

# SECRET PROMISE - DRI

## Wildlife Management Plan



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**June 2007**

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## 1.0 EXECUTIVE SUMMARY

The Secret Promise project, located in Lake County, Florida, is a master planned community with a wide variety of proposed uses including, but not limited to, residential, commercial, light industrial, and essential services (e.g., a potential school site, fire station, and utility substation). EarthBalance<sup>®</sup>, on behalf of Benderson Development Company, LLC, prepared the following Secret Promise Wildlife and Habitat Management Plan (the Plan) for the Secret Promise property. The goal of the Plan is to maintain or improve designated areas, and to provide habitat for the protected and non-protected wildlife species that utilize the site.

EarthBalance<sup>®</sup>, in conjunction with the developers of this property, have designed this management plan specifically for the Secret Promise property and, therefore, it should not be viewed as a standard management plan for other properties. The developer, heirs, or assigns (i.e., CDD(s), Home Owner Association(s), successor developer(s), etc.) retain the right to request authorization from the appropriate agencies to modify these wildlife and habitat management practices as appropriate to achieve the desired goals of this plan and to accommodate proposed land use changes or construction methods that may be needed.

## 2.0 INTRODUCTION

### 2.1 SITE LOCATION AND APPLICANT INFORMATION

The Secret Promise project is a proposed mixed-use master planned development within Sections 17, 18, 19, 20, 21, 30, 31, and 32, Township 20 South, Range 24 East, Lake County, Florida. The property is bounded by County Road 470 to the north, the Florida Turnpike and County Road 48 to the east, the Sumter County line to the west, and private, rural property to the south. The bulk of the site lies on the north side of County Road 48, approximately 6 miles south of downtown Leesburg. A site location map is enclosed as **Exhibit 1**.

### 2.2 LAND USE HISTORY

#### 2.2.1 Historic

Portions of Sumter and Orange Counties were parceled out in 1887 to form Lake County. From its inception, Lake County was rich in agricultural resources such as citrus groves and the largest peach orchard in Florida. After several freezes in the 1980s, many farming operations moved farther south. In addition, the county's more than 500 lakes and rivers provide considerable recreational opportunities for fishing, hunting, and boating enthusiasts. Today, Lake County is transitioning to accommodate a growing population.

The conditions on this site indicate that it is no exception to the historic ranches typically found in Lake County. It was likely cleared for cattle

grazing and farming in the late 1800s and has been serving agricultural and recreational purposes ever since.

**2.2.2 Current**

At present, the subject site serves as an active cattle ranch with some acreage dedicated to row crop and tree farming. The improved pastures and wetland fringes are the habitats most frequently utilized by cattle for grazing. In addition, active watermelon fields are located on the western portion of the property and an oak nursery is located along the eastern edge of the site. The approximate acreages of the existing land use, described by the Florida Land Use, Cover, and Forms Classification System (FLUCCS), are provided in **Table 1** below. A FLUCCS map for the Secret Promise site is included as **Exhibit 2**.

<b>TABLE 1 – EXISTING LAND USE</b>			
<b>FLUCCS</b>	<b>DESCRIPTION</b>	<b>APPROXIMATE ACREAGE</b>	<b>PERCENT</b>
211	Improved Pasture	1,887.11	50.4%
241	Tree Nursery	15.03	0.4%
2154	Watermelon Field Crop	71.51	2.4%
261	Fallow Crop Land	90.87	2.4%
320	Shrub and Brushland	20.09	0.5%
419	Other Pines	16.96	0.4%
427	Live Oak	17.72	0.5%
4271	Oak Hammock	59.35	1.5%
4381	Mixed Forested & Shrub Upland Islands	14.80	0.4%
510	Other Surface Waters	6.71	0.2%
620	Wetland Coniferous Forest	10.46	0.3%
630	Wetland Forested-Mixed	2.76	0.1%
640	Vegetated, Non-forested Wetland	3.64	0.1%
641	Freshwater Marsh	1,521.38	40.6%
650	Non-vegetated Wetland	9.44	0.3%
<b>TOTAL</b>		<b>3,747.83</b>	<b>100.00%</b>

**2.3 PERMITTING OVERVIEW**

The St. Johns River Water Management District (SJRWMD) is currently considering an application for a Conceptual Environmental Resources Permit (ERP) for the Secret Promise site. The U.S. Army Corps of Engineers (COE) has issued a Nationwide 39 permit for the project, and the East Central Florida Regional Planning Council (ECFRPC) and the City of Leesburg are reviewing a Development of Regional Impact (DRI) Application for Development Approval (ADA) for Secret Promise. The proposed development concept plan (**Exhibit 3**) consists of a mixed-use development including commercial, residential, light industrial and office development. The development plan takes into account the

avoidance and minimization of wetland impacts and designates large upland and wetland habitat tracts for conservation and/or passive recreation. This management plan is intended to promote the long-term viability of areas proposed for preservation and to retain sufficient habitat to support listed wildlife currently utilizing the site.

### **3.0 HABITAT DESCRIPTIONS**

#### **3.1 WETLAND HABITATS**

Historic agricultural use and ranching land management practices have altered the wetland and surrounding upland habitats on the Secret Promise site. The majority of the onsite wetlands are categorized as freshwater marshes. These wetlands are similar in type and overall species composition. The primary variables are size and location in proximity to surrounding land uses. A general description of all habitat types follows below.

##### Wetland Coniferous Forest (FLUCCS 620) – 10.46 acres

This community is dominated by a canopy of planted slash pine (*Pinus elliottii*). The understory is covered in a dense layer of pine needles intermixed with a sparse mix of maidencane (*Panicum hemitomon*) and pickerelweed (*Pontederia cordata*). According to the U.S. Department of Agriculture (USDA) Soil Conservation Service, Soils Survey of Lake County, Florida (1971), Myakka sand and Pompano sand, acid are the soil types present in these areas.

##### Wetland Forested-Mixed (FLUCCS 630) – 2.76 acres

Areas designated as wetland forested-mixed exist along the disturbed fringes of herbaceous wetlands and typically contain a mixed canopy of slash pine and laurel oak (*Quercus laurifolia*), with an understory dominated by gallberry (*Ilex glabra*) and broomsedge (*Andropogon virginicus*). According to the USDA Soil Conservation Service, Soils Survey of Lake County, Florida (1971), Myakka sand and Albany sand are the soil types present in these areas.

##### Vegetated, Non-forested Wetland (FLUCCS 640) – 3.64 acres

The vegetated, non-forested wetland areas have sustained significant impacts from frequent cattle use. These wetlands are primarily bare ground with some Asian coinwort (*Centella asiatica*), dollarweed (*Hydrocyle umbellata*), and smartweed (*Polygonum hydropiperoides*). According to the USDA Soil Conservation Service, Soils Survey of Lake County, Florida (1971), Myakka sand and Albany sand are the soil types present in these areas.

