



HERNANDO/CITRUS METROPOLITAN PLANNING ORGANIZATION



Coast to Coast Connector: Brooksville Gap



Alternatives Analysis

September 2016



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- Appendix B Stakeholder Survey and Online Questionnaire
- Appendix C Section Drawings
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1.0 Initial Findings

This chapter describes the process and tools used to develop the preliminary alignments.

1.1 Introduction

In 2012, as part of a process that has been evolving for over two decades, the Florida Department of Environmental Protection's Office of Greenways and Trails developed the Florida Greenways and Trails System Priority Network Map. This map "serves as a green infrastructure plan to tie together the greenway and trails plans and planning activities of communities, agencies and non-profits throughout Florida"¹ and illustrates trail opportunities across the state.

The Coast-to-Coast Connector, as part of the priority network, was selected by the Greenways and Trails Council and the Office of Greenways and Trails as the priority trail in the state to receive SUNTrail funding. This trail, a 250-mile collection of local trails, connects the Gulf of Mexico to the Atlantic Ocean and spans nine counties and dozens of communities, including Hernando County and Brooksville. It makes use of existing trail infrastructure and fills the remaining 75 miles of gaps to eventually allow bicyclists to ride across Florida from St. Petersburg to Titusville and the Canaveral National Seashore in Brevard County.

Figure 1-1 is a map of the Coast to Coast Connector and identifies existing segments and gaps in the system. The gap from the Suncoast Trail through Brooksville to the existing Good Neighbor Trailhead is one of the gaps identified to be filled during this first round of SUNtrail construction. East of the Trailhead, the Good Neighbor Trail is being extended to connect to the Withlacoochee State Trail. Also being studied by the Florida Department of Transportation (FDOT) at this time is the alignment that will complete the gap in Sumter County.

The Brooksville gap is being completed in two parts, FDOT is in the process of identifying the alignment from the Sun Coast Trailhead to Cobb Road. The goal of this study is to identify the preferred alternative alignment to fill the gap that exists from Cobb Road east to the Good Neighbor Trailhead at Russell Street. **Figure 2-1** illustrates the study area and potential corridors.

¹ Coast to Coast Connector Status Report, July 1, 2014–December 31, 2014

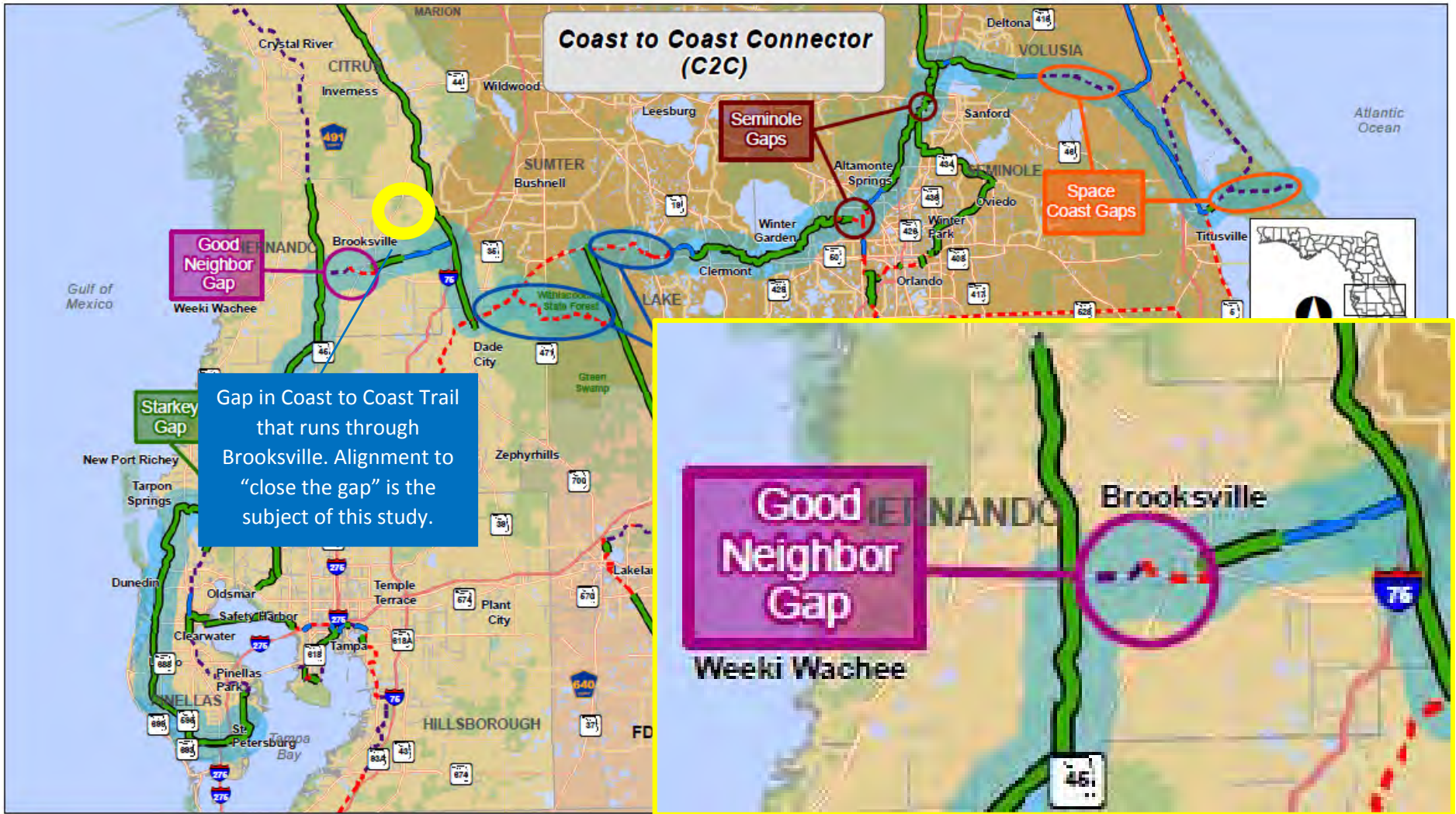


Figure 1-1: Coast to Coast Connector and GNT gap



Figure 1-2: Study corridors

1.2 Public Involvement

Public Involvement Plan

Community involvement has been critical in the evolution of the Good Neighbor Trail (GNT), and the GNT Advisory Committee has been the driving force behind the construction of the trail for more than two decades. For this reason, community engagement was identified as particularly important for the development of the preferred alternative. The Public Involvement Plan, found in **Appendix A**, was developed at the beginning of the project to guide the multi-tiered approach to engaging representatives from many different areas.

Stakeholder Interviews

Stakeholder interviews were held with key groups and individuals identified by County staff and the project team as those who represent different points of view in the community. Interviewed were representatives of the Brooksville Vision Foundation, Hernando County, and the City of Brooksville, as well as City and County officials and bicycle shop employees. The questionnaire used to guide the discussions can be found in **Appendix B**.

Through mostly a discussion format, the interviewees were asked about their vision for the trail in the future, their concerns about the areas along the trail corridor, what the trail needed to connect, what they considered to be community benefits, and what amenities they would like to see included in the plan.

As seen in the word cloud developed from interviewee responses and shown in **Figure 1-3**, a number of concepts emerged. Primary to the discussion was the idea that the trail could be an economic catalyst for Brooksville; the trail also was seen as a way to allow users to experience Brooksville. Other prospective benefits for the trail included an increase in tourism and a direct tie into the long-term economic development plans for the city.

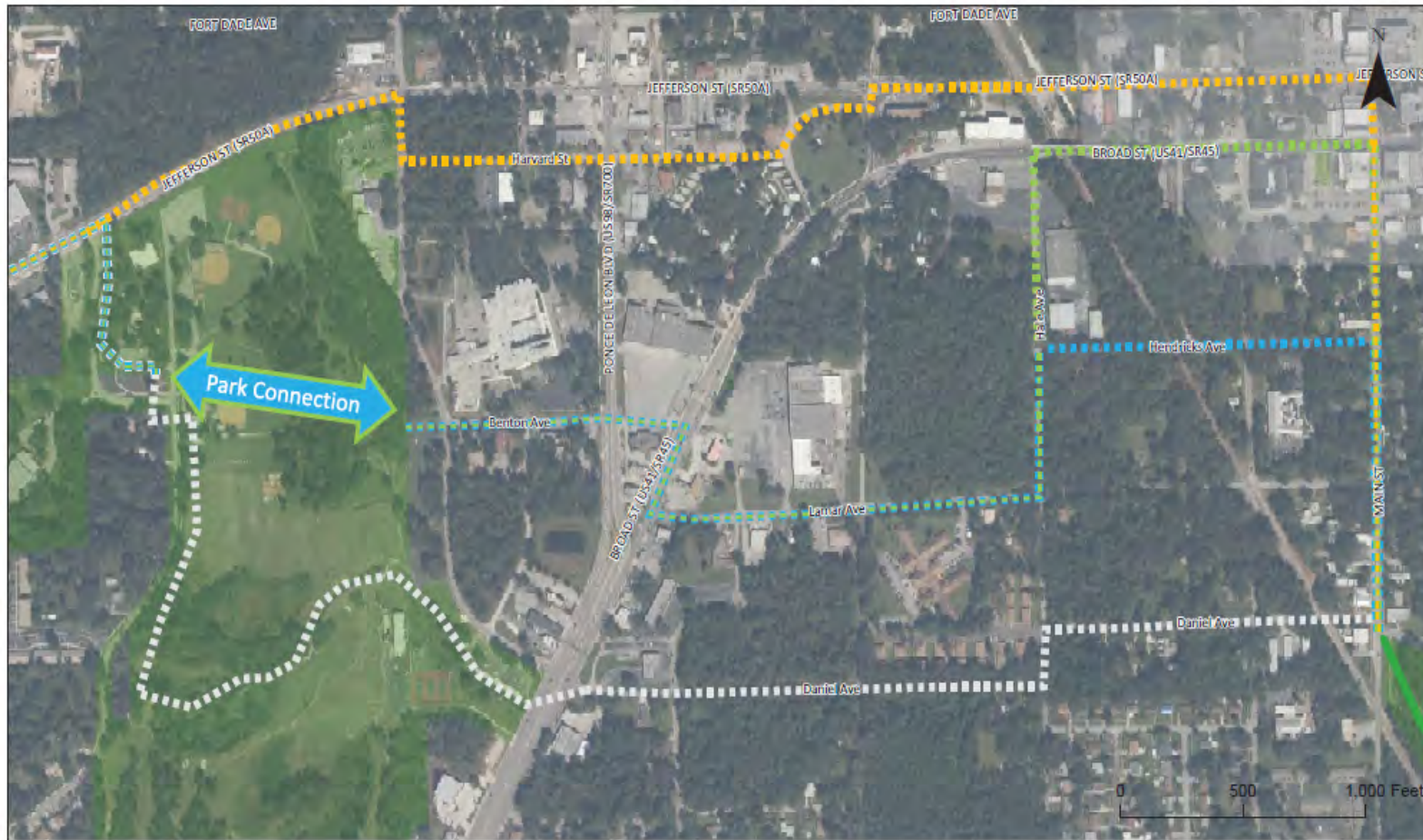


Figure 1-3: Word cloud generated using words used in stakeholder Interviews

Public Workshops

Several public workshops were held to get community feedback. The first was held to review the draft concepts identified by the project team. At the meeting, community members were shown four alignments (see **Figure 1-4**) and asked to comment on them, propose different alignments, and indicate “good–better–best” based on their opinion of how well the alignments would satisfy the preliminary criteria of connectivity, safety, and economic development potential. This exercise provided the team with qualitative measurements of the attendees’ perceptions of each of the alignment alternatives.

Workshop participants were also asked to complete a survey, which also was posted on the project website (see **Appendix B**). Similar to the stakeholder interviews, the survey asked questions about amenities they consider important, concerns they had about the trail (such as safety, maintenance, etc.), and preferences on the preliminary alignments that were on display.



Coast to Coast/Good Neighbor Trail
Brooksville Gap Alternatives
Alternative Alignments
January, 2018

- Good Neighbor Trail
- Daniel Ave
- Hendricks Ave
- Uptown
- Park / Uptown
- Parks and Recreation Space
- Downtown



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*Trail alignment is for illustrative purposes only, final alignment is to be determined.

File: J:\Client\100 - 208\12204-08_15 Good Neighbor Trail\Mapset\MD\Proposed_Brooksville.mxd
Data Sources: Hernando County GIS, Hernando-Citrus MPO, FDOT, USDA, S&P/W&D, and FDEP

Figure 1-4: Preliminary alignments

Generally, concerns included public safety and long-term maintenance. Amenities identified included water fountains, shaded seating areas, and shelters from the weather. These will be used to develop the future trail design plans. Feedback on the alignments suggested a preference for the Uptown Route that ran directly into Uptown Brooksville and also for the Daniel Avenue alignment that offers direct access to the trailhead and the rest of the Coast to Coast Connector.

The public involvement opportunities held early in the project helped identify key criteria and input that helped guide the review of the alignments and narrow the list of candidates.

1.3 Data Collection and Review

The Good Neighbor Trail has been an integral concept in a variety of planning documents developed for the City of Brooksville, the Hernando/Citrus Metropolitan Planning Organization (MPO), and Hernando County. As part of the process, the following planning documents were reviewed:

- MPO, County, and City policies and Comprehensive Plans
- City of Brooksville Community Redevelopment Plan
- 2040 Long Range Transportation Plan
- City of Brooksville Vision 2050
- Coast-to-Coast Trail plans
 - Bicycle and Pedestrian Facilities (Existing and Planned)
 - Development plans for Brooksville
 - TBARTA Multi-use Trail update (2015)

Document Summaries

Brooksville Comprehensive Plan

Within the City of Brooksville’s Comprehensive Plan, providing safe automobile, bicycle, and pedestrian access to all public facilities as well as establishing a downtown focal point in the community are primary initiatives. Making the connection between a redeveloping and pedestrian-oriented downtown and the Good Neighbor Trail are at the forefront of the economic development, recreation and open space, and transportation elements.

City of Brooksville CRA, Community Redevelopment Plan

Goal 7 of the City of Brooksville Community Redevelopment Plan specifically addresses the Good Neighbor Trail and efforts to realize its economic potential. References to the Trail and its significance to the city are included throughout the Plan.



Hernando Comprehensive Plan, Future Land Use Element

The Future Land Use Element of the Hernando Comprehensive Plan states that the area around the Good Neighbor Trail may be developed with specialty stores and services, including, but not limited to, bicycle shops, art galleries, antique shops, and other compatible uses of scale and intensity. The design of streets will encourage pedestrian and bicycle use and discourage high-speed traffic while enhancing the connection between the downtown and surrounding areas.

2040 Hernando-Citrus Long Range Transportation Plan (LRTP)

The 2040 Hernando-Citrus LRTP supports trails and trail connectivity as part of the transportation network. The gap between the Suncoast Trail and the Good Neighbor Trail has been identified as a regional priority, and total funding for trails, sidewalks, and bike facilities from the County totaled approximately \$9.1 million for 2020–2040. As stated in the LRTP, “Brooksville has strongly urged the MPO and FDOT to bring the connecting route for the Coast to Coast Connector through the city, connecting it with the now existing GNT Trailhead facility.”

City of Brooksville Vision 2050

The Vision 2050 plan put forth by the Brooksville Vision Foundation Stakeholders Council specifically mentions closing the gap between the Suncoast and Good Neighbor trails. Maximizing the social and economic benefit to the city and county, Vision 2050’s guiding principles include encouraging multi-modal transportation, developing a walkable and vibrant central business district, and creating an interconnected network of trails, sidewalks and parks.

Coast-to-Coast Trail Plans

The Coast-to-Coast trail was selected as the first trail priority for completion in the Florida Greenways and Trails Plan. The goal of this trail is to create a cross-county non-motorized trail route between St. Petersburg on the Gulf Coast and Titusville on the Atlantic Coast. Completing the identified gaps, including the Brooksville–Good Neighbor gap, will help complete the Coast-to-Coast Trail and ultimately advance efforts ranging from economic development to conservation.

Bicycle and Pedestrian Facilities (Existing and Planned)

The City of Brooksville has a small network of bike lanes on the major roads. Multi-use trails include the Suncoast Trail along the Suncoast Parkway and the Good Neighbor Trail. The Good Neighbor Trail connection to the Withlacoochee State Trail is planned for completion in 2016/2017.



South Brooksville Reuse Planning

South Brooksville Reuse planning focuses on three areas of Brooksville, proposing a series of catalyst projects and supplemental planning components that guide the redevelopment of Brooksville. The Good Neighbor Trail plays an important role in the future development of the South Brooksville study area. Of particular interest is the South Brooksville Project Plan, which presents concepts for the redevelopment of Jefferson Street as a gateway to the city that will welcome visitors to the area. The plan also focuses on the recreational and transportation benefits of the Good Neighbor Trail and proposes a multi-use trail along the west side of Jefferson Street that connects to the existing Good Neighbor Trail crossing. Section Five of the plan presents concepts for redevelopment of the Smith Street block. Those concepts include:

- Creation of bicycle-oriented business opportunities
- Creation of a lodging business opportunity
- Enhanced park-like recreational features
- Connections to surrounding neighborhoods

TBARTA Multi-use Trail Update, 2015

The Tampa Bay Area Regional Transportation Authority's (TBARTA) 2007 Multi-Use Trail Element update and the West Central Florida MPO Chairs Coordinating Committee identified Hernando County as having limited trail facilities with a fragmentation of infrastructure. Particular emphasis is placed on connecting the gaps between trails and facilities, especially between the Suncoast Trail and Withlacoochee State Trail.

The review of documents and plans helped the project team understand the importance of the Good Neighbor Trail to the city and the county, as well as to place it in the larger context of long range plans.

1.4 Site Visits

Initial Field Visit

The project included two field visits. The first was made to gain local insight and understanding about the opportunities and challenges related to the proposed alignments, and the second, which is discussed in the next chapter, looked for engineering and constructability challenges and included an assessment of the alignments prior to review and refinement by the project team.

The first field visit included a tour of the area with the project team to obtain input and perspectives regarding the study area, opportunities for connections, historical information, and any other pertinent information. The visit was preceded by a review of the project area and a discussion about opportunities and challenges for this trail alignment. Other topics discussed included environmental factors such as drainage and the user experience.

Brooksville prides itself on being a special place in a sea of larger communities in the Tampa Bay area. The downtown area has retained its small town feel and the history looms large in its architecture and

historical references. The area is also scenic, with large trees and rolling hills. These factors play a role in how the city wants to present itself to users of the Trail. As a result, there is a strong interest in highlighting the history and the landscape of Brooksville in its trail plans. For example, part of the discussion with City of Brooksville staff was about how to create a historical reference in any needed bridges to the pedestrian bridge that used to cross the railroad tracks at Hendricks Avenue.



Figure 1-5: Pedestrian bridge used to cross railroad tracks at Hendricks Avenue

The main access roads leading into the city, Jefferson Street (SR 50A) and Broad Street (US 41), as with many historic downtowns, are lined with small-scale retail and strip malls. Although there are many occupied buildings, there also are underdeveloped parcels and “For Sale” and “For Rent” signs. Opportunities for community redevelopment exist along many of Brooksville streets, such as establishments that cater to bicyclists as well as restaurants, retail, and other services that support tourism. There are bicycle lanes and sidewalks along Jefferson and Broad streets. With the exception of Jefferson and Broad Streets, most of the roadways are rural in nature, with a low speed limit, low traffic volumes, and open ditch drainage. Bicyclists were seen in the bike lanes and on the sidewalk during the

field visit as well as on many of the roads. Many of the local roads are shaded by a tree canopy that contributes to the charm of the area and also create refuge from the hot Florida sun. The terrain includes a greater variation in elevation gain than is seen in much of the Tampa Bay area. This was noted during the discussions as an attraction to be highlighted and also creates engineering challenges.

A CSX rail line crosses to the west of Uptown and will be a factor in alignment identification and, as a result, early and frequent coordination with FDOT and CSX will need to take place. Other constraints such as right-of-way, traffic, existing structures, crossings, and utilities were identified as they relate to the development of the alignments.

Downtown Brooksville is the historic center of Hernando County and the focus of several programs for long-term economic development. The City is developing a Main Street Program to help revitalize downtown Brooksville and is actively marking the area as “Uptown.” The Main Street Program focuses on developing a vision and strategies for reviving the economic vitality of small towns the county. The City also is working to develop an event and festival program that capitalizes on existing natural resources and community strengths.

Within Brooksville, the primary destinations are “Uptown,” Tom Varn Park, and the Good Neighbor Trailhead. Tom Varn Park is a local community resource that includes ball fields and play equipment and also is envisioned as an activity center for bicyclists and events. Currently, plans are being developed to adapt the former golf course site into an agricultural educational center partnered with the annual Blueberry Festival.



Figure 1-6: Brookville historic character

A variety of factors, including user experience and community vision, land use, and constructability, can influence trail design. During the site visit, care was taken to observe the alignments from a variety of perspectives, taking into account adjacent or nearby land uses and community character, drainage, or infrastructure and the impact the engineering of a trail and may impact the cost to construct the trail and visitor experience.

The field visits gave the Project Team the opportunity to get the local expert perspective and begin to identify the opportunities and challenges inherent in each alignment option.

Summary

The Coast to Coast Connector is envisioned to stretch 250 miles across Florida, from St. Petersburg to Titusville. The gap between the Suncoast Trail at SR 50 and the Good Neighbor Trailhead at Russell Street in South Brooksville will be filled to make the regional trail a reality. This project is a collaborative partnership between the City of Brooksville, the Florida Department of Transportation and the Hernando/Citrus MPO.

Through the analysis of existing conditions, expert local insight, community feedback, and review of planning documents and studies, a number of corridors were identified for review. Chapter 2 discusses the analysis of the alternatives leading to the identification of the preferred alternative discussed in Chapter 3.



Figure 1-7: Tree canopy along local road

2.0 Alternatives Analysis

This chapter discusses the factors that were used to develop the recommended alternative.

2.1 Demand and Potential Use

One of the challenges to developing the preferred alignment for the gap in the Coast to Coast Connector through Brooksville is the identification of the typical trail user. The current Good Neighbor Trail, because of its proximity to adjacent communities and the directness of the connection, frequently acts as a sidewalk connecting the adjacent community to the stores and uses on W Jefferson Street. Currently, its short length creates limited appeal for bicyclists, letting it function more as a recreational facility or for short trips and less as a training opportunity or through route. The connection to the Withlacoochee State Trail in 2017 will create options for riders of all abilities, connecting them to 46 miles of one of the best-ranked rail trails in the Southeast. As seen with the extensions of other local trails, the rider make-up and the distance that riders will travel to use the Trail inevitably will change. The final connection to the Suncoast Trail will open up the Good Neighbor Trail to all of its full potential as an outstanding local resource as well as a destination.

General Demographics of Potential Trail Users

Based on surveys and observations conducted on nearby trails, the general demographic of potential trail users can be assumed to be mixed. For example, the Pinellas User Survey (2015) found that user demographics have changed over time. Since the time when the survey was conducted in 1999, female trail use has increased by 3%, male use has increased by 17%, and tourist use has increased by 14%, suggesting that the trail is increasingly considered a destination. The Pinellas Trail stretches 38 miles and is a good comparison to the final length of the Good Neighbor Trail.

The current four-mile stretch of the Good Neighbor Trail is primarily a local trail that is well used by the community. It serves both recreational and utility functions, for users who ride, walk, or run for exercise and acts as a convenient pathway for adjacent neighborhoods to access a variety of destinations along W Jefferson Street. When connected to the Withlacoochee Trail, it will extend 11 miles, making it a recreational destination and offering opportunities to travel along the Withlacoochee Trail or easily to the Croom Forest. The final segment, the six miles connecting it to the Suncoast Trail, will further expand the reach and again change the user group, much the way the user mix has changed on the Pinellas Trail.

As part of the Coast-to-Coast Trail, the trail will draw visitors who want to make the 250-mile journey across nine counties, countless communities, and between the two Florida coasts, giving visitors a wide variety of experiences. The vision for the trail is to become a destination and generator of short- and long-distance travel. As seen in countless communities around the country, there is an increasing trend towards bicycle tourism. A discussion of those potential users follows.

Population Information and Demographic Patterns (Current/Projected)

The general population trend in Hernando County and Brooksville is slow growth. Figure 2-1 shows generally, based on available land and land use patterns, where population growth will occur. This growth is seen to occur mainly surrounding the trail, as much of the city is considered built-out, with most of the parcels currently occupied. Some land use change can be expected, which, in most cases, will not increase the number of residents. The largest population increases are forecasted to occur in areas north of Cortez Boulevard. Other areas of forecasted growth include the areas around Cobb Road and W Jefferson Street. The trail connection to the Suncoast and Good Neighbor trails will increase the convenient access for the community walking and bicycling.

Community Characteristics

The 2013 American Community Survey and ESRI's Community Analyst were used to create an overview of the study area population within two miles of N Main Street and N Broad Street, as shown in Table 2-1.

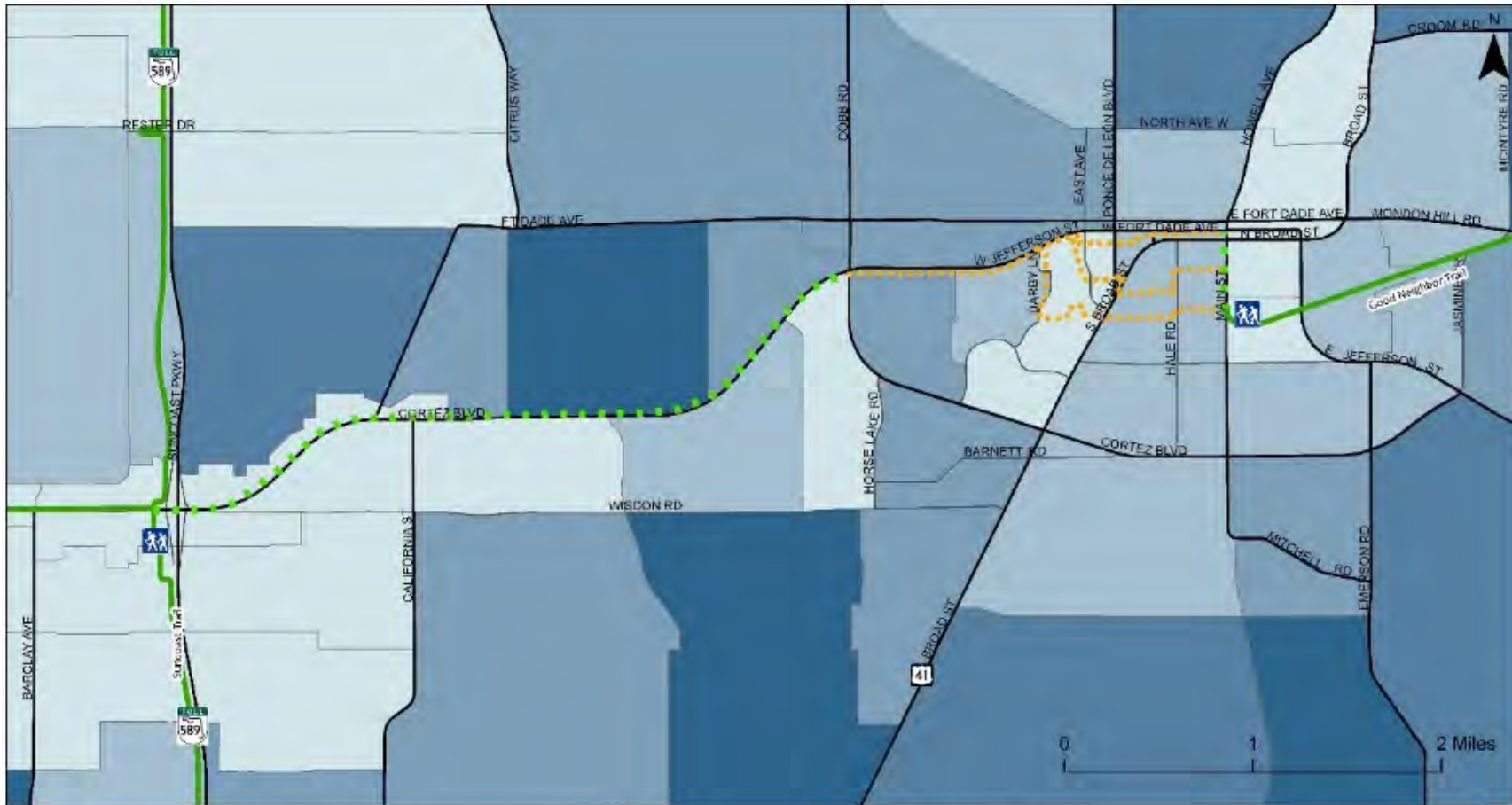
Table 2-1: Current and Projected Community Demographic Characteristics for 2-Mile Study Area around Brooksville

	0.5 miles	1 mile	2 miles
Population Summary			
2015 Total Population	1,310	4,631	10,873
2020 Total Population*	1,300	4,659	10,997
2020 Total Households*	475	1,812	4,854
2020 Average Household Size*	2.53	2.41	2.16
Median Age (projected 2020)	44.3	41.2	50.3
Population over Age 65	24.1%	21.8%	30.4%
2020 Male*	593	2,089	4,975
2020 Female*	717	2,542	5,898
Average Household Income	\$42,113	\$39,610	\$38,105

*Projected

Profile of Potential Trail Users

Trails are increasingly popular around the country with both users and community leaders. Communities have seen their economic fortunes shift with the influx of visitors and tourists as, often, day visitors spend time in the communities shopping and eating, drawn to explore the destinations near the trails they are using. A study done of East Central Florida trail users calculated that users spend about \$20 per day.



Coast to Coast/Good Neighbor Trail
 Brooksville Gap Alternatives
 Population Change by TAZ 2010-2040
 January, 2016

	Trail Head	Population Change 2010-2040 0 - 50 51 - 250 251 - 550 551 - 1000 1000+
	Existing Trail	
	Proposed Alternative	
	Planned Route	



Tindale & Oliver
 Proposed Trail - Defined in 2010 LRTP
File: 201704_100-150_02041012 Data Tables - 11-01-2017 (100) (1).indd
 Modified: 10/26/2017 10:04:40 AM; Author: J. J. Jones; Printer: J. J. Jones

Figure 2-1: Hernando County/Brooksville Population Change 2010–2040

Bicyclists are another type of trail user that increasingly is playing a role in community's economies. As reported by David Loww-Rogstad, Principal at Substance, the consultant that planned and designed the RideOregonRide website (www.rideroregonride.com), there are four kinds of bicycle tourists with their own unique characteristics:

- **Self-contained travelers** who visit a new town every day and carry their gear with them and need camping, grocery, and internet access.
- **Ride-centered travelers** who stay overnight and tend to ride during the day, like to eat/drink along the way, often Baby Boomers.
- **Event-centered travelers** who participate in organized or group rides, also event spectators.
- **Urban-cycling travelers** who arrive in a community and travel around the community by bicycle.

