

East Central Regional Rail Trail Management Plan

**Managed Jointly by
Brevard County and Volusia County
August 2019- August 2029**

**Prepared by
Volusia County Parks and Recreation Department
in Partnership with the
Brevard County Parks and Recreation Department**

East Central Regional Rail Trail Management Plan Executive Summary

The East Central Regional Rail Trail represents the collaboration of Brevard and Volusia Counties joining together with the State of Florida Department of Environmental Protection (FDEP) in providing the residents and visitors of the central Florida area with viable transportation alternatives as well as enjoyable recreational pursuits.

The completion of the acquisition of more than 50 miles of former rail corridor in 2007, FDEP leased the corridor to both Brevard and Volusia Counties for development and management. This corridor is significant to this region in several important ways. First, it provides an alternative transportation corridor for non-motorized vehicles between two counties and several cities. Second, it offers a quality recreational experience for a myriad of users. And, third, it encourages economic development along the trail corridor as more and more people come to use it daily and weekly.

This Management Plan outlines the natural and cultural resources found along the trail corridor. Native species and listed species are highlighted as well as the archaeological, historical, and cultural features. The Plan seeks to identify the resources around the corridor and develops methods to care for these resources in the future. One important asset of the trail corridor is its scenic resources. Traveling through historic towns, such as Maytown and Mims along a historic corridor, users have an opportunity to learn of the early lives of Florida residents. Furthermore, the trail corridor currently passes through rural and agricultural areas between Mims and Osteen providing a natural Florida experience.

Current uses and the desires of the public living near the trail corridor are also explored. Several public meetings were held to inform residents about the plans before and after construction and offer them an opportunity to comment. The impact of the trail on the public post-construction is also discussed.

The final section lists the goals and objectives for the multi-use trail as well as the steps that will be taken to protect the natural and cultural resources in its perpetuity. The trail's construction and completion timeline is included, as well as the actual costs. Funding sources are identified to develop the trail itself as well as manage the trail open to the public. Finally, public access is fully defined and each

use is explored as to its compliance with the purposes of acquisition, its ability to be fully integrated as an accepted use, and how conflicts were handled prior to its conception and into the future.

The Plan includes several maps that demonstrate the appropriateness of this trail location as well as the connections and linkages provided by this valuable public asset. The East Central Regional Rail Trail will continue to be a jewel in the trail system of both Brevard and Volusia Counties providing transportation, recreation, and protection of natural resources for future generations.

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I. INTRODUCTION

The East Central Regional Rail Trail (ECRRT) represents the most extensive rail corridor purchase in the state of Florida. At over 50 miles in length, the finalized trail is an essential piece of the five-county, 260 mile, St. Johns River to Sea loop trail that is anticipated to be completed by 2025. Being the longest stand-alone multi-use trail segment along this historic trail project, the exceptional ECRRT creates a focal point for regional connectivity in central Florida and is poised to become a distinctive eco- and heritage-tourism destination.

LOCATION OF PROPERTY

Located within two central Florida counties, the trail corridor traverses northern Brevard County and southern Volusia County (**Figure 1**). The ECRRT corridor spans 50.8 miles from the community of Enterprise in southwestern Volusia County to the City of Titusville in northern Brevard County with an additional spur from the former community of Maytown to the City of Edgewater. Communities near the trail corridor include Enterprise, Deltona, Osteen, Scottsmoor, Mims, Titusville, Edgewater and New Smyrna Beach. Passing through Enterprise and into Osteen, the trail crosses SR 415, continues east and passes under I-95 in both Volusia and Brevard Counties.

LAND ACQUISITION HISTORY

Purchase of the ECRRT was explored for nearly 20 years. In late 2001, the East Central Florida Regional Planning Council assisted the counties of Volusia and Brevard in submitting an Application for Acquisition of Land to the Office of Greenways and Trails (OGT) of the FDEP. Fortunately, this project was ranked high enough to be slated for purchase and OGT began the long and arduous process of surveying the corridor and having it appraised. Due to the nature of such a long-standing corridor, many title issues had to be resolved. Although the railroad tracks were removed over 50 years ago in many places except in the Titusville/Mims area, where they were only removed two years ago, title to the corridor itself remained in the hands of the Florida East Coast Railway Company (FEC). With such a long history of ownership, the railroad right-of-way had been left off of title searches; hence several private buildings had encroached on the right-of-way. Negotiations to deal with these encroachments were handled fairly by seeking win-win solutions.

Ultimately, nearly the entire corridor was purchased from the FEC for \$16 million using Florida Forever funds. Being the longest rail-to-trail acquisition in the state of Florida, the final corridor is 50.8 miles long and ranges from 35 to 200 feet wide for a total of 668.35 acres. The purchase closed on December 31, 2007 with the Board of Trustees of the Internal Improvement Trust

Fund of the State of Florida (Trustees) acquiring fee simple title. Once in public ownership, the trail corridor was leased to OGT for 50 years on April 25, 2008. In September 2008, OGT subsequently provided Volusia County and Brevard County a 50 year sublease to develop and manage the proposed multi-use trail (**Appendix 1**).

NEARBY PUBLIC LANDS AND DESIGNATED WATER RESOURCES

Nearby public lands consist of several large parcels of conservation land owned by federal, state and local agencies such as Canaveral National Seashore, Merritt Island National Wildlife Refuge, and Kennedy Space Center Reserve (Federal); Lake Monroe Conservation Area, Buck Lake Conservation Area, and Salt Lake Wildlife Management Area (St. Johns River Water Management District); Wiregrass Prairie Preserve (St. Johns River Water Management District/Volusia County); and Hickory Bluff and Turnbull Bay Conservation Area (Volusia County). Nearby parks include Thornby Park, Green Springs Park, Mariner's Cove Park, and Beck Ranch Park (Volusia County), Deltona Community Center, Deltona Festival Grounds and Lake Butler Recreation Complex (City of Deltona), Chain of Lakes, Harry T. and Harriette V. Moore Memorial Park, Holder Park, Cuyler Park, Marina Park, and Sand Point Park (Brevard County), Parrish Park and Space View Park (City of Titusville), and Rotary Park (City of Edgewater).

At the western terminus of the trail corridor is Lake Monroe which is fed by the St. Johns River, one of the first of only 14 federally designated American Heritage Rivers. The headwaters of the St. Johns River then turn east and parallel the trail corridor for several miles. The southern terminus in Titusville is close to the Indian River Lagoon, a "national treasure" which is managed by one of the 28 national estuary programs funded by the U.S. Environmental Protection Agency and considered "the most biologically diverse estuary in North America" (SJRWMD, 2008). At the northeastern terminus of the trail corridor in Edgewater lays the Mosquito Lagoon, the northernmost water body in the Indian River Lagoon. **Figure 2** depicts the proximity of the trail corridor to nearby public conservation lands and designated water resources. Although the trail is close to many acres of public lands and the Indian River Lagoon, the property itself is not within an Aquatic Preserve nor is any of the property designated as an Area of Critical State Concern.

REGIONAL SIGNIFICANCE

The ECRRT is significant to east central Florida for several reasons. First, the trail links Brevard County to Volusia County mirroring a historic path of commerce and travel. Second, the trail links the Seminole County trails system via a short distance along SR 415 as well as via the Spring-to-Spring Trail connection to the Rinehart Road/Riverwalk Connector along the west side of Lake Monroe. There is also the potential for a connection to Seminole County's (natural

surface) Flagler Wilderness Trail in the vicinity of Maytown should a crossing of the St. Johns River be constructed just north of Lake Harney. And third, is its ability to connect the eastern and western population centers in Volusia County, across a path commonly referred to as the “palmetto curtain” which is perceived to separate the county.

Other significant aspects of this trail corridor include the provision of recreational opportunities for nearly 450,000 Volusia County residents and outstanding eco- and heritage-tourism opportunities for communities adjacent to the trail. The ECRRT is a critical part of the 250-mile Florida Coast-to-Coast trail, the St. John’s River to Sea Loop, and the East Coast Greenway. These and other nearby trails are displayed in **Figure 3**.

Due to the nature of the destinations on either end of the ECRRT, the potential for alternative transportation uses are very exciting. Active bicyclists, for example, can now use the trail as a means to travel to work or to the SunRail station in Debary and the “Park and Ride” in Deltona.

PURPOSE AND SCOPE OF PLAN

In both Brevard and Volusia Counties, the mission of the Trails Program is “to provide trails for non-motorized transportation, recreation, linkages to public sites, and conservation of Florida fauna and wildlife habitat”. The major purpose of this acquisition, development and maintenance was to create an extensive public corridor which could be developed as a multi-use trail thus offering the public alternative, non-motorized transportation options and outdoor recreational activities such as walking, hiking, jogging, bicycling, inline skating, equestrian activities, and historical and archaeological appreciation, as well as resource-based activities like bird watching, nature viewing, and cultural resource appreciation. In the spirit of providing trail access for all people, access for individuals with disabilities is an integral part of the design.

In order to manage the ECRRT for the greatest public benefit, this Management Plan outlines the setting and operational constraints of the trail corridor and multi-use trail. The location, land acquisition history, nearby public lands and designated water resources, and the trail’s regional significance are discussed above. The second section provides an overview of the existing natural and cultural resources found along the trail corridor. The third section outlines existing public use and provides a description of how public input into planning the trail was achieved. The fourth section outlines the management strategy including the status of the previous goals and objectives for natural resource protection, construction priorities, and public access plans and the new set of goals and objectives for the next ten years. General management of the trail is dictated by various statutes and rules with the purpose and intended use providing the overall guiding principles.

This Management Plan is submitted for review by the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida (Trustees) through the Division of State Lands (DSL) of the FDEP. This plan complies with Section 253.034, Florida Statutes (F.S.); Subsection 18-2.021(4), Florida Administrative Code (FAC), and paragraph 7 of the subleases between OGT and Volusia and Brevard Counties. The form and content of this management plan for the ECRRT are in accordance with the Acquisition and Restoration Council (“ARC”) recommendations for management plans. Furthermore, each planned use of the property will comply with the State Lands Management Plan.

All development and resource alteration encompassed in this plan is subject to the granting of applicable permits, easements, licenses, and other required legal instruments. Approval of the management plan does not constitute an exemption from complying with all local, state, and federal agency regulations

II. NATURAL AND CULTURAL RESOURCES

This section describes the natural and cultural resources of the ECRRT property. Given that the trail corridor was an abandoned rail bed now constructed into a multi-use trail comprised of compacted soil and gravel usually flanked by parallel drainage ditches, the natural resources actually within the corridor property itself are limited to what has grown there since the rail line was abandoned such as grasses, shrubs and other herbaceous material. Culturally the rail bed itself represents a chapter of history in the central Florida area. Section IV details how these resources will be managed and how any outstanding issues will be resolved.

CLIMATE

The ECRRT corridor has a subtropical climate with an average temperature of 71°F and an average rainfall of 53 inches per year. June, July, and August are the warmest and wettest months with an average temperature of around 90°F while December, January, and February are the coldest months cooling off to an average temperature around 60°F. In the long term, rainfall is lower near the coast than it is inland (United States & Baldwin, et al., 1980). Since the trail corridor extends from the east coast to the inland area, users can expect varied conditions.

PHYSIOGRAPHY

Topography and Geomorphology

The subject area’s topography is underlain by lower marine and estuarine terrace deposits (alluvium, marl, peat) (Brown, Stone and Carlisle, 1990, p. 36) and karst topography “the undulating, pitted land surface that occurs where sinkholes are numerous and drainage is

primarily downward” (United States & Baldwin, 1980). Volusia County contains two major areas of karst topography known as the DeLand Ridge and the Crescent City Ridge which also are the highest in elevation throughout the county. The remaining subject land areas of Volusia County and northern Brevard County are leveled terraces which are “expanses of land of relatively uniform altitude which were the sea floor when the sea level stood higher than present sea level” and are characterized by surface drainage (United States & Baldwin, 1980). The ECRRT begins in western Volusia County within the Deland Ridge and travels eastward through the leveled terraces. The portion of the trail west of Osteen is on the ridge and the majority of the rest of the trail corridor is on relatively level ground. The highest point along the centerline of the corridor is near SR 415 at 51.1 feet and the lowest point is west of Dale Street in Edgewater at 2.2 feet. However, because the rail bed was artificially raised to be level, it is mainly an even slope throughout its extent.

