June 15, 2017

TO: ALL INTERESTED PROPOSERS

REQUEST FOR PROPOSAL: Design Build – Pinellas Trail Loop North Segment – Shared Use Non-Motorized (SUN) Trail Program

PROPOSAL NUMBER: 167-0071-NC (SS)

PROPOSAL SUBMITTAL IS DUE: July 6, 2017 @ 3:00 P.M.

ADDENDUM NO. 1

Following is additional information, clarifications, questions and responses relative to referenced Request for Proposal (RFP):

CHANGES:

1. Question deadline has been changed from June 9, 2017 @ 3:00 P.M. to June 19, 2017 @ 3:00 P.M.

2. The due date for this RFP has been changed from June 20, 2017 @ 3:00 P.M., to July 6, 2017 @ 3:00 P.M.

3. Revise Page 12 of 24, Section B – Special Conditions:
   c. Volume of Work Previously Awarded by the County
      Pre-populated by the Purchasing Department, the purpose of this criterion is to effect an equitable distribution of contracts. This criterion is evaluated based on all CCNA Non-Continuing contracts awarded to a firm during the two (2) previous completed fiscal years through to the current date. The date utilized for establishing award shall be the date the Board of County Commissioners or County Administrator initially awards the contract. The points are worth 5 percent of the overall points available and are distributed as follows:

      $0 - $200,000 – five (5%) percent of points available
      $200,001 - $400,000 – four (4%) percent of points available
      $400,001 – 600,000 – three (3%) percent of points available
      $600,001 - $800,000 – two (2%) percent of points available
      $800,001 - $1,000,000 – one (1%) percent of points available
      Over $1,000,000 – zero (0%) percent of points available

      Based on a typical 1,000 point evaluation scoring process, a firm deemed to be in the $0-$200,000 category threshold would be allotted 50 points etc.
4. Revise Page 12 of 24, Section B – Special Conditions:

5. **EVALUATION CRITERIA for Oral Presentations**
   The scores from the written evaluation phase will be carried forward (for the shortlisted firms deemed qualified to proceed) and combined with scores from the oral presentation process for one total **average** score potential of 2,000 points.

**QUESTIONS:**

1. Question:
   a. Page 12 Section C. Volume of Work Previously Awarded by the County: Is the volume of work evaluated for Professional Services only, or does it also include construction services?
   b. Section B, 4.c Volume of Work: is this specific to the contractor (prime), the lead design consultant (sub), or both?
   
   **Response:**
   a. Volume of work is based on CCNA non-continuing awards.
   b. Volume of Work is based on award of contract values by the prime firm.

2. Question:
   a. Who are the selection committee members for this project?
   b. Please provide the names of the members and the department(s) they represent that are expected to participate on the Evaluation Committee.
   
   **Response:** The list of selection committee members are yet to be determined and are subject to change.

3. Question: Are all required forms (page 18 Vendor References; page 21 Electronic Payment; page 22 W9; page 23 Addenda acknowledgement) required to be signed by the Contractor, or does the design consultant also need to fill them out and sign?
   **Response:** The Design-Build firm must sign all required forms.

4. Question: Please provide the County’s preferred horizontal alignment from the Lake Tarpon Outfall Canal to John Chestnut Park. Was not included in original RFQ.
   **Response:** Trail alignment is on west side of CR 611 as identified in the Pinellas Loop Report included in the RFQ.

5. Question: Section E – Scope of Work, Page 20 of 24, Required Deliverables: No mention of required design variations or design exceptions. In Exhibit J – Design Criteria Package, Section E Roadway Plans (Page J5), it states “all such Design Variations and Design Exceptions must be approved or disapproved prior to the submission of the Proposal and such variances and exceptions will be disclosed to all the Design-Build Firms”. Are the Design-Build teams required to submit all anticipated Design Variations and Design Exceptions with the Proposal?
   **Response:** All such Design Variations and Design Exceptions must be submitted no later than the question deadline of June 19, 2017 @ 3:00 P.M. An addendum will be issued whether the variations are approved or disapproved.
6. Question: Section E – Scope of Work, Page 20 of 24, Item 5: “A Guaranteed Maximum Bid Price (GMP) Proposal subsequent to the delivery and review of the 50% design plans and technical specification”. Exhibit O – Scope of Phase 1 Services, Section 2.6 states, “The final Guaranteed Maximum price included in the proposal at the end of Phase 1 will be at or lower than the budget established in the earlier stages of Phase 1.” The language in Phase 1 Services, Section 2.6 indicates that the team will be required to generate a GMB prior to development/delivery of 60% plans, whereas Section E – Scope of Work, Page 20 of 24, Item 5 indicates that GMP will be developed FOLLOWING development/review of the 60% plans. Which is it?
Response: “…Section E – Scope of Work, Page 20 of 24, Item 5: “A Guaranteed Maximum Bid Price (GMP) Proposal subsequent to the delivery and review of the 50% design plans and technical specification...”. Item 5 of above should state 60%, not 50%.

7. Question: Will the RFP’s submitted to Pinellas County be shared with all shortlisted firms BEFORE oral presentations?
Response: See Page 2 of 24, Section A – Item 1(a) Submission of Proposal.

8. Question: Exhibit H, 4. Progress Payments: This section is specific to Phase II. Please explain how Phase I will be negotiated and paid for.
Response: Phase I will be negotiated based upon the Design-Build firm’s understanding of the project and the ability to provide the required services within the established project budget and schedule. Design-Build firm will be paid through the use of Exhibit D, Design Builder Application for Payment Form.

9. Question: What will FDOT’s involvement be during the selection process, design and construction?
Response: FDOT is not directly involved in the selection process. The County will follow the FDOT requirements for the project. Design/Construction activities located on State right-of-ways will need to be coordinated through FDOT by the Design Build firm.

10. Question: Section B, 7. Time Line: The table provide indicates that on June 20, 2017, the “public bid opening to follow immediately”. Please confirm that, since the selection is based on CCNA guidelines, no bids will be provided.
Response: See Page 2 of 24, Section A – Item 1(a) Submission of Proposal.

11. Question: Please provide a breakdown of the project’s estimated budget according to the sources.
Response: The total project budget has been provided in Section E of the RFQ. The FDOT is providing approximately $5.7 million in grant funding, and the County is providing approximately $2.3 million in funding toward project costs. The breakdown of the total project will be established through negotiation of the Guaranteed Maximum Price as defined in the RFQ.

12. Question: Will survey of the proposed horizontal alignment be provided by the County? If not, could the County please provide the Design-Build teams with the proposed survey scope of work?
Response: Survey will not be provided by Pinellas County, the Design Build firm should provide survey scope to meet all the criteria in the Design Build document.
13. Question: Design Criteria Package, Page “J8”, last paragraph: “Impacts identified by the Designer as not causing an adverse impact shall be well documented and will require approval from the District Drainage Engineer.” Will the drainage design require FDOT District Drainage Engineer approval? 
Response: Revise the document: from District Drainage Engineer to County Drainage Engineer.

14. Question: Is MBE participation considered in final scoring? Is there an MBE requirement? 
Response: There are no points awarded during the selection process for MBE/DBE involvement in the project, however, potential Design-Build firms should meet all requirements as stated in Section 9. LOCAL, STATE, AND FEDERAL COMPLIANCE REQUIREMENTS: The laws of the State of Florida apply to any purchase made under this Request for Proposal. Proposers shall comply with all local, state, and federal directives, orders and laws as applicable to this proposal and subsequent contract(s) including but not limited to Americans with Disabilities Act (ADA), Section 504 of the Rehabilitation Act of 1973, Equal Employment Opportunity (EEO), Minority Business Enterprise (MBE), and OSHA as applicable to this contract. Also, included in the RFQ are requirements pertaining to Compliance with Nondiscrimination Statutes and Authorities.

15. Question: Please provide the trail map from Tampa Rd. to CR 611 at John Chesnut Park. 
Response: West side of CR 611 is shown in the Pinellas Loop Report.

16. Question: We are requesting:
   a. the existing bridge plans for CR-611 SB over Brooker Creek (Bridge No. 154159).
   b. Completed PD&E
   c. Pinellas Trail Loop Alignment Study
Response: 
   a. the bridge is very old and there are no plans or additional information available at this time; 
   b. there has been no PD&E completed for the trail crossing over Brooker Creek 
   c. the Pinellas Trail Loop Alignment Study is attached for reference.

17. Question: Please clarify: do the forms count toward the 50 page maximum for Tabs 2-6? 
Response: The submittal shall be limited to one hundred (100) pages. Tabs 2-6 should be a maximum of 50 pages.

All other specifications, terms and conditions remain the same.

Please remember to acknowledge receipt of this Addendum in Section G, Page 23 under Addendum No.1 and return with completed proposal package.

Sincerely,

[Signature]
Director of Purchasing
PINELLAS TRAIL LOOP
Alternate Alignment Study

Prepared for:
Pinellas County, Florida
Public Works Department

Prepared by:
Cardno, Inc.
380 Park Place Boulevard, Suite 300
Clearwater, Florida 33759

www.cardno.com

October 8, 2015
PINELLAS TRAIL LOOP
Alternate Alignment Study
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PART 1. EXECUTIVE SUMMARY

Pinellas County and its consultant, Cardno Inc., explored and identified the preferred alignment for two missing gaps in the existing Pinellas Trail Loop. The North Gap includes the area between John Chesnut Sr Park and the Duke/Progress Energy Trail; the South Gap includes the areas between the Duke/Progress Energy Trail and the northern terminus of the St Petersburg North Bay Trail. The study areas are located near the center of urbanized Pinellas County and completes the multi-use trail link from Tarpon Springs to St Petersburg. The developed corridor will provide a significant recreational and commuter feature for the region.

The Pinellas Trail Loop Alternate Alignment Study reviewed prior studies for the two gap areas, met with key stakeholders for the project, acquired and analyzed related data, and conducted field reviews of key project areas. The project team also reviewed existing parcel and aerial photography maps to identify ideal alignments. The team also considered other infrastructure that exist or are committed within the corridor so that the trail gaps could development along other capital improvements.

The North Gap preferred alignment was identified using an April 2015 CR 611 and Tampa Road Future Pinellas Trail Corridor Evaluation by Kisinger Campo & Associates, a 2008 study performed by Sprinkle Consulting, and preliminary design plans by Ayers & Associates. The alignment was identified as the most feasibility in terms of constructability, timing, route, and cost.

The South Gap preferred alignment was chosen from three major alternatives. These three alignment alternatives were identified through this report and analysis process. The preferred alignment connects residential neighborhoods, employment centers, and community services while taking advantage of other trail improvement currently being developed by the Florida Department of Transportation.

TRAIL DESIGN

The proposed trail will be constructed to modern multi-use trail standards as adopted by American Association of State Highway and Transportation Officials (AASHTO) and Pinellas County. This include development/construction standards relating to material, crossing, grade, amenities, and trail widths.

- **Separated Trail Concept** - The separated trail option provides two different asphaltic concrete paths – one for exclusive use by pedestrians and one for bicycles. The trail paving width is six feet for pedestrians and 10 feet for bicycles for a total paved width of 16 feet. This option may include different pavement material for pedestrian and bicyclists.

- **Combined Trail Concept** - When the two uses area are combined, the trail section will 14 feet of paving plus four feet of shoulder. This option provide a trail design with the same pavement material for pedestrian and bicyclists.

Trails will be designed with certain amenities and furnishing including shade/shelters, benches, waste receptacles, wayfinding, and landscaping. Furthermore, the trail will be designed with the appropriate roadway...
crossings based on safety, visibility, land availability, and cost. Trail design details will be explored and identified as part of the final project design.

PERMITS

As with any construction project, permitting will be an important step prior to laying the first foot of pavement. A preliminary review of probable stormwater, environmental, cultural and contamination impacts revealed that the following permits will likely be required:

- Southwest Florida Water Management District, Environmental Resource Permit
- US Army Corps of Engineers, Nationwide Permit (NWP 18) for minor discharges for new bridge crossings
- Florida Fish and Wildlife Conservation Commission (FFWCC), Gopher Tortoise relocation permit
- Pinellas County, Land Development Permit

PROJECT COST ESTIMATES

The probable cost to construct north gap multi-use trail is estimated at $9,152,024. The probable cost to construct the south gap multi-use trail is $8,887,538. The estimated cost of the gaps together, including design, permitting, testing, limited contamination remediation, construction of the trail/s and all amenities, construction engineering and inspection, and contingency are a total of $31,083,229.

RECOMMENDATIONS

It is recommended that the County proceed with the design and construction of the two remaining gaps in the Pinellas Trail Loop. It is also recommended that the County actively prioritize the trail construction for funding and actively search for potential funding sources.

COST:

The probable cost to construct the multi-use trail within the corridor is estimated at $31,083,229

- North Gap - $9,152,024
- South Gap - $8,887,538
- Intersections/Crossings - $3,250,000
- Design/Mobilization - $9,193,631
South Gap Recommended Alignment (northern portion)
South Gap Recommended Alignment (southern portion)
PART 2. STUDY REPORT

SECTION A. PROJECT OVERVIEW

The Pinellas Trail is a multi-use pathway that stretches from Tarpon Springs to St. Petersburg with interconnections to Palm Harbor, Dunedin, Clearwater, Largo, Seminole, South Pasadena, and Gulfport. The current trail is mostly aligned along the western portions of the Pinellas County. The south trail segments cut across the southern portions of the peninsula to terminate at downtown St Petersburg. The north trail segments have been expanded to hook across the northern portions of the County and then south to terminate at John Chesnut Sr. Park. Several other community trails and bicycle lanes interconnect with the Trail; this creates an integrated multi-use network across the County.

