern indigo snakes or evidence of eastern indigo snakes, such as shed skins, have been observed onsite or on land immediately abutting the subject property. The driest areas of the property contain gopher tortoise burrows. The developer will follow the *Standard Protection Measures for the Eastern Indigo Snake* (U.S. Fish and Wildlife Service 2013). Development of the property is not anticipated to adversely impact the eastern indigo snake.

In addition to the federally listed species, other species that were considered are listed as protected by FWC and include:

Little Blue Heron ( <i>Egretta caerulea</i> )	threatened
Tricolored Heron ( <i>Egretta tricolor</i> )	threatened
Gopher Tortoise ( <i>Gopherus polyphemus</i> )	threatened
Florida Pine Snake ( <i>Pituophis melanoleucus mugitus</i> )	threatened
Southeastern American Kestrel ( <i>Falco sparverius paulus</i> )	threatened

#### E. Little Blue Heron and Tricolored Heron

The little blue heron (*Egretta caerulea*) and tricolored heron (*Egretta tricolor*) are wading birds that forage primarily in shallow freshwater marshes and along the edges of ponds and lakes, although they can also forage in ditches. Herons potentially could forage along the upper edge of the large borrow pit. No little blue herons or tricolored herons have been observed onsite or are known to utilize the project area. Development of the property is not anticipated to adversely impact these species.

#### F. Gopher Tortoise

The gopher tortoise lives in areas with somewhat poorly drained to excessively well drained soils where there is adequate ground cover vegetation for foraging. Natural habitats that support gopher tortoises include longleaf pine-xeric oak forests, scrubby flatwoods, and sand dunes. Altered areas of such habitat can also provide suitable gopher tortoise habitat, including pasture, mowed roadsides, and cleared power line easements. The better drained portions of the property contain suitable areas of gopher tortoise habitat. A preliminary survey detected tortoise burrows in these areas. The developer of the property will obtain a permit from the Florida Fish and Wildlife Conservation Commission to excavate all of the tortoise burrows and to relocate all captured tortoises to an approved offsite recipient property.