Geology

The entire area beneath the ECRRT is considered part of the lower Atlantic Coastal Plain characterized by a surface of sandy marine sediments which were deposited during the Pleistocene to Recent age. The inland areas were also created during the Pleistocene age while the areas adjacent to the St. Johns River and Atlantic Ocean were created more recently. According to United States and Baldwin (1980) “the geologic material can be divided into an upper sequence of unconsolidated or poorly consolidated clastic deposits and a lower sequence of carbonate rocks.” The depth to rock is much less at the western terminus of the trail corridor than the two eastern termini.

Soils

As noted above, the actual ECRRT corridor was filled and covered with sand, gravel (often mined from Indian mounds) and ballast to provide a suitable surface for the rail road tracks. Therefore, the soil of the raised rail bed within the corridor itself consists mostly of these imported materials. In general, the area around the corridor is made up of two major soil orders: entisols and spodosols. Entisols are “dominated by nearly level to sloping, excessively drained thick sands; ecosystems generally are sandhill and sand pine scrub” (Brown, Stone and Carlisle, 1990, p. 44). Spodosols are “dominated by nearly level, somewhat poorly to poorly drained sandy soils with dark sandy subsoil layers; ecosystems generally are flatwoods and wet to dry prairies with ponds and cypress domes interspersed” (Brown, Stone and Carlisle, 1990, p. 45). There are 51 different soil classes adjacent to the trail corridor with nine of these soil classifications making up over 80 percent of the total. Table 1 below lists these nine most prevalent soil types in order of the most common first. **Figures 4A, 4B and 4C** show the soils around the corridor.

Table 1 Most Prevalent Soil Classification Adjacent to the ECRRT (SJRWMD Soil GIS Layer, 2008)

Soil Classification	Percent
Samsula Muck	22.1
Paola Fine Sand	19.5
Myakka Sand	12.3
Chobee Fine Sand	7.9
Smyrna Fine Sand	7.8
Tuscawilla Fine Sand	4.0
Immokalee Sand	2.7
Pomona Fine Sand	2.4
Wabasso Fine Sand	2.2

Hydrology and Water Management

The trail corridor crosses two significant tributaries/wetland systems associated with the St. Johns River. The easternmost of these is Cow Creek, which drains much of the southeastern quadrant of Volusia County west of the Atlantic Ridge into the St. Johns River. The other watercourse is Deep Creek, including the Deep Creek diversion canal, which is the main drainage way for the south-central portion of Volusia County. In order to maintain the integrity of Cow Creek and Deep Creek, an overpass was constructed to allow for passage of the ECRRT. In an attempt to maintain integrity of the surrounding waterways throughout the trail's corridor, a total of five (5) bridges were constructed.

“Most of the county [Volusia] is underlain by a three-aquifer system. The primary source of water is a limestone artesian aquifer of Eocene age known as the Floridan aquifer, which is divided into an upper and lower part. It is overlain by confining beds of low-permeability clay of Miocene or Pliocene age. These are overlain by a water-table aquifer that is composed of sand beds of Pleistocene and Recent age and the uppermost sand and shell beds of Miocene and Pliocene age” (Mercer, Thomas, Lester, & Broome, 1984, p. 1). Water management is overseen by the St. Johns River Water Management District whose mission is to preserve water for future generations while still providing enough water for current and future development.

NATURAL COMMUNITIES

Because the ECRRT corridor has been abandoned for 50 years, any natural communities that have grown up on the rail bed itself are of recent origin. The western and eastern termini are located in the relatively urban areas of Deltona, Titusville, and Edgewater. However, the middle portion of the trail corridor travels through a very rural area with large open stands of natural vegetation and the expansive Farmton timber lands creating a canopy of trees over much of this section. Adjacent to the built-up rail bed and current trail are 24 different natural

vegetative communities. The most common natural communities, in descending order of their prevalence, are shown in Table 2 below (identified by their four-digit Florida Land Use, Cover, and Forms Classification System (FLUCCS) code). **Figure 5A, 5B, and 5C** depict these natural communities adjacent to the trail corridor.

Table 2 Most Common Natural Communities Surrounding the ECRRT (SJRWMD Natural Communities GIS Layer, 2008)

Natural Community	Percent
4410: Coniferous Pine	27.9
6170: Mixed Wetland Hardwoods	23.7
6210: Cypress	14.7
6300: Wetland Forested Mixed	8.3
4430: Forest Regeneration	5.6
4340: Upland Mixed Coniferous/ Hardwood	5.3
3200: Shrub and Brushland (Wax Myrtle or saw palmetto, occasionally scrub oak)	3.7
4110: Pine Flatwoods	2.9

FOREST RESOURCES

Nearly all of the commercial forest resources on both sides of the ECRRT corridor are owned by the Miami Corporation which manages the Farnton Tree Farm. “Farnton Tree Farm is a 59,000 acre silviculture operation situated in both Volusia and Brevard counties in east central Florida. It was accumulated by the Deering Family of Chicago in the 1920s and benefits from their careful stewardship of the land for over 80 years. Today, Farnton includes timbering operations using best management practices, a mitigation bank restoring thousands of acres of wetlands, and quality wildlife management” (Farnton Tree Farm, 2008).

MINERAL RESOURCES

The Florida Geological Society (2008) describes generalized mineral mining areas in Florida for areas that have mineral extraction for Clay, Coquina, Phosphate, Limestone, Dolomite, Sand and Gravel, Oil and Gas, and Peat. There are no active mining operations near the ECRRT Corridor except for two small sand and gravel pits in Mims. However, in the past there were Coquina mining areas in Brevard County as well as to the north in Flagler County.

NATIVE SPECIES

The most predominant of the terrestrial ecosystems around the ECRRT are the pine flatwoods. Native species include three predominant trees: longleaf pine (*Pinus palustris*), typical slash pine (*P. elliottii*), and pond pine (*P. serotina*), as well as smaller areas of live oak (*Quercus*

virginiana), laurel oak (*Q. laurifolia*), water oak (*Q. nigra*), sweet gum (*Liquidambar styraciflua*), cabbage palm (*Sabal palmetto*), and red maple (*Acer rubrum*). Understory shrub species include saw palmetto (*Serenoa repens*), gallberry (*Ilex glabra*), fetterbush (*Lyonia lucida*), rusty lyonia (*Lyonia ferruginea*), staggerbush (*L. fruticosa*), dwarf huckleberry (*Gaylussacia dumosa*), wax myrtle (*Morella cerifera*), dwarf live oak (*Q. minima*), and tarflower (*Befaria racemosa*). In more open areas grasses include wiregrass (*Aristida stricta*) (Abrahamson & Hartnett, 1990).

Two large mammals native to nearby habitats are the white-tailed deer (*Odocoileus virginianus*) and the Florida black bear (*Ursus americanus floridanus*). Smaller mammals include the bobcat (*Lynx rufus*), opossum (*Didelphis virginiana*), nine-banded armadillo (*Dasypus novemcinctus*), Florida mouse (*Podomys floridanus*), Florida long-tailed weasel (*Mustela frenata peninsulae*), least shrew (*Cryptotis parva*), cotton mouse (*Peromyscus gossypinus*), cotton rat (*Sigmodon hispidus*), gray fox (*Urocyon cinereoargenteus*), and fox squirrel (*Sciurus niger*). Numerous bird species include the Florida scrub-jay (*Aphelocoma coerulescens*), bald eagle (*Haliaeetus leucocephalus*), Bachman's sparrow (*Aimophila aestivalis*), pine warbler (*Dendroica pinus*), brown-headed nuthatch (*Sitta pusilla*), great horned owl (*Bubo virginianus*), Florida sandhill crane (*Grus Canadensis pratensis*), wood stork (*Mycteria americana*), little blue heron (*Egretta caerulea*), tricolored heron (*Egretta tricolor*), great egret (*Ardea alba*), reddish egret (*Egretta rufescens*), snowy egret (*Egretta thula*), glossy ibis (*Plegadis falcinellus*), white ibis (*Eudocimus albus*). Other vertebrates include the gopher tortoise (*Gopherus polyphemus*), eastern indigo snake (*Drymarchon couperi*), Florida pine snake (*Pituophis melanoleucus mugitus*), pine woods snake (*Rhadinaea flavilata*), eastern diamondback rattlesnake (*Crotalus adamanteus*), black racer (*Coluber constrictor*), six-lined race runner (*Cnemidophorus sexlineatus*), scrub lizard (*Sceloporus woodi*), pine woods tree frog (*Hyla femoralis*), oak toad (*Bufo quercicus*), box turtle (*Terrapene carolina*), blue purse-web spider (*Sphodros abboti*), Florida cecidionid beetle (*Selonodon floridensis*), shining ball scarab beetle (*Ceratocanthus aeneus*), and enterprise siltsnail (*Floridobia monroensis*) (FNAI, 2008; Abrahamson & Hartnett, 1990).

LISTED SPECIES

In order to clearly establish the occurrences of potential listed species, both Brevard and Volusia Counties ordered reports from the Florida Natural Areas Inventory (FNAI). Although the following potential Listed Species have been provided by FNAI, their reports specifically recommend that “professionals familiar with Florida’s flora and fauna should conduct a site-specific survey to determine the current presence or absence of rare, threatened, or endangered species.” Site specific surveys were conducted by scientific professionals prior to any permitting for construction activities.

State Listed Plant Species

The following listed plant species (Endangered, Threatened, or Species of Special Concern) are potentially located on or near the ECRRT: Titusville Balm, Large-flowered Rosemary, Nodding Pinweed, and Celestial Lily. A specialized report requested from the Florida Natural Areas Inventory (FNAI, 2008) also includes Titusville balm (*Dicerandra thimicola*), nodding pinweed (*Lechea cernua*), large-flowered rosemary (*Conradina grandiflora*), and celestial lily (*Nemastylis floridana*).

State Listed Animal Species

The following listed animal species (Endangered, Threatened, or Species of Special Concern) are potentially located on or near the ECRRT: Florida Mouse, Florida Black Bear, Gopher Tortoise, Eastern Indigo Snake, Florida Pine Snake, Florida Scrub-jay, Florida Sandhill Crane, Wood Stork, Brown Pelican, Reddish Egret, Little Blue Heron, Least Tern, Tricolored Heron, Osprey, and Snowy Egret.

INVASIVE NON-NATIVE SPECIES

Invasive Non-native Plant Species

Invasive non-native plant species are present in scattered locations along the trail, however their densities vary. Exotic invasive plants are less prevalent along the central portion of the trail corridor from Mims to Maytown and from Maytown to Osteen. The following exotic invasive plants are likely to be found along the trail corridor in the more urbanized areas: Brazilian pepper (*Schinus terebinthifolius*), cogon grass (*Imperata cylindrical*), air-potato (*Dioscorea bulbifera*), camphor tree (*Cinnamomum camphora*), coral ardisia (*Ardisia crenata*), lantana (*Lantana camara*), old world climbing fern (*Lygodium microphyllum*), rosary pea (*Abrus precatorius*), and tropical soda apple (*Solanum viarum*).

Invasive Non-native Animal Species

Invasive non-native animal species include feral hogs (*Suidae spp.*), Cuban tree frogs (*Osteopilus septentrionalis*), and brown anoles (*Anolis sagrei*).

ARCHAEOLOGICAL, HISTORICAL, AND CULTURAL RESOURCES

The Florida East Coast (FEC) railroad corridor is in itself a historical and cultural feature. Constructed in 1885 as the Indian River Railway, the line originally was used to transport citrus from the famous Indian River groves located in Brevard County to Enterprise, a community located on the northern shore of Lake Monroe on the St. Johns River. Lake Monroe was the

“end of the line” for St. Johns River steamship traffic, and the large dock at Enterprise was outfitted with rails to accommodate the transfer of fruit from rail to steamer transport. The fruit was then shipped by steamship to Jacksonville and distributed to cities along the eastern seaboard. When Henry Plant began construction in 1887 of the Jacksonville, Tampa and Key West Railroad, the local line was extended two miles to the west to a railhead referred to as Enterprise Junction in what is now the City of DeBary. This connection integrated the local line into the larger statewide rail network and eventually became a part of FEC railroad holdings.