Each type also has its own budget and preference for accommodations:

- **Self-contained riders** include any of the types above and generally spend \$0–\$100+ per day.
- **Shoestring riders**, on average, travel 70–100+ miles per day, spend \$15–30 per day, tend to be younger, and tend to Homestay or camp and use public showers.
- **Economy riders** average 50–90 miles per day, spend \$50 per day, tend to stay in hostels or biker camps, and appreciate cyclist discounts or benefits.
- **Comfort riders** average 50–75 miles per day, spend \$75–100 per day, typically stay in hotels, eat out, tend to be older; their accommodation preference is motel, hotel, or bed & breakfast.

Based on these types, it is possible to begin to develop a series of options that might appeal to a broad range of bicycle visitors. It is recommended that Brooksville be developed as a “base-camp” for ride- and event-centered riders and that historic preservation and the community's unique sense of place be prioritized. As with any tourist-centric effort, great customer service and a true empathy for the group of travelers being targeted will help the bicycle traveler trade grow, offering a cumulative economic benefit for the entire community from the visit.

Estimate of Initial Use Levels

Trail usage, or more generally, measuring levels of walking or biking, is challenging to estimate. In the past several years, there has been a national effort to count users of facilities to determine demand and to set a baseline from which to judge performance. In addition to counting users, it is helpful to understand who they are so the appropriate amenities can be provided. Trail and facility intercept surveys or observations, in which trail users are interviewed, are also a good way to understand who is using the trail.

To assist in the understanding of trail usage and develop a methodology for ongoing counts, trail counts were conducted. In addition, an observation period was conducted to understand how trail users interacted with the crossing of the Good Neighbor Trail and S Jefferson Street.

Overall, 12 pedestrians were observed; of those, 11 used the trail, 2 used the trail and Jefferson Street, and 5 used the crosswalk. A total of 22 people were observed bicycling; of those, 16 used the trail, 6 used the trail and Jefferson Street, and 12 used the crosswalk. It is worth noting that three bicyclists were observed walking their bicycles across the road; two were asked if they would ride across and responded, “Not across this road!” This comment reflects the observation that cars never stopped for people waiting to cross. In the cases where crossings were

observed, it was between gaps in the traffic flow. Per the 2016 FDOT *Transportation Engineering Manual*, section 3.8.5(c), warrants are not needed to justify the installation of a crossing treatment at a trail crossing, but because this is part of a trail, it is recommended that the crossing should be upgraded to an activated signal. Section 3.8.6 (5) or (6) of the TEM recommends either a Rapid Rectangular Flashing Beacon (RRFB) or a pedestrian activated flashing yellow warning beacon.

It was also noted that the majority of trail users observed during this period appeared to be more utility than recreational. This ratio can be anticipated to shift when the trail connects to the Withlacoochee Trail and the Suncoast Trail, but, for now, the existing segment of the Good Neighbor Trail appears to mostly provide access to nearby residents to various destinations along Jefferson Street.

Table 2-2: Usage Summary, Good Neighbor Trail and W Jefferson Street, Saturday Morning

	Trail	Trail/Jefferson	Other	Used Crossing
Pedestrians	9	2	1	6
Bicyclists	10	6	6	12

Table 2-3: Trail Activity Counts at Trailhead

	Pedestrians	Bicyclists
Wednesday, March 23, 2016, 2-4pm	5	9
Tuesday, April 26, 2016, 2-4pm	8	10

The current counts were made using a methodology developed for the National Bicycle and Pedestrian Documentation (NBPD) project and described in National Cooperative Highway Research Program (NCHRP) Report 797, "Guidebook on Pedestrian and Bicycle Volume Data Collection." This approach was modified slightly and can be refined over time. The goal of the first count was to set a baseline for future data collection efforts. Using the NBPD Extrapolation Spreadsheet available on the NBPD website (<http://bikepeddocumentation.org/>), it was

possible to extrapolate the trail usage to annual counts. For example, with 10 trail users in the 2-hour count window, weekly activity can be estimated at 2,500 and monthly at 27,000 trail users.

Because physical counts are specific to a time and place, a more general analysis of potential user also was completed. Several maps were created to calculate the number of potential users. Table 2-4 shows population within 0.25 miles, 0.5 miles and 1-mile walking distances and 5-, 15-, and 30-minute driving distances. Surveys conducted on other local trails show that as a trail gets longer, it draws users from greater distances.

Table 2-4: Population within Walking and Driving Distances

	Population			
	2000	2010	2015	2020
Walking				
0.25 mi	139	117	113	110
0.5 mi	992	966	946	938
1 mi	3,205	3,074	3,054	3,058
Driving				
5 min	7,219	7,011	7,029	7,097
15 min	28,639	32,846	33,328	34,128
30 min	188,757	240,982	247,129	254,835

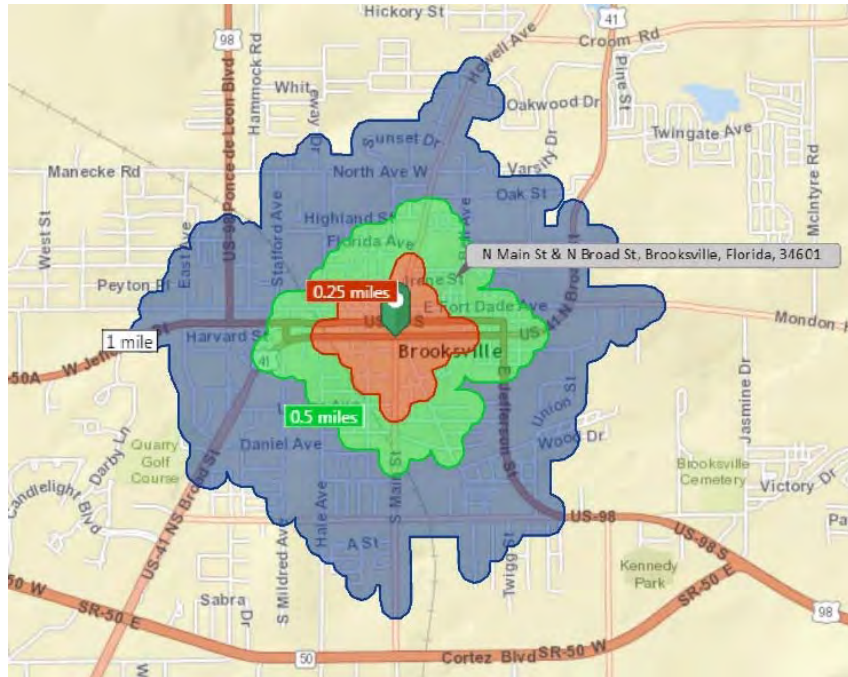


Figure 2-2: Walking distances

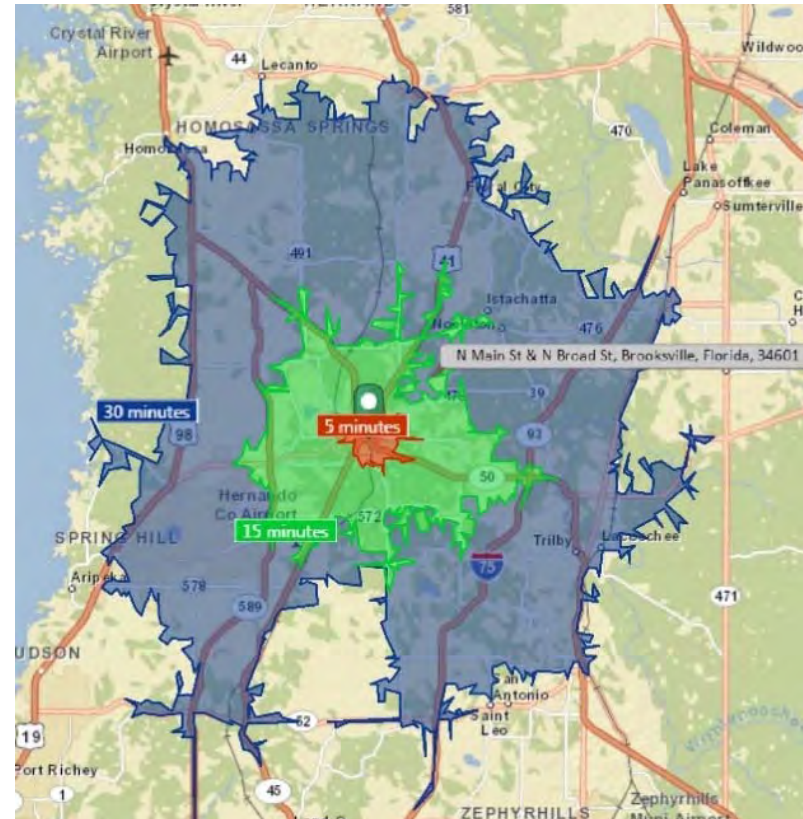


Figure 2-3: Driving distances

Estimate of Future Usage Levels

Estimating future trail usage is challenging, but it is safe to assume that connecting to the regional trails to the east and west will generate more connections and result in an increase in recreational riders. To estimate the potential, a number of local trails were researched, and planned Coast-to-Coast Trail usage can reasonably be estimated based on the following:

- The Withlacoochee Trail, which runs from Pasco County to Citrus County and runs 46 miles, had more than 400,000 visitors, according to the 2015 Florida Department of Environmental Protection Economic Impact Assessment.
- The Pinellas Trail is estimated to host 75,000 users per month.
- Central Florida trails are estimated to host about 1 million users per year.

Measures of Success of Trail Use

Trail success can be measured in a number of ways. This section discusses a variety of measures that could be used to measure the success of the Good Neighbor Trail segment of the Coast-to-Coast Trail.

- **Trail user counts** – increases in trail use anticipated when trail is expanded. The first count has been completed for this study, and it is recommended that counts be undertaken annually to track use.
- **Vacancy Rates** – opportunities created for new businesses related to supporting bicycle tourism. Counts of vacant or for rent/sale businesses along the selected routes can be taken annually to show impact. Distance from the trail can be considered but may not be necessary given the compact nature of Brooksville.
- **Jobs supported by trail** – count of jobs related to bicycling, such as bike sales and repair shops, bicycle campgrounds.

- **Economic benefit, hotel/motel vacancy rates** – increases in hotel stays in the area, as measured by rates and a survey to confirm the mode of arrival or trip purpose.
- **Economic benefit, retail/restaurant increases** – related retail and restaurant increases due to increased trail used; can be measured by increased sales and a survey about mode or trip purpose.
- **Tourist Information Requests** – tracks increases in bicycle tourism-related information requests.

Case Studies

West Orange Trail, Winter Garden, Florida

Winter Garden has been transformed in large part by the West Orange Trail. According to “Economic Impact Analysis of Orange County Trails” (2011):

- In 2010, the West Orange Trail supported 61 jobs and represented a direct and indirect estimated economic impact of \$5 million for Downtown Winter Garden.
- Although extending the Trail through the center of Downtown raised concerns about disruptions to the area, the Trail proved to be a catalyst for downtown redevelopment. Businesses adjacent to the Trail provide convenient access, marketing, and exposure to the 50,000+ trail visitors per month.
- According to counts, September has the highest use, followed by May and October. During fiscal year 2009/2010, almost 889,000 visits were made to the West Orange Trail.
- \$5 million was spent by the City to extend the Trail through Downtown and enhance infrastructure and streetscapes to create a one-of-a-kind destination. Improvements included brick streets, a clock tower, and other enhancements. With a 90%+ downtown

occupancy rate, the City’s strategy to attract business development within its downtown area has succeeded.

- Related to the trail, a visitor stated that “The real economic impact comes from people who visit on their bikes, see what Winter Garden has to offer in terms of restaurants and stores, and then they come back.”
- The trail has been a development catalyst; today, there are 31 businesses downtown with a 90% occupancy rate.
- A survey showed that users are both local and visiting, with 69% using the trail more than 10 times per year, indicating that trails are a major amenity and necessity for the community. Of those visiting, 40% indicated taking an overnight trip in conjunction with their visit to the West Orange Trail, staying in accommodations such as a hotel.

Whereas no two trail experiences are the same, it is reasonable to think that will experience the benefits of increased tourist traffic and economic activity.

Other survey responses illustrate opportunities that Brooksville should explore as part of its overall Good Neighbor Trail development strategy:

- More than 33% said they used the trail primarily for recreation, more than half said for health and fitness, and just over 11% said for transportation.
- Of those who stayed overnight, about 40% said they had stayed or would be staying in a hotel, motel, or bed & breakfast; almost 5% were using a campground.

- On average, restaurant and retail expenditures were the most frequent (see Table 2-5).

The Coast-to-Coast Trail already exists in long segments so it is possible to gain some insight into the future simply based on what is already working. The Florida Greenways and Trails Foundation published the “Florida Coast-to-Coast Connector Economic Benefits and Market Report” in 2013, which noted the following:

- Components of the Coast-to-Coast Connector are already producing economic benefit; for example, the Pinellas Trail is already regarded as an important engine for economic growth.
- Dunedin’s Economic Development Director attributes the increase in business occupancy to the Pinellas Trail. Occupancy was 30% in the 1990s before the trail; today occupancy is 95%.
- According to a 2008 National Homebuilders Association survey, trails are a desired amenity. Homes in proximity to trails see home values increase 10–20%.

Table 2-5: Average Spending on Related Activities by users of the West Orange Trail by Type

	\$0	\$0–5	\$10–20	Over \$20	Spent in Orange Co.	Response Count
Restaurant	56	5	32	19	31	112
Food and beverage (retail)	51	25	17	11	24	104
Transportation	56	14	9	4	9	83
Books, guides, maps	71	4	2	1	2	78
Rental fees for bikes, skates, pull-along carriages	71	2	2	7	5	82
Other	43	2	3	4	6	52

Applicable Lessons

There are myriad examples of trails throughout the county and lessons to be learned from each one. Generally, however, a successful trail includes trailheads or places to rest and shelter from storms, available water, wayfinding information, and locations to lock up bicycles. An urban trail typically offers a different experience, with access to shops and restaurants, places to rest, and safely lock bikes and local sites.

Wayfinding signage offers valuable information about direction as well as opportunity and should highlight local destinations, connections, and facilities. Given the nature of the Coast-to-Coast Trail, it also will need to address county-to-county aspects. A separate project is underway to develop unified branding and key trail side amenities such as trail markers and site control structures.

The Good Neighbor Trail, extending from the Suncoast Trail to the Withlacoochee Trail and part of the larger regional Coast-to-Coast Trail, will experience an increase in bicycle tourism and trail usage, representing an opportunity for Brooksville to encourage tourism and benefit economically.

2.2 Trail Design Standards

Introduction

Hernando County already has several multi-use trails, including the Suncoast Trail, which was built as part of the Suncoast Parkway construction and runs from the Pasco/Hernando County line to US 98. The Suncoast Trail will be extended with the planned extension of the Suncoast Parkway to Citrus County. This 12–15-ft-wide facility includes two major trailheads. The Good Neighbor Trail is a 12-ft wide rail-to-trail conversion. Its western terminus is the Good Neighbor Trailhead that includes parking, water, and restrooms. The facility types identified to fill the gap are proposed as a mix of urban shared use path/cycletrack and multi-use trail. This section discusses the types of facilities and standards that were used to develop the sections for the proposed alignments.

Bicycle Facility Types

Several different types of facilities can be used to develop a bicycle route or an alignment, including multi-use paths, side paths, separated bike lanes, buffered bike lanes, standard bike lanes, shared lane markings, and wide outside lanes.

The identification of the appropriate facility type is determined by a number of factors, including surrounding land use, cost, and available right-of-way. Because this alignment is part of the Coast-to-Coast Trail and the SUN Trail Network, FDOT Trail Legislation (320.072, FS and 339.81, FS) was also considered. This legislation specifically excludes on-road facilities such as bike lanes and shared lane markings except for segments less than ½ mile in length connecting two or more non-motorized trails. For this reason, these facility types were excluded from consideration as facility types for use to complete the gap.

Trail Settings

The gap between the Suncoast Trail and the Good Neighbor Trail includes semi-urban and rural landscapes. Development includes large-scale commercial, small-scale retail, residential, and historic downtown. Roadways range from multi-lane arterials with curb and gutter to single-lane local roads with open drainage.

The following standards and guidance were referred to when developing the sections:

- *Plans Preparation Manual (PPM)*
- *Florida Greenbook*
- *Traffic Engineering Manual*
- *Manual on Uniform Traffic Control Devices (MUTCD)*
- *FHWA's Separated Bike Lane Planning and Design Guide* (although not a standard, specification, or a regulation, document developed by FHWA to “outline considerations for separated bicycle lanes and provide a menu of design options”)
- *AASHTO's Bicycle Guide for the Development of Bicycle Facilities, 4th Edition (2012)*
- *NACTO Urban Bikeway Design Guide, 2nd Edition (2012)*

In 2013, FHWA issued a memorandum of support for “taking a flexible approach to bicycle and pedestrian design,” which allowed the NACTO guides to be used in the development of bicycle and pedestrian facilities. These treatments are either allowed or not precluded by the MUTCD. The sections developed are in compliance with the current guidance.

Geometric Design Criteria

Table 2-6 summarizes the criteria used to design trails. Review of the alignment options against these criteria also was used as an evaluation tool to determine facility type. For example, a 5-ft minimum separation from the roadway is required for a multi-use path by the PPM and, in some areas in Brooksville, this is not possible.

Table 2-6: Trail Design Criteria

	Rural/Urban	Source
Multi-use Trail		
Design speed	18–20 mph	<i>Florida Greenbook</i> , Ch 9, C.5; PPM 8.6.7
Horizontal clearance	5 ft min; 4 ft each side	<i>Florida Greenbook</i> , Ch 9, C.3; PPM 8.6.10
Vertical clearance	8–10 ft	<i>Florida Greenbook</i> , Ch 9, C.4, PPM 8.6.6
Shoulder width	5 ft	<i>Florida Greenbook</i> , Ch 9, C.1
Trail width	12'	
Separated Bike Lane		
Design speed	N/A; recreational rider	<i>FHWA Separated Bike Lane Planning and Design Guide</i> , <i>NACTO Urban Bikeway Design Guide</i>
Horizontal clearance	Context	
Vertical clearance	8–10 ft	
Shoulder width	N/A	

Proposed Typical Sections

Proposed typical sections have been developed for this plan and can be found in **Appendix C**. These sections were developed to understand the different challenges and opportunities for each alignment and develop preliminary cost estimates. The actual design plans will be developed during the next phases of the development of the trail.

Intersection Design

The proposed alignments cross Cobb Road, Ponce de Leon Boulevard, and/or Broad Street and Main Street. Intersection treatments will need

to be considered during the design phase. Options for trail crossings include pedestrian activated RRFBs or HAWK signals and are subject to additional study.

Trailheads and Trail Stops

Trailheads are integral to the comfort of trail users and can include a variety of elements. Trail amenities were the subject of both the stakeholder interview questions and the online survey. Although trailhead type amenities are not eligible for SUNTrail funding, they are critical components of the user experience. Local funding sources or further coordination with the MPO should be pursued for these elements. Major trail heads typically include large amounts of parking, informational kiosks, water, restrooms, bicycle racks, and shade structures. Minor trailheads may include lesser amounts of parking, trail information, water, and bicycle racks. At other locations along the trail, weather protection structures are recommended so trail users know there is safe refuge from Florida's seasonally-temperamental weather.

Design of any of these structures will be undertaken during the next phases of the project.

It is worth noting that the proposed trail alignment will run adjacent to Tom Varn Park, which already includes many parking spaces and available water and restrooms. It is recommended that these existing facilities be updated and incorporated into the alignment to help manage the cost of developing the trail.

Environmental Analysis

A preliminary environmental analysis was completed for the proposed alignments to help identify any challenges that might impact the future design process and can be found in **Appendix C**. A more in-depth environmental analysis will be done during the next phases of the development of the trail.

The trail alignment will be selected according to a variety of applicable standards and to best fulfil the vision of the City of Brooksville and the overall Coast-to-Coast Connector.

2.3 Legal Constraints

A review of land ownership and potential impacts was completed for the initial alignments. This review helped identify preliminary right-of-way impacts. The City of Brooksville is an important partner in the development of the Trail and, accordingly, has begun preliminary discussions with property owners along the proposed alignments. A more detailed review land ownership and right-of-way requirements will be undertaken during subsequent stages of project development.

A preliminary legal review was completed for this study. Additional review will be required during the next phases of project development.

2.4 Trail Corridor Alignments

Site Review

The alignments under consideration at the second field visit were:

- *Jefferson/Broad Street*, from east of Cobb Road along Jefferson to Southeast Avenue where the trail continues along Harvard Street and Hospital Avenue, then crosses at Mildred Avenue and continues along Broad Street and Main Street to the Russell Avenue Trailhead.
- *Park/Broad Street* travels through the Park, across the Brook Plaza Mall, up Broad Street to Main Street, where it travels south to the Russell Street trailhead.

- *Park/Jefferson, via Lamar Avenue* travels through the Park and uses Lamar and Hale avenues to reach Broad Street, where the trail continues to Main Street and south to the trailhead.
- *Park/Hendricks Avenue* travels through Tom Varn Park and uses Lamar, Hale and Hendricks avenues to connect to Main Street and the Russell Street Trailhead.
- *Park/Daniel Avenue* travels through the Park and then travels along Daniel Avenue to Main Street and the Trailhead.

Each of these alignments is discussed in detail in the following sections. Because of the small size of the study area, all roads between the park and the Trailhead were reviewed.

All of the alignments connect to the Coast-to-Coast Trail at the Cortez Boulevard/Cobb Road intersection. Each of the alignments discussed below will have a multi-use trail from Cobb Road heading east toward Tom Varn Park along the north or south side of SR 50, depending on which option to cross Cobb Road is selected. Several options are available to cross Cobb Rd and will be analyzed during design. Some considerations for each option are as follows:

- West of the intersection, if the trail runs along Mobley Road and Clinton Boulevard, a pedestrian bridge will be required to cross SR 50(Cortez Boulevard). The trail would then travel north along the extension of Providence Boulevard and continue on the south side of SR 50A/W Jefferson Street and enter the Tom Varn Park at Darby Road.

- If the trail crosses the Cobb Road/Cortez Boulevard intersection, a pedestrian bridge from the northeast to southwest corner will be required, and the trail will run along the north side of W Jefferson Street; an at-grade crossing at Darby Ave will connect to the trail in Tom Varn Park.

In both cases, some right-of way may be required. Additional study of the crossing at will be undertaken during the PD&E phase to ensure that the connection to the segment of the Coast-to-Coast Connector that ends at Cobb Road is the most appropriate.

Jefferson Street/Broad Street (2.40 miles)

The Jefferson/Broad Street alignment is proposed to run along Jefferson Street through downtown to Main Street and then turn south to the existing Good Neighbor Trailhead at Russell Street. The 12-ft, two-way multi-use trail is proposed to run on the south side of the street in the park right-of-way and will travel south on the west side of Southeast Avenue until Harvard Street. The trail continues along Harvard Street, crossing Ponce de Leon Boulevard, and goes along Hospital Road to South Mildred Avenue.

Crossing at Mildred Avenue, the trail continues on the north side of W Jefferson Street. An at-grade crossing is proposed where the trail crosses the CSX track. A signal upgrade and coordination will be required to construct this crossing. The trail continues along W Jefferson Street to N Main Street, where it continues south on the east side of the street. This alignment removes nine parking spaces in the Uptown area, one on W Jefferson Street, and eight on Main Street. The trail continues south on Main Street to the Good Neighbor Trailhead at Russell Street.



Figure 2-3: Jefferson Street/Broad Street alignment

Opportunities for this alignment include the following:

- Most direct route from the SR 50/Cobb Road trail terminus to Uptown.
- Includes a cycle track along Main Street from Broad Street to Russell Street, which is envisioned as part of Brooksville’s economic development strategy.
- Most business exposure along this route.
- Brings visitors directly to “center” of Brooksville.
- Majority of right-of-way appears to be available; south sidewalk would remain the same; a north curb is proposed to be rebuilt to accommodate the trail.
- Much of stormwater Infrastructure exists, but some modification would be needed to accommodate drainage.

Challenges for this alignment include the following:

- May need to purchase small amounts of right-of-way around driveways.
- Harvard Avenue constrained and identified only as an alternative for segment of Jefferson Street where trail is not feasible.
- Bridge crossing will require coordination with FDOT/CSX.
- Crosswalk needed at Ponce de Leon Boulevard and Harvard Avenue. Additionally, review recommended to determine need for pedestrian signal at Harvard Street and Ponce De Leon Boulevard or coordinated with signal at W Jefferson Street and Ponce de Leon Boulevard; stop control exists at Harvard Avenue crossing Ponce de Leon Boulevard.

- Several driveways on Main Street may need mitigation:
 - At W Jefferson Street and Main Street, bank drive-thru customers exit onto Main Street—crossing treatments may need to be applied to these trail/driveway intersections.
 - At Main Street and Liberty Avenue, review recommended to study the option to close the Main Street exit and the primary exit/entrance on Orange Avenue.
- Estimated reduction in parking spots in the Uptown area includes two on Jefferson Street and eight on Main Street (to Liberty Avenue). If concern about loss of parking, a parking study is recommended to confirm availability and policy recommendations.

Park/Broad Street (3.23 miles)

This alignment enters Tom Varn Park at Darby Avenue. The proposed 12-ft multi-use trail would cross the park and US 41 and continue along Lamar and Hale avenues to Broad Street, where it would run along the south side of Broad Street to the railroad bridge and then continue as a cycletrack to Main Street to a crossing at Mildred Avenue, where it runs along Broad Street via bridge over the CSX tracks and cycletrack to Main Street, where the cycletrack would continue and connect to the Trailhead at Russell Street.

Opportunities for this alignment include the following:

- Alignment connects through Tom Varn Park to Uptown, allowing both destinations to be highlighted.
- Right-of-way through park already exists.
- Primary exposure to businesses is along Broad and Main streets.
- Includes a cycle track south along Main Street from Jefferson Street to Russell Street.
- Brings visitors to Main Street and South Broad Street.
- On Broad Street, north sidewalk remains same; south curb would need to be rebuilt.

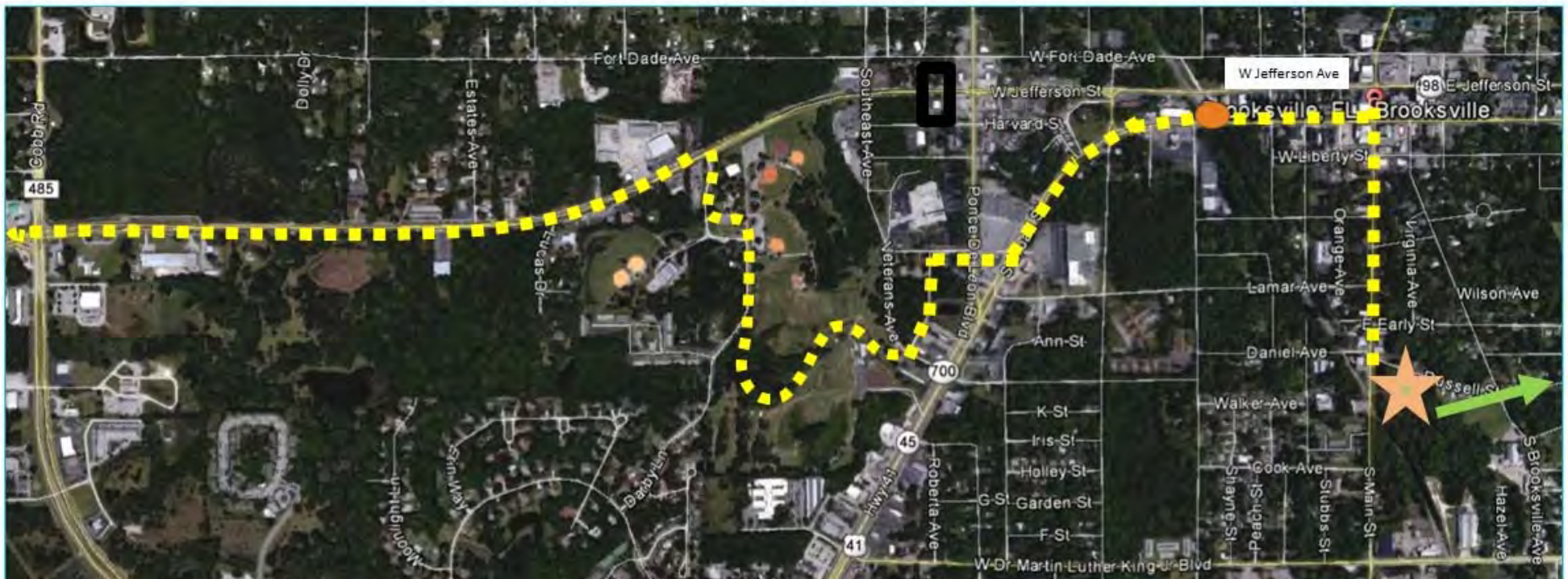


Figure 2-4: Park/Broad Street alignment

Challenges for this alignment include the following:

- Tom Varn Park trails currently for walkers only; plan to manage multiple modes through park recommended.
- Crossing from Benton Avenue to US 41/S Broad Street will need to be redesigned, and pedestrian signal will be needed at Benton Avenue and Ponce de Leon Avenue.
- Coordination with the mall/property owner would be needed to acquire right-of-way to construct a trail through parking lot. Drive aisle would need to be reconstructed as a roadway that includes a trail.
- Reductions in parking spots through Uptown include two on Broad Street and eight on Main Street (to Liberty Avenue). As noted above, parking study may be required.
- Majority of stormwater Infrastructure exists, but would need analysis during next phases of design.
- Alignment requires separate bridge crossing over CSX tracks; appears that right-of-way at east end of bridge will be required. Bridge envisioned as gateway to Brooksville and should be designed with history of area in mind.
- As mentioned previously, driveway/trail intersections at W Jefferson Street and Main Street and at Main Street and parking lot north of W Liberty Street will need study and mitigation.

Park/Jefferson Street via Lamar Ave (2.54 miles)

This alignment enters Tom Varn Park at Darby Avenue. The proposed 12-ft multi-use trail would cross the park and US 41 and continue along Lamar and Hale Avenues to Broad Street, where would run along the south side of Broad Street to the railroad bridge and then continue as a cycletrack to Main Street to a crossing at Mildred Avenue, where it runs along Broad Street via bridge over the CSX tracks and cycletrack to Main Street, where a cyclerack would continue and connect to the Trailhead at Russell Street.