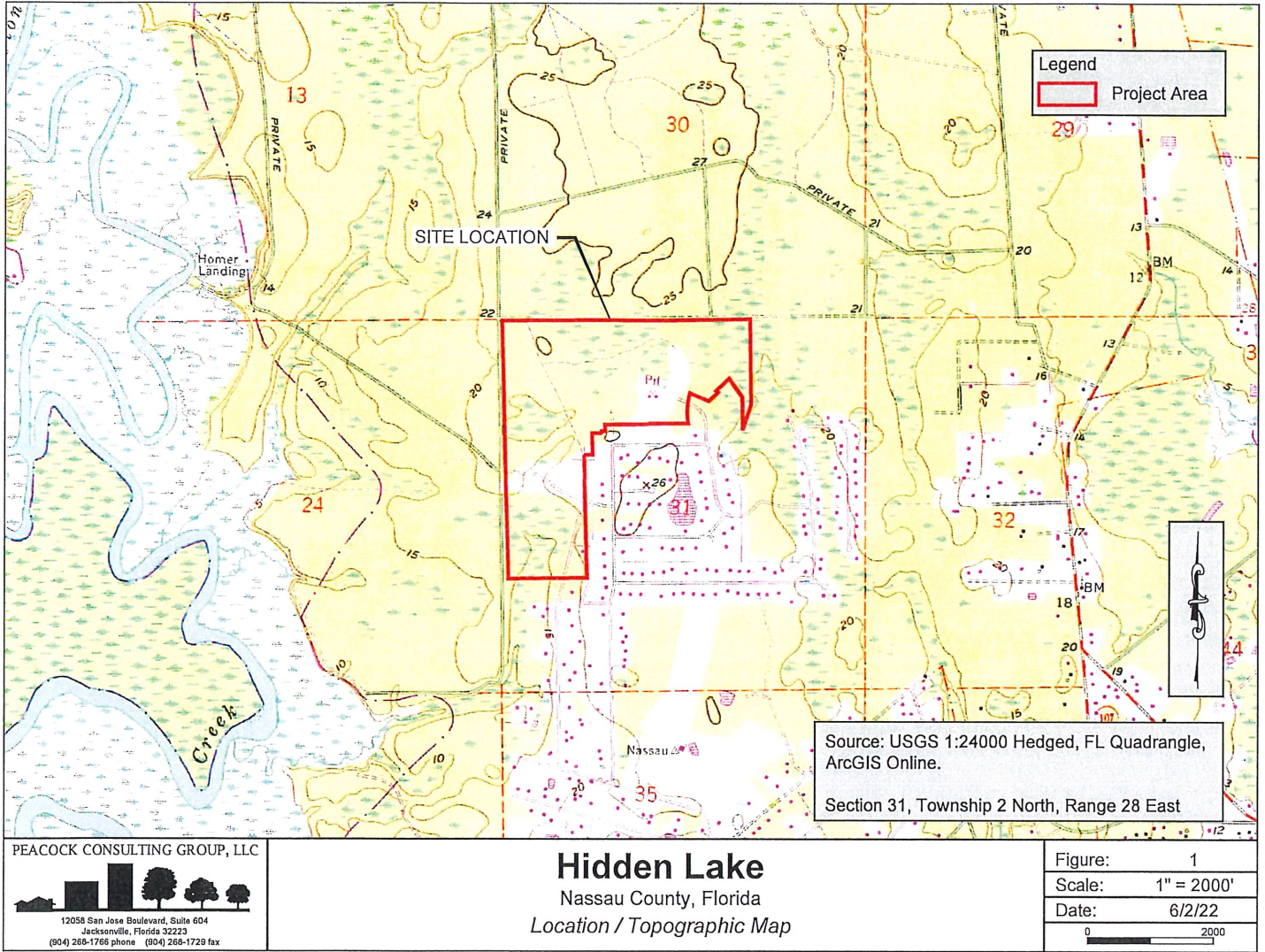
#### G. Florida Pine Snake

The Florida pine snake (*Pituophis melanoleucus mugitus*) lives in areas with well drained sandy soils with a moderate to open canopy. They spend most of the time underground in the burrows of gopher tortoises and Southeastern pocket gophers (*Geomys pinetis*) and feed primarily on

pocket gophers. No pocket gophers occur on the subject property. No Florida pine snakes have been observed onsite or are known to occur onsite. Development of the property is not anticipated to adversely impact the Florida pine snake. If any Florida pine snakes are encountered during the gopher tortoise relocation work, they will be captured and relocated.

#### H. Southeastern American Kestrel

The southeastern American kestrel (*Falco sparverius paulus*) is the non-migratory subspecies of the American kestrel. This