



Dale Mabry Pedestrian Overpass Technical Feasibility Analysis



Hillsborough MPO
Metropolitan Planning
for Transportation

Tindale
Oliver + **GPI**
planning | design | engineering

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY1

II. INTRODUCTION AND PROJECT GOAL2

III. Purpose and Need3

 A. Purpose.....3

 B. Need3

 1. Local Mobility and Regional Connectivity3

 2. Economic Development4

 3. Livability4

 4. Safety5

IV. PROJECT CONTEXT AND CONSTRAINTS5

 A. Project Study Area5

 B. Land Use Patterns.....6

 C. Transportation.....7

 D. Socioeconomic and Cultural9

 E. Stakeholders10

 F. Utilities11

 G. Permits and Environmental Impacts11

 H. Right-of-Way (ROW)12

V. DESIGN GUIDELINES13

 A. Width.....13

 B. Grades13

 C. Design Speed14

 D. Curves14

 E. Clearances14

 F. Railing and Fencing.....15

VI. ALTERNATIVES ASSESSMENT.....15

 A. Alignments.....15

 1. Alternative Alignment A16

 2. Alternative Alignment B17

 3. Alternative Alignment C18

 B. Structure Type Alternatives.....19

 1. Florida I-Beams (FIBs).....20

 2. Florida U-Beams20

 3. Steel Plate Girders.....20

 4. Steel Box Girders.....20

 5. Steel Through Truss.....21

 C. Right-of-Way.....21

 D. Utilities21

 E. Drainage22

 F. Aesthetics23

 G. Permits and Environmental Impacts25

 H. Traffic Impacts26

 I. Future Maintenance and Inspections26

 J. Geometric Improvements for Trail Continuation27

 K. Cost Comparison27

VII. CONCLUSIONS AND RECOMMENDATIONS28

FIGURES

Figure 1: Project Overview2
Figure 2: Initial Project Study Area5
Figure 3: Revised Project Study Area.....6
Figure 4: Existing Commercial Points of Interest.....7
Figure 5: Origin and Destination Map9
Figure 6: Advanced Alternative Alignments15
Figure 7: Shared Use Path Typical Section.....17
Figure 8: Alternative Alignment A21
Figure 9: Alternative Alignment B.....18
Figure 10: Alternative Alignment C.....19
Figure 11: Trail Rendering from Cypress Street to Dale Mabry Highway24
Figure 12: Trail Rendering from Dale Mabry Highway to N Himes Avenue.....25
Figure 13: Rendering of Recommended At-Grade Improvements27
Figure 14: Rendering of Potential Pedestrian Overpass Looking Northwest along Dale Mabry29
Figure 15: Rendering of Potential Pedestrian Overpass Looking North along Dale Mabry.....30

TABLES

Table 1: Minimum Stopping Sight Distance for Shared-Use Paths14
Table 2: Minimum Radius of Curvature for Shared-Use Paths14
Table 3: Summary Impact Evaluation28

APPENDICES

APPENDIX A - Trail Maps
APPENDIX B - Photo Log
APPENDIX C - Land Use Maps
APPENDIX D - FDOT Straight Line Diagrams
APPENDIX E - Turning Movement Counts
APPENDIX F - 2018 Deficiencies On Major Corridors
APPENDIX G - Hart System Map
APPENDIX H - Existing Traffic Signal Timing
APPENDIX I - Dale Mabry Pedestrian & Bicycle Crashes
APPENDIX J - Socioeconomic Data
APPENDIX K - Stormwater Pond Permit Information
APPENDIX L - Regulated Facilities Map
APPENDIX M - Right-of-Way Map
APPENDIX N - Possible Alignments and Impact Evaluation
APPENDIX O - Stormwater Pond Maintenance Agreement
APPENDIX P - Cost Estimate

I. EXECUTIVE SUMMARY

The purpose of this study was to evaluate the feasibility of a pedestrian overpass across Dale Mabry Highway (US 92) in the vicinity of the I-275 interchange within the City of Tampa, Hillsborough County, Florida. The overpass would provide a safe, convenient, and functional transportation link across Dale Mabry Highway for pedestrians and bicyclists who wish to use non-motorized modes of transportation to meet their regular travel needs. Additionally, the overpass would contribute to completing a critical gap in the regional trail system, identified as the West Tampa Bay Gap by the Florida Greenways and Trails Plan (Florida Department of Environmental Regulation, Office of Greenways and Trails).

The Hillsborough County Metropolitan Planning Organization (MPO) and the study team, Greenman-Pedersen, Inc. (GPI) and Tindale Oliver (TO), worked collaboratively with stakeholders to develop and assess the feasibility of various alternatives that will adequately satisfy the stated purpose of the walkway and its multimodal trail connections, both current and proposed. The proposed location for the overpass is just south of the I-275 interchange with Dale Mabry Highway within FDOT right-of-way. The pedestrian overpass will dramatically improve mobility and regional accessibility which will benefit the local neighborhoods, retail / service workers, as well as the public at-large. Furthermore, it will assist in connecting the adjacent communities.

Various bridge structures and configurations were reviewed and evaluated. Three alignments were progressed for a more in depth evaluation. It is anticipated that the recommended alternative will be advanced for public input.

II. INTRODUCTION AND PROJECT GOAL

This project was identified in the Hillsborough County MPO's 2016/2017 Transportation Improvement Program (TIP) as a Priority Project to offer *real choices*. As part of the MPO's General Planning Consultant contract, TO and GPI were selected to perform this feasibility analysis. The study originally focused on the east and west quadrants north of the I-275 interchange, as the intent was to connect the existing shared-use trail north of I-275 to an at-grade crossing at North Himes Avenue. However, field investigation and stakeholder coordination later supported the extension of the project limits to the quadrants south of the interchange. Figure 1 reflects the project overview.



Figure 1: Project Overview

With an ever increasing population of both residents and tourists within the Tampa Bay region, the need for safe, multi-modal options has become a high priority. Additionally, Florida has been making strides in developing local and regional trails that can be enjoyed by residents and visitors alike. These trails not only provide another transportation mode choice, but they promote recreation, improved health, sense of place, and community connectivity. Furthermore, this overpass will directly support the existing and proposed land-use that emphasize transit-supported mix-use growth.

The overall project goal of this study was to identify favorable alignments for a pedestrian overpass and to recommend structure types that meet the project requirements by evaluating impacts to:

- Right-of-Way
- Utilities
- Drainage
- Aesthetics
- Environmental
- Traffic
- Maintenance and Inspection

As the project advances to design and construction, it is anticipated that the final outcomes will include:

- Improved local mobility for non-motorized modes of transportation

- Regional trail connectivity
- Neighborhood connectivity and community cohesiveness
- Economic value via increased patronage for nearby businesses
- Increased safety for bicyclists and pedestrians

III. PURPOSE AND NEED

A. Purpose

The purpose of the Dale Mabry Pedestrian Overpass is to provide both local and regional connectivity that would close a shared-use trail gap from the trailhead located between the I-275 overpass and W Cypress Street to the trailhead proposed at N Himes Avenue and W La Salle Street. The overpass would provide alternative transportation modes, support opportunities for recreation, tourism, and economic development throughout the area. In addition, enhanced safety as well as improved access for local residents, while maintaining consistency with local government and statewide trail plans.

B. Need

There are several primary issues that delineate the necessity for the Dale Mabry Pedestrian Overpass. These reasons include regional connectivity, economic development and livability, and safety. The need is reinforced by the following data and facts regarding the project area and surrounding region.