Opportunities for this alignment include the following:

- Connects through Tom Varn Park to Uptown, allowing both destinations to be highlighted.
- Right-of-way through park already exists.
- Primary exposure to businesses is along Broad and Main streets.
- Includes cycle track south along Main Street from Jefferson Street to Russell Street.



Figure 2-5: Park/Jefferson Street alignment

- Brings visitors to Main Street and South Broad Street. On Broad Street, north sidewalk remains same; south curb would need to be rebuilt.

Challenges for this alignment include the following:

- Current location of road, in center of available right-of-way, does not leave enough room to build a 12-ft trail. Lamar and Hale would have to be rebuilt to accommodate a trail and road in the right-of-way or right-of-way acquired.
- Tom Varn Park trails currently for walkers only; plan to manage multiple modes through park is recommended.
- Crossing from Benton Avenue to U S41/S Broad Street will need to be redesigned; pedestrian signal needed at Benton Avenue and Ponce de Leon Avenue.
- Coordination with mall owner needed to acquire right-of-way to construct trail through parking lot. A drive aisle would need to be reconstructed as a roadway that includes a trail. Existing crosswalk at mall and US 41 would need to be realigned with trail travel direction to facilitate use and appears to need right-of-way on east side.
- Reductions in parking spots through Uptown include two on Broad Street and eight on Main Street (to Liberty Avenue). As noted above, a parking study may be required.
- Majority of stormwater Infrastructure exists, but would need analysis during next phases of design.
- Alignment requires separate bridge crossing over CSX tracks. It appears that right-of-way at east end of bridge will be required. Bridge envisioned as gateway to Brooksville and should be designed with history of area in mind.

- As mentioned previously, driveway/trail intersections at W Jefferson Street and Main Street and at Main Street and parking lot north of W Liberty Street will need study and mitigation.

Park/Hendricks Ave (2.50 miles)

The Hendricks Avenue alignment begins at Tom Varn Park along Darby Lane. The proposed 12-ft multi-use trail would cross the park to connect with Benton Avenue at Veterans Avenue. The trail would continue along the north side of Benton Ave and cross at Ponce de Leon Boulevard. Using right-of-way in Brook Plaza, the trail would continue to the existing signal at US 41/South Broad Street and south to Lamar Avenue.

The trail would continue along Lamar, Hale, and Hendricks avenues. Hendricks Avenue does not currently connect across the railroad tracks. A bicycle/ pedestrian bridge is proposed to cross the tracks. This bridge has historical reference; previously, the bridge allowed people to cross the tracks at this location. The trail would continue on the east side of the railroad tracks to Main Street, where it would connect to a sidewalk to the Russell Street Trailhead.

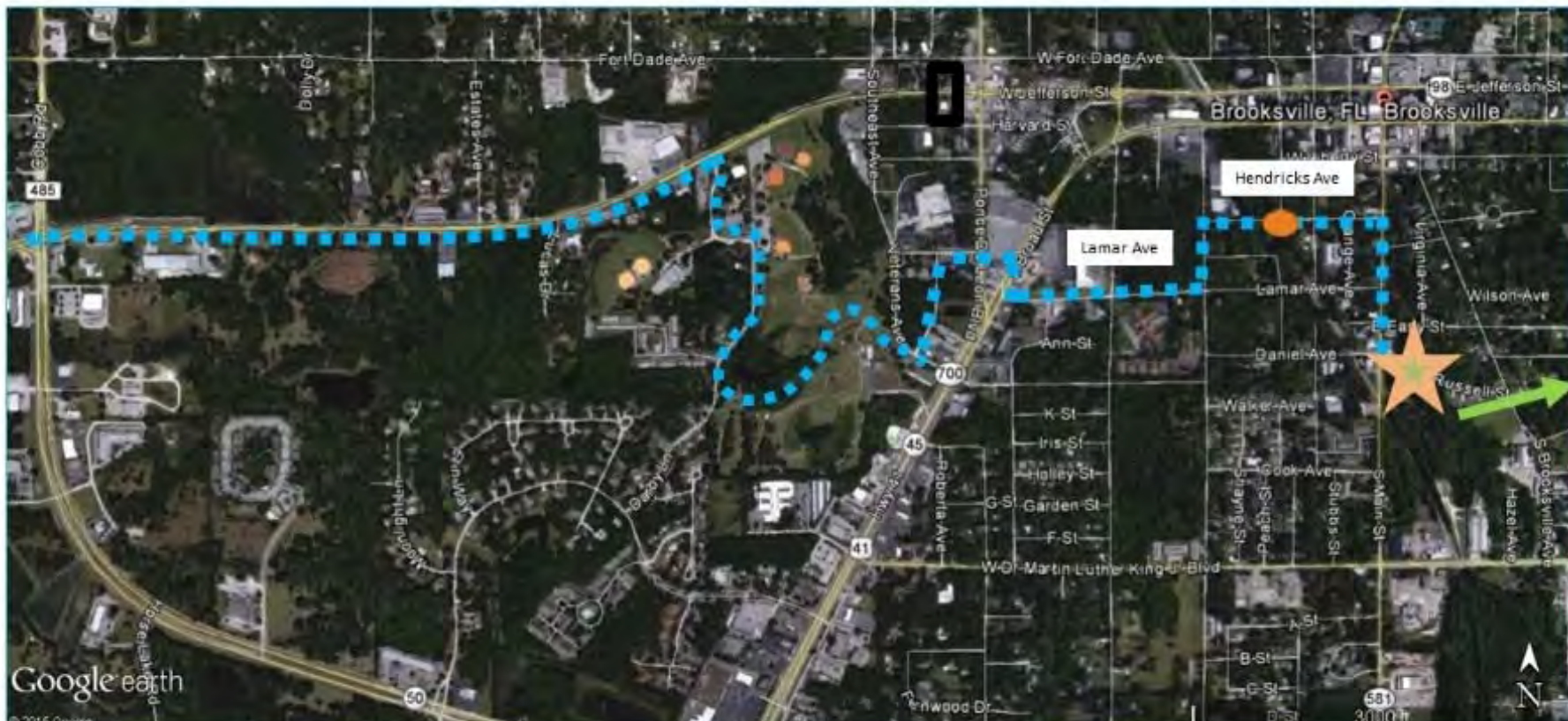


Figure 2-6: Park/Hendricks alignment

Opportunities for this alignment include the following:

- Connects Tom Varn Park and Main Street.
- Bridge required to cross railroad tracks could be designed to connect to Brooksville's rail heritage.

Challenges for this alignment include the following (Note: Because this alignment uses the same route through Tom Varn Park to Lamar Avenue, the challenges are detailed in the Park/Uptown description, but are summarized below):

- Access through Tom Varn Park will require new trail.
- Park trails currently for walkers only and would need new policy to manage modes.
- Crossing from Benton Avenue and Ponce de Leon Boulevard to US 41/Broad Street would require redesign of intersection.
- Not enough room exists to build 12-ft multi-use trail in right-of-way. Options are to purchase right-of-way or narrow trail along Daniel, Lamar, Hale, and Hendricks avenues.
- Personal safety concerns expressed about Hendricks Avenue alignment, applicable to Lamar, Daniel, Hale, and Hendricks avenues. Issue may be addressed with increasing trail users, but development of safety plan for trail recommended.
- Because of where this alignment ends at Hendricks Avenue and Main Street, signage recommended to identify amenities/unique features in Uptown. Also recommended that overall wayfinding signage strategy be developed.

Park/Daniel Avenue (2.68 miles)

This alignment enters Tom Varn Park at Darby Avenue and meanders through the Park, crossing Broad Street and the 12-foot multi-use trail and continuing along Daniel Avenue to Main Street where it meets the trailhead. The proposed 12-ft multi-use trail would cross the park to connect with Benton Avenue at Veterans Avenue. The trail would continue along the north side of Benton Avenue and cross at Ponce de Leon Boulevard. Using right-of-way in Brook Plaza, the trail would

continue to the existing signal at US 41/South Broad Street, then continue along Lamar Avenue and Hale Avenue to West Broad Street, where it connects to a widewalk along Main Street to the Russell Street Trailhead.



Figure 2-7: Park/Daniel Avenue alignment

Opportunities for this alignment include the following:

- Connects to Good Neighbor Trailhead through Tom Varn Park and highlights park.
- Dedicated right-of-way through park already available.
- Riders experience tree canopy and scenery.

Challenges for this alignment include the following:

- Like other alignments through Tom Varn Park, trails currently for walkers only; strategy and policy to manage modes is recommended.
- Crossing at US 41 currently unsignalized. To facilitate crossing by trail users, pedestrian bridge recommended. Right-of-way appears to be needed for bridge landing on east side.
- As noted previously, location of Daniel Avenue within right-of-way precludes construction of a 12-ft trail. Options include purchasing right-of-way or constructing a narrower trail.
- Daniel Avenue potentially would need to be rebuilt as an urban section to address drainage needs.
- Area perceived to have higher crime than others.
- Constructing trail along Daniel Avenue will impact tree line. Construction (trenching for drainage or fill) will disrupt root systems and cause damage.
- Alignment ends at Daniel Avenue and Main Street. Although convenient to trailhead, indirect access to Uptown. Signage would be needed to educate users about points of interest.
- Alignment would require City/MPO funding source for “widewalk” along Main Street from Daniel Avenue to West Broad Street.

Preferred Alternative

Each of the alignments was reviewed against selection criteria that included input, constructability, and responsiveness to the community and the regional vision. Preliminary planning level costs were generated for the alignments that satisfied all of the above criteria and had Stakeholder Team support but were developed for reference and comparison purposes only. The constructability analysis is included in **Appendix F**.

To keep the analysis clear, the segment from Cobb Road to the Park was identified as a segment “common” to each of the alignments. The decision to build on either side of Jefferson will be dependent on factors beyond the scope of this project, but was found to be feasible on either side. For reference, the section of the trail from the Suncoast Trail to Cobb Road was costed separately and is estimated at \$1.4 million. As mentioned at the beginning of this section, the most appropriate way and cost to cross the Cobb Road/Cortez Boulevard intersection will be determined in the next phase of the study, with safety, cost, timing, and availability of right-of-way being factors to consider.

Options include building a trail along Mobley Avenue and Clinton Road, crossing Cortez Boulevard by overpass and continuing up the west side of Cortez along Providence Boulevard where the trail would continue along the south side of Jefferson Street, or an overpass from the southwest to northeast corners of the intersection and a trail along the north side of Jefferson Street with a crossing at Darby Road into the Park. Both of these options provide access to the preferred alternative through Tom Varn Park to Broad Street.

Through stakeholder review, two alignments were identified as preferred. The first, the Park/Broad Street alignment, was included because it has a very high economic development potential and connects two critical areas in the city. Important in the consideration also was the limited right-of-way impacts and constructability. The



Alternatives Analysis



second, the Park/Daniel Avenue alignment, was maintained as an option because it was felt to be scenic and provided the most direct connection to the Trailhead.

Two alignments, as shown in the map in Figure 9, Park/Daniel Avenue and Park/Broad Street were presented to the public at the final workshop held on May 26, 2016. The accompanying chart was used to show the evaluation criteria applied to identify the final preferred alignment.

The public meeting served to affirm the Park/Broad alignment as the preferred alternative. This alignment rated advantageous in the majority of the selection criteria and is estimated to have a lower cost than the second alternative. Other highlights of this alternative include:

- It has much of the needed right-of-way. Additional needs will be coordinated by the City of Brooksville. Preliminary discussions are being held to facilitate the needed agreements.

- The alignment connects two important areas of the City (the Park and the Uptown) and will allow trail users to easily experience the showcase attractions of Brooksville
- Along Broad Street, much of the stormwater infrastructure is in place.
- It appears only be necessary to rebuild one curb in areas along Broad Street where the cycletrack is proposed.
- This alignment is estimated to have a lower construction cost.
- This alignment received positive reaction from the community, the Brooksville City Council, the Hernando/Citrus MPO Board, and the Brooksville Vision foundation.

Therefore, the results of this study are to recommend and pursue the Park/Broad alignment as the Brooksville Good Neighbor Trail connection of the Coast to Coast connector.

Table 2-7: Evaluation Criteria Used to compare preferred alignment alternatives

Criteria	Park/Broad St	Park/Daniel Ave	Notes
Opportunities for Economic Development	1	2	Trail passes by the most retail, etc.
Connect to Brooksville	1	2	Most direct connection
Connection to the Good Neighbor Trail	2	1	Most direct connection
Interesting	1	2	
Best for tourist riders	1	2	Based on access to retail, restaurants, etc.
Best for local riders	1	1	
Community Benefit	1	2	Economic benefit
Environmental Impacts	1	2	Potential damage to tree canopy
Personal Safety	1	2	Personal safety concerns noted in workshop #1
Constructability (drainage, right-of-way)	1	2	
Cost	\$8.3M 1	\$10.7M 2	includes cost of common segment from Cobb to Park. Does not include crossing intersection.
Evaluation Rank	1	2	

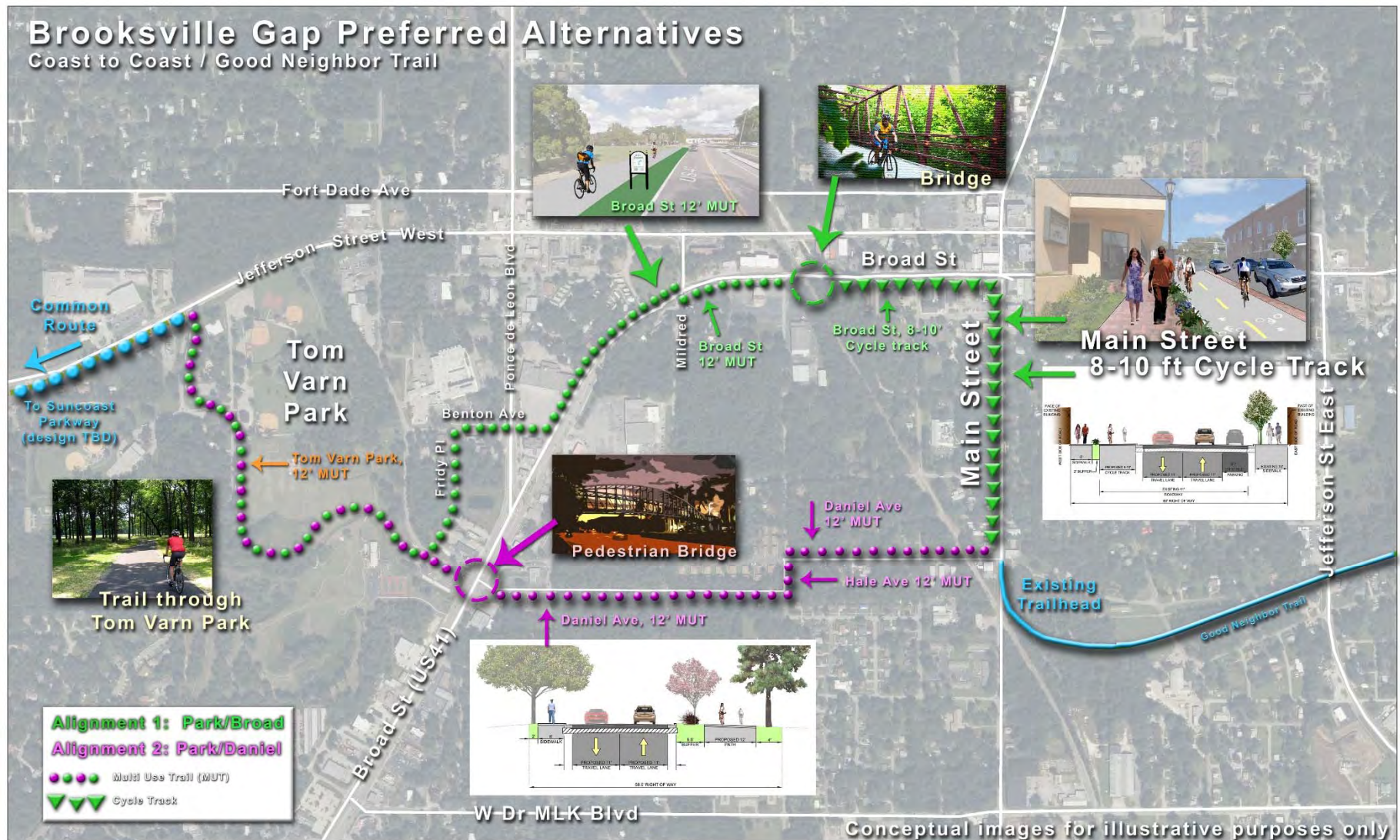


Figure 2-9: Final preferred alternative alignments

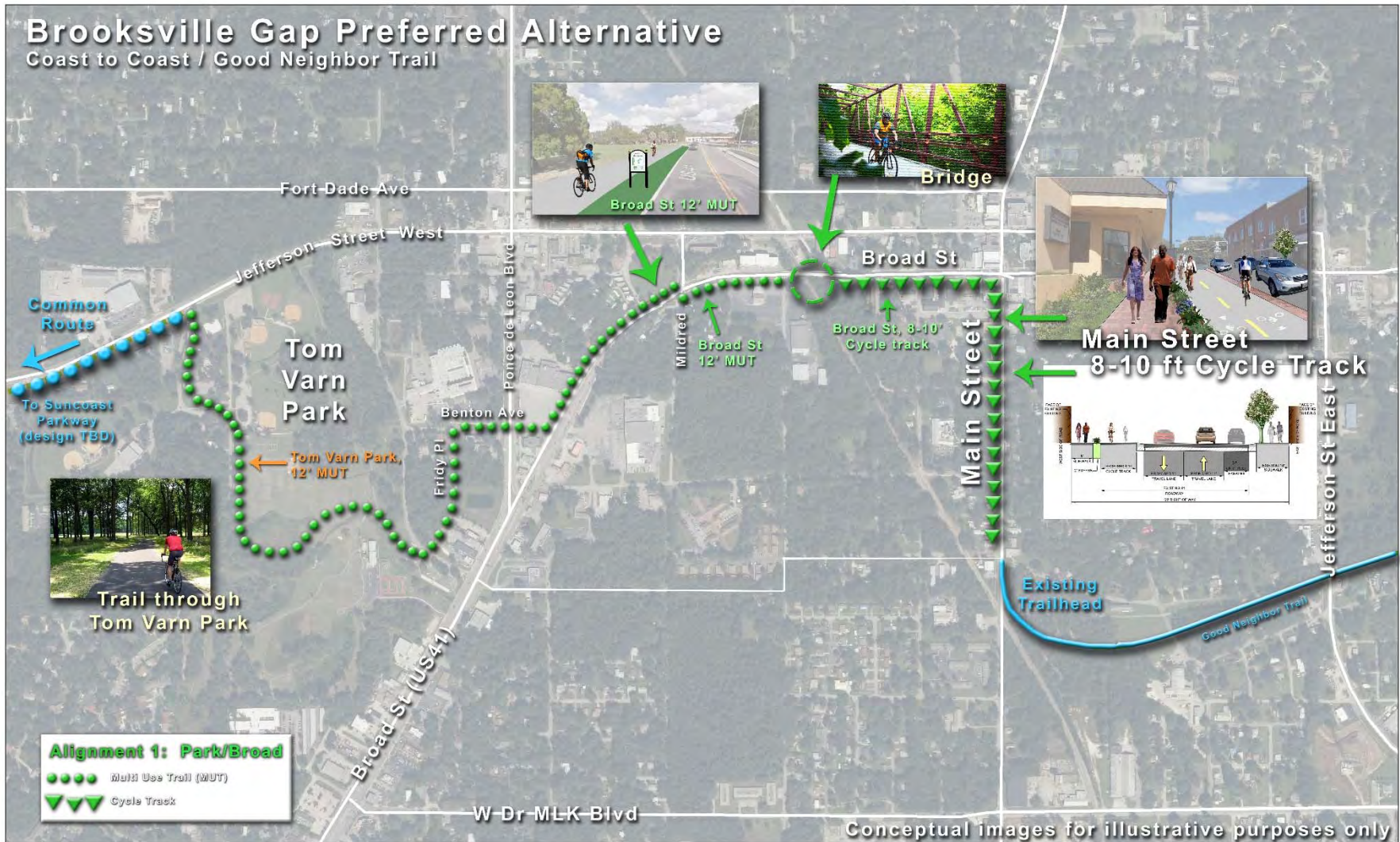


Figure 2-10: the final preferred alignment for the Brooksville segment of the Coast to Coast Connector

3.0 Trail Operations

This chapter describes some of the tools and strategies that can be implemented to manage the trails in Brooksville and Hernando County.

3.1 Selection Summary

The recommendation of the Park/Broad Street alignment is a direct result of community support and engagement. This alignment will become part of the economic development strategy for the City of Brooksville and is an opportunity to highlight the richness of the community. This alignment is supported by workshop feedback and a City Council resolution.

3.2 Financing Plan

Although the majority of this trail construction is proposed to be funded with the State funding source identified specifically for trail projects across the state, SUNTrail, additional funding sources will need to be identified for the following amenities:

- Bicycle racks, air stations or lockers;
- Buildings, restrooms, wayside structures or overlooks, shelters or picnic pavilions;
- Kiosks (regulatory and safety signage permitted);
- Landscaping (trail stabilization permitted);
- Litter or recycle receptacles, and doggie bag dispensers;

- Parking areas or trailheads;
- Playgrounds, fitness equipment or structures;
- Promotional or educational materials;
- Sculptures, fountains or art; and
- Water fountains, spigots or showers.

Additional funding sources may include Transportation Alternatives funding or other FDOT identified sources. The trail is already on the MPO's Priority Project list and appears in the 2040 Long Range Transportation Plan.

3.3 Trail Management Strategy

This section identifies management, operation, and maintenance strategies for the City of Brooksville and Hernando County that may be helpful to consider as the trail system and demands on that system grow. These strategic recommendations have been tailored to the specific needs of the Brooksville Coast-to-Coast Trail gap, but may be implemented along the remainder of the county's trail system.

Overall Management

The safe and efficient operation of the Brooksville Gap of the Coast-to-Coast Trail is the primary goal of the management plan. Active management of the trail and coordination of tasks ensure that the responsibilities, tasks, procedures, and estimated timeframes are successful and accurate. Table 3-1 identifies some typical trail maintenance activities and frequencies. This should be revised as needed and reviewed annually.

Table 3-1: Typical Trail Maintenance Activities/Frequencies

Activity	Frequency
Mowing	Weekly
Tree pruning/removal	Annually
Weed control	Monthly
Vegetation irrigation	Daily/weekly
Drain cleaning	Monthly
Pavement sealing/repave	2–7 years, depending on sealant
Trash pickup/disposal	Twice weekly
Graffiti cleanup	As needed
Lighting repair/replacement	Yearly/as needed
Furniture repair/replacement	Yearly/as needed
Signage repair/replacement	Yearly/as needed
Fence repair/replacement	Yearly/as needed

Operations

Rules and Regulations

The existing Good Neighbor Trail and the Suncoast Trail are open from dawn to dusk. Prior to the completion of the Hernando County portions of the Coast-to-Coast Trail, it is recommended that the rules and regulations, including hours of operation, be reviewed and designed to best suit trail users and the agencies responsible for the safety and security of trail users.

Maintenance and Frequency

There may be additional activities that Hernando County or the City of Brooksville will need to undertake as the trail becomes a cross-jurisdictional feature. Frequencies may change according to funding and staffing availabilities, but need to be kept fairly consistent to keep up with demand and the expected increased trail usage.

The City of Brooksville Parks and Recreation department currently is responsible for the care and maintenance of the Good Neighbor Trail within the city limits; Hernando County Public Works is responsible for the sections that are in the county. It is recommended that staffing levels be reviewed and adjusted as needed in response to the additional miles of trail that will be added to connect to the Withlacoochee State Trail and the eventual connection to the Suncoast Trail. To provide a seamless experience for trail users, intra-agency coordination about maintenance is recommended.

Trail Coordination

Trail Manager

Given the length of the trail and its increasing importance in the Hernando County and City of Brooksville trail systems, the establishment of a position or addition onto a previous position within the City or County government to coordinate between jurisdictions and to serve as the point of contact for citizens and government departments is recommended. The Trail Manager would be responsible for administering the management plan and ensuring the success of the trail. Responsibilities include:

- Coordinate between governmental jurisdictions.
- Serve as point of contact for governments and citizens.
- Implement management plan and seek additional funding.
- Maintain and manage records and trail budget.

- Oversee maintenance and replenishment operations.
- Ensure safety and security of the trail

Risk Management

Safety

As much as possible and in compliance with the PPM and the *Florida Greenbook*, the trail will be designed with adequate right-of-way to buffer the trail from the roadway and create connectivity between open spaces. The trail will also be designed such that crime, fire, flooding, and other hazards are reduced. In some cases, using fencing and other barriers can be used to reduce traffic in unwarranted areas.

Personal safety is always a concern along trails, especially in areas that are secluded or not heavily traveled. To address this concern and ensure that the user experience is a safe one, trail communities have created or

facilitate patrols on trails by either law enforcement agents or volunteers. For example, the Pinellas Trail, through the Pinellas County Parks and Conservation Resources Department, has assigned a volunteer Auxiliary Ranger group that patrols the trail and provides information and light maintenance services and an extra level of safety and security. A similar group in Hernando County is recommended and could also play an ambassador role.

The trail will be designed to minimize road crossings and prioritize pedestrian and bicyclist-friendly crossings where necessary.

While lighting is not a standard trail provision, considered in areas of concern or high use. The hours of trail access are yet to be determined, but providing adequate lighting will allow users peace of mind when using the trail during hours of limited daylight. As this trail grows in popularity and is used for long-haul trips, trail lighting will be a concern.

Fire, Police and Ambulance

It is recommended that contact information for local police and emergency services be posted at all trailheads and intermittent signs throughout the trail to allow easier coordination in case of an emergency. Mile posts should be installed to facilitate emergency response teams in navigating to the affected party. Additionally, a 911 numbering program should be considered; Hillsborough County has instituted this on all its trails. A reflective 911 emblem is installed on the pavement and can be used by 911 callers to locate themselves for the police or emergency services.



Figure 3- 1: Pavement decals embedded in Hillsborough County trails (Source: www.americantrails.org/ Upper Tampa Bay 911 Safety)

Coordination with the South West Florida Water Management District (SWFWMD) is encouraged to ensure appropriate hydrologic management.

Cultural Resources

Historic Preservation

Efforts to facilitate and provide opportunities to preserve, maintain, and document local historical sites and features are described in the Good Neighbor Trail and Trailhead Complex Plan.

Education

It is recommended that educational and recreational programs be provided to the general public and youth. Specific material with information on exotic plant invasion will detail efforts made to keep the area exotic species free. This is in keeping with the Good Neighbor Trail and Trailhead Complex Plan.

Cost Savings

Jurisdictional Sharing

Because the trail will cross City of Brooksville and Hernando County boundaries, both jurisdictions are critical players in the long-term maintenance plans. To help manage the cost of maintenance, it is recommended that the sharing of trail maintenance equipment and facilities between City and County jurisdictions be considered.

The City of Brooksville Parks and Recreation Department currently is in charge of maintenance of the Good Neighbor Trail. This maintenance includes mowing and keeping the trail clear of debris. The City already coordinates with the County for the use of certain equipment.

The maintenance of the Suncoast Trail is being transitioned to the Hernando County Public Works Division, which will care for all segments of the Good Neighbor Trail in the county.

Liability

Liability issues are covered under Section 375.251 of the Florida Statutes. This statute limits the liability of owners or lessees who make their land available to the public for recreational use.

Natural and Cultural Resources

Natural Resources

In keeping with the City of Brooksville’s Good Neighbor Trail and Trailhead Complex Plan, natural resources including flora and fauna that are part of the trail experience should be protected. To that end, it is recommended that efforts be made to minimize impacts on existing hardwood communities and habitats of endangered and threatened species and provide appropriate protective measures for environmentally-sensitive land and unique vegetative communities. Inspection of natural resources defined in the City of Brooksville’s Good Neighbor Trail and Trailhead Complex Plan should be completed annually to prevent and monitor invasive and exotic species.

The proposed alignments are in different areas of right-of-way ownership, so it is recommended that other agencies, such as the Department of Public Works, Streets Division, be considered as part of the maintenance strategy.

Volunteer Opportunities

Volunteers are key to a successful trail maintenance strategy. Many trails in the region have longstanding volunteer programs that supplement Parks and Recreation Department support. For example, Pinellas Trails, Inc. “exists to support and enhance the Pinellas Trail now and for future generations.” This non-profit entity exists to support the trail. Providing such opportunities for volunteer groups to patrol, maintain, and repair segments of the trail help build community and also help share the cost of supporting the trails.

Patrol benefits include:

- Increased security
- Conflict resolution
- Trail inspection
- Emergency aid
- Debris cleanup

Adopt-a-Trail Initiative

Numerous communities around the county have created programs in which individuals or groups “adopt” segments of a trail and provide maintenance services along that adopted segment. This program exists in Brooksville and is recommended for expansion.

Community Partners

Opportunities to foster community partnerships abound, and ways to engage the community as the trail grows should be considered. Other options including creating and fostering partnerships with community

groups such as Boy Scouts, Girl Scouts, and Rotary International and local schools.

Events can be a great way to develop partnerships and build community. Programming the trail and related community spaces will highlight the trail and build further goodwill.



Appendices

- Appendix A Community Involvement Plan
- Appendix B Stakeholder Survey and Online Questionnaire
- Appendix C Section Drawings
- Appendix D Environmental Technical Memorandum
- Appendix E Constructability Review



Appendix A

Community Involvement Plan



HERNANDO/CITRUS METROPOLITAN PLANNING ORGANIZATION

Good Neighbor Trail Connector Alternatives Community Outreach Plan



Community Outreach Plan

November 2015



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1.0 Background

The Hernando/Citrus Metropolitan Planning Organization (MPO) is charged with the planning, programming and management of federal and state transportation funds for transportation projects for Hernando and Citrus Counties. The MPO's planning responsibilities include highways and public transportation, as well as bicycle and pedestrian facilities. Working with the Florida Department of Transportation (FDOT) and member local governments, the MPO identifies, funds and implements transportation projects and studies to improve safety, efficiency and the movement of people and goods within and through its region.

As part of the development of the Florida Coast-to-Coast Trail, the Hernando/Citrus MPO, in collaboration with the City of Brooksville the Florida Department of Transportation (FDOT) and Tindale Oliver (the Consultant), is undertaking a trail corridor feasibility study (Study) to identify a preferred alignment to connect the Suncoast Trail and the Good Neighbor Trail within the City of Brooksville. This Study will develop three alternatives and recommend a preferred alignment.

