

# BKI, INC.

Consulting Ecologists

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June 1, 2017

Chris Caplanis  
41 Fox Trail Road  
Sparta, New Jersey 32937

**Project:**       **Caplanis 5 Acres**  
                  ± 5.06 acres  
                  Section 26, Township 25 South, Range 36 East  
                  PID: 26-36-26-00-781 (2511728)  
                  Rockledge, Brevard County, Florida  
                  BKI File: #17011

**Subject:**       **Wetland and Endangered Species Assessment**

Dear Mr. Caplanis:

BKI, Inc. Consulting Ecologists (BKI) has completed an environmental assessment of the above referenced property. A site visit was conducted May 31, 2017 to investigate the habitats onsite. The following is a summary of the conditions onsite and discussion of the soils, vegetative community types, potential endangered species occurring, and describe any conditions found during the site inspection which may affect development of the subject parcel.

## INTRODUCTION

The subject parcel is located in Rockledge, east of US 1, approximately a half mile north of Rockledge Drive. The site is located in Section 26, Township 25 South, Range 36 East in Brevard County, Florida (*Figure 1*). The acreage of the subject parcel, according to the Brevard County Property Appraiser's Office, is listed as 5.06 acres. Acreage calculations of soils and habitat types are based on Geographic Information Systems (GIS) data and can vary slightly from what is legally listed.

## TOPOGRAPHY AND SOILS

The USGS Topographic Map (5' contours) indicates the entire parcel is between 5' and 10' (NGVD). There is a 10' contour that runs down the western edge of the parcel and a 5' contour down the eastern side of the parcel. The Cocoa quadrangle is depicted in *Figure 2*. The topographic quadrangle depicts the current site as being undeveloped. The area where the parcel is located seems to be a low area in the regional topography.

Mitigation/Conservation Bank Permitting \* Land Management Plans \* Environmental Assessments & Permitting  
GIS/GPS Mapping \* Wildlife Evaluations \* Feasibility Studies \* Wetland Assessments & Enhancements

To further describe the topography, the 2-foot LiDAR elevation data was over-laid on the aerial. Elevations range from 4' to 8' (NAVD) from the east to the western edge of the parcel.

North American Vertical Datum (NAVD) elevations are approximately 1.4 feet below the National Geodetic Vertical Datum (NGVD) elevations.

There are two (2) soil types found onsite (*Figure 3*). The soil types are Immokalee Sand, 0 to 2% Slopes and St. Johns, Depressional. The following is a general description of the soils, as described within the SCS survey.

**Immokalee Sand, 0 to 2% Slopes (2.2 ac)**

This is a gently sloping, poorly drained soil of flatwoods on marine terraces. These soils have sandy layers to a depth of 80 inches. Normally the water table is at a depth of at least 6-18 inches and there is no chance of ponding and flooding. The native vegetation of these soils would be slash pine, saw palmetto, and mesic oak. This soil **does not** meet hydric criteria, but there can be inclusions of hydric soils present in the overall soil type.

**St. Johns Sand, Depressional (2.8 ac)**

This is a nearly level, very poorly drained soil of depressions of flatwoods on marine terraces. These soils have fine sandy layers are to a depth of 70 inches. Normally the water table is at a depth of 0 inches and there is no chance of flooding, but there is frequent ponding. The native vegetation of these soils would be typical of freshwater marshes, forested wetlands, and ponds. This soil **does** meet hydric criteria.

The presence of hydric soils in the survey can suggest that wetlands can be located on the subject site. In the case of this site, the entire site is hydric soil. The hydric indicators included the presence of muck throughout the site.

**VEGETATION and COMMUNITY TYPES**

Natural vegetation grows in particular associations that can be classified into ecological units known as "communities", and various land uses can be categorized into descriptive classifications. The communities and land uses incorporated into the surveyed area were designated by BKI using the Florida Land Use, Cover and Forms Classification System (FLUCFCS) (FDOT 1999) as a guideline. It should be noted that variations between the published FLUCFCS descriptions and the actually occurring onsite land use/communities may exist; consequently, the classifications which came closest to the observed onsite land uses/communities were chosen, but may not match precisely. The acreages calculated are determined by Geographic Information Systems (GIS) analysis and are approximate.