1. Local Mobility and Regional Connectivity

Both local mobility and regional connectivity are the major needs for the proposed trail facility. The project study area reflects one of the largest missing segments in the local and regional trail system that stretches from Pasco County, through Pinellas and into Hillsborough County, and includes several trails including but not limited to the Southwest Coast Regional Connector Trail and the Coast to Coast Regional Connector Trail. This urban overpass will be characterized by its interconnection to local and regional destinations, as well as other statewide trails. It will serve local residents on both sides of the Dale Mabry corridor to provide safe access to employers, schools, parks, stores, community centers, and restaurants. Additionally, the pedestrian and bicycle overpass is intended to facilitate long distance travel for recreational users by connecting major trail systems. While these trails provide safe access to local destinations, they can also provide the nexus for the larger statewide trail system designed to attract recreational users from other areas of the state. Several trail maps, both local and regional, can be found in Appendix A.



The need for this trail has been consistently documented the last few years. Hillsborough, Hernando, and Pasco counties are committed to the development and creation of comprehensive trail networks in the region. The Dale Mabry Pedestrian Overpass is identified as a needed project in the Hillsborough County MPO’s adopted List of Priority Projects. Support for the project can be found in Hillsborough County’s Community Health Improvement Plan (2015) and the 2040 Long Range Transportation Plan. Additionally, the overpass will provide a regional connection to neighboring counties of Pinellas and Pasco.

2. Economic Development

Trails and greenways are an economic engine for communities in Florida. By combining regional trails together into larger systems, there is great potential to advance the area and statewide economic development strategies. These trail connections are valuable resources for neighborhood, municipal, and regional connectivity. The proposed trail particularly advances several strategies including Quality of Life & Quality Places and Infrastructure & Growth Leadership that make up the Florida Strategic Plan for Economic Development. Notable among these is to create and sustain “vibrant, safe, and healthy communities that attract workers, businesses, residents, and visitors.” Nearby businesses, such as the Sa Ri One located along W Cypress Street, are likely to experience economic stimulus from increased exposure resulting from trail usage.



3. Livability

In recent years, Hillsborough County has experienced significant growth, making it on one of Florida’s fastest growing counties in terms of percentage increase and one of the top 10 fastest-growing counties in the nation over the last decade. The proposed trail is needed to enhance multimodal solutions for the project area and region, and accommodate future growth by connecting destinations that can be reached by pedestrians, cyclists, and disabled citizens. These facilities balance multimodal transportation systems that encourage increased mobility options and provide for efficient transportation alternatives while minimizing environmental impacts. Among the factors that influence livability are the region’s ability to tie the quality and location of transportation facilities to broader opportunities such as access

to jobs, natural resources, affordable housing, quality schools, and safe streets. All of these elements contribute to the sense of place, belonging, and ultimately the vitality of a region.

4. Safety

Currently, our vulnerable road users must use the existing at-grade crossings along Dale Mabry Highway both north and south of I-275. To maximize efficiency for motorists, the traffic signal timing has been programmed such that the pedestrian storage in the median of Dale Mabry Highway is required for the safe crossing of the extensive intersection width. Providing a pedestrian overpass for the local and regional users will separate the pedestrians and bicyclists from the motorists and facilitate safer crossing of a heavily used arterial corridor.

IV. PROJECT CONTEXT AND CONSTRAINTS

A. Project Study Area

As shown in Figure 2, the initial project study area was defined as the northeast and northwest quadrants of the I-275 interchange with Dale Mabry Highway, Tampa, Florida. The intent was to provide a connection from the existing shared-use trailhead that currently terminates at N Church Avenue to the at-grade crossing at Himes Avenue that will eventually lead to the proposed trail along La Salle Street.

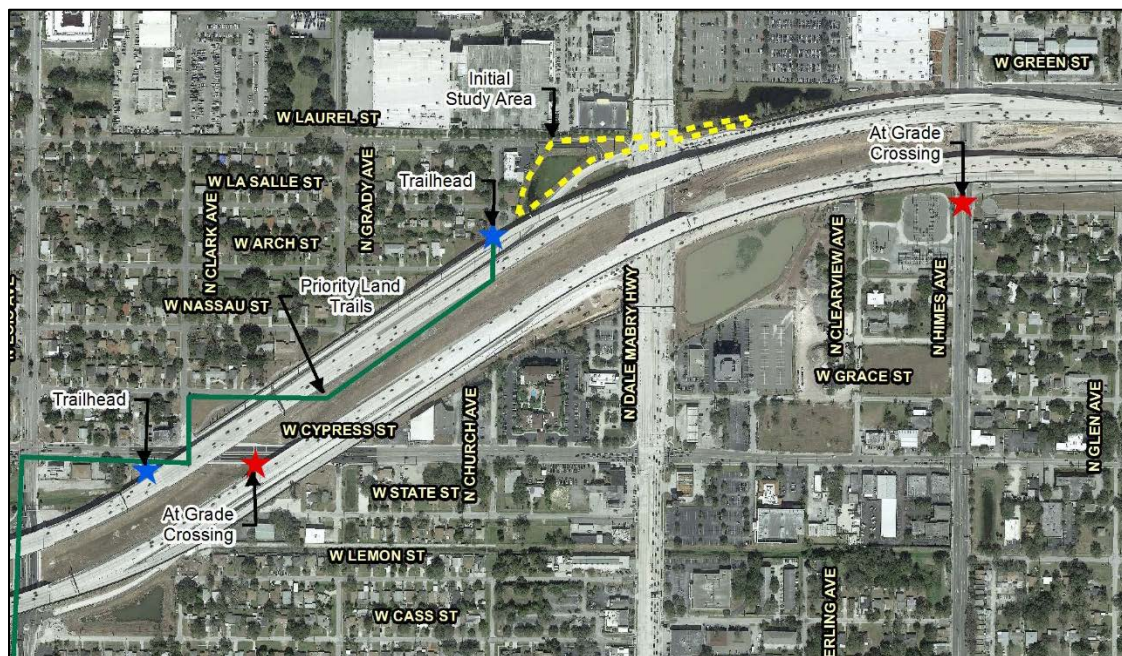


Figure 2: Initial Project Study Area

However, preliminary field investigation revealed geometric, utility, and right-of-way constraints within the northwest and northeast interchange quadrants. The information was presented to the stakeholders, and it was collectively agreed to refocus the study area to the southwest and southeast quadrants of the I-275 interchange with Dale Mabry Highway. Figure 3 reflects the revised project study area south of the interchange. This area revealed relatively less constraints and no potential *fatal flaws*.

