EW Consultants, Inc.
Natural Resource Management, Wetland, and Environmental Permitting Services

KOA - FORT PIERCE

Environmental Assessment

Prepared For:
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Prepared By:
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July 2017
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I. INTRODUCTION -

This Environmental Assessment documents and summarizes the various natural resources and man-made alterations present on a property referred to as the KOA Fort Pierce site. The project site, as shown on Figure 1 in Appendix A, is ±56.1 acres, and is located at the northeast corner of South Jenkins Road and Edwards Road, east of I-95, and south of Okeechobee Road (S.R. 70). It lies within Section 30, Township 35 South, Range 40 East in the City of Fort Pierce, St. Lucie County, Florida (see Figure 2, USGS Quadrangle Map in Appendix A).

II. GENERAL PROPERTY DESCRIPTION –

The property is bounded to the north by the North Saint Lucie River Water Control District's (NSLWCD) Canal Number 39 and residential development, to the east by residential development and McNeil Road, to the south by residential development and Edwards Road, and to the west by Jenkins Road (please refer to Figure 3, 2016 Aerial Photograph, in Appendix A for surrounding conditions). The property is undeveloped and forested, and is comprised of a combination of native and exotic vegetation habitat types with man-made surface water areas. Detailed discussions of land cover types are described in subsequent sections of this report.

III. SOIL TYPES –

A Soils Report generated by the United States Department of Agriculture/Natural Resources Conservation Service is provided in Appendix B of this report. The soils report identifies mainly sand-based and loamy soils throughout the project site, all of which are considered poorly drained.

IV. EXISTING LAND COVER TYPES –

The following is a summary of the land cover types and vegetative communities found on the subject site. Land cover and vegetative community classifications are mapped based on the Florida Land Use, Cover and Forms Classification System (FLUCCS) developed by the Florida Department of Transportation. Field reconnaissance and aerial photograph interpretation were employed in the mapping of the vegetative communities on the subject property. The vegetative community descriptions include discussions of potential wildlife habitat provided by the various resources present in those communities.

There are several different FLUCCS upland classifications currently present on the site based on fieldwork conducted by EW Consultants, Inc. in July, 2017. They include: Pine Flatwoods (411); Brazilian Pepper (422); Upland Scrub, Pine and Hardwoods (436); Lakes Less than 10 Acres (524), and; Disturbed Lands (740). A land cover map of the observed vegetative community types

is included as Figure 4 in the Appendix A of this report. The land cover types observed on the property are described as follows:

Upland Inventory

411 Pine Flatwoods

This is a sub-category of the FLUCCS Upland Forests classification and includes areas where the tree canopy is dominated by slash pines. The pine flatwood upland habitat is generally found in the eastern half of the property. This area is in good ecological condition with minimal impacts from man-made alterations or exotic vegetation. Some portions of the edges of this upland habitat, especially along McNeil and Edwards roads, contain limited exotic vegetation. Native slash pine, saw palmetto, and gallberry are the dominant plants species within this land cover category. Listed species such as gopher tortoises typically use pine flatwoods for burrowing and foraging. Their presence has been confirmed within this habitat based on the July, 2017 site investigation.

436 Upland Scrub, Pine and Hardwoods

This native upland forest classification includes areas where the tree canopy is generally an even mix of laurel and live oaks, as well as slash pines. It typically occurs in areas that have been previously cleared and have regenerated naturally. Other native plant species observed within the 436 area include cabbage palm, myrsine, wild coffee, saw palmetto, grapevine, and smilax vine. Exotic species include Brazilian pepper, climbing fern, guava, and earleaf acacia. This upland habitat type is located in the central portion of the property, adjacent to and west of the pine flatwoods habitat community, and east of the Brazilian pepper area. The 436 area can be described as a naturally regenerating area with intermediate stages of succession. Although signs of stress from human activities and cover of invasive exotics are currently low, it is apparent that the ecological development within this area is influenced by adjacent exotic vegetation to the west, historic land uses, and current anthropogenic influences including a network of active off-road vehicle trails. Listed species such as gopher tortoises typically use pine flatwoods for burrowing and foraging. Their presence has been confirmed within this habitat based on the July 2017 site investigation. This land cover category also includes portions of a remnant ditch system which appears to be frequently used by off-road vehicles.

422 Brazilian Pepper

Thickets of the exotic Brazilian pepper tree exist within the southwestern and northern portions of the property. These trees typically dominate a landscape and prevent desirable native plant species from establishing. This land cover type provides minimal wildlife habitat, although the state listed gopher tortoise may use the trees' root system for burrowing. No such burrows were identified within the Brazilian pepper area during the July 2017 site investigation. This land cover category also includes portions of a remnant ditch system which appears to be used by off-road vehicles.

