

C. Site Information

1) Describe the existing land uses and vegetative associations. Provide an aerial photograph of the site.

The Subject Property is located in southern St. Johns County in the southwestern quadrant of County Road 305 and State Road 207. County Road 305 encompasses portions of its western boundary and State Road 207 encompasses a portion of its northern boundary. It is a parcel of land containing approximately 2,800 acres. For the most part, the Subject Property is timberland with jurisdictional wetlands in low-lying areas associated with Deep Creek and Moccasin Branch. The western portion of the Subject Property is currently under agricultural use.

On-site vegetative associations were classified according to the Florida Department of Transportation's *Florida Land Use, Cover and Forms Classification System* (FLUCFCS) are described below.

Upland Communities

Row Crops, FLUCFCS Code 214 (189.97 acres±)

Two large tracts of land in the western portion of the Subject Property can be classified as Row Crops. This area has been used as agricultural land for more than two decades and comprises approximately 6.6% of the study area. The agricultural area is currently planted for cabbage (*Brassica oleracea*).

Mixed Hardwoods, FLUCFCS Code 438 (7.5 acres±)

Scattered portions (0.2%) of the site, that have not been planted with slash pine (*Pinus elliottii*) contain forested stands that remain relatively undisturbed and in their natural state. The upland portions of these areas can most often be characterized as Mixed Hardwoods. In these areas, the canopy consists of hardwood species such as laurel oak (*Quercus hemisphaerica*), live oak (*Q. virginiana*), water oak (*Q. nigra*), sweetgum (*Liquidambar styraciflua*), southern magnolia (*Magnolia grandiflora*), southern red cedar (*Juniperus silicicola*), cabbage palm (*Sabal palmetto*), and red maple (*Acer rubrum*). The understory consists of saw palmetto (*Serenoa repens*), grapevine (*Vitis rotundifolia*), bitter gallberry (*Ilex glabra*), winged sumac (*Rhus copallina*), and wax myrtle (*Myrica cerifera*). The groundcover includes such species as bracken fern (*Pteridium aquilinum*), reindeer moss (*Cladonia* spp.), and chalky bluestem (*Andropogon capillipes*).

Coniferous Plantation, FLUCFCS Code 441 (870.9 acres±)

Upland slash pine plantations are the most prevalent community type located throughout the study area, comprising approximately 32.0% of the site. They are exclusively pine stands that are the result of planting or seeding operations. The plantations are typically bedded, but can appear random, possibly as a result of aerial seeding. The stands are stocked with a high number of trees per acre, all of the same age class and with a uniform appearance. The stocked species in the study area is entirely slash pine. Some areas have been artificially bedded for planting, or have been clear-cut during harvesting and left to reforest naturally without management (described below). The soils are disturbed and are not uniform due to mechanical mixing as a result of bedding manipulation and drainage. The canopy consists almost exclusively of slash pine, and the understory structure varies according to proximity to low-lying wetland areas. Due to fire suppression, the dominant subcanopy species in many areas include water oak, loblolly bay (*Gordonia lasianthus*), wax myrtle, and swamp bay (*Persea palustris*). Live oak, sand live oak (*Quercus geminata*), and southern magnolia occur in drier areas at higher elevations. Dominant shrub layer species include saw palmetto, bitter gallberry, fetterbush (*Lyonia lucida*), highbush blueberry (*Vaccinium corymbosum*), and blackberry (*Rubus* spp.). Typical herbaceous layer vegetation includes bracken fern, chalky bluestem, Virginia chainfern (*Woodwardia virginica*), St. Johns wort (*Hypericum* spp.), beakrushes (*Rhynchospora* spp.), yellow-eyed grass (*Xyris* spp.), redroot (*Lachnanthes caroliniana*), and scattered bog button (*Lachnocaulon* spp.). Common vines found within the study area include greenbrier (*Smilax* spp.) and grape vine (*Vitis rotundifolia*).