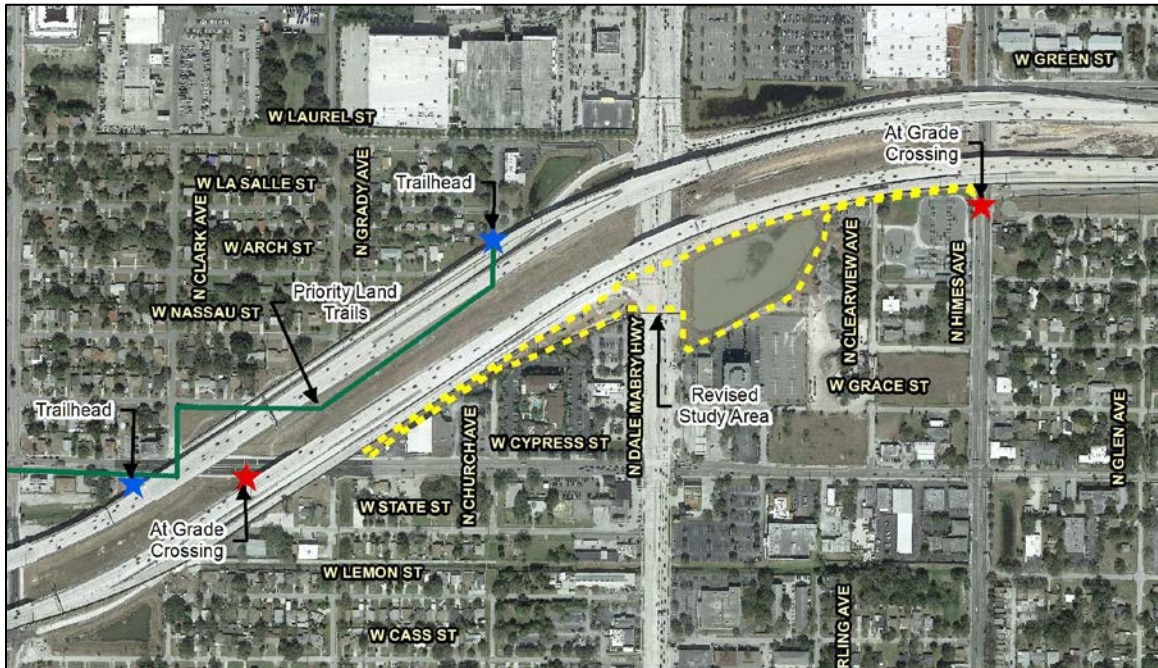


Figure 3: Revised Project Study Area

A comprehensive photo log documenting both the northern and southern parts of the study area can be found in Appendix B. These images shall be used for reader reference throughout the remainder of the document.

B. Land Use Patterns

The existing land use, as defined by the Hillsborough County MPO, is primarily comprised of light commercial, single family/mobile home, public communications/utilities, and public quasi-public/institutions. Some of the primary commercial points of interest are shown in Figure 4. The adopted future land-use is regional mixed-use, residential and community commercial. Both existing and proposed Land Use maps can be found in Appendix C.



Figure 4: Existing Commercial Points of Interest



There is a mixed-use development, *Tampa Bay 1*, planned for the southeast quadrant of the I-275 interchange that will be comprised of 1.2 million square feet of mixed-use space (residential, hotel, commercial and business) on 15 acres. This development will be the single largest mixed-use development to be constructed outside the Tampa downtown core area. It is anticipated that this development will attract hundreds of residents and workers, and thousands of visitors/patrons.

C. Transportation

Dale Mabry Highway is an urban principal arterial road that begins at MacDill Airforce Base entrance in South Tampa and ends by merging with US 41 just north of the Pasco County border. It remains under FDOT jurisdiction and is coincidental with both Route US 92 and SR 600. The FDOT Straight Line Diagrams for Dale Mabry within the study area can be found in Appendix D. Within the study area, there are six thru lanes, one right-turn lane, a bicycle lane, and a sidewalk in the northbound direction and three thru lanes, one right-turn lane, a bicycle lane and a sidewalk in the southbound direction.

Dale Mabry Highway serves as a pivotal connection route serving access to many local amenities including Raymond James Stadium, George M. Steinbrenner Field, Tampa International Airport, Westshore Plaza, International Plaza, as well as many area schools, parks, and neighborhoods. The 2015 AADT was reported as 37,000 by FDOT. Traffic volume data, provided by the City of Tampa, can be found in Appendix E. The traffic volume is anticipated to steadily increase, and both this corridor and the I-275 corridor, and have been identified as being over capacity by year 2018 in the Hillsborough County MPO's 2040 Long Range Transportation Plan (Appendix F).

Currently, the Hillsborough Area Regional Transit agency operates the local route service no. 36, which serves south Tampa to Carrollwood via Dale Mabry Highway / Himes Avenue. The project study area is surrounded by four transit/transfer centers, and there is a Flex Service route south of the project study area. The HART Local and HARTFlex Service map can be found in Appendix G. There is one HART bus stop, no. 36, within the study area, along the southbound side of Dale Mabry Highway and adjacent to the Brick House tavern.



The Long Range Transit Plan Beyond 2040 identifies future express and Bus Rapid Transit service along this corridor.

There are two signalized intersections within the study area, each facilitating operations for the I-275 on/off ramps with Dale Mabry Highway. The traffic signals have multiple phases, including pedestrian phases. There is also a CCTV camera, which facilitates remote traffic signal control operation, in the southeast quadrant of the interchange. The traffic signal heads are mounted to both mast arms and the I-275 overpass structure. Traffic signal timing information can be found in Appendix H.

Between the years of 2011 and 2015, there were 11 reported accidents involving bicycles or pedestrians. These crashes resulted in 10 injuries and one fatality. The crash diagrams depicting detailed information on the type of crashes can be found in Appendix I.

Some of the major area origins and destinations with each of their respective travel times relative to alternate travel mode choice are shown on Figure 5. This information can assist with determining the potential use of a pedestrian overpass south of the I-275 interchange.



Figure 5: Origin and Destination Map

There are no railroads or scenic highways located within the study area.

D. Socioeconomic and Cultural

The study area reflects minority populations between 47% and 96% depending on the location relative to the I-275 interchange. The poverty rates are higher north of the I-275 interchange than south of the interchange. Maps reflecting minority population percent and percent below poverty based on total population can be found in Appendix J. The surrounding neighborhoods reflect quaint, historical homes with unique architectural features. Many residents from the surrounding neighborhoods access the abundant commercial areas in the immediate vicinity of the project study area via walking, biking, and transit service. For them, having safe, reliable alternate transportation choices is a necessity and their way of life.



E. Stakeholders

The overall success of any project is directly dependent on effective stakeholder coordination throughout the life of a project. The primary stakeholders identified for this study include:

- Hillsborough County MPO
- Hillsborough County
- FDOT
- City of Tampa
- Florida Greenways and Trails Foundation
- Florida Department of Environmental Protection
- Westshore Alliance
- Bromley Companies
- Other area businesses and residents

The study team met with the stakeholders and also provided informational presentations as follows:

- November 14, 2016 – Project kick-off meeting
- December 15, 2016 – Project status meeting
- February 9, 2017 – Stakeholder meeting with legal representation for Bromley Companies
- February 14, 2017 – Project status meeting
- March 8, 2017 – Presentation to MPO Bicycle and Pedestrian Advisory Committee (BPAC)
- March 15, 2017 – Presentation to MPO Citizen Advisory Committee (CAC)
- March 22, 2017 – Presentation to MPO Livable Roadways Committee (LRC)
- May 5, 2017 – Presentation to Westshore Alliance
- May 22, 2017 – Project status meeting with FDOT

In addition to meetings and presentation, many phone conversations and emails were exchanged in an effort to efficiently coordinate all aspects of the study. During the course of project coordination, the City of Tampa spearheaded coordination with Bromley Companies, as they are the property owner of much of the land in the southeast quadrant of the I-275 interchange. Bromley Companies expressed interest in facilitating the overall success of the pedestrian overpass. They generally support the highly visible project, as they opinion it will be incredible flagship branding opportunity for their proposed mixed-use property, *Tampa Bay 1*.

F. Utilities

The existing roadway as-built plans for I-275, as well as field verification, were used to identify the existing utilities within the project study area. The project study area contains both overhead and underground utilities ranging in size from small distribution lines to large transmission lines. A TECO substation is located within the project area.



