FCL Timber, Land & Cattle, LLLP
Special Area Study (SAS) Report

Submitted April 11, 2022
to Alachua County

Patrice Boyes, Esq.
5700 SW 34th Street, Suite 1120
Gainesville, FL 32608
(352) 372-2684 ◆ (352) 379-0385 (fax)

www.Boyeslaw.com
Certified Circuit Court & Appellate Mediator

April 11, 2022

Missy Daniels, Director, Growth Management Dept.
10 SW 2nd Avenue
Gainesville, FL 32601
mdaniels@alachuacounty.us

Via Email or Hand-delivery

Steve Hofstetter, Director, Environmental Protection Dept.
408 West University Avenue, Suite 106
Gainesville, FL 32601
SHofstetter@alachuacounty.us

Re: Special Area Study Report (FCL Timber, Land & Cattle, LLLP)

Dear Ms. Daniels and Mr. Hofstetter:

FCL Timber, Land & Cattle, LLLP ("FCL"), is pleased to submit the following Special Area Study Report for FCL's 4,068-acre tract in unincorporated Alachua County. A review fee deposit in the amount of $3,900.00 accompanies this submission.

On behalf of FCL, the undersigned requests that Staff schedule the matter for the Board of County Commissioners at the earliest possible date in April 2022.

Sincerely,

/s/ PATRICE BOYES, ESQ.

_____
Patrice Boyes, Esq.

Encl: Special Area Study Report w/ Exhibits A-E
cc: Board of County Commissioners (via e-mail)
Michele Lieberman, County Manager (via e-mail)
Corbin Hanson, Sr. Asst. County Attorney (via e-mail)

Table of Contents

April 8, 2022

Special Area Study Report

In a letter dated May 1, 2020, agents for FCL Timber, Land & Cattle LLLP ("Owner" or "FCL") requested permission to initiate a Special Area Study (SAS) for FCL's ±4,068 acres in unincorporated Alachua County as a prelude to adoption of a Special Area Plan (SAP) and to master planning the FCL property. That request was unanimously approved by the County Commission on June 9, 2020.

The Special Area Study ("SAS") was conducted pursuant to Alachua County's Unified Land Development Code ("ULDC") Sections 402.98 (Special Area Planning Process) and 402.100 (Specific Elements). The mandatory pre-application conference with County staff (§402.99, ULDC) was completed. An additional pre-application meeting with multiple staff members from the Growth Management, Environmental Protection, and other departments was held on July 22, 2021. Senior Alachua County staff members from the Growth Management Department and the Environmental Protection Department (EPD) toured the property on August 13, 2021, and EPD returned to the property on August 31, 2021, and again on December 17, 2021 for additional field work.

The Owner through its scientists and planners has completed the SAS scope and provides this report containing a "ground-truthed" resource assessment and an infrastructure and land use analysis, which in turn provide the supporting data and analysis for the SAP to be prepared and considered at a future date. The SAS report is organized to track the Alachua County ULDC provisions (in **bold**) as follows:

§402.101 Special Area Study

(a) Stakeholders Workshop

Agents for the Owner conducted the first Stakeholders Workshop in person on the evening of March 23, 2022 at the facilities of the Frankel Agency at Celebration Pointe and a voluntary second Stakeholders Workshop via Zoom videoconference on March 30, 2022.

Mailed notice for the first Stakeholders Workshop is required to be provided to all property owners within the area defined by the scope of the SAS, which in this case was the ±4,068-acre tract. Additional mailed notice was provided per County requirements for Neighborhood Workshops (Article 5 of Chapter 406) to all addresses within a 1,320-ft. radius of the boundary of Owner's property. A total of 713 notices dated March 8, 2022 were mailed to those addresses within a quarter mile of the property. A Workshop advertisement in a larger public service ad format was published in the Gainesville Sun on March 8, 2022 -- 14 days in advance of the workshop. In addition, the Gainesville Sun published a lengthy front-page story one day prior to the First Stakeholders Workshop and announced the date, time, and place in the article.

More than 60 persons attended the first workshop, which lasted approximately 2 hours; more than 50 persons attended the second virtual workshop, which was held via Zoom. The minutes of the two workshops, a copy of the workshop presentations, and the Gainesville Sun advertisement and news story are attached to this report as **Composite Exhibit A** and incorporated herein. A copy of the presentation was furnished by email or U.S. Mail after the Workshops to more than 40 persons who had requested a copy.

(b) Ground-Truthing of Site

Significant Geologic Features

Mark Culbreth, P.G., Principal Hydrogeologist of Environmental Consulting & Technology (ECT) and an expert in karst geology, hydrogeology, and groundwater quality assessment, scientifically assessed the Owner's property for potentially significant geological resources. (§402.100(b) Specific Elements 1, 3, 4 and 8). Mr. Culbreth oversaw and participated in a site visit and conducted a fracture trace/lineament analysis, in addition to other analysis of data. He established the location coordinates of each significant geologic feature. The full ECT report, signed and sealed by Mr. Culbreth, is attached as **Exhibit B** and incorporated herein.

Attention should be directed to Figure 6 of the ECT report as the yellow points locate the significant geologic features that require protection under the County's ULDC. Those features include a cave, sinkholes, and chimneys that likely connect directly to the Floridan aquifer. The ECT report recommends a minimum 75-foot buffer from these features. The feature known colloquially as the "bat cave" in the northeastern portion of the property is highlighted for additional buffering and is further discussed in the biologists' report *infra*.

The ECT report found that given the shallow depth to limestone photolinear features identified in aerial photographs are not significant, as defined in the County's ULDC, and are unlikely to represent significantly enhanced connectivity to the Floridan aquifer. The recommended buffers for the significant geologic features are depicted in the consultants' reports attached as **Exhibits C** and **D** and incorporated herein, but

represent the combined recommendation of Owner's hydrogeology, biology, and planning consultants.

Ecological Habitat

Approximately 2,278.90 acres of Owner's ±4,068-acre property were identified as a potential Strategic Ecosystem by KBN/Golder (Hickory Sink SE) in a broad survey of prospective public acquisition properties that was commissioned by Alachua County in the late 1980s (updated 1996). The KBN/Golder Report is incorporated herein by reference; an excerpt of the report pertaining to the Hickory Sink Strategic Ecosystem is attached as **Exhibit E** and incorporated herein. The Owner's subject property was not acquired for public conservation ownership by local or state entities, as it did not rank high enough relative to other properties of interest, nor was it recommended by KBN/Golder for such acquisition.

After adopting the KBN/Golder report as an overlay map in the Conservation & Open Space Element of the Comprehensive Plan in the early 2000s, the County adopted Land Development Regulations (LDRs) that required ground-truthing to determine whether and to what extent regulated Strategic Ecosystems existed on a mapped property. Using the map as a starting point, those areas found not to contain strategic ecosystem resources "shall be eligible for consideration for development as part of a development plan or Special Area Plan provided the ecological integrity of the strategic ecosystem as a whole will be sufficiently protected." §402.101(b), ULDC.

In this instance, biologists observed that the property was a significantly disturbed site due to a century of timber harvesting, grazing, and farming with no consistent natural habitat to suggest an integrated ecosystem. Rather, isolated habitats

of interest that require special care were identified in portions of the property. Nonetheless, it is anticipated that intensive conservation management techniques, albeit difficult in this urbanizing location, could lead to a rebound of conservation resources in the proposed set-aside areas of the property – a conclusion that is consistent with the findings of the KBN/Golder Report. It is this potential rebound that suggests the area for Primary Conservation Open Space in the Cardno and CHW reports (**Exhibit C and D**), discussed below.

Ground-truthing revealed potentially significant populations of gopher tortoises. The active gopher tortoises will be relocated, preferably to an on-site recipient site (subject to Florida Fish and Wildlife Service permitting) or offsite or some combination of both.

Ground-truthing determined that the southwestern-most portion of the property – which was <u>not</u> mapped as Strategic Ecosystem – contained the most ecologically intact features, including a seasonal marsh and a remnant of the property's original sandhill community plus land that could, through management, rebound to previous ecological conditions. Comprising approximately one square mile, these features are proposed for protection as Primary Conservation Open Space. [This protection area is in addition to mandatory buffering of significant geologic features identified by ECT on the property].

The County's KBN/Golder Report itself concluded the former bat cave and at least one other known cave supporting aquatic cave species should be protected, and potentially acquired, but did not recommend public conservation acquisition of the entire property, stating:

> "The reasons are its lack of connection to any other conservation area, the poor location for the frequent prescribed burning that its

> management would require, and its size, which, combined with its isolation, is not large enough to support the full spectrum of upland pine habitat species."
>
> KBN/Golder, 1996; p. 4-57, 4-58.

The 25-year-old KBN/Golder Report noted that the property was "bisected by a paved road that is destined to become a busy highway." More than two decades ago, KBN/Golder also found:

> "Another difficulty would be the need for frequent prescribed burning. The metropolitan area of Gainesville has (*sic)* now occurs at the eastern edge of this site, and Parker Road runs through the middle of it. Also, it is not big enough to ever support a viable population of red-cockaded woodpeckers (*Picoides borealis*), even if the longleaf pines 100 years old were eventually established there. It could support many of the other species characteristic of this habitat, but the trend is obviously in the other direction."
>
> KBN/Golder, 1996; p. 4-58

To begin the ground-truthing, the sole proprietor of ERC, Inc. collected field data on the Owner's property during the Summer of 2020. To provide extra personnel to timely complete the Property's ecological assessment, the owners retained Cardno[1], a global environmental consulting firm, which reviewed the material provided to the Owner by ERC, sent scientists and field crews to collect additional field data during the Spring of 2021, and performed a 15% gopher tortoise survey of the property along habitat transects, walking more than 130 linear miles of the property. Cardno then synthesized all available environmental data and analysis into a comprehensive report and Primary Conservation Open Space recommendation; a copy of the Cardno report and recommendation is attached as **Exhibit C** and incorporated herein. Resumes of the Cardno scientists also are included in the report.

[1] Cardno recently was acquired by Stantec.

Cardno noted that the property has been in ranch or pastureland and silviculture since the 1930s, evidence of which Cardno documented in its conclusion that the property's original long-leaf pine habitat is highly disturbed and encroached upon by surrounding urbanization (i.e. residences, schools, sports parks, and other features) to the north, northwest, east and southeast. Current ranching and silviculture efforts are hampered by growing complaints from residential neighbors about controlled burning and by difficulty transporting hay and feed to the farm through the developed areas leading to the property. [The Owner reports that a lightning strike ignited a wildfire on July 27, 2021, which burned 30-40 acres on the west side of Parker Road requiring several hours of forestry firefighters' efforts to contain and extinguish. At this time, controlled burn permits are only issued to the Owner during a limited time of the winter when prevailing winds are in a north-south direction to permit smoke dispersion away from neighboring developed properties.] Those intervals will only shorten with the recent opening of Alachua County Public Schools "K" / Terwilliger Elementary.

Cardno concluded that the property, in an unmanaged state, would quickly complete a transformation to oak thicket.

Other than a small emergent wetland, which was created decades ago by the landowner, outside of the mapped Strategic Ecosystem, Cardno found that no surface water exists at the site to support wildlife populations. (This is consistent with KBN/Golder findings. KGN/Golder, 1996. p. 4-58). The property is not connected to any wildlife corridors, due to offsite urban development. Accordingly, the Owner proposes to create significant wildlife and pedestrian corridors that will interconnect the Property to adjacent green space, plus Primary Conservation Open Space and Non-Conservation

Open Space, as discussed further below. A population of gopher tortoises and presumed commensal species were documented at the site in a 15% gopher tortoise survey, using Florida Fish and Wildlife Service methodology and formulae. Management strategies for the gopher tortoise population will accompany development standards and conservation measures in the SAP. Bahia grass, a sod-forming grass that excludes native grasses, has spread throughout the property and is ubiquitous in all areas.

Detailed data and analysis, findings and resource maps are contained in the Cardno report dated April 8, 2022 (**Exhibit C**).

In partnership with UF-IFAS and in collaboration with County staff, the Owner will formulate land management strategies to address the recommended Primary Conservation Open Space areas, buffering and protection of significant geologic features, gopher tortoises, and active management of habitat for the woodland poppy mallow, a state-listed plant species. It is expected that the Primary Conservation Open Space would be formally designated during the SAP process through the accompanying amendments to the Comprehensive Plan map series and text that would be specific to this property. The required Conservation Management Plans / Open Space Management Plans would be prepared and submitted at the time of development plan review.

The Primary Conservation Open Space area, as recommended by Cardno, consists of the seasonal wetland in the southwest corner of the property, which was not included in the KBN-Golder Strategic Ecosystem report and a remnant longleaf-pine sandhill community. It is believed that the sandhill community represents the best opportunity for potential, albeit voluntary, restoration into longleaf pine habitat, the

original landscape cover found in parts of North Central Florida. ("This area is interesting mainly for its potential for restoration to the former upland pine forest habitat. This could be done, although the wire grass…that was dominant ground cover is gone, as are the longleaf pine…Southern red oak…mockernut hickory…and many other species." KBN/Golder, 1996; p. 4-58).

The majority of the Primary Conservation Open Space area measures approximately one square mile (±840 acres) in the southwestern portion of the Property that lies west of Parker Road. Primary Conservation Open Space also will include ±150 acres recommended by ECT, Cardno, and CHW for the identified significant geologic features east of Parker Road. Approximately ±40 acres are proposed for creation of a pedestrian/bicycle trail west of Parker Road connecting the 840-acre set-aside to various green spaces along a corridor to the north (i.e. Alachua County Public Schools Diamond Sports Park, GRU Groundwater Recharge Park, and set-aside lands in the recently approved Flintrock Agrihood) terminating in the set-aside area likely to be proposed in the Town of Tioga.

Secondary, or Non-Conservation, Open Space protection is proposed for a 300-acre equivalent portion of a 580-acre championship-level golf course and related support amenities that is proposed by the University of Florida for the southeastern portion of the FCL property that lies east of Parker Road.

(c) Public infrastructure and services.

The current Urban Cluster Line ("UCL"), established in the April 8, 2002 update of the Comprehensive Plan, gerrymanders around this property to the northwest, north,

east and southeast, and includes portions of the Hickory Sink Strategic Ecosystem. See Context Map in the CHW slide presentation (**Composite Exhibit A**).

Currently, 20 years after that 2002 update to the Comprehensive Plan, stub-outs for urban utilities and roadways connect to the property from the Haile Plantation Subdivision (SW 47th Boulevard) to the east, the Oakmont Subdivision to the north (2 connections), the Flintrock Agrihood Subdivision to the west (2 connections), and the Lugano Subdivision to the southeast (3 connections). Future utilities and road connections may be expected from the south side of Town of Tioga TND into the property west of Parker Road. See Context Map in the CHW slide presentation (**Composite Exhibit A**). In every engineering and planning sense, all urban utilities are available to this property and readily exist at the property's edge. In addition, longstanding and recently adopted and constructed transportation corridors abut the Property.

The property is bisected by Parker Road, a County major collector road, and is proximate to Archer Road to the south. Several additional public roads abut the property's edges and often parallel the property lines.

Historic and current adopted County transportation plans have shown the future extension of a premium mass transit service from the north through the property, connecting Jonesville Activity Center and Oakmont Subdivision to Haile Plantation and ultimately the UF campus and UF Health complexes and the Veterans Administration Medical Center to the east. Opportunities exist to improve the interconnected public street grid among and between existing subdivisions that surround the subject property, as further discussed in the CHW, Inc. planning report; a copy of which is attached as

Exhibit D and incorporated herein. It is expected that transportation planning will commence in the Special Area Study phase, when transportation data is collected. There are no plans to connect to privately owned roads, and Alachua County regulations and Florida law would not permit truncating existing access rights enjoyed by property owners to the nearest practicable public roadway.

It is expected that development of the Property would simultaneously generate the demand for and density necessary to establish bus rapid transit service in the western portion of the County to move employees to the complex of campuses at UF, UF Health and the VA Hospital, plus downtown employers, the future VA Hospital at 34th Street/Williston Road and the North Florida Regional Medical facility planned at the intersection of Archer Road and Bear Archery Road.

Potable water supplies and wastewater services are available to the property, subject to regulatory approval of the connections. Comprehensive Plan Policies implementing the formerly designated Urban Services Line (USL) constrained the extension of potable water and wastewater beyond the USL.

Cognizant of the potentially deleterious, cumulative impacts of development serviced by private septic tanks and wells in the high aquifer recharge area of western Alachua County, agents for the Owner recommend creation of a new future land use map designation and accompanying text in the comprehensive plan to accommodate the unique opportunities and challenges of such future development of large tracts in close proximity to the UCL, to permit access to utilities extensions and to accommodate other planning issues. In its report, CHW recommends that development standards and density ranges for qualifying property in Alachua County be adopted in the

Comprehensive Plan as further detailed in companion land development regulations. CHW further recommends that the County consider adoption of the new FLUM designation for the FCL Property. (See **Exhibit D**).

The proposed creation of the new FLUM designation will allow a development pattern in Alachua County that is referred to by its working title of “Mixed Use Village” (MUV). Limited to tracts of property exceeding the proposed threshold in proximity to the UCL, this designation has the potential to reduce the impacts of new development on the natural environment while providing a high quality of life for residents in the urbanizing area of the County. The MUV land use category shall guide and establish development of a compact, mixed-use village comprised of interconnected traditional neighborhoods intrinsically linked to adjacent Conservation and Non-Conservation Open Space, managed natural areas, and designated preserve areas consisting of native uplands and wetlands. The MUV land use category shall create a desirable workplace location in Alachua County by shaping a mixed-use, walkable downtown environment in close proximity to a variety of housing options, including workforce housing, civic uses, public and private recreation, and a variety of managed natural areas. Within the MUV land use category, lands shall be designated Primary Urban Service District (USD-P) to permit connection to available public utilities (E.g. potable water and wastewater, electric, natural gas, fiber optic, reclaimed water) and to avoid potential impacts to the groundwater that rural-style development using wells and septic tanks will create in the absence of a holistic Master Planned area.

As it relates to the FCL Property, the tract could be serviced in part by treated, reclaimed water, subject to regulatory approval and intergovernmental cooperation.

Treated, reclaimed water is available from Gainesville Regional Utilities ("GRU") through connections to existing piping in the Haile Plantation Subdivision and may be expected in the future through connections to the Oakmont Subdivision.

The ±75-acre GRU groundwater recharge park, which was approved by the Alachua County Commission in December 2020 for an expected completion in 2024, is expected ultimately to receive a surplus of treated reclaimed water, providing ample opportunity for water reuse, conservation and responsible aquifer recharge at the property. The GRU groundwater recharge park also will function as a public wetlands park with trails for walking and hiking, similar to the Sweetwater Branch wetlands park located off SE Williston Road at Paynes Prairie.

Public schools have completed construction or are planned adjacent to the Property to the north. A planning level review of school capacity by the School Board will occur when student projections may be made based on a proposed plan amendment during the SAP process. If necessary, the School Board will confirm school capacity or make recommendations at that time. School concurrency review will occur at the time of specific development plan review.

The FCL property offers unique possibilities through the MUV-PD master planning and development plan review process to provide additional active public and private recreational facilities in the southwest portion of Alachua County.

Although the property would be served by available solid waste facilities, opportunities exist for a pilot or model community-scale composting project, which could be designed to accept yard trash, and pre- and post-consumer food waste with the

potential of future curbside compost collection. Such a project depends on the willing participation of public and private partners.

To combat the effects on climate change of additional fossil-fuel sourced electricity, there exists an opportunity to provide power to all development at the property through a directed energy, solar micro-grid. The success of that alternative depends on intergovernmental cooperation and possibly regulatory approval of a micro-grid in the service area of an electric cooperative.

(d) Land-use analysis.

The existing Future Land Use classification on the FCL property is Rural/Agricultural, which allows 1 dwelling unit per 5 acres (1du/5ac), generally served by wells and septic tanks. The FCL property currently is used for industrial-scale silviculture and animal grazing, which are permitted uses under this land use classification. Other permitted uses include agritourism, agricultural processing, dairies, event centers, farm equipment repair, wood processing, kennel/cattery/animal shelters, animal sanctuaries, and farmworker housing.

The existing Zoning on the FCL property is Rural/Agricultural. The permitted density is a similar 1 dwelling unit per 5 acres, (1du/5ac) with a mandatory rural clustered subdivision. Under a “by-right” development scenario, the property would be allowed 813 residential lots with at least 813 wells and at least 813 septic tanks. Minimal infrastructure is required (E.g. internal roads and limited sidewalks).

FCL’s principal existing land uses are silviculture and cow-calf ranching, with associated farm support structures, livestock fencing and paddocks, kennels, and caretaking residences.

The Cardno and CHW reports, read together, propose the most appropriate locations for Primary and Secondary Conservation Open Space protection and upland development.

Generally speaking, CHW recommends retention of agricultural land use and zoning designations across the property where Primary Conservation Open Space and Secondary Open Space are located. No development activities shall occur within those areas and those areas will serve as the situs for ecological rebound efforts.

FCL's consultants concur with the recommended buffering as proposed by Cardno and ECT for identified significant geologic features on the property.

As discussed in its report, CHW has ascertained that potential community infrastructure such as a yard trash recycling/compost facility would be most appropriately located west of Parker Road proximate to the potential photovoltaic facilities. Community services such as a future school site, police and fire/EMS stations would be most appropriately located east of Parker Road, north of the proposed UF golf course.

CHW analyzed potential by-right land use scenarios for this property. As stated, the FCL property as currently zoned and classified could be built out by right at agricultural densities of 1 unit per 5 acres, all on wells and septic tanks. Likely, given the past development patterns in Alachua County, the land would be consumed over time in multiple 10- to 20-acre+ tracts, none of which alone could aggregate the capital necessary to construct public infrastructure or facilities on the scale contemplated by the more appropriate master-planning of this 4,068-acre property.

Such a rural development pattern would squander the efficiencies available to an urban level of density. Urban development patterns coupled with the proposed new FLUM category also would protect the environmental welfare by allowing connection to public utilities that are available abutting and paralleling several of the Property's boundaries. On balance, master planning the entire Property would support the economic feasibility of preserving a large area of Primary and Secondary Conservation Open Space (~2 square miles) and of providing the internal transportation network necessary to link this property with surrounding existing and future development, while allowing sustainable development of the Owner's remaining property.

From a master planning perspective, the subject property presents a unique opportunity to employ innovative planning principles and techniques envisioned by the Comprehensive Plan on a community scale, immediately adjacent to the ever-expanding urban core of Gainesville. Many of these proposals are not possible without relief from the UCL policies that were designed to curb dynamic fluctuations in the UCL caused by smaller-parcel piecemeal expansion.

The UCL has been static since the 2002 update to the comprehensive plan -- no land has been added. FCL proposes the new land use category to create an alternative methodology for sustainable development of large tracts under common ownership that are proximate to the existing urban areas of Gainesville. An important rationale for this large-scale analysis is that the public benefits of master planning such a parent parcel greatly exceed the costs to the public of piecemeal urban or rural development of smaller parent parcels.

FCL has committed to the contribution of ±50 acres of land to Alachua County or its designee, within the overall Property, for the provision of workforce housing (targeting 50% to 80% AMI), to workers in the schools, first responders, and others expected to be employed in or close to the FCL property as it develops. One potential scenario envisions the development of four (4) 12.5-acre phases all connected to a master Stormwater Management Facility. Such a configuration would suit the needs of a Community Land Trust model of workforce housing development.

The CHW report contains a map identifying the areas proposed for conservation set-aside and other areas that may be considered for future development (**Exhibit D**).

The context map in the CHW report represents the input of FCL's scientists and consultants and achieves a balance of protection of natural resources and their management with FCL's ownership interests and the protection of private property rights that is required by the Comprehensive Plan and the ULDC requirements for this Special Area Study.

(e) Recommendations and strategies.

The CHW report dated April 8, 2022 (**Exhibit D**), contains the collective recommendations and strategies synthesized by FCL's consultants to implement the findings of the SAS in the context of anticipated master planning and future development of the FCL property. Specifically, it is recommended that the following steps be taken next:

1. Create a new future land use category (MUV) and implementing zoning classification (MUV-PD) with specific qualifying criteria limited to large tracts proximate to the urbanizing core of Gainesville;

2. Undertake a Special Area Plan (SAP) for the FCL Property to permit master planning and coordination of the public infrastructure, Primary and Secondary Conservation Open Space areas, community facilities, and planned recreational uses with the residential and non-residential development of the tract;

3. Prepare a Comprehensive Plan Amendment (MUV) application for the FCL property, except on lands to be denoted for photovoltaic fields;

4. Prepare a MUV-PD zoning application for the FCL property, except on lands to be denoted for photovoltaic fields;

5. Prepare site-specific development standards to be included in the FCL Comprehensive Plan Amendment(s) and Zoning applications;

6. Prepare any necessary text amendment(s) to the ULDC to implement the land use and zoning, if adopted for the FCL property;

7. Identify potential capital improvements in the SAP and accompanying plan amendment and zoning applications; and

8. Commence preparation of conservation management plans for the Primary and Secondary Conservation Open Spaces, employing the expertise available through public-private partnerships where possible.

CONCLUSION

In conclusion, FCL Timber, Land & Cattle, LLLP respectfully requests that the County Commission accept this Special Area Study Report and direct staff and the Owner to implement the recommendations and strategies incorporated above and in the CHW Report (Exhibit D).

COMPOSITE EXHIBIT A

STAKEHOLDERS WORKSHOP NOTIFICATION

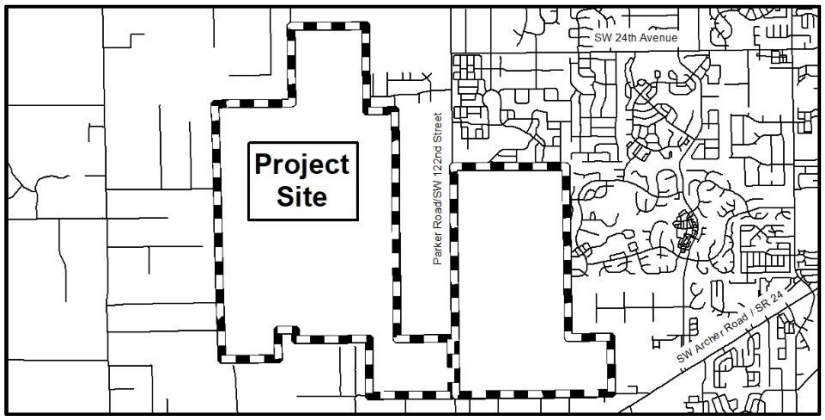
19-0010

To:	Neighbors of Parker Road Area
From:	Gerry Dedenbach, AICP, Vice President
Date:	March 8, 2022
RE:	Stakeholders Workshop Public Notice

A Stakeholders Workshop will be held to discuss a Special Area Study conducted on ±4,067.3 acres (Alachua County Tax Parcels 4411, 4419, 4432, 4434, 4435, 4479, 4481, 4488, 4491, 4492, 4492-1, 4492-1-1,4492-2, 4493, 4493-1, 4493-2, 4493-1-1, 4495, 4495-1, 4496-1, 7074, 7074-1, 7074-2, 7074-3, 4501, and 4498).

The site's Future Land Use category is Rural/Agricultural; the Zoning is Agricultural (A). The parcel is located on Parker Road, largely between SW Archer Road and SW 24th Avenue.

Date:	March 23, 2022
Time:	6:00 p.m.
Location:	5001 Celebration Pointe Ave, Suite 520, Gainesville, FL, 32608
Contact:	Gerry Dedenbach, AICP Mail: 11801 Research Drive, Alachua, FL, 32615 Phone: (352) 331-1976 Email: Live@CHW-inc.com



This is not a public hearing. The purpose is to inform the public about the intent to develop a Special Area Plan for the area (§402.101(a) ULDC) and seek their participation. Once submitted, the Special Area Study Report and Plan may be requested from Alachua County Growth Management staff.

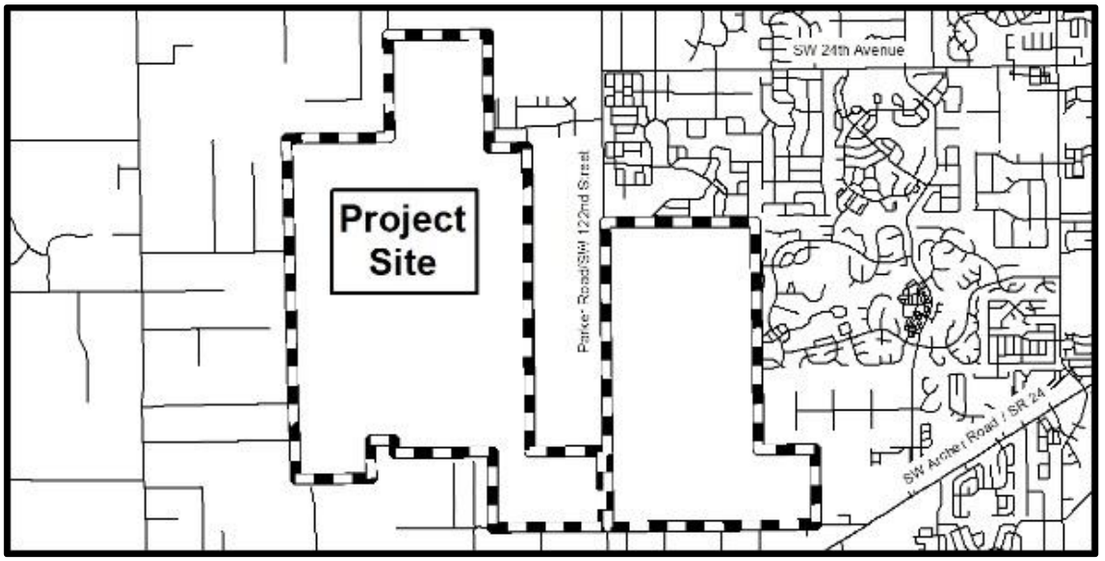
If you are unable to attend the meeting, please contact CHW using the information above, and we will provide printed or virtual copies of all materials discussed at the meeting after the workshop is held upon request. Comments may also be submitted in writing to the email or mailing address above or by phone at the phone number above.

t: (904) 619-6521 | 8465 Merchants Way, Suite 102, Jacksonville, FL 32222
t: (352) 331-1976 | 11801 Research Drive, Alachua, FL 32615
t: (352) 414-4621 | 2100 SE 17th Street, Unit 802, Ocala, FL 34471
www.chw-inc.com

PUBLIC NOTICE

A Stakeholders Workshop will be held to discuss a Special Area Study conducted on ±4,067.3 acres (Alachua County Tax Parcels 4411, 4419, 4432, 4434, 4435, 4479, 4481, 4488, 4491, 4492, 4492-1, 4492-1-1,4492-2, 4493, 4493-1, 4493-2, 4493-1-1, 4495, 4495-1, 4496-1, 7074, 7074-1, 7074-2, 7074-3, 4501, and 4498).

The site's Future Land Use category is Rural/Agricultural; the Zoning is Agricultural (A). The parcel is located on Parker Road, largely between SW Archer Road and SW 24th Avenue.



This is not a public hearing. The purpose is to inform the public about the intent to develop a Special Area Plan for the area (§402.101(a) ULDC) and seek their participation. Once submitted, the Special Area Study Report and Plan may be requested from Alachua County Growth Management staff.

Time: 6:00 p.m., March 23, 2022
Location: 5001 Celebration Pointe Ave, Suite 520, Gainesville, FL, 32608

Contact: Gerry Dedenbach, AICP
Mailing Address: 11801 Research Drive, Alachua, FL, 32615
Phone: (352) 331-1976
Email: Live@CHW-inc.com

FLORIDA LOTTERY RESULTS: VISIT FLALOTTERY.COM OR CALL 850-921-7529.

Florida Lottery

Results are for tickets sold only in Florida

FLORIDA LOTTO

SATURDAY, MARCH 5 ..... **9-12-13-19-21-31**

DOUBLE PLAY

SATURDAY, MARCH 5 ..... **4-8-33-39-41-53**
To see payouts on games above, visit flalottery.com.

POWERBALL

SATURDAY, MARCH 5 ..... **8-23-37-52-63 PB: 13 (x2)**
5+PB: $85 million (0). Next jackpot $90M.
5 of 5: $1 million (1). 4+PB: $50,000 (2).
4 of 5: $100 (21). 3+PB: $100 (56).
3 of 5: $7 (1,371). 2+PB: $7 (1,269).
1+PB: $4 (10,320). PB: $4 (24,639).

MEGA MILLIONS

FRIDAY, MARCH 4 ..... **11-19-28-46-47 MB: 5 (x4)**
5+MB: $113 million (0). Next jackpot $126M.
5 of 5: $1 million (0). 4+MB: $10,000 (2).
4 of 5: $500 (28). 3+MB: $200 (47).
3 of 5: $10 (1,394). 2+MB: $10 (1,255).
1 +MB: $4 (9,140). MB: $2 (20,408).

JACKPOT TRIPLE PLAY

FRIDAY, MARCH 4 ..... **1-15-16-32-36-46**
6 of 6: $275,000 (0). 5 of 6: $493 (18).
4 of 6: $22.50 (961). 3 of 6: $1 (16,368).
Combo10+: $10,000 (0). Combo9: $500 (6).
Combo8: $50 (54). Combo7: $20 (425).
Combo6: $10 (2,240) Combo5: $5 (8,342).
Combo4: Free ticket (22,354).

FANTASY 5

SUNDAY, MARCH 6 ..... **6-9-13-24-34**
5 of 5: $56,673.27 (3). 4 of 5: $115.50 (237).
3 of 5: $10 (480). 2 of 5: Free ticket (73,333).

PICK 2, 3, 4, 5

SUNDAY, MARCH 6, MIDDAY
3-0 ..... 7-1-7 ..... 3-5-1-4 ..... 5-1-7-7-3 Fireball: 4

SUNDAY, MARCH 6, EVENING
7-1 ..... 3-8-5 ..... 9-7-8-9 ..... 1-0-3-3-2 Fireball: 8

CASH4LIFE

SUNDAY, MARCH 6 ..... **8-13-39-55-59 CB: 3**
No winners of $1,000 a day or week for life.
4 of 5+CB: $2,500 (0). 4 of 5: $500 (3).
3 of 5+CB: $100 (60). 3 of 5: $25 (144).
2 of 5+CB: $10 (1,029). 2 of 5: $4 (2,884).
1 of 5+CB: Free ticket (7,523).

TODAY IN HISTORY

Today is Tuesday, March 8, the 67th day of 2022. There are 298 days left in the year. On this date in:

1618: German astronomer Johannes Kepler devised his third law of planetary motion.

1817: The New York Stock & Exchange Board, which had its beginnings in 1792, was formally organized; it later became known as the New York Stock Exchange.

1948: The Supreme Court, in McCollum v. Board of Education, struck down voluntary religious education classes in Champaign, Illinois, public schools, saying the program violated separation of church and state.

1965: The United States landed its first combat troops in South Vietnam as 3,500 Marines arrived to defend the U.S. air base at Da Nang.

1971: Joe Frazier defeated Muhammad Ali by decision in what was billed as "The Fight of the Century" at Madison Square Garden in New York. Silent film comedian Harold Lloyd died in Beverly Hills, California, at age 77.

1983: In a speech to the National Association of Evangelicals convention in Orlando, Florida, President Ronald Reagan referred to the Soviet Union as an "evil empire."

1988: Seventeen soldiers were killed when two Army helicopters from Fort Campbell, Kentucky, collided in mid-flight.

1999: Baseball Hall of Famer Joe DiMaggio died in Hollywood, Florida, at age 84.

2000: President Bill Clinton submitted to Congress legislation to establish permanent normal trade relations with China. (The U.S. and China signed a trade pact in November 2000.)

2004: Iraq's Governing Council signed a landmark interim constitution.

BIRTHDAYS

Jazz saxophonist **George Coleman** is 87. Actor **Sue Ane Langdon** is 86. Songwriter **Carole Bayer Sager** is 78. Actor-director **Micky Dolenz** of The Monkees is 77. Bassist **Randy Meisner** (The Eagles, Poco) is 76. Singer **Peggy March** is 74.

Jazz pianist **Billy Childs** is 65. Singer **Gary Numan** is 64. NBC News anchor **Lester Holt** is 63. Actor **Aidan Quinn** is 63. Guitarist **Jimmy Dormire** (Confederate Railroad) is 62. Actor **Camryn Manheim** ("The Practice") is 61. Actor Leon ("Cool Runnings") is 61. Singer **Shawn Mullins** is 54. Actor **Andrea Parker** ("Less Than Perfect") is 52. Actor **Boris Kodjoe** ("Code Black," "Madea's Family Reunion") is 49. Actor **Freddie Prinze Jr.** is 46. Actor **Laura Main** ("Call the Midwife") is 45.

House budget chair Jay Trumbull, R-Panama City, and Senate counterpart, Sen. Kelli Stargel, R-Lakeland, negotiate the state budget. FILE

Budget plan includes restarting Florida State Guard as deadline loom

Jim Turner
News Service of Florida

TALLAHASSEE — With legislative leaders trying to meet a Tuesday deadline for finishing a new state budget, Gov. Ron DeSantis will get more money than he requested for a reactivated Florida State Guard and to relocate undocumented immigrants out of the state.

Budget chiefs also agreed Sunday night to provide money for DeSantis' effort to attract law-enforcement officers from other states, while numerous other issues remained unresolved.

Senate Appropriations Chairwoman Kelli Stargel, R-Lakeland, and House Appropriations Chairman Jay Trumbull, R-Panama City, said they expected talks to resume Monday morning.

With a legally required 72-hour "cooling off" period before the House and Senate can vote on the budget, leaders must finish a spending plan Tuesday to end the annual legislative session as scheduled Friday. The budget likely will top $100 billion and will take effect July 1, the start of the state's fiscal year.

Trumbull acknowledged his attention has at times been diverted to wildfires that raged throughout the weekend in Bay County, his home county.

"It's incredible to be able to watch what fire-rescue is doing and what state resources there are making sure that people are safe," Trumbull said Saturday, noting he traveled to Bay County that morning.

Trumbull added that lawmakers could add more money for dealing with wildfires with conditions for the blazes growing statewide.

"I don't think it's specific to Northwest Florida," Trumbull said. "I think from looking at the agriculture silo (of the budget) as a whole, maybe looking for opportunities to put more resources there."

The House and Senate leaders Sunday night fixed at $10 million an amount to re-establish the Florida State Guard, which was a defense force set up during World War II to replace Florida National Guard members who were deployed abroad.

DeSantis requested $5.4 million to train and equip a 200-member force that would be used to assist the Florida National Guard during emergencies.

Trumbull said the budget line "gets us about 400 people."

Also, the Department of Transportation is expected to receive a one-time payment of $12 million to set up a program for the "transport of unauthorized aliens from this state."

The budget would allow the department to contract with a private provider or reach an agreement with a federal agency to undertake the relocation work, while maintaining that any of the work would remain consistent with federal law.

DeSantis requested $8 million and has made that part of his campaign speeches, drawing cheers when saying undocumented immigrants would be rerouted to President Joe Biden's home state of Delaware.

The Senate also agreed to spend $20 million that the House had approved as part of bill (HB 3) that includes establishing a program to provide one-time payments of up to $5,000 to newly employed law-enforcement officers.

The bill also would set up a Florida Law Enforcement Academy Scholarship Program to cover basic-training tuition and fees for new officers and reward officers who adopt children.

DeSantis, who is running for re-election this year, has made beefing up law enforcement a hallmark of his policies through such things as the proposed bonuses.

The Senate also dropped a push to provide a more-permanent allocation of $50 million a year for the Visit Florida tourism-marketing agency.

The two sides had agreed early in the talks to spend $50 million in the coming year on Visit Florida, the same amount as this year. But the Senate wanted to make that amount "recurring," which would have more firmly established it as an annual amount. House leaders had concerns about some past spending by the agency and preferred to handle the issue on a year-by-year basis.

"One of the best ways we, as the appropriators, have to remedy bad behaviors is to put non-recurring on it," Trumbull said Saturday. "They have done a good job as of late of making good decisions, using the state's resources."

The Senate this week will take up a House proposal to extend Visit Florida's legal authorization to operate until Oct. 1, 2028. Under current law, Visit Florida would be repealed Oct. 1, 2023, without an extension, and the Senate had sought to move the date to Oct. 1, 2031.

The Gainesville Sun

Customer service
To view important information online related to your subscription, visit **aboutyoursubscription.gainesville.com.** Contact the The Gainesville Sun for questions or to report issues at 800-443-9493.
Operating hours are:
Monday-Friday: 7:00 a.m.-4:00 p.m.
Saturday, Sunday & holidays: 7:00 a.m.-11:00 a.m.

Full access subscriptions
Subscribe and save today by visiting **gainesville.com.**

Subscriptions below include unlimited access to **gainesville.com**, mobile apps and the e-Edition, a digital replica of the print edition. Additional subscription information can be found at **aboutyoursubscription.gainesville.com.**

Delivery of Sunday through Saturday print editions $90.00/month.*
Delivery of Sunday print edition up to $65.00/month.*
**Plus applicable taxes*

Florida law requires we inform you transportation costs are included in monthly subscription. The transportation fee can be avoided if you choose to pickup your newspaper at one of our distribution centers. To arrange for pickup, please call customer service at 800-443-9493.

Corrections and clarifications
Our goal is to promptly correct errors. Email us at **news_desk@gville.com** to report a mistake or call **352-374-5035.** Describe the error, where you saw it, the date, page number, or the URL.

Contact us
Customer Service 800-443-9493
Newsroom 352-374-5013
Advertising 855-263-7654
Obituaries 352-378-1411

Postal information
The Gainesville Sun, ISSN#0163-4925, is published daily at 2700 SW 13th St., Gainesville, FL 32608. Periodicals postage paid at Gainesville, FL 32608.
Postmaster: Send address changes to The Gainesville Sun, 2700 SW 13th St., Gainesville, FL 32608.

The Gainesville Sun
FLORIDA PUBLIC NOTICE VERIFIED
Approved Auditor info or periodicals permit (if applicable) as required for public notices per section 50.011(1)(e), F.S.
Alliance for Audited Media
4513 Lincoln Ave, Suite 105B, Lisle, IL 60532
Phone: 800-285-2220
Website: www.auditedmedia.com

STAKEHOLDERS WORKSHOP MINUTES

FCL Timber, Land & Cattle, LLLP Special Area Study

19-0010

Professional Consultants

Event:	Stakeholder Workshop Number 1
Date/Time:	March 23, 2022 @ 6:00 PM
Place:	5001 Celebration Pointe Ave, Suite 520, Gainesville, FL, 32608
Re:	FCL Timber, Land & Cattle, LLLP – Special Area Study Stakeholders Workshop

Patrice Boyes, P.A. Attendees:	Patrice Boyes, Esq.
CHW Attendees:	Gerry Dedenbach, AICP; Ryan Thompson, AICP; Braxton Linton, III; Seth Wood
Public Attendees:	70

CHW hosted and facilitated a Stakeholders Workshop with a presentation containing the following information: the workshop's purpose; maps illustrating the site's regulatory and physical characteristics; an explanation of the Special Area Study (SAS) and Special Area Plan (SAP) process; and findings of onsite environmental assessment. Questions and comments from the public attendees are listed below, with agent responses. Please note, these minutes are not meant to act as a verbatim transcript of the Stakeholders Workshop.

GOLF COURSE

Question: Is there a residential component of the golf course planned?
Response: There is not a residential component of the golf course planned.

Question: What is happening with the old UF golf course? Was a land swap involved?
Response: There are no current plans for the existing golf course. A land swap was not involved.

Question: Will this golf course be on the tax rolls?
Response: This land is being given to the State / UF as a gift. We would it will become tax-exempt property.

Question: Will there be a hotel included as part of the golf course?
Response: We've had no discussion about a hotel. There may be some supportive uses, such as limited number of cottages for teams, coaches, and support staff during limited stays, such as during a tournament.

TRAFFIC

Question: What is the timeline for roadway connectivity?
Response: A development timeline is not known at this time. This will be determined during the SAP process.

Question: Are there plans to pave SW 73rd Avenue?
Response: This is not known at this time. This will be investigated during the Traffic Impact Analysis, which will be conducted during the future Special Area Plan.

Question: Will new roadways in this development connect to the roadways in the Town of Metcalf?
Response: No, we're informed Town of Metcalf roads are private. Connecting to private roads is not planned.

Question: Will there be connectivity to Haile Boulevard?
Response: Yes, Alachua County requires roadway interconnectivity for development with public roadways.

Question: Will Parker Road be widened as part of this development? Traffic on Parker Road has doubled in recent years because of Oakmont.
Response: A Traffic Impact Analysis will be conducted as part of the Special Area Plan. The results of this analysis will determine whether road widening or other modification are warranted.

Comment: The intersection of Parker Road and SW 24th Avenue is dangerous. There have been multiple crashes, some of which have included fatalities. A traffic signal is necessary.

t: (904) 619-6521 | 8465 Merchants Way, Suite 102, Jacksonville, FL 32222
t: (352) 331-1976 | 11801 Research Drive, Alachua, FL 32615
t: (352) 414-4621 | 101 NE 1st Avenue, Ocala, FL 34470
www.chw-inc.com

Response: A Traffic Impact Analysis will be conducted as part of the Special Area Plan. The results of this study will indicate whether a traffic signal is warranted.

Comment: Haile is a golf cart community. We hope that golf carts will be usable with the interconnectivity.
Response: Thank you for your great comment.

UTILITIES

Question: I am on well water. How will a golf course impact water flow and water quality?
Response: Modern golf course management is focused on water conservation and environmental quality. The future golf course will use Gainesville Regional Utilities (GRU) reclaimed water, similar to the Haile Plantation Golf Course, common areas in surrounding neighborhoods, and the new GRU Groundwater Recharge Wetlands Park. Golf course design will focus on minimizing the need for irrigation, fertilizer, and pesticides.

Question: Will Parker Place be expected to connect to central water and sewer? Will Parker Place get sidewalks if there are roadway connections?
Response: The SAS and SAP will not cause Parker Place to have to connect to central utilities. We will look at alternatives for non-motorized, or bicycle/pedestrian connections to the trail system proposed in the SAS.

Question: A GRU gas line, approximately 6-8" in diameter, is being installed on Parker Road, connecting to Flint Rock. Will this development also be served by natural gas?
Response: We were not aware of the new gas main. Since no development concepts have been planned for the study area at this time, we have not made any decisions on natural gas.

Question: Solar is a by-right use in agricultural land in the State of Florida. Is solar planned on the property?
Response: There are no development plans associated with the Special Area Study. Because this land is within the Hickory Sink Strategic Ecosystem, a SAS and SAP would still be needed as part of any planning process, despite the State preemption allowing solar energy collection facilities by right in agricultural land.

ENTITLEMENTS

Question: Will you be amending the Alachua County Comprehensive Plan as part of this project?
Response: Yes, amending the Comprehensive Plan with site-specific policies will be considered in the SAP.

Question: Would the policies created with the SAP be nullified if the property ownership were to change? I hear the current owners love the land, but what if someone else bought it, could they do what they want?
Response: No, policies established by the SAS and/or SAP will run with the land. If a new property owner desired to change the policies of the SAP, they would need to go through a similar SAS/SAP process again and have to conduct a full public process with Alachua County and the Board of County Commissioners.

Question: What areas of the property are maintaining Agricultural zoning? Will the golf course still be agricultural?
Response: It is not known at this time how the study area will ultimately be zoned. Golf courses are a permitted use in the Agricultural zoning district.

ENVIRONMENT & CULTURE

Question: What is the anticipated path, size, and use of the greenway corridor west of Parker Place? And what will be west of this corridor?
Response: This greenway corridor will generally follow the study area property line. It will be approximately 175-200 feet wide. The use within may include a 10-foot multi-use trail for walking, jogging, bicycling, and non-motorized uses. It is not known at this time what may be west of this corridor.

Question: What is the water table gradient for this area?
Response: This is detailed in the Environmental Resource Assessment that will be submitted as part of the application. Generally, groundwater flows west-northwest.

Comment: Please note that there is a family of black bobcats in this area.
Response: Thank you for your comment. We will look into this.

Question: Will indigenous stakeholders be engaged in this process?

Response: Yes, yet the Special Area Study is specifically focused on the ecological aspects of the study area. Cultural characteristics such as this will be addressed during the Special Area Planning process. Investigating any historical or culturally-significant components of a property is a requirement component of Comprehensive Plan Amendment and rezoning applications. If it is determined the study area is of cultural significance to indigenous stakeholder groups, they will be engaged during those processes.

Comment: There was a battle of the Second Seminole War that occurred near this land.
Response: Thank you for your comment. We will look into this.

POTENTIAL DEVELOPMENT

Question: What are the plans for the area near the area labeled "Range Land" (*southeast corner of western study area)*?
Response: There are no conceptual plans for the site at this time. The Special Area Plan will determine where and how development may occur over the course of time.

Question: What are partnerships in this process?
Response: One partner is with the University of Florida, and the Institute of Food and Agricultural Sciences (IFAS). IFAS is assisting with the future natural resources management plans for set-aside areas.

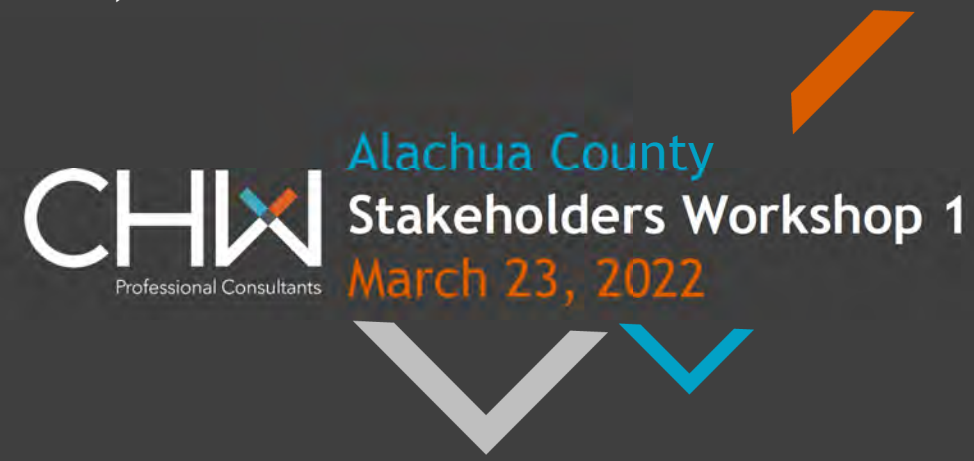
Comment: Please be aware of the airport to the west of the study area. The County is obligated to protect the airport from complaints on matters including noise and accidents.
Response: Thank you for your comment. The Special Area Plan will address how to best proceed regarding protection Flying Ten airport. The safety and operation of the airport will be considered and you will be engaged during our continue planning process.

Question: When will the planned number of dwelling units be known?
Response: Since we have not put pencil to pater, it will be some time in the future. Land use classifications and potential zoning categories and policies will be determined as part of the Special Area Plan process.

The meeting concluded at approximately 7:30 pm.

FCL Timber, Land & Cattle, LLLP

Special Area Study (SAS) Report



The Stakeholders Workshop purpose:

Alachua County requires landowners who undertake a Special Area Study to host a Stakeholders Workshop;

All property owners within the area defined by the scope of the FCL Timber, Land & Cattle, LLLP Special Area Study, as well as other registered stakeholders, shall be notified in writing of the intent to develop a plan for the area, and *shall be encouraged to participate in the process*; and

This workshop provides the landowner with an opportunity to engage the public prior to the Special Area Study Report's preparation and submission.

Public Notification

STAKEHOLDERS WORKSHOP NOTIFICATION

19-0010

To: Neighbors of Parker Road Area
From: Gerry Dedenbach, AICP, Vice President
Date: March 8, 2022
RE: Stakeholders Workshop Public Notice

A Stakeholders Workshop will be held to discuss a Special Area Study conducted on ±4 (Alachua County Tax Parcels 4411, 4419, 4432, 4434, 4435, 4479, 4481, 4488, 4491, 4 4492-1-1,4492-2, 4493, 4493-1, 4493-2, 4493-1-1, 4495, 4495-1, 4496-1, 7074, 7074-1 7074-3, 4501, and 4498).

The site's Future Land Use category is Rural/Agricultural; the Zoning is Agricultural (A). T located on Parker Road, largely between SW Archer Road and SW 24th Avenue.

Date: March 23, 2022
Time: 6:00 p.m.
Location: 5001 Celebration Pointe Ave, Suite 520, Gainesville, FL, 32608
Contact: Gerry Dedenbach, AICP
Mail: 11801 Research Drive, Alachua, FL 32615
Phone: (352) 331-1976
Email: Live@CHW-inc.com

This is not a public hearing. The purpose is to inform the public about the intent to develop a S Area Plan for the area (§402.101(a) ULDC) and seek their participation. Once submitted, the S Area Study Report and Plan may be requested from Alachua County Growth Management sta

If you are unable to attend the meeting, please contact CHW using the information above, and provide printed or virtual copies of all materials discussed at the meeting after the workshop is upon request. Comments may also be submitted in writing to the email or mailing address abo by phone at the phone number above.

www.chw-inc.com

Page : A02

Hocke driving force behind UF football's brand-new culture

SPORTS, 1B

The Gainesvil[le Sun]

USA TODAY NETWORK

TUESDAY, MARCH 22, 2022 | GAINESVILLE.COM

Jackson set to face t[ough]

Supreme Court nominee Judge Ketanji Brown Jackson arrives for her confirmation hearing before the Senate Judiciary Committee on Monday.

High school golfers get ready to tee off in the Alachua County boys golf championship Course in Gainesville on Oct. 21.

UF golf course part of Parker Road plans

West Gainesville development includes land for university

John Henderson
Gainesville Sun
USA TODAY NETWORK

A landowner who is in the early stages of development plans for more than 4,000 acres in west Gainesville has set aside property for a new University of Florida golf course.

UF spokesman Steve Orlando confirmed the plans Monday in an email.

"The University of Florida Foundation has received a generous private offer of land in western Alachua County, and we are exploring the potential of this land as a championship-caliber golf course," Orlando wrote.

The donated land is within the acreage the "Lee family" owns along Parker Road (Southwest 122nd Street) between Southwest Archer Road and Southwest 24th Avenue, said Ryan Frankel, a marketing official for the family.

Frankel could not say exactly where the course would be located within the 4,063 acres. A golf course typically covers about 200 acres.

"Everything is very preliminary right now, so I don't believe it's been quite decided yet," he said.

Landowners FCL Timberland & Cattle are engaged in a "special area study," which is required by the county to analyze existing conditions, infrastructure and natural resources on their property, Frankel said in an email.

Marian S. Lee is the registered agent for FCL Timberland & Cattle.

"Since then, the owners' scientists

See GOLF COURSE, Page 7A

A man looks out the window of his partially destroyed home after the shelling by Russian warships on the outskirts of Odessa Monday.

See MARIUPOL, Page 11A

GAINESVILLE.COM | TUESDAY, MARCH 22, 2022 | 7A

Golf course

Continued from Page 1A

Special Study Area in southwest Alachua County

CHW Consultants is developing a plan for 26 parcels in southwest Alachua County, totaling more than 4,000 acres, that could include a new golf course for the University of Florida. The land, termed a Special Study Area, is currently in agricultural use but adjacent to large residential developments including Haile Plantation to the east, and the Town of Tioga and Oakmont to the north.

A second Stakeholders Workshop will be held in one week, online via Zoom, to provide additional public input opportunities.

PUBLIC NOTICE

Workshop will be held to discuss a Special Area Study conducted es (Alachua County Tax Parcels 4411, 4419, 4432, 4434, 4435, 88, 4491, 4492, 4492-1, 4492-1-1,4492-2, 4493, 4493-1, 4493-2, 4495-1, 4496-1, 7074, 7074-1, 7074-2, 7074-3, 4501, and 4498).

ture Land Use category is Rural/Agricultural; the Zoning is The parcel is located on Parker Road, largely between SW Archer 24th Avenue.

ublic hearing. The purpose is to inform the public about the intent to ecial Area Plan for the area (§402.101(a) ULDC) and seek their Once submitted, the Special Area Study Report and Plan may be n Alachua County Growth Management staff.

m., March 23, 2022
1 Celebration Pointe Ave, Suite 520, Gainesville, FL, 32608

y Dedenbach, AICP
Mailing Address: 11801 Research Drive, Alachua, FL, 32615
Phone: (352) 331-1976
Email: Live@CHW-inc.com

The format of the Stakeholders Workshop:

- **General Presentation (±10 minutes)**
  - Team Introduction; and
  - SAS Process & Data/Analysis
- **Participants' Questions (±30 minutes)**
- **Closing Comments (5-10 minutes)**

LANDOWNERS CARE GREATLY FOR THE LAND AND LONG-TERM OUTCOME

LAND USE OPTIONS	Continued Agriculture Use Has become difficult to maintain as County grows	By-Right Scenario Existing Comprehensive Plan & Land Development Code	Collaborative Planning Scenario Special Area Study Special Area Plan
USES	Industrial-scale Silviculture Animal grazing	Rural Residential 4,068ac ÷ 1du/5ac = 813 lots	**Site Specific Policies** Land Management/Restoration **Housing** Policies on equitable market/workforce homes **Energy** Options for solar, micro grid, directed concept **Community Facilities** Police/Fire/EMS, schools, rec. **Partnerships** UF, IFAS, ACT, Other interested parties...
DENSITY / INTENSITY	Agriculture, Agritourism, Ag Processing, Dairy, Event Centers, Produce Stand, Farm Machinery/Lawn/Garden Equipment Repair, Wood Processing, Kennel/Cattery/Animal Shelter, Animal Sanctuary, Farmworker Housing	Cluster Subdivision process Preliminary Development Plan / Final Development Plan	To be determined through County Land Use and Zoning Process
WATER USAGE	Both Residential & mass-consumption on-site	At least 813 wells	Option for centralized water system
SEPTIC USAGE	A few exist today	At least 813 septic tanks	Option for centralized sewer system
COMMUNITY ASSETS	No infrastructure	Minimal infrastructure [roads, limited sidewalks]	Multi-modal network [drive, bike, walk, carts]

SAS DATA & ANALYSIS:

- Existing Conditions

Aerial Map

The 6-square-mile study area consists of 14 parcels west of and 12 east of Parker Road, which have had agricultural & silvicultural activity occurring for the past 100 years.

FCL Timber, Land & Cattle, LLLP maintains the land, its cattle and silviculture operations, and some partners reside on the property.

CHW

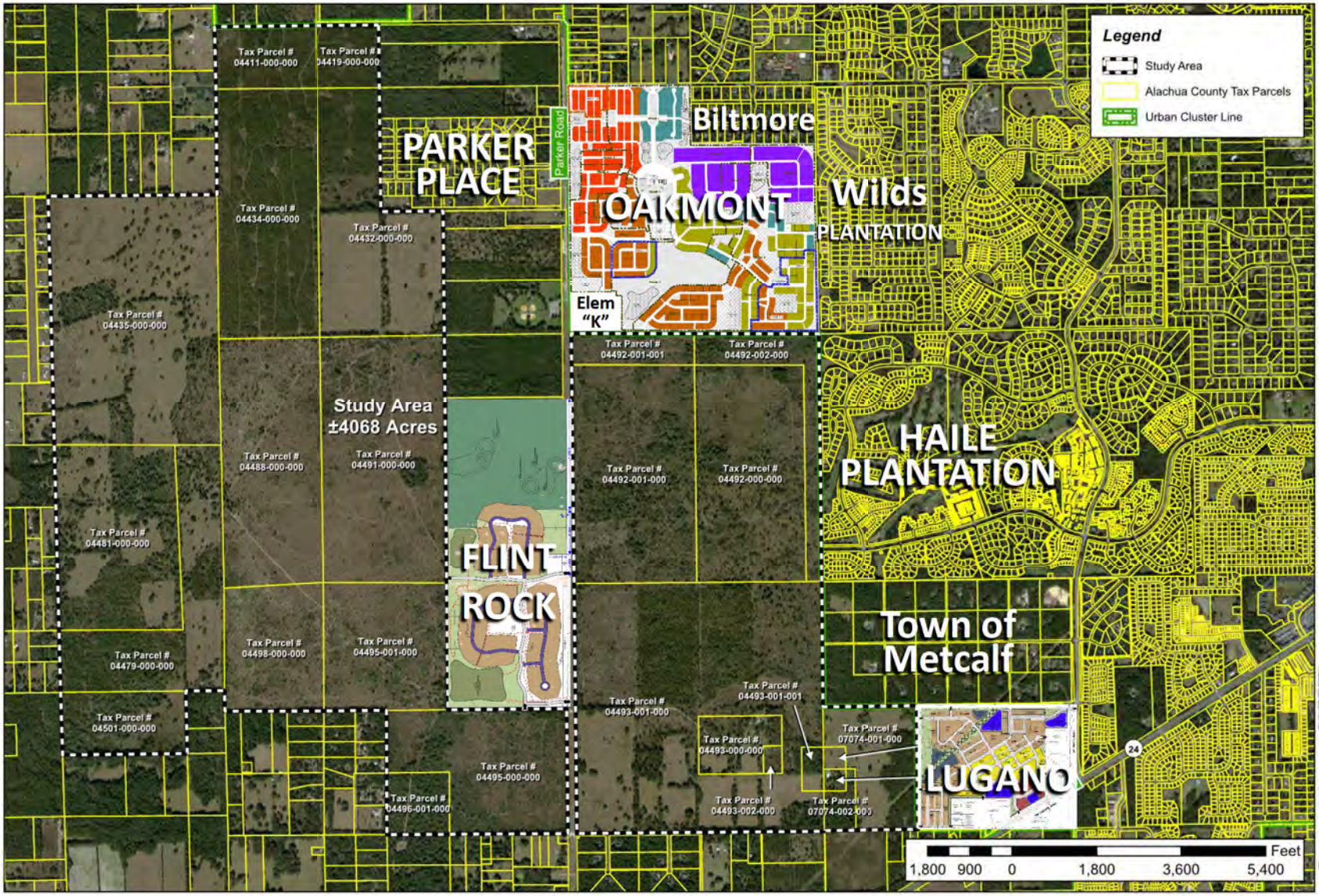


ILLUSTRATION 1B: AERIAL MAP

FCL Timber, Land & Cattle, LLLP
Alachua County, FL

CHW Professional Consultants

Existing Future Land Use Map

Rural/Agricultural Land Use allows 1 dwelling / 5 acres generally served by wells and septic tanks.

Eastern parcels abut Oakmont, Haile Plantation, Town of Metcalf, Lugano, and the Carrollton subdivisions. The western parcel abuts Parker Place and the Town of Tioga subdivisions.

CHW

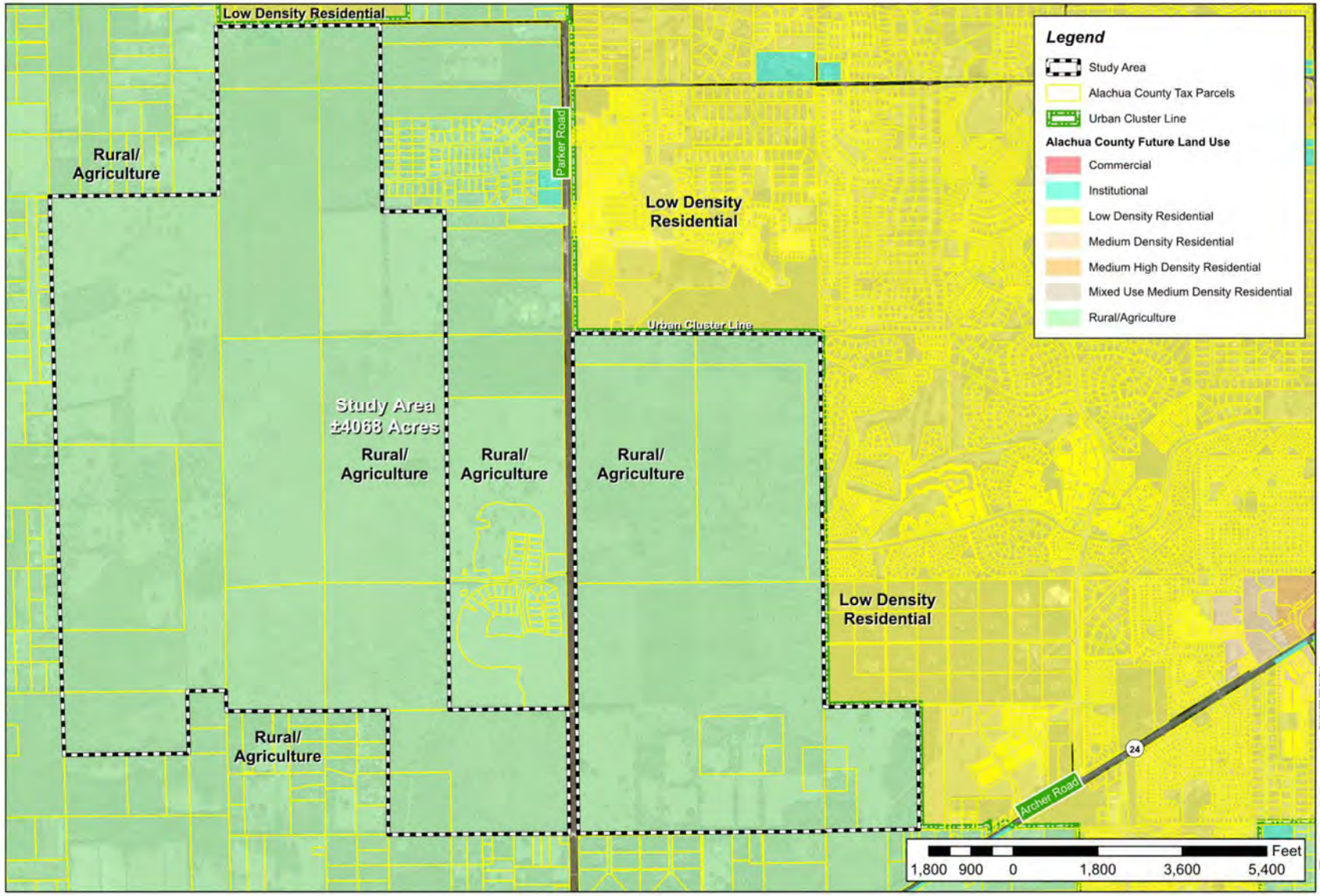


ILLUSTRATION 2A: FLU MAP

FCL Timber, Land & Cattle, LLLP
Alachua County, FL

CHW Professional Consultants

Existing Zoning Map

Rural/Agricultural Zoning allows 1 dwelling / 5 acres, with a mandated rural cluster subdivision.