The Land Use map is based on the dominant vegetation or characteristics observed in the field. The location of these land use/communities are depicted on *Figure 4*. Pictures from the site are included in Appendix A.

**Table 1: Land Use Types Located Onsite.**

FLUCFCS	Type	ACRES
6170	Mixed Wetland Hardwoods	2.2
6310	Wetland Shrub	2.8



### **Mixed Wetland Hardwoods (6170) – 2.2 acres**

The entire site is undeveloped. The dominant understory vegetation is chain fern (*Woodwardia virginica*), swamp fern (*Blechnum serrulatum*), shiny lyonia (*Lyonia lucida*), wax myrtle (*Myrica cerifera*), small sweet gum (*Liquidambar styraciflua*), and small cabbage palms (*Sabal palmetto*). The canopy vegetation is comprised of sweet gum, red maple (*Acer rubrum*), and live oak (*Quercus virginiana*). The typical vegetation can be seen in the photographs in Appendix A. There was one very small area that had some cogon grass (*Imperata cylindrica*) growing in it in the northwestern corner. The presence of cogon grass suggests that this area is slightly drier than other areas of the site. Even though cogon grass was present there was a canopy of sweet gum in this small area estimated at 0.1 acre in size.

### **Wetland Shrub (6310) – 2.8 acres**

Within this portion of the site the vegetative community is comprised of Brazilian pepper (*Schinus terebinthifolius*), Carolina willow (*Salix caroliniana*), elderberry (*Sambucus canadensis*), chain fern, black berry (*Rubus* spp.), taro (*Colocasia esculenta*), and swamp fern. There was also extensive vine coverage of grapevine (*Vitis* spp.) and greenbrier (*Smilax* spp.). The vegetation is extremely dense and access is only available by cutting a trail by machete. The typical vegetation can be seen in the photographs in Appendix A.

## **THREATENED and ENDANGERED SPECIES**

A preliminary review of literature pertaining to threatened and endangered species as listed by Freshwater Fish and Wildlife Conservation Commission (FWC) and United States Fish and Wildlife Service (USFWS) was completed in addition to the site visit. During the site visit, the habitats onsite were evaluated for the likelihood that they would support listed species.

The site is utilized by avian and reptilian species. A very large yellow rat snake was observed onsite.

Based on our findings, development of the parcel *would not* result in impacts to listed species.

## **SUMMARY**

The entire parcel is wetland. The northeastern half of the property is a forested wetland, while the southwestern half is a shrub wetland. The site has a ditch on the eastern side that conveys surface water to the south, a swale on the west that conveys waters to the south, and a ditch on the south end of the property that conveys waters from the west to the east.

The neighbors to the east utilize the property for recreation. There are some trails established from the residential area to the east onto the site. There is also a “zip-line” set up within the forested area along with a trampoline.

Impacts to any portions of the site would require approvals from Brevard County, Florida Department of Environmental Protection or St. Johns River Water Management District (depending on proposed use), and the U.S. Army Corps of Engineers. It is anticipated that County, State, and Federal regulations would allow for some impact of the wetlands onsite. The first step with any project is the avoidance and minimization of impacts to wetlands.

The site is located within the Northern Indian River Lagoon Basin (Basin 21). Impacts to wetlands must be offset by mitigation. There is not presently a mitigation bank within this basin, making wetland mitigation a difficult and costly endeavor. One bank is in the process of being established and should be able to offer credits in the near future. It is anticipated that credits at the bank will cost \$150,000 per credit, equating roughly to one acre of impact. Therefore, the cost for impact for one-half of an acre of wetland will be approximately \$75,000.

We have requested information from Brevard County staff to discuss options for the utilization of the parcel and are awaiting a response.

If you have any questions or would like to discuss our report in more detail, please contact our office at (321) 951-7964.