##### Freshwater Marsh (FLUCCS 641) – 1,521.38 acres

The majority of the freshwater marshes on this site are in good condition. However, the smaller marshes (i.e., less than 10 acres), the marshes surrounded by row crops, and the marshes abutting roadways have sustained long-term impacts. These impacts consist of

- Alteration of drainage patterns associated with roadside ditches

- Removal of native habitat in upland buffers
- Intrusion of row crops up to the wetland edge
- Surface water withdrawal for crop irrigation
- Lack of wetland species diversity from cattle grazing
- Increased nutrients from cattle having access to wetlands

Consequently, some wetlands are considered degraded from these activities. The onsite freshwater marshes contain a variety of herbaceous and shrubby species commonly found throughout Central Florida including, but not limited to: pickerelweed, soft rush (*Juncus effusus*), maidencane, yellow-eyed grass (*Xyris* spp.) and pipewort (*Eriocaulon* spp.). According to the USDA Soil Conservation Service, Soils Survey of Lake County, Florida (1971), these marsh systems contain Immokalee sand, Placid sand, and Myakka sand.

Non-vegetated Wetland (FLUCCS 650) – 9.44 acres

Row crops currently under cultivation but occurring in historically hydric soils fall into the non-vegetated wetland FLUCCS category. These wetlands are primarily furrowed, bare ground. According to the USDA Soil Conservation Service, Soils Survey of Lake County, Florida (1971), Myakka sand is the historic soil type present in these areas.

Other Surface Waters (FLUCCS 510) – 6.71 acres

This land cover type is composed of small, man-made livestock watering ponds and surface water irrigation pits. Bahia grass (*Paspalum notatum*) extends to the edge of the constructed ponds with little or no wetland species fringing the bank. The frequent presence of cattle prevents the establishment of emergent species within the ponds.

### 3.2 UPLAND HABITATS

The upland communities within the Secret Promise project area are typical of an agricultural site. The majority of the uplands were converted to improved pasture decades ago to support cattle grazing and ranching activities. In addition, the uplands were converted for other agricultural functions, including an oak tree nursery, watermelon fields, and fallow crop land. Small pockets of oak hammock, mixed forested islands, other pines, and shrub and brushland are the only remaining native upland communities, and collectively they comprise 2,196 acres of the Secret Promise property.

Specific upland habitats are described below.

Improved Pasture (FLUCCS 211) – 1,887.11 acres

Improved pasture is the most prevalent vegetation type within the Secret Promise project area, covering more than 50% of the site. These areas are dominated by bahia grass intermixed with other grasses, forbs, and sedges including dog fennel (*Eupatorium capillifolium*), broomsedge grass (*Andropogon* spp.), southern

crabgrass (*Digitaria sanguinalis*), carpetgrass (*Axonopus* spp.), soda apple (*Solanum viarum*), and natalgrass (*Rhynchelytrum repens*). According to the USDA Soil Conservation Service, Soils Survey of Lake County, Florida (1971), the improved pasture areas contain a variety of soil types including: Cassia sand, Astatula sand, dark surface, Apopka sand, Albany sand, Astatula sand, dark surface, Pompano sand, acid, Tavares sand, and Myakka sand.

Tree Nursery (FLUCCS 241) – 15.03 acres

A tree nursery consisting of oak trees is located in the eastern portion of the property and comprises less than 1% of the total project acreage. According to the USDA Soil Conservation Service, Soils Survey of Lake County, Florida (1971), Tavares sand is present within the tree nursery.

Watermelon Field Crop (FLUCCS 2154) – 71.51 acres

A small portion of the Secret Promise site is used to produce watermelons. The area comprises a total of 97.33 acres. According to the USDA Soil Conservation Service, Soils Survey of Lake County, Florida (1971), Tavares sand, Myakka sand, and Astatula sand, dark surface are the soil types present in the watermelon fields.

Fallow Crop Land (FLUCCS 261) – 90.87 acres

Approximately 90.87 acres of the property are abandoned watermelon fields. These areas are dominated by a mix of bare ground, herbaceous weedy species, and various pasture grasses. Dominant species present include dog fennel, caesar weed (*Urena lobata*), bahia grass, and soda apple. Portions of this area are occasionally used for cattle grazing. According to the USDA Soil Conservation Service, Soils Survey of Lake County, Florida (1971), Albany sand is the soil type present in these areas.

Shrub and Brushland (FLUCCS 320) – 20.09 acres

A portion of the upland buffers surrounding the freshwater marshes is dominated by various shrub and brush species. Dominant vegetation in these areas include gallberry, broomgrass, blackberry (*Rubus* spp.), wax myrtle (*Myrica cerifera*), and saltbush (*Baccharis halimifolia*). According to the USDA Soil Conservation Service, Soils Survey of Lake County, Florida (1971), Myakka sand is the soil type present in the shrub and brushland habitats.

Other Pines (FLUCCS 419) – 16.96 acres

A small portion in the center of the property is largely made up of slash pine. The area makes up less than 1% of the property and comprises a total of 16.96 acres. According to the USDA Soil Conservation Service, Soils Survey of Lake County, Florida (1971), Myakka sand and Pompano sand, acid are the soil types present in these areas.

Live Oak (FLUCCS 427) – 17.72 acres

These areas are characterized by a dominant canopy of live oak (*Quercus virginiana*). The typical understory strata show significant disturbance from cattle grazing and primarily contain soda apple and scattered clumps of saw palmetto (*Serenoa repens*). According to the USDA Soil Conservation Service, Soils Survey of Lake County, Florida (1971), Myakka sand, Tavares sand, and Lucy sand are present in the live oak areas.

Oak Hammock (FLUCCS 4271) – 59.35 acres

Scattered throughout the property are small areas of oak hammocks. These areas are made up of laurel oak, live oak, soda apple, and some saw palmetto. According to the USDA Soil Conservation Service, Soils Survey of Lake County, Florida (1971), Myakka sand, Tavares sand, and Lucy sand are present in the oak hammocks.

Mixed Forested and Shrub Upland Islands (FLUCCS 4381) – 14.80 acres

This habitat type identifies upland forested islands present within the freshwater marsh habitats. These islands generally contain a mixed forested canopy containing slash pine and live oak. Understory species in these areas include scattered saw palmetto, wax myrtle, gallberry, and bahia grass. According to the USDA Soil Conservation Service Soils Survey of Lake County, Florida (1971), Myakka sand and Albany sand are the soil types present in these areas.

#### **4.0 CONSTRUCTION PHASING**

The site plan will be divided into development pods and construction scheduled in phases. Each pod will continue to be managed under the current agricultural management practices until construction occurs. In some instances, roads will have to be constructed through areas where the adjacent lands will remain in their current state in order to complete a transportation link.

Consequently, pre-construction, under construction, and post-construction management practices will occur on the site simultaneously until total site development is completed. However, only one land management designation (pre-construction, under construction, or post-construction) will occur within a pod at any given time.

#### **5.0 MANAGEMENT PLAN OBJECTIVE**

The objective of this management plan is to implement measures that will protect sensitive communities currently present on the Secret Promise site, and retain sufficient living and foraging habitat for listed species currently utilizing the site. This plan also aims to promote the site's wildlife populations' continued use of the property during and after construction of the proposed development.

## 6.0 PROTECTED SPECIES MANAGEMENT PLAN

Existing land management practices include agricultural activities such as cattle grazing, row cropping, timber harvesting, and tree farming. These activities will continue to be implemented until construction begins. Prior to commencing construction, silt fencing will be installed along preserve areas within or directly adjacent to development pods.