740 Disturbed Lands

The northwest portion of the property includes scattered native trees such as slash pines, laurel oaks, and cabbage palms along with exotic Brazilian pepper, lygodium, lead tree, guava, and earleaf acacia. This area has been categorized as disturbed due to the significant percent cover of exotics and the absence of intact native upland habitat.

Other Surface Waters

524 Lakes Less than 10 Acres

Two man-made ponds occur on the property; one located in the northern portion and the other within the southern portion of the project site. Both ponds are in poor ecological condition and offer minimal foraging opportunities for wildlife.

The northern pond is adjacent to a berm that is associated with the NSLWCD canal that extends along the northern property boundary. Vegetation within and around this pond includes exotic Brazilian pepper along most of its outer perimeter with exotic primrose willow growing within the more central portions of the pond.

The southern pond also has a berm along a portion of its perimeter which is likely composed of excavated soil from the pond. Vegetation within and around this pond is dominated by exotic Brazilian pepper and exotic primrose willow.

V. WILDLIFE AND LISTED SPECIES EVALUATION -

Preliminary field observations made during the July, 2017 site visit indicate that the property hosts a variety of wildlife species. The table below lists the species that were directly observed, or evidence of their presence was noted through indirect means, such as scat, tracks, or burrows. In general, the western third to half of the property is dominated by non-native invasive trees with poor suitability for wildlife except for feral hogs (also exotic). The pine flatwoods and upland forest host a number of hunting stations. The upland scrub, pine and hardwood area includes a network of well-established paths indicating that off-road trucks and ATV's traverse the site through such trails and shallow ditches on a regular basis. Given the anthropogenic disturbances and its setting within a suburban landscape, the site does not provide the habitat suitable to host a large variety of listed species. Below is a table of observed listed and non-listed wildlife on-site:

Common Name	Scientific Name	On-Site Locations	Status	Occurrence
Raccoon	*Procyon lotor*	Throughout site	Not listed	Directly observed
Hog	*Sus scrofa*	Throughout site	Not listed	Directly observed
Black Racer	*Coluber constrictor*	Throughout site	Not listed	Directly observed
Cattle Egret	*Bubulcus ibis*	In/around ditches and in open areas	Not listed	Directly observed
Mourning Dove	*Zanaida macroura*	Throughout site	Not listed	Directly observed
Northern Mockingbird	*Mimus polyglottus*	Throughout site	Not listed	Directly observed
Northern Cardinal	*Cardinalis cardinalis*	Pine flatwoods and mixed forest	Not listed	Directly observed
Blue Jay	*Cyanocitta cristata*	Throughout site	Not listed	Directly observed
Red-Shouldered Hawk	*Buteo jamiacensis*	Throughout site	Not listed	Directly observed
Black Vulture	*Coragyps atratus*	Throughout site	Not listed	Directly observed
Turkey Vulture	*Cathartes aura*	Throughout site	Not listed	Directly observed
Gopher Tortoise	*Gopherus polyphemus*	Pine flatwoods and mixed forest	Threatened – State	Indirectly observed (burrows)

*Florida's Endangered and Threatened Species
May, 2017, Florida Fish & Wildlife Conservation Commission

While their presence was not detected either directly or indirectly, a number of other species may occur due to the site's habitats. In particular, the pine flatwoods, upland hardwood forest, ponds, and ditches may provide habitat and foraging opportunities for a number of listed species, which are outlined in the below table.

Common Name	Latin Name	Likely Location	Legal Status	Occurrence
Roseate Spoonbill	*Ajaia ajaja*	In/around ditches and ponds	Threatened – State	Not directly observed, but suitable habitat is present
Reddish Egret	*Egretta rufescens*	In/around ditches and ponds	Threatened – State	Not directly observed, but suitable habitat is present
Little Blue Heron	*Egretta caerulea*	In/around ditches and ponds	Threatened – State	Not directly observed, but suitable habitat is present
Tricolored Heron	*Egretta tricolor*	In/around ditches and ponds	Threatened – State	Not directly observed, but suitable habitat is present
Wood Stork	*Mycteria amricana*	In/around ditches and ponds	Threatened – State and Federal	Not directly observed, but suitable habitat is present
Florida Sandhill Crane	*Grus canadensis pratensis*	In/around northern pond and open areas	Threatened - State	Not directly observed, but suitable habitat is present
Sherman's Fox Squirrel	*Sciurus niger shermani*	In upland forests with mature pines	Species of Special Concern - State	Not directly observed, but suitable habitat is present
Eastern Indigo Snake	*Drymarchon corais couperi*	In pine flatwoods; gopher tortoise commensal	Threatened – State and Federal	Not directly observed, but suitable habitat is present
American Alligator	*Alligator mississippiensis*	In ditches and ponds	State and Federal – Threatened (similarity of appearance to American crocodile)	Not directly observed, but suitable habitat is present

