



TENOROC TRAIL
M A S T E R P L A N

TENOROC TRAIL MASTER PLAN STUDY
JULY 2014

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THE CITY OF LAKELAND, LAKELAND FL

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ACKNOWLEDGEMENTS

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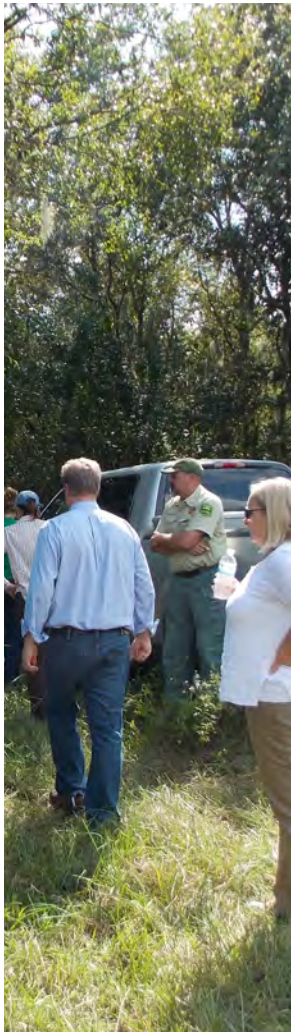
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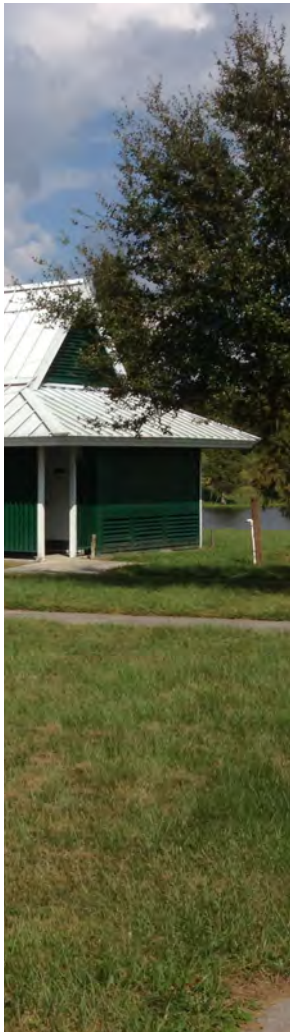
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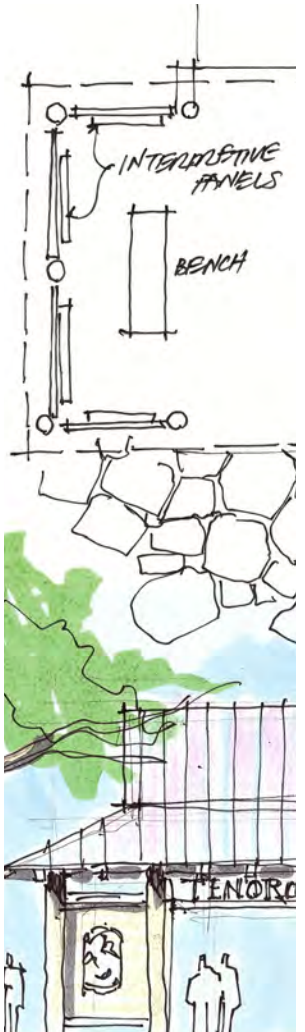
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PROPOSED MASTER PLAN



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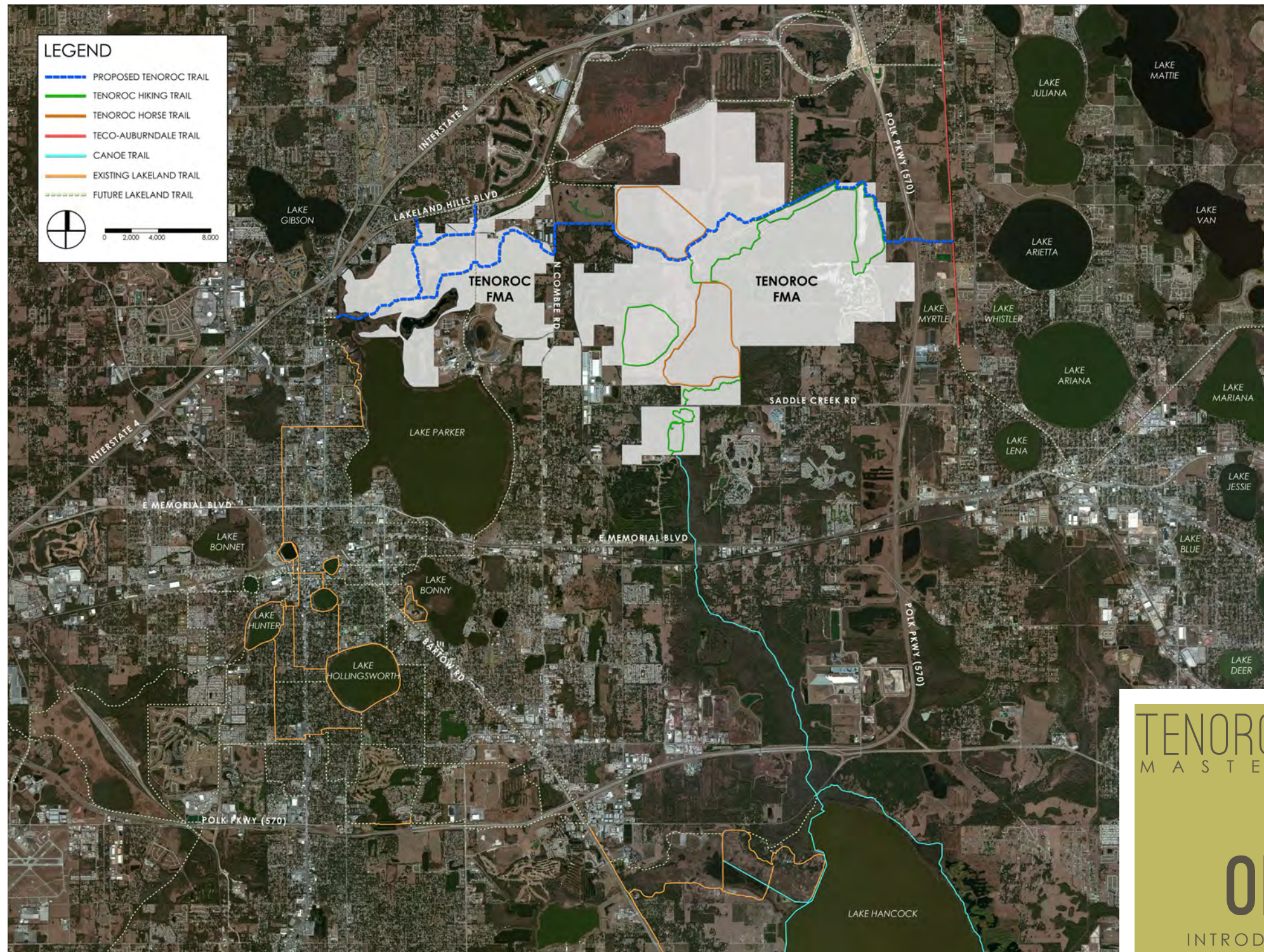
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Introduction

In 2013, the City of Lakeland commissioned Littlejohn Engineering Associates (LEA) to prepare a master plan for a regional multi-use trail connection between its Lake-to-Lake Bikeway Network, the TECO-Auburndale and General Van Fleet State Trails in the vicinity of Auburndale and Polk City. The trail that is incorporated into the Braddock Road bridge crossing of the of SR 570/Polk Parkway near the TECO-Auburndale Trail has been identified as the Tenoroc Trail's desired eastern terminus. The Tenoroc Trail is a Priority Pathway Corridor identified in the Citywide Pathways Plan portion of the Lakeland Comprehensive Plan 2010-2020. The Tenoroc Trail is also a high-priority multi-use trail contained in the 2035 Mobility Vision Plan (Long-Range Transportation Plan) adopted by the Polk Transportation Planning Organization and is a component of a Priority Land Trail in the Florida Office of Greenways and Trails Systems Plan.

In addition to connecting Polk County's urbanized areas with the larger regional trail network, the Tenoroc Trail will provide needed connectivity to premier area recreation facilities such as Polk County's Lake Myrtle Sports Complex and Lakeland's Lake Crago Park. The Tenoroc Trail is an important component of an overall trail network that will ultimately connect to the 12th State University in Florida, Florida Polytechnic University, the Williams Development of Regional Impact, Polk County's Saddle Creek Park and the planned Coast-to-Coast Connector extending from Pinellas County to Brevard County.

TENOROC TRAIL MASTER PLAN

ONE

INTRODUCTION & OVERVIEW

The Florida Fish and Wildlife Conservation Commission (FWC) maintains a network of unpaved hiking and equestrian trails throughout the Tenoroc Fish Management Area and provides a direct trail connection to Saddle Creek Park. This trail network is maintained by dedicated volunteers generally referred to as the "Friends of Tenoroc". To the north of the master plan area, multi-use trails have been constructed by the Florida Department of Transportation (FDOT) and Polk County as part of the recently-completed University Boulevard, Research Way, Pace Road and Polk Parkway/Pace Road interchange improvement projects.

FDOT is incorporating a 12-foot wide pathway in the future four-lane cross-section for S.R. 33 improvements between Old Combee Road/Deeson Pointe Boulevard and University Boulevard through the Project Development and Environment (PD&E) Study that is scheduled for completion in 2014.





Overview

The Tenoroc Fish Management Area (FMA) is located two miles northeast of the City of Lakeland, in Polk County. Managed by the Florida Fish and Wildlife Conservation Commission (FWC), Tenoroc is an 8,300 acre site that offers pristine fishing, birding, shooting, hiking and equestrian activities.

Prior to phosphate mining operations between the 1940s and 1970s, Tenoroc was part of a large wetland system that discharged into Saddle Creek, headwaters for the Peace River basin. To the west, another wetland system associated with Lake Parker also contributed water to Saddle Creek.

Phosphate mining operations, which primarily took place before 1970, significantly disrupted natural drainage patterns by eliminating original wetlands and impounding water in retention areas. On the eastern portion of Tenoroc, a system of ditches carries water through and around mined areas, including a series of mine-created lakes. The western portion of Tenoroc consists of a series of pits/lakes which flow to Lake Parker and Lake Crago through control structures during high water periods. To the north, the Williams Company added 750 acres for inclusion into the Tenoroc FMA.

Mining operations by the Coronet Mining Company led to the name "Tenoroc", or Coronet spelled backwards. The property ownership subsequently transferred to the

Smith-Douglass Company and then Borden, Inc. In September of 1982, Borden donated the 6,030-acre property to the State of Florida. Two additional tracts of land were acquired through purchase: 341 acres with the funds from the Non-Mandatory Reclamation Trust Fund and Preservation 2000 in 1998, and 986 acres through the Preservation 2000 Inholdings and Additions program in 2000. Additional lands were acquired through a series of land swaps with the City of Lakeland and through a 750-acre donation from the Williams Company. Today, Tenoroc covers approximately 8,300 acres.

The Tenoroc FMA is a managed landscape of lakes, marshes, open grasslands, and wooded hills between the Green Swamp and Peace River and is a vital component of a "greenbelt" that has been identified in the City's Comprehensive Plan. The result of FWC management activities has transformed the site into well maintained fishing lakes and quality hiking and horseback riding trails.





Littlejohn Engineering Associates (LEA), City of Lakeland Staff from numerous departments and various stakeholders of the Tenoroc property met for a two-day long planning session (known as a “charrette”) from October 22, 2013 to October 23, 2013. During the charrette, the City stated that the purpose of the proposed trail network is to:

“Create a paved trail connection between the City’s planned Lake Crago Park through the Tenoroc Preserve to the Van Fleet/TECO-Auburndale Trail.”

This improved trail network could, via the Van Fleet Trail, link the surrounding network of trails with the ability to travel from the Lakeland area north to Lake County and on into Volusia County’s growing network reaching the Atlantic Ocean. Charrette participants developed a list of key goals to minimize financial costs of the Tenoroc Trail Project in order to achieve more “bang for the buck” in trail length and connections:

1. The trail will likely be divided into phases/segments
2. Limit ditch crossings
3. Limit the number of bridge connections
4. Limit road crossings and address crossing of S.R. 659 (Combee Rd)
5. Spend savings from the above to develop and pave segments of the actual trail itself with appropriate trail heads, signage and amenities.

Through the charrette process, the following discussion topics were developed:

Lakeland’s planned Lake Crago Park

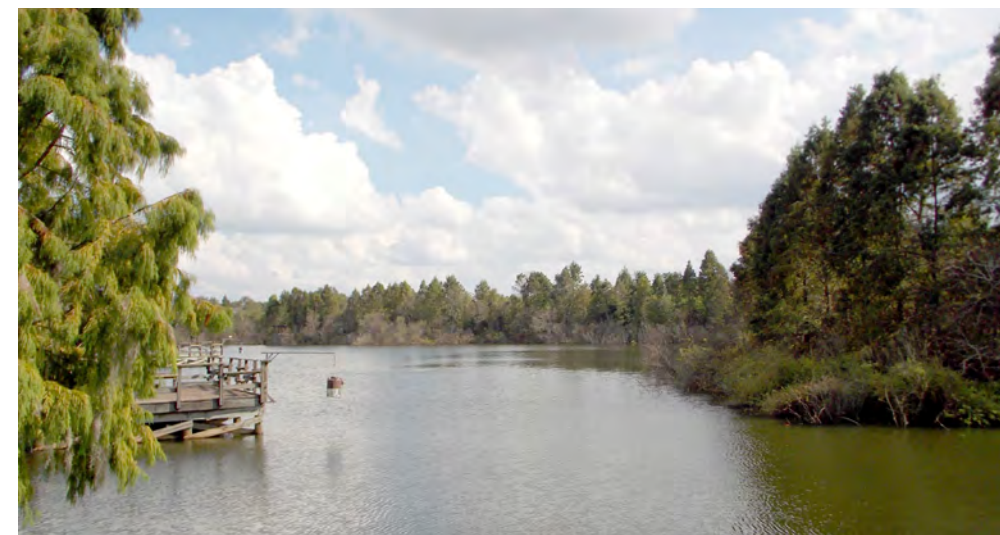
The City of Lakeland has a master plan for Lake Crago Park which is located at 525 Lake Crago Drive. The site is accessed from Lakeland Hills Boulevard (S.R. 33) via a paved road with a 10’ trail on the south side of the road. The park site, a 119 acre tract of land, is bounded by Lake Parker, Lake Crago and the Crago Canal. Construction on Phase I of the park began in 2013 and includes earth moving, drainage, utilities work, road and trail stabilization, a dog park and a boat ramp, funding permitting. Phase 1 includes partial road paving from the existing bridge road to the dog park and boat ramp. Additional site access will be provided as a stabilized unpaved road base. Subsequent capital improvement funding for this project is anticipated in FY 2021. Future phases of the park will provide three multi-purpose fields, walking paths, restrooms, concession stand, baseball fields, kayak/canoe/sailing opportunities and a programmable education center for water based activities. This site will provide an opportunity for a western trailhead for the Tenoroc Trail.



Use of existing trails, loop trails, multi-use and walkable trails, and shade



Currently, the Tenoroc FMA provides a number of hiking/walking trails as well as equestrian trails. Many of these trails are aligned along the top of existing dikes, berms and spurs left from phosphate mining use in the past and utilize shaded areas when available. Existing trees for shade were also identified as an important element to Stakeholders participating in the charrette and therefore some portion of the unimproved hiking trails/equestrian trails will be developed into the paved trail network.



Paved and unpaved areas

The majority of the regional portion of the trail network will be a twelve foot (12’) asphalt paved trail meandering through the Tenoroc property. Different options have been discussed such as leaving some unpaved trail areas for those seeking a more natural experience. One area in particular that has been targeted for an unpaved trail is along the “Northern Alternate”, south of Long Lake. The natural beauty of the site would be preserved, and a paved route along S.R. 33 as identified in the PD&E study would be the primary trail route. Participants in the charrette pointed out the benefits of



a short paved exercise loop that utilizes the southern edge of Long Lake. The loop, if implemented, would introduce nearby residents to the rest of the trail system and connect Old Combee Road and S.R. 33. Additionally, benefits of the exercise loop near residential properties as a means of general public safety keep eyes on the trail and reduce the opportunity for crime.

Management and Operation of Tenoroc

Currently, the management and daily operations of Tenoroc is provided by the Florida Fish and Wildlife Conservation Commission (FWC). It is important to the FWC that the trail users stay on the designated trails. Wandering off the trails could pose safety hazards given the steep grade of mine pits and the unstable nature of some mined soils. Wildlife in Tenoroc includes common species such as coyotes, raccoons, ospreys and bobcats. Much of the site and boundary is not known to the general public and the current website was observed to have only a basic map of the facility with very little detail. This issue led to a discussion of creating a mobile website or app for the facility that would be operated and maintained by a third party partner, such as a local college/university or a local service organization.

Collaboration of adjacent property owners

There was extensive discussion of different property owners adjacent to the Tenoroc property and the integration of their properties into the trail routing. The Polk County School Board was identified as having a designated elementary school site at the intersection of S.R. 659/Combee Rd and Old Combee Rd. Access on the School Board site would provide a convenient and safe route to school for children and parents. Shared use of adjacent properties for trail routing can reduce cost, provide access and an amenity for all properties and potentially increase property values. Another property is an adjacent tract owned by the Williams Company, whose representatives have expressed concern about trail users sharing their access road extending east from S.R. 659 (Combee Road) since it is used for industrial and mining purposes. The Williams Company would prefer that the trail be positioned on the southern ditch edge and along the north edge of a potential business park area. Public and private owners abutting the east edge of the Tenoroc and Braddock Road were identified as potential trail development partners with which the City and/or Tenoroc FMA planned to meet. These properties offer alternative routes to provide a direct connection to Braddock Road and the Van Fleet/TECO-Auburndale Trail corridor. The trail sections on these properties can be implemented through stand-alone projects or incorporated into development plans that are prepared in the future.

The eastern portion of the Williams Company's holdings are located within a "Development of Regional Impact" (DRI) that include specific on-site transportation



requirements to encourage bicycle, pedestrian and transit circulation. The current DRI conditions require the development of a trail network that links the Tenoroc Trail corridor with the development's town center component and the new Florida Polytechnic University campus. It should be noted that University Boulevard, Research Way and Pace Road within the Williams DRI include 12-foot wide multi-use trail facilities to provide direct connections to future residential, commercial and employment center components. Roads that are currently being evaluated in the adjacent Polk Commerce Center DRI in unincorporated

Polk County also include trail facilities as part of their recommended cross-sections to improve access and circulation via non-motorized modes of travel. Toward the western end of Segment 1, it appears that a connection between Tenoroc Trail and the Villages of Noah's Landing development will also be feasible, providing an amenity for its residents. The Villages of Noah's Landing already has an easement agreement with the Tenoroc FMA for its main access road extending south from Melody Lane. The zoning ordinance covering the Villages of Noah's Landing project requires the access road to accommodate a future connection to the Tenoroc Trail.