The Pinellas Trail is also a part of local community trails; the City of St Petersburg has the Downtown Connection Trail and the North Bay Trail that provide a continued link between the Pinellas Trail southern terminus and up to 83rd Avenue NE (San Martin Drive NE). The Duke/Progress Energy Trail in Clearwater is present from just south of NE Coachman Road and stretching south to Belleair Road (it remains unconnected to the Pinellas Trail). Considering the existing infrastructure, the Pinellas Trail can be expanded with two additional segments to result in a complete multi-use trail circle around the County.

The ultimate vision is to create a continuous, designated Pinellas Trail loop that circles the county, interconnects other networks, and service as the primary spine facility for pedestrian/bicycle infrastructure. The Pinellas Trail has only two gaps that would otherwise create a full trail loop within Pinellas County;

> **The North Gap** includes the area between John Chesnut Sr Park and the Duke/Progress Energy Trail,

> **The South Gap** includes the areas between the Duke Energy Trail and the northern terminus of the St Petersburg North Bay Trail.

The purpose of this report is to identify the alternative alignments for each gap that will result in a logical, safe, and cost-effective trail loop. Community support is strong with enthusiasm to complete the trail. The two segments are located on the eastern side of the loop; the people of Pinellas will benefit from the increased connectivity to major employers, higher education and vocational centers, schools, recreation, and community services. This study includes project goals, background, and alternatives analysis, planning consideration, preferred alignment, and cost estimates.
GOALS AND OBJECTIVES

Pinellas County and its municipalities maintain their goal to construct, manage, and expand the MPO Bicycle and Pedestrian Master Plan. In this plan, the Pinellas Trail Loop is envisioned as a 75 mile trail network that will include access to safe, reliable, and equitable transportation for County residents. The goal is to complete the Pinellas Trail Loop through near-term construction of the North and South Gaps. This study moves toward this goal through these objective:

> Identify alternatives for the trail gap alignments.
> Utilize existing infrastructure and right-of-way/easements.
> Interconnect educational, employment, residential, and community service uses.
> Connect and link to public transportation.
> Avoid and protect environmental resources.
> Consider cost-effective elements and routes.

STUDY PROJECT SCOPE

In May 2015, Pinellas County contracted with Cardno, Inc. (a multidisciplinary physical infrastructure consulting firm) to assist with the alternative alignment study for the Pinellas Trail Loop. Pinellas and the consultant (the Team) reviewed previously created reports, adopted plans, GIS data sets, and conducted site visits in conducting the study. The study scope included the following key tasks. Meet with key trail stakeholders.

I. Collect and review data on the proposed corridor.
II. Identify and examine key planning considerations for each alternative.
III. Conduct a visual and data assessment of trail roadway intersections.
IV. Select the recommended alignment for the trail.
V. Generate project cost estimates.
VI. Draft the Pinellas Trail Loop Alternate Alignment Study Report with recommendations for the trail development.

SITE VISITS

The nature of the project dictated that the corridor be viewed by key team staff in order to fully appreciate and understand the existing field conditions. The Cardno project team, visited numerous areas of the proposed trail alignment and photographed intersection, key topographic sites, and potential development issues. The project team focused on identifying the following key elements in the field:

> Cross-section changes
> Noticeable contaminants
> Drainage features and structures
> Bridges and other structures
> Visible encroachments
> General alignment conditions
> Roadway intersections
> Environmental and cultural features
> Land Use Patterns
SECTION B. PROJECT BACKGROUND

PROJECT SETTING

Pinellas County started out with several historical townships, each with very identifiable downtowns, neighborhoods, and outer boundaries. The original townships (St Petersburg, Gulfport, Clearwater, Safety Harbor, Tarpon Springs, and Oldsmar) were compact and walkable. Most towns developed according to a pre-planned city plat. Overtime, their boundaries blurred as massive urban development occurred and outward expansion resulted in a completely built-out peninsula.

The majority of Pinellas’ development occurred post-World War II which resulted in suburban-style, automobile-oriented land use patterns. This pattern also resulted in little integration between individual projects, subdivisions, and commercial centers. An unintended consequence was an automobile-oriented transportation network. This resulted in a lack of connectivity to destinations and a poor safety record for vulnerable road users. In recent years, the County and its municipalities are implementing solutions to retrofit the suburban landscape into an integrated, walkable/bikeable community.

The Pinellas Trail was created and serves as the center piece to pedestrian/bicycle facilities within the County. Several other community trails have been developed and interconnect with the Pinellas Trail; others are in planning stages. Today, the trail system is very close to becoming a continuous network that knits together existing neighborhoods and public infrastructure.

The project is focused on the two trail gaps in northeastern and central Pinellas County. The North Gap extends 9.6 miles from John Chesnut Sr. Park to the Duke/Progress Trail in eastern Clearwater. The South Gap extends 11 to 13 miles from the Duke/Progress Trail towards the Weedon Island State Preserve. The two trail loop gaps are located in a built-out suburban settings, the trail alignments will be integrated into the existing development patterns. The Pinellas Trail Loop is essential pedestrian/bicycle infrastructure to connect people, neighborhoods, and resources.

Top: The existing Pinellas Trail in South Pasadena

Bottom: Existing pedestrian/bicycle bridge recently constructed over Hwy 19 near Countryside Mall awaits connection to regional trail system.
The North Gap is located in a mostly residential suburban setting but crosses through several commercial/multi-family nodes. Most trail segments are planned within the Duke/Progress power line easement. Many of the primary roadways are wide, high speed arterials and collectors; the trail crosses seven 4-lane roadways. The trail passes through or alongside several residential neighborhoods. These neighborhoods are in good condition and well maintained. Most of the adjoining residences to the trail are single-family houses. There are clusters of townhouses, duplexes, and multi-family communities abutting the trail alignment. There are opportunities to create internal, local pathway connections to the trail from individual neighborhoods. There are numerous public parks adjacent to the trail. Most of the area has sidewalks. The North Gap area has existing trail infrastructure but it remains unconnected. The Ream Wilson Clearwater Trail provides an east-west connection from Coachman Ridge Park to Safety Harbor, it connects to the Duke/Progress Trail but the two remain unconnected to a regional trail system.

The South Gap is a widely diverse section that includes a mix of employment, residential, and government uses. Most of the trail segment is located within the Duke/Progressive power line easement, while other portions run alongside major roadways. I-275 bifurcates the South Gap to create two distinct, large geographic areas. The segment starts amongst commercial and office uses. It then progresses into residential neighborhoods; this includes a mix of well-maintained single-family houses and multi-family communities, as well as, multiple educational institutions. The South Gap central portions are highly industrial in character and are adjacent to high-quality office/business parks. A concentration of office, business and multi-family is located east of I-275. The eastern terminus abuts the Weedon Island State Park. Many of the primary roadways are wide, high speed arterials; the trail may be required to cross at least eight 4-lane roadways. I-275 is a major divide; the trail may have to cross over the highway or navigate amongst ramps. The South Gap area has extensive existing on-street bike lane infrastructure. Additionally, there are existing community trails in the vicinity; the North Bay Trail (north-south along 1st Street N) and the Friendship Trail (east-west along Gandy Boulevard). The adjoining areas east of I-275 are generally interconnected with existing sidewalks, roadways, and/or driveways; whereas, the individual areas/parcels west of I-275 are generally isolated and less integrated with pedestrian/bicycle infrastructure.
PINELLAS TRAIL LOOP MASTER PLANNING

The Pinellas Trail Loop is, and has been, in numerous strategic plans for bicycles and multi-use trails for many years. These master plans frequently call for the completion of the trail to loop around Pinellas County. The following is a list of known strategic plans that include the completion of the Pinellas Trail.

> Pinellas Metropolitan Planning Organization (MPO)  
  Bicycle Pedestrian Master Plan Facilities Element, 2013

> Pinellas Metropolitan Planning Organization (MPO);  
  Bicycle, Pedestrian and Trails Master Plan – 2014

> Pinellas Metropolitan Planning Organization (MPO);  
  2040 Long-Range Transportation Plan

> Florida Department of Environmental Protection; Florida  
  Greenway and Trails System – 2012 Priority Trails  
  Map, 2008, Updated 2012

SECTION C. ALIGNMENT ANALYSIS

The Pinellas Trail Loop (the Loop) is planned to connect northeast Pinellas County to northeast St. Petersburg. Specifically, the Loop alignment will connect John Chesnut Sr. Park to just west of Weedon Island State Preserve; the trail is anchored with two signature natural areas and wilderness preserves.

The Trail Loop is designed as a multi-use pathway to serve pedestrians and bicyclists. The multi-use trail is envisioned to function as a primary multiuse route that provides for regional connections and mobility; smaller secondary routes/links will spur off from the Trail Loop to provide local access to individual neighborhoods and buildings. To serve this function, the Trail Loop will interconnect residential neighborhoods, commercial nodes, recreation, transit, and employment centers.

The Pinellas Trail Loop is planned within the existing urban fabric. Its alignment will respond to existing improvements, ownership boundaries, planned construction, and land use patterns. The Loop also builds upon, connects, and strengthens existing City and County pedestrian and bicycle infrastructure to create a holistic trail network.

The trail is planned as two distinct sections, the North Trail Loop and the South Trail Loop. The existing Duke/Progress Energy Trail is located midway within the full Pinellas Trail Loop corridor; this existing trail defines the north and south sections. The North Trail Loop is planned from John Chesnut Sr. Park and connect to the Duke/Progress Energy Trail northern terminus. The South Trail Loop is planned to extend from the Duke/Progress Energy Trail southern-most terminus to San Martin Boulevard just southwest of the Weedon Island State Preserve.

A corridor analysis was conducted to define the preferred trail sections alignment. In doing so, the design team revised existing improvements, rights-of-way, ownership boundaries, and planning capital improvements within the general trail section corridors. The team identified the preferred alignment along with minor variations to overcome site conditions and/or respond to community goals; these are provided as trail alignment alternatives.

The following subsections provide insight to the corridor analysis by trail section (North or South). The information is provided for the preferred alignments and alternative routes. The analysis describes the alignment in terms of surrounding land uses, development patterns, route location, and planning considerations.
NORTH TRAIL SECTION
ALIGNMENT ANALYSIS

The North Trail Loop alignment is planned from the John Chesnut Sr. Park on East Lake Road to the Alligator Creek Bridge on Old Coachman Rd. A preferred alignment has been identified and connects existing segments of the Pinellas Trail. A recent separate study conducted in April 2015 (Kisinger Campo & Associates; under separate title, also a 2008 study by Sprinkle Consulting and preliminary plans by Ayers & Associates) identified several alternative alignments, but the County chose the preferred route for that report. The following subsections describe the North Trail Section in smaller segments and identifies key planning considerations. Segments N1 and N2 constitutes a division of the North Trail Section into specific corridors.

Top: Typical View of Progress Energy Easement

Bottom: Pinellas Trail Loop – North End of North Gap

Left: North Gap Alignment – from John Chesnut Park to the Old Coachman Road Alligator Creek bridge.
Segment N1 - Preferred Alignment

This preferred segment alignment extends from the John Chesnut Sr. Park located along the west side of East Lake Road to Enterprise Road. The preferred segment alignment follows East Lake Road to the split of McMullen Booth Road where it crosses the Lake Tarpon Canal. The trail continues south along McMullen Booth Road and moves west at the intersection of Countryside Boulevard and continues along that road segment to the intersection of Meadow Wood Drive. The trail segment extends along Meadow Wood Drive turning south at the Utility right-of-way and continuing along the extent of the right-of-way where it crosses SR 580 and continues south to Enterprise Road.

Planning Considerations

> **Existing/Committed Trail Facilities** – There are existing or committed trail facilities in portions of this segment. Existing sidewalks occur along Meadow Wood Drive, Countryside Boulevard and portions of McMullen Booth Road/East Lake Road.

> **Limited Public Right-of-Way** – There are portions of the existing roadway rights-of-way that are narrow and may necessitate a condensed trail section design and/or other design solutions to ensure a fit. This includes Meadow Wood Drive and McMullen Booth Road/East Lake Road.

> **Specialized Construction** – A portion of the trail segment will require a multi-use trail bridge to cross the Lake Tarpon Canal due to the lack of available right-of-way along McMullen Booth Road. Safe crossing will also need to be addressed where the trail crosses Main St/SR 580 at the Countryside Mall. There is currently no traffic control or medians at this location.

> **Private Property** – The segment passes through the existing parking lot of the Countryside Mall and will require unique design solutions to address the combined uses of parking and trail uses.

> **Residential Neighborhoods** – The segment passes alongside many residential neighborhoods; including single-family and multi-family housing types. The majority of the adjacent residential will have direct access to the trail.

> **Commercial Centers** – There are commercial centers/uses along this segment. Most of the commercial uses will have direct access to the trail. Those that are in close proximity should have enhanced features along the trail segment to attract/enhance pedestrian use.

> **Recreational Centers** – The Countryside Community Park and John Chesnut Sr. Park are located along the preferred alignment segment and offers an opportunity to blend the uses of the parks and trail into a single unified experience.