Forest Regeneration Area, FLUCFCS 443 (666.0 acres±)

Several locations (22.2%) within the study area are classified as Forest Regeneration Areas. These are areas in which it is clearly evident that harvested stands will be reforested through one of the various silvicultural practices prescribed in Florida's forests rather than being allocated for another land use or abandonment. With all or most of the canopy layer removed, only shrub and herbaceous layers remain. Typical vegetative species that can be found growing as shrubs and bushes include saw palmetto, bitter gallberry, fetterbush, myrtle-leaf holly (*Ilex myrtifolia*), immature loblolly bay, and immature slash pine. The herbaceous layer most often dominates this community and includes such species as beakrushes, yellow-eyed grass, redroot, dog fennel (*Eupatorium* spp.), meadow-beauty (*Rhexia* spp.), Virginia chainfern, and bracken fern.

Wetland Communities

Bay Swamp, FLUCFCS Code 611 (59.2 acres±)

These relatively small cover types occupy approximately 2.4% of the on-site acreage, and are found mostly in the southeastern portion of the study area. They most often occur within or adjacent to Mixed Forested Wetlands (630), and at slightly higher elevations than the large forested wetlands on the site. Bay swamps are dominated by a variety of bays including loblolly bay, sweetbay (*Magnolia virginiana*), and swamp bay, with a low density of slash pine or loblolly pine (*Pinus taeda*) in some areas. The subcanopy and shrub layer comprises primarily bitter gallberry, fetterbush, myrtle-leaf holly, highbush blueberry, and wax myrtle. Groundcover species include netted chainfern (*Woodwardia aereolata*), Virginia chainfern, St. John's wort, and yellow-eyed grass.

Stream Bottomland, FLUCFCS Code 615 (71.7 acres±)

This natural forested community occurs in association with Deep Creek near the northern project boundary, and a tributary that flows from north to south into the Moccasin Branch ditch that drains to the west. Both of these sub-drainage basins ultimately flow into the St. Johns River approximately six miles to the west. Stream Bottomland occupies approximately 2.5% of the site and contains predominantly hardwood species in the canopy and subcanopy including laurel oak, red maple, swamp tupelo (*Nyssa sylvatica*), swamp bay, and sweetgum. Various species of cypress (*Taxodium* spp.) can also be found growing throughout the area. The understory consists of fetterbush, button bush (*Cephalanthus occidentalis*), bitter gallberry, myrtle-leaf holly, highbush blueberry, and saw palmetto. Ground cover throughout this community varies, with the most common species including sphagnum moss (*Sphagnum* spp.), netted chainfern, and Virginia chainfern.

Mixed Wetland Hardwoods, FLUCFCS Code 617 (188.3 acres±)

This community type occurs over approximately 6.0% of the site and is associated primarily with wetlands connected to the Moccasin Branch watershed. Mixed Wetland Hardwoods exhibit an ill-defined mixture of hardwood canopy species dominated by red maple, laurel oak, water oak, tupelo, and sweetgum. Slash pine and cypress occur in low densities within this community type. Species identified in the understory include loblolly bay, swamp bay, cabbage palm, and saplings of canopy species. The shrub layer consists of wax myrtle, button bush, bitter gallberry, fetterbush, sparse saw palmetto, and highbush blueberry. The herbaceous layer ranges from sparse to dense, and includes such species as Virginia chainfern, netted chainfern, St John's wort, beakrush, yellow-eyed grass, and sphagnum moss.

Cypress, FLUCFCS Code 621 (11.1 acres±)

Composed predominantly of bald cypress (*Taxodium distichum*) and/or pond cypress (*T. ascendens*), these areas are scattered throughout the site, comprising 0.1% of the site. They are typically found as "isolated" domes within the planted pine areas. Other canopy and sub canopy species found in association include slash pine, red maple, and swamp tupelo. The existing shrub layer is sparse in many areas and primarily includes fetterbush, wax myrtle, and myrtle-leaf holly. The ground cover in many of these areas is sparse to non-existent, and can include Virginia chain-fern, netted chain-fern, and sphagnum moss.

Wetland Forested Mixed, FLUCFCS Code 630 (512.1 acres±)

This community type, which comprises 18.6% of the site, includes mixed hardwoods and coniferous species in which neither achieves greater than 66% dominance in the canopy. Typical canopy species in these on-site communities includes slash pine, loblolly bay, red maple, sweetgum, laurel oak, water oak, and cypress. The typical shrub layer comprises fetterbush, bitter gallberry, greenbrier, myrtle-leaf holly,

and saw palmetto. Herbaceous species include primarily beakrushes, netted chainfern, yellow-eyed grass, St. John's wort, sphagnum moss, and Virginia chainfern.