Attracting visitors to Tenoroc/Tenoroc's Marketability

With the thoughtful placement of strategic trailheads and markers along major roadways, public awareness and recognition of the Tenoroc FMA will be enhanced. Interpretive centers for visitors/users of the Tenoroc Trail would serve as amenities to attract and educate visitors as well. The development of the trail network will be implemented in a series of phases so repeat visitation may occur as each phase is implemented. There will also be an opportunity to develop a "neighborhood" pedestrian and bicycle access point at the S.R. 33 and Old Combee intersection and an interim vehicular trailhead at the end of each phase. Existing restroom facilities at Lake Myrtle Park and within the Tenoroc FMA at Derby Lake or Picnic Lake will serve trail users as the central trailhead while the Lake Crago Park design will serve trail users, once constructed, as the western trailhead.

Charrette participants identified opportunities and benefits of short loops that could be developed between Long Lake and Lake Crago Park. If implemented, The loops will provide added incentive for nearby residents seeking shorter routes for regular biking and walking exercise activities that can be accomplished before or after work or school and be directly accessed from communities such as Landings at Long Lake and Spanish Oaks. Additionally, benefits of the exercise loop near residential properties as a means of general public safety keep eyes on the trail and reduce the opportunity for crime.

The public's level of awareness of Tenoroc's attractiveness as a destination will be largely influenced by its natural beauty as well as existing and future amenities that it will provide. A list of possible future assets identified for the facility could include:

- Adventure Course
- Mountain Biking
- Blue Course/Water Trails
- Youth Conservation Center
- Kayak, Running, Cross County, Biking Races
- Mini Loops/Tike Trails for Kids
- Ecological Tours/Geocaching Opportunities
- Vendor Opportunities
- Exercise Stations
- Gun Range Expansion/Rifle and Arrow Shooting Facility (existing)

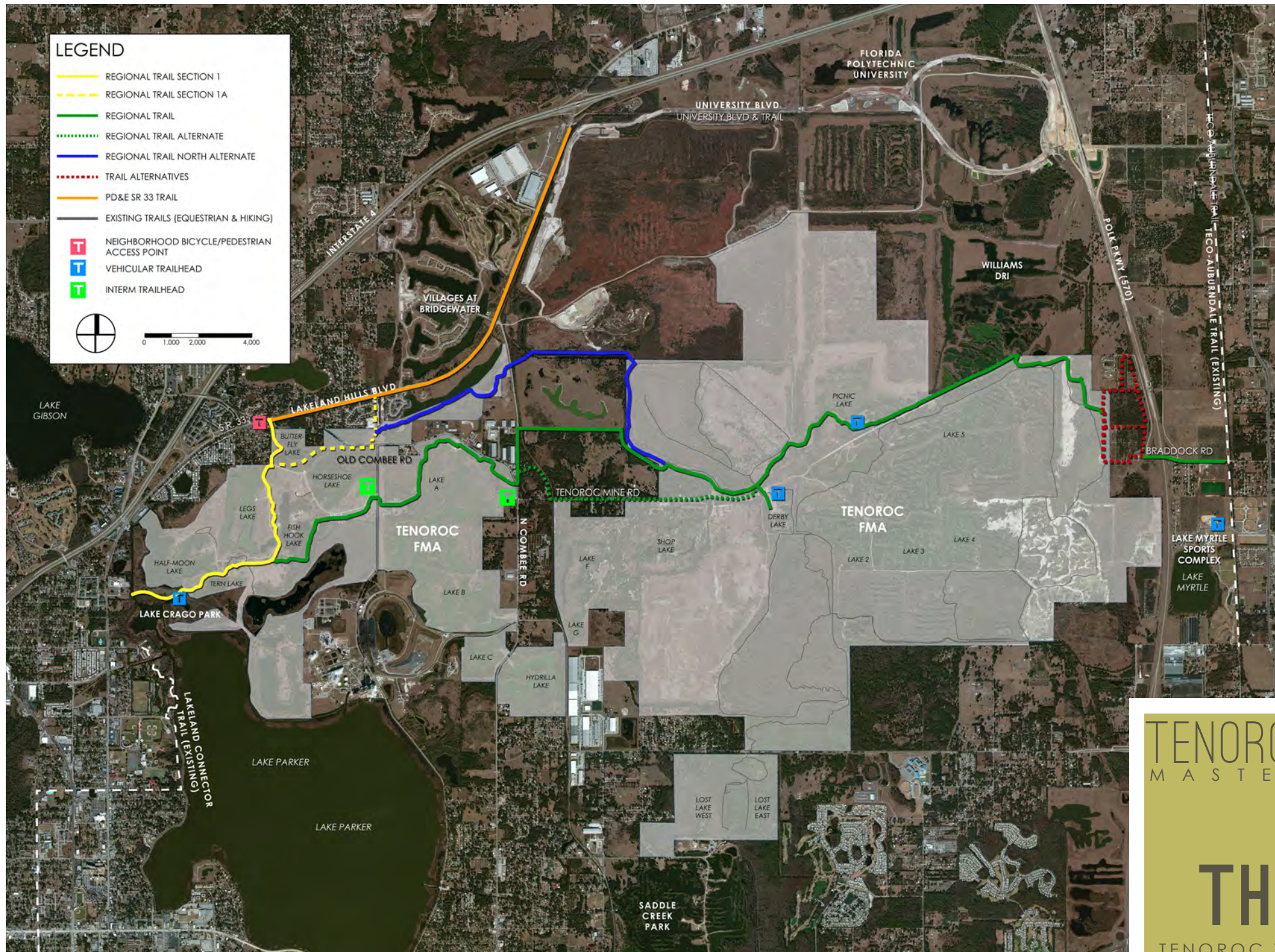
Issues and Concerns

Charrette participants identified the following issues that will need to be addressed in the design of the trail and following its construction:

- Safety of users near lakes with quick drop offs/steep grades
- Policing and maintenance of trails
- Possible conflicts with the gun range & archery ranges
- Hikers and bikers going off-trail
- Unpredictable soils and sink pockets
- Funding for trail and trailhead Maintenance
 - Daily user fee of \$3.00 (annually earns \$30-\$50k). Waiving fee for trail users would require an administrative approval from the Florida Fish and Wildlife Conservation Commission; potentially legislative approval.
 - Kiosks to collect fees at parking areas
 - Partnerships with Polk County and surrounding cities to make small annual contributions in lieu of user fees to ensure resident access to well-maintained trails



- Crossings of S.R. 659 (Combee Road), including an over/underpass or an at-grade crossing.
 - Connectivity to S.R. 33 and the entrance to the Villages at Bridgewater
 - Consolidation of S.R. 659/Old Combee Road and S.R. 659/Tenoroc Mine Road intersections to one location to improve possibility of signalized intersection with trail crossing. This option would require cooperation from the Polk County School Board, owner of tract on east side of S.R. 659.



Regional Trail Segment 1 ———

The Proposed Segment 1 and 1A trail network begins at the City's proposed Lake Crago Park. Utilizing the park's proposed pathway system, the trail traverses the park and enters the Tenoroc property. The trail then aligns with an existing hiking trail south of the vehicular access road and meanders south of Legs Lake. At the southwest corner of Butterfly Lake, Segment 1 splits to head north towards S.R. 33. Following a meandering route along the western edge of Butterfly Lake, Segment 1 provides a link to S.R. 33 creating the western edge of a loop trail. Construction of these portions of the trail provides additional access to area residents along or near S.R. 33.

Regional Trail Segment 1A - - - - -

Segment 1A continues east, south of Butterfly Lake. Crossing Old Combee Road at East Lake Parker Drive, the trail turns northward following the Lakeland Gas and Lakeland Electric Easement. This route creates the eastern edge of the loop. Both trails connect to the proposed PD&E S.R. 33 Path, creating the northern portion of the trail loop.

Regional Trail ———

From the proposed Segment 1 trail at the southwest corner of Fishhook Lake, the Regional trail continues east, crossing East Lake Parker at the gated entrance to the Tenoroc FMA. The trail follows the western edge of a large wetland then travels north up toward Old Combee Road. The trail then winds eastward towards

a crossing of S.R. 659/Combee Road. Once across S.R. 659/Combee Road at the Old Combee Road intersection, the trail would be located on Polk County School Board (PCSB) property before arriving back on the Tenoroc Property. At this point, the Regional Trail and the Regional Trail North Alternate merge into one trail. The trail could then meander towards Tenoroc Mine Road and follow it in a parallel fashion towards Picnic Lake. The proposed Regional Trail continues east to the eastern boundary of the Tenoroc FMA; at this point, there are numerous alternatives both on private or public lands, for the trail to link with Braddock

Road and ultimately the TECO-Auburndale Trail.

Regional Trail Alternate ■ ■ ■ ■ ■

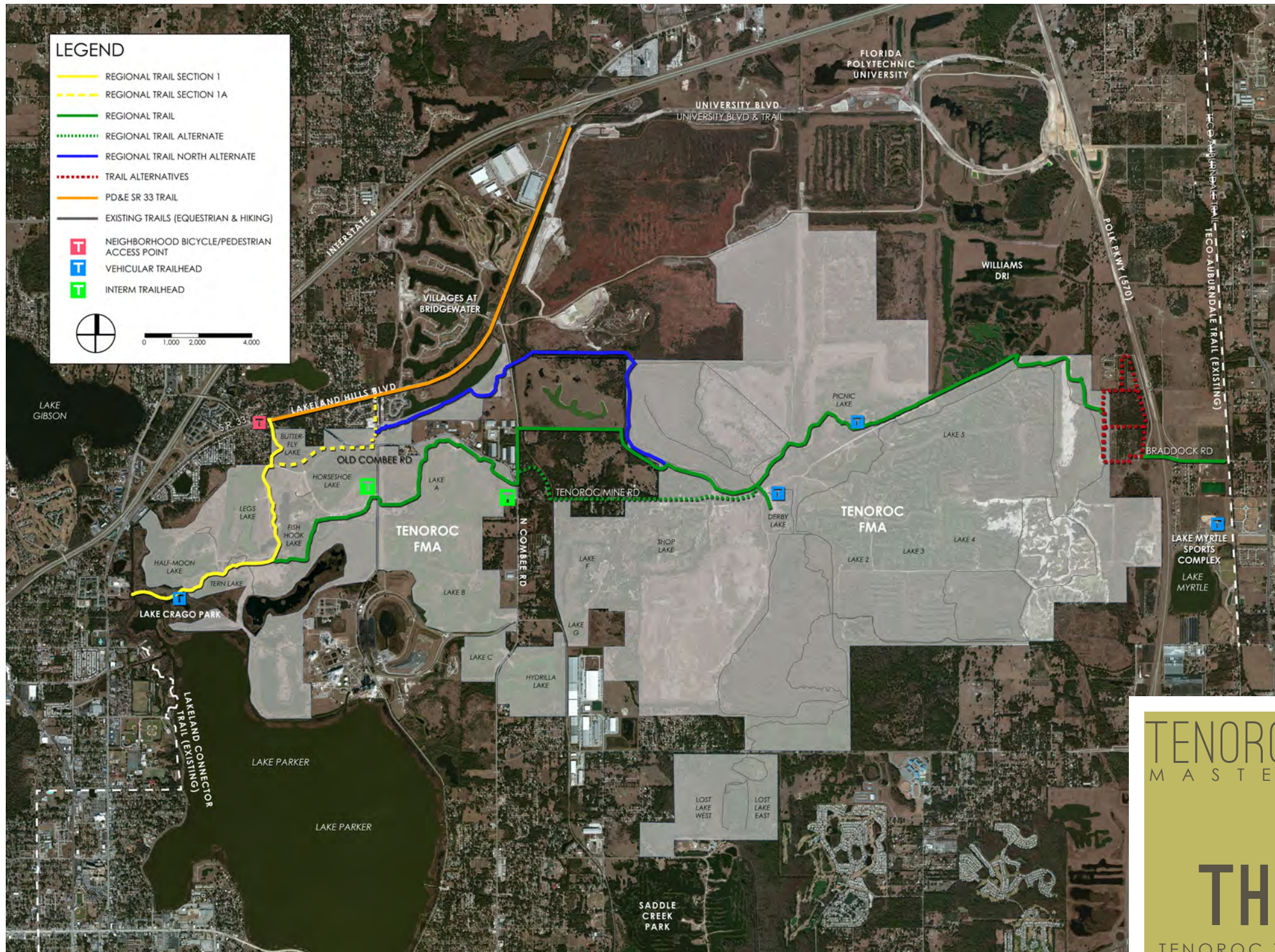
The Regional Trail Alternate proposes a southern connection from the Regional Trail with an at-grade crossing at S.R. 659/Combee Road/Old Combee Road intersection. This alternate meanders along the southern edge of the School Board property and follows Tenoroc Mine Road back onto the Tenoroc FMA, where it connects back to the Regional Trail at Derby Lake.

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AND ALTERNATIVES





Regional Trail North Alternate (RTNA) █

The Regional Trail North Alternate connects to the Proposed Segment 1A trail north of Old Combee Road in the utility easement and travels east along the southern edge of Long Lake, offering pristine views as the trail meanders through native vegetation. The Regional Trail North Alternate proposes an at grade intersection of S.R. 33/S.R. 659 (Combee Road) or a pedestrian bridge that would span S.R. 659/Combee Road and connect to the Williams Property directly to the east of S.R. 659/Combee Road. The North Alternate proceeds east along the northern boundary of the potential Williams business park (land use shown on Lakeland's Future Land Use Map) property on the north side of the canal bank. The trail then runs south, where it joins the route of the Regional Trail. While the RTNA is not part of the Regional Trail, alternative segmentation and phasing should be identified to allow for short-term implementation of a primitive trail on the south side of Long Lake.

East End Trail Alternatives █

The East End Tenoroc Trail alternatives have a variety of different opportunities to connect to the TECO-Auburndale Trail system near the Polk Parkway. Utilizing different property rights-of-way from adjacent owners, there are four routes being considered. The northernmost alternative follows "Road G" and intersects at Braddock Road; the preceding two alternatives follow the property line of parcels immediately to the South of "Road G" and intersect at the collector road portion of "Road G". The Southernmost trail alignment follows Braddock Road.

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PD&E SR 33 Path (Complementary Pathway) █

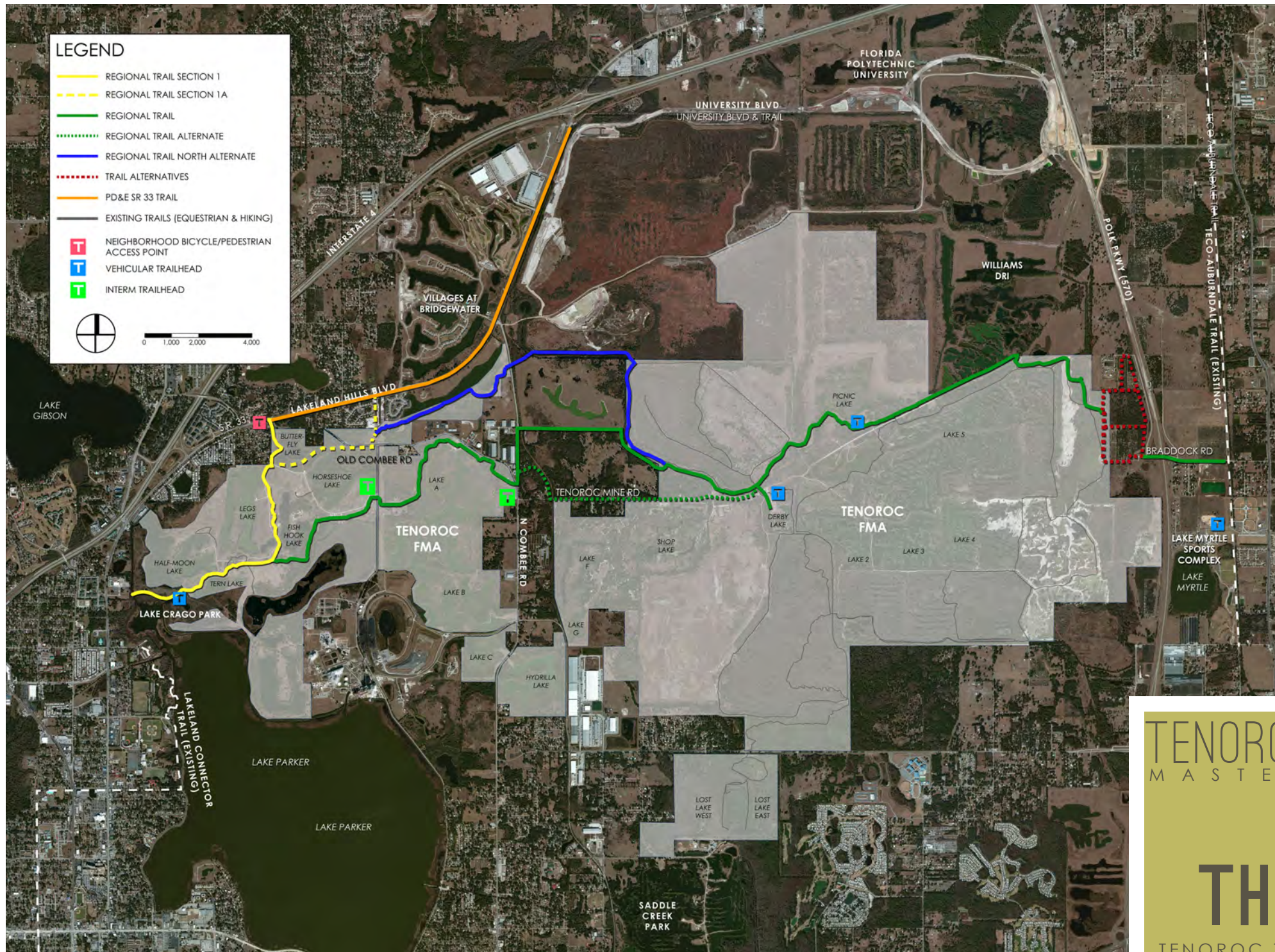
The Florida Department of Transportation (FDOT) has conducted a Project Development and Environment (PD&E) Study for the four-laning of S.R. 33 from the Old Combee Road/Deeson Pointe Boulevard intersection to a point north of Tomkow Road and Interstate 4. The roadway cross-section that was developed as part of this PD&E Study includes a 12-foot wide path that will be constructed on the south side of S.R. 33 within the FDOT right-of way; it will stretch from Old Combee Road to University Boulevard to connect with another 12-foot wide asphalt path

that was constructed as part of the University Boulevard and Research Way road projects that opened to traffic in 2012. A construction commencement date has not been determined; the construction phase is currently unfunded in the FDOT Five Year Work Program.