The existing utility companies and their facilities relative to the study area have been identified below:

- Fibernet Direct has an existing underground fiber optic facility adjacent to the east side of Dale Mabry Highway.
- Tampa Water Department has a water main with fire hydrants adjacent to the west side of Dale Mabry Highway.
- A storm sewer runs parallel to the water main until the intersection of I-275 and Dale Mabry Highway. From there, the sewer runs adjacent to I-275 and across Dale Mabry Highway next to the existing stormwater pond.
- Tampa Electric has overhead electric that crosses Dale Mabry Highway south of the northbound I-275 on-ramp. Also, there is overhead electric transmission lines located on the north side of I-275.
- XO Communications has a fiber optic cable buried along the east side of Dale Mabry Highway.
- FDOT has traffic signals mounted on mast arms and I-275 overpass with cable at the southwest intersection of I-275 and Dale Mabry Highway.

G. Permits and Environmental Impacts

There are no wetlands or surface waters within the proposed alternative footprints which would fall under the jurisdiction of the US Army Corps of Engineers (USACE) pursuant to the USACE *Regional Supplement to the Corps of Engineers Wetland Delineation Manual, Atlantic and Gulf Coastal Plan Region (Version 2.0)*. Additionally there are no wetlands or surface waters, as defined by Chapter 62-340, Florida Administrative Code.

The project location is extremely urbanized, and therefore possesses no habitats which are likely to be used by either threatened or endangered species. There is no involvement anticipated with aquatic preserves, water quality issues, Outstanding Florida Waterbodies (OFWs), Wild and Scenic Rivers, floodplains, coastal zone, coastal barrier resources, wildlife habitats, or essential fish habitat (EFH) are located within the study area. Additionally, noise, air quality, and navigation concerns are absent.

There following environmental resource permits (ERPs) were found within the study area:

- Walmart – ERP No. 44010206.004 (served by one stormwater pond on the north side of I-275)
- FDOT D7 I-275 Himes to Hillsborough River – ERP No. 44002958.014 (served by two stormwater ponds, one at the southeast corner of Dale Mabry Highway and I-275, one in the northwest corner of Dale Mabry Highway and I-275)
- Grand Key Condos – ERP No. 44021183.000
- Brick House Restaurant – ERP No. 47035500.000
- TECO Substation – ERP No. 48008944.000
- Circle K – ERP No. 48011999.000

The stormwater management system within the study area was previously permitted in its existing configuration by the Southwest Florida Water Management District (SWFWMD) as part of a Florida Department of Transportation (FDOT) District 7 roadway project by Environmental Resource Permit (ERP) No. 44002958.014 in October 2012. The stormwater features present include a stormwater management pond (Pond 7) and an upland cut drainage ditch. This permit was subsequently modified in February, 2015 (ERP No. 44002958.015) to include expansion of Pond 7 in order to provide attenuation and water quality treatment for runoff from an additional 1.56 acres of future impervious area on the adjacent site owned by Tampa Bay 1, LLC. As part of this modification, Tampa Bay 1, LLC was added as a permittee through a written agreement between FDOT and Tampa Bay 1, LLC. Both entities are responsible for operation and maintenance of the permitted system. The existing stormwater pond permit information can be found in Appendix K.

Three Florida Department of Environmental Protection (FDEP) petroleum sites are documented within the study area. The Men’s Warehouse located north of Grace Street east of Dale Mabry Highway (FDEP Facility ID 8624998) was formerly a gas station, however all of the underground storage tanks were removed and the site has been closed. The Drew Tile Supply Co. (FDEP Facility ID 8625369) historically had one 1000-gallon underground unleaded tank which has been removed. This site is also closed. Currently, the only open site within the study area is a Shell gas station, formerly Circle K (No. 9795, FDEP Facility ID 8625108). This site is an operating gas station located at the northeast corner of Dale Mabry Highway and Cypress Street. The FDEP database indicates that this site is in ongoing cleanup status. A Regulated Facilities map can be found in Appendix L.

H. Right-of-Way (ROW)

The study team conducted a thorough ROW investigation using all available resources from FDOT, the City of Tampa and Hillsborough County. Initially, there appeared to be a 60 foot ROW through the Brickhouse Tavern’s parking lot, a tract that previously held Nassau Street, as depicted on the Hillsborough County Property Appraiser ROW map. The owner of the surrounding lots are Deborah H Johnson et al. (DBA Pkg Lot), Alfredo Rosello/ Trustee (DBA Brickhouse Tavern and Tap), and Holtsinger Inc (DBA Courtyard by Marriott). After confirming it was not an FDOT owned

parcel, City of Tampa Land Development Coordination Department was contacted. Although their records had not been updated, their record search indicated that the ROW and the street had been vacated and the land ownership was surrendered to the surrounding properties. Therefore, this area was not considered useful, as it is now privately held. There is however, ample FDOT ROW both along Dale Mabry Highway and I-275. A map depicting the FDOT, County and City ROW can be found in Appendix M.

V. DESIGN GUIDELINES

The feasibility of a pedestrian overpass was evaluated to ensure project goals are satisfied in accordance with the design criteria and procedures presented in the FDOT Plans Preparation Manual (PPM) Vol. 1, Chapter 8.6 and are discussed in the proceeding sub-sections.

A summary of the key parameters are listed below:

- Width shall be 10 feet minimum for a two-directional shared-use path. A width of 12' will be considered in this feasibility to reflect stakeholder preferences.
- Cross slope is 2% maximum to meet ADA requirements.
- Longitudinal grade is 5% maximum (without landings) to meet ADA requirements.
- Lateral offset shall be 4 feet minimum on both sides of a shared-use path.
- Design speed is 18 mph for grades $\leq 4\%$ and 30 mph for grades $> 4\%$.
- Minimum radii for horizontal curves must be 86 feet for 18 mph design speed and 316 feet for 30 mph design speed.
- Separation between shared-use paths to the edge of paved shoulders shall be 5 feet minimum for posted speeds of 45 mph or less.
- Clear width shall be 12 feet minimum for a shared-use path structure.
- Vertical clearance for new bridges must be 17.5 feet minimum for a pedestrian structure over roadway.

A. Width

Recommended widths for shared-use paths are dependent upon multiple factors including context, volume, and variety of users. Width guidelines for shared-use paths commonly range from 10 to 14 feet, with the wider values attributed to areas of high use and a wide variety of users including pedestrians, bicyclists, and skaters. For this project, the desired shared-use path width is 20 feet total, 12 feet with an additional 4 feet on either side, to facilitate emergency access and maintenance. The width of the approach spans and structure will be consistent with the shared-use path width of 12 feet.

B. Grades

The maximum longitudinal slope for a shared-use path to meet ADA requirements without providing landings or handrails is 5%. Longitudinal slopes greater than 5% are considered ramps and must be designed to provide 5 feet landings every 30 vertical inches. While it is more cost efficient to steepen the grades to reduce the approach lengths for the shared-use path, it is preferred to provide an ADA accessible path easy for children, seniors, and wheelchair users, and bicyclists to travel.

Considering the alternative alignments, all shared-use path structure approaches and switchbacks shall be nearly 550 feet long with a resting spot or viewing spot along the way. This approach

length is based on a design speed of 18 mph which will allow for a maximum longitudinal slope of 4%.

Also, in order to meet ADA requirements, the cross slope must be designed with a maximum grade of 2% for the shared-use path. A cross slope of 2% will provide adequate drainage and it is also recommended for the shared-use path to slope in one direction instead of a crowned section.

The minimum stopping sight distance for shared-use paths is shown in Table 1.

Slope (%)	Design Speed (mph)	Min Stopping Sight Distance (ft)
-5	30	383
-4	18	156
4	18	120
5	30	118

Table 1: Minimum Stopping Sight Distance for Shared-Use Paths

C. Design Speed

In relatively flat areas it is advisable to use a design speed of 18 mph for grades less than or equal to 4%. However, under conditions where the downgrade exceeds 4%, it is appropriate to use a design speed of 30 mph.