> **Transit** – This segment passes along/intersects multiple public transportation lines.
Segment N1 Alignment.
Segment N2 – Preferred Alignment

This segment extends from Enterprise Road to Old Coachman Road at the Alligator Creek Bridge. The trail segment begins at Enterprise Road and continues south, crossing over U.S. Highway 19 via an existing multi-use pedestrian bridge. A new segment of trail will continue south from the multi-use bridge along a utility right-of-way and cross Sunset Point Road then continuing south until turning west on NE Coachman Road. The segment turns south on Old Coachman Road where it picks up the existing trail connections next to Brighthouse Field.

Planning Considerations

> **Existing/Committed Trail Facilities** – This segment alignment capitalizes and incorporates existing/committed trail infrastructure. There are existing/committed trail facilities along Old Coachman Road, NE Coachman Road, and Enterprise Road that will not require any additional expansion or funding. Old Coachman over the Alligator Bridge is programmed in the Pinellas County Capital Improvement Projects (CIP) for replacement and will include the trail.

> **Limited Public Right-of-Way** – There are portions of the existing roadway rights-of-way that are narrow and may necessitate a condensed trail section design and/or other design solutions to ensure a fit.

> **Wetlands** – There are areas within/along the preferred alignment that pass near Freshwater Emergent Wetlands. Special care will need to be taken during design and construction of the trail to accommodate the proximity to the wetland areas.

> **Trail Base** – Portions of the trail adjacent to the On Top of the World Development and wetlands located within the Duke Energy parcel/easement must provide for heavy equipment access to service the existing electrical substation. This requires the trail base and paving to be enhanced to support vehicle weight.

> **Golf Course Buffer** – Portions of the trail segment run along the On Top of the World Golf Course. A buffer is recommended to insure the safety of the trail users as well as to prevent any conflicts with patrons of the golf course.

> **Recreational Uses** – The trail segment passes and runs through multiple city parks. These city parks include recreational sports and existing trail networks throughout the park. This provides opportunities to connect the internal park's trails with the proposed trail segment.

> **Residential Neighborhoods** – The segment passes alongside many residential neighborhoods; including single-family and multi-family housing types. The majority of the adjacent will have direct access to the trail.

> **Commercial Centers** – There are commercial centers/uses at each end of this segment. Most of the commercial uses will have direct access to the trail. Those that are in close proximity should have enhanced features along the trail segment to attract/enhance pedestrian use.

> **Transit** – This segment passes along/intersects multiple public transportation lines
Segment N2 Alignment.
SOUTH TRAIL SECTION ALIGNMENT ANALYSIS

The South Trail Loop alignment is planned from the Duke/Progress Energy Trail to San Martin Boulevard just southwest of the Weedon Island State Preserve. A preferred alignment has been identified, whereas, multiple variations have been reviewed in an effort to determine the chosen route. The following subsections describe the South Trail Sections in smaller segments and identify key planning considerations. Segments S1, S2, and S3 provide similar alignments with minor variations. Segments S4, S5, and S6 offer widely different routes and connect very different communities and land uses. Segment S1 and S4 have been identified as the preferred alignments; whereas, the other segments remain viable options.
Segment S1 - Preferred Alignment

This preferred segment alignment extends from the Duke/Progress Energy Trail along the north side of Belleair Road. It crosses under US Hwy 19 and continues south along the east side of the north-bound service road. The segment turns east on Haines Bayshore Road and then travels south on Cardinal Drive to access the Duke Energy power easement. The segment continues south within the easement to Icot Boulevard; portions of the easement lay within Duke Energy property while others extend over private property. The route continues south a short distance to Ulmerton Road. The segment runs east along the north side of Ulmerton Road to a bridge at a creek crossing. The segment crosses under Ulmerton Road via an existing sidewalk/trail underpass.

Planning Considerations

- **Existing/Committed Trail Facilities** – There are existing or committed trail facilities in portions of this segment that require no additional money or planning. This segment alignment was created to capitalize and incorporate existing/committed trail infrastructure. Existing/Committed trail facilities are located along Belleair Road, US Hwy 19, and Haines Bayshore Road. There is an existing sidewalk/trail underpass under Ulmerton Road.

- **Limited Public Right-of-Way** – There are portions of the existing roadway rights-of-way that are narrow and may necessitate a condensed trail section design and/or other design solutions to ensure a fit. This includes Icot Boulevard.

- **Private Property** – There are areas within/along the Duke Energy easement that are on private property and require access easements for the proposed trail. These easement areas are near Haines Bayshore Road and Icot Boulevard.

- **Trail Base** – Portions of the trail just south of Whitney Road must provide for heavy equipment access to service the existing electrical substation. This requires the trail base and paving to be enhanced to support vehicle weight.

- **Employment Uses** – The segment passes along and within close proximity to employment areas including warehousing, industrial, and office uses. The trail can provide alternative access to employers within the county.

- **Residential Neighborhoods** – The segment passes alongside many residential neighborhoods; including single-family and multi-family housing types. The majority of the residential neighborhoods are adjacent to the preferred alignment and will have direct access to the trail.

- **Commercial Centers** – There are commercial centers/uses at each end of this segment. Most of the commercial uses will have direct access to the trail.

- **Educational Institutions** – There are multiple educational institutions that are located along and/or within close proximity to this segment. High Point Elementary and Pinellas Technical College are located at its midpoint, and Clearwater Central Catholic High School is located near to the northern portions.

- **Transit** – This segment passes along/intersects multiple public transportation lines. This segment also passes through a Duke Energy Substation, which requires additional review and approval.
Segment S1 Alignment.
Segment S2 – Alternative Alignment A

This segment alternative extends for the Duke/Progress Energy Trail along the north side of Belleair Road. It crosses under US Hwy 19 and continues south along the east side of the north-bound service road. The segment turns east on Haines Bayshore Road to access the Duke Energy power easement. The segment continues south within the easement to 142nd Avenue; portions of the easement lay within Duke Energy property while others extend over private property. The route runs west on the south side of 142nd to Icot Boulevard then travels south to Ulmerton Road. The segment runs east along the north side of Ulmerton Road to a bridge at a creek crossing. The segment crosses under Ulmerton Road via an existing sidewalk/trail underpass.

Planning Considerations

> **Existing/Committed Trail Facilities** – This segment alignment capitalizes and incorporates existing/committed trail infrastructure. There are existing/committed trail facilities along Belleair Road, US Hwy 19, and Haines Bayshore Road; there is an existing sidewalk/trail underpass under Ulmerton Road.

> **Limited Public Right-of-Way** – There are portions of the existing roadway rights-of-way that are narrow and may necessitate a condensed trail section design and/or other design solutions to ensure a fit.

> **Private Property** – There are areas within/along the Duke Energy easement that are on private property and require access easements for the proposed trail. These easement areas are near Haines Bayshore Road and Icot Boulevard. This segment alignment alternative uses 142nd Avenue N. to avoid private property at Icot Boulevard.

> **Trail Base** – Portions of the trail just south of Whitney Road must provide for heavy equipment access to service the existing electrical substation. This requires the trail base and paving to be enhanced to support vehicle weight.

> **Employment Uses** – The segment passes along and within close proximity to employment areas including warehousing, industrial, and office uses. The trail can provide alternative access to employers within the county.

> **Residential Neighborhoods** – The segment passes alongside many residential neighborhoods; including single-family and multi-family housing types. The majority of the residential neighborhoods are adjacent to the preferred alignment and will have direct access to the trail.

> **Commercial Centers** – There are commercial centers/uses at each end of this segment. Most of the commercial uses will have direct access to the trail.

> **Educational Institutions** – There are multiple educational institutions that are located along and/or within close proximity to this segment. High Point Elementary and Pinellas Technical College are located at its midpoint, and Clearwater Central Catholic High School is located near to the northern portions.

> **Transit** – This segment passes along/intersects multiple public transportation lines.
Segment S2 Alignment.
Segment S3 – Alternative Alignment B

This segment alternative extends from the Duke/Progress Energy Trail along the north side of Belleair Road. It crosses under US Hwy 19 and continues south along the east side its north-bound service road. The segment turns east on Haines Bayshore Road and then travels south on Cardinal Drive to access the Duke Energy power easement. The segment continues south within the easement to 58th Street N.; portions of the easement lay within Duke Energy property while others extend over private property. The route continues to Ulmerton Road runs east along the north side of the road to the bridge. The segment crosses under Ulmerton Road via an existing sidewalk/trail underpass.

Planning Considerations

> **Existing/Committed Trail Facilities** – This segment alignment capitalizes and incorporates existing/committed trail infrastructure. There are existing/committed trail facilities along Belleair Road, US Hwy 19, and Haines Bayshore Road; there is an existing sidewalk/trail underpass under Ulmerton Road. There is an existing paved pathway within the open space tract (with power easement) between Icot Boulevard and 58th Street N; a property association owns this tract.

> **Limited Public Right-of-Way** – There are portions of the existing roadway rights-of-way that are narrow and may necessitate a condensed trail section design and/or other design solutions to ensure a fit.

> **Private Property** – There are areas within/along the Duke Energy easement that are on private property and require access easements for the proposed trail. These easement areas are near Haines Bayshore Road and Icot Boulevard. However, this segment uses existing pathways within a private tracts between Icot Boulevard and 58th Street N.

> **Trail Base** – Portions of the trail just south of Whitney Road must provide for heavy equipment access to service the existing electrical substation. This requires the trail base and paving to be enhanced to support vehicle weight.

> **Employment Uses** – The segment passes along and within close proximity to employment areas including warehousing, industrial, and office uses. The trail can provide alternative access to employers within the county.

> **Residential Neighborhoods** – The segment passes alongside many residential neighborhoods; including single-family and multi-family housing types. The majority of the residential neighborhoods are adjacent to the preferred alignment and will have direct access to the trail.

> **Commercial Centers** – There are commercial centers/uses at each end of this segment. Most of the commercial uses will have direct access to the trail.

> **Educational Institutions** – There are multiple educational institutions that are located along and/or within close proximity to this segment. High Point Elementary and Pinellas Technical College are located at its midpoint, and Clearwater Central Catholic High School is located near to the northern portions.

> **Transit** – This segment passes along/intersects multiple public transportation lines.
Segment S3 Alignment.
Segment S4 - Preferred Alignment

This preferred segment alignment starts at the Ulmerton Road pedestrian/trail underpass and continues east along the south side of the roadway to a major Duke Energy substation. The trail turns south around the east side of the substation and travels southeast within an existing power easement to 126th Avenue N. The trail continues east along 126th Avenue N. to 34th Street N. The trail wraps south along the PSTA campus/transit center and continues along Scherer Road to 28th Street N. The trail uses 28th Street to cross Roosevelt Boulevard and access the Carillon Business Park and residential communities. The alignment continues southeast along the east side of Roosevelt Boulevard to Gandy Boulevard; it passes under I-275 and along office and multi-family communities. The trail aligns along the north side Gandy Boulevard to a signal at Brighton Bay Boulevard; it crosses Gandy Boulevard and continues east to San Martin Boulevard NE. The trail is planned along the west side of San Martin Boulevard NE and terminates as Macoma Drive NE.

Planning Considerations

> **Existing/Committed Trail Facilities** – This segment alignment capitalizes and incorporates existing/committed trail infrastructure. There is an existing/committed multiuse trail along the east side of Roosevelt Boulevard starting at 28th Street/Lake Carillon Drive. This 10-ft trail will be constructed by FDOT.

> **Planned Roadways** – 126th Avenue N is planned for lane widening and complete roadway construction between 34th Street N and west of US Hwy 19. The project has not been designed, but creates an opportunity to incorporate the multiuse trail within its future right-of-way and its roadway construction. The planned structure carrying the Gateway Express is currently designed to accommodate the widened section and will also accommodate the trail.

> **Limited Public Right-of-Way** – In the near term, 126th Avenue has a narrow and disconnected right-of-way.

> **Wetlands/Ditches** – There are existing wet drainage ditches along Gandy Boulevard east of 4th Street. The trail must be constructed on a structure over these features. Many of these existing features will be modified by the on-going FDOT design/build project along Gandy Boulevard.

> **Highway/Ramps** – Portions of the trail cross I-275 on/off ramps; there are five (5) ramp crossings. FDOT is constructing a trail in this area and independent to the Pinellas Trail Loop project.

> **Other Gandy Trail** – There is an existing multiuse trail that runs eastward along Gandy Boulevard that starts at Brighton Bay Boulevard NE; this trail alignment creates a connection with the existing trail improvements.

> **Trail Base** – Portions of the trail just south of Ulmerton Road to the existing substation must provide for heavy equipment access to service the existing electrical substation. This requires the trail base and paving to be enhanced to support vehicle weight.

> **Employment Uses** – The segment passes along and within close proximity to employment areas including warehousing, industrial, and office uses. The trail can provide alternative access to employers within the county. There are many industrial uses along 126th Avenue. Carillon is a major business park; and there are several office developments along Roosevelt south of I-275.
> **Substation** – Anywhere the trial passes through an existing Duke Energy Substation will require additional review and approval.

> **Residential Neighborhoods** – There are many large multifamily and senior housing communities located adjacent to/near to the mid portions of this segment.

> **Transit** – This segment passes along/intersects multiple public transportation lines and intersects with a transit transfer center. The route also abuts the PSTA headquarters.

