

**ALACHUA COUNTY PARCEL ID
07411-003-001
NATURAL RESOURCE ASSESSMENT**

October 2023

Prepared for:

SkyFrog Tree Service, LLC
1600 Gulf Boulevard 917
Clearwater, FL 33767
(716) 289-6686

Prepared by:

CHW Ecological Services Group
11801 Research Drive
Alachua, Florida 32615
(352) 331-1976

ENVIRONMENTAL RESOURCES ASSESSMENT CHECKLIST

Pursuant to Alachua County Comprehensive Plan 2002, as amended, Conservation Open Space Element Policy 3.4.1, applications for land use change, zoning change, and development approval shall be required to submit an inventory of natural resource information. The inventory shall include site specific identification, analysis and mapping of each resource present on or adjacent to the site. The identification and analysis shall indicate information sources consulted.

Natural Resources Checklist:

Check "Yes" for each resource or resource characteristic identified and discuss and provide supporting material.
Check "N/A" for each resource or resource characteristic not present or otherwise relevant to the application.

- | | | |
|---|---|--|
| Yes <input type="checkbox"/> | N/A <input checked="" type="checkbox"/> | Surface Waters (ponds, lakes, streams, springs, etc.) |
| Yes <input type="checkbox"/> | N/A <input checked="" type="checkbox"/> | Wetlands |
| Yes <input checked="" type="checkbox"/> | N/A <input type="checkbox"/> | Surface Water or Wetland Buffers (Wetlands are located offsite) |
| Yes <input checked="" type="checkbox"/> | N/A <input type="checkbox"/> | Floodplains (100-year) (Within FEMA flood zone AE) |
| Yes <input type="checkbox"/> | N/A <input checked="" type="checkbox"/> | Special Area Study Resource Protection Areas (Cross Creek, Idylwild/Serenola, etc) |
| Yes <input checked="" type="checkbox"/> | N/A <input type="checkbox"/> | Strategic Ecosystems (within or adjacent to mapped areas) (Adjacent but separated by roads/development) |
| Yes <input type="checkbox"/> | N/A <input checked="" type="checkbox"/> | Significant Habitat (biologically diverse natural areas) |
| Yes <input type="checkbox"/> | N/A <input checked="" type="checkbox"/> | Listed Species/Listed Species Habitats (FNAI S1, S2, & S3; State or Federally E, T, SSC) (No listed species were observed on the Project) |
| Yes <input type="checkbox"/> | N/A <input checked="" type="checkbox"/> | Recreation/Conservation/Preservation Lands |
| Yes <input type="checkbox"/> | N/A <input checked="" type="checkbox"/> | Significant Geological Features (caves, springs, sinkholes, etc.) |
| Yes <input checked="" type="checkbox"/> | N/A <input type="checkbox"/> | High Aquifer Recharge Areas (In "Vulnerable" area) |
| Yes <input type="checkbox"/> | N/A <input checked="" type="checkbox"/> | Wellfield Protection Areas |
| Yes <input type="checkbox"/> | N/A <input checked="" type="checkbox"/> | Wells |
| Yes <input type="checkbox"/> | N/A <input checked="" type="checkbox"/> | Soils (No hydric soils) |
| Yes <input type="checkbox"/> | N/A <input checked="" type="checkbox"/> | Mineral Resource Areas (Within "Undifferentiated" defined resources) |
| Yes <input type="checkbox"/> | N/A <input checked="" type="checkbox"/> | Topography/Steep Slopes |
| Yes <input type="checkbox"/> | N/A <input checked="" type="checkbox"/> | Historical and Paleontological Resources |
| Yes <input type="checkbox"/> | N/A <input checked="" type="checkbox"/> | Hazardous Materials Storage Facilities |
| Yes <input type="checkbox"/> | N/A <input checked="" type="checkbox"/> | Contamination (soil, surface water, ground water) |

SIGNED: _____ **PROJECT #** _____ **DATE:** _____

TABLE OF CONTENTS

1.0	INTRODUCTION	4
2.0	CURRENT and HISTORIC SITE CONDITIONS	4
2.1	Land Use and Land Cover	4
2.2	Flood Zones	5
2.3	High Aquifer Recharge Areas	5
2.4	Wellfield Protection Areas	5
2.5	Environmental Hazards Site Assessments	5
2.6	Mineral Resources	6
2.7	Soils	6
2.8	Geological Features and Topography	6
2.9	Listed Species and their Habitats	6
3.0	QUALIFICATION AND DETERMINATION FOR SIGNIFICANT HABITAT	8
4.0	PROJECT DETAILS	8
5.0	SUMMARY	9
6.0	REFERENCES and RESUMES	9

LIST OF TABLES

Table 1. Summary of Land Use and Habitat Types on the Project Site	5
Table 2. Summary of Soils on the Project Site	6
Table 3. Summary of Listed Species Potentially Found in FNAI Matrix Units 26155 and IPaC Query	7

LIST OF EXHIBITS

Exhibit 1. Project Boundary Map	E-1
Exhibit 2. Project Location Map.....	E-2
Exhibit 3. Historic Aerials (3).....	E-3
Exhibit 4. Historic Features Map	E-4
Exhibit 5. Conservation Areas Map.....	E-5
Exhibit 6. Alachua County Strategic Ecosystems Map.....	E-6
Exhibit 7. Aerial with FLUCFCS Map.....	E-7
Exhibit 8. SkyFrog Photolog	E-8
Exhibit 9. FEMA Flood Zones Map	E-6
Exhibit 10. Alachua County Floridan Aquifer High Recharge Area	E-10
Exhibit 11. Alachua County Murphree Well Field Management Zones	E-11
Exhibit 12. FDEP Hazardous Waste Data	E-12
Exhibit 13. Mineral Resources of Alachua County Map	E-13
Exhibit 14. NRCS Soils Map.....	E-14
Exhibit 15. Sensitive Karst Areas Map	E-15
Exhibit 16. USGS Quad Map	E-16
Exhibit 17. Documented Occurrences of Listed Species	E-17
Exhibit 18. Aerial With Survey Transects Map	E-18
Exhibit 19. Outstanding Florida Waters Map.....	E-19

1.0 INTRODUCTION

The following information regarding natural and historic resource conditions and environmental considerations has been prepared for Alachua County Parcel ID 07411-003-001 (Project) (Exhibit 1). This assessment has been prepared to address specific requirements of the Alachua County Unified Land Development Code (ULDC) Section 406.04.

The Project totals approximately 5 acres and is located in Section 21, Township 11 South, Range 19 East, Alachua County (Exhibit 2). The Project contains forested uplands, an inactive commercial operation, and a single-family residence. The surrounding land uses include single-family residences to the north and east; forested/cleared lands to the west; and marshlands to the south.

Onsite Project habitat mapping and threatened and endangered species surveys were conducted by CHW in October 2023. This National Resources Assessment was prepared by ecologists Andy Woodruff and Ethan Vroonland. Resumes of these individuals are included in Section 6.0 below.

2.0 CURRENT and HISTORIC SITE CONDITIONS

A 2022 aerial photograph showing the Project boundary is provided as Exhibit 1. Historical aeriels show that much of the southern portion of the Project had been cleared sometime between 1956 and 1979 and has since partially revegetated (Exhibit 3). Furthermore, a single-family home and several buildings were built in around the 1990's and still exist currently within the southern portion of the Project. No historic features exist onsite as identified by the State Historic Preservation Office (SHPO) Master File (Exhibit 4). Wildlife habitat value is generally fair as one-third of the Project area remains undeveloped with mature canopy and its location in the landscape has been relatively minimally developed with close proximity to conservation and preservations easements and three Alachua County Strategic Ecosystems; including Kanapaha Prairie and Paynes Prairie West to the north as well as Barr Hammock – Levy Lake Preserve to the east (Exhibit 5 & 6). There are no known St. John's River Water Management District (SJRWMD) surface water management or water use permits reported for the site.

2.1 Land Use and Land Cover

The vegetation and land use mapping for the Project was conducted using Florida Department of Transportation 2022 color rectified aeriels. Ground truthing to map the vegetative communities was conducted in October 2023 utilizing the Florida Land Use, Cover and Forms Classification System (FLUCFCS) Levels III (Florida Department of Transportation 1999). AutoCAD 2022 was used to determine the acreage of each mapping area, produce summaries, and generate the FLUCFCS map for the Project (Exhibit 7).

Two vegetation community types including land uses (i.e., FLUCFCS code) were identified on the Project. Table 1 summarizes the identified FLUCFCS codes, descriptions, wetland status, and acreages. Photographs of the typical habitats are included in Exhibit 8.

Table 1. Summary of Land Use and Habitat Types on the Project Site

FLUCFCS Code	Description	Wetland Status	Acres ±	% of Project
200	Agriculture	No	3.11	62.3
438	Mixed Hardwoods	No	1.88	37.7
Total			4.99	100%

Agriculture (FLUCFCS Code 200)

This area is the site of an existing residence and an inactive reptile breeding facility with multiple buildings and maintained landscaping. The Canopy of this habitat type contains live oak (*Quercus virginiana*), pignut hickory (*Carya glabra*), cabbage palm (*Sabal palmetto*), laurel oak (*Quercus laurifolia*), Carolina laurelcherry (*Prunus caroliniana*), hackberry (*Celtis occidentalis*), and chestnut oak (*Quercus montana*). The subcanopy includes cabbage palm, American hornbeam (*Carpinus caroliniana*), Carolina laurelcherry, Chinese elm (*Ulmus parvifolia*), Bambusa spp., and yaupon holly (*Ilex vomitoria*). The ground cover includes bahiagrass (*Paspalum notatum*), Spermacoce spp., sensitive brier (*Mimosa quadrivalvis*), Virginia creeper (*Parthenocissus quinquefolia*), American beautyberry (*Callicarpa americana*), beggarticks (*Bidens alba*), Carolina laurelcherry, pokeweed (*Phytolacca americana*), muscadine (*Vitis rotundifolia*), and Richardia spp.

Mixed Hardwoods (FLUCFCS Code 438)

The canopy of this habitat type includes American holly (*Ilex americana*), live oak, water oak (*Quercus nigra*), sweetgum (*Liquidambar styraciflua*), American hornbeam, chestnut oak, and pignut hickory. The subcanopy of this habitat type includes southern magnolia (*Magnolia grandiflora*), Carolina laurelcherry, and American hornbeam. The ground cover of this habitat type includes American beautyberry, beggarticks, muscadine, Cyperus spp., Smilax spp., Carolina laurelcherry, laurel oak, red bay (*Persea borbonia*), American holly, Eastern poison ivy (*Toxicodendron radicans*), pignut hickory, water oak, trumpet vine (*Campsis radicans*), white snakeroot (*Ageratina altissima*), and Echinochloa spp.

2.2 Flood Zones

The entire Project is described by the Federal Emergency Management Agency (FEMA) as Significant Flood Hazard Area (SFHA) Zone AE – 1% annual chance flood hazard with base flood elevations (Exhibit 9).

2.3 High Aquifer Recharge Areas

The Project lies within an area of Alachua County where the Floridan Aquifer is considered “Vulnerable” and is not within a Stream-to-Sink Basin (Exhibit 10).

2.4 Wellfield Protection Areas

The Project does not lie within any wellfield protection zones identified by the Alachua County Murphree Well Field Management Zones Map (Exhibit 11).

2.5 Environmental Hazards Site Assessments

A preliminary review of FDEP data indicates no reported hazardous materials storage facilities or contamination sites are located on the Project (Exhibit 12).

2.6 Mineral Resources

According to Mineral Resources of Alachua County, Florida (Hoenstine, et al. 1990) the Project lies within Undifferentiated Resources (Exhibit 13). The Project has not been reviewed for subsurface mineral rights or resources. Further geotechnical investigation would be required to identify site specific subsurface resources.

2.7 Soils

The Natural Resources Conservation Service (NRCS) soils map describes two soil types as occurring on the Project site (Exhibit 14). Table 2 summarizes the Project's mapped soil units and their hydric ratings.

Table 2. Summary of Soils on the Project Site

Map Unit	Soil Description	Hydric Rating
7	Kanapaha Sand, 0 to 5 percent slopes	No
74	Blichton Sand, 2 to 5 percent slopes	No

2.8 Geological Features and Topography

The Project does not lie within sensitive karst areas as described by Alachua County (Exhibit 15). A geotechnical site exploration of the Project is not within the scope of this assessment.

The observed topography appeared consistent with elevation contours depicted on U.S. Geological Survey Quad map (Exhibit 16).

2.9 Listed Species and their Habitats

A literature review and field survey were conducted to determine if the Project site is being utilized by species identified by the Florida Fish and Wildlife Conservation Commission (FWCC) and the U.S. Fish and Wildlife Service (USFWS) as endangered or threatened, and species that have a state element rank of S1, S2, or S3 by the Florida Natural Areas Inventory (FNAI). In addition, the Project site was surveyed for plant species listed by the Florida Department of Agriculture and Consumer Services (FDACS) and the USFWS as endangered threatened, or commercially exploited.

The FNAI Biodiversity Matrix and the USFWS Information for Planning and Consulting (IPaC) tools were utilized to determine which listed species could Likely or Potentially be found in the vicinity of the Project site, and if any have been Documented or Historically Documented in the vicinity of the Project site (Table 3). The FNAI and IPaC tools do not have species occurrence location information precise enough to determine a species occurrence within one square mile. The occurrence status within individual biodiversity matrix units includes historic occurrence data, predicted ranges, and inferences to occurrence based on other community data such as soil types, topography, and landcover maps that may or may not be representative of actual site conditions. This information is not a substitute for on-site surveys and should not be regarded as a list of species that are expected to be found on the Project site.

