PALATKA-TO-LAKE BUTLER STATE TRAIL
Park Chapter

STATE TRAIL SYSTEM

PALATKA-TO-LAKE BUTLER STATE TRAIL

UNION, BRADFORD, CLAY, & PUTNAM COUNTIES

0 2 4 Miles

N W E S

LAKE BUTLER TRAILHEAD

FOREST HILLS TRAILHEAD

PALATKA TRAILHEAD

Palatka-to-Lake Butler State Trail

Gainesville-to-Hawthorne State Trail

Lake Butler
Worthington Springs
Brooker
LaCrosse
GAINESVILLE
Waldo
Hampton
Starke
Orange Heights
Melrose
Keystone Heights
Lake Geneva
Putnam Hall
Grandin
Florahome
Interlachen
Hollister
Palatka
Bostwick
Hawthorne

CAMP BLANDING (Florida National Guard)

New River Conservation Area
Graham Conservation Area
Santa Fe Swamp Conservation Area
Monteocha Creek Conservation Easement
Timber Company Conservation Easement
Newnans Lake Conservation Area
Newnans Lake State Forest
Belmore State Forest
Halloran Conservation Area
Clay Ranch Agricultural/ Conservation Easement
Rice Creek Conservation Area
Etoniah Creek State Forest
Bayard Conservation Area

Mike Roess Gold Head Branch State Park
San Felasco Hammock Preserve State Park
Paynes Prairie Preserve State Park
Ravine Gardens State Park
Marjorie Harris-Carr Cross-Florida Greenway

Kingsley Lake
Lake Sampson
Lowry Lake
Alto Lake
Lake Santa Fe
Hampton Lake
Newnans Lake
Georges Lake

Butler Lake
New River
Water Oak Creek
North Fork Black Creek
Sampson River
Santa Fe River
Rocky Creek
Hatchet Creek
Lochloosa Creek
Greens Creek
Simms Creek
Etoniah Creek
St. Johns River

TRAIL RIDGE

- Florida State Parks
- Trailheads
- Clay County-Managed Trail
- Florida Forest Service
- Suwannee/St. Johns River Water Mgmt Districts
- Florida National Guard
- Cities and Towns
- Unincorporated Communities

INTRODUCTION

LOCATION AND ACQUISITION HISTORY

The Palatka-to-Lake Butler State Trail is located in Putnam, Clay, Bradford, and Union counties (see Vicinity Map). Access to the trail is available at multiple points. The Vicinity Map also reflects significant land and water resources existing near the trail. The following trailheads provide trailhead access and parking.

Palatka Trailhead:
N 29.668780, W -81.699718

Forest Hills Trailhead:
N 29.741777, W -81.971131

Lake Butler Trailhead:
N 30.022390, W -82.342873

The Palatka-to-Lake Butler State Trail was initially acquired on Feb. 26, 2001, with funds from the Land Acquisition Trust Fund program. Currently, the trail comprises 613.94 acres. The Board of Trustees of the Internal Improvement Trust Fund (Trustees) hold fee simple title to the trail and on July 16, 2002, the Trustees leased (Lease No. 4338) the property to the Division of Recreation and Parks (DRP) under a 50-year lease. The current lease will expire on July 15, 2052.

The Palatka-to-Lake Butler State Trail is designated single-use to provide public outdoor recreation and conservation. There are no legislative or executive directives that constrain the use of this property (see the Appendix). A legal description of the trail property can be made available upon request to the Florida Department of Environmental Protection (DEP).

SECONDARY AND INCOMPATIBLE USES

In accordance with 253.034(5) F.S., the potential of the trail to accommodate secondary management purposes was analyzed. These secondary purposes were considered within the context of DRP's statutory responsibilities and resource values. This analysis considered the trail's natural and cultural resources, management needs, aesthetic values, visitation and visitor experiences. It was determined that no secondary purposes could be accommodated in a manner that would not interfere with the primary purpose of resource-based outdoor recreation and conservation.

DRP has determined that uses such as water resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry (other than those management activities specifically identified in this plan) would not be consistent with the management purposes of the trail.

In accordance with 253.034(5) F.S., the potential for generating revenue to enhance management was also analyzed. Visitor fees and charges are the principal source of revenue generated by the trail. It was determined that multiple use management activities would not be appropriate as a means of generating revenues for land management. Instead, techniques such as entrance fees, concessions and similar

measures will be employed on a case-by-case basis as a means of supplementing trail management funding. Generating revenue from consumptive uses or from activities that are not expressly related to resource management and conservation is not under consideration.

PURPOSE AND SIGNIFICANCE OF THE PARK

Park Purpose

The purpose of the Palatka-to-Lake Butler State Trail is to provide Florida's residents and visitors with a scenic multiuse trail while preserving and restoring the natural and cultural values of the property and providing a better quality of life for visitors and surrounding communities.

Park Significance

- The Palatka-to-Lake Butler State Trail has designation as a National Recreation Trail and is a key component in the Florida Greenways and Trails System (FGTS), which plays an important role in advancing Florida's economy, tourism, health, transportation, recreation, conservation, and quality of life.

- The Palatka-to-Lake Butler State Trail follows a route where rail passengers once traveled, Historic railroad reminders include historical markers of past events and abandoned railroad tracks. The route now travels through the countryside, communities and conservation land.

- Palatka embraces its history as a transportation connection. It was once a major port for steamboat traffic traveling along the St. Johns River, and then a bustling railroad stop. Today, the city and trail continue to serve as a multiuse corridor for north central Florida from St. Augustine to Lake Butler.

Central Park Theme

Tracing an old railroad, the peaceful Palatka-to-Lake Butler State Trail passes through open pastures and historic towns of the Florida countryside.

The Palatka-to-Lake Butler State Trail is classified as a state trail in the DRP unit classification system. In the management of state trails, primary consideration is given to providing opportunities for active recreational pursuits. Thus, user considerations are generally given priority over resource considerations. In areas where exceptional natural or cultural resources are included, however, resource considerations may become paramount even at the loss of some recreational use. Emphasis is placed on active recreational pursuits, although passive uses may be provided if suitable resources exist. Program activity is concerned with promoting use of the site for public recreation and with interpreting the trail and its surrounding area for public enjoyment. Development is aimed at enhancing the recreational appeal of the trail by providing basic facilities for access, user convenience and safety, and interpretation.

OTHER DESIGNATIONS

The unit is not within an Area of Critical State Concern as defined in section 380.05, Florida Statutes and is not presently under study for such designation. The park is a component of the Florida Greenways and Trails System, administered by the DEP Office of Greenways and Trails.

All waters along the trail have been designated as Outstanding Florida Waters, pursuant to Chapter 62-302, Florida Administrative Code. Surface waters along the trail are also classified as Class III (suitable for fish consumption and recreation) waters by DEP. The trail is not within or adjacent to an aquatic preserve as designated under the Florida Aquatic Preserve Act of 1975 (Section 258.35, Florida Statutes).

PARK ACCOMPLISHMENTS

- Obtained invasives treatment grant from the Florida Fish and Wildlife Conservation Commission (FWC).
- Met 100% of invasive removal goals each year. In fiscal year 2018-19, treated 43.16 of 634 gross acres. In fiscal year 2019-20, treated 17.89 of 357 gross acres.
- Removed sod netting, which entrapped wildlife.
- Obtained AmeriCorps ANT members for invasive plant treatment.
- Hosted annual Iron Horse Endurance Race.

RESOURCE MANAGEMENT COMPONENT

Palatka-to-Lake Butler State Trail Management Zones			
Management Zone	**Acreage**	**Managed with Prescribed Fire**	**Contains Known Cultural Resources**
PLB-01	53.95	N	Y
PLB-02	23.60	N	Unknown
PLB-03	49.08	N	Unknown
PLB-04	34.41	N	Unknown
PLB-05	20.75	N	Unknown
PLB-06	13.22	N	Unknown
PLB-07	85.45	N	Y
PLB-08	14.36	N	Unknown
PLB-09	22.19	N	Unknown
PLB-10	35.55	N	Y
PLB-11	34.83	N	Y
PLB-12	25.42	N	Y
PLB-13	29.27	N	Y
PLB-14	71.63	N	Y
PLB-15	50.28	N	Y
PLB-16	25.64	N	Y
PLB-17	24.29	N	Y

TOPOGRAPHY

The Palatka-Lake Butler State Trail is located within two subdivisions of the Atlantic Coastal Plain physiographic province, i.e., the Atlantic Coastal Plain Section and the Florida Section (Brooks 1981). Most of Florida is designated as being within the Florida Section, however a relatively small portion of the Atlantic Coastal Plain Section (i.e., the Sea Island District) extends into the northeastern corner of the state. Along its course between Palatka and Lake Butler, the trail passes through portions of these two sections, crossing three physiographic subdivisions in the process, i.e., (from east to west) the Eastern Flatwoods District, the Sea Island District, and the Central Lake District. The trailhead in Palatka is located in the Eastern Flatwoods District. As the trail progresses westward from Palatka, it passes through the southeastern end of the Sea Island District and through the northernmost part of the Central Lake District before terminating in a western lobe the Sea Island District.