*Florida's Endangered and Threatened Species
May, 2017, Florida Fish & Wildlife Conservation Commission

The confirmed presence of potentially occupied gopher tortoise burrows represents the only listed species identified on-site during the July 2017 site visit. Gopher tortoises are listed as a state-designated threatened species and are protected by state law, Chapter 68A-27, Florida Administrative Code. Within 90 days prior to any clearing activities, a complete gopher tortoise survey covering 100% of those area slated for clearing on-site must be conducted. If impacts to gopher tortoise burrows as a result of land alterations cannot be avoided, a permit must be obtained from Florida Fish and Wildlife Conservation Commission (FFWCC) to relocate gopher tortoises to a permitted recipient site.

The FFWCC's database was searched in order to identify wading bird colonies near the project site. The foraging range for the state and federally-listed listed wood stork is 18.6 miles. Since several wading bird colonies exist within that distance of the project site (mainly along the Indian River Lagoon), it would be considered within the wood stork's foraging range (see Figure 5 in Appendix A).

Although the bald eagle has been de-listed, the birds and their nests are still protected under the federal Bald and Golden Eagle Protection Act. Although no such nests or individuals were observed during the site visit, this area of St. Lucie County contains sufficient mature pine trees and waterways to support bald eagle populations. This is evident by Figure 6 in Appendix A, which shows the recorded eagle nest locations within 10 miles of the project site. The closest recorded nest is SL006 just east of I-95 by the Wal-Mart Distribution center, approximately a mile from the project site.

Three listed plant species, the common wild-pine (*Tillandsia fasciculate*), the reflexed wild-pine (*Tillandsia balbisiana*), and the giant wild-pine (*Tillandsia urticulata*) were observed throughout the property. Common wild-pine and giant wild-pine are listed as endangered and reflexed wild-pine is listed as threatened by the Florida Department of Agriculture and Consumer Services (FDACS); none are federally listed. FDACS' listed plant species are considered the property of the landowner, and as such, the landowner has the ability to remove or relocate the listed plant species without authorization from the State. State law prohibits the sale of regulated plants. No federally listed plants were observed on-site.

APPENDIX A

Figure 1: Location Map

Figure 2: USGS Quadrangle Map

Figure 3: 2016 Aerial Photograph

Figure 4: FLUCCS MAP

Figure 5: Wading Bird Colonies

Figure 6: Bald Eagle Nests

LEGEND

▨ - SITE (56.1+/- AC)

0 2,000 Feet

N

KOA FORT PIERCE
LOCATION MAP

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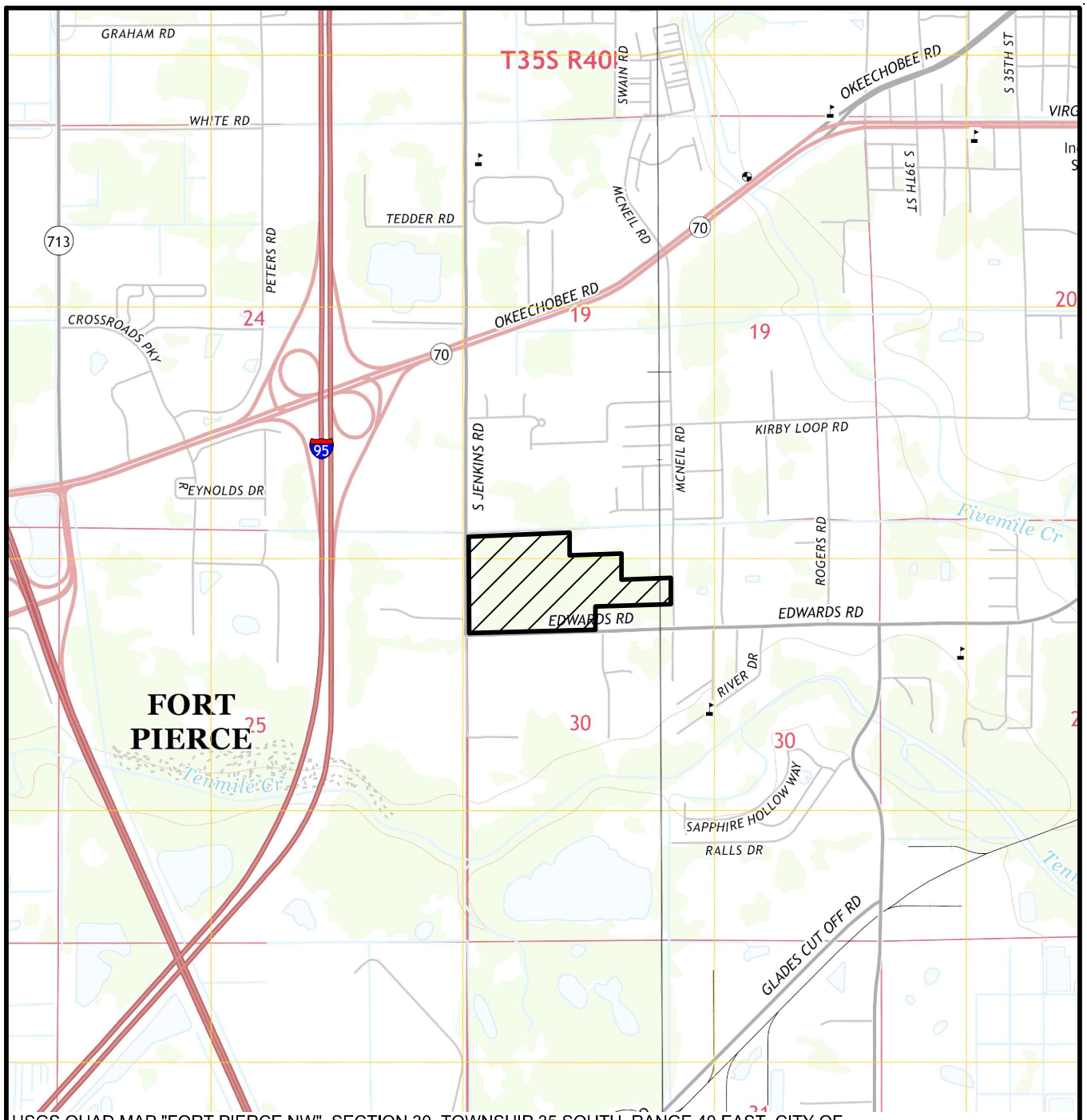
FIGURE