Post-construction management activities include long-term management activities necessary to maintain compliance with the SJRWMD ERP, the City of Leesburg Development Order, the COE Nationwide 39 permit, and The U.S. Fish and Wildlife Service (FWS) and/or Florida Fish and Wildlife Conservation Commission (FWC) wildlife permits issued for this site. Every effort has been made to anticipate these requirements and include them on the attached Land Management Practices Map (see **Exhibit 4**). The Conservation Easements to be granted over the preserve areas will include reserved rights to conduct long-term management activities within the preserve areas.

Specific pre- and post-construction practices for individual species are discussed in greater detail below.

### 6.1 FLORIDA SANDHILL CRANE (*Grus canadensis pratensis*)

#### 6.1.1 Pre-construction

Development phasing of the Secret Promise site and ample preserve areas will provide opportunity for cranes to safely nest and forage away from construction activity. When construction begins in a new development pod, a formal Florida sandhill survey will be conducted in all wetland habitats, prior to initiation of construction activities. If an active Florida sandhill crane nest is identified within the pod scheduled for development, a minimum protection zone of 400 feet surrounding the nest will be observed (Stys, 1997). In addition, the adult nesting pair will be monitored for any signs of distress or disturbance of normal crane mating and nesting behavior. In the event that such disturbance is observed, construction will cease until FWC is notified and agrees to a more appropriate buffer distance from the nest. Monitoring will be conducted by a qualified biologist a minimum of two times per week throughout the nesting season or until construction within that pod is complete, whichever date is reached first. St. John's River Water Management District personnel will be copied on any and all correspondence concerning Florida sandhill crane surveys or monitoring between EarthBalance® and the FWC.

#### 6.1.2 Post-construction

In order to maintain certain areas of the site as suitable habitat for Florida sandhill cranes, mowing will be used to replace the vegetation management previously provided by cattle grazing. Portions of upland

preserve, transitional wetlands, and upland buffers have been designated for perpetual mowing (**Exhibit 4**).

Mowing with commercial mowing equipment will be conducted adjacent to specified wetlands from the wetland/upland buffer boundary in an approximately 40-foot wide swath. Mowing will be conducted on an annual basis to maintain a low grassy area. Annual mowing will be conducted during the wet season on a five to six week cycle beginning in June and running through October. The specific mowing areas are identified on **Exhibit 4**, the Secret Promise Land Management Practices Map. Only those areas identified on **Exhibit 4** will be mowed. All other preserve areas are to be left in their natural condition. Specific acreages and wetland and upland ID numbers are given in **Table 2** below.

Table 2 Wetland/Upland and Buffer Mowing Areas	
Wetland/Upland ID	Area to be Mowed (ac)
W8	49.97
W16	12.45
W54	4.58
W8 Buffer	19.26
W16 Buffer	5.01
U8-1	25.64
U8-2	33.42
U8-3	4.90
U16-1	3.07
U16-2	1.11
U20-1	3.59
Total Area	162.99

Educational signs will be installed to mark the Florida sandhill crane habitat management areas. The following language will be used:

**Florida Sandhill Crane (*Grus c. pratensis*) Habitat Management Area**

*Please do not proceed beyond this point or approach sandhill cranes or their nests. Sandhill cranes may permanently abandon their nests and young, if disturbed.*

*The Florida sandhill crane is classified as a threatened species by the State of Florida. Feeding or harassing sandhill cranes is prohibited and punishable by law.*

*Call the Florida Fish and Wildlife Conservation Commission for further information on this habitat or sandhill cranes and their ecology.*

## 6.2 FLORIDA BURROWING OWL (*Athene cunicularia floridana*)

### 6.2.1 Pre-construction

Prior to the implementation of construction, a 100% formal survey will be conducted in all identified potential burrowing owl habitat. Artificial burrows will be constructed in a designated upland preservation area to be used as a means of housing and safe guarding the burrowing owls located onsite. The artificial burrows will be constructed primarily of an inverted five gallon bucket. A six inch hole will be drilled near the bottom of the bucket to serve as the entrance into the burrow. Eight feet of flexible drainage piping will be fitted into the hole constructed in the bucket. Burrows will be constructed for every owl pair identified during the survey period, as well as a few additional ones, allowing for population expansion and possible immigration of other owls from surrounding areas.

Placement of the artificial burrows will be conducted in the weeks prior to the implementation of construction and existing burrow collapse, which will allow the owls to investigate the new burrows and potentially relocate themselves. Burrow arrangement will match the spatial arrangement of the existing original burrows. No burrow will be placed within 150 feet of the preserve boundaries or foot trails to eliminate the possibility of the owls being disturbed from construction activities or pedestrians along the trails. Excavation of an approximately 4-foot deep hole for the placement of the artificial burrows will be done by a backhoe. This will allow for the flexible piping to slope gently towards the surface, emerging approximately 3 feet horizontal from the burrow.

At the time of burrow placement, a 5-foot fence pole will be placed next to the burrow to serve as a perch and vantage point for the owl, as well as to mark the burrow placement. This new method of providing alternative burrows for owls has proven effective in Pinellas County, Florida. A copy of construction specifications and placement protocol are provided within **Attachment 1**.

The 100% survey will be initiated outside of the nesting season to ensure that no new burrows are constructed outside of the survey timeframe. The survey will consist of overlapping transects within all potential burrowing owl habitat. Any identified or suspected owl burrows will be scoped using a gopher tortoise camera to identify the presence/absence of individual owls in the burrow. If no owl is identified within the burrow, it will be collapsed at that time. If an owl is identified within the burrow at the time of investigation, the burrow will be monitored until all owls are observed leaving the burrow, at which time absence will be verified by the gopher tortoise camera and the nest collapsed. It is hypothesized that owls with collapsed nests will actively seek new burrows and, therefore, will be attracted to the artificial burrows and perch posts. Site monitoring will

continue to ensure that owls do not re-inhabit the areas from which they were relocated.

### **6.2.2 Post-construction**

In order to maintain certain areas of the site as suitable habitat for Florida burrowing owls, mowing will be used to replace the vegetation management previously provided by cattle grazing. Portions of upland preserve, transitional wetlands, and upland buffers have been designated for perpetual mowing (**Exhibit 4**).

Mowing with commercial mowing equipment will be conducted adjacent to specified wetlands from the wetland/upland buffer boundary in an approximately 40-foot wide swath. Mowing will be conducted on a monthly schedule or as needed to maintain a low grassy area. The specific mowing areas are identified on **Exhibit 4**, the Secret Promise Land Management Practices Map. Only those areas identified on **Exhibit 4** are to be mowed. All other preserve areas will be left in their natural condition. Specific acreages and wetland ID numbers are given in **Table 2**.

## 6.3 GOPHER TORTOISE (*Gopherus polyphemus*)

### **6.3.1.1 Pre-construction**

Prior to the implementation of construction, a 100% survey will be conducted in all identified gopher tortoise habitat. When a gopher tortoise burrow is identified, it will be scoped with a gopher tortoise burrow camera to identify the presence or absence of an individual tortoise and any commensals. If an identified tortoise burrow does not contain a tortoise or any commensals, the burrow will be collapsed to ensure that no new species have the opportunity to inhabit the burrow. When a tortoise burrow does contain a tortoise, the gopher tortoise along with any commensal species will be relocated to the upland preserve. Excavation procedures are outlined below.

### **6.3.1.1 Excavation Procedures**

Excavations will take place when weather is appropriate i.e., the overnight lows for the actual capture/relocation day and two days thereafter do not fall below 50°F as forecasted by the U.S. National Weather Service. This criteria ensures that the tortoises will have optimum weather conditions for acclimation to their new surroundings.