Table 3. Summary of Listed Species Potentially Found in FNAI Matrix 26155 and IPaC

Scientific Name	Common Name	FNAI	FWCC	USFWS
Plants				
<i>Agrimonia incisa</i>	Incised groove-bur	S2		ST
<i>Arnoglossum diversifolium</i>	variable-leaved Indian-plantain	S2		ST
<i>Asplenium x curtissii</i>	Curtiss' spleenwort	S1		
<i>Asplenium x heteroresiliens</i>	Morzenti's spleenwort	S1		
<i>Asplenium x plenum</i>	Ruffled spleenwort	S1		
<i>Brickellia cordifolia</i>	Flyr's brickell-bush	S2		SE
<i>Forestiera godfreyi</i>	Godfrey's swampprivet	S2		SE
<i>Litsea aestivalis</i>	Pondspice	S2		SE
<i>Matelea floridana</i>	Florida spiny-pod	S2		SE
<i>Phyllanthus liebmannianus</i> <i>ssp. platylepis</i>	pinewoods dainties	S2		SE
<i>Pycnanthemum floridanum</i>	Florida mountain-mint	S3		ST
<i>Sideroxylon alachuense</i>	Silver buckthorn	S1		SE
<i>Spigelia loganioides</i>	pinkroot	S2		SE
Invertebrates				
<i>Danaus plexippus</i>	Monarch Butterfly	S4	C	-
Amphibian				
<i>Lithobates capito</i>	Gopher frog	S3	-	-
Reptiles				
<i>Crotalus adamanteus</i> *	Eastern diamondback rattlesnake	S3		
<i>Drymarchon couperi</i> ()	Eastern indigo snake	S2?	FT	FT
<i>Gopherus polyphemus</i>	Gopher tortoise	S3		ST
<i>Lampropeltis extenuata</i>	Short-tailed snake	S3		ST
Birds				
<i>Antigone canadensis pratensis</i>	Florida sandhill crane	S2		ST
<i>Athene cunicularia floridana</i>	Florida burrowing owl	S3		ST
<i>Dryobates borealis</i>	Red-cockaded Woodpecker	S2	FE, PT	FE
<i>Falco sparverius paulus</i>	Southeastern American kestrel	S3		ST
<i>Mycteria americana</i> ()	Wood stork	S2	FT	FT
<i>Peucaea aestivalis</i>	Bachman's sparrow	S3		
Mammals				
<i>Corynorhinus rafinesquii</i>	Rafinesque's Big-eared Bat	S1		
<i>Myotis austroriparius</i>	Southeastern myotis	S3		
<i>Neofiber alleni</i>	Round-tailed muskrat	S2		
<i>Sciurus niger niger</i>	Southeastern fox squirrel	S3		

FE = Listed as Endangered at the Federal level by the U. S. Fish and Wildlife Service

FNAI = Florida Natural Areas Inventory

* = There is a documented occurrence in the FNAI database within these Matrix Units

() = FNAI data, the species or community is known to occur in this vicinity, and is considered Likely to occur

FT = Listed as Threatened at the Federal level by the U. S. Fish and Wildlife Service

PT = Proposed for listing as threatened

C = Candidate species for listing

S#? = Tentative rank

S1 = Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor

S2 = Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor

S3 = Either very rare and local in Florida (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors
S4 = Apparently secure in Florida (may be rare in parts of range).
SE= Listed as Endangered at the State level by the Florida Fish and Wildlife Conservation Commission
ST = Listed as Threatened at the State level by the Florida Fish and Wildlife Conservation Commission

The Eastern Diamondback Rattlesnake has a state rank of S3 and has been identified by FNAI as Documented within the Biodiversity Matrix 26155.

The nearest documented bald eagle (*Haliaeetus leucocephalus*) nest (AL022) location is approximately 1.75 miles northeast of the Project site. The nearest documented wading bird rookery is approximately 3.1 miles southwest of the Project site (Exhibit 17).

A pedestrian transect survey was conducted by CHW ecologists on October 31st, 2023, to identify any listed species that are utilizing the Project site. The survey was conducted by qualified ecologists walking parallel east-west transects spaced approximately 65 feet apart (Exhibit 18). No listed species were observed during the survey.

3.0 QUALIFICATION AND DETERMINATION FOR SIGNIFICANT HABITAT

Unaltered habitat areas onsite may be further required to provide protected habitat corridors to areas of preservation located onsite or offsite. Significant habitat or listed species habitat is identified and delineated by a qualified professional based on consideration and assessment of at least the following factors as outlined in ULDC Sec. 78.12 (b):

(1) Quality of native ecosystem, (2) Overall quality of biological diversity, (3) Wildlife habitat value, (4) Presence of listed or uncommon species, (5) Grouping, contiguity, compactness of native vegetation, (6) Proximity to other natural preserve areas and corridors, and (7) Impact by prohibited and invasive non-native vegetation”.

It is CHW’s professional opinion that habitats on the Project would not qualify as Significant Habitat. The existing communities are not rare or unique for this region nor were any listed species observed onsite. The Project does contain examples of large mature oak, hickory, and other hardwood species. Native ecosystems on the Project have been altered to varying degrees from residential/agricultural uses and general clearing. Habitat alteration and disturbance is greatest in areas mapped as Agriculture (FLUCFCS Code 200).

Habitat fragmentation from residential and roadway development exists around the Project site. The project is not located within any Strategic Ecosystems as defined by Alachua County and proximity to nearby natural preserve areas is separated by roadways/development (Exhibit 6).

The nearest OFW is Payne’s Prairie Preserve State Park located 2.8 miles northeast of the Project (Exhibit 19).

4.0 PROJECT DETAILS

The information in this report regarding natural and historic resource conditions and environmental considerations is irrespective of any future Project plans. Development proposals will be subject to agency verification of site conditions and ULDC regulations and applicable restrictions at the time of application.

5.0 SUMMARY

No wetlands were observed on the Project site. Offsite wetlands are located immediately to the south with buffers extending on to the property. The entire Project is in FEMA Zone AE – 1% annual chance flood hazard with base flood elevations.

No federally or state protected species have been documented on the Project. No listed species were observed on the Project during the October 2023 listed species survey. No existing communities are rare or unique for the region on the Project site. The Project is not within an Alachua County Strategic Ecosystem.

The Project lies within an area of Alachua County where the Floridan Aquifer is considered “Vulnerable” and is not within a Stream-to-Sink Basin.

A preliminary review of FDEP data indicates no reported hazardous materials storage facilities or contamination sites are located on the Project.

No historic features exist onsite as identified by the State Historic Preservation Office (SHPO) Master File.

The Project is not located on or adjacent to any Outstanding Florida Waters (OFW).

6.0 REFERENCES and RESUMES

Florida Department of Agriculture and Consumer Services. 2004. Endangered, Threatened and Commercially Exploited Plants of Florida.

Florida Fish and Wildlife Conservation Commission. 2022. Florida’s Endangered and Threatened Species. Official Lists, Bureau of Non-Game Wildlife, Division of Wildlife.

Florida Land Use Cover and Forms Classification System: Handbook. (1999). Third Edition. Florida Dept. of Transportation, Surveying and Mapping Office, Thematic Mapping Section.

Florida Natural Areas Inventory (FNAI). <https://www.fnai.org/conslands/florida-forever>

Hoerstine, R.W., Yon, J.W., Lane, E., and Spencer, S.M. 1990. Mineral Resources of Alachua County. Map Series MS 131. Florida Geological Survey.

IPaC - Information for Planning and Consultation.

KBN, A Golder Associates Company. 1996. Alachua County Ecological Inventory Project. Prepared for Alachua County Department of Growth Management, Gainesville, Florida.

Runde, D.E., J.A. Gore, J.A. Hovis, M.S. Robson, and P.D. Southall. 1991. Florida Atlas of Breeding Sites for Herons and Their Allies, Update 1986 - 1989. Nongame Wildlife Program Technical Report No. 10. Florida Game and Fresh Water Fish Commission, Tallahassee, Florida. E6-5

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online. Accessed 06/06/2023.

U.S. Fish and Wildlife Service. 2007. National Bald Eagle Management Guidelines.

Resumes

Andy Woodruff

Ethan Vroonland

ANDY WOODRUFF, PWS

Vice President / Senior Ecologist

(386) 518-5176 · andyw@chw-inc.com

ROLE

Mr. Woodruff has a M.S. in Environmental Engineering from the University of Florida and a B.S. in Biology from Emory University. Andy is a Senior Ecologist and Certified Professional Wetland Scientist serving as CHW Vice President of Ecological Services, with considerable experience in wetland and listed species permitting and project management. He and his team work together to provide insight into the complexities of environmental regulations and to offer proactive, responsible solutions. Andy's 30-plus years of experience include state, federal, and local permitting; agency negotiations; environmental impact assessments; ecological assessments; listed species surveys, permitting and relocation; state and federal wetland jurisdictional determinations; wetland mitigation design, permitting, and construction observations; wetland mitigation banking management, design, permitting and construction observations; and environmental project management.

SPECIALIZATIONS

- Large Scale Project Development and Management
- Environmental Regulatory Permitting
- Wetland Delineation
- Ecological Surveys
- Threatened and Endangered Species Surveys
- Landscape Habitat Management
- Expert Witness Testimony
- Agency Negotiations
- Mitigation Banking

PROJECT EXPERIENCE

490± acre Ecological Assessment, Gilchrist County, FL
130± acre Wetland Delineation and Habitat Mapping, Alachua County, FL
Town of Viera DRI, Brevard County, FL
Isles of Collier Preserve, Collier County, FL
Little Pine Island Wetland Mitigation Bank, Lee County, FL
Big Cypress Stewardship District, Collier County, FL
Alico Road Alignment Study, Lee County, FL
Collier's Reserve Gopher Tortoise Relocation, Collier County, FL

EDUCATION

M.S., Environmental Engineering, Aquatic Science, University of Florida, 1993
B.S., Biology, Emory University, Atlanta, Georgia, 1989

PROFESSIONAL LICENSE / CERTIFICATIONS

Certified Professional Wetland Scientist, Society of Wetland Scientists
Certified Wetland Delineator, U.S. Army Corps of Engineers
Certified Prescribed Burn Manager and Prescribed Fire Techniques for Wildlife, Florida Division of Forestry
Certified Natural Areas Management, Natural Areas Training Academy
Qualified Mitigation Supervisor, Florida Department of Environmental Protection

ACTIVITIES

Florida Association of Environmental Professionals, Local Board of Directors (1999)
Society of Wetland Scientists
Coastal Conservation Association
U.S. Power Squadron San Carlos Bay, Chairman Environmental Committee (1999)
Calusa Nature Center and Planetarium, Board of Trustees (2007)

ETHAN VROONLAND

Ecologist I

(386) 518-6158 · ethanv@chw-inc.com

ROLE

Mr. Vroonland has a B.S. in Animal Bio-Health Sciences and a Minor in Remote Sensing and Geographic Information Systems from Alabama A&M University. As an Ecologist I Ethan has experience in state, federal, and local permitting; environmental impact assessments; ecological assessments; listed species surveys, permitting and relocation; state and federal wetland jurisdictional determinations/delineations; project development & environment studies (PD&E), and preparation of open space / habitat management plans.