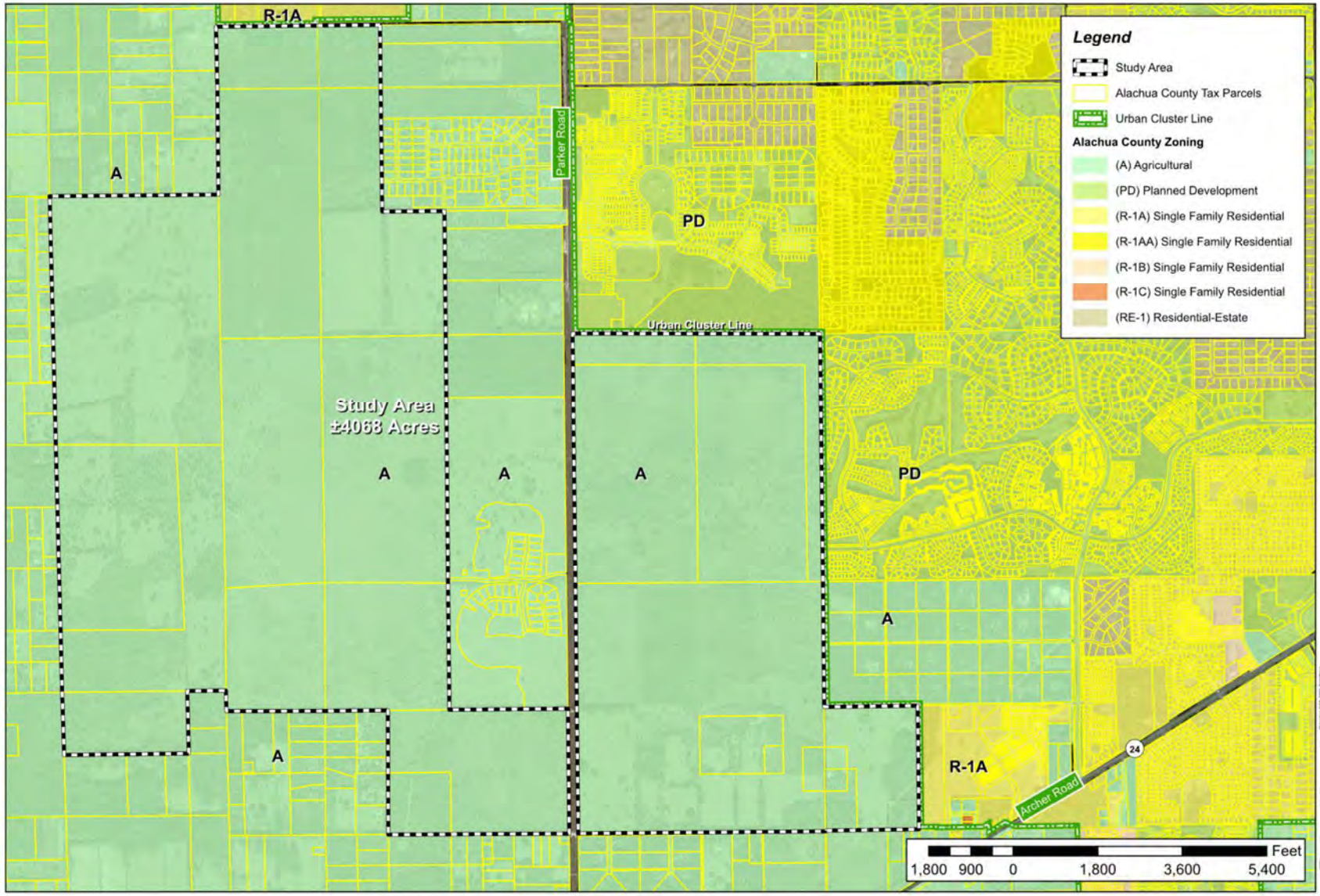


ILLUSTRATION 3A:
ZONING MAP

FCL Timber, Land & Cattle, LLLP
Alachua County, FL

CHW
Professional Consultants

Strategic Ecosystem Map

In 2004, Alachua County included properties inventoried by the KBN/Golder Report creating new Strategic Ecosystems Map.

Property owners must ground-truth the map as part of a Special Area Study.

CHW

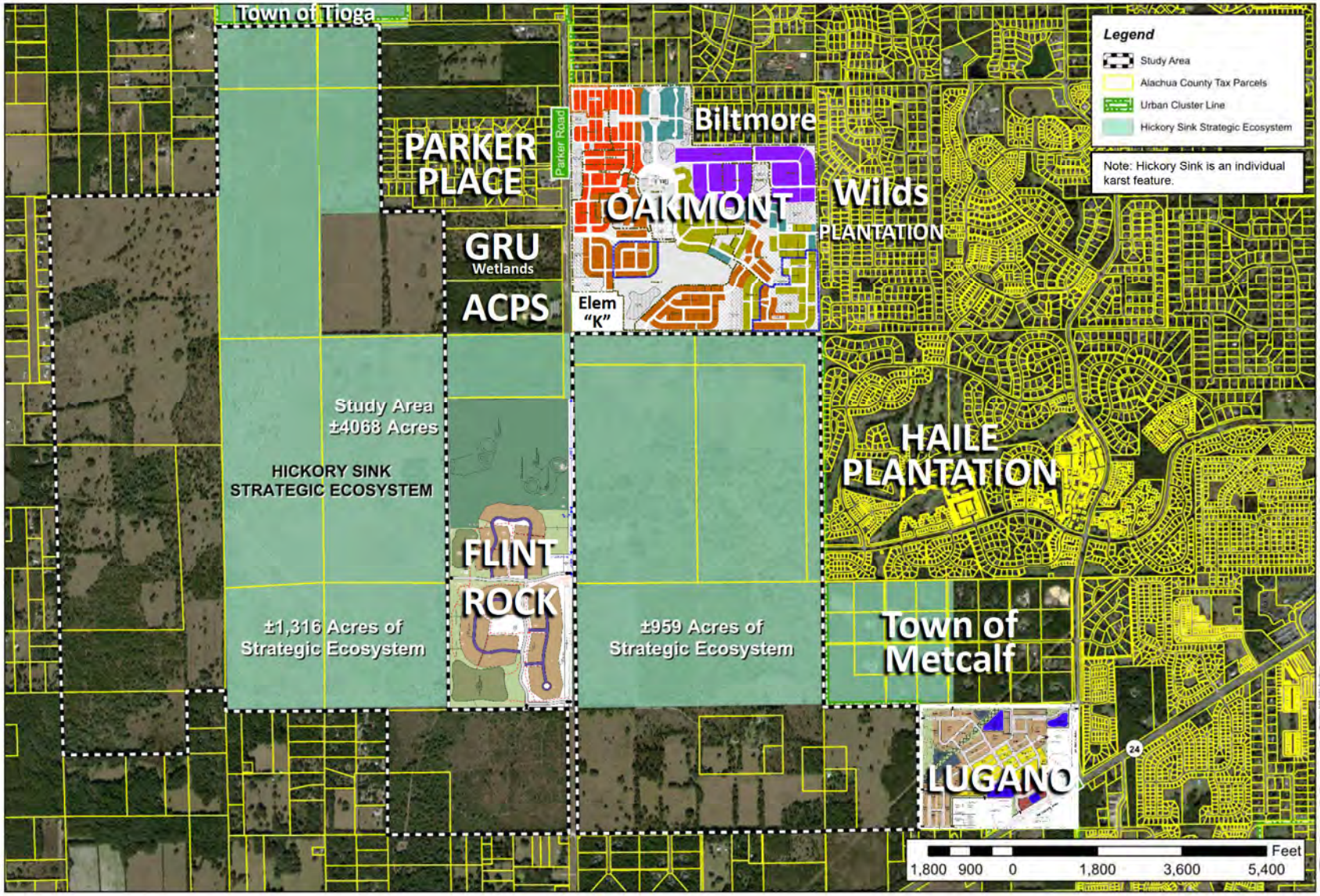


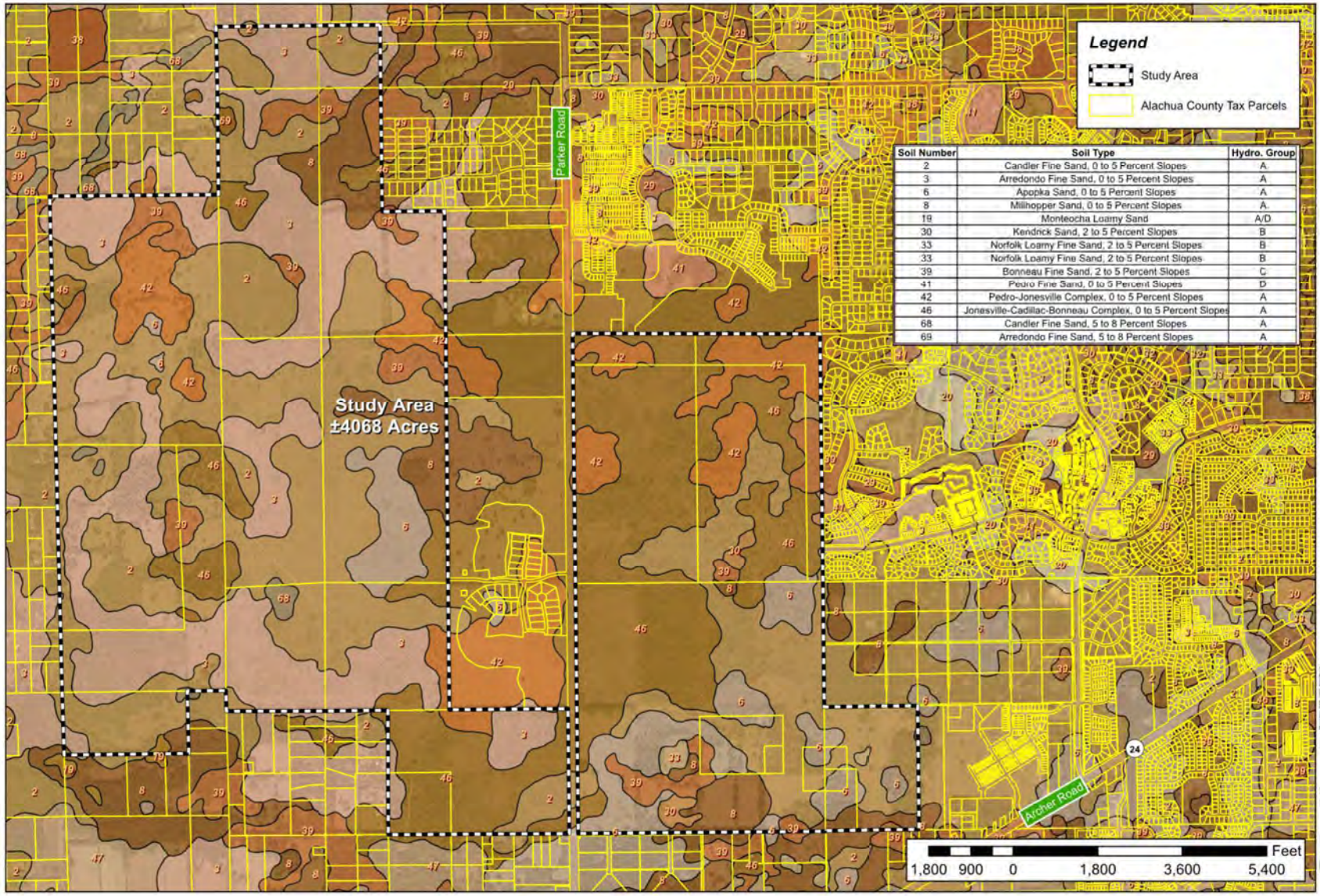
ILLUSTRATION 6:
STRAT. ECO. MAP

FCL Timber, Land & Cattle, LLLP
Alachua County, FL

CHW
Professional Consultants

Soils Map

The property has multiple well drained soil types, common to the surrounding land in Alachua County.



Soil Number	Soil Type	Hydro. Group
2	Candler Fine Sand, 0 to 5 Percent Slopes	A
3	Arredondo Fine Sand, 0 to 5 Percent Slopes	A
6	Apopka Sand, 0 to 5 Percent Slopes	A
8	Millhopper Sand, 0 to 5 Percent Slopes	A
19	Monteocha Loamy Sand	A/D
30	Kendrick Sand, 2 to 5 Percent Slopes	B
33	Norfolk Loamy Fine Sand, 2 to 5 Percent Slopes	B
33	Norfolk Loamy Fine Sand, 2 to 5 Percent Slopes	B
39	Bonneau Fine Sand, 2 to 5 Percent Slopes	C
41	Pedro Fine Sand, 0 to 5 Percent Slopes	D
42	Pedro-Jonesville Complex, 0 to 5 Percent Slopes	A
46	Jonesville-Cadillac-Bonneau Complex, 0 to 5 Percent Slopes	A
68	Candler Fine Sand, 5 to 8 Percent Slopes	A
69	Arredondo Fine Sand, 5 to 8 Percent Slopes	A

ILLUSTRATION 5:
SOILS MAP

FCL Timber, Land & Cattle, LLLP
Alachua County, FL

CHW
Professional Consultants

SAS DATA & ANALYSIS:

- Existing Conditions
- Infrastructure

Context Map

The study area in western Alachua County is proximate to available public roads, utility infrastructure, and reclaimed water.

State/County Roads

Existing Utility Services

CHW

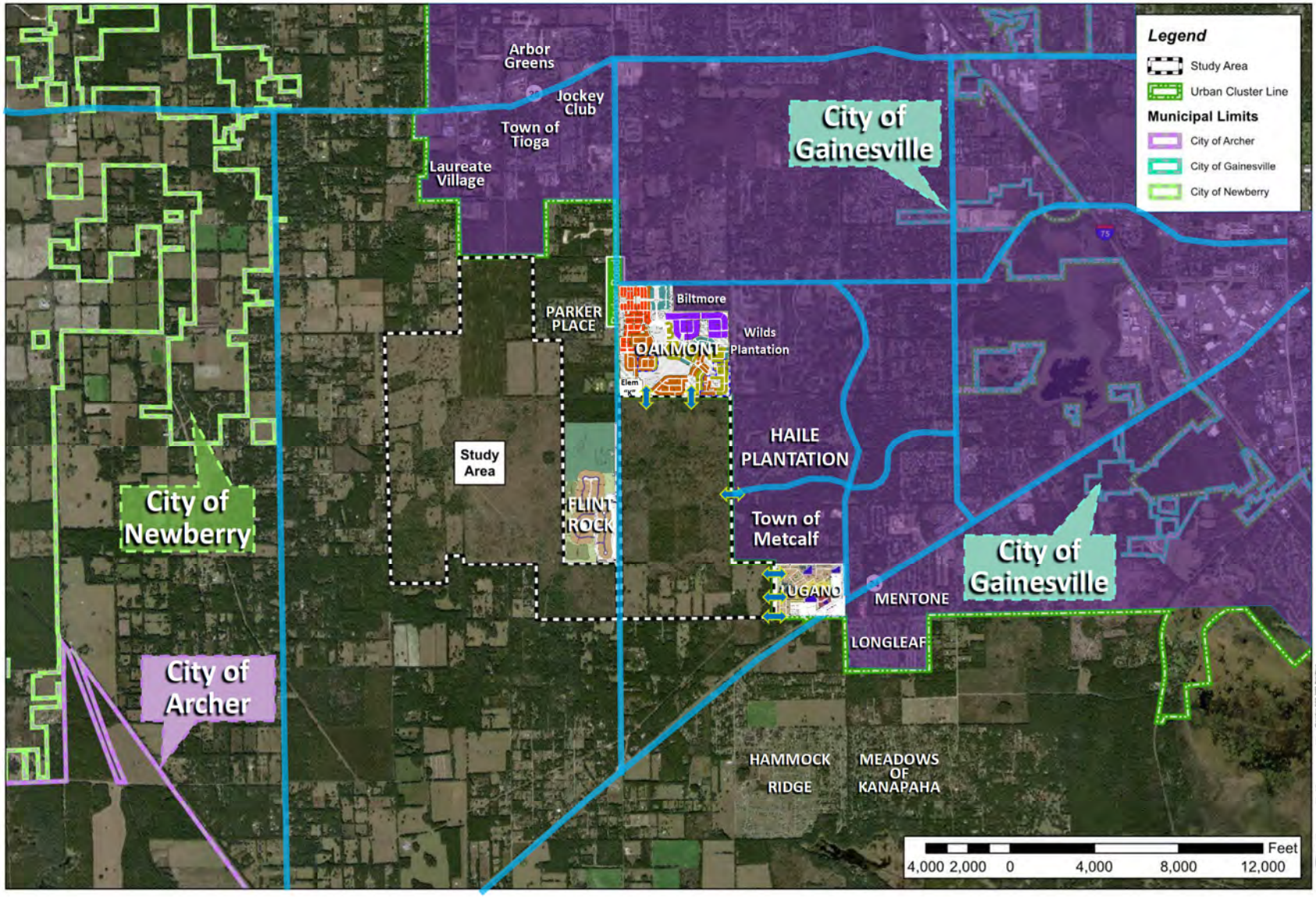


ILLUSTRATION 1A: CONTEXT MAP

FCL Timber, Land & Cattle, LLLP
Alachua County, FL

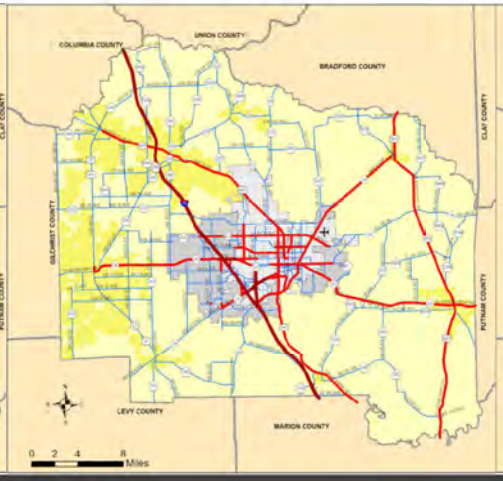
NORTH

CHW Professional Consultants

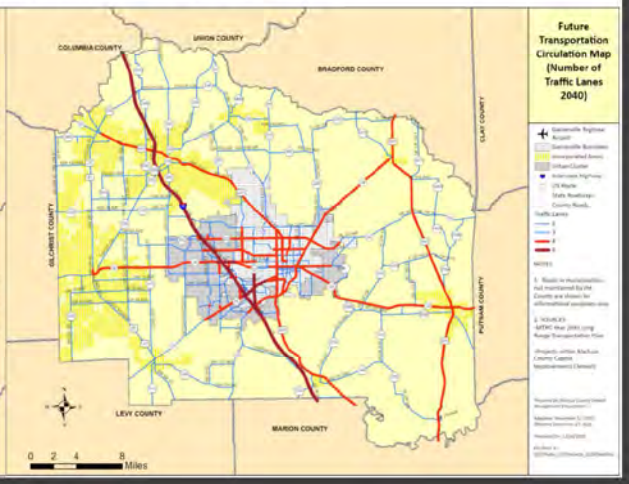
Map 1. Future Transportation Functional Classifications (2025)

Map 2. Future Transportation Functional Classifications (2040)

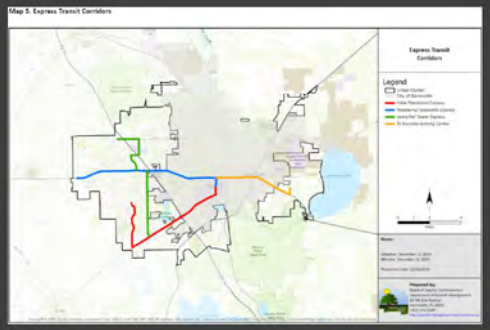
Map 3. Future Transportation Circulation Map (Number of Traffic Lanes) (2025)



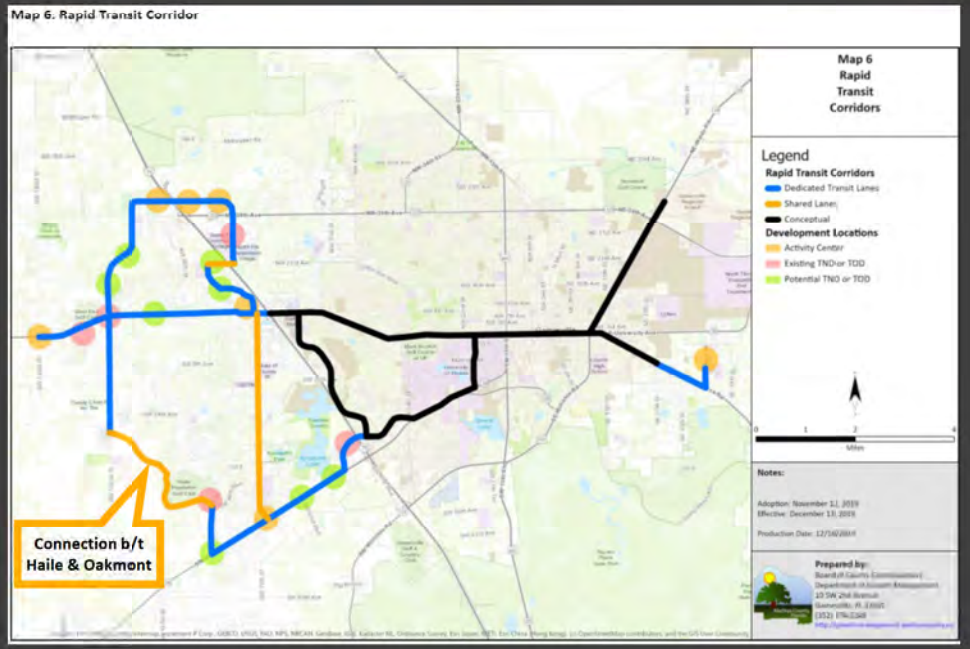
Map 4. Future Transportation Circulation Map (Number of Traffic Lanes) (2025)



Map 5. Express Transit Corridors



Map 6. Rapid Transit Corridor



Map 8. Existing & Future Bicycle and Pedestrian Network

CHW

SAS DATA & ANALYSIS:

- Existing Conditions
- Infrastructure
- Natural Resources

SAS Data & Analysis: Natural Resources

Site ground-truthing:

- Studied historical property usage
- Walked ~130 linear miles of habitat transects
- Identified "Significant Geologic Features"

More than 2 square miles of land proposed as Primary or Secondary Conservation Open Space (COS)

- 840 acres west of Parker Road (includes Gopher Tortoise preserve)
- 150 acres of karst feature protection/buffer
- 40 acres for ped/cycle trail to Town of Tioga
- 300 acres on proposed UF Golf Course
- Management plan to foster ecological rebound

CHW

Conservation Open Space Map

Based on the field studies, Data & Analysis, land-owner's experts identified the areas in green for Conservation Open Space.

These areas interconnect with established off-site Conservation or Common Open Spaces, and with proposed UF golf course.

CHW

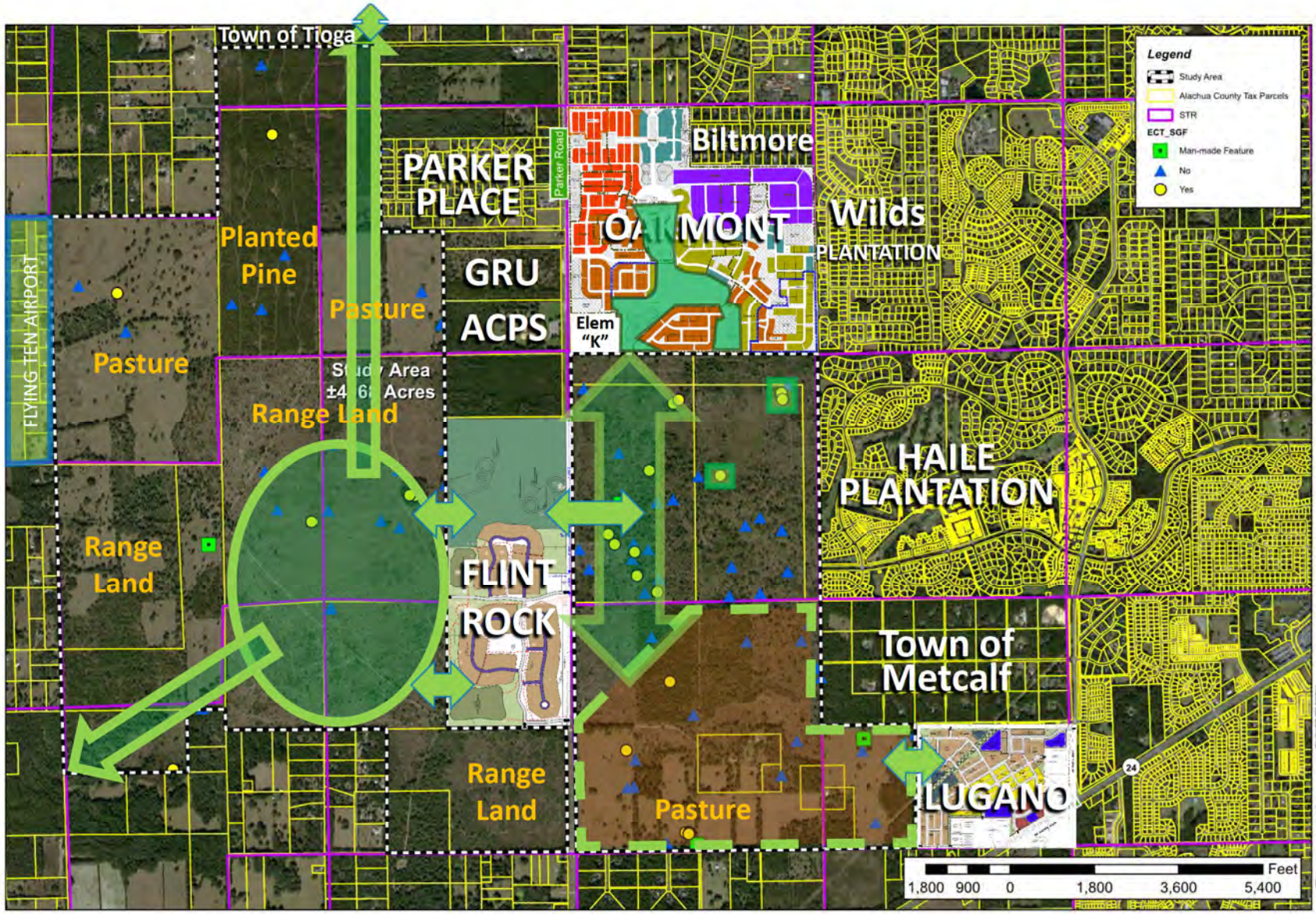
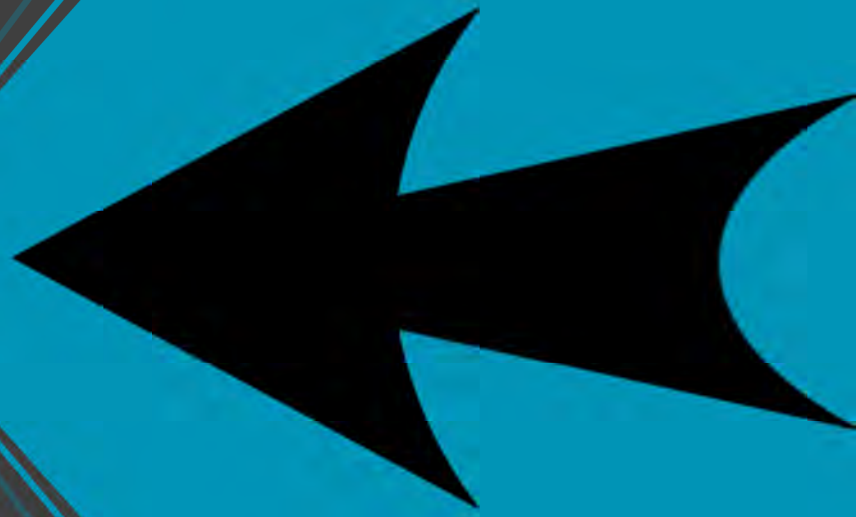


ILLUSTRATION 7
CONSERVATION OPEN SPACE MAP

FCL Timber, Land & Cattle, LLLP
Alachua County, FL

NEXT STEPS:

- Receive public input from Workshops
- Prepare SAS Report/Recommendations & Submit to BoCC
- Develop Special Area Plan (Land Use, Zoning, etc.)



CHW


CHW
Professional Consultants

STAKEHOLDERS WORKSHOP NOTIFICATION

19-0010

CHW Professional Consultants

To: Neighbors of Parker Road Area

From: Gerry Dedenbach, AICP, Vice President

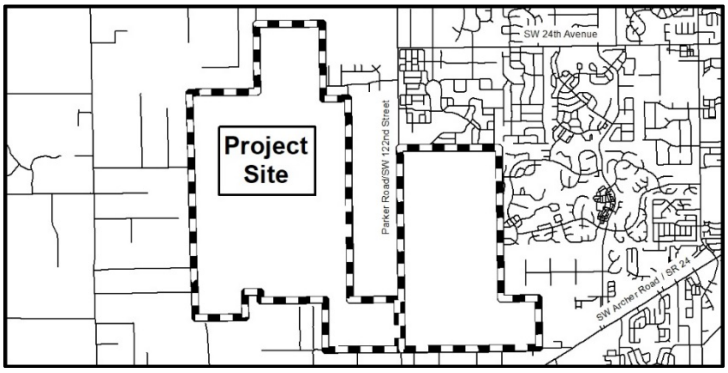
Date: March 17, 2022

RE: Stakeholders Virtual Workshop Public Notice

A second Stakeholders Workshop will be held virtually via Zoom to discuss a Special Area Study conducted on ±4,067.3 acres (Alachua County Tax Parcels 4411, 4419, 4432, 4434, 4435, 4479, 4481, 4488, 4491, 4492, 4492-1, 4492-1-1,4492-2, 4493, 4493-1, 4493-2, 4493-1-1, 4495, 4495-1, 4496-1, 7074, 7074-1, 7074-2, 7074-3, 4501, and 4498).

The site's Future Land Use category is Rural/Agricultural; the Zoning is Agricultural (A). The parcel is located on Parker Road, largely between SW Archer Road and SW 24th Avenue.

Date:	March 30, 2022
Time:	6:00 p.m.
Zoom Link:	bit.ly/ParkerRoad-SAS
Call-in Number	+1 929 205 6099
Meeting ID:	879 7442 8204
Contact:	Gerry Dedenbach, AICP Mail: 11801 Research Drive, Alachua, FL, 32615 Phone: (352) 331-1976 Email: Live@CHW-inc.com



This is not a public hearing. The purpose is to inform the public about the intent to develop a Special Area Plan for the area (§402.101(a) ULDC) and seek their participation. Once submitted, the Special Area Study Report and Plan may be requested from Alachua County Growth Management staff.

Directions to Attend Meeting: Using your web browser, visit the web address link above. Please note, the link is case-sensitive. For best performance, Google Chrome, Safari, Microsoft Edge, or Mozilla Firefox are recommended. The meeting can also be attended by phone. To attend the meeting by phone, call the call-in number above, and enter the Meeting ID number followed by the pound sign ("#") when prompted.

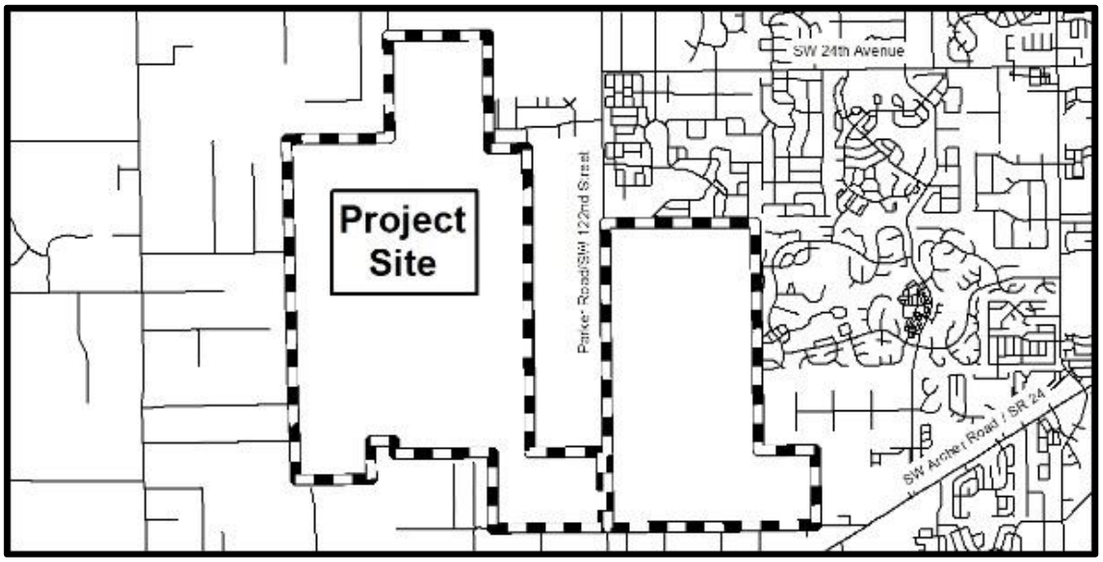
If you are unable to attend the meeting, please contact CHW using the information above, and we will provide printed or virtual copies of all materials discussed at the meeting after the workshop is held upon request. Comments may also be submitted in writing to the email or mailing address above or by phone at the phone number above.

t: (904) 619-6521 | 8465 Merchants Way, Suite 102, Jacksonville, FL 32222
t: (352) 331-1976 | 11801 Research Drive, Alachua, FL 32615
t: (352) 414-4621 | 2100 SE 17th Street, Unit 802, Ocala, FL 34471
www.chw-inc.com

PUBLIC NOTICE

A second Stakeholders Workshop will be held virtually via Zoom to discuss a Special Area Study conducted on ±4,067.3 acres (Alachua County Tax Parcels 4411, 4419, 4432, 4434, 4435, 4479, 4481, 4488, 4491, 4492, 4492-1, 4492-1-1,4492-2, 4493, 4493-1, 4493-2, 4493-1-1, 4495, 4495-1, 4496-1, 7074, 7074-1, 7074-2, 7074-3, 4501, and 4498).

The site's Future Land Use category is Rural/Agricultural; the Zoning is Agricultural (A). The parcel is located on Parker Road, largely between SW Archer Road and SW 24th Avenue.



This is not a public hearing. The purpose is to inform the public about the intent to develop a Special Area Plan for the area (§402.101(a) ULDC) and seek their participation. Once submitted, the Special Area Study Report and Plan may be requested from Alachua County Growth Management staff.

Time: 6:00 p.m., March 30, 2022
Link to attend meeting: bit.ly/ParkerRoad-SAS
Meeting Call-in Number: +1 929 205 6099
Meeting ID: 879 7442 8204

Contact: Gerry Dedenbach, AICP
Mailing Address: 11801 Research Drive, Alachua, FL, 32615
Phone: (352) 331-1976
Email: Live@CHW-inc.com

LOCAL&STATE

Pace Center finds meaning in March

Girls Talk forums at school amplify Women's History Month message

Gershon Harrell
Gainesville Sun
USA TODAY NETWORK

March is a big deal for middle and high school students attending the Pace Center for Girls.

Not only is it Women's History Month, but it's now also Believe in Girls Month.

The local education center, which is a school for girls in grades 6-12 and also provides social services, is celebrating the month with a Girls Talk series where women come by the center to share stories about how they got to be where they are today.

"As far as the girls, we just want to simply celebrate them and let them know that they are queens in their own right," said Carlonda McTier, a science teacher at the Pace Center for Girls. "That they are worthy, they are important, that they are thought about, cared about and all of the above."

The center, located at 1010 SE 4th Ave., welcomed Queneller Clark last week as one of the school's first guests for the series.

Clark, an entrepreneur, spoke to the crowd about overcoming adversity and believing in their goals.

She is the former owner of two Gainesville restaurants, STMC Food, located on 1040 E. University Ave. and Ms. Nola's Cajun Po' Boy's and Seafood, at 3200 NW 98th St. in Gainesville.

The cajun and seafood restaurant operated from 2017 to 2020 out of the Meadowbrook Golf Club until a dispute between the two businesses forced Clark to close its doors. Both of Clark's restaurants are now closed.

After the closures, Clark didn't give up.

She moved to Orlando where she now sells her own food seasoning, Miss Nola's Seasoning Blends, which is sold in several stores, including Walmart.

Clark is now CEO of Boss Mamas Inc., a company that seeks to educate girls and women of color on how to start their own businesses.

Those in attendance at the Pace event were given bags filled with goodies, including Boss Mamas T-shirts, pens and notebooks.

"I think I just inspired them (the girls) to never give up and go hard," Clark said.

McTier said the center wants to highlight women in the community for this year's Believe in Girls Month to inspire the youth.

"The biggest thing I wanted the girls to take away was just representation. Like that's No. 1," McTier said. "Just for them to see people who come from where they come from."

Residents with Ukraine ties watch, wait and advocate

Beth Reese Cravey
Jacksonville Florida Times-Union
USA TODAY NETWORK

When Jacksonville-based missionary Kathy Gould left Ukraine after the Russian invasion in late February, the people she left behind asked her to give the rest of the world a message.

"'Tell the world about us," one woman said. "Help the world hear and see."

Gould, 61, has been doing just that ever since.

She has done multiple media interviews, talking about the Ukrainian people she came to know and love over her 29 years in Kyiv, where she runs a child-services nonprofit called ABC's of Life.

"The most generous, loving, hospitable people you've ever met," Gould said.

She talked about the children, who "filled my heart." She talked about learning not to verbally admire anyone's jewelry because they would take it off and give it to her. She talked about people who, when she initially planned to stay in Ukraine even if there was bombing, were intent on risking their own lives to take care of her.

She talked about how she hoped to return next week, next month, as soon as she could, to resume her ministry.

Ukraine had become her home.

"You're there so long," Gould said. "This is not the end."

'We wanted our freedom'

Natalia Solyeva was born and raised in Uk-

See MISSION, Page 6A

Keeping Alachua County Beautiful preparing to host Great American Cleanup

Gershon Harrell
Gainesville Sun
USA TODAY NETWORK

Keeping Alachua County Beautiful will be sweeping back into Gainesville for a widespread community cleanup event.

The Great American Cleanup is celebrating its 30th anniversary with a relaunch event in hopes of restoring cleanliness to the parts of the Gainesville community.

Each year, the anti-littler nonprofit organization — a local branch of the national Keep America Beautiful group — sets out to make the county a cleaner area by cleaning up parks, dumps sites and streets.

"We've already identified four illegal dump sites and expect at least one more to make our list along with the other priority sites we have throughout Alachua county," said Gina Hawkins, executive director for Keep Alachua Beautiful.

The event will take place from 9 a.m. to noon on Saturday, April 9. Two of the illegal were a location near Holly Heights and off Northeast 8th Avenue and Northeast 25th Street. Gainesville and Alachua County governments are sponsoring the event.

The re-launch effort comes as COVID-19 cases are on the decline. The pandemic had caused the group's efforts to suffer, a news release says, as volunteers were either staying home or social distancing.

During last year's event, the nonprofit

See CLEANUP, Page 11A

REVIEW

"The Full Monty" is playing at Acrosstown Repertory Theatre. TAMMY SAUCIER

'The Full Monty' brings energy, comedy and sheds inhibitions

Ron Cunningham
Special to Gainesville Sun
USA TODAY NETWORK

Helpful tips for neophyte strippers:

1. Remember to take off your work boots before your trousers.

2. When whipping off your belt be careful not to lash out the eye of the stripper on your right.

3. When in doubt, ask yourself: What would Michael Jordon do?

And if you are wondering what all this has to do with the price of beer in Buffalo, you need to go to the Acrosstown Repertory Theater for answers.

The ART's production of "The Full Monty," Terrance McNally's musical based on the hit 1997 movie, is running through April 3. And under the artful direction of Jackie Collins, it is an energetic comedy of errors about men wondering what's happened to their worlds, women who have suddenly become the men of their houses...and an adolescent boy

See REVIEW, Page 11A

STAKEHOLDERS WORKSHOP MINUTES

FCL Timber, Land & Cattle, LLLP Special Area Study

19-0010

Professional Consultants

Event:	Virtual Neighborhood Workshop
Date/Time:	March 30, 2022 @ 6:00 PM
Place:	Zoom Virtual Meetings
Re:	FCL Timber, Land & Cattle, LLLP – Special Area Study Stakeholders Workshop

Patrice Boyes, P.A. Attendees:	Patrice Boyes, Esq.
Frankel Attendees:	Ryan Frankel
CHW Attendees:	Gerry Dedenbach, AICP; Craig Brashier, AICP; Seth Wood
Public Attendees:	43

CHW hosted and facilitated a Virtual Stakeholders Workshop with a presentation containing the following information: the workshop's purpose; maps illustrating the site's regulatory and physical characteristics; an explanation of the Special Area Study (SAS) and Special Area Plan (SAP) process; and findings of onsite environmental assessment. Questions and comments from attendees are listed below, with agent responses. Please note, these minutes are not meant to act as a verbatim transcript of the Stakeholders Workshop.

Question: Please explain the rapid transit corridors depicted in maps linking Haile and Oakmont.
Response: These maps are from the Alachua County Comprehensive Plan Transportation Element. They identify future systems and roadways the County has identified for enhancements and modification. These are considered during the course of our planning effort for the study area, and will be taken into consideration, as they represent the County's transportation plans through 2040. They will provide guidance during the SAP.

Question: What is rapid transit?
Response: The rapid transit designation on these maps means that the roadways may be utilized by buses with minimal stops. These maps do not provide detail on what form this transit vehicle or route will take. Those decisions would be considered under future planning scenarios.

Question: Parker Place has seen several "through street" signs be posted in recent years. Can you please explain what development of the study area may mean for traffic?
Response: At this point in the SAS, we are not looking in detail at specific roadway network connections, because we do not have a land use plan. We know that Oakmont, Haile, and the Lugano development have platted right of way/roadway connections into the SAS property. When the SAP process begins, we will conduct a full traffic analysis, which will analyze future land use and transportation concepts & scenarios.

The County's Comprehensive Plan and Unified Land Development Regulations require interconnectivity between new public roadways and existing public roadways. Any development of new roadways on the property would be required to connect to existing and planned future roadway corridors.

Question: Can you please provide more detail on the green space to go on the boundary west of Parker Place?
Response: That greenway will be between 175 feet and 200 feet in width. We envision a winding, serpentine trail, approximately 10 feet in width, running north/south through the linear park. It will be for walking, jogging, bicycling, and non-motorized uses. It will not be a connection for motor vehicles.

Question: Will streets run through the greenway?
Response: If a trail is put within the greenway, roadway connections crossing the greenway would not be desired, or ideal. We would like to minimize potential conflict points between vehicles and trail users.

Question: How will the golf course affect those of us on well and septic? I believe that golf courses require many chemicals to maintain.

t: (904) 619-6521 | 8465 Merchants Way, Suite 102, Jacksonville, FL 32222
t: (352) 331-1976 | 11801 Research Drive, Alachua, FL 32615
t: (352) 414-4621 | 101 NE 1st Avenue, Ocala, FL 34470
www.chw-inc.com

Response: Golf course management today is very environmentally conscientious—much more so than it was in years past. The future golf course will use Gainesville Regional Utilities (GRU) reclaimed water, similar to the Haile Plantation Golf Course. Our planning will seek to reduce impacts on well and septic systems.

Question: Where will the clusters of homes be located?
Response: Beyond the designated golf course area, no plans have been made as to how the land will be utilized or developed. The current stage of the project, the SAS, is strictly focused on gathering empirical ecological and relevant planning data. Land design and concept planning will begin in the SAP process.

Question: What is planned for the acreage in the study area not currently set aside?
Response: At this juncture, no land planning has been done for the study area. This will begin in the SAP process and will continue through the SAP process and concept development process.

Question: Will any additional roads be built in the area to accommodate the additional traffic?
Response: At this juncture, no land planning has been done for the study area. This will begin in the SAP process and will continue through the SAP process and development programming process.

Question: Will development connect to SW 46th Avenue through the study area? I see this roadway depicted as a transit corridor.
Response: That will be determined as part of the future transportation study, and likely yes. We will continue to engage the public during the SAS and SAP processes. SW 46th Avenue is a platted connection that is extends to the study area's eastern property line. The right-of-way exists directly to the property line.

Question: Will there be an entrance onto Ridge Road?
Response: Ridge Road appears to be a private roadway. The County only mandates interconnectivity for public rights-of-way.

Question: What is the timeline for this?
Response: Currently, we are engaged in the SAS process. The SAS will likely be submitted in April. Later this year, the SAP process will begin. This will likely involve a Large-scale Comprehensive Plan Amendments (LsCPA) and a rezoning process. Those processes, when run concurrently, typically take 8-10 months. The SAP process will likely take the remainder of 2022 and may conclude sometime in 2023.

Only when SAP process is concluded, can a development planning and approval process begin. In Alachua County, this involves both Preliminary Development Plans (PDP) and Final Development Plans (FDP) for nonresidential development or PDP and FDP with platting for residential development. Those processes can each take another year to complete. In short, it will be at least a few years, if not more, before any form of construction or development may occur property, and it will take years if not decades for this property to be fully developed. For a frame of reference—Oakmont, the nearby residential neighborhood was permitted for 999 homes in 2005. As of today in March 2022, it is only approximately at the mid-point if completion.

CHW responded to several questions in the Zoom Chat and recorded several participants contact information so copies of the presentation could be shared with participants and the public. CHW staff thanked the Stakeholder Workshop participants and encouraged participants to supply contact information so future mailouts could include interested persons. CHW staff also encouraged participants to contact their offices directly if additional questions arose after the meeting.

The meeting concluded at approximately 6:56 pm.

FCL Timber, Land & Cattle, LLLP

Special Area Study (SAS) Report

Professional Consultants

Alachua County

Stakeholders Workshop 2

March 30, 2022

The Stakeholders Workshop purpose:

Alachua County requires landowners who undertake a Special Area Study to host a Stakeholders Workshop;

All property owners within the area defined by the scope of the FCL Timber, Land & Cattle, LLLP Special Area Study, as well as other registered stakeholders, shall be notified in writing of the intent to develop a plan for the area, and *shall be encouraged to participate in the process*; and

This workshop provides the landowner with an opportunity to engage the public prior to the Special Area Study Report's preparation and submission.

Public Notification

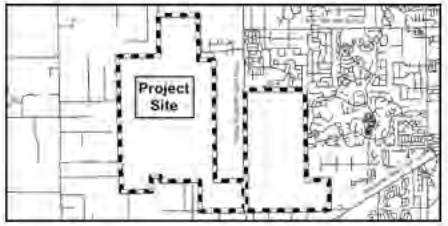
A second Stakeholders Workshop will be held in one week, online via Zoom, to provide additional public input opportunities.

To: Neighbors of Parker Road Area
From: Gerry Dedenbach, AICP, Vice President
Date: March 8, 2022
RE: Stakeholders Workshop Public Notice

A Stakeholders Workshop will be held to discuss a Special Area Study conducted on ±4
(Alachua County Tax Parcels 4411, 4419, 4432, 4434, 4435, 4479, 4481, 4488, 4491, 4
4492-1-1,4492-2, 4493, 4493-1, 4493-2, 4493-1-1, 4495, 4495-1, 4496-1, 7074, 7074-1
7074-3, 4501, and 4498).

The site's Future Land Use category is Rural/Agricultural; the Zoning is Agricultural (A)
located on Parker Road, largely between SW Archer Road and SW 24th Avenue.

Date: March 23, 2022
Time: 6:00 p.m.
Location: 5001 Celebration Pointe Ave, Suite 520, Gainesville, FL, 32608
Contact: Gerry Dedenbach, AICP
Mail: 11801 Research Drive, Alachua, FL, 32615
Phone: (352) 331-1976
Email: Live@CHW-inc.com



This is not a public hearing. The purpose is to inform the public about the intent to develop a
Area Plan for the area (§402.101(a) ULDC) and seek their participation. Once submitted, the
Area Study Report and Plan may be requested from Alachua County Growth Management sta

If you are unable to attend the meeting, please contact CHW using the information above, and
provide printed or virtual copies of all materials discussed at the meeting after the workshop is
upon request. Comments may also be submitted in writing to the email or mailing address abo
by phone at the phone number above.

Page : A02

Hocke driving force behind UF football's brand-new culture

SPORTS, 1B

The Gainesvill un

USA TODAY NETWORK

TUESDAY, MARCH 22, 2022 | GAINESVILLE.COM

Jackson set to face t

GOP pr
questio
her rec

Supreme Court nominee Judge Ketanji Brown Jackson arrives for her confirmation hearing before the Senate Judiciary Committee on Monday. JACQUELYN MARTIN/AP

Mark She
and Mary
ASSOCIATED

WASH
nominee
pledged
"withou

High school golfers get ready to tee off in the Alachua County boys golf champions
Course in Gainesville on Oct. 21. BRAD MCCLENNY/THE GAINESVILLE SUN

GAINESVILLE.COM | TUESDAY, MARCH 22, 2022 | 7A

Golf course

Continued from Page 1A

and consultants have studied the property, walking more than 130 linear miles of the land," Frankel said. "The empirical results are being analyzed now and form the basis for a proposed one-square-mile area of conservation open space plus creation of multiple wildlife corridors and connections."

A final special area study report will be submitted to Alachua County in the near future for approval.

"The next step after that will be to develop a special area plan for the property, which likely will include proposed land use and zoning measures," Frankel said. "There are no specific development plans at this time, although the special area study requires that the owner review a range of land uses for the property."

The land is adjacent to other large residential developments in southwest Alachua County, including Haile Plantation, Oakmont and the Town of Tioga, and geographically is larger than those three combined.

No details about project density have been decided yet.

Senior Associate Athletics Director Steve McClain said in a prepared statement that "there are absolutely no plans to alter the use of the Mark Bostick Golf Course as a public facility."

"Should a different land use be determined as appropriate at some point in the future, that information would be shared with the UF community in a timely manner," McClain said.

Residents in the Parker Road area have been invited to learn more about development plans at the "stakeholders workshop" on Wednesday at 6 p.m. at 5001 Celebration Pointe Ave., Suite 520.

"This is not a public hearing. The purpose is to inform the public about the intent to develop a Special Area Plan for the area and seek their participation," a notice to the residents says. "Once submitted, the Special Area Study Report and Plan may be requested from Alachua County Growth Management staff."

Missy Daniels, the growth management director at Alachua County, said county officials have been told that the Lee family is interested in having UF's course on the property and some form of residential development.

No formal application has been made, she added.

"They have thrown out different planning scenarios," Daniels said. "We have not seen anything (specific) plans. But a project of that size would require a comprehensive land plan amendment and public hearing.

Daniels did say, however, that much of the site is capable of being developed.

She said she doesn't know if major mixed-use development, like the nearby Tioga, is in the landowner's number. And you know they have mentioned maybe part of it (remaining) as still agriculture."

Daniels said, which is currently used for farming, has a rural agricultural zoning that allows one unit per five acres. A golf course is allowed use under the current zoning, Daniels pointed out.

"We have standards," she said. "Anything above 10 units (per acre) has to be clustered. You have to have a lot of open space to do anything beyond that. They'd have to have a comprehensive plan amendment to do a project like Tioga or Haile Plantation, anything like that."

The Lee family owns all 4,063 acres, which could make a development approval process go smoother than multiple landowners.

Daniels said the environmental study on the property, which has been going on for several months, is identifying wetlands that may need to be preserved.

"Most of that property is in a strategic ecosystem, so they have to do a special area study," Daniels said. "They went to the board a couple of months ago to get the scope for the approval of the study. They have been working on the special area study for quite a bit, the environmental part. I honestly don't know how far along they are with lining up any potential land use for it."

Special Study Area in southwest Alachua County

CHW Consultants is developing a plan for 26 parcels in southwest Alachua County, totaling more than 4,000 acres, that could include a new golf course for the University of Florida. The land, termed a Special Study Area, is currently in agricultural use but adjacent to large residential developments including Haile Plantation to the east, and the Town of Tioga and Oakmont to the north.

USA TODAY NETWORK

UF golf course part of Parker Road plans

West Gainesville development includes land for university

John Henderson
Gainesville Sun
USA TODAY NETWORK

A landowner who is in the early stages of development plans for more than 4,000 acres in west Gainesville has set aside property for a new University of Florida golf course.

UF spokesman Steve Orlando confirmed the plans Monday in an email.

"The University of Florida Foundation has received a generous private offer of land in western Alachua County, and we are exploring the potential of this land as a championship-caliber golf course," Orlando wrote.

The donated land is within the acreage the "Lee family" owns along Parker Road (Southwest 122nd Street) between Southwest Archer Road and Southwest 24th Avenue, said Ryan Frankel, a marketing official for the family.

Frankel could not say exactly where the course would be located within the 4,063 acres. A golf course typically covers about 200 acres.

"Everything is very preliminary right now, so I don't believe it's been quite decided yet," he said.

Landowners FCL Timberland & Cattle are engaged in a "special area study," which is required by the county to analyze existing conditions, infrastructure and natural resources on their property, Frankel said in an email.

Marian S. Lee is the registered agent for FCL Timberland & Cattle.

"Since then, the owners' scientists

See GOLF COURSE, Page 7A

With communities movement restricted and many residents in hiding, the fate of those inside

See MARIUPOL, Page 11A

A man looks out the window of his partially destroyed home after the shelling by Russian warships on the outskirts of Odessa Monday. OLEKSANDR GIMANOV/AFP VIA GETTY IMAGES

ed by TECNAVIA

PUBLIC NOTICE

Workshop will be held to discuss a Special Area Study conducted
res (Alachua County Tax Parcels 4411, 4419, 4432, 4434, 4435,
88, 4491, 4492, 4492-1, 4492-1-1,4492-2, 4493, 4493-1, 4493-2,
, 4495-1, 4496-1, 7074, 7074-1, 7074-2, 7074-3, 4501, and 4498).

ture Land Use category is Rural/Agricultural; the Zoning is
. The parcel is located on Parker Road, largely between SW Archer
24th Avenue.

ublic hearing. The purpose is to inform the public about the intent to
ecial Area Plan for the area (§402.101(a) ULDC) and seek their
Once submitted, the Special Area Study Report and Plan may be
n Alachua County Growth Management staff.

m., March 23, 2022
01 Celebration Pointe Ave, Suite 520, Gainesville, FL, 32608

y Dedenbach, AICP
Mailing Address: 11801 Research Drive, Alachua, FL, 32615
Phone: (352) 331-1976
Email: Live@CHW-inc.com

Public Notification

STAKEHOLDERS WORKSHOP NOTIFICATION

CHW Professional Consultants

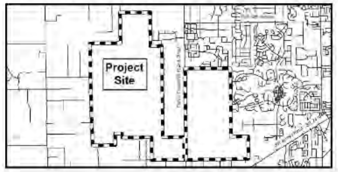
19-0010

To:	Neighbors of Parker Road Area
From:	Gerry Dedenbach, AICP, Vice President
Date:	March 17, 2022
RE:	Stakeholders Virtual Workshop Public Notice

A second Stakeholders Workshop will be held virtually via Zoom to discuss a Special Area Study conducted on ±4,067.3 acres (Alachua County Tax Parcels 4411, 4419, 4432, 4434, 4435, 4479, 4481, 4488, 4491, 4492, 4492-1, 4492-1-1,4492-2, 4493, 4493-1, 4493-2, 4493-1-1, 4495, 4495-1, 4496-1, 7074, 7074-1, 7074-2, 7074-3, 4501, and 4498).

The site's Future Land Use category is Rural/Agricultural; the Zoning is Agricultural (A). The parcel is located on Parker Road, largely between SW Archer Road and SW 24th Avenue.

Date:	March 30, 2022
Time:	6:00 p.m.
Zoom Link:	bit.ly/ParkerRoad-SAS
Call-in Number	+1 929 205 6099
Meeting ID:	879 7442 8204
Contact:	Gerry Dedenbach, AICP Mail: 11801 Research Drive, Alachua, FL, 32615 Phone: (352) 331-1976 Email: Live@CHW-inc.com



This is not a public hearing. The purpose is to inform the public about the intent to develop a Special Area Plan for the area (§402.101(a) ULDC) and seek their participation. Once submitted, the Special Area Study Report and Plan may be requested from Alachua County Growth Management staff.

Directions to Attend Meeting: Using your web browser, visit the web address link above. Please note, the link is case-sensitive. For best performance, Google Chrome, Safari, Microsoft Edge, or Mozilla Firefox are recommended. The meeting can also be attended by phone. To attend the meeting by phone, call the call-in number above, and enter the Meeting ID number followed by the pound sign ("#") when prompted.

If you are unable to attend the meeting, please contact CHW using the information above, and we will provide printed or virtual copies of all materials discussed at the meeting after the workshop is held upon request. Comments may also be submitted in writing to the email or mailing address above or by phone at the phone number above.

www.chw-inc.com

The Gainesville Sun - 03/21/2022 Page : A03

GAINESVILLE.COM | MONDAY, MARCH 21, 2022 | 3A

LOCAL & STATE

Pace Center finds meaning in March

Girls Talk forums at school amplify Women's History Month message

Residents with Ukraine ties watch, wait and advocate

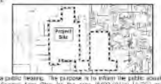
REVIEW

'The Full Monty' brings energy, comedy and sheds inhibitions

Keeping Alachua County Beautiful preparing to host Great American Cleanup

PUBLIC NOTICE

PUBLIC NOTICE

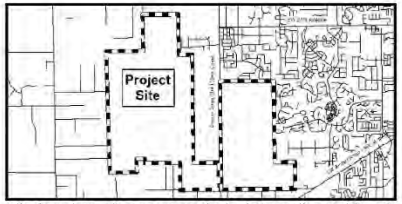


March 25, 2022 8:59 am (GMT -4:00) Powered by TECNAVIA

PUBLIC NOTICE

A second Stakeholders Workshop will be held virtually via Zoom to discuss a Special Area Study conducted on ±4,067.3 acres (Alachua County Tax Parcels 4411, 4419, 4432, 4434, 4435, 4479, 4481, 4488, 4491, 4492, 4492-1, 4492-1-1,4492-2, 4493, 4493-1, 4493-2, 4493-1-1, 4495, 4495-1, 4496-1, 7074, 7074-1, 7074-2, 7074-3, 4501, and 4498).

The site's Future Land Use category is Rural/Agricultural; the Zoning is Agricultural (A). The parcel is located on Parker Road, largely between SW Archer Road and SW 24th Avenue.



This is not a public hearing. The purpose is to inform the public about the intent to develop a Special Area Plan for the area (§402.101(a) ULDC) and seek their participation. Once submitted, the Special Area Study Report and Plan may be requested from Alachua County Growth Management staff.

Time: 6:00 p.m., March 30, 2022
Link to attend meeting: bit.ly/ParkerRoad-SAS
Meeting Call-in Number: +1 929 205 6099
Meeting ID: 879 7442 8204

Contact: Gerry Dedenbach, AICP
Mailing Address: 11801 Research Drive, Alachua, FL, 32615
Phone: (352) 331-1976
Email: Live@CHW-inc.com

The format of the Stakeholders Workshop:

- **General Presentation (±10 minutes)**
  - Team Introduction; and
  - SAS Process & Data/Analysis
- **Participants' Questions (±30 minutes)**
- **Closing Comments (5-10 minutes)**

LANDOWNERS CARE GREATLY FOR THE LAND AND LONG-TERM OUTCOME

LAND USE OPTIONS	Continued Agriculture Use Has become difficult to maintain as County grows	By-Right Scenario Existing Comprehensive Plan & Land Development Code	Collaborative Planning Scenario Special Area Study Special Area Plan
USES	Industrial-scale Silviculture Animal grazing	Rural Residential 4,068ac ÷ 1du/5ac = 813 lots	**Site Specific Policies** Land Management/Restoration **Housing** Policies on equitable market/workforce homes **Energy** Options for solar, micro grid, directed concept **Community Facilities** Police/Fire/EMS, schools, rec. **Partnerships** UF, IFAS, ACT, Other interested parties…
DENSITY / INTENSITY	Agriculture, Agritourism, Ag Processing, Dairy, Event Centers, Produce Stand, Farm Machinery/Lawn/Garden Equipment Repair, Wood Processing, Kennel/Cattery/Animal Shelter, Animal Sanctuary, Farmworker Housing	Cluster Subdivision process Preliminary Development Plan / Final Development Plan	To be determined through County Land Use and Zoning Process
WATER USAGE	Both Residential & mass-consumption on-site	At least 813 wells	Option for centralized water system
SEPTIC USAGE	A few exist today	At least 813 septic tanks	Option for centralized sewer system
COMMUNITY ASSETS	No infrastructure	Minimal infrastructure [roads, limited sidewalks]	Multi-modal network [drive, bike, walk, carts]

CHW

SAS DATA & ANALYSIS:

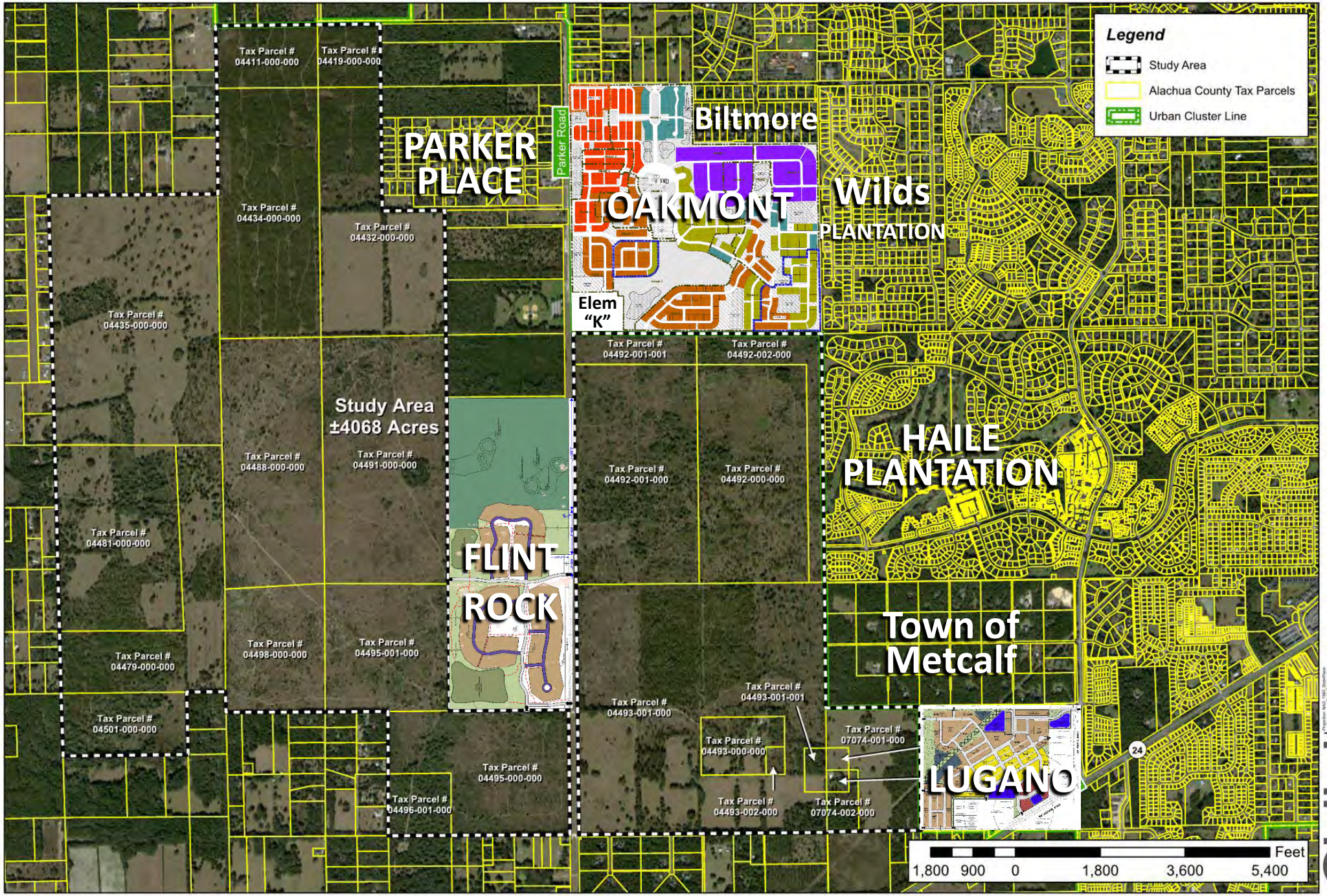
- Existing Conditions

Aerial Map

The 6-square-mile study area consists of 14 parcels west of and 12 east of Parker Road, which have had agricultural & silvicultural activity occurring for the past 100 years.

FCL Timber, Land & Cattle, LLLP maintains the land, its cattle and silviculture operations, and some partners reside on the property.

CHW



Existing Future Land Use Map

Rural/Agricultural Land Use allows 1 dwelling / 5 acres generally served by wells and septic tanks.

Eastern parcels abut Oakmont, Haile Plantation, Town of Metcalf, Lugano, and the Carrollton subdivisions. The western parcel abuts Parker Place and the Town of Tioga subdivisions.

CHW

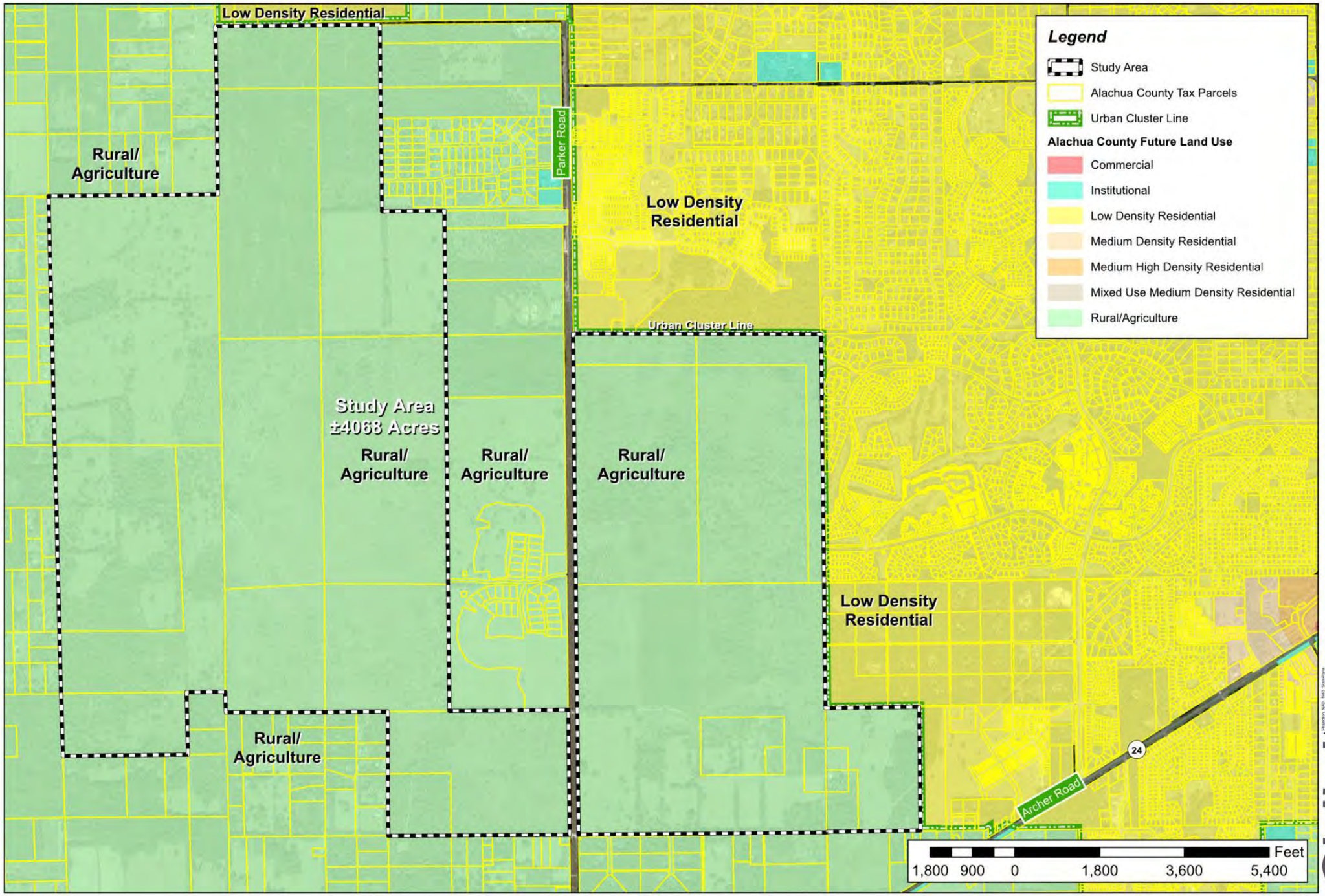


ILLUSTRATION 2A:
FLU MAP

FCL Timber, Land & Cattle, LLLP
Alachua County, FL

Professional Consultants

Prepared by: Employee ###
Date: 3/22/2022

Document Path: N:\2019\19-0019\Planning\GIS\MXD\FCL Timber_Planning Maps\FCL Timber_Planning Maps.aprx

Existing Zoning Map

Rural/Agricultural Zoning allows 1 dwelling / 5 acres, with a mandated rural cluster subdivision.