An experienced backhoe operator will be utilized to minimize the potential of harming a tortoise during the excavation. When the burrow is being excavated, small flexible tubing will be inserted into the mouth of the burrow to gauge the depth and direction of the burrow. The backhoe bucket will have a flat plate scoop, rather than teeth, to minimize potential of harming the tortoise. The backhoe will be positioned behind the burrow mouth, such that the backhoe is pulling dirt from the mouth, along the length and to the end point of the burrow. Excavation will be done by making deep narrow trenches in small incremental scoops across a wide swath of ground to ensure that collapse is avoided.

When backhoe excavation is within 5 feet of the identified tortoise, digging by hand will commence to ensure the safety of the tortoise. The tortoise will be hand removed from the burrow and placed in a shaded container for transport to new burrows.

#### **6.3.1.2 Starter Burrows**

When relocating tortoises to new burrows, a starter burrow will be dug prior to the arrival of the tortoises. These starter burrows will provide initial refuge and shelter and may eventually become the new burrows, which the tortoises will excavate to full size. A starter burrow will be created by digging approximately 1 foot in width at a 45 degree angle into the ground until the burrow reaches at least 2 feet in length. When tortoises are released, they will be placed directly into the mouth of the starter burrow.

#### **6.3.1.3 Penning**

To ensure that translocated tortoises stay within their new home ranges within the upland preserve area throughout the construction process, the area will be silt fenced. This will provide both a visual and physical barrier to the tortoises. The silt fence will be entrenched into the ground to at least 8 inches deep to prevent burrowing underneath the fencing.

The fencing will be checked regularly to identify any weak areas or areas where the fencing has failed. The problem areas will be addressed immediately to ensure that the tortoises are not harmed by construction activities. Upon the cessation of construction, the fencing will be removed. The upland preserve will be silt fenced along the entire boundary where tortoises could possibly escape, with

special emphasis on sides facing construction activities. Wetlands along some of the upland preserve boundary will prohibit the emigration of tortoises.

#### **6.3.1.4 Post-construction**

In order to maintain certain areas of the site as suitable habitat for gopher tortoises, mowing will be used to replace the vegetation management previously provided by cattle grazing. Portions of upland preserve, transitional wetlands, and upland buffers have been designated for perpetual mowing (**Exhibit 4**).

Mowing with commercial mowing equipment will be conducted adjacent to specified wetlands from the wetland/upland buffer boundary in an approximately 40-foot wide swath. Mowing will be conducted on a monthly schedule or as needed to maintain a low grassy area. The specific mowing areas are identified on **Exhibit 4**, the Secret Promise Land Management Practices Map. Only those areas identified on **Exhibit 4** are to be mowed. All other preserve areas will be left in their natural condition. Specific acreages and wetland ID numbers are given in **Table 2**.

### 6.4 FLORIDA SCRUB-JAY (*Alhelocoma coerulescens coerulescens*)

#### **6.4.1 Pre-construction**

The FWC stipulates that 25 acres be preserved for every family or group of scrub jays found onsite. A total of 25 acres have been set aside for preservation because only one family was observed onsite. Secret Promise has a strategic upland and wetland habitat conservation area that includes the 25 acres of preservation surrounding the scrub jay nesting location observed during the survey (see **Exhibit 4** for scrub jay nest location). In addition, the 25-acre scrub jay preserve will be connected to additional upland preservation areas. There will be no development within the preserve areas, only a 15-foot wide walking trail located on the outer edge of the preserve. There will also be scattered undeveloped recreational areas within the Secret Promise site with oak habitat suitable for scrub jays. Prior to commencing construction, silt fencing will be installed on the perimeter of all preserve areas within or directly adjacent to development pods.

#### **6.4.2 Post-construction**

Traditionally, scrub jay habitat is managed through prescribed burning. The scrub jay preservation area on Secret Promise is located in a newly described alternative habitat that includes an upland island with one pine

tree and two small oak trees, surrounding improved pasture, and freshwater marsh; therefore, a fire regime is not necessary to manage this land. Mowing will instead be used to replace the vegetation management previously provided by cattle grazing. Portions of upland preserve, transitional wetlands, and upland buffers have been designated for perpetual mowing (**Exhibit 4**).

Mowing with commercial mowing equipment will be conducted adjacent to specified wetlands from the wetland/upland buffer boundary in an approximately 40-foot wide swath. Mowing will be conducted on a monthly schedule or as needed to maintain a low grassy area. The specific mowing areas are identified on **Exhibit 4**, the Secret Promise Land Management Practices Map. Only those areas identified on **Exhibit 4** are to be mowed. All other preserve areas will be left in their natural condition. Specific acreages and wetland ID numbers are given in **Table 2**.

## 6.5 SHERMAN'S FOX SQUIRREL (*Sciurus niger shermani*)

### **6.5.1 Pre-construction**

Onsite populations of Sherman's fox squirrel have been observed within or adjacent to the mature oak stands and hammocks found in scattered locations throughout the property. Per FWC guidelines, a minimum of 25% of the existing habitat will be protected from development. These areas are included within the upland preserve for Secret Promise. The developer is also committed to using native plants in their landscaping to include planting additional live oaks. Prior to commencing construction, silt fencing will be installed on the perimeter of all preserve areas within or directly adjacent to development pods.

### **6.5.2 Post-construction**

Routine maintenance of all Sherman's fox squirrel habitat will be provided on an as-needed basis to keep this habitat in its natural condition. Maintenance may include, but is not limited to, land management techniques such as tree pruning, mowing, shrub control, and nuisance vegetation control. These activities will be directed at maintaining the understory vegetation in its current open condition.

## **7.0 GENERAL WILDLIFE PROTECTION MEASURES**

### 7.1 RECREATIONAL TRAIL CONSTRUCTION

Walking paths, of a 10 foot width, for educational and recreational purposes will be constructed throughout the site. The trails will be paved when present in upland areas. When in wetland areas the trail will either be at grade with the existing present site conditions or as a raised

boardwalk, depending on the exact topography at the trail placement. The trails are intended to provide access for maintenance purposes and to allow passive recreation through the preserve areas. The developer reserves the right to cross through preserve areas in order to complete construction of the trail in accordance with the ERP permit. In the event of any unanticipated disturbance to the natural areas as a result of this access, the developer will restore the area to its original condition. The proposed placements of the recreation trails are not located within optimal nesting habitat for sandhill cranes. The trails are proposed within large tracks of upland habitats or along wetland fringes, where the water depth is particularly shallow. Prior to construction of these trails, a comprehensive nesting survey will be conducted. Should a nest be identified during the survey, all monitoring and management guidelines previously proposed will be observed. Should a nest be identified post construction, those trails within 400 feet of a nest may need to be closed in order to avoid nest disturbance and possible abandonment.

The developer reserves the rights to access the recreation trail for maintenance and upkeep purposes. Wetland preserve areas that are under conservation easement and are not managed will be avoided at all possible costs by maintenance activity equipment. In the event of any unavoidable disturbance to the preserve areas as a result of maintenance activities, the developer will restore the area to its original condition.