2.0 Purpose of the Community Outreach Plan

The successful development of a plan must have community support. The purpose of this document is to establish a framework for providing information to and obtain feedback from the public. The outreach will be a collaborative effort between the partner agencies who will work together with the Consultant to undertake public involvement tasks and activities. It is important to note that the Community Outreach Plan (COP) is intended to be a living document that evolves as needed or as the study progresses to respond to unanticipated challenges and circumstances. The following acts and polices will be properly addressed in performing community outreach tasks and activities.

Title VI of the Civil Rights Act

The MPO is committed to ensuring that no person, on the basis of race, color or national origin, sex, age, disability, family, or religious status, as provided by Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, and the Florida Civil Rights Act of 1992, will be excluded from participation in, denied the benefits of, or otherwise subjected to discrimination or retaliation under any MPO program or activity.

Environmental Justice

Title VI of the 1964 Civil Rights Act and the 1994 U.S. Department of Transportation (DOT) Order on Environmental Justice requires that the transportation planning process seeks to identify the needs of low-income and minority populations. The MPO is committed to enhancing public involvement activities to identify and address the needs of minority and low-income populations in making transportation decisions.

Limited English Proficiency (LEP)

Public transportation providers receiving federal funding from the U.S. DOT have a responsibility, under Title VI of the Civil Rights Act of 1964, to take reasonable steps to ensure that persons with Limited English Proficiency (LEP) have meaningful access to benefits, services, information, and other important programs and activities. Persons with LEP include individuals who have a limited ability to read, write, speak, or understand English. The MPO is committed to creating a positive environment for persons with LEP and ensuring that they have an opportunity for full participation in public involvement activities.

Special Accommodations

Persons who require special accommodations under the Americans with Disabilities Act (ADA) or persons who require translation service to

participate in public meeting activities are requested to notify the MPO at least 48 hours prior to workshops or meetings. Requests for alternative format materials or translation should be made in advance to accommodate the development and provision of these materials. Public meeting notices will include the contact number for MPO staff and the deadline date for requesting special accommodations at workshops or meetings.

3.0 Project Management

The Trail Connector Alternatives Study will be managed by the Hernando/Citrus MPO and guided by a Project Steering Team that includes representatives from the Florida Department of Transportation District 7, City of Brooksville, MPO, and other parties as may be deemed necessary by the MPO. The Project Steering Team will be responsible for reviewing all project deliverables and ensuring consistency with the outreach strategies and project schedule developed as part of this Community Outreach Plan.

4.0 Outreach Tools and Techniques

Effective community engagement and public participation relies upon the use of a broad, yet relevant spectrum of techniques to gather input. These techniques will provide:

- Transparent process in completing the corridor study,
- Public access to readily available and easy-to-understand Study information,
- Opportunities for collaborative, two-way communication, feedback and exchange of information, and
- Open access to the decision-making process.

The following tasks will be performed by the Consultant and the MPO to ensure opportunities are provided for the public to participate in the planning process to determine a preferred alignment for the Good Neighbor Trail connection to the Coast-to-Coast Connector.

4.1 Contact list

A contact list of community members and interested individuals will be developed and maintained. This list will be used to communicate with community members that have expressed interest in staying informed about the Study progress and opportunities for engagement.

4.2 Study Brand and Website

The MPO will confirm the Study name and create a brand/logo that will be used on all community outreach materials. Once the brand/logo has been selected, the MPO and Consultant will develop a Study webpage on its website. The webpage will contain materials about the Study, including the update schedule, notices, maps/graphics and summaries. The MPO will also coordinate with City of Brooksville to establish web links between the MPO website and their websites to help distribute information about the update.

4.3 Fact Sheet

A Study fact sheet will be available to update the public about the Study and also about opportunities to get involved with the development of the plan.

4.4 Meetings

A series of meetings will be held to gather feedback from the agency partners (responsible for designing, funding, building and maintaining the trail) and the community. The Kick-Off Meeting with all agencies and stakeholders will be held early during the planning process and a series of meetings with governmental staff and community groups will also be held early in the project.

4.5 Stakeholder Interviews

Up to twelve (12) stakeholder interviews will be conducted to gain obtain input from elected officials, local agency staff, and

other community stakeholders. A questionnaire will be developed and used to conduct key stakeholder phone or in-person interviews. Officials representing individuals/groups and the traditionally underserved populations by existing transportation systems and staff from agencies providing transportation services will be among those interviewed. The results of the stakeholder interviews will be incorporated into the final corridor summary report.

4.6 Online survey

The Consultant will develop an online survey and will place the survey on the MPO's website during the development of the plan to obtain community input in an interactive but simple-to-use online tool. Feedback will be gathered during the evaluation of the alternatives to help in determining the preferred alternative.

4.7 Public Workshops

Public or community workshops have proven to be an effective technique for obtaining substantive public participation and feedback in the planning process. For this trail connector alternatives study, a series of community workshops/meetings will be held with property owners, other stakeholders and citizens in the Study area. There will be two (2) public workshops, and each meeting will be held at a centrally-located venue with significant walk-through traffic. The workshops will be "open house" in nature to encourage review of the materials presented and discussion of the ideas and input with Study team members present to answer questions. The purpose of these meetings, as listed below, will coincide with the various stages of the Study. The schedule for the outreach events and meetings are provided in Section 4.9 of this Community Outreach Plan.

4.7.1 Community Workshop #1

The first workshop will present the three alternative trail alignments to the public.

4.7.2 Community Workshop #2

The second workshop will present the Draft Preferred Alignment Corridor Plan to the public and get final comments.

4.8 Committee and Board Briefings

The Citizen's Advisory Committee, the Technical Advisory Committee and the Bicycle/Pedestrian Advisory Committee will be updated about Study progress and will be asked for their input. The MPO staff will attend and present at the three (3) CAC, TAC and BPAC meetings. The Consultant will attend and present at two (2) MPO Board Meetings and the MPO staff will attend and present at one (1) MPO Board meeting.

4.9 Outreach Activities and Schedule

A community outreach schedule has been developed to inform the key stakeholders, affected parties, and other interested citizens about the Study and provide opportunities to comment. This schedule will be updated as necessary during the course of the Study, and any changes or updates to the outreach schedule will be posted and reflected on the Study webpage.

PUBLIC OUTREACH SCHEDULE		ANTICIPATED TIMEFRAME
Stakeholder Interviews	12 interviews	Nov 2015
Staff/Community Group meetings	7 meetings	TBD
Online outreach	Survey	Dec 2015-Jan 2016
Community Workshops	Community Meeting # 1	January, date TBD
	Community Meeting # 2	February, date TBD
MPO Board, CAC/TAC/BPAC Briefings (2 by consultant, 1 by MPO staff)	1st Briefing Series	January 2016
	2 nd Briefing Series	TBD
	3 rd Briefing Series	March 2016
City Commission Briefings		TBD

5.0 Conclusion

This Community Outreach Plan describes the strategies that have been identified to engage the community for the development of this plan. This is not to suggest, however, that it is a static document that is written and set aside. Rather, this Community Outreach Plan is a living and dynamic document that will be updated as required throughout the course of the development of the plan.

Appendix B

Stakeholder interviews and online questionnaire



Question 1: Vision

“Should go through Brooksville since east/west connector is going to happen, it should go through town”

Tourist development

Economic development – cafes, small businesses

Reflection of Brooksville – showcase, history

Connect to downtown, to parks

Community – local and introducing others to it

Question 2: Concerns

Lighting	2
Safety	8
Maintenance	3
Security & Security	8
Intersections	4
Truck traffic	2
Cheapest alignment will be chosen	2
Businesses won't coordinate	2
Visitors won't experience Brooksville	1
Crime	2
Crossing US41	2
Won't connect activities	4
Cheapest alignment will be chosen	1
Uptown connection	3
Trash	2

Question 3: Access

Activities	1
Downtown	15
Heritage	2
Historic Neighborhood	1
Museum	2
Parks	16
Recreation	1
Residential Neighborhoods	2

Question 3: Access, continued

School	2
Shopping/Entertainment	5
Trail spurs	2

Question 4: Benefits

Improved mobility	5	
Improved traffic flow	4	
Improved tourism and economic development	10	
Improved/new land uses, including redevelopment	6	
Improved/new pedestrian and bicycle facilities	11	
Other	4	Urban trails through established communities are the most economically feasible development tool available, economic benefit, foot traffic downtown, get out and move!- Health Benefit

Question 5: Amenities

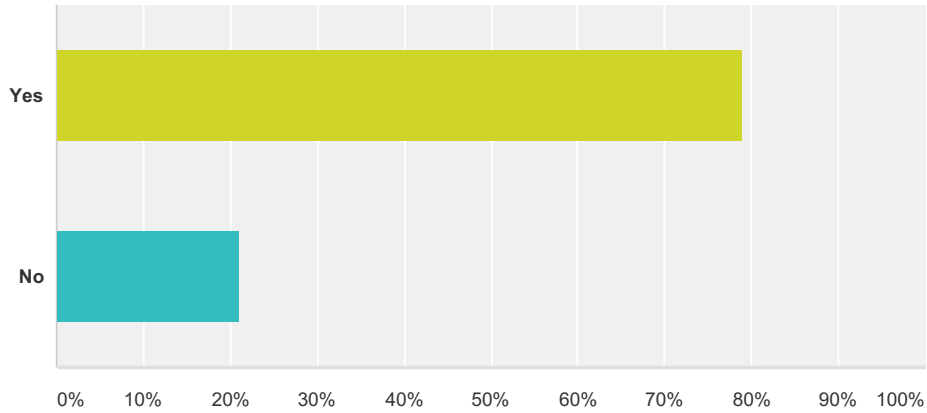
Access management	2	
branding	4	
Historic markers	3	
Interpretive information	5	
major trailhead	4	
minor trailhead	5	
rest areas along the corridor	6	
Wayfinding signage	7	
Other	17	Bike parking – downtown, secure
		Bike services/repair
		Camping
		Chilled water
		Commercial along trail
		Education
		Enforcement
		local identity
		Maintenance
		Memorial- veterans
		Restaurants

Question 5: Amenities, continued

Other		Security for neighbors
		Shade
		Shelters
		Theme: architectural continuity
		'Lightening retreats'
		Rest areas/shade, water, scenic

Q1 Do you currently use the trail?

Answered: 38 Skipped: 0



Answer Choices	Responses
Yes	78.95% 30
No	21.05% 8
Total	38

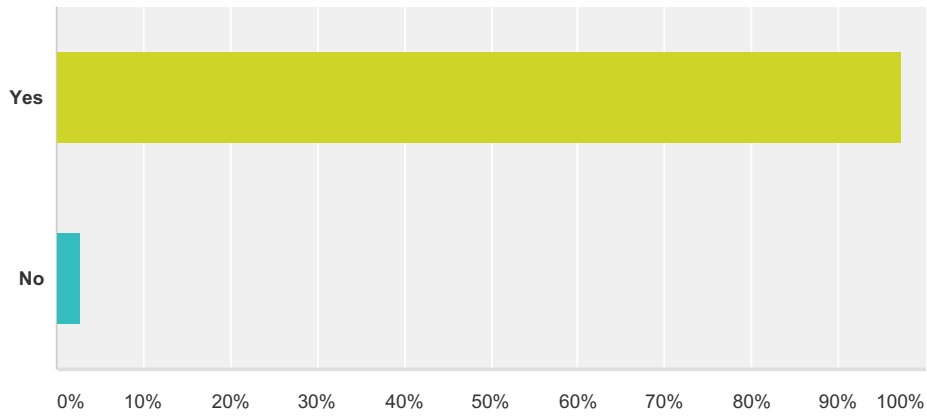
#	If yes, why? (Recreation? Transportation? Other?)	Date
1	Recreation	2/2/2016 7:50 AM
2	Recreation	1/30/2016 7:36 AM
3	recreation	1/26/2016 8:57 AM
4	recreation - walk	1/26/2016 8:55 AM
5	recreation	1/26/2016 8:54 AM
6	recreation	1/26/2016 8:53 AM
7	recreation	1/26/2016 8:51 AM
8	recreation	1/26/2016 8:50 AM
9	bike, running	1/26/2016 8:49 AM
10	recreation	1/26/2016 8:47 AM
11	walk, bike, litter walk	1/26/2016 8:45 AM
12	recreation and exercise	1/26/2016 8:40 AM
13	walking	1/26/2016 8:37 AM
14	While attending Brooksville events	1/23/2016 10:35 AM
15	Recreation	1/22/2016 10:53 PM
16	Cycling, running, skating with my family. Mostly recreational.	1/22/2016 8:14 AM
17	recreation/transportation	1/21/2016 10:53 PM
18	Biking. Commute to work	1/21/2016 9:15 PM
19	Not convenient to where I currently live.	1/21/2016 4:06 PM
20	recreation	1/21/2016 2:24 PM

GNT/Brooksville Alternatives Survey

21	Group cycling events	1/21/2016 2:04 PM
22	exercise, recreation	1/21/2016 11:24 AM
23	Recreation and travel to Brooksville restaurants.	1/21/2016 11:21 AM
24	Recreation, road cycling. The trail is a nice addition to a road ride but is not long enough for a trail only ride. An extension from sun coast would be great allowing cyclists from suncoast to venture into brooksville without cycling on open roads.	1/21/2016 11:17 AM
25	Fitness	1/21/2016 10:45 AM
26	Cycling	1/21/2016 10:45 AM
27	Recreation	1/21/2016 10:06 AM
28	Recreation	1/20/2016 3:31 PM
29	Recreation & fitness	1/20/2016 11:50 AM

Q2 Will you use the trail when it is complete?

Answered: 38 Skipped: 0



Answer Choices	Responses
Yes	97.37% 37
No	2.63% 1
Total	38

#	If yes, why? (Recreation? Transportation? Other?)	Date
1	Recreation, and "transportation" to the Withlacoochee Trail as well as to the Suncoast Trail.	2/2/2016 7:50 AM
2	Pleasure riding	1/30/2016 7:36 AM
3	Recreation	1/27/2016 9:17 AM
4	recreation	1/26/2016 8:57 AM
5	recreation - walk/bike	1/26/2016 8:55 AM
6	recreation	1/26/2016 8:54 AM
7	recreation	1/26/2016 8:53 AM
8	recreation	1/26/2016 8:51 AM
9	recreation	1/26/2016 8:50 AM
10	recreation, bike, running	1/26/2016 8:49 AM
11	recreation	1/26/2016 8:47 AM
12	recreation	1/26/2016 8:45 AM
13	recreation	1/26/2016 8:43 AM
14	recreation	1/26/2016 8:42 AM
15	recreation, exercise and peace of mind	1/26/2016 8:40 AM
16	recreation, walking	1/26/2016 8:37 AM
17	Recreation.	1/25/2016 12:11 PM
18	Recreation, historical connections	1/25/2016 10:39 AM
19	Leisure	1/23/2016 10:35 AM

GNT/Brooksville Alternatives Survey

20	Recreation	1/23/2016 10:02 AM
21	Both	1/22/2016 10:53 PM
22	Recreation	1/22/2016 8:14 AM
23	recreation/transportation	1/21/2016 10:53 PM
24	Recreation and transportation	1/21/2016 9:15 PM
25	Recreation. Moving to Brooksville.	1/21/2016 4:06 PM
26	Rec	1/21/2016 3:24 PM
27	recreation -- plus casual transportation (weekend and evening connection)	1/21/2016 2:24 PM
28	I organize a lot of group cycling events and this will provide a safer passage between the Suncoast and Withlacoochee trails.	1/21/2016 2:04 PM
29	exercise, recreation	1/21/2016 11:24 AM
30	Quick access to Silver Lake Recreation Area, the Withlacoochee State Trail, Croom Off-Road Bicycle Trails, Malie Kaylas and other nearby eateries. Access to Tom Varn Park needs to include provision for dogs on a leash on walking paths.	1/21/2016 11:21 AM
31	Recreation	1/21/2016 11:17 AM
32	Fitness	1/21/2016 10:45 AM
33	Cycle and commute	1/21/2016 10:45 AM
34	Recreation	1/21/2016 10:06 AM
35	Recreation	1/20/2016 3:31 PM
36	Recreation & fitness	1/20/2016 11:50 AM
37	Recreation	1/20/2016 10:24 AM

GNT/Brooksville Alternatives Survey

Q3 What are your top two goals for the trail when it is finished?

Answered: 35 Skipped: 3

#	Responses	Date
1	1. To provide a safe way to get through Greater Brooksville. 2. To attract cyclists and hikers to the community.	2/2/2016 7:50 AM
2	Be part of a much larger grid connecting St. Pete to the Atlantic.	1/30/2016 7:36 AM
3	Safety and attract visitors	1/27/2016 9:17 AM
4	connect park to uptown through scenic Brooksville	1/26/2016 8:57 AM
5	people enjoy Brooksville and hernando county	1/26/2016 8:55 AM
6	safety, beauty	1/26/2016 8:54 AM
7	safety	1/26/2016 8:53 AM
8	ease of use, maybe some scenic/economic	1/26/2016 8:51 AM
9	safe, fun	1/26/2016 8:50 AM
10	utilize twice weekly	1/26/2016 8:49 AM
11	extension to connect other public trail systems	1/26/2016 8:47 AM
12	encourage business in the surrounding areas (restaurants, B&Bs, shops, etc.)	1/26/2016 8:45 AM
13	safety, interesting	1/26/2016 8:43 AM
14	connecting the ? and the community	1/26/2016 8:42 AM
15	locals & visitor friendly safety - family friendly	1/26/2016 8:37 AM
16	Safety and beauty.	1/25/2016 12:11 PM
17	That it will showcase the city of Brooksville and the beauty of eastern Hernando County	1/25/2016 10:39 AM
18	Showcase downtown Brooksville	1/25/2016 10:19 AM
19	Help promote it for local tourism	1/23/2016 10:35 AM
20	Connect in Downtown Brooksville	1/23/2016 10:02 AM
21	To safely ride longer distance in hernando county without having to be on the road as much	1/22/2016 10:53 PM
22	1. Safety 2. Good location, to be along plenty of green areas. Or to a park that has bathroom facilities.	1/22/2016 8:14 AM
23	1. people of all ages using the trail 2. increasing bicycle tourism to Brooksville	1/21/2016 10:53 PM
24	Exercise and the ability to ride my bike to and from work more often	1/21/2016 9:15 PM
25	Getting people into Downtown Brooksville and learning about the city. Attending events downtown. People getting more active and healthy	1/21/2016 4:06 PM
26	1. connection of the GNT as part of Coast to Coast Trail; 2. trail that I can ride for short-trips/outings and for a longer-trips for being a "FL cycling tourist" (=	1/21/2016 2:24 PM
27	1) Ability for riders to safely ride throughout the connectors in large groups (5 - 15 riders) without posing danger to single riders, walkers, or other trail users.	1/21/2016 2:04 PM
28	connection to other trails	1/21/2016 11:24 AM
29	Linking Orlando to Tarpon Springs; linking bicycle trips from home to recreation areas Brooksville.	1/21/2016 11:21 AM
30	Safe place to ride Regularly maintained. Clearing debris, filling any holes, etc.	1/21/2016 11:17 AM
31	Connecting the suncoast trail to others	1/21/2016 10:45 AM
32	To get finish in a timely manner	1/21/2016 10:45 AM
33	Provide a safe route for cyclist/runners to enjoy the outdoors. Connect to existing trails for coast to coast trail	1/20/2016 3:31 PM

GNT/Brooksville Alternatives Survey

34	Promotion of its use in Brooksville with spurs branching to various points of interest, and To ride the trail often, lol	1/20/2016 11:50 AM
35	1. Convenient use for locals and out of towners to access local business, activities and attractions 2. Family recreational use	1/20/2016 10:24 AM

GNT/Brooksville Alternatives Survey

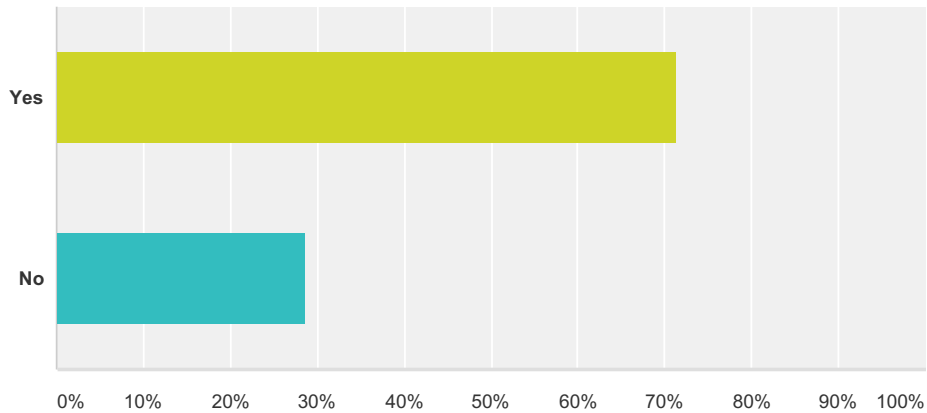
Q4 Name two things you'd like to see the trail connect to.

Answered: 30 Skipped: 8

#	Responses	Date
1	1. The city's center (Brooksville, that is)	2/2/2016 7:50 AM
2	No preference for local connections other than to keep it in the city as opposed to the bypass.	1/30/2016 7:36 AM
3	Downtown and restaurants	1/27/2016 9:17 AM
4	park/uptown	1/26/2016 8:57 AM
5	Brooksville, local business	1/26/2016 8:55 AM
6	park, uptown	1/26/2016 8:54 AM
7	park, scenic	1/26/2016 8:50 AM
8	Hendricks Ave	1/26/2016 8:49 AM
9	access to other public areas, parks that exist	1/26/2016 8:47 AM
10	downtown, main st	1/26/2016 8:43 AM
11	suncoast and downtown	1/26/2016 8:42 AM
12	connection to the Withlacoochee trail connection to the suncoast trail	1/26/2016 8:40 AM
13	Uptown Brooksville businesses Parks - Tom Varn, Hernando Park	1/26/2016 8:37 AM
14	Downtown Brooksville & Fort Dade Ave canopy road	1/25/2016 10:39 AM
15	Fort Dade Avenue, Historic Courthouse	1/25/2016 10:19 AM
16	Other trails	1/23/2016 10:35 AM
17	Chinsegut, Downtown Brooksville	1/23/2016 10:02 AM
18	withalacoocche forest and restaurants	1/22/2016 10:53 PM
19	Green areas	1/22/2016 8:14 AM
20	Suncoast Trail and Withlacoochee Trail	1/21/2016 10:53 PM
21	Withacochee rails to trails. And down town	1/21/2016 9:15 PM
22	The Downtown area would show people a lot of the beauty in Brooksville with the turn of the century houses and the cobblestone streets. I would like the trail to have connections that will show the history and culture of Brooksville. Connecting the "new " Brooksville (retail district) to the old time charm of Downtown	1/21/2016 4:06 PM
23	Solid Ground	1/21/2016 3:24 PM
24	1. other recreational areas across Florida & 2. expanded trail system in the State	1/21/2016 2:24 PM
25	Local business that can add value to the trail; bike shops/bike rentals, stores, and possibly historic sites for out of town participants.	1/21/2016 2:04 PM
26	Downtown Brooksville commercial restaurants and shops; Silver Lake Recreation Area.	1/21/2016 11:21 AM
27	Anything that doesn't require cyclist's to pay money to park!!!!	1/21/2016 10:45 AM
28	Suncoast and Withlacoochee trails	1/20/2016 3:31 PM
29	Tom Varn Park & Downtown to west end of existing trailhead.	1/20/2016 11:50 AM
30	1. Uptown City of Brooksville 2. City/County Parks wherever possible	1/20/2016 10:24 AM

Q5 Do you have concerns about the trail?

Answered: 35 Skipped: 3



Answer Choices	Responses
Yes	71.43% 25
No	28.57% 10
Total	35

#	If yes, what are your concerns?	Date
1	1. conflicts with motorized vehicles at entrances/exits at commercial establishments 2. conflicts with motorized vehicles at highway crossings	2/2/2016 7:50 AM
2	Safety in South Brooksville	1/27/2016 9:17 AM
3	should avoid areas that are not friendly to our future trail guests	1/26/2016 8:57 AM
4	depends on the route	1/26/2016 8:54 AM
5	Safety- Lamar, Hendricks are in bad neighborhoods	1/26/2016 8:53 AM
6	safety, ease of use	1/26/2016 8:51 AM
7	funding	1/26/2016 8:47 AM
8	Currently no amenities/food are offered along the trail and no businesses open; cleanliness and safety along east portion	1/26/2016 8:45 AM
9	bypassing historic Brooksville and people not knowing what they are missing	1/26/2016 8:40 AM
10	Safety - lights - rest/way stops Not passing through secluded areas or areas of concern in town (Hale- Lamar-Benton)	1/26/2016 8:37 AM
11	Safety.	1/25/2016 12:11 PM
12	crime, drugs, prostitution in parts of trail. This is a real issue! Ask all who use it now, do they park at Russell Park or do they park at Jasmine Rd?	1/25/2016 10:39 AM
13	That the route help downtown Brooksville by encouraging visitors	1/25/2016 10:19 AM
14	Safety when traveled, need repairs and upkeep for cleanliness	1/23/2016 10:35 AM
15	Please do not put the trail around the ghetto, i will be terrified to use it and have my bike stolen or being raped.	1/22/2016 8:14 AM
16	The county / government will not do their best to make the trail excellent.	1/21/2016 10:53 PM
17	Certain neighborhoods it goes thru	1/21/2016 9:15 PM
18	Lighting and safety. In Leesburg, there were parts of the trail that are unlit. They also aren't patrolled at all. Security on bikes on the trail would be nice.	1/21/2016 4:06 PM

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19	very excited about the trail and see as an opportunity for me, my friends, our city and our county	1/21/2016 2:24 PM
20	Ramp design that may not be safe for cyclists	1/21/2016 2:04 PM
21	I am concerned that any further delays in routing the trail through Brooksville will hold up completion of the overall project.	1/21/2016 11:21 AM
22	Depending on final route I would be concerned about drivers. I can only imagine that this extension will be more like the multi-use lane along state road 50 and along some parts near mariner blvd. the high concentration of businesses and driveways can make for a dangerous mix. While it would be nice to have the trail go through a busy part of downtown to allow users access to businesses it could also deter use of trail by recreation users if they feel it's not worth the risk.	1/21/2016 11:17 AM
23	Safety while on the trail	1/21/2016 10:45 AM
24	Parking costs.	1/21/2016 10:45 AM
25	Maintenance.	1/20/2016 11:50 AM
26	I would like to be sure that trail entry points have appropriate parking, but do not want parking lots to interfere with the natural beauty of the trail or other environmental aesthetics.	1/20/2016 10:24 AM

GNT/Brooksville Alternatives Survey

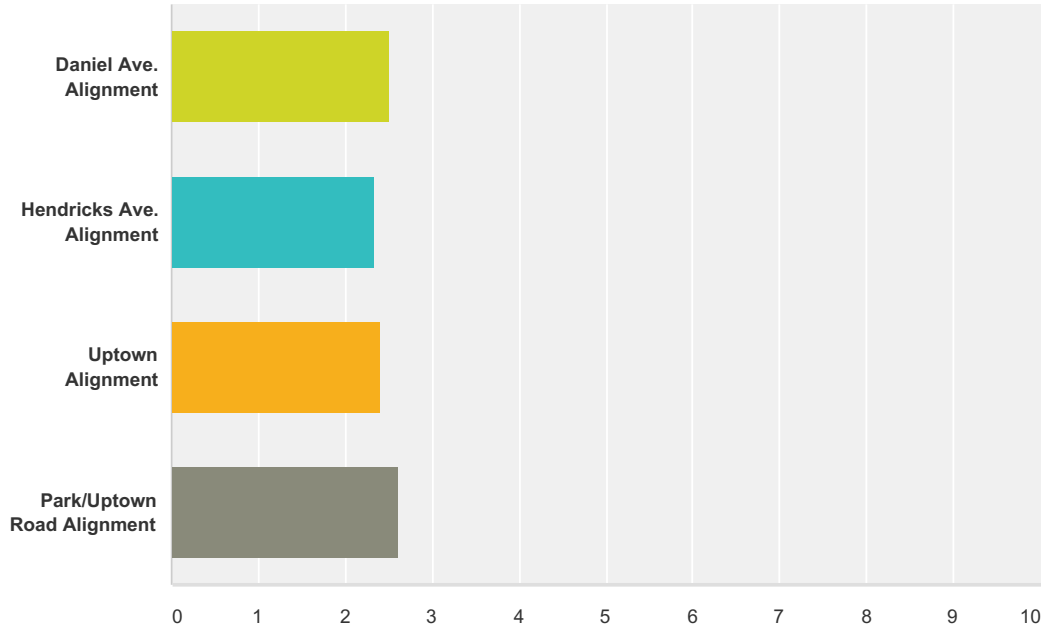
Q6 What amenities would you like to see along the trail?

Answered: 32 Skipped: 6

#	Responses	Date
1	Water and bathrooms are a preference but probably too costly. Sometimes less is better.	1/30/2016 7:36 AM
2	Shelter from Sun and Rain Benches Drinking fountains	1/27/2016 9:17 AM
3	food, refreshments, overnight stay	1/26/2016 8:57 AM
4	water, benches, restrooms	1/26/2016 8:55 AM
5	water,shade, signs	1/26/2016 8:54 AM
6	water, restrooms, benches	1/26/2016 8:51 AM
7	camping, food options	1/26/2016 8:50 AM
8	rest areas - in safe areas	1/26/2016 8:47 AM
9	rest rooms, shopping, restaurants	1/26/2016 8:43 AM
10	bike racks, restrooms, rest/picnic areas	1/26/2016 8:42 AM
11	Informational signage about Brooksville and herando county	1/26/2016 8:40 AM
12	rest stops; scenic stops for photos	1/26/2016 8:37 AM
13	Water,restrooms,benches for resting and garbage collection.	1/25/2016 12:11 PM
14	Sitting benches & historic plaques showcasing the historic localities along the old railroad line	1/25/2016 10:39 AM
15	Several rest stop facilities and informational signage	1/23/2016 10:35 AM
16	Water stations	1/23/2016 10:02 AM
17	Occasional bench and water source	1/22/2016 10:53 PM
18	1. Water 2. Bathrooms 3. Place to rest or tables to do a picnic.	1/22/2016 8:14 AM
19	good signage, historic markers/information, places to camp for those that are cycling across the state.	1/21/2016 10:53 PM
20	May be water access at the park	1/21/2016 9:15 PM
21	Fitness challenge stops and drinking fountains.	1/21/2016 4:06 PM
22	Water	1/21/2016 3:24 PM
23	trailhead facilities, passive public "green space" and some retail shops and restaurants	1/21/2016 2:24 PM
24	Water, rest rooms	1/21/2016 2:04 PM
25	water, rest room	1/21/2016 11:24 AM
26	Mini rest stops with shaded seating at regular intervals along the route. Trail heads that show links to points of interest.	1/21/2016 11:21 AM
27	Water Restroom	1/21/2016 11:17 AM
28	Water	1/21/2016 10:45 AM
29	Free parking. If you charge menti park and offer no water, I will not pay nor use it.	1/21/2016 10:45 AM
30	Water / Benchs or rest area	1/20/2016 3:31 PM
31	Trailhead amenities, cold water, shelter areas, information kiosks, shade, etc.	1/20/2016 11:50 AM
32	Periodic Restroom Facilities, periodic park benches	1/20/2016 10:24 AM

Q7 Review the 4 proposed alignments found below this question. You will need to scroll down to review. Please rank them in order of preference, with 1 being your first choice and 4 being your last choice.