Harvested Wetland Forested Mixed, FLUCFCS Code 6301 (217.4 acres±)

Several large areas (roughly 8.0% of the site) within the study area are characterized as Harvested Wetland Forested Mixed. In this community, a large portion of the hardwoods and softwoods have been harvested. Very sparse canopy remains including tupelo (*Nyssa* spp.), loblolly bay, slash pine, and cypress. The brush layer is generally non-existent with the exception of saw palmetto, bitter gallberry, fetterbush, myrtle-leaf holly, and slash pine. The herbaceous layer most often dominates this community and includes such species as beakrushes, yellow-eyed grass, redroot, dog fennel, meadow-beauty, Virginia chainfern, and sphagnum moss.

Vegetated Non-Forested Wetlands, FLUCFCS Code 640 (6.2 acres±)

This community type occurs on 0.2% of the site, most often where the ground has been disturbed as a result of silvicultural practices or feral hog activity with no replanting of pine. These low-lying areas lack shrub and canopy layers, are seasonally flooded, and contain herbaceous vegetation dominated by dog fennel, yellow-eyed grass, goldenrod (*Solidago* spp.), bulrushes (*Scirpus* spp.), beakrushes, yellow-eyed grass, redroot, and meadow beauty.

Surface Water Communities

Ditches, FLUCFCS Code 510 (15.4 acres±)

Linear water features occur on the site primarily in the form of manmade ditches adjacent to timber access roads that traverse both upland and wetland community types. Approximately 0.5% of the study area comprises this land type. Most of the ditches are connected to the Moccasin Branch tributary along the western portions of the site. Typical vegetation found alongside of the ditch banks includes Carolina willow (*Salix caroliniana*), cattail (*Typha* spp.), immature cypress, maidencane (*Panicum hemitomon*), immature red maple, and Virginia chainfern.

2) Provide a brief environmental assessment of the site, encompassing such topics as the probable occurrence of wetlands and listed plant and animal species.

Environmental Resource Solutions, Inc. (ERS) conducted a preliminary environmental site assessment of the Elkton DRI Tract (hereinafter "the site"). The site encompasses approximately 2,800 acres located south of State Road 207 and east of County Road 305, in St. Johns County, Florida. The purpose of the assessment was to identify the occurrence and approximate limits of any wetlands/surface waters and the presence or potential presence of any listed plant and animal species.

A GIS database research and a preliminary survey for floral and faunal species listed as endangered, threatened, or of special concern by the U.S. Fish and Wildlife Service (FWS) and/or the Florida Fish and Wildlife Conservation Commission (FWC) were conducted. Table C-1 includes a listing of protected species that could potentially occur in association with this site.

Of the 2,800 acres± that comprise the site, approximately 1,065 acres± comprise wetlands or surface waters. The largest contiguous wetlands occur as Stream and Lake Swamps (615) and Mixed Forested Wetlands (630), and can be found along the eastern portions of the site draining southward into Deep Creek. Bay Swamps (611) occur primarily in transitional areas between Mixed Forested Wetlands (630) and Coniferous Plantations (441) along the eastern portion of the site. Mixed Wetland Hardwoods (617) can also be found scattered throughout the site, but predominantly in the western portion of the site in the large wetland strand that drain into Moccasin Branch through a series of drainage ditches. Cypress (621) domes, as well as Vegetated Non-Forested Wetland (640) areas occur sporatically throughout the site. Harvested Mixed Forested Wetlands (6301) occur throughout the site.

Upland communities are dominated by Coniferous Plantations (441) that occur throughout the site. Other upland areas comprise a small percentage of the on-site land use types and include Row Crops (214), Mixed Hardwoods (438), and Forest Regeneration Areas (443). Other community/habitat types include manmade Ditches (510) and Reservoirs less than 10 acres (534).