The developer reserves the right to add a limited number of passive recreational trail features such as trail markers, fitness stations, picnic shelters etc, within the 50 foot offset area of the wetland impact areas. These passive recreation features will be excluded from areas that are preserved under conservation easement. Such features are subject to permit review to assess the proposed impact once an actual improvement is designed.

## 7.2 WILDLIFE CROSSINGS

Wildlife crossings will be constructed in the areas where the project's spine road crosses Wetlands 8, 19, and 58. Wildlife crossings have been located on the site plan in areas expected to be utilized by wildlife. The crossings have been designed to encourage smaller wildlife to cross under the roads, and to increase visibility for drivers should cranes cross the road. These same areas contain signage to alert drivers to yield to wildlife and contain passive and active design features that encourage slower vehicular speeds.

Both passive and active controls are present at these crossing areas. Passive controls include crane crossing signs that are posted to remind drivers that cranes are present in these areas, well maintained landscaping

to improve driver visibility to make a crane more visible should they enter the road right-of-way, and limited use of grass to reduce potential crane forage area within the road right-of-way. The active control measures are segments of textured pavement on the roadway to change driver sensation through the area. Alerts to increased fines for speeding will be placed on certain roads at the entrance to a wildlife crossing area when not in conflict with other laws and transportation operational criteria.

## 7.3 WILDLIFE SIGNS

### 7.3.1 Wildlife Crossing and Low Speed Signs

Wildlife crossing signs and alerts to increased fines for speeding will be posted along roadways that intersect areas of anticipated wildlife activity. Please refer to **Exhibit 4** for specific sign locations. Alerts to increased fines for speeding can only be used when not in conflict with other laws and transportation operational criteria.

### 7.3.2 Wildlife Education Signs

Three wildlife education signs will be placed along the recreation paths entering into the large tracks of upland and wetland preserve along western portion of the property. Educational signs will be placed at wetlands 20, 55, 24, and 58 (see **Exhibit 4**). These signs will serve to educate the general public on the biology and behavior of species found in the preserve areas and well as rules and regulations about wildlife interactions.

### 7.3.3 Florida Sandhill Crane Signs

Educational signs will be installed to mark the Florida sandhill crane habitat management areas. The following language will be used:

#### **Florida Sandhill Crane (*Grus c. pratensis*) Habitat Management Area**

*Please do not proceed beyond this point or approach sandhill cranes or their nests. Sandhill cranes may permanently abandon their nests and young, if disturbed.*

*The Florida sandhill crane is classified as a threatened species by the State of Florida. Feeding or harassing sandhill cranes is prohibited and punishable by law.*

*Call the Florida Fish and Wildlife Conservation Commission for further information on this habitat or sandhill cranes and their ecology.*

## 7.4 RESERVED RIGHTS

The developer reserves the rights to install and maintain in perpetuity the wildlife crossing, speeding, and education signs indicated on **Exhibit 4**

and any additional signage that may be required by the aforementioned SJRWMD, COE, FWS, FWC, Lake County, or City of Leesburg permits.

## 7.5 WILDLIFE CROSSING MAINTENANCE

It may be necessary to periodically clear out accumulated vegetative debris in the culverts associated with wildlife crossings and drainage structures. The developer reserves the right to access and maintain these areas.

## 8.0 SPECIES-SPECIFIC BIOLOGY

### 8.1 FLORIDA SANDHILL CRANE

Two subspecies of sandhill cranes and one additional species of crane occur in Florida, the Florida sandhill crane (*Grus canadensis pratensis*), the greater sandhill crane (*Grus c. tabida*), and the whooping crane (*Grus Americana*). The Florida sandhill crane is the only resident (non-migratory) subspecies that occurs in Florida. Sandhill cranes observed in Florida between May and September are assumed to be the Florida subspecies. The whooping crane occurs within the state of Florida in experimental populations.

The Florida sandhill crane (*Grus canadensis pratensis*) is a member of the long-legged, heron-like family (Ciconiidae). Adult sandhill cranes typically stand 3.9 feet (1.2 meters) tall with a wingspan of 6 to 7 feet. They are uniformly grayish-brown with a white cheek patch and a red, unfeathered crown (Williams, 1978). Males are typically larger than females but have identical plumage. Distinguishing them can be difficult, even if both sexes are present during observation. First-year juveniles are often quite brown and sometimes have white mottling on the belly and underwings (Peterson, 1995). Although adult-like appearance is reached at 10 to 14 months of age (Lewis, 1979), it takes 3 to 5 years to reach sexual maturity (Nesbitt, 1989).

Florida sandhill crane habitat includes wet and dry prairies, though maidencane and slough communities with low-growth emergent vegetation associated with freshwater marshes and ponds are preferred. Water depth and food availability are the primary factors that control shifts in seasonal habitat and nesting location (Bennett, 1992). Throughout central Florida, resident sandhill cranes spend the majority of their time foraging in uplands consisting of improved pasture and herbaceous emergent wetlands (Bishop, 1988). Unlike herons, sandhill cranes rarely feed on fish. The sandhill crane is an opportunistic, omnivorous species, feeding on seeds, grain, berries, insects, earthworms,

mice, small snakes, frogs, crayfish, and other small bird species (Walkinshaw, 1976).

Nest habitat utilized by Florida sandhill cranes varies regionally. For example, in north, central, and southwest Florida, sandhill cranes typically nest in mixed persistent and non-persistent freshwater herbaceous wetlands (Walkinshaw, 1976). In south Florida, sandhill cranes typically nest in open slough areas of wet prairies and freshwater marshes (Thompson, 1970). The nest of sticks, reeds, grasses, and mosses is built by both adults, generally in wet areas. Nests are usually 15.7 to 57.1 inches in diameter and are typically 4 to 6.3 inches above the water surface (Bennett, 1992). The Florida subspecies of sandhill crane typically starts nesting earlier (late December) than other species and continues nesting into June. Incubation begins the day the first egg is laid and usually continues until hatching. Incubation on average lasts 29 to 31 days, with eggs typically hatching one day apart (Walkinshaw, 1976). Adult sandhill cranes assist in feeding the juvenile cranes until they reach approximately 3 to 4 months of age (Layne, 1981).

The whooping crane's habitat and behavior are similar to that of the sandhill crane. The outstanding difference is the appearance between the species. The whooping crane, which stands just over 4 feet tall with a wing span averaging 7.5 feet, is the tallest of the North American birds. Males tend to be larger than females. The whooping cranes are distinct in color being all white with red facial skin and black primary feathers that can be seen during flight. Juveniles are cinnamon brown in color and, at four months of age, slowly begin to turn white.

### **8.1.1 Protection Status**

The Florida sandhill crane is listed as Threatened by the FWC. Historically, this subspecies occupied the general region of Alachua and Putnam Counties, south from the Kissimmee Prairie through the Everglades. In 1992, the Florida sandhill crane population was estimated to be between 4,000 and 6,000 individuals (Tacha et al., 1992). The decline in sandhill crane numbers is attributed to the loss of wetland habitat. Habitat fragmentation also caused the subspecies to adapt to living in close contact with humans. Florida sandhill cranes manage to utilize golf course marshes for nesting, and residential neighborhoods throughout central and southwest Florida for foraging. However, the protection of appropriate areas in recent years has helped this species. Several large tracts of suitable habitat are now in public ownership, including the Cecil M. Webb Wildlife Management Area, Three-Lakes Wildlife Management Area, Lake Kissimmee and Myakka River State Parks, and Paynes Prairie State Preserve.