SPECIALIZATIONS

- Ecological Assessments
- Soil and Land Use Maps
- FDEP Surface Water Collection
- Uniform Mitigation Assessment Method (UMAM)
- ArcGIS pro and ArcMap
- Lake and Stream Condition Indexing
- Wildlife Surveys and Reports

EXPERIENCE

Years' Experience: 3

Years with Current Firm: 1

PROJECT EXPERIENCE

Levy County Development Ecological Services, Levy County, FL
IFAS Camp Cherry Lake Environmental Assessment, Madison County, FL
Little Pine Island Wetland Mitigation Bank Ecological Services, Lee County, FL
Tomoka Hills Ecological Services, Alachua, FL
Zolfo Springs Ecological Services, Zolfo Springs, FL
Origis Energy Solar Facility Due Diligence, Miami, FL
North Fort Myers Bat Acoustic Monitoring, Lee County, FL
Depot Avenue Ecological Services, Gainesville, FL
Ford Ecological Services, Gainesville, FL

EDUCATION

B.S. - Animal Bio-Health Sciences

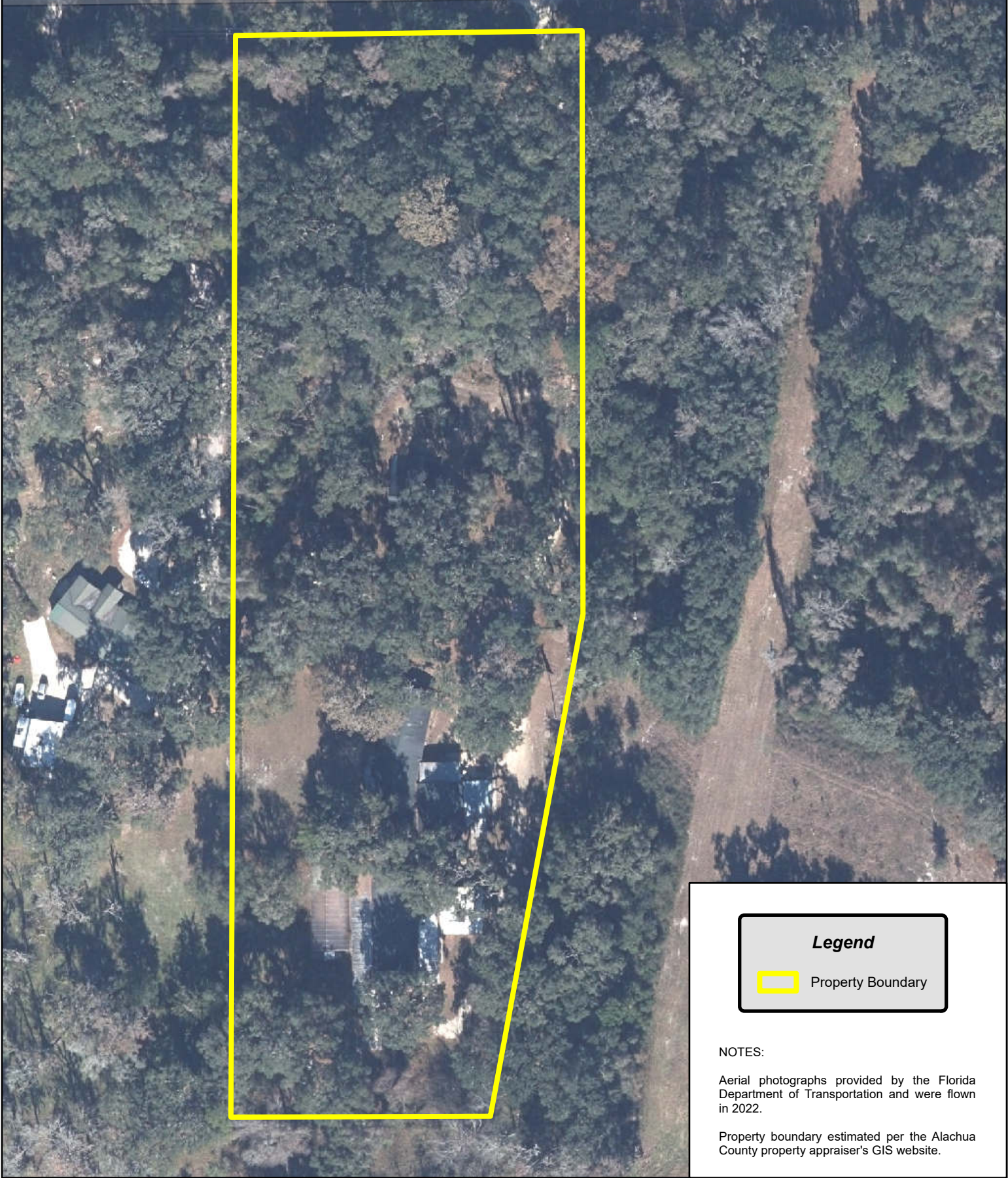
Minor - Remote Sensing and Geographic Information Systems

2021, Alabama A&M University, Huntsville, AL

ACTIVITIES

FDEP Surface Water Collection Certified (2021)

Exhibit 1
Project Boundary Map



Legend

 Property Boundary

NOTES:

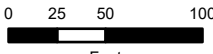
Aerial photographs provided by the Florida Department of Transportation and were flown in 2022.

Property boundary estimated per the Alachua County property appraiser's GIS website.



Professional Consultants
www.chw-inc.com

NORTH

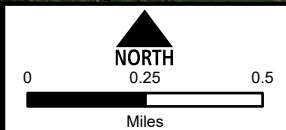
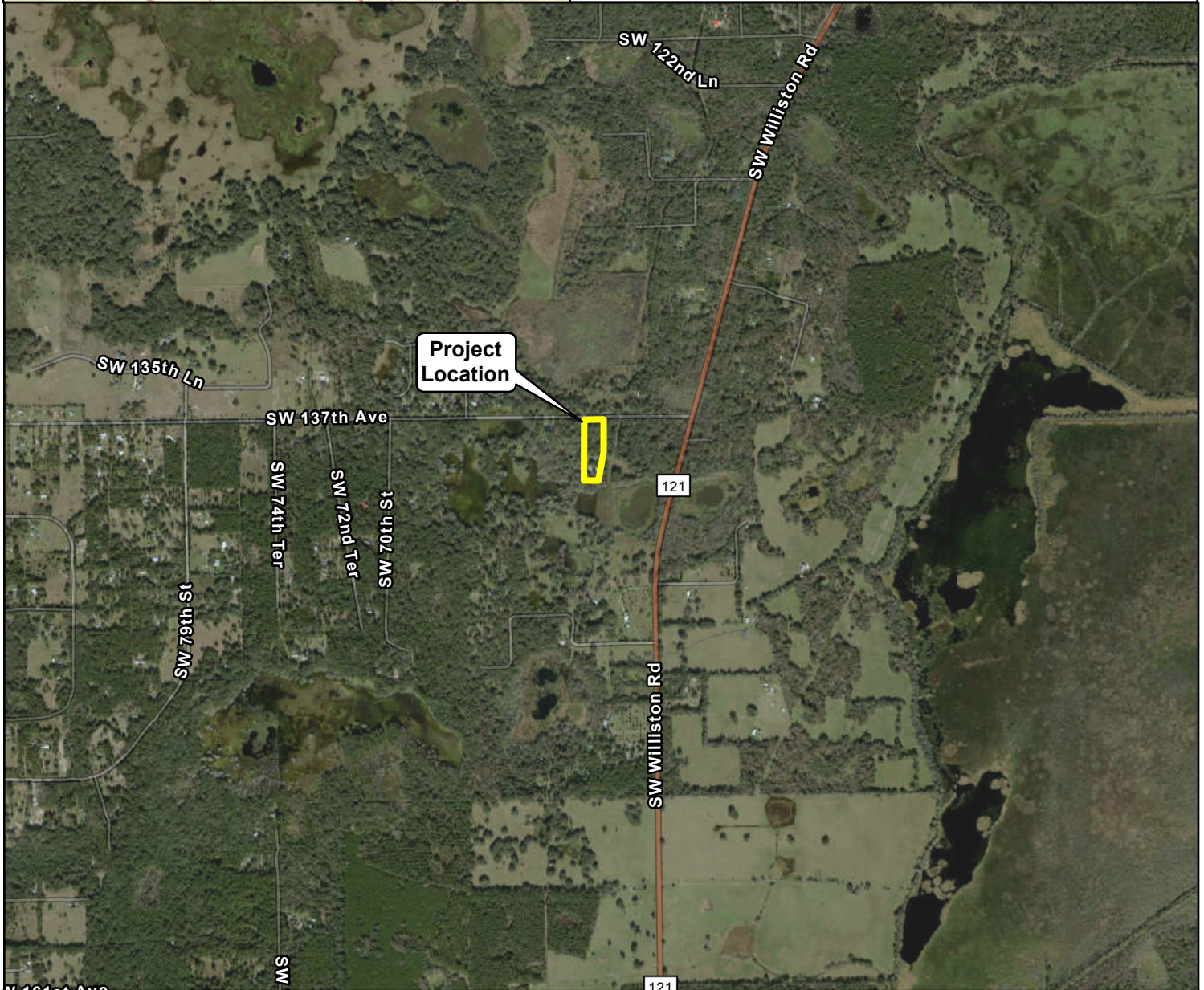
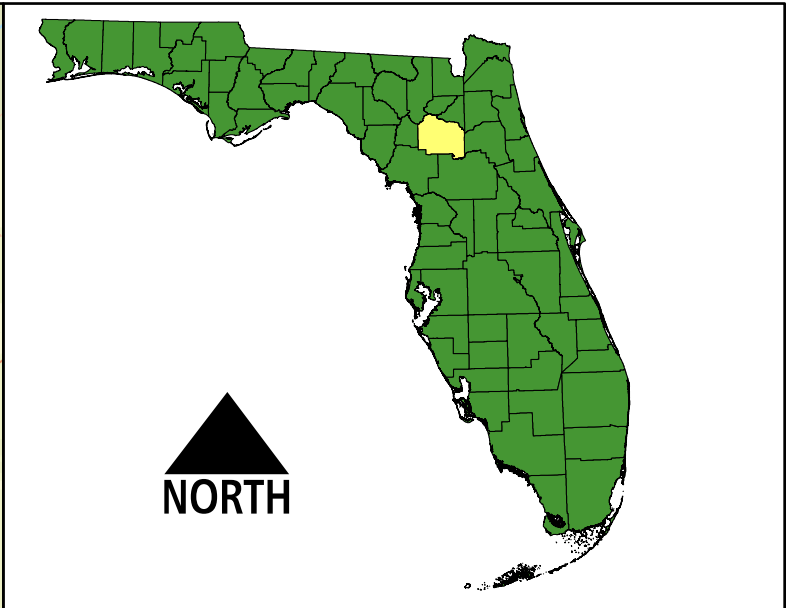
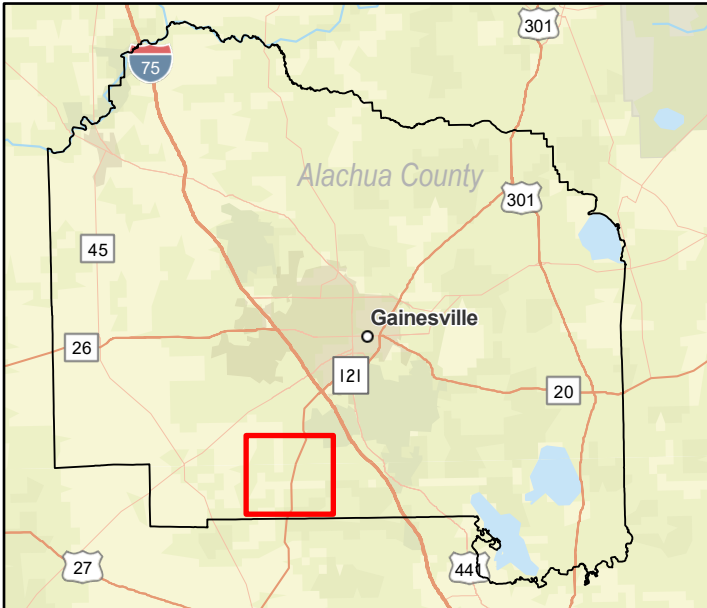


Feet

Aerial With Boundary SkyFrog

DRAWN BY:	D. B.
DRAWING DATE:	10/27/23
REVIEWED BY:	A. W.
EXHIBIT NUMBER:	1

Exhibit 2
Project Location Map



Project Location Map SkyFrog

DRAWN BY:	D.B.
DRAWING DATE:	10/27/23
REVIEWED BY:	A.W.
EXHIBIT NUMBER:	2

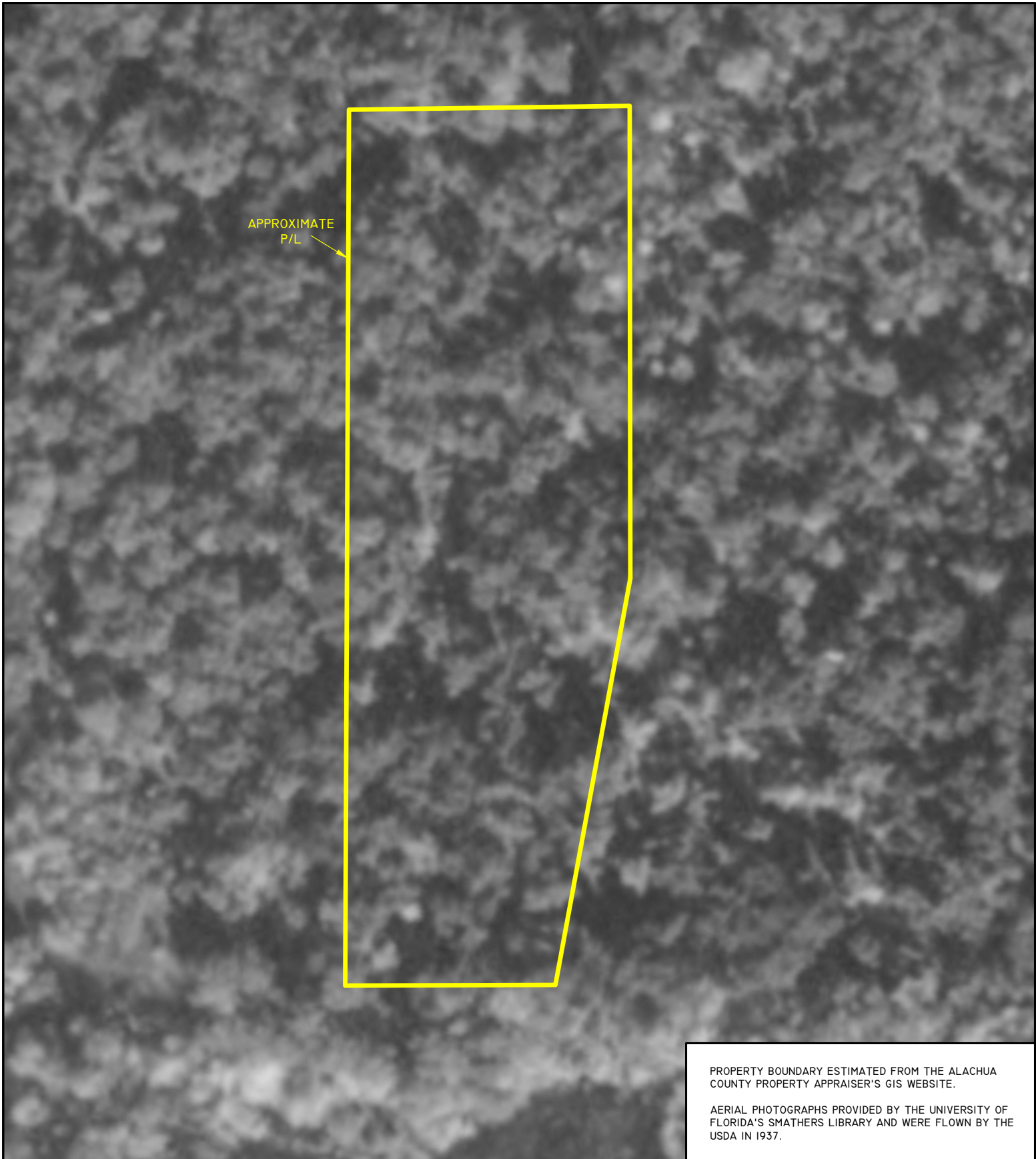
Exhibit 3

Historic Aerials (3)