subspecies remains in Florida during the warmer months of the year and does not migrate farther north. Positive identification of kestrels during the months of May through July or August provides prima facie evidence of the presence of southeastern American kestrels. This species is a cavity nester that lives in very open forests as well as pastures and golf courses. The subject property does not contain open forests or pastures or golf courses. No suitable nesting trees (snags with cavities) were observed on the property. No southeastern American kestrels have been observed onsite. Development of the subject property is not anticipated to adversely impact the southeastern American kestrel.





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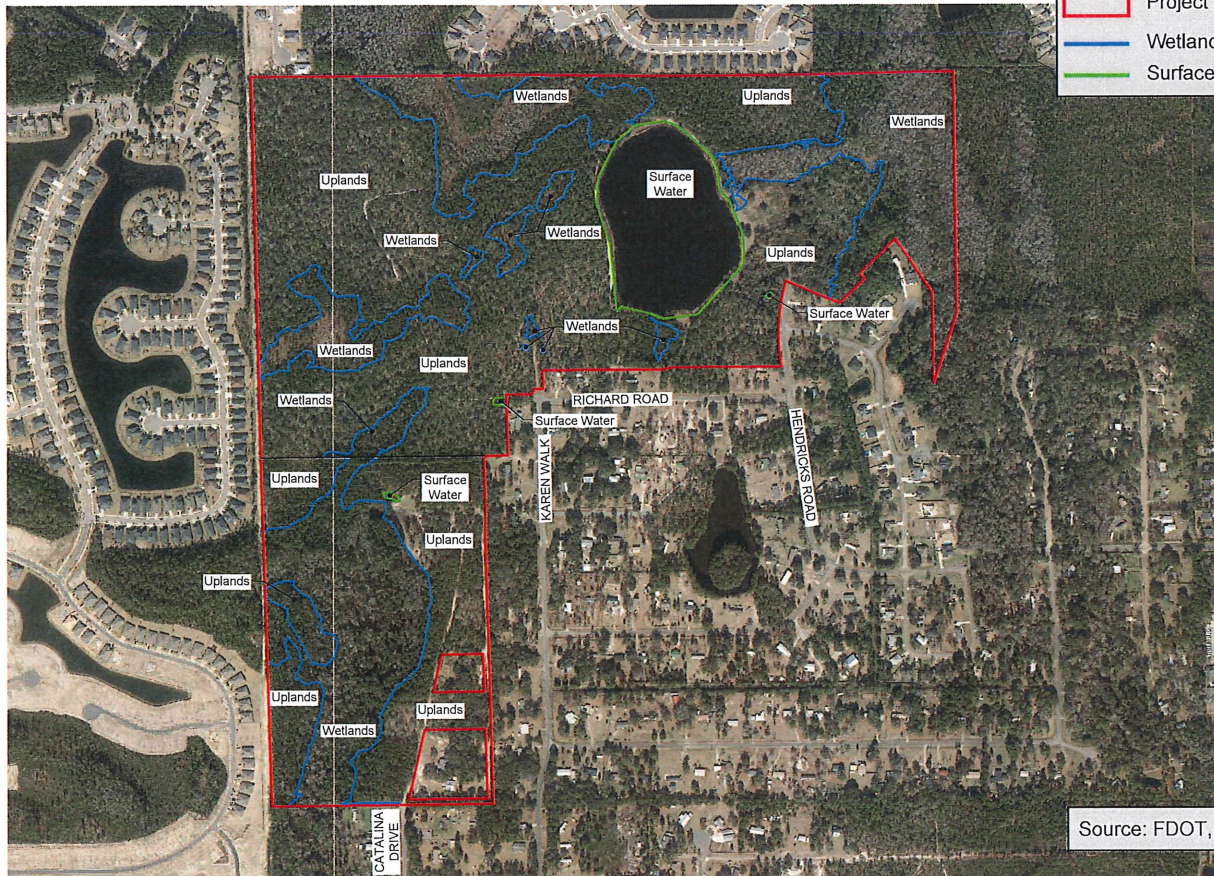
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## Hidden Lake