> **Utilities** – The north side of Gandy Boulevard has significant utilities within the right-of-way. Avoiding these utilities will add significant cost to the proposed structure.
Segment S4 Alignment.
**Segment S5 – Alternative Alignment A**

This segment alternative starts at the Ulmerton Road pedestrian/trail underpass and continues east along the south side of the roadway to the new Hwy 686/Gateway Expressway. The trail aligns along the west side of Hwy 686/Gateway Expressway and crosses over 118th Avenue/690 Gateway Expressway. It continues along the south side of 118th Avenue/690 Gateway Expressway until the Pinellas County field office and waste management properties. The trail wraps around the County properties, along the west and south boundaries, to 28th Street N. The trail then continues south along the west side of 28th Street N to Gandy Boulevard. The trail continues east on the north side of Gandy Boulevard, passing under I-275 and intersecting 16th Avenue N. The trail continues north on 16th Avenue and then turns east into a Duke Energy parcel/easement. The trail travels along a frontage road and then intersects Martin Luther King Jr (MLK) Street N. The trail crosses MLK Street to the east side and then immediately crosses Gandy Boulevard to the south. The trail continues east within another Duke Energy parcel/easement, crossing over 4th Street N. and intersecting with San Martin Boulevard NE. The trail is planned along the west side of San Martin Boulevard NE and terminates as Macoma Drive NE.

**Planning Considerations**

> **Existing/Committed Trail Facilities** – This segment alignment incorporates existing trail/roadway crossing improvements at Martin Luther King Jr Street N. and Gandy Boulevard (See Appendix J). The trail portions along Gandy are designed by FDOT but construction is funded through Pinellas County.

> **Planned Trail Segments (other)** – The City of St Petersburg has preliminary plans to construct a multi-use trail along Gandy Boulevard from 28th Street N to Martin Luther King Jr Boulevard N.

> **Highway/Ramps** – Portions of the trail cross I-275 on/off ramps; there are two (2) ramp crossings. The City of St Petersburg prefers that tunnels be provided under ramps to ensure pedestrian/bicycle safety.

> **Highway Design Modification** – The new Hwy 686/Gateway Expressway is planned as an elevated facility with retaining walls and side slopes. The trail portions that run along the west side of the new highway will require highway design modifications; additional wall and slope adjustments.

> **Landfill/Surveillance** – Portions of this alignment run along the back side of the land fill; there will be a lack of surveillance to the trail. However, the County owns this land.

> **4th Street N. Crossing** – The trail crossing over 4th Street N will require a lengthy structure, the roadway splits to become a right merge lane for Gandy Boulevard and there is no traffic control. **There is an opportunity to cross 4th Street N further to the south at Koger Blvd N; however, additional right-of-way may be required and trail users will be rerouted to the south.**

> **Employment Uses** – The segment passes along and within close proximity to employment areas including warehousing, industrial, and office uses. There are many industrial uses between Ulmerton Rd and 118th Avenue. Business parks are located at Martin Luther King Jr Boulevard and Gandy, and at 4th Street N and 94th Avenue N. The trail also passes the Florida Army National Guard and a business park along 28th Street just north of Gandy Boulevard.
> **Residential Neighborhoods** – There are some isolated multifamily pockets that are located along the trail; one is located along 28th Street just north of Gandy, and another between 16th Street and Martin Luther King Jr Street. Single-family neighborhoods are located east of 4th Street and adjacent to the proposed trail.

> **Transit** – This segment passes along/intersects multiple public transportation lines.
Segment S5 Alignment.
Segment S6 – Alternative Alignment B

This segment alternative starts at the Ulmerton Road pedestrian/trail underpass and continues east along the south side of the roadway to a major Duke Energy substation. The trail turns south around the east side of the substation and travels southeast within an existing power easement to 49th Street N. The trail runs along the west side of 49th Street N to Lake Boulevard; the trail crosses 49th Street and continues south along its east side. The trail continues east along the south side of 102nd Avenue; it crosses the Duke Energy power easement and continues east within undeveloped, linear right-of-way (R.O.W.) (102nd Ave N) to 16th Street N; this path crosses I-275. The trail continues south on 16th Avenue and then turns east into a Duke Energy parcel/easement. The trail travels along a frontage road and then intersects Martin Luther King Jr (MLK) Street N. The trail crosses MLK Street to the east side and then immediately crosses Gandy Boulevard to the south. The trail continues east within another Duke Energy parcel/easement, crossing over 4th Street N. and intersecting with San Martin Boulevard NE. The trail is planned along the west side of San Martin Boulevard NE and terminates as Macoma Drive NE.

Planning Considerations

> **Existing/Committed Trail Facilities** – This segment alignment incorporates existing trail/roadway crossing improvements at Martin Luther King Jr Street N. and Gandy Boulevard (See Appendix J).

> **Private Property** – The undeveloped 102nd Avenue ROW terminates at a private parcel.

> **Highway Crossing** – The trail alignment along undeveloped 102nd Avenue ROW requires crossing I-275; a bridge or tunnel is required to cross the interstate at this location.

> **4th Street N. Crossing** – The trail crossing over 4th Street N will require a lengthy structure, the roadway splits to become a right merge lane for Gandy Boulevard and there is no traffic controls. **There is an opportunity to cross 4th Street N further to the south at Koger Blvd N; however, additional right-of-way may be required and trail users will be rerouted to the south.

> **Employment Uses** – The segment passes along and within close proximity to employment areas including warehousing, industrial, and office uses. Light industrial and warehousing are located along 49th Street N. Business parks are located at Martin Luther King Jr Boulevard and Gandy, and at 4th Street N and 94th Avenue N. The trail also passes business parks just south of the 102nd Avenue ROW.

> **Residential Neighborhoods** – Large areas of single-family neighborhoods are located along this trail alignment. Several subdivisions are located between US Hwy 19 and I-275. There are other neighborhoods east of 4th Street and south of the proposed trail.

> **Transit** – This segment passes along/intersects multiple public transportation lines.
Segment S6 Alignment.
SECTION D. DESIGN

PHYSICAL FEATURES

State and national standards for multi-use trails are still evolving. Only recently have national agencies started developing and publishing recommended standards. The most widely used and quoted are American Association of State Highway and Transportation Officials (AASHTO) Guide for the Planning, Design, and Operation of Bicycle Facilities, the National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide, and the Federal Highway Administration (FHWA) Designing Sidewalks and Trails for Access. Some states and municipalities have gone beyond the national guidelines and developed their own, more detailed design standards. One of those states is Minnesota Department of Transportation (MNDOT) which developed and published the Bikeway Facility Design Manual. Because of its clarity and comprehensive coverage of multi-use trails, this manual is cited frequently in the design criteria for the Pinellas Trail Loop Study. The MNDOT standards appear to match or exceed the various national standards on key criteria.

The Multi-use Trail Design Criteria matrix follows on the next two pages. Key design features include a multi-use (combined) trail width of 14 feet and dual, separated trails with widths of 10 feet for the bike only trail and six feet width for the pedestrian only trail. Each trail will have a two to five-foot shoulder on each side. The design speed for bicycles will be 15 MPH on the combined trail in flat areas and 20 MPH on bicycle only trails and downhill areas (future overpass ramps).

The trail must also meet all Federal and State design criteria associated with the Americans with Disabilities Act (ADA) and other safety standards. These criteria include keeping the trail fairly flat between 1% and 2% cross-slope. The linear grade should be kept to 3% where possible with a maximum of 8.33% with five-foot landings at 30 feet allowed at future overpass ramps. Shoulders should be constructed of stable base-type material such as bank-run shell and have a maximum 6% cross-slope.

As the trail approaches roadway crossings, the separated trails must be combined to form a single crossing location for all users. The approach should be a minimum of 65 feet in length with the total width widened at the roadway edge to allow for stacking prior to crossing. The proposed treatment of each roadway crossing is discussed in a later section. Each crossing must also include a detailed review of site distance needs during final design. Many of the existing crossings currently have very limited sight distance due to vegetation overgrowth, fences, building, and other visibility blockages.
# Table D.1. - Multi-use Trail Design Criteria Matrix - Pinellas Trail Loop

## MULTIUSE TRAIL DESIGN CRITERIA

<table>
<thead>
<tr>
<th>Design Element</th>
<th>Reference</th>
<th>Design Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TRAVEL CONDITIONS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design Speed</td>
<td>AASHTO</td>
<td>15 mph – Level, shared path</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20 mph – Downhill, shared path</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20 mph – Bicycle only path</td>
</tr>
<tr>
<td></td>
<td>MNDOT</td>
<td>12 mph - Intersections</td>
</tr>
<tr>
<td>Stopping Sight Distance (bicycle) with 5% max. grade</td>
<td>AASHTO</td>
<td>123′ @ 15 mph</td>
</tr>
<tr>
<td></td>
<td></td>
<td>194′ @ 20 mph</td>
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<tr>
<td><strong>PAVEMENT</strong></td>
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<tr>
<td>Minimum Multiuse Trail Width</td>
<td>AASHTO</td>
<td>10′ min.</td>
</tr>
<tr>
<td></td>
<td>MNDOT</td>
<td>12′ rec. w/ emergency vehicle</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14′ heavy use / proposed</td>
</tr>
<tr>
<td>Minimum Pedestrian Trail Width (2-way; w/o bicycles)</td>
<td>MNDOT</td>
<td>5′ min.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6.5′ heavy use</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6′ proposed</td>
</tr>
<tr>
<td>Minimum Bicycle Trail Width (2-way; w/o pedestrians)</td>
<td>MNDOT</td>
<td>8′ min.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10′ heavy use / proposed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(may be tight for emerg. Vehicles.)</td>
</tr>
<tr>
<td>Pavement Cross Slope (walk/bike lanes)</td>
<td>AASHTO</td>
<td>1% (min.)</td>
</tr>
<tr>
<td></td>
<td>AGODA (7)</td>
<td>2% (max.)</td>
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<tr>
<td></td>
<td></td>
<td>5% (max.) independent ROW</td>
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<tr>
<td>Grade (flat terrain-urban)</td>
<td>AASHTO</td>
<td>5% max.</td>
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<td></td>
<td></td>
<td>3% recommended</td>
</tr>
<tr>
<td>Minimum Radius of Curvature (bicycle on trail)</td>
<td>AASHTO</td>
<td>42′ @ 15 mph</td>
</tr>
<tr>
<td></td>
<td></td>
<td>74′ @ 20 mph</td>
</tr>
<tr>
<td><strong>SHOULders AND SIDE SLOPES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shoulder width (unpaved)</td>
<td>AASHTO</td>
<td>2′ min. w/ side slopes &lt; 4:1 *</td>
</tr>
<tr>
<td></td>
<td>MNDOT</td>
<td>5′ min. w/out railing, slopes &gt; 4:1 *</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2′ – 5′ w/ railing, slopes &gt; 4:1 *</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(* - See AASHTO for details.)</td>
</tr>
</tbody>
</table>
Table D.1. - Multi-use Trail Design Criteria Matrix - Pinellas Trail Loop

<table>
<thead>
<tr>
<th>Design Element</th>
<th>Reference</th>
<th>Design Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoulder slope</td>
<td>AASHTO</td>
<td>6:1 max.</td>
</tr>
<tr>
<td></td>
<td>MNDOT</td>
<td></td>
</tr>
</tbody>
</table>

Table Notes:
4. AGODA is Accessibility Guidelines for Outdoor Developed Areas.
5. PPM is the Florida Department of Transportation (FDOT) Plans Preparation Manual.

TYPICAL SECTIONS

The Design Criteria and existing conditions of the corridor dictate how the combined and separated bike and pedestrian trails can be laid out. The trail typical section will vary throughout the project based on whether the trail is combined or separated. At final design stage, portions of the trail make including a combination of separated and combined trail design based on use activity, available right-of-way, and surrounding land uses.

In past planning and visioning discussions with trail users, there was strong community desire to build new trails with more variety in the trail alignment and section design. (a) There was a desire to avoid straight, monotonous trail runs. (b) There was also a request to reduce conflicts between pedestrian and bicyclists in heavy use areas. The final trail design will respond to these community desires.

Separated Trail Concept - As stated in the Design Criteria Matrix, the width of the paved trail when pedestrians are separated from bicycles will be six feet for pedestrians and 10 feet for bicycles for a total paved width of 16 feet plus eight feet of shoulders. The separated trail option provides two different asphaltic concrete paths – one for exclusive use by pedestrians and one for bicycles. This option reduces risk of bicycle to pedestrian crashes but increases the cost of construction and maintenance. Illustrated in Figure D.1

Combined Trail Concept - When the two uses are combined, the section will consist of 14 feet of paved trail plus four feet of shoulder. This scenario is illustrated in the above graphic, Figure 3 – Combined Trail Concept. This option provide a trail design with the same pavement material for pedestrian and bicyclists. Illustrated in Figure D.2

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Figure D.1 – Separated Trail Concept – 16-ft Trail Paved Width

Figure D.2 – Combined Trail Concept – 14-ft Trail Paved Width
TRAIL CONNECTIONS

The Pinellas Trail Loop Extension preferred alignment has been identified and final design will commence after funding is secured. The alignment is general in nature and falls within specific rights-of-way and/or easements. The trail alignment creates opportunities to connect to adjoining/nearby land uses such as parks, natural resources, residential neighborhoods, public institutions, and employment centers. The community’s goal is to integrate the Pinellas Trail will surrounding land uses; this should be achieved through secondary pavement extensions that connect to existing improvements.