3A - 1937 Aerial with Boundary

3B - 1956 Aerial with Boundary

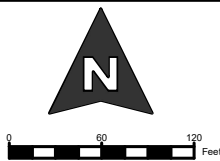
3C - 1979 Aerial with Boundary



APPROXIMATE
P/L

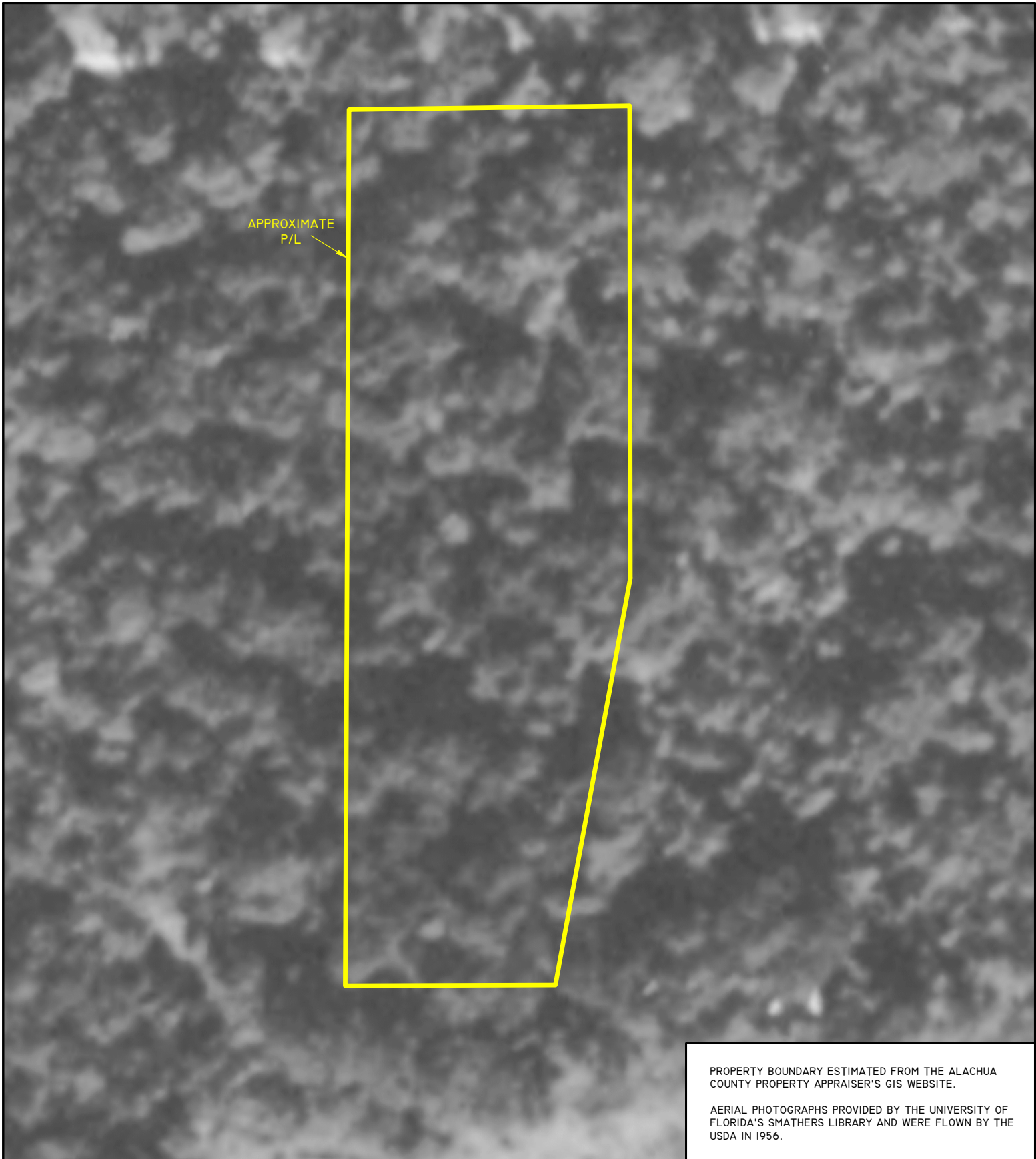
PROPERTY BOUNDARY ESTIMATED FROM THE ALACHUA
COUNTY PROPERTY APPRAISER'S GIS WEBSITE.

AERIAL PHOTOGRAPHS PROVIDED BY THE UNIVERSITY OF
FLORIDA'S SMATHERS LIBRARY AND WERE FLOWN BY THE
USDA IN 1937.



1937 Aerial with Boundary SkyFrog

DRAWN BY:	D.B.
DRAWING DATE:	10/30/23
REVISED:	
EXHIBIT NUMBER:	3A



PROPERTY BOUNDARY ESTIMATED FROM THE ALACHUA COUNTY PROPERTY APPRAISER'S GIS WEBSITE.

AERIAL PHOTOGRAPHS PROVIDED BY THE UNIVERSITY OF FLORIDA'S SMATHERS LIBRARY AND WERE FLOWN BY THE USDA IN 1956.

CHW
Professional Consultants
WWW.CHW-INC.COM

N

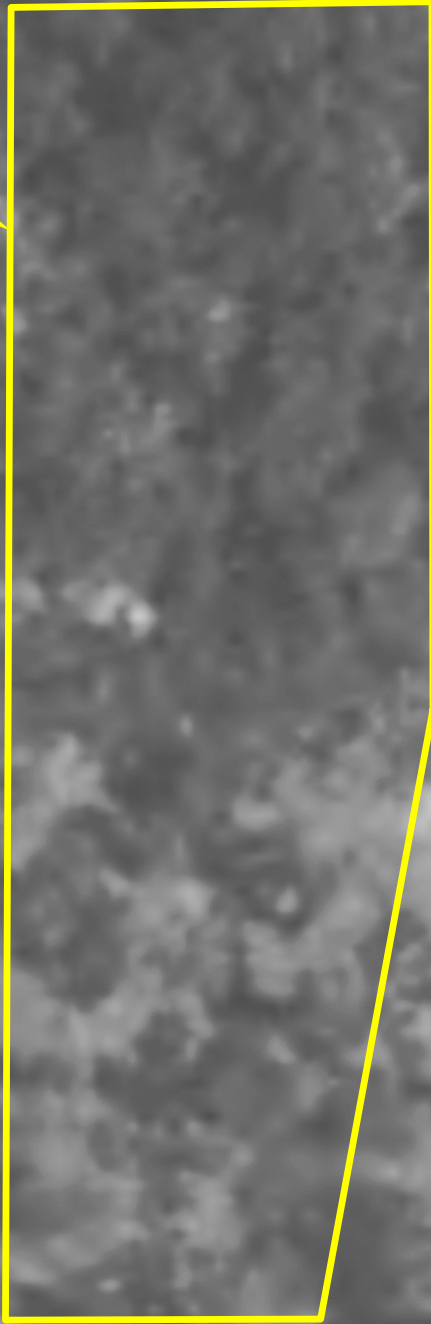
0 60 120 Feet

**1956 Aerial with Boundary
SkyFrog**

DRAWN BY:	D. B.
DRAWING DATE:	10/30/23
REVISED:	
EXHIBIT NUMBER:	3B

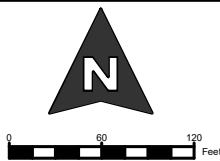
~SW 137TH AVE~

APPROXIMATE
P/L



PROPERTY BOUNDARY ESTIMATED FROM THE ALACHUA COUNTY PROPERTY APPRAISER'S GIS WEBSITE.

AERIAL PHOTOGRAPHS PROVIDED BY THE UNIVERSITY OF FLORIDA'S SMATHERS LIBRARY AND WERE FLOWN BY THE USDA IN 1979.



1979 Aerial with Boundary SkyFrog

DRAWN BY:	D.B.
DRAWING DATE:	10/30/23
REVISED:	
EXHIBIT NUMBER:	3C

Exhibit 4
Historic Features Map

Legend



Project Site



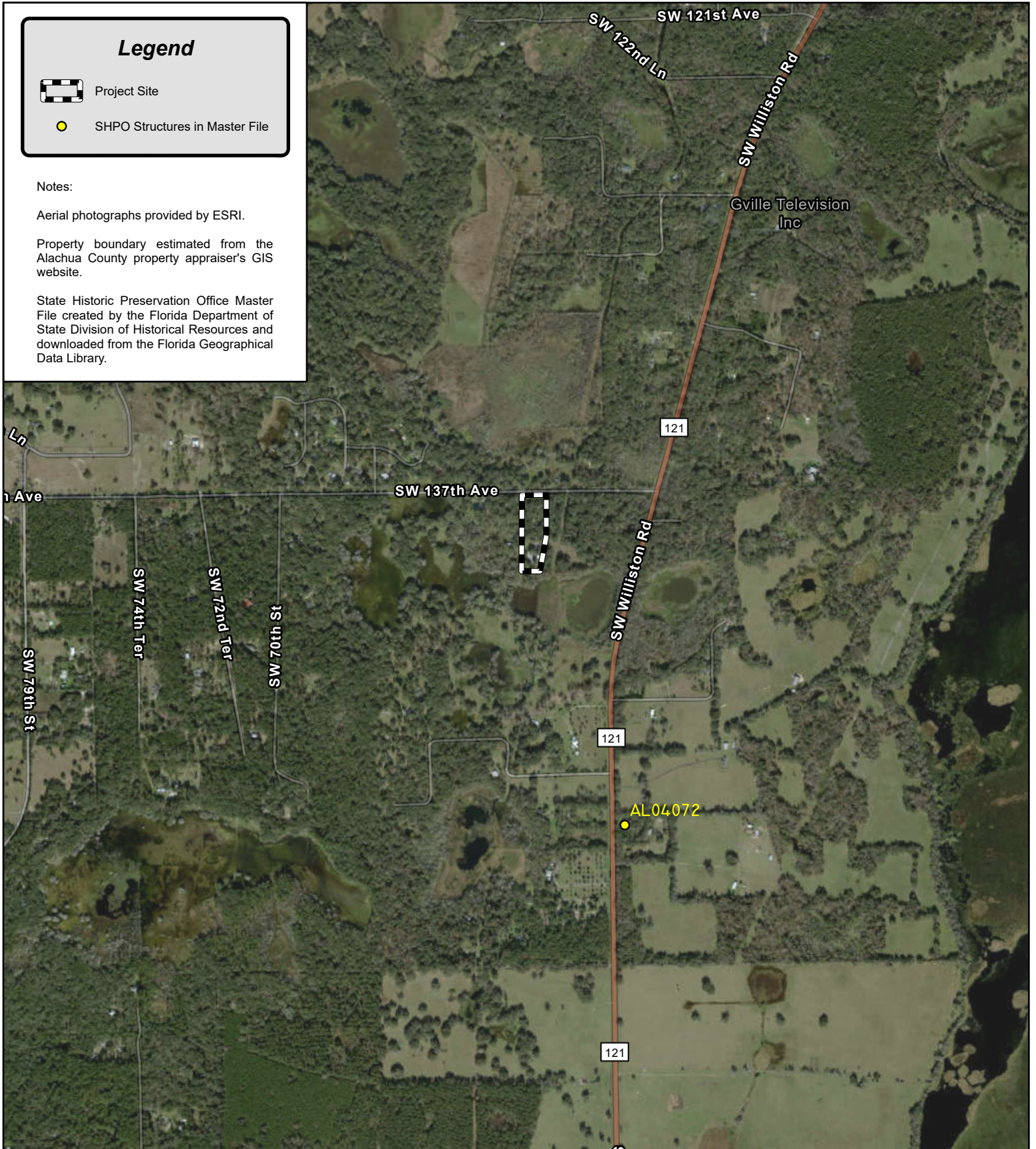
SHPO Structures in Master File

Notes:

Aerial photographs provided by ESRI.

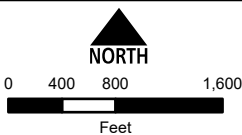
Property boundary estimated from the Alachua County property appraiser's GIS website.

State Historic Preservation Office Master File created by the Florida Department of State Division of Historical Resources and downloaded from the Florida Geographical Data Library.