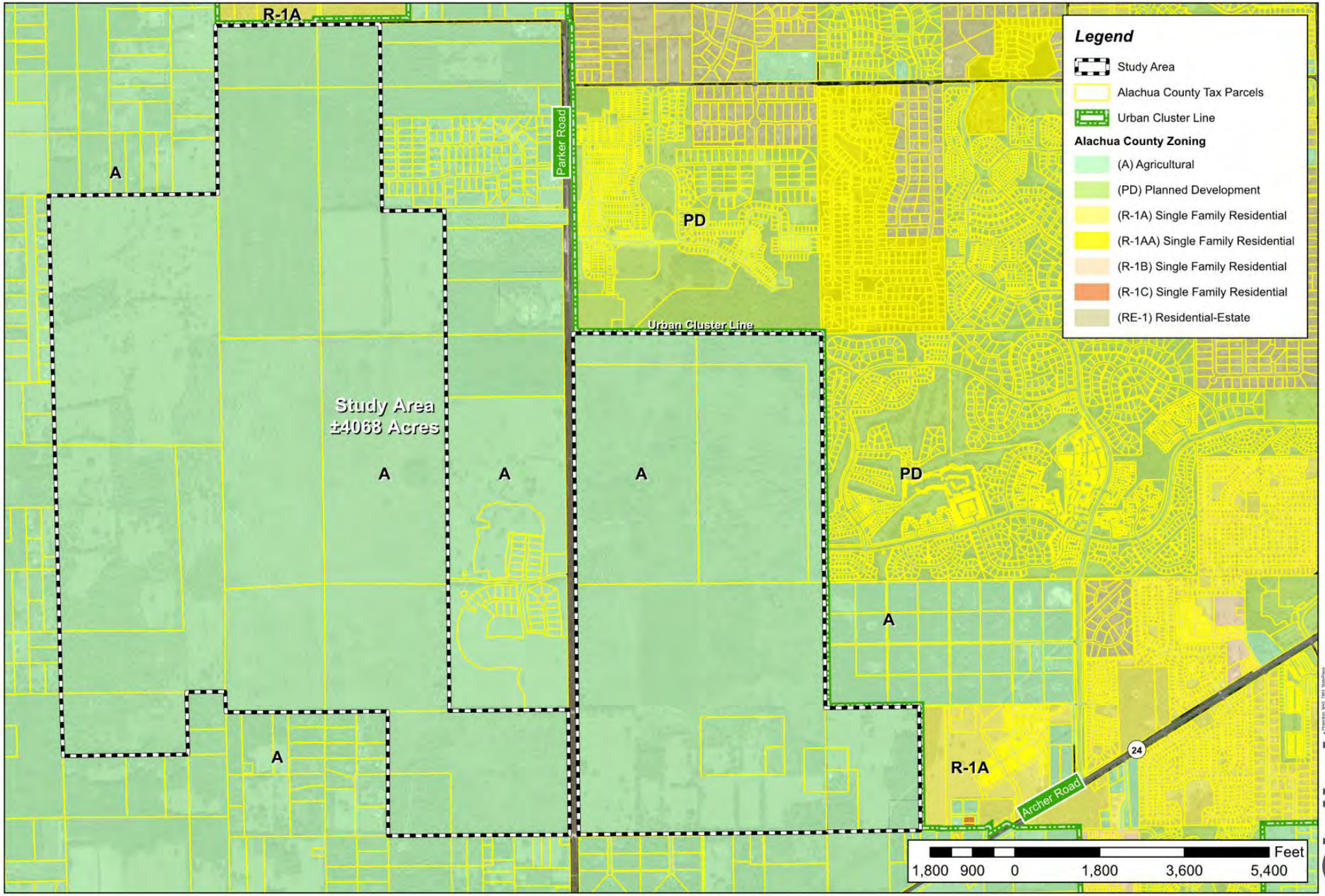


ILLUSTRATION 3A:
ZONING MAP

FCL Timber, Land & Cattle, LLLP
Alachua County, FL

NORTH

Professional Consultants

Prepared by: Employee ###
Date: 3/22/2022

Document Path: N:\2019\19-0019\Planning\GIS\MXD\FCL Timber_Planning Maps\FCL Timber_Planning Maps.aprx

Strategic Ecosystem Map

In 2004, Alachua County included properties inventoried by the KBN/Golder Report creating new Strategic Ecosystems Map.

Property owners must ground-truth the map as part of a Special Area Study.

CHW

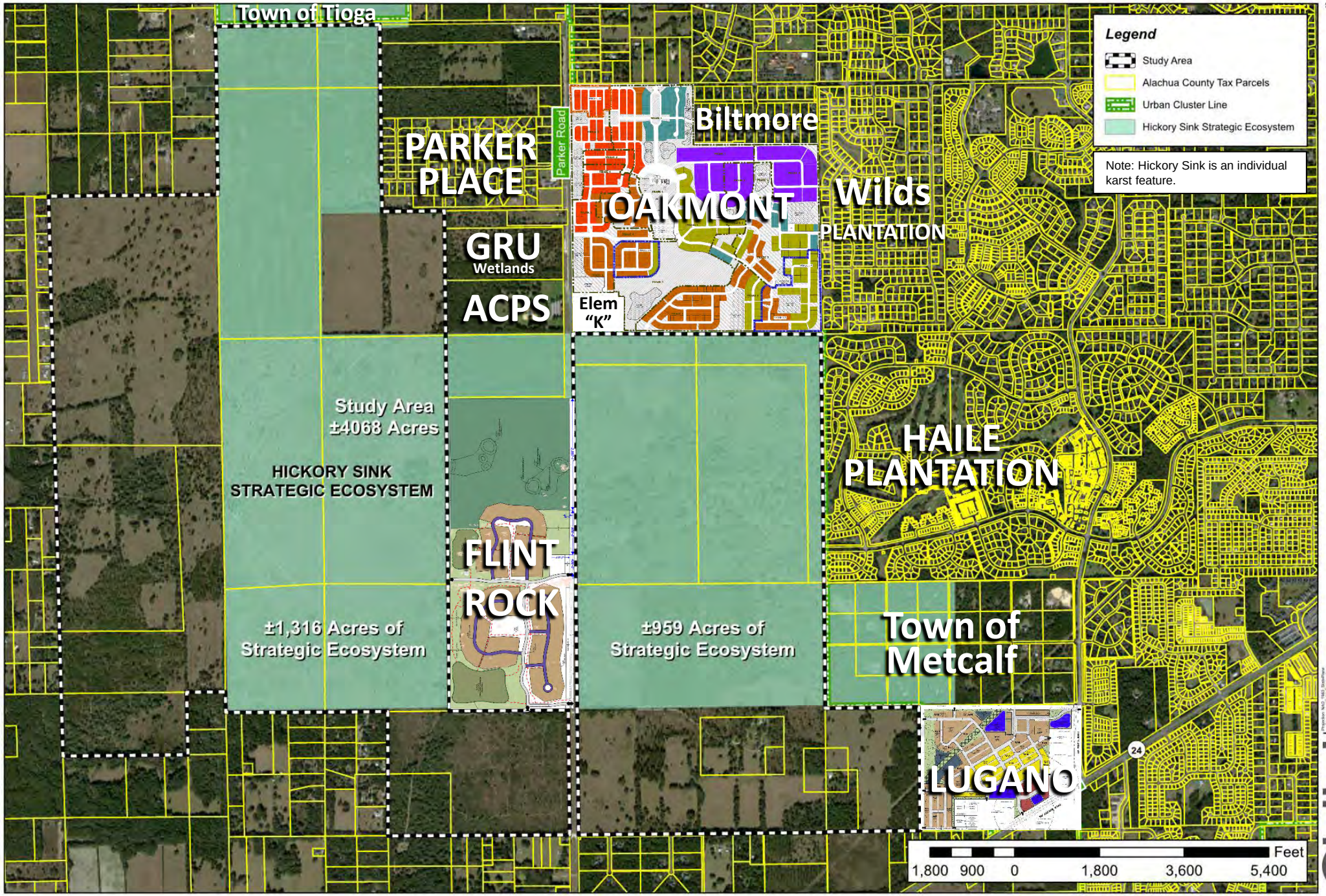


ILLUSTRATION 6:
STRAT. ECO. MAP

FCL Timber, Land & Cattle, LLLP
Alachua County, FL

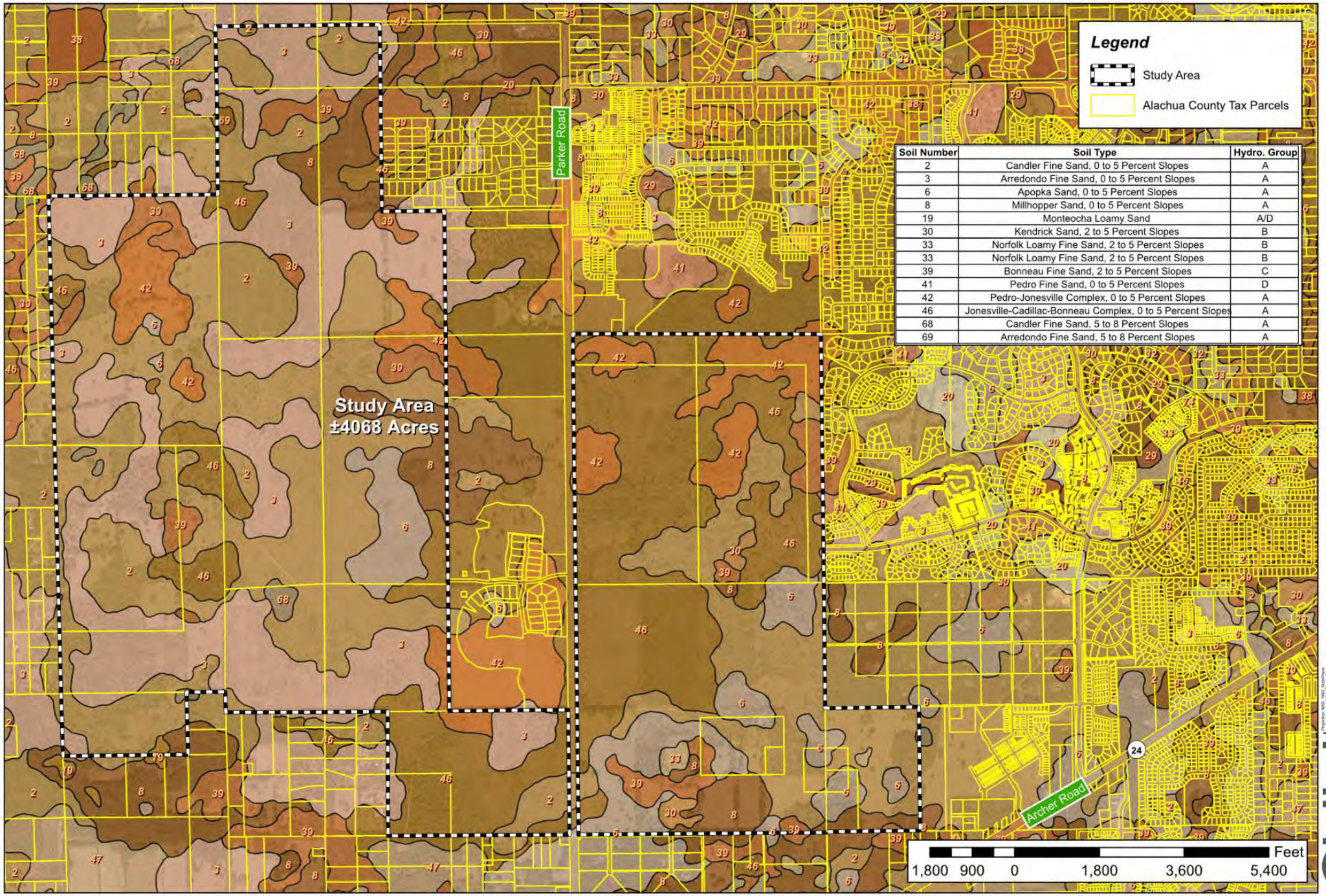
CHW Professional Consultants

Prepared by: Employee ####
Date: 3/22/2022

Document Path: N:\2019\19-0610\Planning\GIS\MXD\FCL Timber_Planning Maps\FCL Timber_Planning Maps.aprx

Soils Map

The property has multiple well drained soil types, common to the surrounding land in Alachua County.



Soil Number	Soil Type	Hydro. Group
2	Candler Fine Sand, 0 to 5 Percent Slopes	A
3	Arredondo Fine Sand, 0 to 5 Percent Slopes	A
6	Apopka Sand, 0 to 5 Percent Slopes	A
8	Millhopper Sand, 0 to 5 Percent Slopes	A
19	Monteocha Loamy Sand	A/D
30	Kendrick Sand, 2 to 5 Percent Slopes	B
33	Norfolk Loamy Fine Sand, 2 to 5 Percent Slopes	B
33	Norfolk Loamy Fine Sand, 2 to 5 Percent Slopes	B
39	Bonneau Fine Sand, 2 to 5 Percent Slopes	C
41	Pedro Fine Sand, 0 to 5 Percent Slopes	D
42	Pedro-Jonesville Complex, 0 to 5 Percent Slopes	A
46	Jonesville-Cadillac-Bonneau Complex, 0 to 5 Percent Slopes	A
68	Candler Fine Sand, 5 to 8 Percent Slopes	A
69	Arredondo Fine Sand, 5 to 8 Percent Slopes	A

ILLUSTRATION 5:
SOILS MAP

FCL Timber, Land & Cattle, LLLP
Alachua County, FL

Professional Consultants

Prepared by: Employee ###
Date: 3/22/2022

Document Path: N:\2019\19-0019\Planning\GIS\MXD\FCL Timber_Planning Maps\FCL Timber_Planning Maps.aprx

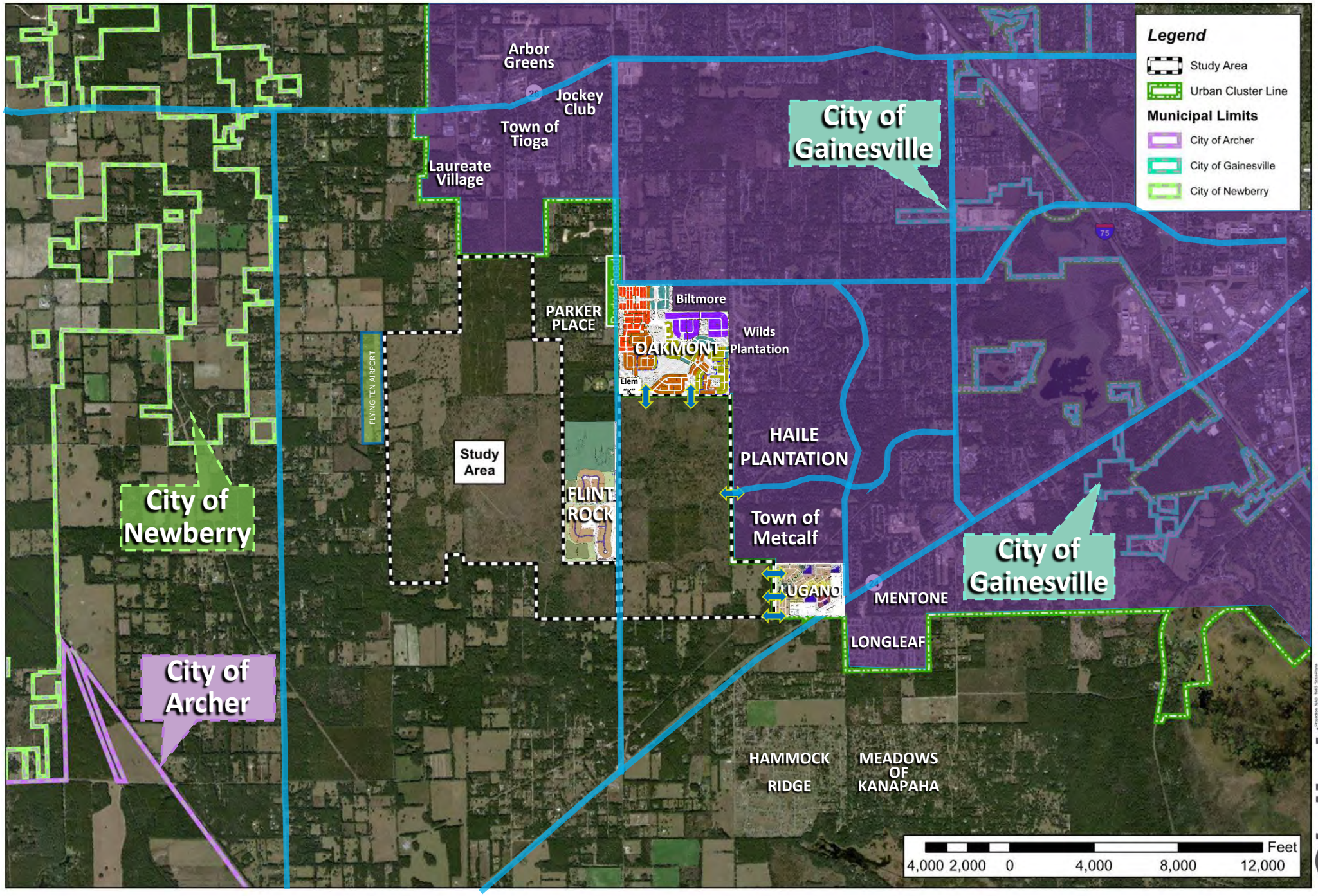
SAS DATA & ANALYSIS:

- Existing Conditions
- Infrastructure

Context Map

The study area in western Alachua County is proximate to available public roads, utility infrastructure, and reclaimed water.

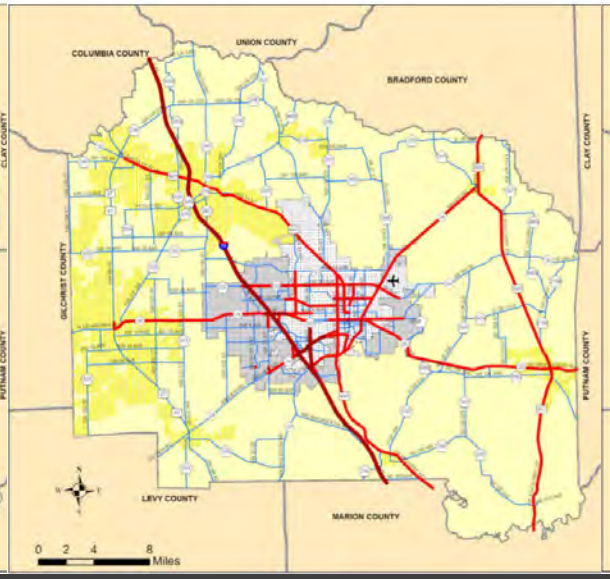
- State/County Roads
- Existing Utility Services



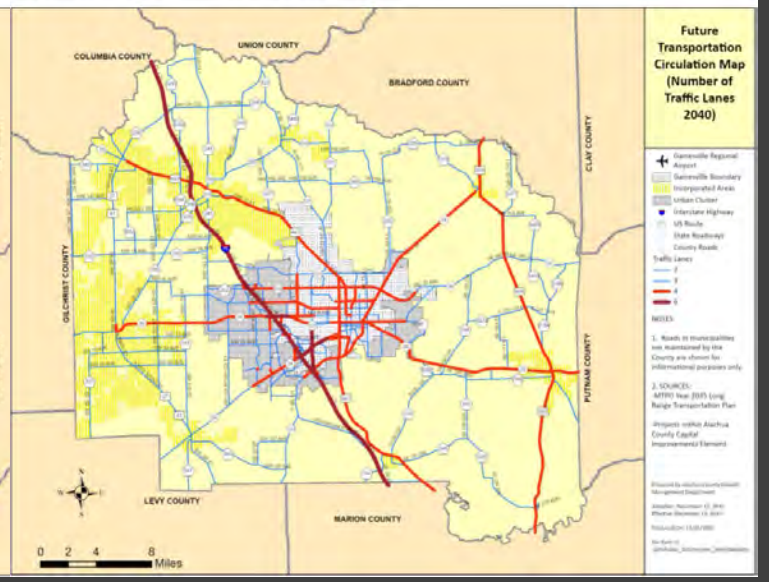
Map 1. Future Transportation Functional Classifications (2025)

Map 2. Future Transportation Functional Classifications (2040)

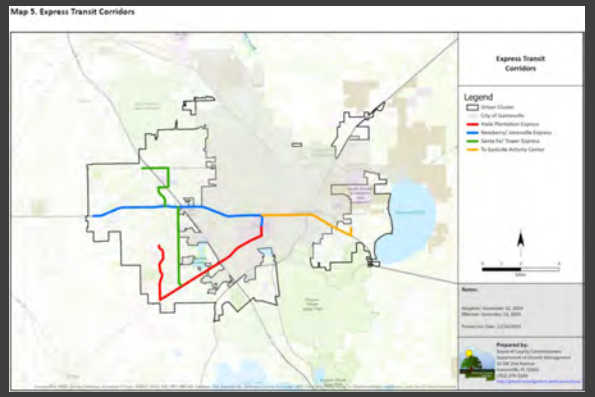
Map 3. Future Transportation Circulation Map (Number of Traffic Lanes) (2025)



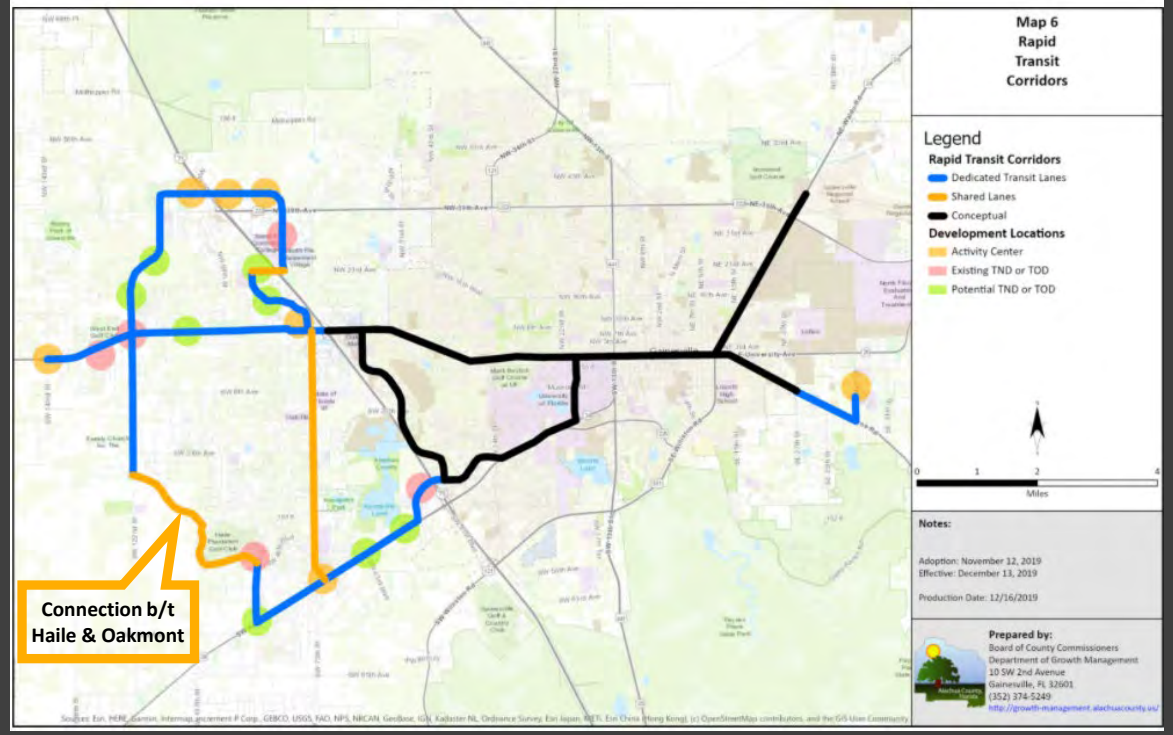
Map 4. Future Transportation Circulation Map (Number of Traffic Lanes) (2025)



Map 5. Express Transit Corridors



Map 6. Rapid Transit Corridor



Map 8. Existing & Future Bicycle and Pedestrian Network

CHW

SAS DATA & ANALYSIS:

- Existing Conditions
- Infrastructure
- Natural Resources

SAS Data & Analysis: Natural Resources

Site ground-truthing:

- Studied historical property usage
- Walked ~130 linear miles of habitat transects
- Identified "Significant Geologic Features"

More than 2 square miles of land proposed as Primary or Secondary Conservation Open Space (COS)

- 840 acres west of Parker Road (includes Gopher Tortoise preserve)
- 150 acres of karst feature protection/buffer
- 40 acres for ped/cycle trail to Town of Tioga
- 300 acres on proposed UF Golf Course
- Management plan to foster ecological rebound

Conservation Open Space Map

Based on the field studies, Data & Analysis, land-owner's experts identified the areas in green for Conservation Open Space.

These areas interconnect with established off-site Conservation or Common Open Spaces, and with proposed UF golf course.

CHW

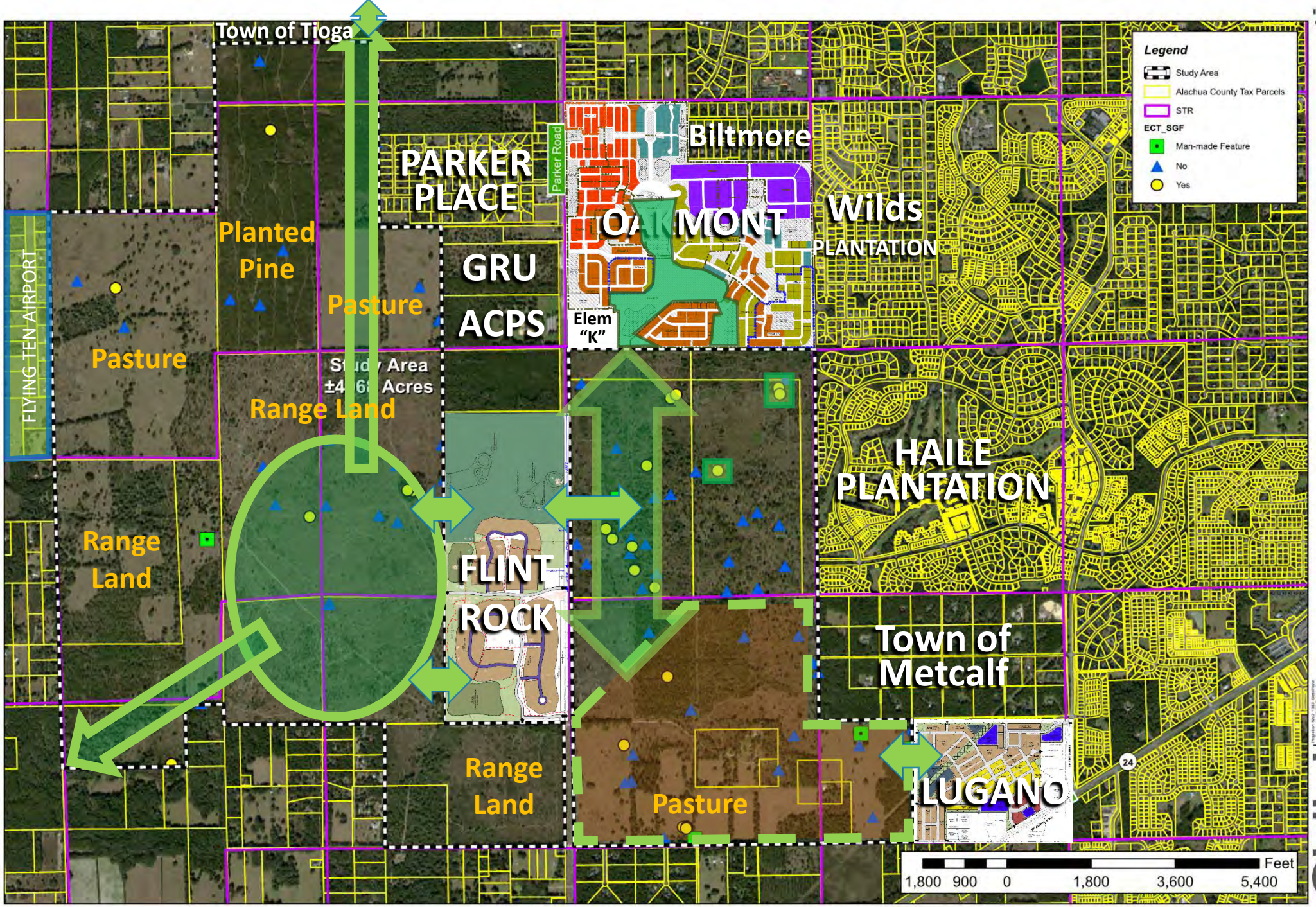


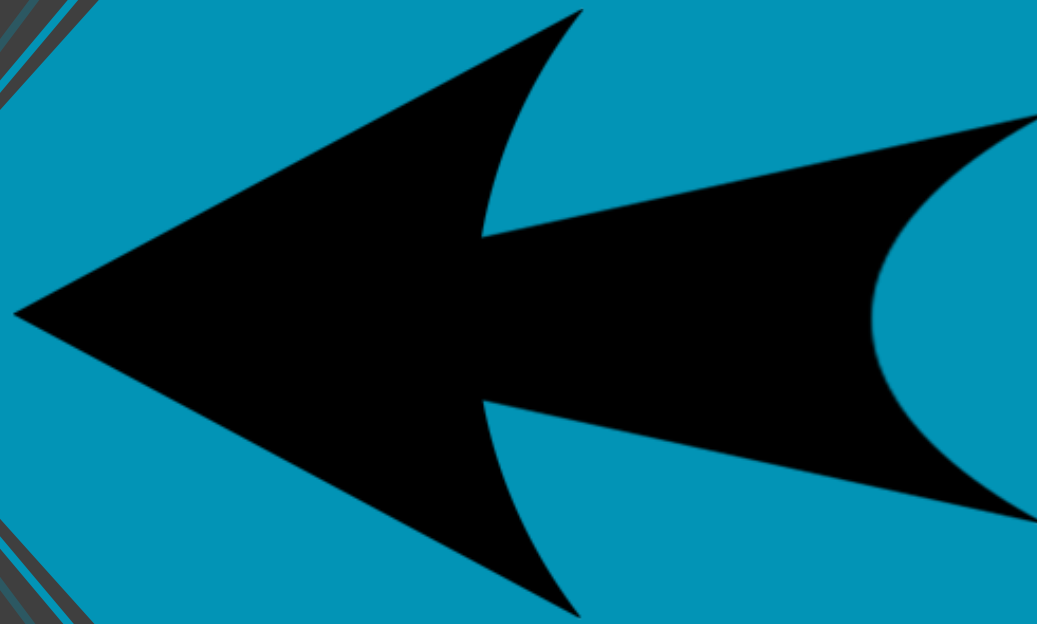
ILLUSTRATION 7: CONSERVATION OPEN SPACE MAP

FCL Timber, Land & Cattle, LLLP
Alachua County, FL

CHW Professional Consultants

NEXT STEPS:

- Receive public input from Workshops
- Prepare SAS Report/Recommendations & Submit to BoCC
- Develop Special Area Plan (Land Use, Zoning, etc.)



CHW

Professional Consultants

EXHIBIT B

REPORT OF
SIGNIFICANT GEOLOGIC FEATURES
HICKORY SINK STRATEGIC ECOSYSTEM
FCL TIMBER, LAND & CATTLE, LLLP
GAINESVILLE, ALACHUA COUNTY, FLORIDA

Prepared for:

FCL Timber, Land & Cattle, LLLP
11003 Southwest 65th Avenue
Gainesville, Florida 32608

Prepared by:

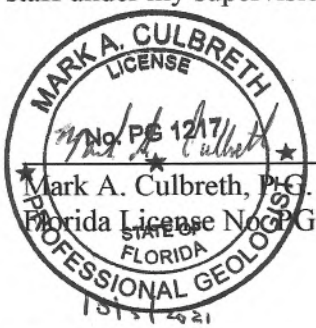
ECT Environmental Consulting & Technology, Inc.
1408 North Westshore Boulevard, Suite 115
Tampa, Florida 33607
www.ectinc.com

ECT No. 200326-0100
October 2021

PROFESSIONAL CERTIFICATION

The technical contents of this Report of Significant Geologic Features represent our professional interpretations and are arrived at in accordance with generally accepted hydrogeologic practices. Utilization of this report by other parties is at their risk. Neither Environmental Consulting & Technology, Inc. nor I am liable for consequences or damages extending therefrom.

I certify that this report has been produced by me and staff under my supervision.



Mark A. Culbreth, P.G.
Florida License No. PG 1217

Date

ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.
Florida Engineering Business Certificate of Authorization No. 5520
Florida Geologist Business Certificate No. GB42
1408 North Westshore Boulevard, Suite 115
Tampa, Florida 33607
Telephone: (813) 289-9338
Fax: (813) 289-9388
www.ectinc.com

TABLE OF CONTENTS

LIST OF FIGURES

TERMINOLOGY

Fracture Trace, a line that marks the intersection of a fracture with the surface of the earth.

Lineament, a photolinear feature that meets established criteria for features that are likely the result of underlying zones of fractured bedrock.

Photolinear Feature, any linear pattern seen on aerial photographs and other remotely sensed imagery.

Topolinear Feature, linear pattern observed in topographic contours. For the purpose of this report, emphasis is placed on linear patterns that represent zones of lower elevation.

1. INTRODUCTION

1.1 BACKGROUND

FCL Timber, Land & Cattle, LLLP (FCL) owns approximately 4,000 acres of land southwest of Gainesville, Florida lying on both sides of Southwest 122nd Street (aka Parker Road). Figure 1 shows the location of the FCL property. The property is being considered for development.

The Alachua County Land Development Regulations requires significant geologic features be protected due to the interrelationship of natural resource values, characteristics, and hazards with land capability and suitability. According to Alachua County Land Development Code, Section 406.89, significant geologic features include point source features such as sinkholes, caves, and limestone outcrops; linear features such as lineaments, ridges, escarpments, and springs; and areal features such as steep slopes and springsheds.

1.2 GEOLOGIC SETTING

The study area lies in the Western Valley physiographic province of Williams, *et al.*, (1977). The geology of the western part of Alachua County is characterized by a nearly flat limestone karst plain. This area was once covered by sediments of the Hawthorn Formation, which have subsequently been eroded away. This karst plain is bounded to the east by a westward facing escarpment.

The dominant geologic formation in the area is the Ocala Limestone. However, throughout the area, the limestone is covered by a thin veneer of soils, as well as remnant sands, silts, and clays of the Hawthorne Formation. Numerous low hills and slight ridges represent erosional remnants of the Hawthorn Formation.

Due to a deep water table, rainfall infiltrates into the subsurface rather than running off to rivers, streams or creeks. Regionally, small lakes or ponds may be present in low lying areas and may be perched on top of clays.

Sinkholes and other karst features are abundant throughout the area. The area is characterized a high vulnerability area on the Alachua County Floridan Aquifer High Recharge Area map (Alachua County, 2008).

1.3 OBJECTIVE

The objective of this report is to summarize the tasks conducted as part of an investigation of the FCL property to identify whether significant geologic features are present on the property. For those features identified, proposed set back areas will be identified.

2. SCOPE OF WORK

The investigation into the identification of significant geologic features consisted of three phases:

1. Review of aerial photographs and satellite imagery to identify possible photolinear features that could be representative of fracture traces or lineaments;
2. Development of a digital elevation model from existing LiDAR data to identify possible lineaments and closed depressions; and
3. Conducted a site visit to ground-truth previously identified geologic features.

2.1 AERIAL PHOTOGRAPH AND IMAGERY ANALYSIS

Fracture traces and lineaments appear as subtle tonal variations, straight line segments of streams, linear shaped surface water bodies, and alignments of various features.

Aerial photographs were obtained from the Florida Department of Transportation (FDOT) and evaluated to identify whether there were photolinear features that could be fracture traces. Aerial photographs from March 30, 1964; May 9, 1971; February 22, 1982; and November 2, 1994 were examined were analyzed.

The subject area appears to have been used for grazing and other agricultural purposes since prior to 1964. The area consists of a mosaic of parcels, many of which are cleared and altered. The land use of the area obscures some natural features making identification of tonal variations difficult.

Each aerial photograph was examined from multiple directions to identify possible photolinear features. Drainage patterns are absent, given the lack of a regionally extensive clay layer and resulting internal drainage in the area. However, soil tonal variations and alignment of visible features were sufficient to identify photolinear features that could be representative of fracture traces. Copies of the aerial photographs with photolinear features

are provided in Appendix A. Figure 2 contains a compilation of photolinear features identified on the aerial photographs.

Satellite imagery was obtained from the United States Geological Survey (USGS). Four LANDSAT images and one synthetic aperture radar image were selected based on lack of cloud cover, quality of the imagery, and sensitivity of the scanner to soil tonal variations. The images selected include the following:

- LM05 L1TP 017039 19911117_20180323_01_T2 – Color
- LM05_L1TP_017039_19911117_20180323_01_T2 – Black and white
- LC08_CU_025016_20191130_20191218_C01_V01 – Black and white
- LC08_CU_025016_20200508_20200508_C01 V01 – Black and white

The synthetic aperture radar image used for this analysis was an X-band radar image acquired in 1993 and produced for the USGS by INTERA.

Each satellite image was examined from multiple directions to identify possible photolinear features. Soil tonal variations and alignment of visible features were sufficient to identify photolinear features that could be representative of fracture traces. Copies of the satellite images with photolinear features are provided in Appendix B. Figure 3 contains a compilation of photolinear features identified on the satellite imagery.

2.2 TOPOGRAPHIC FEATURES

Available 2001 LiDAR data were obtained and a digital elevation model generated. The digital elevation model was developed for the subject property plus an area extending a minimum of 2 miles from the property boundary. The output was a topographic map with color gradients used to illustrate changes in elevation.

The topographic data were examined to evaluate whether linear topographic features are present on the property. Linear topographic features (referred to as topolinear features) could be indicative of preferential erosion in areas overlying fracture traces. The

topographic map generated from the digital elevation model with linear topographic features is included in Appendix C. Figure 4 contains a compilation of the topolinear features identified on the digital elevation model.

The digital elevation model was also used to identify closed depressions. Figure 5 is a map of closed depressions with mapped topolinear features.

2.3 SITE VISIT

The property was extensively investigated by Ecological Research Corporation (ERC) in the 2007 and again in May 2020. During their field investigations, ERC identified potentially significant geologic features. A database of their findings is presented in Appendix D.

On May 27, and June 3, 2020, ECT conducted a site visit to identify the nature and extent of the potential geologic features. On May 27, 2020, ECT was shown karst features known to the owner, Val Lee. On June 3, 2020, ECT investigated features identified by ERC.

Collectively, the features identified are categorized as landscape depressions. Landscape depressions fell into three categories:

1. Open depressions: These are sinkholes, typically characterized by limestone and clay walls, that would potentially intercept the aquifer.
2. Closed depressions: As defined in 406.92(d), these are areas where there is a significant probability that these features are sand-filled sinkholes that have no surface indication.
3. Man-made surface water features.

Appendix D contains the database of features identified at the subject property. Figure 6 is a map of the locations of the potential significant geologic features.

3. DISCUSSION

3.1 GEOLOGIC SETTING

The near surface geology observed at the site appeared to be consistent with the regional geology described by Williams, *et al.,* 1977. Soil borings will be necessary to further assess the near surface stratigraphy at the site. Limestone and chert, were observed throughout the property, covered by a thin veneer of weathering residuum. These carbonates were likely Ocala Limestone.

Given the regional hydrogeology of the area, it is likely that there is widespread connectivity to the Floridan aquifer. This is based on the generally unconfined nature of the Floridan aquifer in this area, and the lack of surface water features in the area. It is anticipated that the areas at elevations reflected in green and lower elevations shown on the digital elevation model provided in Appendix C, represent areas of dispersed connectivity to the Floridan aquifer as compared to higher elevation areas where connectivity to the Floridan aquifer is likely more point source via sinkholes, chimneys, and other geologic features.

3.2 FRACTURE TRACE ANALYSIS

3.2.1 PHOTOGRAMMETRY

The abundance of distinctive land use signatures makes identification of photolinear features from aerial photography difficult, due to the anthropogenic patterns that dominate the aerial photographs. These anthropogenic patterns tend to obscure subtle tonal variations that would otherwise be used to identify photolinear features.

Observable tonal variations and alignment of non-anthropogenic features were sufficient to allow for identification of photolinear features. None of the photolinear features identified on the aerial photographs had strong signatures.

The photolinear features identified on the aerial photographs are not considered significant geologic features, based on the following:

- An overlay of the geologic features on the map of photolinear features (Figure 7) shows there is no correlation between the photolinear features and landscape depressions.
- There is insufficient evidence at this time to characterize these photolinear features as fracture traces or lineaments.
- Given the shallow depth to limestone, these features likely do not represent significantly enhanced connectivity to the Floridan aquifer relative to adjacent features.

Few photolinear features were observed in the satellite imagery in the vicinity of the subject property. At the satellite scale, the area around the subject property is characterized by limited tonal variations, relative to other areas. The photolinear features observed in the satellite imagery in the vicinity of the property are not considered significant geologic features for the same reasons identified above.

3.2.2 TOPOGRAPHIC INDICATORS

Numerous topolinear features were identified in the digital elevation model. Linear topographic features are considered strong indicators of underlying fracture traces in this geologic setting based on the hypothesis that the underlying fractures could influence the erosional patterns resulting in their development. The distribution of topolinear features relative to the distribution of landscape depressions is shown on Figure 8.

More of the landscape depressions are located on mapped topolinear features than photolinear features. While the topolinear features could be considered significant geologic features; however, with the absence of additional stratigraphic data, it is considered unlikely that these features represent significantly enhanced connection to the Floridan aquifer relative to adjacent areas.

3.3 GEOLOGIC FEATURES

Significant geologic features were identified as landscape depressions with steep walls and exposed limestone and/or clay in the walls. The distribution of significant geologic features is shown in Figure 6. These features represent areas of enhanced connectivity to the Floridan aquifer. These features require setback protection, not only to prevent discharge of potentially poor-quality water to the Floridan aquifer, but also due to their uncertain stability, their uniqueness, and possible unique ecologic value.

Those features identified as sand-filled depressions may represent relict karst features; however, to evaluate their connectivity to the Floridan aquifer and subsurface structure, ground penetrating radar surveys across these features, coupled with site-specific stratigraphic data will be necessary. In the absence of additional data, these features are not considered significant geologic features.

Man-made features are not considered significant geologic features.

4. SUMMARY OF SIGNIFICANT GEOLOGIC FEATURES

Figure 6 identifies the significant geologic features identified at the subject property. These features include caves, sinkholes, and chimneys and likely represent direct connection to the Floridan aquifer. In addition, each of these features may have unique ecological value. It is proposed that each of these features be protected by a buffer of at least 75 feet. Within this buffer zone, use of reclaimed water and fertilizers should be prohibited. In addition, these features should not be used for management of stormwater.

It is also recommended that access to these features by the general public should be discouraged due to inherent risks associated with these features.

FIGURES

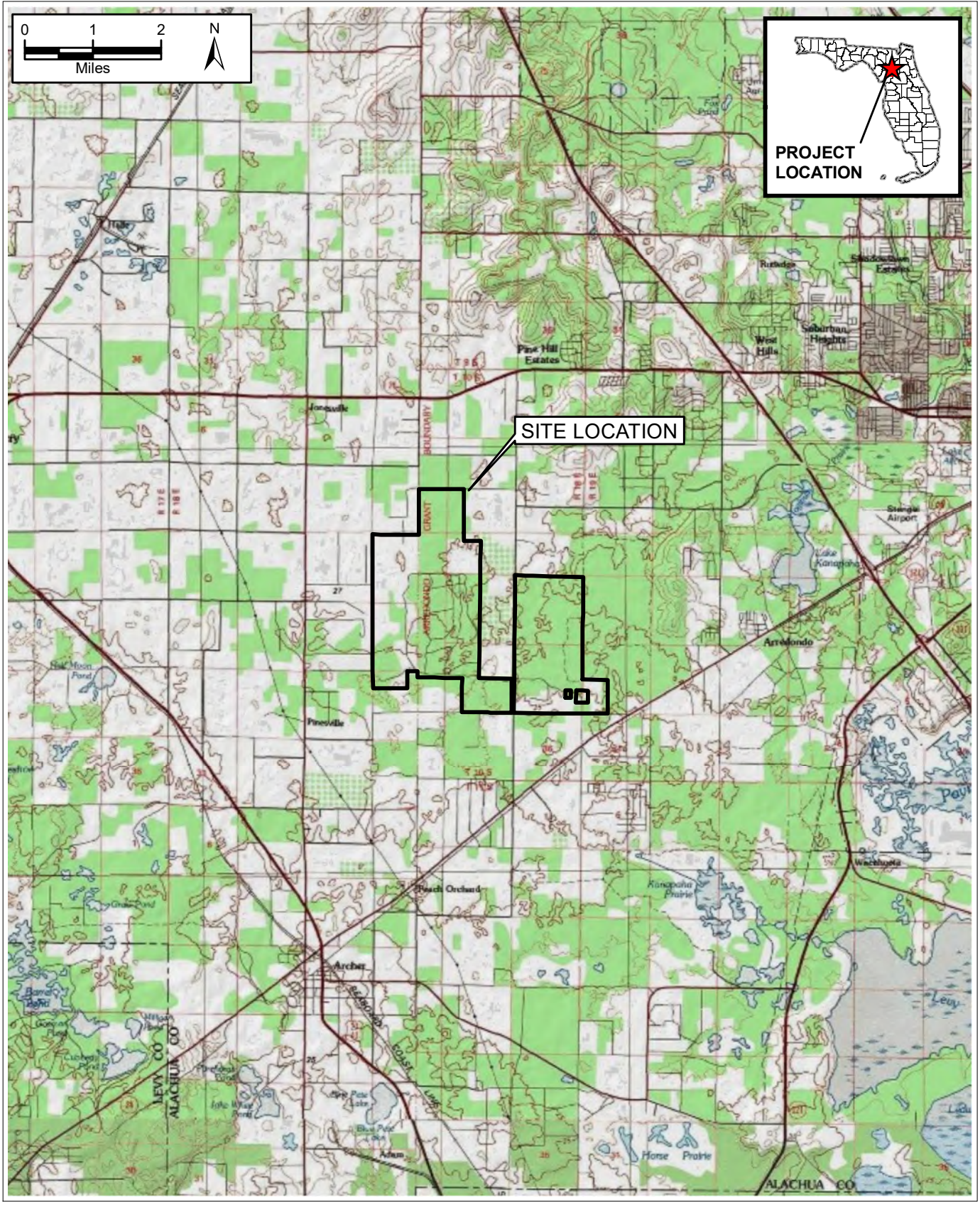


FIGURE 1.
SITE LOCATION MAP
FCL TIMBER, LAND & CATTLE LLLP
ALACHUA COUNTY, FLORIDA

Sources: USGS Quad: Newberry, Archer, & Arredondo, FL, 1993 & Gainesville West, FL, 1994; ECT, 2021.

ECT

Q:\projects\kanapaha\200326\0100\USGS_map.mxd

jvonborstel 2/26/2021 9:08:30 AM

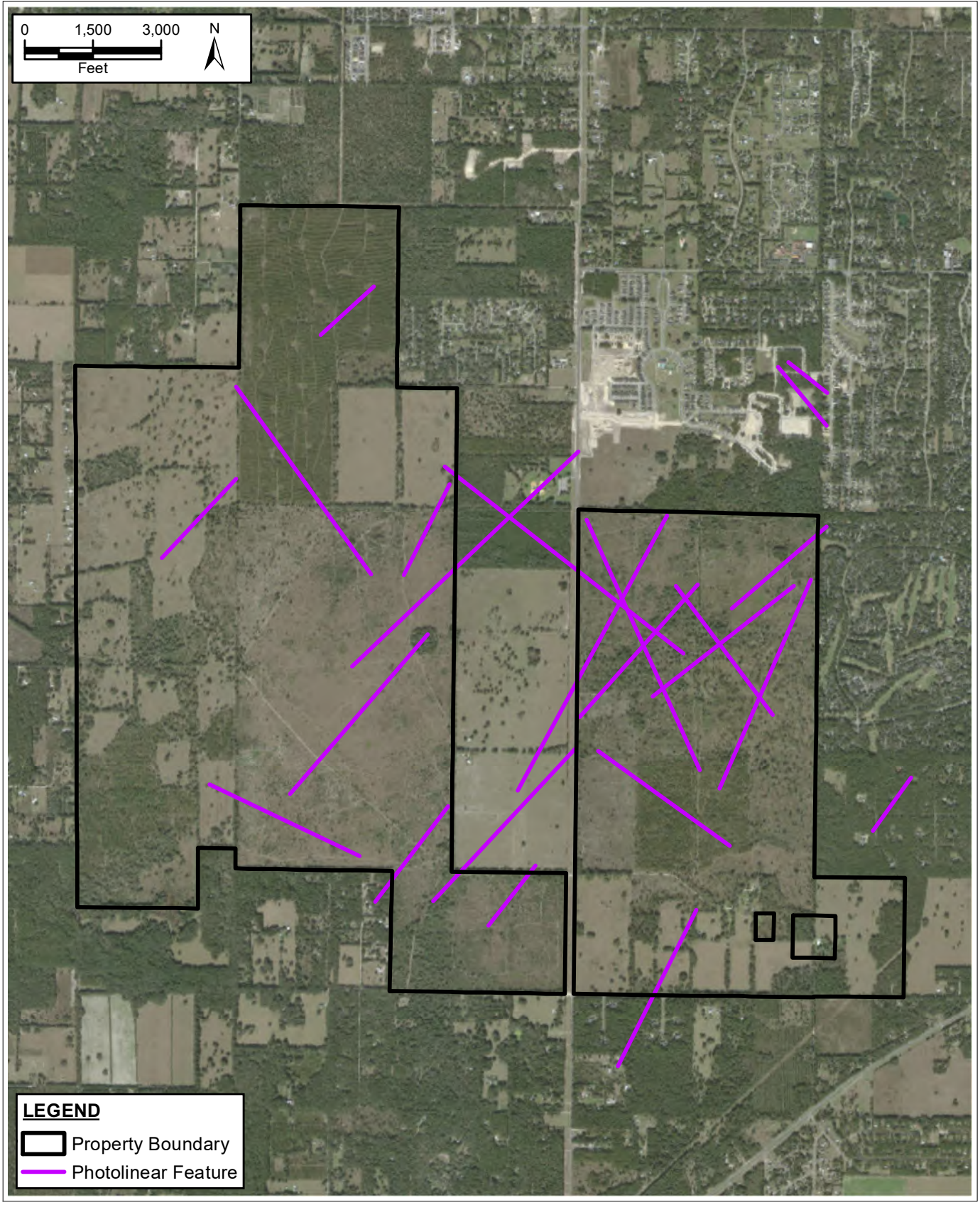


FIGURE 2.
PHOTOLINEAR FEATURES FROM AERIAL PHOTOGRAPHS
FCL TIMBER, LAND & CATTLE LLLP
ALACHUA COUNTY, FLORIDA

Sources: Maxar, 2018; ECT, 2021.

ECT

Q:\projects\kanapaha\200326\0100\PhotoLinear_Aerial.mxd

jvonborstel 2/26/2021 9:06:57 AM

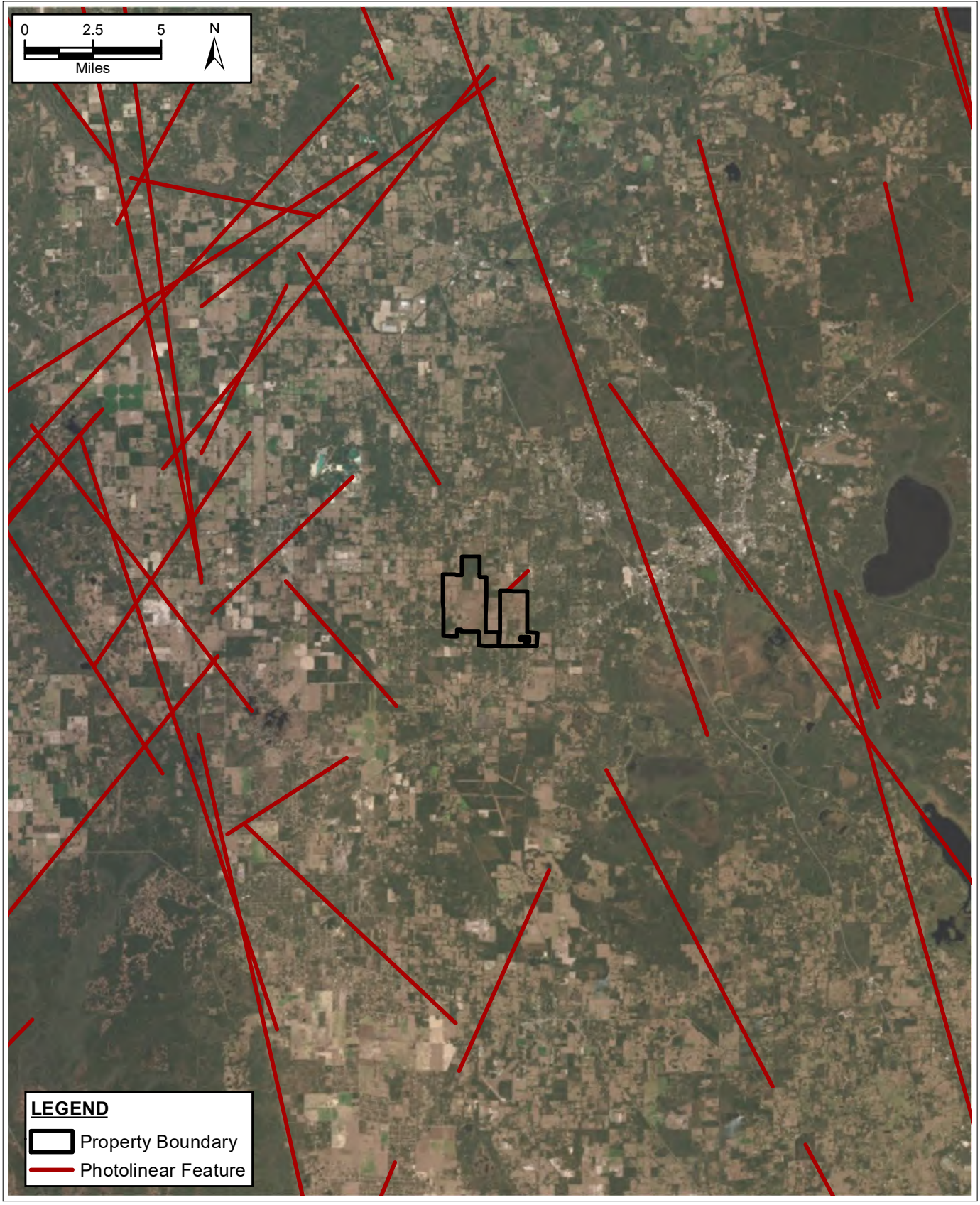


FIGURE 3.
PHOTOLINEAR FEATURES FROM SATELLITE IMAGERY
FCL TIMBER, LAND & CATTLE LLLP
ALACHUA COUNTY, FLORIDA

Sources: Maxar Imagery, 2018; ECT, 2021.

ECT

Q:\projects\kanapaha\200326\0100\PhotoLinear_Satelite.mxd

jvonborstel 2/26/2021 9:11:25 AM

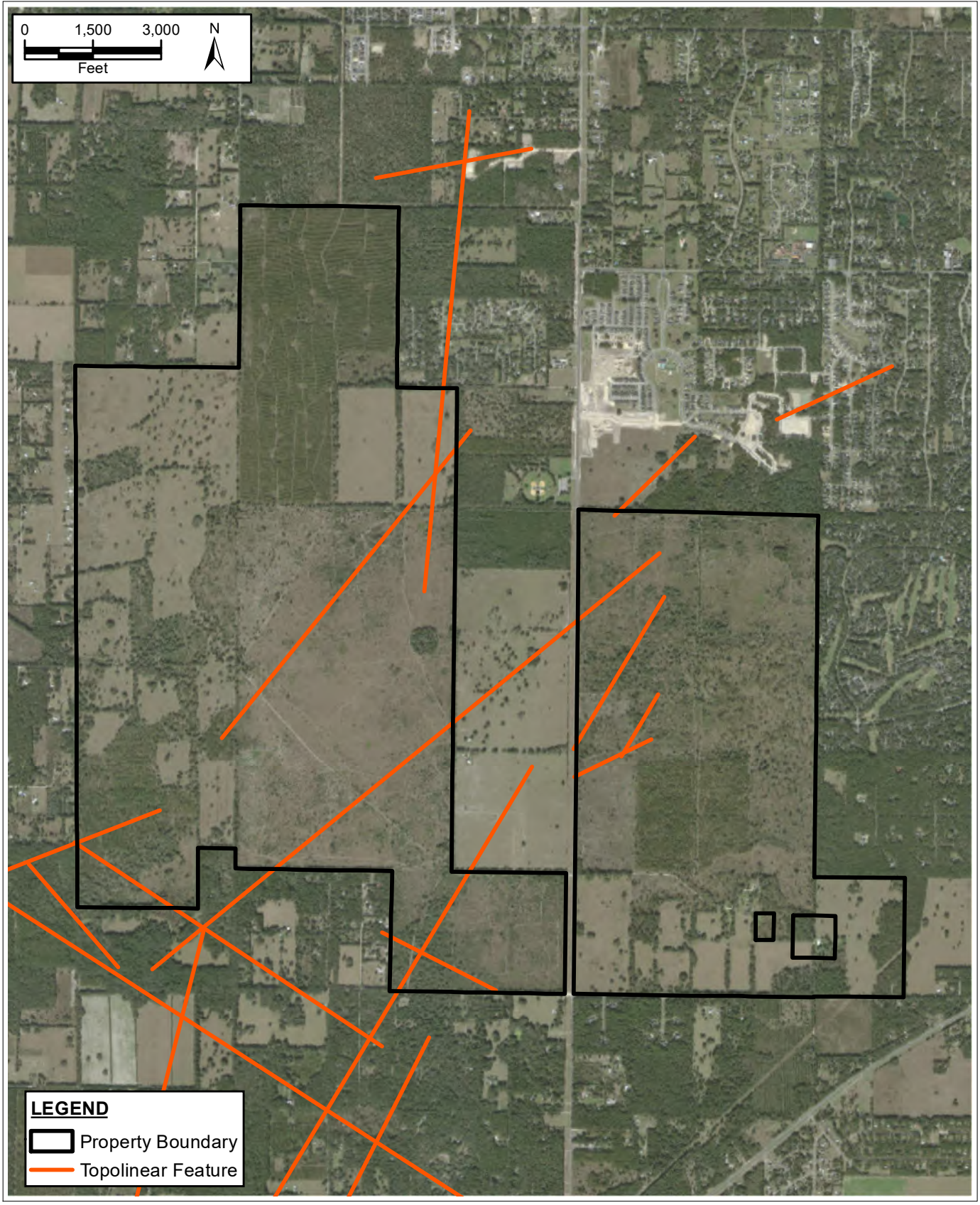


FIGURE 4.
TOPOLINEAR FEATURES FROM DIGITAL ELEVATION MODEL
FCL TIMBER, LAND & CATTLE LLLP
ALACHUA COUNTY, FLORIDA

Sources: Maxar Imagery, 2018; ECT, 2021.

ECT

Q:\projects\kanapaha\200326\0100\PhotoLinear_DEM.mxd

jvonborstel 2/26/2021 9:15:00 AM

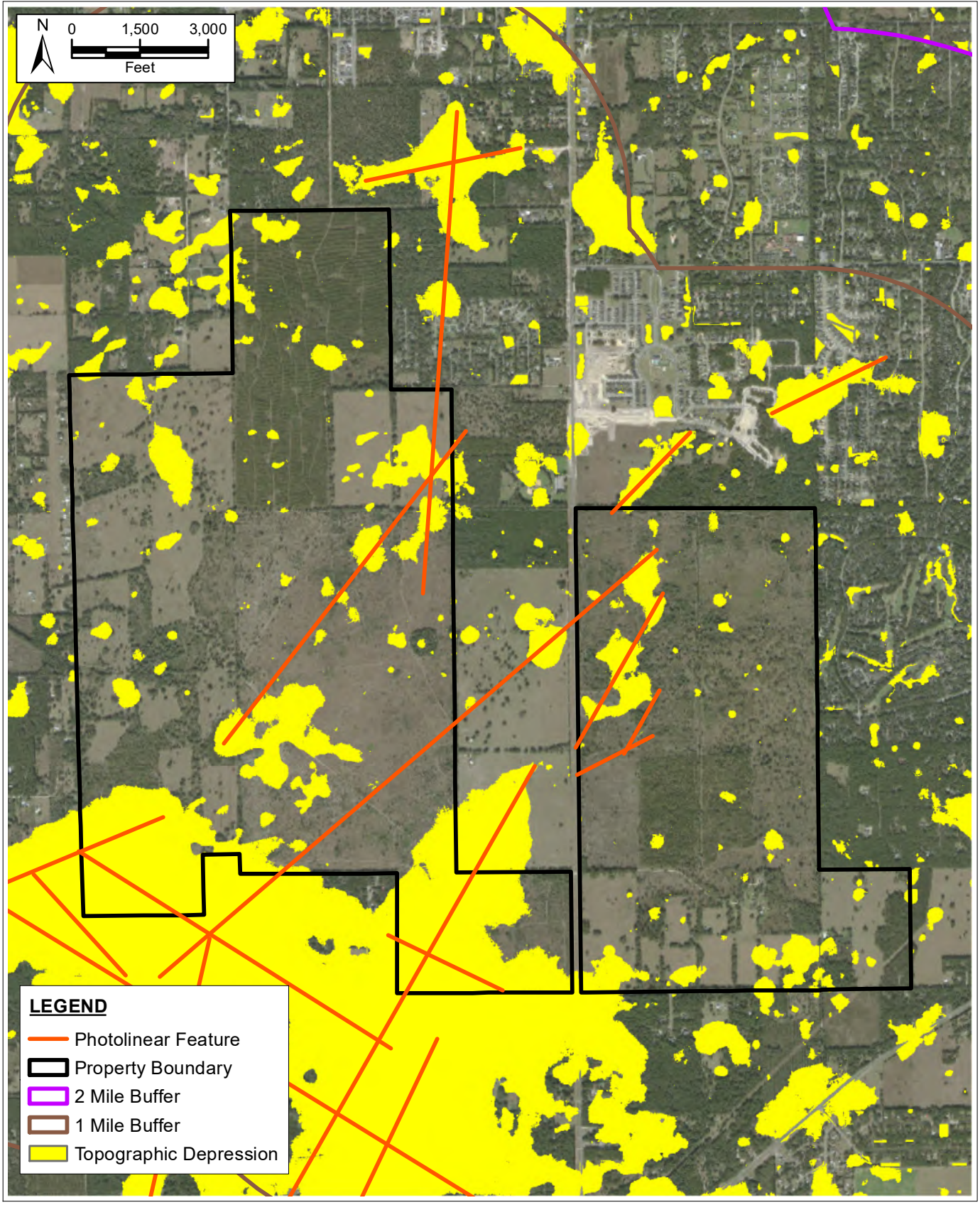


FIGURE 5.
MAP OF CLOSED DEPRESSIONS FROM DIGITAL ELEVATION MODEL
FCL TIMBER, LAND & CATTLE LLLP
ALACHUA COUNTY, FLORIDA

Sources: Maxar Imagery, 2018; ECT, 2021.

ECT

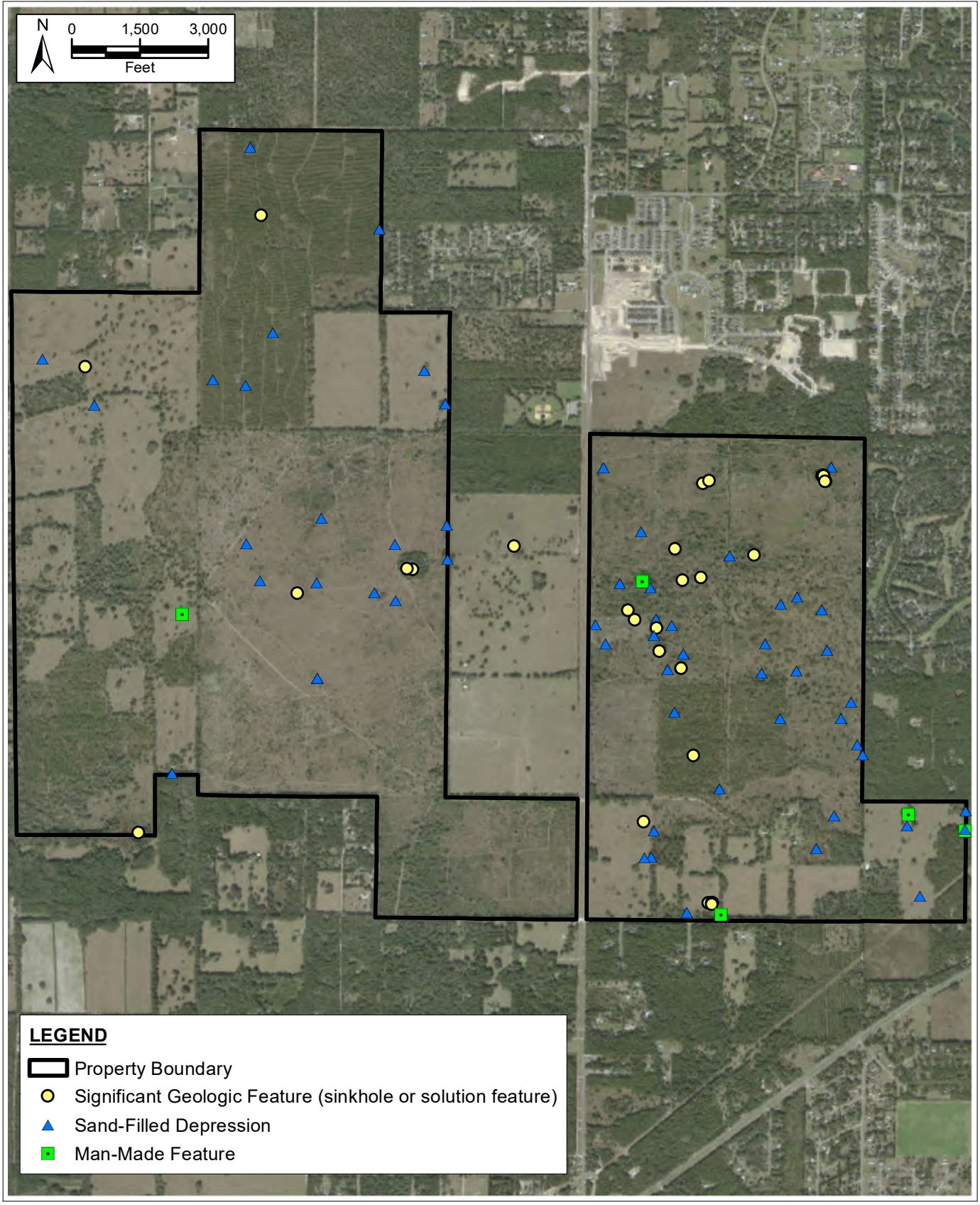


FIGURE 6.
MAP OF LOCATIONS OF LANDSCAPE DEPRESSIONS
FCL TIMBER, LAND & CATTLE LLLP
ALACHUA COUNTY, FLORIDA

Sources: Maxar Imagery, 2018; ECT, 2021.