D. Curves

The minimum radius of curvature for shared-use paths is shown below in Table 2. Superelevation for a shared-use path is typically limited to 2% towards either side, with a 75 feet transition.

Design Speed (mph)	Min Radius of Curvature (ft)
18	86
30	316

Table 2: Minimum Radius of Curvature for Shared-Use Paths

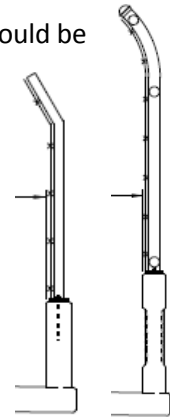
E. Clearances

The following list indicates design criteria with regard to clearances:

- The lateral offset from obstruction on both sides of a shared-use path is 4 feet minimum.
- The distance from the edge of the shared-use path to signs is 2 feet minimum.
- The vertical clearance for new pedestrian bridges over roadways is 17.5 feet minimum.
- The separation between shared-use paths to the edge of paved shoulders shall be 5 feet minimum for posted speeds of 45 mph or less.
- The clear zone width for 45 mph design speed is 24 feet minimum on travel lanes or multilane ramps and 14 feet minimum on auxiliary lanes or single lane ramps.

F. Railing and Fencing

Drop-offs greater than 10 vertical inches on either side of the shared-use path should be avoided unless railing will be implemented. The standard height for pedestrian/bicyclist railing is 42 inches tall which will accommodate bicyclists with a higher center of gravity compared to pedestrian users. A 48 inch tall pedestrian/bicyclist railing should be considered if the downgrade slope exceeds 5%, the radius of curvature is less than desired for the specified design speed, or when bicyclists are permitted to travel within 3 feet of the railing. However, fencing shall be considered as the desired alternative for the approach sidewalks in order to match the safety features of the shared-use path structure. Since each alternative crosses FDOT right of way, full or partial screening is necessary to reduce the likelihood of objects being dropped or thrown onto the roadway below.



VI. ALTERNATIVES ASSESSMENT

A. Alignments

Six alternative alignments, as well as a preliminary evaluation of impacts by alternative, were brought before the stakeholders for discussion and consideration. These alternatives, as well as an evaluation matrix, can be found in Appendix N. Discussion generated a seventh alternative (identified as Alternative Alignment A below) for further consideration. It was agreed to advance three alternatives as shown in Figure 6. Each of the alternatives are discussed in further detail in the proceeding sections.

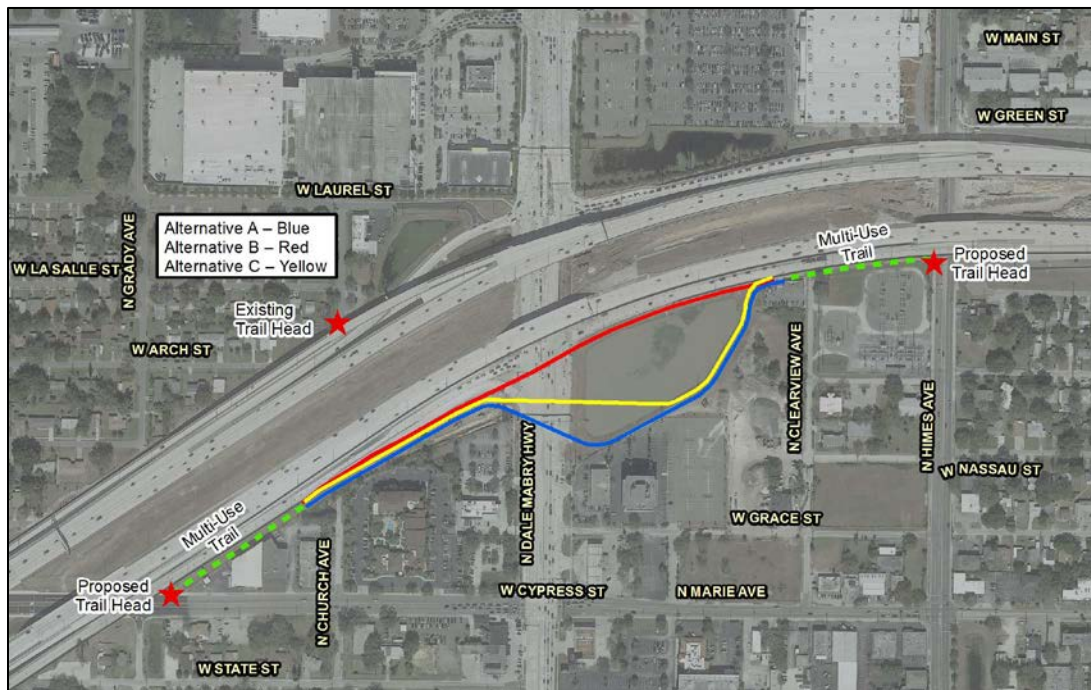


Figure 6: Advanced Alternative Alignments

Each of the overpass structure alignments will connect to a multi-use trail both on the east and west sides. The trail location is shown in a dashed green line in Figure 6. The typical section for the shared use path can be seen in Figure 7.

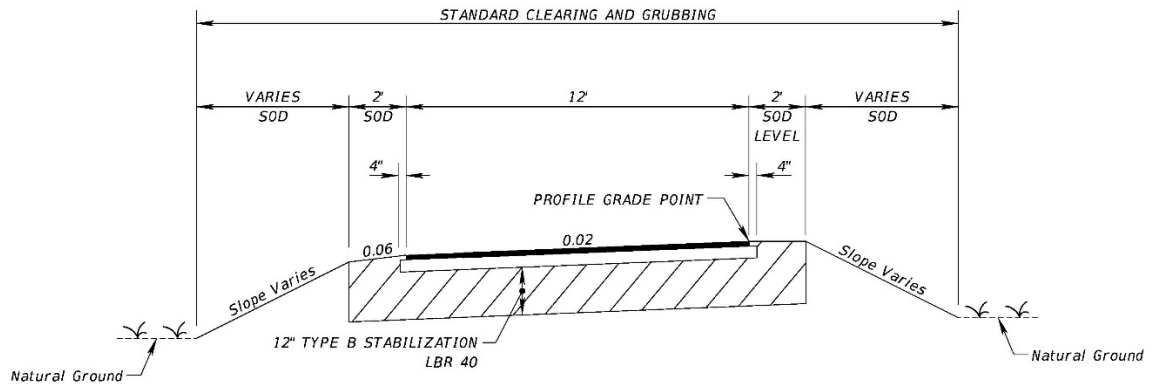


Figure 7: Shared Use Path Typical Section

1. Alternative Alignment A

As shown in Figure 8, Alternative Alignment A is nearly parallel to I-275 and the bridge is 235 feet in length with two span lengths of 105 and 130 feet. Using a design speed of 18 mph, the minimum radius of curvature for the bridge approach sidewalks is 86 feet. Each end bent is located outside of the lateral offset requirements for Dale Mabry Highway and behind the existing sidewalk requiring no protection. The median pier will require FDOT standard pier protection.

The bridge approach sidewalk on the west side runs parallel to the I-275 exit ramp and is 550 feet in length with a 4% longitudinal slope. A switchback is provided which will connect diagonally to the existing sidewalk adjacent to Dale Mabry Highway. The radius of curvature for the bridge approach sidewalk connecting to the shared-use path structure is 125 feet. The radius of curvature for the switchback connecting to the existing sidewalk adjacent to Dale Mabry Highway is 140 feet-1 inch.