Answered: 38 Skipped: 0



	1st Choice	2nd Choice	3rd Choice	4th Choice	Total	Weighted Average
Daniel Ave. Alignment	32.43% 12	13.51% 5	24.32% 9	29.73% 11	37	2.51
Hendricks Ave. Alignment	28.57% 10	22.86% 8	34.29% 12	14.29% 5	35	2.34
Uptown Alignment	32.43% 12	24.32% 9	13.51% 5	29.73% 11	37	2.41
Park/Uptown Road Alignment	11.43% 4	40.00% 14	25.71% 9	22.86% 8	35	2.60

#	If there is another alignment you'd prefer please include it here:	Date
1	My assumption is the issues of the one way pairings and the trucks go through downtown is corrected. We need downtown for local traffic only.	1/30/2016 7:36 AM
2	combine uptown and daniel	1/26/2016 8:45 AM
3	combination of east portion of Uptown Ave plan and west section of Daniel Ave	1/26/2016 8:40 AM
4	Fort Dade Ave in Wiscon (SR-50 & Fort Dade Ave) up to historic Old Spring Hill atop hill were Lykes homestead and 3 historic cemeteries are located, then Eastward 4 miles on Fort Dade Ave, the original 1840's road from Bayport to Brooksville. Down one of the MOST SCENIC CANOPY ROADS IN FLORIDA! all the way up steep hill past Victorian houses to Main St and the historic Brooksville courthouse square. this is the obvious choice! I'm shocked it was not considered! Please drive it and you will see why it should be the chosen route!	1/25/2016 10:39 AM
5	Avoid the need to remove historical structures	1/23/2016 10:35 AM

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6	Continuation East of 98/50 toward Inverness connecting to Croom Road offroad trails.	1/21/2016 4:06 PM
7	This is not the time to further quibble about even more alignments. The fifth choice should only be the truck route, if no clear alternative stands out.	1/21/2016 11:21 AM
8	Use the Park alignment as shown in the first alignment below, connecting Daniel Avenue to Hale Avenue. Proceed north on Hale to Hendricks. Go east on Hendricks to Main Street and south on Main St. to the existing trailhead at Daniel Avenue.	1/20/2016 11:50 AM



Appendix C

Section Drawings





Coast to Coast/Good Neighbor Trail
 Brooksville Gap Alternatives
 Engineering Sections
 May, 2016

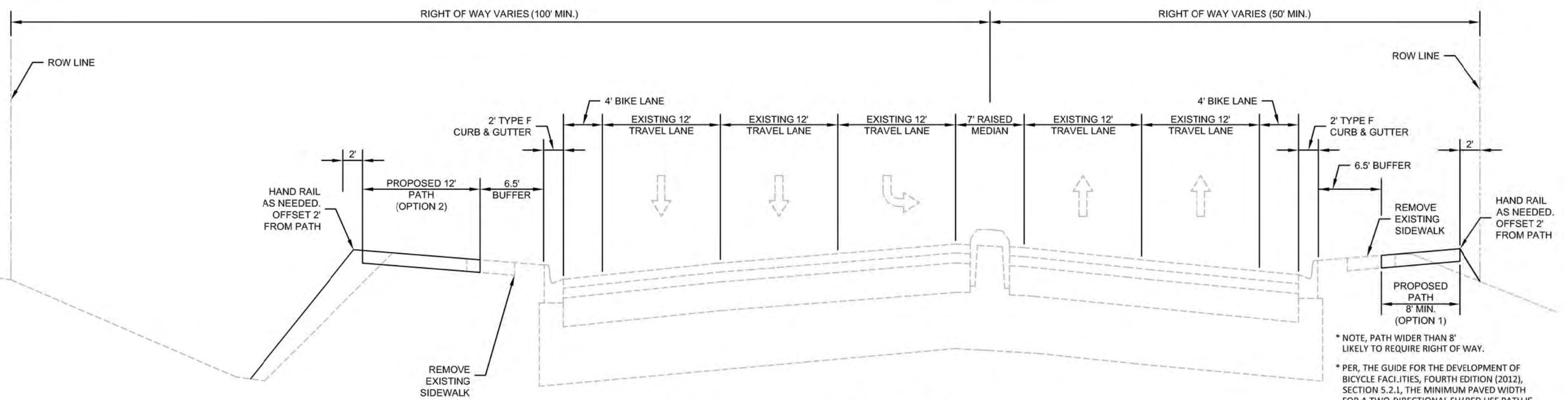
-  Trail Head
-  Parks



*Proposed Trail - Defined in 2040 LRTP

Path: J:\-Client 100 - 299\122084-06.15 Good Neighbor Trail\Maps\MXD\Engineering_Sections.mxd
 Data Sources: Hernando County GIS, Hernando-Citrus MPO,FDOT, USDA, SWFWMD, and FDEP

TYPICAL SECTION "A"



SR-50A (W. JEFFERSON STREET) EAST OF COBB
TYPICAL SECTION "A"

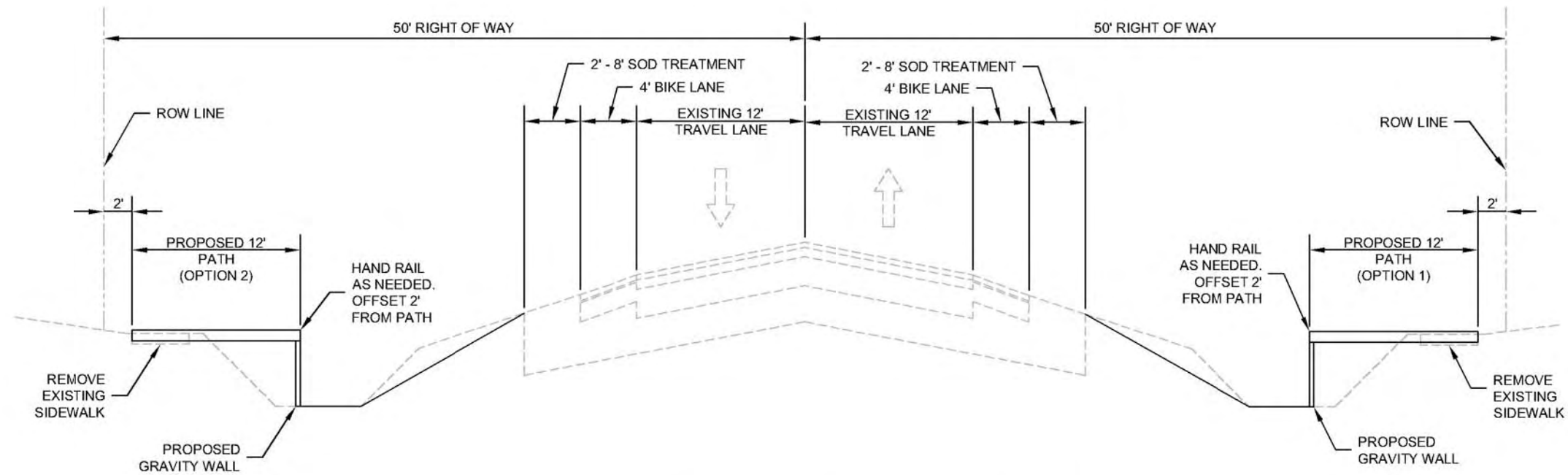
* NOTE, PATH WIDER THAN 8' LIKELY TO REQUIRE RIGHT OF WAY.
* PER, THE GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES, FOURTH EDITION (2012), SECTION 5.2.1, THE MINIMUM PAVED WIDTH FOR A TWO-DIRECTIONAL SHARED USE PATH IS 10FT (3.0M). IN RARE CIRCUMSTANCES, A REDUCED WIDTH OF 8FT. (2.4M) MAY BE USED.

TYPICAL SECTION "B"

N
Scale: N.T.S.



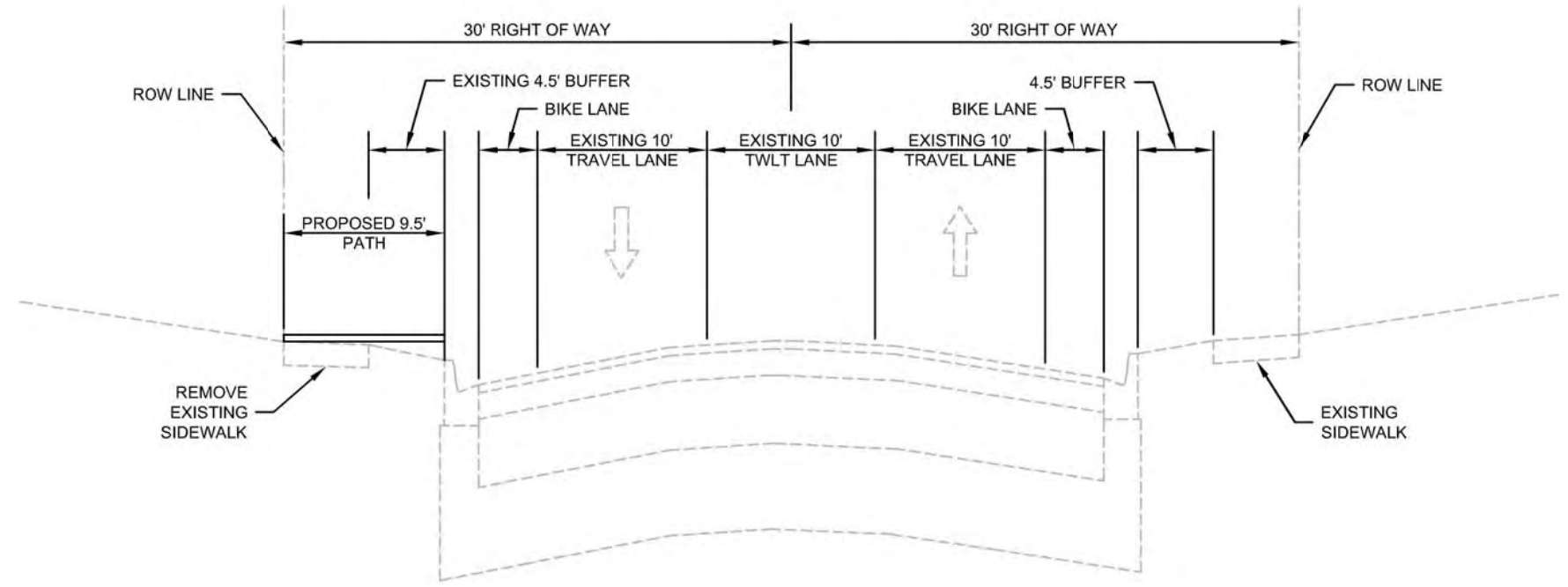
JEFFERSON STREET



SR-50A (W. JEFFERSON STREET) EAST OF COBB
TYPICAL SECTION "B"

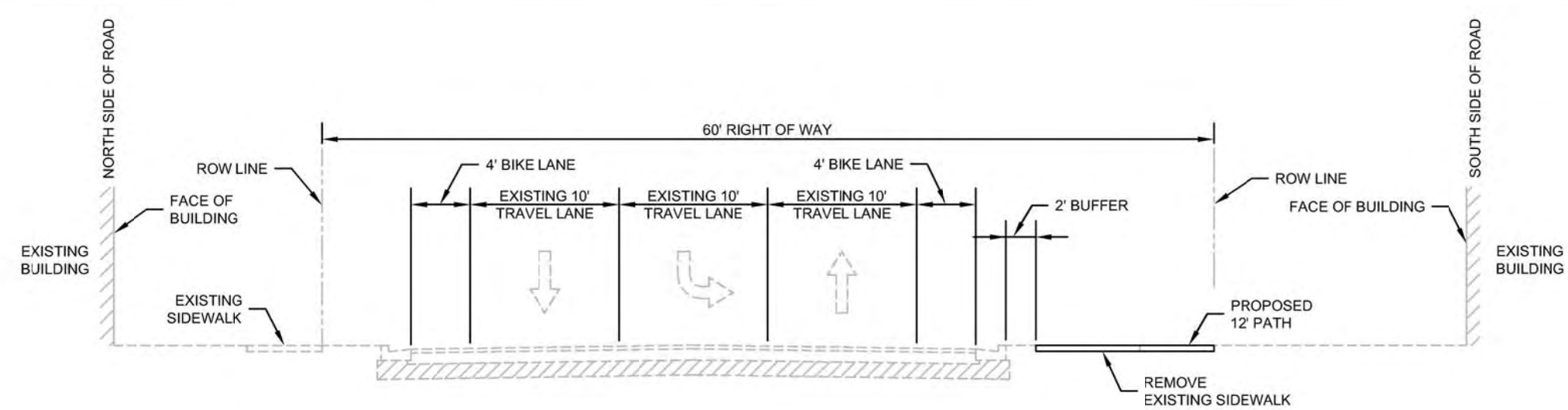
Scale: 1" = 10'

TYPICAL SECTION "C"



SR-50A (W. JEFFERSON STREET) EAST OF COBB
TYPICAL SECTION "C"

BASED ON ANTICIPATED IMPACTS
NEEDING RIGHT OF WAY, THIS
ALIGNMENT IS NOT PREFERRED.

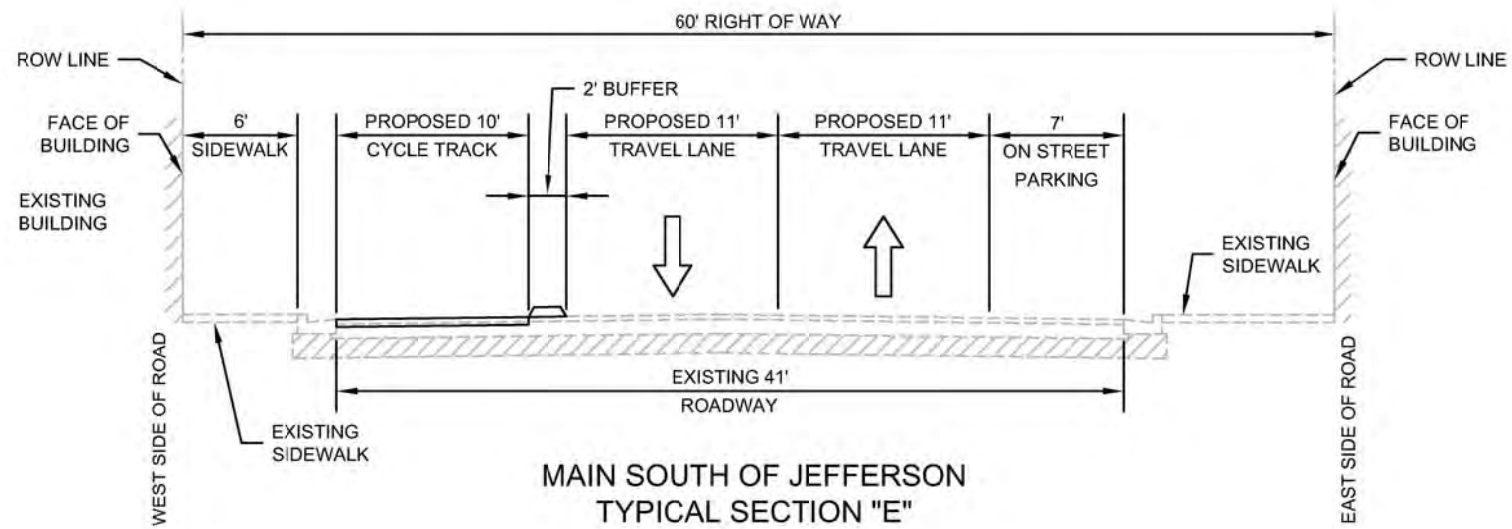


SR-50A (JEFFERSON STREET) DOWNTOWN
TYPICAL SECTION "D"

RIGHT OF WAY BASED ON
HERNANDO COUNTY PROPERTY
APPRAISERS OFFICE

BASED ON ANTICIPATED IMPACTS
NEEDING RIGHT OF WAY, THIS
ALIGNMENT IS NOT PREFERRED.

Scale: 1" = 10'



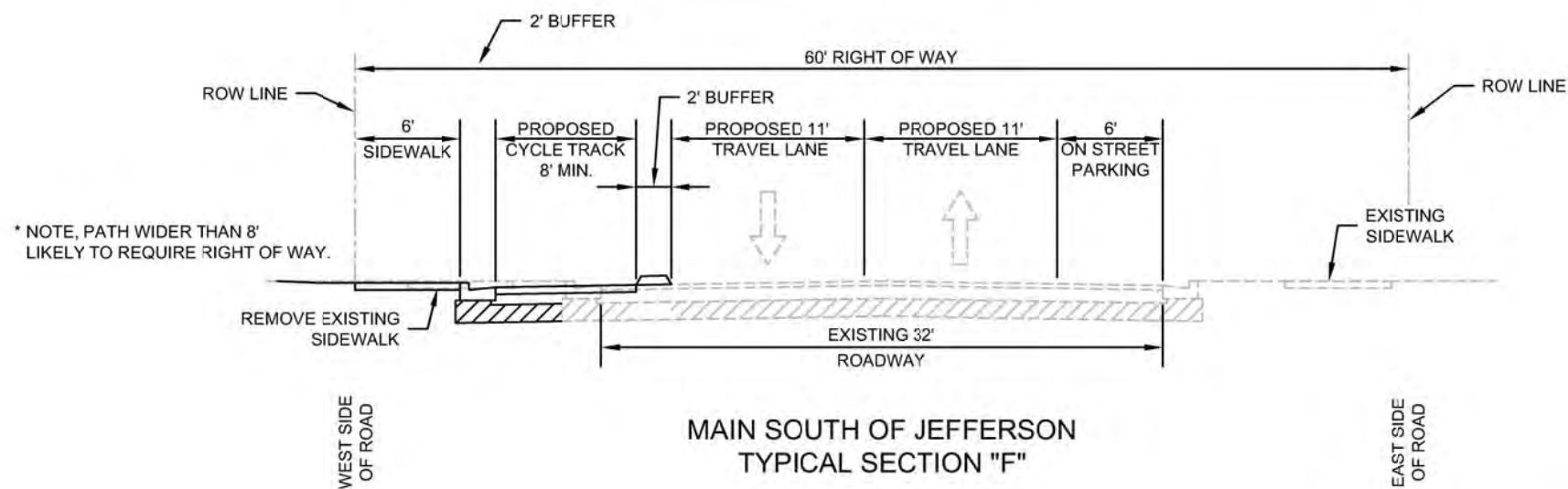
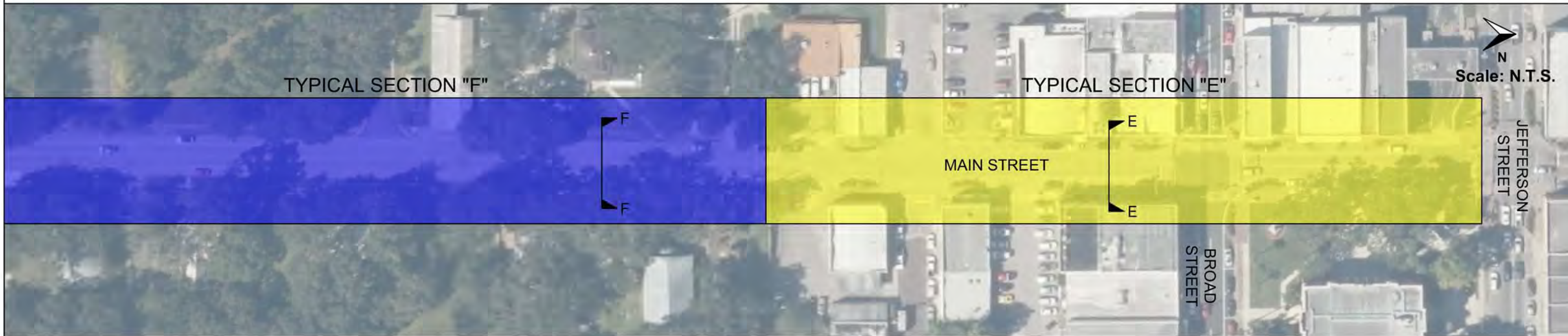
CYCLE TRACK EXAMPLE

RIGHT OF WAY BASED ON
HERNANDO COUNTY PROPERTY
APPRAISERS OFFICE

Scale: 1" = 10'

TYPICAL SECTION "F"

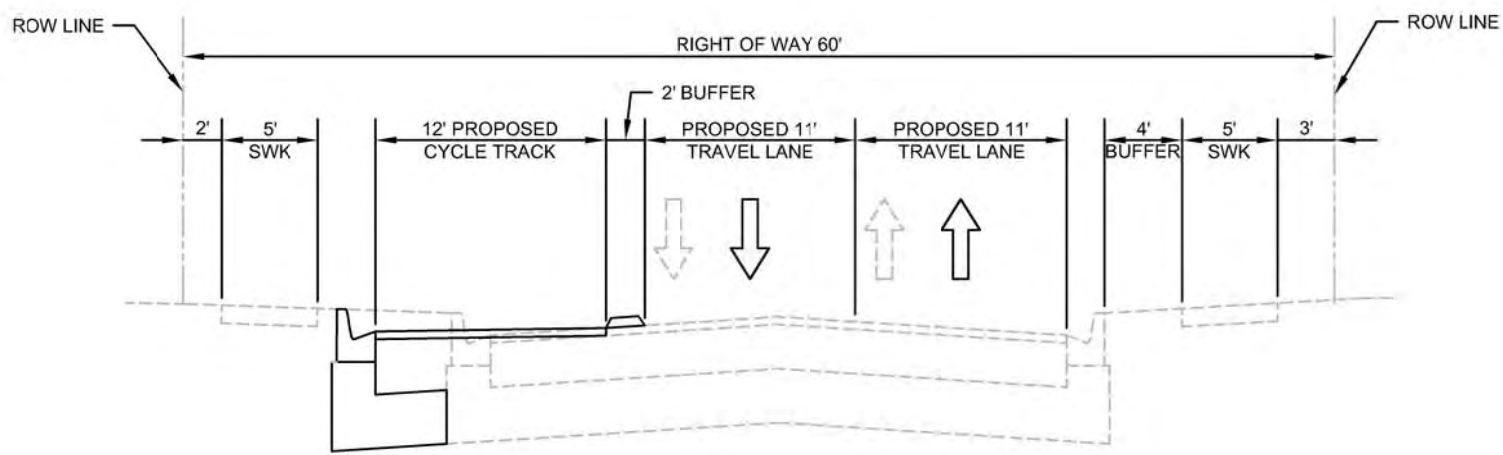
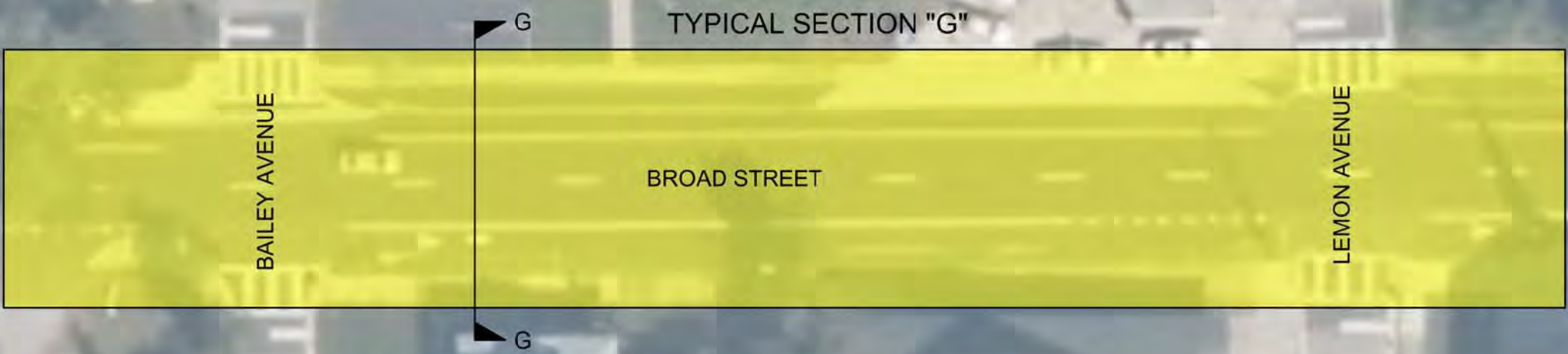
TYPICAL SECTION "E"



CYCLE TRACK EXAMPLE

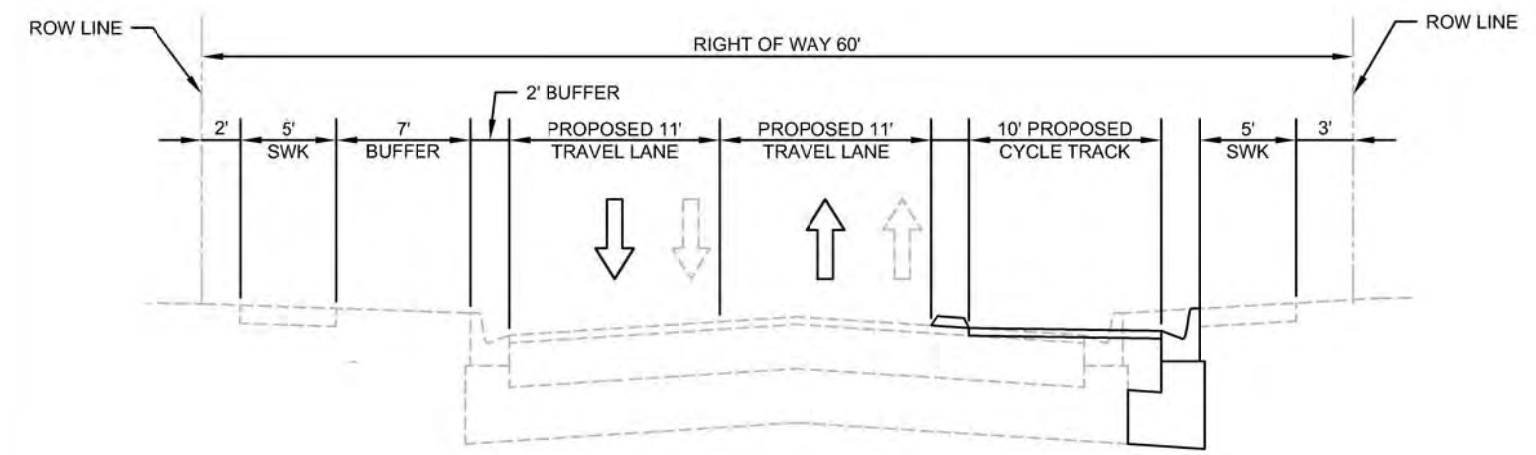
RIGHT OF WAY BASED ON
HERNANDO COUNTY PROPERTY
APPRAISERS OFFICE

Scale: 1" = 10'



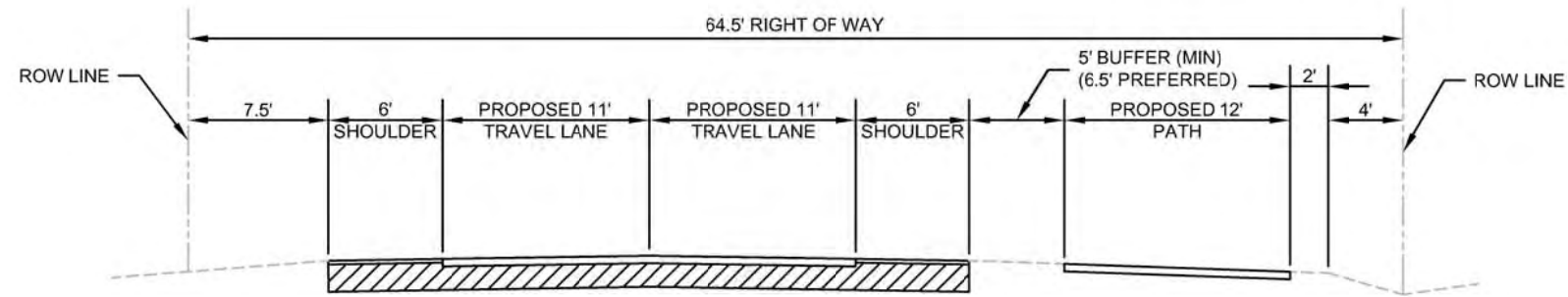
BROAD AVENUE
TYPICAL SECTION "G"
(NORTH SIDE OPTION)

* NOTE, THIS SECTION REPRESENTS THE MOST "CONSTRICTED" SECTION FROM BAILEY AVENUE TO MAIN STREET.



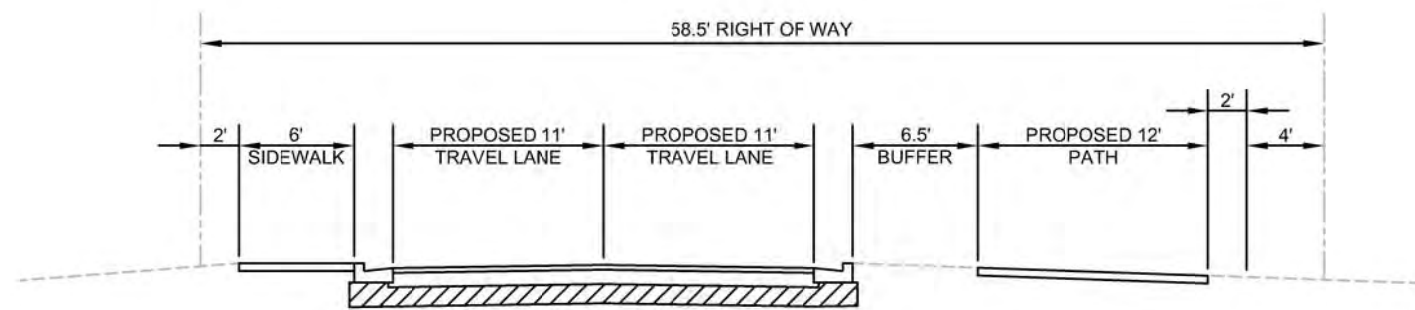
BROAD AVENUE
TYPICAL SECTION "G"
(SOUTH SIDE OPTION)

* NOTE, THIS SECTION REPRESENTS THE MOST "CONSTRICTED" SECTION FROM BAILEY AVENUE TO MAIN STREET.