Nassau County, Florida  
*Vicinity Map*

Figure:	2
Scale:	1" = 5000'
Date:	6/2/22

0 5000



**Legend**

- Project Area
- Wetland Line
- Surface Water Limits



Source: FDOT, 2021 Imagery

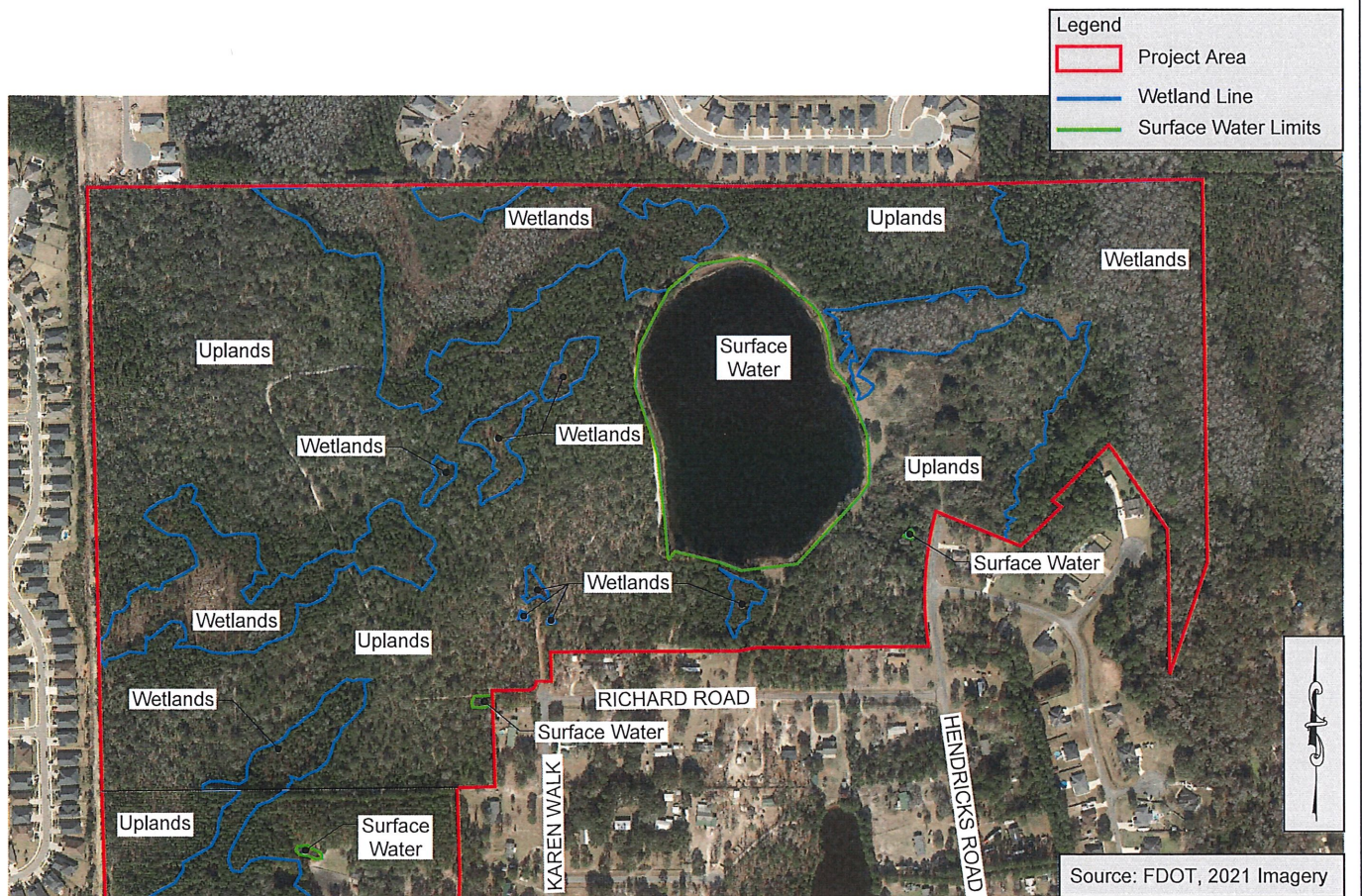
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## Hidden Lake