Existing Trails, Equestrian and Hiking █

The Tenoroc FMA hiking network is approximately 12 miles long, consisting of loops and a main connector trail. There are currently two entrances to the trail network;





Picnic Lake Recreational Facility and Polk County's Saddle Creek Park. The trails pass over both reclaimed and unreclaimed mining property and the majority of trails follow existing berms along the edge of mined areas. Western segments of the trail are mostly flat, open, and dry. The eastern loop of the Orange Trail is shaded with oaks. Trails along Rattlesnake Ridge on the southern portion of the Blue Loop Trail are steep and narrow but offer pleasant vistas of lakes and forests. Tenoroc's central trail, approximately five miles long, links these trails to the two loop trails on the Saddle Creek Tract of Tenoroc, south of the main section of Tenoroc. Two main loop trails in Tenoroc are available for horseback riding. The 3.5-mile North Trail and the 4.4-mile South Trail are accessible from the Tenoroc Office and parking area and are shared with hikers. These trails expand the routes, distances and experiences pedestrian trail users may have and provide connectivity to Polk County's Saddle Creek Park, located between CR 546 and US 92.

Neighborhood/Pedestrian Trailhead T

A trailhead on the right-of-way located at the southwest corner of the S.R. 33/Old Combee Road-Deeson Pointe Boulevard intersection is proposed to provide an important access point and gateway feature for residents in nearby neighborhoods such as Lakeland Harbor, Parke 33 Apartments, Arbor Glen Apartments, Lake Deeson and Paddock Club Apartments. The trailhead would feature an information kiosk as well as entry marker/monument at the intersection designed consistent with the overall Tenoroc Trail theme. In addition to serving users of the Tenoroc Trail, this trailhead would also offer an amenity for users of the PD&E S.R. 33 Path

and recently-constructed sidewalks and bicycle lanes on S.R. 33 to the south of this location. This trailhead is not proposed to include automobile parking to minimize impacts to the adjacent neighborhood south of Joyce Drive.

Vehicular Trailhead T

Four vehicular trailheads have been identified for the project and can be considered as planned or existing, since they are located at: Lakeland's Northeast Recreation Park, Tenoroc FMA's Picnic Lake Recreation Facility, Derby Lake Recreational Facility and the Lake Myrtle Sports Complex that is operated by Polk County and the City of Auburndale.

Interim Trailhead T

Two interim vehicular trailhead opportunities appear to exist along the regional trail route. These trailheads occur at or near where segment termini of the trail may be located, specifically near East Lake Parker Drive and the S.R. 659 (Combee Road)/Old Combee Road intersection.

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Old Combee Road and Lake Parker Drive Intersection

In order to provide a safe crossing for trail users crossing Old Combee Road at the intersection of East Lake Parker Drive, an “oval-about” is proposed for implementation. The oval-about is intended to calm traffic shortcutting between S.R. 33 and S.R. 659/Combee Road and to provide a gateway/monument for the Tenoroc FMA on Old Combee Road. The oval-about, measuring approximately 40’ long and 25’ wide allows trail users the opportunity to look in only one direction when crossing travel lanes and to have a refuge space within the oval-about to accommodate traffic. The interior of the oval-about provides ample space for native landscaping and signage for the Tenoroc FMA. This type of treatment would be subject to a future engineering analysis and permitting by Polk County, which maintains Old Combee Road and East Lake Parker Drive. It is noted that Lakeland Electric has expressed concerns regarding the location and ultimate design of the oval-about due to its potential impacts on a major gas transmission line serving the McIntosh Power Plant (south of Tenoroc Trail corridor); this issue would then be taken into consideration during the future design phase.

TENOROC TRAIL
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ALIGNMENTS AND
ELEVATION STUDIES



S.R. 33 and Old Combee Road Neighborhood/Pedestrian Trailhead

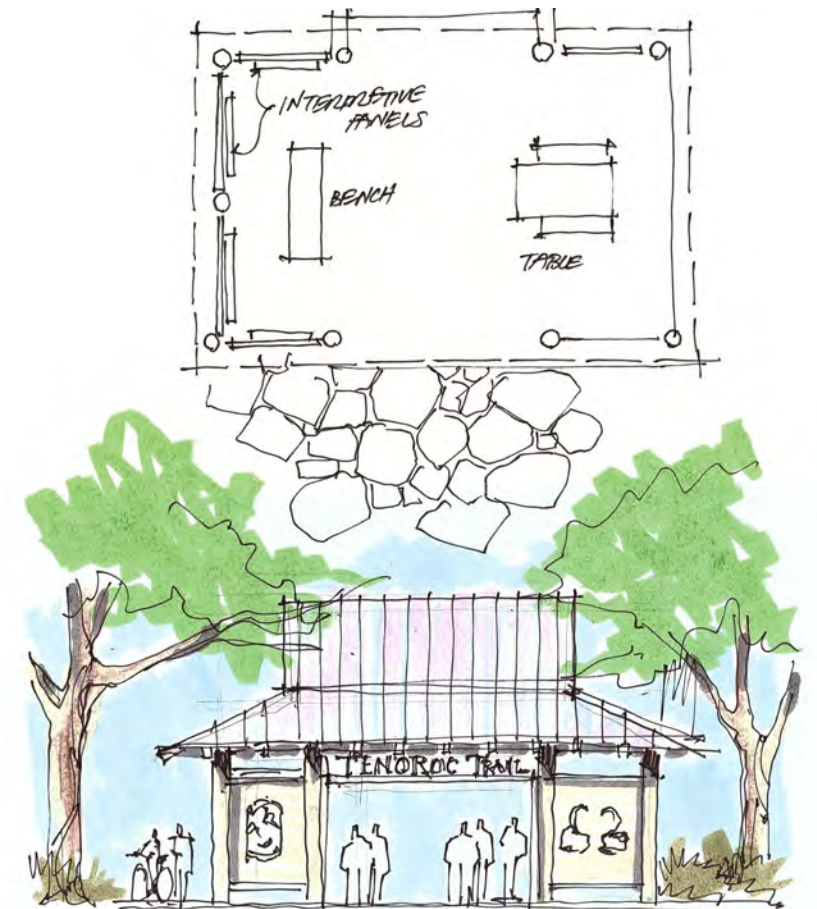
The area north of existing neighborhoods at S.R. 33 and Old Combee Road presents an opportunity for a neighborhood/pedestrian trailhead for the Tenoroc Trail, as the trail will intersect the S.R. 33 PD&E Study 12' pathway along the southern right-of-way line at S.R. 33. This trailhead will serve as a pedestrian and bicycle facility intersection for area residents heading toward the new campus of Florida Polytechnic University, Tenoroc FMA and Lake Crago Park.

The high visibility of the site from S.R. 33 provides the opportunity for the trailhead to serve as a gateway to the Tenoroc FMA and to provide an awareness of the Tenoroc Trail to passersby. The site plan takes advantage of the existing oak trees and features a proposed shade structure/information kiosk, drinking fountain and site furnishings. The plan also includes a pathway routing from the Ron Circle intersection to the shade structure through the existing stormwater ponds which will receive additional landscaping to achieve a park-like character. A rail fence with Florida Fieldstone columns is also shown paralleling Old Combee Road south to the northwest corner of the Tenoroc FMA and will help to establish the edge of the Tenoroc property. At this time, no parking has been shown since this is a neighborhood trailhead intended to serve area residents as they pass through on the trail and pathway.

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FOUR

ALIGNMENTS AND
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S.R. 659/Combee Road and Old Combee Road Intersection

The intersection of S.R. 659/Combee Road and Old Combee Road is currently an un-signalized, high use intersection; it is recommended that this intersection be slightly realigned and improved to better serve both the drivers and Tenoroc Trail users. The sketch plan suggests that Old Combee Road intersect S.R. 659/Combee Road at a more perpendicular angle allowing for better visibility of drivers coming south on S.R. 659/Combee Road. In addition, longer storage lanes have been added for left turn movements which allow a reduced queue for those desiring to make a right turn. To be signalized, this intersection would have to meet established criteria known as "warrants" and be approved by the Florida Department of Transportation and Polk County. The addition of a signal to the intersection would enable a safer trail crossing for trail users and may be warranted if the planned Polk County School Board site on the east side of S.R. 659/Combee Road is developed or if Tenoroc Mine Road is ever realigned to create a standard four point intersection with S.R. 659/Combee and Old Combee Roads.

The southwest quadrant of the intersection presents an opportunity of Tenoroc FMA signage/monument marker and rail fencing with columns identifying the edge of the property. The realignment of Old Combee Road must also accommodate increased stormwater capacity necessitated by the intersection improvements. In the northwest quadrant, compensation will be needed for the convenience store's stormwater pond since it will likely be impacted by this modification. A sidewalk

would be constructed along the west side of S.R. 659/Combee Road between the trail and convenience store to provide a safe and convenient route for patrons.

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POLK COUNTY
SCHOOL
BOARD SITE
(PLANNED
ELEMENTARY
SCHOOL)

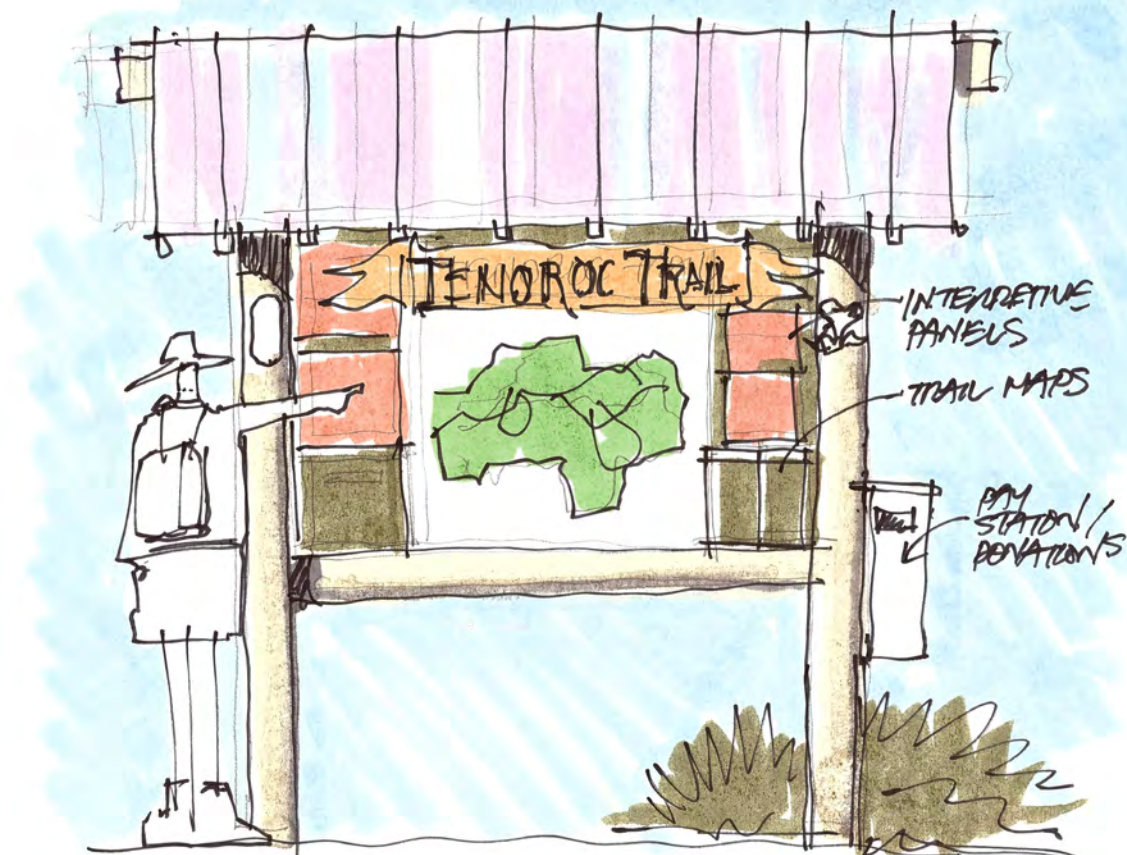


Long Lake South Alternate Trail Route

The north alternate route of the trail through the Tenoroc FMA affords a series of beautiful views across Long Lake. As shown, a 12' trail would meander along the wooded south shore of Long Lake, providing a natural/shaded experience for users and provide a loop for area residents with the construction of the PD&E S.R. 33 Path. In lieu of a paved trail, maintaining unpaved trails through this area may be more appropriate and function as a spur coming off of the primary trail route.

Fishing Platform and Lake Overlook

Along the trail corridor in the Tenoroc FMA, there are several opportunities to provide fishing platforms and/or lake overlooks for trail users. These shaded rest stops will need to be carefully located as fishing in the lakes is closely monitored and restricted by the FWC at Tenoroc.



Tenoroc Wayfinding Kiosk

Wayfinding kiosks will be located at strategic intersections along the Tenoroc Trail network. Each information kiosk will provide directional information in the form of an overall map, amenities provided, site information, updates on events and signs informing users of the animals that call Tenoroc FMA home. Each wayfinding kiosk will be designed to follow the architectural character established by the Tenoroc FMA so as to create a cohesive character for the management area.





Entry/Monument Marker

Primary entry/monument markers serve as locational and gateway features for the Tenoroc FMA and trail network. Monuments would be located at key roadway intersections and be made of materials indigenous to the Tenoroc area, to add an additional visual connection to the site.

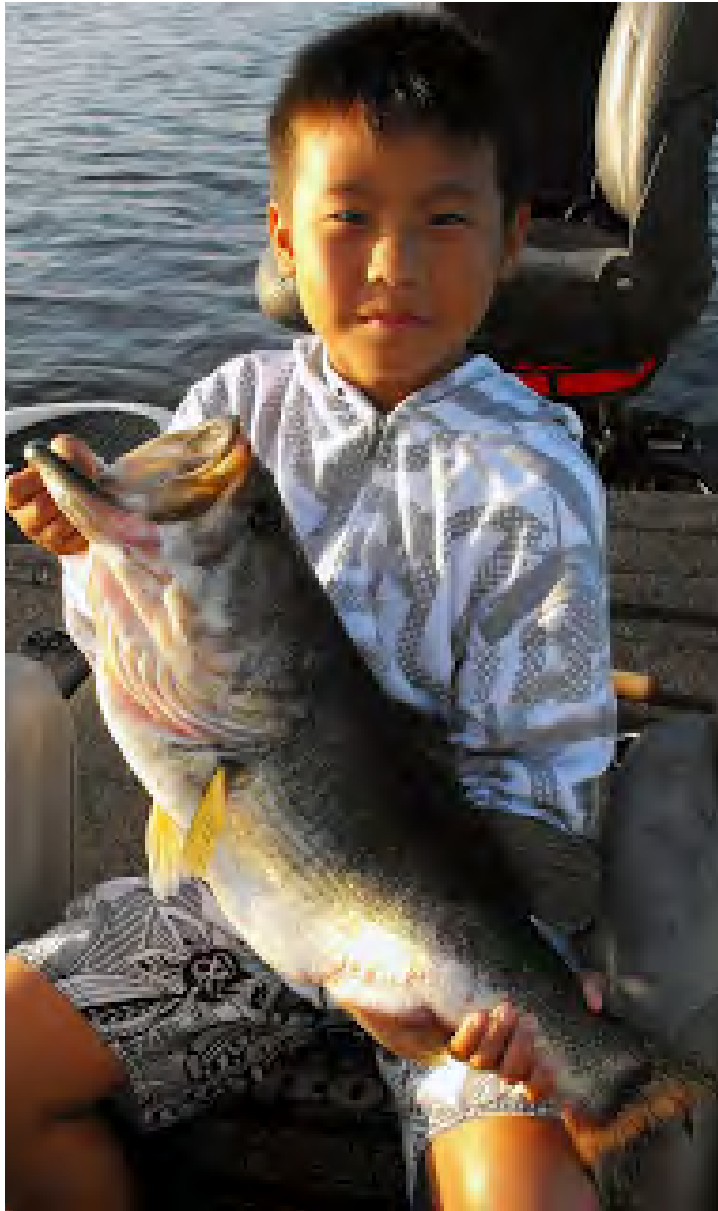
Kiosk

Kiosks are a popular wayfinding technique for users along the trail as they will provide an overall location map, location of amenities, and general information regarding the trail. There is an opportunity to create seating areas with bike racks and litter receptacles at each location, as well as a shade structure which serves as protection from both sun and rain. Wayfinding kiosks will be located at strategic intersections along the Tenoroc Trail network. Each information kiosk will provide directional and distance information on an areawide map, amenities provided, site information, updates on events and signs informing users of the animals that call Tenoroc FMA home. Each wayfinding kiosk will be designed to follow the architectural character established by the Tenoroc FMA so as to create a cohesive character for the management area.

Trail Markers

Trail markers along the trailway can be used to provide users a visual verification that they are following the intended path, provide distances or locations for EMS.

There are many different applications to trail markers. Some markers are nailed to trees along the trail, others have small pillars carved with directions or written on rocks. Directional medallions may also be placed into the pavement of the trail for a low maintenance approach to trail marking. Trail markers under consideration for the Tenoroc FMA and Trail Network will be consistent with those of adjacent trail systems. Another important role of the trail markers is to denote which trails are appropriate for what users. Tenoroc will provide visitors with a number of trails, and it will be important that different applications are properly distinguished.



Directional Signage

Directional signage applications are typically used at the intersection of multiple trailways, providing users the option to stay on their original trail or explore another path. Their uses can be either vertical or low to the ground, the main importance being informative directional assistance and include distances for trail users.

Mobile Devices

As smartphones have become more popular, it would be a strategic investment for Tenoroc to launch both a website and mobile website for the facility. This interactive feature would allow users to pull up maps on their mobile devices to pinpoint their exact location, geolocate points of interest, and locate the nearest amenity area. If the mobile app becomes a popular feature with users of the Tenoroc FMA, looking into the possibility of creating a mobile app for streamlined access may be an opportunity for additional marketing. This marketing effort could be expanded through the inclusion of web links on sites operated by Lakeland, Auburndale, Polk County, Florida Office of Greenways and Trails and the Florida Trails Association.