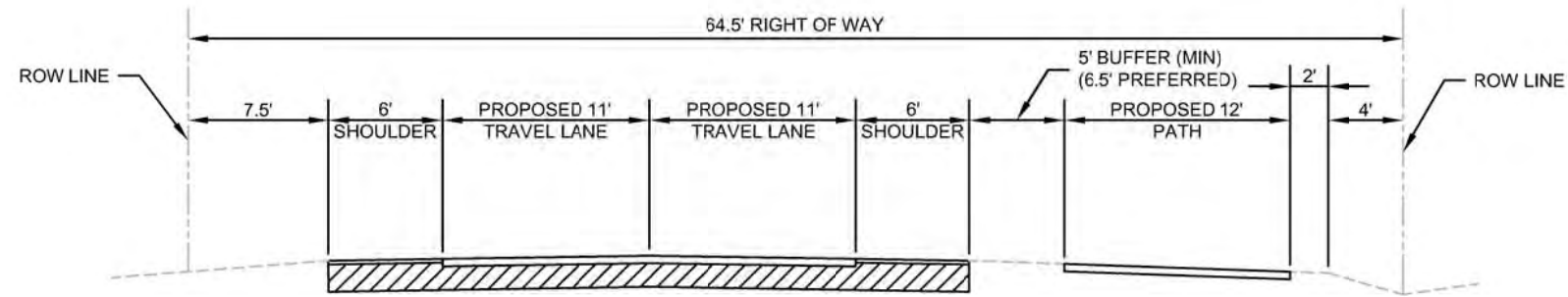
DANIEL AVENUE
TYPICAL SECTION (NO CURB AND GUTTER)

Scale: 1" = 10'



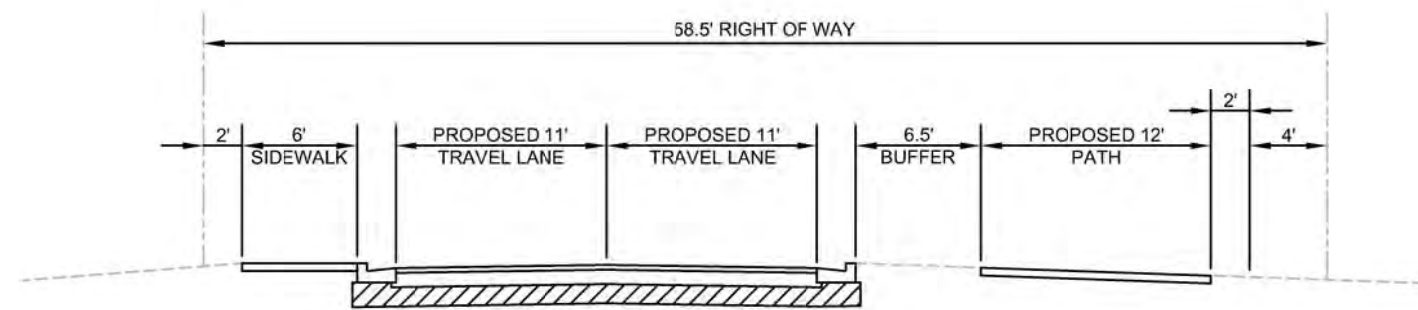
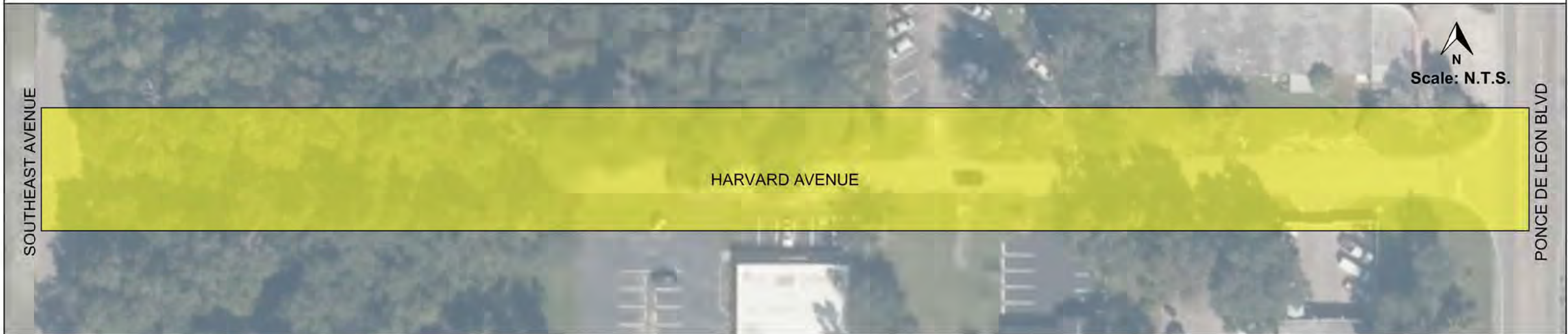
DANIEL AVENUE
TYPICAL SECTION (CURB AND GUTTER)

Scale: 1" = 10'



HARVARD AVENUE
TYPICAL SECTION (NO CURB AND GUTTER)

Scale: 1" = 10'

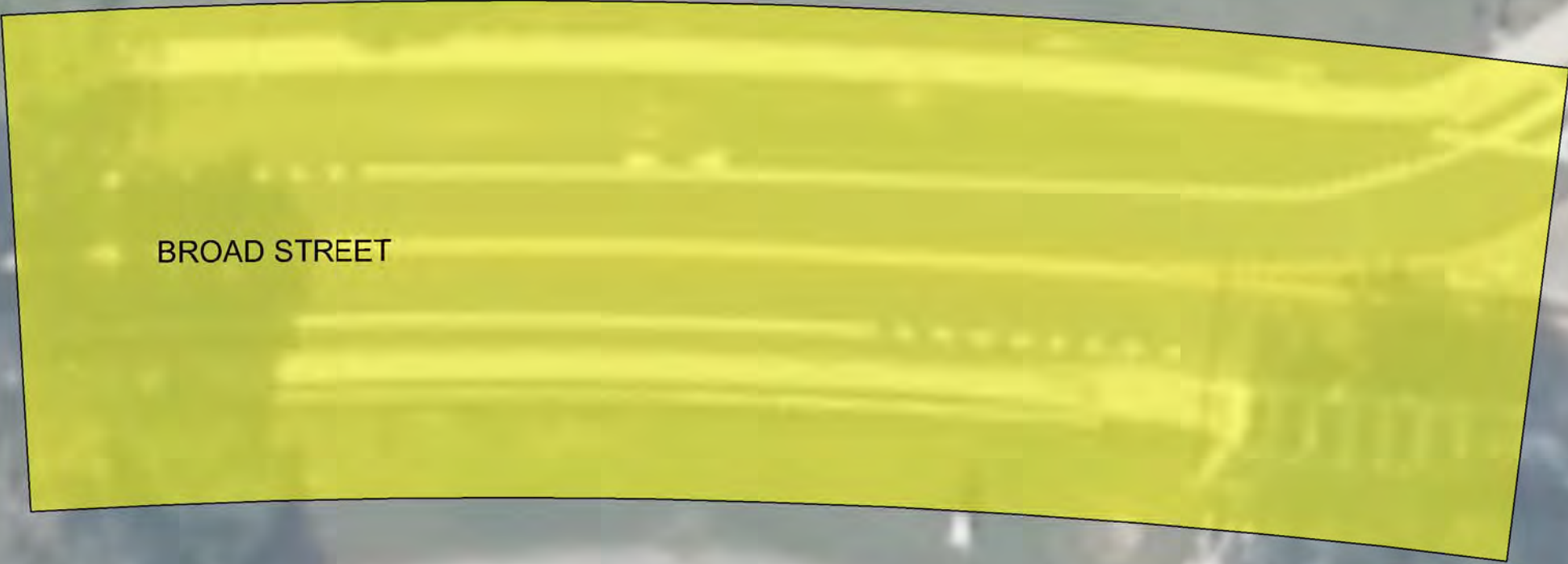


HARVARD AVENUE
TYPICAL SECTION (CURB AND GUTTER)

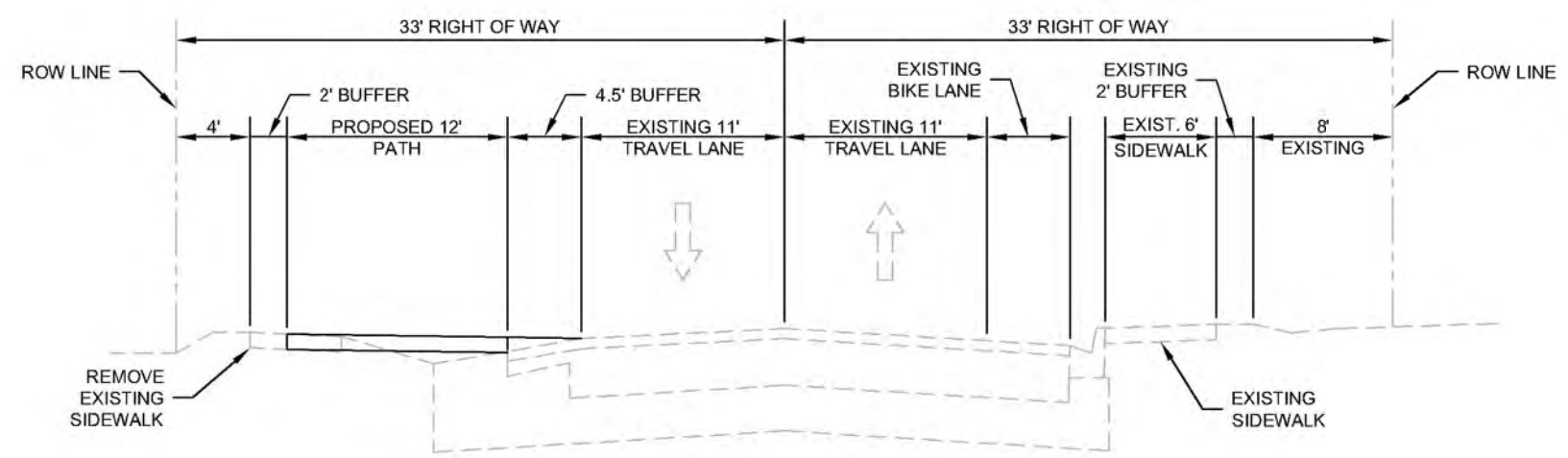
Scale: 1" = 10'

HARVARD STREET

MILDRED AVENUE



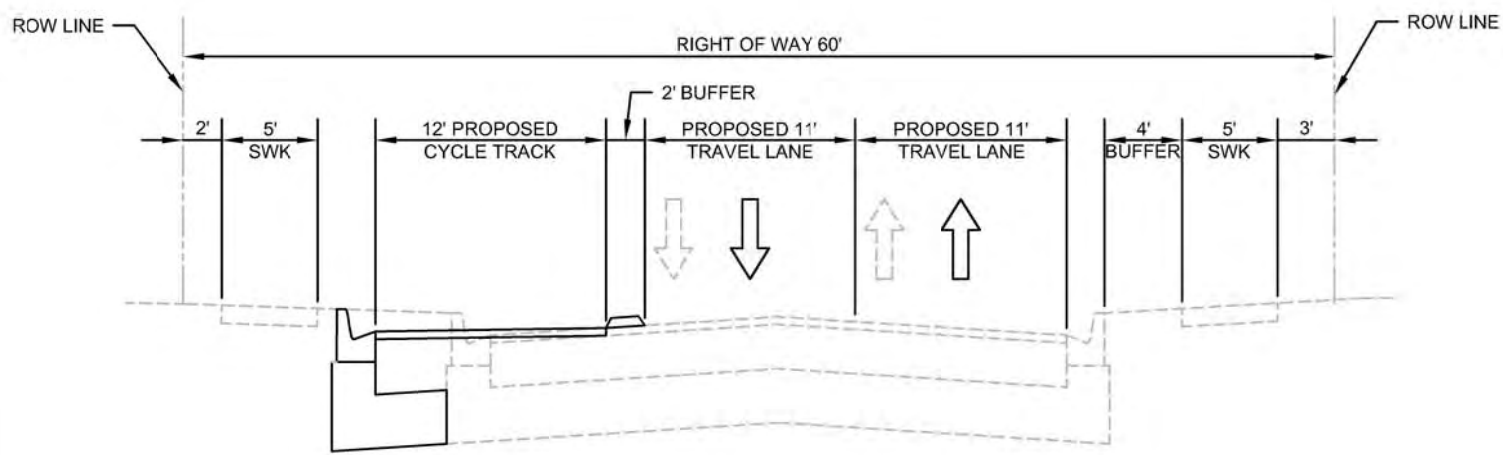
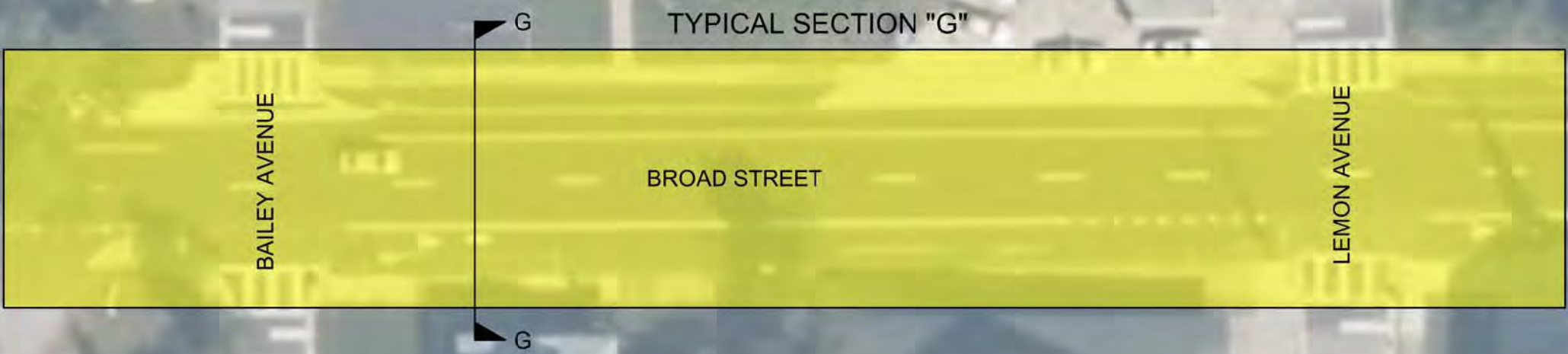
BROAD STREET



S. BROAD STREET WEST OF MILDRED AVENUE
TYPICAL SECTION

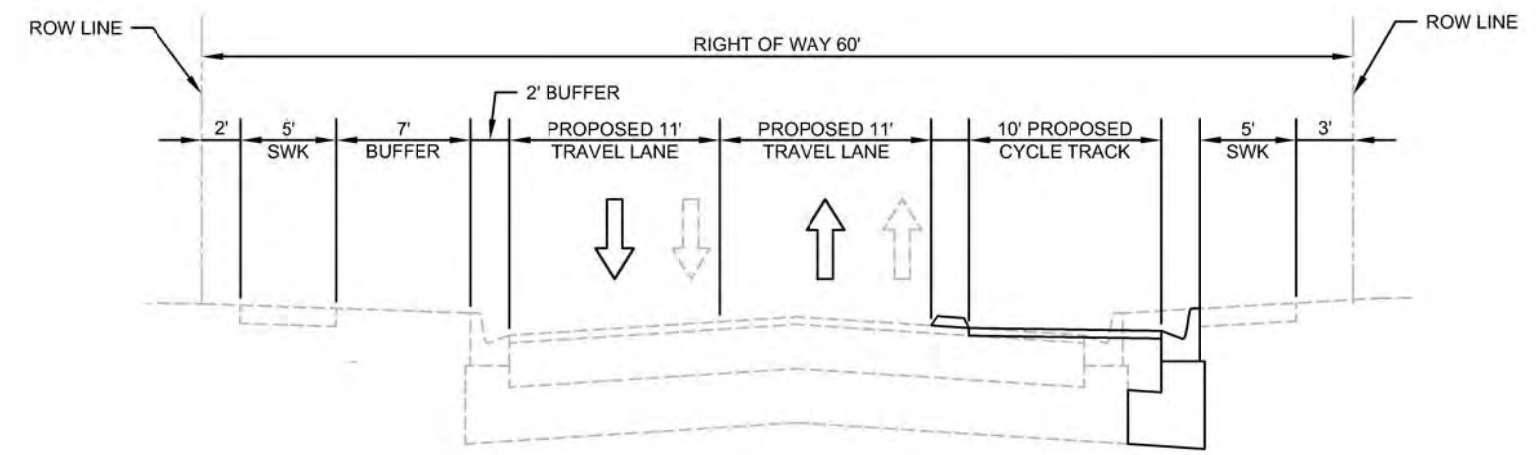
NOTE: ROW MAY NEED TO BE ACQUIRED.

Scale: 1" = 10'



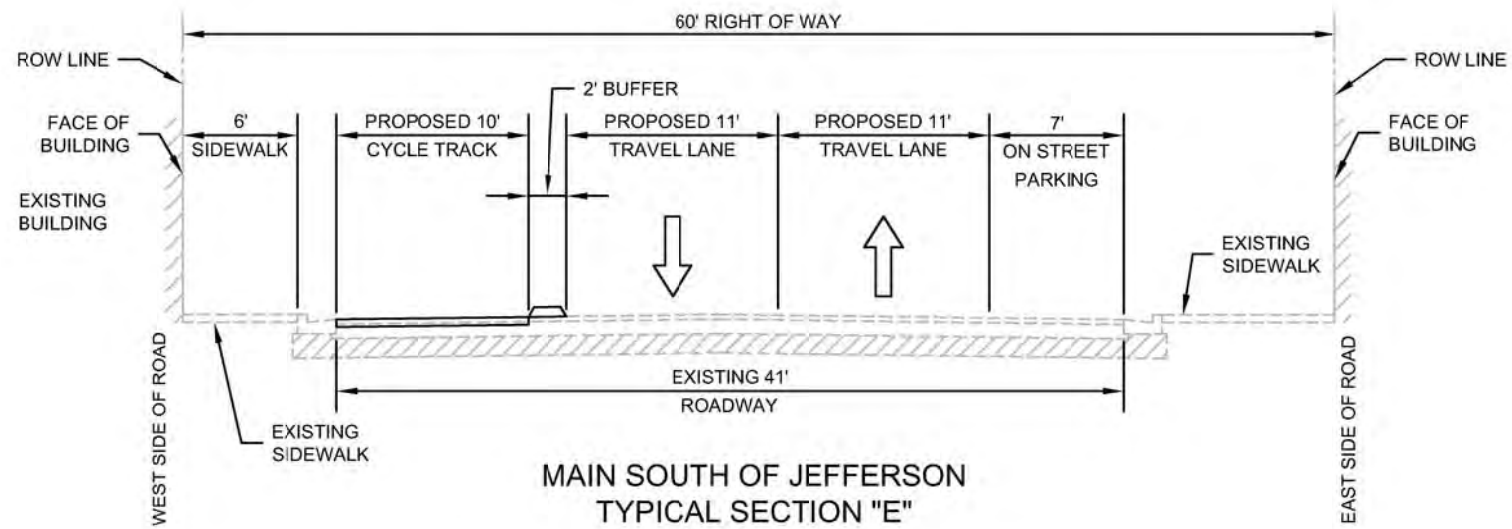
BROAD AVENUE
TYPICAL SECTION "G"
(NORTH SIDE OPTION)

* NOTE, THIS SECTION REPRESENTS THE MOST "CONSTRICTED" SECTION FROM BAILEY AVENUE TO MAIN STREET.



BROAD AVENUE
TYPICAL SECTION "G"
(SOUTH SIDE OPTION)

* NOTE, THIS SECTION REPRESENTS THE MOST "CONSTRICTED" SECTION FROM BAILEY AVENUE TO MAIN STREET.



CYCLE TRACK EXAMPLE

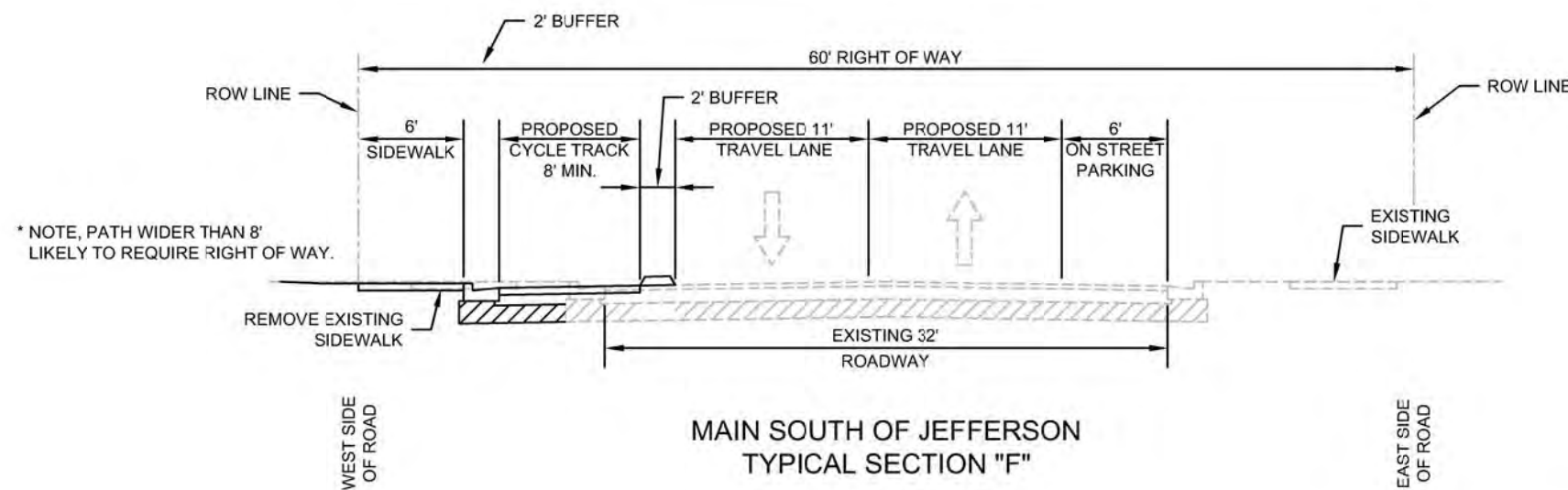
RIGHT OF WAY BASED ON
HERNANDO COUNTY PROPERTY
APPRAISERS OFFICE

Scale: 1" = 10'

TYPICAL SECTION "F"

TYPICAL SECTION "E"

Scale: N.T.S.



CYCLE TRACK EXAMPLE

RIGHT OF WAY BASED ON
HERNANDO COUNTY PROPERTY
APPRAISERS OFFICE

Scale: 1" = 10'

Appendix D

Environmental Review Technical Memorandum



M E M O R A N D U M

TO: W. T. Bowman, P.E., Tindale Oliver

FROM: Tori Kuba, Scheda Ecological Associates, Inc.

RE: **CORRIDOR ANALYSIS**
Good Neighbor Trail Extension
Hernando County, Florida
Scheda Project No. 003488.10.C

DATE: April 25, 2016; revised May 26, 2016

INTRODUCTION

As part of the development of the Florida Coast to Coast Trail, the Hernando/Citrus Metropolitan Planning Organization (MPO), in collaboration with the City of Brooksville and the Florida Department of Transportation (FDOT), is conducting a trail corridor feasibility study (Study) to identify a preferred alignment to connect the Suncoast Trail and the Good Neighbor Trail within the City of Brooksville. The goal of this project is to determine the preferred alignment to close the gap between the Suncoast terminus at Cobb Road and the Good Neighbor Trail terminus at Russell Street to create a statewide regional Coast-to-Coast Connector.

Scheda Ecological Associates, Inc. (Scheda) has completed a review of the four alternatives for the above referenced project. This project is located in Hernando County, Florida and falls within Sections 20, 21, and 22 of Township 22 South, Range 19 East (**Figure 1**). This memorandum presents the methods and results of data collection and field investigation for potential impacts to threatened and endangered species and wetlands associated with developing the preferred trail alternative. It also addresses how large trees, such as grand oaks, can be protected during construction and retained in the post-design condition.

METHODOLOGY

Readily available data sources were initially reviewed to determine if any protected species or their habitats occurred within or adjacent to the proposed alternatives. The primary GIS sources utilized included:

- 2010 Microsoft True Color Aerial;

- 2011 Southwest Florida Water Management District (SWFWMD) Florida Land Use, Cover and Forms Classification System (FLUCFCS);
- United States Fish and Wildlife Service (USFWS) National Wetland Inventory data (NWI, 2013);
- Florida Natural Areas Inventory (FNAI) element occurrence records and protected resources data;
- USFWS Listed Species Consultation Areas (CA);
- Florida Fish and Wildlife Conservation Commission (FWC) bald eagle nest sites, wading bird rookeries, wildlife observation database, protected species occurrence records, managed areas, and wildlife management areas; and
- National Resource Conservation Service (NRCS) Hernando County Soil Survey.

Following the in-house data collection effort, Scheda scientists conducted field surveys of the alternatives on March 10, 2016 to verify the GIS data previously obtained and to assess existing ecological conditions present at each site. Existing land uses were field verified by Scheda scientists and classified in accordance with FLUCFCS. Observations were recorded to characterize vegetative communities present, document the presence of wetland and surface waters within the alternatives, and evaluate the potential of each site to support protected wildlife species.

For tree preservation considerations, we researched city and county tree ordinances that cover the project area, and noted presence/absence of large trees along the trail alternatives during the field review. Subsequent to this effort, we investigated means and methods of preserving large trees in various design scenarios.

RESULTS

The following is a brief discussion of protected species that occur within close proximity to the project corridor based on database and literature research, USFWS CA's that overlap the project alignments, and/or have the potential to occur based upon existing habitat in the project area.

Federally listed faunal species potentially occurring within the alternative alignments include:

- wood stork (*Mycteria americana*) (FE),
- Florida scrub-jay (*Aphelocoma coerulescens*) (FT),
- red-cockaded woodpecker (*Picoides borealis*) (FE), and
- eastern indigo snake (*Drymarchon corais couperi*) (FT).

Potential state listed faunal species (not listed above) in the project area include:

- Florida mouse (*Podomys floridanus*) (SSC),
- gopher tortoise (*Gopherus polyphemus*) (ST),
- Florida pine snake (*Pituophis melanoleucus mugitus*) (SSC),
- gopher frog (*Lithobates capito*) (SSC),
- Sherman's fox squirrel (*Sciurus niger shermani*) (SSC),
- Scott's seaside sparrow (*Ammodramus maritimus peninsulae*) (SSC),
- Florida sandhill crane (*Grus canadensis pratensis*) (SSC),
- Florida burrowing owl (*Athene cunicularia floridana*) (SSC),
- southeastern American kestrel (*Falco sparverius paulus*) (ST),
- little blue heron (*Egretta caerulea*) (SSC),
- snowy egret (*Egretta thula*) (SSC),
- white ibis (*Eudocimus albus*) (SSC),
- limpkin (*Aramus guarauna*) (SSC),
- roseate spoonbill (*Platalea ajaja*) (SSC), and
- tricolored heron (*Egretta tricolor*) (SSC).

FE= Federally Endangered FT= Federally Threatened
SSC=Species of Special Concern ST=State Threatened

Potential Federally listed floral species in the project area include:

- britton's beargrass (*Nolina brittoniana*),
- brooksville bellflower (*Campanula robinsiae*), and
- Cooley's water-willow (*Justicia cooleyi*).

Potential state listed floral species in the project area include:

- brittle maidenhair fern (*Adiantum tenerum*),
- auricled spleenwort (*Asplenium auritum*),
- dwarf spleenwort (*Asplenium pumilum*),
- delicate spleenwort (*Asplenium verecundum*),
- hammock fern (*Blechnum occidentale* var. *minor*),
- sand dune spurge (*Chamaesyce cumulicola*),
- short-leaved rosemary (*Conradina brevifolia*),
- spiked crested coralroot (*Hexalectris spicata*),
- spreading pinweed (*Lechea divaricata*),

- tall twayblade (*Liparis nervosa*),
- lowland loosestrife (*Lythrum flagellare*),
- green adder's-mouth orchid (*Malaxis unifolia*),
- Florida spiny-pod (*Matelea floridana*),
- pigmypoies (*Monotropis reynoldsiae*),
- low peperomia (*Peperomis humilis*),
- widespread polypody (*Polypodium dispersum*),
- plume polypody (*Polypodium plumula*),
- swamp plume polypody (*Polypodium ptilodon*),
- Florida mountain-mint (*Pycnanthemum floridanum*),
- tall neottia (*Spiranthes elata*),
- broad halberd fern (*Tectaria heraclifolia*),
- creeping star-hair fern (*Thelypteris reptans*),
- Craighead's orchid (*Triphora craigheadii*),
- wide-leaved triphora (*Triphora latifolia*),
- three-birds orchid (*Triphora trianthophora*), and
- rainlily (*Zephyranthes atamasco*).

All the alignment alternatives fall within the USFWS Consultation Areas (CA) for the Florida scrub-jay, red-cockaded woodpecker and within wood stork core foraging areas. The bald eagle (*Haliaeetus leucocephalus*) is no longer listed by the USFWS or FWC but remains protected under the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668d), as amended, and the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712). No bald eagle nests were previously documented within 660 feet of the alignment alternatives. In addition, no bald eagle nests were observed in the project area during fieldwork. The closest bald eagle nest is HN021 and is located approximately 2.1 miles northeast of the project limits. According to the FWC Eagle Nest Locator database, this nest was last surveyed and documented as active in 2014. However, there is a possibility that bald eagles may establish new nests within appropriate habitat within 660 feet of the proposed limits.

Field verified FLUCFCS within the alternatives is depicted in **Figure 2**. The NWI and soils is located in **Figure 3**. The approximate locations of protected species observations and known occurrence data located in the vicinity of the proposed alignments are provided in **Figure 4**. The wetland data for each alternative alignment is located in **Table 1** and faunal protected species that could potentially utilize the alternatives is located in **Table 2**.