As part of the final trail design phases, certain secondary pathways will be planned to provide for safe, convenient, and cost-effective physical linkages to the surrounding uses. In some cases, the trail alignment(s) may be alternated to make said connections practical. The final project design stage must identify and respond to opportunities to connect to adjacent land uses, community assets, and designations.

TRAIL GRADE

Grades on shared use paths in independent corridors should be kept to a minimum, especially on long inclines. Grades greater than 5 percent are undesirable because the ascents are difficult for many path users, and the descents cause some users to exceed the speeds at which they are competent or comfortable. Additionally, no more than 30 percent of the total path length should have a grade exceeding 8.3 percent. Where grades exceed 5 percent, a resting interval with a 5 foot landing at 30 feet is required at the end of any segment of maximum length as described above. Trail/pathway grade should generally match the grade of the adjacent roadway.

ROADWAY CROSSINGS TREATMENT

The Pinellas Trail Loop Extension preferred alignment will require multiple roadway crossings. These crossings range from low volume local roads to high volume, high-speed thoroughfares. As part of the final project design state, each roadway crossing must be further analyzed for the most-appropriate and cost-effective crossing treatment.

Crossing Types have been conceptually considered as part of the alignment study but will be further defined and planned as part of the final project design phases. Crossing types may include (a) Midblock options, (b) Sidepath options and/or (c) Bridges/Underpasses options.

- **Midblock Crossings** - A crossing is considered midblock if it is located outside of the functional area of any adjacent intersection. There are circumstances that a midblock crossing is needed where the overall trail alignment precludes crossing at a designated intersection. Midblock crossings must consider visibility between motorist and trail users.

- **Sidepath** - A sidepath crossing occurs within the functional area of an intersection of two or more roadways; they are typically parallel to at least one roadway. Sidepath crossings must consider visibility from motorists and the appropriate distance from the intersection.

- **Bridge/Underpass Crossings** – Limited access highways and certain higher speed and high volume traffic roadways may require a bridge/underpass feature so that trail users can safely cross the facility. Bridge/underpass crossings area expensive and require extensive engineering design. Furthermore, bridges/tunnels are limited in slopes to comply with ADA requirements; this requires long trail runs to respond to the required elevation change to cross the roadways.

**Crossing Control Options** must be defined as part of the final project design phases. Generally speaking, grade level roadway crossing locations must be planned with signed and striped crossings or signalized crossings. The crossing control method should be determined based on roadway width, traffic volume, and motor vehicle speed.
Signed and Stripe Crossings - Low volume and low speed intersections are considered safe for crossing but require signage to stop trail users OR motor vehicles. Some intersections may give trail users the full right-of-way and require motor vehicle to stop. In other intersections, motorists may have the full right-of-way; whereas trail users must yield to oncoming traffic. The final trail design phases will determine the crossing signage arrange for each intersection.

Signalized Crossings - Higher speed and high volume traffic intersections will require signalization to provide for safe crossing for trail users. Many of these crossings will also include a center refuge area developed in the existing roadway median. The signalized crossing will be designed per AASHTO, MUTCD, Florida Green Book and other highway standards to ensure the ultimate safety for the trail user.

Trail Crossing Evaluations were conducted when defining the trail alignment alternatives. When defining a route, the project team considered key variables for each road that impact the type of crossing to be designed. These variables include roadway type, number of lanes, median width, signal/signage type, and other related factors. Generally speaking, the project team avoided crossing locations that would have resulted in onerous trail crossing types for that location. Final design for all intersections will be the responsibility of the construction design engineer. Roadway Intersection Treatments table identifies the roadway intersections that will be crossed, existing conditions and proposed traffic control treatment.

Crossing Features will be incorporated at each crossing; grade-level crossings will bare all features; whereas, bridge/underpass crossings may only warrant a select few. The distinct features are intended to alert the trail user of an approaching a roadway crossing. These include:

> merging separated trails into a single combined trail
> widening the trail at the stopping point adjacent to the road for users to congregate prior to crossing
> roadway warning/ crossing signs
> pavement markings
> unique landscaping features;
> pedestrian crossing striping in the roadway;
> trail bollards
> pole mounted signal activation buttons
> other unique design features.
<table>
<thead>
<tr>
<th>Intersecting Roadway</th>
<th>Speed (MPH)</th>
<th>No.Lanes (Divided/Undivided)</th>
<th>Median Width</th>
<th>Existing Signal/Signage</th>
<th>Proposed Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cove Drive</td>
<td>25 MPH</td>
<td>2 D</td>
<td>10'</td>
<td>Stop Sign</td>
<td>Stop Sign &amp; Striping</td>
</tr>
<tr>
<td>Boot Ranch Blvd. N.</td>
<td>30 MPH</td>
<td>4 D</td>
<td>20'</td>
<td>Stop Sign</td>
<td>Stop Sign &amp; Striping</td>
</tr>
<tr>
<td>Boot Ranch Blvd. S.</td>
<td>30 MPH</td>
<td>4 D</td>
<td>20'</td>
<td>Stop Sign</td>
<td>Stop Sign &amp; Striping</td>
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<tr>
<td>McMullen Booth Exit road</td>
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<td>1 U</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>McMullen Booth Entrance road</td>
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<td>1 U</td>
<td>N/A</td>
<td>N/A</td>
<td>Signage &amp; Striping</td>
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<tr>
<td>Tampa Road</td>
<td>45 MPH</td>
<td>7 D</td>
<td>30'</td>
<td>Signal Ltd Cross-walks</td>
<td>Signals &amp; Add Striping &amp; Signage</td>
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<tr>
<td>Countryside Blvd.</td>
<td>unspecified</td>
<td>1 U</td>
<td>N/A</td>
<td>Ped. Crossing</td>
<td>Signage &amp; Striping</td>
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<td>2 U</td>
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<td>Hollow Trail Court</td>
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<td>2 U</td>
<td>N/A</td>
<td>Stop Sign</td>
<td>Stop Sign &amp; Striping</td>
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<td>2 U</td>
<td>N/A</td>
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<td>Stop Sign &amp; Striping</td>
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<td>Stop Sign &amp; Striping</td>
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<td>2 U</td>
<td>N/A</td>
<td>Stop Sign</td>
<td>Stop Sign &amp; Striping</td>
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<tr>
<td>Curlew Road</td>
<td>45 MPH</td>
<td>7 D</td>
<td>20' w/ Turn Lane</td>
<td>Signals</td>
<td>Signals &amp; Striping Add Signage</td>
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<td>Endicott Court</td>
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<td>2U</td>
<td>N/A</td>
<td>Stop Sign</td>
<td>Stop Sign &amp; Striping</td>
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<tr>
<td>Intersecting Roadway</td>
<td>Speed (MPH)</td>
<td>No.Lanes (Divided/Undivided)</td>
<td>Median Width</td>
<td>Existing Signal/Signage</td>
<td>Proposed Treatment</td>
</tr>
<tr>
<td>----------------------</td>
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<td>Holbrook Court</td>
<td>30 MPH</td>
<td>2 U</td>
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<td>Stop Sign</td>
<td>Stop Sign &amp; Striping</td>
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<tr>
<td>Countryside Blvd.</td>
<td>30 MPH</td>
<td>2 U</td>
<td>N/A</td>
<td>Ped. Crossing</td>
<td>Signage &amp; Striping</td>
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<td>Meadow Wood Drive</td>
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<td>Stop Sign</td>
<td>Stop Sign &amp; Striping</td>
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<td>Masters Drive</td>
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<td>2 U</td>
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<td>Stop Sign</td>
<td>Stop Sign &amp; Cross-walk</td>
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<tr>
<td>Fox Hill Drive</td>
<td>25 MPH</td>
<td>2 U</td>
<td>N/A</td>
<td>N/A</td>
<td>Signage &amp; Striping</td>
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<td>Northridge Drive</td>
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<td>N/A</td>
<td>Signage &amp; Striping</td>
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<tr>
<td>Northside Drive</td>
<td>35 MPH</td>
<td>2 U</td>
<td>N/A</td>
<td>N/A</td>
<td>Signage &amp; Striping</td>
</tr>
<tr>
<td>Main Street</td>
<td>45 MPH</td>
<td>7 U</td>
<td>14’ Cntr. Lane</td>
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<td>Signal &amp; Protected Median</td>
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<td>Countryside Blvd.</td>
<td>40 MPH</td>
<td>7 D</td>
<td>22’ w/ Turn Lane</td>
<td>N/A</td>
<td>Signal w/ cross-walk</td>
</tr>
<tr>
<td>Enterprise Road</td>
<td>35 MPH</td>
<td>5 U</td>
<td>14’ Striped</td>
<td>N/A</td>
<td>Signal &amp; Protected Median</td>
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<tr>
<td>US 19</td>
<td>55 MPH</td>
<td>10 D</td>
<td>Restricted</td>
<td>Conc. Trail Overpass</td>
<td>Conc. Trail Overpass</td>
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<td>Sunset Point Road</td>
<td>40 MPH</td>
<td>5 D</td>
<td>16’</td>
<td>N/A</td>
<td>Signal &amp; Protected Median</td>
</tr>
<tr>
<td>Old Coachman Road</td>
<td>35 MPH</td>
<td>2 U</td>
<td>N/A</td>
<td>Signal &amp; Cross-walk</td>
<td>Signal w/ cross-walk</td>
</tr>
<tr>
<td>NE Coachman Road</td>
<td>45 MPH</td>
<td>2 U</td>
<td>N/A</td>
<td>Signal &amp; Cross-walk</td>
<td>Signal w/ cross-walk</td>
</tr>
<tr>
<td>Intersecting Roadway</td>
<td>Speed (MPH)</td>
<td>No. Lanes (Divided/Undivided)</td>
<td>Median Width</td>
<td>Existing Signal/Signage</td>
<td>Proposed Treatment</td>
</tr>
<tr>
<td>----------------------</td>
<td>-------------</td>
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<tr>
<td>Ulmerton Road</td>
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<td>24'</td>
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<td>Underpass</td>
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<td>49th St. N</td>
<td>45 MPH</td>
<td>6D</td>
<td>8'</td>
<td>Signal w/ cross-walk</td>
<td>Signal w/ cross-walk</td>
</tr>
<tr>
<td>126th Ave. N</td>
<td>30 MPH</td>
<td>2U</td>
<td>N/A</td>
<td>Signal w/ cross-walk</td>
<td>Signal w/ cross-walk</td>
</tr>
<tr>
<td>47th Way</td>
<td>30 MPH</td>
<td>2U</td>
<td>N/A</td>
<td>Stop Sign</td>
<td>Stop Sign w/ cross-walk</td>
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<tr>
<td>Automobile Blvd</td>
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<td>2U</td>
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<td>Stop Sign</td>
<td>Stop Sign w/ cross-walk</td>
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<tr>
<td>44th St. N</td>
<td>30 MPH</td>
<td>2U</td>
<td>N/A</td>
<td>Stop Sign</td>
<td>Stop Sign w/ cross-walk</td>
</tr>
<tr>
<td>126th Ave. N</td>
<td>30 MPH</td>
<td>2U</td>
<td>N/A</td>
<td>Stop Sign</td>
<td>Stop Sign w/ cross-walk</td>
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<tr>
<td>41st St.</td>
<td>30 MPH</td>
<td>2U</td>
<td>N/A</td>
<td>N/A</td>
<td>Cross-walk</td>
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<td>40th St. N</td>
<td>unspecified</td>
<td>2U</td>
<td>N/A</td>
<td>N/A</td>
<td>Ped. Crossing w/ signage</td>
</tr>
<tr>
<td>34th St. N</td>
<td>40 MPH</td>
<td>2U</td>
<td>N/A</td>
<td>N/A</td>
<td>Ped. Crossing w/ signage</td>
</tr>
<tr>
<td>Scherer Dr.</td>
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<td>N/A</td>
<td>N/A</td>
<td>Ped. Crossing w/ signage</td>
</tr>
<tr>
<td>28th St. N</td>
<td>40 MPH</td>
<td>6D</td>
<td>8'</td>
<td>N/A</td>
<td>Ped. Crossing w/ signage</td>
</tr>
<tr>
<td>Roosevelt Blvd N</td>
<td>55 MPH</td>
<td>6D</td>
<td>50'</td>
<td>Signal w/ cross-walk</td>
<td>Signal w/ cross-walk</td>
</tr>
<tr>
<td>I-275 S Exit Ramp to Roosevelt Blvd N</td>
<td>45 MPH</td>
<td>2U</td>
<td>N/A</td>
<td>N/A</td>
<td>Stop Sign w/ cross-walk and signage</td>
</tr>
<tr>
<td>I-275 N Exit Ramp to 118th Ave. N</td>
<td>45 MPH</td>
<td>2U</td>
<td>N/A</td>
<td>Underpass</td>
<td>Underpass</td>
</tr>
<tr>
<td>I-275 N Exit Ramp to Roosevelt Blvd</td>
<td>45 MPH</td>
<td>1U</td>
<td>N/A</td>
<td>N/A</td>
<td>Stop Sign w/ cross-walk and signage</td>
</tr>
<tr>
<td>Intersecting Roadway</td>
<td>Speed (MPH)</td>
<td>No.Lanes (Divided/Undivided)</td>
<td>Median Width</td>
<td>Existing Signal/Signage</td>
<td>Proposed Treatment</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>-------------</td>
<td>------------------------------</td>
<td>--------------</td>
<td>------------------------</td>
<td>---------------------------------------------------------</td>
</tr>
<tr>
<td>I-275 N Exit Ramp to Roosevelt Blvd</td>
<td>45 MPH</td>
<td>1U</td>
<td>N/A</td>
<td>Stop Sign</td>
<td>Stop Sign w/ cross-walk and signage</td>
</tr>
<tr>
<td>I-275 S Exit Ramp to 118th Ave. N</td>
<td>45 MPH</td>
<td>2U</td>
<td>N/A</td>
<td>Underpass</td>
<td>Underpass</td>
</tr>
<tr>
<td>I-275</td>
<td>70 MPH</td>
<td>6U</td>
<td>N/A</td>
<td>Underpass</td>
<td>Underpass</td>
</tr>
<tr>
<td>I-275 N Exit Ramp to Roosevelt Blvd N</td>
<td>45 MPH</td>
<td>2U</td>
<td>N/A</td>
<td>Underpass</td>
<td>Underpass</td>
</tr>
<tr>
<td>118th Ave N.</td>
<td>45 MPH</td>
<td>1U</td>
<td>N/A</td>
<td>Underpass</td>
<td>Underpass</td>
</tr>
<tr>
<td>Roosevelt Blvd N Exit (East)</td>
<td>55 MPH</td>
<td>1U</td>
<td>N/A</td>
<td>Stop Sign</td>
<td>Ped. Crossing w/ signage</td>
</tr>
<tr>
<td>Roosevelt Blvd N Exit (West)</td>
<td>55 MPH</td>
<td>1U</td>
<td>N/A</td>
<td>N/A</td>
<td>Stop sign w/ cross-walk and signage</td>
</tr>
<tr>
<td>Bell Flower N</td>
<td>10 MPH</td>
<td>3U</td>
<td>N/A</td>
<td>Signal &amp; Crosswalk</td>
<td>Signal &amp; Crosswalk</td>
</tr>
<tr>
<td>112th Cir. N</td>
<td>45 MPH</td>
<td>4D</td>
<td>30’</td>
<td>Signal</td>
<td>Signal &amp; Crosswalk</td>
</tr>
<tr>
<td>9th St. N</td>
<td>40 MPH</td>
<td>6D</td>
<td>10’</td>
<td>Signal &amp; Crosswalk</td>
<td>Signal &amp; Crosswalk</td>
</tr>
<tr>
<td>Gandy Blvd N</td>
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<td>2U</td>
<td>N/A</td>
<td>N/A</td>
<td>Cross-walk</td>
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<tr>
<td>Oak St. N</td>
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<td>N/A</td>
<td>N/A</td>
<td>Cross-walk</td>
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<tr>
<td>Gandy Blvd N</td>
<td>45 MPH</td>
<td>4D</td>
<td>16’</td>
<td>Signal &amp; Crosswalk</td>
<td>Signal &amp; Crosswalk</td>
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<tr>
<td>Brighton Bay Blvd NE</td>
<td>15 MPH</td>
<td>4D</td>
<td>10’</td>
<td>Signal &amp; Crosswalk</td>
<td>Signal &amp; Crosswalk</td>
</tr>
<tr>
<td>Weedon Drive NE</td>
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<td>2U</td>
<td>N/A</td>
<td>Stop Sign</td>
<td>Stop Sign &amp; Cross-walk</td>
</tr>
<tr>
<td>Intersecting Roadway</td>
<td>Speed (MPH)</td>
<td>No.Lanes (Divided/Undivided) *includes turn lanes</td>
<td>Median Width</td>
<td>Existing Signal/Signage</td>
<td>Proposed Treatment</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-------------</td>
<td>--------------------------------------------------</td>
<td>--------------</td>
<td>------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Tallahassee Drive N</td>
<td>20 MPH</td>
<td>2U</td>
<td>N/A</td>
<td>Stop Sign</td>
<td>Stop Sign &amp; cross-walk</td>
</tr>
<tr>
<td>Macoma Drive N</td>
<td>20 MPH</td>
<td>2U</td>
<td>N/A</td>
<td>Stop Sign</td>
<td>Stop Sign &amp; Cross-walk</td>
</tr>
</tbody>
</table>
DRAINAGE