Whooping cranes in Florida are members of an experimental population released by FWC. They are protected from deliberate molestation or harassment as a Species of Special Concern. (68A-27.005(b) F.A.C.) However, the experimental status of the whooping crane stipulates that their presence on a parcel of property shall not alter the future use of that property.

### **8.1.2 Crane Nesting History at Secret Promise**

The Secret Promise property (formerly Pruitt Ranch) has been utilized by cranes for decades. Its use by large numbers of sandhill cranes was first documented in the late 1980s, when captive-reared sandhill cranes (*Grus canadensis*), released in Alachua County and monitored by the FWC, dispersed to the Secret Promise property. The FWC documented several hundred migratory sandhill cranes utilizing the Secret Promise property during the winter months, and approximately 12 pairs of resident (non-migratory) sandhill cranes have all or part of their home ranges on the proposed Secret Promise site. The developer will continue to allow the FWC to utilize the Secret Promise property for the study of cranes during and post development. This will allow the FWC a unique opportunity to study the effects of development on cranes. The FWC August 2005 report on Crane Nesting Activity on the Pruitt Property and the FWC Pruitt Ranch (Secret Promise) Whooping Crane Reproduction 2006 Preliminary Report are provided as **Attachments 2 and 3**, respectively.

## **8.2 FLORIDA BURROWING OWL**

The Florida burrowing owl (*Athene cunicularia floridana*) is a subspecies of the burrowing owl (*Athene cunicularia*) found in western portions of the United States. The Florida burrowing owl is restricted to Florida, the Bahamas, and very marginally in southern Georgia. Burrowing owls are much smaller and more sedentary than their larger owl relatives, attaining only 9 inches in height, a 21-inch wingspan, and weigh 135 to 150 grams. The burrowing owl is the only North American owl in which males are larger than females, however the dimorphism is not as pronounced in the Florida subspecies. These owls lack ear tufts more commonly found on woodland owls. Adult plumage consists of brown and white bars and striping around the body and white striping around the eyes and underneath the chin; bright yellow eyes distinguish the face. Unusually long legs relative for their size provide additional vantage from ground level.

Florida burrowing owls inhabit a wide range from Madison and Duval Counties in the north to the middle Florida Keys in the south. The owls within this range are local and spotty depending on the habitat present. They inhabit open native prairies and cleared areas that have short herbaceous ground cover, including areas such as pastures, golf courses,

vacant fields, and fallow agriculture fields. The owls reside in burrows in the ground that are excavated themselves or by previous inhabitants such as squirrels, armadillos, and tortoises. These burrows can extend 4 to 8 feet underground. Burrows are lined with grass clippings, feathers and manure. The owls eat mainly insects, beetles, and small vertebrates, but also eat brown anoles and tree frogs in South Florida.

Burrowing owls live in pairs or small colonies with two or more families. The owls are active both day and night and use the burrow year round. Breeding occurs from March to late August, with clutch sizes ranging from six to eight eggs. The female incubates the eggs for approximately 30 days, and fledging occurs around 40 days post hatching. Young will stay with the parents until they are approximately 12 weeks old.

### **8.2.1 Protection Status**

Florida burrowing owls are listed by the FWC as a Species of Special Concern. Under this status, it is illegal to take, pursue, capture, or harass burrowing owls or their nests without a permit issued by the Executive Direction of the Commission (68A-9.002 & 68A-27.005, Florida Administrative Code). Burrowing owls are also protected federally under the Federal Migratory Bird Treaty Act (Title 50, Code of Federal Regulations, Part 21), which prohibits the destruction of an active nest without a federal permit.

### **8.2.1 Burrowing Owl Nesting History at Secret Promise**

Historic burrowing owl nesting on the Secret Promise site is unknown, however since the 1920s and rapidly in the last 50 years, burrowing owls have greatly expanded their range due to the extensive land clearing for cattle grazing. EarthBalance<sup>®</sup> biologists have observed three active burrows onsite during field activities in 2005 and 2006.

## **8.3 GOPHER TORTOISE**

The gopher tortoise (*Gopherus polyphemus*) is the only true tortoise found east of the Mississippi River. It can be distinguished from other Florida turtles by the absence of webbed feet. Gopher tortoises are medium-sized tortoises, averaging 9-11 inches in length and obtaining 8-10 pounds in weight. The carapace coloration varies geographically from light tan to dark grey. Sexual dimorphism is present, and the male plastron is slightly more concave than the female. However, individual variability makes it hard to distinguish between the sexes unless they are placed closely to one another for comparison. The forelimbs are flattened and stiffened with specialized ligaments to maximize the tortoises digging potential. (Cox et al., 1987) Gopher tortoises range throughout much of the southeastern United States, from east Louisiana to southeastern South Carolina and down into some portion of all 67 Florida counties. (Berish, 2001) Within

this range, its distribution is limited by the presence of deep, well-drained sandy soils.

The burrow of a gopher tortoise is extremely important for survival. It serves as a refuge from predators, fire, and temperature extremes. Burrow lengths up to 49 feet have been documented, but most burrows do not attain such length. Individual burrows are widely variable so an average length cannot be reported. Many commensal species are also found within the gopher tortoise burrows. A total of 39 invertebrates and 42 vertebrate species are known to occupy gopher tortoise burrows including: frogs, mice, insects, birds, and, most notably, the eastern indigo snake (*Drymarchon corais couperi*) and the gopher frog (*Rana capito aesopus*). (Cox et al., 1987) Burrows are typically excavated with intermittent groundcover and shrub stratum coverage that have deep, dry, sandy soils. Gopher tortoises feed on a wide array of broadleaf grasses and forbs along with various fruits and berries.

Individuals reach maturity at approximately 10 years of age and the nesting season runs from May to June. An individual clutch size averages five to seven eggs and usually incubates 2.5 to 3.5 months, hatching in August through September. When hatchlings emerge they are about 2 inches in length and are yellow-orange in coloration. When initially on their own, juvenile gopher tortoises will reside in shallow depressions or cover themselves in loose sand, rather than excavate a burrow (Cox et al., 1987). Within a year of hatching, juveniles will have a well-established burrow reaching 3 to 4 feet in depth.

### **8.3.1 Protection Status**

Gopher tortoises are listed by the FWC as a Species of Special Concern. Under this status, it is illegal to take, pursue, capture, or harass the tortoises or disturb their burrows without a permit issued by the Executive Director of the Commission (68A-9.002 & 68A-27.005, Florida Administrative Code).

### **8.3.2 Gopher Tortoise Burrowing History at Secret Promise**

Historic gopher tortoise burrowing on the Secret Promise site prior to agricultural practices is unknown. The majority of the gopher tortoise burrows were found in improved pastures (FLUCCS 211) during the wildlife survey. Therefore, the Secret Promise property currently supports an active gopher tortoise population.

## **8.4 SHERMAN'S FOX SQUIRREL**

The Sherman's Fox Squirrel (*Sciurus niger shermani*) is a very large squirrel exhibiting a variable color pattern over its range. Color can be from black to gray with a black nose. Some have dark fur on the back and

shoulders and others range from salt and pepper gray to agouti or yellow and orange. In Florida, the fox squirrel most commonly has a black head and a white nose and ear tips. In the less common melanistic form, nearly all of the fur is black. The underparts are whitish to buff.