1



USGS QUAD MAP "FORT PIERCE NW", SECTION 30, TOWNSHIP 35 SOUTH, RANGE 40 EAST, CITY OF FORT PIERCE, ST LUCIE COUNTY, FLORIDA LATITUDE 27°24'32" LONGITUDE -80°22'47"

LEGEND

▨ - SITE (56.1± AC)

0 2000

SCALE IN FEET

KOA FORT PIERCE

QUAD MAP

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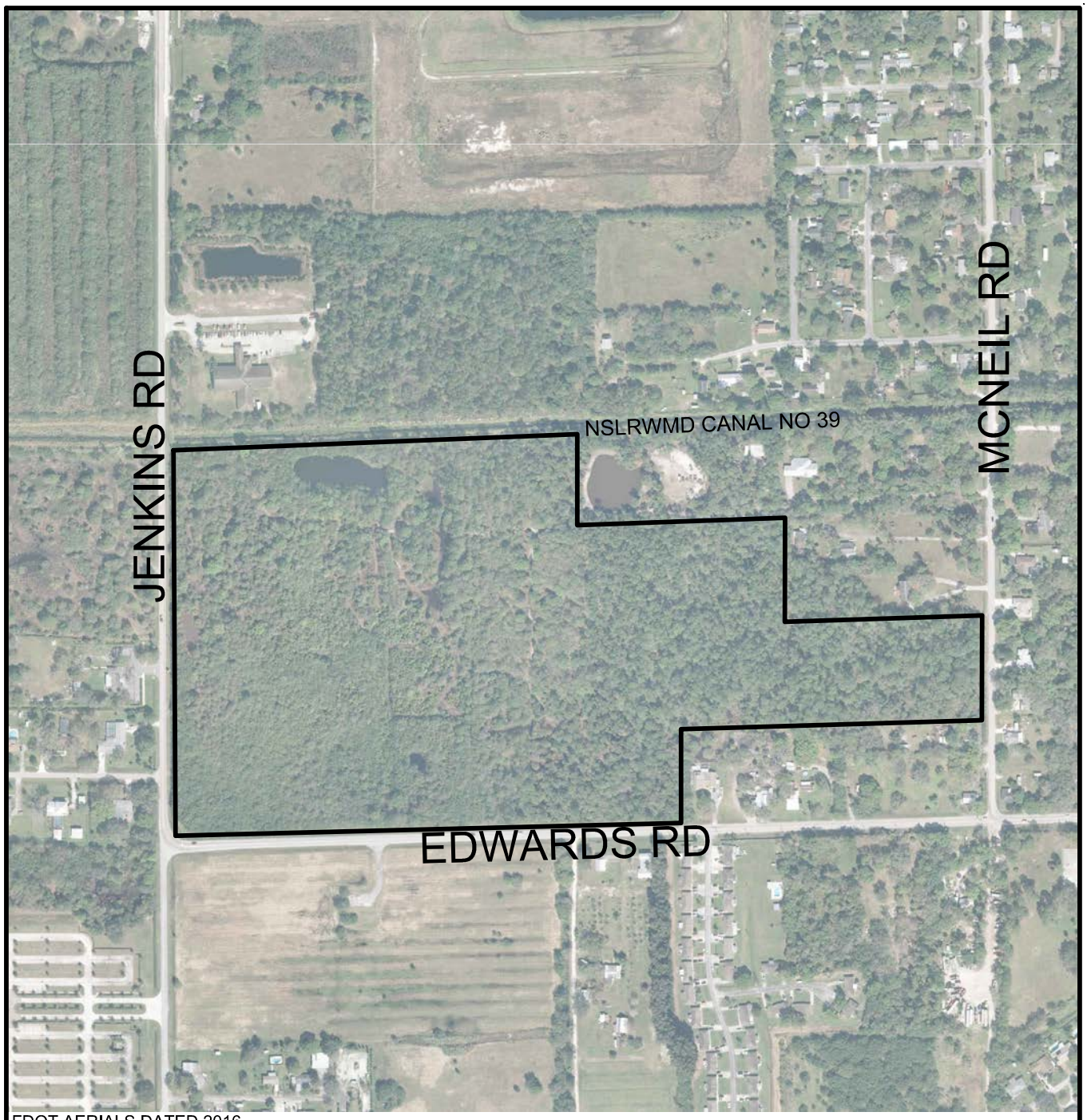
FIGURE