The Pinellas Trail Loop pavement, structures, and amenities must be designed to address drainage continues and comply with regulatory standards. Suitable drainage controls are needed to protect trail facilities and immediately-surrounding land from flooding and erosion. Furthermore, mitigation and enhancement features should be designed appropriately to ensure trail safety and desirably for trail users.

Stormwater Management

The trail is applicable to State and County stormwater standards; this includes the Southwest Florida Water Management District (SWFMWD) requirements and the proposed Pinellas County Stormwater Manual (pending approval but anticipated at the time of project design). Generally speaking, the trail sections that are 14-foot-wide AND do not impact wetland features will be exempt from Environmental Resource Permit (ERP) requirements. However, sections of the trail that are separated and have a combined impervious pavement width of 16 feet may require stormwater attenuation. Furthermore, any new bridges and wetlands encroachment will also require permitting.

In those segments where the trail requires an ERP, water quantity and water quality criteria must be met. The water quantity requirements are to maintain the pre- verses post- runoff rate for the 25-year/24-hour rainfall event. The water quality standards require nutrient reduction through treatment features. It is anticipated that swales will be planned to address stormwater management requirements for trail sections exceeding 14-ft and for bridge structures. Swale dimensions will be reduced accordingly for trails split by the rail bed, as each trail will have its own swale. For those split trails that are adjacent to each other, a common swale running between or parallel to split trails segments will be constructed.

Typical Swale Drainage
Environmental Impacts and Mitigation

In a preliminary assessment of the impacts of the proposed conceptual designs, the trail is anticipated to have minimal impacts on jurisdictional wetlands. Of the 9.6 mile corridor, approximately 3.5 acres of wetlands and wet could be affected and would possibly require mitigation. Mitigated wetlands would be accounted for in the newly-formed swales along new trail segments in the design. In segments where wetland encroachment cannot be avoided, mitigation would be sought on adjacent County lands or the power line easement. A detailed jurisdictional wetland boundary should be conducted prior to finalizing the path footprint to avoid as many impacts as possible.

Sections of the conceptual plan that incorporate a split multi-use path will have a swale located between the two path segments. Additionally, the water quality standards established by SWFWMD and outlined in Section 4.2.1 of the ERP Applicant’s Handbook Volume II will be accounted for with swale storage capable of retaining one inch of runoff in wet detention and one-half inch in dry retention.

Floodplain Impacts

Section 3.6 of the SWFWMD ERP Applicant’s Handbook Volume II requires no net encroachment into the floodplain between the 100-year event and seasonal high water table which will adversely affect the rights of others. Potential impacts on the 100-year floodplain were identified at the proposed bridge crossings. The effects of the individual supports on flows and stages are anticipated to be negligible as long as the headwalls are constructed within the existing embankments. In the event the 100-year floodplain is compromised at either of the crossings, any construction within the regulatory floodway will be required to meet the Federal FEMA Floodway requirements (i.e. a no rise analysis).

TRAIL AMENITIES

The Pinellas Trail Loop extension is proposed to continue and improve upon the functionality and flavor of the existing Pinellas Trail network. This include developed shelters, trailheads, signage, landscaping, health and safety features, and other features of modern multi-use trails.

The following are features that are part of the attached concept plan or are recommended to be included in the final design:

> Trailheads spaced at two miles
> Shelters spaced at one mile
> Scenic rest areas with additional pavement and sod
> Drinking water at shelters where practical
> Bathrooms at trailheads
> Benches at shelters and other stopping points
> Bike racks on the trail
> Bike lockers at key commuter intersections
> Trash cans
> Landscaping
> Access points to adjacent relevant businesses
> Interpretive signs
> Mileage markers
> Informational Kiosks
> Lighting for sections to be open at night
> Wayfinding system – paper and electronic
> Wi-Fi at trailheads
> Special parking sites for overnight recreational vehicle camping
> Roadway overpasses
> Other features that make the trail experience more enjoyable
MAINTENANCE

Multi-use trails and the associated corridor amenities must be maintained to provide a safe and pleasant recreational experience for the user. The final design phase for construction must consider the cost-benefit of creating a trail system that can be easily and economically maintained. The concept plans recommend a robust structural cross-section for the trail that consists of two inches of asphalt on a compacted six-inch base. This will hold up well with any volume of pedestrian and bicycle traffic in addition to the occasional emergency vehicle.

Trail amenities are important to the users’ safety and enjoyment. The following are a few of the key maintenance functions to consider when planning the trail maintenance budget:

<table>
<thead>
<tr>
<th>Multi-use Trail Maintenance Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trail Feature</strong></td>
</tr>
<tr>
<td>Trail structure</td>
</tr>
<tr>
<td>Trail striping</td>
</tr>
<tr>
<td>Trail shoulder</td>
</tr>
<tr>
<td>Trail signs</td>
</tr>
<tr>
<td>Shelters</td>
</tr>
<tr>
<td>Trailheads</td>
</tr>
<tr>
<td>Bathrooms</td>
</tr>
<tr>
<td>Water fountains</td>
</tr>
<tr>
<td>Lighting</td>
</tr>
<tr>
<td>Landscaping</td>
</tr>
<tr>
<td>Benches, bike racks</td>
</tr>
<tr>
<td>Wayfinding system</td>
</tr>
<tr>
<td>Drainage elements</td>
</tr>
<tr>
<td>Road crossings</td>
</tr>
</tbody>
</table>
SECTION E. PROJECTED COST OF CONSTRUCTION

A cost estimate was conducted to identify the project cost of construction for the Pinellas Loop Trail improvements. As with any capital project, costs will vary depending on the state of the economy, changes in the complexity of the project, schedule duration, limitations on site access, and customization of features such as shelters, signs, etc.

The cost projection takes into account the preferred routes for the North and South Gaps only. The projected cost of construction was calculated at $400,000.00 per mile / $75.76 per linear foot. ‘Cost Factors’ were applied to certain segments to account for unique environmental/topographical conditions and/or enhanced construction methods to respond to access or structural needs. Additionally, these cost projections acknowledge existing trail improvements or committed FDOT trail improvements.

The probable trail construction cost was calculated based on historical pricing for local projects containing similar pay items such as base material, asphalt and concrete. Other items that are unique to trails are estimated based on the prior construction of the south phase of Pinellas Trail Loop or data from the national Federal Highway Administration (FHWA) data file for “Costs for Pedestrian Bicycle Infrastructure Improvements”. This data file contains recent prices for numerous trail construction features. Prices on many items vary widely. Data used from this file was selected based on reasonableness for the local area.

The cost estimate is based on conceptual plans developed for this feasibility report. All quantities are estimated based on predicted trail lengths and pavement widths. The projected cost tables are divided by preferred trail segments. These segments take into account major costs associated with the trail construction with the exceptions of structures and design & engineering services. The structures are calculated based on the preferred route as a whole, whereas the design & engineering services are tabulated for the entirety of the project.

The probable cost for the complete trail system with project expenses is calculated for the preferred alignments. The estimated construction cost is $21,889,598.40; this is based on a cost per mile and applying certain cost factors for various segments. Design and mobilization is estimated at $9,193,631; this is based on construction costs percentages. The projected cost for the north and south gaps is $31,083,229.85. A general breakdown of these costs is provided below. Complete line item cost tables are included in Appendix I.

The project cost estimates do not include potential right-of-way acquisition or easement purchase. However, cost estimates for purchase of the corridor right-of-way, in 2015 dollars, range from $318,000 per mile to $2.6 million per mile. The 2008 purchase of the south section of Pinellas Trail Loop was $1.18 million per mile adjusted for inflation. If the same cost per mile is anticipated.

**COST:**

The probable cost to construct the multi-use trail within the corridor is estimated at $31,083,229

- North Gap - $9,152,024
- South Gap - $8,887,538
- Intersections/Crossings - $3,250,000
- Design/Mobilization - $9,193,631
### Projected Construction Cost

<table>
<thead>
<tr>
<th>Alignment</th>
<th>Description</th>
<th>Alignment Length (feet)</th>
<th>Estimated Construction Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1</td>
<td>North Gap – Chestnut Park to Enterprise</td>
<td>34,517</td>
<td>$5,866,098.00</td>
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<tr>
<td>N2</td>
<td>North Gap – Enterprise to Brighthouse Field</td>
<td>13,660</td>
<td>$3,285,962.00</td>
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<tr>
<td>S1</td>
<td>South Gap – Bellair Road to Ulmerton Road</td>
<td>20,960</td>
<td>$2,236,447.00</td>
</tr>
<tr>
<td>S4</td>
<td>South Gap – Ulmerton Road to San Martin</td>
<td>43,021</td>
<td>$7,251,091.00</td>
</tr>
<tr>
<td></td>
<td>Intersections/Signalizations</td>
<td></td>
<td>$3,250,000.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>Construction Estimate</strong></td>
<td></td>
<td><strong>$21,889,598.40</strong></td>
</tr>
</tbody>
</table>

Note: Cost estimates include credits for segment portions that are currently in place or are being constructed by Florida Department of Transportation. Estimates also include cost factor increases for certain segmental conditions are require additional construction methods.