Over its range, Sherman's fox squirrels prefer oak and hickory groves, but in the southeast they readily use a variety of habitats including oak hammocks, mixed oak and longleaf pine forests, open borders of cypress swamps, and low thickets. Seldom found in the deep woods chosen by the gray squirrel, fox squirrels prefer the half-open oak stands, which are often surrounded by prairie and/or pasture land.

A diurnal species, the Sherman's fox squirrel will make a nest in a tree cavity or in a cavity at the base of the tree. In common with other tree squirrels, during the summer months, it will also utilize leaf nests placed in the branches of trees. Two breeding seasons are recorded, one in January and the other in May-June. Gestation is approximately 45 days, and the average litter size ranges from 2 to 4. These squirrels feed on acorns and hickory nuts and harvest the cones of longleaf pine trees. Berries and fruits are also taken when in season. This species also utilizes fungi and it has been suggested that they are important dispersers of fungal spores.

#### **8.4.1 Protection Status**

The Sherman's fox squirrel is considered a Species of Special Concern protected by the State of Florida.

#### **8.4.2 Sherman's Fox Squirrel History at Secret Promise**

Historic Sherman's fox squirrel nesting on the Secret Promise site prior to agricultural activities is unknown, however, EarthBalance® biologists have observed several Sherman's fox squirrels onsite during field studies in 2005 and 2006. The small remaining clusters of onsite live oak habitat likely support a small population of Sherman's fox squirrels.

### **8.5 FLORIDA SCRUB JAY**

The Florida scrub jay (*Aphelocoma coerulescens coerulescens*) is a small bird similar in size and shape to its close relative the blue jay. The predominant color is blue, interspersed with smoky gray coloring. The male and female are indistinguishable, with the male being slightly larger in size. They are usually found in scrub habitat existing of oak scrub and well-drained sandy soil within the state of Florida. However, with diminishing native habitat, they are being found in alternative habitats including improved pasture, rangeland, pine flatwoods, and disturbed rural land.

Scrub jays are usually found in groups or families averaging three individuals. Groups up to eight adults and four juveniles are known, but are rare. Group behavior consists of daily foraging, predator surveillance, territory defense and body maintenance, and with the exception of foraging, all are conducted within close proximity of the group. Individuals forage independently of one another and will often consume prey items at a distance from the group in order to feed unharassed. Scrub jays possess a varied diet including things such as insects, tree frogs, *Anolis* lizards, small snakes, small fruit, and berries.

Scrub jays nests are a bulky basket of twigs usually in dense shrub bordering an open or bare-earth area at low to mid height, averaging 1 meter off the ground. Nests are lined with fibers from saw palmetto or palms forming a tightly woven cup. Nest locations or nesting material are never reused. The nesting season extends from March through June and clutches average three to four eggs. Surpassing the one year mark, young will stay within the family group as helper jays. They may assist in feeding new young, guarding territory, mobbing predators, and various sentinel duties.

#### **8.5.1 Protection Status**

Both the FWC and the FWS list the Florida scrub jay as a threatened species. The FWC established guidelines to assess the quality of scrub habitat; Type I is the highest quality and Type III is the lowest. Type I habitat is defined as having greater than 15% coverage by scrub oak vegetation while Type II habitat supports 1-15% scrub oak coverage. Uplands or seasonally dry wetlands with no scrub oak coverage that are within 0.25 mile of Type I or Type II habitat are considered to be Type III habitat. Surveys are recommended for all Type I, II, and III habitats to determine presence of Florida scrub jays and to define occupied territories

In January 2005, the FWS issued an update to the scrub jay survey guidelines, adding 14 additional vegetative communities to the list of habitats requiring scrub jay surveys. The 14 new habitats include: pine-mesic oak, xeric oak, sand live oak, improved, unimproved, and woodland pastures, citrus groves, rangeland, pine flat woods, longleaf pine xeric oak, sand pine, sand pine plantations, forest regeneration areas, sand other than beaches, disturbed rural land in transition without positive indicators of intended activity, and disturbed burned area.

Although the Secret Promise site does not contain Type I, II, or Type III scrub jay habitat, it does contain several of the communities included on the FWS January 2005 list including improved pasture, rangeland, pine flatwoods, and disturbed rural land.

### **8.5.2 Florida Scrub Jay Nesting History at Secret Promise**

Scrub jays were originally spotted onsite during wetland delineation fieldwork; therefore, a formal scrub jay survey was deemed necessary before the issue of the new habitat guidelines. A formal 5-day pedestrian survey was conducted by EarthBalance<sup>®</sup> biologists from March 21 through March 31, 2005 in accordance with FWS guidelines.

Based on the survey events, it appears that the scrub jays use a limited portion of the Secret Promise site for both foraging and nesting. During the survey period, three scrub jays were observed in the same area on three separate days. All three scrub jays occupied the same territory and were observed flying to the same nest. Because the typical Florida scrub jay family consists of an adult female, adult male, and one or more young from previous years, these three scrub jays are likely from the same family group. No other scrub jays were observed onsite.