The three physiographic districts encountered from east to west along the trail are further subdivided as follows (Brooks 1981; USGS 2013):

1. Eastern Flatwoods District
    a. Palatka Relic Hills: relatively high area, with elevations at 80-85 feet mean sea level (msl), but of recent origin (Pliocene-Pleistocene age); soils are deep sands intermixed with silts and clays
    b. Rice Creek Swamp: lowland area (less than 40 feet msl) in sediment-filled ancient river bed, with flatwoods and river swamp predominant

2. Sea Island District (southeastern lobe)
    a. Penney Farms Upland: broad plain with elevations over 100 feet msl; southern portion contains sandhills
    b. Trail Ridge: well-defined ridge of sand deposits, with some southern portions uplifted to elevations as high as 190 feet msl, supporting sandhill and scrub vegetation
3. Central Lake District
    a. Interlachen Sand Hills: sand/gravel deposits reaching elevations of 220 feet msl, situated above uplifted limestone containing the Floridan aquifer; sandhill vegetation is predominant
    b. Perched Lakes and Prairies: surficial sands are clayey to the extent that small lakes and prairies are present amidst a matrix of sandhills; elevations range from 140-186 feet msl
4. Sea Island District (western lobe)
    a. High Flatwoods: broad, upland plain supporting mainly flatwoods but with some river swamps present as well; elevations typically in the 140-160 feet range

Although the geological features, soil types, and natural communities along the trail corridor vary depending on the physiographic districts encountered along the route, the elevation of the old rail bed itself remains relatively constant all the way to Lake Butler. The natural topography along most of the trail corridor has been altered extensively, largely due to construction of the rail bed, adjacent roadways, powerlines and access points. Construction activities along the historic rail bed were designed to provide consistent elevation grade and drainage, thus creating an artificially flat topography for the entire rail bed, albeit with swales scooped out on either side of the bed. Topographic disturbances adjacent to the trail corridor are attributable to the construction and maintenance of State Road 100, which closely parallels the trail for most of its length.

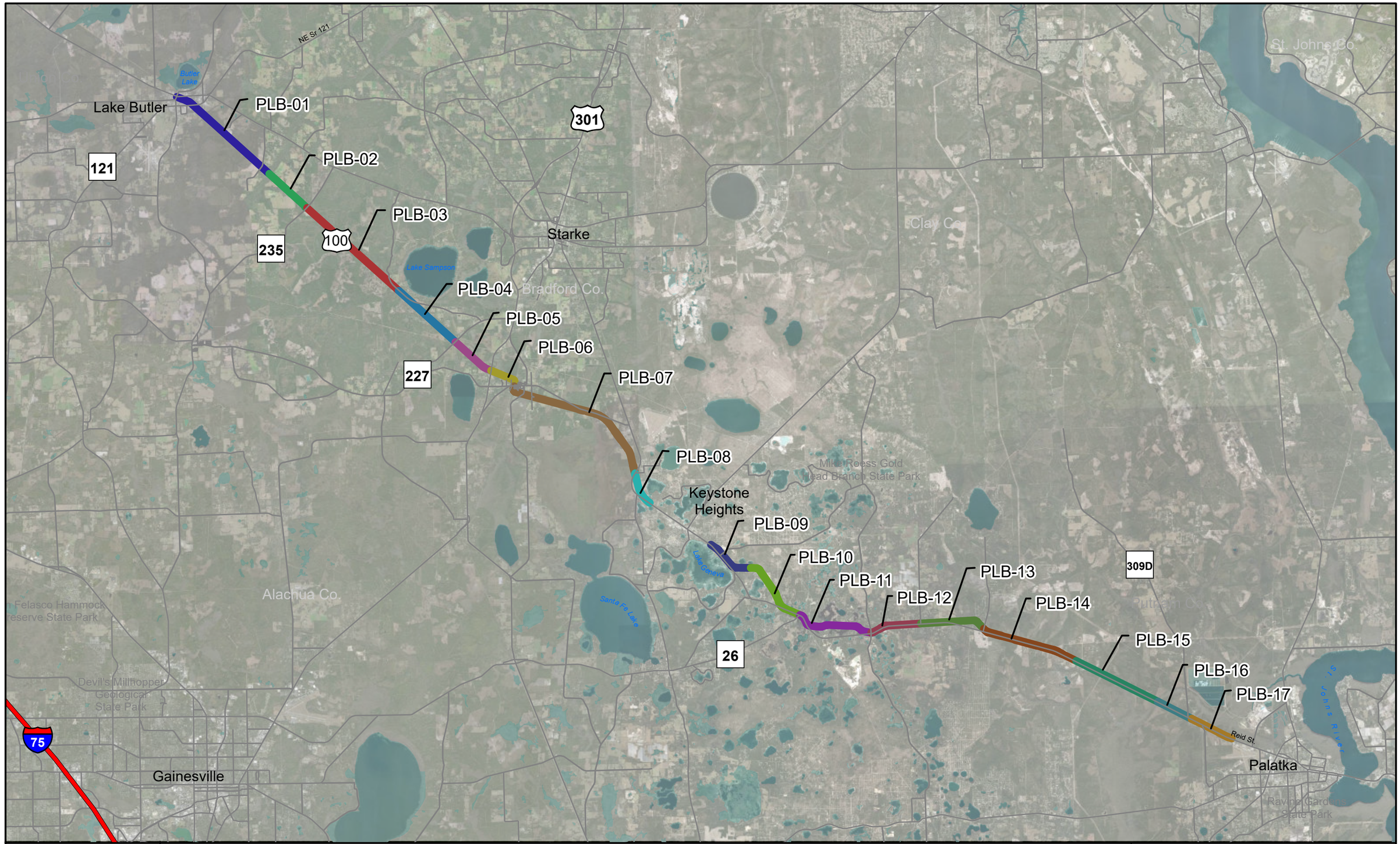
SOILS

The Palatka-Lake Butler State Trail traverses sixty specific soil types along its 46-mile path (Dearstyne et al. 1991, Readle 1990, Weatherspoon et al. 1989). These soils represent a typical cross section of soil types found in Putnam, Clay, Bradford, and Union counties. The artificial berm that supports the rail bed and trail is composed of soils from adjacent ditches and borrow sites. Excavation and fill activities associated with construction of this berm have permanently altered or destroyed natural soil profiles within the trail corridor. For this reason, soils are listed in this plan (see Appendix), but descriptions are not included.

Erosion control is the primary management concern for soils along the trail. The steep slopes associated with the elevated rail bed are subject to occasional erosion, especially where vegetative cover is lacking. Management activities will follow generally accepted best management practices to minimize or prevent soil erosion and conserve soil and water resources on site.

HYDROLOGY

The Palatka-to-Lake Butler State Trail passes through two main surface drainage basins, the St. Johns River and the Santa Fe/Suwannee rivers. These basins are managed by the St. Johns River Water Management District (SJWMD) and the Suwannee River Water Management District (SRWMD), respectively.