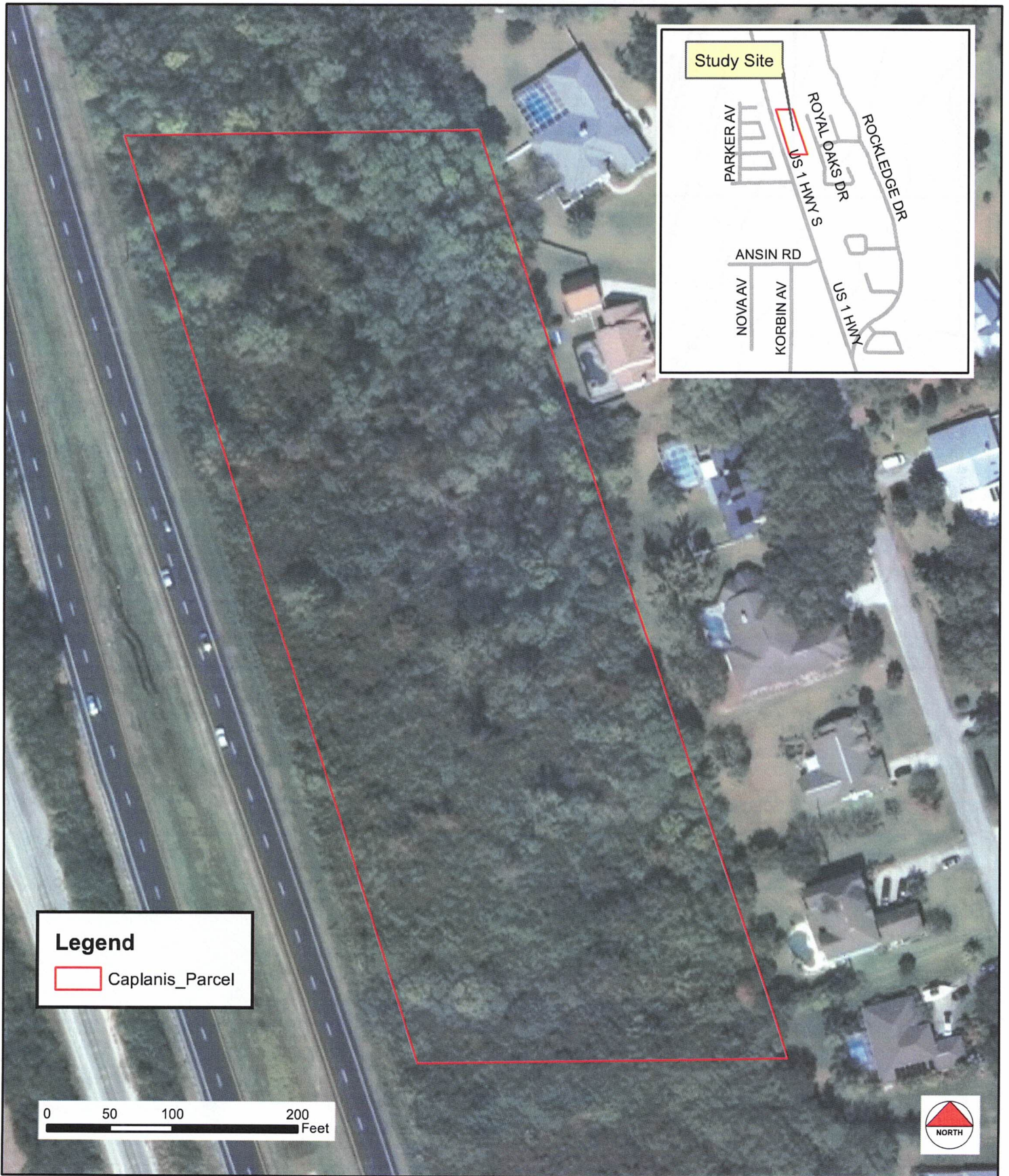
Sincerely,

A handwritten signature in black ink that reads "Christopher W. Harnden". The signature is written in a cursive, flowing style.

Chris Harnden  
Project Manager / Ecologist

Attachments: Figure 1 – Aerial /Location Map  
Figure 2 – USGS Topographic Map  
Figure 3 – LiDAR Topographic Map  
Figure 4 – NRCS Soil Survey Map  
Figure 4 – Current Land Use Map  
Appendix A – Site Photographs