There are large trees along each of the trail alternatives. In review of local and county tree ordinances, we identified City of Brooksville Ordinance No. 826, Part 4-5 which addresses landscaping and tree protection. Large trees, defined as a diameter of 10 inches or greater, are protected. A removal permit and/or landscape plan approval in conjunction with development or redevelopment activities is required. Although some species are exempt (presumed to be nuisance/exotic and ornamental species), certain additional restrictions apply to large “specimen” trees, and trees located in designated areas of the City. The Code Enforcement Office of the City of Brooksville handles tree removal permits. If construction of this trail project is not exempt from local ordinances, tree permitting will be required.

Alternative Corridors

Five (5) corridor alternatives were considered as part of the Good Neighbor Trail Extension alternatives study process. The alternatives include:

- Jefferson St./Broad St.;
- Park/Daniel Ave.;
- Park/Hendricks Ave.;
- Park/Lamar Ave./Broad St.; and
- Park/Broad St.

The analysis examines each of the corridors over the approximate 4-mile stretch heading east from the Russell Street Trailhead. By mid-2017, it will connect to the Withlacoochee State Trail running north through Citrus County. This paved multi-use trail provides safe off-street recreational and transportation opportunities for the City of Brooksville. The distinctive elements of each of these alternatives are discussed in more detail below. A description of the evaluation process and the results/recommendations then follows.

Jefferson St./Broad St. Option

This option starts along Jefferson Street then turns south onto Southeast Avenue. From Southeast Avenue the trail turns east onto Harvard Street then northeast onto Hospital Road. It then heads north onto Mildred Avenue where the trail promptly turns east onto South Broad Street where it continues over the railroad track. From South Broad Street the trail turns south onto Main Street and continues south to the existing trail head at Russell Street and Daniel Avenue.

Field verification of land use determined an existing surface water (FLUCFCS 5100) along the south side of Jefferson Street and a forested wetland (stream and lake swamp, FLUCFCS 6150) west of Southeast Avenue also on the south side of Jefferson Street. There is similarly a forested wetland system (FLUCFCS 6150) on the north side of Jefferson Street in this area. Other land uses were consistent with the SWFWMD FLUCFCS and consisted of residential (FLUCFCS 1200), commercial (FLUCFCS 1400), institutional (FLUCFCS 1700), recreation (FLUCFCS 1800), and hardwood-conifer mixed forest (FLUCFCS 4340). This alignment has minimal wildlife habitat value, but has the potential to be utilized by gopher tortoise and other commensal species, wood stork, state-listed wading birds, and eastern indigo snake.

Park/Daniel Ave. Option

This option starts heading south on Darby Lane then east through Tom Varn Park with an overhead pedestrian crossing over U.S. 41 to Daniel Avenue. The alternative continues west then turns north onto Hale Avenue then east onto Daniel Avenue and continues east to the existing trail head at Russell Street and Daniel Avenue.

Field verification of land use determined this alignment would cross two highly disturbed wetlands (freshwater marsh, FLUCFCS 6410) and a surface water (FLUCFCS 5100) located in Tom Varn Park. Other land uses were consistent with the SWFWMD FLUCFCS and consisted of residential (FLUCFCS 1200), commercial (FLUCFCS 1400), institutional (FLUCFCS 1700), recreation (FLUCFCS 1800), upland coniferous forest (FLUCFCS 4100) hardwood-conifer mixed forest (FLUCFCS 4340), and transportation (FLUCFCS 8100). This alternative has minimal wildlife habitat value, but has the potential to be utilized by gopher tortoise and other commensal species, wood stork, state-listed wading birds, and eastern indigo snake.

Park/Hendricks Ave. Option

This option starts heading south on Darby Lane then east through the existing Tom Varn Park sidewalk (just south of the ball field) to Benton Avenue. It continues on Benton Avenue then heads south onto Broad Street South then turns east onto Lamar Avenue. The alternative continues on Lamar Avenue north onto Hale Avenue, then east onto Hendricks Avenue and continues east then south onto Main Street to the existing trail head at Russell Street and Daniel Avenue.

Field verification of land use determined this alignment would potentially impact one wetland (stream and lake swamp, FLUCFCS 6150) located in Tom Varn Park. However,

there is an existing sidewalk where the trail is proposed to cross the wetland; this would minimize wetland impacts to the forested system. Other land uses were consistent with the SWFWMD FLUCFCS and consisted of residential (FLUCFCS 1200), commercial (FLUCFCS 1400), recreation (FLUCFCS 1800), hardwood-conifer mixed forest (FLUCFCS 4340), and transportation (FLUCFCS 8100). This alternative has minimal wildlife habitat value, but has the potential to be utilized by gopher tortoise and other commensal species, wood stork, state-listed wading birds, and eastern indigo snake.

Park/Lamar Ave./Broad St. Option

Similar to the Park/Hendricks Ave. Option, this alternative starts heading south on Darby Lane then east through the existing Tom Varn Park sidewalk (just south of the ball field) to Benton Avenue. It continues on Benton Avenue then heads south onto the South Broad Street, then turns east onto Lamar Avenue. The alternative continues on Lamar Avenue then turns north onto Hale Avenue, then turns east onto Broad Street, then turns south onto Main Street to the existing trail head at Russell Street and Daniel Avenue.

Field verification of land use determined this alignment would potentially impact one wetland (stream and lake swamp, FLUCFCS 6150) located in Tom Varn Park. However, there is an existing sidewalk where the trail is proposed to cross the wetland; this would minimize wetland impacts to the forested system. Other land uses were consistent with the SWFWMD FLUCFCS and consisted of residential (FLUCFCS 1200), commercial (FLUCFCS 1400), recreation (FLUCFCS 1800), hardwood-conifer mixed forest (FLUCFCS 4340), and transportation (FLUCFCS 8100). This alternative has minimal wildlife habitat value, but has the potential to be utilized by gopher tortoise and other commensal species, wood stork, state-listed wading birds, and eastern indigo snake.

Park/Broad St. Option

This option starts heading south on Darby Lane then east through Tom Varn Park. The alternative then turns north onto Fridy Place then east onto Benton Avenue. From there, the option turns north onto Broad Street where it continues to Main Street. At Main Street, the option turns south where it meets the existing trail head at Russell Street and Daniel Avenue.

Field verification of land use determined this alignment would cross two highly disturbed wetlands (freshwater marsh, FLUCFCS 6410) and a surface water (FLUCFCS 5100) located in Tom Varn Park. Other land uses were consistent with the SWFWMD

FLUCFCS and consisted of residential (FLUCFCS 1200), commercial (FLUCFCS 1400), institutional (FLUCFCS 1700), recreation (FLUCFCS 1800), upland coniferous forest (FLUCFCS 4100) hardwood-conifer mixed forest (FLUCFCS 4340), and transportation (FLUCFCS 8100). This alternative has minimal wildlife habitat value, but has the potential to be utilized by gopher tortoise and other commensal species, wood stork, state-listed wading birds, and eastern indigo snake.

CONCLUSION

Listed Species

All of the alignment alternatives were documented as having potential faunal protected species involvement. This is based on the presence of both wetland and upland habitats within and adjacent to the trail alignments that could support listed species. However, protected species were not observed during the field review. Additionally, the upland habitat is of low to moderate quality due to overgrowth, edge effects from adjacent development, and the presence of nuisance and exotic vegetation.

Gopher tortoise burrows were not observed; however, prior to construction of the selected trail alignment, a 100 percent survey should be conducted in accordance with the FWC Gopher Tortoise Permitting Guidelines. If gopher tortoise burrows are located, a relocation permit with the FWC will be required. The relocation activities would include excavation of the gopher tortoise burrows and relocation of the gopher tortoises off-site to an FWC-approved recipient site.

Wood stork compensation would likely be required for all of the wetland and surface water impacts if the entire project impacts more than half an acre of suitable foraging habitat. It is anticipated that all wood stork foraging compensation would be completely mitigated through the purchase of wetland mitigation credits and no additional wetland credits would be needed to offset wood stork impacts. Standard eastern indigo snake construction precautions (**Appendix A**) will likely apply, which is common of most construction projects. The project falls within the Florida scrub-jay and red-cockaded woodpecker CA; however, no individuals were observed during field surveys and there is no habitat for these species within the project limits.

A detailed floral field investigation was not conducted; however, based on available habitats and the influence of urban developed described above, we do not anticipate that protected plants occur within the trail alignment options. Upon selection of the trail alternative and the final design and permitting phase, a more detailed species survey is

recommended. This more detailed field review is recommended for all potential protected species, both floral and faunal.

Wetlands

All of the alternative trail alignments contain wetlands within or adjacent to the proposed alignment. Based on field verification, the Park/Daniel Ave. alignment and Park/Broad St. alignment would likely have the greatest wetland impacts (approximately 0.61 acres based on a proposed 12-foot path). These impacts are associated with the proposed trail alignment through undeveloped areas south of the main infrastructure of Tom Varn Park. The Jefferson St./Broad St. alignment would have less impacts (approximately 0.05 acres based on widening the existing sidewalk on the south side of Jefferson Street; approximately 0.20 acres based on widening the existing sidewalk on the north side of Jefferson Street). A portion of the south side impacts are to surface waters and these impacts would not require SWFWMD mitigation. The USACE would likely require mitigation for these impacts unless the surface waters can be replaced elsewhere on site and at approximately the same ditch bottom elevation. The Park/Hendricks Ave. and Park/Lamar Ave./Broad St. alternatives are similar and would both have the least amount of wetland impacts. The wetland impacts associated with these two alternatives would depend on the extent of work associated with the existing sidewalk in Tom Varn Park that connects Darby Lane to Benton Avenue. For example, if the sidewalk is to remain in its current condition and width these alternatives would result in no wetland impacts. If the sidewalk were to be widened to a 12-foot path, impacts would be approximately 0.13 acres for each alternative. The Jefferson St./Broad St., Park/Broad St., and Park/Daniel Ave. options do not appear to qualify for a SWFWMD General Permit (Ch. 62-330.447); therefore, an Individual Permit will likely be required from SWFWMD and a Nationwide Permit will likely be required from the U.S. Army Corps of Engineers (USACE). The applicable Nationwide Permit may be #42 (Recreational Facilities) or #14 (Linear Transportation Projects). The Park/Hendricks Ave. and Park/Lamar Ave./Broad St. alternatives would qualify for a SWFWMD permit exemption (Ch. 62-330.051) provided that no impacts to wetlands or other surface waters are proposed.

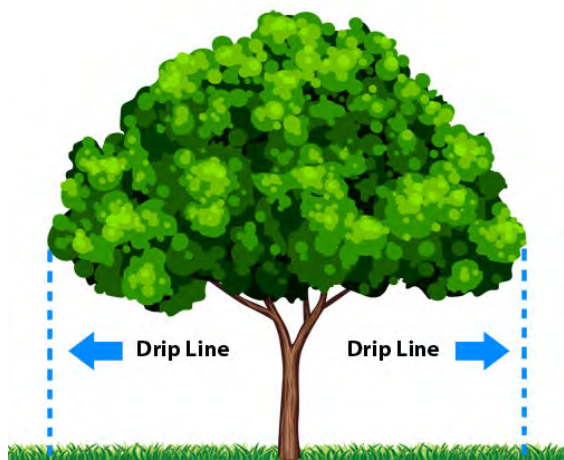
The purpose of wetland mitigation is to comply with agency regulatory requirements to provide compensation for wetland impacts by restoring, creating, enhancing, and/or preserving wetlands. The project is located in both the Withlacoochee River drainage basin and the Upper Coastal drainage basin. Mitigation options for unavoidable impacts associated with the project located in the Withlacoochee River drainage basin could be

through purchase of mitigation bank credits at the Withlacoochee Wetland Mitigation Bank. Mitigation for unavoidable wetland impacts associated with the project located in the Upper Coastal drainage basin could be through the purchase of mitigation bank credits at Old Florida Mitigation Bank. Depending on funding and other contractual agreements with the FDOT, compensation could be through the FDOT's wetland mitigation inventory; specifically, Conner Preserve, for impacts in the Upper Coastal drainage basin. Any of these options would satisfy all mitigation requirements of Part IV, Chapter 373 F.S., and U.S.C. 1344.

Tree Considerations

The following provides guidance for determining trees that can be left in place along the selected trail alignment. It also describes how to properly protect and root-prune trees. We offer three methods of tree preservation for constrained design scenarios where trees would typically be removed. Finally, we address why adding fill material over tree root systems is not a recommended practice by arborists.

For trees that are deemed feasible and appropriate to leave in-place adjacent to the selected trail alignment, care must be taken to protect the root zone within the construction work site. Tree protection barricades should be erected so that a minimum of two-thirds of the drip line is protected throughout all construction activities.



Inset 1: Tree drip line diagram

Three to four inches of mulch may be spread in areas outside the tree protection barricades to further protect existing tree roots subjected to construction activities by

dispersing the weight of staged equipment over a larger area. Mulch should be removed after construction activities are completed.

Where root-pruning is necessary, cuts should be done at a distance of at least three to five times the trunk diameter from the outside of the trunk. For example, if the trunk is 2 feet in diameter, the cut should be made at least 6 to 10 feet from the trunk. Deleterious effects increase in significance with increasing cut proximity to the tree trunk. The maximum percentage of a tree's root zone that can be cut without causing severe injuries and potential tree death is twenty-five percent.

If possible, root-pruning should occur during late winter or early spring, when the risk of dehydration is lowest. Root cuts should be made with a sharp saw; ragged tears from heavy equipment such as trenchers or backhoes should be appropriately pruned prior to backfilling. After cutting, roots should be covered immediately to prevent drying; soils should be kept moist, but not soaked. No sealants or pruning paint should be used on the cut root ends.

New roots are formed very near the pruning cut so curbs and sidewalks should be constructed no closer than 6" from cut roots to allow for sufficient room for new growth. Six inches of 1-inch gravel may be used as a sidewalk base near existing trees. The air spaces between gravel pieces is too dry to support new roots. Existing roots would continue to expand however. This may protect the sidewalk from cracking caused by root expansion in the future.

In situations where the typical tree barricade and root-pruning described above would be inadequate to protect and leave trees in place, we offer the following three methods for consideration in construction of the sidewalk/trail:

- 1) Wooden Boardwalk- this construction method is the least invasive as all construction components and activities except the post take place above the root zone. It is also the most expensive to construct and requires extensive long term maintenance.



Inset 2: Wooden boardwalk through oak hammock

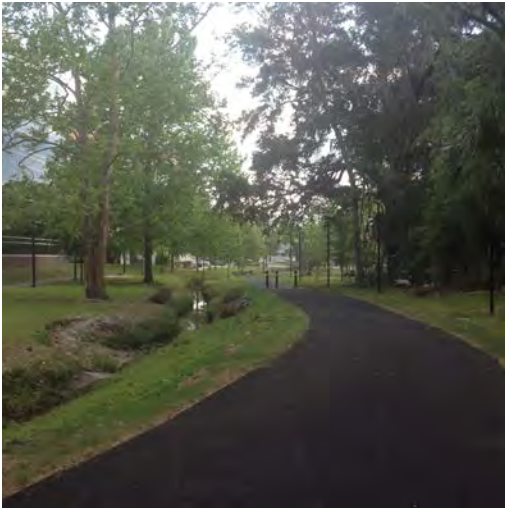
- 2) Concrete or Clay Pavers- this material is placed on a six-inch base of one- inch gravel (57 stone) with one-inch of fines (87 stone) on top to set the pavers. Filter fabric must be used between the subgrade and the base material. Heavy duty aluminum edging is recommended to contain the pavers and base material. Compacted soil is placed on the outside of the aluminum edging for support and to transition the trail to existing soil grade. This method is intermediate in cost and impact to the root zone.



Inset 3: Pavers along wooded area

- 3) Permeable Asphalt Pavement- this material is placed on a six-inch base of 57 stone and two inches of 87 stone. This a new technique that was used by the FDOT to construct pedestrian/bike trails along the University of Florida campus. This construction method is the least expensive of the three and requires little or

no maintenance once installed. This method may have marginal impact on existing trees depending on sub soil compaction.



Inset 4: Permeable asphalt pavement at the University of Florida

Fill material placed over tree root systems to protect them from construction damage is not recommended for several reasons. First, most of the feeder roots of trees are in the top 12 to 18 inches of the soil profile. In order for feeder roots to function, proper air space for gas exchange is necessary. Fill materials including sand have no natural soil aggregates and as a result, relatively small pore space between sand particles. This lack of pore space limits gas exchange and essentially suffocates roots. Second, fill materials are easily compacted by construction equipment and even rainfall. The compaction of the fill material will only compound the detrimental effects of the fill material, accelerating the decline of the existing trees. Third, the proposed fill must be further compacted by mechanical means to achieve the density necessary to support the “road bed”. This mechanical compaction of the sand and placement of an impermeable “road bed” will add even further impact to the trees.

In summary adding soil over the root zone of trees will disturb the delicate relationship between roots and surrounding soil. This will result in root mortality, decline of vigor, and frequently death of the tree. The severity of the symptoms and rate of decline depends on the extent of the grade change as well as the age, size and initial vitality of the tree. Generally, mature trees, trees in a weakened condition, and shallow rooted species are more sensitive to grade changes. Many of the trees in the proposed trail corridor are mature trees and would be severely and adversely affected by adding fill over the root system.

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Tables, Figures and Appendices

Table 1. Wetland and Surface Water Impact Summary

Alternative	Forested Wetland Impacts	Herbaceous Wetland Impacts	Surface Water/Ditch Impacts	Approximate Total Impacts
Jefferson St./ Broad St.	PFO1/6150	--	PEM1x/5100	0.05 - 0.20 acres*
Park/Daniel Ave.	--	PEM1	--	0.61 acres
Park/Hendricks Ave.	PFO1/6150	--	--	0.13 acres**
Park/Lamar Ave./ Broad St.	PFO1/6150	--	--	0.13 acres**
Park/Broad St.	--	PEM1	--	0.61 acres

* varies depending on north or south side of Jefferson Street

** assumes worst case - existing sidewalk will be widened and/or improved

Table 2. Listed Wildlife Species Observed and With Potential Occurrence Within the Project

Common Name	Scientific Name	USFWS Status	FWC Status	Preferred Habitat	Probability of Occurrence
Amphibians					
Gopher Frog	<i>Lithobates capito</i>	N	SSC	Inhabits xeric oak scrub and sand pine scrub and breeds in shallow grassy ponds or ditches. Use gopher tortoise burrows.	Low
Reptiles					
American Alligator	<i>Alligator mississippiensis</i>	T (S/A)	FT(S/A)	Inhabits marshes, rivers, lakes, and ponds.	Moderate
Eastern Indigo Snake	<i>Drymarchon couperi</i>	T	FT	Inhabits gopher tortoise habitat.	Low
Gopher Tortoise	<i>Gopherus polyphemus</i>	N	ST	Inhabits sandhills, xeric oak scrub, sand pine scrub, and scrubby flatwoods.	Low
Short-tailed Snake	<i>Lampropeltis extenuata</i>	N	ST	Inhabits sandhill and sometimes adjacent xeric oak hammocks and rosemary-sand pine scrub	Low
Florida Pine Snake	<i>Pituophis melanoleucus mugitus</i>	N	SSC	Inhabits sandhill, scrub, xeric hammock, scrubby flatwoods. Also inhabits mesic pine flatwoods and dry prairie with dry soils. Inhabits underground retreats.	Low
Suwanee River Cooter	<i>Pseudemys concinna suwanniensis</i>	N	SSC	Inhabits rivers and large streams	Low
Birds					
Florida Scrub-jay	<i>Aphelocoma coerulescens</i>	T	FT	Inhabits low, open xeric oak scrub in peninsular Florida.	Low
Limpkin	<i>Aramus guarana</i>	N	SSC	Inhabits marshes, swamps, ponds, estuaries, and rivers. Nests in shrubs and small trees.	Moderate
Burrowing Owl	<i>Athene cunicularia floridana</i>	N	SSC	Inhabits sandhills, ruderal communities, and dry prairies.	Low
Little Blue Heron	<i>Egretta caerulea</i>	N	SSC	Inhabits marshes, swamps, ponds, estuaries, and rivers. Nests in shrubs and small trees.	High
Snowy Egret	<i>Egretta thula</i>	N	SSC	Inhabits marshes, swamps, ponds, estuaries, and rivers. Nests in shrubs and small trees.	High
Tricolored Heron	<i>Egretta tricolor</i>	N	SSC	Inhabits marshes, swamps, ponds, estuaries, and rivers. Nests in shrubs and small trees.	High
White Ibis	<i>Eudocimus albus</i>	N	SSC	Inhabits marshes, swamps, ponds, estuaries, and rivers. Nests in shrubs and small trees.	High
Southeastern American Kestrel	<i>Falco sparverius paulus</i>	N	ST	Inhabits open lands and nests in natural cavities of dead trees and abandoned woodpecker nests.	Low
Florida Sandhill Crane	<i>Grus canadensis pratensis</i>	N	ST	Breeds in emergent palustrine wetlands and forages in pastures.	Moderate

Table 2. Listed Wildlife Species Observed and With Potential Occurrence Within the Project

Common Name	Scientific Name	USFWS Status	FWC Status	Preferred Habitat	Probability of Occurrence
Bald Eagle	<i>Haliaeetus leucocephalus</i>	*	N	Nests in trees or structures along coasts, rivers and lakes.	Moderate
Wood Stork	<i>Mycteria americana</i>	E	FT	Inhabits estuarine or freshwater wetlands; nest in tops of trees in cypress or mangrove swamps.	High
Mammals					
Florida Mouse	<i>Podomys floridanus</i>	N	SSC	Inhabits sandhills, xeric oak scrub, sand pine scrub, and scrubby flatwoods. Use gopher tortoise burrows.	Low
Sherman's Fox Squirrel	<i>Sciurus niger shermani</i>	N	SSC	Inhabits sandhills with some pines and mesic flatwoods with low ground cover.	Moderate

*Protected under the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668d)

N: Not currently listed

T: Threatened

T(S/A): Threatened due to similarity of appearance

E: Endangered

SSC: Species of Special Concern

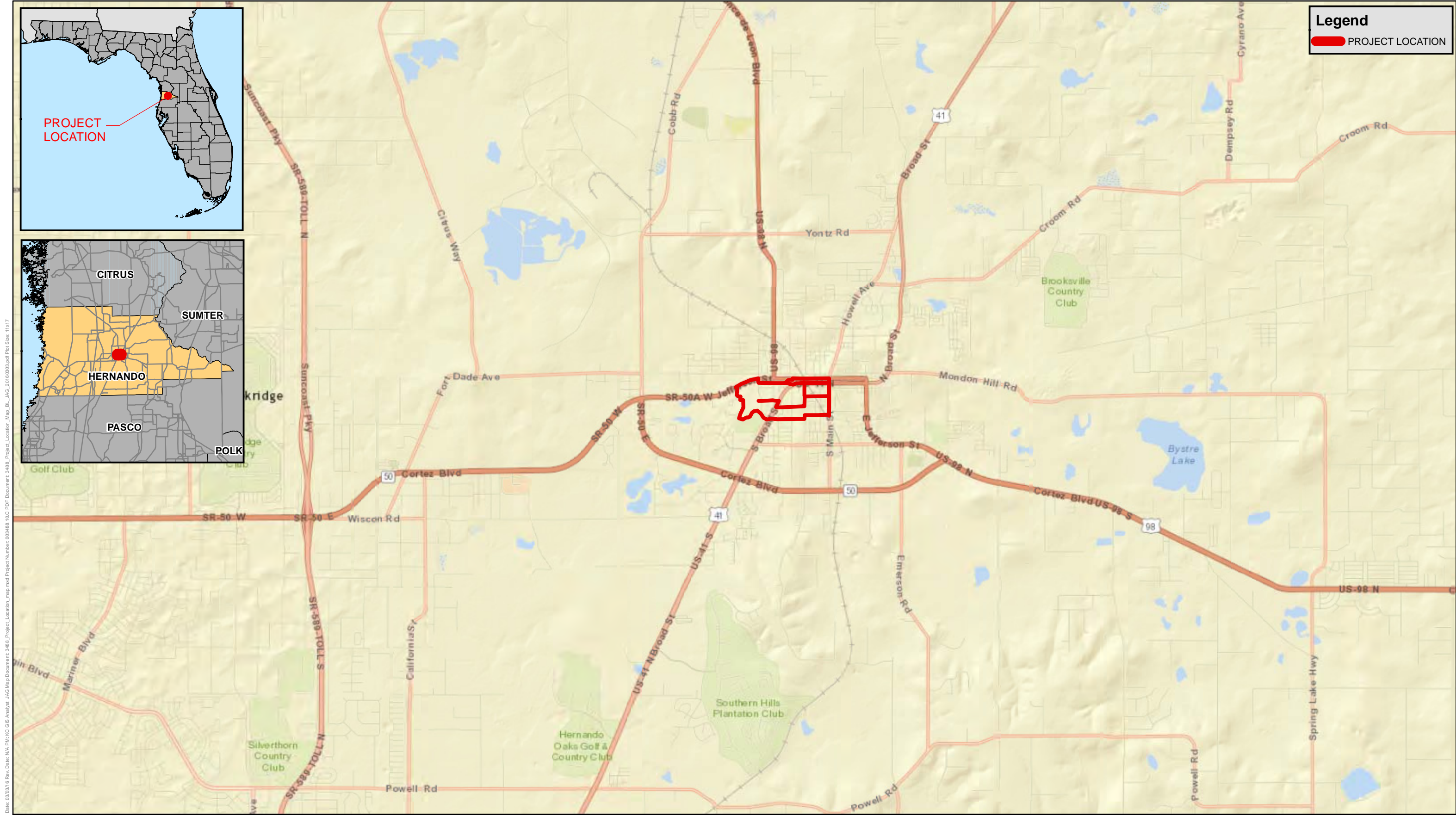
ST: State Threatened

FT: Federally Threatened

FT(S/A): Federally Threatened due to similarity of appearance

FE: Federally Endangered

Source: USFWS, FWC



Legend

█ PROJECT LOCATION

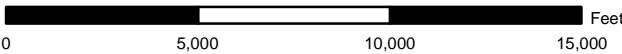
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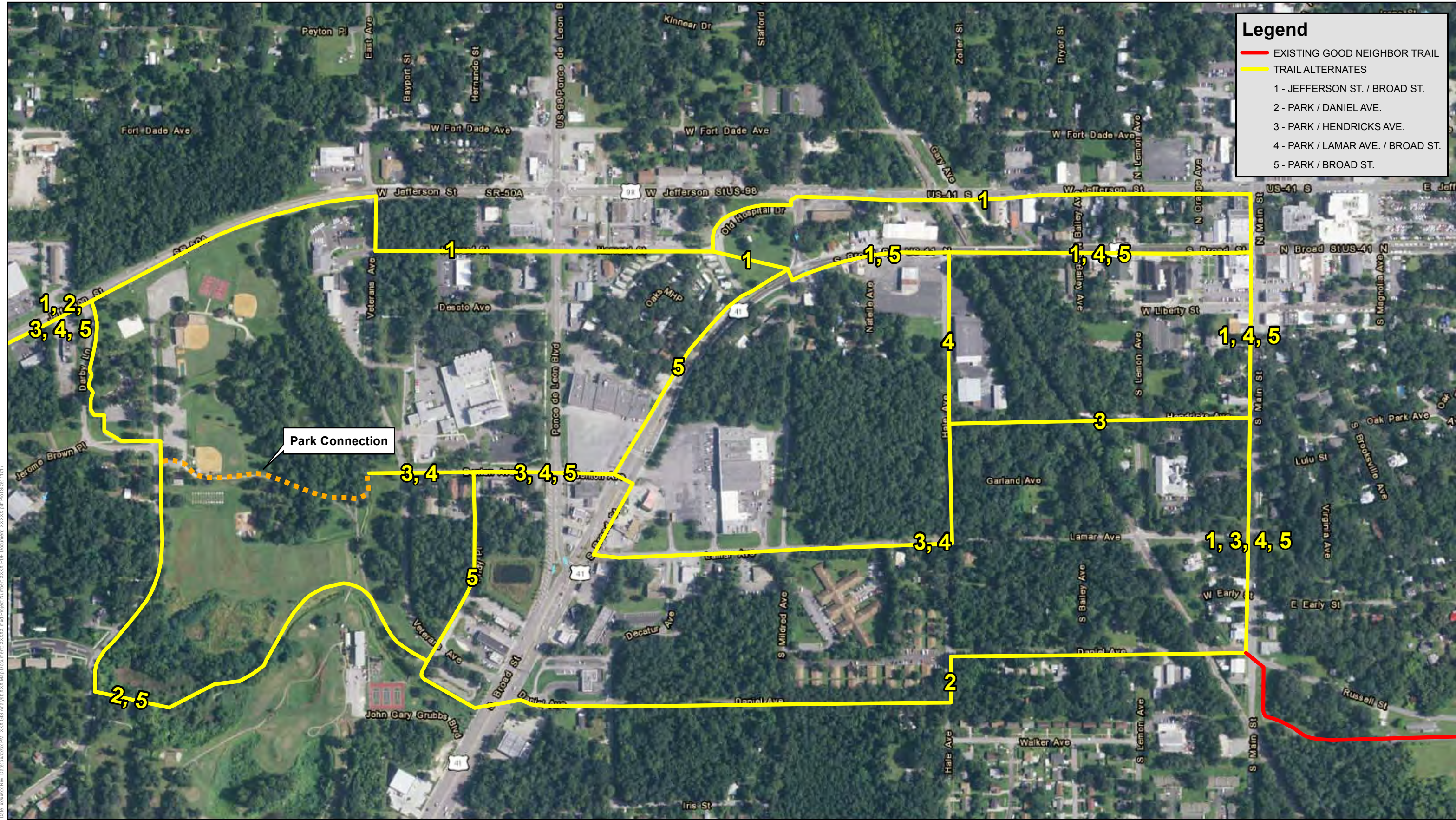
Figure 1a - Project Location Map

Good Neighbor Trail Corridor Analysis
 Hernando County, Florida



Data Source:
 - Tindale Oliver
 Imagery Source:
 - ESRI Streets

Coordinate System:
 NAD 1983 Florida
 State Plane West



Legend

- EXISTING GOOD NEIGHBOR TRAIL
- TRAIL ALTERNATES
- 1 - JEFFERSON ST. / BROAD ST.
- 2 - PARK / DANIEL AVE.
- 3 - PARK / HENDRICKS AVE.
- 4 - PARK / LAMAR AVE. / BROAD ST.
- 5 - PARK / BROAD ST.