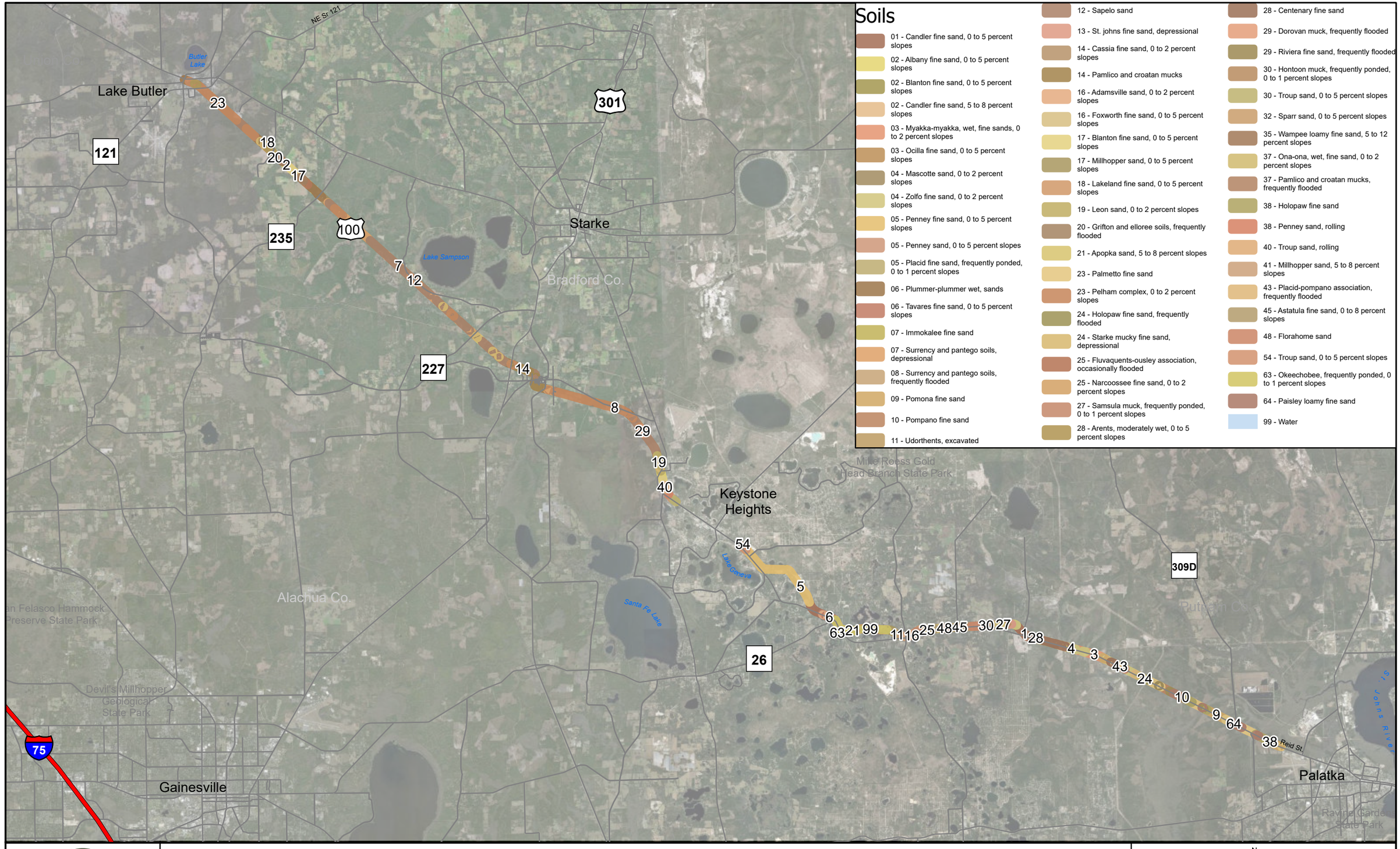


PALATKA-TO-LAKE BUTLER STATE TRAIL
Management Zones

N

0 3 6 Miles

Sources: ESRI; Florida Department of Environmental Protection
This graphical representation is provided for informational purposes and should not be considered authoritative for navigational, engineering, legal, and other uses.



Soils

- 01 - Candler fine sand, 0 to 5 percent slopes
- 02 - Albany fine sand, 0 to 5 percent slopes
- 02 - Blanton fine sand, 0 to 5 percent slopes
- 02 - Candler fine sand, 5 to 8 percent slopes
- 03 - Myakka-myakka, wet, fine sands, 0 to 2 percent slopes
- 03 - Ocilla fine sand, 0 to 5 percent slopes
- 04 - Mascotte sand, 0 to 2 percent slopes
- 04 - Zolfo fine sand, 0 to 2 percent slopes
- 05 - Penney fine sand, 0 to 5 percent slopes
- 05 - Penney sand, 0 to 5 percent slopes
- 05 - Placid fine sand, frequently ponded, 0 to 1 percent slopes
- 06 - Plummer-plummer wet, sands
- 06 - Tavares fine sand, 0 to 5 percent slopes
- 07 - Immokalee fine sand
- 07 - Surrency and pantego soils, depressional
- 08 - Surrency and pantego soils, frequently flooded
- 09 - Pomona fine sand
- 10 - Pompano fine sand
- 11 - Udorthents, excavated
- 12 - Sapelo sand
- 13 - St. johns fine sand, depressional
- 14 - Cassia fine sand, 0 to 2 percent slopes
- 14 - Pamlico and croatan mucks
- 16 - Adamsville sand, 0 to 2 percent slopes
- 16 - Foxworth fine sand, 0 to 5 percent slopes
- 17 - Blanton fine sand, 0 to 5 percent slopes
- 17 - Millhopper sand, 0 to 5 percent slopes
- 18 - Lakeland fine sand, 0 to 5 percent slopes
- 19 - Leon sand, 0 to 2 percent slopes
- 20 - Grifton and elloree soils, frequently flooded
- 21 - Apopka sand, 5 to 8 percent slopes
- 23 - Palmetto fine sand
- 23 - Pelham complex, 0 to 2 percent slopes
- 24 - Holopaw fine sand, frequently flooded
- 24 - Starke mucky fine sand, depressional
- 25 - Fluvaquents-ousley association, occasionally flooded
- 25 - Narcoossee fine sand, 0 to 2 percent slopes
- 27 - Samsula muck, frequently ponded, 0 to 1 percent slopes
- 28 - Arents, moderately wet, 0 to 5 percent slopes
- 28 - Centenary fine sand
- 29 - Dorovan muck, frequently flooded
- 29 - Riviera fine sand, frequently flooded
- 30 - Hontoon muck, frequently ponded, 0 to 1 percent slopes
- 30 - Troup sand, 0 to 5 percent slopes
- 32 - Sparr sand, 0 to 5 percent slopes
- 35 - Wampee loamy fine sand, 5 to 12 percent slopes
- 37 - Ona-ona, wet, fine sand, 0 to 2 percent slopes
- 37 - Pamlico and croatan mucks, frequently flooded
- 38 - Holopaw fine sand
- 38 - Penney sand, rolling
- 40 - Troup sand, rolling
- 41 - Millhopper sand, 5 to 8 percent slopes
- 43 - Placid-pompano association, frequently flooded
- 45 - Astatula fine sand, 0 to 8 percent slopes
- 48 - Florahome sand
- 54 - Troup sand, 0 to 5 percent slopes
- 63 - Okeechobee, frequently ponded, 0 to 1 percent slopes
- 64 - Paisley loamy fine sand
- 99 - Water

PALATKA-TO-LAKE BUTLER STATE TRAIL
Soils

N

0 3 6 Miles

Sources: ESRI; Florida Department of Environmental Protection
This graphical representation is provided for informational purposes and should not be considered authoritative for navigational, engineering, legal, and other uses.

From east to west, the trail begins near Palatka in the St. Johns River basin as it crosses the upper floodplain swamps of Rice Creek. Most of the main floodplain is bridged. The next drainage encountered is Etoniah Creek. Portions of the trail are bridged within the Etoniah watershed. From Etoniah, the trail enters a lakes and prairies region near the cities of Putnam Hall and Keystone Heights. As the trail bisects this region, a few sections can become inundated during high water conditions, causing staff to post public closure notices. These inundated sections should be reassessed for possible improvements to mitigate for these periodic inundations which ultimately cause trail damage and create altered lake hydrology.

From Keystone Heights, the trail runs adjacent to Santa Fe Swamp, part of the headwaters of and an important contributor to the Santa Fe River. The next major wetland encountered is the Sampson River. Here, the trail is bridged over the Sampson River and evidence of surface water flow disruption within its floodplain wetlands is evident. As the trail approaches the town of Lake Butler, it crosses the New River. The New River is also an important tributary of the Santa Fe River. The bridge over the New River has been badly burned and will have to be rebuilt.

The natural surface hydrology within and immediately surrounding the Palatka-to-Lake Butler State Trail is altered by the elevated berm and associated parallel ditches that were constructed for the rail bed. The berm impedes the natural overland flow of surface water and can impound water during times of heavy rainfall. As mentioned above, the rail bed passes through multiple low-lying and wetland areas and includes several bridge crossings.

Other crossings are outfitted with assorted culverts to facilitate flow through the berm. However, the effectiveness of these structures in maintaining the natural hydroperiod of adjacent wetlands and freshwater systems has not yet been ascertained. The parallel ditches constructed adjacent to the berm provide drainage for the infrastructure. However, they may also channelize water in times of high flow, further altering natural drainage patterns.

The natural surface hydrology of lands surrounding the Palatka-to-Lake Butler State Trail has been significantly altered by the construction of the elevated railway bed. Extensive excavation and filling were done to achieve consistent grade and alignment of the rail corridor.