Partnership Opportunities

Tenoroc has a multitude of opportunities for partnerships to ensure the success of the trail network. The following are some partnership opportunities that stakeholder participants listed:

- Florida Fish and Wildlife Conservation Commission
- City of Lakeland
- Polk County
- FDOT
- Florida Trails Association
- Youth Conservation Corps
- Boy Scouts of America
- Equestrian Groups
- Tampa Electric Company (TECO)
- Lakeland Electric
- Polk County School Board
- Florida Youth Conservation Centers Network
- Polk Transportation Planning Organization (TPO)
- Polk Museum of Art
- City of Auburndale
- Central Florida Development Council (CFDC)
- Florida Department of Environmental Protection (FDEP)
- Mosaic
- Florida Industrial and Phosphate Research Institute
- Mulberry Phosphate Museum

In addition to assisting with potential funding for capital components of the Tenoroc Trail, these entities will be crucial partners in the maintenance of the trail and its components. Volunteers with the Florida Trails Association currently conduct maintenance and litter control activities on the existing Tenoroc FMA trail network; however, FTA will need to be engaged to determine if it is willing and has the resources to participate in these same activities along the entire Tenoroc Trail route, including paved segments.

TENOROC TRAIL
MASTER PLAN

FIVE
WAYFINDING AND
OUTREACH

Potential Programming

Potential programming opportunities were also discussed to ensure the success and longevity of the Tenoroc trail network. The following are some programming opportunities that stakeholder participants listed:

- Educational Programming via City of Lakeland Parks/Saddle Creek
- Equestrian Opportunities
- Expansion of Fishing Program
- Adventure Courses (ziplines, ropes courses, leadership)
- Interpretative Signage
- Wildlife/Nature Overlooks
- Summer Day Camps
- Cycling
- Kayak and Canoe (blue trails)



Implementation

After consideration from key stakeholders and charrette participants, a preferred trail alignment was developed. The destinations, roadway crossing and planned improvements to S.R. 33 provide a series of natural phasing segments for the Tenoroc Trail over its 14 mile length. Each segment will provide a meaningful experience for trail users and be anchored by planned or existing trailheads and in some cases, intern trailheads.



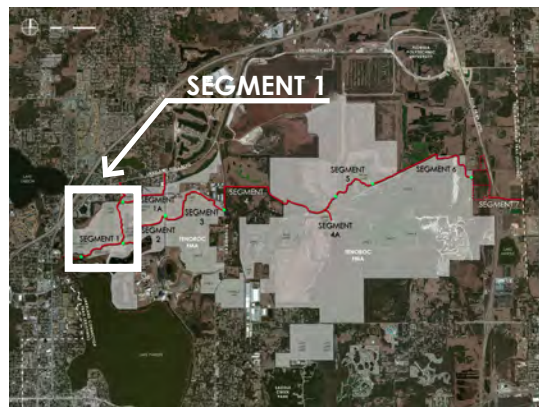


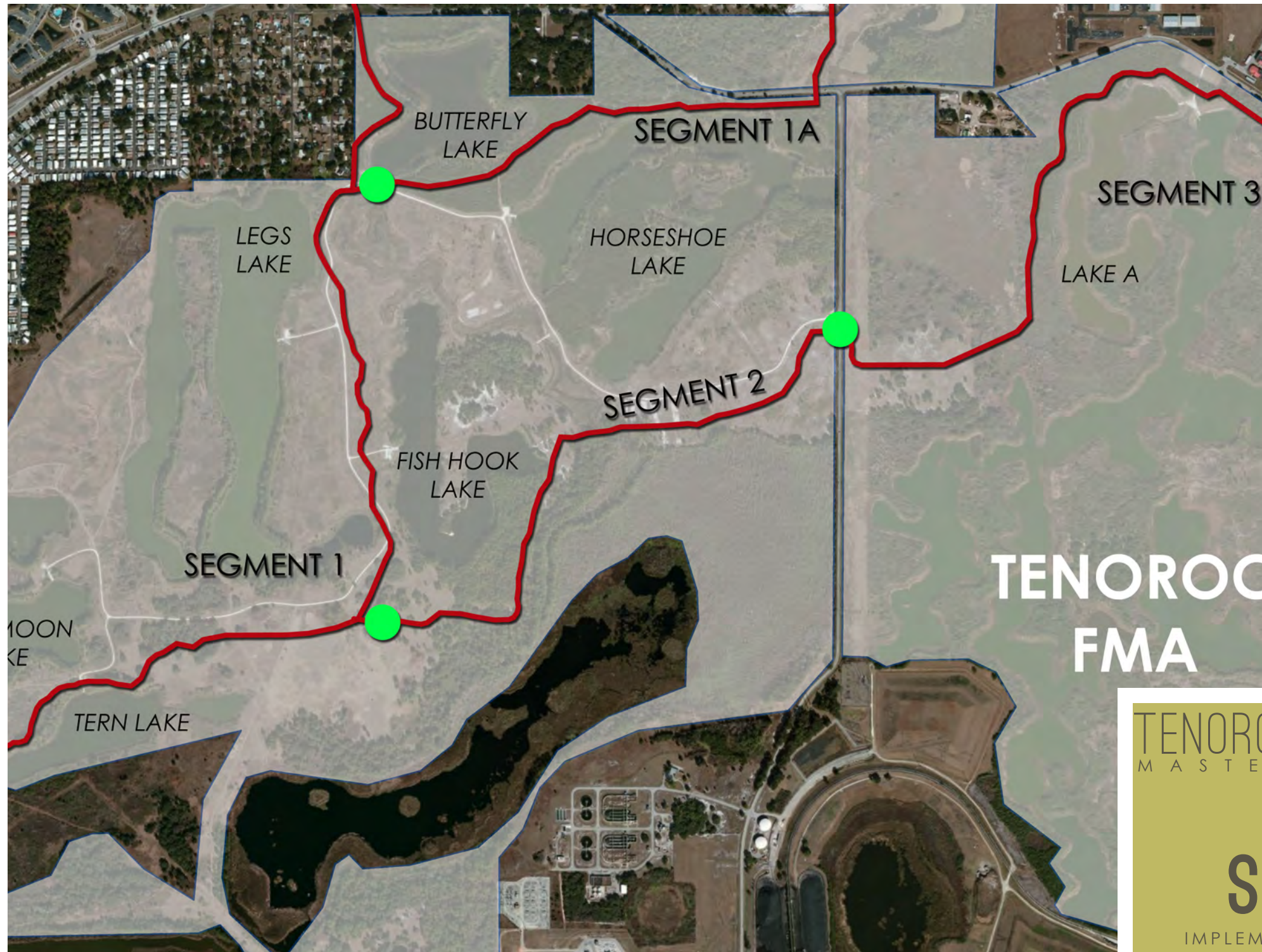
Segment 1 – Northeast Recreation Park to S.R. 33 at Old Combee Road

This initial 2.2 mile segment begins within Lake Crago Park and travels east and north between Legs Lake and Fish Hook Lake, predominately in planted pines, and follows some of the existing hiking trail alignments. The trail will link to a neighborhood trailhead at the intersection of S.R. 33 and Old Combee Road. Public outreach will be necessary for this phase as the route is behind existing homes. In order to minimize resident concerns, the route should be as close to Butterfly Lake as possible. A potential connection to the Village of Noah's Landing development could also be accommodated during implementation of this segment

Segment 1 By the Numbers:

- Trail: 12' wide, 2.2 miles
- Intersections/Roadway Crossings:
 - 2 Interior Unpaved Roads
- Trailhead
- Benches and Concrete Pads: 6
- Information Kiosk: 2
- Bike Racks: 6
- Litter Receptacles: 4
- Monument Sign: 1





Segment 2 – Lake Parker Drive Segment

Segment 2 serves as the first segment of the primary Tenoroc Trail alignment beginning near Northeast Recreation Park and continuing east to Lake Parker Drive. If desired, a small, interim trailhead/parking area can be added at the existing entrance on the west side of Lake Parker Drive or, as with many other trail projects, it could temporarily end at the edge of right away. Along the route, the 12' trail will utilize the existing mature tree cover and as it makes its easterly turn. A small boardwalk will be required to cross a wetland pond alongside the interior roadway.

Segment 2 By the Numbers:

- Trail: 12' wide, 1.2 miles
- Information Kiosk: 1
- Benches and Concrete Pads: 3
- Bike Racks: 3
- Litter Receptacles: 3
- Boardwalk: 80'

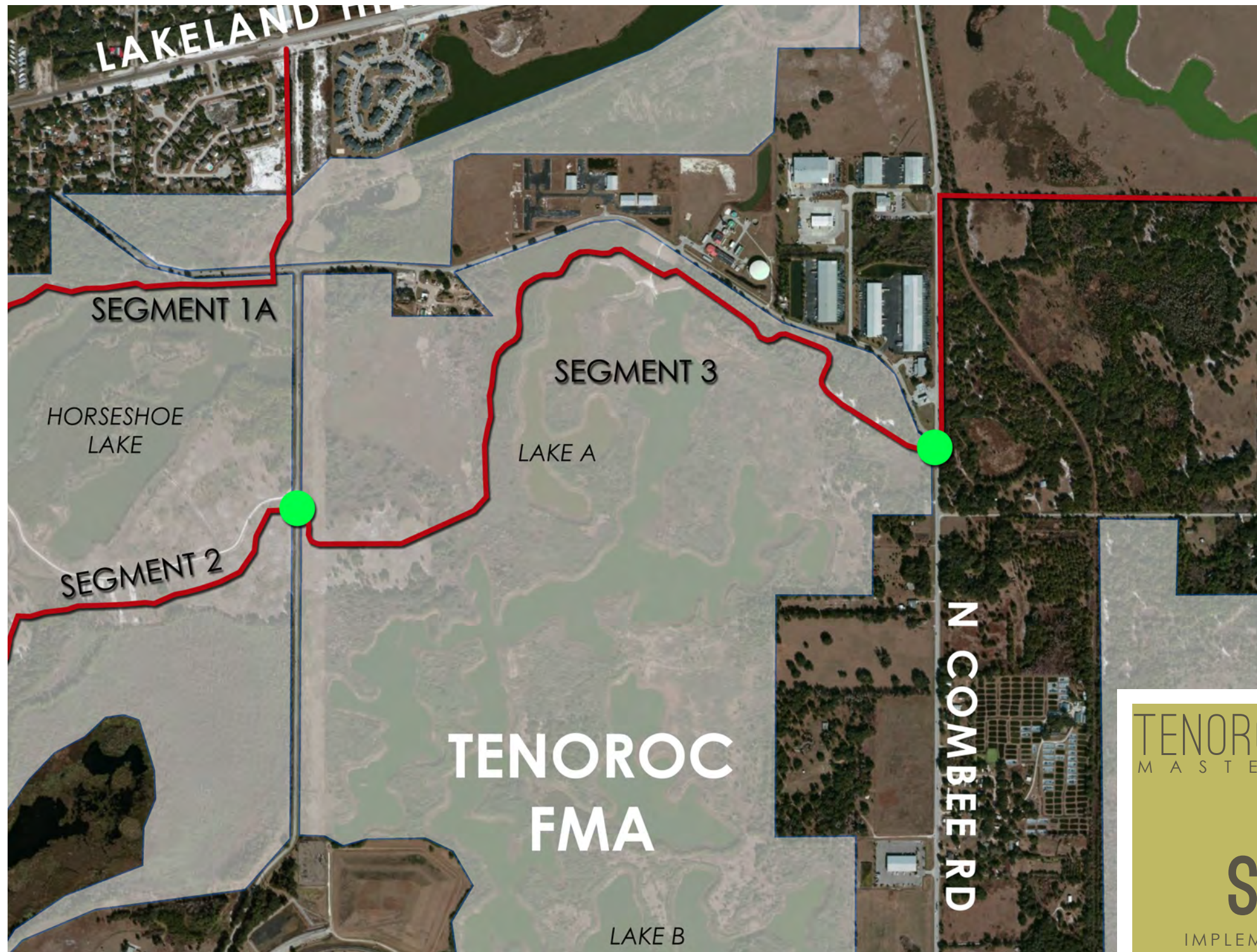
TENOROC TRAIL
MASTER PLAN

SIX
IMPLEMENTATION



KEYMAP





Segment 3 – Lake Parker Drive to Combee Road

This 1.7 mile trail segment begins with a crossing of East Lake Parker Drive, passes eastward beneath the overhead power lines, across wetlands necessitating a boardwalk of approximately 530' to the upland edge of a series of lakes. At this point, it continues north toward Old Combee Road through a planted pine area and then east toward Tenoroc's Old Combee Road boat ramp entry drive. Upon crossing the entry drive, the trail parallels the right of way of Old Combee Road through an upland mix of canopy trees, moving to and from the right of way as necessary to avoid wetlands. It is anticipated that 1,200' of boardwalk may be necessary at the tightest of points just south of the Ruthven Business Park. A sidewalk can be added along S.R. 659/Combee Road north to an existing convenience store which can provide trail users with access to food, drinks and restrooms.

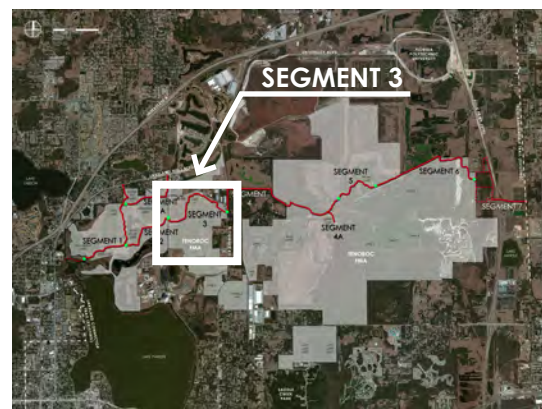
Tenoroc's Old Combee Road boat ramp parking area has an entry drive of sufficient length to allow a small, interim parking area to be implemented at the eastern terminus until the trail is extended east to Tenoroc's Picnic Lake or Derby Lake Recreational Facilities. Also, the southwest corner of the intersection affords an opportunity for gateway/monument markers addressing the trail and Tenoroc FMA to passersby.

TENOROC TRAIL
MASTER PLAN

SIX
IMPLEMENTATION

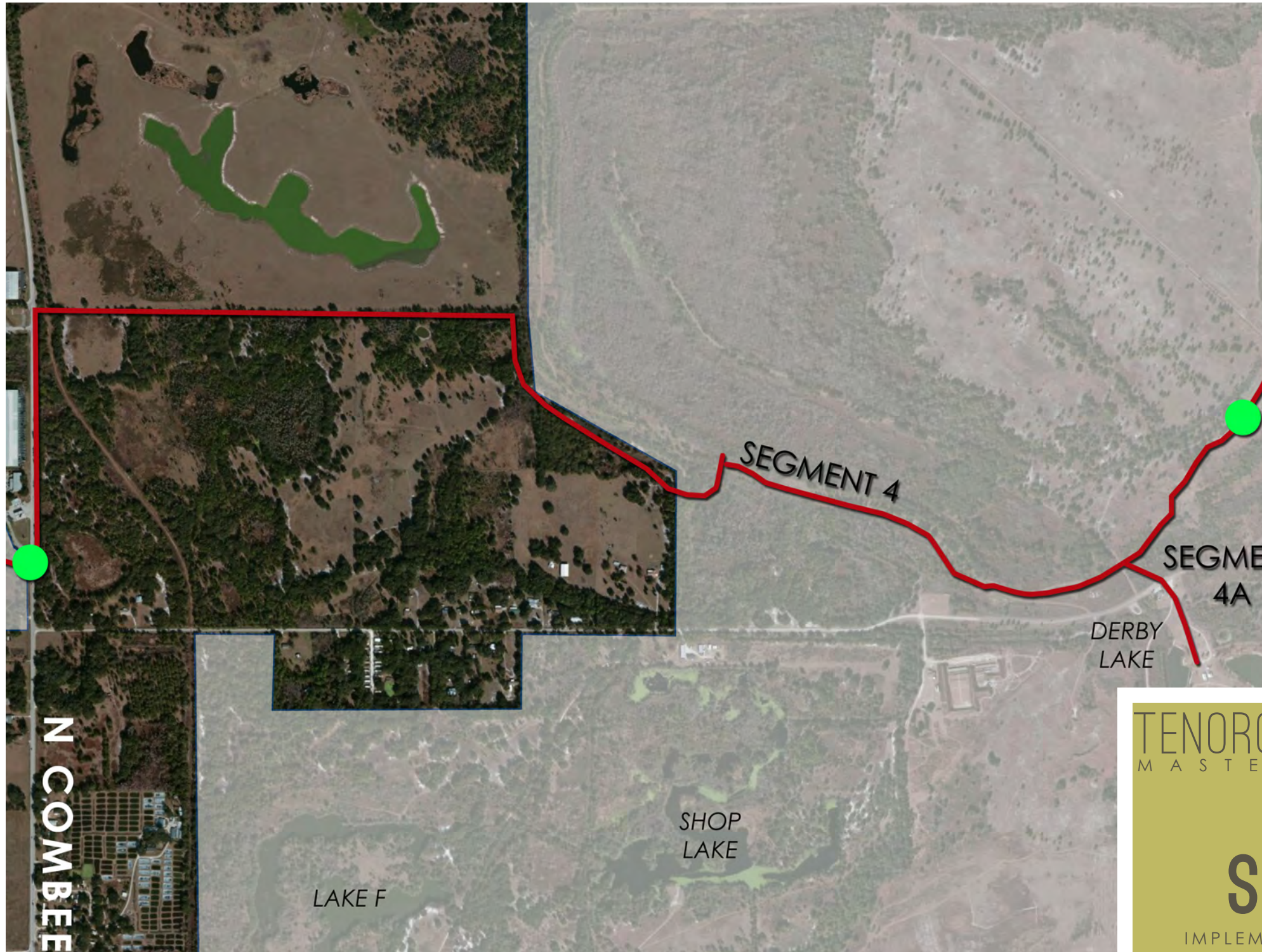
Segment 3 By the Numbers:

- Trail: 12' wide, 1.7 miles
- Intersections/Roadway Crossings:
 - Roadway - Lake Parker Drive
- Information Kiosk: 2
- Benches and Concrete Pads: 3
- Litter Receptacles: 3
- Bike Racks: 6
- Boardwalks: 530' (east of powerlines and along Old Combee Road)



KEYMAP





Segment 4 – S.R. 659/Combee Road to Derby Lake Recreational Facility

Trail crossing improvements will be required for the crossing of S.R. 659/Combee Road as a part of the Segment 4 implementation of the trail. A signalized intersection would be preferable for trail users and vehicles at the intersection of Old Combee Road and S.R. 659/Combee Road but may not be warranted at this time. However, the development of a new school on the Polk County School Board site, east of the intersection may provide the necessary support for a signalized intersection. Another option would involve the realignment of Tenoroc Mine Road to align with Old Combee Road, thereby creating a standard four-approach intersection. Once across S.R. 659/Combee Road, the 3.1 miles section of trail is planned to continue north along S.R. 659/Combee Road but within the school board site and turn east upon reaching the northern boundary of the site. Placing the trail along the edge of the property line will permit trail access from future development on the adjacent Williams Property. At the east end of the common property line, the trail re-enters the Tenoroc FMA and travels along the top of a canal bank on an existing horseback riding trail (1.4 miles) toward Tenoroc Mine Road. The trail spurs down to Derby Lake Recreational Facility (DLRF), one of the potential permanent trailheads being considered, .