ECT

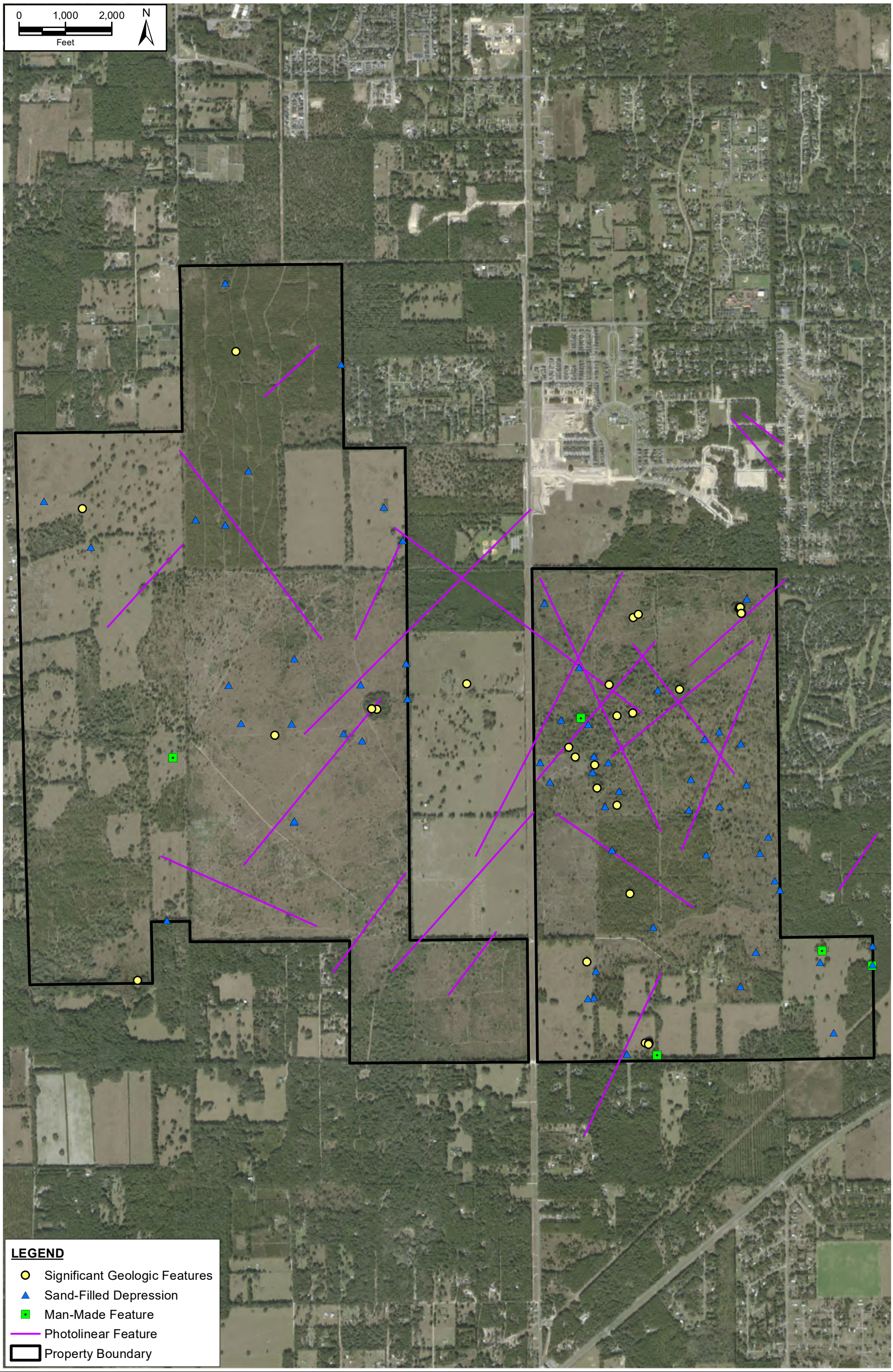


FIGURE 7.
DISTRIBUTION OF LANDSCAPE DEPRESSIONS RELATIVE TO PHOTOLINEAR FEATURES
FCL TIMBER, LAND & CATTLE LLLP
ALACHUA COUNTY, FLORIDA

Sources: Maxar Imagery, 2018; ECT, 2021.

ECT

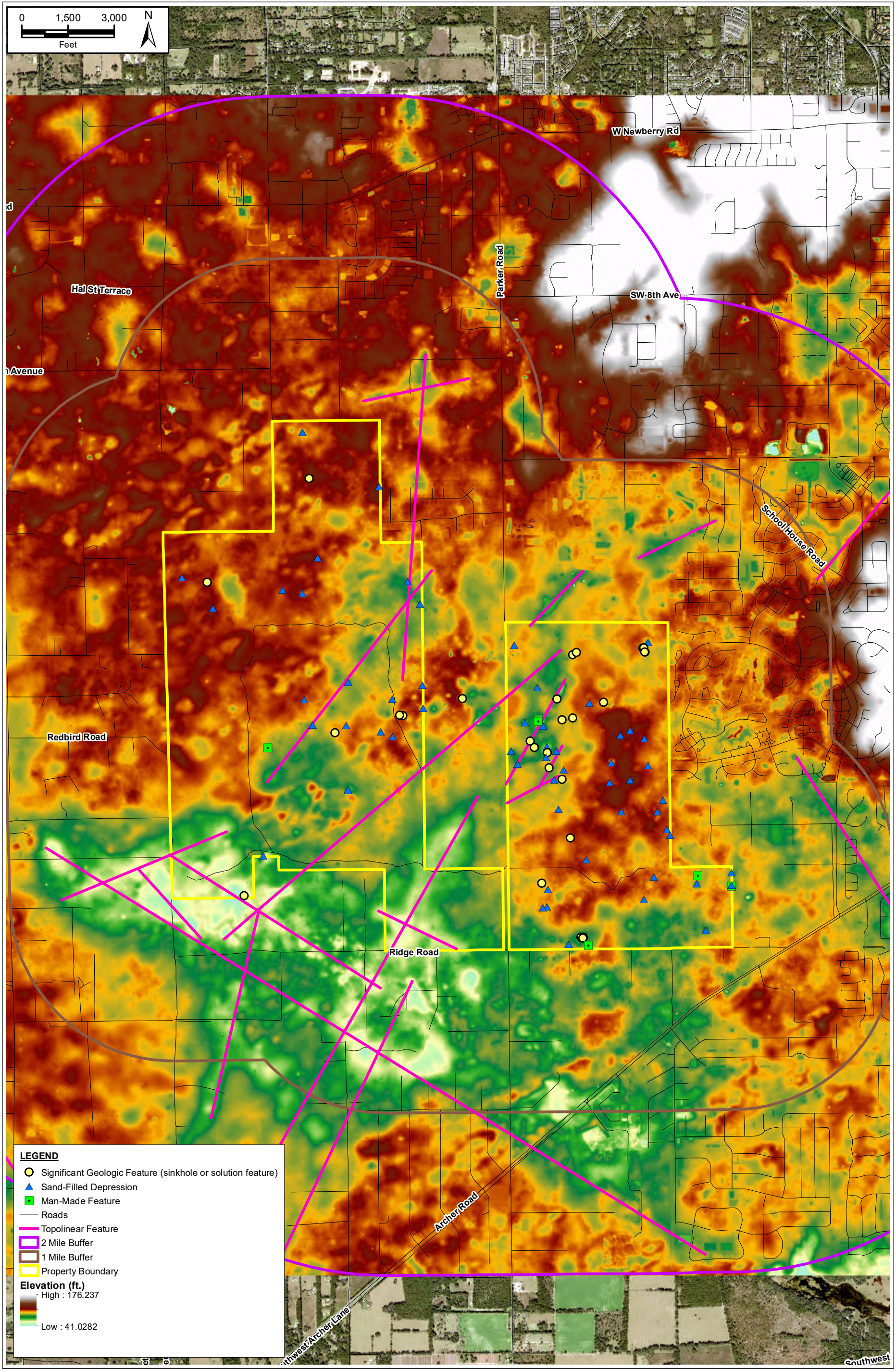


FIGURE 8.
DISTRIBUTION OF LANDSCAPE DEPRESSIONS RELATIVE TO TOPOLINEAR FEATURES
FCL TIMBER, LAND & CATTLE LLLP
ALACHUA COUNTY, FLORIDA

Sources: ECT, 2021.

ECT

APPENDIX A

AERIAL PHOTOGRAPHS

0 1,000 2,000
Feet
N

LEGEND

Photo Linear Feature

Boundary

PHOTOLINEAR FEATURES
1964 AERIAL PHOTOGRAPH
FCL TIMBER, LAND & CATTLE LLLP
ALACHUA COUNY, FLORIDA

Sources: FDOT, 1964; ECT, 2021.

ECT

0 1,000 2,000
Feet
N

LEGEND
Boundary
Photo Linear Feature

PHOTOLINEAR FEATURES
1971 AERIAL PHOTOGRAPH
FCL TIMBER, LAND & CATTLE LLLP
ALACHUA COUNY, FLORIDA
Sources: FDOT, 1971; ECT, 2021.

ECT

0 1,000 2,000 N
Feet

PD-2806-6H-10

2-22-82

PD-2806-6H-09

LEGEND
Boundary
Photo Linear Feature

PHOTOLINEAR FEATURES
1982 AERIAL PHOTOGRAPH
FCL TIMBER, LAND & CATTLE LLLP
ALACHUA COUNY, FLORIDA
Sources: FDOT, 1971; ECT, 2021.

ECT

0 1,000 2,000
Feet
N

LEGEND
Boundary
Photo Linear Feature

PHOTOLINEAR FEATURES
1994 AERIAL PHOTOGRAPH
FCL TIMBER, LAND & CATTLE LLLP
ALACHUA COUNY, FLORIDA
Sources: FDOT, 1994; ECT, 2021.

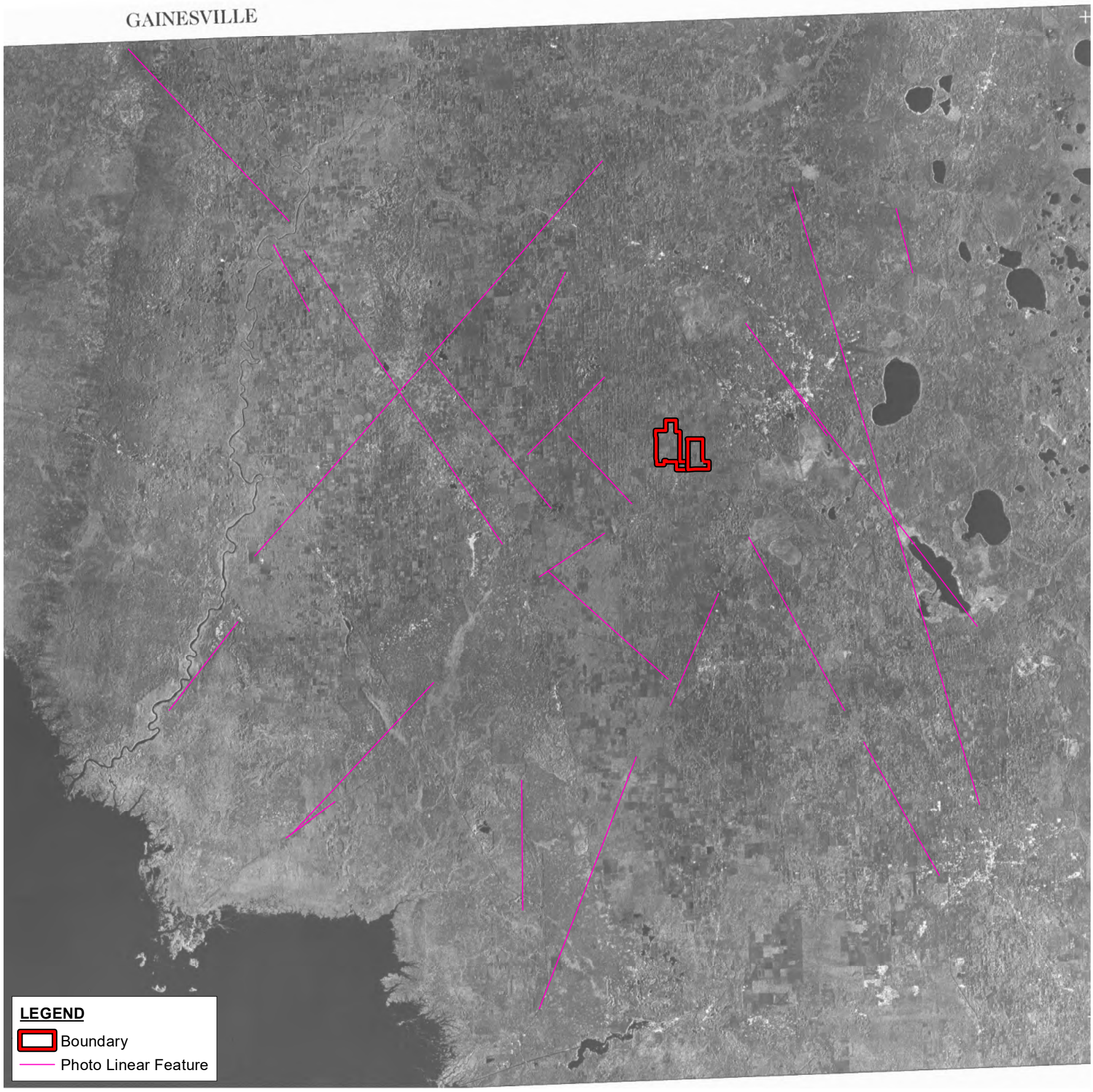
ECT

APPENDIX B

SATELLITE IMAGES

0 3.75 7.5
Miles
N

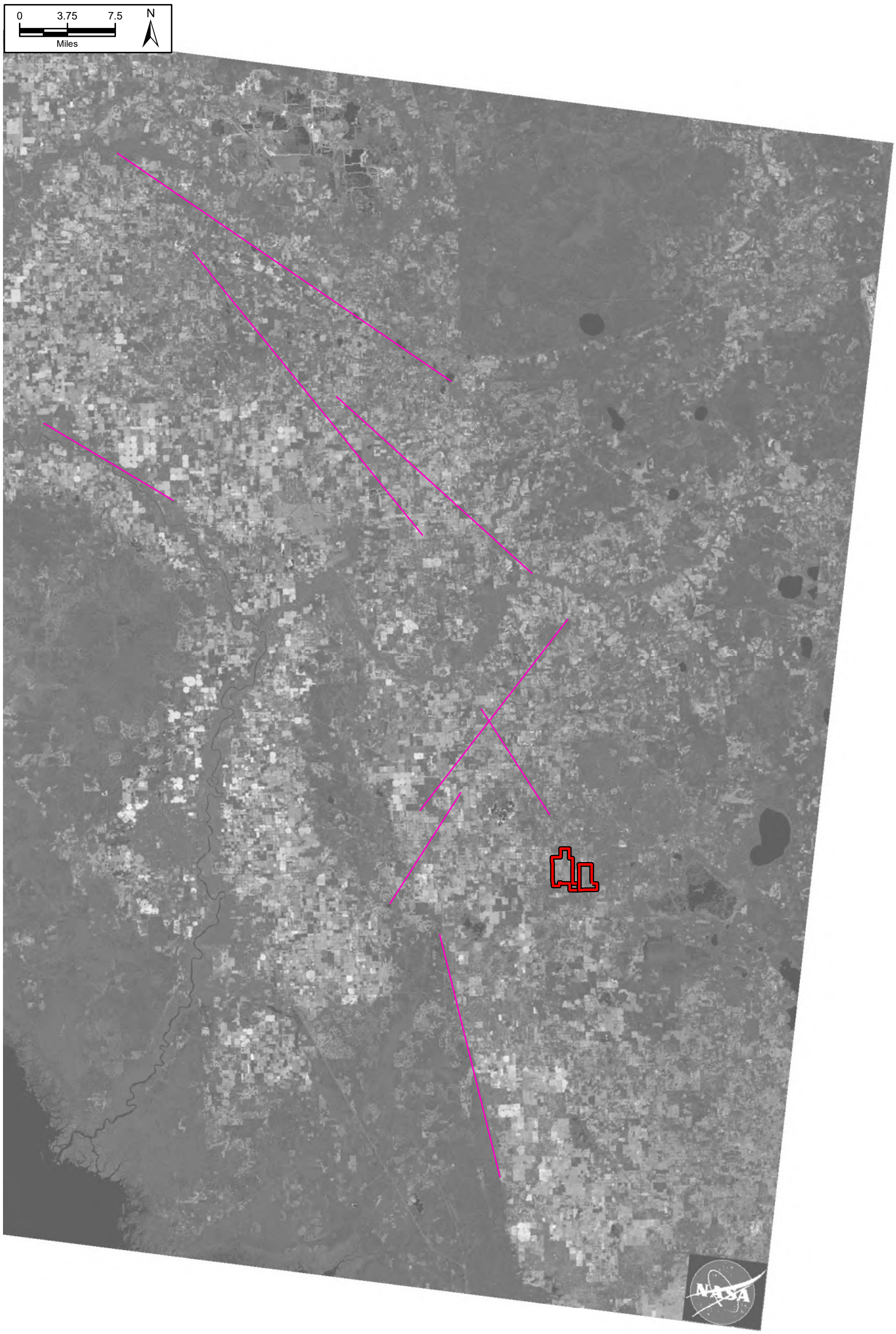
GAINESVILLE



LEGEND
Boundary
Photo Linear Feature

PHOTO LINEAR FEATURES
821092
FCL TIMBER, LAND & CATTLE LLLP
ALACHUA COUNTY, FLORIDA
Sources: NASA, Imagery, 2020; ECT, 2021.

ECT



LEGEND

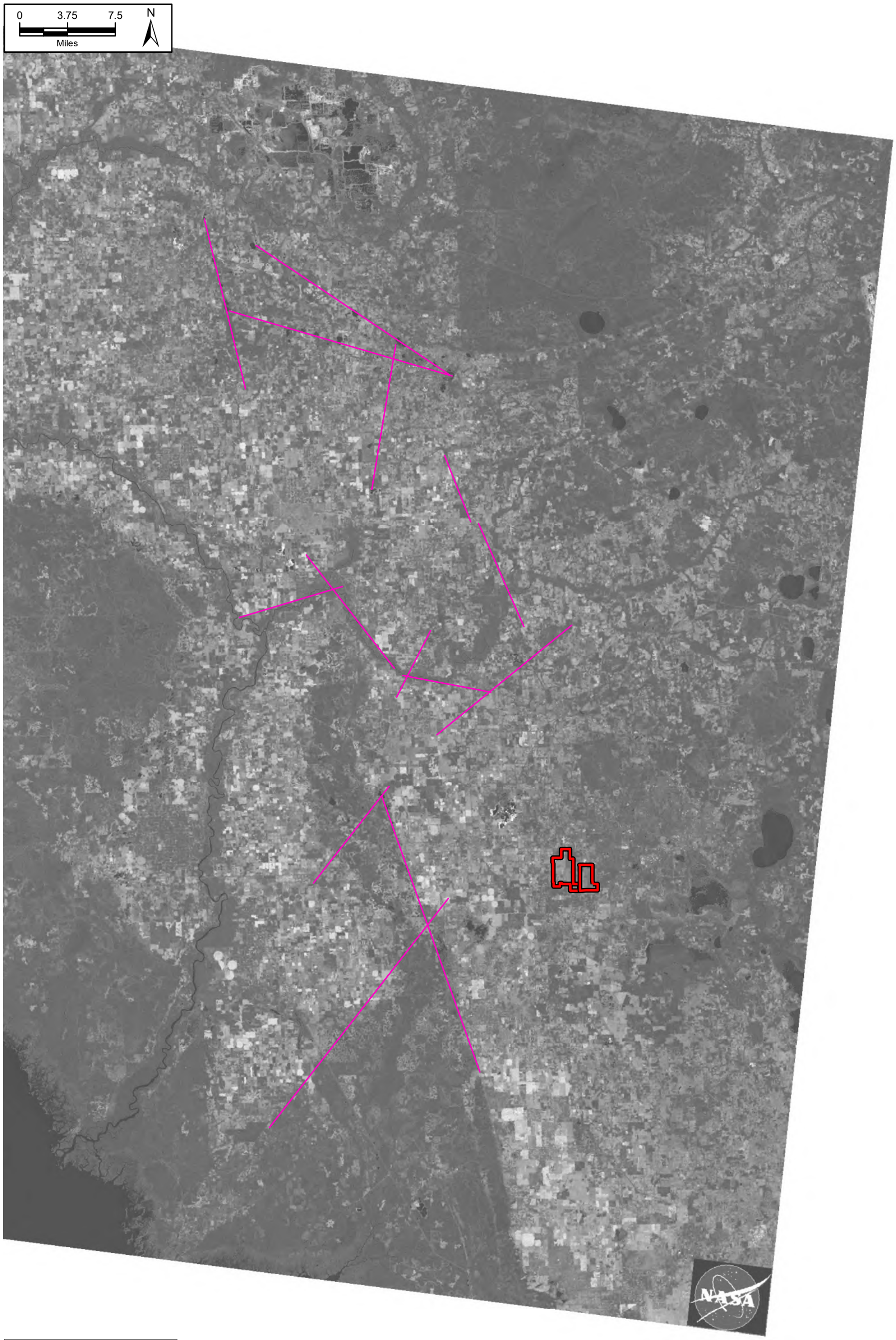
Boundary

Photo Linear Feature

PHOTO LINEAR FEATURES
LC08_CU_025016_20191130_20191218_C01_V01
FCL TIMBER, LAND & CATTLE LLLP
ALACHUA COUNTY, FLORIDA

Sources: NASA, Imagery, 2020; ECT, 2021.

ECT



LEGEND

Boundary

Photo Linear Feature

PHOTO LINEAR FEATURES
LC08_CU_025016_20200508_20200528_C01_V01
FCL TIMBER, LAND & CATTLE LLLP
ALACHUA COUNTY, FLORIDA

Sources: NASA, Imagery, 2020; ECT, 2021.

ECT

LEGEND

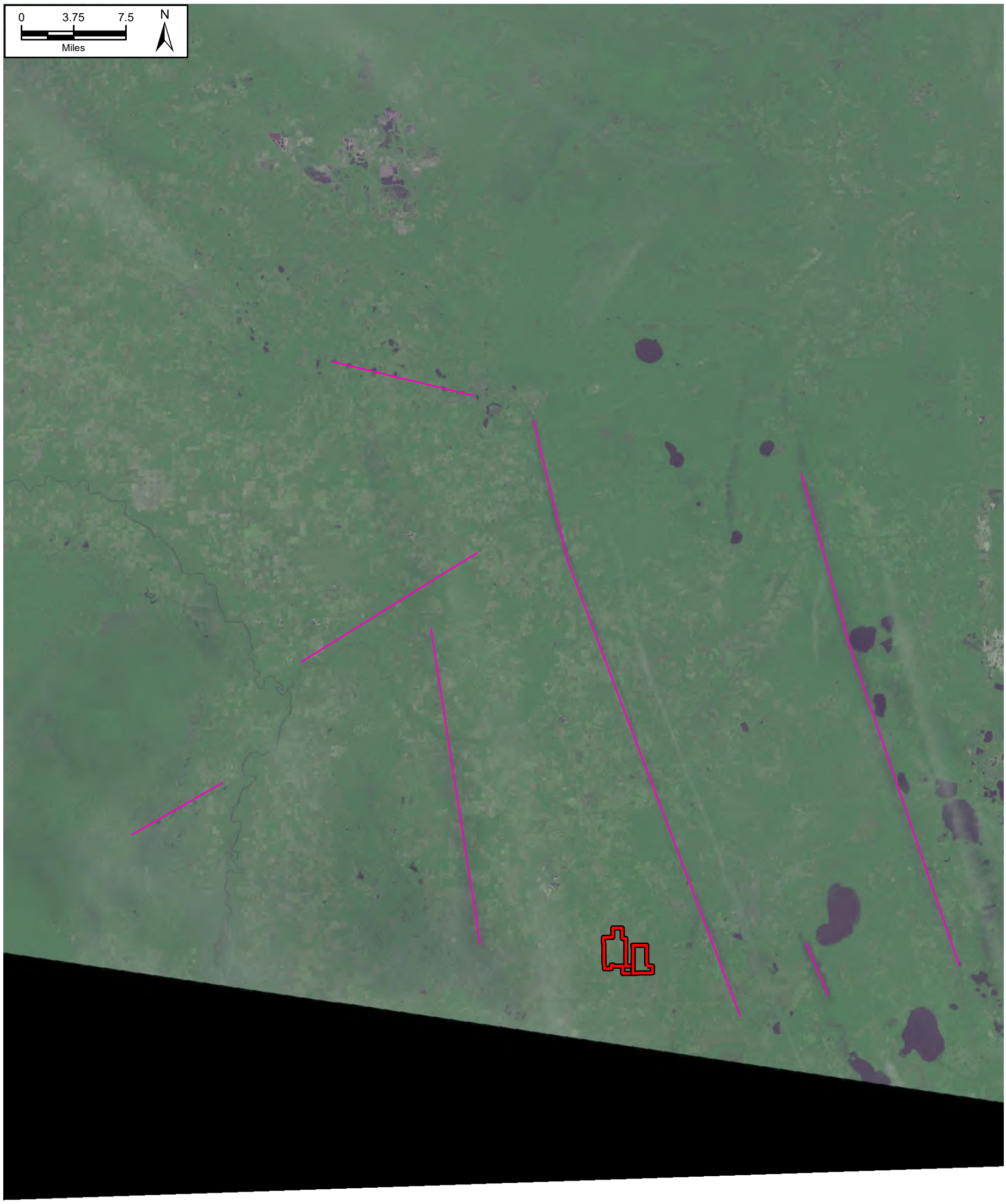
Boundary

Photo Linear Feature

PHOTO LINEAR FEATURES
LM05_L1TP_017039_19911117_20180323_01_T2
FCL TIMBER, LAND & CATTLE LLLP
ALACHUA COUNTY, FLORIDA

Sources: NASA, Imagery, 2020; ECT, 2021.

ECT



LEGEND

Boundary

Photo Linear Feature

PHOTO LINEAR FEATURES
LM05_L1TP_017039_19911117_20180323_01_T2
FCL TIMBER, LAND & CATTLE LLLP
ALACHUA COUNTY, FLORIDA

Sources: NASA, Imagery, 2020; ECT, 2021.

ECT

APPENDIX C

TOPOGRAPHIC MAPS

0 1,500 3,000
Feet
N

LEGEND

- Property Boundary
- 5' Contours
- 2 Mile Buffer
- 1 Mile Buffer
- Topolinear Feature
- Photolinear Feature

Elevation (ft.)

High : 176.237

Low : 41.0282

APPENDIX C.
DIGITAL ELEVATION MODEL
FCL TIMBER, LAND & CATTLE LLLP
ALACHUA COUNTY, FLORIDA

Sources: FDOT Imagery, 2018; ECT, 2021.

ECT

APPENDIX D

ERC DATABASE OF POTENTIAL SIGNIFICANT FEATURES

Landscape Depressions

Type	GPS No.	Lat	Long	Side Slopes		Closed Sand	Open Water	Significant Geologic Feature (SGF)	Description
				Rock	Clay				
2	22	29.61426965	-82.45804567			✓		No	Small closed sand-filled depression
1	26	29.61372323	-82.45857893	✓	✓		✓	Yes	Open hole – cannot see bottom – roof of Hog Sink (chimney)
1	27	29.61375936	-82.45848438	✓	✓		✓	Yes	Open hole – cannot see bottom – roof of Hog Sink (chimney)
1	29	29.61339609	-82.45838656	✓	✓		✓	Yes	South opening of Hog Sink – Cave (sinkhole)
1	122	29.60895427	-82.46269595	✓	✓	✓		Yes	Large sand-filled closed depression
2	126	29.60894479	-82.46417535			✓		No	Small sand-filled depression
1	333	29.60932290	-82.46746617	?	?	?	?	Yes	Hickory Sink – no notes except SGF – sinkhole
1	367 16920	29.61326893	-82.46577269	✓	?		✓	Yes	3 very deep limerock chimneys – not visible on topo (North)
1	371 16924	29.61347127	-82.46540297	✓	?		✓	Yes	2 deep limerock chimneys – not visible on topo (South)
2	443	29.61039168	-82.46949049			✓		No	Small sand-filled depression
3	615 14445	29.60740160	-82.46942695	✓	✓	—	—	No	Excavated surface water pit with limerock sides, Dragline Sink SW
2	616	29.60698301	-82.46895237			✓		No	Natural circular depression
2	666 14267	29.60727981	-82.47079806			✓		No	Dry well-defined depression, dense *Viburnum walterii*

Type	GPS No.	Lat	Long	Side Slopes		Closed Sand	Open Water	Significant Geologic Feature (SGF)	Description
				Rock	Clay				
1	698	29.60563880	-82.47029515	✓	✓	✓		Yes	Deep depression; west face = rock
1	746 15123	29.60760327	-82.46590286	✓		✓		Yes	Exposed limerock – dry, well-defined On northwest wall, shallow depression
1	760 17615	29.60745969	-82.46699117	✓	✓	✓		Yes	Small solution hole
2	790 15357	29.60645436	-82.46007535	?	?	✓		No	Well-defined dry depression
2	829	29.60569245	-82.45862394			✓		No	Small sand-filled depression
2	862	29.60599864	-82.46106600			✓		No	Small well-defined dry depression
2	952	29.60183996	-82.46222480			✓		No	Small well-defined shallow depression
2	984	29.60361374	-82.46204518			✓		No	Large dry depression
2	1028 14695	29.60326555	-82.45828288			✓		No	Small dry depression, relic sand-filled
2	1054 14598	29.60197960	-82.46014492			✓		No	Well-defined small depression
2	1067	29.60013030	-82.45686441			✓		No	Shallow dry double depression
2	1072	29.59915766	-82.45744930			✓		No	Small well-defined depression
2	1078	29.59754138	-82.45649141			?	?	No	Small solution area (?)

Type	GPS No.	Lat	Long	Side Slopes		Closed Sand	Open Water	Significant Geologic Feature (SGF)	Description
				Rock	Clay				
2	1079	29.59698139	-82.45616552			?	?	No	Small offsite depression
2	1208	29.59492522	-82.46479218			✓		No	Small well-defined dry depression
1	1225	29.59688667	-82.46632783	✓	✓	✓		Yes	Deep rock wall on all sides
2	1292	29.59952940	-82.46750766			✓		No	Small dry depression
1	1333 17401	29.60950529	-82.47713688			✓		Yes	Hickory Sink – Large Sand-filled, dense vegetation
2	1497	29.60479525	-82.47227043			✓		No	Small dry depression
2	1508	29.60362472	-82.47163198	?	?	✓		No	Large dry depression
2	1539	29.60510270	-82.46859890			✓		No	Large shallow depression
1	1544 13642	29.60457397	-82.46854191	✓	✓	✓		Yes	Steep, deep, well-defined vertical rock walls on south side Reevaluated 2020
2	1547	29.60471847	-82.46763825			✓		No	Well-defined shallow dry depression
1	1577 14009	29.60317964	-82.46841593	✓	✓	?	?	Yes	“Chasm sink” – cave?
2	1582	29.60416853	-82.46872153			✓		No	Small well-defined dry depression(20 ft)
1	1663	29.60214707	-82.46708161			✓		Yes	Dry depression with small solution hole

Type	GPS No.	Lat	Long	Side Slopes		Closed Sand	Open Water	Significant Geologic Feature (SGF)	Description
				Rock	Clay				
2	1668	29.60211321	-82.46791477			✓		No	Small well-defined depression
2	1675	29.59128253	-82.45895192			✓		No	Small dry depression
2	1692	29.59328111	-82.45786772			✓		No	Large shallow well-defined depression
2	1723	29.59263277	-82.45349195			✓		No	Large shallow dry depression
3	1724 20012	29.59333241	-82.45337628			✓		No	Surface water depression; shallow water SW
3	1730 20121	29.59236958	-82.44998639			✓		No	Depression – surface water, shallow
2	1741	29.58841567	-82.45267362			✓		No	Large shallow dry depression
2	1761	29.59235307	-82.46874399			✓		No	Small well-defined depression
2	1763	29.59078699	-82.46888364			✓		No	Small well-defined depression
2	1765	29.59071659	-82.46929779			✓		No	Small well-defined dry depression; possible beginning solution activity
1	1766 20693	29.59290284	-82.46934112			✓		Yes	Small well-defined dry sink
2	1808	29.58741445	-82.46674533			✓		No	Small shallow dry depression

Type	GPS No.	Lat	Long	Side Slopes		Closed Sand	Open Water	Significant Geologic Feature (SGF)	Description
				Rock	Clay				
1	1810 20769	29.58801175	-82.46544924	✓		✓		Yes	Two small rock-filled depressions
1	1812 20774	29.58801828	-82.46521337	✓		✓		Yes	Two small rock-filled depressions (western)
1	1813 20773	29.58798953	-82.46520801	✓		✓		Yes	Two small rock-filled depressions (eastern)
1	1815 20775	29.58793120	-82.46524665	✓		✓		Yes	Two small rock-filled depressions
1	2003 12662	29.60810157	-82.48327277	✓	✓	✓		Yes	West side – very large depression with significant vegetation
1	2004	29.60813108	-82.48360519	✓	✓	✓		Yes	East side – very large depression with significant vegetation (SW)
2	3181	29.60961166	-82.48433199			✓		No	Relic, sand-filled depression
2	3269	29.61918907	-82.49333859			✓		No	Relic, sand-filled depression
2	3715	29.61954882	-82.49533583			✓		No	Relic, sand-filled depression
2	4165	29.60870474	-82.48117536	✓	✓	✓		No	(Deas) Vertical east and south clay/rock wall

Type	GPS No.	Lat	Long	Side Slopes		Closed Sand	Open Water	Significant Geologic Feature (SGF)	Description
				Rock	Clay				
2	4355	29.60151424	-82.48902996			✓		No	Two side-by-side depressions used by deer
2	4357	29.60158087	-82.48901504			✓		No	Two side-by-side depressions used by deer
2	4689	29.61809884	-82.4812995			✓		No	Dry, closed, sand-filled depression
2	4786	29.6201032	-82.48256433			✓		No	Large, dry, sand-filled relic depression
2	5013	29.62861151	-82.48529138			✓		No	Small, sand-filled relic depression
2	5142	29.63355834	-82.49305503			✓		No	Large well-defined relic sand-filled depression
1	5220	29.62945757	-82.49241474	✓	✓	?		Yes	Dangerous solution area in roadway 8-ft across by 12 ft deep
2	5271	29.62238476	-82.4917063			✓		No	Well-defined 20 x 20 ft wide by 8 ft deep sand-filled relic depression
2	5347	29.61078538	-82.48122892			✓		No	Relic well-defined sand-filled depression
1	6108	29.62031828	-82.50302112	?	?	?		Yes	Dangerous solution area
2	6129	29.61801854	-82.50248753			✓		No	Small sand-filled depression
2	6735	29.62079924	-82.50562026	?	?	?		No	Small solution area
1	7699	29.60667531	-82.49022782	✓	✓			Yes	Large collapsing solution area, actively growing
2	8406	29.6062672	-82.48431581			✓		No	Sand-filled relic depression

Type	GPS No.	Lat	Long	Side Slopes		Closed Sand	Open Water	Significant Geologic Feature (SGF)	Description
				Rock	Clay				
2	8480	29.60669442	-82.4855622			✓		No	Small relic sand-filled depression
2	8533	29.61119995	-82.48880206			✓		No	Sand-filled relic depression
3	9060	29.60545021	-82.4971646		✓	—	✓	No	Excavated pond in clay, surface water perched
1	9143	29.59225642	-82.49982669			✓		Yes	Wetland, water table reflects Floridan, water elevation 50 ft
2	9300	29.59579627	-82.49778788			✓		No	Sand-filled relic depression
2	12890	29.59915658	-82.46111412			✓		No	Small relic sand-filled depression
1	14202	29.60504629	-82.46987614					Yes	Small 5 ft deep x 15 in. solution feature
1	16038	29.61371519	-82.45853576	✓			✓	Yes	Hog Cave, northwest, root evidence
1	16039	29.61375182	-82.45848857	✓			✓	Yes	Hog Cave, northeast, root evidence
1	16046	29.61339609	-82.45842688	✓			✓	Yes	Hog Cave, main entrance
2	17074	29.60300412	-82.46694163			✓		No	Small relic depression
2	17713	29.61423637	-82.47177497			✓		No	Relic sand-filled depression
2	18361	29.60732549	-82.4890893			?		No	Small solution area in road
2	18461	29.60742893	-82.49250837			?		No	Large solution area 20 x 30 ft wide by 6 ft deep
2	18533	29.6096845	-82.49330775			✓		No	Small relic sand-filled depression

Type	GPS No.	Lat	Long	Side Slopes		Closed Sand	Open Water	Significant Geologic Feature (SGF)	Description
				Rock	Clay				
2	20114	29.59354799	-82.44993215			✓		No	Large relic dry depression
2	20121	29.59243085	-82.44996317			✓		No	Relic sand-filled depression
3	20509	29.58730079	-82.46468296			✓	✓	No	Small man-made surface water

EXHIBIT C

FCL TLC LLLP Parcel

Special Area Study Report

April 8, 2022

Contact Information

Cardno
3905 Crescent Park Drive
Riverview, FL 33578, USA
Telephone: 1.813.664.4500
www.cardno.com

Author(s) John Bailey, PWS
Senior Consultant

Approved By Shirley Denton, Ph.D.
Senior Consultant

Approved By Ray Loraine
Senior Scientist

Document Information

Prepared for	FCL TLC LLLP
Project Name	FCL TLC LLLP Parcel Special Area Study Report
Date	April 8, 2022, Draft
Version Number	1.0

This Page Intentionally Left Blank

Table of Contents

Appendices

Maps

1 Introduction

Cardno, Inc. (Cardno) was retained by FCL TLC, LLLP to provide an ecological evaluation for a Special Area Study per Policy 4.10.1 of the Conservation and Open Space Element (COSE) of the Alachua County Comprehensive Plan (2019-2040)(the Plan) of their approximately 4,068-acre project site (Project) located in Alachua County, Florida. The Project is specifically located on either side of Parker Road, beginning approximately 1.3 miles north of SR 24 (Archer Road) in Gainesville, FL (see attached Location Map, 2020 Aerial Map, and USGS Quadrangle Map). The proposed future uses of the property include residential, non-residential, and active recreational development and open space/conservation areas.

The purpose of the Cardno assessment was to make recommendations for a conservation set-aside as required by the Plan, in preparation for plans for development of the property. This analysis includes habitat mapping and an assessment of wildlife species' use of the property, including a 15 percent gopher tortoise survey, consisting of approximately 123 linear miles of pedestrian transects. Cardno's empirical results are contained in this report.

More specifically, the purpose of the Cardno report is to: (1) document whether, or to what extent, areas qualifying as a Strategic Ecosystem (SE) exist on the approximately 2,278.90-acre portion of the property mapped by Alachua County as SE; and (2) provide, based on the data and analysis from ground-truthing, the proposed set-aside for conservation management purposes, as required by the COSE. Pursuant to Section 402.98, Alachua County Unified Land Development Code (ULDC), FCL TLC, LLLP has opted to undertake a Special Area Study to ground-truth its mapped property to determine whether, or to what extent, SEs exist using COSE Objective 4.10, Policies 4.10.1 through 4.10.8, and the KBN/Golder Report as a guide. [COSE Objective 4.10 states, "Protect, conserve, enhance, and manage the ecological integrity of strategic ecosystems in Alachua County."].

A portion of the Project is included in the "Hickory Sink Strategic Ecosystem" shown on the Alachua County Strategic Ecosystems Map (Attached). The SE Map Units were originally identified in the KBN/Golder Associates report, "Alachua County Ecological Inventory Project" (1996) (Report), and were mapped generally by the KBN/Golder Ecological Inventory Map. A total of 47 SE's were mapped throughout Alachua County in the Report (See attached Alachua County Strategic Ecosystems Map). The information collected for the Report covered 900 square miles of Alachua County over a 90-day period, and most sites, including the Project site, were assessed via roadside observation and analysis of aerial imagery. The intent, at that time, was to identify areas for potential public acquisition and management.

The area identified as Hickory Sink Strategic Ecosystem on the Alachua County SE Map is a 2,998-acre parcel (2,278.90 acres of which is located within the Project boundaries) that is described in the Report as being "an area of well drained, moderately fertile soil that once supported an upland pine forest." (See attached Hickory Sink Mapped Strategic Ecosystem Boundary map and Appendix A - Hickory Sink excerpt from the KBN/Golder Report, pages 4-57 and 4-58). The Report ranked the Hickory Sink SE as below average in priority due to its lack of connections to existing conservation areas (refer to the attached Conservation Areas Within Three Miles Map), encroachment of the metropolitan area of Gainesville and Parker Road adding difficulty to necessary management, and the size of the property not being large enough to support the full spectrum of upland pine forest habitat species. The color code on the Legend to the Alachua County SE Map identifies the Hickory Sink SE as "poor" and further details it as low to below average based on the criteria of vegetation, endangered species habitat, wildlife habitat, hydrology, landscape ecology and management potential. The KBN/Golder Report does not recommend the property to be protected under public conservation, but rather focused on a cave located on the property that supports cave invertebrates (troglobites).

FCL TLC, LLLP previously sought to sell the parcel as conservation land but has been unsuccessful. In 2017, the Alachua County Forever Project listed the site as not scoring high enough to be considered for acquisition and classified the parcel in the bargain share category, requiring matching funds to purchase. In 2018, the County prepared an application, on behalf of the landowner, for submission to the Florida Forest Service, Rural and Family Lands Protection Program (RFLPP). The property was rated Tier 2. A property must be rated as Tier 1 to be eligible for purchase without matching funds.

2 Assessment Methodology

2.1 Methodology

Chapter 406, Article 5 [Strategic Ecosystems], ULDC, implements the Plan and provides that the specific location and extent of strategic ecosystem resources shall be determined through ground-truthing using the KBN/Golder Report as a guide and performed either as part of the development review process or, as here, the Special Area Planning Process. The Special Area Study level of resource-based planning does not contemplate the detailed level of analysis that accompanies a development application [i.e., Section 406.04, ULDC information]. For this assessment, Cardno reviewed available data, conducted extensive fieldwork, literature review, and desktop analysis of available local, state, and federal resources mapping and databases. Because of the known population, Cardno, at this juncture, did perform a 15 percent survey of gopher tortoise habitat on the property.

2.2 Alachua County Set-Aside Limitations

No more than 50% of the upland portion of a parcel may be required to be preserved because it is or includes a strategic ecosystem unless the landowner provides consent or state or federal agencies require additional protection. §406.53, ULDC.

In this case, Cardno's set-aside recommendation is based on an overall evaluation of the actual and potential presence of the following characteristics pursuant to COSE Policy 4.10.1:

- Natural ecological communities that exhibit native biodiversity within or across natural ecological communities, ecological integrity, rarity, and functional connectedness with other communities;
- Plant and animal species habitat that is documented for listed species and species with large home ranges, and habitat that is a special wildlife migration or aggregation site for activities such as breeding, roosting, colonial nesting, or overwintering, high in vegetation quality and species diversity, and low in non-native invasive species; and
- Size, shape, and landscape features that allow the ecosystem to be restored to, or maintained in, good condition with regular management activities, such as prescribed burning, removal of exotic vegetation, or hydrological restoration.

2.3 Desktop Evaluation of Data

Cardno performed a desktop evaluation of the Project that focused on identifying certain signatures and contours suggestive of potential wetlands, waterbodies, and habitats within the Project boundary. A desktop review and inventory of potential Federal and State rare, threatened, and endangered species (listed species) that may utilize the site and surroundings was also conducted. Sources of data used to complete the evaluation included but were not limited to the following:

- United States Geological Survey (USGS): 7.5-minute topographic quadrangle maps;
- Digital aerial imagery;
- United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS): Soil Survey of Alachua, Florida;
- USFWS Information for Planning and Consultation (IPaC) database;
- Florida Fish and Wildlife Conservation Commission (FWC) Florida's Imperiled Species Management Plan;
- Audubon Florida EagleWatch Public Nest App;
- FWC Water Bird Locator;

2.4 Habitat Assessment

Cardno conducted a habitat assessment including 123 linear miles of pedestrian transects required for the 15% gopher tortoise survey, pursuant to FWC *Gopher Tortoise Permitting Guidelines*, and a review of previously collected data in order to assess if any habitats on the property are suitable to support federal and stated protected species.

2.4.1 Field Evaluation

Cardno ecologists conducted a review of the property on February 9, 2021, April 12, 2021, May 3-7, 2021, and May 10-13, 2021, for a total of 43 person-days, to assess and document current conditions. All habitat types on the property, including key areas identified in the desktop evaluation and in previously collected on-site data, were investigated via pedestrian and vehicular transects. Habitat types were assigned a land use code consistent with the nomenclature of the Florida Department of Transportation's Florida Land Use, Cover and Forms Classification System (FLUCFCS) code that best fit the current site conditions and were recorded and mapped on 1' = 3,000' aerial prints of the Project (Land Use Map).

2.4.2 Data Evaluation

Cardno also conducted an evaluation of the data collected by ERC in October 2020 to supplement the data collected during field evaluation. Data includes field evaluations and listed species observations conducted across the Project using a team of FWC Authorized Gopher Tortoise Agents (AGTAs), traversing the site by 4-wheel drive vehicles and pedestrian access.

2.5 Federal and State Listed Species Assessment

2.5.1 Species of Interest

Cardno developed an inventory of potential listed species of interest for the Project based upon the following:

- A query of the USFWS IPaC System;
- Review of the FNAI Biodiversity Matrix for Alachua County, Florida;
- Review of USFWS and FWC GIS database files; and
- Cardno's extensive previous history and knowledge of wildlife habitats in Alachua, Gilchrist, and Levy County, Florida, in habitats similar to the historical habitat on-site.

The USFWS IPaC resource list, FNAI Biodiversity Matrices, and full species of interest list are presented in Appendices B, C and D, respectively. Floral and faunal species were eliminated from further consideration if the necessary habitat was not identified within the Project boundary based on the desktop evaluation and after verification during the field assessment. Refer to Section 5.0, Federal and State Listed Species, for the discussion on species that have the potential to occur within the Project. Any required species-specific surveys will be conducted prior to development in accordance with the Alachua County ULDC.

2.5.2 General Listed Species Assessment

During the general habitat assessment, Cardno ecologists conducted meandering pedestrian and motorized transects throughout the Project to determine the presence and relative abundance of species afforded protection by the USFWS under the *Endangered Species Act of 1973* (fauna in 50 CFR 17 and flora in 50 CFR 23), the FWC under Rule 68A-27.003, 68A-27.0031 and 68A-27.005 F.A.C. and *Preservation of native flora of Florida* (Section 581.185 F.S. and Chapter 5B-40 F.A.C.) The assessment was performed in general accordance with methods found in the Florida Wildlife Conservation Guide as developed by the USFWS, FWC, and FNAI. During each survey event, observations of all listed species, as well as physical features that may indicate the presence of these species (e.g., tracks, scat, nests, burrows, cavity trees, etc.) were recorded and mapped on 1"= 600' aerial prints of the Project. The field

assessment did not include species specific surveys as those surveys are not typically conducted during the planning stages of development in Alachua County.

2.5.3 Gopher Tortoise Survey Methodology

During the field assessment, Cardno FWC AGTAs conducted field surveys within the Project to complete a specific 15% survey to locate gopher tortoise (*Gopherus polyphemus*) burrows and estimate the density of gopher tortoises in upland habitats. The tortoise survey was conducted in accordance with the standard methodology from the Gopher Tortoise Permitting Guidelines (Updated July 2020). Gopher tortoise burrows were censused along straight-line transects in potentially suitable habitats throughout the Project. Widths of the transects were determined by visibility, a function of the density and height of the existing vegetation. Observed burrows were categorized as potentially occupied, active and inactive, or abandoned. Burrow locations were recorded using a sub-meter GPS device, marked with flagging in the field, and their locations were plotted on aerial photography.

3 Habitat Assessment

3.1 Historic Site Management

Cardno conducted a review of historical aerials and landowner management practices to assess past use of the property. Review of the imagery and interviews of the property owner shows that agricultural use of the property has been underway since at least the 1930s. Since that time, the site has been intensely managed for cattle, timber, and quail hunting. The site has been repeatedly logged and cleared. The western and northern third of the property were most recently logged in 2005.

Based on discussions with the current landowners, land conversion activities included burning, mowing, chopping, herbicide use, and clear cutting. These activities continued throughout the history of the site until a period between 1998 and 2004, when little to no burning occurred due to drought conditions. As a result, oak growth became uncontrollable in some areas of the property. The resultant oak thickets are essentially impenetrable to either humans or most wildlife species. At some point in history, all portions of the Project have been clear cut during various agricultural practices, and essentially no undisturbed habitat exists on-site.

Prescribed burning is the only practical method for management of the property and prevention of the formation of oak thickets. Several factors make continued prescribed burning of this large property infeasible moving forward, the main reasons being risk and smoke containment both of which are driven by development of adjacent land.

3.2 Soils

The attached Natural Resources Conservation Service (NRCS) Soils Map shows 11 soil mapping units within the Project:

- 2-Candler fine sand, 0 to 5 percent slopes;
- 30-Kendrick sand, 2 to 5 percent slopes;
- 39-Bonneau fine sand, 2 to 5 percent slopes;
- 3-Arredondo fine sand, 0 to 5 percent slopes;
- 41-Pedro fine sand, 0 to 5 percent slopes;
- 42-Pedro-Jonesville complex, 0 to 5 percent slopes;
- 46-Jonesville-Cadillac-Bonneau complex, 0 to 5 percent slopes;
- 68-Candler fine sand, 5 to 8 percent slopes;
- 69-Arredondo fine sand, 5 to 8 percent slopes;
- 6-Apopka sand, 0 to 5 percent slopes; and
- 8-Millhopper sand, 0 to 5 percent slopes.

In their undisturbed state, these soil types range from excessively drained to somewhat poorly drained. No hydric soils are present within the Project.

3.3 Land Use

As part of the Field Assessment, Cardno ecologists “ground-truthed” habitats within the Project to aid in the determination of the specific location and extent of areas of sufficient ecological quality and value to qualify as potential SE resources. Results of the assessment can be found in Section 6.0.

All portions of the site were classified based on the FLUCFCS System. The project-specific land use map is attached. Table 4.3-1 provides a summary of the land uses mapped on-site by FLUCFCS code and is

followed by a description of each land use type based on field observations made while conducting the 123 linear miles of pedestrian transects required to complete the 15 percent gopher tortoise survey.

Table 4.3-1 Project Land Uses

FLUCCS Code	Description	Total Site Acres	Mapped SE Area Acres
1100	Residential, Low Density (Less than 2 dwellings per ac.)	13.05	0.0
2110	Improved Pasture	965.02	5.04
3100	Range Land, Herbaceous (Dry Prairie)	34.25	0.0
321	Palmetto Prairies	78.0	77.81
3300	Mixed Rangeland	821.27	783.26
4210	Longleaf Pine – Xeric Oak	27.15	0.00
4200	Upland Hardwood Forests	100.61	4.56
4340	Hardwood Coniferous - Mixed	279.98	7.87
4410	Coniferous Plantations	728.06	583.29
4430	Forest Regeneration Areas	1017.47	817.34
641	Freshwater Marshes	2.58	0.00
Grand total		**4067.44**	**2,279.17**

3.3.1 Residential, Low Density <Less than two dwelling units per acre> (FLUCFCS 1100)

This land use type is associated with the residential buildings located on property. Bahia grass (*Paspalum notatum*) dominates the vegetative coverage in these areas.

3.3.2 Improved Pasture (FLUCFCS 2110)

This is typically associated with open pastures located on the eastern portion of the Project. This vegetation is dominated by Bahia grass, lopsided Indiangrass (*Sorghastrum secundum*), and broomsedge (*Andropogon virginicus*).

3.3.3 Rangeland, Herbaceous (Dry Prairie) (FLUCFCS 3100)

This land use type is dominated by Bahia grass, saw palmetto (*Serenoa repens*), wire grass (*Aristida stricta*), shiny blueberry (*Vaccinium myrsinities*), blackberry (*Rubus pensilvanicus*), broomsedge, and winged sumac (R*hus copallinum*). Scattered slash pine (*Pinus elliottii*) and oaks (*Quercus* spp.) are found throughout this land use.

3.3.4 Mixed Rangeland (FLUCFCS 3300)

Mixed Rangeland is dominated by similar species as the Rangeland, Herbaceous (Dry Prairie), but with more saw palmetto throughout.

3.3.5 Longleaf Pine – Xeric Oak (FLUCFCS 4120)

This land use type is only found on the western Project boundary. It is dominated by longleaf pine (*Pinus palutris*), and thickets of various oaks such as turkey oak (*Quercus laevis*), blue jack oak (*Quercus incana*), Darlington (upland laurel) oak (*Quercus hemisphaerica*), and southern red oak (*Quercus falcata*). The thickets have very little understory herbaceous vegetation due to the thick nature of the oak trees.

3.3.6 Upland Hardwood Forests (FLUCFCS 4200)

Upland hardwood forests within the Project boundaries are dominated by thickets of turkey oak, blue jack oak, laurel oak, and southern red oak, with a vegetated understory of muscadine grape (*Vitus rotundifolia*), Virginia creeper (*Parthenocissus quinquefolia*), blackberry, Bahia grass, and saw green briar (*Smilax bona-nox*).

3.3.7 Hardwood Coniferous – Mixed (FLUCFCS 4340)

This land use type is typically associated with the areas around sink holes within the Project. Its understory is dominated by vines such as muscadine grape, Virginia creeper, Carolina jessamine (*Gelsemium sempervinus*), and saw green briar, with little herbaceous vegetation present. Canopy cover is dominated by cabbage palm (*Sabal palmetto*), dogwood (*Cornus florida*), and red bay (*Persea borbonia*) trees.

3.3.8 Coniferous Plantations (FLUCFCS 4410)

This land use type is an active pine plantation that is thinned every few years. The vegetation is dominated by a canopy of slash pine with a maintained understory of dog fennel (*Eupatorium capillifoium*), broomsedge, and knotroot foxtail (*Seteria parviflora*).

3.3.9 Forest Regeneration Areas (FLUCFCS 4430)

This is the dominant upland habitat community type within the Project (58% of the property). Historically, these areas consisted of longleaf pine (*Pinus palustris*) dominated sandhill habitat. Native undisturbed sandhill plant communities are characterized by an overstory of longleaf pine and an open savannah-like understory dominated by grasses. They are pyrogenic communities requiring frequent low intensity fires on a two- to five-year interval to maintain the area in an open condition by controlling the invasion of oaks and other shrubs, and to stimulate flowering and germination of herbaceous species that are typically found in sandhill habitat (such as wire grass). Maintenance of the longleaf pine overstory is dependent on fire to remove oak competition and expose bare soil for seed germination.

Essentially all of the longleaf pine has been logged off the property. In the current condition, as a result of lack of the frequent low intensity fires required to maintain the habitat, the areas mapped as forest regeneration are generally dominated by oaks, including darlington oak (*Quercus hemisphaerica*), bluejack oak (*Q. incana*) and sand live oak (*Q. geminata*). Southern red oak (*Q. falcata*), mockernut hickory (*Carya tomentosa*), and black cherry (P*runus serotina*) can also be observed in these areas.

Dominant understory plant cover in these areas include bahia grass, broomsedge, saw palmetto, wire grass, blackberry with shrub vegetation comprised of various oaks. Patches of non-native, invasive cogon grass (*Imperata cylindrica*) were observed throughout the Project. Most areas within the Project boundary do not contain canopy height trees; however, a few small stands of longleaf and slash pines do exist on the eastern portion of the Project. Some areas of this habitat type have also been completely dominated by various oak species, resulting in little to no understory in these areas.

3.3.10 Wet Prairie (FLUCFCS 6410)

This land use type is associated with the so-called “Duck Pond” found on the southwest portion of the Project. It is dominated by yellow-eyed grass (*Xyris* spp.), smartweed, (*Persicaria hydropiperoides*), spike rush (*Eleocharis baldwinii*), soft rush (*Juncus effusus),* and various sedges (*Cyperus* spp.).

3.4 USGS Quadrangle and FEMA Floodplain

The attached USGS Quadrangle indicates the presence of wetlands within the Project boundary. These areas are found in the southwestern portion of the Project. The USGS Quadrangle also indicates that there are a number of sinkholes across the Project, and one sink hole labeled as Hickory Sink on the eastern portion of the Project.

The attached FEMA Flood Zone Map shows isolated portions of the eastern portion of the Project are mapped as FEMA Flood Zone A. Flood Zone A areas are subject to inundation by the 1-percent-annual-chance flood event generally determined using approximate methodologies.

4 Federal and State Listed Species

4.1 Study Area Potential Species

According to the FNAI database and IPaC Unofficial Species List, a total of 27 listed flora and fauna species are known to occur or have the potential to occur in Alachua County (Appendix B. Listed Flora and Fauna Species with the Potential to Occur in Alachua County). During the desktop analysis, Cardno determined that 16 of these federal and state protected species have the potential to occur within the Project based on potential habitat on-site. Neither Cardno nor ERC performed formal species-specific surveys, outside of Cardno's 15% gopher tortoise survey. A map showing incidental listed species observations during the tortoise survey is attached. Species with the potential to occur within the Project and their likelihood to occur are described in detail below.

4.1.1 Bald Eagle (*Haliaeetus leucocephalus*)

Bald eagles have the potential to occur in any of the native upland habitats within the Project. Using the best available data, six bald eagle nests are known to occur within 5 miles of the Project (refer to attached Bald Eagle Nests Location Map). No bald eagles were observed during the field evaluation and are unlikely to occur within the Project due to the lack of mature pines and open water habitats.

4.1.2 Florida Burrowing Owl (*Athene cuncularia floridana)*

Burrowing owls typically occur in open, well-drained, treeless areas where herbaceous ground cover is short. Florida burrowing owls usually construct their own burrows where they lay their eggs and brood their young. Burrows are utilized for nesting in the spring and for cover in the winter. While potentially suitable habitat is present within the Project, no burrowing owls or burrowing owl burrows were observed during the field evaluation. Due to the species characteristics of burrowing owls, it is likely that if any individuals exist on-site, they would have been observed during the field evaluation. Since no observations have ever been documented within the Project, it is unlikely that the species is present on-site.

4.1.3 Southeastern American Kestrel (*Falco sparverius paulus)*

Open areas suitable for southeastern American kestrel foraging and cavity trees/snags suitable for nesting habitat are present within the Project. A single kestrel was observed on the east side of the Project (Incidental Listed Species Observations Map). Potential nest sites were inspected for signs of kestrel activity, such as prey remains, feathers, and whitewash stains. No evidence of on-site kestrel nesting was observed during the field evaluation.

4.1.4 Eastern Indigo Snake (*Drymarchon couperi*)

The eastern indigo snake is a large, wide ranging predator that occupies large areas of native upland and wetland habitats in Florida. Indigo snakes are often associated with gopher tortoise burrows, which they use as refugia from extreme temperatures. No indigo snakes were documented within the Project, but appropriate habitat exists, and indigo snakes could occur within the Project. However, research has shown that at least 1,000 hectares (2,471 acres) of contiguous habitat is required to sustain a population of eastern indigo snakes (Moler 1992). Not only does this species require large undisturbed habitat, but the habitat must be relatively roadless. The effect of road mortality and intentional killing of eastern indigo has been demonstrated to substantially impact populations (Enge and Wood 2002; Breininger et al. 2004 2011, 2012). A study of snake mortality on rural roads (less than 1000 vehicles per day) in Hernando County found a mean annual snake mortality of 12.8/kilometer/year (Enge and Wood (2002). Paired drift fence/funnel trap surveys have shown indigo snakes were proportionately trapped three times more frequently in intact habitats on public lands than on rural sites with roads, suggesting that road mortality had reduced the indigo snake population at the rural site with roads (Enge and Wood 2002). Deliberate killing of snakes on roads is known to be a common activity throughout the world (Andrews et al. 2006).

Based on recent studies, the size of the property, and its isolation from other areas of potential habitat, it is likely that the site does not support a viable population of eastern indigo snakes (Breininger et al. 2011, and Hyslop 2007).

4.1.5 Gopher Tortoise (*Gopherus polyphemus*)

During the gopher tortoise survey, Cardno AGTA's surveyed approximately 608 acres of the 4015 acres of suitable habitat (15%) (refer to attached Gopher Tortoise 15% Survey Transects Map). A total of 464 potentially occupied burrows and 69 abandoned burrows were observed within the Project (Gopher Tortoise Burrow Locations Map). Based on the FWC population density calculation, the property is estimated to have approximately 3,063 burrows and 1,532 tortoises on-site.

4.1.6 Short-tailed snake (*Lampropeltis extenuata*)

The short-tailed snake is an extremely slender, spotted snake with a cylindrical body rarely exceeding 20 inches in total length. A secretive burrower, the short-tailed snake is only rarely seen above ground or under cover objects. The snake inhabits dry upland habitats, principally sandhill, xeric hammock, and sand pine scrub. No short-tailed snakes were documented within the Project, but appropriate habitat exists and short-tailed snakes could occur within the Project.

4.1.7 Florida Pine Snake (*Pituophis melanoleucus mugitus*)

Florida pine snakes are large, stocky, tan, or rusty colored snakes with an indistinct pattern of large blotches on a lighter background. These snakes are typically found within areas with open canopies and dry sandy soils in which it burrows. These species often coexist with pocket gophers (*Geomys pinetis*) and gopher tortoises. No pine snakes were documented within the Project, but appropriate habitat exists, and pine snakes could occur within the Project.

4.1.8 Listed Plants

FNAI lists nine listed species of plants as having been recorded in or within one-square-mile of the Project, and potentially suitable habitat for some of these species does occur within the Project: Incised groove-bar (*Agrimonia incisa)*, Flyr's brickell-bush (*Bruckellua cordifolia*), many-flowered grass-pink (*Calopogon multiflorus*), Godfrey's swampprivet (*Forestiera godfreyi*), Florida spiny-pod (*Matelea floridana*), Florida mountain-mint (*Pycnanthemum floridanum*), silver buckthorn (*Sideroxylon alachuense*), angularfruit milkvine (*Gonolobus suberosus*), and woodland poppymallow (*Callirhoe papaver*). Two species, the angularfruit milkvine and woodland poppymallow were observed within the Project boundary (Listed Plant Locations Map) during 2021 surveys on the project site.

5 Recommended Set-Aside Acreage

The Alachua County SE Map shows the Hickory Sink SE map unit coded as “poor” resulting from the lack of connectivity to existing conservation areas, encroachment of the metropolitan area of Gainesville, Parker Road adding difficulty to necessary management, and the size of the property not being large enough to support the full spectrum of upland pine-habitat species. The original KBN/Golder Report does not recommend the property, as a whole, to be protected under public conservation but rather focused on protecting the caves on the property that support cave invertebrates (Appendix A, Excerpt from KBN/Golder Report).

As described below, because of the disturbed and degraded ecological condition of much the property, Cardno ecologists recommend that a total of approximately 1148-acre area be designated for conservation set-aside that can, through management and potential enhancement, serve as protected wildlife habitat including creation of wildlife corridors through the subject property that connect to existing set-asides in adjacent urban development.

Cardno agrees with the evaluation provided in the original KBN/Golder report that the property overall is not a high-quality candidate for public conservation action. A large, approximately 728-acre portion of the property currently consists of slash pine plantation. Of this, approximately 583 acres of the pine plantation are located in the area mapped as SE.

Although the Property is a large undeveloped parcel, the predominant native sandhill plant communities have been altered and degraded as a result of lack of frequent periodic burning, periodic clear-cut logging, mowing, roller chopping, herbicide use, the planting of non-native grasses, and grazing. The native old growth long leaf pine, needed to maintain the suitability of the site for many rare species such as the red-cockaded woodpecker, has been all but eliminated, and this previously heavily canopied habitat now consists of a scrub shrub habitat with a large component of non-native grasses, decreased ecological diversity and areas that are not usable by wildlife because they are too densely vegetated by either thickets of young oaks or shrubs.

Bahia grass has been planted to stabilize roads and as cattle forage. Bahia grass is a sod forming grass that excludes native grasses and forms into low-quality habitat for bobwhite and other wildlife. This species has spread throughout the property and is very abundant in many areas, with an average cover ranging from 10 to 80 percent. As native grasses are the primary fuel to carry fire, abundance of Bahia grass has created a management challenge. Lower than historic fire frequency on the property has resulted in an overgrowth of shrubs and small trees and the loss of a “Savanah-like” character typical of sandhill habitat.

Another important factor is that, with the exception of several caves and sinkholes, there are only approximately three acres of wetland habitat, or other sources of water located within the Project boundary. The main wetland water source is in the southwest corner of the Project (which was not mapped as SE). This is a limiting factor for use of the property by many wildlife species. Without readily available water sources, wildlife populations will not be sustainable, and generally, many wildlife species must travel to areas outside of the Project for this necessity.

The Project lacks functional connectedness with other native communities, does not contain suitable habitat for species with large home ranges, is not considered an aggregation site for listed species, nor is it a candidate for restoration by way of prescribed burning. The Project is bisected laterally by Parker Road and bordered by large development communities on the north and east sides. The roadway and development communities prevent necessary habitat management via prescribed burning, and lack of frequent fire is already degrading the on-site habitats. In addition, undesirable plants such as cogon grass have invaded portions of the Project, and management to control this species is extremely difficult.

Cardno has recommended the conservation set-aside as generally shown in the attached “Proposed Set Aside Map”. The proposed set-aside will include all wetlands on the property, all significant geologic features located on the property, the most undisturbed natural habitat, and will provide continuity to areas proposed for set-aside now or in the future on adjacent properties. The project will have connectivity to the Town of Tioga subdivision to the north, the Gainesville Regional Utilities groundwater recharge park,

the Flintrock Agrihood, and open space areas of adjacent developed projects. Table 5.1 summarizes the proposed set aside acreages on the western portion of the property, and includes Significant Geologic Features (SGFs) on the property east and west of Parker Road. A corridor connecting the SGFs on the eastern half of the property is shown.

Table 5.1 Proposed Conservation Set Aside Summary Table

Set Aside Component	Acres
West Set Aside (future gopher tortoise recipient site and offsite corridors)	715
East Set Aside - North Portion and Significant Geologic Features Buffers	133
East Set Aside - UF Golf Course, Buffer and Offsite Corridor	111
East Set Aside – Additional Areas of COS on UF Golf Course	189
Total Conservation Area Open Space Set Aside	**1148**

It is the property owner's intention that a portion of the property east of Parker Road will be developed as a recreational facility to include golf and related amenities. This facility will be utilized by the intercollegiate golf programs at the University of Florida and will include facilities for youth development programs as well as other golf related uses. The property owner anticipates that the ecological characteristics provided and/or restored or enhanced on this portion of the property east of Parker Road would satisfy the balance of any required maximum set aside as referenced above.