### Projected Cost of Design & Engineering Services

<table>
<thead>
<tr>
<th>Service</th>
<th>Percent of Project Cost</th>
<th>Estimated Design &amp; Engineering Services Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design &amp; Survey</td>
<td>10%</td>
<td>$2,188,959.85</td>
</tr>
<tr>
<td>Mobilization</td>
<td>5%</td>
<td>$1,094,479.92</td>
</tr>
<tr>
<td>MOT</td>
<td>3%</td>
<td>$656,687.95</td>
</tr>
<tr>
<td>Geotech &amp; Testing</td>
<td>2%</td>
<td>$437,791.97</td>
</tr>
<tr>
<td>Unforeseen additional items</td>
<td>10%</td>
<td>$2,188,959.85</td>
</tr>
<tr>
<td>Contingency</td>
<td>10%</td>
<td>$2,188,959.85</td>
</tr>
<tr>
<td>As-builts/Project Close-out</td>
<td>2%</td>
<td>$437,791.97</td>
</tr>
<tr>
<td><strong>SubTotal</strong></td>
<td></td>
<td><strong>$21,889,598.40</strong></td>
</tr>
<tr>
<td><strong>Total of Complete Project</strong></td>
<td></td>
<td><strong>$31,083,229.85</strong></td>
</tr>
</tbody>
</table>
PART 3. RECOMMENDATIONS

SECTION A. BENEFITS

The Pinellas Trail Loop Alternate Alignment Study shows the technical feasibility of constructing a multi-use trail along the corridor defined in this study. There is strong community support for the project and indications that the trail extension will be heavily used by a wide spectrum of the County’s citizens. While land purchase and construction costs are significant, there are major economic and non-financial benefits that off-set the up-front cost. Most of these benefits are hard to quantify but, nonetheless, are a major benefit to the community. Completing the Pinellas Trail Loop provides the following community benefits:

> **Fosters a safe, connected and accessible transportation system**, through a 75 mile uninterrupted multimodal transportation facility that connects to 92 schools and 192 major employers (within one half mile).

> **Creates a reliable multimodal network**, improving the efficiency of the road network, while providing an option for movement of non-motorized travelers.

> **Improves economic mobility**, bringing an estimated 487,800 residents and 280,700 jobs within one half mile of the 75 mile, uninterrupted, non-motorized transportation facility. More than half of the county’s population will live within one-mile of the completed Loop.

> **Provides economic opportunities**, enhancing economic competitiveness by connecting residents, particularly those are currently disadvantaged, with employment, education, commercial and recreational destinations, drawing tourists to the area, and attracting new businesses along and near the corridor.

> **Increases community transportation choices**, benefiting low-income and minority neighborhoods with direct access to this multi-modal transportation facility and enhanced connections to transit, schools, commercial centers, employment, recreational and cultural facilities and community and health services.

> **Avoids adverse environmental impacts on air quality**, providing bicyclists and pedestrians with a reliable transportation alternative, reducing greenhouse gas emissions as cars are taken off the roadways.
SECTION B. ISSUES

Other issues that must be considered are listed below. None of the remaining issues appear to be insurmountable problems that will prevent construction of the trail.

1. **Encroachments** - There are numerous areas of encroachment into the corridor from neighboring businesses and homeowner. These must be addressed prior to construction.

2. **Contamination** - Contamination from historical uses related to railroad activity and illegal dumping is highly likely throughout the corridor. A detailed Phase II Environmental Study must be undertaken to know the exact locations and extent of contaminants and associated clean-up required. Responsibility for clean-up should be defined prior to purchase.

3. **Visibility** - Sight triangles at each roadway-trail intersection are critical for safety. Each intersection must be individually surveyed and designed to meet safe crossing criteria.

4. **Property Access Easements** – Access easements are needed in a few selected areas as the trail aligns over private property.
   - **Countryside Mall** – an access easement is needed where the trail is planned to be aligned across the Countryside Mall eastern parking lot (owned by Duke Energy Florida Inc) under existing power lines.
   - **Enterprise** – an access easement or land purchase is needed for a small portion of property located behind the Enterprise Car Rental property (owned by Quality Boats of Clearwater) near Haines Shore Blvd and U.S. 19. The recommended alignment passes across the northeast corner of the site to align with an existing easement to the north.
   - **Lokey Honda Dealership** – an access easement or land purchase is needed along the eastern portions of the Honda Dealership property (owned by D/L Motor Company) near Haines Shore Blvd and U.S. 19. The recommended trail alignment is located on upland portions along existing power lines and eastward of a large wetland feature.
   - **Icot Option** – an access easement is needed on the Icot property (owned by Icot Center Master Association Inc.) if an alternative trail alignment is sought in lieu of Icot Boulevard. This option would align the public trail atop existing private trails located between Icot Boulevard and 58th Street N.

5. **Public Outreach** - Although studies show property values adjacent to the trail will increase, not all citizens will want a trail behind their property. A campaign to illustrate the benefit of the trail should be undertaken to educate all citizens.

6. **Trimming and Re-vegetation** - Removal of an extensive amount of nuisance vegetation from the corridor will necessitate extensive re-landscaping to replace a portion of the lost privacy and animal habitat.

7. **Historical Context** - The railroad ran in the corridor since the early twentieth century but has ceased operation within the trail location. As such it is considered to have historical archeological value. Some form of monument or historical signage should be planned for the new corridor.

8. **Wetland Mitigation/Reconstruction** - There are several areas of historical wetland intrusion into the rail corridor. These areas will need to be reconstructed in a manner to minimize additional impacts.
9. **Floodplain Impact** - Two crossings are proposed for Phillippi Creek. Each crossing must consider impact on the 100-year floodplain.

10. **Final Design** - Numerous details must be defined as part of the final design process. A team of County staff from Parks, Recreation and Natural Resources, and Public Works Departments, and involved citizens should be created to help guide final design based on local preferences and lessons learned from phase one of the Legacy Trail.

11. **Operation Costs** - An increase of 21.5 miles of multi-use trail to the County park system will increase annual operating costs and the need for additional staff resources. This must be planned and implemented concurrent with acceptance of the trail into the park system.
SECTION C. RECOMMENDATION

This report has laid out the alignment options of constructing the Pinellas Trail Loop extension as a multi-use trail.

Evaluation of the corridor itself and the options to construct a multi-use trail revealed a number of important issues that must be considered and planned for. The most critical is the basic question of whether the multi-use trail can be constructed within the existing power line easement.

The Pinellas Trail Loop Extension has strong community support and will be quickly adopted by those who use and enjoy it. With good construction and on-going support from the County and Cities, it will become another jewel in the community’s environmental and recreational crown.

1. **Cure Encroachments** – Work with property owners to cure encroachments into the trail corridor.
2. **Property Acquisition** – Purchase or secure easements across key properties that necessitate vital trail crossing locations.
3. **Project Funding** – Secure project funding.
4. **Project Design** – Commence project design
5. **Wayfinding Program** – Expand existing wayfinding signage to include new trail sections

The recommended alignments are N1, N2, S1, and S4 for the reasons stated in this report. This recommended alignment will cost approximately $31 million for design, construction, and inspection.
APPENDICES
North Gap

North End of North Gap at John Chesnut Sr. Park

Entrance of John Chesnut Sr. Park

Pedestrian Crossing at Brooker Creek

Intersection of McMullen Booth Road and S. Boot Ranch Blvd.
North Gap

Intersection of McMullen Booth Road and Tampa Road

Exit from McMullen Booth Road

Countryside Blvd.

Intersection of Countryside Blvd. And Curlew Road
North Gap

Countryside Mall East End

North End of Trail Overpass at U.S. Highway 19

Gap at Stag Run Blvd

Intersection of NE Coachman and Old Coachman Road
North Gap

Existing Steel Bridge at Alligator Creek

North Side of NE Coachman Road

Existing Trail at NE Coachman Park

West Side of Old Coachman Road
South of Alligator Creek
South Gap

U.S. Highway 19 Looking North from Haines Bayshore Blvd.

Looking East - Haines Bayshore Blvd.

Looking North – Whitney Road

Looking East – ICOT Blvd.
South Gap

Looking North – 126th Ave

Looking East – 126th Ave

Looking West – Scherer Drive

Looking East – Scherer Drive
Map 5-5: Existing, Committed, and Planned Trails and Bike Lanes
Pinellas Trail Loop
North Gap – N1 segment
Pinellas Trail Loop
North Gap – N2 segment
Pinellas Trail Loop
South Gap – Overall Alignment
Pinellas Trail Loop
South Gap – S1 Segment

Pinellas County, Florida
Pinellas Trail Loop
South Gap – S4 Segment
References


APPENDIX F – TIGER GRANT SELECTION CRITERIA
Primary Selection Criteria:

Applications that do not demonstrate a likelihood of significant long-term benefits based on these criteria will not proceed in the evaluation process. DOT does not consider any primary selection criterion more important than the others. The primary selection criteria, which will receive equal consideration, are:

a. **Safety.** Improving the safety of U.S. transportation facilities and systems for all modes of transportation and users. DOT will assess the project’s ability to reduce the number, rate, and consequences of surface transportation-related accidents, serious injuries, and fatalities among transportation users, the project’s contribution to the elimination of highway/rail grade crossings, and the project’s contribution to preventing unintended releases of hazardous materials. DOT will consider the project’s ability to foster a safe, connected, accessible transportation system for the multimodal movement of goods and people.

b. **State of Good Repair.**

Improving the condition and resilience of existing transportation facilities and systems. DOT will assess whether and to what extent: (1) the project is consistent with relevant plans to maintain transportation facilities or systems in a state of good repair and address current and projected vulnerabilities; (2) if left unimproved, the poor condition of the asset will threaten future transportation network efficiency, mobility of goods or accessibility and mobility of people, or economic growth; (3) the project is appropriately capitalized up front and uses asset management approaches that optimize its long-term cost structure; (4) a sustainable source of revenue is available for operations and maintenance of the project; and (5) the project improves the transportation asset’s ability to withstand probable occurrence or recurrence of an emergency or major disaster or other impacts of climate change. Additional consideration will be given to a project’s contribution to improve the overall reliability of a multimodal transportation system that serves all users, and to projects that offer significant transformational improvements to the condition of existing transportation systems and facilities.

c. **Economic Competitiveness.**

Contributing to the economic competitiveness of the United States over the medium- to long-term, revitalizing communities, and creating and preserving jobs. DOT will assess whether the project will (1) decrease transportation costs and improve access for Americans with transportation disadvantages through reliable and timely access to employment centers, education and training opportunities, and other basic needs of workers; (2) improve long-term efficiency, reliability or costs in the movement of workers or goods; (3) increase the economic productivity of land, capital, or labor at specific locations, and through community revitalization efforts; (4) result in long-term job creation and other economic opportunities; or (5) help the United States compete in a global economy by facilitating efficient and reliable freight movement, including border infrastructure and projects that have a significant effect on reducing the costs of transporting export cargoes. DOT will prioritize projects that exhibit strong leadership and vision, and are part of a larger strategy to significantly revitalize communities and increase economic opportunities.

d. **Quality of Life.**

Increasing transportation choices and access to essential services for people in communities across the United States, particularly for disadvantaged groups. DOT will assess whether the project furthers the six “Livability Principles” developed by DOT with the Department of Housing
and Urban Development (HUD) and the Environmental Protection Agency (EPA) as part of the Partnership for Sustainable Communities.[5] DOT will focus on the first principle, the creation of affordable and convenient transportation choices.[6] Further, DOT will prioritize projects developed in coordination with land-use planning and economic development decisions, including through programs like TIGER Planning Grants, the Department of Housing and Urban Development’s Regional Planning Grants, the Environmental Protection Agency’s Brownfield Area-Wide Planning Pilot Program, and technical assistance programs focused on quality of life or economic development planning. DOT will assess the extent to which the project will anchor transformative, positive and long-lasting quality of life changes at the national, regional or metropolitan level.

e. **Environmental Sustainability.**

Improving energy efficiency, reducing dependence on oil, reducing greenhouse gas emissions, improving water quality, avoiding and mitigating environmental impacts and otherwise benefitting the environment. DOT will assess the project’s ability to: (i) reduce energy use and air or water pollution; (ii) avoid adverse environmental impacts to air or water quality, wetlands, and endangered species; or (iii) provide environmental benefits, such as brownfield redevelopment, ground water recharge in areas of water scarcity, wetlands creation or improved habitat connectivity, and stormwater mitigation, including green infrastructure. Applicants are encouraged to provide quantitative information, including baseline information that demonstrates how the project will reduce energy consumption, stormwater runoff, or achieve other benefits for the environment.