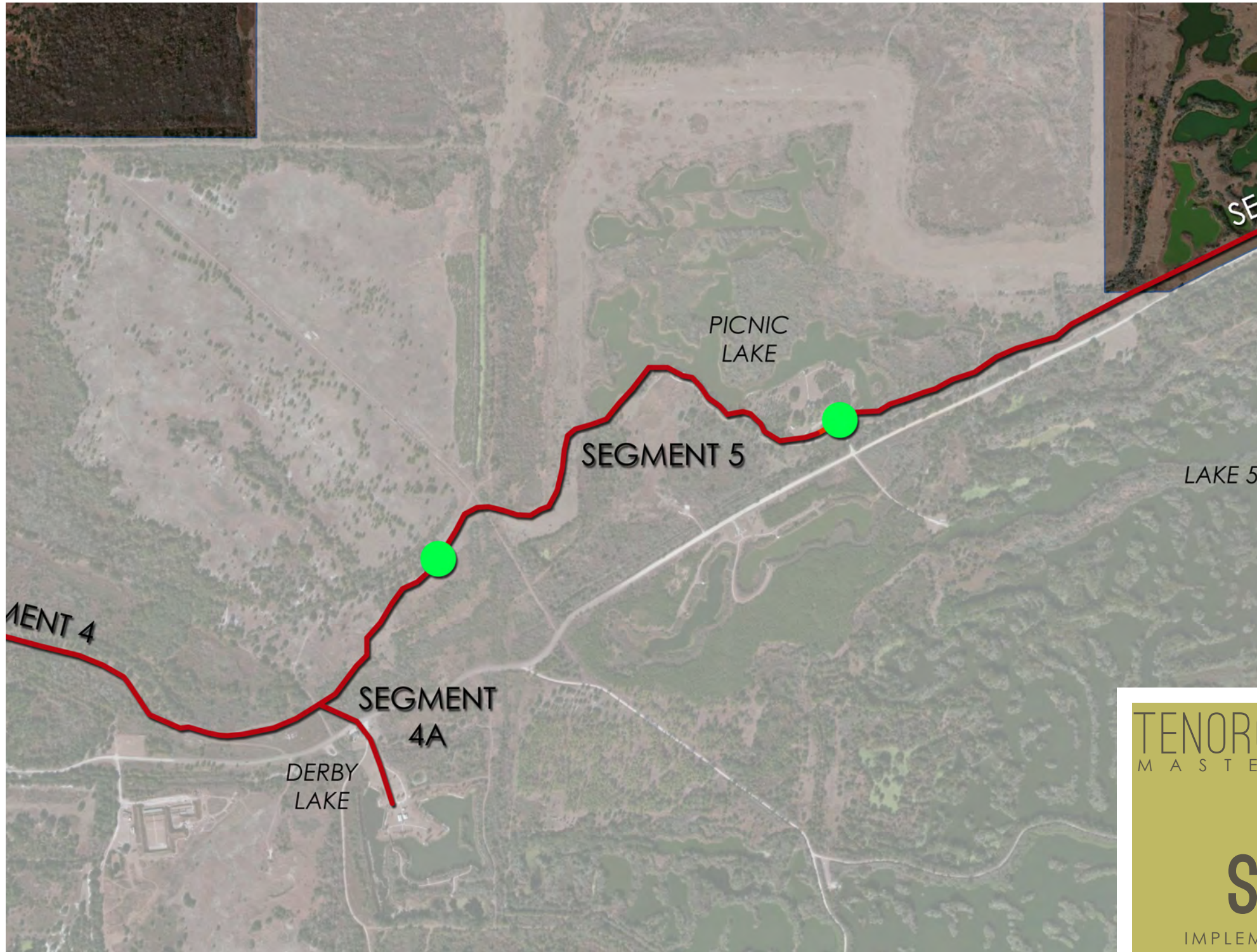
The DLRF is considered as one of two potential permanent trailheads within Tenoroc along the route between Northeast Recreation Park and Auburndale's Lake Myrtle Sports Complex. Parking, restrooms, shade and picnic facilities are present and could provide the trail with a readymade trailhead. From this point east, the existing Tenoroc Mine Road can be temporarily or permanently signed with shared-pavement markings (known as "sharrows") providing trail users a paved surface to the second trailhead under consideration within the Tenoroc FMA at Picnic Lake Recreational Facility (PLRF). The distance from DLRF to the PLRF along Tenoroc Mine Road is 0.9 miles.



Segment 4 By the Numbers:

- Trail: 12' wide, 3.1 miles
- Intersections/Roadway Crossings:
 - 2 Roadway (Combee Road & Tenoroc Mine Road)
- Information Kiosk: 1
- Benches and Concrete Pads: 3
- Litter Receptacles: 3
- Bike Racks: 3



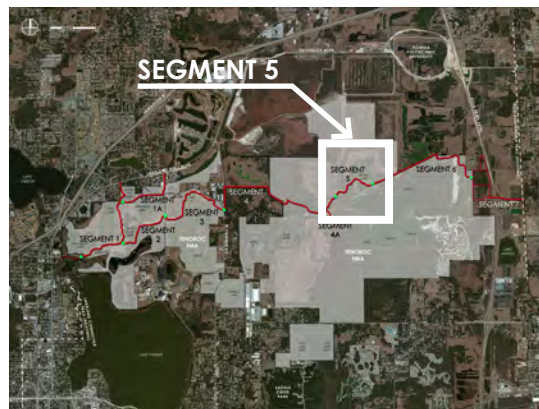


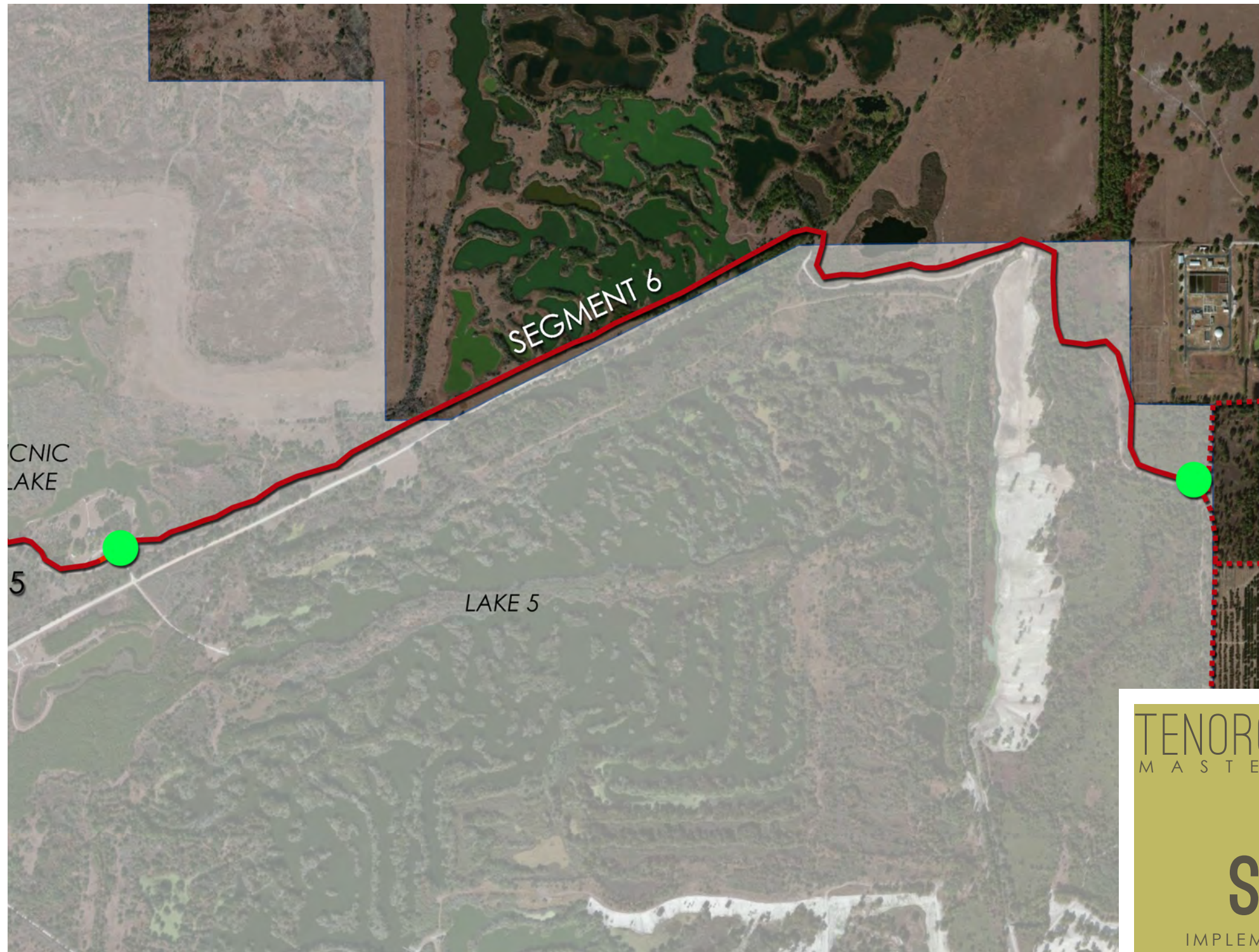
Segment 5 – Derby Lake to Picnic Lake

Utilizing 1.3 miles of existing horseback trails, the Tenoroc Trail will reach to Picnic Lake which will serve as another trailhead with amenities similar to Derby Lake. The trail route will be remote from Tenoroc Mine Road along the edge of wetlands and lakes in open and shaded environments.

Segment 5 by the Numbers:

- Trail: 12' wide, 1.3 miles
- Intersections/Roadway Crossings:
 - 1 Interior Unpaved Road (Picnic Lake Entry Drive)
- Information Kiosk: 1
- Benches and Concrete Pads: 3
- Litter Receptacles: 3





Segment 6 – Picnic Lake Recreational Facility to Braddock Road

Segment 6 of the trail begins at the PLRF and continues eastward 2.5 miles along the north shoulder of Tenoroc Mine Road toward the Auburndale Wastewater Treatment Plant in a relatively open environment with little shade. Prior to reaching the plant, the trail turns south and crosses a wetland as it approaches the eastern boundary of the Tenoroc FMA. At this point, several viable alignment options are available to complete the trail connection to Braddock Road with the northernmost route traversing the east side of the Auburndale Wastewater Treatment Plant and the southernmost route following the Tenoroc FMA fence line through an upland scrub environment, past adjacent active and inactive citrus groves until it reaches a powerline easement extending from the terminus of Braddock Road. Each of these alternative alignments would require more detailed engineering analyses and agreements, easements or property acquisition from public or private property owners.

Segment 6 By the Numbers:

- Trail: 12' wide, 2.5 miles
- Information Kiosk: 1
- Benches and Concrete Pads: 2
- Litter Receptacles: 2



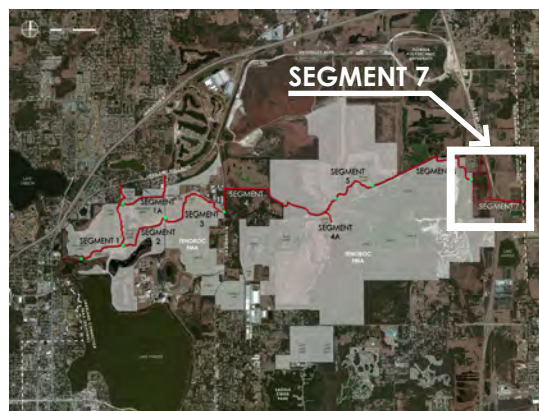


Segment 7 – Braddock Road to TECO-Auburndale Trail

The final phase of the Tenoroc Trail within Segment 7 offers a variety of extension opportunities from approximately Road G, parcel rights-of-way south of Road G and along the collector road portion of Road G, east to the TECO-Auburndale Trail. Ample shoulder is available along the north side of Braddock Road to accommodate a trail connecting to the existing trail section on the S.R. 570/Polk Parkway overpass bridge structure. About 1 mile south of the Tenoroc Trail and the TECO-Auburndale Trail intersection, Auburndale's Lake Myrtle Sports Complex will serve as the eastern trailhead.

Segment 7 By the Numbers:

- Trail: 12' wide, approximately 1 mile
- Intersections/Roadway Crossings:
 - 2 Roadway & Road G
- Information Kiosk: 1
- Benches: 2
- Litter Receptacles: 2





Regardless of which trail segments are constructed first, numerous steps must be taken in the implementation of the overall Tenoroc Trail Master Plan in addition to standard design, right-of-way acquisition and construction production phases. For example, it will be important to engage the FDOT staff early to ensure that the alignment and trail project complies with all Local Agency Program (LAP) requirements for Federal funding. These actions and decisions may apply to the entire Tenoroc Trail corridor or a single segment—some are engineering or budgetary decisions that will affect how the trail is designed while others are policy decisions that affect how the trail will operate following construction.

Within One Year :

- Determination regarding applicability of \$3.00 user fee for Tenoroc Trail users and process for formal waiver of this fee by the FWC.
- Determination on level of formal approval and rights (easements, etc.) for Tenoroc Trail and alternate regional routes identified in the master plan. If easements are required, then process and timeline for funding and implementation of survey work will need to be established with concurrence from FWC and Tenoroc FMA.
- Establishment of costs and responsibilities for trail maintenance and operations. Will the Youth Conservation Corps be a potential trail maintenance partner? Costs and responsibilities should be applied to each segment, including trailhead amenities and hardscape components (monument markers, wayfinding signage, fencing, etc.). Formal agreements should be executed to provide greater assurances to State and Federal funding agencies that will be reviewing future funding requests.
- Development of trail implementation/phasing plan, including interim or permanent primitive trail sections along the Regional Trail or Regional Trail Alternate

routes. This implementation/phasing plan would include potential State and Federal funding sources and funding match needs.

- Development of Tenoroc Trail Web page with master plan and implementation updates. Web links would be made available to the Tenoroc FMA, Polk TPO, Polk County and City of Auburndale.
- Submittal of “Recreational Trails Program” application package to FDEP Office of Greenways and Trails; Submittal of Regional Multi-Use Trail funding request through the Polk TPO and FDOT.
- Development of a mobile app with trail information, specifically focused on segments that have been completed or opened to public use.
- On-going coordination with adjacent property owners within alignment alternative routes. Coordination includes drafting/ adoption of development conditions where appropriate. Preparation of an easement agreement with Lakeland Electric for Segment 1A improvements within electric/gas line corridors along East Lake Parker Drive and between Old Combee Road and State Road 33.
- Neighborhood meetings regarding Segment 1 improvements to obtain feedback regarding proposed trail alignment and amenity options. Feedback would be used to make requested adjustments in advance of formal design process.
- Review and acceptance of proposed Segment 1 route through Lake Crago Park by Florida Department of Transportation staff. Will design variances be needed and if so, what process must be followed to obtain such a variance?
- Participation in design of S.R. 33 improvements north of Old Combee Road/ Deeson Pointe Boulevard intersection, particularly in design of multi-use path to be included in roadway construction. Permitting of Segment 1 and 1A connections to S.R. 33 should be addressed as part of road design to maximize efficiency of public expenditures and to reduce additional step in permitting of Segment 1 and 1A. Participation in S.R. 33 design will also address bicycle and pedestrian improvement needs at S.R. 33/S.R. 659 (Combee Road) intersection, thereby improving connectivity between Villages at Bridgewater and PD&E S.R. 33 Path as well as Tenoroc Trail North Regional Trail Alternate.



One to Five Years :

- Continued implementation of trail segments/amenities and implementation steps as necessary and outlined above.
- Identification of Tenoroc Trail, trail segments and associated crossing improvements for inclusion in the Polk TPO 2040 Long-Range Transportation Plan update and associated Congestion Management Plan as stand-alone future project needs.
- Coordination with FDOT, Polk County and Polk County School District regarding necessary operational analyses for S.R. 659/Old Combee Road-Tenoroc Mine Road intersection improvements, including recommended improvement alternatives and identification of project/project phases to be funded in City, County and State five-year Work Programs, where appropriate. The project could also be identified as a Congestion Management Program need and project through the Polk TPO.
- Funding request to Polk TPO and FDOT for PD&E Study for grade-separation of S.R. 659/Combee Road in area between Old Combee Road and S.R. 33.
- Development of design options for Old Combee Road/East Lake Parker Drive intersection, including review of oval-about concept. The oval-about concept, if entertained by Polk County, would have to be subject of an operational analysis and also a design review by Lakeland Electric to confirm that impact on gas transmission line is not significant or cost-prohibitive. Implementation of intersection/trail-crossing measure may occur within five years depending on alternative that is selected and associated costs. All treatments at this location must be approved by Polk County.

Five to Ten Years :

- Continued implementation of Tenoroc Trail segments.
- Implementation of acceptable improvement alternatives for S.R. 659 (Combee Road)/Old Combee Road intersection, including potential re-alignment of Tenoroc Mine Road if approved by Polk County and Polk County School Board and able to be incorporated in land development on east side of S.R. 659/Combee Road.
- Implementation of Old Combee Road/East Lake Parker Drive oval-about if determined to be feasible.
- Development of PD&E Study for S.R. 659/Combee Road grade-separation and construction of recommended “build” alternative(s) if determined to be feasible.

TENOROC TRAIL
MASTER PLAN

SEVEN
APPENDIX



JIM C. STUDIALE
Director
Community Development Department

October 15, 2013

**SUBJECT: TENOROC TRAIL MASTER PLAN PLANNING SESSION
(CHARRETTE): OCTOBER 22-23, 2013**

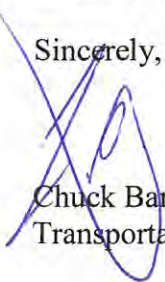
Dear Property Owner:

The City of Lakeland needs your help in the planning of a new regional multi-use trail through the Tenoroc State Preserve, connecting Lakeland Hills Boulevard at the Lakeland Regional Cancer Center and the TECO-Auburndale Trail at Braddock Road. Littlejohn Engineering Associates (LEA) has been hired to prepare a master plan of the trail area, trail alignment, trail cross-section, trailhead features and a crossing of State Road 659 (Combee Road) near State Road 33. The master plan will also split the trail into multiple phases that can be submitted for funding through the Polk Transportation Planning Organization, Florida Department of Transportation and/or Florida Department of Environmental Protection as early as 2014. A map of the general study area is depicted with a blue polygon on the attached Citywide Priority Pathways Corridors Map.