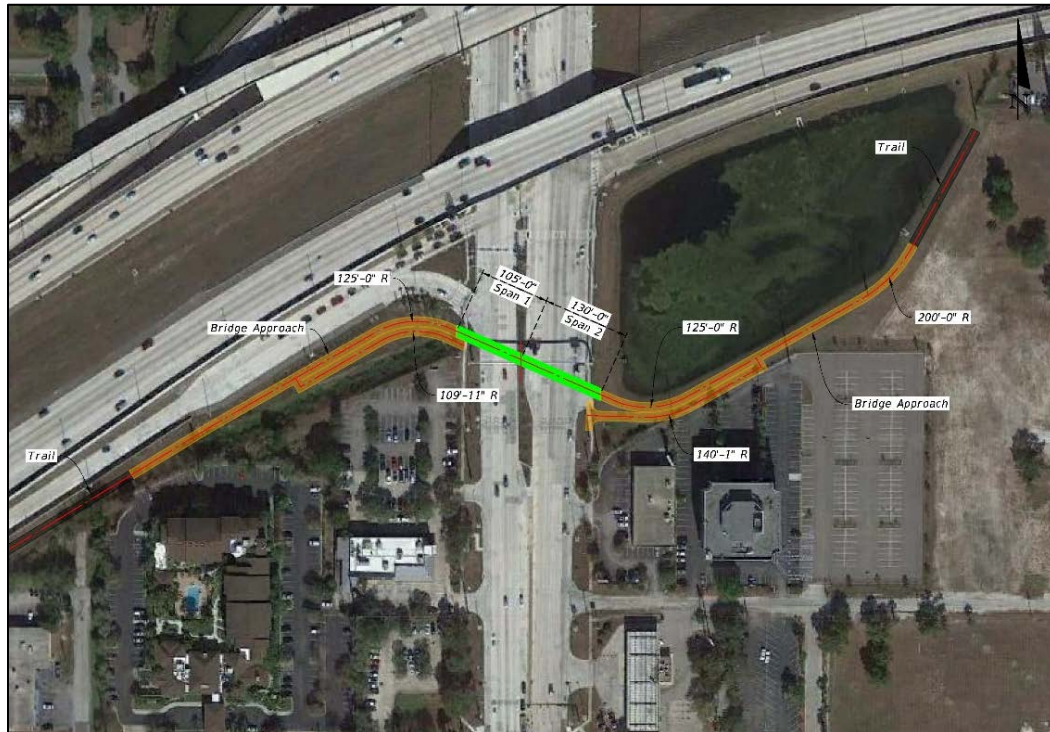


Figure 8: Alternative Alignment A

The bridge approach sidewalk on the east side runs along the south side of the existing pond and is 550 feet in length with a 4% longitudinal slope. A switchback is provided which will connect perpendicularly to the existing sidewalk adjacent to Dale Mabry Highway. The radius of curvature for the bridge approach sidewalk connecting to the shared-use path structure is 125 feet. The radius of curvature for the switchback connecting to the existing sidewalk adjacent to Dale Mabry Highway is 140 feet-1 inch. After the switchback, the remaining bridge approach has a radius of curvature of 200 feet and ties into a proposed trail running along the outside of the existing pond.

5. Alternative Alignment B

As shown in Figure 9, Alternative Alignment B is diagonal to Dale Mabry Highway and the bridge is 360 feet in length with two span lengths of 180 feet each. Using a design speed of 18 mph, the minimum radius of curvature for the bridge approach sidewalks is 86 feet. The end bents for this alternative are placed behind existing barrier along the I-275 on/off ramps as well as outside the lateral offset requirements for Dale Mabry Highway. The median pier, like Alternative A, will require FDOT standard pier protection.

The bridge approach sidewalk on the west side runs parallel to the I-275 exit ramp and is 550 feet in length with a 4% longitudinal slope. A switchback is provided which will connect perpendicularly to the existing sidewalk adjacent to Dale Mabry Highway. The bridge approach sidewalk connecting to the shared-use path structure runs tangent and is parallel to I-275. The radius of curvature for the switchback connecting to the existing sidewalk adjacent to Dale Mabry Highway is 200 feet. After the switchback, the remaining bridge approach has two radii of curvatures equaling 500 feet each which ties into a trail running parallel to I-275.



Figure 9: Alternative Alignment B

The bridge approach sidewalk on the east side runs parallel to the I-275 and is 550 feet in length with a 4% longitudinal slope. A switchback is provided which will connect diagonally to the existing sidewalk adjacent to Dale Mabry Highway. The radius of curvature for the bridge approach sidewalk connecting to the shared-use path structure is 500 feet. The radius of curvature for the switchback connecting to the existing sidewalk adjacent to Dale Mabry Highway is 484 feet. After the switchback, the remaining bridge approach has a radius of curvature of 2500 feet which ties into the trail running parallel to I-275.

6. Alternative Alignment C

As shown in Figure 10, Alternative Alignment C is perpendicular to Dale Mabry Highway and bisects the existing pond with a 4% longitudinal slope. The shared-use path structure is 520 feet in length with four span lengths of 130 feet each. Using a design speed of 18 mph, the minimum radius of curvature for the bridge approach sidewalks is 86 feet. The west end bent is placed outside the required lateral offset for the I-275 off ramp and Dale Mabry Highway. The east end bent is placed at the east edge of the existing stormwater facility, spanning the pond to minimize impacts. The pier in the median of Dale Mabry Highway will require the standard FDOT pier protection. The second pier is located behind the existing northbound sidewalk and outside the lateral offset requirements on Dale Mabry Highway.

The bridge approach sidewalk on the west side runs parallel to the I-275 exit ramp and is 550 feet in length with a 4% longitudinal slope. A switchback is provided which will connect perpendicularly to the existing sidewalk adjacent to Dale Mabry Highway. The radius of curvature for the bridge approach sidewalk connecting to the shared-use path structure is 125 feet. The radius of curvature for the switchback connecting to the existing sidewalk

adjacent to Dale Mabry Highway is 109 feet-11 inches. After the switchback, the remaining bridge approach runs tangent and ties into the trail parallel to I-275.



Figure 10: Alternative Alignment C

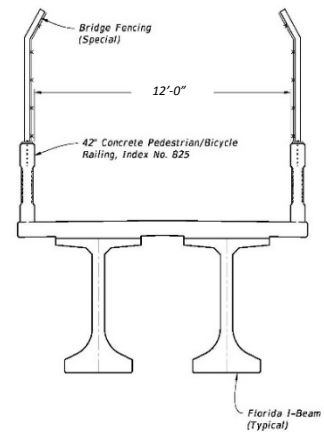
The bridge approach path on the east side runs along the outside of the existing pond and is 100 feet in length with a 4% longitudinal slope. A switchback is provided which will tie into a trail along the south side of the existing pond with a radius of curvature of 125 feet that connects perpendicularly to the existing sidewalk adjacent to Dale Mabry Highway. The radius of curvature for the bridge approach sidewalk connecting to the shared-use path structure is 125 feet. After the switchback, the remaining bridge approach ties into a trail along the outside of the existing pond with three radius of curvatures of 200, 200, and 86 feet respectively.

B. Structure Type Alternatives

The following discussion presents an evaluation of general categories of structure type options for this project. It is recommended that, utilizing the information presented in this document, a Bridge Concept Report further analyzing the recommended structure types and providing a specific recommendation for the crossing be prepared for MPO and FDOT review.