Florida Master Site File

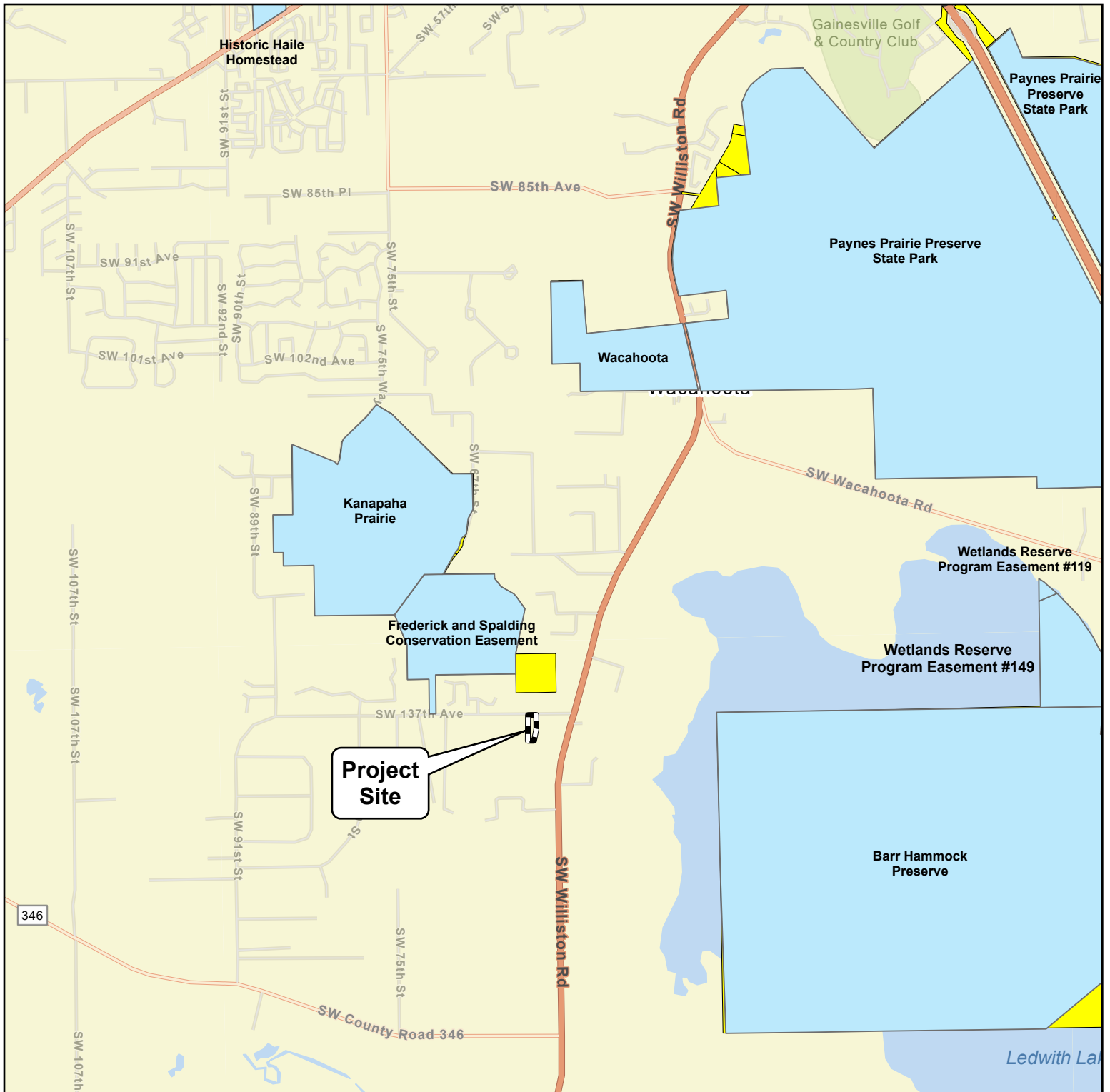
Site ID	Site Name	Year Bt.	SHPO Evaluation	Style
AL04072	335 SR 121	1935	NOT EVALUATED BY SHPO	FRAME VERNACULAR



Historic Features Map SkyFrog

DRAWN BY:	D.B.
DRAWING DATE:	10/30/23
REVIEWED BY:	A.W.
EXHIBIT NUMBER:	4

Exhibit 5
Conservation Areas Map



Notes:

Conservation areas acquired from the Florida Geographic Library and were compiled by the Florida Natural Areas Inventory.

Additional private/public conservation areas acquired from the Alachua County GIS department.

Property boundary estimated per the Alachua county property appraiser's GIS website.

Legend



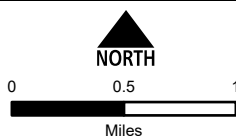
Project Site



Conservation/Preservation



Alachua County Preservation/Conservation



**Conservation Areas Map
SkyFrog**

DRAWN BY:	D.B.
DRAWING DATE:	10/30/23
REVIEWED BY:	A.W.
EXHIBIT NUMBER:	5

Exhibit 6
Alachua County Strategic Ecosystems Map

Exhibit 7
Aerial With FLUCFCS Map

~SW 137TH AVE~

P/L

438
(1.88 Ac. ±)

200
(3.11 Ac. ±)

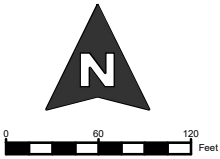
FLUCFCS CODES	DESCRIPTIONS	ACREAGE	% OF TOTAL
200	AGRICULTURE	3.11 Ac. ±	62.3%
438	MIXED HARDWOODS	1.88 Ac. ±	37.7%
TOTAL		4.99 Ac. ±	100.0%

PROPERTY BOUNDARY PER CHW-INC. SURVEY DRAWING No. 23-0622 BOUNDARY.DWG ACCESSED ON DECEMBER 15, 2023.

AERIAL PHOTOGRAPHS PROVIDED BY THE FLORIDA DEPARTMENT OF TRANSPORTATION AND WERE FLOWN IN DECEMBER 2022.

FLUCFCS PER FLORIDA LAND USE, COVER, AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

PROPERTY COMPOSED ENTIRELY OF UPLANDS SUBJECT TO AGENCY REVIEW.



Aerial with FLUCFCS Map SkyFrog

DRAWN BY: D.B.

DRAWING DATE: 12/15/23

REVISED:

EXHIBIT NUMBER:

7

Exhibit 8
SkyFrog Photolog



Photo 1: Agriculture (FLUCFCS 200) 10/31/2023



Photo 2: Agriculture (FLUCFCS 200) 10/31/2023



Photo 3: Agriculture (FLUCFCS 200) 10/31/2023



Photo 4: Agriculture (FLUCFCS 200) 10/31/2023



Photo 5: Mixed Hardwoods (FLUCFCS 438) 10/31/2023



Photo 6: Mixed Hardwoods (FLUCFCS 438) 10/31/2023

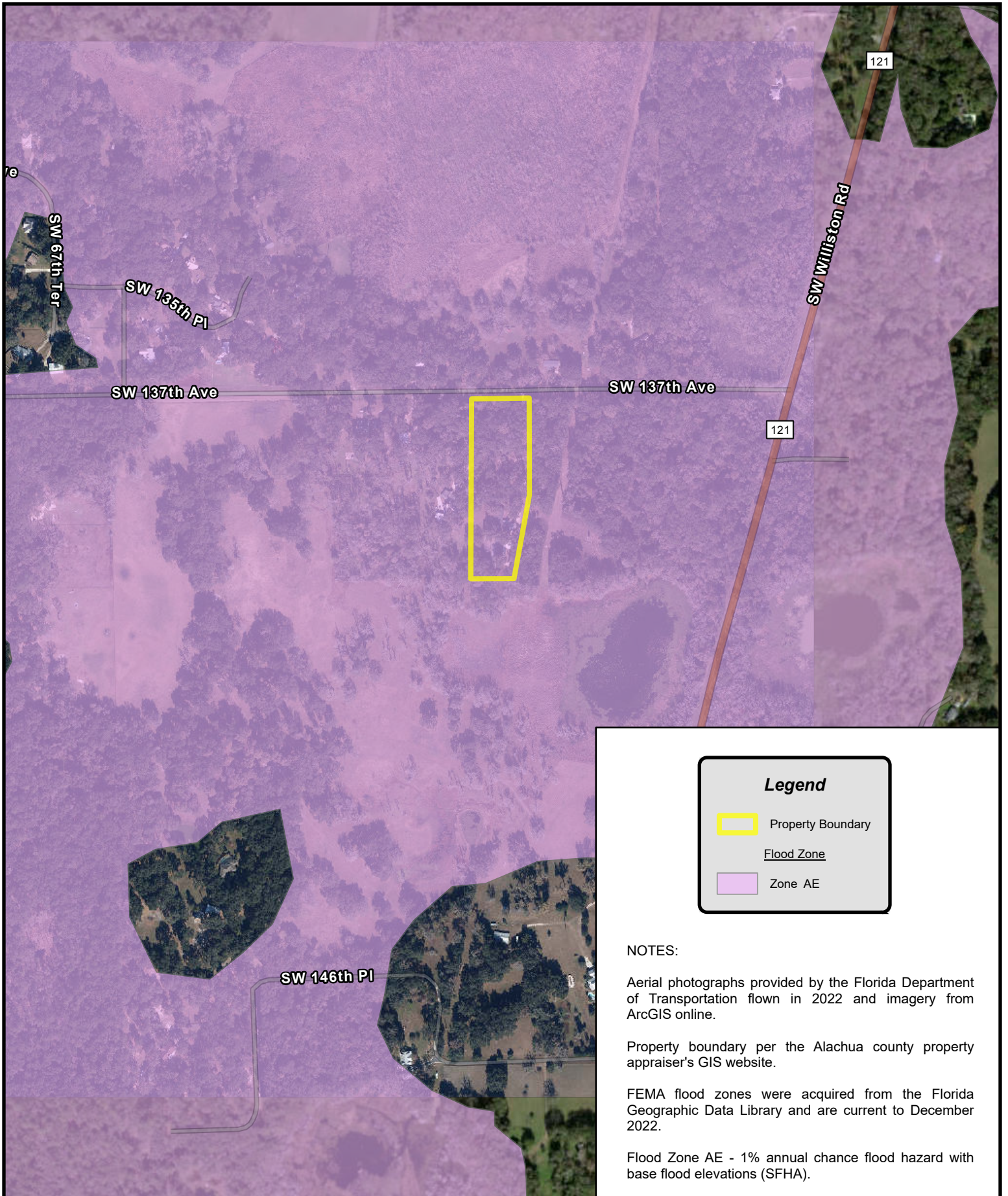


Photo 7: Mixed Hardwoods (FLUCFCS 438) 10/31/2023





Figure 8: Mixed Hardwoods (FLUCFCS 438) 10/31/2023

Exhibit 9
FEMA Flood Zone Map



Legend

-  Property Boundary
- Flood Zone
-  Zone AE

NOTES:

Aerial photographs provided by the Florida Department of Transportation flown in 2022 and imagery from ArcGIS online.

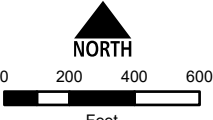
Property boundary per the Alachua county property appraiser's GIS website.

FEMA flood zones were acquired from the Florida Geographic Data Library and are current to December 2022.

Flood Zone AE - 1% annual chance flood hazard with base flood elevations (SFHA).



NORTH



Feet

FEMA Flood Zones Map SkyFrog

DRAWN BY:	D.B.
DRAWING DATE:	10/30/23
REVIEWED BY:	A.W.
EXHIBIT NUMBER:	9

Exhibit 10
Alachua County Floridan Aquifer High Recharge Area

Exhibit 10

Alachua County Floridan Aquifer High Recharge Area

Legend

Generalized Vulnerability Rating

- Low Vulnerability
- Vulnerable
- High Vulnerability
- Stream-to-Sink Basins
- Municipalities
- Major Roads
- Lakes

High Aquifer Recharge Areas: Areas where stream-to-sink surface water basins occur and areas where the Floridan aquifer system is vulnerable or highly vulnerable

Source:
Basins Layer used to produce the Stream-to-Sink Basins Layer (FDEP, 1998)
Generalization of Alachua County (Floridan) Aquifer Vulnerability Assessment Results (Advanced Geospatial Inc., 2008)

Prepared At:
Alachua County
Environmental Protection Department
201 SE 2nd Avenue, Suite 201
Gainesville, FL 32601

DISCLAIMER: This map and the spatial data it contains are made available as a public service, to be used for reference purposes only. The Alachua County Environmental Protection Department provides this information AS IS without warranty of any kind, implied or expressed, regarding accuracy, completeness, or fitness of use. The quality of the data is dependent on the various sources from which each data layer is obtained. 3-27-2009