6 Literature Cited

EIS – highlighted were cited

Breininger, D.R., M.R. Bolt, M.L. Legare, J.H. Drese, and E.D. Stolen. 2011. Factors Influencing Home-Range Sizes of Eastern Indigo Snakes in Central Florida. Journal of Herpetology 45(4):484-490.

Breininger, D.R., M.L. Legare, and R.B. Smith. 2004. Eastern Indigo Snake (*Drymarchon couperi*) in Florida: influence of edge effects on population viability. Pp. 299-311 In Species Conservation and Management: Case Studies. Akcakaya, H., M. Burgman, O. Kindvall, C. Wood, P. Sjögren-Gulve, J. Hatfield, and M. McCarthy (Eds.). Oxford University Press, New York, New York, USA.

Breininger, D.R., M.J. Mazerolle, M.R. Bolt, M.L. Legare, J.H. Drese, and J.E. Hines. 2012. Habitat fragmentation effects on annual survival of the federally protected eastern indigo snake. Animal Conservation 15:361-368.

Enge, K. M. and K. N. Wood. 2002. A pedestrian road survey of an upland snake community in Florida. Southeastern Naturalist 1:365-380.

Moler, P.E. 1985. Distribution of the eastern indigo snake, (*Drymarchon corais couperi*), in Florida. Herpetological Review 16(2): 37-38.

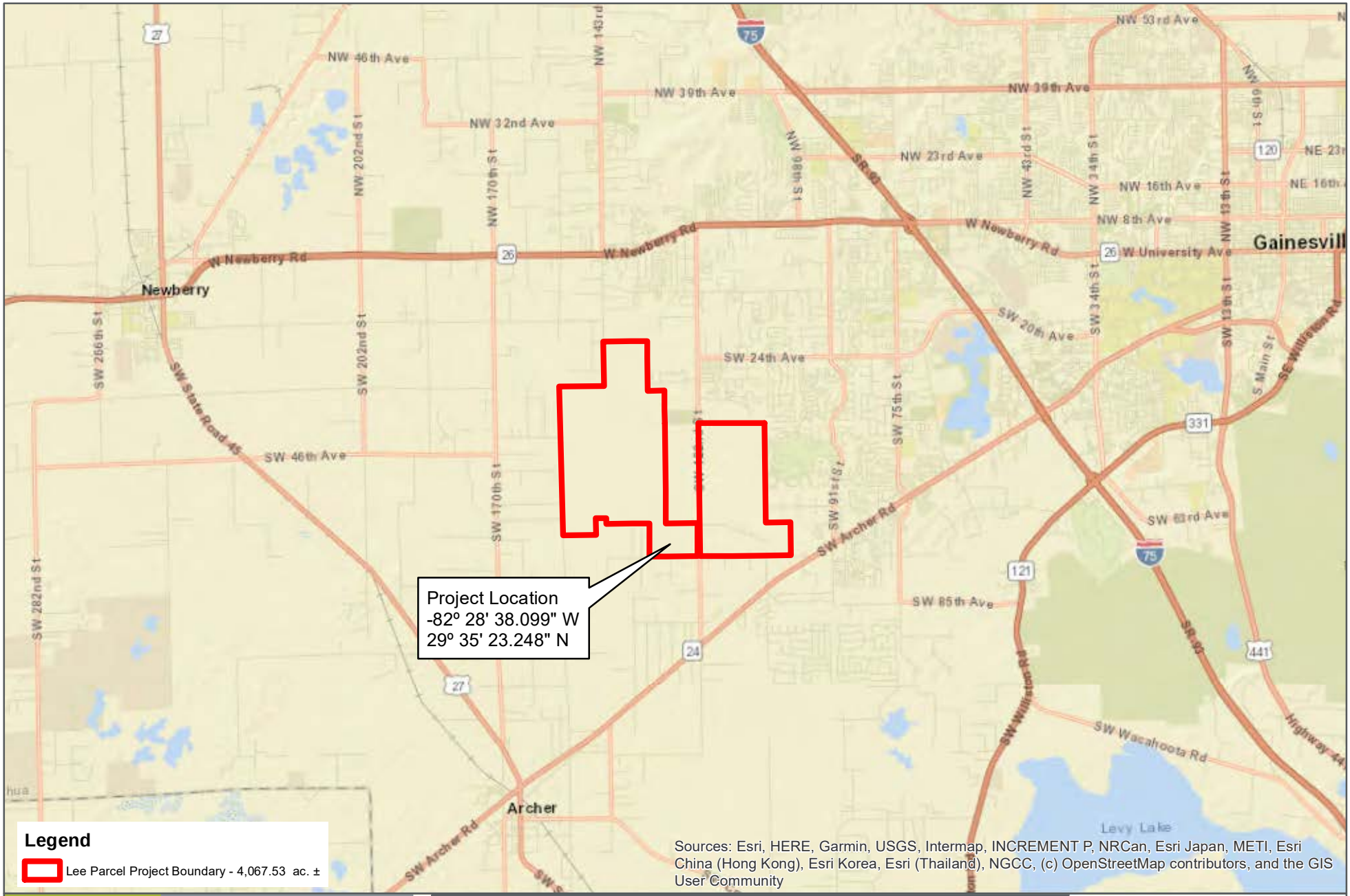


Image:Streetmap

Data Source: ESRI

Sec 10, 11, 14, 15, 22, 23, 24, 25, 26 & 27
Twp 10 S
Rng 18 E

Sec 30
Twp 10 S
Rng 19 E

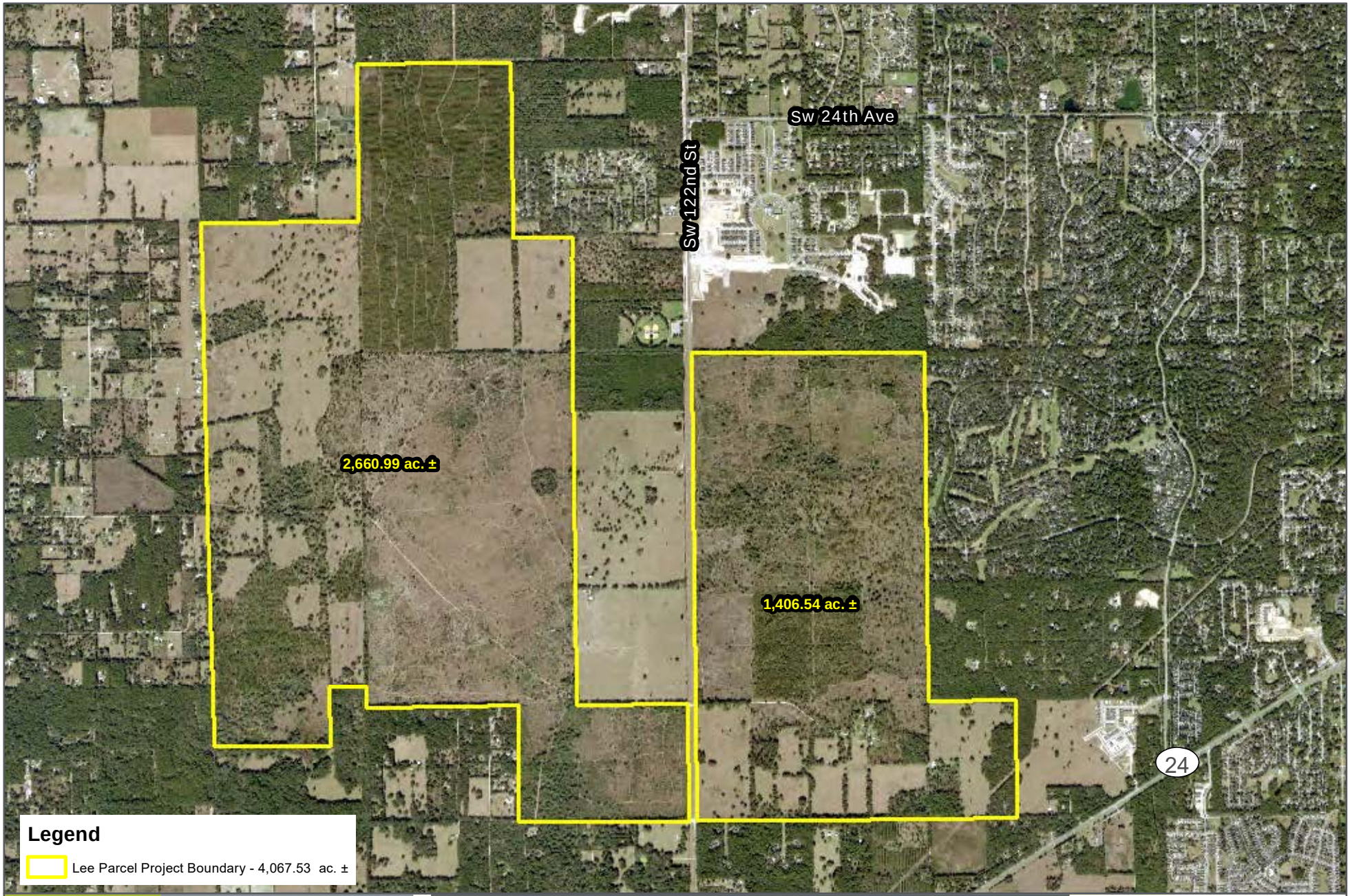
Project Location Map

Lee Parcel
Alachua County, Florida

0 2 4 Miles
0 3.2 6.4 Kilometers

Cardno®
3905 Crescent Park Drive, Riverview, FL 33578 USA
Phone (+1) 813-664-4500 Fax (+1) 813-664-0440
www.cardno.com

Date Created: 6/23/2021 Date Revised: 6/23/2021 File Path: Q:\UnitedStates\Florida\Tampa\Lee Parcels\working\arcmap\LeeParcel_Location_20210623.mxd
GIS Analyst: Lauren.Federsel



Legend

Lee Parcel Project Boundary - 4,067.53 ac. ±

Image:2020

Data Source: FDOT

Sec 10, 11, 14, 15, 22, 23, 24, 25, 26 & 27
Twp 10 S
Rng 18 E

Sec 30
Twp 10 S
Rng 19 E

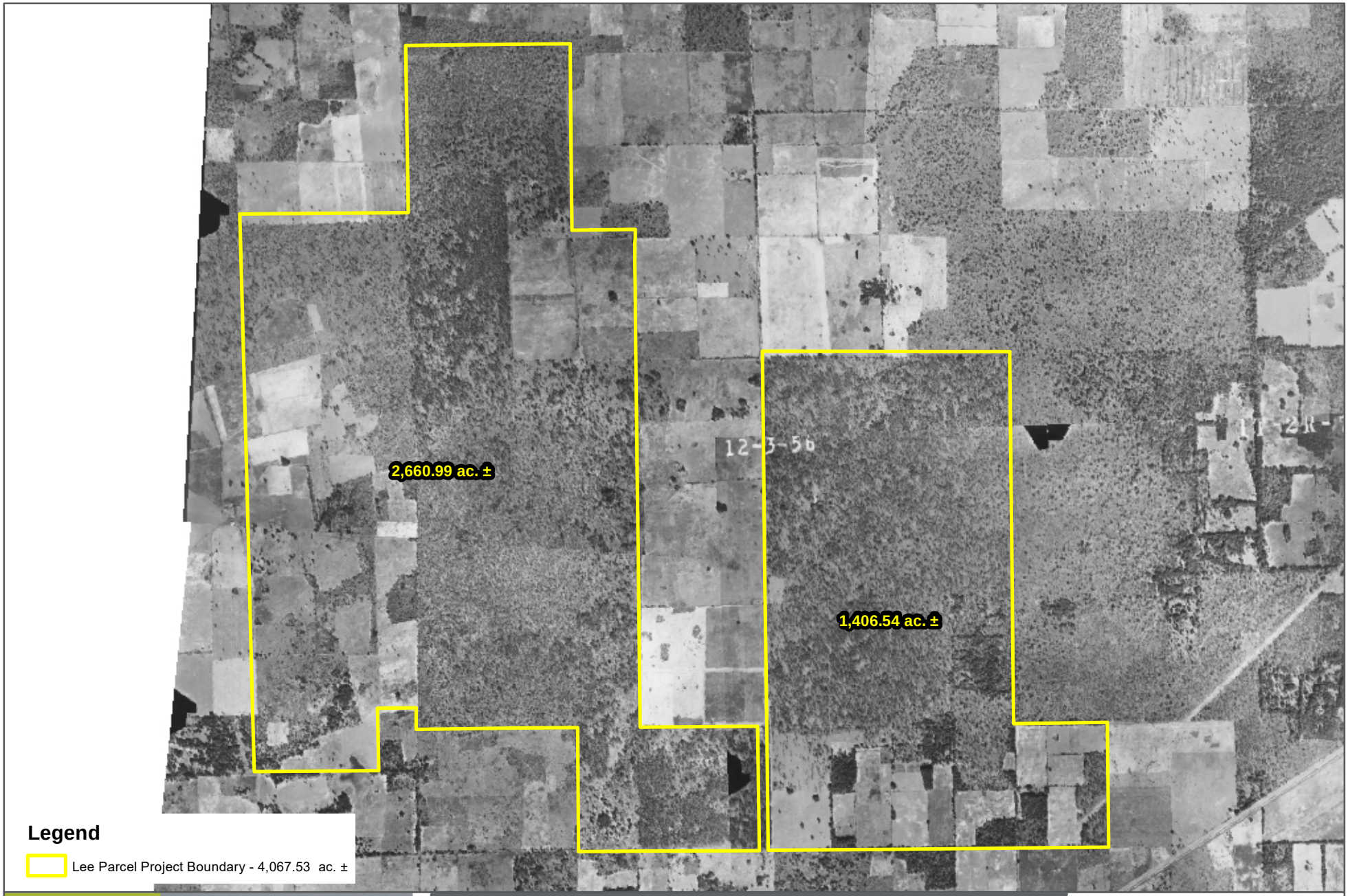
Aerial (2020) Map

Lee Parcel
Alachua County, Florida

0 3,000 6,000 Feet
0 914 1,828 Meters

Cardno®
3905 Crescent Park Drive, Riverview, FL 33578 USA
Phone (+1) 813-664-4500 Fax (+1) 813-664-0440
www.cardno.com

Date Created: 6/23/2021 Date Revised: 6/23/2021 File Path: Q:\UnitedStates\Florida\Tampa\Lee Parcels\working\arcmap\LeeParcel_Aerial_20210623.mxd
GIS Analyst: Lauren.Federsel



Legend

Lee Parcel Project Boundary - 4,067.53 ac. ±

Image:1956

Data Source: UF

Sec 10, 11, 14, 15, 22, 23, 24, 25, 26 & 27
Twp 10 S
Rng 18 E

Sec 30
Twp 10 S
Rng 19 E

Aerial (1956) Map

Lee Parcel
Alachua County, Florida

0 3,000 6,000 Feet
0 914 1,828 Meters

Cardno

3905 Crescent Park Drive, Riverview, FL 33578 USA
Phone (+1) 813-664-4500 Fax (+1) 813-664-0440
www.cardno.com

Date Created: 7/14/2021 Date Revised: 7/14/2021 File Path: Q:\UnitedStates\Florida\Tampa\Lee Parcels\working\arcmap\LeeParcel_Aerial_1956_20210714.mxd
GIS Analyst: Lauren.Federsel

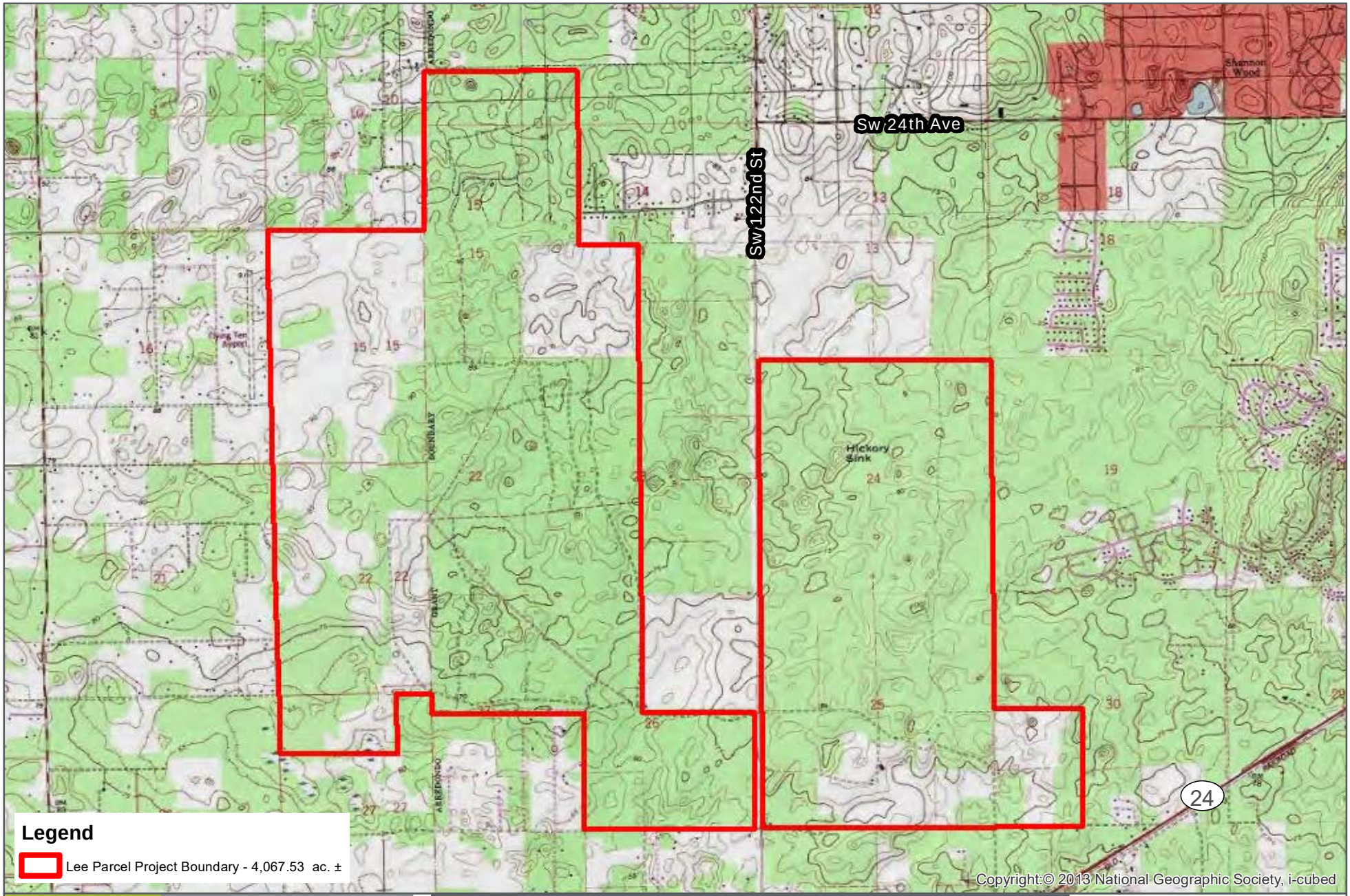


Image:USGS QUAD

Data Source: ESRI

Sec 10, 11, 14, 15, 22, 23, 24, 25, 26 & 27
Twp 10 S
Rng 18 E

Sec 30
Twp 10 S
Rng 19 E

USGS Quadrangle Map

Lee Parcel
Alachua County, Florida

0 3,000 6,000 Feet

0 913 1,826 Meters

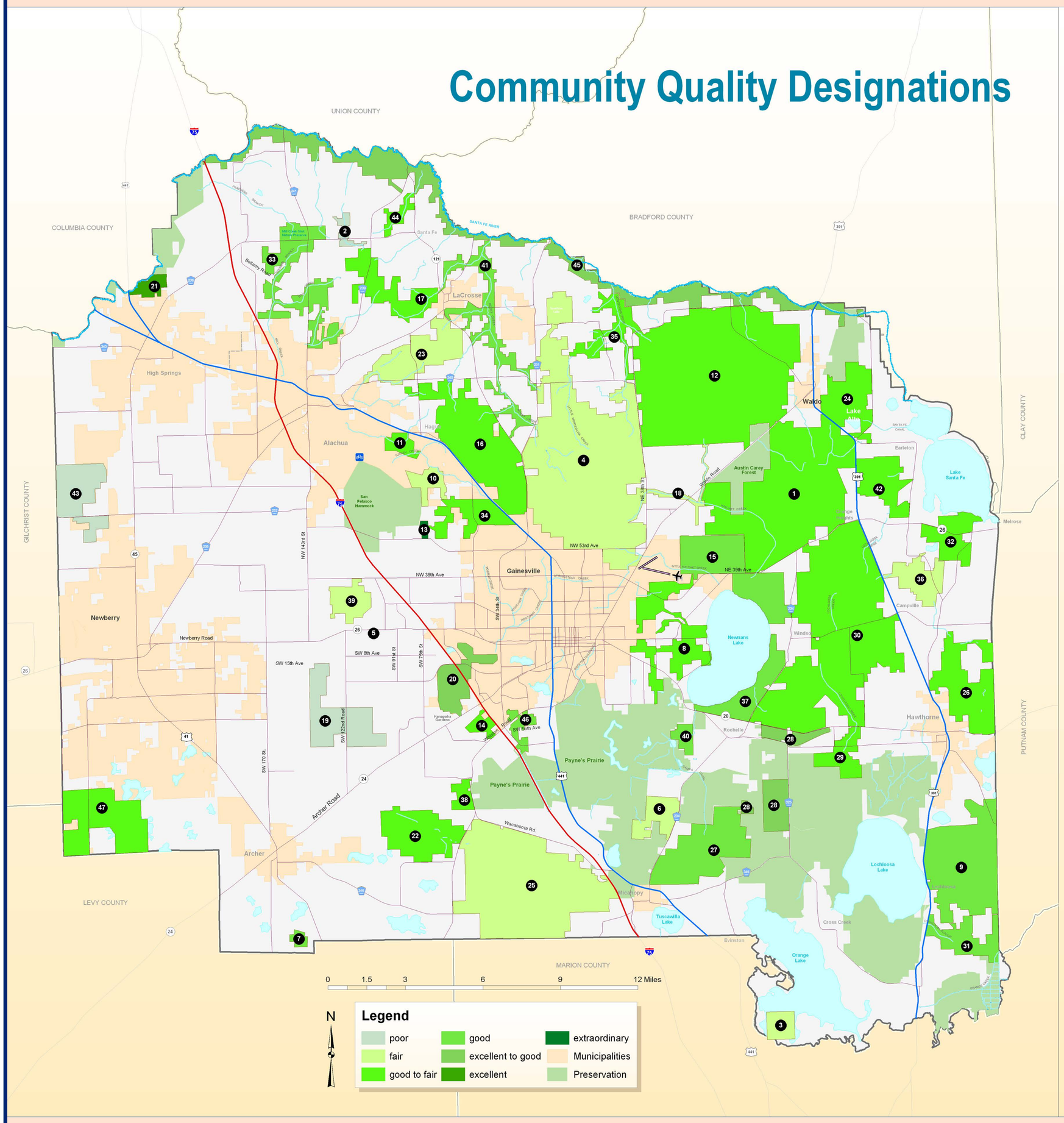
Cardno

3905 Crescent Park Drive, Riverview, FL 33578 USA
Phone (+1) 813-664-4500 Fax (+1) 813-664-0440
www.cardno.com

Date Created: 6/23/2021 Date Revised: 7/14/2021 File Path: Q:\UnitedStates\Florida\Tampa\Lee Parcels\working\arcmap\LeeParcel_QUAD_20210623.mxd
GIS Analyst: Lauren.Federsel

STRATEGIC ECOSYSTEMS - ALACHUA COUNTY, FLORIDA

Community Quality Designations



Introduction

A few years ago Alachua County conducted two studies to create an Ecological Inventory for the County. The first study was conducted in 1987 and the second in 1996. The studies aimed to identify, inventory, map, describe, and evaluate the most significant natural biological communities, both upland and wetland, that were in private ownership in Alachua County and to make recommendations for protecting these natural resources. The studies do not focus on the public water bodies and publicly owned lands in the County. This map captures the GIST of the analysis used.

Community Quality Designations

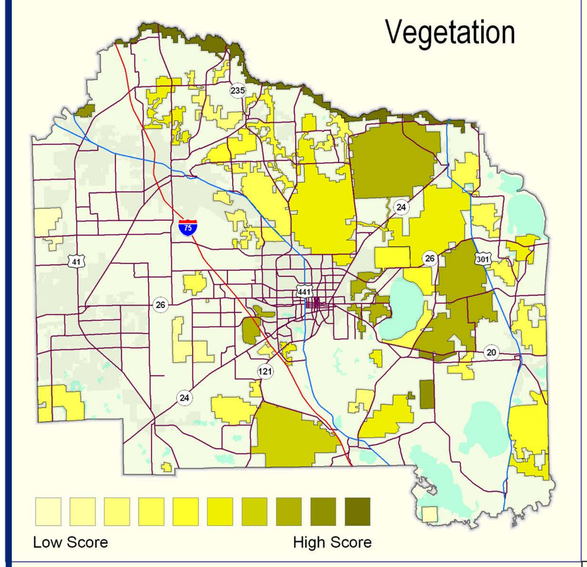
The biological communities on each site were evaluated for overall ecosystem quality. While the scope of the project precluded certain statistical analysis, the approach taken combined limited site visits and judgment based on other sources of information. Some decisions were made on the basis of aerial photography combined with a judgment based on the general condition of such ecosystems throughout Alachua County. Most communities were visited in the field at least once. Evaluations of quality are based primarily on the biodiversity and functional integrity of the community as reported in the field data sheets or by the evaluators.

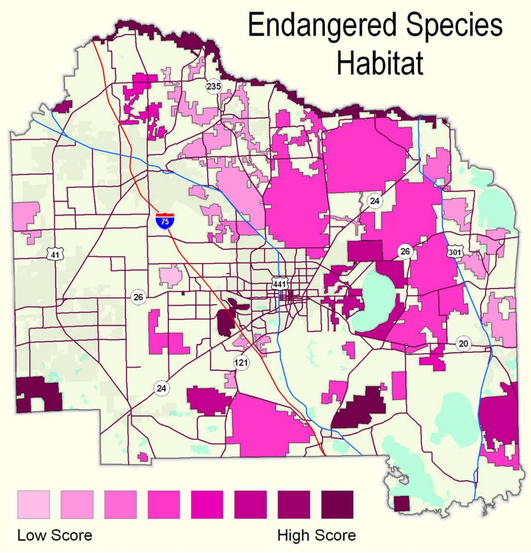
SITE NUMBER	SITE NAME	PARAMETER RANK	SUB-PARAMETER RANK
1	AUSTIN CARY FLATWOODS	18	15
2	BEECH VALLEY	47	47
3	BIRD ISLAND	18	28
4	BUCK BAY FLATWOODS	18	20
5	BUZZARDS ROOST	24	20
6	CHACALA POND	18	15
7	DOMINO HAMMOCK	27	26
8	EAST SIDE GREENWAY	18	14
9	EAST LOCHLOOSA FOREST	12	26
10	EAST SAN FELASCO HAMMOCK	33	28
11	NORTH SAN FELASCO HAMMOCK	24	23
12	NORTHEAST FLATWOODS	18	15
13	FOX POND	5	5
14	FRED BEAR HAMMOCK	40	39
15	GUM ROOT SWAMP	6	8
16	HAGUE FLATWOODS	24	23
17	HASAN FLATWOODS	43	44
18	HATCHETT CREEK	33	31
19	HICKORY SINK	27	36
20	HOGTOWN PRAIRIE	3	3
21	HORNSBY SPRINGS	2	2
22	KANAPAHA PRAIRIE	12	9
23	SOUTH LACROSSE FOREST	40	39
24	LAKE ALTO SWAMP	27	31
25	BARR HAMMOCK - LEVY LAKE	6	6
26	LITTLE ORANGE CREEK	40	39
27	LOCHLOOSA FOREST WEST	3	4
28	LOCHLOOSA FOREST ADDITIONS	8	9
29	LOCHLOOSA CREEK	12	20
30	LOCHLOOSA CREEK FLATWOODS	8	9
31	LOCHLOOSA SLOUGH	12	15
32	SOUTH MELROSE FLATWOODS	27	31
33	MILL CREEK	12	9
34	MILLHOPPER FLATWOODS	27	23
35	MONTEOCHA CREEK	33	39
36	MORAN'S PRAIRIE	43	45
37	EAST SIDE NEWNANS LAKE	6	13
38	PAYNES PRAIRIE WEST	33	31
39	PINE HILL FOREST	43	36
40	PRAIRIE CREEK	8	6
41	ROCKY CREEK	33	31
42	SALUDA SWAMP	33	36
43	BUDA SANDHILLS	46	46
44	SANTA FE CREEK	33	43
45	SANTA FE RIVER	1	1
46	SERENOLA FOREST	27	28
47	WATERMELON POND	12	15

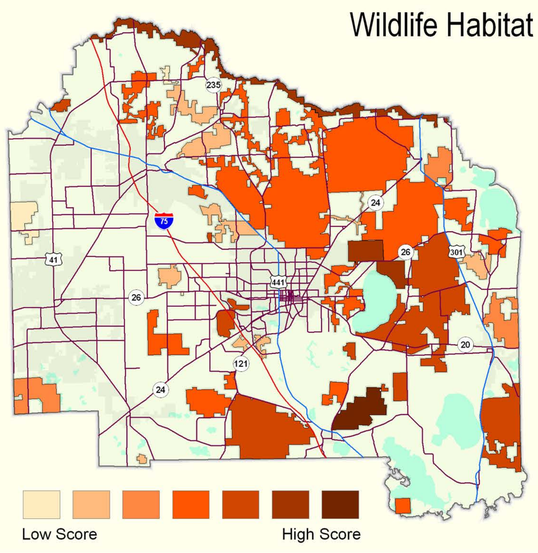
Site Ranking

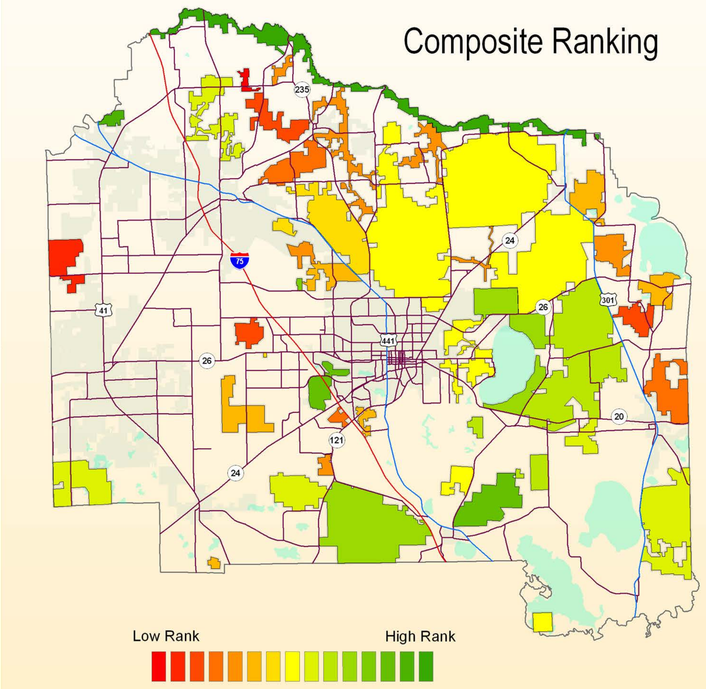
A numerical scoring and ranking system was developed to determine the relative importance of the sites based on their ecological, hydrological, and management characteristics. Each site was evaluated and ranked by three project scientists for six ecological, hydrological, and management parameters. In some cases, a parameter was subdivided into subparameters to better define the relationship. Definitions were developed for each parameter and subparameter. Based on these definitions, a score of 1 (low) to 5 (high) was assigned by consensus to each site based on the characteristics it exhibited. These scores were summed to obtain a total site score. Sites were ranked by comparing their total scores.

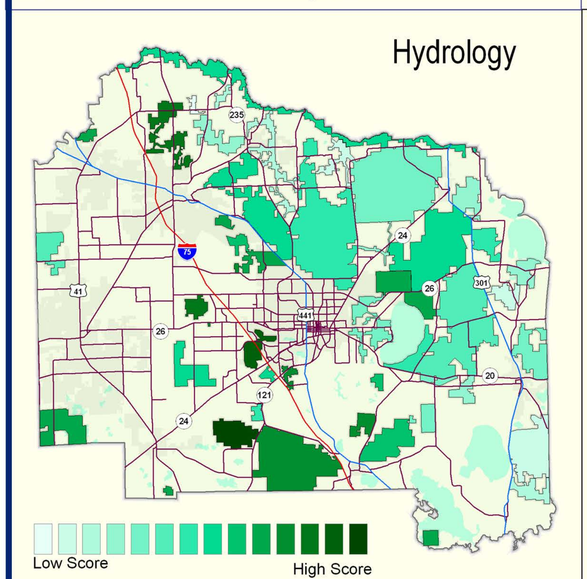
Site Rankings for each Criteria

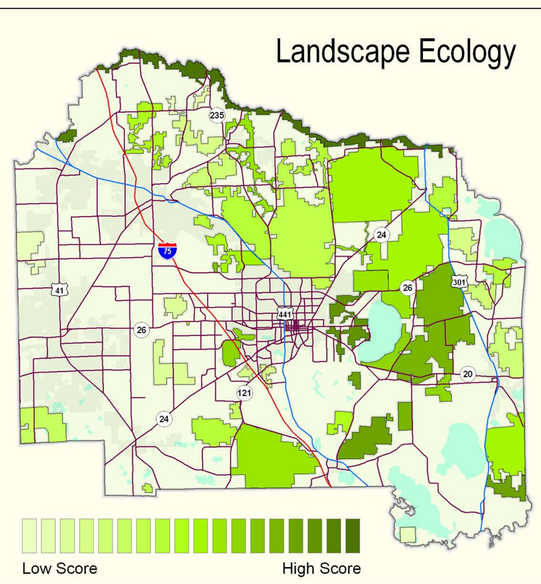


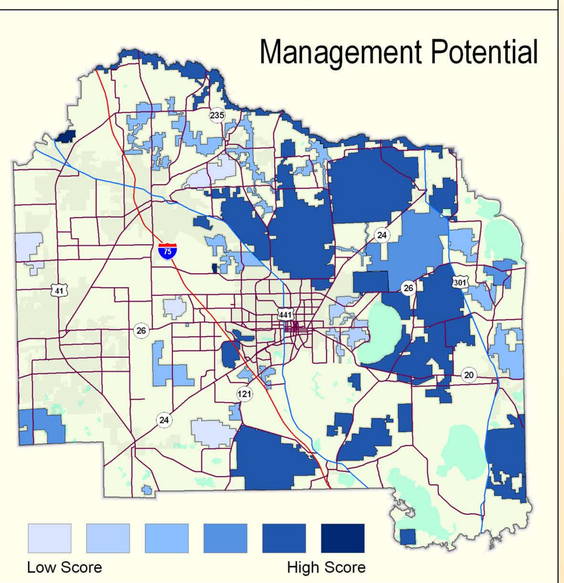












Prepared by:
Alachua County
Department of Growth Management
10 SW 2nd Avenue, Gainesville, Fl 32601
(352) 374-5249
http://growth-management.alachuacounty.us/

Notes:

Poster Size: 36 x 49
Date of Production: 02/03/2011
File on Disk: M:/Projects/Strategic_Ecosystems/Strategic_Ecosystems_Ratings.mxd

Data Sources:
KBN/Golder Associates. 1996. "Ecological Inventory of Alachua County, Florida." Report prepared for the Alachua County Department of Growth Management by KBN/Golder Associates.

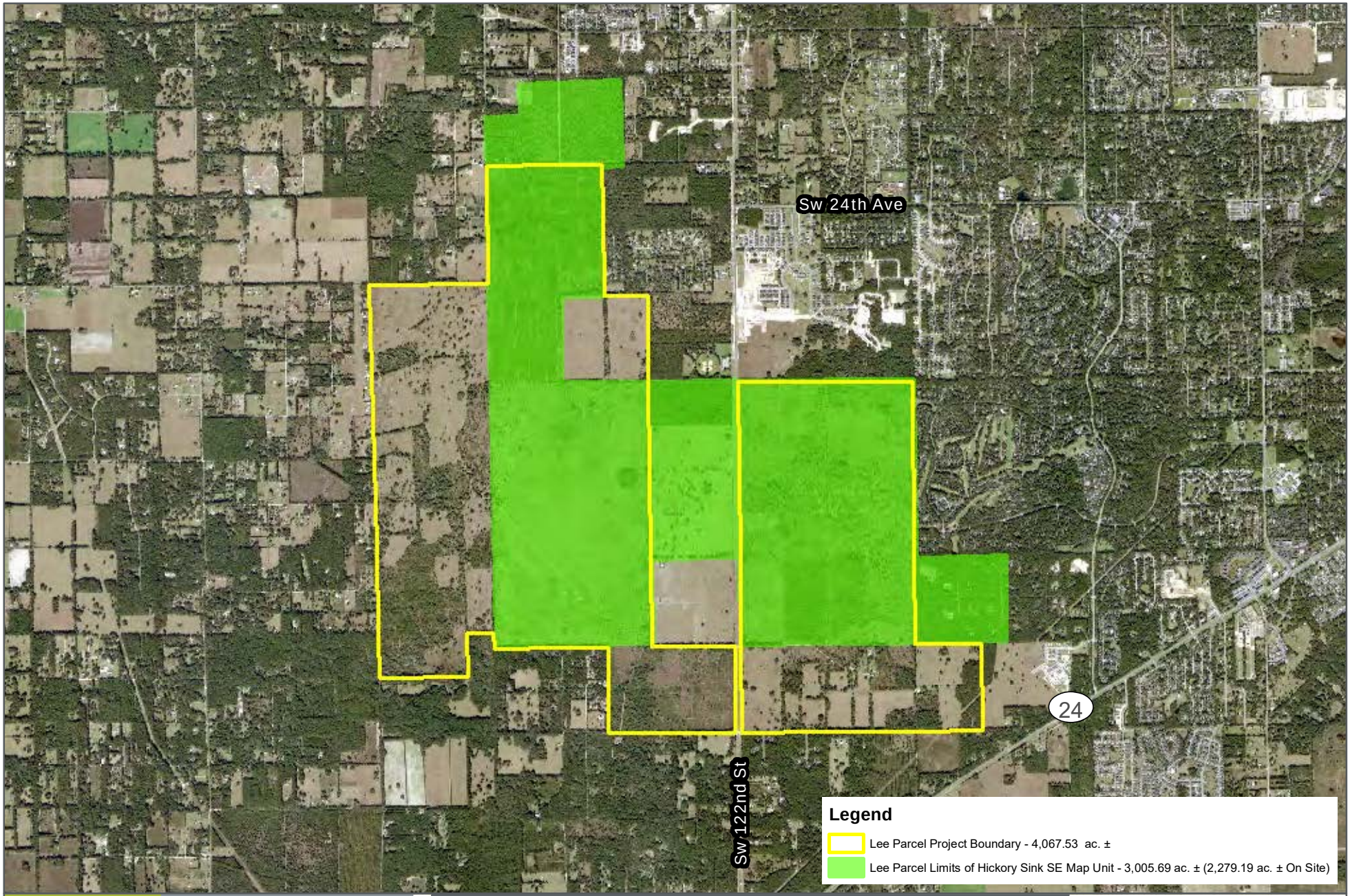


Image:2020

Data Source: FDOT

Sec 10, 11, 14, 15, 22, 23, 24, 25, 26 & 27
Twp 10 S
Rng 18 E

Sec 30
Twp 10 S
Rng 19 E

Lee Parcel Limits of Hickory Sink SE Map Unit

Lee Parcel
Alachua County, Florida

0 4,000 8,000 Feet
0 1,219 2,438 Meters

Cardno®
3905 Crescent Park Drive, Riverview, FL 33578 USA
Phone (+1) 813-664-4500 Fax (+1) 813-664-0440
www.cardno.com

Date Created: 7/14/2021 Date Revised: 7/14/2021 File Path: Q:\UnitedStates\Florida\Tampa\Lee Parcels\working\arcmap\LeeParcel_LimitsOfHickorySinkSE_20210714.mxd
GIS Analyst: Lauren.Federsel

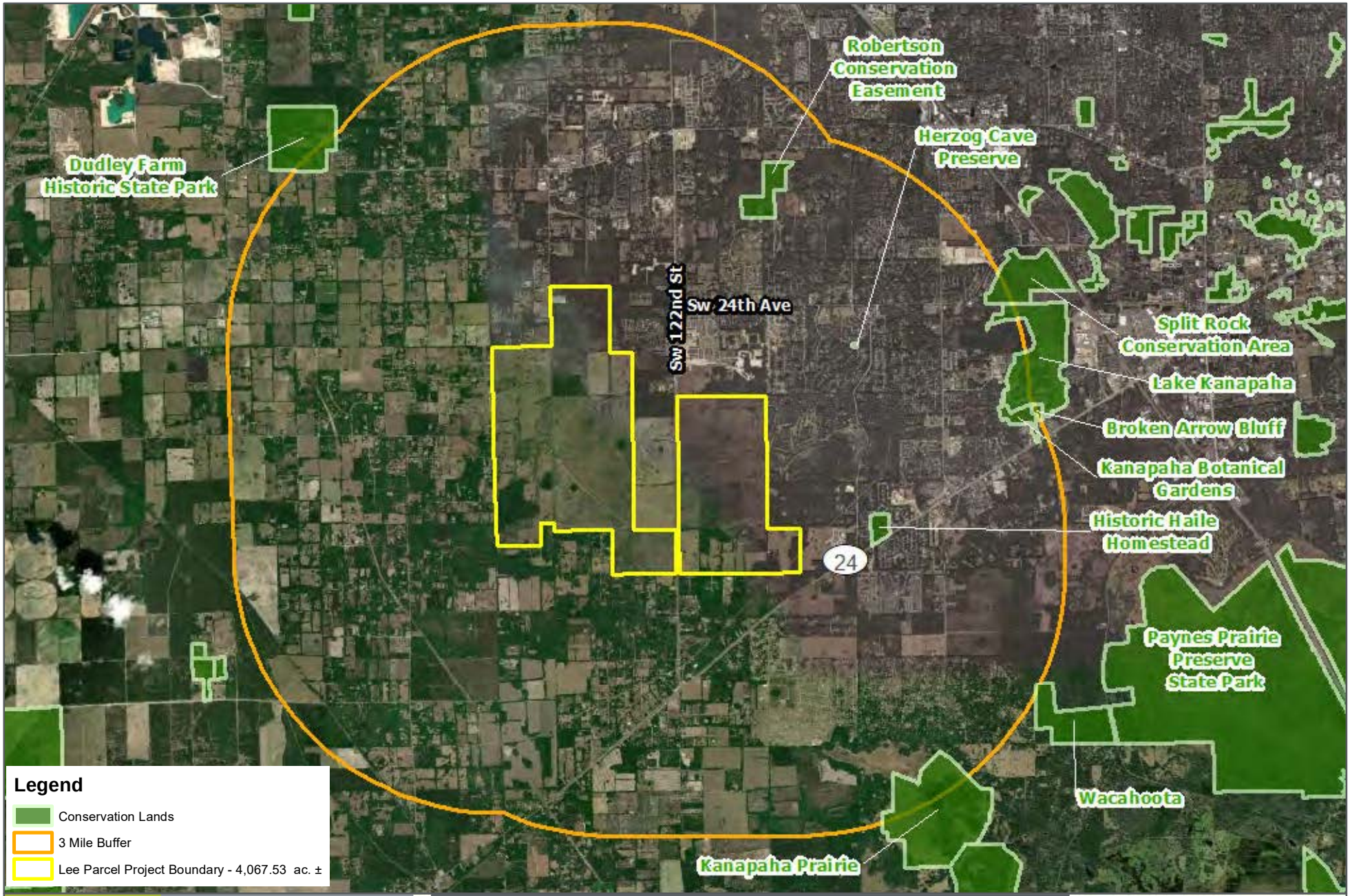


Image:2020

Data Source: bing

Sec 10, 11, 14, 15, 22, 23, 24, 25, 26 & 27
Twp 10 S
Rng 18 E

Sec 30
Twp 10 S
Rng 19 E

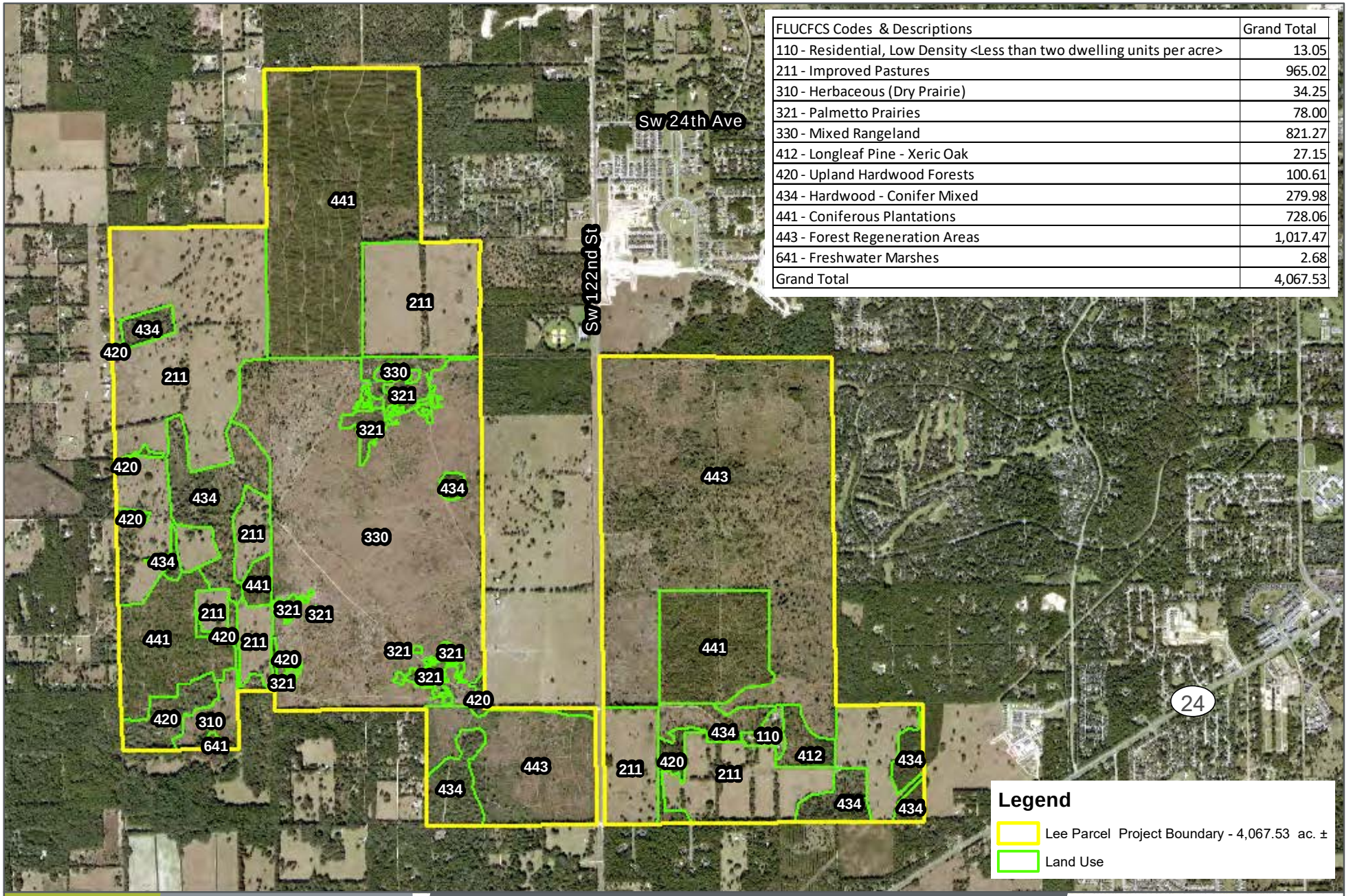
Conservation Areas Within 3 Miles Map

Lee Parcel
Alachua County, Florida

0 1.5 3 Miles
0 2.4 4.8 Kilometers

Cardno
3905 Crescent Park Drive, Riverview, FL 33578 USA
Phone (+1) 813-664-4500 Fax (+1) 813-664-0440
www.cardno.com

Date Created: 6/23/2021 Date Revised: 6/23/2021 File Path: Q:\UnitedStates\Florida\Tampa\Lee Parcels\working\arcmap\LeeParcel_Conservation_20210623.mxd
GIS Analyst: Lauren.Federsel



FLUCFCS Codes & Descriptions	Grand Total
110 - Residential, Low Density <Less than two dwelling units per acre>	13.05
211 - Improved Pastures	965.02
310 - Herbaceous (Dry Prairie)	34.25
321 - Palmetto Prairies	78.00
330 - Mixed Rangeland	821.27
412 - Longleaf Pine - Xeric Oak	27.15
420 - Upland Hardwood Forests	100.61
434 - Hardwood - Conifer Mixed	279.98
441 - Coniferous Plantations	728.06
443 - Forest Regeneration Areas	1,017.47
641 - Freshwater Marshes	2.68
Grand Total	4,067.53

Image:2020

Data Source: FDOT

Sec 10, 11, 14, 15, 22, 23, 24, 25, 26 & 27
Twp 10 S
Rng 18 E

Sec 30
Twp 10 S
Rng 19 E

Land Use Map

Lee Parcel
Alachua County, Florida

0 3,000 6,000 Feet
0 914 1,828 Meters

Cardno
3905 Crescent Park Drive, Riverview, FL 33578 USA
Phone (+1) 813-664-4500 Fax (+1) 813-664-0440
www.cardno.com

Date Created: 10/7/2021 Date Revised: 10/7/2021 File Path: Q:\UnitedStates\Florida\Tampa\Lee Parcels\working\arcmap\LeeParcel_LandUse_20211007.mxd
GIS Analyst: Lauren.Federsel

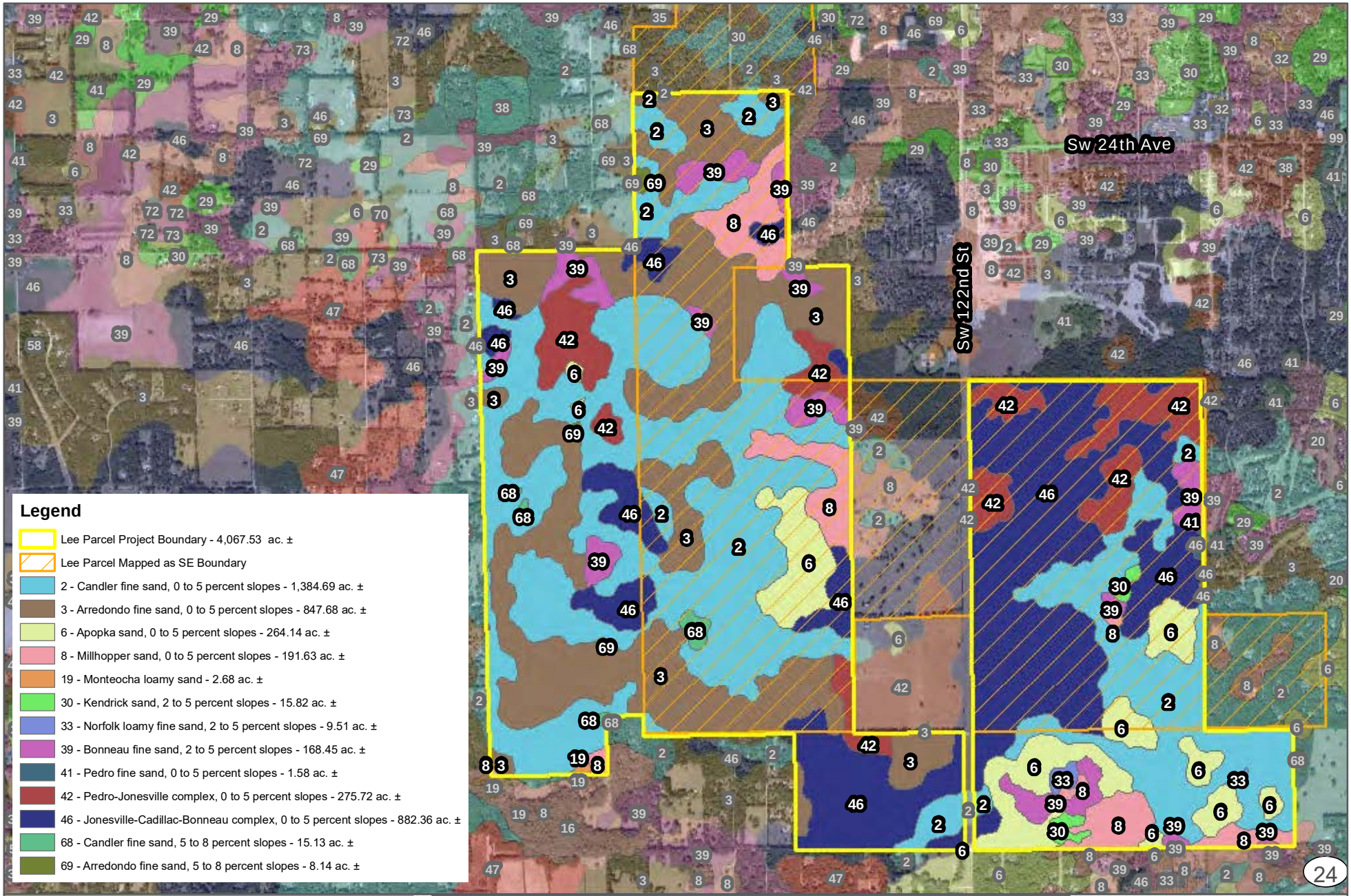


Image:2020

Data Source: FDOT

Sec 10, 11, 14, 15, 22, 23, 24, 25, 26 & 27
Twp 10 S
Rng 18 E

Sec 30
Twp 10 S
Rng 19 E

NRCS Soils Map

Lee Parcel
Alachua County, Florida

0 3,000 6,000 Feet
0 914 1,828 Meters

Cardno
3905 Crescent Park Drive, Riverview, FL 33578 USA
Phone (+1) 813-664-4500 Fax (+1) 813-664-0440
www.cardno.com

Date Created: 7/14/2021 Date Revised: 7/14/2021 File Path: Q:\UnitedStates\Florida\Tampa\Lee Parcels\working\arcmap\LeeParcel_Soils_20210714.mxd
GIS Analyst: Lauren.Federsel

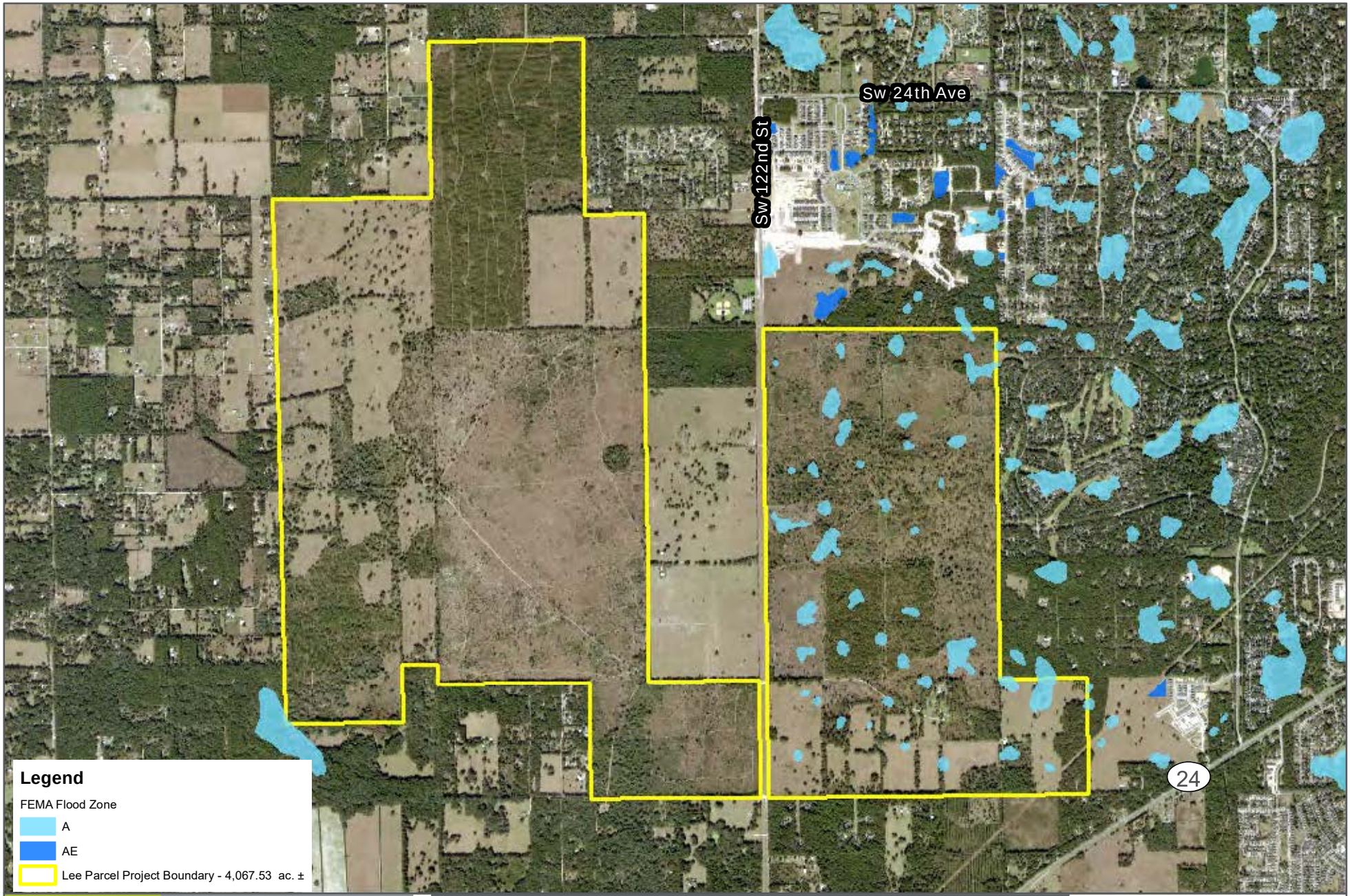


Image:2020

Data Source: FDOT

Sec 10, 11, 14, 15, 22, 23, 24, 25, 26 & 27
Twp 10 S
Rng 18 E

Sec 30
Twp 10 S
Rng 19 E

FEMA Flood Zone Map

Lee Parcels
Alachua County, Florida

0 3,000 6,000 Feet

0 914 1,828 Meters

Cardno

3905 Crescent Park Drive, Riverview, FL 33578 USA
Phone (+1) 813-664-4500 Fax (+1) 813-664-0440
www.cardno.com

Date Created: 6/23/2021 Date Revised: 6/23/2021 File Path: Q:\UnitedStates\Florida\Tampa\Lee Parcels\working\arcmap\LeeParcel_FEMA_20210623.mxd
GIS Analyst: Lauren.Federsel

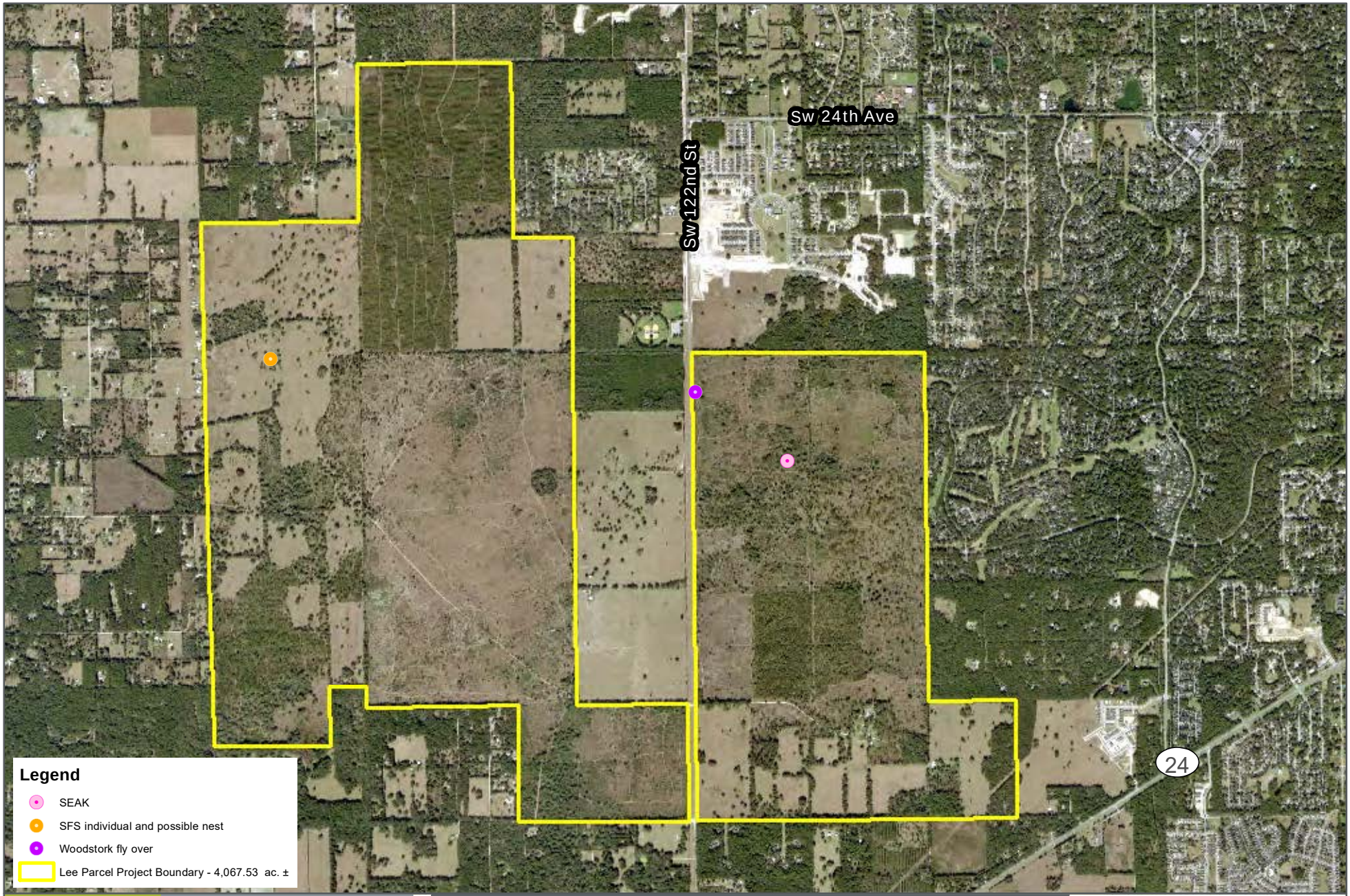


Image:2020

Data Source: FDOT

Sec 10, 11, 14, 15, 22, 23, 24, 25, 26 & 27
Twp 10 S
Rng 18 E

Sec 30
Twp 10 S
Rng 19 E

Incidental Listed Species Observations Map

Lee Parcel
Alachua County, Florida

0 3,000 6,000 Feet
0 914 1,828 Meters

Cardno

3905 Crescent Park Drive, Riverview, FL 33578 USA
Phone (+1) 813-664-4500 Fax (+1) 813-664-0440
www.cardno.com

Date Created: 6/23/2021 Date Revised: 6/23/2021 File Path: Q:\UnitedStates\Florida\Tampa\Lee Parcels\working\arcmap\LeeParcel_incidentals_20210623.mxd
GIS Analyst: Lauren.Federsel

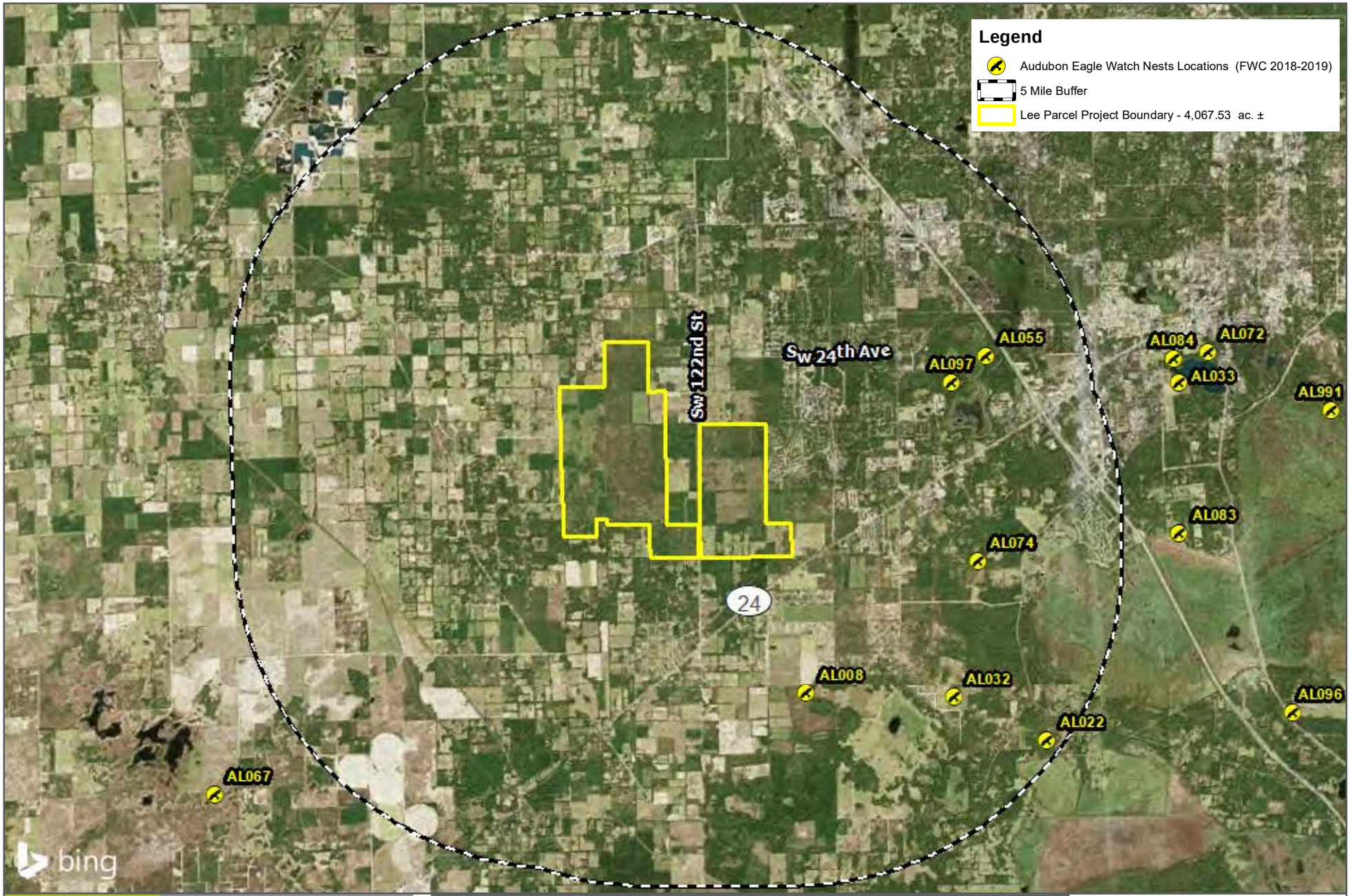


Image:2020

Data Source: BING

Sec 10, 11, 14, 15, 22, 23, 24, 25, 26 & 27
Twp 10 S
Rng 18 E

Sec 30
Twp 10 S
Rng 19 E

Bald Eagle Nest Location Map

Lee Parcel
Alachua County, Florida

0 2 4 Miles
0 3.2 6.4 Kilometers

Cardno
3905 Crescent Park Drive, Riverview, FL 33578 USA
Phone (+1) 813-664-4500 Fax (+1) 813-664-0440
www.cardno.com