Within Volusia County, the corridor passes through the small, historic communities of Enterprise, Osteen and Maytown. A few privately-owned buildings in these settlements constructed between 1870 and 1940 remain adjacent to, or accessible from the corridor, though some are vacant and in a state of neglect. Most notable of the historic resources is the Cobb House in Enterprise (ca. 1870) which would have been potentially eligible for the National Register of Historic Places. Unfortunately, the Cobb House was demolished in 2012. Other buildings have associations with historic agricultural practices and settlement patterns, but are in dilapidated conditions and lack architectural integrity and historical significance to meet the criteria for listing on the National Register. Within Brevard County, the only noted archaeological and historical feature near the trail is the rail bed itself.

Although railroad infrastructure (rails, ties, semaphores, etc.) on most of the corridor were removed in the 1960s, several historic features are still associated with the corridor, including the original earthen berm of soil and lime rock ballast. The Enterprise shell midden site, once one of the largest prehistoric shell middens on the St. Johns, is protected within the boundaries of Green Springs Park which is managed by Volusia County. A systematic archaeological survey was conducted along the corridor; however, it held no significant findings.

SCENIC RESOURCES

The scenic resources of the ECRRT corridor are its most impressive assets. Traveling through the historic towns of Enterprise and Mims, users are introduced to the sights and sounds of an earlier time. Entering the urbanized areas of Deltona, Titusville and Edgewater, users will have access to parks and commercial centers making these portions amenable to alternative transportation trips. The middle area through Osteen and historic Maytown is mostly forested with limited rural development. This portion of the corridor allows users a glimpse into the natural central Florida landscape and provides a superior recreational experience.

The River of Lakes Heritage Corridor, in which the ECRRT is included, was created to preserve, protect and promote the intrinsic resources of the region through its programs and partnerships. An example is the Florida Scenic Highway Designation that many community volunteers worked on prior to the trails construction. The Heritage Corridor was officially

designated in mid-February, 2009, which will provide the opportunity to obtain funding for numerous community projects.

III. PUBLIC USE AND PUBLIC INPUT

PAST USES OF THE CORRIDOR

The Mims to Enterprise portion of the ECRRT corridor was originally constructed in 1885 and was known as the Indian River Railway. This railroad was used to transport citrus fruit from the famous Indian River groves located in Brevard County to Enterprise, a community located on the northern shore of Lake Monroe on the St. Johns River. Eventually, this line became part of the Florida East Coast Railway Company holdings which expanded south into Titusville and also included a spur from Maytown to Edgewater. In the 1960s, most of the railroad infrastructure in Volusia County was removed including the rails, ties, depots, and semaphores. On the other hand, the infrastructure from Titusville to Mims remained in place until 2007. The corridor has remained undeveloped since this time; however, some nearby homeowners have constructed various buildings on the right-of-way (including a few houses) and some use the rail bed as a road to access their property. Specific encroachments are detailed in the Project Development and Environmental (PD&E) study completed by the Florida Department of Transportation.

Although some sections of the corridor have been in continuous use by local residents, when OGT purchased the ECRRT corridor, “No Trespassing” signs were erected until the property was studied and officially opened for public use. “No Trespassing” signs are currently placed on the property boundaries adjacent to the trail to minimize foot traffic into privately-owned lands. Local residents have traditionally used the corridor as a multi-use trail in various sections; however, the dominant use is by off-road vehicle users and hunters, especially in the middle section.

Prior to construction, several sections of the corridor were amenable to hiking day trips and people have been observed hiking along the rail bed, despite the lack of designated parking spots and access points. Most of the trail corridor was too overgrown prior to construction for regular bicycles; however, mountain bikers were known to use the trail corridor on occasion. Local equestrians also used the more cleared areas especially around Osteen.

For decades, the trail corridor had been used by hunters around Maytown and northern Brevard County to access privately leased hunting lands. The northern third of the Brevard portion of the trail corridor passes through the Brevard County Game Refuge where the Miami Corporation lands support a private hunting club (Farnton Tree Farm, 2008).

CURRENT USES OF THE CORRIDOR

The newly constructed ECRRT is being used daily by a multitude of users. Users of the trail include walking and running pedestrians, in-line skaters, mountain-bikers, and bicyclists. In the Brevard County section, horseback riding is frequent. Passive uses include bird watching and wildlife viewing. The trail also hosts events, like charity-rides, races, and memorials which bring additional viewers, riders, and event volunteers into the trail. In the more urban areas, the ECRRT also provides non-automobile-based transportation options for Volusia and Brevard residents and visitors.

Furthermore, the trail facility was specifically designed to be accessible for individuals with disabilities thus providing equitable access for all segments of the population. The ECRRT and its facilities are compliant American Disabilities Act (ADA). These features include ADA accessible parking spaces and portable toilets at trailheads, detectable warning pavers at street crossings and a smooth asphalt trail to allow for ADA access. In keeping with current policies, motorized vehicles will be prohibited on the trail. Naturally, this prohibition does not include motorized wheel chairs.

While the actual rail bed was developed into a paved, multi-use trail, the surrounding public conservation habitats will be preserved for natural resource-based recreation and trailhead access.

EXISTING LAND USES SURROUNDING THE CORRIDOR

Outside of the large tracts of conservation land and forest land, by far the greatest percentage of existing land uses surrounding the ECRRT is residential (over 50%) (SJRWMD Natural Communities GIS Layer 2008). This is apparent as the trail corridor passes through the urbanized areas of Deltona, Titusville and Edgewater (**Figure 5A, 5B, and 5C**). Over ninety percent of the various land uses are contained in the top nine classes as shown in Table 3 below (in order of the most prevalent).

Table 3 Existing Land Use Categories Surrounding the ECRRT. (SJRWMD Natural Communities GIS Layer, 2008)

Existing Land Use Category	Percent
1200: Residential, Medium Density (2-5 dwelling units/ acre)	40.0
1100: Residential, Low Density (less than 2 dwelling units/acre)	16.2
3200: Shrub and Brushland (wax myrtle or saw palmetto, occasionally scrub oak)	14.4
2110: Improved Pastures (monoculture, planted forage crops)	6.4
3300: Mixed Upland Nonforested	4.1
3100: Herbaceous Upland Nonforested	3.8
2210: Citrus Groves	3.1
1400: Commercial and Services	1.6
1300: Residential, High Density (6 or more dwelling units/acre)	1.6

ADJACENT CONFLICTING LAND USES

Since the majority of the existing land uses surrounding the ECRRT are residential, adjacent conflicts that have arisen are primarily due to access issues. When the trail corridor was purchased, many cross easements were given to existing users. Following the PD&E study, easements were negotiated on a case-by-case basis. Many homeowners and landowners were initially concerned with the increase in users of the trail causing problems on their property. Community public meetings were held to address public concerns with the ECRRT. The other major land uses, such as the natural communities described above, are conducive to the provision of a natural recreational experience along the future trail. Therefore, no major land use conflicts are anticipated along the rail trail corridor in the future.

DETERMINATION OF PUBLIC USES CONSISTENT WITH ACQUISITION PURPOSES

The ECRRT corridor was specifically acquired for “the conservation and protection of natural and historical resources and for resource-based public outdoor recreation which is compatible with the conservation and protection of these public lands” (OGT, 2008). Therefore, the public use of the trail as a non-motorized, resource-based, recreational “linear park” is fully consistent with the original purpose of this acquisition.

ALTERNATIVE AND MULTIPLE USE POTENTIAL

The alternative-use potential of this extensive corridor is for private property owners to continue to use it to access their property as well as for the hunting community to access their hunting leases. However, any alternative uses are still limited to non-motorized modes of transportation only with the exception of authorized perpendicular crossings. Now developed as a 12' wide, paved, two-way trail, the ECRRT is well suited for its multiple-use trail potential.

IMPACT ASSESMENT OF USES

The planned and current public uses will be limited to non-motorized trail uses as outlined above. Impacts of these activities include the need for regular safety checks, clearing of debris, and trash removal. Run-off associated with the trail is and will continue to be minimal as no motorized vehicles will be permitted other than safety/cleaning vehicles. Neighborhood impacts include additional traffic and more activity. Parking is contained at trailheads and was planned for with public input. Impacts to the adjacent environment are minimized through the use of educational signage and the provision of ample waste containers and recycling bins. Education signage and waste containers are present at trailheads and at rest stops throughout the trail.

PUBLIC INVOLVEMENT

Public involvement is critical to ensuring that communities embrace the trail and, therefore, create a successful project. Public involvement was specifically cultivated for the development of the original 2009-2019 Management Plan. Pursuant to the statutes noted in Section I, an Advisory Group was formed from members of the community to include representatives from the lead managing agencies, co-managing agencies, local private property owners, Soil and Water Conservation District, local conservation organizations, and local elected officials. Since this trail project is located in two counties, representatives were invited from each county. The lead managing agency representatives were made up of Brevard County and Volusia County trails staff while OGT provided staff members to represent the co-managing agency. Several local property owners were invited to join the group including the official representative of the largest single private land owner adjacent to the trail corridor, the Miami Corporation. Soil and Water Conservation District representation was filled by staff from the St. Johns River Water Management District (SJRWMD). Local conservation organization representation was provided by members of the Florida Trail Association and the Florida Freewheelers. The local elected officials were former County Commissioner Truman Scarborough (Brevard County) and Council Member Pat Northey (Volusia County).

Prior to any construction, the Advisory Groups held their organizational meetings on August 26, 2008 in Brevard County and August 28, 2008 in Volusia County. Subsequently, public meetings were held in September in both Brevard and Volusia Counties (September 17, 2008 and September 24, 2008, respectively). Both public meetings were well attended and gathered many interesting and useful comments. In addition, participant contact information was entered into a database so that they could be kept up-to-date on the progress of the design and development of the trail segments.

IV. MANAGEMENT GOALS AND OBJECTIVES

To meet FS 253.034(5)(b), the following short-term and long-term management goals, including measurable objectives, are made part of this Management Plan. The overall management goals and objectives for the development, operation, and maintenance of the trail are the responsibility of Brevard County and Volusia County. Every effort will be made to secure funding, however, the implementation of the following goals and objectives will be accomplished as funding and resources become available. The original goals established during the 2009-2019 Management Plan were amended to form the next phase of management goals and objectives for the 2019-2029 Management Plan.

Goal 1: Habitat Restoration and Improvement

As managers of the trail corridor, Brevard County and Volusia County are tasked with restoring and improving any damaged or impacted habitats within the corridor. However, it is important to note that this property is a highly disturbed railroad corridor which is too narrow to exhibit normal ecological functioning. It was specifically purchased for the primary purpose of outdoor recreation and alternative transportation rather than native habitat conservation. In addition, the paved trail and stabilized sod shoulders occupy the majority of the trail corridor and only leaves thin strips of natural land along both sides of the improved trail. The majority of these strips of natural lands are in good ecological condition. Although habitat restoration often requires the use of prescribed burning, due to the configuration of the property as a long, narrow corridor, this management tool is not applicable. Furthermore, most habitat restoration and improvement was achieved by eliminating most detrimental activities occurring along the corridor such as ATV use and dumping. The elimination of these activities will allow the remaining natural communities to restore or improve on their own.

Objective 1.1: Conduct habitat/ natural community restoration on land inside the corridor and adjacent to the multi-use trail as resources allow.

Measure 1.1.1: Pursue funding to perform habitat restoration adjacent to the trail corridor within 2 years as resources allow.

Measure 1.1.2: Maintain native habitat adjacent to the trail corridor within 10 years as resources allow.

Measure 1.1.3: Implement educational signage near the restoration site(s) to inform the trail users of the habitat restoration and benefits provided to native Florida flora and fauna species as resources allow.