Low areas such as wetlands and small intermittent streams were filled with borrow material and outfitted with various water control structures. While bridge and culvert structures do facilitate surface water movement from one side of the berm to the other, the elevated berm continues to impound water during storm events or times of flooding. In addition, the ditch system associated with the berm may channel surface water away from naturally low areas. The natural hydroperiods of surrounding surface waters are affected to an unknown extent by these physical alterations.

Restoration of the original hydrology would entail removal of the railbed and restoration of the corridor to original grade and therefore is not feasible. Instead, a design is needed to alleviate the hydrologic alterations associated with the berm and to restore, to the greatest extent possible, the original flow and flow patterns which existed prior to construction. The hydrologic function of the surrounding watershed should be incorporated into the design, with special attention paid to identification of historic topographic features and natural surface water characteristics. Once defined, these features may be imitated utilizing engineered water control structures, including the existing structures where practical.

Objective A: Conduct/obtain an assessment of the park's hydrological restoration needs.

Action 1:	Cooperate and seek guidance from state/federal agencies engaged in hydrological research and monitoring programs within wetlands associated with the trail corridor.
Action 2:	Provide timely response to any significant water quantity/quality issue within wetlands associated with the trail corridor.
Action 3:	If necessary, seek guidance and mitigate any wetland issue using best management practices.

DRP will continue its tradition of close cooperation with state and federal agencies that monitor waterways intersecting the trail. DRP will rely on agencies such as the SJRWMD, SRWMD, U.S. Geological Survey (USGS) and DEP to keep it informed about any declines in groundwater or surface water quality or quantity that might have occurred in watersheds through which the trail passes.

Restoration of the original hydrology along the trail route would likely entail removal of the rail bed and restoration of the corridor to original grade, which is not feasible. However, after a detailed assessment of natural flow rates and patterns, a project could be designed that would help mitigate the hydrologic alterations associated with the historic railroad berm and restore, to the extent feasible, the original flow patterns between wetlands. Improving the hydrologic function of the surrounding watershed should be a chief consideration in the design of any hydrological restoration project.

NATURAL COMMUNITIES

The trail intersects five distinct natural communities in addition to ruderal and developed areas. Construction of the rail bed and continual maintenance of the railroad right-of-way caused permanent alteration of the natural communities within the trail corridor.

Consequently, all lands within the trail corridor are classified as ruderal or developed, and a natural communities map is not included in this plan. Natural communities adjacent to the trail have been subjected to varying degrees of disturbance from both public and private use. Trail-specific characterizations of the natural communities adjacent to the trail corridor are provided below. A list of plants and animals occurring along the trail is contained in the Appendix.

Floodplain swamp

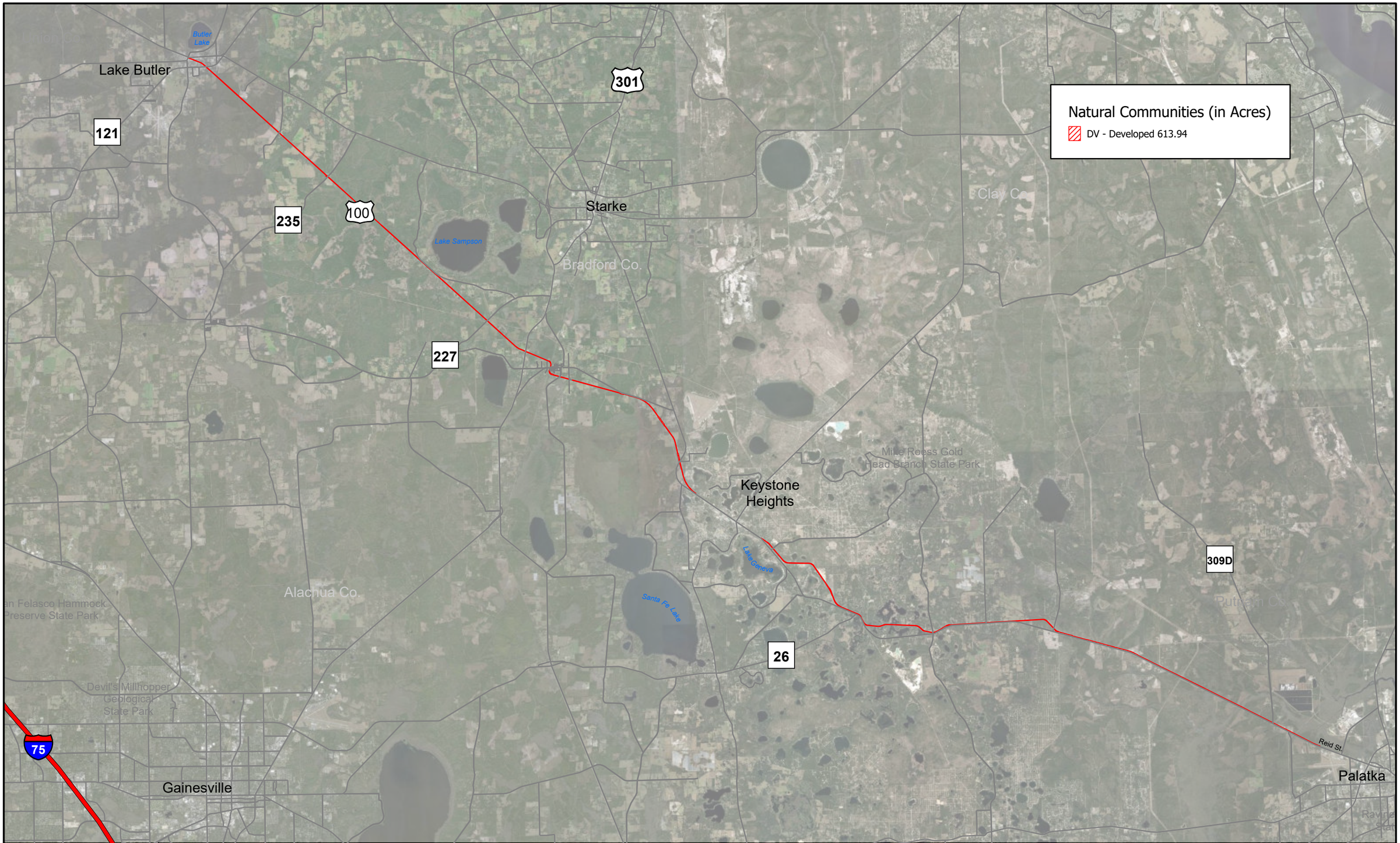
This community occurs primarily along the New River. It is dominated by red maple and water oak.

Sandhill

Prior to development of the rail bed and surrounding areas, this was the dominant natural community along the trail corridor.

Mesic flatwoods

This community was common in a couple of areas along the trail. Today, most of it is in active silviculture.



PALATKA-TO-LAKE BUTLER STATE TRAIL
Natural Communities - Existing Conditions

N
Miles
0 3 6

Sources: ESRI; Florida Department of Environmental Protection
This graphical representation is provided for informational purposes and should not be considered authoritative for navigational, engineering, legal, and other uses.

Xeric hammock

Scattered hammocks, dominated primarily by live oak and diamond leaf oak, occur on private lands. The occurrence of this community is likely the result of fire exclusion in the sandhill community.

Blackwater stream

Numerous blackwater streams flow under the rail bed.

Ruderal

The maintenance of the rail bed over the years has led to the ruderal condition found in the areas adjacent to the bed.

Developed

The central berm of the railroad bed constitutes the major developed feature in the trail right-of-way. Multiple bridges situated in wetland areas also occur. Except for the roads and power lines that intersect the trail, other developed areas along the route are located just outside the trail boundaries. Currently there are portions of several structures that have encroached on park property. Most of this development consists of small businesses associated with adjacent urban and suburban areas.

IMPERILED SPECIES

One imperiled plant species and two imperiled animal species have been recorded within the Palatka-to-Lake Butler State Trail corridor. The gopher tortoise (*Gopherus polyphemus*) and Sherman's fox squirrel (*Sciurus niger shermani*) are the two imperiled animal species that reside within the trail corridor. Edges of the old railway berm and its associated swale provide suitable open habitat for fox squirrels and for tortoises to excavate burrows and forage for food. The only imperiled plant species recorded within the trail corridor is the rainlily (*Zephyranthes atamasca*) (see table below). Other than keeping the rainlily habitat free of invasive plants and protecting them from recreational impacts, there is no management action applicable to them. Appropriate management of natural communities in public lands adjacent to the trail will benefit most of the imperiled species that use the trail for foraging or passage.