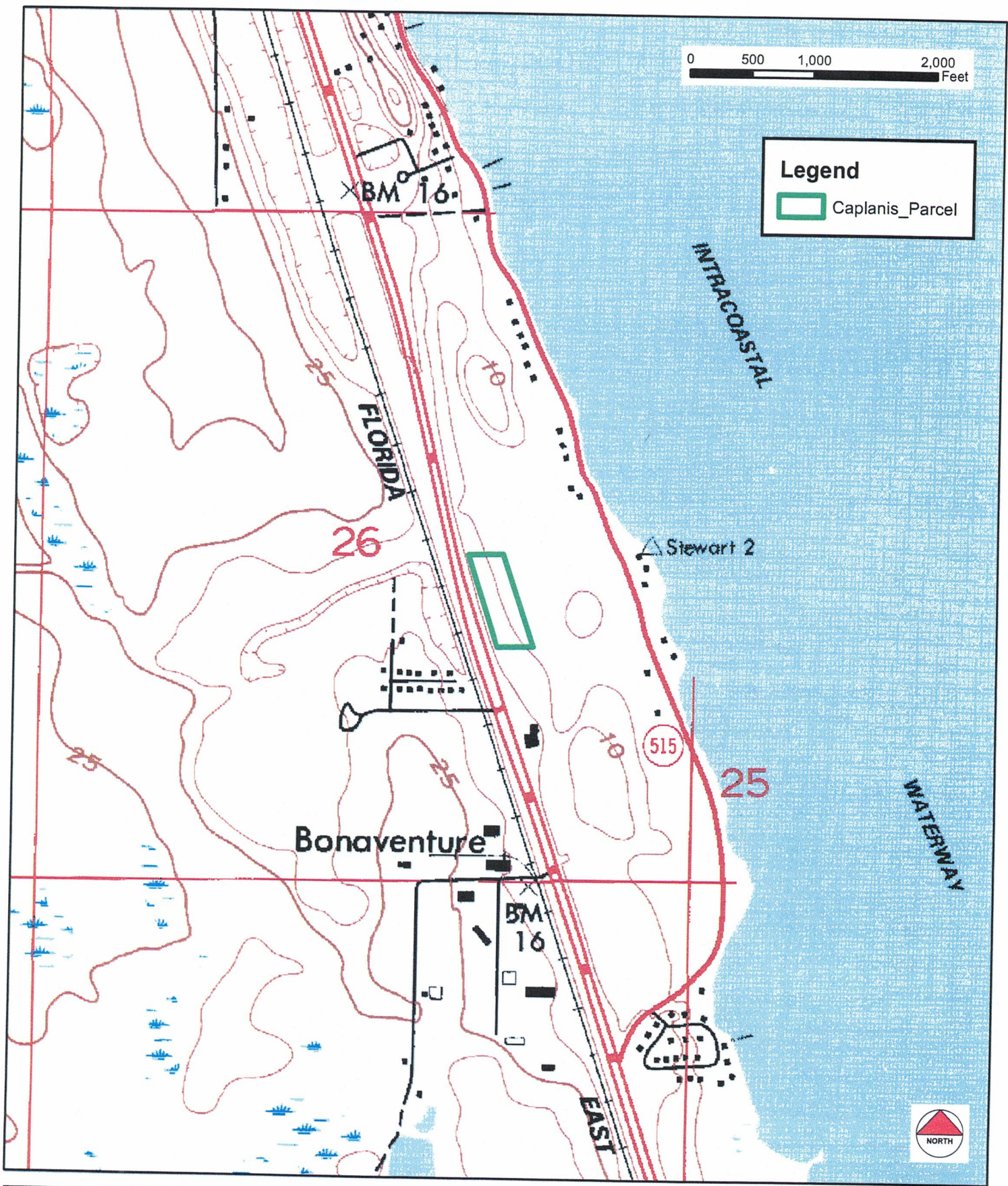


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Subject: Location Map  
 Project: 17011 Caplanis 5 Acres  
 Date: 05/31/17  
 Note: Aerial is the 2015 high resolution image

Figure  
 1





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Subject: USGS Topographic Map  
 Project: 17011 Caplanis 5 Acres  
 Date: 05/31/17  
 Note: USGS Cocoa topographic quadrangle