Goal 2: Public Access and Recreational Opportunities

As managers of the trail corridor, Brevard County and Volusia County are tasked with providing equitable public access to the property. Recreational opportunities are available to anyone who seeks them, thus the opportunities are significant.

Objective 2.1: Allow for open access for non-motorized uses to the trail to be utilized by the public every day, sunrise to sunset, as safety conditions allow.

Measure 2.1.1: Perform a usage study to track the amount of users on each trail segment within 2 years as resources allow.

Measure 2.1.2: Perform a secondary usage study to track the amount of users on each trail segment using electronic counting devices within 10 years as resources allow.

Objective 2.2: Actively restrict access to enforce the “No Motorized Vehicles” Rule.

Measure 2.2.1: Install bollards or appropriate fencing where motorized access is frequently occurring on the multi-use trail as deemed appropriate within 2 years as resources allow.

Measure 2.2.2: Install additional sections of bollards or appropriate fencing where motorized access is frequently occurring on the multi-use trail within 10 years as deemed appropriate and as resources allow.

Objective 2.3: Develop measures to eliminate illegal dumping on the trail.

Measure 2.3.1: Identify and remove all dumping sites on the trail within 2 years.

Measure 2.3.2: Use appropriate county staff to investigate and identify originator of dumped materials and issue citations compliant with local laws.

Objective 2.4: Update and complete the information available online and in electronic applications regarding trailheads, signage, and rest areas.

Measure 2.4.1: Update the Volusia County Parks and Trails Application to reflect the open trail segments, trail heads, and rest areas within 2 years.

Measure 2.4.2: Update the Volusia County and Brevard County Government websites to reflect the open trail segments, trail heads, and rest areas within 2 years.

Measure 2.4.3: Add a Calendar feature on the Volusia County Parks and Trails Application and on the Volusia County website to allow for trail users to view events within 2 years.

Measure 2.4.4: Update and maintain the Volusia County Parks and Trails Application, and the Volusia County and Brevard County websites to reflect open trail segments, trailheads, and rest areas within 10 years.

Measure 2.4.5: Add all trails and trailheads information to online maps to yield searchable results under “Trails Near Me” within 10 years.

Goal 3: Hydrological Preservation and Restoration

Although there are no significant water bodies within the trail corridor itself, there are several areas that benefit from improved drainage across the corridor. These areas were identified as part of the PD & E Study and were improved by creating bridges, large box culverts, and various water connection features.

Objective 3.1: Maintain integrity of the hydrological features restored within the construction phase.

Measure 3.1.1: Conduct a site assessment of all hydrologic features constructed on the trail corridor within 2 years as resources allow.

Measure 3.1.2: Pursue funding and implement infrastructure to maintain integrity of water features in the case of any damages within 10 years as resources allow.

Goal 4: Sustainable Forest Management

There are no silviculture activities currently within or proposed within the corridor, thus, this goal is not applicable.

Goal 5: Exotic and Invasive Species Maintenance and Control

Due to the narrow and linear configuration of the trail corridor, exotic and nuisance animals likely only use the site for movement. Therefore, exotic animal control within the corridor is not applicable.

The former use of the rail bed and the construction of the trail has resulted in invasive exotic plant species in scattered locations inside the trail corridor. The majority of the exotic and invasive plant species occur within or near the urbanized segments of the trail.

Objective 5.1: Eliminate Florida Exotic Pest Plant Council (FEPPC) Category I invasive exotic plant species utilizing the trail corridor.

Measure 5.1.1: Remove invasive exotic plant species within the trail corridor within 2 years through chemical or mechanical means as resources allow.

Measure 5.1.2: Maintain FEPPC Category I invasive exotic plant species to approximately 5% of the total trail corridor within 10 years as resources allow.

Goal 6: Capital Facilities and Infrastructure

The rail corridor was purchased with the intention of developing a paved, multi-use trail, equestrian trail in the Brevard County section north of Mims. As of August 2019, the majority of the paved trail has been completed; however, a segment between Gobblers Lodge Road and Guise Road in Osteen still needs to be completed.

There are currently no adequate drinking water sources on the majority of the trail for public use. Providing access to drinking water will be an objective in the next phase of management.

Objective 6.1: Complete the remaining 3.5 mile segment between Gobblers Lodge Road and Guise Road.

Measure 6.1.1: Secure design and funding for the segment within 2 years.

Measure 6.1.2: Complete construction of the segment and hold opening ceremony for the finalized path within 10 years.

Objective 6.3: To maintain integrity of 50.8 miles of multi-use trails, 10 trailheads, 20 access points and adequate signage.

Measure 6.3.1: Maintain 50.8 miles of completed multi-use trails, 10 trailheads, and 20 access points within 2 years.

Measure 6.3.2: Maintain 50.8 miles of completed multi-use trails, 10 trailheads, and 20 access points within 10 years.

Measure 6.3.3: Install signage along the trail to inform users of park site locations, miles traveled, and emergency information within 2 years as resources allow.

Measure 6.3.4: Maintain signage and update as needed the signage installed in 10 years.

Objective 6.4: To install drinking water and water bottle filling stations in strategic locations along the multi-use trail.

Measure 6.4.1: Pursue funding for the design, construction and maintenance for the installation of drinking water stations along the trail corridor in 2 years as resources allow.

Measure 6.4.2: Install drinking water stations along the trail corridor in two locations in 10 years as resources allow.

Goal 7: Cultural and Historic Resources

Both Brevard County and Volusia County are aware of the potential for cultural and historic resources on site due to its age and use patterns. While no sites were available to be recorded in the Florida Master Site File, the trail corridor offers numerous historic and cultural educational opportunities.

Objective 7.1: Continually seek previously unknown cultural and historic resources throughout the trail's corridor.

Measure 7.1.1: Record all new cultural and historical resources in the Florida Master Site File.

Objective 7.2: Educate the ECRRT's users about the railway's rich history and cultural influence on central Florida.

Measure 7.2.1: Install educational signs regarding the railway's influence on Florida's economics, cultural, and social structure in 2 years as resources allow.

Measure 7.2.1: Pursue funding to open and maintain a cultural/trail welcome center at a specified trailhead, as resources allow.

Goal 8: Imperiled Species Habitat Maintenance, Enhancement, Restoration, or Population Restoration

Due to the disturbed nature of the site and its linear configuration, there are limited amount of imperiled species habitats on the site. The gopher tortoise (*Gopherus polyphemus*), Florida scrub-jays (*Aphelocoma coerulescens*), and an eastern indigo snake (*Drymarchon corais couperi*) were observed on some segments of the trail prior to or during construction activities. Proper care was taken to ensure these species were unharmed and their habitat maintained integrity during construction activities.

Objective 8.1: Ensure any imperiled or protected species found on site are documented and protected.

Measure 8.1.1: Install educational signs regarding imperiled or protected species along the trail corridor in relevant locations in 2 years as resources allow.

Measure 8.1.2: Install additional educational signs regarding imperiled or protected species along the trail corridor and in relevant areas in 10 years as resources allow.

MANAGEMENT AUTHORITY AND RESPONSIBILITIES

The Trustees hold title to the ECRRT corridor, but overall management authority remains in the hands of OGT. The subleases between OGT and Brevard and Volusia Counties establish development and daily management authority for the trail through implementation of this Management Plan. Although overall policy management of the ECRRT lies with OGT, the design and construction phases in Brevard County will be managed by the Brevard County Parks and Recreation Department/Public Works Department within their appropriate jurisdictions and, in Volusia County, by the Volusia County Engineering & Construction Division. Maintenance in Brevard County will be the responsibility of the Brevard County Parks and Recreation Department while maintenance of the Volusia County portion will be the responsibility of the Volusia County Parks, Recreation, and Culture Division.

TRAIL PLANNING AND MANAGEMENT

Trail planning began with the resolution of all easements and claims for access on adjacent privately owned properties. The second condition that was addressed was arsenic contamination due to the corridors past uses. Volusia and Brevard Counties worked in concert with FDEP's Bureau of Waste Cleanup, Office of Greenways and Trails, and Division of State Lands, as well as with environmental consulting firm *WRS Infrastructure & Environment, Inc.*, to ensure that any arsenic containing media within the State-owned former railroad corridor was thoroughly and accurately assessed and managed in accordance with all Federal, State, and local regulations. The Phase Two Environmental Site Assessment was completed prior to construction. All known arsenic-related issues were resolved prior to opening the multi-use trail for public recreational use.

The newly constructed trail provides residents and visitors with a 50.8 mile multi-use, paved trail that is 12 feet wide, attractively landscaped, and accessible from several waysides and trailheads along the way. Benches and rest areas are included as well as interpretive signage where significant features are located.

The ECRRT is managed to provide resource-based outdoor recreation for the public while ensuring the conservation and protection of the natural and historical resources within the corridor. Therefore, a holistic planning approach was utilized to bring the most important qualities to bear in the development of this trail. Cultivating public buy-in ensured future public support for the trail concept and increased the chances for funding.

POTENTIAL SURPLUS LANDS

No known surplus lands have been identified thus far in the planning or process.

PROSPECTIVE LANDS ACQUISITION

Thornby Park in Enterprise provides a trailhead and link to the trail corridor as well as access to Lake Monroe. When the Trail Corridor was purchased by OGT, this historically and ecologically significant property was under consideration for purchase. In early 2009, the City of Deltona, in partnership with the County of Volusia, purchased the property for public access as a park and trailhead. There are no current or future prospective lands to be purchased by Brevard or Volusia County for the trail.

PARTNERSHIPS AND REGIONAL COORDINATION

The ECRRT is an example of the best in agency cooperation. The Board of Trustees purchased the corridor on recommendation from the Office of Greenways and Trails (OGT) which continues to hold an overall management interest in the future trail as well as the ability to eventually designate the trail as a state recreation and transportation resource. Because the trail corridor travels through two central Florida counties: Brevard and Volusia, these two county governments have combined their resources to provide a seamless multi-use trail for public enjoyment. In the past, many other regional agencies contributed to the realization of this project. These agencies include the East Central Florida Regional Planning Council, St. Johns River Water Management District, Florida Department of Transportation, Space Coast Transportation Planning Organization, Volusia/Flagler Metropolitan Planning Organization, Merritt Island National Wildlife Refuge, and Canaveral National Seashore.

By far the largest private organization both benefitting and impacted by the future trail is the Miami Corporation. During acquisition negotiations, Miami Corporation representatives assisted in the location of easements and provided access through their property. Due to the fact that much of the land area surrounding the trail corridor was in public ownership set aside for conservation and recreation, land use coordination was focused on preserving these areas for quality outdoor recreation. In the more urban areas of Titusville, Deltona and Edgewater, ease of access for the most people was the driving force.

COMPLIANCE WITH STATE AND LOCAL GOVERNMENT REQUIREMENTS

The preparation and subsequent approval of this Management Plan update complies with government regulations. The original plan allowed for management for the years 2009-2019. Every ten years, the Management Plan will be updated according to Florida Statutes 235.034(5). After the original plan was approved by the Board of Trustees, development of the trail began. Various permits from the Florida Department of Environmental Protection and the St. Johns River Water Management District were obtained for the construction of each section of trail which included wetland alterations and the rebuilding of five (5) small bridges. When dealing with local code variations between Brevard County and Volusia County the more stringent requirements were used for consistency.

ON-GOING RESEARCH AND MONITORING

Following completion of each segment, research and monitoring was and will continue to be conducted as deemed necessary to address any issues that may present themselves. With the help of Volusia County and Brevard County, staff experts and volunteers, issues will be dealt with on a fair and equitable basis with conservation of the resource being of the highest priority and provision of access to all users being the next highest priority. Brevard and Volusia County hope to install trail cameras to monitor activities into the future.

NATURAL RESOURCE MANAGEMENT AND PROTECTION

Soil Management

Soils of the trail corridor itself are managed to provide a safe and long-lasting surface for the 12 foot wide asphalt multi-use trail. Soils on either side of the trail corridor protected during installing silt fencing where necessary to protect wetland areas and installing drainage structures to avoid trail washouts while at the same time preventing excessive drainage onto nearby lands. At the end of construction of each phase of the trail, the sideslopes were stabilized with various turf grasses to prevent trail washouts.