On Tuesday October 22nd and Wednesday October 23rd, the City will host a two-day planning session that will allow stakeholders to tour the trail corridor and actively work with LEA on the development of the trail master plan. Attached is an agenda covering both days of the event (sections where stakeholder input is necessary is shown in red type). If you cannot attend both days in full, we hope that you can attend the sections that are of most interest to you. Lunch will be provided on both days to reward you for your service and time. **The Tenoroc Connector Trail Master Planning Session will be held at the Lakeland Police Department Training Facility located at 3131 Centurion Boulevard, Lakeland 33805. The LPD Training Facility is adjacent to the McIntosh Power Plant and can be accessed from SR 659 (North Combee Road) and North Lake Parker Drive.**

If you have any questions or need additional information, please contact me at (863) 834-6011 or charles.barmby@lakelandov.net. As a property owner within the study area, we look forward to working with you on this important trail project!

Sincerely,


Chuck Barmby
Transportation Planner

TENOROC CONNECTOR TRAIL – MASTER PLANNING SESSION

October 22 -23, 2013 (8 am to 5 pm on both days)



Day # 1

SIGN-IN SHEET
Tenoroc Connector Trail Planning Session
October 21, 2013
Lakeland Police Department Training Facility

Name

Representing/Phone/E-mail

Britt Watson

Williams Co. brit@w-b-eng.com

David Waldrop

Heartland Chpt. FTA

MONIKA HOERL

HEARTLAND CHPT FTA

jwilson@earthlinked.com

Jerre Wilson

Florida Sport Horse Club

Dave Butcher

FL Forest Svc. dave.butcher@freshfordbrill.com

Amee Bailey

Polk County Parks & NR

Dawn Mackey

FWC - Tenoroc

Chris Dougherty

LEA/407-975-1273/cdougherty@lea-inc.com

Jesse Pearson

City of Auburndale 965-5570/jpearson@auburndale.com

Ken Williams

Florida Trail Association

David Urra

COL - Public Works Engineer

Wayne Dobson

Florida Trail Ass - '17

Ryan Kadek

Polk TPO

Trave Holland

ECON - (R Allen)

TRAVIS HAAS

FWL 648-3994
travis.haas@myfwc.com

SIGN-IN SHEET
Tenoroc Connector Trail Planning Session
October 21, 2013
Lakeland Police Department Training Facility

Name

Representing/Phone/E-mail

Providance Nagy FDOT DI providance.nagy
@dot.state.fl.us

~~Pat Page~~ COL ~~pat@lakelandgov.net~~
pamelz.ppage@lakelandgov.net

Chuck Spratz COL

Day #2

SIGN-IN SHEET
Tenoroc Connector Trail Planning Session
October 21, 2013
Lakeland Police Department Training Facility

Name	Representing/Phone/E-mail
Steve McCann	Chestara Skillman 863-646-1402
Ameé Bailey	Polk County Parks & NR
Jesse W. Pearson	Duburndale
MONIKA HOERL	FTA HEARTLAND CHAPTER
Terre Wilson	Florida Sport Horse Club
Ken Williams	FTA
Dave Butcher	FFS
Ryan Kordek	POLK TPO
Wayne Dobson	FTA 863-206-6315
Britt Watson	Williams 863-581-2722
PAM PAGE	COU
Nraph Nute(?)	
Dawn Morrey	FWC
Celia Brandy	COL



LITTLEJOHN ENGINEERING ASSOCIATES

Tenoroc Connector Trail Conceptual Alignment Study and Master Plan – Design Charrette

October 22nd and 23rd

Design Charrette Agenda

Day One - October 22nd

A. Project Orientation 8:30 AM – 10 AM (For Project Staff Only)

B. Stakeholder Input 10 AM – 11:30 PM (Stakeholders Join Session)

- I) Stakeholder Input
 - a) Introductions
 - b) Project Overview
 - c) Overview of Corridor
 - d) Stakeholder Input
 - i) Property Owners
 - ii) Florida Fish & Wildlife Conservation Commission
 - iii) FDOT/Central Polk Parkway
 - iv) Lakeland Electric
 - v) Other City Invited Stakeholders
 - e) Alignment Alternatives
 - f) Partnerships
 - g) Area Development Activities
 - h) Issues and Opportunities

2) Lunch (11:30 – 12:00)

C. Corridor Tour 12 PM – 4 PM Break at Tenoroc FMA Restroom Area (Stakeholders, Staff & LEA)

- Site walking/driving tour
- Identification of wetlands and wildlife
- Identification of potential trailhead locations
- Identification of off-site connection opportunities
- Identification of special/unique areas for overlooks and rest areas
- Identification of constrained/challenging alignment areas where bridges or boardwalks may be required

D. Debrief - Corridor Review and Observations 4 PM – 5 PM

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Environmental Services
Health and Safety
Economic Development



Day Two – October 23rd

A. Design Session 8 AM – 12 PM (Project Staff Only)

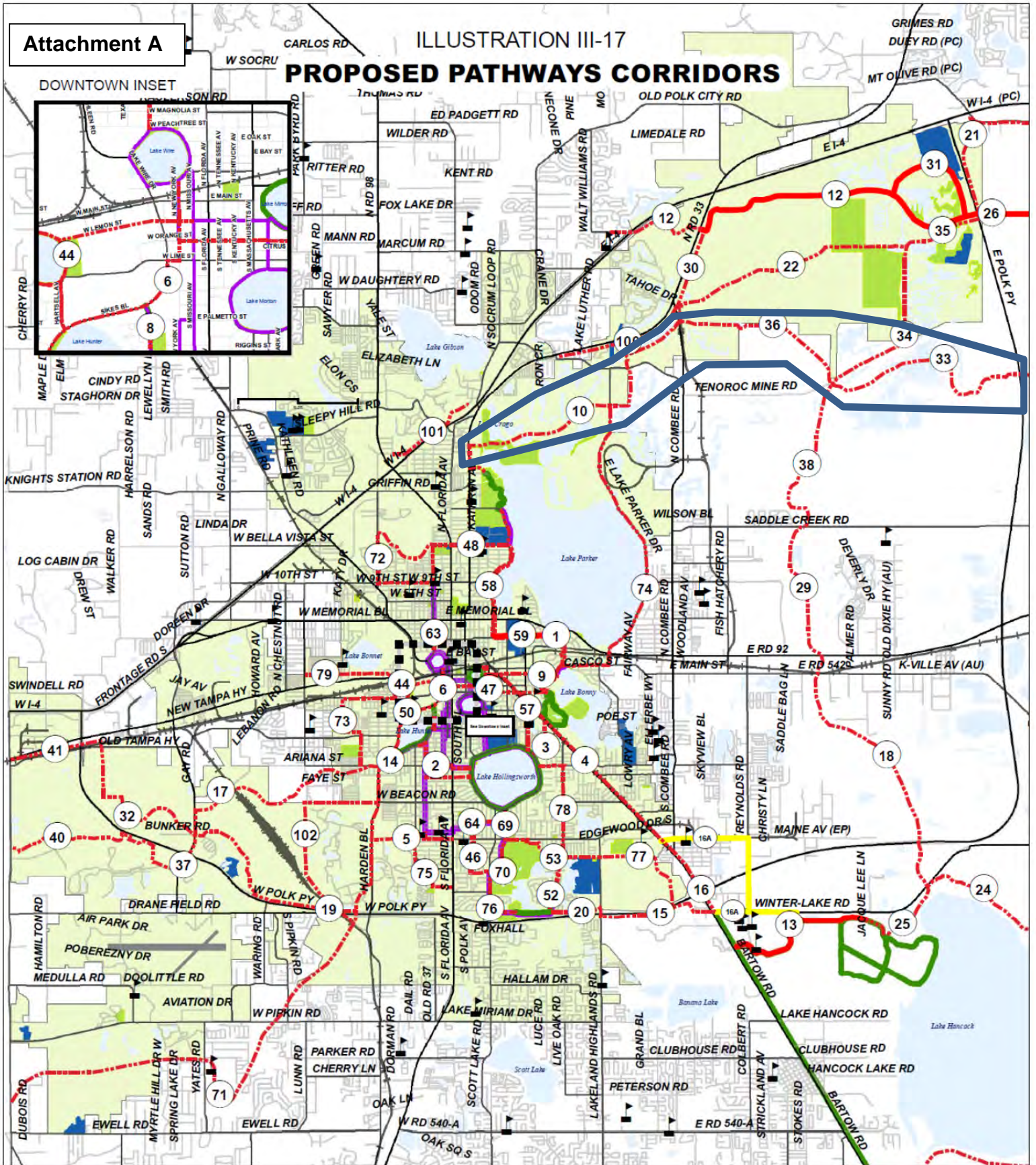
B. Lunch & Pin-UP Presentation 12 PM – 2 PM (Stakeholders Join Session)

- Identification of preferred routes
- Corridor “walkthrough” with design elements
 - Sections and elevations
 - Amenities
 - Comparable imagery
- Phasing/Implementation Strategy

C. Design Revision Session 2 PM – 4 PM

D. Pin Up Presentation & Consensus Signoff 4 PM – 5 PM

PROPOSED PATHWAYS CORRIDORS



Source: Lakeland Community Development Department, 2012

- Proposed Pathways Status**
- Completed since 2009
 - Planned
- Potential Corridor ReAlignments**
- Alignment

- Local Street
- Collector Roadway
- Arterial Roadway
- Limited Access Arterial
- Public Schools

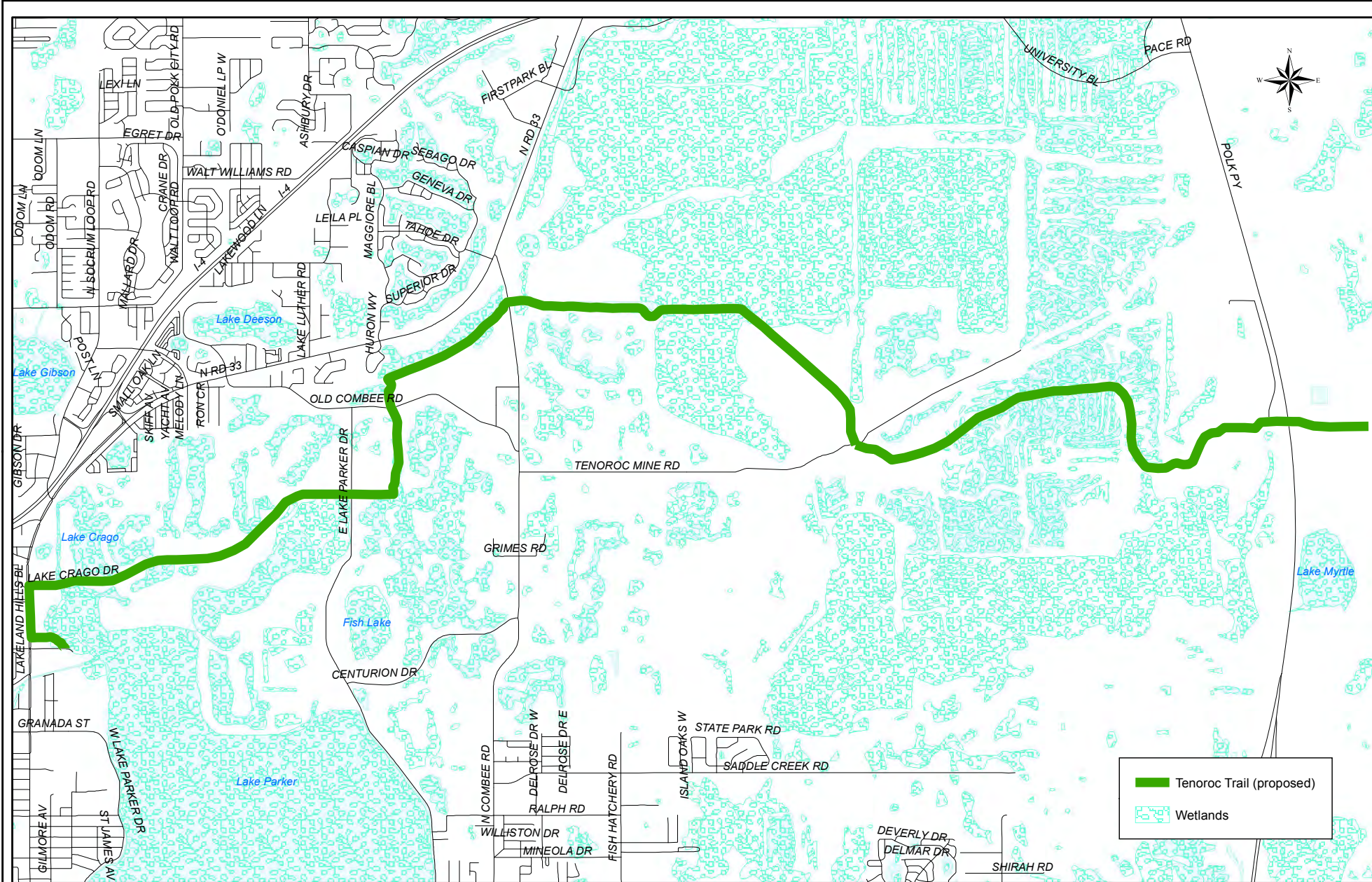
- Recreational
- Public and Institutional
- Existing Lake to Lake Network
- Existing Multiuse Trail

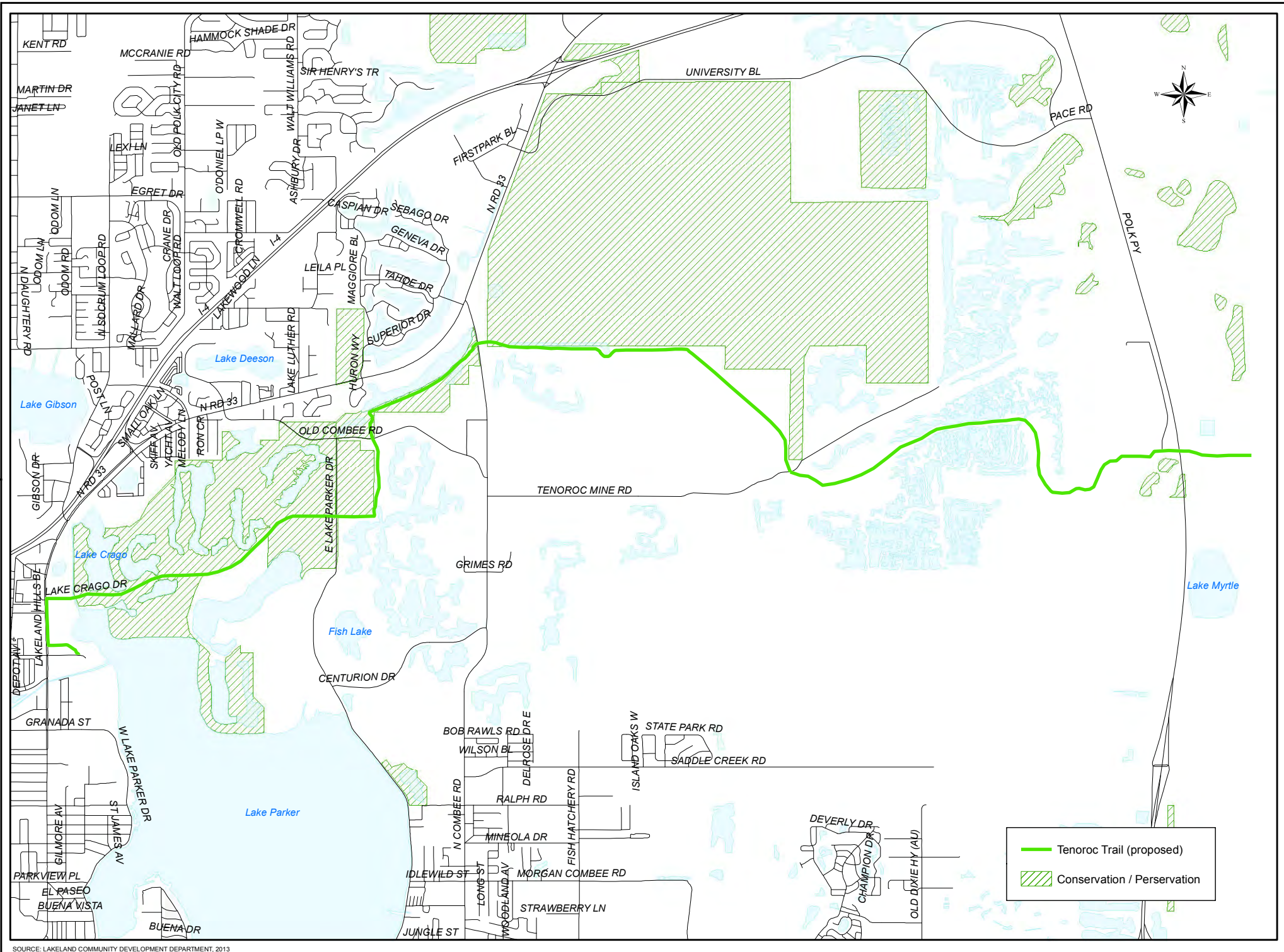
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Date: 05/21/12