Date Created: 6/23/2021 Date Revised: 6/23/2021 File Path: Q:\UnitedStates\Florida\Tampa\Lee Parcels\working\arcmap\LeeParcel_Eagle_20210623.mxd
GIS Analyst: Lauren.Federsel

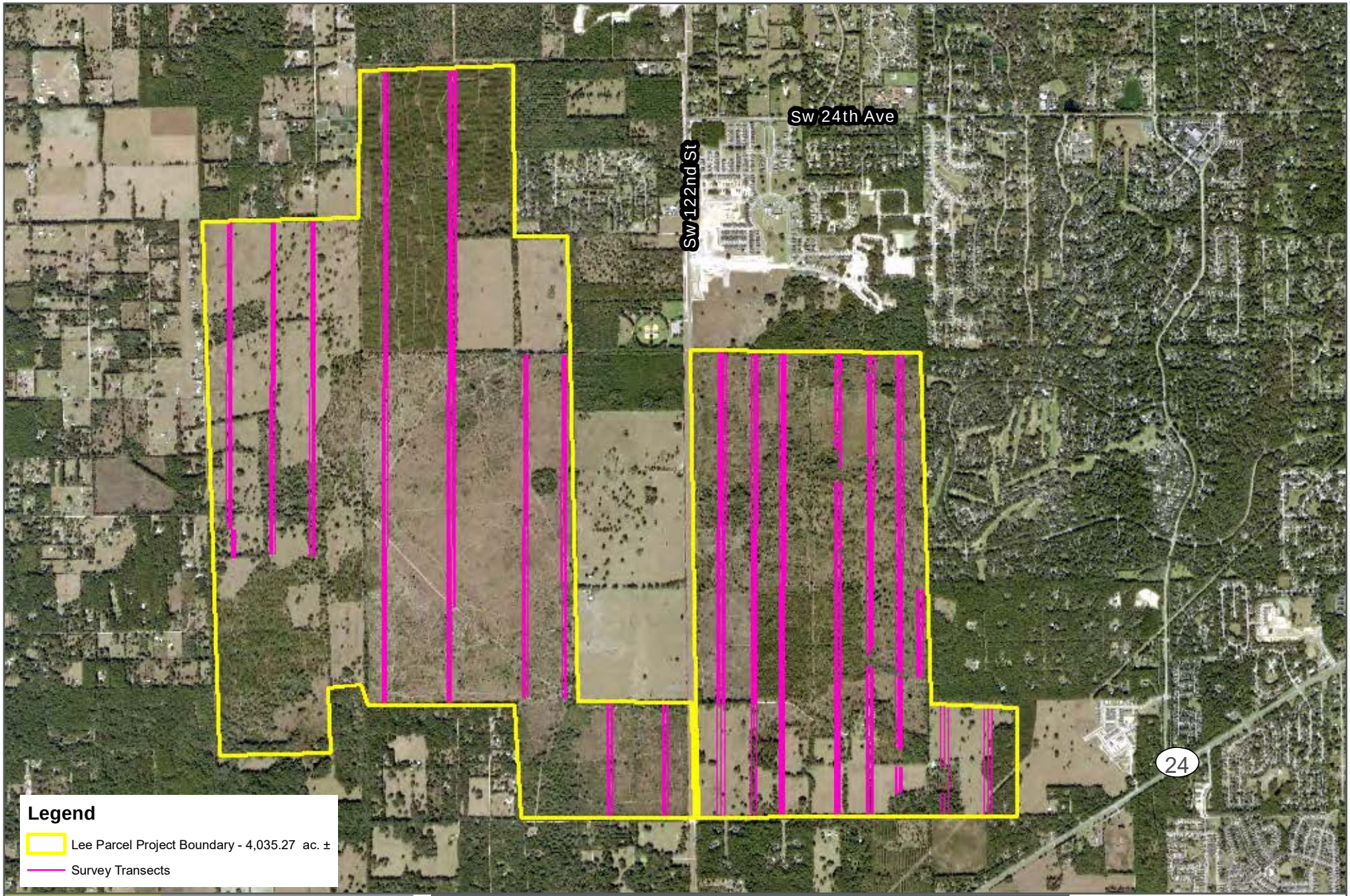


Image:2020

Data Source: FDOT

Sec 10, 11, 14, 15, 22, 23, 24, 25, 26 & 27
Twp 10 S
Rng 18 E

Sec 30
Twp 10 S
Rng 19 E

Gopher Tortoise 15% Survey Transects Map

Lee Parcel
Alachua County, Florida

0 3,000 6,000 Feet

0 914 1,828 Meters

Cardno

3905 Crescent Park Drive, Riverview, FL 33578 USA
Phone (+1) 813-664-4500 Fax (+1) 813-664-0440
www.cardno.com

Date Created: 6/23/2021 Date Revised: 6/23/2021 File Path: Q:\UnitedStates\Florida\Tampa\Lee Parcels\working\arcmap\LeeParcel_GT_15pct_20210623.mxd
GIS Analyst: Lauren.Federsel

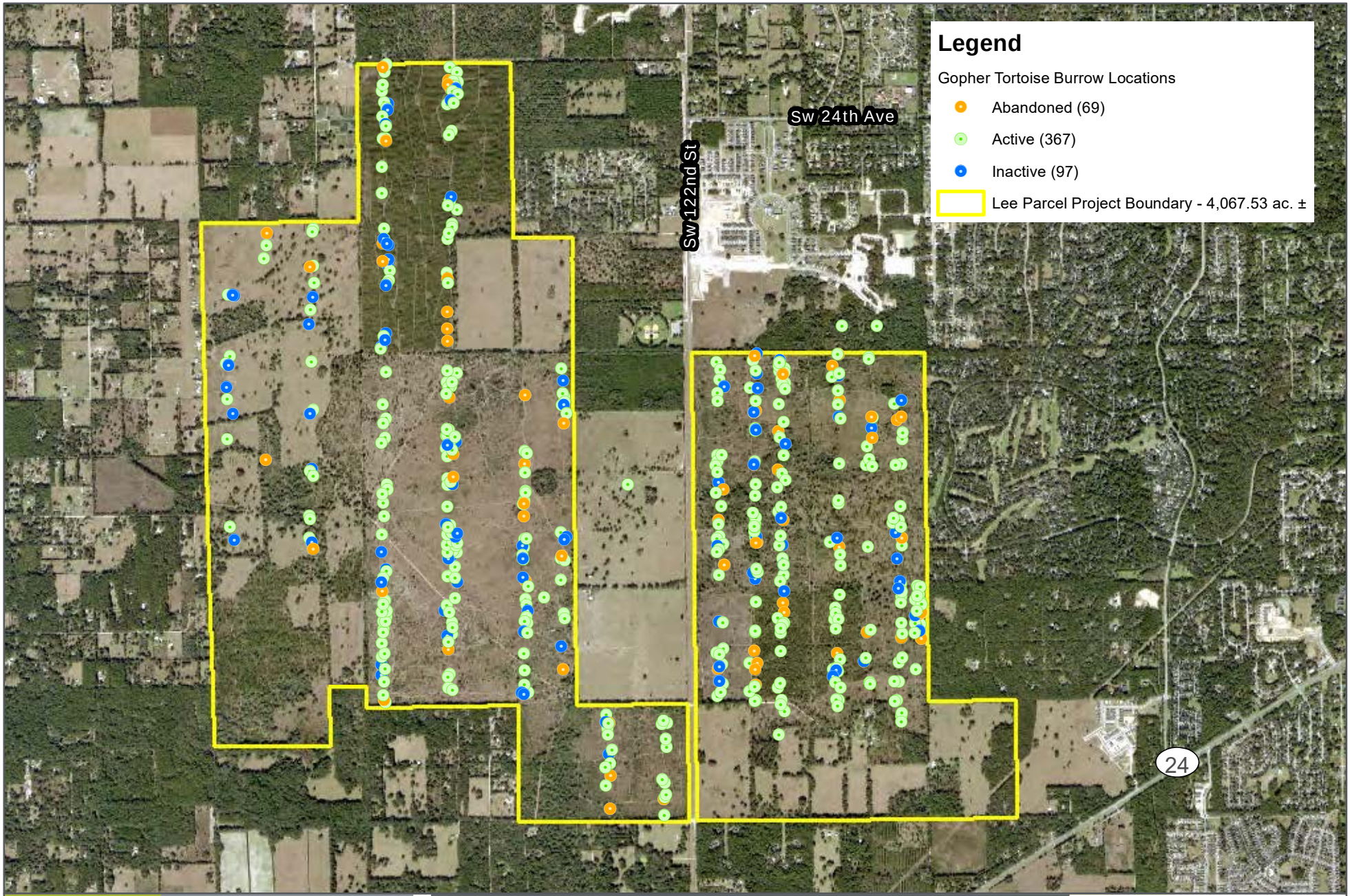


Image:2020

Data Source: FDOT

Sec 10, 11, 14, 15, 22, 23, 24, 25, 26 & 27
Twp 10 S
Rng 18 E

Sec 30
Twp 10 S
Rng 19 E

Gopher Tortoise Burrow Locations Map

Lee Parcel
Alachua County, Florida

0 3,000 6,000 Feet
0 914 1,828 Meters

Cardno
3905 Crescent Park Drive, Riverview, FL 33578 USA
Phone (+1) 813-664-4500 Fax (+1) 813-664-0440
www.cardno.com

Date Created: 6/23/2021 Date Revised: 6/23/2021 File Path: Q:\UnitedStates\Florida\Tampa\Lee Parcels\working\arcmap\LeeParcel_GT_Burrow_locations_20210623.mxd
GIS Analyst: Lauren.Federsel

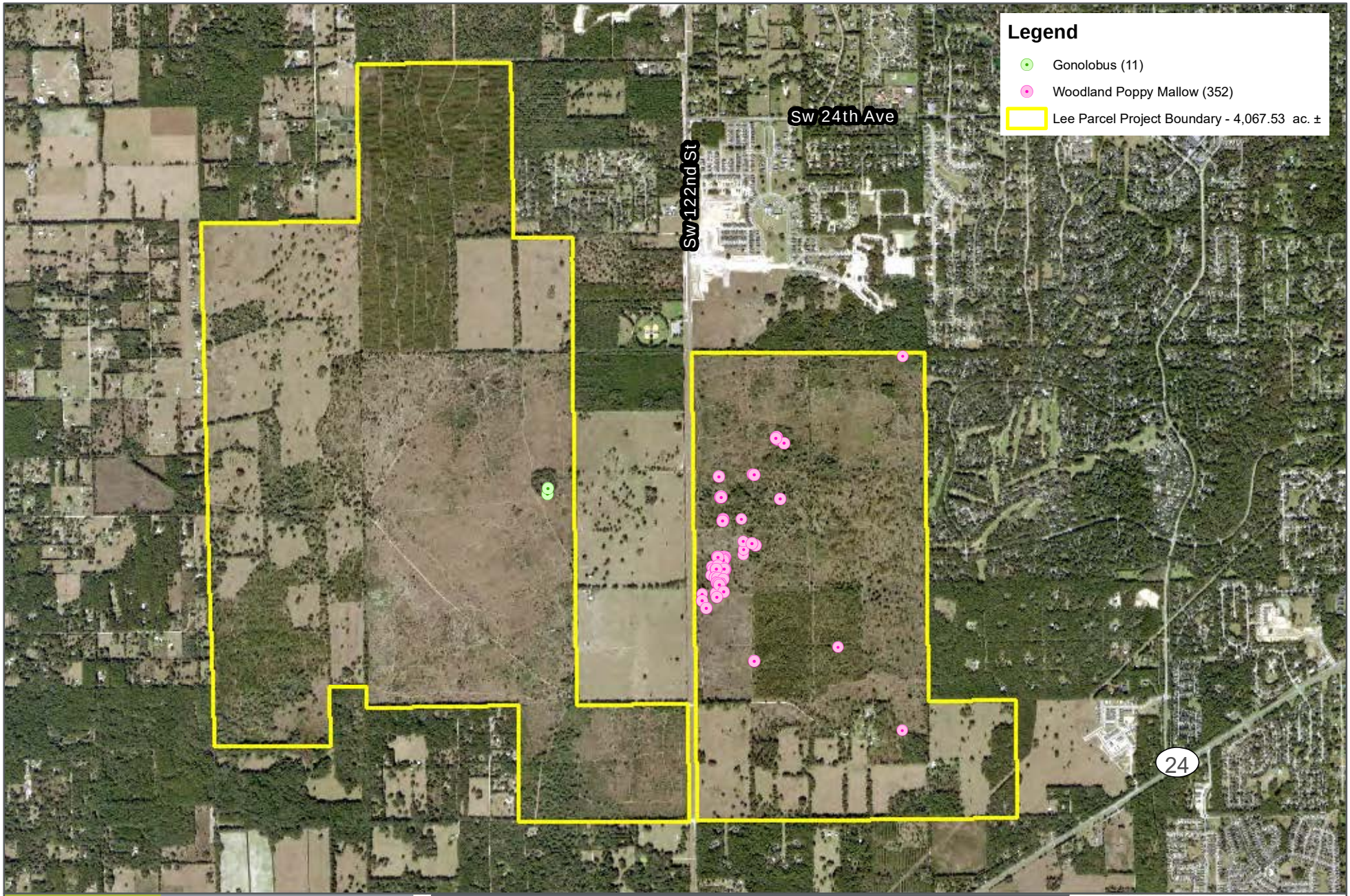


Image:2020

Data Source: FDOT

Sec 10, 11, 14, 15, 22, 23, 24, 25, 26 & 27
Twp 10 S
Rng 18 E

Sec 30
Twp 10 S
Rng 19 E

Listed Plant Location Map

Lee Parcel
Alachua County, Florida

0 3,000 6,000 Feet

0 914 1,828 Meters

Cardno

3905 Crescent Park Drive, Riverview, FL 33578 USA
Phone (+1) 813-664-4500 Fax (+1) 813-664-0440
www.cardno.com

Date Created: 6/23/2021 Date Revised: 6/23/2021 File Path: Q:\UnitedStates\Florida\Tampa\Lee Parcels\working\arcmap\LeeParcel_ListedPlant_Locations_20210623.mxd
GIS Analyst: Lauren.Federsel

Significant Geologic Feature Buffer Criteria

Type	Description	Buffer Area (calculated from edge)	Minimum dist edge of buffer to edge of sink
A	sinkholes	50 feet	35
B	caves	75 feet	50
C	sinkholes where water is expression of the Floridan aquifer	150 feet	100

GPS Numbers	Type	SGF Area (ac.)	SGF Buffer Area (ac.)	Total Area of SGF and Buffer (ac.)
26, 27, 16038, 16039	C	0.06	2.26	2.32
29, 16046	C	0.06	2.24	2.30
122	A	0.43	0.76	1.19
333	C	0.32	3.12	3.44
367	C	0.05	2.24	2.29
371	C	0.07	2.31	2.38
698	A	0.02	0.29	0.31
1225	A	0.05	0.37	0.42
1544	A	0.02	0.30	0.32
1577	C	0.07	2.31	2.38
1810, 1812, 1813, 1815	A	0.16	0.54	0.70
2003, 2004	A	1.15	1.14	2.29
7699	A	0.01	0.28	0.29
14202	A	0.01	0.27	0.28
	Total:	2.48	18.43	20.91

Sw 24th Ave

Sw 122nd St

371
367
26
16038
16039
27
29
16046
333
122
2004
2003
698
14202
7699
1544
1577
1225
1810
1812
1815
1813

24

Legend

- Lee Parcel Project Boundary - 4,067.53 ac. ±
- Significant Geologic Features Boundary
- Significant Geologic Features Buffers
- Significant Geologic Features

Image:2020

Sec 10, 11, 14, 15, 22, 23, 24, 25, 26 & 27
Twp 10 S
Rng 18 E

Sec 30
Twp 10 S
Rng 19 E

Lee Property Significant Geologic Features and Buffers

Lee Parcel
Alachua County, Florida

0 2,400 4,800 Feet
0 700 1,400 Meters

Cardno
3905 Crescent Park Drive, Riverview, FL 33578 USA
Phone (+1) 813-664-4500 Fax (+1) 813-664-0440
www.cardno.com

Date Created: 10/14/2021 Date Revised: 10/14/2021 File Path: Q:\UnitedStates\Florida\Tampa\Lee Parcels\working\arcmap\Lee_Property_Significant_Geologic_Features_and_Buffers_B_1_20211014.mxd
GIS Analyst: Lauren.Federsel

UF Golf Course Area to Include Additional 189.08 AC of Conservation Open Space

Legend

- Lee Parcel Project Boundary: 4,067.53 ac. ±
- Significant Geologic Features Boundary
- Proposed UF Golf Course: 580 ac.
- Conservation Open Space: 958.92 ac. ±
- Additional COS on UF Golf Course: 189.08 ac. ±
- Total Area of COS: 1,148.00 ac. ±

Image:12/01/2021

Data Source: Planet

Sec 10, 11, 14, 15, 22, 23, 24, 25, 26 & 27
Twp 10 S
Rng 18 E

Sec 30
Twp 10 S
Rng 19 E

0 2,000 4,000 Feet

0 610 1,220 Meters

Proposed Set Aside Map

Lee Parcel
Alachua County, Florida

Cardno®

3905 Crescent Park Drive, Riverview, FL 33578 USA
Phone (+1) 813-664-4500 Fax (+1) 813-664-0440
www.cardno.com

Date Created: 4/8/2022 Date Revised: 4/8/2022 File Path: S:\GIS\Misc\Hickory Sink\MXD\LeeParcel_SetAside_11x17_20220407.mxd
GIS Analyst: Peter.Marsey

APPENDIX A

KBN/GOLDER REPORT EXCERPT

HICKORY SINK

PRIORITY: 36 (below average) (from unweighted sub-parameter score)

KEY FEATURES: This is an area of well drained, moderately fertile soil that once supported an upland pine forest. Most of the area is now slash pine (*Pinus elliottii*) plantation and some is pasture. The ground cover vegetation of the high pine community is still somewhat intact on most of the area. There are several sink holes and caves, one of which supported a major bat colony (Humphrey, 1992, 1996), and two of which support specialized aquatic cave invertebrates (Franz et al., 1994).

USGS QUAD: Gainesville West, Arredondo
SIZE: 3,006 acres

BIO-COMMUNITY TYPES	ACRES	CONDITION OF BIO-COMMUNITY
Upland Mixed Forest	81	poor (pioneer hammock)
Upland Pine Forest	2560	poor
Sinkhole	56	good to fair
Sinkhole Pond	1	good
Cave (dry)		good
Old Field Pine Plantation *	205	
Improved Pasture *	103	

* Categories not used by FNAI

CONNECTIONS: none

SITE BOUNDARY CONDITIONS: The boundaries are regular in shape and generally conform to property boundaries, roads, section lines, or other surveyed lines. The area is bisected by a paved road that is destined to become a busy highway.

GEOLOGIC/HYDROLOGIC FEATURES: Soils this area are shallow sands over porous limerock. All rainfall percolates directly to the Floridan Aquifer. There are several sink holes, a small sinkhole pond, and several dry caves, some of which connect to aquatic caves within the Floridan Aquifer.

WILDLIFE HABITAT: There is still a reasonably good ground cover of blackberry plants (*Rubus* spp.), chinquapin (*Castanea pumila*), poison oak (*Toxicodendron toxicarium*), and other native plants that supports animals such as cottontail rabbits (*Sylvilagus floridanus*), gopher tortoises (*Gopherus polyphemus*), pocket gophers (*Geomys pinetis*), and cotton rats (*Sigmodon hispidus*). These in turn support gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), diamondback rattlesnakes (*Crotalus adamanteus*), and other predators. There is no longer much habitat for the pine canopy species. There are few cavities and little mast production. One of the caves on the property had one of the biggest bat colonies in Alachua County. An estimated 30,000 southeastern brown bats, *Myotis austroriparius*, occupied the cave in the early 1950's (Rice, 1957). It is currently not an active colony, probably due to declining water levels in the cave, making the environment in the cave less humid (Hovis, 1996).

RARE, THREATENED, AND ENDANGERED SPECIES: Gopher tortoises, pine snakes (*Pituophis melanoleucus mugitus*), eastern indigo snakes (*Drymarchon corais couperi*), and southeastern American kestrels (*Falco sparverius paulus*) still inhabit the area, but are all declining, and they will decline further as the young pines grow and shade out more of the ground cover that supports most of what is left of the wildlife here. One interesting plant that is here is poppy mallow (*Callirhoe papaver*), which is listed by the state as endangered.

EXOTICS: There is mimosa (*Albizia julibrissin*), chinaberry (*Melia azedarach*), centipede grass (*Eremochloa ophiuroides*), and bahia grass (*Paspalum notatum*) scattered throughout much of the property. Only the mimosa is a threat to the native habitats.

RESTORATION AND MANAGEMENT POTENTIAL: This area is interesting mainly for its potential for restoration to the former upland pine forest habitat. This still could be done, although the wire grass (*Aristida stricta*) that was the dominant ground cover is gone, as are the longleaf pine (*Pinus palustris*), Southern red oak (*Quercus falcata*), mockernut hickory (*Carya tomentosa*), and many other species. Another difficulty would be the need for frequent prescribed burning. The metropolitan area of Gainesville has now occurs at the eastern edge of this site, and Parker Road runs through the middle of it. Also, it is not big enough to ever support a viable population of red-cockaded woodpeckers *(Picoides borealis)*, even if longleaf pines 100 years old were eventually established there. It could support many of the other species characteristic of this habitat, but the trend is obviously in the other direction.

RECOMMENDED CONSERVATION STRATEGIES: The former bat cave, which supports aquatic cave invertebrates, and the other caves on the property that support cave invertebrates should be protected. Perhaps they could be purchased, along with a few acres of land, and the ownership given, with deed restrictions, to some organization willing to help protect them. The current owners are doing a good job of protecting the caves, so that this is not an urgent need (Doonan, 1996). The property as a whole is not recommended for public conservation action. The reasons are its lack of connection to any other conservation area, the poor location for the frequent prescribed burning that its management would require, and its size, which, combined with its isolation, is not large enough to support the full spectrum of upland pine habitat species.

COMPREHENSIVE PLAN CONSIDERATIONS: There are no wetlands, floodplains or streams and only one small open water pond here. The sinkhole and caves here are well known and documented. At least two of them open into aquatic caves within the Floridan Aquifer (Doonan, 1996).

SITE VISITS: On the edge only: David Clayton, 1996; Bob Simons, 1996, 1987.

SITE EVALUATION SCORING

Vegetation:	
Species Diversity	1
Exotics	3
Endangered Species Habitat	3
Wildlife Habitat	3
Hydrology:	
Floridan Aquifer	4
Surficial Aquifer Resource Protection	1
Vulnerability of Aquifer	4
Landscape Ecology:	
Community Diversity	1
Ecological Quality	1
Community Rarity	4
Functional Connectedness	1
Management Potential	3

Note: See Table 2-1 for parameter descriptions.

APPENDIX B

USFWS IPAC RESOURCE LIST

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Alachua County, Florida

Local office

North Florida Ecological Services Field Office

(904) 731-3336
(904) 731-3045

7915 Baymeadows Way, Suite 200
Jacksonville, FL 32256-7517

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS

Eastern Black Rail Laterallus jamaicensis ssp. jamaicensis — Threatened
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/10477

Wood Stork Mycteria americana — Threatened
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/8477

Reptiles

NAME	STATUS

Eastern Indigo Snake Drymarchon corais couperi — Threatened
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/646

Gopher Tortoise Gopherus polyphemus — Candidate
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6994

Amphibians

NAME	STATUS

Frosted Flatwoods Salamander Ambystoma cingulatum — Threatened
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/4981

Crustaceans

NAME	STATUS

Squirrel Chimney Cave Shrimp Palaemonetes cummingi — Threatened
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/1551

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE.

"BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

American Kestrel Falco sparverius paulus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 1 to Aug 31
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Common Ground-dove Columbina passerina exigua This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Feb 1 to Dec 31
Prairie Warbler Dendroica discolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Red-headed Woodpecker Melanerpes erythrocephalus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Swallow-tailed Kite Elanoides forficatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8938	Breeds Mar 10 to Jun 30

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation *of these measures is particularly important when birds are most likely to* occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project

intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER FORESTED/SHRUB WETLAND

PFO6F

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

APPENDIX C

FNAI BIODIVERSITY MATRICES

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
850-224-8207
850-681-9364 fax
www.fnai.org

Florida Natural Areas Inventory

Biodiversity Matrix Query Results

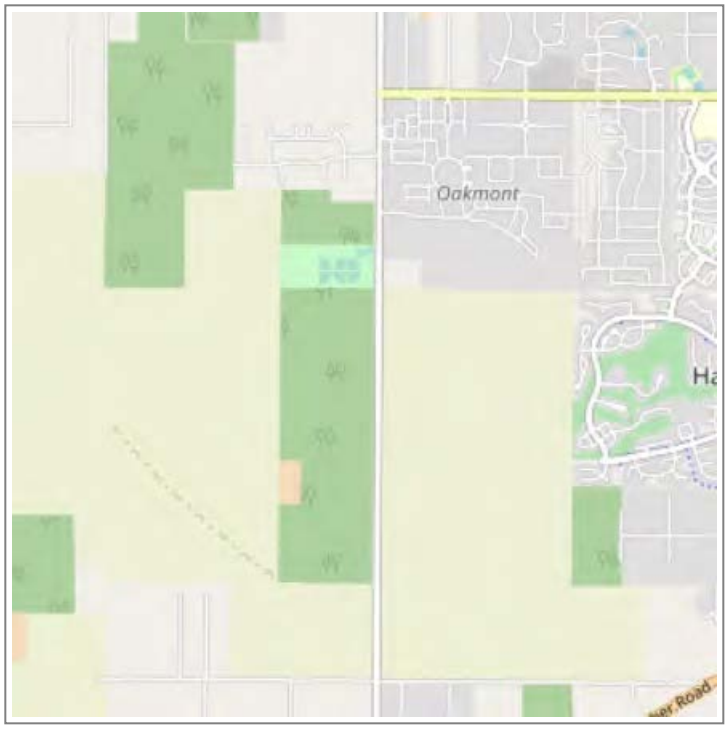
UNOFFICIAL REPORT

Created 2/8/2021

(Contact the FNAI Data Services Coordinator at 850.224.8207 or kbrinegar@fnai.fsu.edu for information on an official Standard Data Report)

NOTE: The Biodiversity Matrix includes only rare species and natural communities tracked by FNAI.

Report for 9 Matrix Units: 24830 , 24831 , 24832 , 25093 , 25094 , 25095 , 25357 , 25358 , 25359



Descriptions

DOCUMENTED - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit.

DOCUMENTED-HISTORIC - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit; however the occurrence has not been observed/reported within the last twenty years.

LIKELY - The species or community is *known* to occur in this vicinity, and is considered likely within this Matrix Unit because:

1. documented occurrence overlaps this and adjacent Matrix Units, but the documentation isn't precise enough to indicate which of those Units the species or community is actually located in; *or*
2. there is a documented occurrence in the vicinity and there is suitable habitat for that species or community within this Matrix Unit.

POTENTIAL - This Matrix Unit lies within the known or predicted range of the species or community based on expert knowledge and environmental variables such as climate, soils, topography, and landcover.

Matrix Unit ID: 24830

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

3 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Drymarchon couperi Eastern Indigo Snake	G3	S3	LT	FT
Mesic flatwoods	G4	S4	N	N
Upland hardwood forest	G5	S3	N	N

Matrix Unit ID: 24831

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

4 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Drymarchon couperi Eastern Indigo Snake	G3	S3	LT	FT
Sandhill	G3	S2	N	N
Scrub	G2	S2	N	N
Upland hardwood forest	G5	S3	N	N

Matrix Unit ID: 24832

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

2 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Drymarchon couperi Eastern Indigo Snake	G3	S3	LT	FT
Upland hardwood forest	G5	S3	N	N

Matrix Unit ID: 25093

1 **Documented** Element Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Crotalus adamanteus Eastern Diamondback Rattlesnake	G4	S3	N	N

0 **Documented-Historic** Elements Found

3 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Drymarchon couperi Eastern Indigo Snake	G3	S3	LT	FT
Mesic flatwoods	G4	S4	N	N
Upland hardwood forest	G5	S3	N	N

Matrix Unit ID: 25094

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

3 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Drymarchon couperi Eastern Indigo Snake	G3	S3	LT	FT
Mesic flatwoods	G4	S4	N	N
Upland hardwood forest	G5	S3	N	N

Matrix Unit ID: 25095

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

3 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Drymarchon couperi Eastern Indigo Snake	G3	S3	LT	FT
Mesic flatwoods	G4	S4	N	N
Upland hardwood forest	G5	S3	N	N

Matrix Unit ID: 25357

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

3 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Drymarchon couperi Eastern Indigo Snake	G3	S3	LT	FT
Mesic flatwoods	G4	S4	N	N
Upland hardwood forest	G5	S3	N	N

Matrix Unit ID: 25358

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

5 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Drymarchon couperi Eastern Indigo Snake	G3	S3	LT	FT
Gopherus polyphemus Gopher Tortoise	G3	S3	C	ST
Mesic flatwoods	G4	S4	N	N
Sandhill	G3	S2	N	N
Upland hardwood forest	G5	S3	N	N

Matrix Unit ID: 25359

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

3 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Drymarchon couperi Eastern Indigo Snake	G3	S3	LT	FT
Sandhill	G3	S2	N	N
Upland hardwood forest	G5	S3	N	N

Matrix Unit IDs: 24830 , 24831 , 24832 , 25093 , 25094 , 25095 , 25357 , 25358 , 25359

41 **Potential** Elements Common to Any of the 9 Matrix Units

Scientific and Common Names	Global	State	Federal	State

	Rank	Rank	Status	Listing
Agrimonia incisa Incised Groove-bur	G3	S2	N	T
Ambystoma cingulatum Frosted Flatwoods Salamander	G2	S2	LT	FT
Aquatic cave	G3	S3	N	N
Arnoglossum diversifolium Variable-leaved Indian-plantain	G2	S2	N	T
Asplenium heteroresiliens Wagner's Spleenwort	GNA	S1	N	N
Asplenium plenum Ruffled Spleenwort	G1Q	S1	N	N
Asplenium x curtissii Curtiss' Spleenwort	GNA	S1	N	N
Athene cunicularia floridana Florida Burrowing Owl	G4T3	S3	N	SSC
Brickellia cordifolia Flyr's Brickell-bush	G2G3	S2	N	E
Calopogon multiflorus Many-flowered Grass-pink	G2G3	S2S3	N	T
Corynorhinus rafinesquii Rafinesque's Big-eared Bat	G3G4	S2	N	N
Crangonyx hobbsi Hobbs' Cave Amphipod	G2G3	S2S3	N	N
Falco sparverius paulus Southeastern American Kestrel	G5T4	S3	N	ST
Forestiera godfreyi Godfrey's Swampprivet	G2	S2	N	E
Gopherus polyphemus Gopher Tortoise	G3	S3	C	ST
Grus canadensis pratensis Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Hartwrightia floridana Hartwrightia	G2	S2	N	T
Lampropeltis extenuata Short-tailed Snake	G3	S3	N	ST
Lithobates capito Gopher Frog	G3	S3	N	SSC
Litsea aestivalis Pondspice	G3?	S2	N	E
Matelea floridana Florida Spiny-pod	G2	S2	N	E
Myotis austroriparius Southeastern Bat	G3G4	S3	N	N
Neofiber alleni Round-tailed Muskrat	G3	S3	N	N
Notophthalmus perstriatus Striped Newt	G2G3	S2	C	N
Onthophagus polyphemi polyphemi Punctate Gopher Tortoise Onthophagus Beetle	G2G3T2T3	S2	N	N
Peucaea aestivalis Bachman's Sparrow	G3	S3	N	N
Phyllanthus liebmannianus ssp. platylepis Pinewoods Dainties	G4T2	S2	N	E
Picoides borealis Red-cockaded Woodpecker	G3	S2	LE	FE
Pituophis melanoleucus mugitus Florida Pine Snake	G4T3	S3	N	SSC
Podomys floridanus Florida Mouse	G3	S3	N	SSC
Procambarus lucifugus Light-fleeing Cave Crayfish	G2G3	S2S3	N	N
Procambarus pallidus Pallid Cave Crayfish	G2G3	S2S3	N	N
Pycnanthemum floridanum	G3	S3	N	T

Florida Mountain-mint				
Salix floridana Florida Willow	G2	S2	N	E
Sciurus niger shermani Sherman's Fox Squirrel	G5T3	S3	N	SSC
Selonodon floridensis Florida Cebrionid Beetle	G2G4	S2S4	N	N
Selonodon mandibularis Large-Jawed Cebrionid Beetle	G2G4	S2S4	N	N
Sideroxylon alachuense Silver Buckthorn	G1	S1	N	E
Terrestrial cave	G3	S2	N	N
Troglocambarus maclanei North Florida Spider Cave Crayfish	G2	S2	N	N
Ursus americanus floridanus Florida Black Bear	G5T2	S2	N	N

Unofficial Report

These results are considered unofficial. FNAI offers a Standard Data Request option for those needing certifiable data.

Special Area Study
Report

APPENDIX

D

LISTED FLORA AND FAUNA SPECIES WITH THE POTENTIAL TO OCCUR IN ALACHUA COUNTY

Listed flora and fauna species with the potential to occur in Alachua County

Common Name	Scientific Name	Federal Status	State Status	Potential Habitats	Documented Historical Occurrence (FNAI, IPaC)	Potential to Occur On Site?
Amphibians						
Frosted Flatwoods Salamander	*Ambystoma cingulatum*	Threatened	Federally Threatened	Mesic flatwoods, wet flatwoods and wet prairie communities with wiregrass groundcrover and scattered wetlands oftend dominated by cypress or gum	Yes	Unlikely
Birds						
Bald Eagle	*Haliaeetus leucocephalus*	None – ESA, BGEPA, MBTA	State Rule Chapter 68A-16.002 F.A.C.	Most commonly includes areas clost to coastal areas, bays, rivers, lakes, or other bodies of water that proivde concetrations of food sources.	Yes	Closest documented nest, AL008 is located apprximately 3.5 miles south of the Project Study Area
Florida Burrowing Owl	*Athene cunicularia floridana*	None	Threatened	High, sparsely vegetated, sandy ground	Yes	Potentially
Florida Sandhill Crane	*Grus canadensis pratensis)*	None	Threatened	Prairies, freashwaer marshes and pasure lands	Yes	Unlikely
Southeastern American Kestrel	*Falco sparverius paulus*	None	Threatened	Found in open pine habitat woodland edges, prairies, and pastures	Yes	Potentially
Red-cockaded Woodpecker	*Picoides borealis*	Endangered	Federally Endangered	Inhabits open, mature pine woodlands that have a diversity of grass, forb, andn shrub species.	Yes	Unlikely, project is located outside of USFWS RCW Consultation Area
Eastern Black Rail	*Laterallus jamaicensis ssp. jamaicensis*	Threatened	Federally Threatened	found in salt and brackish marshes with dense cover	Yes	Unlikely
Wood Stork	*Mycteria americana*	Threatened	Federally Threatened	Forages in shallow water in freshwater marshes, swamps, lagoons, ponds tidal creeks, flooded pastures and ditches	Yes	Unlikely
Reptiles						
Eastern Indigo Snake	*Drymarchon couperi*	Threatened	Federally Threatened	Broad range of habitats, from scrub and sandhill to wet prairies and mangrove swamps	Yes	Potentially
Gopher Tortoise	*Gopherus polyphemus*	Candidate	Threatened	Dry upland habitats, including sandhills, scrub, xeric oak hammock, and ry pine flatwoods	Yes	Yes, nurmerous gopher tortoise burrows were documented on site.
Short-tailed Snake	*Lampropeltis extenuata*	None	Threatened	Dry upland habitats, principally sandhill, xeric hammock, and sand pine scrub	Yes	Potentially
Florida Pine snake	*Pituophis melanoleucus mugitus*	None	Threatened	Habitats with relatively open canopies and dry sandy soils, in which it burrows	Yes	Potentially

Common Name	Scientific Name	Federal Status	State Status	Potential Habitats	Documented Historical Occurrence (FNAI, IPaC)	Potential to Occur On Site?
Invertebrates						
Squirrel Chimney Cave Shrimp	*Palaemonetes cummingi*	Threatened	Federally Threatened	Groundwater within a flooded solution cave in limestone	Yes	Unlikely, species is only known to occur in Squirrel Chimney Sink
Plants						
Incised Groove-Bar	*Agrimonia incisa*	None	Threatened	Dry to moist, longleaf pine-oak woods, oak-hickory slopes, roadsides, sand or	Yes	Potentially
Variable-leaved Indian-plantain	*Arnoglossum diversifolium*	None	Threatened	Swamps and along streams in mucky soil	Yes	Unlikely
Flyr's Brickell-bush	*Bruckellua cordifolia*	None	Endangered	Dry, upland pine-oak woods, often with souther red oak and loblolly pine.	Yes	Potentially
Many-flowered Grass-pink	*Calopogon multiflorus*	None	Threatened	Dry to moist flatwoods with longleaf pine, wiregrass, and saw palmetto	Yes	Potentially
Godfrey's Swampprivet	*Forestiera godfreyi*	None	Endangered	Upland hardwood forests with limestone at or near the surface	Yes	Potentially
Hartwrightia	*Hartwrightia floridana*	None	Threatened	Seepage slopes, edges of baygalls and springheads, wet prairies, and flatwoods with wet peaty soils	Yes	Unlikely
PondSpice	*Litsea aestivalis*	None	Endangered	Peaty soils in edges of baygalls, flatwoods ponds, and cypress domes	Yes	Unlikely
Florida Spiny-pod	*Matelea floridana*	None	Endangered	Sandhills, woodlands, open habitat	Yes	Yes, observed on site
Pinewood Dainties	*Phyllanthus liebmanniaus ssp. Platylepis*	None	Endangered	Hydric hammocks, floodplain and bottomland forests, often on hummocks at bases of trees.	Yes	Unlikely
Woodland Poppymallow	*Callirhoe papaver*	None	Endangered	grasslands or shrublands in very deep sandy soils	Yes	Yes, observed on site
Angularfruit milkvine	*Gonolobus suberosus*	None	Threatened	rocky, well-drained soils in open woodlands, ravines, and overgrown areas	Yes	Yes, observed on site
Florida Mountain-mint	*Pycnanthemum floridanum*	None	Threatened	Roadside ditches, and sandhill communities in moist areas	Yes	Potentially
Florida Willow	*Salix floridana*	None	Endangered	Wet, mucky sols in bottomland forests, floodplains, hydric hammocks, swamps, edges of spring-runs, and streams	Yes	Unlikely
Silver Buckthorn	*Sideroxylon alachyense*	None	Endangered	Upland hardwood forests around limesinks and on shell mounds	Yes	Potentially

Special Area Study
Report

APPENDIX

E

STAFF RESUMES

John Bailey, PWS

Current Position
Senior Project Scientist

Discipline Areas
Wetland Delineation
> Mitigation Bank Permitting
> USACE Wetland Permitting
> ERP Permitting
> Wetland Functional Assessment (UMAM)
> Wetland Mitigation Design
> Listed Species Surveys
> Permit Compliance and Enforcement

Years' Experience
31

Joined Cardno
1993

Education
> MS, Wetland Ecology, University of Florida, 1994
> BS, Forest Resources Management, Southern Illinois University, 1986

Certifications
> Professional Wetland Scientist, #763, Society of Wetland Scientists, 1995
> MSHA Training
> YMCA, Open Water Diver, 1993
> PADI, Advanced Open Water Dive, 2008
> PADI, Enriched Air Diver, 2009
> Accomplished nature and underwater photographer

Summary of Experience

Mr. John Bailey is a Certified Professional Wetland Scientist (PWS) with 31 years of experience in South and Central Florida ecosystems. He is an expert in wetland delineation and Florida ecology. His master's research at the Center for Wetlands at the University of Florida focused on assessing changes in wetland plant communities associated with cattle ranching and ditching. His project experience is in ecological assessments of wetlands and uplands, environmental resource permitting, wetland delineation, listed species assessments and surveys, wetland mitigation design, wetland hydroperiod assessment, and data analysis. He has conducted formal wetland determinations with the Florida Department of Environmental Protection (FDEP), Florida and US Army Corps of Engineers on thousands of acres of wetlands including a 14,000 acre phosphate mine site located in Hardee County, Florida. His project experience includes small and large residential developments, phosphate mines, regional malls, mitigation banking, roadways, landfills and other types of construction projects.

Significant Projects

Environmental and Mitigation Bank Permitting (Section 404 and ERP)

Project Manager – Permit Coordination/Enforcement and Compliance – Various Counties, Florida

Mr. Bailey has represented and managed projects for agricultural, residential and commercial development, transportation, and mitigation/conservation banking industries. Projects include due diligence, wetland and listed species surveys, permitting with local, state, and federal agencies. He has prepared and submitted Environmental Resource Permit (ERP) and Standard General Applications to the Florida Department of Environmental Protection, Southwest Florida Water Management District, South Florida Water Management District, and St. John's River Water Management District. He has prepared and submitted Individual and Nationwide Permit Applications and Requests for No Permit Needed findings to the USACE.

Project Scientist – Two Rivers Ranch Mitigation Bank – Hillsborough and Pasco Counties, Florida

Mr. Bailey provided environmental support for the permitting of an approximately 1500- acre mitigation bank located in Hillsborough and Pasco Counties, Florida. Permits for the bank were secured from both the U.S. Army Corps of Engineers (USACE) and Southwest Florida Water Management District (SWFWMD). Services provided included mitigation bank design, project coordination and oversight, preparation of permit application packages, response to requests for additional information, wetland delineations, listed species surveys, and Uniform Mitigation Assessment Method (UMAM) analyses/credit determination.

Project Scientist – Crystal River Commons – Citrus County, Florida

Mr. Bailey provided biological support for the environmental permitting of this approximately 265-acre mixed use development located in Citrus County, Florida. Services included pre-construction permit coordination, wetland delineations, listed species surveys, agency permitting (federal USACE and state SWFWMD), UMAM analyses, wetland impact avoidance and minimization, and development

of a mitigation plan to compensate for unavoidable impacts to on-site wetlands.

Project Scientist – JED Landfill Expansion – Florida

Mr. Bailey managed the State Environmental Resource Report (ERP) and federal USACE wetland impact permitting of this 100-acre expansion to the existing Osceola Omni Waste Disposal Facility. This included a re-evaluation of the USACE wetland jurisdiction based on the Rapanos decision, UMAM assessment of on-site wetlands, and evaluation of the use of the expansion area by listed species, including the crested caracara and Florida grasshopper sparrow. Mitigation for impacts to wetland was provided via several mitigation banks.

Project Manager – Omni Waste Disposal Site – Osceola County, Florida

Mr. Bailey provided wetland delineation and environmental permitting for a 264-acre waste disposal facility located on a 2,179-acre site in Osceola County, Florida. This large, complicated project involved many issues, including listed species, wetland impacts, alternative site analysis, re-hydration of ditched wetlands, and potential legal challenges. Mitigation for this site consisted of a 1,200-acre upland and wetland preservation area which required the drafting of a long-term management plan.

Project Manager – Grand Hampton – Hillsborough County, Florida

Mr. Bailey managed the wetland permitting, mitigation design, upland habitat monitoring, wetland delineation, and listed species surveys for this 800-acre residential development.

Senior Ecologist – Connerton- Newland Communities – Pasco County, Florida

Mr. Bailey conducted wetland delineation, permitting, UMAM assessments, and mitigation design for a large multi-family development. Mr. Bailey managed the State Environmental Resource Report (ERP) and federal USACE wetland impact permitting. This included a re-evaluation of the USACE wetland jurisdiction based on the Rapanos decision, UMAM assessment of on-site wetlands, and evaluation of the use of the expansion area by listed species. Mitigation for impacts to wetland was provided via several mitigation banks.

Wetland Delineations

Senior Ecologist – Wetland Delineation and Assessment on Proposed Phosphate Mine Site – Hardee County, Florida

Mr. Bailey provided project coordination, wetland delineation, and evaluation of all wetlands on a 14,000-acre future mine site in Central Florida for the Farmland-Hydro Corporation. This land was purchased by the Mosaic Company and is now part of the Pioneer and Ona Tracts. Wetland quality was assessed using the Wetland Rapid Assessment Procedure (WRAP), and wetland boundaries were delineated and approved by both state and federal agencies. Delineations were based on ortho-rectified and georeferenced color infrared digital imagery flown specifically for the project. A sub-meter accuracy global positioning system (GPS) unit was used extensively to aid in ground truthing of aerially interpreted wetland boundaries.

Senior Ecologist – Cypress Creek Development of Regional Impact – Pasco County, Florida

Mr. Bailey provided wetland delineation and environmental permitting for a 404-acre mixed commercial development. The project was located on the east side of the newly- created interchange on I-75 (SR 56), a regional commercial node. Both SWFWMD and an USACE individual permit were required. The mitigation plan consisted of wetland creation, restoration, and enhancement, as well as upland preservation.

Shirley Denton, PhD

Current Position
Senior Project Scientist

Discipline Areas
> Litigation Support
> Development Approval Services
> Environmental Management Planning
> Plant Inventories & Listed Plant Surveys
> Wetland Hydrological Analyses
> Wetland Functional Assessment

Years' Experience
39

Joined Cardno
1988

Education
> PhD, Natural Resources, University of Michigan, 1985
> MS, Natural Resources, University of Michigan, 1982
> MA, Math, University of Michigan, 1972
> BA, Math, University of Michigan, 1971

Affiliations
> Audubon Society
> Ecological Society of America
> Florida Association of Environmental Professionals
> Florida Native Plant Society
> National Association of Environmental Professionals

Summary of Experience

Dr. Shirley Denton is a broad-based and highly experienced terrestrial ecologist. She has become known for her experience in assessment of wetland condition relative to hydrology, and has many years of experience in this area of expertise. She also designs and implements studies in plant ecology, landscape ecology, wildlife ecology, listed species, land management planning, and recreation planning. Supporting skills include data analysis, botany, photography, and logic-based Web design. Dr. Denton provides environmental support to clients on complex issues and can provide expert witness testimony if needed.

Significant Projects

Litigation Support

Dr. Denton has developed specialized studies and provided expert witness services for clients with diverse needs ranging from water use permitting challenges, wetland jurisdictional disputes, and condemnation issues. She has been qualified and accepted in several areas of expertise including ecology, wetland ecology, and plant ecology.

Development Approval Services

Dr. Denton has provided client support, project management, and technical expertise for Developments of Regional Impact (DRIs), zoning changes, and Comprehensive Plan amendments. These have been provided for both private and public sector clients.

Environmental Management Planning

Dr. Denton developed and implemented resource assessment and management studies for public and private sector clients. Studies have included development of management plans for conservation lands ranging from 10 acres to 40,000 acres, development and implementation of restoration plans, and large-scale (county-wide) identification of lands with conservation and/or recreational potential.

Plant Inventories And Listed Plant Surveys

Dr. Denton has conducted plant species inventories and listed plant surveys on numerous tracts in Florida. In addition, she has provided educational materials to staff and the public through database inventories and photographic documentation. A publicly available internet site was developed by her and is updated regularly for educational uses. The site includes Dr. Denton's photographs of over 200 rare species and more than 1,500 species that occur in Florida along with summary information about each species.

Wetland Hydrological Analyses

Dr. Denton has developed procedures to associate wetland biotic condition with prevailing and past wetland hydrology, developed and applied hydrological water balance models to wetlands and lakes near potable water wellfields.

Wetland Functional Assessment

Dr. Denton has developed specialized wetland functional assessment procedures and applies them to support permit applications, provide permit compliance monitoring, and developed testimony for litigation. She is also experienced in the development and use of

> The Nature Conservancy
> Society of Wetland Scientists

government-assessment procedures, such as the Southwest Florida Water Management District's Wetland Assessment Procedure (WAP).

Typical Experience

Project Manager – Ridge Road

Dr. Denton was the Cardno project manager for this roadway permitting project from 2008 to 2018. The proposed road, intended to enhance hurricane evacuation, wass proposed to pass through a large public natural area. Because of environmental sensitivity, services included the design and implementation of intensive and extensive wildlife surveys, wetland jurisdictional determinations, wetland functional assessments, alternatives analyses for the roadway, alternatives identification and assessment for mitigation, permit applications, secondary and cumulative impacts analysis, and other services.

Client Representative – Central Florida Water Initiative (CFWI)

Dr. Denton represented the largest water supplier in the greater Orlando area on three of the technical subcommittees involved in this large water supply planning project whose goal is to determine if adequate groundwater is available to supply the CFWI area through 2030, and if so, to identify the environmentally least damaging areas yet financially feasible areas from which to supply future groundwater. Dr. Denton sits on the Environmental Measure, Minimum Flows and Levels, and Groundwater Availability Teams. 2004-2018, plus special services though 2020.

Project Manager – Mosaic Bay Wetland Study – Hardee and Desoto Counties, Florida

Dr. Denton designed a study to determine species composition, structure, and soil characteristics of intact hardwood forested wetlands with a high component of "bays" – sweetbay magnolia, loblolly-bay, and swamp bay – and to compare the characteristics of the intact systems with recreated bay-dominated seepage wetlands. Based on the results, mined sites have been located which have appropriate hydrology for bay swamps, the new swamps have been designed, and permitting is in progress. 2011-2015

Project Manager – Wetland Conditions on the Morris Bridge Wellfield – Hillsborough County, Florida

Dr. Denton managed environmental monitoring programs for this potable water wellfield including evaluations of wetland conditions to refine hydrological modeling and develop a wellfield management plan as required in the Southwest Florida Water Management District (SWFWMD) Water Use Permit.

Project Manager – Protected Plant Surveys – Hillsborough County, Florida

Dr. Denton conducted protected plant surveys and provided management recommendations for the Florida golden aster and other protected species on the approximately 5,000-acre Boyette Tract, the Goldenaster Preserve, the Rhodine Road Preserve, and other environmentally sensitive lands in the county. Results of these surveys were in part responsible for the ultimate purchase of these lands by the county as preserves. 1988-1994

Technical Expert – Wetland Assessment Procedure – Southwest Florida

Dr. Denton participated on the Technical Assistance Team that developed the WAP methodology testing and refinement of methodology. She is the primary author and photographer for the plant identification manual specific to the WAP and leader of field training sessions for WAP implementation.

Technical Expert – Representation on the SWFWMD Technical Advisory Committee for Establishment of Minimum Flows and Levels – Hillsborough, Pasco, and Pinellas Counties, Florida

Dr. Denton provided representation for Pinellas County on the SWFWMD Technical Advisory Committee for the establishment of Minimum Flows and Levels for wetlands, lakes, and streams in the Northern Tampa Bay area. Included was the development of a method to associate wetland conditions to wetland hydrology for cypress wetlands. 1995-1996

Project Manager – Succession and Management Model – Orange and Osceola Counties, Florida

Dr. Denton designed an ecological and succession and management model applicable to ecosystems in Central Florida. She provided project review and model implementation. The model was developed to evaluate the likely effects of potential management alternatives on listed species when applied on time scales of 2 to 75 years.

Listed Species and Conservation Projects

> Dr. Denton provided project management support and development of technical documents for a Habitat Management Plan and associated incidental take permit for Gulf County, Florida. Services include species profiles for St. Andrew beach mouse, piping plover, red knot, loggerhead, green, Kemp's ridley, and leatherback sea turtles, and habitat identification. Gulf County, Florida, 2014-2015

> Dr. Denton provided rare plant survey review and field surveys for *Schwalbea americana* and *Trillium reliquum* and scrub species in Alabama, Georgia, and Florida. Sabal Trail, 2014-2015

> Dr. Denton provided species descriptions and management analyses for 63 rare plant and animal species native to Arizona and New Mexico, 2007

> Dr. Denton completed a revised management plan for Flying Eagle, Citrus County, Florida. Southwest Florida Water Management District, 2006

> Dr. Denton completed a revised management plan for Potts Preserve, Citrus County, Florida. Southwest Florida Water Management District, 2006

> Dr. Denton conducted a cumulative impact analysis for the wood stork in relation to development of the Cypress Creek Town Center. Jacobs Group, Pasco County, Florida, 2006

> Dr. Denton completed a habit management plan, incidental take permit, and relocation permit for over 51,000 acres of IMC lands. Development of this management plan included habitat modeling, analysis of data from listed wildlife surveys, project coordination, and production of an over 200-page document. IMC Phosphates Company, Manatee, Hillsborough, Hardee, and DeSoto Counties, Florida, 2004

> Dr. Denton completed a management plan for open space on Connerton, which included management for nuisance species control, open space, wetlands, listed species, and recreation planning. Development of this management plan included client coordination, habitat assessment, and compilation of listed species surveys. Terrabrook, Pasco County, Florida, 2003

> Dr. Denton conducted monitoring of an endangered species, the bunched arrowhead (*Sagittaria fasciculata)* which is found only in a handful of seepage areas in the Blue Ridge Mountain foothills. Geotrans, Hendersonville, North Carolina, 2001-2003

> Dr. Denton completed a Florida Communities Trust Application for the Winding Waters' site where Arbuckle Creek empties into Lake Istokpoga. Highlands County Planning Department, Highlands County, Florida, 2000

- Dr. Denton developed a resource management, plan including site management and community use for the Crooked Lake Conservation Area. Services included project management, site assessment, wildlife surveys, listed plant surveys, supervision of engineering planning services for an entrance road, and locating of a nature trail. Polk County Drainage and Natural Resources Department, Polk County, Florida, 2000
- Dr. Denton developed of a photographic database and educational internet and intranet sites of plant species found in Florida with emphasis on listed plant species. The database provides photographs of over 1,500 plant species found in Florida with most photographs being taken by Dr. Denton.
- Dr. Denton reviewed listed plant and ecosystem management plans proposed by the U.S. Fish and Wildlife Service in the Multi-Species Recovery Plan for South Florida. 1999-2000
- Dr. Denton provided interpretation of aerial photographs, aerial flight surveys, a literature review, and site visits to delineate lands potentially appropriate for purchase as conservation areas in Sarasota County. The project included development of criteria for determining the relative importance of an identified area for conservation and potential for long-term management of properties to retain their environmental qualities. Natural Resources Department, Sarasota County, Florida, 1996
- Dr. Denton provided interpretation of aerial photographs, aerial overflights, literature review, and site visits to delineate lands potentially appropriate for purchase as conservation areas in Sarasota County. The project included development of criteria for determining relative importance of identified area for conservation and potential for effective long-term management of properties to retain their environmental qualities. Natural Resources Department, Sarasota County, Florida, 1993-1995
- Dr. Denton designed an ecological and succession and management model applicable to ecosystems in Central Florida. The model specifically predicted changes in suitability of specific ecosystems under various management regimes. Disney Development Company, Orange and Osceola Counties, 1993-1994
- Dr. Denton conducted an assessment of *Lupinus aridorum* on the Little Lake Bryan Development of Regional Impact (DRI) site and provided recommendations for management. Little Lake Bryan Company, Osceola County, Florida, 1994

  Dr. Denton conducted an environmental assessment of a 40-acre scrub site where a hospital was proposed to be constructed. Scrub-jays and listed plants were identified on the site. Ivey, Harris and Walls, Inc., Highlands County, Florida, 1994
- Dr. Denton conducted an assessment of environmental conditions in a proposed preserve area, potential wetland enhancement strategies for a mitigation of wetland impacts, and evaluation of reputed Florida sandhill crane nesting areas along US Highway 441 at the Osceola Corporate Center site. Ivey Harris and Walls, Inc., Osceola County, Florida, 1993
- Dr. Denton designed and implemented a geographic information systems (GIS)-based Habitat Evaluation Procedure analyses for the Everglades kite, American alligator, northern harrier, wood stork, oak toad, and crayfish. Berman and Murray, Miami-Dade County, Florida, 1992
- Dr. Denton assessed environmental conditions at a 200-acre Blackwater Creek site nominated for purchase under the Hillsborough County Environmentally Sensitive Lands ordinance. She produced a photographic report and provided client representation. Arthur Weiss, Hillsborough County, Florida, 1992
- Dr. Denton provided project review, listed plant surveys, assessment, and management recommendations on 27,000 acres of land in North Florida. Suwannee River Water Management District, Suwannee, Hamilton, Madison, and Columbia Counties, Florida, 1992-1993

- Dr. Denton conducted an environmental assessment, wetland characterization, and listed plant surveys on the 6,000-acre Walton Tract. Camp, Dresser and McKee for the Sarasota County Solid Waste Department, Sarasota County, Florida, 1992
- Dr. Denton developed of environmental management plans for conservation areas on Serenova, a 7,000-acre DRI. Otto Pottberg Trust, Pasco County, Florida, 1992
- Dr. Denton conducted an environmental assessment and protected plant surveys of Orlando International Airport fourth runway expansion and proposed mitigation sites. Camp, Dresser and McKee for the Greater Orlando Aviation Authority, Orange County, Florida, 1989-1990
- Dr. Denton designed an ecological and succession and management model applicable to ecosystems in Central Florida. She provided project review and model implementation. The model was developed to evaluate the likely effects of potential management alternatives on listed species when applied on time scales of two to 75 years. Disney Imagineering, 1994
- Dr. Denton conducted protected plant surveys and management recommendations for the Florida golden aster and other protected species on the 5,000-acre Boyette Tract. Williams Land Acquisition Company, Hillsborough County, Florida, 1990
- Dr. Denton conducted a listed species assessment of a 100-acre tract at SR 405 and US 1 with emphasis on Florida scrub-jays and listed plants. Ivey, Harris and Walls, Inc., Brevard County, Florida, 1990
- Dr. Denton provided management recommendations for Vector Space Scrub-Jay Habitat Preserve. Vector Space, Inc., Brevard County, Florida, 1990
- Dr. Denton provided identification, environmental assessment, and management recommendations for listed species and ecologically significant lands in Southwest Florida Water Management District (SWFWMD) ownership. SWFWMD, Florida, 1988-1990
- Dr. Denton conducted an environmental assessment and conservation area delineation for scrub and Florida golden aster preservation for a 546-acre tract on Rhodine Road. She provided assistance in having this land purchased for conservation under the Hillsborough County Environmental Land Acquisition Program. Hillsborough County, Florida, 1988
- Dr. Denton estimated gopher tortoise population size, surveyed for other protected species, and prepared the gopher tortoise relocation plan for proposed borrow lands on Rhodine Road. Phillips and Jordan, Inc., Hillsborough County, Florida, 1988

Comprehensive Plan Compliance, Development of Regional Impact, and Rezoning Projects

- Dr. Denton led the environmental team on this project that was heavily scrutinized by the public and agencies due to its position adjacent to an Outstanding Florida Water (Cypress Creek) and the unavoidably high acreage of wetland impacts needed to place a regional mall on the site. Services included DRI, Environmental Resource Permit, and USACE permit support. Outcomes included the use of Low Impact Development techniques and large-scale mitigation that will enhance and preserve nearly 300 acres of “regionally significant” land. Cypress Creek Town Center, Pasco County, Florida.
- Dr. Denton assisted the client with significant changes to update the DRI, created a detailed Environmental Management Plan, updated wildlife surveys, and provided project management services. Connerton, Pasco County, Florida
- Dr. Denton provided project management, completion of an Application for Development Approval (ADA) wildlife and wetland surveys and questions, and client representation for the over 2100-acre Lake Hutto Development, Hillsborough County, Florida, 2004-2005

- Dr. Denton provided project management, completion of ADA wildlife and wetland surveys and questions, and client representation for the over 7,000-acre Bexley Development, Pasco County, Florida, 2002-2004
- Dr. Denton provided project management, field reviews, and documentation for a major modification of the Connerton DRI. Terrabrook, Pasco County, Florida, 2002-2004
- Dr. Denton provided project management, completion of ADA wildlife and wetland surveys and questions, preparation of ADA text, and assessment of mitigation alternatives for an over 500-acre mall site (Cypress Creek Town Center) in Pasco County, Florida. 2002-2003
- Dr. Denton prepared ADA responses to Questions 12 (wildlife), 13 (wetlands), and 14 (water) for a 2,000-acre site (NE corner of I-75 and SR 56) in Pasco County, Florida.
- Dr. Denton provided project management, supervision of wildlife and wetland surveys, and completion of ADA Questions 12 (wildlife), 13 (wetlands), and 14 (water) for an auto mall site at junction of I-75 and CR 54 in Pasco County, Florida
- Dr. Denton assisted the client with the Notification of Proposed Changes to update the DRI, created a detailed Environmental Management Plan, updated wildlife surveys, project management. Terrabrook, Connerton DRI, Pasco County, Florida, 2003
- Dr. Denton provided an alternative analysis for siting a landfill. Omni Waste, Osceola County, Florida, 2002
- Dr. Denton assessed bird strike probabilities for an unlit, 85-feet stack at a proposed power plant. She conducted a literature review and prepared a report. ENRON North America Corporation, Miami-Dade County, Florida, 2001
- Dr. Denton provided client support, project management, and development of responses to Question 12 (Vegetation and Wildlife) and Question 13 (Wetlands) of the ADA for the South Shore DRI. Hillsborough County, Florida, 2000-2001
- Dr. Denton developed responses to Question 12 (Vegetation and Wildlife) and Question 13 (Wetlands) of the ADA for the Suncoast Crossings DRI, Pasco County, Florida. 2000
- Dr. Denton development of responses to Question 12 (Vegetation and Wildlife), and Question 13 (Wetlands) of the ADA for the Cypress Creek DRI, Pasco County, Florida. 2000
- Dr. Denton provided peer review for environmental submittals for the 21,000-acre Indigo Master DRI near Daytona Beach. East Central Regional Planning Council, Volusia County, Florida, 1992-1993
- Dr. Denton provided project management and environmental assessment for the Yamato Associates DRI. She provided rezoning support, representation in agency meetings, and development of responses to the Wetlands and Wildlife questions of the ADA. The Pugliese Company, Palm Beach County, Florida, 1990-1992
- Dr. Denton provided project management, protected plant surveys, preservation area design, and contributions to the Preliminary Development Agreement and ADA submittal documents for the Serenova DRI. Pasco County, Florida, 1990-1992
- Dr. Denton provided project management and environmental assessment for the Gateway Commons DRI. Ivey, Harris & Walls, Osceola County, Florida, 1989-1991

Wetland Assessment Projects

- Dr. Denton provided impact assessment for a proposed gold mine. Services include evaluation of hydrology for slope wetlands and assessment of likely long and short-term impacts of mining on those wetlands. Services were provided as part of the EIS third party review. Haile Gold Mine, 2014

- Dr. Denton developed a sampling methodology and initial assessment for wetlands along the Little River near Raleigh, NC. Services include a presentation to a multi-agency task force. The study was used to assist in permitting for a dam. 2010
- Dr. Denton conducted a rapid assessment of over 150 sites that had the potential for use as mitigation for a transmission line spanning seven counties in Florida. Sites were assessed based on aerial photography and then more promising sites were assessed in detail including evaluating correctable alterations to wetlands and conducting a Florida UMAM evaluation. Progress Energy, 2010
- Dr. Denton developed a sampling methodology and provided project management and technical review for a study of the Withlacoochee River floodplain, Florida. The study is being used to assist in MFL (minimum flows) development for the river. Southwest Florida Water Management District, 2008-2010
- Dr. Denton participated on a technical advisory committee (on behalf of Tampa Bay Water) that developed the Wetland Assessment Procedure (WAP) used in the monitoring of wellfields for Tampa Bay Water and the Southwest Florida Water Management District. She was the Primary author and photographer of Wetland ID manual for the WAP (For the Southwest Florida Water Management District) and the Field Plant ID trainer for official WAP training sessions in 2005-2010
- Dr. Denton developed water balances for six augmented wetlands on Tampa Bay Water wellfields. She provided project management, model development, literature review of wetland evapotranspiration, and development of stage-volume curves. Tampa Bay Water, Pasco County, Florida, 2000-2001
- Dr. Denton assessed wetlands to determine the extent, if any, to which expansion of Dale Mabry Highway may have caused impoundment and resulted in wetlands expansion. She assessed jurisdictional changes and analysis of rainfall data and developed of exhibits for litigation. Genesis Group, Inc. for the Florida Department of Transportation, Hillsborough County, Florida, 2000
- Dr. Denton provided project management, rapid assessment, and analysis of over 500 wetlands relative to water production, drainage alteration, development, and agricultural impacts in the northern Tampa Bay area, Hillsborough, Pasco, Sumter, and Pinellas Counties, Florida, 1995
- Dr. Denton provided aerial photographic interpretation and historical change analysis of three wetlands adjacent to and potentially impacted by a Superfund site. Williams Reed, Hillsborough County, Florida, 1993
- Dr. Denton conducted an assessment of Fisheating Creek/Cowbone Marsh to determine potential origins of three vegetative cattail patches relative to historic conditions in the marsh. Lykes Bros, Inc., Glades County, Florida, 1992
- Dr. Denton conducted an evaluation of surface water alterations at Cross Bar Ranch to determine historical water flows and recommend alterations that would restore wetland water retention characteristics. West Coast Regional Water Supply Authority, Pasco County, Florida, 1992
- Dr. Denton conducted an ecological assessment of Mud Lake Swamp for proposed restoration as part of mitigation for wetland encroachments due to construction of the Fourth Runway at Orlando International Airport. Engineering Management and Design, Inc., Orange County, Florida, 1990
- Dr. Denton conducted wetland delineation for a variety of projects in Central Florida. Projects have included delineation on large, 1000-acre phosphate mine tracks, airport expansion sites, DOT take sites, communication tower sites, and future residential developments. Methodologies include SWFWMD, South Florida Water Management District, Florida Department of Environmental Protect (FDEP), U.S. Army Corps of Engineers (USACE), Hillsborough County Environmental Protection Commission, Palm Beach Department of Environmental Resource Management, and Florida

Uniform Mitigation Assessment Method (UMAM). Hillsborough, Osceola, Hardee, Polk, and Pasco Counties, Florida, 1988-2007