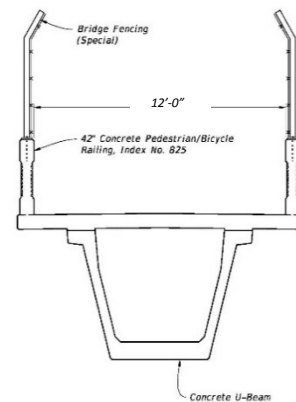
1. Florida I-Beams (FIBs)

Prestressed concrete girders are the most common bridge superstructure for medium span bridges in Florida. They are generally the most economical solution and provide a superstructure with which most contractors are familiar. Florida-I 96 girders can span over 200 feet, making this type of superstructure unlikely to provide an option that could clear span Dale Mabry Highway. As such, all FIB alternatives will require a pier in the Dale Mabry Highway median. Shorter span alternatives will result in greater cost-effectiveness due to the ability to use smaller girder sizes, which in turn results in a shallower superstructure that reduces approach heights.



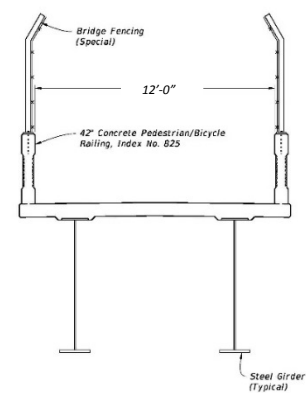
2. Florida U-Beams

Prestressed concrete U-beams provide greater aesthetic appeal than the I-beams while maintaining similar ease of construction and low maintenance requirements. They are not able to achieve the same span lengths as the Florida-I beams, though, making them only viable for alternates A and C. In addition, these girders result in a slightly more expensive structure than the I-beams. Should aesthetics and ease of maintenance weigh heavily in the final superstructure selection, Florida U-beams would result in a desirable option despite their higher cost.



7. Steel Plate Girders

Steel plate girders allow for a greater span length with potentially a shallower superstructure depth than what can be achieved with concrete. Despite the approach embankment savings provided by the shallower superstructure, the more complex fabrication and erection requirements result in a higher total construction cost than the concrete alternatives. Painted steel structures will also require higher maintenance than concrete, increasing the total life-cycle cost for the structure. In addition, it is unlikely that a steel plate girder structure could economically clear-span Dale Mabry Highway, negating any potential MOT or construction cost savings from not building a median pier.



8. Steel Box Girders

As with concrete U-beams and FIBs, steel box girders provide greater aesthetic appeal than the steel plate girders. In addition, they provide a more simplified erection and potentially lower maintenance needs, due to reduced painting areas. While providing safer inspection conditions, due to the closed box, any potential savings from a reduced structure depth are

prevented by a minimum interior clear height of 6 feet, which is required by the FDOT SDG. It is unlikely that a steel box girder bridge will economically clear span Dale Mabry Highway, and with a mandatory minimum girder height, this structure type will likely not provide a competitive cost alternative to the other options.

9. Steel Through Truss

A steel through truss provides a number of potential benefits, in addition to presenting a more visually striking structure. With the majority of the superstructure above the bridge deck, this structure will reduce the approach height and length to a much greater extent than any other alternative. For Alternate C, there is potential to clear span Dale



Mabry Highway, both improving bridge aesthetics, eliminating a median pier, and reducing traffic control costs. This alternative will require a Design Variation, though, as the FDOT PPM limits the length of steel truss spans for prefabricated bridges to 200'. A prefabricated structure may also reduce design costs and erection time. While a steel through truss will generally result in the most expensive superstructure cost (with both construction cost and life-cycle maintenance costs), it could become a competitive option when considering design, approach, and traffic control savings alongside aesthetic appeal.

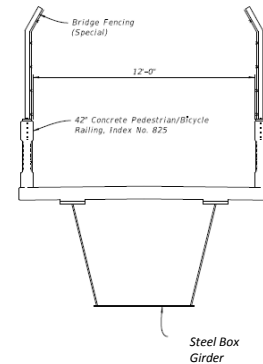
C. Right-of-Way

The ROW between I-275 northbound and the TECO substation, between Dale Mabry Highway and Himes Avenue is constrained. Therefore, an easement or modified multi-use trail width may be considered in this location.

The design alternatives A, B, and C are within the FDOT ROW and do not impact any adjacent parcels. However, alternatives A and C are in close proximity to or are located within part of the stormwater pond in the southeast quadrant. Therefore, pond maintenance coordination with Tampa Bay 1 will be essential for the long term feasibility of these two options.

D. Utilities

The alternative alignments were selected to minimize the impacts of the existing utilities. However, existing utility information is not available via the current as-built plans, and contact with Sunshine 811 revealed very little information. Based on the information received from both the current as-built plans and Sunshine 811, no major utility impacts are anticipated from the three alternative alignments. Alternative alignments A and C have the potential to impact the existing overhead utilities on the south side of the stormwater pond in the southeast quadrant, and the relocation responsibility of these utilities is unclear at this time. A more thorough utility investigation will be critical prior to design.



Mabry Highway, both improving bridge aesthetics, eliminating a median pier, and reducing traffic control costs. This alternative will require a Design Variation, though, as the FDOT PPM limits the length of steel truss spans for prefabricated bridges to 200'. A prefabricated structure may also reduce design costs and erection time. While a steel through truss will generally result in the most expensive superstructure cost (with both construction cost and life-cycle maintenance costs), it could

E. Drainage

This project is expected to add impervious area to the contributing basins of three permitted stormwater management facilities, as well as potentially impact existing drainage structures and pipes. Generally, this project will require the modification of existing Southwest Florida Water Management District Environmental Resource Permit #2958, and will also require the modification of the design of the existing collection and conveyance system. Existing field reconnaissance revealed standing water and a large amount of trash present in the swale in the southwest quadrant of I-275 and Dale Mabry Highway. As a part of the pedestrian project, this condition should be reviewed for potential modifications which would decrease maintenance requirements and opportunity for trash accumulation.



There are three existing stormwater management facilities (SWMFs) that serve the basins that contain the proposed improvements. These facilities may currently have capacity to service the minor increase in impervious area associated with the project. The western most portion of the project may potentially impact an existing drainage conveyance immediately adjacent to the south side of I-275, however this conveyance can be redesigned to provide positive drainage and accommodate pedestrian facilities. There is an existing 72" stormwater pipe in this area which is not anticipated to be impacted by the on-grade portion of the proposed shared-use path. The eastern side of this project includes the accommodation of a pedestrian overpass, including ramps and accesses. The locations where the path is proposed to tie to existing grade include areas within the existing maintenance berm of the existing SWMF on the east side of Dale Mabry Highway. The proposed pedestrian interconnection at this location should provide for the continued access of maintenance equipment along the existing maintenance berm.

With consideration to the Alternative Alignment A, the existing ditch in the southwest quadrant of I-275 and Dale Mabry Highway may need to be piped or shifted south to accommodate the access up to the west pedestrian structure approach. The beginning of the western span will need to be sited carefully to avoid an existing 43" x 68" pipe that crosses under Dale Mabry Highway. The pier between the two spans will need to be carefully sited to avoid an existing 18" pipe under Dale Mabry Highway, or this pipe may need to be re-routed to accommodate the proposed pier. The end of the eastern span will need to be sited carefully to avoid an existing 18" pipe that exists in the area, or the pipe may need to be re-routed to accommodate the proposed approach. The Pond 7 SWMF access and maintenance berm may need to be shifted slightly to ensure that maintenance equipment has adequate access around the facility with this option.