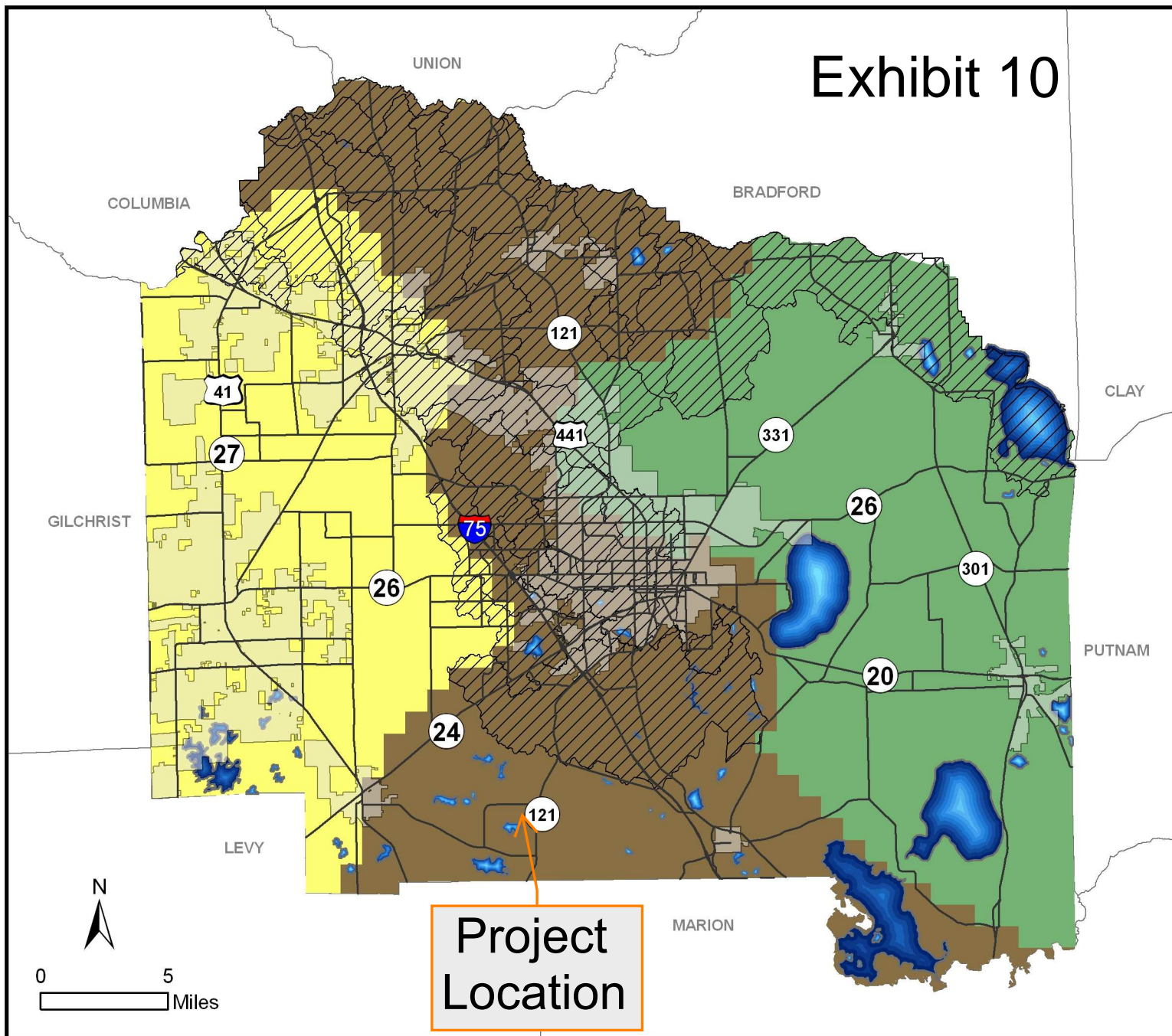


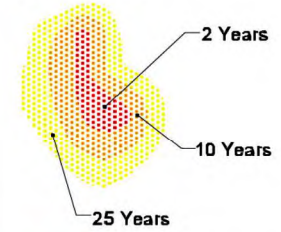
Exhibit 11
Alachua County Murphree Well Field Management Zones

ALACHUA COUNTY MURPHREE WELL FIELD MANAGEMENT ZONES

Legend

▼ Existing and Future Wells

Murphree Well Field Management Zones
Travel Times



Existing Well Field

Conservation Easement

Roads

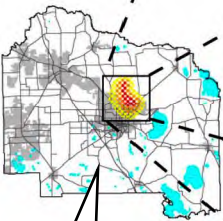
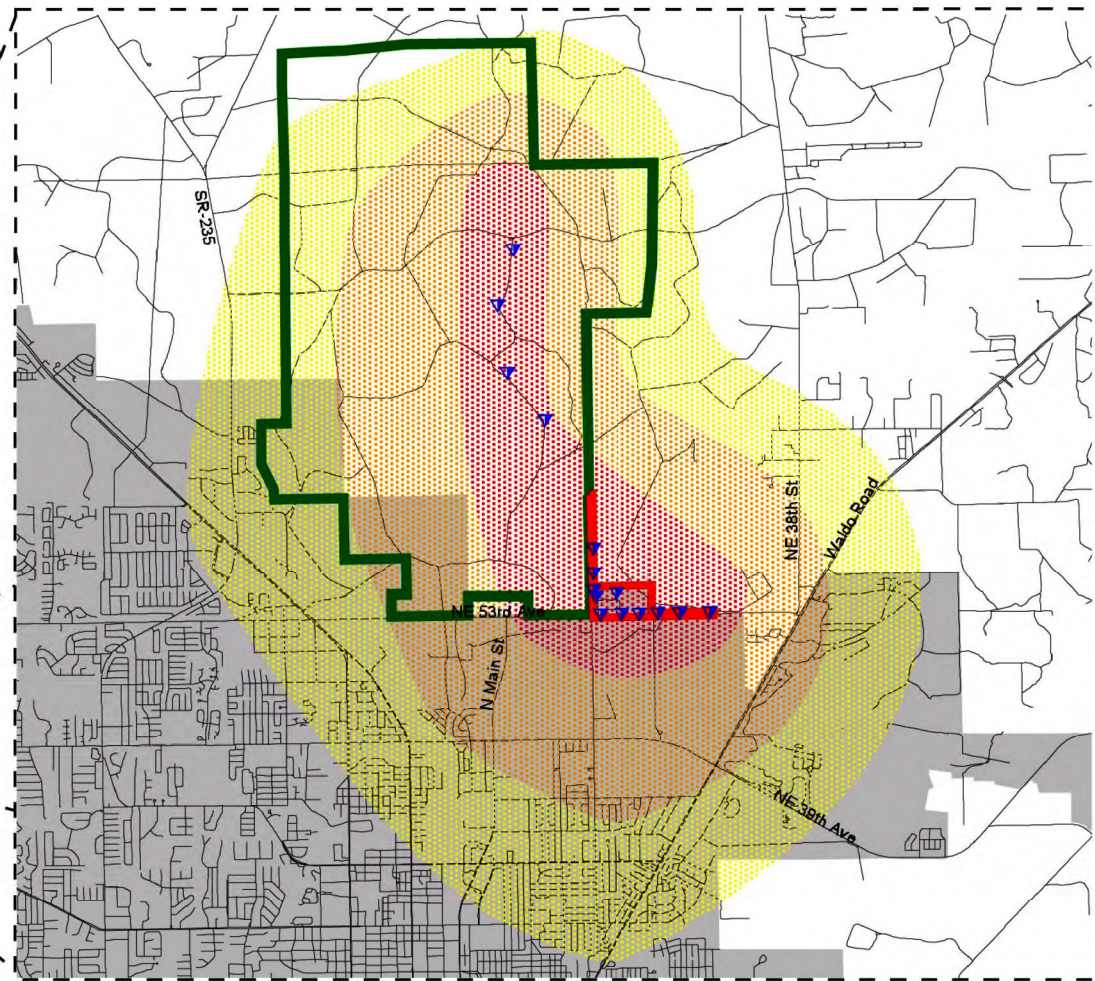
City of Gainesville

SOURCE:
Murphree Wellfield digital files were obtained from Gainesville Regional Utilities, Dept. of Strategic Planning. The originals were CAD files, received at various times, and subsequently converted to shapefiles at Alachua County Environmental Protection Department

CONTENT:
Murphree Well Field Management Zones

NOTES:
This map is part of the Future Land Use Map (FLUM) Series. The FLUM Series includes maps such as the County Wide Map, the Urban Cluster and Surrounding Area Map, the Wetlands and Floodplains Map, the Murphree Well Field Management Zones Map, the USDA Soil Map (incorporated by reference), activity center maps, and special study area maps.
Date of Production: 2-20-2002

PREPARED AT:
Alachua County
Department of Growth Management
10 SW 2nd Avenue
Gainesville, FL 32601
(352) 374-5249
<http://argrowth-management.alachua.fl.us/index.php>



Project Site



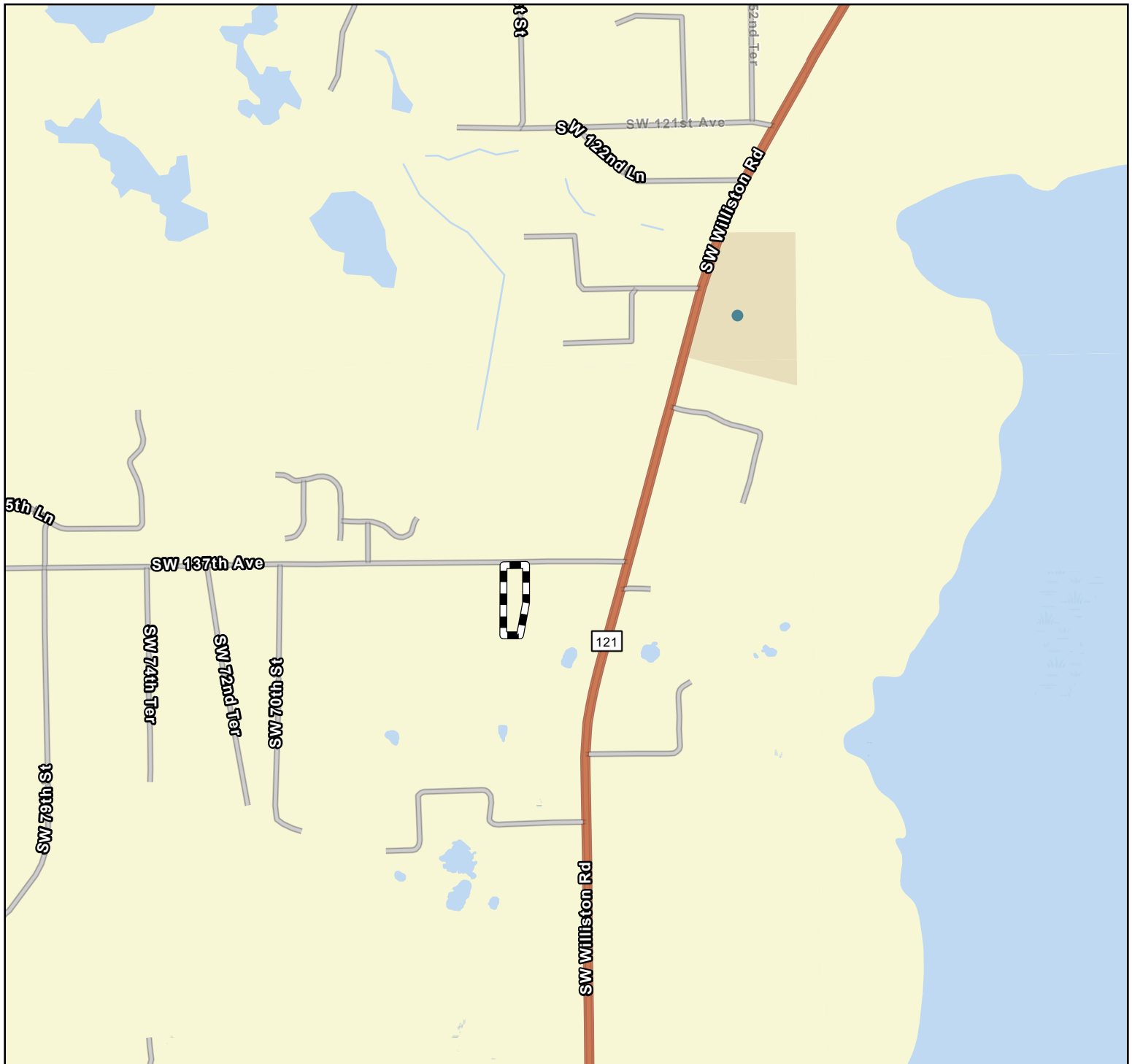
11801 Research Drive,
Alachua, Florida 32615
(352) 331-1976
www.chw-inc.com
est. 1988 **FLORIDA**
CA-5075

Alachua County Murphree Well Field Management Zones Skyfrog



DRAWN BY: D.B.
DRAWING DATE: 01/02/24
REVIEWED BY: A.W.
EXHIBIT NUMBER: 11

Exhibit 12
FDEP Hazardous Waste Data



Legend



Property Boundary

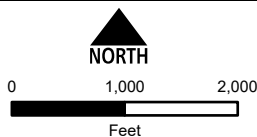


Registered_Tanks_from_Storage_Tank_Contamination_Monitoring_(STCM)

NOTES:

Property boundary estimated from the Alachua County property appraiser's GIS website.