Nassau County, Florida  
*Current Aerial Photograph*

Figure:	3A
Scale:	1" = 800'
Date:	6/2/22



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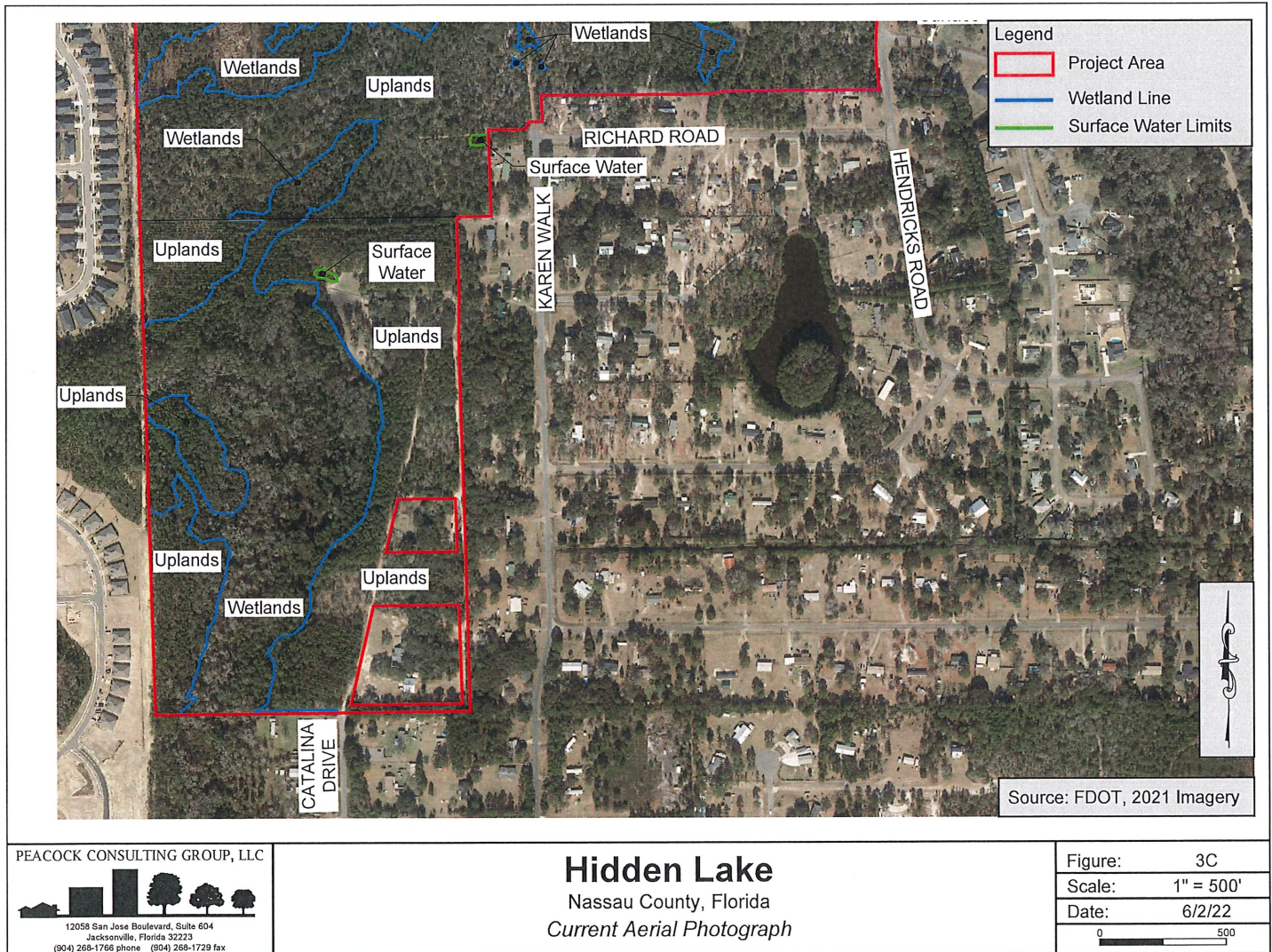
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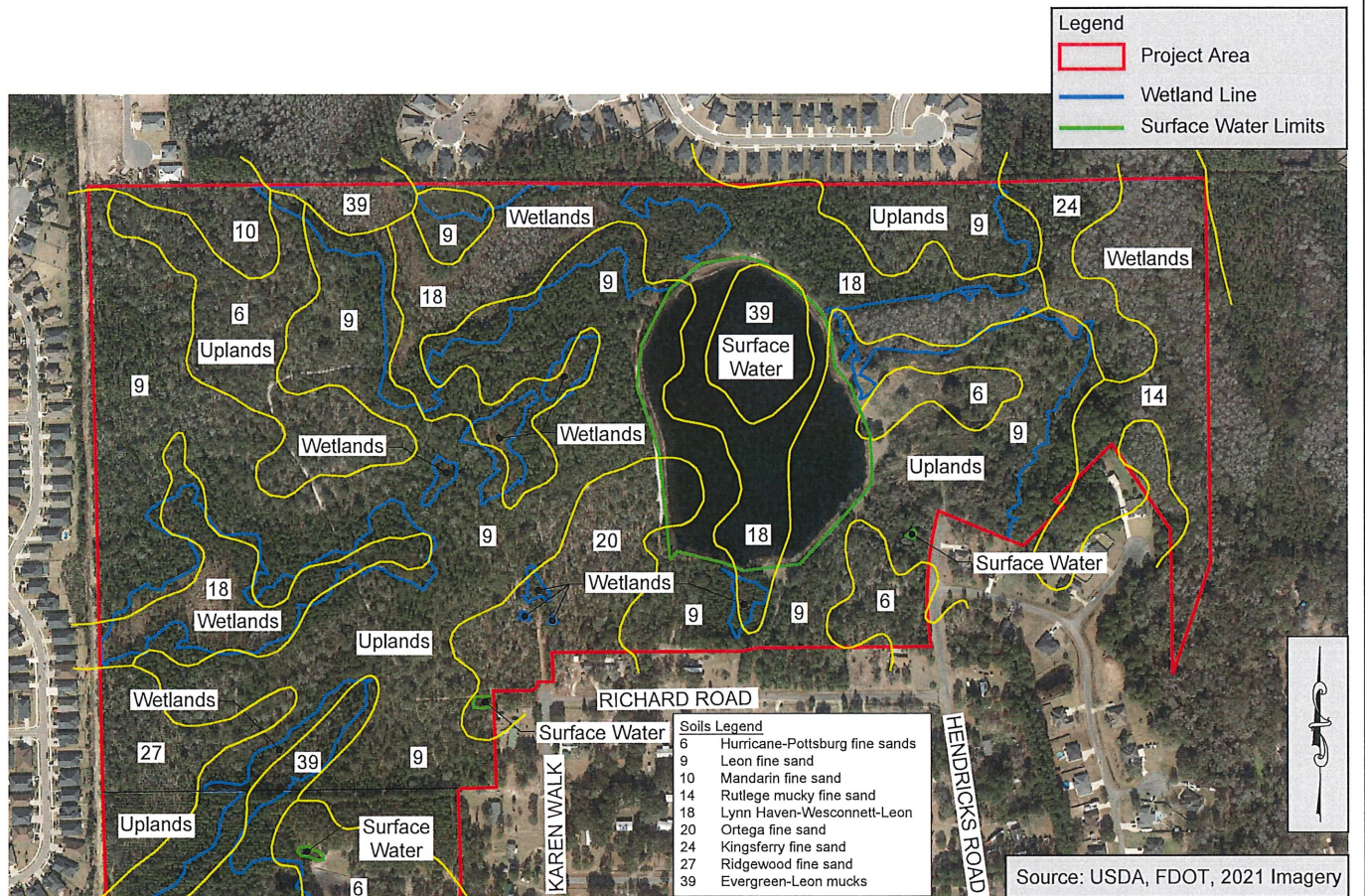
## Hidden Lake