2

Fort Pierce KOA.dwg QUAD



FDOT AERIALS DATED 2016

0 500
SCALE IN FEET

KOA FORT PIERCE
AERIAL

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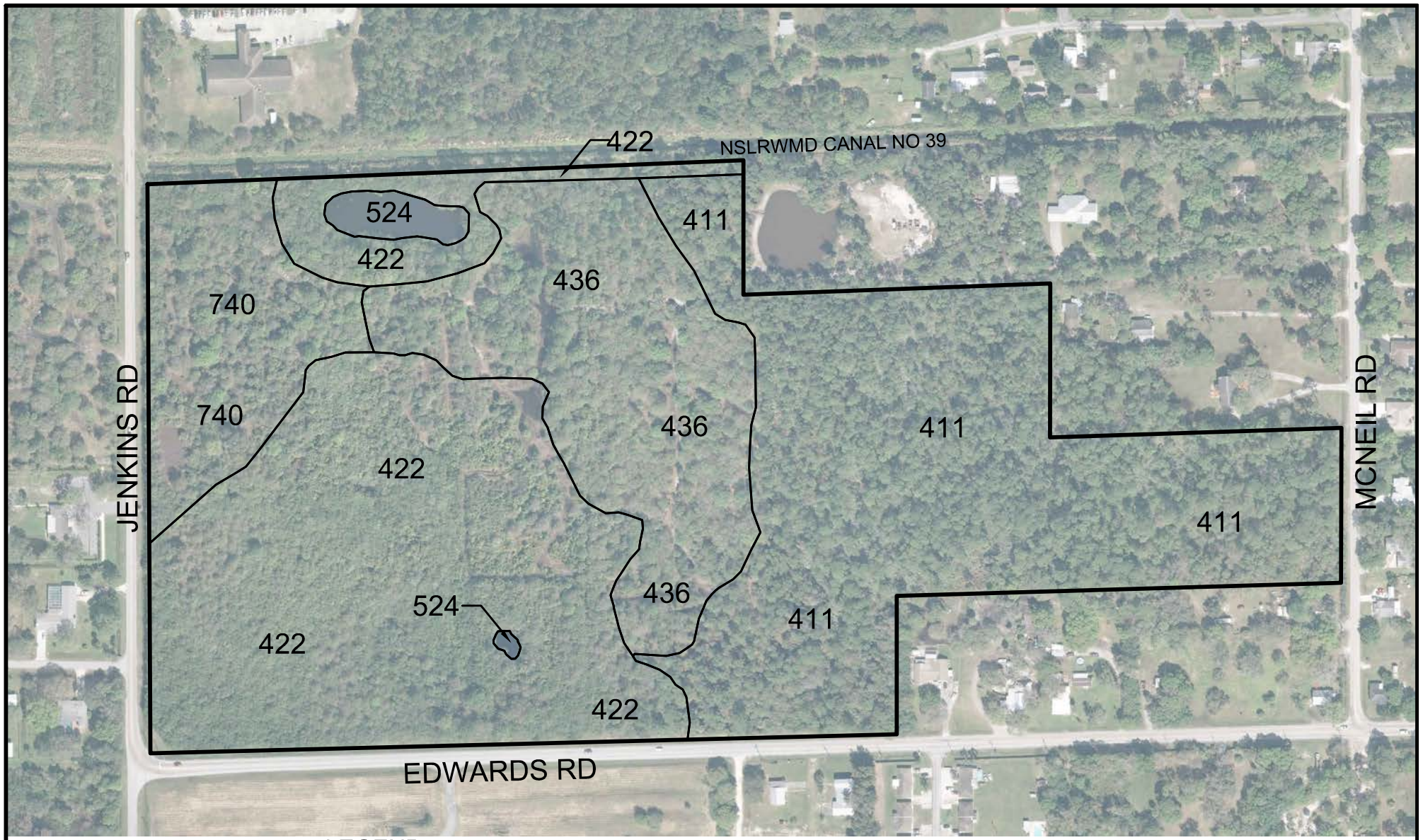
FIGURE
3