Imperiled Species Inventory						
Common and Scientific Name	**Imperiled Species Status**				**Management Actions**	**Monitoring Level**
	FWC	**USFWS**	**FDACS**	**FNAI**		
PLANTS						
Rainlily *Zephyranthes atamasca*			LT		6,	Tier 1
REPTILES						

Imperiled Species Inventory						
Common and Scientific Name	**Imperiled Species Status**				**Management Actions**	**Monitoring Level**
	FWC	**USFWS**	**FDACS**	**FNAI**		
Gopher tortoise *Gopherus polyphemus*	ST			G3, S3	2,10,13	Tier 2
MAMMALS						
Sherman's fox squirrel *Sciurus niger shermani*	SSC			G5T3/S3	2,10	Tier 1

Management Actions:

1. Prescribed Fire
2. Invasive Plant Removal
3. Population Translocation/Augmentation/Restocking
4. Hydrological Maintenance/Restoration
5. Nest Boxes/Artificial Cavities
6. Hardwood Removal
7. Mechanical Treatment
8. Predator Control
9. Erosion Control
10. Protection from visitor impacts (establish buffers)/law enforcement
11. Decoys (shorebirds)
12. Vegetation planting
13. Outreach and Education
14. Other

Monitoring Level:

Tier 1:

Non-Targeted Observation/Documentation: includes documentation of species presence through casual/passive observation during routine park activities (i.e. not conducting species-specific searches). Documentation may be in the form of Wildlife Observation Forms, or other district specific methods used to communicate observations.

Tier 2:

Targeted Presence/Absence: includes monitoring methods/activities that are specifically intended to document presence/absence of a particular species or suite of species.

Tier 3:

Population Estimate/Index: an approximation of the true population size or population index based on a widely accepted method of sampling.

Tier 4:

Population Census: A complete count of an entire population with demographic analysis, including mortality, reproduction, emigration, and immigration.

Tier 5:

Other: may include habitat assessments for a particular species or suite of species or any other specific methods used as indicators to gather information about a particular species.

Objective A: Develop/update baseline imperiled species occurrence inventory lists.

- Action 1 - Conduct a plant survey along the trail corridor to augment the trail's species list.

No extensive plant survey has been conducted along the Palatka-to-Lake Butler State Trail. An inventory would augment the trail's species list and may reveal hitherto unknown populations of imperiled plants.

Objective B: Monitor and document one selected imperiled animal species.

- Action 1 - Implement monitoring protocols for one imperiled animal species.

Conduct at least one gopher tortoise survey (burrow count) along the trail corridor within the next 10 years. There have been no formal surveys for gopher tortoises on the trail. Consequently, there are no baseline population estimates for that species within the corridor. Periodic burrow counts along the trail might be useful in determining whether DRP management activities are affecting resident gopher tortoises. Park staff should also continue to document observations of fox squirrels and their locations.

Objective C: Monitor and document one selected imperiled plant species.

- Action 1 - Survey the trail for additional populations of *Zephyranthes atamasca*.

One population of *Zephyranthes atamasca* is known to exist along the trail in a power line right-of-way. Staff should communicate the location of this population to power line managers and express concerns about the possible effects that power line management could have on this species. The population should be monitored regularly for signs of decline possibly related to power line management activities.

INVASIVE AND NUISSANCE SPECIES

The ruderal nature of the Palatka-to-Lake Butler State Trail, its linear configuration with extensive edge and the proximity of adjacent private lands preclude permanent eradication of invasive species. Despite aggressive control efforts, encroachment of invasive species is expected along the route. Parts of the trail next to public natural areas will be managed cooperatively with their respective management agencies. Invasive species along the rest of the trail will be controlled as time and staffing permit.

Eight invasive plant species are known to exist along the trail. Further surveys will likely reveal more. The Florida Invasive Species Council (FISC) lists all eaglet as Category I or Category II plants, which are known to disrupt natural communities and therefore require special attention where present. A removal program will be developed, targeting all of these species, which includes cogongrass, Japanese climbing fem, Chinaberry, paper mulberry, camphor tree, loquat, Chinese tallow tree and castorbean. The highest priority will be on cogongrass and Japanese climbing fern, tile species that have the greatest potential to spread rapidly along the length of the trail or into adjacent natural areas. Special attention will be given to infestations near or adjacent to natural managed areas.

Several invasive animal species have been documented within the trail corridor. Most are presumed to be transient. Of those recorded, domestic/feral dogs and cats, feral hogs and armadillos pose the most significant threats to the park's resources. If appropriate, an invasive animal species control program will be developed.

Inventory of FISC Category I and II Invasive Plant Species			
Species Name **Scientific Name - Common Name**	**FLEPPC Category**	**Distribution**	**Zone ID**
PLANTS			
Mimosa *Albizia julibrissin*	I	2	PLB 01, PLB 02, PLB 04, PLB 05, PLB-07, PLB 08
Coral ardisia *Ardisia crenata*	I	2	PLB-01, PLB-07
Paper mulberry *Broussonetia papyrifera*	II	2	PLB-09
Camphor-tree *Cinnamomum camphora*	I	2	PLB 01, PLB 03, PLB 04, PLB 06, PLB 07, PLB 16
		3	PLB-14, PLB-17
Wild taro *Colocasia esculenta*	I	2	PLB-01, PLB-02, PLB-07
Winged yam *Dioscorea alata*	I	2	PLB-07
Air potato *Dioscorea bulbifera*	I	1	PLB-11
		2	PLB-02, PLB-07, PLB-10, PLB-15
		3	PLB-09, PLB-12, PLB-13, PLB-14, PLB-17
Cogongrass *Imperata cylindrica*	I	2	PLB 14, PLB 16
		3	PLB 08
Flamegold tree *Koelreuteria elegans*	II	2	PLB-04
Lantana *Lantana camara*	I	1	PLB-01
Glossy privet *Ligustrum lucidum*	I	2	PLB 02
Chinese privet *Ligustrum sinense*	I	2	PLB-01, PLB-04, PLB-06, PLB-07
Peruvian primerosewillow *Ludwigia peruviana*	I	2	PLB-05
		3	PLB-06
Japanese climbing fern *Lygodium japonicum*	I	2	PLB-01, PLB-02, PLB-03, PLB-04, PLB-05, PLB-06, PLB-07, PLB-08

Inventory of FISC Category I and II Invasive Plant Species			
Species Name **Scientific Name - Common Name**	**FLEPPC Category**	**Distribution**	**Zone ID**
		3	PLB-16
Bottlebrush *Melaleuca viminalis*	II	1	PLB-07
Chinaberry Melia azedarach	II	2	PLB-01, PLB-02, PLB-07, PLB-16
Skunkvine *Paederia foetida*	I	3	PLB-01
Torpedograss *Panicum repens*	I	3	PLB-10, PLB-13
Chinese tallowtree *Triadica sebifera*	I	1	PLB-09
		2	PLB 06, PLB 07, PLB 11
Purple sesban *Sesbania punicea*	II	2	PBL-05
Tropical soda apple *Solanum viarum*	I	2	PLB-07
Wedelia *Sphagneticola trilobata*	II	2	PLB-04
Small-leaf spiderwort *Tradescantia fluminensis*	I	2	PLB-01
		3	PLB-12
Chinese wisteria *Wisteria sinensis*	II	1	PLB-01
		2	PLB-02
Arrowleaf elephant's ear *Xanthosoma sagittifolium*	II	2	PLB-07

Distribution Categories:

0 No current infestation: All known sites have been treated and no plants are currently evident.

1 Single plant or clump: One individual plant or one small clump of a single species.

2 Scattered plants or clumps: Multiple individual plants or small clumps of a single species scattered within the gross area infested.

3 Scattered dense patches: Dense patches of a single species scattered within the gross area infested.

4 Dominant cover: Multiple plants or clumps of a single species that occupy a majority of the gross area infested.

5 Dense monoculture: Generally, a dense stand of a single dominant species that not only occupies more than a majority of the gross area infested, but also covers/excludes other plants.

6 Linearly scattered: Plants or clumps of a single species generally scattered along a linear feature, such as a road, trail, property line, ditch, ridge, slough, etc. within the gross area infested.

Objective A: Annually treat 29 acres of invasive plant species.

- Action 1 - Annually develop/update an invasive plant management work plan.
- Action 2 - Implement the annual work plan by treating 29 acres on the trail annually, and by continuing maintenance and follow-up treatments as needed.

Annually, DRP staff will develop and implement a management plan for non-native invasive plants. The number of acres of invasive plants treated per year is likely to vary depending on the status of established infestations and any new infestations that might occur or be detected during the management plan period. However, the annual goal will remain the same: to treat all infestations that are in maintenance and treat any new infestations before they can increase in size.