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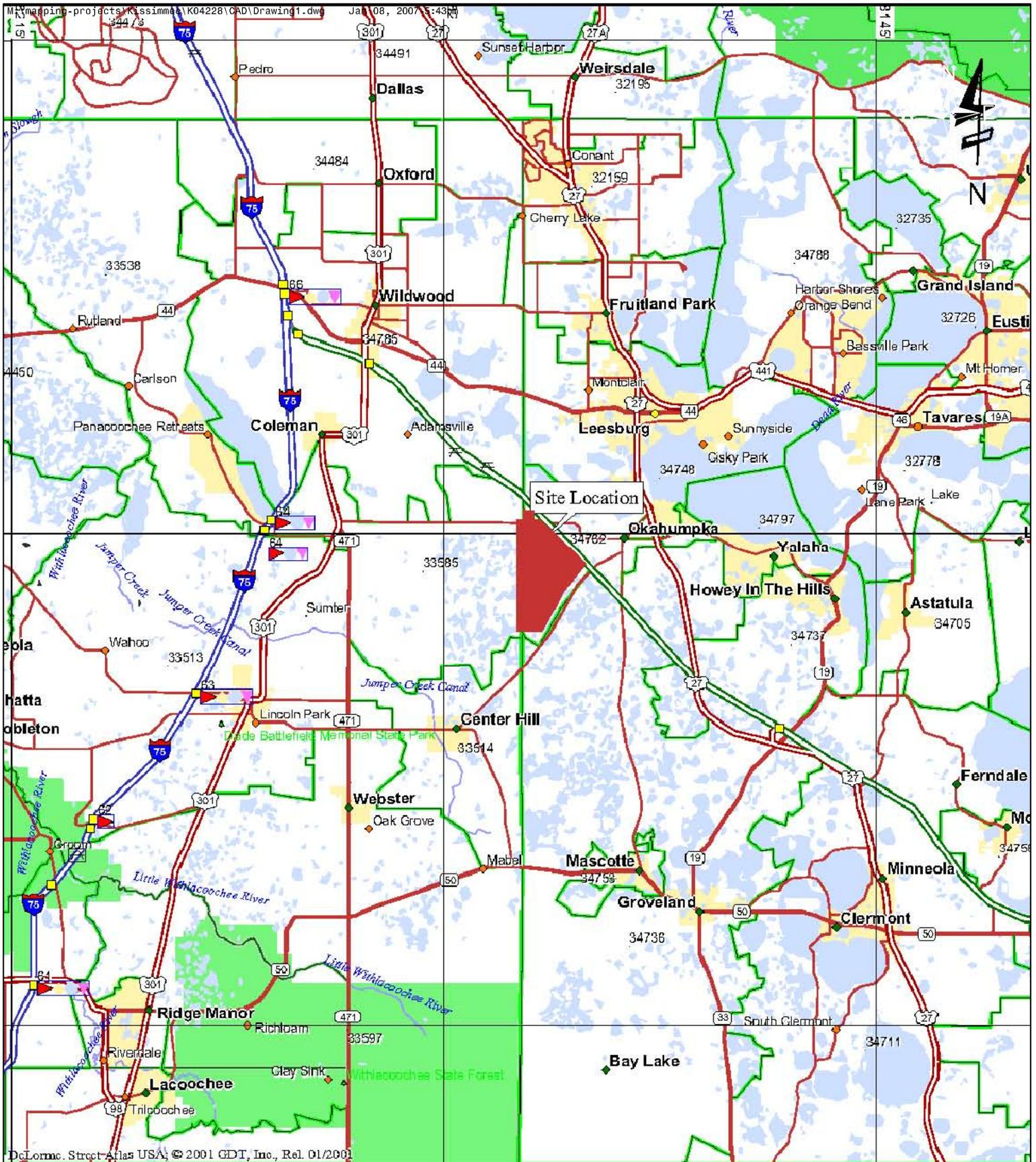
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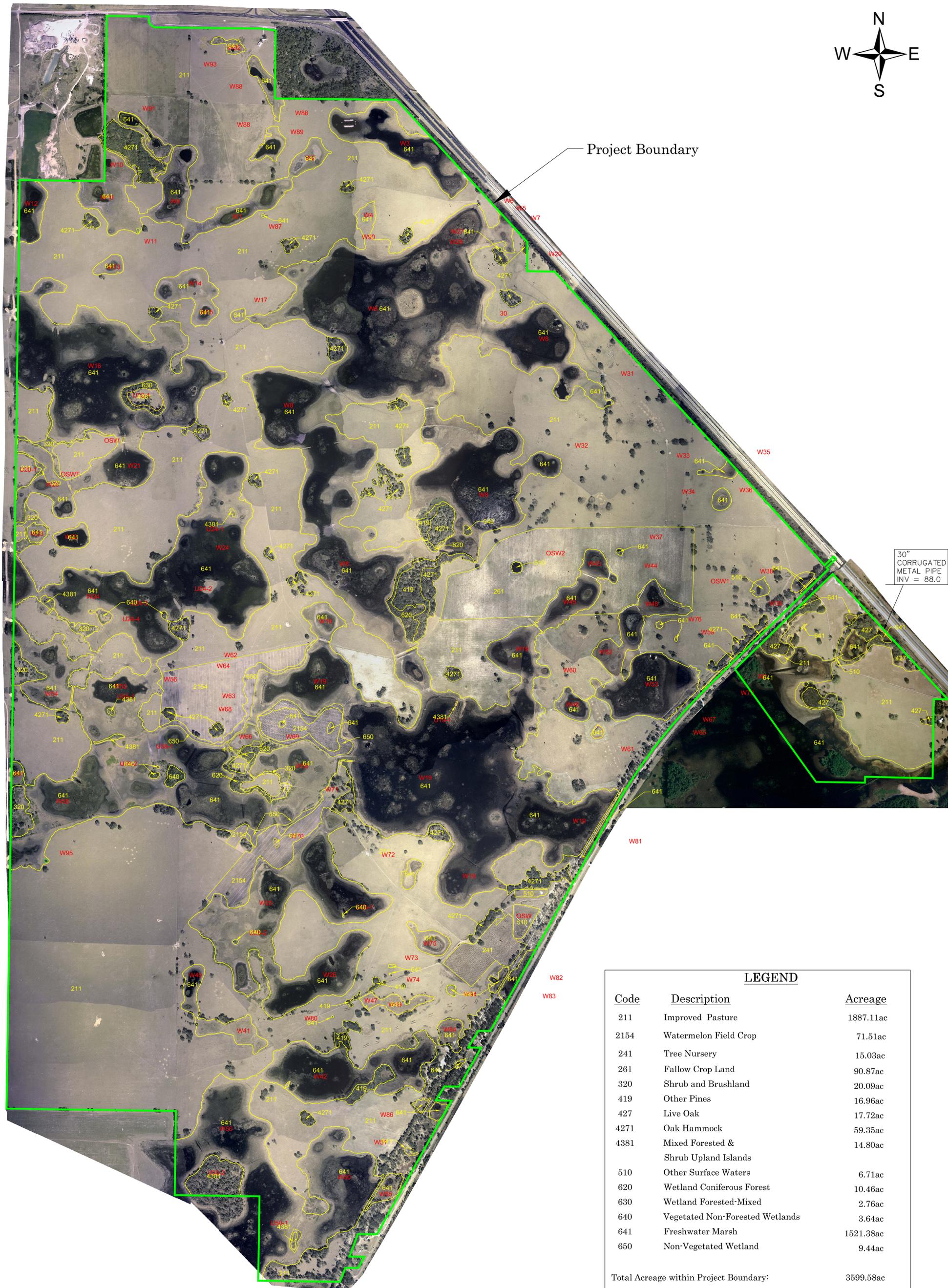
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DATE: 01-08-07  
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 PROJECT NO: K04228  
 AERIAL: N/A  
 SCALE: N.T.S.

EXHIBIT 1  
 LOCATION MAP  
 SECRET PROMISE  
 LAKE COUNTY, FLORIDA



2629 Waverly Barn Rd., Suite 121  
 Davenport, FL 33897  
 Tel (863) 420-1945  
 Fax (863) 420-1959  
 www.earthbalance.com



30" CORRUGATED METAL PIPE  
INV = 88.0

LEGEND		
Code	Description	Acreage
211	Improved Pasture	1887.11ac
2154	Watermelon Field Crop	71.51ac
241	Tree Nursery	15.03ac
261	Fallow Crop Land	90.87ac
320	Shrub and Brushland	20.09ac
419	Other Pines	16.96ac
427	Live Oak	17.72ac
4271	Oak Hammock	59.35ac
4381	Mixed Forested & Shrub Upland Islands	14.80ac
510	Other Surface Waters	6.71ac
620	Wetland Coniferous Forest	10.46ac
630	Wetland Forested-Mixed	2.76ac
640	Vegetated Non-Forested Wetlands	3.64ac
641	Freshwater Marsh	1521.38ac
650	Non-Vegetated Wetland	9.44ac
Total Acreage within Project Boundary:		3599.58ac
Total Acreage within Farrah Parcel:		148.25ac
Total Acreage within Project Boundary an Farrah Parcel:		3747.8 ac

DATE: 01-08-07  
 FILE: MASTER\_FLUCCS\_Updated-2-9-06.dwg  
 PROJECT NO: K04228.2  
 AERIAL: TC 2005  
 SCALE: 1"=650' at (D-Size 24x36)

EXHIBIT 2  
 MAP F  
 FLUCCS MAP  
 SECRET PROMISE  
 LAKE COUNTY, FLORIDA

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