Hydrology/Water Management

The integrity of the hydrological resources was maintained throughout the construction activities. Water management will remain the responsibility of the St. Johns River Water Management District and were implemented and maintained through construction activities and local inspections during each phase of the trail.

Natural Communities Management

Any natural communities within the trail corridor itself were marked for preservation as appropriate. Development of the trail took into consideration specimen trees and any protected plants or animals. The shoulders of the trail surface were planted with varieties of native and turf grasses to prevent the encroachment of invasive plants into the surrounding natural communities and to limit erosion from the trail.

Forest Resources Management

The forest resources surrounding the trail corridor are either in public ownership or owned by Farmton Tree Farm. Public lands are managed under the same conditions as the trail corridor, for protection of the natural resources balanced with sustainable resource-based recreational usage. Private forest resources are managed for logging operations by their respective owners.

Fire Management

Fire management is critical to the health of several communities such as long-leaf pine, scrub, and flatwoods. Fire management will likely not be applied to the trail corridor because of its linear nature. If fire management is considered, it will be coordinated between each county's environmental division and the local Division of Forestry. The trail does provide a natural fire break and access point in the case of a wildfire.

Mineral Resources Management

Mineral resources belong to the underlying property owner and are not a significant factor in this planning process.

Native Species Management

Habitat requirements for native species within the edges of the trail corridor will be maintained and managed as resources allow to ensure that native species survive and are able to sustain the natural biodiversity found along the trail corridor.

Listed Species Management

Several segments of this site are located near scrub habitat, a natural community in decline that provides important habitat for several rare species within a small area. Surveys for the Florida scrub jay were performed prior to construction in scrub habitats, but no birds were found to occupy the habitat. Gopher tortoise surveys were performed on all suitable habitats within the trail segments. Gopher tortoises were permitted and relocated from occupied habitat during construction of each phase of the trail. These tortoises were relocated to off-site recipient sites permitted by Florida Fish and Wildlife Conservation Commission (FWC). The remaining habitat

along the trail corridor which is outside of the paved multi-use trail and stabilized shoulders will continue to provide habitat for listed species such as gopher tortoises.

Invasive Non-native Species Management

According to the FEPPC, Category I plants (those that are altering and displacing native plant communities) will require constant vigilance to prevent their spreading to other areas of the trail corridor. Management will require regular maintenance as typical for a corridor. Invasive plants commonly spread along the corridor will be removed through both mechanical and chemical means to prevent further disbursement, as resources allow. Where possible, volunteers trained in exotic identification and removal will be enlisted to help control the spread of non- native species.

Problem Native Species Management

Problem native species will be treated as invasive non-native species and removed when encountered, as resources allow, while strictly adhering to state, federal, and local governmental guidelines.

Archaeological, Historical and Cultural Resource Management

The majority of historic structures along the trail corridor are clustered in the Osteen and Maytown settlement areas. The construction of the trail and its continued use is not expected to impact these structures. All archaeological and historical resource management followed the “Management procedures for Archaeological and Historical Sites and Properties on State-owned or Controlled Properties.”

A systematic archeological survey was conducted by the Florida Division of Historical Resources along the railroad corridor prior to any construction activities. The archaeological survey did not find any artifacts or historic properties that held sufficient historical significance, architectural distinction nor integrity to be deemed eligible for the National Register of Historic Places. Construction of the original rail bed may have substantially disturbed sites, including shell middens, but there was no indication of any historic sites that needed to be added to the Master File.

Scenic Resources Management

The scenic resources along the trail corridor are one of the main reasons people will come back and use the trail many times. The preservation of the scenic resources in the public lands will be ensured throughout the trails perpetuity. In addition, private land owners can be encouraged to maintain their scenic resources through land development regulations and incentive programs such as Transfer of Development Rights and cluster development.

TRAIL CONSTRUCTION AND COMPLETION DATES

Following the 2009-2019 Management Plan approval, Brevard and Volusia Counties constructed an attractive and inviting multi-use trail. The trail corridor was conceptually divided into logical and manageable segments to facilitate an orderly and equitable progression of development. The segments and their completion dates are listed in Table 4. Trail construction priorities started with the most easily accessible segments that serve the most people, i.e. on each terminus, and work toward the middle segments and the Edgewater spur. As of August 2019, only one segment has yet to be completed.

Table 4 Trail Segments and Completion Dates

Trail Segment	Completion Date
Segment 1 - Providence Boulevard (Enterprise) to Garfield Road (Deltona)	2012
Segment 2 - Garfield Road to SR 415 (Deltona)	2012
Segment 3 - SR 415 to Guise Road (Osteen)	2015
Segment 4 - Guise Road to Gobblers Lodge Road (Osteen)	2020
Segment 5 - Gobblers Lodge Road to Maytown Spur	2018
Segment 6 - Maytown Spur to Brevard County Line	2018
Segment 7 - County Line to Aurantia Road	2018
Segment 8 - Aurantia Road to Kingman Road	2018
Segment 9 - Brevard County Line to Cow Creek Road	2018
Segment 10 - Cow Creek Road to Dale Street (Edgewater)	2015

Development Timeline

The most important accomplishment was the successful purchase of the FEC corridor by a state agency dedicated to the preservation of natural resources and the provision of recreational access. The next phase of the ECRRT project was to complete the 2009-2019 Management Plan and the Project Development & Environment study. The plan to deal with the arsenic was the next order of business followed by the design and subsequent construction of a paved, multi-use trail open to the public. These were all completed and development of the ECRRT is almost complete.

The ECRRT was developed in segments to spread the fiscal impact over several years. Brevard County was responsible for developing their segments (12.8 miles) and Volusia County developed their segments (35.9+ miles). The City of Titusville is responsible for managing the section of trail between Kingman Road and Canaveral Avenue. Because of the separate management authority, this section of the trail was not included in this Management Plan.

Trailhead locations (**Figure 7**) can be found throughout the trail corridor. Currently there are 10 total trailhead locations with 8 in Volusia County and 2 in Brevard County. The Volusia County

trailhead locations include Green Springs Park, Thornby Park, Audubon Park, Osteen Civic Center, Gobblers Lodge, Maytown, Cow Creek, and Rotary Park. The Brevard County trailhead locations include Aurantia Road and Chain of Lakes.

The original target completion date for the ECRRT was set for 2015. However, this date was delayed due to funding and construction delays. The completion date for the final segment from Guise Road to Gobblers Lodge Road is set for 2020. Original costs estimates were based on the average market cost of \$453,244 per mile for design and construction for the segments completed by 2010. For the segments scheduled for completion after 2010, the cost estimate per mile of trail was increased by 10% to \$498,568 based on anticipated inflation. The segments that contained bridges anticipated higher construction cost estimates than the per mile cost listed above. The table below displays the trail segments, total mileage, cost estimate, actual cost, targeted completion date, and actual completion date.

Table 5 ECRRT - Estimated and Actual Costs, Expected and Actual Construction Completion

Trail Extent/ Facility	Miles	Cost Estimate	Actual Cost	Targeted Completion Year	Actual Completion Year
Segment 1 - Providence Boulevard (Enterprise) to Garfield Road (Deltona)	1.4	\$635,000	\$1,742,471	2010	2012
Segment 2 - Garfield Road to SR 415 (Deltona)	4.3	\$1,949,000		2010	2012
Segment 3 - SR 415 to Guise Road (Osteen)	2.7	\$1,224,000	\$1,071,474	2013	2015
Segment 3 - Pedestrian Bridge over SR 415	--	\$5,000,000	\$1,996,794	2013	2015
Segment 4 - Guise Road to Gobblers Lodge Road (Osteen)	3.5	\$5,000,000	-----	2020	-----
Segment 4 - Bridge over 442		\$1,012,000	\$2,180,536	2013	2015
Segment 5 - Gobblers Lodge Road to Maytown Spur	6.8	\$3,390,000	\$6,595,000	2015	2018
Segment 5 - Two Bridges	--	\$1,012,000		2015	2018
Segment 6 - Maytown Spur to Brevard/Volusia County Line	1.6	\$798,000	\$10,700,000	2015	2018
Segment 7 - Brevard/Volusia County Line to Aurantia Road	5.5	n/a		2015	2018
Segment 8 - Aurantia Road to Kingman Road	7.2	\$3,590,000		2014	2018
Segment 9 - Maytown Spur to Cow Creek Road	8.6	\$4,288,000	\$9,470,000	2015	2018
Segment 10 - Cow Creek Road to Dale Street (Edgewater)	7.0	\$3,490,000	\$2,283,471	2014	2015
Segment 10 - 2 Bridges	--	\$506,000	\$2,180,536	2014	2015
Segment 11 - Aurantia Road to Kingman Road (Titusville)*	2.2	*Titusville section not included in this Management Plan			
TOTALS	50.8	\$31,894,000	\$38,220,282		

Construction Funding Sources

The original timeline assumed that the Volusia County Council would receive the \$1 million annual ECHO allocation for the Trails Program in each of the successive fiscal years and the Florida Department of Transportation would continue funding Enhancement activities for multi-use trails in both counties. Volusia County and the Brevard County Parks and Recreation Department/Public Works Department continued to seek additional trail construction funding from grant sources such as the annual Volusia ECHO competitive grant and DEP's Recreational Trails Program. The additional funding sources received to complete the Volusia County portion came from the State of Florida's Local Agency Program (LAP) funding.

In order to complete the remaining portion of the ECRRT, funds were secured through SunTrail Funding.

TRAIL MANAGEMENT PRIORITIES

Management Activities

Management activities are prioritized as follows: (1) ensure the safety of all patrons; (2) provide equal access for patrons; (3) protect the surrounding environment; (4) present a clean, comfortable, and enjoyable experience; (5) encourage user feedback; (6) provide maps and brochures; (7) promote a "share the trail" ethic; and (8) celebrate our successes.

Operational Activities

Brevard County Parks and Recreation Department and Volusia County Parks, Recreation and Culture Division staff will continue to maintain the trails utilizing park maintenance staff and volunteers. County staff will be responsible for routine maintenance including mowing the stabilized shoulders, litter pickups, periodic safety checks as well as the removal of large tree limbs. As the last piece of the trail system is finished, additional staff and equipment may need to be budgeted to meet these needs.

Operating Funds

In both counties, funds to operate and maintain the trail system may be allocated from the General Fund budgets and other sources each fiscal year. Operational expenses may be offset somewhat with the assistance of a "Friends Group" to help with the maintenance of the trail.

Security Management

Security management is by far the greatest concern to users of the trail as well as trail neighbors. Intense use of a trail, the presence of "trail rangers", a group of trained volunteers,

and well- maintained trails, statistically leads to fewer security issues on trails throughout the country. Brevard County and Volusia County may designate staff members to maintain the trail and report to law enforcement should the need arise.

Potential to Contract with Private Vendors

Public and private partnerships are natural in trail development. As the trails were built through an area, private individuals and companies had an opportunity to capitalize on the visitors that use the trail and the provision of goods and services is only limited by the creativity and drive of local business owners. The Trails Programs will seek ways to contract with private vendors to provide services that are better handled in a market economy. However, these services should not be allowed to weaken safety considerations.

Citizen Support Organization

For many years, state parks have depended on their Citizen Support Organizations (CSO's) to help with planning, assist in maintenance, build new amenities, provide a security presence, and raise private funds to improve their sites. The ECRRT is poised to attract a myriad of devoted users who will take a personal interest in the trail. A CSO can be incorporated as a non-profit entity to take advantage of donations often missed by government agencies. Currently, there are no active CSO's offering assistance to the management of the ECRRT in Brevard or Volusia County.

State Designation

Following completion of the ECRRT, Brevard and Volusia Counties may apply to OGT for State Designation of the ECRRT. More information on the Florida Greenways and Trails State Designation can be found at <https://floridadep.gov/parks/ogt/content/designations>.