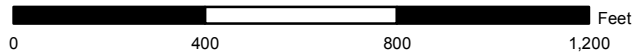
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Figure 1b - Trail Alternates Location Map

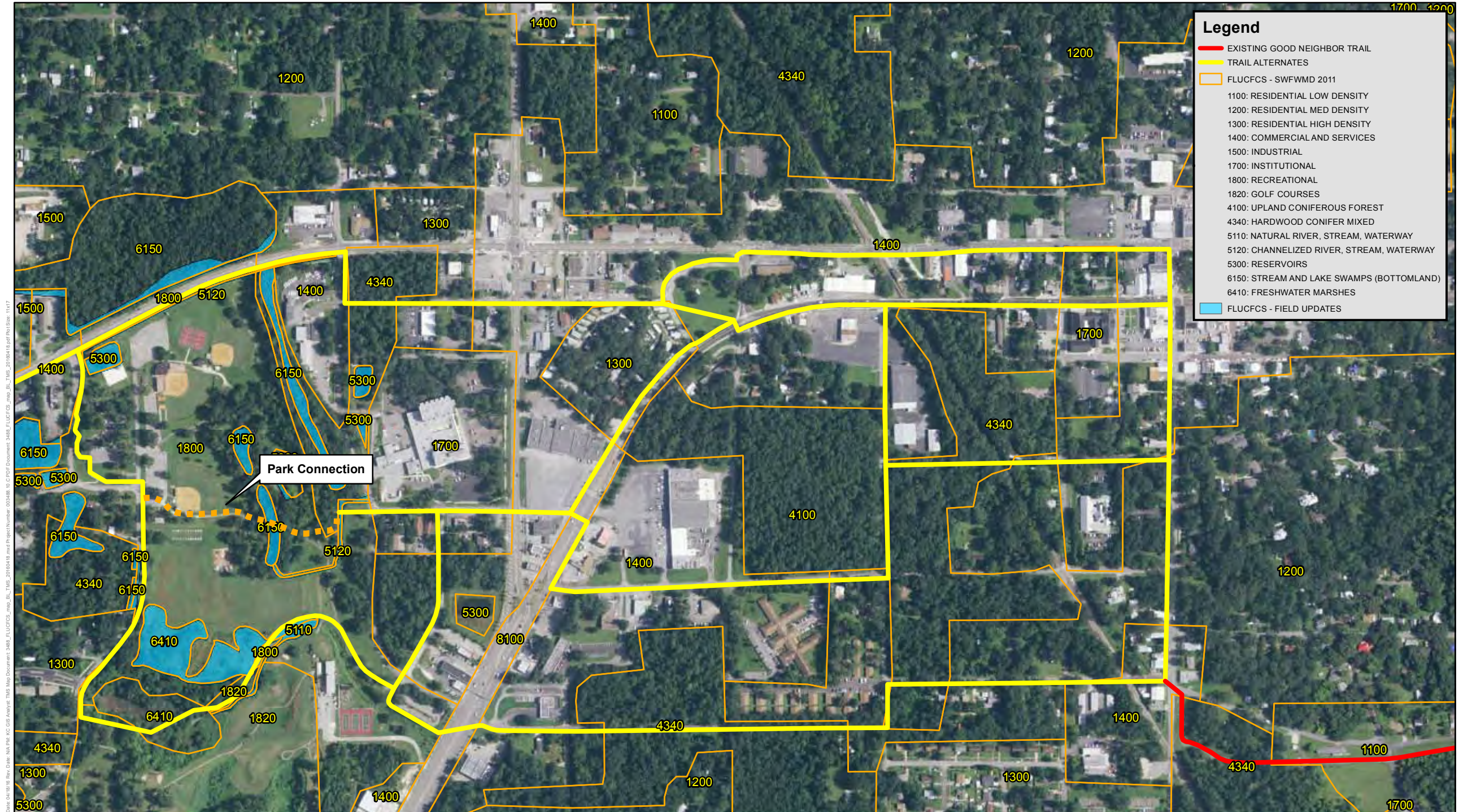
Good Neighbor Trail Corridor Analysis
Hernando County, Florida



Data Source:
- Scheda Ecological Associates
Imagery Source:
- USDA FSA NAIP 2013

Coordinate System:
NAD 1983 Florida
State Plane West





Legend

- EXISTING GOOD NEIGHBOR TRAIL
- TRAIL ALTERNATES
- FLUCFCS - SWFWMD 2011
- 1100: RESIDENTIAL LOW DENSITY
- 1200: RESIDENTIAL MED DENSITY
- 1300: RESIDENTIAL HIGH DENSITY
- 1400: COMMERCIAL AND SERVICES
- 1500: INDUSTRIAL
- 1700: INSTITUTIONAL
- 1800: RECREATIONAL
- 1820: GOLF COURSES
- 4100: UPLAND CONIFEROUS FOREST
- 4340: HARDWOOD CONIFER MIXED
- 5110: NATURAL RIVER, STREAM, WATERWAY
- 5120: CHANNELIZED RIVER, STREAM, WATERWAY
- 5300: RESERVOIRS
- 6150: STREAM AND LAKE SWAMPS (BOTTOMLAND)
- 6410: FRESHWATER MARSHES
- FLUCFCS - FIELD UPDATES

Date: 04/18/19 Rev: Date: WA.PM.KC GIS Analyst: TMS Map Document: 3488_FLUCFCS.mxd Project Number: 000488 - 01/15/2019 10:41:19 AM

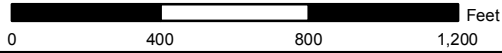
Park Connection



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Figure 2 - FLUCFCS Map

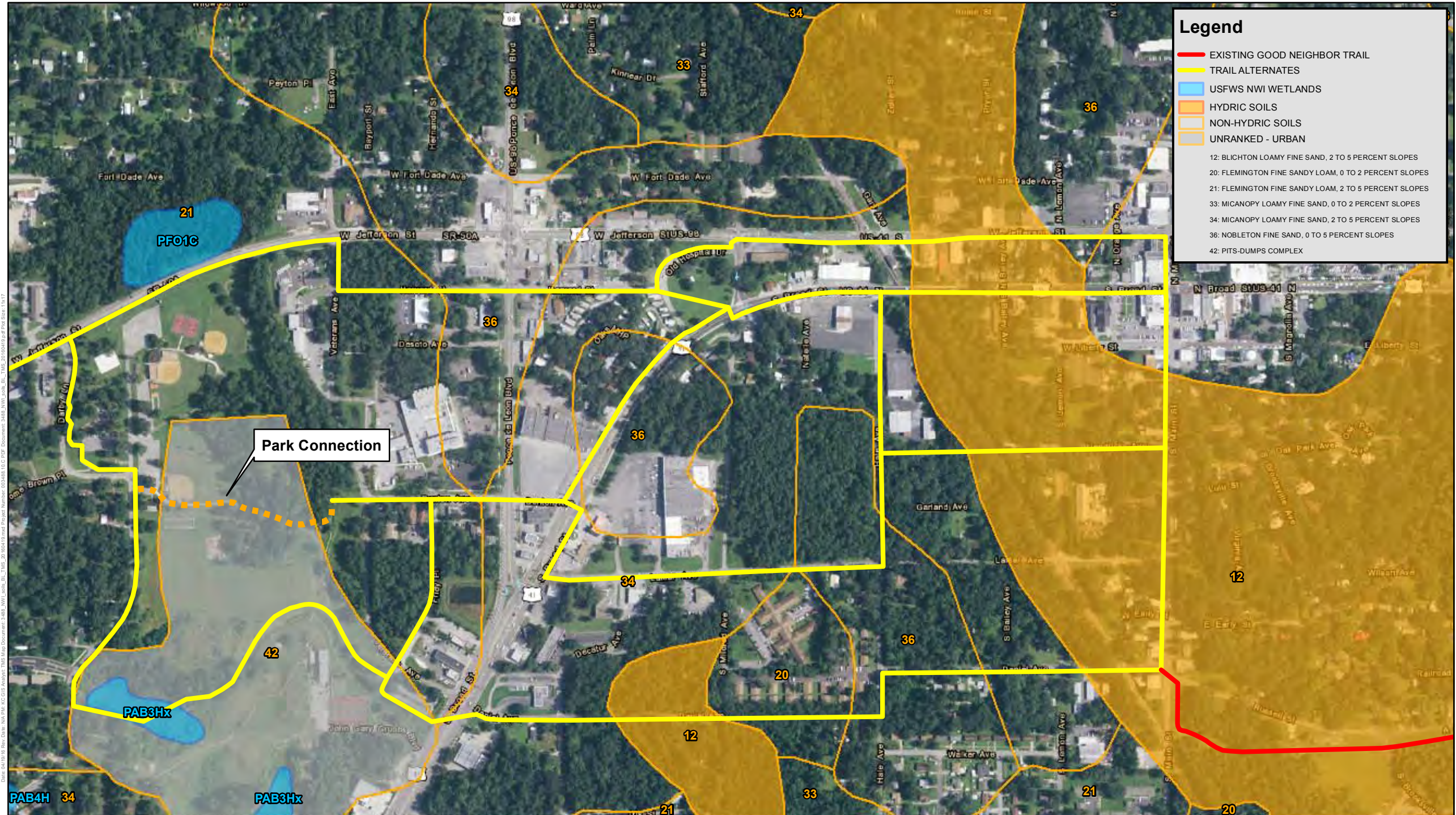
Good Neighbor Trail Corridor Analysis
Hernando County, Florida



Data Source:
- SWFWMD FLUCFCS 2011
- Scheda Ecological Associates
Imagery Source:
- ESRI

Coordinate System:
NAD 1983 Florida
State Plane West





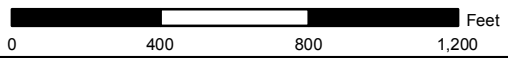
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- EXISTING GOOD NEIGHBOR TRAIL
- TRAIL ALTERNATES
- USFWS NWI WETLANDS
- HYDRIC SOILS
- NON-HYDRIC SOILS
- UNRANKED - URBAN

12: BLIGHTON LOAMY FINE SAND, 2 TO 5 PERCENT SLOPES
 20: FLEMINGTON FINE SANDY LOAM, 0 TO 2 PERCENT SLOPES
 21: FLEMINGTON FINE SANDY LOAM, 2 TO 5 PERCENT SLOPES
 33: Micanopy LOAMY FINE SAND, 0 TO 2 PERCENT SLOPES
 34: Micanopy LOAMY FINE SAND, 2 TO 5 PERCENT SLOPES
 36: NOBLETON FINE SAND, 0 TO 5 PERCENT SLOPES
 42: PITS-DUMPS COMPLEX

Figure 3 - NWI Wetlands and NRCS Hydric Soils Map

Good Neighbor Trail Corridor Analysis
 Hernando County, Florida





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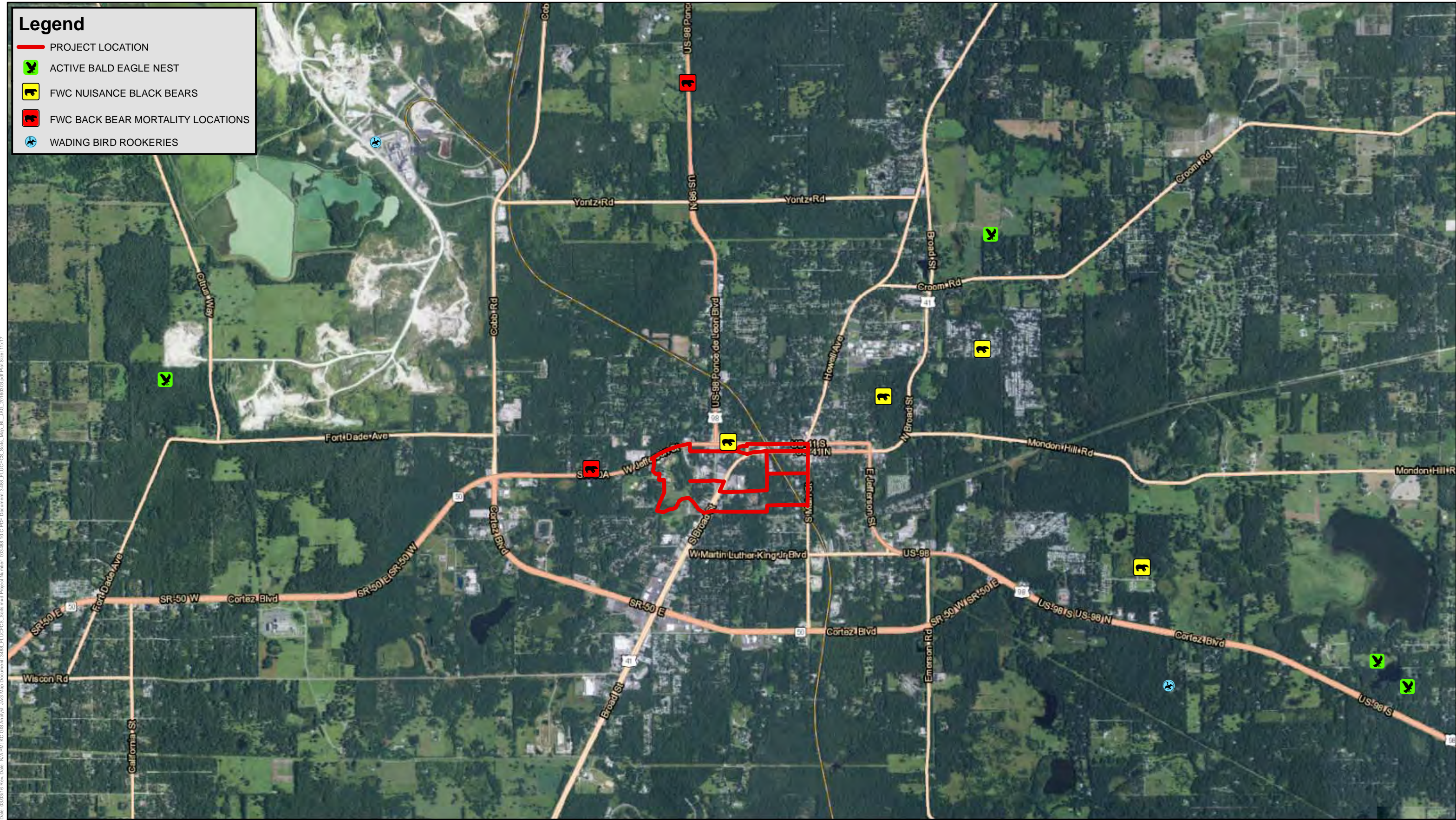
All data within this map are supplied as is, without warranty. This product has not been prepared for legal, engineering, or survey purposes.

Data Source:
 - USFWS NWI
 - NCRS Soils
 Imagery Source:
 - ESRI

Coordinate System:
 NAD 1983 Florida
 State Plane West

Legend

-  PROJECT LOCATION
-  ACTIVE BALD EAGLE NEST
-  FWC NUISANCE BLACK BEARS
-  FWC BACK BEAR MORTALITY LOCATIONS
-  WADING BIRD ROOKERIES



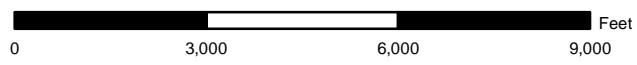
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Figure 4 - Protected Species Map

Good Neighbor Trail Corridor Analysis
Hernando County, Florida



Data Source:
- FNAI
- FWC
- USFWS
Imagery Source:
- ESRI

Coordinate System:
NAD 1983 Florida
State Plane West



Appendix A

Standard Construction Precautions for the Eastern Indigo Snake

STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE
U.S. Fish and Wildlife Service
August 12, 2013

The eastern indigo snake protection/education plan (Plan) below has been developed by the U.S. Fish and Wildlife Service (USFWS) in Florida for use by applicants and their construction personnel. At least **30 days prior** to any clearing/land alteration activities, the applicant shall notify the appropriate USFWS Field Office via e-mail that the Plan will be implemented as described below (North Florida Field Office: jaxregs@fws.gov; South Florida Field Office: verobeach@fws.gov; Panama City Field Office: panamacity@fws.gov). As long as the signatory of the e-mail certifies compliance with the below Plan (including use of the attached poster and brochure), no further written confirmation or “approval” from the USFWS is needed and the applicant may move forward with the project.

If the applicant decides to use an eastern indigo snake protection/education plan other than the approved Plan below, written confirmation or “approval” from the USFWS that the plan is adequate must be obtained. At least 30 days prior to any clearing/land alteration activities, the applicant shall submit their unique plan for review and approval. The USFWS will respond via e-mail, typically within 30 days of receiving the plan, either concurring that the plan is adequate or requesting additional information. A concurrence e-mail from the appropriate USFWS Field Office will fulfill approval requirements.

The Plan materials should consist of: 1) a combination of posters and pamphlets (see **Poster Information** section below); and 2) verbal educational instructions to construction personnel by supervisory or management personnel before any clearing/land alteration activities are initiated (see **Pre-Construction Activities** and **During Construction Activities** sections below).

POSTER INFORMATION

Posters with the following information shall be placed at strategic locations on the construction site and along any proposed access roads (a final poster for Plan compliance, to be printed on 11” x 17” or larger paper and laminated, is attached):

DESCRIPTION: The eastern indigo snake is one of the largest non-venomous snakes in North America, with individuals often reaching up to 8 feet in length. They derive their name from the glossy, blue-black color of their scales above and uniformly slate blue below. Frequently, they have orange to coral reddish coloration in the throat area, yet some specimens have been reported to only have cream coloration on the throat. These snakes are not typically aggressive and will attempt to crawl away when disturbed. Though indigo snakes rarely bite, they should NOT be handled.

SIMILAR SNAKES: The black racer is the only other solid black snake resembling the eastern indigo snake. However, black racers have a white or cream chin, thinner bodies, and WILL BITE if handled.

LIFE HISTORY: The eastern indigo snake occurs in a wide variety of terrestrial habitat types throughout Florida. Although they have a preference for uplands, they also utilize some wetlands

and agricultural areas. Eastern indigo snakes will often seek shelter inside gopher tortoise burrows and other below- and above-ground refugia, such as other animal burrows, stumps, roots, and debris piles. Females may lay from 4 - 12 white eggs as early as April through June, with young hatching in late July through October.

PROTECTION UNDER FEDERAL AND STATE LAW: The eastern indigo snake is classified as a Threatened species by both the USFWS and the Florida Fish and Wildlife Conservation Commission. “Taking” of eastern indigo snakes is prohibited by the Endangered Species Act without a permit. “Take” is defined by the USFWS as an attempt to kill, harm, harass, pursue, hunt, shoot, wound, trap, capture, collect, or engage in any such conduct. Penalties include a maximum fine of \$25,000 for civil violations and up to \$50,000 and/or imprisonment for criminal offenses, if convicted.

Only individuals currently authorized through an issued Incidental Take Statement in association with a USFWS Biological Opinion, or by a Section 10(a)(1)(A) permit issued by the USFWS, to handle an eastern indigo snake are allowed to do so.

IF YOU SEE A LIVE EASTERN INDIGO SNAKE ON THE SITE:

- Cease clearing activities and allow the live eastern indigo snake sufficient time to move away from the site without interference;
- Personnel must NOT attempt to touch or handle snake due to protected status.
- Take photographs of the snake, if possible, for identification and documentation purposes.
- Immediately notify supervisor or the applicant’s designated agent, **and** the appropriate USFWS office, with the location information and condition of the snake.
- If the snake is located in a vicinity where continuation of the clearing or construction activities will cause harm to the snake, the activities must halt until such time that a representative of the USFWS returns the call (within one day) with further guidance as to when activities may resume.

IF YOU SEE A DEAD EASTERN INDIGO SNAKE ON THE SITE:

- Cease clearing activities and immediately notify supervisor or the applicant’s designated agent, **and** the appropriate USFWS office, with the location information and condition of the snake.
- Take photographs of the snake, if possible, for identification and documentation purposes.
- Thoroughly soak the dead snake in water and then freeze the specimen. The appropriate wildlife agency will retrieve the dead snake.

Telephone numbers of USFWS Florida Field Offices to be contacted if a live or dead eastern indigo snake is encountered:

North Florida Field Office – (904) 731-3336
Panama City Field Office – (850) 769-0552
South Florida Field Office – (772) 562-3909

PRE-CONSTRUCTION ACTIVITIES

1. The applicant or designated agent will post educational posters in the construction office and throughout the construction site, including any access roads. The posters must be clearly visible to all construction staff. A sample poster is attached.
2. Prior to the onset of construction activities, the applicant/designated agent will conduct a meeting with all construction staff (annually for multi-year projects) to discuss identification of the snake, its protected status, what to do if a snake is observed within the project area, and applicable penalties that may be imposed if state and/or federal regulations are violated. An educational brochure including color photographs of the snake will be given to each staff member in attendance and additional copies will be provided to the construction superintendent to make available in the onsite construction office (a final brochure for Plan compliance, to be printed double-sided on 8.5" x 11" paper and then properly folded, is attached). Photos of eastern indigo snakes may be accessed on USFWS and/or FWC websites.
3. Construction staff will be informed that in the event that an eastern indigo snake (live or dead) is observed on the project site during construction activities, all such activities are to cease until the established procedures are implemented according to the Plan, which includes notification of the appropriate USFWS Field Office. The contact information for the USFWS is provided on the referenced posters and brochures.

DURING CONSTRUCTION ACTIVITIES

1. During initial site clearing activities, an onsite observer may be utilized to determine whether habitat conditions suggest a reasonable probability of an eastern indigo snake sighting (example: discovery of snake sheds, tracks, lots of refugia and cavities present in the area of clearing activities, and presence of gopher tortoises and burrows).
2. If an eastern indigo snake is discovered during gopher tortoise relocation activities (i.e. burrow excavation), the USFWS shall be contacted within one business day to obtain further guidance which may result in further project consultation.
3. Periodically during construction activities, the applicant's designated agent should visit the project area to observe the condition of the posters and Plan materials, and replace them as needed. Construction personnel should be reminded of the instructions (above) as to what is expected if any eastern indigo snakes are seen.

POST CONSTRUCTION ACTIVITIES

Whether or not eastern indigo snakes are observed during construction activities, a monitoring report should be submitted to the appropriate USFWS Field Office within 60 days of project completion. The report can be sent electronically to the appropriate USFWS e-mail address listed on page one of this Plan.

Appendix E

Constructability Review





HERNANDO/CITRUS METROPOLITAN PLANNING ORGANIZATION

Good Neighbor Trail



Field Review Summary

February 4, 2016



01. Field Visit Summary

Date: February 4, 2016

To: Steve Diez, Hernando/Citrus MPO; Dennis Dix, Hernando/Citrus MPO

From: Jennifer Bartlett, Tindale Oliver

Re: Field Visit Summary

This memo summarizes the results of the January 26, 2016, consultant field “Constructability” review of the four identified Good Neighbor Trail alignment alternatives. The four alignments and the opportunities and challenges presented by each are presented below. A recommendation is included in the summary.

- Uptown – along SR50 to Main St, from Main St to Russell St trailhead
- Park/Uptown – through Tom Varn Park, along Lamar Ave, Hale Ave, Broad St, Main St, and south to Russell St trailhead
- Hendricks Ave – through Tom Varn Park, along Lamar Ave, Hale Ave, Hendricks Ave, Main St, and south to Russell St trailhead
- Daniel Ave – through Tom Varn Park, along Daniel Ave, Hale Ave, Daniel Ave to Russell St trailhead.

FIELD REVIEW

Uptown Alignment

Opportunities:

- Most direct route from SR 50/Cobb Rd trail terminus to Uptown
- Includes a “widewalk” or 10-12’ wide sidewalk south along Main Street from Jefferson Street to Russell Street
- Business exposure along entire route
- Brings visitors to “center” of Brooksville
- Future partnership with MPO to enhance “spur” trails through park
- Right-of-way appears available, south sidewalk stays as is; north curb rebuilt
- Infrastructure exists, would need modification
- Opportunity to develop gateway signage to identify amenities/unique features in Tom Varn Park

Figure 1: Mural visible from Jefferson Street



Figure 2: Right-of-way on north side of Jefferson Street



- Recommend development of Wayfinding Signage Program

Challenges:

- May need limited amounts of right-of-way (at driveways)
- At-grade rail crossing requires coordination with FDOT/CSX
- Driveway cuts along W Jefferson Street:
 - Review driveway access to W Jefferson Street for businesses on north side from Ponce De Leon Boulevard to Mildred Avenue; there appears to be the opportunity to reduce driveway cuts by half.
 - Alternate route: Harvard Ave from Southeast Ave to Mildred Avenue. Potential drainage issues may exist with this option.
- Review need for pedestrian signal at Harvard Street and Ponce De Leon Boulevard, coordinated with signal at W Jefferson Street and Ponce De Leon Boulevard, or stop control on Harvard Avenue. Enhanced crosswalk needed at trail crossing at Ponce De Leon Boulevard
- Intersection enhancement required at Main Street and Jefferson Street
 - Recommend review to determine need to increase crossing times if trail is constructed on north side of W Jefferson Street and any other specific trail crossing enhancements
 - recommend the review traffic impacts of trail crossing
- Driveways on Main Street
 - Jefferson Street and Main Street. Bank exit onto Main Street.
 - Recommend review recommended crossing treatments for intersection of trail and driveway
 - Main Street and Liberty Avenue
 - Review option to close Main Street exit and make primary exit/entrance on Orange Avenue
- Reduction in parking spots in the Uptown area: two on Jefferson Street, eight on Main Street (to Liberty Avenue)

Figure 3: Driveway on Main Street and Liberty Street

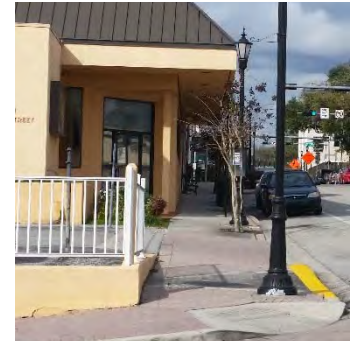


Figure 3: Existing conditions along Main St, between Jefferson Street and Broad Street



Figure 5: Bank driveway on Main Street and Jefferson Street



Park/Uptown Alignment

Opportunities:

- Connects through Tom Varn Park to Uptown; allows both to be highlighted
- Exposure to businesses from Hale Avenue east
- Includes a “widewalk” or 10-12’ wide sidewalk south along Main Street from Jefferson Street to Russell Street
- Brings visitors to Main Street and S Broad Street
- North sidewalk stays as is; south curb rebuilt
- Infrastructure exists, would need modification

Challenges:

- Access through Tom Varn Park requires new trail
- Tom Varn Park trails currently for walkers only
 - Recommend way to manage multiple modes through Tom Varn Park
- Crossing at Benton Ave & Ponce de Leon Avenue
 - Pedestrian signal needed at intersection
 - Right-of-way needed through mall parking lot
 - Throughway/trail in mall parking lot would have to be designed as a street, with curb
 - Crosswalk at US-41 and mall is northeast of signal and would need to be rebuilt.
 - Appears to need right-of-way
 - Landing on east side would require right-of-way to access Lamar Avenue
 - Intersection re-build cost estimated at \$1million
- May not have room to build 12 ft. trail without moving road (Lamar Avenue, Hale Avenue)
 - If this option selected, narrower trail might be required
- Reduction in parking spots through Uptown: two on Broad Street, eight on Main Street (to Liberty Avenue)
- Intersection enhancement required at Main Street and Jefferson Street
 - Review need to increase crossing times
 - Review need for trail specific bicycle crossing enhancements
 - Recommend review of traffic impacts
- Requires separate bridge crossing over CSX tracks
 - Appears to require right-of-way at east end of bridge

Figure 4: Pedestrian crossing on Broad Street/US-41



Figure 5: Intersection at US 41 and mall, looking west towards Ponce De Leon Boulevard and Benton Avenue



- Driveways on Main Street
 - Main Street & Liberty Avenue
 - Recommend review option to close Main Street exit and make primary exit/entrance on Orange Avenue

Hendricks Avenue Alignment

Opportunities:

- Connects through Tom Varn Park
- Bridge required to cross railroad tracks could be designed to connect to Brooksville's rail heritage

Challenges:

- Access through Tom Varn Park requires new trail
- Park trails currently are for walkers only; recommend way to manage multiple modes through Park
- Crossing at Benton Avenue and Ponce de Leon Boulevard
 - Pedestrian signal needed at intersection
 - Right-of-way needed through mall parking lot
 - Throughway/trail in mall parking lot would have to be designed as a street, with curb
 - Crosswalk at US-41 and mall is northeast of signal and would need to be rebuilt.
 - Appears to need right-of-way
 - Landing on east side would require right-of-way to access Lamar Avenue
 - Intersection re-build cost estimated at \$1 million
- May not have room to build 12 ft. trail without moving road (Lamar Avenue, Hale Avenue, Hendricks Avenue)
 - If this option selected, narrower trail might be required
- Personal safety a concern on Hendricks Avenue
 - May be addressed with increasing trail users but recommend the development of a safety plan for the trail
- Requires signage to identify amenities/unique features in Uptown
 - Recommend the development of a wayfinding signage plan

Daniel Ave Alignment

Opportunities:

- Connects to the Good Neighbor Trail through Tom Varn Park
- Highlights Tom Varn Park
- Dedicated right-of-way through the Park is already available
- Riders experience tree canopy and scenery

Challenges:

- Park trails currently for walkers only; recommend way to manage multiple modes through Park
- Crossing US-41 without pedestrian signal not recommended
 - Recommended crossing is a pedestrian bridge
 - Right-of-way appears to be needed for bridge landing on east side
- May not have enough room to build 12 ft. trail without moving road
 - If this option selected, narrower trail might be required
- Road would potentially need to be rebuilt as urban section to address drainage needs
- Crime in area- this area of Brooksville is perceived to have higher crime than others
- Likely impact to trees along Daniel Avenue
 - Recommend study the possible impacts of adding fill
 - Recommend study to understand trenching for drainage
- No direct access to Uptown
 - Would require signage to direct users of the Coast-to-Coast trail to Uptown Brooksville
 - Would necessitate City/MPO funding for “widewalk” along Main Street from Daniel Avenue to W Broad Street

Figure 6: Tree canopy on Daniel Ave



Figure 7: Measuring right-of-way availability on Daniel Avenue



ADDITIONAL OBSERVATIONS

The field review indicated that the two alignments that include the crossing at Benton Avenue and Ponce De Leon Boulevard (Park/Uptown and Hendricks Avenue) would be less desirable because of the complexity of rebuilding the crossing to get users from Benton Avenue to US-41 and Lamar Avenue: a pedestrian signal would be needed at Benton Avenue and Ponce de Leon Boulevard right-of-way would need to be acquired from mall owners, and the current “road” through the mall would have to be rebuilt to include a multi-use trail, not a parking lot drive aisle.

The crossing between the malls on US-41 also would need to be reconfigured. Until the City of Brooksville's envisioned boulevard plan or complete streets plan for US-41 is designed, it is not recommended that this intersection be used to cross Coast-to-Coast Trail users.

RECOMMENDATION

Based on the second field review, the two alignments recommended to be considered for further study are the Daniel Avenue alignment and the Uptown alignment.