**Secondary Selection Criteria**

a. **Innovation.**

Use of innovative strategies to pursue the long-term outcomes outlined above. DOT will also assess the extent to which the project uses innovative technology to pursue one or more of the long-term outcomes outlined above or to significantly enhance the operational performance of the transportation system. DOT will also assess the extent to which the project incorporates innovations in transportation funding and finance and leverages both existing and new sources of funding through both traditional and innovative means. Further, DOT will consider the extent to which the project utilizes innovative practices in contracting, congestion management, safety management, asset management, or long-term operations and maintenance. DOT is interested in projects that apply innovative strategies to improve the efficiency of project development or to improve project delivery.

b. **Partnership.**

Demonstrating strong collaboration among a broad range of stakeholders, and the product of a robust, inclusive planning process. DOT will consider the extent to which projects involve multiple partners in project development and funding, such as State and local governments, other public entities, and/or private or nonprofit entities. DOT will also assess the extent to which the project application demonstrates collaboration among neighboring or regional jurisdictions to achieve national, regional, or metropolitan benefits. In the context of public-private partnerships, DOT will assess the extent to which partners are encouraged to ensure long-term asset performance, such as through pay-for-success approaches.
## TYPE 1 AND PROGRAMMATIC CATEGORICAL EXCLUSION CHECKLIST

**Pinellas Trail Loop**  
*Pinellas County, Florida*

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Will the project cause adverse impacts to local traffic patterns, property access, or community cohesiveness, or planned community growth or land use patterns?</td>
<td></td>
<td><strong>X</strong></td>
</tr>
<tr>
<td>2. Will the project cause adverse impacts to air, noise and water?</td>
<td></td>
<td><strong>X</strong></td>
</tr>
<tr>
<td>3. Will the project cause adverse impacts to wetlands requiring a federal finding?</td>
<td></td>
<td><strong>X</strong></td>
</tr>
<tr>
<td>4. Will the project cause adverse impacts to navigation requiring a federal finding or permit?</td>
<td></td>
<td><strong>X</strong></td>
</tr>
<tr>
<td>5. Will the project cause impacts to floodplains in accordance with Part 2, Chapter 24?</td>
<td></td>
<td><strong>X</strong></td>
</tr>
<tr>
<td>6. Will the project affect endangered and threatened species or their critical habitats requiring a federal finding?</td>
<td></td>
<td><strong>X</strong></td>
</tr>
<tr>
<td>7. Will the project require acquisition of a significant amount of right-of-way?</td>
<td></td>
<td><strong>X</strong></td>
</tr>
<tr>
<td>8. Will the project require relocation of residents or businesses?</td>
<td></td>
<td><strong>X</strong></td>
</tr>
<tr>
<td>9. Is there any potential involvement with properties protected under Section 4(f) requiring a finding from FHWA in accordance with Part 2, Chapter 13?</td>
<td></td>
<td><strong>X</strong></td>
</tr>
<tr>
<td>10. Are there any property is protected under Section 106 that may be affected by the project? Coordination with SHPO (or THPO as appropriate) per Part 2, Chapter 12 of this manual should occur if potential adverse impacts to these properties are identified, requiring a federal finding.</td>
<td></td>
<td><strong>X</strong></td>
</tr>
<tr>
<td>11. Are there any known potential contamination sites which would impact right-of-way, design, or construction activities, or other issues/resources? (see Part 2, Chapter 22 for specifics on contamination impacts)</td>
<td></td>
<td><strong>X</strong></td>
</tr>
<tr>
<td>12. Will the project require a public hearing or an opportunity for a public hearing?</td>
<td></td>
<td><strong>X</strong></td>
</tr>
</tbody>
</table>

*Since all responses above are “no”, this project is a Type 1 Categorical Exclusion under [23 CFR 771.117(c)] effective November 27, 1987. This checklist will serve as the NEPA document.*
**APPENDIX H – COST ESTIMATES**

Base Trail Cost: $400,000 per mile / $75.76 per linear foot

<table>
<thead>
<tr>
<th>Segment</th>
<th>Segment Length (ft)</th>
<th>Trail Width</th>
<th>Cost Factor</th>
<th>Estimated Construction Cost</th>
<th>Driveways or Conflict Points</th>
<th>Roadway Crossing or Intersection</th>
<th>Potential Wetland Impacts</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chesnut Park to Boot Ranch Blvd S.</td>
<td>6,378</td>
<td>15</td>
<td>1.5</td>
<td>$724,773</td>
<td>0</td>
<td>4</td>
<td>yes</td>
<td>requires widening of bridge over Brooker Creek (154159)</td>
</tr>
<tr>
<td>Boot Ranch Blvd S. to Curlew Road</td>
<td>10,394</td>
<td>15</td>
<td>2</td>
<td>$1,574,848</td>
<td>0</td>
<td>7</td>
<td>yes</td>
<td>KCA study area - includes bridge over LTOC</td>
</tr>
<tr>
<td>Curlew Road to Enterprise Road</td>
<td>17,745</td>
<td>15</td>
<td>1.5</td>
<td>$2,016,477</td>
<td>9</td>
<td>9</td>
<td>yes</td>
<td>Countryside mall / requires small pedestrian bridge</td>
</tr>
<tr>
<td></td>
<td>34,517</td>
<td></td>
<td></td>
<td>$4,316,098</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6.5 miles</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>structure 1 (162')</td>
<td></td>
<td></td>
<td></td>
<td>$300,000</td>
<td></td>
<td></td>
<td></td>
<td>162 x 12 x 150</td>
</tr>
<tr>
<td>structure 2 (KCA - over LTOC)</td>
<td></td>
<td></td>
<td></td>
<td>$1,100,000</td>
<td></td>
<td></td>
<td></td>
<td>does not include spans over Tampa Road</td>
</tr>
<tr>
<td>structure 3 (35' prefab)</td>
<td></td>
<td></td>
<td></td>
<td>$150,000</td>
<td></td>
<td></td>
<td></td>
<td>prefab pedestrian bridge over creek north of curlew</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td>$5,866,098</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## N2 - North Gap – Enterprise to Brighthouse Field

<table>
<thead>
<tr>
<th>Segment</th>
<th>Segment Length (ft)</th>
<th>Trail Width</th>
<th>Cost Factor</th>
<th>Estimated Construction Cost</th>
<th>Driveways or Conflict Points</th>
<th>Roadway Crossing or Intersection</th>
<th>Potential Wetland Impacts</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enterprise Road to Sunset Point Road</td>
<td>6,439</td>
<td>15</td>
<td>2</td>
<td>$975,606</td>
<td>0</td>
<td>0</td>
<td>yes</td>
<td>Duke Energy substation / heavy equipment design (Ayers)</td>
</tr>
<tr>
<td>Sunset Point Road to NE Coachman</td>
<td>3,508</td>
<td>15</td>
<td>2</td>
<td>$531,515</td>
<td>2</td>
<td>0</td>
<td>yes</td>
<td>high environmental impacts / heavy equipment design</td>
</tr>
<tr>
<td>along NE Coachman to Old Coachman</td>
<td>1,817</td>
<td>15</td>
<td>1.5</td>
<td>$206,477</td>
<td>2</td>
<td>0</td>
<td>yes</td>
<td>along FDOT RRR project for NE Coachman</td>
</tr>
<tr>
<td>along Ream Wilson Trail to BH Field</td>
<td>1,896</td>
<td>12</td>
<td>1.5</td>
<td>$172,364</td>
<td>1</td>
<td>1</td>
<td>yes</td>
<td>Old Coachman over Alligator Creek bridge replacement</td>
</tr>
<tr>
<td></td>
<td>13,660</td>
<td></td>
<td></td>
<td>$1,885,962</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.6 miles</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Structure 1 - bridge replacement | $400,000 | includes trail cost on bridge only |
| Structure 2 - heavy vehicle structure | $1,000,000 | required by Duke Energy |

**TOTAL** | **$3,285,962** |
## S1 - South Gap – From Belleair Road to Ulmerton Road

<table>
<thead>
<tr>
<th>Segment</th>
<th>Length (ft)</th>
<th>Trail Width</th>
<th>Cost Factor</th>
<th>Estimated Construction Cost</th>
<th>Driveways or Conflict Points</th>
<th>Roadway Crossing or Intersection</th>
<th>Potential Wetland Impacts</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>along Belleair Road</td>
<td>1,164</td>
<td>10</td>
<td>0</td>
<td>$ -</td>
<td>6</td>
<td>4</td>
<td>no</td>
<td>FDOT construction</td>
</tr>
<tr>
<td>along US19</td>
<td>2,752</td>
<td>10</td>
<td>0</td>
<td>$ -</td>
<td>4</td>
<td>2</td>
<td>no</td>
<td>FDOT construction</td>
</tr>
<tr>
<td>along Haines Bayshore Road</td>
<td>575</td>
<td>10</td>
<td>0</td>
<td>$ -</td>
<td>3</td>
<td>0</td>
<td>no</td>
<td>existing</td>
</tr>
<tr>
<td>Haines Bayshore Road to Whitney Road</td>
<td>3,084</td>
<td>15</td>
<td>2</td>
<td>$467,273</td>
<td>0</td>
<td>1</td>
<td>yes</td>
<td>easements required</td>
</tr>
<tr>
<td>Whitney Road to Roosevelt Blvd</td>
<td>3,074</td>
<td>15</td>
<td>1</td>
<td>$232,879</td>
<td>0</td>
<td>2</td>
<td>no</td>
<td>Duke Energy substation plus structure 1 required</td>
</tr>
<tr>
<td>Roosevelt Blvd to 150th Avenue North</td>
<td>2,692</td>
<td>15</td>
<td>1.5</td>
<td>$305,909</td>
<td>5</td>
<td>2</td>
<td>no</td>
<td>removal of existing s/w</td>
</tr>
<tr>
<td>150th Avenue North to 142nd Avenue North</td>
<td>2,842</td>
<td>15</td>
<td>1.5</td>
<td>$322,955</td>
<td>9</td>
<td>1</td>
<td>no</td>
<td>removal of existing s/w</td>
</tr>
<tr>
<td>142nd Avenue North to Icot Blvd</td>
<td>2,851</td>
<td>15</td>
<td>1.5</td>
<td>$323,977</td>
<td>0</td>
<td>2</td>
<td>no</td>
<td>easements and some clearing required plus structure 2 required</td>
</tr>
<tr>
<td>along Icot Blvd (South)</td>
<td>1,091</td>
<td>12</td>
<td>2</td>
<td>$132,242</td>
<td>1</td>
<td>0</td>
<td>no</td>
<td>removal of existing s/w - may require road re-work</td>
</tr>
<tr>
<td>along Ulmerton Road</td>
<td>835</td>
<td>12</td>
<td>2</td>
<td>$101,212</td>
<td>0</td>
<td>2</td>
<td>no</td>
<td>place at ROW line</td>
</tr>
<tr>
<td></td>
<td>20,960</td>
<td></td>
<td></td>
<td>$1,886,447</td>
<td>28</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.0</td>
<td>miles</td>
<td></td>
<td>$200,000</td>
<td>north of Roosevelt</td>
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<tr>
<td>structure 1 (50' span - prefab)</td>
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<td></td>
<td>$200,000</td>
<td>north of Roosevelt</td>
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<tr>
<td>structure 2 (45' span - prefab)</td>
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<td>$150,000</td>
<td>at Icot pond</td>
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**TOTAL**  $2,236,447
## S4 - South Gap – From Ulmerton Road to San Martin

<table>
<thead>
<tr>
<th>Segment</th>
<th>Segment Length (ft)</th>
<th>Trail Width</th>
<th>Cost Factor</th>
<th>Estimated Construction Cost</th>
<th>Driveways or Conflict Points</th>
<th>Roadway Crossing or Intersection</th>
<th>Potential Wetland Impacts</th>
<th>Comments</th>
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<tbody>
<tr>
<td>along Ulmerton Road</td>
<td>1,186</td>
<td>15</td>
<td>3</td>
<td>$269,545</td>
<td>4</td>
<td>2</td>
<td>no</td>
<td>large open conveyance ditches must be piped</td>
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<td>Ulmerton Road to 126th Ave North</td>
<td>2,768</td>
<td>15</td>
<td>2</td>
<td>$419,394</td>
<td>0</td>
<td>0</td>
<td>yes</td>
<td>Duke Energy substation / heavy equipment design</td>
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<tr>
<td>along 126th Ave North</td>
<td>11,742</td>
<td>10</td>
<td>2</td>
<td>$1,186,061</td>
<td>32</td>
<td>8</td>
<td>no</td>
<td>tight right-of-way / interim condition</td>
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<tr>
<td>along Roosevelt Blvd North</td>
<td>11,619</td>
<td>10</td>
<td>0</td>
<td>$ -</td>
<td>5</td>
<td>10</td>
<td>yes</td>
<td>FDOT FPID 429060-1-52-01 / Roosevelt Blvd RRR</td>
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<tr>
<td>across 4th St North</td>
<td>1,091</td>
<td>10</td>
<td>0</td>
<td>$ -</td>
<td>0</td>
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<td>no</td>
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<td>along Gandy Blvd North (north side)</td>
<td>3,677</td>
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<td>4</td>
<td>$3,677,000</td>
<td>12</td>
<td>3</td>
<td>no</td>
<td>likely boardwalk / significant utility and pond issues / $1000/lf</td>
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<td>1,728</td>
<td>15</td>
<td>2</td>
<td>$261,818</td>
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<td>no</td>
<td>connection to San Martin Blvd</td>
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<td>along San Martin Blvd</td>
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<td>12</td>
<td>1.5</td>
<td>$837,273</td>
<td>23</td>
<td>4</td>
<td>yes</td>
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<td>43,021</td>
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<td></td>
<td>$6,651,091</td>
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<td></td>
<td>8.1 miles</td>
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<td>San Martin Blvd over Riviera Bay bridge</td>
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<td>$600,000</td>
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<td>Pinellas County PID #001036A - CIP construction FY 2018</td>
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<td>(actual cost $9.6m - matching funds cost = $600,000)</td>
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<td>TOTAL</td>
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<td>Intersections / Signalization</td>
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<td>As-builts / Project Close-out</td>
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