"In order to be designated, lands or waterways must:

- Protect and/or enhance natural, recreational, cultural or historic resources; and
- Provide linear open space or a hub or a site; or
- Promote connectivity between or among conservation lands, communities, parks, other recreational facilities, cultural sites, or historic sites" (OGT, 2008).

PUBLIC ACCESS AND USE

Access/Parking/Disabled Access

Providing access to such an extensive trail is a challenge for all agencies in light of the high cost of land. It is expected that people living near the trail will access it through their

neighborhoods. However, the final construction plans do include many formal trailheads for parking access for users that live further away from the trail. Several parcels adjacent to the ECRRT corridor were well suited for and developed into trailheads. The trail heads along the ECRRT include Green Springs Park, Thornby Park, Audubon Park, Osteen Civic Center, Gobblers Lodge, Maytown, Cow Creek, Rotary Park, Aurantia Road, and Chain of Lakes. All of the trailheads and waysides will be designed and built to be ADA compliant. The trail itself was built according to ADA standards so that people of all abilities can enjoy this community asset.

Transportation Alternatives

The development of the ECRRT imparts several multi-modal transportation benefits. The newly constructed trail provided alternative routes for non-motorized transportation to connect population centers to the proposed Central Florida Commuter Rail project, Amtrak lines, bus service, Park & Ride lots, employment centers, schools, and parks. Residents and visitors now have several alternatives to using the traditional road network for their transportation needs. The trail offers commuters multi-modal alternatives to highway travel by linking bicycle travel on trails to buses with bike racks, to active rail lines, and to other trail connections to Brevard, Seminole, and Volusia County. Commuters have a practical option to reduce traffic on I-4 and I-95, and other major highways and roadways.

Walking/Hiking

Walking and hiking are the most prevalent use of the ECRRT. However, it is constructed as a multi-use trail so other users have equal access. Seniors are attracted to the trail for daily walking exercise that gets them out of the house and into the natural environment. Parents with small children also enjoy taking brief walks along trails.

Jogging

Joggers prefer the asphalt surface to concrete sidewalks due to its consistency and slightly more giving surface. The ECRRT attracts more joggers in the urbanized areas.

Bicycling

For the two major groups of on-road bicyclists, weekend riders and serious long-distance riders, the ECRRT offers both groups a preferred alternative to riding and sharing space with motorized vehicles on the road. Bicyclists seeking recreation and daily exercise are able to travel short distances on a smooth, paved surface. Long-distance bicyclists, on the other hand, enjoy the fact that this trail (when complete) is over 50 miles long, meeting their desire for a longer ride.

Inline Skaters

Inline skaters enjoy using multi-use trails due to the smooth, continuous surface and the clear sight distances. Some inline skaters skate very fast and the wide trail adds to their enjoyment as well as the safety of others. The ECRRT is specifically designed to handle this use.

Equestrian Use

Equestrian use is more favored in the rural areas of the trail system and a separate parallel path was constructed for horseback riders in the Brevard County segment from Aurantia Road to the Brevard/Volusia County Line. Equestrian users desire a trail long enough to be worth transporting their horses. Trailheads also need to have a parking area large enough and with adequate turning radii for horse trailers.

Paddling

Paddling opportunities are available near the ECRRT and users can use the trail to complete a non-motorized multi-modal trip. Water bodies with paddling access include Lake Monroe (near the Green Springs trailhead), the upper reaches of the St. Johns River (via Guise Road), Mosquito Lagoon (near Edgewater), and Indian River Lagoon (near Mims and Titusville).

Boating

Boating is likewise not directly related to the ECRRT project. However, the trail does come near several boating areas and access points such as Mariner's Cove Boat Ramp and Deltona's Boat Ramp on Lake Monroe, Lemon Bluff Boat Ramp on the upper reaches of the St. Johns River, Menard-May Park boat ramp in Edgewater on Mosquito Lagoon, and Sand Point Park in Titusville on the Indian River Lagoon.

Camping

There are several areas where the ECRRT corridor expands to nearly 200 feet. These areas, as well as several municipally-owned lands, may accommodate camping in the future. Camping is currently available at Gemini Springs and Blue Springs Park, Lake Ashby Park, and Hickory Bluff Preserve.

Fishing

Fishing opportunities are similar to the opportunities provided to paddlers and boaters noted above. The Mosquito Lagoon, which is near the Park Avenue terminus of the ECRRT, is known as "the Redfish Capital of the World". Likewise, at the southern terminus in Titusville, the Indian River Lagoon offers abundant fishing prospects.

Hunting

In the central, more rural sections of the ECRRT, both public and private hunting areas have been in used for decades. Hunting is one of the activities that must be carefully managed near a recreational trail. In accordance with Ch. 62S-3.002(5)(c), F.A.C., “Shooting into or across lands under the management of the Office [OGT] from beyond said lands’ boundaries is prohibited.”

Picnicking

Picnicking is a popular activity along the ECRRT. Numerous benches, rest areas, and trailheads provide many options for picnics.

Interpretive Opportunities

The ECRRT takes its users on a trip through history. From the historic town of Enterprise (once the county seat of Volusia) to Maytown (which only exists in memory) through Mims and down to Titusville where the original train lines picked up famous Indian River Fruit, the trail corridor abounds in opportunities to provide interpretive displays. Future funding requests will include an interpretive component to complete the trail and attract both daily local users as well as heritage tourists visiting the area. Green Springs Park, a western trailhead, already has an interpretive component that educates while instilling an appreciation for the history of the area and the natural environment.

Visitor/Educational/Cultural Centers

As described above, the ECRRT corridor has much to offer in the way of visitor education; therefore, educational and cultural centers were planned along with the design of the actual trail itself. Current opportunities exist at the Osteen Civic Center and Deltona Civic Center on Lakeshore Drive. There is also a free downloadable application (Volusia County Parks and Trails), available in the Apple App Store and the Google Play Store, which offers visitor information on Volusia County trails.

Pet Policies

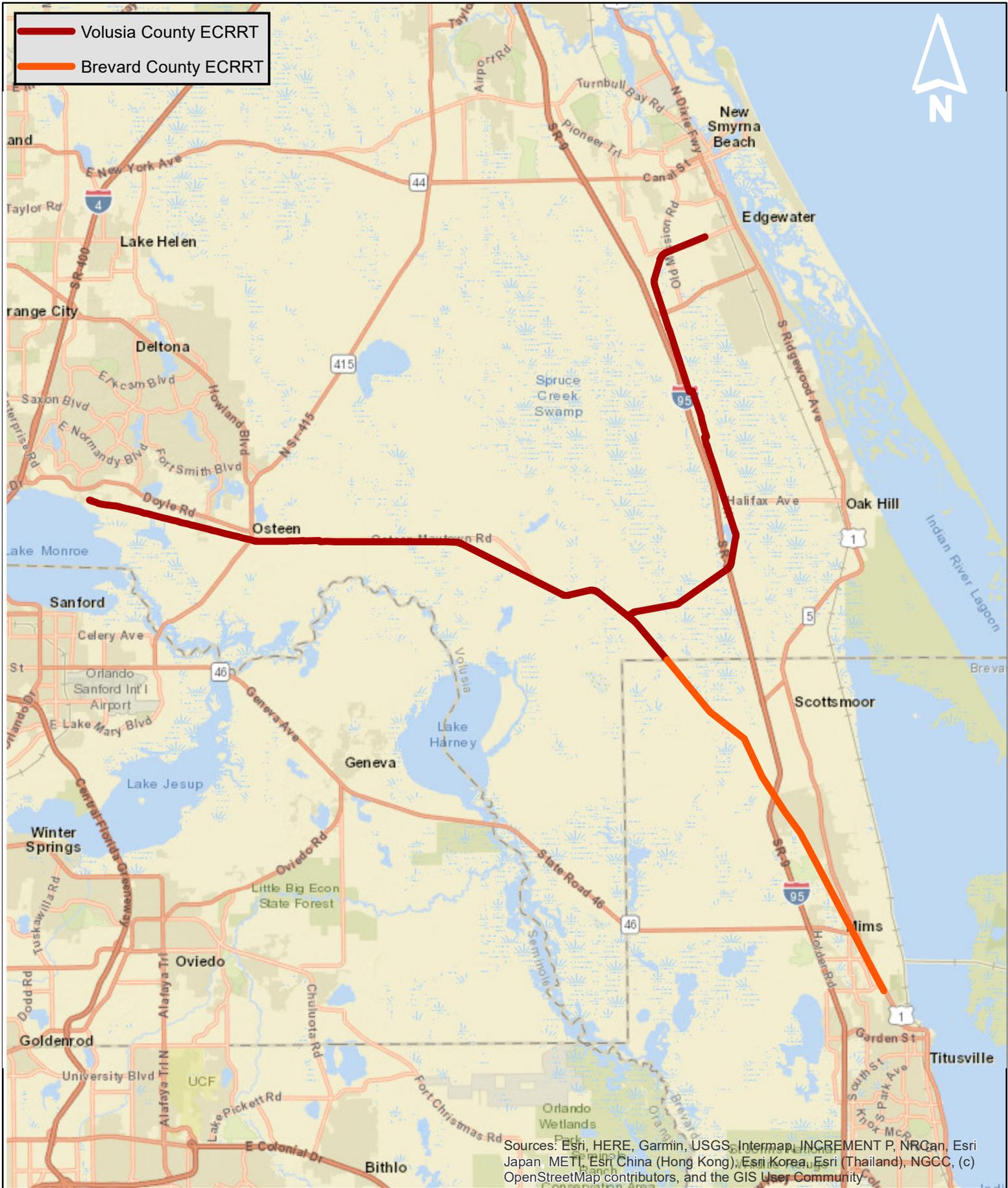
The ECRRT is a linear park facility to be operated under the same rules as other Volusia County parks which currently allow dogs on six-foot leashes. Pets are allowed on the trail as long as they are leashed and their owners pick up after them. A “Pets in Parks” brochure may be promulgated to educate the public about pet policies and “Doggie Bag” stations have also been employed to remind users to clean up after their pets.

Managing Multi-use Conflicts

“Share the Trail” brochures, have been developed to encourage respect and politeness among trail users. In the future, these brochures may be placed in trailhead kiosks. Suggestions to minimize conflicts include: be courteous, be predictable, don’t block the trail, slower traffic stays to the right, obey traffic and trail signs, control your bicycle, keep pets on a leash and children by your side, respect private property, and keep your trail clean. The general rule is “wheels yield to heels”. In addition, to educate trail users on appropriate trail etiquette, signage may be posted along the trail listing the general suggestions as well as a depiction of the wheels yield to heels hierarchy symbol. Safe and courteous multi-use can be accomplished on trails through education and a positive presence on the trail.

V. REFERENCES

- Abrahamson, W. G. & Hartnett, D. C. (1990). Pine Flatwoods and Dry Prairies. In R. L. Myers and J. J. Ewel (Eds.), *Ecosystems of Florida* (pp. 103-149). Gainesville, FL: The University of Central Florida Press.
- Brown, R. B., Stone, E. L. and Carlisle, V. W. (1990). *Soils*. In R. L. Myers and J. J. Ewel (Eds.), *Ecosystems of Florida* (pp. 35-69). Gainesville, FL: The University of Central Florida Press.
- Farmton Tree Farm. 2008. Retrieved December 16, 2008, from <http://www.farmtontreefarm.com/>.
- Farmton Tree Farm. 2008. Retrieved December 17, 2008, from <http://www.farmtontreefarm.com/ab-hunting.html>.
- FNAI. (2008). Specialized Reports for the ECRRT. Florida Natural Areas Inventory. Florida Resources and Environmental Analysis Center. The Florida State University.
- Mercer, J. W., Thomas, S. D., Lester, B. H., & Broome, R. W. (1984). *Saltwater Intrusion in Volusia County, Florida, Due to Ground Water Withdrawals-Technical Summary* (Technical Publication SJ 85-1). Prepared For St. Johns River Water Management District. Palatka, FL: Geotrans, Inc. Retrieved November 28, 2008, from <http://www.sjrwmd.com/technicalreports/pdfs/TP/SJ85-1.pdf>.
- OGT. (2019). Office of Greenways and Trails of the Florida Department of Environmental Protection.
- SJRWMD – St. Johns River Water Management District. (2008). *Indian River Lagoon Basin*. Retrieved December 29, 2008, from <http://www.sjrwmd.com/indianriverlagoon/>.
- The Florida Geological Society. (2008). Retrieved November 12, 2008, from <http://www.clas.ufl.edu/users/query/gly4155/sp35/fgs35.htm>.
- United States & Baldwin, R. (1980). *Soil survey of Volusia County, Florida*. [Washington, D.C.]: The Service.