Fort Pierce KOA.dwg AERIAL



FDOT AERIALS DATED 2016

LEGEND

411 - PINE FLATWOODS (19.7± AC)
422 - BRAZILIAN PEPPER (19.9± AC)
436 - UPLAND SCRUB, PINE & HARDWOODS (10.4± AC)
524 - LAKES LESS THAN 10 ACRES (0.7± AC)
740 - DISTURBED LANDS (5.4± AC)
TOTAL SITE (56.1± AC)

KOA FORT PIERCE FLUCCS MAP

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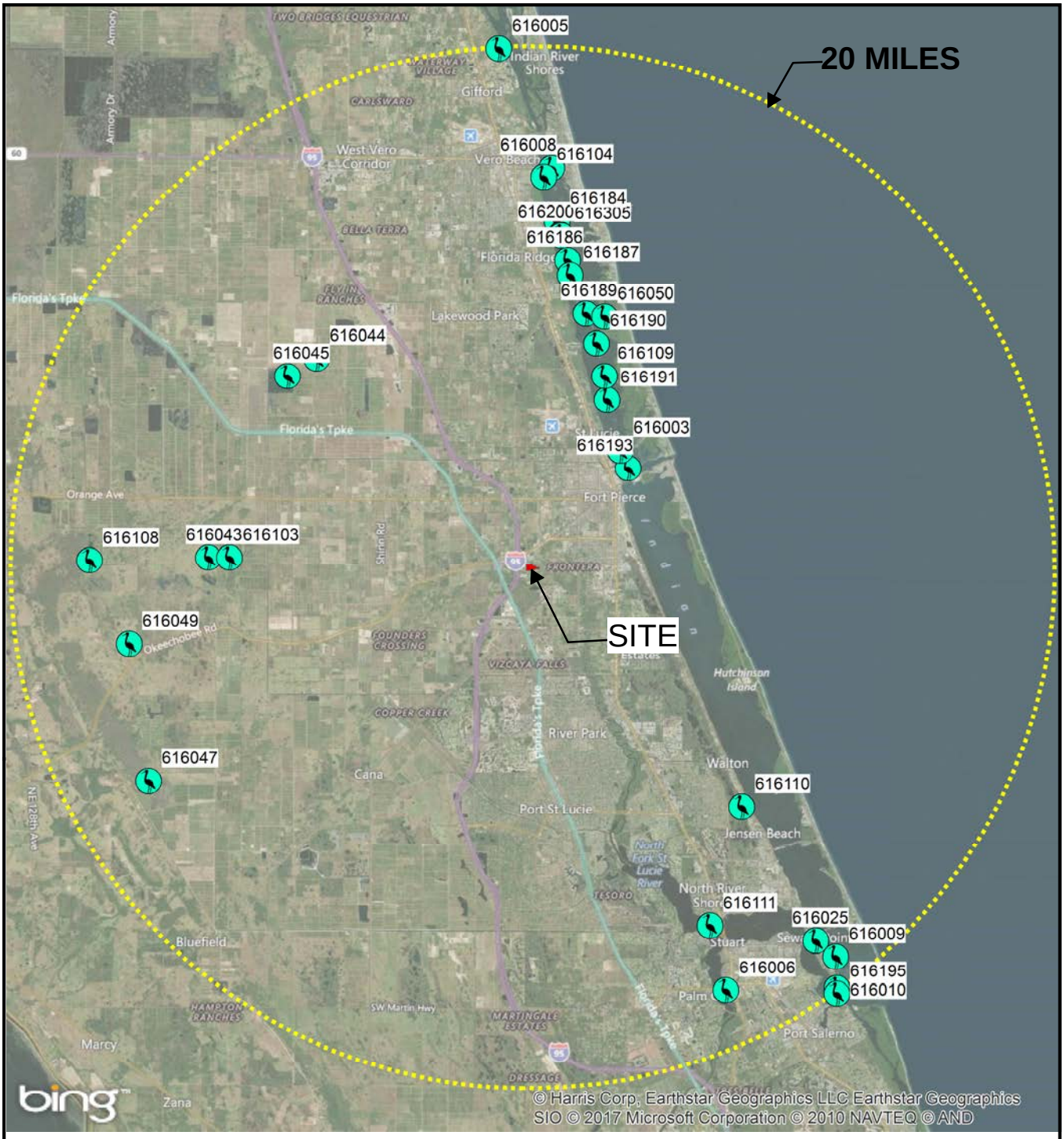
FIGURE 4