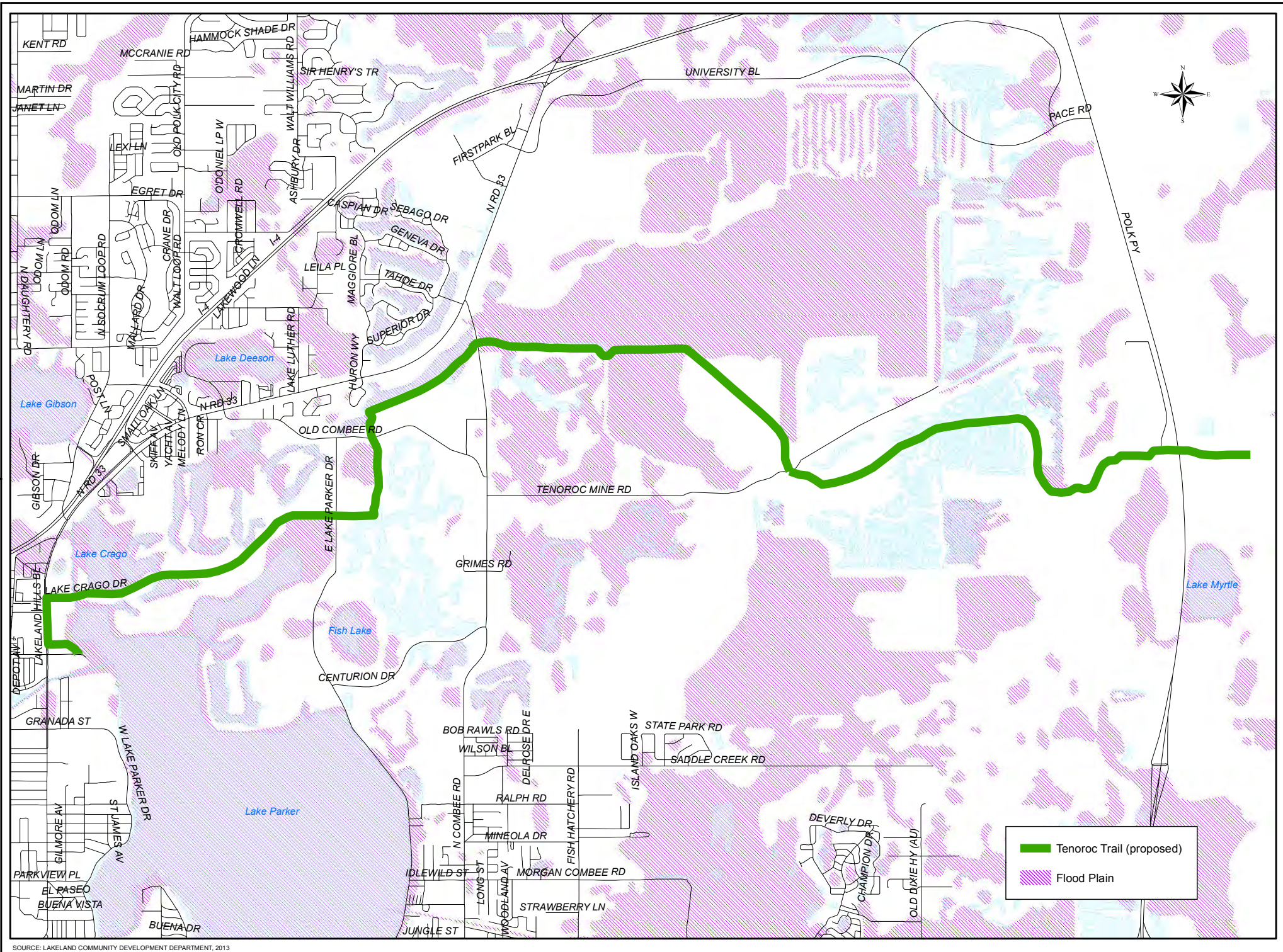
Note: Priority Scoring found in attached table

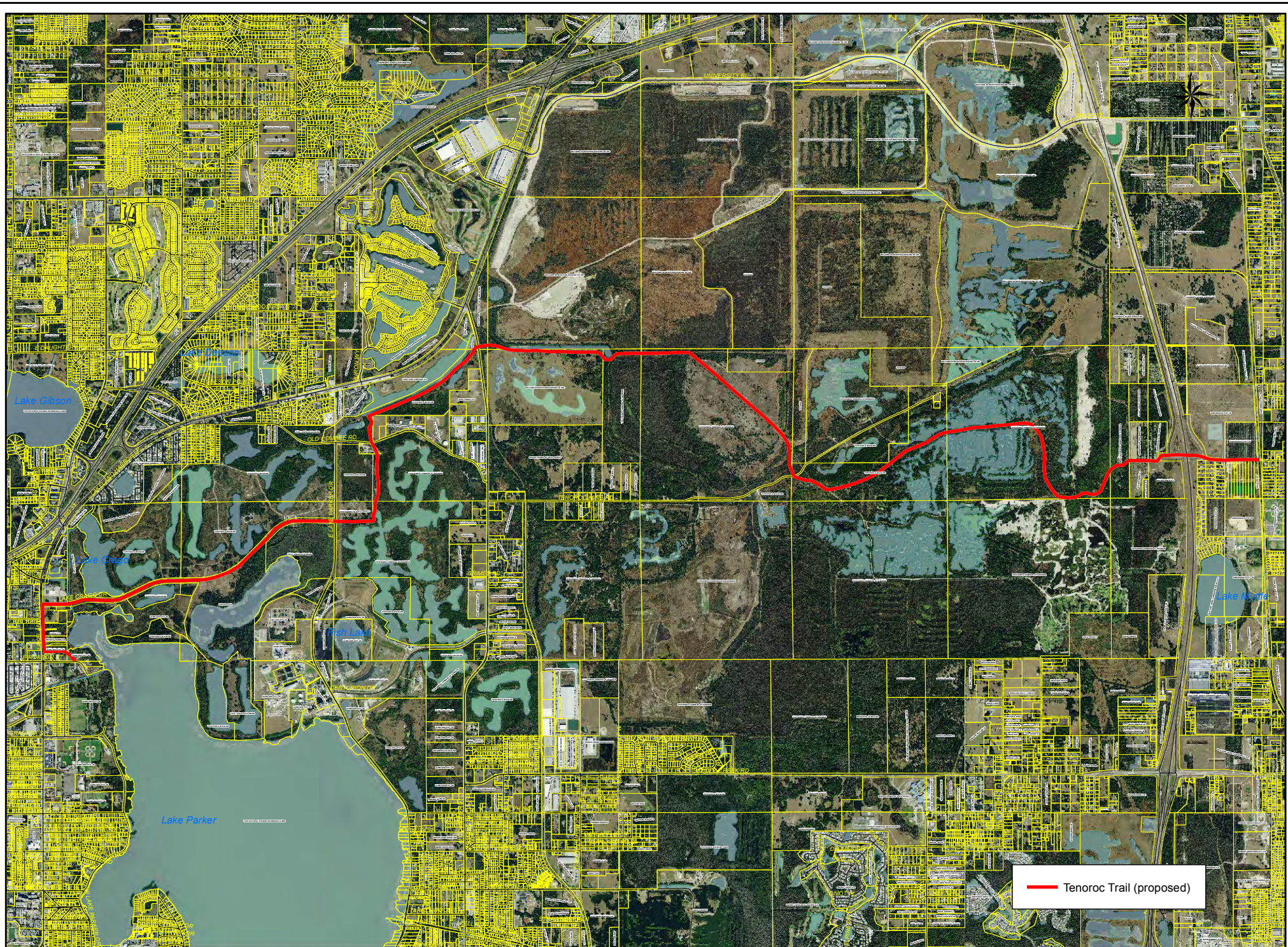
Owner	Parcels	Acres
ADDIE L L C	1	4.00004268401
ALLEN GROVE PARTNERSHIP	2	43.66220174290
AUBURNDALE CITY OF	8	164.76278894900
BRIDGEWATER MINIWAREHOUSES LLC	1	6.43892993269
COOPERATIVE VENTURES LLC	2	38.12626072210
DUNSON LESLIE W JR FAMILY LIMITED PARTNERSHIP	1	11.54028824450
FORK CREEK LLC	3	31.48829730530
GRADE A WAY INC	1	4.63810496773
GSELLMAN JOHN	1	3.00751500657
J EVERETT ALLEN & SONS INC	1	72.73366897500
LAKELAND CITY OF	2	109.14861237200
LONG LAKE VENTURE LLC	1	58.34721163960
NOEL GARY	1	0.96294715476
POLK COUNTY	12	36.96172219640
REDDEN WILLIAM KYLE	1	0.99295354461
ROSSETTER JERRY	1	0.94934490664
TAMPA ELECTRIC COMPANY	1	9.10819355859
TIITF / STATE OF FLORIDA	1	15.33144320600
TIITF/DEP	5	769.34437064400
TIITF/FISH & WILDLIFE	9	1140.49012042000
TIITF/FWCC	1	3.14831001890
TIITF/GFWFC TENEROC ST RESERVE	2	766.86650299900
TIITF/GFWFC TENOROC ST RESERVE	2	763.27841676300
TIITF/ST OF FL	1	217.06363105800
TITUS JOSEPH M	1	0.51516623284
TURLINGTON GLENDA MARIE FAMILY TRUST	1	10.00637661200
WILLIAMS ACQUISITION HOLDING CO INC	8	1914.95442169000

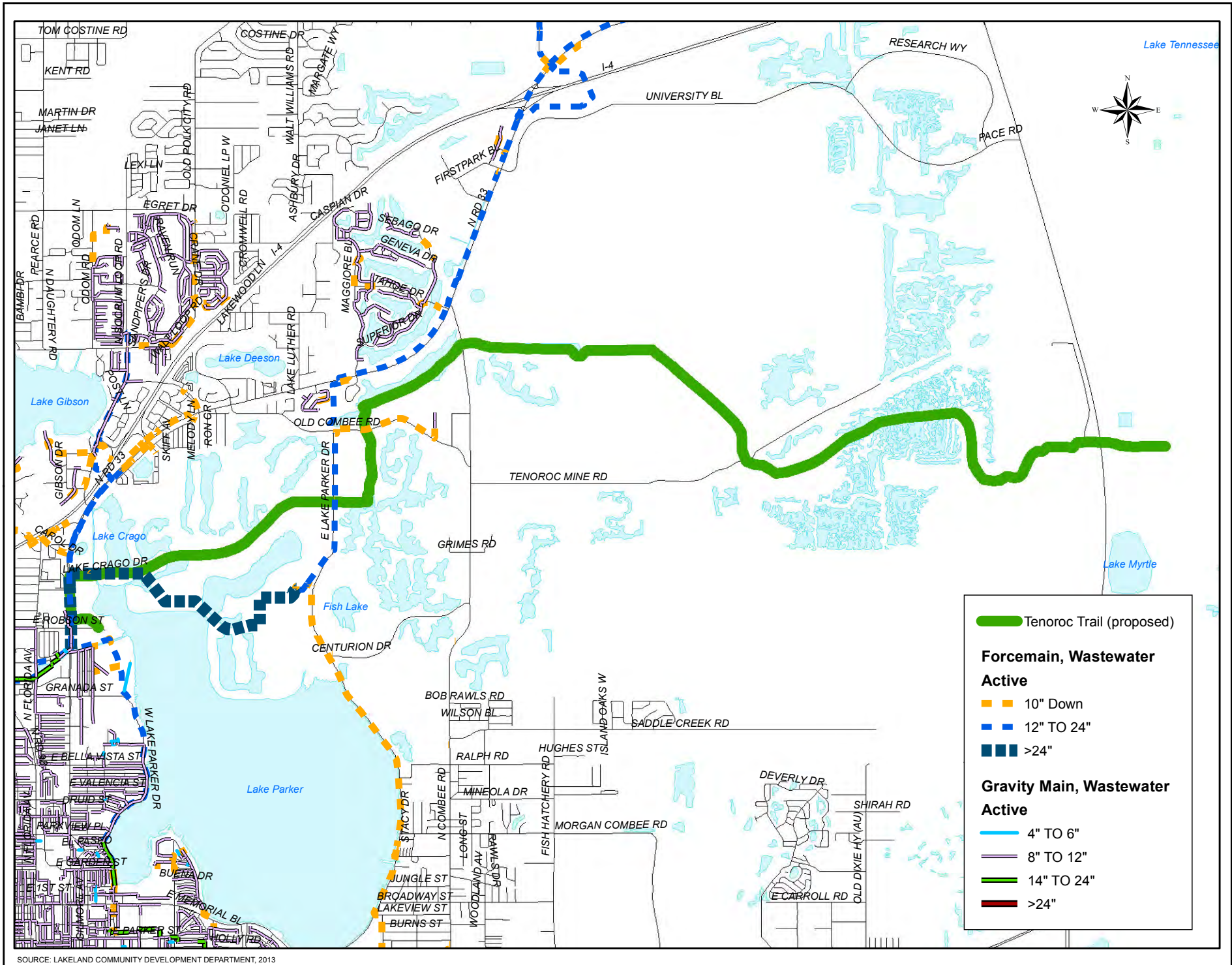




	Tenoroc Trail (proposed)
	Conservation / Preservation







Tenoroc Trail (proposed)

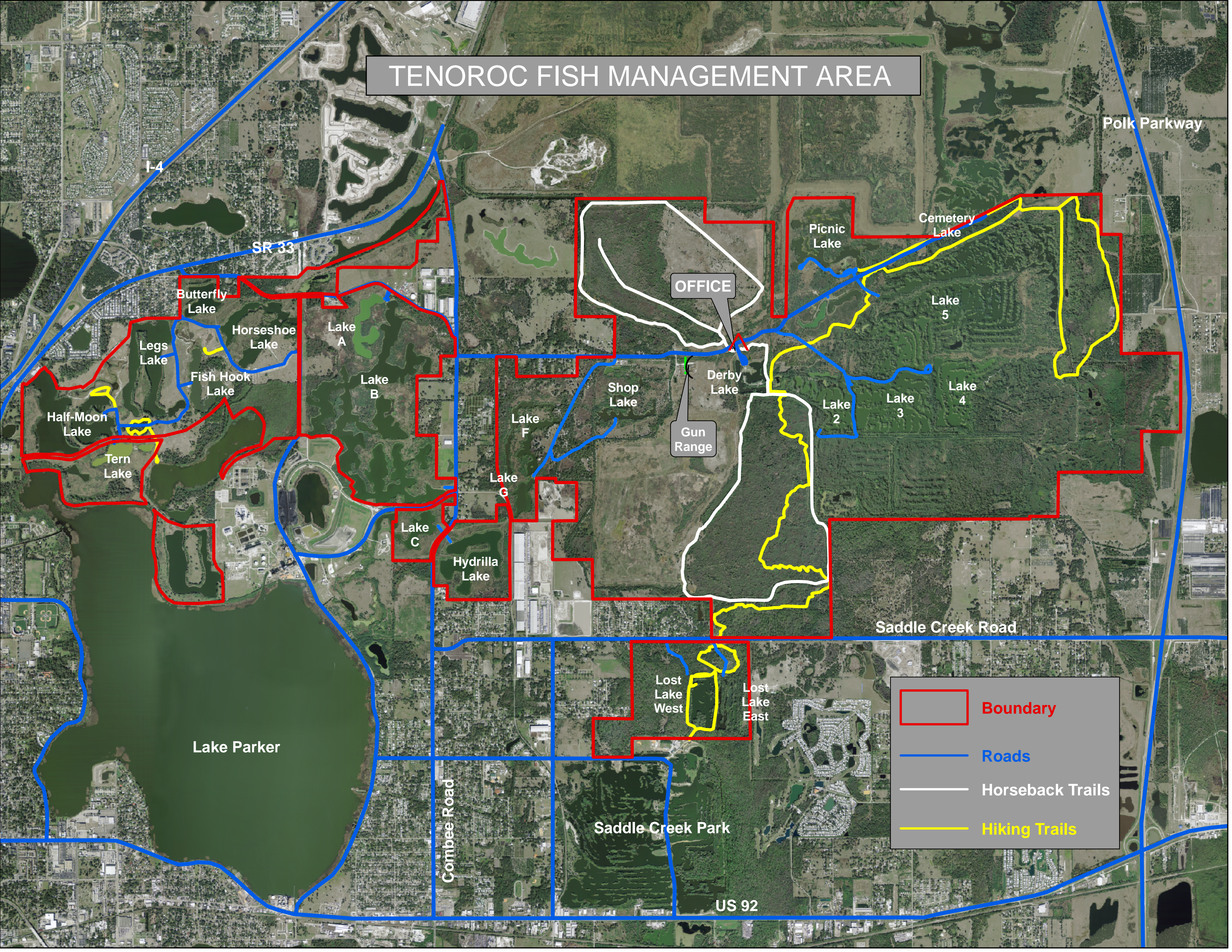
Forcemain, Wastewater Active

- 10" Down
- 12" TO 24"
- >24"

Gravity Main, Wastewater Active

- 4" TO 6"
- 8" TO 12"
- 14" TO 24"
- >24"