Figure  
 2



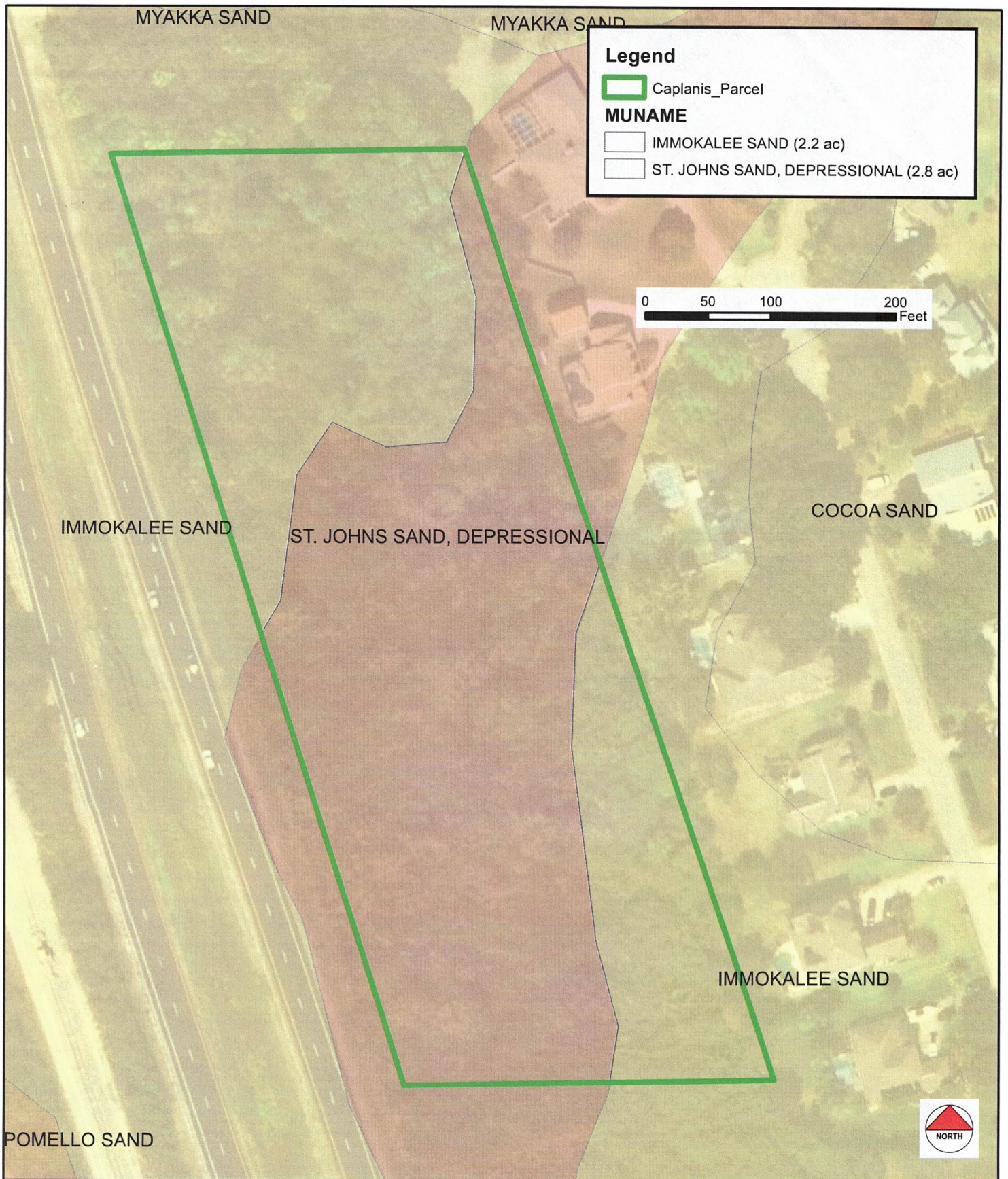


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Subject: LiDAR Topographic Map  
Project: 17011 Caplanis 5 Acres  
Date: 05/31/17  
Note: LiDAR NAVD Elevations

Figure  
3





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Subject: NRCS Soil Survey Map  
 Project: 17011 Caplanis 5 Acres  
 Date: 05/31/17  
 Note: LABINS 2015 High Resolution Aerial

Figure  
 4





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Subject: Current Land Use Map  
Project: 17011 Caplanis 5 Acres  
Date: 05/31/17  
Note: LABINS 2015 High Resolution Aerial

Figure  
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