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Figure 1 - Vicinity Map
 East Central Regional Rail Trail
 Brevard and Volusia County, Florida

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 ph 386-677-2482

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19,000 9,500 0 19,000 Feet



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Figure 3 - Nearby Trails
East Central Regional Rail Trail
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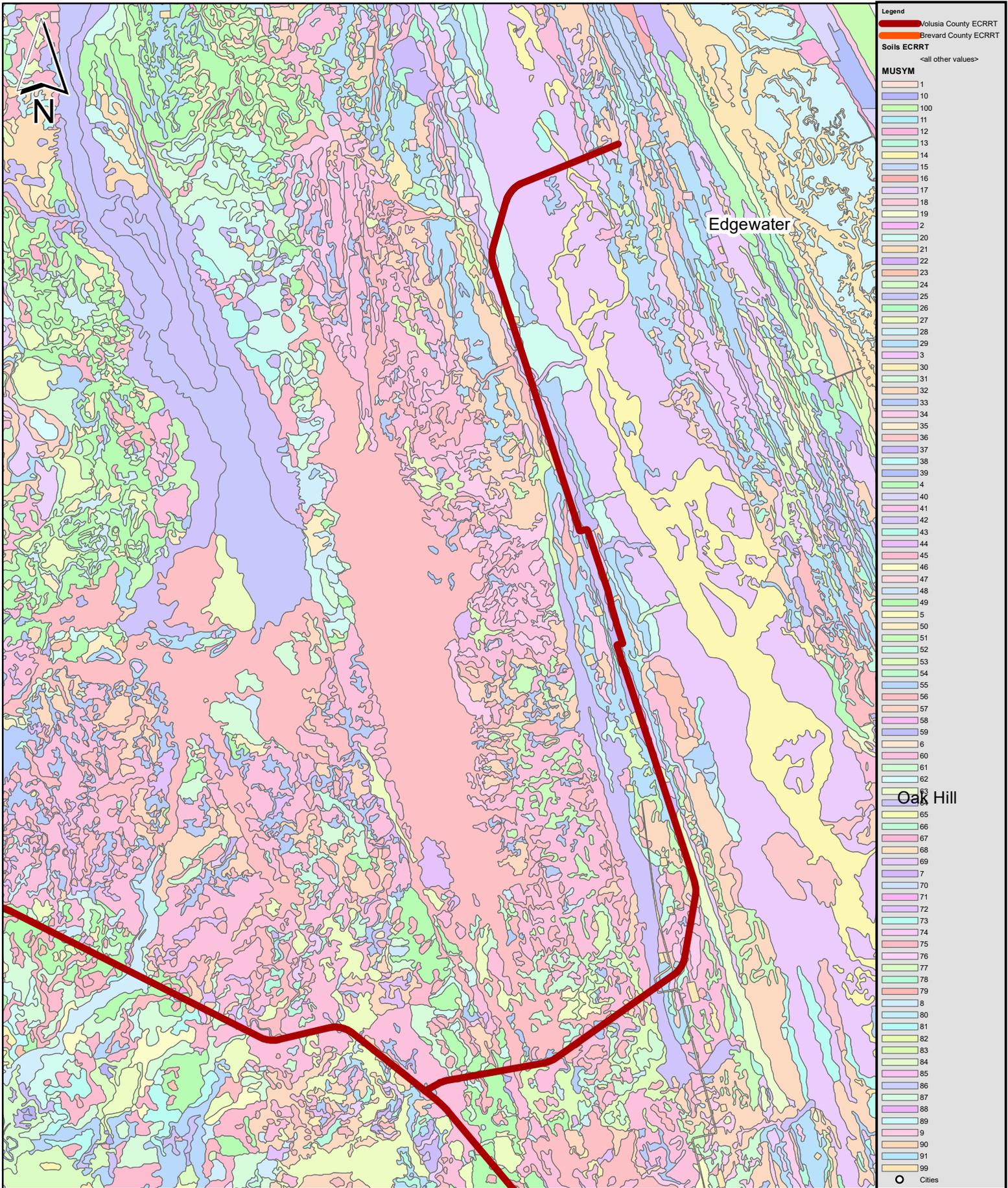


Figure 4a - Soils Map
 East Central Regional Rail Trail
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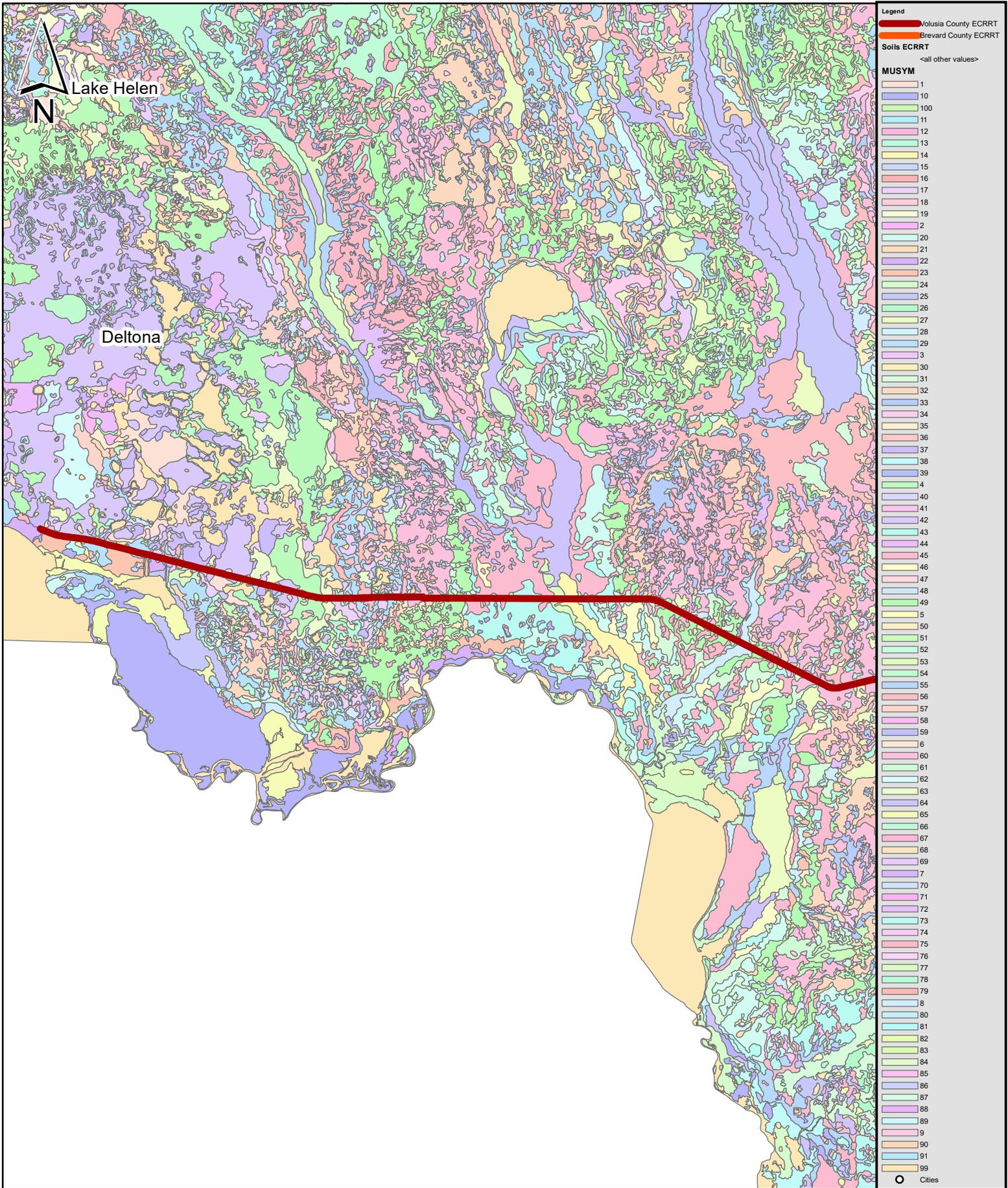


Figure 4b - Soils Map
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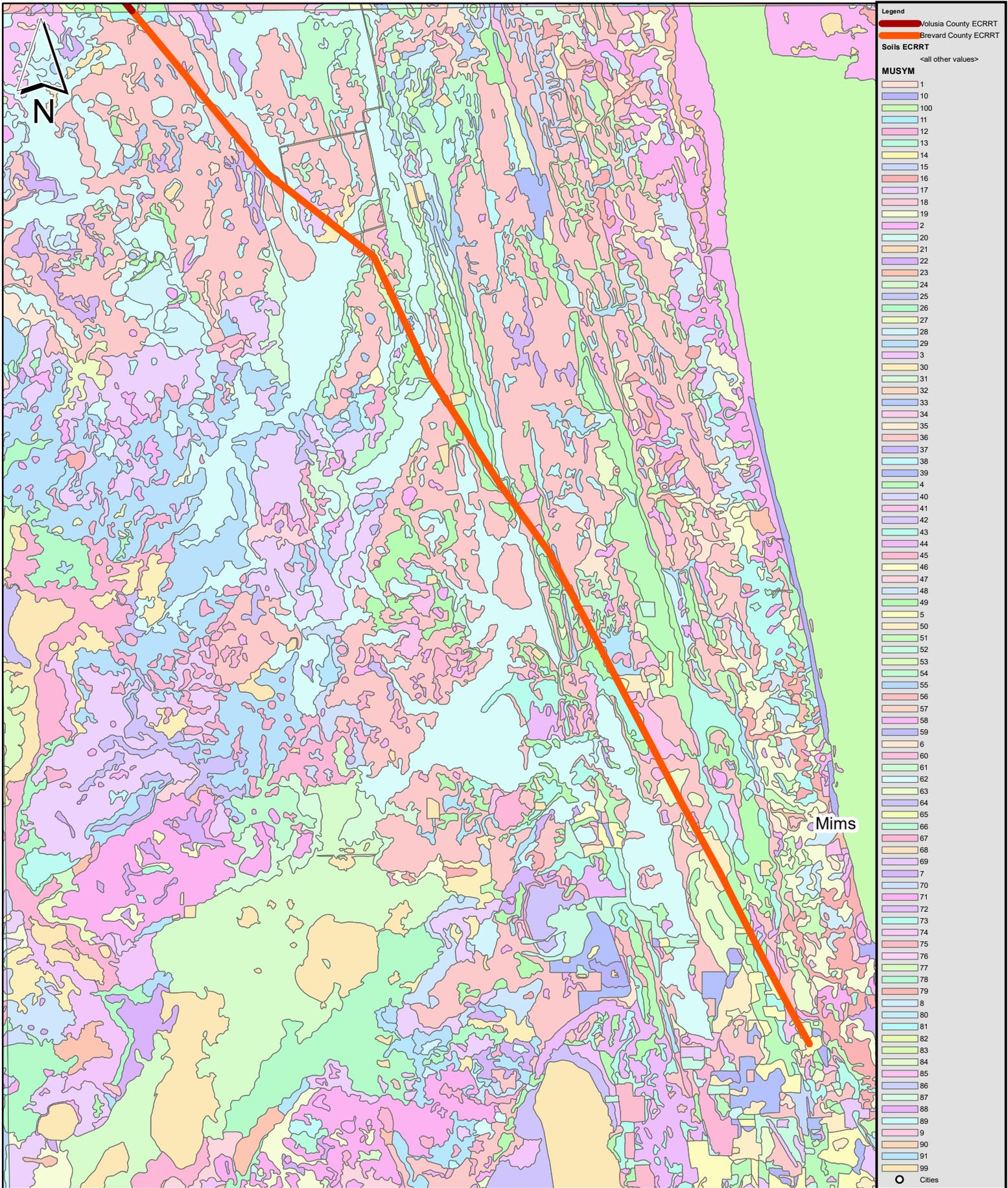