TENOROC FISH MANAGEMENT AREA



Polk Parkway

I-4

SR 33

OFFICE

Gun Range


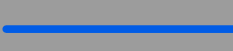


Saddle Creek Road

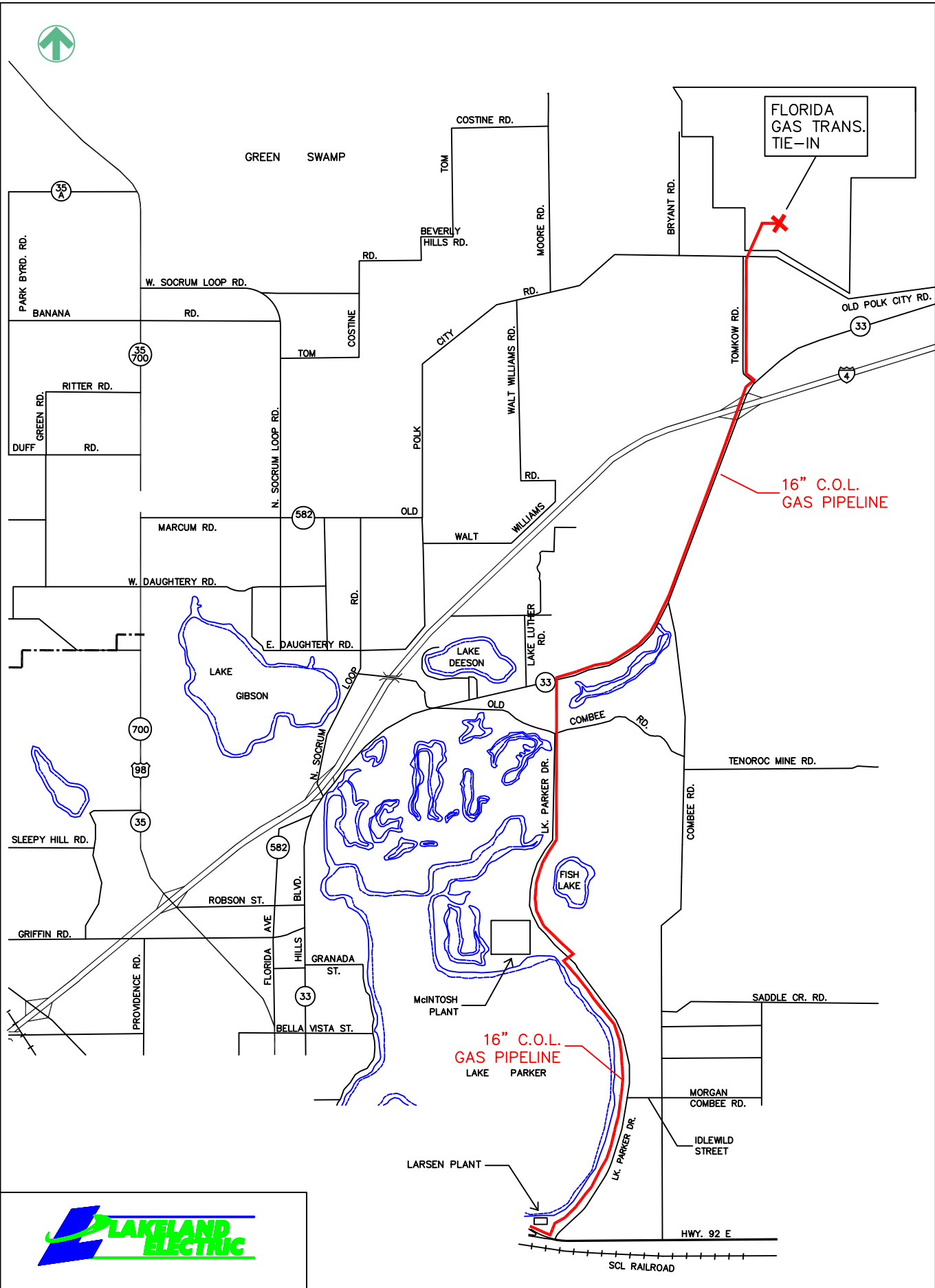
Lake Parker

Combee Road

Saddle Creek Park

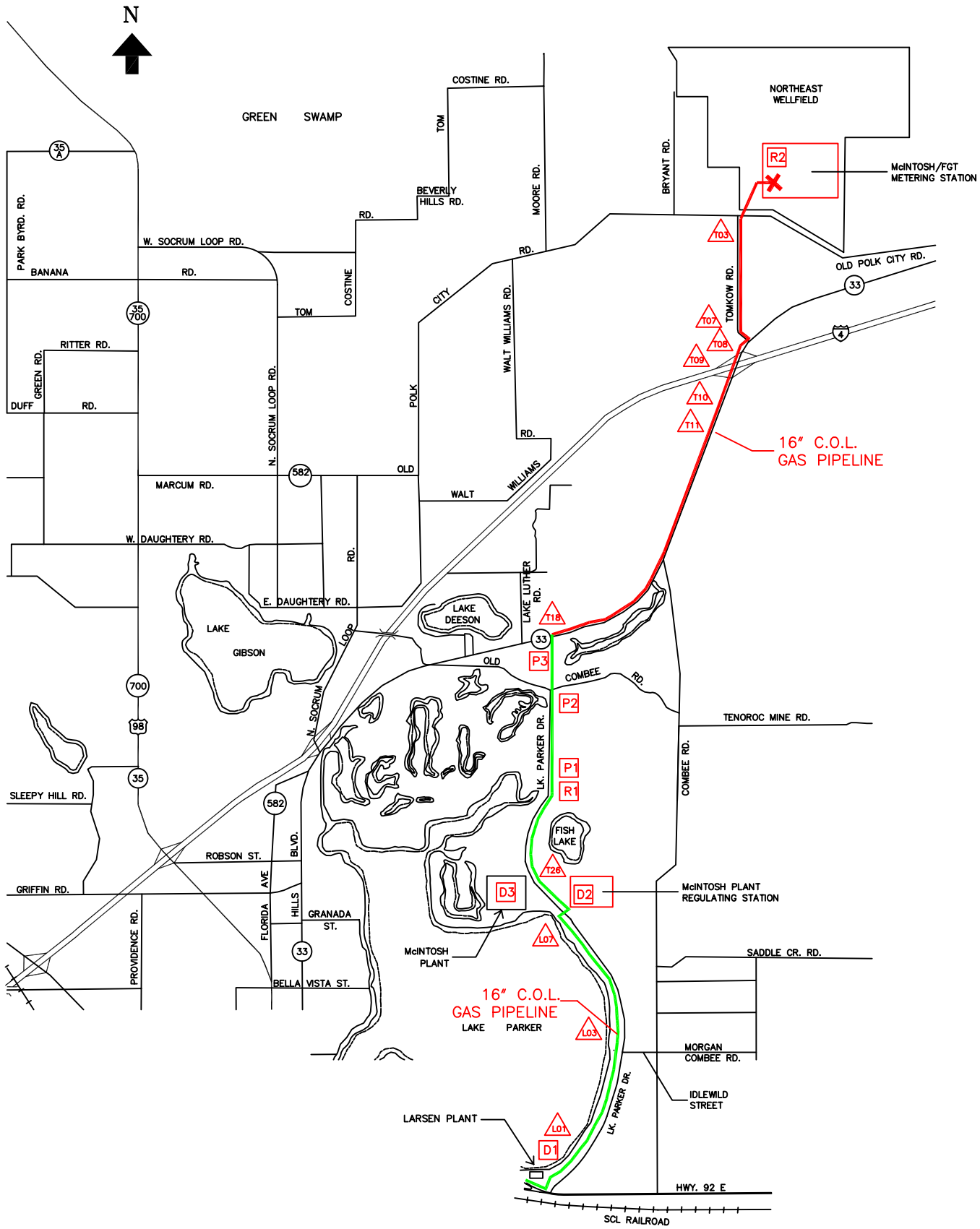
US 92

	Boundary
	Roads
	Horseback Trails
	Hiking Trails

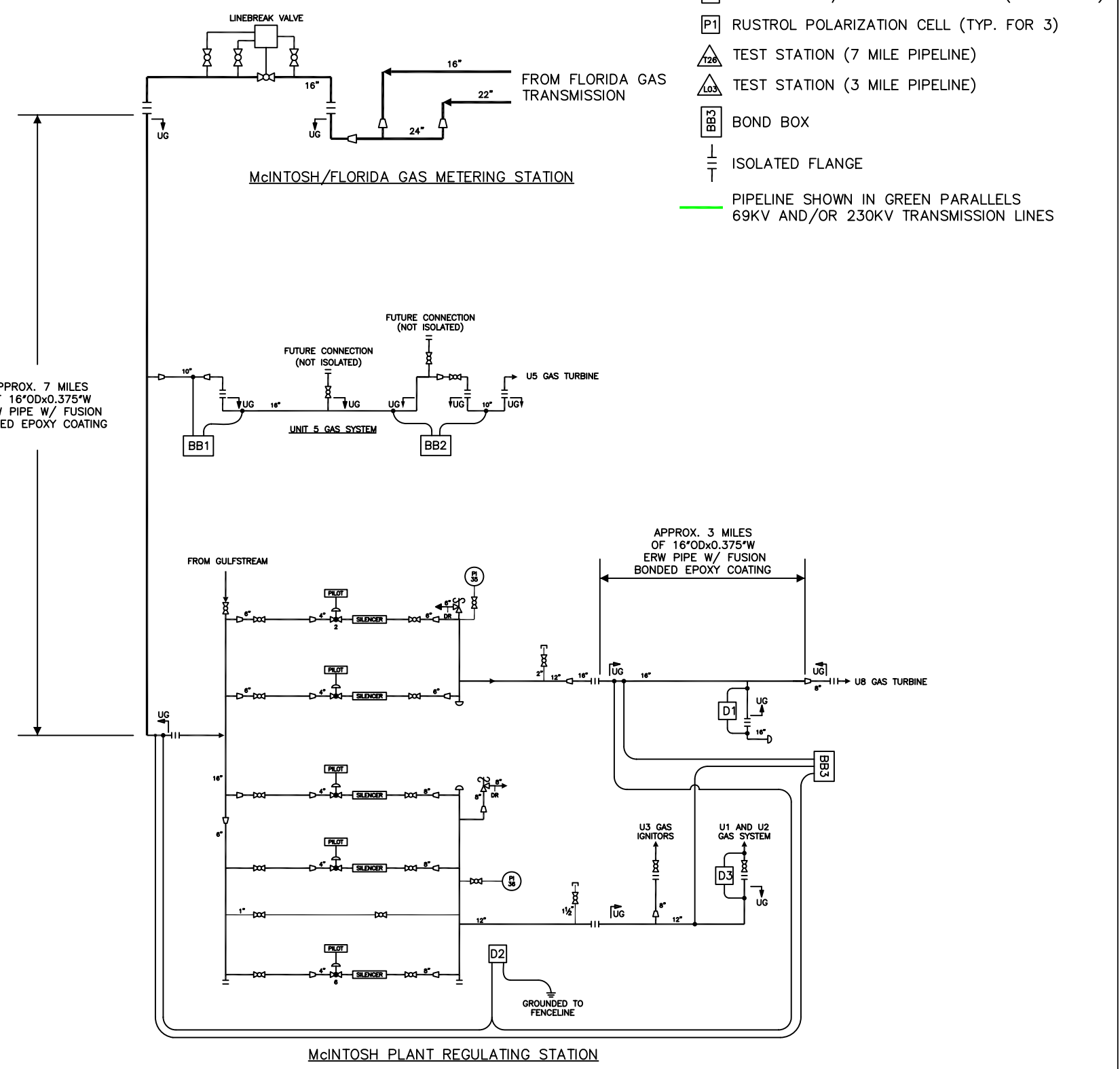


DESCRIPTION 16"Ø GAS PIPELINE ROUTE	DIVISION PROD. ENGINEERING		SCALE NONE		
	ENGINEER AL DODD		MAP SECTION		
	DRN. BY: MGIEGER	DATE: 10-13-91	DWG. NO.	SKETCH 001	SHT. REV.
APPR. BY:					

SIZE A



APPROX. 7 MILES OF 16"ODx0.375"W ERW PIPE W/ FUSION BONDED EPOXY COATING

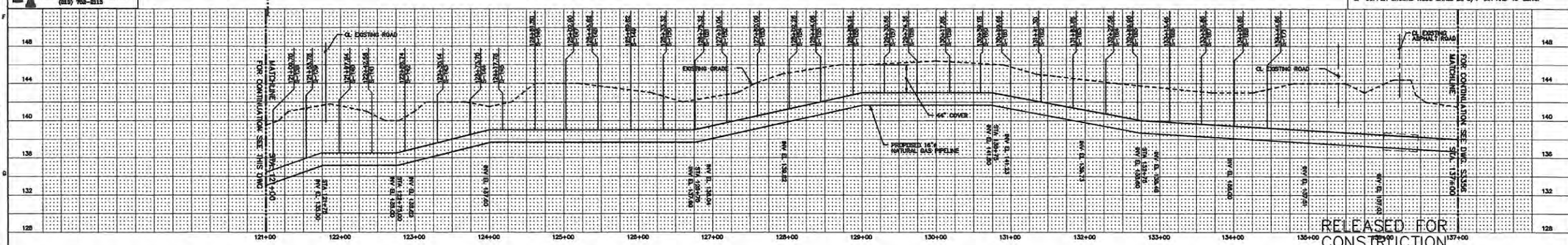
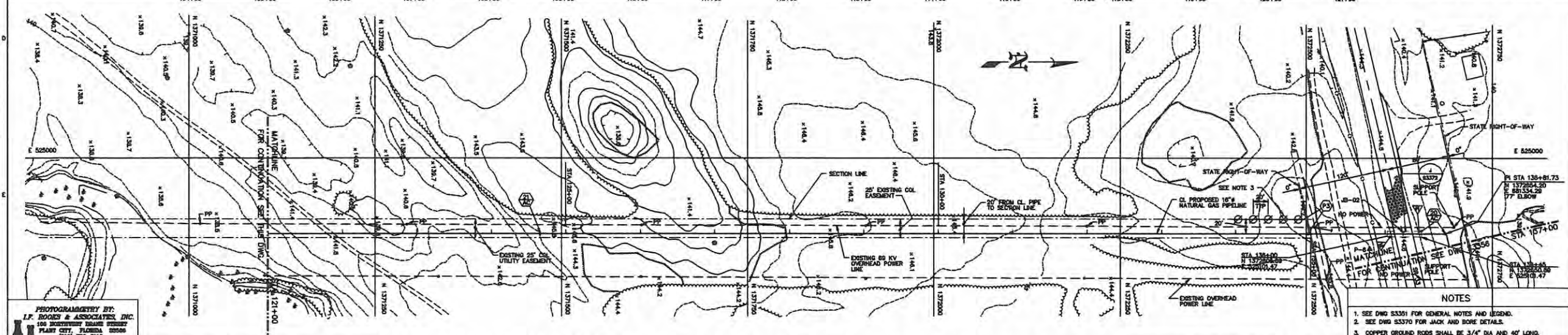
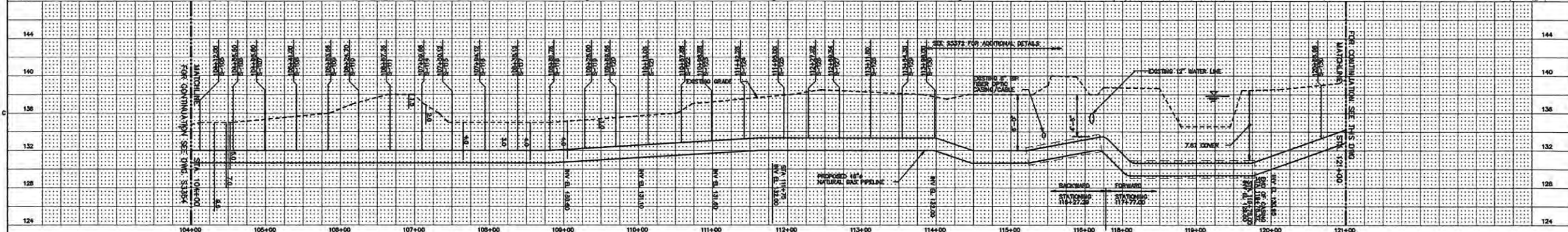
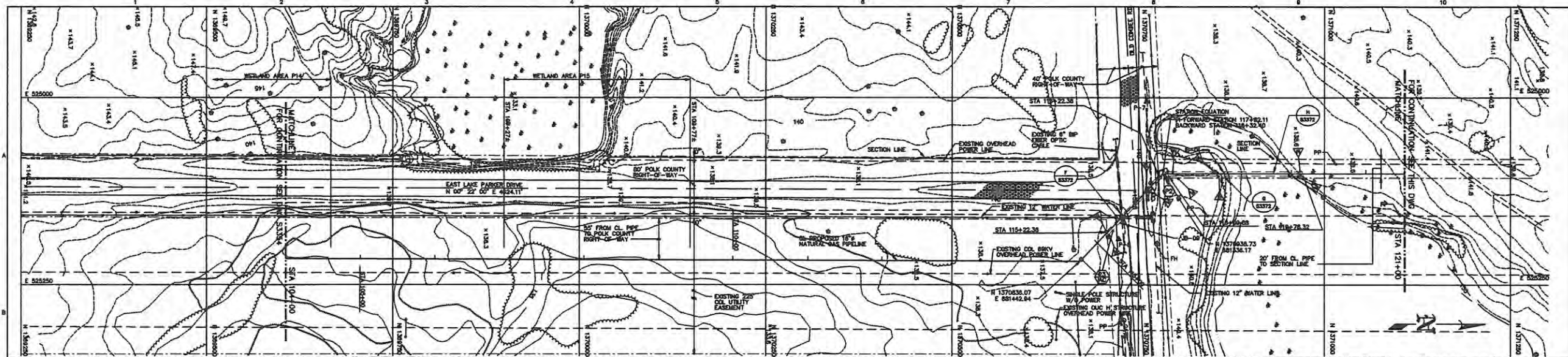


- [R1] GOODALL RECTIFIER (TYP. FOR 2)
- [D1] DIARYLAND A/C MITIGATION DEVICE (TYP. FOR 3)
- [P1] RUSTROL POLARIZATION CELL (TYP. FOR 3)
- △ T26 TEST STATION (7 MILE PIPELINE)
- △ L03 TEST STATION (3 MILE PIPELINE)
- [BB3] BOND BOX
- || ISOLATED FLANGE
- PIPELINE SHOWN IN GREEN PARALLELS 69KV AND/OR 230KV TRANSMISSION LINES

REV. NO.	DRN. BY	DATE	ENG. BY	APPR.	REVISION



DRAWING TITLE		DIVISION: PRODUCTION ENGINEERING		PROJ. NO. -		SCALE NONE	
CITY OF LAKELAND 16" GAS PIPELINE PLAN AND SCHEMATICS		ENGINEER: McDONALD		PLOT DATE -		CAD NO. SK04004-1	
DRN. BY: MGIEGER	DATE: 04-13-04	DWG. NO. SK04004-1		SHT. NO. - OF -	REV. 0		SIZE B
APPR. BY: -	DATE: -						



RELEASED FOR CONSTRUCTION
 D. D. SCHULTZ 06/01/01
 SIGNED DATE

<p>PHOTOGRAMMETRY BY: L.F. ROGERS & ASSOCIATES, INC. 106 BENTLEY BLVD. SUITE 100 PLANT CITY, FLORIDA 33508 (813) 708-5113</p>	<p>NOTES</p> <ol style="list-style-type: none"> SEE DWG S3351 FOR GENERAL NOTES AND LEGEND. SEE DWG S3370 FOR JACK AND BORE DETAILS. COPPER GROUND RODS SHALL BE 3/4" DIA AND 40' LONG. 	<p style="text-align: center;">BLACK & VEATCH ENGINEERS-ARCHITECTS</p> <p style="text-align: center;">LAKELAND ELECTRIC AND WATER NATURAL GAS PIPELINE EXTENSION PROJECT</p> <p style="text-align: center;">SITE - GAS PIPELINE PLAN AND PROFILE - SHEET 6</p> <p style="text-align: right;">PROJECT NUMBER: 16587-CFGA-S3355 DRAWN BY: MAU CHECKED BY: MLE DATE: 06/01/01</p> <p style="text-align: right;">REVISIONS AND RECORD OF ISSUE</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>NO.</th> <th>DATE</th> <th>REVISIONS</th> </tr> <tr> <td>3</td> <td>06/01/01</td> <td>ISSUED FOR CONSTRUCTION</td> </tr> <tr> <td>2</td> <td>05/13/01</td> <td>REVISED CATHODIC PROTECTION</td> </tr> <tr> <td>1</td> <td>05/13/01</td> <td>REVISED PLAN AND PROFILE</td> </tr> <tr> <td>0</td> <td>05-19-01</td> <td>INITIAL REVIEW</td> </tr> </table>	NO.	DATE	REVISIONS	3	06/01/01	ISSUED FOR CONSTRUCTION	2	05/13/01	REVISED CATHODIC PROTECTION	1	05/13/01	REVISED PLAN AND PROFILE	0	05-19-01	INITIAL REVIEW
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