Water Use Permitting and Permit Compliance Support

- Dr. Denton participated as a technical advisor for the development of the Southwest Florida Water Management District (SWFWMD) Wetland Assessment Procedure (WAP) used to evaluate potential wellfield impacts and recovery from past impacts. Development of the plant identification manual used to support the WAP, and annual teaching of SWFWMD/Tampa Bay Water WAP training course, wetland plant identification section. Tampa Bay Water and SWFWMD, 2004-2010
- Dr. Denton provided project management, agency negotiation, monitoring program design, and monitoring transect setup. She continues to provide project management, client support, and project review for ongoing monitoring. She is currently supplying review for various MFLs set by the water management districts as they may affect the client's facilities and permits. Orlando Utilities Commission, 2005-2015
- Dr. Denton provided project management, agency negotiation, wetland and lake assessments, and preparation of mitigation and lake/wetland monitoring plans for renewal of a Consumptive Use Permit. Orlando Utilities Commission, 2002-2003
- Dr. Denton assessed wetlands bordering the Upper Hillsborough River relative to potential negative impacts of a small increase in water withdrawals from Crystal Springs. Two Rivers Ranch, Hillsborough and Pasco Counties, Florida, 2003
- Dr. Denton conducted an investigation of an environmental complaint submitted regarding the Flying P Ranch. Analysis of this complaint was unusual in that a previous landowner had made a challenge to renewal of the Cross Bar Ranch permit, asserting that the wellfield was impacting his property, and had lost his challenge in an administrative hearing in 1989. The investigation that under current management and wellfield production occurring in 2000-2001, determined the land is being impacted by the wellfields. Tampa Bay Water, Pasco County, Florida, 2001
- Dr. Denton provided assistance in responding to environmental requests for additional information and an environmental monitoring plan for renewal of wellfields. Orlando Utilities Commission, 2001
- Dr. Denton developed an Environmental Monitoring Plan for Sugarmill Woods, for Florida Water Services in Citrus County, Florida. 2001
- Dr. Denton developed an Environmental Monitoring plan for an Aquifer Storage and Recovery facility for Tampa Water Department. 2001
- Dr. Denton provided client support for development of an Environmental Monitoring Plan for Tampa Bay Water's Central System Wellfields. Pinellas County, Florida, 2000
- Dr. Denton provided client support regarding wetland constraints and minimum flows and levels in the St. Johns River Water Management District. Orlando Utilities Commission, 2000
- Dr. Denton provided project management and environmental monitoring of the Cross Bar Ranch Wellfield for the West Coast Regional Water Supply Authority (now Tampa Bay Water), Pasco County, Florida from 1997-2000. She continues to provide ongoing project review and quality control from 2001 through the present.
- Dr. Denton completed a Water Use Permit (WUP) renewal for an orange grove in Thonotosassa, Florida. 2000
- Dr. Denton completed of a WUP application and agency negotiation for Tampa Bay Downs in Hillsborough County, Florida for McFarlane-Ferguson. 1998
- Dr. Denton provided representation for Pinellas County on the SWFWMD Technical Advisory Committee for establishment of minimum flows and levels for wetlands, lakes, and streams in the Northern Tampa Bay area. Included was development of a

method to associate wetland conditions to wetland hydrology for cypress wetlands. Hillsborough, Pasco, and Pinellas Counties, Florida, 1997-2000

- Dr. Denton conducted an investigation of environmental complaints submitted by landowners near the Cross Bar Ranch Wellfield. Assessment of historical rainfall and water production records and interpretation of historical and recent aerial photographs were conducted to evaluate the relative contributions of drought, drainage changes, land-use changes, and water production on the current condition of the areas for which complaints were received. West Coast Water Supply Authority, Pasco County, Florida, 1993-1999
- Dr. Denton has provided project management, environmental assessment, ecological monitoring, and quality control for the Morris Bridge Wellfield, in Hillsborough County, Florida. Services were provided to the City of Tampa from 1985 through 1999 and for Tampa Bay Water since that time.
- Dr. Denton developed an environmental tour to demonstrate the causes of current wetland condition in the northern Tampa Bay area and demonstrated mitigative actions being taken by water producers to minimize environmental impacts from pumping. Pinellas County, northern Tampa Bay area, 1996
- Dr. Denton provided project design and project management of an assessment of current and historic wetland conditions at Eldridge-Wilde Wellfield and the adjacent Salls Tract in Hillsborough and Pinellas Counties, Florida. 1996
- Dr. Denton provided project design and management of an analysis of current and historic water levels at Cross Bar Ranch and Cypress Creek Wellfields, Pasco County, Florida. West Coast Regional Water Supply Authority, 1994-1995
- Dr. Denton conducted an evaluation of environmental complaints relative to water withdrawals at Cross Bar Ranch. She conducted an analysis of current conditions, historical water level trends, and historical aerial photography. West Coast Regional Water Supply Authority, 1994
- Dr. Denton provided project design and management of a project to assess current wetland conditions of all wetland areas on the Morris Bridge Wellfield. The data were analyzed to refine the hydrological model for the wellfield and to provide ecological inputs for the wellfield management plan as required in the SWFWMD WUP. City of Tampa Water Department, 1994
- Dr. Denton conducted an evaluation of water levels and current wetland conditions relative to modeled surficial water drawdown contours and wetland history. In addition, she evaluated the scientific appropriateness of SWFWMD WUP rules. Pinellas County, 1995
- Dr. Denton conducted a project review and data analysis for ecological monitoring of the Cross Bar Ranch Wellfield in Pasco County, Florida. West Coast Regional Water Supply Authority, 1990-1994
- Dr. Denton evaluated the Taylor Creek System to determine potential effects of water withdrawals from the reservoir on the riverine swamp downstream. Potential effects on a large population of hand fern were evaluated. Deseret Farms, Osceola County, 1992
- Dr. Denton provided project review and data analysis for ecological monitoring of the South Central Hillsborough Regional Wellfield. West Coast Regional Water Supply Authority, Hillsborough County, Florida, 1990-1992

Wetland Resource Permitting

- Dr. Denton has assessed mitigation options and provided updated wetland mitigation plans for the USACE and SWFWMD, as well as responses to requests for additional information and other client support for Ridge Road in response to changes in

conditions and permitting status. The most recent service for this project was an in-depth analysis of 17 potential alternative assignments. 2010-2015

- Dr. Denton provided experimental design, data analysis, and project management on in-depth plant transect sampling designed to support the Environmental Resource Permit for a Levy County mine site, 2007-2008
- Dr. Denton developed an Alternatives Analysis site selection of a site for a for a Levy County mine site. 2010
- Dr. Denton developed an Alternatives Analysis site selection of a site for a future landfill complex in Brevard County. The analyses included the review of previous siting studies, updates of studies from 1979-2005, and a re-evaluation of potential sites as they existed as of 2008. Brevard County, 2008-2009
- Dr. Denton provided project management, ERP and USACE application preparation, and agency negotiation for wetland impact permits for the Cypress Creek Town Center, Pasco County, Florida. The project was unusual in the extent of information required by the USACE, which included detailed cumulative and secondary impact assessments. Since permit issuance, services have included assisting the client with environmental group challenges to the SWFWMD and USACE permits, 2004-2008
- Dr. Denton provided site assessment, using UMAM and WRAP, of wetlands in the path of the Ridge Road extension from Little Road to US 41. Services included multiple approaches for mitigating impacts to wetlands including components of enhancement, upland restoration from pasture, preservation, and wetland creation. Pasco County, 2007-2009
- Dr. Denton provided assistance with mitigation site assessment and agency negotiation for wetland impacts due to the extension of Ridge Road, Pasco County, Florida. 2006
- Dr. Denton conducted a site assessment and provided client representation in support of a wetland setback variance for a homesite on a saltwater canal in West Tampa. MacFarlane-Ferguson, Hillsborough County, Florida, 2000
- Dr. Denton developed responses to a Green Swamp Impact Assessment for development of a commercial parcel adjacent to I-4 on the southern edge of the Green Swamp. The assessment included responses to questions regarding surface and subsurface drainage, changes in water table and water quality, maintenance of water table and water quality after development, and the likelihood of significant impacts to the groundwater resource if the site was developed. Matthew S. Mudano, P.A. Polk County, Florida, 2000
- Dr. Denton evaluated changes in wetland jurisdiction expected as a result of adoption of the Unified Wetland Delineation Methodology at three agricultural sites. She recommended changes to the methodology and species lists to limit jurisdictional extent in agricultural areas in Glades, Sarasota, and Osceola Counties, Florida. 1994
- Dr. Denton provided project coordination and quality control supervision of environmental inspections during construction of an over 500-mile pipeline from Alabama to southeastern Florida. The project consisted of independent environmental review of the pipeline with reports being provided to the FDEP. The FDEP was kept appraised of conditions during construction, while the immediate response on the part of the pipeline company kept the project moving. Florida Gas Transmission Company, 1994-1995
- Dr. Denton provided project management and prepared FDEP and USACE permit applications for a 14,900-acre phosphate mine. The project included development of permit packages, habitat mapping and evaluation, FDEP jurisdictional issues, mitigation design, and reference wetland evaluations. CF Industries, Inc., Hardee County, Florida, 1993-1994

- Dr. Denton conducted wetland assessments and preliminary jurisdictional determinations for full buildout of the Orlando International Airport. Camp, Dresser and McKee, for the Greater Orlando Aviation Authority, Orange County, Florida, 1990-1991

Litigation Services

- Dr. Denton provided expert witness support for a wetland jurisdiction and impact issue involving a severely dewatered, historic, bay swamp. RLI, 2013
- Dr. Denton provided expert witness support for a wetland jurisdiction along the Rainbow River. Rondalino, 2013
- Dr. Denton provided expert witness services to the Northwest Florida Water Management District (NWFWMD) in support of a permit issued to Bay County for an emergency water supply wellfield (hurricane / disaster contingencies). 2011
- Dr. Denton provided an assessment of wetland limits, site constraints relative to development, wetland delineation, and expert witness services for a variety of Florida Department of Transportation condemnation cases. Representative clients included Matthew S. Mudano, P.A. and Brickelmeyer, Smolker, and Bolves, P.A. in Hillsborough, Pasco, Osceola, and Hernando Counties, Florida. 1993-2001
- Dr. Denton conducted site analysis, evaluation of the occurrence of redroot (*Lachnanthes caroliniana*) relative to water levels, soil acidity, and drainage. She provided expert witness services on behalf of the landowner in federal court regarding wetland jurisdictional issues brought into the court system by the U.S. Environmental Protection Agency. Satori, Highlands County, Florida, 2000
- Dr. Denton provided client support and expert witness testimony in support of permit renewals for the Cosme-Odessa, Northwest Hillsborough, Section 21, and South Pasco Wellfields in Hillsborough and Pasco Counties, Florida. 1996
- Dr. Denton provided client support and expert witness testimony regarding emergency water shortage orders and proposed rules changes to a WUP in Hillsborough, Pasco, and Pinellas Counties, Florida. 1995
- Dr. Denton conducted an environmental evaluation to support landowner access to a tract partially condemned for the construction of the Veterans Expressway in Hillsborough County, Florida. Fishback, Dominick, Bennett, Slepter, Ardaman, and Bonus, PA., 1995

Presentations

- Denton, S.R. Great natural ecosystems of Florida. Presented at the 24th Annual Conference of the Florida Native Plant Society, Orlando, Florida. May 2004.
- Denton, S.R. Serendipity. Wildlife usage of wetlands in New Tampa – was it design or chance. Presented at the 23rd Annual Conference of the Florida Native Plant Society, Fort Myers, Florida, 2003
- Denton, S.R. Effects of drainage and water table drawdowns on plant diversity of isolated wetlands in West Central Florida. Presented at the 21st Annual Conference of the Florida Native Plant Society: Biodiversity and Development: Striking a Balance, Palm Harbor, Florida, 2001
- Denton, S.R. Minimum flows and levels; assumptions, methods, issues, and implementation implications relative to SWFWMD methodologies for isolated cypress wetlands. Invited speaker, CLE International Florida Water Law, June 18, 1999, Tampa, Florida
- Denton, S.R. A performance based method for applying and drawing from mitigation banks. Presented at the National Wetland Symposium on Effective Mitigation: Mitigation Banks and Joint Projects in the Context of Wetland Management Plans, Palm Beach County, Florida, 1992

- Denton, S.R. Growth of cypress in mitigation areas in West Central Peninsular Florida: Implications for design and planting. Presented at the 17th Annual Conference on Wetlands Restoration and Creation, Tampa, Florida, 1990
- Denton, S.R. Temporal patterns of water availability and plant water status in upland ecosystems of the Lake Wales Ridge, Florida. Presented at the 8th Annual Conference of the Florida Native Plant Society, Gainesville, Florida, 1988
- Denton, S.R. Climatic patterns and the distribution of trembling (Populus tremuloides) and bigtooth (P. grandidentata) aspens in Michigan. Presented at the Ecological Society of America (joint ESA/INTECOL/ISEM) meeting, Syracuse, New York, 1986
- Denton, S.R. Climate and the current limit of beech in Michigan. Presented at the Ecological Society of America Field Conference on Wisconsin/Michigan Forests Along the Modern Limit of Beech, Eagle River, Wisconsin, 1985

Publications

- Barnes, B.V., D.R. Zak, S.R. Denton and S. Spur. 1998. Forest Ecology, 4th Edition. John Wiley & Sons, New York, New York.
- Denton, S.R. 1990. Growth rates, morphometric and planting recommendations for cypress trees at forested mitigation sites. In F.J. Webb (ed.). Proceedings of the 17th Annual Conference on Wetlands Restoration and Creation, May 10-11, 1990, Tampa, Florida, Hillsborough Community College, Tampa, Florida.
- Denton, S.R. and B.V. Barnes. 1988. An ecological climatic classification of Michigan: A quantitative approach. Forest Science. 34:119-138.
- Denton, S.R. and B.V. Barnes. 1987. Tree distributions related to climatic patterns in Michigan. Canadian Journal of Forest Research. 17:613-629.
- Denton, S.R. and B.V. Barnes. 1987. Spatial distribution of ecologically applicable climatic statistics in Michigan. Canadian Journal of Forest Research. 17:598-612.
- Denton, S.R. and B.V. Barnes. 1987. Application of the sucrose inversion method to delineation of region - wide temperature patterns. Canadian Journal of Botany. 5:779-786.
- Albert, D., S.R. Denton and B.V. Barnes. 1986. Landscape ecosystems of Michigan. School of Natural Resources, University of Michigan, Ann Arbor.

Continuing Education and Certifications

- Certified Senior Ecologist, Ecological Society of America, 1999

Research

- Dr. Denton conducted an analysis of growth rates of trees in mitigation wetlands to determine optimal planting densities, optimal size of trees to plant, estimated time to achieve success, and the effect on mitigation and monitoring costs in Hillsborough County, Florida, 1989
- Dr. Denton estimated biomass in sand pine scrub, scrubby flatwoods, and southern ridge sandhill ecosystem at Archbold Biological Station, Highlands County, Florida, 1986-1988
- Dr. Denton conducted a regional level ecosystem delineation based on climatic, physiographic, pedological, and biotic factors for Michigan. University of Michigan, 1983-1985
- Dr. Denton evaluated optimal choice of species selection for ordination of vegetation samples. University of Michigan, 1982

Educational & Professional Development Experience

> Dr. Denton provided course design and teaching of a Wetland Delineation Course, with emphasis on plant identification and soils, for the University of Florida - IFAS, Natural Resource Conservation Program, Plant City Campus. 2006.

> Dr. Denton served as the President of the Florida Native Plant Society, (2006-2008). Her responsibilities include project and society management, technical content development (policy statements), and lobbying. Previous services included 5 years as the Society's Science Advisory Chair. She is the 2014-2015 Communications Chair.

> Dr. Denton is a Certification Review Board Member, American Board of Certified Environmental Professionals.

Raymond Loraine

Senior Scientist
36 years of experience · Sarasota, Florida

Mr. Raymond “Ray” K. Loraine has more than 30 years of experience and expertise in the areas of listed and non-game wildlife surveys, management, and permitting; natural community/habitat delineation and assessment; and environmental planning and permitting. He has prepared assessments, wildlife inventories, natural community mapping, and management plan recommendations for public and privately owned tracts of land up to 30,000 acres in size. His expertise is valuable throughout the life of the project, from pre-purchase assessments through design and permitting to project implementation. Ray has contributed to the preparation of numerous Developments of Regional Impact (DRIs), Project Development and Environment (PD&E), and Sector Plan studies. He also has extensive experience in wetlands and wildlife permitting at the local, state, and federal levels.

EDUCATION

Bachelor of Science, Biology, University of Kansas, Lawrence, Kansas, 1985

Master of Science, Zoology, University of South Florida, Tampa, Florida, 1990

National Interagency Prescribed Fire Training Center, Tallahassee, Florida, 1992

Wildlife Hazard Management, Embry-Riddle Aeronautical University, Daytona Beach, Florida, 2007

REGISTRATIONS

Authorized Gopher Tortoise Agent #GTA-09-00055F, Florida Fish and Wildlife Conservation Commission, April 14, 2021 - April 27, 2025

PROJECT EXPERIENCE

ENVIRONMENTAL ASSESSMENT AND PERMITTING

Red Hawk Reserve* | Clark Road Development | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager to resolve development conflicts following colonization of the 102-acre Red Hawk Reserve project by nesting bald eagles after the project had been designed and rezoned. As part of the federal permitting process, he requested an Incidental Take Statement of the nest territory pursuant to Section 7(b) (4) of the Endangered Species Act and participated in a formal Section 7 consultation between the USACE and the USFWS that resulted in issuance of a Biological Opinion, including an Incidental Take Statement, for the bald eagle territory. This critical federal approval allowed portions of the project to be developed outside of the protection zone for the nest. Subsequent monitoring by Cardno provided documentation that the nest was used only once. This monitoring ultimately enabled Cardno to request and receive a determination by state and federal agencies that the territory was “Abandoned” and no longer subject to regulation, recovering the area for development.

Baltimore Orioles * | Sarasota County, Florida | Project Manager

Mr. Loraine served as the lead biologist for state and federal permitting required to remove an active bald eagle nest from a light pole at Sarasota County’s Ed Smith Stadium, the spring training facility for the Baltimore Orioles major league baseball club. Services included behavioral and construction monitoring, permit application preparation and coordination with the FWC and USFWS, coordination of nest removal and egg recovery, and post-construction monitoring and reporting.

USACE Site 1 Impoudment D-525* | Lodge Construction, Inc. | Palm Beach County, Florida | Managing Wildlife Biologist

Mr. Loraine served as the managing wildlife biologist during the construction of the USACE Site 1 Impoundment D-525 (L-40 modifications) project. Environmental services provided by Cardno included development of the project Environmental Protection Plan, preparation and presentation of environmental training for construction staff, pre-construction gopher tortoise monitoring, and daily on-site construction monitoring to ensure the protection of listed wildlife and migratory birds.

** denotes projects completed with other firms*

Peace River Boat Lift* | The Bove Company | Charlotte County, Florida | Project Manager

Mr. Loraine was retained to assist with state (Southwest Florida Water Management District [SWFWMD]) and federal (USACE) permitting of a proposed 450-slip congregate docking facility and boat lift to allow passage of boats from the upland-excavated facility into an adjacent canal connected to the Peace River. Services included agency negotiations and the preparation of responses to state and federal wetlands and wildlife (USFWS and FWC) agency requests for additional information received in response to the initial application materials prepared by an earlier consultant for the project. Prepared supporting materials included a detailed alternatives analysis for the proposed docking facility, evaluation of potential project effects on listed species (West Indian manatee and small-toothed sawfish), and a comparison of the potential boat population at the proposed facility with that currently present in an adjacent, extensive canal network. Based on these analyses, consulting wildlife agencies determined that the proposed project was not likely to adversely affect federally listed species and the USACE was prepared to issue the permit for the project. The client subsequently withdrew the permit application because of factors not related to environmental issues.

Riverwood DRI Sawgrass Pointe* | Centex Homes | Charlotte County, Florida | Project Manager

Mr. Loraine served as project manager for the 300-acre Riverwood DRI Sawgrass Pointe residential subdivision. Cardno's multi-disciplinary services included wetland delineation; local, state, and federal wetland permitting; wetland mitigation design and implementation; upland preserve management design and implementation; and listed species monitoring and permitting. Mr. Loraine coordinated a formal Section 7 consultation between the USFWS and USACE leading to the issuance of a Biological Opinion and Incidental Take Statement for listed bald eagles and Florida scrub-jays. Working with the project archeologist, he also coordinated the protection of an on-site Indian burial mound and stabilization measures for a historically significant midden at risk to erosion by the Myakka River.

PROJECT MANAGEMENT

Hammock Preserve on Palmer Ranch, Palmer Ranch DRI Increment XXIII* | DiVosta Homes, LP | Sarasota County , Florida | Project Manager

Mr. Loraine served as project manager for the 224-acre Hammock Preserve on Palmer Ranch residential development. Services included wetland delineation; habitat mapping; listed species assessment; entitlement support (Comprehensive Plan Amendment, DRI Incremental Development Approval and Rezoning); environmental planning; local, state, and federal wetlands permitting; and gopher tortoise relocation.

Arbor Lakes on Palmer Ranch, Palmer Ranch DRI Increment XX* | Taylor Morrison of Florida Inc. | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager for the 217-acre Arbor Lakes on Palmer Ranch residential development. Services included wetland delineation; habitat mapping; listed species assessment; entitlement support (Comprehensive Plan Amendment, DRI Incremental Development Approval and Rezoning); environmental planning; local, state, and federal wetlands permitting; wetland mitigation design; and gopher tortoise relocation.

IslandWalk* | DiVosta Homes, LP | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager for environmental services in support of the IslandWalk residential subdivision. Services included due diligence analyses; wetland delineation; habitat mapping; listed species assessment; environmental planning; local, state, and federal wetlands permitting support; wetland mitigation design and implementation; lake management; mitigation area monitoring and maintenance; and water consumptive use permitting. Cardno also obtained an incidental take permit for gopher tortoises on the site.

Lowe's Home Improvement Store* | Lincks and Associates, Inc. | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager in support of a proposed Lowe's home improvement store. Services included wetland delineation; habitat mapping; listed species assessment; entitlement support (DRI Notice of Proposed Change, Sarasota County Rezoning and Special Exception approvals); environmental planning; local, state, and federal wetlands permitting; and gopher tortoise relocation permitting.

Pulte Homes * | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager for due diligence analyses, wetland delineations, and environmental planning associated with the proposed conversion of a derelict golf course to a multi-family residential subdivision.

Centex Homes * | Charlotte County, Florida | Environmental Support

Mr. Loraine provided environmental support for a DRI Notice of Proposed Change.

Villa Rosa* | Centex Homes | Sarasota County, Florida | Environmental Documentation Support

Mr. Loraine provided environmental documentation in support of construction permitting of the Villa Rosa multi-family residential development.

** denotes projects completed with other firms*

Arielle at Palmer Ranch* | Pulte Homes | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager for the Arielle at Palmer Ranch multi-family residential development. Services included wetland delineation; habitat mapping; listed species assessment; entitlement support (DRI Notice of Proposed Change and Sarasota County Rezoning); environmental planning; and local, state and federal wetlands permitting. Cardno also provided an implementation of wetland mitigation and enhancement plans for the project and coordinated special protection measures for a Sarasota County-regulated grand live oak.

Lowe's Home Improvement Store * | Lincks and Associates, Inc. | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager for the environmental permitting support of a Lowe's home improvement store.

SeaTek Communities, Inc.* | Sarasota County, Florida | Project Manager

Mr. Loraine provided environmental support for a proposed rezoning application of this eight-acre parcel comprised entirely of native pine flatwoods.

Anson on Palmer Ranch, Palmer Ranch DRI Increment IV* | The Spanos Company | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager for the 20-acre Anson on Palmer Ranch multi-family residential development. Services included wetland delineation; habitat mapping; listed species assessment; entitlement support (Comprehensive Plan Amendment, DRI Notice of Proposed Change and Rezoning); environmental planning; local, state and federal wetlands permitting; and wetland restoration design and implementation.

VillageWalk on Palmer Ranch* | DiVosta Homes, LP | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager for environmental services in support of the VillageWalk residential subdivision on Palmer Ranch. Services included due diligence analyses; wetland delineation; habitat mapping; listed species assessment; bald eagle monitoring; entitlement support (DRI Notice of Proposed Change and Sarasota County Rezoning); environmental planning; local, state, and federal wetlands permitting support; wetland mitigation design and implementation; lake management; and mitigation area monitoring and maintenance.

San Palermo* | DiVosta Homes, LP | Manatee County, Florida | Project Manager

Mr. Loraine served as project manager for the environmental design and construction permitting of the San Palermo multi-family residential development.

Legacy Estates on Palmer Ranch, Palmer Ranch DRI Increment XXII, * | Taylor Morrison of Florida Inc. | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager for the 104-acre Legacy Estates on Palmer Ranch residential development. Services included wetland delineation; habitat mapping; listed species assessment; entitlement support (Comprehensive Plan Amendment, DRI Incremental Development Approval and Rezoning); environmental planning; local, state, and federal wetlands permitting; and gopher tortoise relocation.

Isles of Sarasota* | DiVosta Homes, LP | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager for the Isles of Sarasota on Palmer Ranch residential development. Services included wetland delineation; habitat mapping; listed species assessment; entitlement support (DRI Notice of Proposed Change and Sarasota County Rezoning); environmental planning; local, state, and federal wetlands permitting; and gopher tortoise relocation permitting. Cardno also provided an implementation of wetland mitigation and enhancement plans for the project.

Bayonne Development, LLC * | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager in the entitlement (rezoning) and local, state, and federal permitting of this commercial and residential condominium project. Services included participation in a formal Section 7 consultation between the USACE and USFWS, resulting in the issuance of a Biological Opinion and Incidental Take Statement for bald eagles. SWFWMD and USACE wetland permitting included the design of wetland mitigation/enhancement areas to offset unavoidable wetland impacts.

Charlotte County Trucking Distribution Facility* | Southeastern Freight Lines | Charlotte County, Florida | Project Manager

Mr. Loraine served as project manager for environmental support of local government (Charlotte County) construction authorizations for a proposed trucking distribution facility.

North Port Gardens Shopping Center DRI* | Lee Pallardy, Inc. | Sarasota , Florida | Project Manager

Mr. Loraine served as project manager for the proposed North Port Gardens Shopping Center DRI Application for Development Approval (ADA). Services included wetland delineation; listed species censuses; environmental planning support; preparation of ADA Questions 12 – Vegetation and Wildlife, 13 – Wetlands, and 14 – Water; preparation of Sufficiency Responses for these ADA Questions; and agency negotiations.

** denotes projects completed with other firms*

Hammocks* | Boykin Barnett | Charlotte County, Florida | Project Manager

Mr. Loraine served as project manager for the Hammocks as Cape Haze multi-family residential development. Services included wetland delineation, habitat mapping, gopher tortoise and Florida scrub-jay censuses, and local (Charlotte County) and state (SWFWMD) construction permitting. Cardno also obtained an incidental take permit for gopher tortoises on the site.

Englewood YMCA * | Sarasota County | Englewood, Florida | Project Manager

Mr. Loraine served as project manager for the Englewood YMCA project. Services included wetland delineation; habitat mapping; listed species assessment; entitlement support (Sarasota County Rezoning and Special Exception); environmental planning; and local, state, and federal wetlands permitting.

San Michelle* | DiVosta Homes, LP | Manatee County, Florida | Project Manager

Mr. Loraine served as project manager for the environmental design and construction permitting of the San Michelle multi-family residential development. Services included design and oversight of special protection measures for an existing 70" DBH live oak tree that was preserved on the site.

Cobblestone on Palmer Ranch, Palmer Ranch DRI Increment VI* | Taylor Morrison of Florida Inc. | Sarasota County, Florida | Project Management

Mr. Loraine served as project manager for the 68-acre Cobblestone on Palmer Ranch residential development. Services included wetland delineation; habitat mapping; listed species assessment; entitlement support (Comprehensive Plan Amendment, DRI Incremental Development Approval and Rezoning); environmental planning; and local, state, and federal wetlands permitting.

Publix Super Markets * | Sarasota County, Florida | Project Manager

Mr. Loraine served as the project manager for the local entitlement (rezoning) and local, state, and federal wetlands permitting for the contentious expansion of a Publix Super Markets Distribution Center warehouse, doubling its size from 344,507 square feet to 690,307 square feet. Services included environmental support of a Sarasota County rezoning application; wetland delineation and assessment; listed species surveys; and local, state, and federal wetland permitting. As part of the permit application, Cardno prepared an alternative site analysis to demonstrate that no practicable alternative existed, but the proposed site and the proposed wetland impacts were, therefore, unavoidable. The Wetland Rapid Assessment Procedure (WRAP) was used to establish lost wetland functional values and appropriate compensation, implemented through a combination of on-site wetland creation and enhancement. Cardno also provided construction oversight of the compensation areas, wetland plant installation, and monitoring and maintenance of the sites.

Stonebridge* | Sandler at Manatee, LLC | Manatee County, Florida | Project Manager

Mr. Loraine served as project manager for environmental services in support of the proposed 48-acre Stonebridge residential subdivision. Services included wetland delineation; habitat mapping; listed species assessment; bald eagle monitoring and management plan development; environmental planning; and local, state, and federal wetlands permitting support. As part of the federal permitting process, Mr. Loraine requested an Incidental Take Statement of the nest territory pursuant to Section 7(b) (4) of the Endangered Species Act and participated in a formal Section 7 consultation between the USACE and the USFWS that resulted in an issuance of a Biological Opinion, including an Incidental Take Statement, for the bald eagle territory.

Ventura on Palmer Ranch * | Pulte Homes | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager for environmental services in support of the proposed Ventura residential subdivision on Palmer Ranch. Services included wetland delineation; habitat mapping; listed species assessment; bald eagle monitoring; entitlement support (DRI Notice of Proposed Change and Sarasota County Rezoning); environmental planning; and local, state, and federal wetlands permitting support.

Northport Investments #3 * | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager for the preparation of permit applications and agency negotiations with the SWFWMD and USACE to modify two existing borrow pits. Services also included negotiations with the FWC regarding potential project impacts on state listed species.

Phillippi Harbor Club * | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager for the permitting of a 309-slip dry storage facility. Services included negotiations with Sarasota County regarding the appropriate baseline for proposed additional boat storage units, support of local and state permit applications, and negotiations with the Florida Department of Environmental Protection, FWC, and Sarasota County reviewers.

Sarasota County Coastal Setback Variance Petition* | Bladstrum, Laidlaw | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager to provide environmental support for a Sarasota County Coastal Setback Variance Petition for a proposed seawall to protect 15 properties on Casey Key from erosion by the Gulf of Mexico. Services included habitat mapping, environmental documentation, agency negotiations, and public hearing testimony.

StoneLake Ranch, LLC * | Hillsborough County, Florida | Project Manager

Mr. Loraine served as project manager for environmental services in support of the StoneLake Ranch 147-lot rural subdivision on 645 acres on the eastern shore of Lake Thonotosassa. Services included wetland delineation; habitat mapping; listed species censuses; bald eagle monitoring; environmental planning; and local, state and federal wetlands permitting and Hillsborough County rezoning support. Cardno also obtained an incidental take permit for gopher tortoises on the site.

Promenade on Palmer Ranch, Palmer Ranch DRI Increment IV* | D.R. Horton Homes | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager for the 21-acre Promenade on Palmer Ranch multi-family residential development. Services included wetland delineation; habitat mapping; listed species assessment; gopher tortoise relocation; entitlement support (Comprehensive Plan Amendment, DRI Notice of Proposed Change, and Rezoning); environmental planning; local, state, and federal wetlands permitting; and gopher tortoise relocation.

Sarasota County Comprehensive Plan Amendment* | North American Properties | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager and provided environmental support for applications for a Sarasota County Comprehensive Plan Amendment, rezoning, and construction approvals for a proposed shopping center. Services also included the relocation of on-site gopher tortoises under permit from the FWC.

Sandhill Preserve on Palmer Ranch, Palmer Ranch DRI Increment XXI* | DiVosta Homes, LP | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager for the 139-acre Sandhill Preserve on Palmer Ranch residential development. Services included wetland delineation; habitat mapping; listed species assessment; entitlement support (Comprehensive Plan Amendment, DRI Incremental Development Approval and Rezoning); environmental planning; and local, state and federal wetlands permitting.

LT Ranch 2050 * | Taylor Morrison of Florida, Inc. and LT Partners, LLLP | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager for the entitlement and permitting of the 1725 - acre LT Ranch 2050 Village. Services included wetland delineation; habitat mapping; extensive listed species assessment; entitlement support (Sarasota 2050 Plan Rezoning); environmental planning; local, state, and federal wetlands permitting; state and federal bald eagle permitting; wetland creation and restoration design; and upland habitat enhancement planning.

Heritage U.S. Home Corporation, Inc. * | Manatee County, Florida | Project Manager

Mr. Loraine served as project manager for the preparation of ADA Questions 12 - Vegetation and Wildlife, 13 - Wetlands, and 14 - Water for the more than 2800-acre DRI.

ENVIRONMENTAL ASSESSMENTS

City of Venice * | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager for the design and census of gopher tortoises on a City of Venice park site. Following completion of the census, Cardno ecologists obtained relocation permits from the FWC and relocated the tortoises from a proposed construction area to other suitable habitats in the park.

Villages at Pine Tree* | Ridgewood Building and Development Company | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager for bald eagle monitoring, management plan development, and site plan revisions after discovery of a new bald eagle nest immediately adjacent to the proposed Villages at Pine Tree residential subdivision. Cardno also testified in support of the proposed project during the rezoning of the site.

Laguna Veneta* | Venice H.G., L.C. | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager for Florida scrub-jay censuses and gopher tortoise incidental take permit application preparation for Laguna Veneta.

Linebaugh Avenue Improvements* | Hillsborough County Engineering & Construction Serv. | Hillsborough County, Florida | Project Manager

Mr. Loraine served as project manager for the preparation of a gopher tortoise incidental take permit application for Linebaugh Avenue Improvements.

Abel Band * | Sarasota County, Florida | Technical Support

Mr. Loraine provided technical support for an application for rezoning of four parcels previously annexed into the City of Venice.

Karpay Berger Residential Corporation * | Karpay Berger Residential Corporation | Hillsborough County, Florida | Project Manager

Mr. Loraine served as the project manager for a gopher tortoise assessment and incidental take permitting at a 30-acre subdivision.

Walton Tract, Sarasota County Landfill* | Camp, Dresser & McKee, Inc. | Sarasota County, Florida | Lead Ecologist

Mr. Loraine was the lead ecologist for listed wildlife surveys and habitat mapping of the 6,151-acre Walton Tract, the proposed site of a Sarasota County Landfill.

Vector Space Site* | Ivey – Harris, and Walls, Inc. | Brevard County, Florida | Census

Mr. Loraine completed a Florida scrub-jay census of the Vector Space Site.

Day and Zimmerman Infrastructure* | Sarasota County Environmental Stormwater Utility | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager for the inventory of wildlife along South Creek in Oscar Scherer State Park to assess possible effects of the restoration of South Creek on wildlife for the Day and Zimmerman Infrastructure.

J & J Homes * | Sarasota County, Florida | Project Manager

Mr. Loraine conducted an assessment of potential effects of construction of a single-family home on an adjacent bald eagle nesting territory and worked with the Client and USFWS to develop a construction schedule that avoided impacts to the nest and the need for permitting.

Villa Rosa* | Westfield Development Corporation | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager for the preparation of a gopher tortoise incidental take permit application for Villa Rosa.

Jones Edmunds * | Martin County, Florida | Project Manager

Mr. Loraine served as project manager for the design and sampling of potential recipient sites and subsequent relocation of gopher tortoises from South Florida Water Management District lands.

Murdock Village, Stock Development * | Charlotte County, Florida | Project Manager

Mr. Loraine served as project manager for wetland delineations and environmental analyses associated with the proposed Murdock Village project.

Sarasota County's Shamrock Park* | Sarasota County | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager for the census and banding of Florida scrub-jays inhabiting Sarasota County's Shamrock Park.

Northwest Regional Mall* | JMB Urban Development | Hillsborough County, Florida | Lead Ecologist

Mr. Loraine was the lead ecologist for gopher tortoise relocation and habitat analysis for the Northwest Regional Mall.

Foxwood* | Ranch Property Partners, Ltd. | Manatee County, Florida | Project Manager

Mr. Loraine served as project manager for Florida scrub-jay censuses and management plan preparation and negotiation with the USFWS for Foxwood.

Villages of Palm Aire* | Taylor Woodrow Communities, Inc. | Manatee County, Florida | Project Manager

Mr. Loraine served as project manager for gopher tortoise incidental take permit application preparation for Villages of Palm Aire.

Sunshine Natural Gas Pipeline* | Florida | Team Leader

Mr. Loraine served as the team leader for field work to census listed species, delineate wetlands, and assess habitat quality along the proposed route of the Sunshine natural gas pipeline.

Colonial Pipeline Company * | Colonial Pipeline Company | Jefferson County, Florida | Lead Ecologist

Mr. Loraine was the lead ecologist for an endangered and threatened species assessment for a proposed petroleum pipeline.

Leslie Land Corporation * | Leslie Land Corporation | Hillsborough County, Florida | Project Manager

Mr. Loraine was project manager for a gopher tortoise assessment and incidental take permitting for a proposed borrow pit.

Knob Hill Tract* | The Pugliese Company | Palm Beach County, Florida | Lead Ecologist

Mr. Loraine was the lead ecologist for small mammal and gopher tortoise burrow commensal trappings and gopher tortoise burrow occupancy rate research on the Knob Hill Tract.

Rock Springs Ridge Tract* | Springstead Engineering, Inc | Marion County, Florida | Project Manager

Mr. Loraine served as the project manager for an endangered and threatened species assessment of the ±1,100-acre Rock Springs Ridge tract.

City of Tallahassee Southeast Priority Planning Study Area* | City of Tallahassee | Leon County, Florida | Project Manager

Mr. Loraine provided identification of potential environmentally sensitive areas within the City of Tallahassee Southeast Priority Planning Study Area.

Pottberg Trust * | Pasco County, Florida | Wildlife Surveys

Mr. Loraine was involved with the wildlife surveys and DRI Questions 16 – Wetlands and 18 – Vegetation and Wildlife at Serenova, a ±6,700-acre DRI.

Eagle Lake RV Park* | Jay Ramsey Trustee | Pasco County, Florida | Project Manager

Mr. Loraine served as the project manager for an endangered and threatened species assessment and incidental take permitting of gopher tortoises at the Eagle Lake RV Park.

Rock Crusher Road School Site * | Citrus County, Florida | Project Manager

Mr. Loraine was project manager for gopher tortoise preserve design and population relocation at the Rock Crusher Road School Site.

** denotes projects completed with other firms*

Sage Oaks* | DFR Engineering | Pinellas County, Florida | Lead Ecologist

Mr. Loraine was the lead ecologist for a gopher tortoise assessment and incidental take permitting for Sage Oaks.

Willow Bend* | Scarborough Corporation | Hillsborough County, Florida

Mr. Loraine completed the gopher tortoise relocation at Willow Bend.

Sam Rodgers Properties * | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager for the census of Florida scrub-jays and wildlife agency negotiations in support of a proposed rezoning of a 47-acre parcel.

Jaclyn Oaks* | White Oak Development | Manatee County, Florida | Project Manager

Mr. Loraine served as project manager for bald eagle monitoring and management plan development after discovery of a new bald eagle nest on the proposed Jaclyn Oaks residential subdivision. Cardno also provided construction monitoring for the bald eagle nest.

Conservation Consultants, Inc. * | Conservation Consultants, Inc. | Orange County, Florida | Project Manager

Mr. Loraine served as the project manager for gopher tortoise burrow occupancy rate determination using a closed-circuit camera system at Avalon.

Save Our Rivers Program* | Northwest Florida Water Management District | Florida | Project Manager

Mr. Loraine served as the project manager for Timber Appraisals completed on four tracts proposed for acquisition under the Save Our Rivers Program.

Sawgrass* | Taylor Woodrow Communities, Inc. | Sarasota County, Florida | Lead Ecologist

Mr. Loraine was lead ecologist for gopher tortoise incidental take permit application preparation and census of Florida scrub-jays for Sawgrass.

Moriber Rock Mine* | Berman and Murray | Dade County, Florida | Data Collection

Mr. Loraine participated in the sampling design and data collection for a GIS-based Habitat Suitability Analysis (HEP) of the ±1,200-acre Moriber Rock Mine at the edge of the Florida Everglades.

Rinker Materials Corporation * | Rinker Materials Corporation | Lake County, Florida | Project Manager

Mr. Loraine served as the project manager for the assessment, permitting, and relocation of gopher tortoises from a proposed sand mine.

State Road 44 Improvements* | Brown & Root-Genesis for Florida Department of Transportation | Species Assessment

Mr. Loraine completed an endangered and threatened species assessment for State Road 44 improvements.

Wading Bird Golf and Country Club* | Florida West Coast Development Corporation | Manatee County, Florida | Project Manager

Mr. Loraine prepared bald eagle and West Indian manatee Management Plans and completed negotiations with the USFWS resulting in a Biological Opinion of No Affect for bald eagles and May Affect Not Likely to Adversely Affect for West Indian manatees for the Wading Bird Golf and Country Club.

Save-Our-Rivers Lands* | Suwannee River Water Management District | Six North Florida Counties, Florida | Project Manager

Mr. Loraine was project manager for habitat identification and assessment, and wildlife and listed plant surveys in 28,000± acres of Save-Our-Rivers lands.

LeMax Development * | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager for the due diligence assessment of a 14-acre parcel containing Sarasota County-regulated scrub habitats and supporting Florida scrub-jays.

Anchin Trust * | Sarasota County, Florida | Project Manager

Mr. Loraine served as project manager for the census of Florida scrub-jays on the 280-acre Anchin Trust parcel.

USACE C-51 STA-1E Culvert Repairs* | L. J. Clark, Inc. | Palm Beach County, Florida | Managing Wildlife Biologist

Mr. Loraine served as managing wildlife biologist for the preparation of the Environmental Protection Plan and environmental training materials for construction staff of the USACE C-51 STA-1E culvert repairs construction project.

Orlando International Airport Fourth Runway Expansion* | Greater Orlando Aviation Authority | Orange County, Florida | Species Assessment

Mr. Loraine participated in an endangered and threatened species assessment of Orlando International Airport fourth runway expansion and proposed mitigation sites.

Palmer Ranch DRI* | Palmer Ranch Holdings Ltd. | Sarasota County, Florida | Expert Witness

Mr. Loraine served as an expert witness representing Palmer Ranch Holdings against the Commissioner of Internal Revenue before the United States Tax Court (Docket No. 17017-11). Services included the preparation of an Environmental Assessment Report detailing state and federal regulations pertaining to the permitting of bald eagles (Haliaeetus leucocephalus) and the permitting history of bald eagles on the Palmer Ranch DRI. The report also provided opinions regarding the development potential of the subject property with respect to the applicable bald eagle permitting requirements in 2006. Mr. Loraine also testified as an expert witness in federal Tax Court on this matter. The Court ruled in favor of Palmer Ranch Holdings, Ltd.

Trout Creek Tract* | Trout Creek Associates Inc. | Pasco County, Florida | Species Assessment

Mr. Loraine participated in an endangered species assessment and gopher tortoise incidental take permitting on the 1,821-acre Trout Creek Tract.

Savannah River Ecology Laboratory, Savannah River Site * | Aiken, South Carolina | Research Technician

Mr. Loraine was a research technician for a radiotelemetric study of the thermal ecology of the American alligator in thermally impacted streams.

Iowa Natural Areas Inventory/The Nature Conservancy * | Iowa | Principal Investigator

Mr. Loraine was principal investigator for the study of the distribution and habitat preferences of the state-endangered wood turtle (Clemmys insculpta).

Kansas Fish and Game Commission * | Cherokee County, Kansas | Principal Investigator

Mr. Loraine was principal investigator for the study of the distribution, population status, and habitat preferences of two state-endangered amphibians in southeastern Kansas.

C.W. Bill Young Regional Reservoir* | Tampa Bay Water | Hillsborough County, Florida | Project Manager

Mr. Loraine served as project manager for the development and implementation of a monitoring program and protection measures for sandhill cranes during construction of the C.W. Bill Young Regional Reservoir project in eastern Hillsborough County.

Rhodine Road Borrow* | Phillips and Jordon Inc. | Hillsborough County, Florida | Lead Ecologist

Mr. Loraine was the lead ecologist for the gopher tortoise relocation at Rhodine Road Borrow.

Firethorn County Club* | Summar Properties, Inc. | Hernando County, Florida | Lead Ecologist

Mr. Loraine was the lead ecologist for a gopher tortoise assessment at Firethorn County Club.

Hunter's Green Population Censuses * | Markborough Florida, Inc. | Hillsborough County, Florida | Lead Ecologist

Mr. Loraine was the lead ecologist for gopher tortoise population censuses and relocation at Hunter's Green.

Savannah River Ecology Laboratory, Savannah River Site * | Aiken, South Carolina | Research Technician

Mr. Loraine was a research technician for mark-recapture studies of aquatic and terrestrial snake community, foraging, and reproductive ecology.

Osceola Corporate Center* | Ivey, Harris & Walls | Orange County, Florida | Species Assessment

Mr. Loraine was involved with the endangered species assessment, gopher tortoise incidental take permitting, and Sandhill Crane management plan preparation at the Osceola Corporate Center.

USACE C-44 Reservoir* | Phillips and Jordon, Inc | Martin County, Florida | Managing Wildlife Biologist

Mr. Loraine served as the managing wildlife biologist during the construction of the U.S. Army Corps of Engineers (USACE) C-44 Reservoir and STA Contract 1 project. Environmental services provided by Cardno included development of the project Environmental Protection Plan, preparation and presentation of environmental training for construction staff, pre-construction gopher tortoise surveys, breeding season crested caracara monitoring, and coordination and reporting on daily on-site construction monitoring to ensure the protection of listed wildlife and migratory birds.

ENVIRONMENTAL RESOURCE PERMITTING

Villa Rosa* | Westfield Development Corporation | Sarasota County, Florida | Project Manager

Mr. Loraine served as the project manager for a local (Sarasota County) and state (SWFWMD) permitting for the 63-acre Villa Rosa residential development.

Goldfield * | Leon County, Florida | Environmental Analysis

Mr. Loraine completed environmental analyses and local (City of Tallahassee) environmental permitting for the Goldfield subdivision, a 38-unit residential planned development.

Tuscaloosa Waste Water Treatment Facility * | Tuscaloosa County, Alabama | Quantitative Monitoring

Mr. Loraine conducted quantitative monitoring of a ten-acre wetland mitigation area to ensure compliance with a permit issued by the USACE

Golf Course Maintenance Facility at Hunter's Green* | Markborough Florida, Inc. | Hillsborough County, Florida | Lead Ecologist

Mr. Loraine was the lead ecologist for environmental permitting for the Golf Course Maintenance Facility at Hunter's Green.

CCSWDC North Borrow Area – Sarasota County Public Utilities | Sarasota County, Florida | Environmental Task Manager

Mr. Loraine served as environmental task manager for the design and permitting of the CCSWDC North Borrow Area. Environmental services provided by Stantec included delineation of wetlands and surface waters, listed species surveys (including an acoustic survey for the federally endangered Florida bonneted bat), development of a wetland permitting and mitigation strategies, and preparation and support of permit applications to the US Army Corps of Engineers/Florida Department of Environmental Protection, Southwest Florida Water Management District and Sarasota County.

Cross Creek* | Gulfstream Communities | Hillsborough County, Florida | Project Coordination

Mr. Loraine provided project coordination and mitigation construction supervision at Cross Creek.

Osprey Tract* | Lowder Construction Company, Inc. | Sarasota County, Florida | Project Manager

Mr. Loraine served as the project manager for a local (Sarasota County) and state (SWFWMD) permitting for the 54-acre Osprey Tract residential development.

Gateway to Sarasota* | Sarasota Gateway Associates, Ltd. | Sarasota County, Florida | Lead Ecologist

Mr. Loraine was the lead ecologist for wetland delineations and environmental permitting (USACE, SWFWMD, and Sarasota County Natural Sciences Department) for the 91-acre Gateway to Sarasota project.

Florida Quality Development* | Markborough Florida, Inc. | Hillsborough County, Florida | Lead Ecologist

Mr. Loraine was the lead ecologist for project coordination, environmental permitting, and mitigation construction supervision at Hunter's Green, a 1,980-acre Florida Quality Development.

Maclay Gardens State Park* | Florida Department of Environmental Protection | Leon County, Florida | Lead Ecologist

Mr. Loraine was the lead ecologist for local (City of Tallahassee) environmental permitting for proposed improvements to the entrance of Maclay Gardens State Park.

Wyndtree Boulevard Extension and Wyndtree Phases III, IV, and V* | Haydon-Ruben | Pasco County, Florida | Lead Ecologist

Mr. Loraine was the lead ecologist for environmental permitting for Wyndtree Boulevard Extension and Wyndtree Phases III, IV, and V.

Coastal Oaks* | Coastal Builders, Inc. | Pinellas County, Florida | Lead Ecologist

Mr. Loraine was the lead ecologist for environmental permitting for Coastal Oaks.

The Home Depot * | Florida Land Trust VI | Venice , Florida | Project Manager

Mr. Loraine served as the project manager for a local (Sarasota County), state (SWFWMD), and federal (USACE) permitting of a The Home Depot commercial development.

Venice Parcel* | Ms. Velda L. Turner | Sarasota County, Florida | Lead Ecologist

Mr. Loraine was the lead ecologist for wetland delineations, regulatory agency verification (USACE, SWFWMD, and Sarasota County Natural Sciences Department), environmental assessment, and listed species censuses in support of a rezoning application for the 75-acre Venice Parcel.

S.R. 61 (Thomasville Road) Improvements* | Florida Department of Transportation District 3 | Leon County, Florida | Environmental Analysis

Mr. Loraine contributed to environmental analyses and permitting (City of Tallahassee and USACE) assistance to Florida Department of Transportation staff for improvements to S.R. 61 (Thomasville Road).

Florida Corporate Center* | Richard Mulholland Properties, Inc. | Hillsborough County, Florida | Permitting

Mr. Loraine participated in environmental permitting (USACE, SWFWMD, and Hillsborough County Environmental Protection Commission) for the 450-acre Florida Corporate Center site.

County Road 581 Phases I and II Improvements at Hunters Green* | Markborough Florida, Inc. | Hillsborough County, Florida | Lead Ecologist

Mr. Loraine was the lead ecologist for environmental permitting for the County Road 581 Phases I and II Improvements at Hunters Green.

ENVIRONMENTAL LITIGATION, ARBITRATION AND MEDIATION SUPPORT

Topsail Hill * | Florida Attorney General's Office | Walton County, Florida | Lead Ecologist

Mr. Loraine was lead ecologist for environmental assessments and determination of listed species and wetlands regulatory exposure of three tracts near Topsail Hill in support of opinion of probable development cost used by the Florida Department of Environmental Protection in negotiations/mediations resulting in state acquisition of these parcels.

COMMUNITY INVOLVEMENT

Member, Sarasota County Environmentally Sensitive Lands (SCESL), Sarasota, Florida

Member, The Gopher Tortoise Council (GTC), Safety Harbor, Florida

** denotes projects completed with other firms*

PUBLICATIONS

Loraine, R. K. Report to the Kansas Fish and Game Commission on the status of two species of amphibians in southeastern Kansas Fish and Game Contract. #*76 Final Report*, 1983, pp. 56.

Knight, J.L. and R.K. Loraine. Notes on turtle egg predation by Lampropeltis getulus getulus (Linnaeus) (Reptilia: Colubridae) on the Savannah River Plant. *Brimleyana*, 1986, pp. 12:1 4.

Loraine, R.K. A geographic analysis of sexual dimorphism and morphological variation in Seminatrix pygaea (Cope).. *M.S. Thesis*, 1990.

Seigel, R.A., R.K. Loraine, J.W. Gibbons. Reproductive cycles and temporal variation in fecundity in the Black Swamp Snake, Seminatrix pygaea. *American Midland Naturalist* , 1995, pp. 134:371-377.

PRESENTATIONS

Seasonal changes in foraging success and diet composition of Seminatrix pygaea. *SSAR/HL*, 1985.

State and Federally Listed Wildlife Regulatory Overview. *Administration and Enforcement of Wetlands and Endangered Species Regulations Seminar*, 2006.

Sexual dimorphism in Seminatrix pygaea: A geographic analysis. *SSAR/HL/ASIH*, 1988.

Foraging ecology of the black swamp snake, Seminatrix pygaea. *Undergraduate Seminar, Savannah River Ecology Laboratory*, 1984.

Alternative Designs Allow Fish Colonization of Created Wetlands in a Florida Surface Water Management System. *17th Annual Conference on Wetlands Restoration and Creation*, 1990.

The present status of Eurycea lucifuga in southeastern Kansas. *Kansas Herpetological Society*, 1983.

Please Respect the Environment

About Cardno

Cardno is an ASX-200 professional infrastructure and environmental services company, with expertise in the development and improvement of physical and social infrastructure for communities around the world. Cardno's team includes leading professionals who plan, design, manage, and deliver sustainable projects and community programs. Cardno is an international company listed on the Australian Securities Exchange [ASX:CDD].

Cardno Zero Harm

Cardno ZERO HARM EVERY JOB. EVERY DAY.

At Cardno, our primary concern is to develop and maintain safe and healthy conditions for anyone involved at our project worksites. We require full compliance with our Health and Safety Policy Manual and established work procedures and expect the same protocol from our subcontractors. We are committed to achieving our Zero Harm goal by continually improving our safety systems, education, and vigilance at the workplace and in the field. Safety is a Cardno core value and through strong leadership and active employee participation, we seek to implement and reinforce these leading actions on every job, every day.

EXHIBIT D

Exhibit D - CHW Planning Report

Special Area Study
FCL Timber, Land & Cattle, LLLP
Alachua County, Florida

FCL Timber, Land & Cattle, LLLP owns +/- 4,068 acres (the "Property") in unincorporated Alachua County that is overlain in part by the Alachua County Strategic Ecosystems Map, necessitating a privately initiated Special Area Study pursuant to the Comprehensive Plan before undertaking master planning for the Property. The Special Area Study principally analyzes the environmental characteristics of the Property to arrive at a proposed Primary Conservation Open Space ("PCOS") set-aside with the balance of the Property being available for potential development.

As detailed in the Cardno report, the PCOS is primarily proposed for a bloc of land lying west of Parker Road in the southwesterly area. The total acreage for this area plus additional PCOS protecting significant geologic features, creating a linear park connection northerly to the Town of Tioga, and a connection to the proposed UF Golf Course in the southeastern region of the Property, is detailed in the Cardno Report (Exhibit C).

Those lands not identified in the Cardno Report for PCOS would be considered in the Special Area Plan process for potential additional non-conservation set-aside area linking key urban land uses such as residential, institutional, recreation, mixed-use and potentially community-scale agriculture.

To complete the requirements for an analysis of the developable portion of the Property (See, Special Area Study ULDC §402.101(c) Public infrastructure and services and (d) Land-use analysis), CHW analyzed a variety of existing data including but not limited to available soils and transportation data, utility infrastructure, existing infrastructure stub-outs to the Property from

abutting subdivisions, relevant policies in the Comprehensive Plan and ULDC, the Future Land Use Map and official zoning atlas, and other relevant planning materials.

Generally, in the undersigned's opinion, the land is suitable for urban residential and non-residential development based on the presence of well-drained soils, the availability of urban infrastructure and environmental conditions that are significantly comparable to the context area. There is evidence that continued agricultural and silvicultural uses may no longer be practicable due to the continued urbanization of Alachua County, and the resulting land management difficulties. [FCL's principal existing land uses are silviculture and cow-calf ranching, with associated farm support structures, livestock fencing and paddocks, kennels, and caretaking residences.]

Given the study area's residual four (4) square miles of developable land – after the set-aside of two (2) square miles of PCOS which can remain in Agricultural zoning and land use -- portions of the Property west of Parker Road are also suitable for photovoltaic fields, recreational uses, and support services such as yard waste composting. Portions of the Property east of Parker Road would be most suited to public municipal services such as police, fire, EMS and schools.

It would be a great loss to Alachua County to fail to collaboratively master plan the Property to create a model Florida community. Failing that, the alternative likely will be piecemeal development of the Property (i.e. 20-, 40-, 100-acre subdivisions) with little to no aggregation of capital or resources to provide overall community benefit.

In any development of the Property, it is critical to safeguard the Floridan aquifer and promote viable ecological rebound that supports Alachua County's holistic vision of an interconnected environmental set-aside linking key land areas in western Alachua County. Prudent planning practice suggests that the Property's ultimate development should not rely on private septic tanks

and private wells, given the vulnerability of the groundwater in this area of the County. Under a by-right scenario, the Property could be developed as a Rural Cluster Subdivision with 813 lots, at least 813 private wells and at least 813 private septic tanks. Minimal infrastructure would be required (internal roads and limited sidewalks). Some of the other permitted uses in this Rural Agricultural land use and zoning district could similarly introduce unsuitable impacts to the groundwater. Among the permitted uses are agritourism, agricultural processing, dairies, event centers, farm equipment repair, wood processing, kennel/cattery/animal shelters, animal sanctuaries, and farmworker housing.

That is not to say development is not possible in western Alachua County, as evidenced by the established master-planned communities of Town of Tioga, Haile Plantation, Oakmont and Lugano. Rather, under proper techniques, specific management strategies and continued stewardship, urban development is the preferable pattern and has the unique potential to create or accomplish: (1) an interconnected system of open space linking several community features (i.e. GRU Groundwater Recharge Park, School “K” Elementary, and a system of non-motorized vehicle connections); (2) key strategic partnerships and collaboration between Alachua County, private land owners and institutional parties that can facilitate the ecological rebound of the set-aside areas within the Property and their connectivity into abutting set-aside areas in existing residential neighborhoods; (3) central municipal sewer and potable water services; (4) a truly multi-modal transportation network that provides connectivity to community features, residential communities and employment opportunities without the necessity to utilize single-occupant vehicles, and promote mass transit between established employment centers and other large-scale master-planned communities in western Alachua County (i.e. Town of Tioga, Haile Plantation, Oakmont, Lugano). At this time -- 20 years after the 2002 update to the Comprehensive Plan -- longstanding

and recently adopted and constructed transportation corridors abut the Property. Stub-outs for urban utilities and roads connect to the property from the Haile Plantation Subdivision (SW 47th Boulevard) to the east, the Oakmont Subdivision to the north (2 connections), the Flintrock Agrihood Subdivision to the west (2 connections), and the Lugano Subdivision to the southeast (3 connections). Future utilities and road connections may be expected from the south side of Town of Tioga TND into the property west of Parker Road. See (**Composite Exhibit A**). In every engineering and planning sense, all urban utilities are available to this property and readily exist at the property's edge. Historic and currently adopted County transportation plans have shown the future extension of a premium mass transit service from the north through the property, connecting Jonesville Activity Center and Oakmont Subdivision to Haile Plantation and ultimately the UF campus and UF Health complexes and the Veterans Administration Medical Center to the east. Opportunities exist to improve the interconnected public street grid among and between existing subdivisions that surround the subject property; and (5) construction of Alachua County's first inclusionary workforce housing program, based on FCL's commitment to contribute ±50 acres of land to Alachua County or its designee, within the overall Property, for the provision of workforce housing (targeting 50% to 80% AMI). This workforce housing would ideally serve school employees, first responders, and others expected to be employed in or close to the Property as it develops. One potential scenario envisions the development of four (4) 12.5-acre phases all connected to a master Stormwater Management Facility. Such a configuration would suit the needs of a Community Land Trust model of workforce housing development. The goal is to promote the accumulation of generational wealth through home ownership.

A key component of master-planning this Property is relief or alternative methodology to permit extension of utilities and services beyond the Urban Cluster Line, which has been static

since 2002. The underlying policy of preventing smaller-parcel piecemeal expansion of the Urban Cluster Line creates the unintended consequence of preventing the proper development pattern for this Property, and squandering the unique opportunities articulated in this Report and throughout the Special Area Study.

CHW has included a series of maps that detail the context area (Map 1-a), study area (Map 1-b), Future Land Use Map (Map 2), Zoning Atlas (Map 3), Topographical, FEMA Floodplains and Wetlands (Map 4), NRCS Soils (Map 5), and Strategic Ecosystems (Map 6). These maps form the basis of FCL scientists' and consultants' recommendations for preparation of a Special Area Plan as detailed below.

§402.101(e) Special Area Study - Recommendations and strategies.

The following recommendations, based on the collective analyses of FCL's scientists and consultants, balance protection of natural resources and their management with FCL's ownership interests and the protection of private property rights required by the Comprehensive Plan and ULDC for the Special Area Study.

The recommendations, if accepted by the Board of County Commissioners for further consideration in a Special Area Plan, are designed to implement the findings of the FCL Land, Timber & Cattle LLLP Special Area Study. The SAP will be a master-planning effort for the Property and will be accompanied by a proposed comprehensive plan amendment, a rezoning request, and one or more proposed planning overlays, as necessary.

In lieu of traditional piecemeal development patterns, which have predominated much of the Gainesville and Alachua County landscape throughout the late 1800's and 1900's, creation of an SAP should be a primary consideration for the study area. The results of the SAS align to justify a holistic approach focused on ecological rebound under unified management strategies. The

specific strategies will be developed during the SAP in a collaborative effort and accompany any future or subsequent development scenarios presented for the study area.

Specifically, CHW recommends that the following steps be taken next:

Recommendation No. 1. Create a new future land use category, potentially named Mixed-Use Village (MUV) and a complementary implementing zoning classification, such as Mixed-Use Village – Planned Development (MUV-PD) with specific qualifying criteria limited to large tracts proximate to the Gainesville's growing urban core;

Rationale: The study area abuts multiple established large-scale urban residential communities yet lies outside the Urban Cluster Line (UCL) precluding extension of potable water and sewer. Surrounding uses and densities represent traditional urban residential development patterns. With the exceptions of the Haile Plantation Town Center one (1) mile to the east and the Town of Tioga one-half (1/2) mile to the north, the predominant development pattern is suburban residential subdivisions or moderate-to-large lot rural subdivisions. Both Haile Plantation and the Town of Tioga contain a mixture of uses that complement each subdivision's residents and guests. Both represent more resilient and sustainable development forms, not only because of their mixed-use components, but because of their residential density range. While each has a signature form and character, they both approach thresholds where elements such as transit, interconnected open space, and ranges of housing stock allows diversity in home ownership opportunities across multiple income levels.

The study area has the potential to deliver a master planned range of land uses, linked by a truly interconnected multi-modal transportation network where residents, their guess, and visitors to the community are not wholly dependent upon the single-occupant vehicle. Moreover, if designed in concert with the proposed set asides defined in the SAS, linked to an SAP containing

specific land management strategies, the study area has the ability to deliver both interconnectivity and intra-connectivity to other established communities and both Conservation and Non-Conservation Open Space areas in the context area.

Recommendation No. 2. Undertake a Special Area Plan (SAP) for the Property to promote master planning and coordination of the public infrastructure, Primary and Secondary Conservation Open Space areas, community facilities, and planned recreational uses in concert with mixed-use development of the Property;

Rationale: With the SAS as the guiding document for Conservation and initial Non-Conservation Open Space areas, designing in conjunction with the proposed ±2 square mile set-aside area will create the foundation for a model Florida community. The study area's residual ±4 square miles can introduce coordinated public infrastructure, key community and municipal facilities, along with planned recreational uses that preserve and protect the larger context area of western Alachua County. With the SAS study area situated between the Cities of Newberry, Archer, and Gainesville, approval of protections for the more than two-square-mile set aside area furthers the Board of County Commissioners' 'emerald necklace' concept originally envisioned in the late 1980s and early 1990s.

Moreover, as the 'emerald necklace concept' was supplanted recently by 'the Green Crescent', promoted by the current Board of County Commissioners for the eastern reaches of Alachua County, the proposed Conservation and Non-Conservation Open Space areas promote ecological rebound on this property and provide large-scale protection. The SAS also promotes linkages between several established neighborhoods and recently approved neighborhoods in western Alachua County, through direct connection to their established set-aside areas.

Recommendation No. 3. Prepare a Comprehensive Plan Amendment (MUV) application for the FCL Property, including a variety of land uses and passive energy options;

Rationale: The SAS study area lies outside the Urban Cluster Line (UCL) yet abuts several well-established communities and neighborhoods in western Alachua County. Historically, the most resilient and sustainable development patterns have resulted from master-planned properties. Those communities often require specific protections contained in Comprehensive Plan text and Future Land Use Map (FLUM) provisions to promote strong community form and protect existing and future open space environments within the respective community.

The FCL study area should similarly be conceptualized, planned, and ultimately entitled under similar planning methods. Research of the existing infrastructure systems abutting the study area document the Property's ability to accommodate urban residential densities and mixed-use community form. Moreover, if the study area's ±4,068-acre lands are subdivided or approached in a piecemeal manner, the benefits of collaborative master planning and its long-term strategies are forever lost to a series of unconnected and isolated individual concepts;

Recommendation No. 4. Prepare a MUV-PD zoning application for the FCL Property, including lands to be denoted, or reserved, for future passive energy options;

Rationale: As stated above, creating a cohesive master plan clearly presents the most holistic approach to address and avoid the pitfalls of piecemeal development forms. In addition, based on current and future energy needs of Alachua County, the City of Gainesville, and the consistently growing employment centers within the community, it is critically important to plan for and implement energy strategies that are not largely dependent upon fossil fuels and combustion-based energy production.

The creation of a Mixed-Use Village Zoning category and respective planning document can deliver area-specific uses (i.e. photovoltaic fields) within the SAS study area that are best suited to address not only the Property but its context area's existing rural residential and agricultural neighbors. Some of these areas also are most proximate to the lowest density and intensity lands abutting the SAS study area's western boundaries. In addition, a transportation facility proximate to the Property – the Flying Ten Airport (KOJ8), a 3,200' single Fair Grass runway [18-36 orientation] can be buffered from future urban residential densities and encroachment of non-complementary land-use patterns abutting an active airport consistent with state and federal aviation regulations.

Recommendation No. 5. Prepare specific development standards to be included in the FCL Comprehensive Plan Amendment(s) and Zoning application(s);

Rationale: The SAS process identified specific areas for Conservation and Non-Conservation Open Space, which represents the largest single private landowner proposed set aside in Alachua County's history. Following adoption of the empirical data-drive approach within the SAS, preparation of a site-specific SAP containing unique Comprehensive Plan Goals, Objectives, and Policies that are directly linked to specific Zoning regulations should be the next step in the collaborative planning process. During the SAP process, the Property owner/applicant, their environmental and planning consultants, Alachua County, and the University of Florida's Institute for Food and Agricultural Sciences (IFAS) can collaborate on strategies and regulations related to SAS study area's ecological rebound potential.

This collaborative planning effort must combine both land management and land development strategies in a manner creating practicable short- and long-term approaches to furthering Alachua County's adopted Comprehensive Plan Goals, Objectives and Policies and the County's Unified

Land Development Code (ULDC). It is envisioned, in some cases, the potential new strategies may have applicability or positive impacts upon lands abutting the FCL study area and promote long-term benefits to the context area.

Recommendation No. 6. Prepare any necessary text amendment(s) to the ULDC to implement the land use and zoning, if adopted for the FCL Property;

Rationale: Working collaboratively with Alachua County's Growth Management Department and Environmental Protection Department, and other County Staff, the owner/applicant shall define achievable Goals, Objectives, and Policies to effectuate both short- and long-term land use strategies, which likely will require creation of new text within Alachua County's Comprehensive Plan. These text amendments may include such concepts as a focus on balanced design alternatives that promote ecological rebound in concert with providing equitable housing and employment opportunities on a phased basis within the property. Enabling site-specific uses (i.e. photovoltaic fields) and their relative location within the Property shall be addressed during the SAP, using the SAS empirical data and analysis in support of these amendments.

Recommendation No. 7. Identify potential capital improvements in the SAP and accompanying plan amendment and zoning applications; and

Rationale: Working collaboratively with Alachua County's Growth Management, Public Works, Parks & Recreation, and Environmental Protection Departments, the owner/applicant shall define practicable and achievable Goals, Objectives, and Policies identifying both short- and long-term capital improvements necessary within the SAS study area and within the context area. In addition, during the SAP, creation and memorialization of infrastructure priorities will be a primary focus. Existing preliminary research on utility infrastructure and planned transportation

enhancements has occurred. While multiple planned and platted connections into the SAS study area exist, no physical connections are present today. Future corridors have been identified in Alachua County's Comprehensive Plan and should be considered for the Metropolitan Transportation Planning Organization's "List of Priority Projects".