Fort Pierce KOA.dwg FLUCCS



LEGEND

FFWCC 1999 WOODSTORK NESTING COLONIES & WADING BIRD ROOKERY

0 7 Miles

N

KOA FORT PIERCE

FFWCC WADING BIRD COLONIES DATABASE

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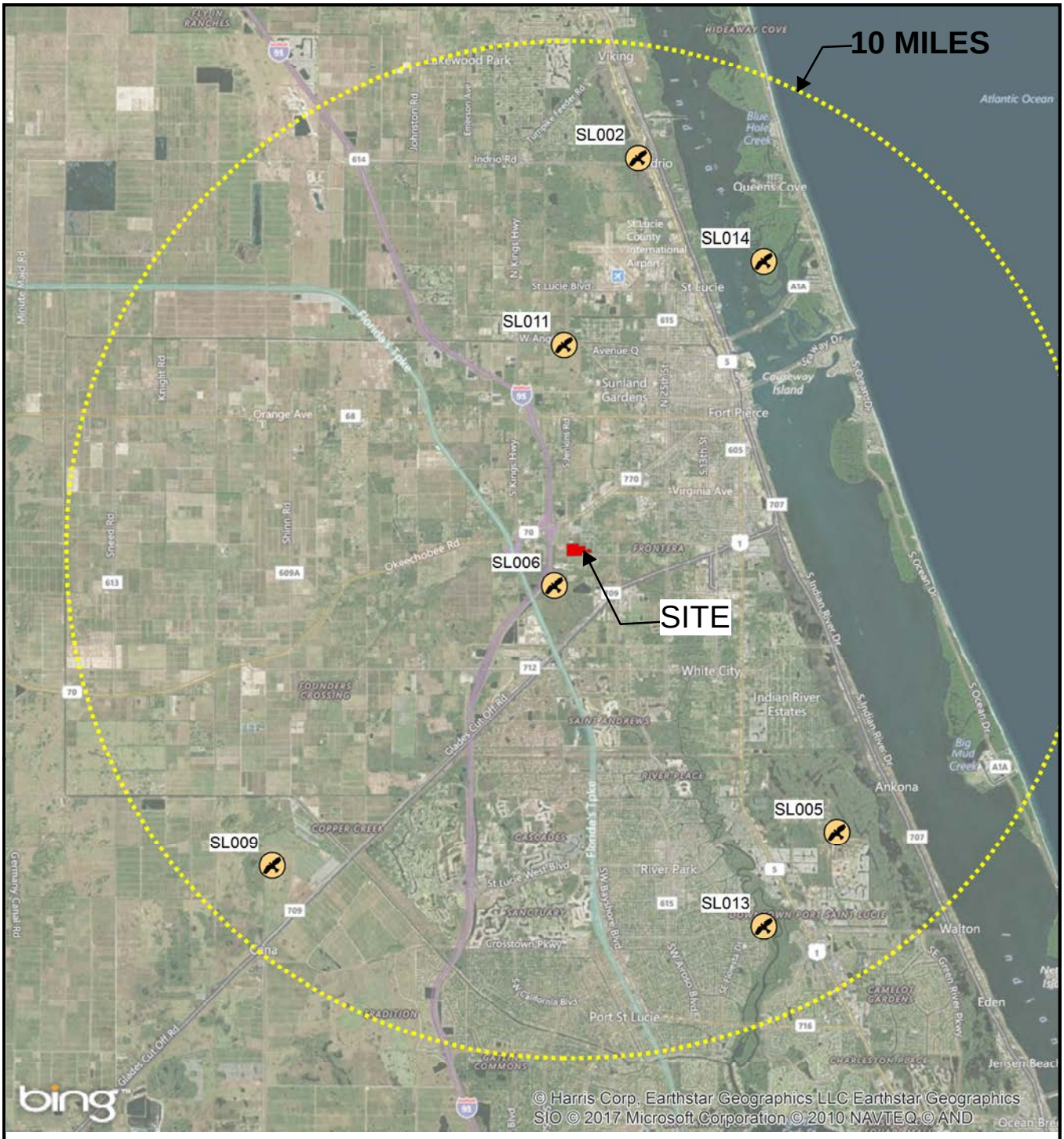
FIGURE