Priority should be given to FISC Category I and II species when treating invasive plant species along the trail. A plan and schedule should be developed that complies with DRP standards for scouting and mapping invasive invasives in every zone within the park. Areas that contain sources of particularly aggressive species will need to be scouted more frequently. Finding new populations of invasive plants before they become established will help prevent larger infestations from occurring and reduce the cost and effort needed to control them. Outreach to neighbors who have high priority invasive plant species on their property should be part of the annual treatment plan, particularly in areas where they are the primary source of invasive species infestations along the trail.

CULTURAL RESOURCES

Archaeological, Historical and Cultural Resources

There are no documented sites within the trail that are recorded with the Florida Master Site File (FMSF). However, nine recorded sites are located within a half-mile of the trail, and an additional 27 sites are within 1 mile.

In the 1870s and 1880s, timber was becoming a valuable commodity in southern Georgia and northern Florida. In 1881, the Georgia Legislature authorized the formation of the Georgia Southern and Florida Railroad Company (GS&F). Its charter was to build a line south from Macon, Georgia, to Clinch County, Georgia, near the Florida border. There, it would tie into the Savannah, Florida and Western Railroad.

In 1884, the Florida Legislature granted a charter for the Macon and Florida Air-Line Railroad Company to extend the GS&F tracks from the Georgia-Florida line to Tampa/Charlotte Harbor on the Gulf Coast, with a branch line to run to the St. Johns River. In 1888, the two companies merged into the Georgia Southern and Florida Railroad. The decision was made for the line to go to Palatka, a busy river port on the St. Johns River. The GS&F reached Palatka by March 1890. This turned out to be a lucrative rail line.

Due to poor management of funds and heavy mortgages, the GS&F went bankrupt in 1891. In 1895, J.P. Morgan attempted to gain control of the GS&F and reorganized the railroad into the GS&F Railway.

In 2002, the Norfolk Southern Corporation sold a stretch of the dismantled GS&F railroad corridor to become the Palatka-to-Lake Butler State Trail.

The trail has one historic structure (PU01413), five bridges (PU01412, PU01621, PU01622, PU01623 and UN00174) and five linear resources (BF00165, BF00728, PU01411, PU01620 and UN00175) recorded with the FMSF. These resources are mostly associated with the abandoned railroad line of the Georgia Southern and Florida Railroad (PU01411, UN00175), whose construction was initiated in the late 1800s during Florida's railroad boom. BF00728 is a spur line constructed during WWII to connect the main rail line to the WWII US Army Air Corps Operation at present-day Keystone Air Park. The Etoniah Canal (PU01620) was a land reclamation project important to the establishment of the community of Florahome.

The Florida Railroad Corridor (BF00165), built by David Yulee, ran from Fernandina Beach to Cedar Key. Construction began in 1855 and was completed in 1861. This rail line crosses the Georgia Southern and Florida Railroad line (PU01411) west of Keystone Heights. Other than the section in Lake Butler, the Georgia Southern and Florida Railroad line west of Keystone Heights has not been recorded with the FMSF.

The five historic bridge structures are all associated with the railroad. Two of the bridges (PU01621, PU01622) support the railroad as it crosses the Etoniah Canal (PU01620). The only recorded historic structure is PU01413, which represents a culvert associated with the railroad line and dates to about 1944.

All structures and resource groups are in good condition except for the bridges. The primary threat to these structures will be ongoing repair and maintenance of the rail trail. As bridges are repaired or replaced, their construction style should be documented and information in the FMSF should be updated. Park staff should record new structures as they find them but leave them in place along the rail trail to provide historic context.

Cultural Sites Listed in the Florida Master Site File					
Site Name and FMSF #	**Culture/Period**	**Description**	**Significance**	**Condition**	**Treatment**
BF00165 Florida Railroad Corridor	Nineteenth century American, 1821-1899	Linear Resource	NHR	G	RH
BF00728 GS+F RR to Keystone AAF RR	World War II & aftermath, 1941-1950	Linear Resource	NS	G	RH
PU01411 Georgia Southern + Florida Railroad	Nineteenth century American, 1821-1899	Linear Resource	NS	G	RH
PU01412 Bridge 760031	ca 1956	Bridge	NS	G	RH
PU01413 Georgia Southern + Florida Railroad	ca 1940	Historic Structure	NS	G	RH
PU01573 Parcel 102 Site	Twentieth century American, 1900-present	Archaeological Site	NS	P	P
PU01620 Etoniah Canal	Late nineteenth- and early twentieth-century	Linear Resource	NHR	G	P
PU01621 GS & F Railroad Bridge 1	1940s	Bridge	NS	F	RH
PU01622 GS & F Railroad Bridge 2	1940s	Bridge	NS	F	RH
PU01623 GS & F Railroad Bridge 3	ca 1940	Bridge	NS	F	RH
UN00173 GS & F RR Bridge Remains	Twentieth century American, 1900-present	Archaeological Site	NS	F	P
UN00174 GS & F Bridge over Richard Creek	ca 1940	Bridge	NS	P	RH
UN00175 Georgia Southern & Florida Railroad	American	Linear Resource	NS	G	RH

Significance:

NRL National Register listed
NR National Register eligible
NE not evaluated
NS not significant

Condition:

G	Good
F	Fair
P	Poor
NA	Not accessible
NE	Not evaluated

Recommended Treatment:

RS	Restoration
RH	Rehabilitation
ST	Stabilization
P	Preservation
R	Removal
N/A	Not applicable

Objective A: Assess and evaluate two of 13 recorded cultural resources in the park.

- Action 1 - Complete assessments/evaluations of two railroad bridges (PU01621 and PU01622) that cross the Etoniah Canal (PU01620), which is eligible for the National Register of Historic Places.

Objective B: Compile reliable documentation for all recorded historic and archaeological resources.

- Action 1 - Record the section of the rail line west of Keystone Heights to Lake Butler and any associated bridges and rail line features.

Objective C: Bring one of 13 recorded cultural resources into good condition.

- Action 1 - Implement a regular monitoring program for the rail bed to check for possible erosion sites.

In some areas, the rail bed is raised significantly above the level of the surrounding terrain. These areas should be regularly checked for erosion so that the integrity and safety of the rail bed are protected.

LAND USE COMPONENT

VISITATION

This former rail corridor is still under construction and connects Lake Butler to Keystone Heights and, eventually, Palatka, providing an economic boost to northeast Florida's State Road 100 corridor. Once fully paved, the Palatka-to-Lake Butler State Trail will traverse 11 incorporated and unincorporated small towns, hamlets and villages, allowing unbroken long-distance cycling across more than 52 miles.

Functioning as a short segment of the 1,500-mile Florida National Scenic Trail, this rail trail provides statewide recreational connections from the Florida Panhandle to South Florida. Extended excursions from developed areas to timberlands and state forests are available, as well as numerous other natural areas. In downtown Keystone Heights, a 7-mile connector trail branches to the northeast, following State Road 21 to Mike Roess Gold Head Branch State Park and Camp Blanding Wildlife Management Area.

Palatka is an emerging trail mecca and designated Trail Town that, if extended, will allow for more than 100 miles of uninterrupted cycling from the Atlantic Coast to Lake City and the opportunity for visitors to paddle the St. Johns River along the St. Johns River Blueway (see Optimum Boundary section for additional details). Eventually, the trail will also connect to the St. Johns River-to-Sea Loop to the east along the Atlantic coast, providing a 260-mile trail loop. In addition to providing immense recreational opportunities, this trail leads visitors through dense tree canopies, wet prairies and agricultural lands and allows for visitors to observe remnants of the city of Lake Butler's Union Depot.

Trends

Annually, the Palatka-to-Lake Butler State Trail receives around 90,000 visitors. The trail sees an uptick in visitation during the spring and early summer months as outdoor recreation becomes more comfortable. In January and April, the Palatka Bike Club holds Florahome-to-Etoniah trail events which also attracts visitors to the state trail during the cooler spring months.

EXISTING FACILITIES AND INFRASTRUCTURE

There are currently no structures owned or managed by DRP along the trail. Paved, formalized parking is available at the western terminus of the trail in downtown Lake Butler, along Southwest 1st Street. Pervious parking is available at several locations along the trail, including designated trailheads which are located on the north shoulder of State Road 100, 5 miles west of Palatka and 4 miles east of Keystone Heights at the intersection of Forest Hills Road and State Road 100 (see Introduction for more details).

City and county parks along the trail provide additional trail access points and feature an assortment of amenities, including picnic areas, restrooms, ballfields, playgrounds, potable water and additional parking. Notable locally managed parks are located in Florahome and Hampton.