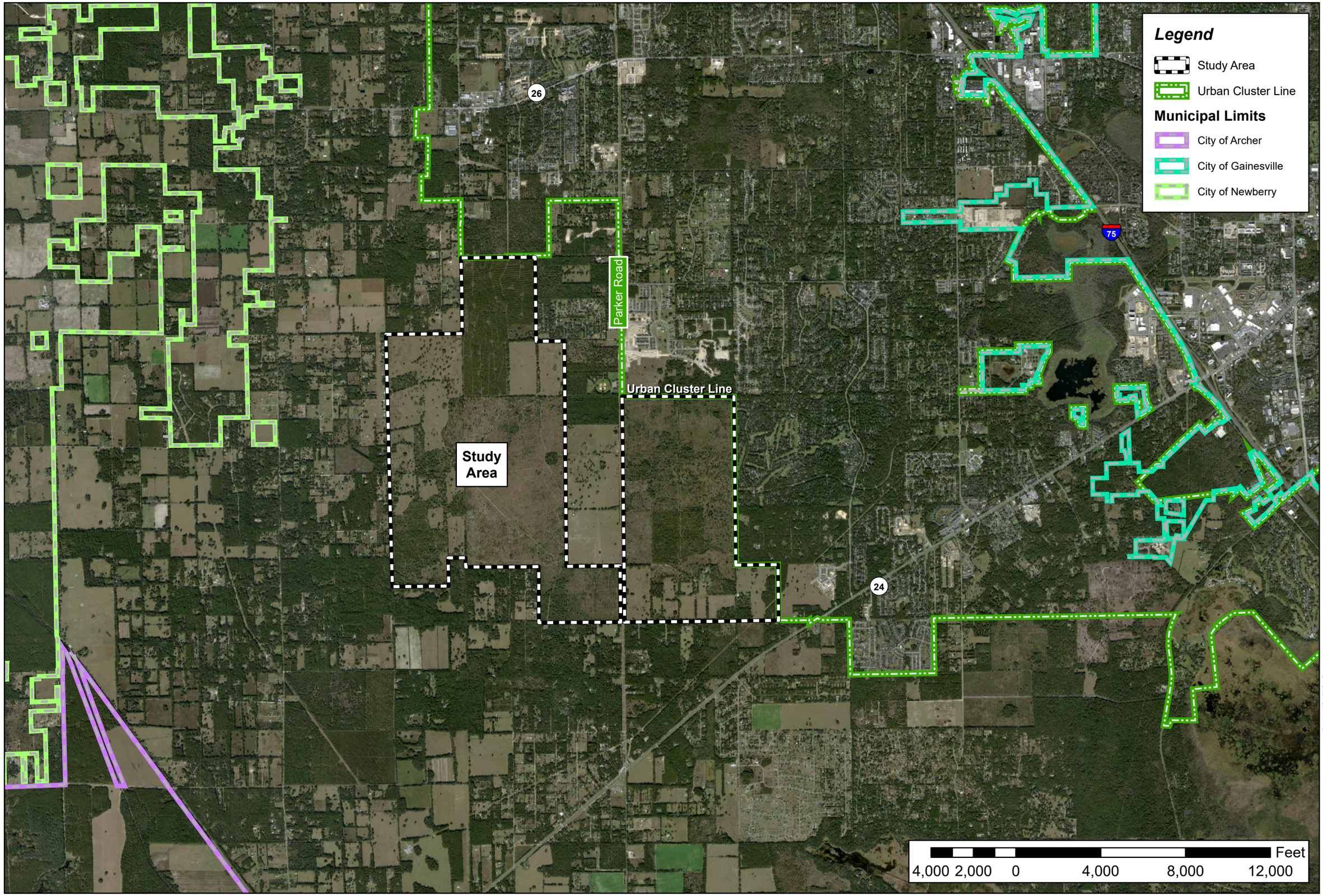
During the SAP, when site-specific land use scenarios are conceptualized, complementary analysis shall occur that identifies probable infrastructure needs to accommodate future development within the SAS study area, accounting for abutting and adjacent existing approved development projects and planned projects.

Recommendation No. 8. Commence preparation of conservation management plans for the Primary and Secondary Conservation Open Space, employing the expertise available through public-private partnerships where possible.

Rationale: The owner/applicant shall work collaboratively with their environmental consultants, Alachua County, and the University of Florida's Institute for Food and Agricultural Sciences (IFAS) on strategies and regulations related to the proposed conservation set-aside area's ecological rebound potential. The site-specific effort shall focus on preparation of conservation management plans for the Primary and Secondary Conservation Open Space, employing the expertise available through public-private partnerships where possible. These partnerships shall be memorialized during the SAP process and can form the bases for both short- and long-term conservation land management.

Submitted by,
/S/ GERRY DEDENBACH, AICP
Gerry Dedenbach, AICP,
Executive Vice President
CHW Professional Consultants, Inc.
11801 Research Drive
Alachua, FL 32615

ILLUSTRATION 1A:
CONTEXT MAP



FCL Timber, Land & Cattle, LLLP
Alachua County, FL

NORTH

Professional Consultants

Projection: Lambert_Conformal_Conic
Datum: D_North_American_1983
False Easting: 0.000000
False Northing: 0.000000
Central Meridian: -84.333333
Standard Parallel 1: 29.583333
Standard Parallel 2: 30.750000
Latitude Of Origin: 29.166667
GCS_North_American_1983

Prepared by: Employee ###
Date: 3/22/2022

Document Path: N:\2019\19-0010\Planning\GIS\MXD\FCL Timber_Planning Maps\FCL Timber_Planning Maps.aprx

ILLUSTRATION 1B:
AERIAL MAP

FCL Timber, Land & Cattle, LLLP
Alachua County, FL

Legend

- Study Area
- Alachua County Tax Parcels
- Urban Cluster Line

Tax Parcel # 04411-000-000
Tax Parcel # 04419-000-000
Tax Parcel # 04434-000-000
Tax Parcel # 04432-000-000
Tax Parcel # 04435-000-000
Parker Road
Urban Cluster Line
Tax Parcel # 04492-001-001
Tax Parcel # 04492-002-000
Study Area ±4068 Acres
Tax Parcel # 04488-000-000
Tax Parcel # 04491-000-000
Tax Parcel # 04492-001-000
Tax Parcel # 04492-000-000
Tax Parcel # 04481-000-000
Tax Parcel # 04479-000-000
Tax Parcel # 04498-000-000
Tax Parcel # 04495-001-000
Tax Parcel # 04501-000-000
Tax Parcel # 04493-001-000
Tax Parcel # 04493-001-001
Tax Parcel # 04493-000-000
Tax Parcel # 07074-001-000
Tax Parcel # 07074-003-000
Tax Parcel # 07074-000-000
Tax Parcel # 04495-000-000
Tax Parcel # 04496-001-000
Tax Parcel # 04493-002-000
Tax Parcel # 07074-002-000
24
Archer Road

NORTH

1,800 900 0 1,800 3,600 5,400 Feet

Professional Consultants

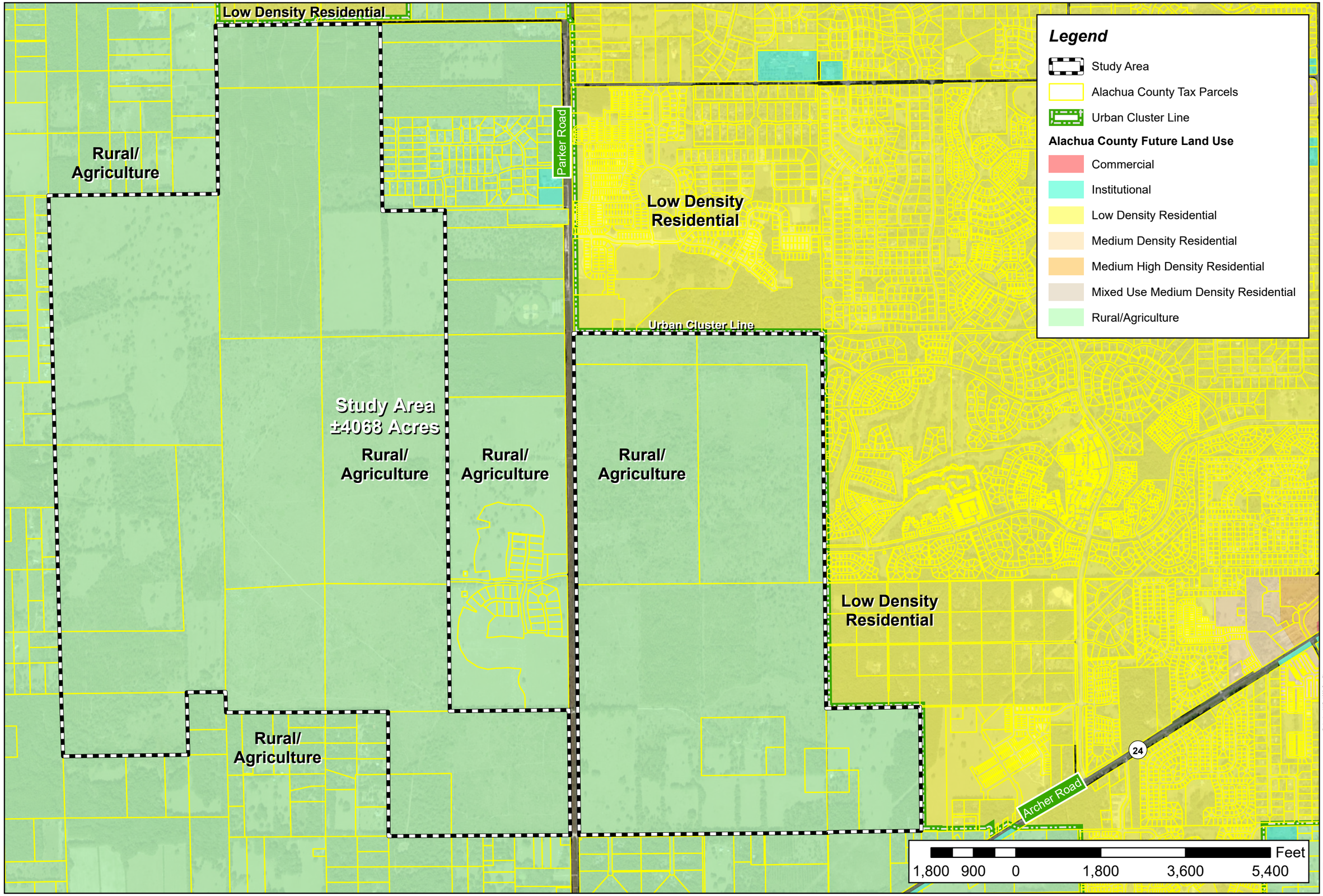
Projection: NAD_1983_StatePlane_Florida_North_FIPS_0903_Feet
Projection: Lambert_Conformal_Conic
False Easting: 1968500.000000
False Northing: 0.000000
Central Meridian: -84.500000
Latitude of Origin: 29.000000
Standard Parallel 1: 30.750000
Standard Parallel 2: 29.583333
GCS_North_American_1983

Prepared by: Employee ###
Date: 3/22/2022

Document Path: N:\2019\19-0010\Planning\GIS\MXD\FCL Timber_Planning Maps\FCL Timber_Planning Maps.aprx

ILLUSTRATION 2A:
FLU MAP

FCL Timber, Land & Cattle, LLLP
Alachua County, FL



NORTH

Projection: NAD_1983_StatePlane_Florida_North_FIPS_0903_Feet
Projection: Lambert_Conformal_Conic
False Easting: 1968500.000000
False Northing: 0.000000
Central Meridian: -84.500000
Latitude of Origin: 29.000000
Standard Parallel 1: 30.750000
Standard Parallel 2: 29.583333
Linear Unit: Foot_US
GCS_North_American_1983

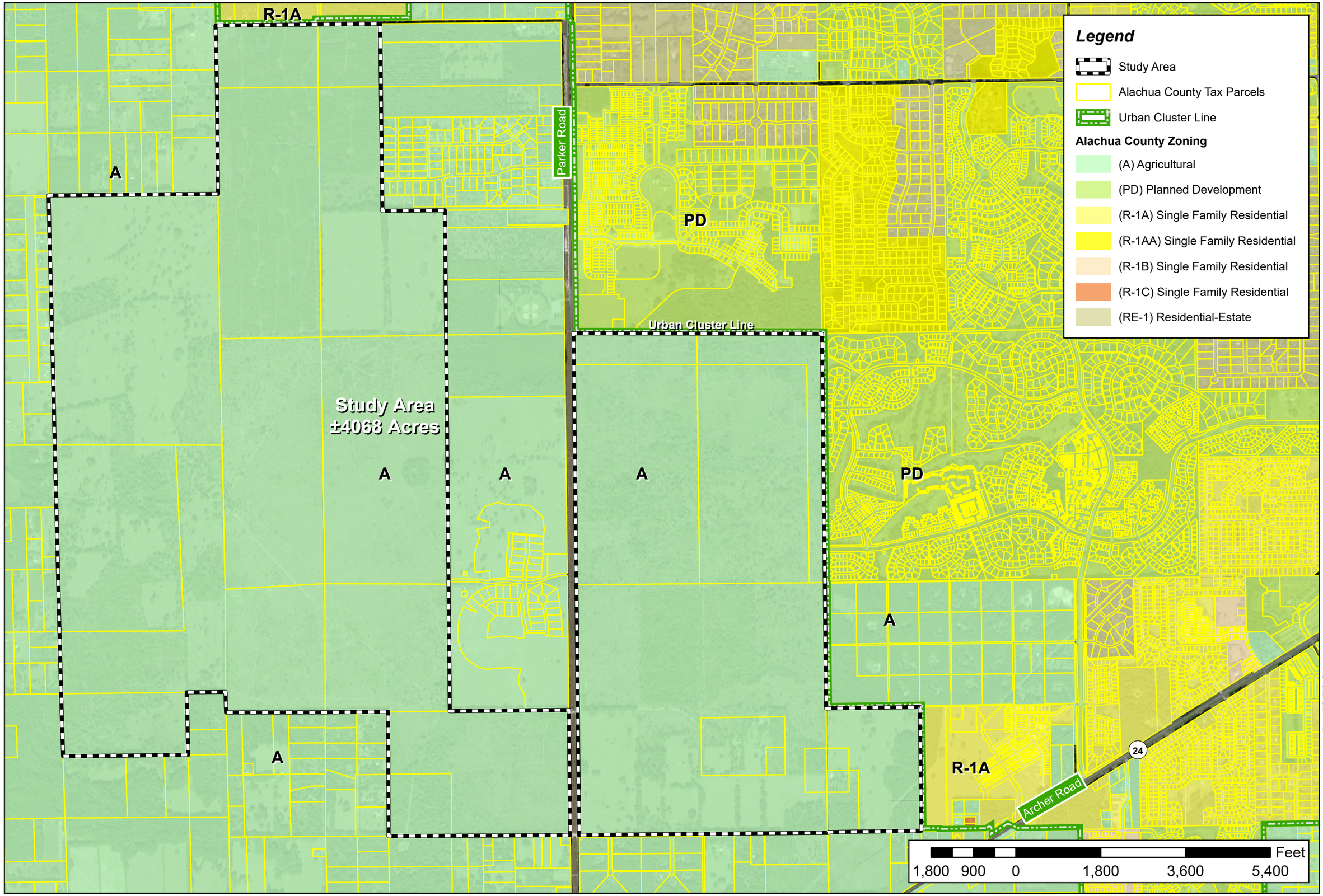
Prepared by: Employee ###
Date: 3/22/2022

CHW Professional Consultants

Document Path: N:\2019\19-0010\Planning\GIS\MXD\FCL Timber_Planning Maps\FCL Timber_Planning Maps.aprx

ILLUSTRATION 3A:
ZONING MAP

FCL Timber, Land & Cattle, LLLP
Alachua County, FL



NORTH

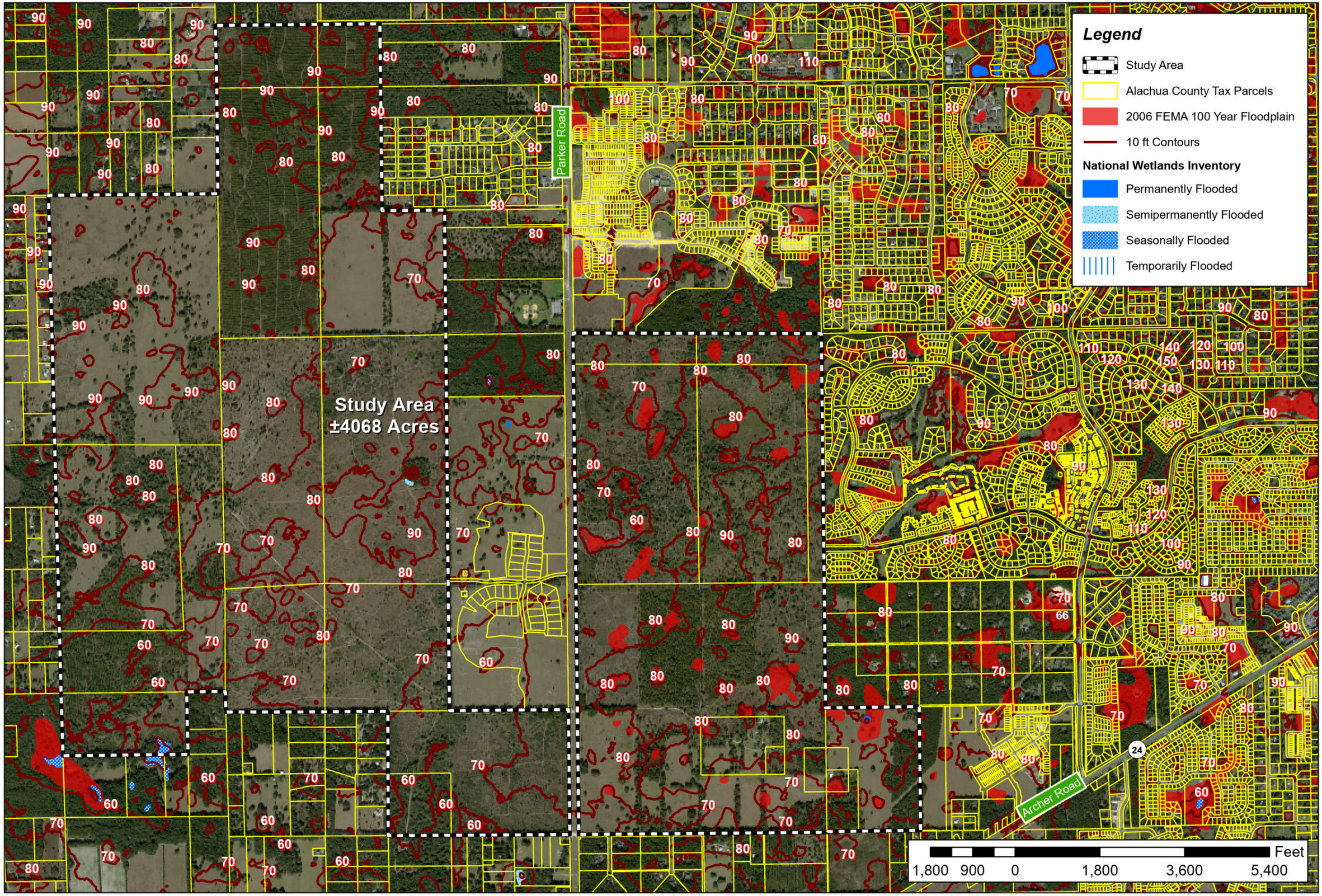
Projection: WKID: 102257
Projection: NAD_1983_StatePlane_Florida_North_FIPS_0903_Feet
Projection: Lambert_Conformal_Conic
False Easting: 1968500.000000000000
False Northing: 0.000000000000
Central Meridian: -84.500000000000
Latitude of Origin: 29.000000000000
Standard Parallel 1: 30.750000000000
Standard Parallel 2: 29.583333333333
Linear Unit: Foot_US (0.304801)
GCS: North_American_1983

Prepared by: Employee ###
Date: 3/22/2022

Professional Consultants

Document Path: N:\20191\19-0010\Planning\GIS\MXD\FCL Timber_Planning Maps\FCL Timber_Planning Maps.aprx

ILLUSTRATION 4:
ENV. MAP



FCL Timber, Land & Cattle, LLLP
Alachua County, FL

CHW
Professional Consultants

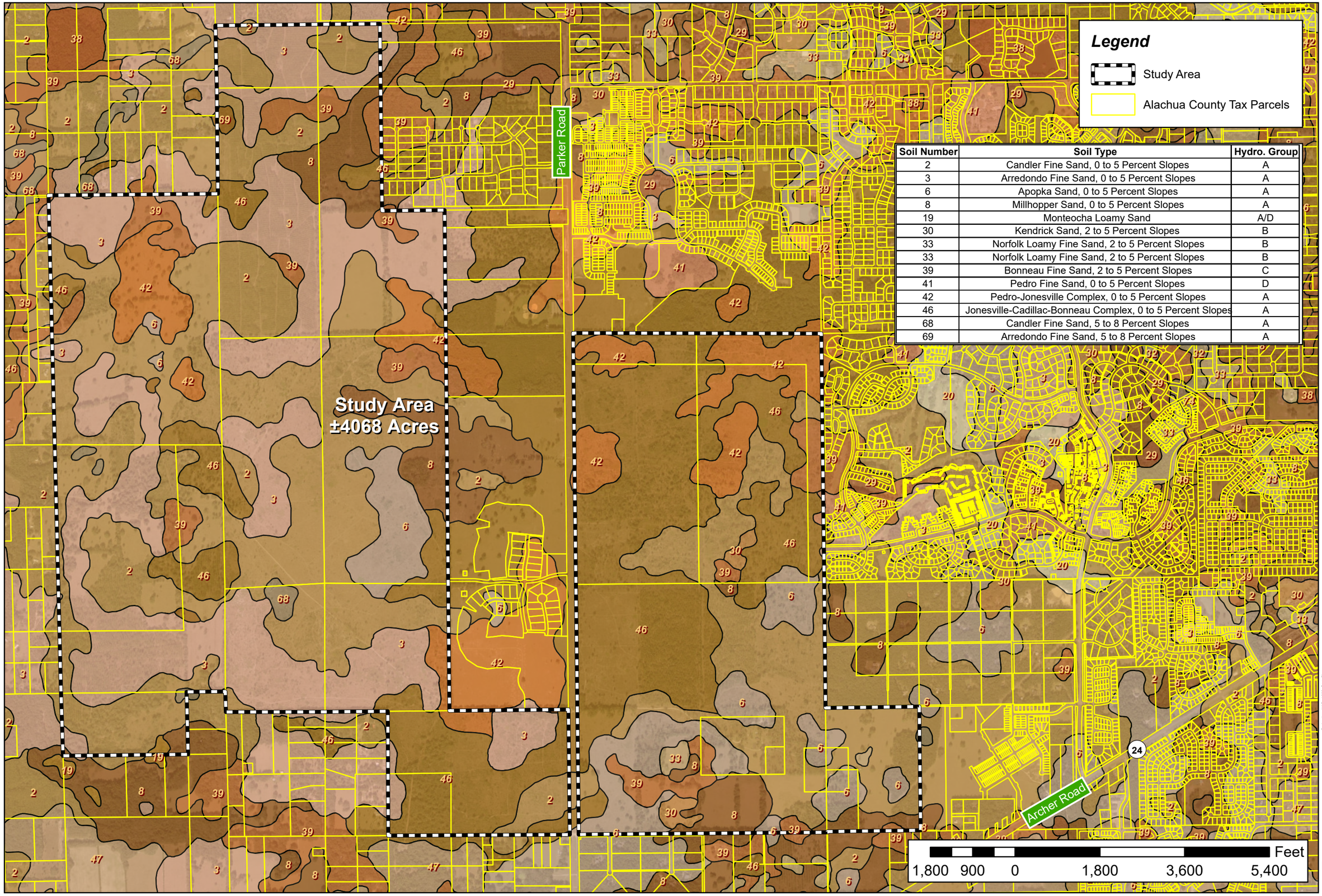
Projection: NAD_1983_2011_StatePlane_Florida_North_FIPS_0903_Feet
Projection: Lambert_Conformal_Conic
False Easting: 1968500.000000
False Northing: 0.000000
Central Meridian: -84.500000
Zenia Meridian: -84.5000000
Standard Parallel 1: 30.750000
Standard Parallel 2: 29.583333
Latitude Of Origin: 29.000000
GCS_North_American_1983

Prepared by: Employee ###
Date: 4/8/2022

Document Path: N:\2019\19-0010\Planning\GIS\MXD\FCL Timber_Planning Maps\FCL Timber_Planning Maps.aprx

ILLUSTRATION 5:
SOILS MAP

FCL Timber, Land & Cattle, LLLP
Alachua County, FL



Soil Number	Soil Type	Hydro. Group
2	Candler Fine Sand, 0 to 5 Percent Slopes	A
3	Arredondo Fine Sand, 0 to 5 Percent Slopes	A
6	Apopka Sand, 0 to 5 Percent Slopes	A
8	Millhopper Sand, 0 to 5 Percent Slopes	A
19	Monteocha Loamy Sand	A/D
30	Kendrick Sand, 2 to 5 Percent Slopes	B
33	Norfolk Loamy Fine Sand, 2 to 5 Percent Slopes	B
33	Norfolk Loamy Fine Sand, 2 to 5 Percent Slopes	B
39	Bonneau Fine Sand, 2 to 5 Percent Slopes	C
41	Pedro Fine Sand, 0 to 5 Percent Slopes	D
42	Pedro-Jonesville Complex, 0 to 5 Percent Slopes	A
46	Jonesville-Cadillac-Bonneau Complex, 0 to 5 Percent Slopes	A
68	Candler Fine Sand, 5 to 8 Percent Slopes	A
69	Arredondo Fine Sand, 5 to 8 Percent Slopes	A

Professional Consultants

Projection: Web_Mercator_Auxiliary_Sphere
Projection: North_FIPS_0903_Feet
Projection: Lambert_Conformal_Conic
False Easting: 656166.6666666666
False Northing: 0.0000000
Central Meridian: -84.3333333
Standard Parallel 1: 29.5833333
Standard Parallel 2: 30.7500000
Latitude Of Origin: 29.0000000
GCS_North_American_1983

Prepared by: Employee ###
Date: 3/22/2022

Document Path: N:\2019\19-00\10\Planning\GIS\MXD\FCL Timber_Planning Maps\FCL Timber_Planning Maps.aprx

ILLUSTRATION 6:
STRAT. ECO. MAP

Legend

- Study Area
- Alachua County Tax Parcels
- Urban Cluster Line
- Hickory Sink Strategic Ecosystem

Parker Road

Urban Cluster Line

Study Area
±4068 Acres

HICKORY SINK
STRATEGIC ECOSYSTEM

±1,316 Acres of
Strategic Ecosystem

±959 Acres of
Strategic Ecosystem

24

Archer Road

Feet
1,800 900 0 1,800 3,600 5,400

NORTH

FCL Timber, Land & Cattle, LLLP
Alachua County, FL

Professional Consultants

Projection: PCS: NAD_1983_StatePlane_Florida_North_FIPS_0903_Feet
Projection: Lambert_Conformal_Conic
False Easting: 1968500.000000
False Northing: 0.000000
Central Meridian: -84.500000
Latitude of Origin: 29.000000
Standard Parallel_1: 30.750000
Standard Parallel_2: 29.583333
Linear Unit: Foot_US
GCS: North_American_1983

Prepared by: Employee ###
Date: 3/22/2022

Document Path: N:\2019\19-0010\Planning\GIS\MXD\FCL Timber_Planning Maps\FCL Timber_Planning Maps.aprx

GRU
More than Energy

The data depicted on this map has been prepared exclusively for the internal use of The City of Gainesville, Gainesville Regional Utilities, which assumes no liability for errors, or omissions in the information on the map. No other person may rely upon its accuracy for any purpose, nor should any person use the information displayed in lieu of strict compliance with applicable provisions of Chapter 556, Florida Statutes. Further information may be obtained by contacting the Engineering Division by calling (352) 393-1576.

Contact Sunshine State One Call of Florida a minimum of two business days before excavation or demolition. Florida Law requires that you call 811 before you dig. It is free and It is the law.
The governing law is the Underground Facility Damage Prevention and Safety Act, chapter 556, Florida Statutes (F.S.).
Other laws may also affect excavations:
-Florida Trench Safety Act, Part VI, chapter 553, F.S.
-Florida Gas Safety Law, Part I, Chapter 368, F.S.
-Pipeline Safety Improvement Act of 2002
-Federal Pipeline Safety Act
-National Electric Safety Code ANSI C-2
-OSHA Standard 1926.651

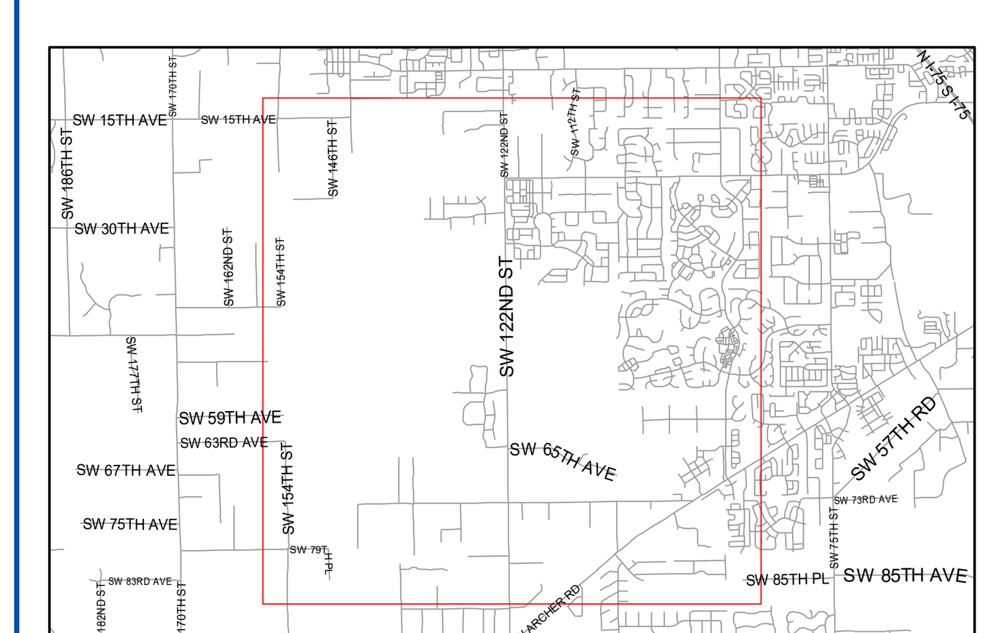
811 KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG
It's fast. It's free. It's the law.
www.callsunshine.com

NOTE - Additional facilities may have been constructed, retired, or otherwise not shown here.

NOTE - Conversion to PDF may have altered map scale.

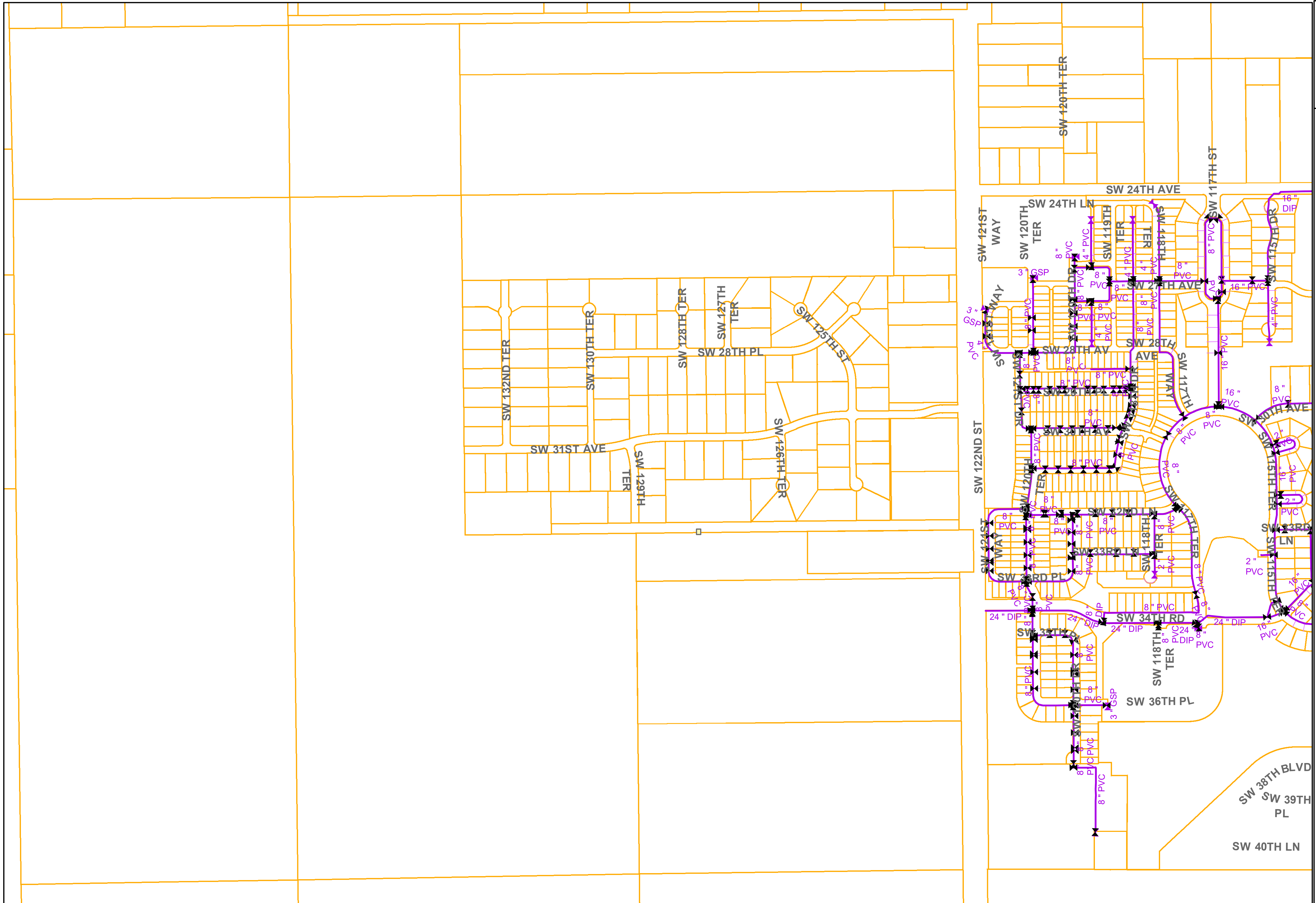
Legend

Parcel



GRU Facilities

Plotted: 06 Apr 2022



The data depicted on this map has been prepared exclusively for the internal use of The City of Gainesville, Gainesville Regional Utilities, which assumes no liability for errors, or omissions in the information on the map. No other person may rely upon its accuracy for any purpose, nor should any person use the information displayed in lieu of strict compliance with applicable provisions of Chapter 556, Florida Statutes. Further information may be obtained by contacting the Water/Wastewater

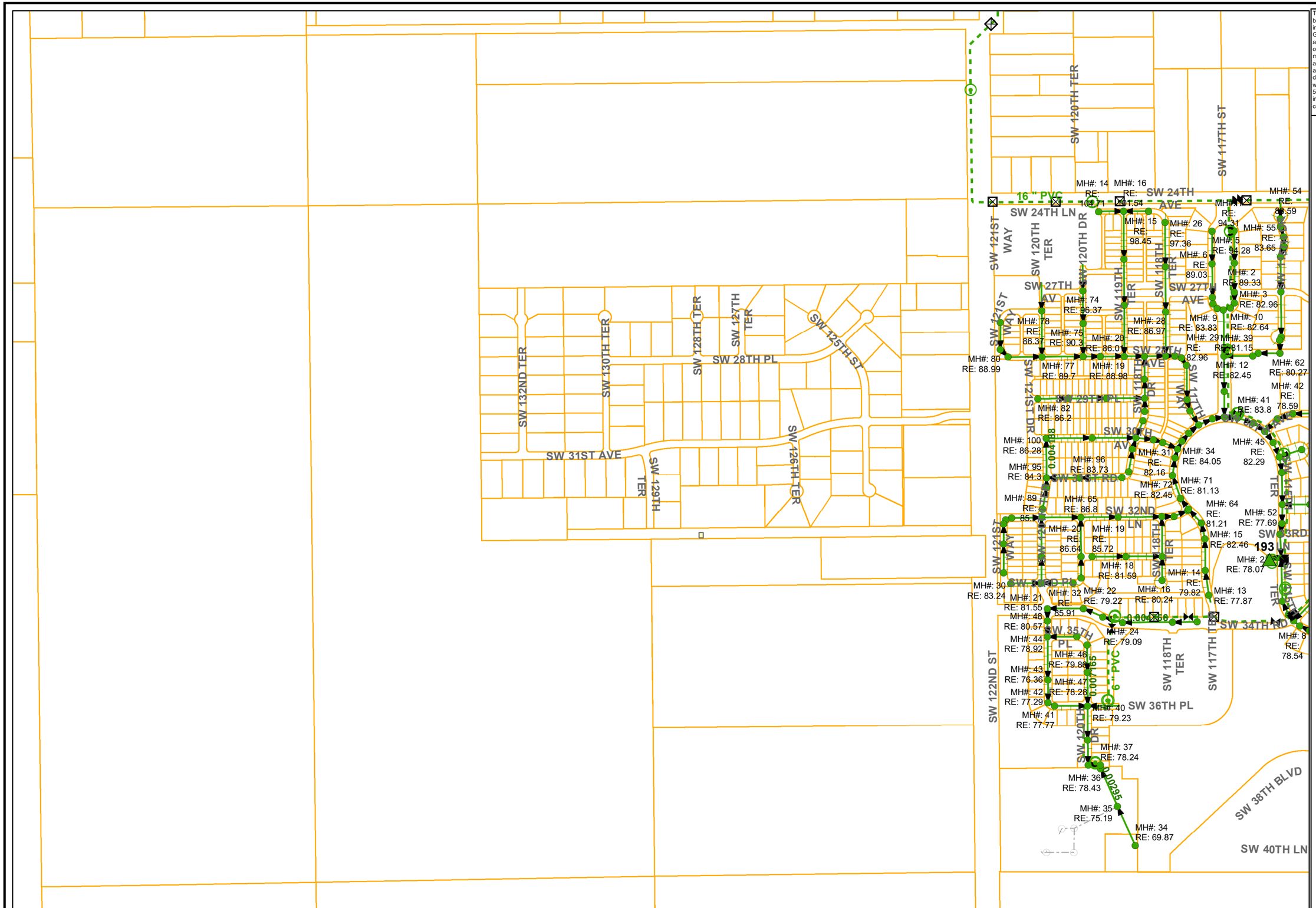
Legend

- Valve - Ball,Butterfly,Gate
- Valve - AirRelease,Backflow,Blowoff
- Reclaim Main
- Service

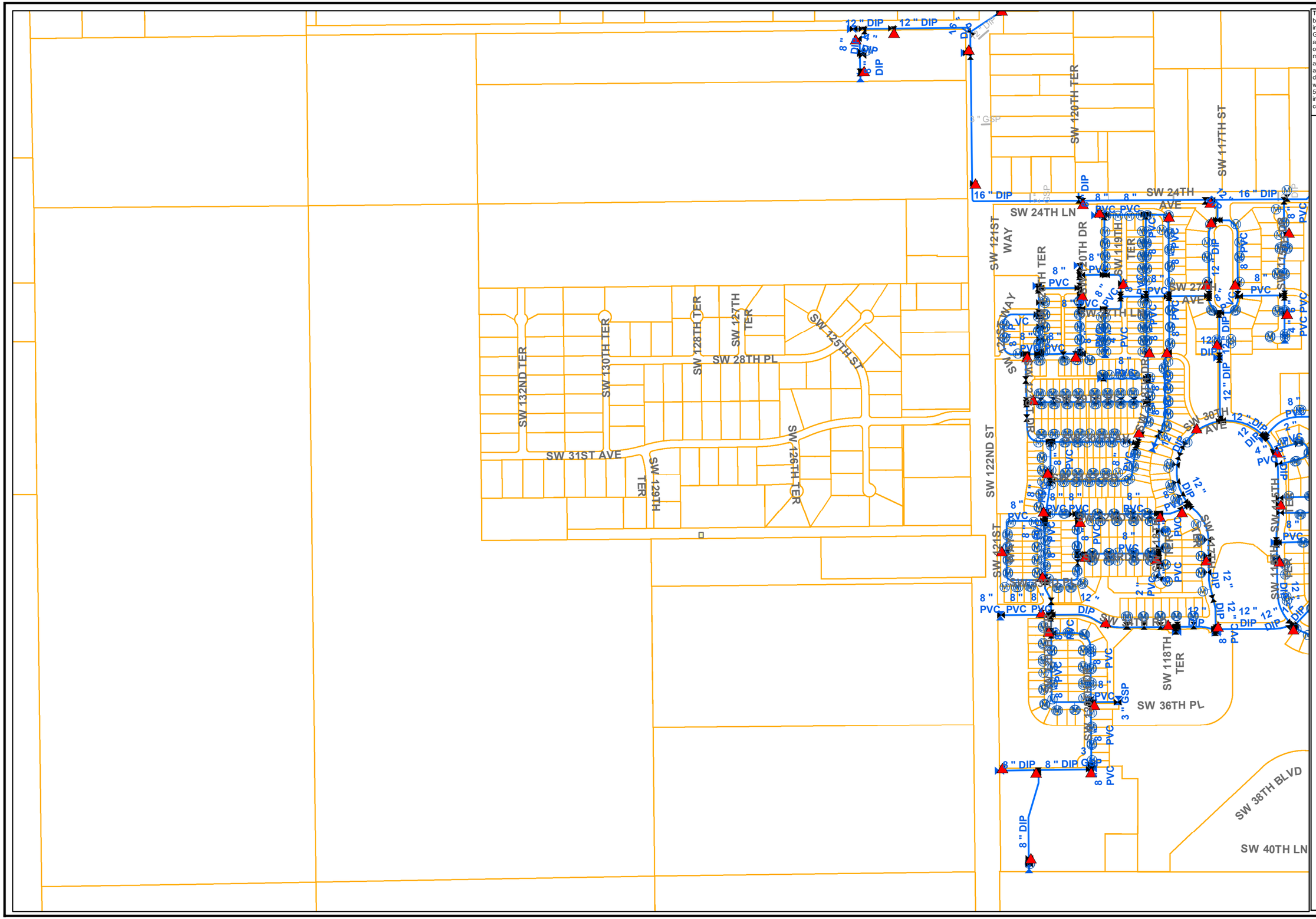
N

1 inch = 700 feet

GRU More than Energy



The data depicted on this map has been prepared exclusively for the internal use of The City of Gainesville, Gainesville Regional Utilities, which assumes no liability for errors, or omissions in the information on the map. No other person may rely upon its accuracy for any purpose, nor should any person use the information displayed in lieu of strict compliance with applicable provisions of Chapter 556, Florida Statutes. Further information may be obtained by contacting the Water/Wastewater



The data depicted on this map has been prepared exclusively for the internal use of The City of Gainesville, Gainesville Regional Utilities, which assumes no liability for errors, or omissions in the information on the map. No other person may rely upon its accuracy for any purpose, nor should any person use the information displayed in lieu of strict compliance with applicable provisions of Chapter 556, Florida Statutes. Further information may be obtained by contacting the Water/Wastewater

Legend

Hydrant

Owner

- GRU
- Private

Water Meter

- Small Meter
- Large Meter

Valve - Ball, Butterfly,Gate

Owner - STATUS

- GRU - Active/Unknown
- GRU - Abandoned/POS
- Private System

Valve - AirRelease,Backflow,Blowoff

OWNER - SUBTYPE

- GRU - AirRelease
- GRU - Backflow, Blowoff
- Private

Water Main

Owner - STATUS

- GRU - Active/Unknown
- GRU - Abandoned/POS
- Private

Service - Water, Fire

Owner - Subtype - Status

- GRU - Domestic - Active/Unknown
- GRU - Domestic - Abandoned/POS
- GRU - Fire - Active/Unknown
- Private System

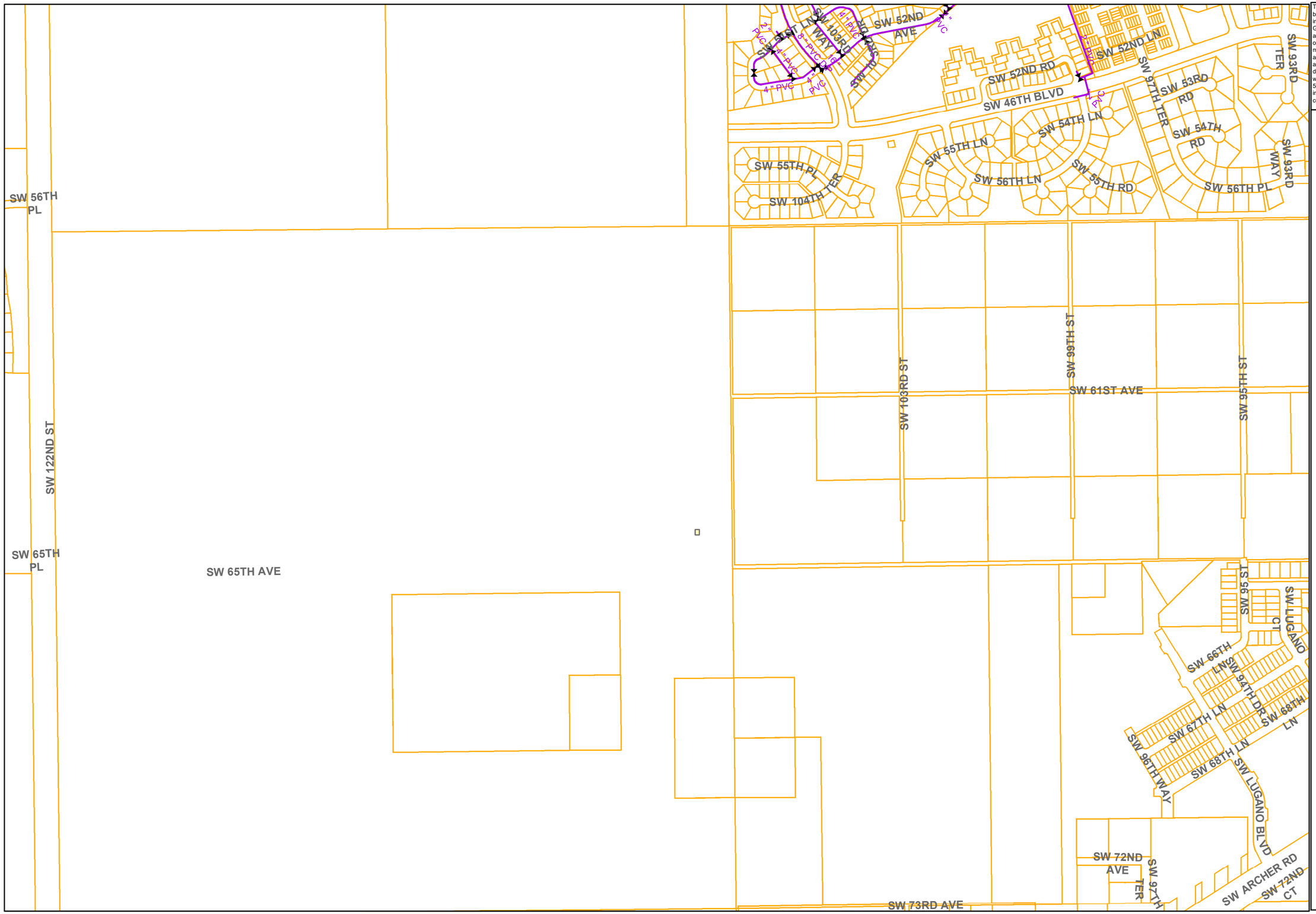
Owner - Description

- GRU - Hydrant - Active

N

1 inch = 700 feet

GRU More than Energy



The data depicted on this map has been prepared exclusively for the internal use of The City of Gainesville, Gainesville Regional Utilities, which assumes no liability for errors, or omissions in the information on the map. No other person may rely upon its accuracy for any purpose, nor should any person use the information displayed in lieu of strict compliance with applicable provisions of Chapter 556, Florida Statutes. Further information may be obtained by contacting the Water/Wastewater

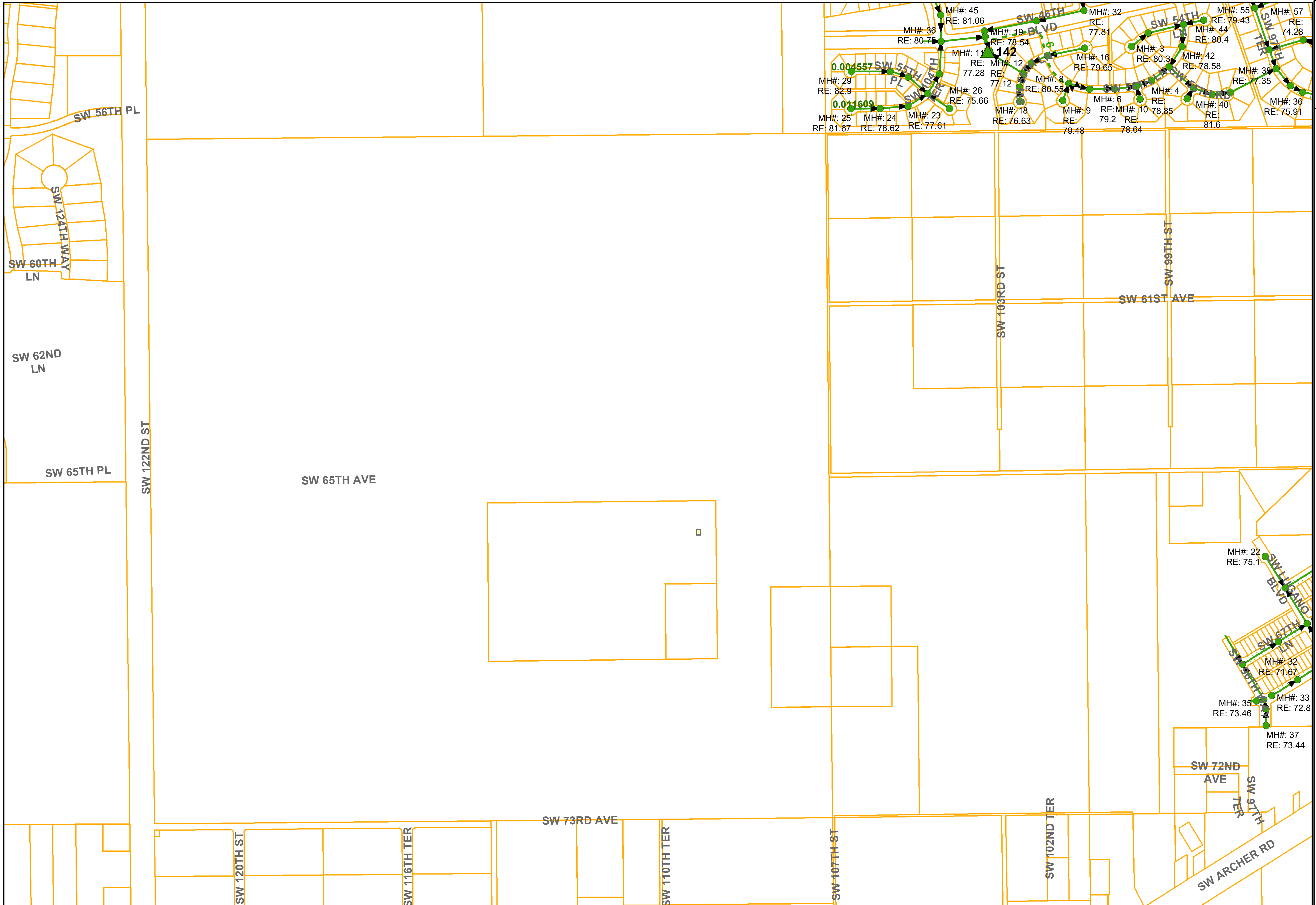
Legend

- Valve - Ball,Butterfly,Gate
- Valve - AirRelease,Backflow,Blowoff
- Reclaim Main
- Service

N

1 inch = 700 feet

GRU More than Energy



The data depicted on this map has been prepared exclusively for the internal use of The City of Gainesville, Gainesville Regional Utilities, which assumes no liability for errors, or omissions in the information on the map. No other person may rely upon its accuracy for any purpose, nor should any person use the information displayed in lieu of strict compliance with applicable provisions of Chapter 556, Florida Statutes. Further information may be obtained by contacting the Water/Wastewater

Legend

- LiftStation
- Air Release Valve
- Valve
- Wire Box Only

Manhole

OWNER - STATUS
- GRU - Active/Unknown
- GRU - Abandoned/POS
- Private System

Gravity Main

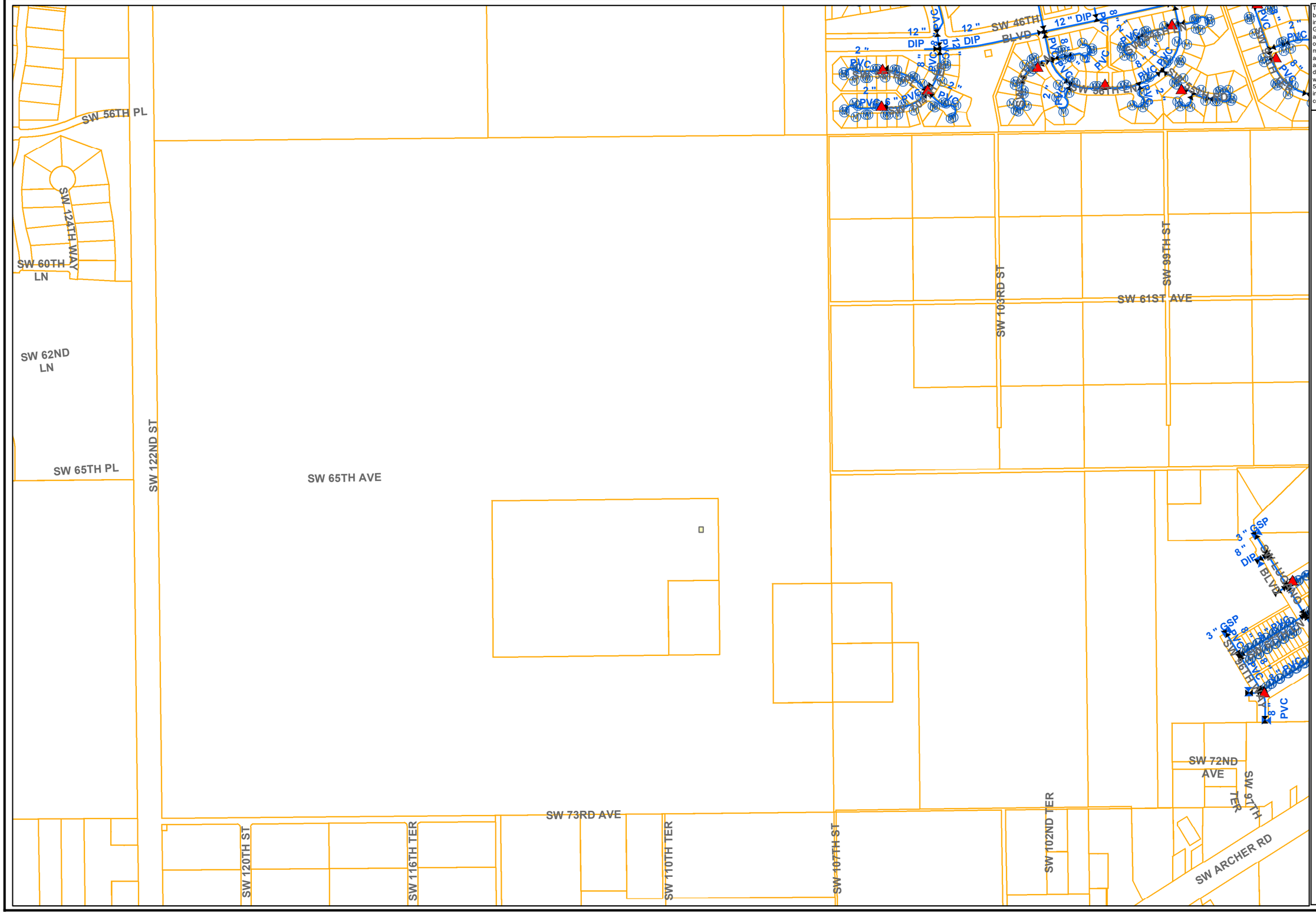
OWNER - STATUS
- GRU - Active/Unknown
- GRU - Abandoned/POS
- Private System; Private

Force Main

Owner - Status
- GRU - Abandoned/POS
- GRU - Active/Unknown
- Private System

Service Lateral

Owner - Status
- GRU - Active/Unknown
- GRU - Abandoned/POS
- Private



The data depicted on this map has been prepared exclusively for the internal use of The City of Gainesville, Gainesville Regional Utilities, which assumes no liability for errors, or omissions in the information on the map. No other person may rely upon its accuracy for any purpose, nor should any person use the information displayed in lieu of strict compliance with applicable provisions of Chapter 556, Florida Statutes. Further information may be obtained by contacting the Water/Wastewater

Legend

Hydrant

Owner

- GRU
- Private

Water Meter

- Small Meter
- Large Meter

Valve - Ball, Butterfly,Gate

Owner - STATUS

- GRU - Active/Unknown
- GRU - Abandoned/POS
- Private System

Valve - AirRelease,Backflow,Blowoff

OWNER - SUBTYPE

- GRU - AirRelease
- GRU - Backflow, Blowoff
- Private

Water Main

Owner - STATUS

- GRU - Active/Unknown
- GRU - Abandoned/POS
- Private

Service - Water, Fire

Owner - Subtype - Status

- GRU - Domestic - Active/Unknown
- GRU - Domestic - Abandoned/POS
- GRU - Fire - Active/Unknown
- Private System

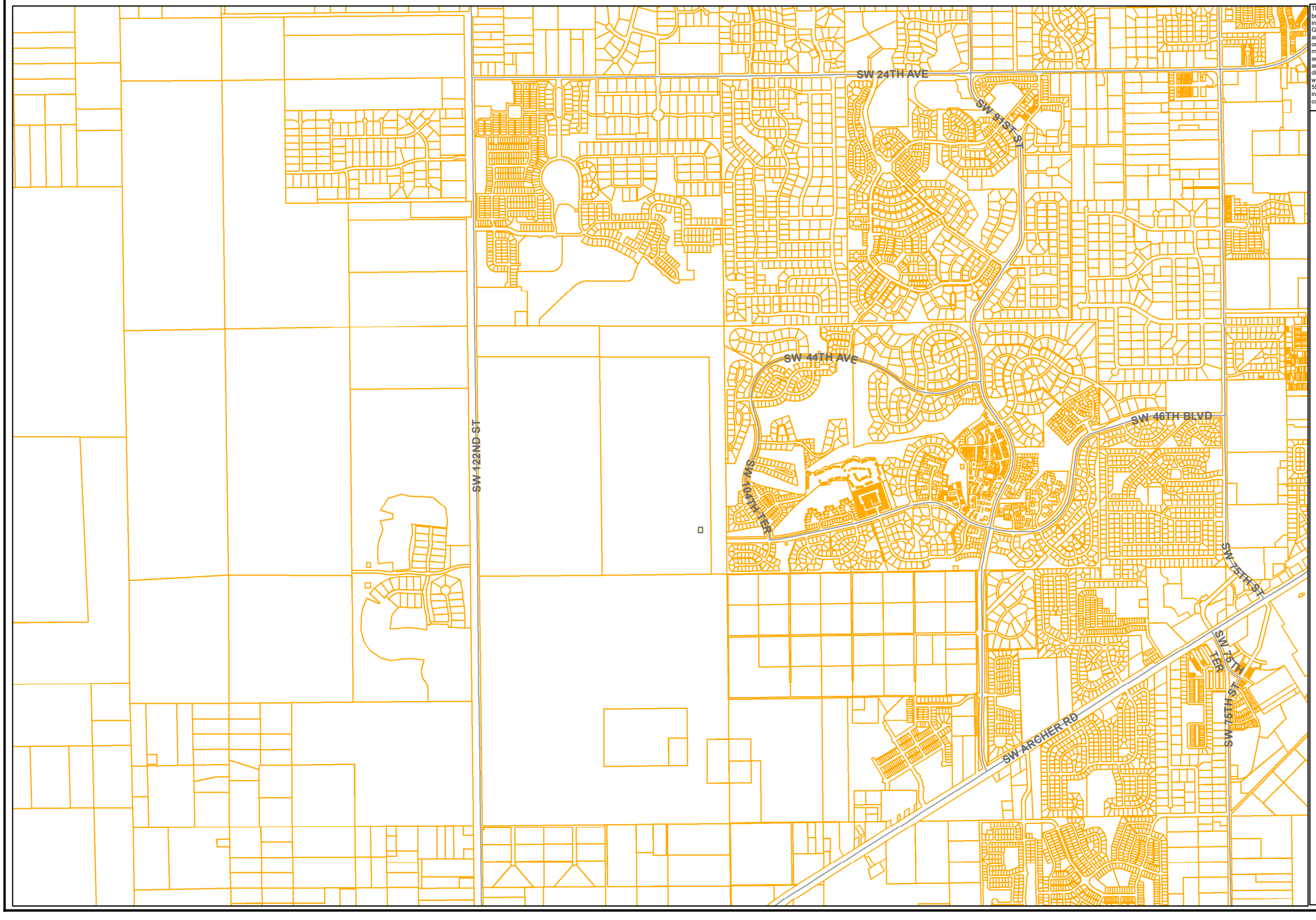
Owner - Description

- GRU - Hydrant - Active

N

1 inch = 700 feet

GRU More than Energy



Legend

N

1 inch = 1,900 feet

GRU
More than Energy

EXHIBIT E

HICKORY SINK

PRIORITY: 36 (below average) (from unweighted sub-parameter score)

KEY FEATURES: This is an area of well drained, moderately fertile soil that once supported an upland pine forest. Most of the area is now slash pine (*Pinus elliottii*) plantation and some is pasture. The ground cover vegetation of the high pine community is still somewhat intact on most of the area. There are several sink holes and caves, one of which supported a major bat colony (Humphrey, 1992, 1996), and two of which support specialized aquatic cave invertebrates (Franz et al., 1994).

USGS QUAD: Gainesville West, Arredondo
SIZE: 3,006 acres

BIO-COMMUNITY TYPES	ACRES	CONDITION OF BIO-COMMUNITY
Upland Mixed Forest	81	poor (pioneer hammock)
Upland Pine Forest	2560	poor
Sinkhole	56	good to fair
Sinkhole Pond	1	good
Cave (dry)		good
Old Field Pine Plantation *	205	
Improved Pasture *	103	

* Categories not used by FNAI

CONNECTIONS: none

SITE BOUNDARY CONDITIONS: The boundaries are regular in shape and generally conform to property boundaries, roads, section lines, or other surveyed lines. The area is bisected by a paved road that is destined to become a busy highway.

GEOLOGIC/HYDROLOGIC FEATURES: Soils this area are shallow sands over porous limerock. All rainfall percolates directly to the Floridan Aquifer. There are several sink holes, a small sinkhole pond, and several dry caves, some of which connect to aquatic caves within the Floridan Aquifer.

WILDLIFE HABITAT: There is still a reasonably good ground cover of blackberry plants (*Rubus* spp.), chinquapin (*Castanea pumila*), poison oak (*Toxicodendron toxicarium*), and other native plants that supports animals such as cottontail rabbits (*Sylvilagus floridanus*), gopher tortoises (*Gopherus polyphemus*), pocket gophers (*Geomys pinetis*), and cotton rats (*Sigmodon hispidus*). These in turn support gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), diamondback rattlesnakes (*Crotalus adamanteus*), and other predators. There is no longer much habitat for the pine canopy species. There are few cavities and little mast production. One of the caves on the property had one of the biggest bat colonies in Alachua County. An estimated 30,000 southeastern brown bats, *Myotis austroriparius*, occupied the cave in the early 1950's (Rice, 1957). It is currently not an active colony, probably due to declining water levels in the cave, making the environment in the cave less humid (Hovis, 1996).

RARE, THREATENED, AND ENDANGERED SPECIES: Gopher tortoises, pine snakes (*Pituophis melanoleucus mugitus*), eastern indigo snakes (*Drymarchon corais couperi*), and southeastern American kestrels (*Falco sparverius paulus*) still inhabit the area, but are all declining, and they will decline further as the young pines grow and shade out more of the ground cover that supports most of what is left of the wildlife here. One interesting plant that is here is poppy mallow (*Callirhoe papaver*), which is listed by the state as endangered.

EXOTICS: There is mimosa (*Albizia julibrissin*), chinaberry (*Melia azedarach*), centipede grass (*Eremochloa ophiuroides*), and bahia grass (*Paspalum notatum*) scattered throughout much of the property. Only the mimosa is a threat to the native habitats.

RESTORATION AND MANAGEMENT POTENTIAL: This area is interesting mainly for its potential for restoration to the former upland pine forest habitat. This still could be done, although the wire grass (*Aristida stricta*) that was the dominant ground cover is gone, as are the longleaf pine (*Pinus palustris*), Southern red oak (*Quercus falcata*), mockernut hickory (*Carya tomentosa*), and many other species. Another difficulty would be the need for frequent prescribed burning. The metropolitan area of Gainesville has now occurs at the eastern edge of this site, and Parker Road runs through the middle of it. Also, it is not big enough to ever support a viable population of red-cockaded woodpeckers *(Picoides borealis)*, even if longleaf pines 100 years old were eventually established there. It could support many of the other species characteristic of this habitat, but the trend is obviously in the other direction.

RECOMMENDED CONSERVATION STRATEGIES: The former bat cave, which supports aquatic cave invertebrates, and the other caves on the property that support cave invertebrates should be protected. Perhaps they could be purchased, along with a few acres of land, and the ownership given, with deed restrictions, to some organization willing to help protect them. The current owners are doing a good job of protecting the caves, so that this is not an urgent need (Doonan, 1996). The property as a whole is not recommended for public conservation action. The reasons are its lack of connection to any other conservation area, the poor location for the frequent prescribed burning that its management would require, and its size, which, combined with its isolation, is not large enough to support the full spectrum of upland pine habitat species.

COMPREHENSIVE PLAN CONSIDERATIONS: There are no wetlands, floodplains or streams and only one small open water pond here. The sinkhole and caves here are well known and documented. At least two of them open into aquatic caves within the Floridan Aquifer (Doonan, 1996).

SITE VISITS: On the edge only: David Clayton, 1996; Bob Simons, 1996, 1987.

SITE EVALUATION SCORING

Vegetation:	
Species Diversity	1
Exotics	3
Endangered Species Habitat	3
Wildlife Habitat	3
Hydrology:	
Floridan Aquifer	4
Surficial Aquifer Resource Protection	1
Vulnerability of Aquifer	4
Landscape Ecology:	
Community Diversity	1
Ecological Quality	1
Community Rarity	4
Functional Connectedness	1
Management Potential	3

Note: See Table 2-1 for parameter descriptions.