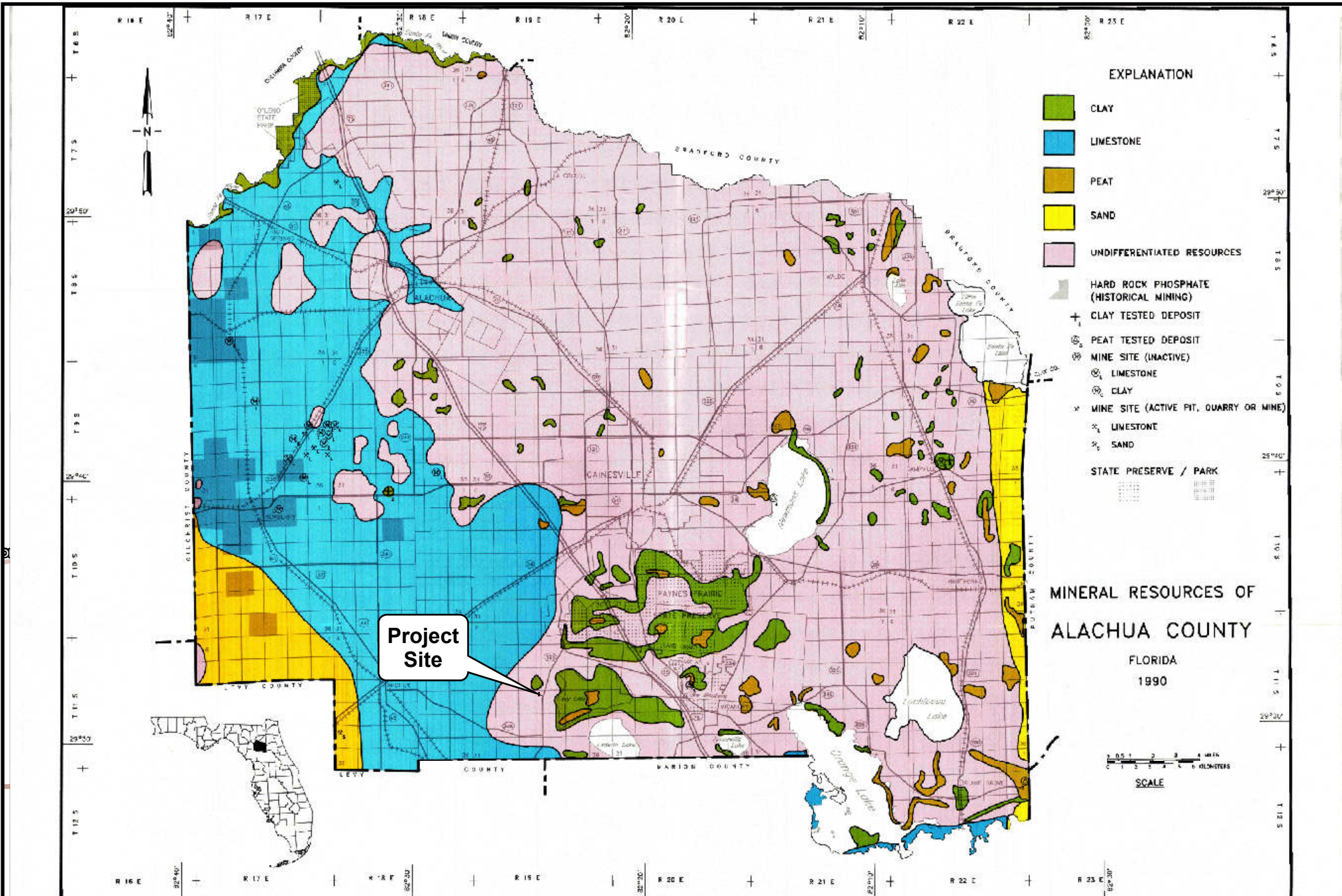
Hazardous waste data downloaded from Map Direct: FDEP Open Data GIS website in August of 2023



**FDEP Hazardous Waste Data
SkyFrog**

DRAWN BY:	D.B.
DRAWING DATE:	10/30/23
REVIEWED BY:	A.W.
EXHIBIT NUMBER:	12

Exhibit 13
Mineral Resources of Alachua County Map



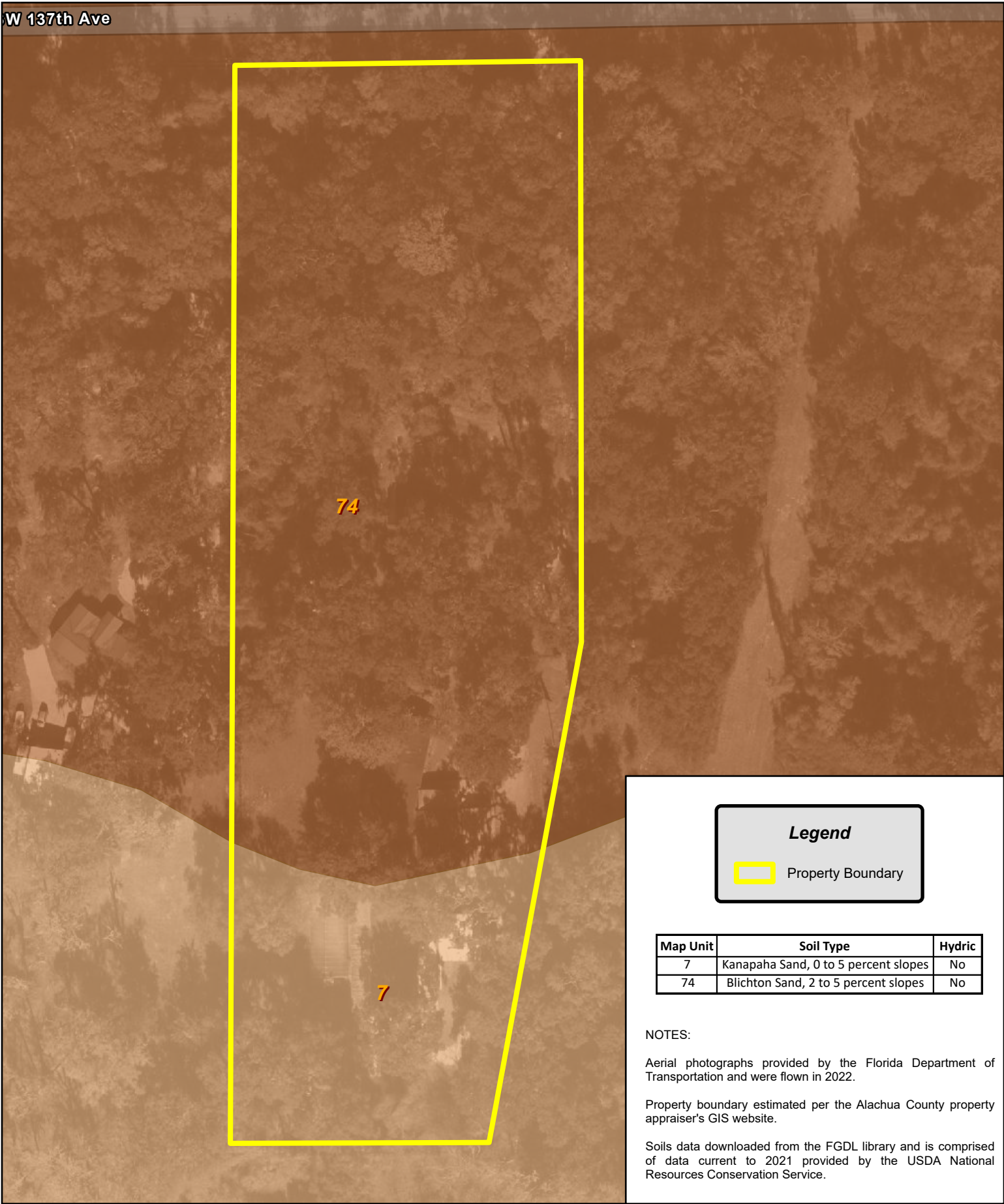
11801 Research Drive,
Alachua, Florida 32615
(352) 331-1976
www.chw-inc.com
est. 1988 **FLORIDA**
CA-5075

Mineral Resources of Alachua County SkyFrog



DRAWN BY: D.B.
DRAWING DATE: 10/30/23
REVIEWED BY: A.W.
EXHIBIT NUMBER: 13

Exhibit 14
NRCS Soils Map



Legend

Property Boundary

Map Unit	Soil Type	Hydric
7	Kanapaha Sand, 0 to 5 percent slopes	No
74	Blichton Sand, 2 to 5 percent slopes	No

NOTES:

Aerial photographs provided by the Florida Department of Transportation and were flown in 2022.

Property boundary estimated per the Alachua County property appraiser's GIS website.

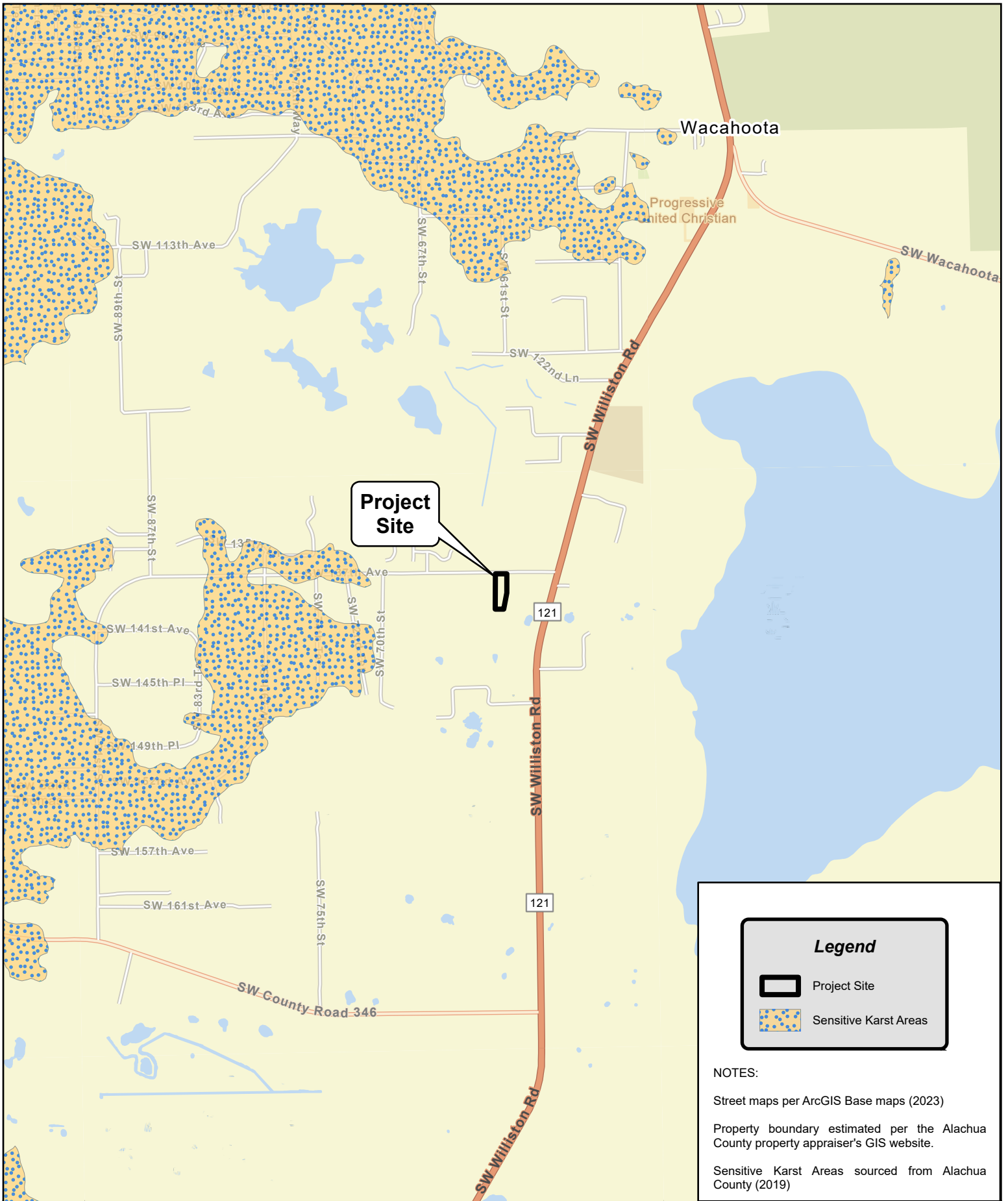
Soils data downloaded from the FGDL library and is comprised of data current to 2021 provided by the USDA National Resources Conservation Service.

NORTH



Soils Map SkyFrog

DRAWN BY:	D.B.
DRAWING DATE:	10/27/23
REVIEWED BY:	A.W.
EXHIBIT NUMBER:	14

Exhibit 15
Sensitive Karst Areas Map



Legend

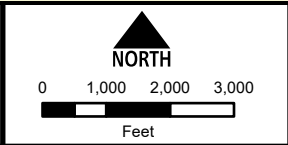
-  Project Site
-  Sensitive Karst Areas

NOTES:

Street maps per ArcGIS Base maps (2023)

Property boundary estimated per the Alachua County property appraiser's GIS website.