Nassau County, Florida  
Current Aerial Photograph

Figure: 3B  
Scale: 1" = 500'  
Date: 6/2/22

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## Hidden Lake

Nassau County, Florida

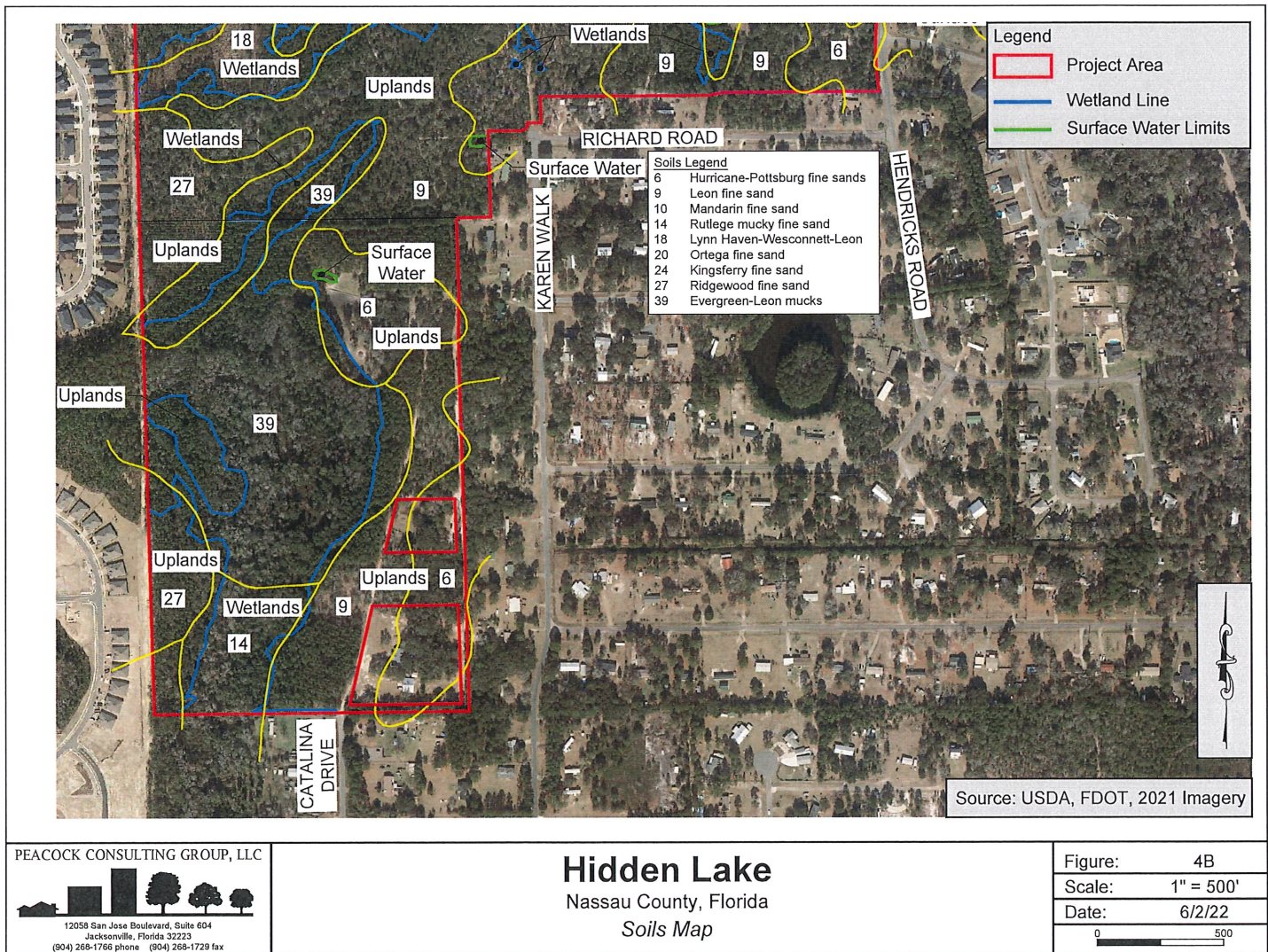
Soils Map

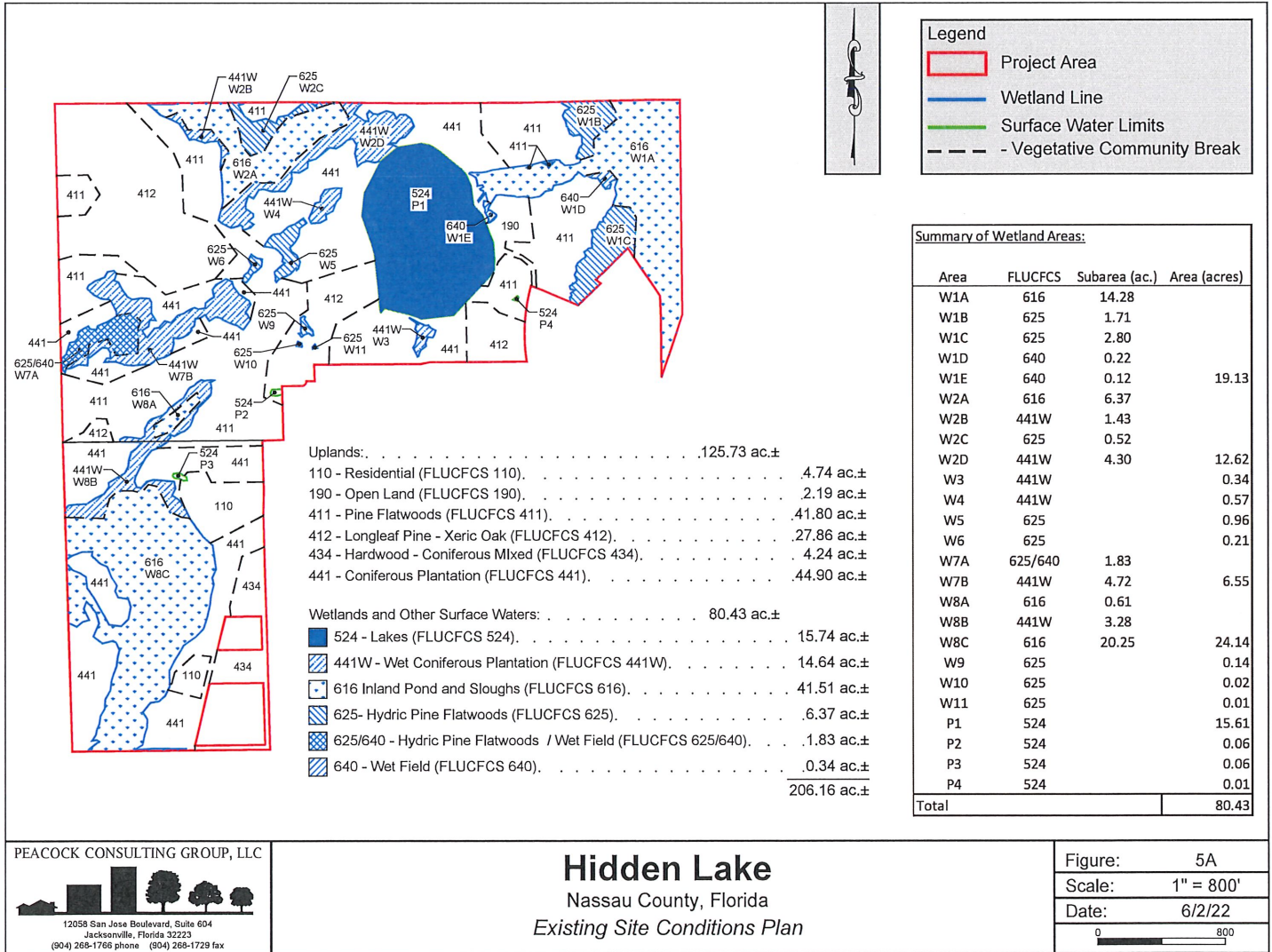
Figure: 4A

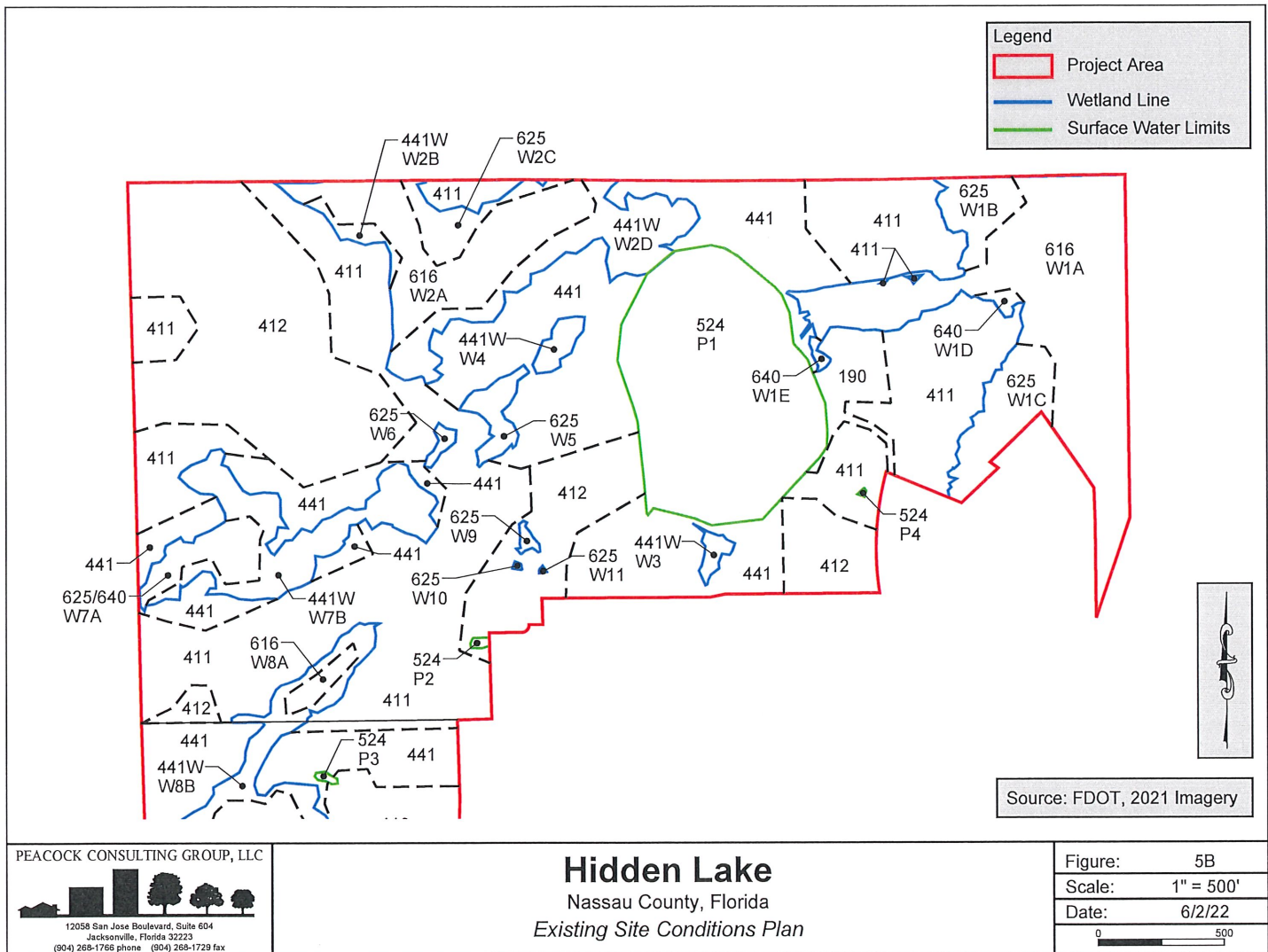
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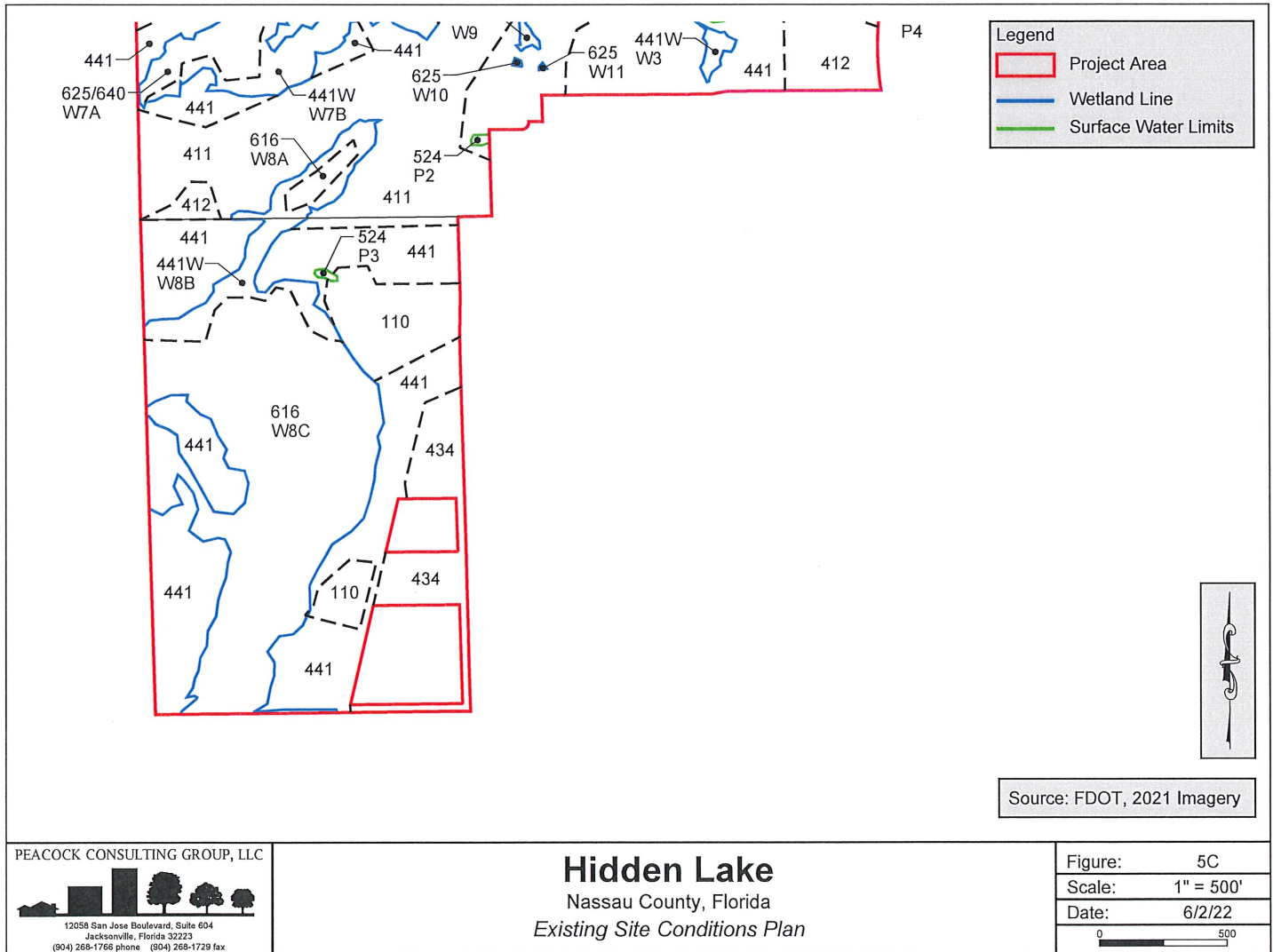
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## Hidden Lake

Nassau County, Florida  
*Existing Site Conditions Plan*

Figure: 5C  
Scale: 1" = 500'  
Date: 6/2/22

0 500