A Geographic Information Systems (GIS) databases reviewed did not list any occurrence record of any federal or state listed species within the site or nearby vicinity within a two mile radius. Although the species were not observed within the site, the protected avian wading species can be expected to forage within upland-cut drainage ditches and seasonally inundated wetland areas located on the site.

**Table C-1
Listed Plant and Animal Species**

Scientific Name	Common Name	Federal Status	State Status
AMPHIBIANS			
<i>Rana capito</i>	Gopher Frog	N	SSC
<i>Ambystoma cingulatum</i>	Flatwoods Salamander	T	SSC
REPTILES			
<i>Alligator mississippiensis</i>	American Alligator	T(S/A)	SSC
<i>Drymarchon couperi</i>	Eastern Indigo Snake	T	T
<i>Gopherus polyphemus</i>	Gopher Tortoise	N	SSC
<i>Pituophis melanoleucus mugitus</i>	Florida pine snake	N	SSC
BIRDS			
<i>Speotyto cunicularia floridana</i>	Florida burrowing owl	N	SSC
<i>Aramus guarauna</i>	Limpkin	N	SSC
<i>Egretta caerulea</i>	Little Blue Heron	N	SSC
<i>Egretta tricolor</i>	Tricolored Heron	N	SSC
<i>Egretta rufescens</i>	Reddish Egret	N	SSC
<i>Egretta thula</i>	Snowy Egret	N	SSC
<i>Eudocimus albus</i>	White Ibis	N	SSC
<i>Falco peregrinus</i>	Peregrine Falcon	N	E
<i>Falco sparverius paulus</i>	Southeastern American Kestrel	N	T
<i>Haliaeetus leucocephalus</i>	Southern Bald Eagle	T*	T
<i>Mycteria americana</i>	Wood Stork	E*	E
<i>Picoides borealis</i>	Red-cockaded woodpecker	E*	T
MAMMALS			
<i>Peromyscus polionotus phasma</i>	Anastasia Beach Mouse	LE	LE
<i>Podomys floridanus</i>	Florida mouse	N	SSC
<i>Sciurus niger shermani</i>	Sherman's Fox Squirrel	N	SSC
<i>Ursus americanus floridanus</i>	Florida Black Bear	N	T
PLANT			
<i>Calydores coelestina</i>	Bartram's ixia	N	E
<i>Ctenium floridanum</i>	Florida toothache grass	N	E
<i>Helianthus carnosus</i>	Lake-side sunflower	N	E
<i>Litsea aestivalis</i>	Pondspice	N	E
<i>Monotropis reynoldsiae</i>	Pigmy pipes	N	E
<i>Asclepias viridula</i>	Southern milkweed	N	T
<i>Nolina atopocarpa</i>	Florida beargrass	N	T
<i>Rudbeckia nitida</i>	St. John's black-eyed susan	N	E
<i>Verbesina heterophylla</i>	Diverseleaf crownbeard	SSC	N
<i>Calopogon multiflorus</i>	Many-flowered grasspink	SSC	E

Scientific Name	Common Name	Federal Status	State Status
<i>Aesclepis viridula</i>	Southern milkweed	N	T
<i>Drosera intermedia</i>	Spoon-leaved sundew	N	T
<i>Ruellia tubiflora</i>	Night-flowering wild petunia	N	E

KEY: N = Not Listed; T = Threatened; T(S/A) = Threatened/ Similarity of Appearance; E = Endangered; SSC = Species of Special Concern; C – Confirmed in St. Johns County; G = GIS database; P = Potential

3) Indicate which portions of the site, if any, are within the 100-year floodplain.

Generally, some areas on the western portion of the subject property are occupied by Federal Emergency Management Agency (FEMA) Zone A classification. This zone is within the 100-year floodplain; no detailed study has been performed to refine the base flood elevation (100-year floodplain).

The design approach to this project will utilize the majority of the upland areas, outside of the FEMA zones, to develop the mixture of uses throughout the site. In an effort to maximize the potential of different areas, including the development of areas within the floodplain, the necessary studies will be conducted to determine the viability for revisions to the FEMA flood maps.

4) Provide a letter from the Division of Historical Resources indicating if there are potentially regionally significant historical or archaeological sites on the property.

A letter and Florida Master Site File Map from the Division of Historical Resources is attached in the Appendix of this document.