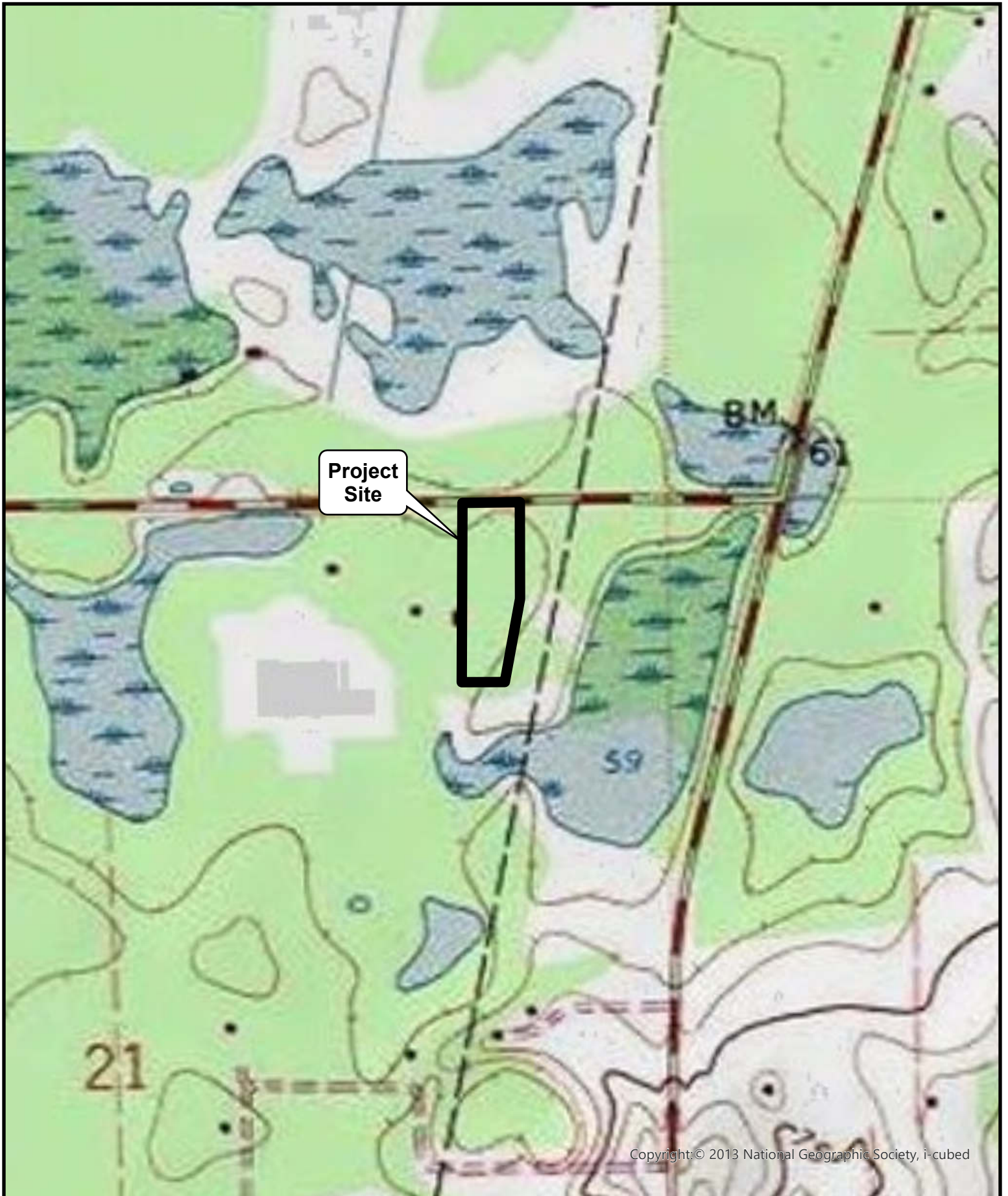
Sensitive Karst Areas sourced from Alachua County (2019)



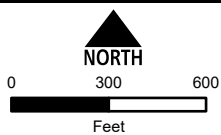
Sensitive Karst Areas Map SkyFrog

DRAWN BY:	D.B.
DRAWING DATE:	10/30/23
REVIEWED BY:	A.W.
EXHIBIT NUMBER:	15

Exhibit 16
USGS Quad Map



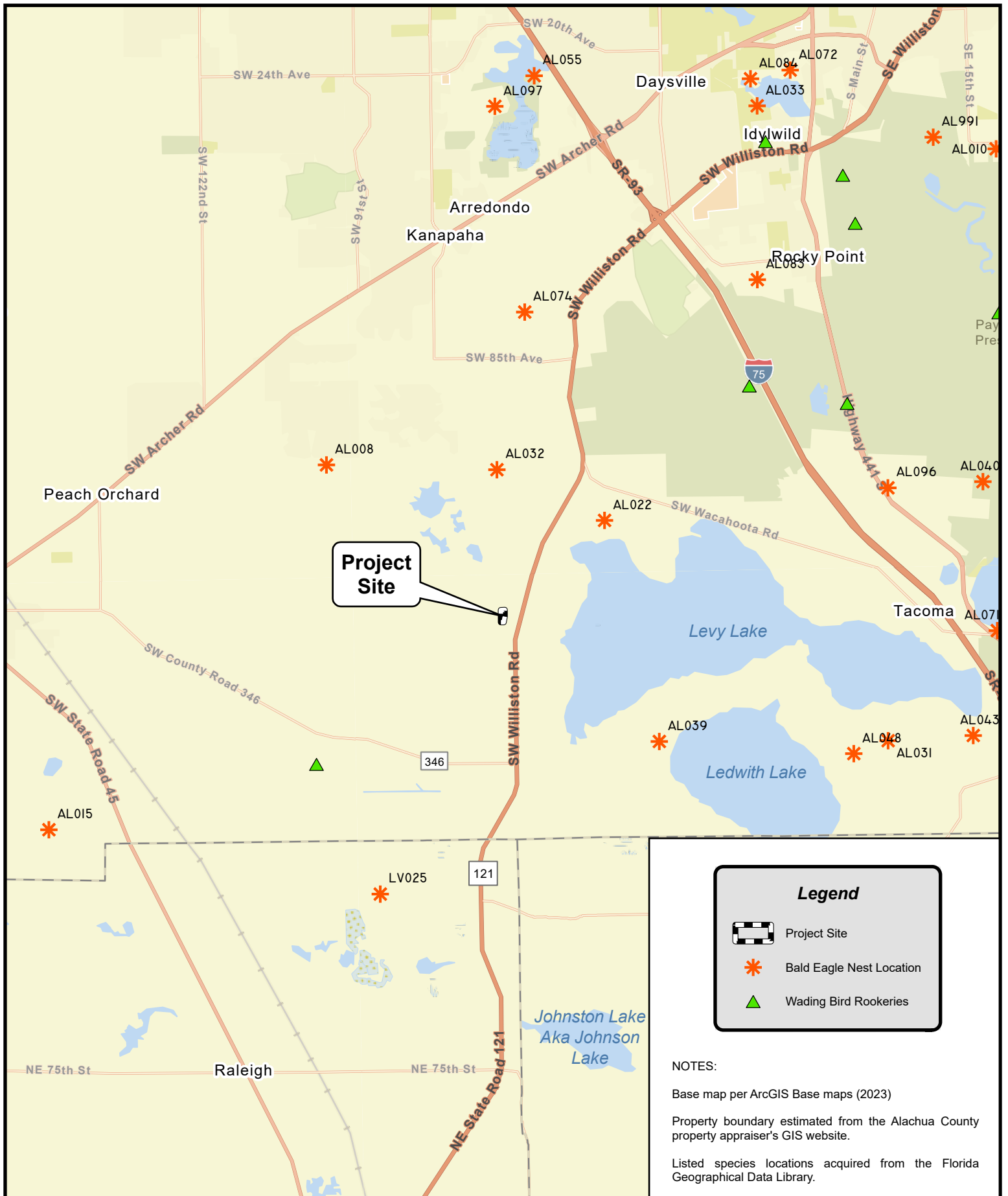
Copyright © 2013 National Geographic Society, i-cubed



USGS Quad Map SkyFrog

DRAWN BY:	D.B.
DRAWING DATE:	10/27/23
REVIEWED BY:	A.W.
EXHIBIT NUMBER:	16

Exhibit 17
Documented Occurrences of Listed Species



Legend

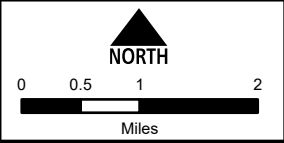
-  Project Site
-  Bald Eagle Nest Location
-  Wading Bird Rookeries

NOTES:

Base map per ArcGIS Base maps (2023)

Property boundary estimated from the Alachua County property appraiser's GIS website.

Listed species locations acquired from the Florida Geographical Data Library.



Documented Occurrences of Listed Species SkyFrog

DRAWN BY:	D.B.
DRAWING DATE:	10/30/23
REVIEWED BY:	A.W.
EXHIBIT NUMBER:	17

Exhibit 18
Aerial With Survey Transects Map

~SW 137TH AVE~

P/L

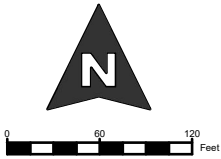
LEGEND:

--- APPROXIMATE LOCATION OF WALKED SURVEY TRANSECTS

PROPERTY BOUNDARY PER CHW-INC. SURVEY DRAWING No. 23-0622 BOUNDARY.DWG ACCESSED ON DECEMBER 15, 2023.

AERIAL PHOTOGRAPHS PROVIDED BY THE FLORIDA DEPARTMENT OF TRANSPORTATION AND WERE FLOWN IN DECEMBER 2022.

NO LISTED SPECIES OBSERVED.



Aerial With Survey Transects and Listed Species Locations SkyFrog

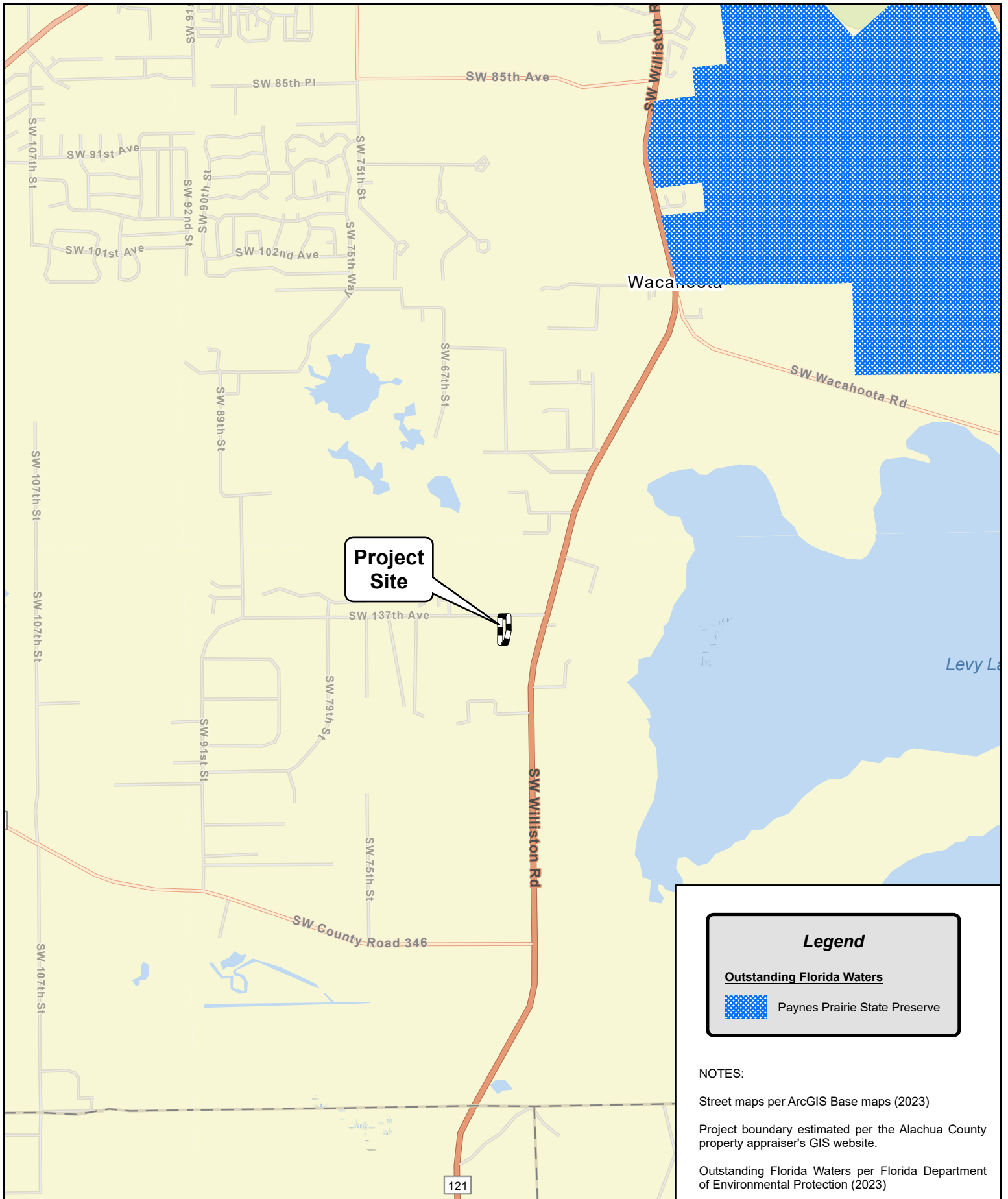
DRAWN BY: D.B.

DRAWING DATE: 12/15/23

REVISED:

EXHIBIT NUMBER: 18

Exhibit 19
Outstanding Florida Waters Map



Project Site

Legend

Outstanding Florida Waters

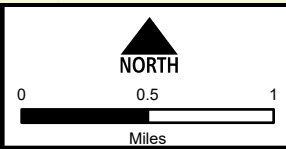
Paynes Prairie State Preserve

NOTES:

Street maps per ArcGIS Base maps (2023)

Project boundary estimated per the Alachua County property appraiser's GIS website.

Outstanding Florida Waters per Florida Department of Environmental Protection (2023)



Outstanding Florida Waters Map

SkyFrog

DRAWN BY:	D.B.
DRAWING DATE:	10/27/23
REVIEWED BY:	A.W.
EXHIBIT NUMBER:	19