Certain segments of the trail are still not paved. The easternmost paved section stretches approximately 26 miles from Palatka to Keystone Heights. Currently, a traffic control device is being installed across State Road 100. Other disjunct paved sections currently exist as well, including a 2-mile stretch east of Bobby Shepard Ball Park in the town of Hampton and another 4-mile stretch southeast of the Lake Butler trailhead, ending just before New River.

A roughly 3-mile stretch of the trail through the city center of Keystone Heights continues to parallel State Road 100. This portion of the trail is maintained by Clay County. From the center of Keystone Heights, a spur trail follows State Road 21 for 6 miles to the northeast, connecting trail users to the entrance of Mike Roess Gold Head Branch State Park. This spur trail is also managed by Clay County.

Facilities Inventory

Lake Butler Trailhead	
Paved Parking Area (25 spaces)	1
Forest Hills Trailhead	
Stabilized Parking Area (5 spaces)	1
Palatka Trailhead	
Unpaved Parking Area (10 spaces)	1

CONCEPTUAL LAND USE PLAN

Detailed Conceptual Land Use Plan Objectives

Below are detailed descriptions of land planning proposals and considerations, organized according to use areas or other types of specific sites along the trail.

General Trail Needs

Objectives:

1. ***Create an interpretive plan that enhances wayfinding and sense of place.***
2. ***Update trail infrastructure and coordinate with Florida Department of Transportation (FDOT) to increase safety efforts.***

Action Items:

- *Comply with the Manual on Uniform Traffic Control Devices (MUTCD).*
- *Rebuild the New River Bridge.*
- *Consider removing wooden fencing.*
- *Prevent unauthorized entry points.*
- *Install 911 emergency system.*

There are currently no wayfinding or interpretive elements associated with the trail. DRP should prioritize enhancing wayfinding and sense of place at key trailheads. A series of comprehensive trail maps with locational points specific to individual trailheads should be standardized and installed. The trail map should highlight amenities, highway junctions, key cities and towns, DRP-managed trailheads, city and county-managed trailheads, county-managed portions of the trail, and the paved spur trail to Gold Head Branch State Park. Key facilities such as restrooms should be highlighted. Locally managed restrooms should be highlighted on the map with permission of managing entities.

Additionally, the trail bridge over New River, southeast of Lake Butler, requires reconstruction. This should be a priority construction project for DRP as it is a key component in the completion of this paved trail.

Paving for the entire length of the trail is currently underway in some sections and planned in other sections. The DRP should continue to ensure with the FDOT that this process is completed in a timely manner, with asphalt 10-12 feet in width and appropriate water crossings where necessary. Funding will continue to be sought to complete this project.

The MUTCD ensures uniformity of traffic control devices by setting minimum standards and providing guidance for safe and efficient transportation. All improvements and developments made to the trail should be followed with the proper MUTCD-compliant signage.

Wooden fencing is found along certain segments of the trail and requires more maintenance or replacement. Fencing should remain in areas where needed and park staff should consider removing unnecessary portions of fencing that provide no value.

Along certain portions of the trail, adjacent private properties are creating makeshift trail connections for convenient access. Motorized vehicles are prohibited from driving along the trail. Unauthorized entry points create erosion scars which should be revegetated. Appropriate signage should be installed, and effective enforcement should be implemented with a focus on preventing the entry of motor vehicles, to deter people from creating these eroded paths.

A 911 emergency system should be implemented. Installation of the system would involve the placement of decals or mile markers along the trail to identify the exact location of multiple "station numbers" assigned to the trail. The use of station numbers will enable 911 call takers to know the exact location (using geographic coordinates) of trail users in need of emergency response services. Call takers will immediately know which units to dispatch and the best way for emergency responders to reach the incident.

Support Areas

Objective: Delineate park boundary and increase support facilities.

Action Item:

- *Conduct a property survey.*

The trail is currently maintained using a single storage structure that is located within the maintenance complex that serves the city of Keystone Heights. To optimize maintenance and facilitate development and upkeep of proposed infrastructure at DRP-sanctioned trailheads along its 52-mile length, a central maintenance hub near Keystone Heights, should be pursued in addition to satellite support areas in Lake Butler to the east and Palatka to the west (see Optimum Boundary section for more details).

DRP should aggressively explore properties for acquisition in the immediate vicinity of all three locations to facilitate construction. The construction of a staff residence, volunteer campsites and storage structures are recommended. The staff residence and volunteer campsite should be located near the midpoint of the trail, with storage structures located near the midpoint, eastern terminus and western terminus. This will facilitate a support "hub and satellite" support layout across the length of the trail. Parcels under consideration for construction of support structures should prioritize staff and volunteer safety and convenience.

In order to evaluate feasible support facility locations, a formal property survey should be conducted in areas along the trail that offer the possibility to accommodate a support complex. Optimum boundary parcel identification efforts are closely related to the development of a support complex.

Palatka Trailhead

Objective: Formalize the Palatka Trailhead.

Action Items:

- *Pave parking lot.*
- *Delineate parking spaces.*
- *Install permanent restroom.*
- *Connect restroom to municipal sewage system.*
- *Install bike repair station.*
- *Provide deceleration lanes.*
- *Provide interpretive elements.*

The current unstabilized informal parking area on the north shoulder of State Road 100 west of Palatka should be featured as a primary trailhead. To accomplish this, paving and painting of the parking lot with clearly delineated spaces, the addition of one ADA compliant parking space, the installation of a permanent restroom facility, the addition of a bike repair station, and the addition of drinking water fountains is recommended. If a permanent restroom is constructed, a connection to the municipal sewage system should be provided and automatic locking restroom doors should be installed.

Partnering with Putnam County and FDOT is recommended to plan a deceleration lane for westbound traffic and a central turn lane for eastbound traffic on State Road 100. As a formalized trailhead, an interpretive element that displays a trail-wide map and provides historical information is recommended.

Forest Hills Trailhead

Objective: Formalize the Forest Hills Trailhead.

Action Item:

- *Add interpretive elements.*

This trailhead provides stabilized parking and one ADA parking space. To further improve this trailhead, an interpretive element displaying a trail-wide map and historical material should be installed.

Lake Butler Trailhead

Objective: Further formalize the Lake Butler Trailhead.

Action Items:

- *Install permanent restroom.*
- *Connect restroom to municipal sewage system.*
- *Install a bike repair station.*
- *Create interpretive elements.*

Paved parking is available at this centrally located trailhead in downtown Lake Butler. Further formalization efforts, including the construction of a permanent restroom and the addition of a bicycle repair station would be helpful and likely be well-received by trail users. If a permanent restroom is

constructed, a connection to the municipal sewage system should be provided and automatic locking restroom doors should be installed. One ADA compliant parking space will also be provided.

In addition to the Palatka and Forest Hills trailheads, the Lake Butler trailhead would benefit significantly from the installation of an interpretive element that displays a trail-wide map and historical information.

U.S. Highway 301 Crossing
Objective: Coordinate with FDOT to increase safety features at road crossings.

West of Hampton and south of Starke, the trail crosses U.S. Highway 301, a heavily trafficked four-lane divided highway that serves as the primary connection between Gainesville and Jacksonville. The speed limit on this rural stretch of highway is 65 miles per hour. The Palatka-to-Lake Butler State Trail is currently unpaved at this highway junction. However, in conjunction with paving, a safe and feasible trail crossing solution will require significant attention to trail user safety. Any viable solution to completing this trail connection would involve no interaction between cyclists and motorists on U.S. Highway 301, indicating a significant need for a bridge or tunnel-based solution. This crossing should replicate the U.S. Highway 98 bridge crossing along the Withlacoochee State Trail. If a trail bridge is constructed, welded wire fencing will be required as a buffer between trail users and the busy highway below. This fencing could also be used for signage to indicate to motorists utilizing U.S. Highway 301 that a state trail passes overhead.

Road crossing options should be planned and implemented in close coordination with FDOT as the trail becomes fully paved and trail usage steadily increases.