5



0 3 Miles

N

LEGEND

FFWCC EAGLE NESTING 2015

KOA FORT PIERCE
EAGLE NESTING

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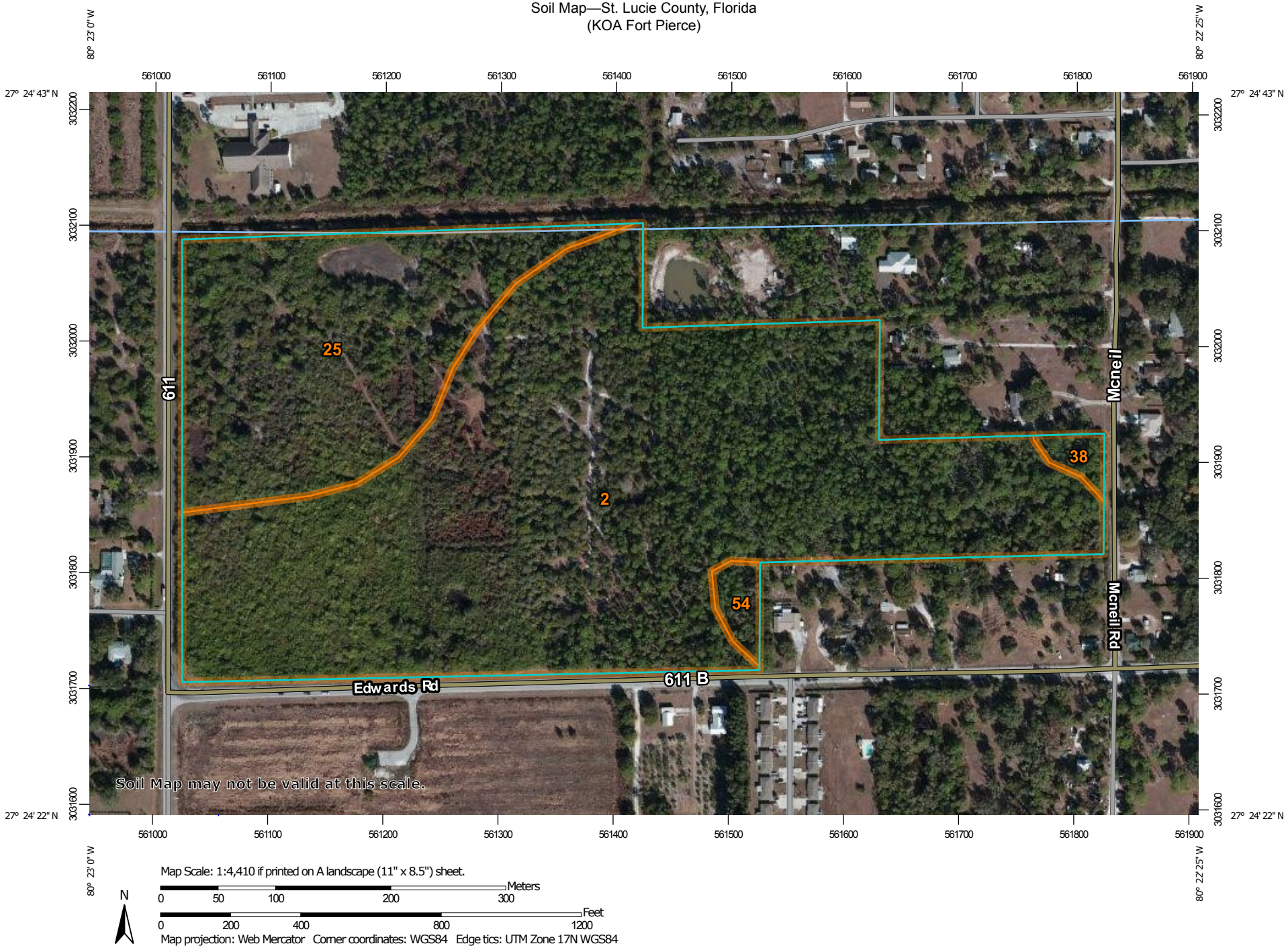
FIGURE

6

APPENDIX B

USDA Soils Report

Soil Map—St. Lucie County, Florida
(KOA Fort Pierce)



Map Scale: 1:4,410 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: St. Lucie County, Florida
Survey Area Data: Version 9, Sep 16, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 15, 2010—Mar 13, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

St. Lucie County, Florida (FL111)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
2	Ankona and Farmton sands	40.9	73.0%
25	Nettles and Oldsmar sands	14.0	24.9%
38	Riviera fine sand, 0 to 2 percent slopes	0.5	0.9%
54	Winder sand, depressional	0.7	1.2%
Totals for Area of Interest		**56.1**	**100.0%**