Figure 4c - Soils Map

East Central Regional Rail Trail

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Figure 5a - Land Cover / Land Use
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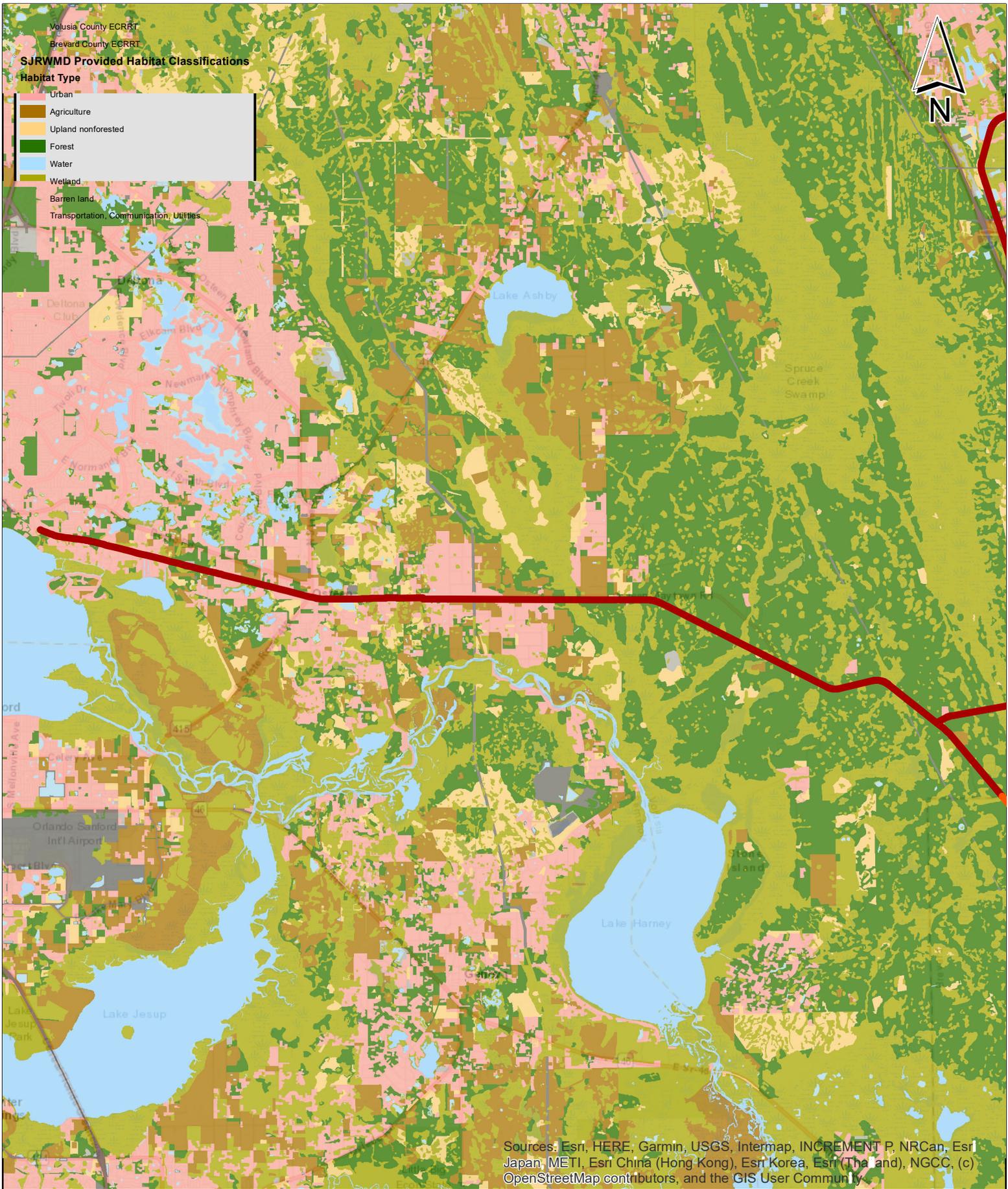


Figure 5b - Land Cover / Land Use
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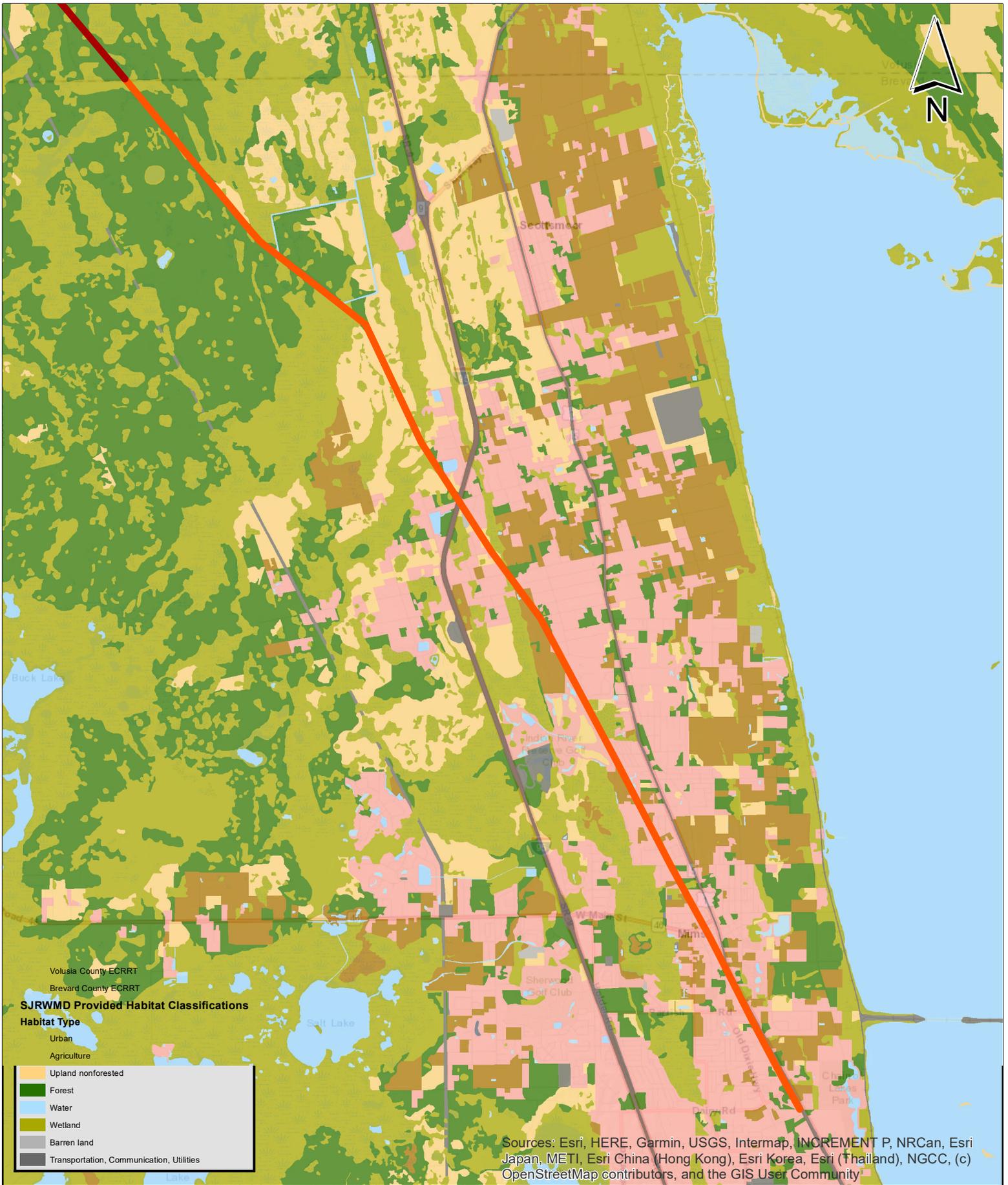
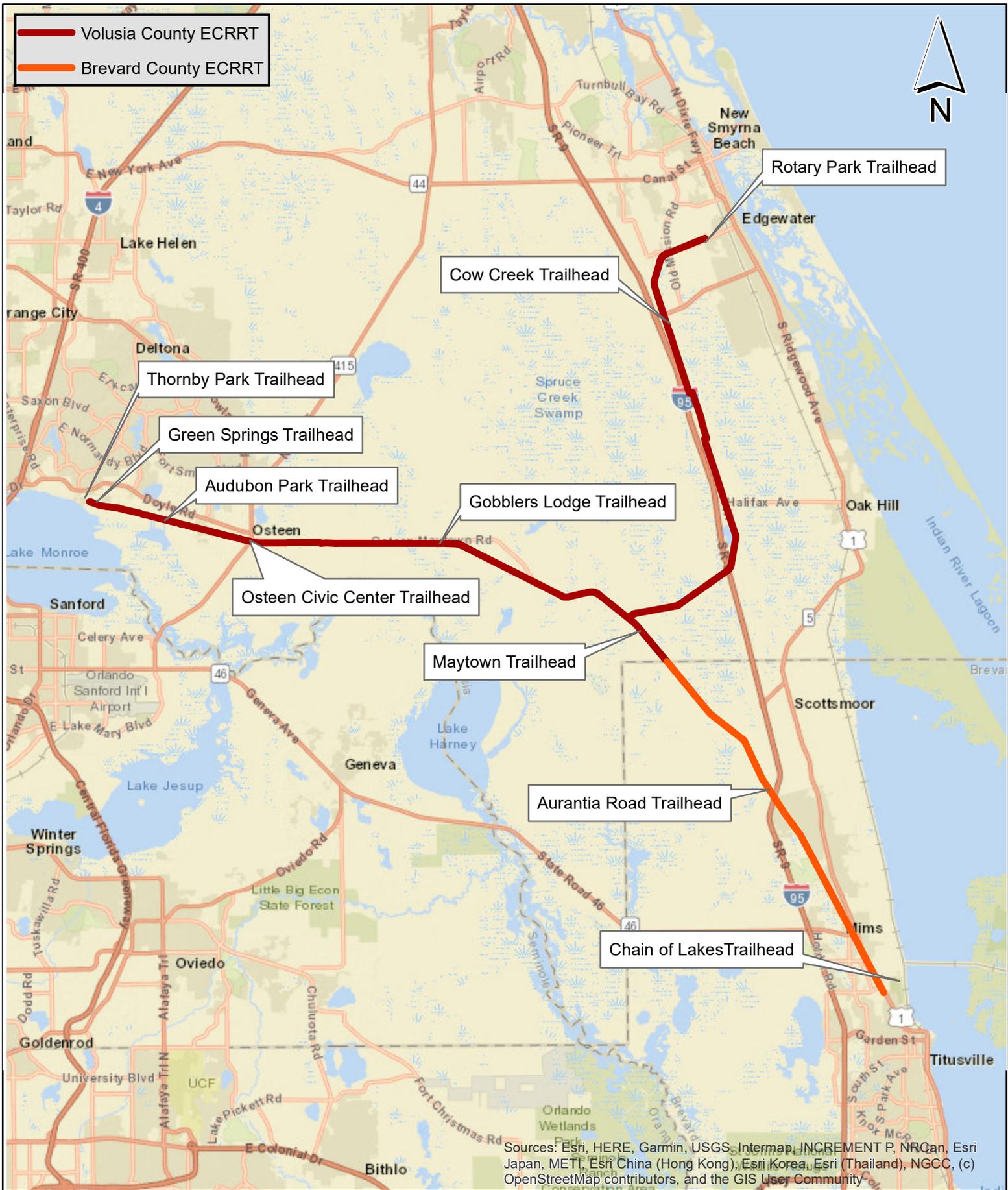


Figure 5c - Land Cover / Land Use
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Figure 6 - Trailhead Locations
 East Central Regional Rail Trail
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