OPTIMUM BOUNDARY

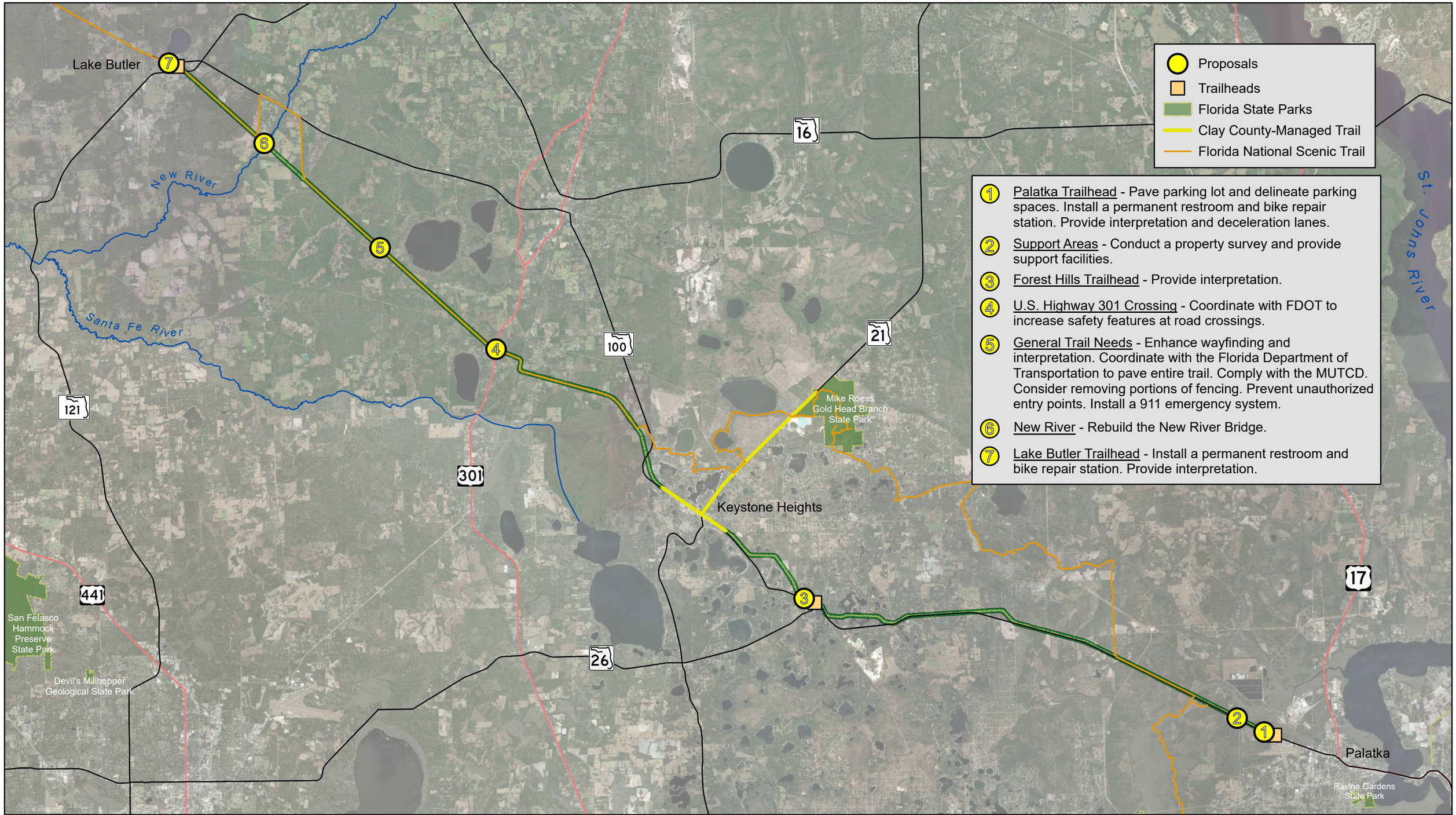
Land uses adjacent to the Palatka-to-Lake Butler State Trail include agricultural, rural, commercial, industrial, residential, and conservation uses. Numerous conservation lands and Florida Forever Board of Trustees (BOT) projects are underway in lands adjacent to the trail, including the Etoniah/Cross Florida Greenway Project and the Lake Santa Fe Project.

Where the trail intersects Southeast 75th Street, 2.5 miles northwest of Keystone Heights, DRP should consider approaching the U.S. Forest Service regarding its current swathes of planted pine parcels in the area. This location would be optimal with respect to constructing a maintenance hub at a central location along the length of the trail.

To support the Office of Greenways and Trails' Priority Trail Network, the Palatka to Hawthorne Corridor should be acquired to connect the eastern terminus of the Palatka-to-Lake Butler State Trail to the Gainesville-to-Hawthorne State Trail. This extension would also provide cyclists a connection from Gainesville to the St. Johns River-to-Sea Loop to the west.

West of the terminus in downtown Lake Butler, the Palatka to Lake City Corridor, a Florida Forever BOT project and component of the Strategic Managed Areas Lands List, would extend the trail corridor 21 miles northwest to Lake City. This potential addition, along with closing additional trail gaps further west, would allow uninterrupted cycling from St. Augustine to Lake City.

DRP should only explore trail extension options that would not result in direct DRP management, as identified in the Optimum Boundary Map. By acquiring the Land Trail Priority and Florida Forever BOT project, long-distance excursions to and from Lake City, Gainesville, Palatka and St. Augustine would be provided.



Palatka-to-Lake Butler State Trail

Conceptual Land Use Plan

0 3 6 Miles

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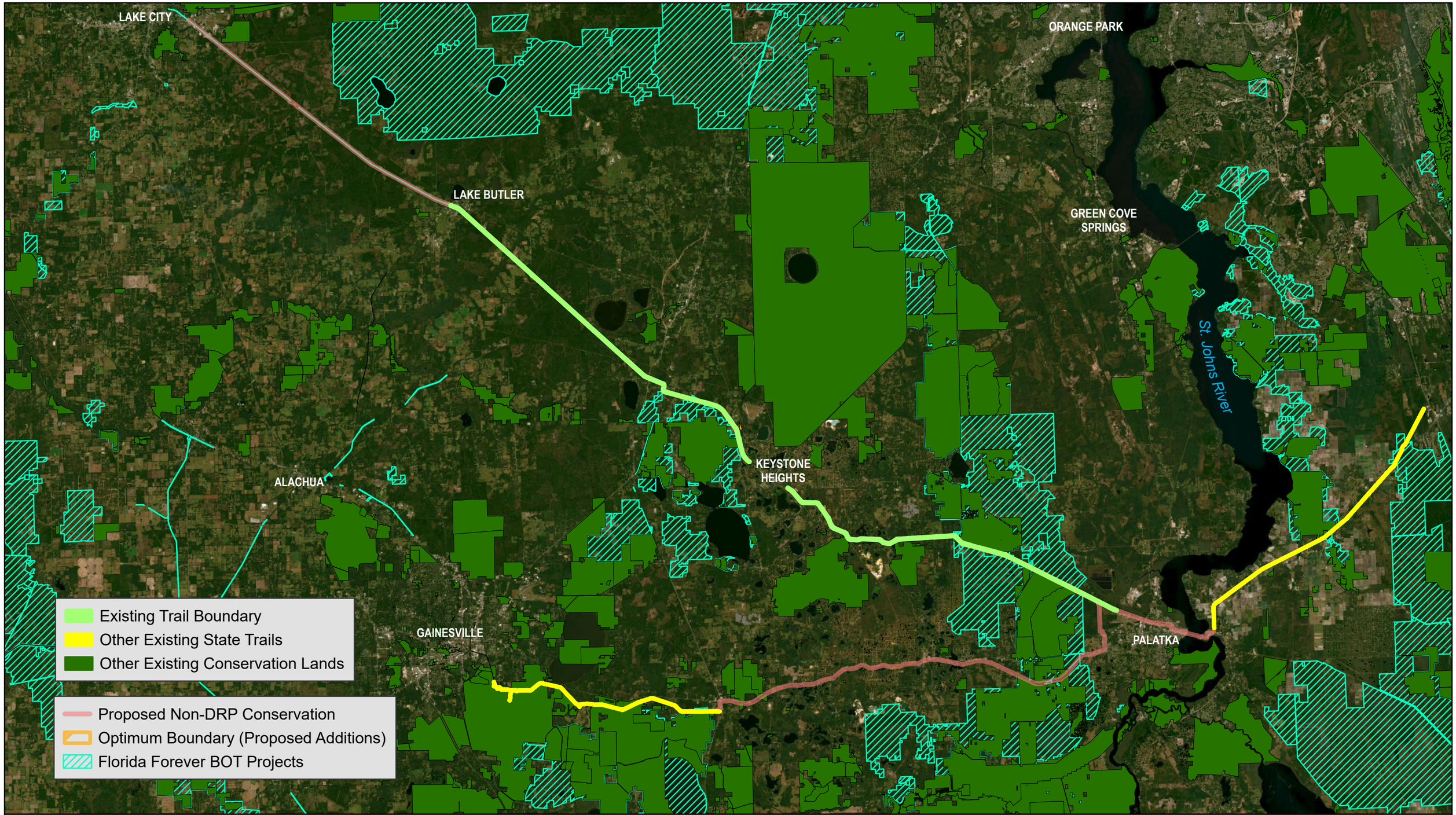

Palatka-to-Lake Butler State Trail

Optimum Boundary

0 5 10 Miles

N