With consideration to the Alternative Alignment B, the existing ditch in the southwest quadrant of I-275 and Dale Mabry Highway may need to be piped or shifted south to accommodate the access up to the west pedestrian structure approach. The beginning of the western span will need to be sited carefully to avoid an existing 18" pipe, in the area, or the pipe may need to be re-routed to accommodate the proposed shared-use path. The pier between the two spans will need to be carefully sited to avoid an existing 54" pipe under Dale Mabry Highway. The end of the eastern span will need to be sited carefully to avoid an existing 38x60" pipe that exists in the area. The proposed improvements will need to accommodate a 15 foot clear space for maintenance around Pond 7.

With consideration to the Alternative Alignment C, the existing ditch in the southwest quadrant of I-275 and Dale Mabry Highway may need to be piped or shifted south to accommodate the access up to the west pedestrian structure approach. The beginning of the western span will need to be sited carefully to avoid an existing 43x68" pipe that crosses under Dale Mabry Highway. The first pier between the spans does not appear to be in conflict with any existing drainage facilities. The second pier between the spans will need to be carefully sited to avoid conflict with an existing 36" pipe and to provide for a 15 foot clear maintenance berm around the SWMF. Additional investigation is required to determine if a liner exists in SWMF 7, and the installation of the third pier between the spans will need to maintain the integrity of the liner if one exists. As the structure approaches grade on the eastern end, the design should consider the ability to access the pond area below the proposed structure for maintenance. The proposed improvements on the east end of the structure will need to accommodate 15 foot clear space for maintenance around Pond 7. Any volume lost in the SWMF due to the placement of the approach and piers within the facility will need to be adequately addressed during design.

F. Aesthetics

As part of the recently completed improvements to I-275 over Dale Mabry Highway, extensive efforts were made to obtain community input and acceptance of the proposed bridge aesthetics. Regardless of the selected alternate, the trail's close proximity to I-275 will result in the obstructed



view of the interstate, making aesthetics a primary concern. For most steel and concrete superstructure alternates, the existing aesthetic details of I-275 over Dale Mabry Highway can be mimicked to complement the interstate bridges. To further enhance bridge aesthetics, FRP panels could be used to obscure concrete or steel girders. In addition, the selection of fencing alternatives has the potential to detract from the appearance of the structure and requires consideration. Colored vinyl fencing could provide a desirable appearance. A steel through truss provides a variety of aesthetic alternatives for the main span, reduces concerns for the aesthetic appeal of fencing by reducing its visibility, and allows for the use of similar end bent details to those used on I-275.

As part of each of the alternatives, the trails on either side of the overpass will provide a major aesthetic benefit to the existing conditions. The proposed trail will complement the existing nearby trails so as to promote cohesive user experience. Figures 11 and 12 depict before and after renderings of the trail areas parallel to I-275.



Figure 11: Trail Rendering from Cypress Street to Dale Mabry Highway

Native Florida vegetation shall be utilized to enhance the trail. The trails shall be properly lit to ensure maximum safety during dark hours.



Figure 12: Trail Rendering from Dale Mabry Highway to N Himes Avenue

G. Permits and Environmental Impacts

It is anticipated that any impacts to the permitted stormwater management system which result from any of the proposed alternative alignments will require a modification of the existing ERP. The modification request will need to be authorized by the current permittees. Depending upon the scope and extent of the modifications proposed to the stormwater management system, either a major or a minor permit modification will be required to authorize the activity. To qualify for a minor modification, it must be demonstrated that any proposed changes will not substantially modify the existing permit authorization, increase permitted of site discharge, decrease of required retention, decrease of required detention, decreased flood control elevations, or decrease pollution removal efficiency. It should be noted that all of the proposed alternatives appear to meet the ERP exemption criteria outlined in Rule 62-330.051(10) of the Florida Administrative Code (F.A.C.); due to the fact that (a) they are not located in wetlands or other surface waters; (b) the proposed shared-use trail is less than 14 feet wide, and; (c) they are not intended to be used by motorized vehicles.

Since there are no existing environmental constraints, i.e. aquatic preserves, water quality issues, Outstanding Florida Waterbodies, Wild and Scenic Rivers, floodplains, coastal zone, coastal

barrier resources, wildlife habitats, or essential fish habitat, the alternative alignments will not generate any environmental impacts. No contamination impacts are anticipated by any of the alternative alignments. Additionally, by improving non-motorized transportation within the area, reduced noise and improved air quality can be anticipated.

No environmental justice issues are expected, and there is no relocation potential. Archaeological and historical resources were previously determined and no impacts anticipated. In short, this project is anticipated to produce negligible environmental impacts.

H. Traffic Impacts

Alternative Alignment A impacts the existing overhead sign structure. Although not aesthetically ideal, the signs can be placed on the pedestrian overpass structure to eliminate the need to relocate the existing overhead structure. It may also be possible to structurally mount the signs adjacent to Dale Mabry Highway. The stopping sight distance for the existing signals will not be impacted.

Alternative Alignment B will impact the existing southbound mast arm on Dale Mabry Highway along with the I-275 exit ramp mast arm for northbound traffic located in the median of Dale Mabry Highway. The sight distance for the I-275 exit ramp mast arm for southbound traffic will be impacted as well.

Alternative Alignment C will incur no impacts to existing mast arms or sign structures. Stopping sight distance will not be reduced for the existing signals or turning movements.

All alternative alignments will impact the existing roadway lighting, and as such will need to be reevaluated during design. The proposed overpass will incorporate lighting features, which will need to be incorporated into the roadway lighting reevaluation. Furthermore, Alternative Alignment B will impact the existing CCTV structure located in the southeast quadrant of the I-275 interchange.

Due to the geometric complexity of Dale Mabry intersection with the I-275 northbound ramps, Maintenance of Traffic for this project is expected to be complex, regardless of the preferred alternative alignment.

With the introduction of the pedestrian overpass, it is anticipated that vehicular traffic will slightly decrease while bike and foot traffic may inversely increase. It has been statistically proven that offering safer choices contributes to the overall choice of alternate modes.

I. Future Maintenance and Inspections

In selecting a preferred alternate, consideration must be given to not only the design and construction cost but to the long-term costs of structure maintenance. Without the addition of any lighting or mechanical components, such as elevators, all presented alternatives require relatively low maintenance; however, the selected finish for the steel superstructure alternatives could result in the need for periodic painting. The selection of a weathering steel in lieu of paint would reduce steel maintenance costs but should be reviewed in light of desired bridge aesthetics.

Currently, the basin maintenance located in the southeast quadrant is shared between FDOT and Tampa Bay 1. If either Alternative Alignment A or C is selected, the current maintenance agreement for the stormwater pond will need to be reevaluated such that the responsible party and the maintenance terms for the trail and vegetation in close proximity to the trail are clearly defined and upheld. The existing maintenance agreement can be found in Appendix O.

J. Geometric Improvements for Trail Continuation

To achieve maximum connectivity within the existing and proposed trail network, minor at-grade geometric improvements are recommended from the trailhead located in the northwest quadrant of the I-275 interchange, along North Church Avenue to the anticipated pedestrian overpass. It is essential to continue the trail within the constraints of the existing infrastructure to the greatest extent possible to encourage use and capitalize on the benefits of the pedestrian overpass. The recommended at-grade improvements include, but are not limited to:

- Construction of a sidewalk on the west side of North Church Avenue
- Installation of sharrow markings to North Church Avenue
- Installation of way finding signs throughout route
- Widening sidewalks and curb ramps along West Laurel Street and I-275 Ramp areas
- Installation of emphasized crossings
- Adjustment to traffic signal timing to better prioritize pedestrians

These improvements will increase the use and benefits of the pedestrian overpass. A rendering of the proposed improvements is shown in Figure 13.

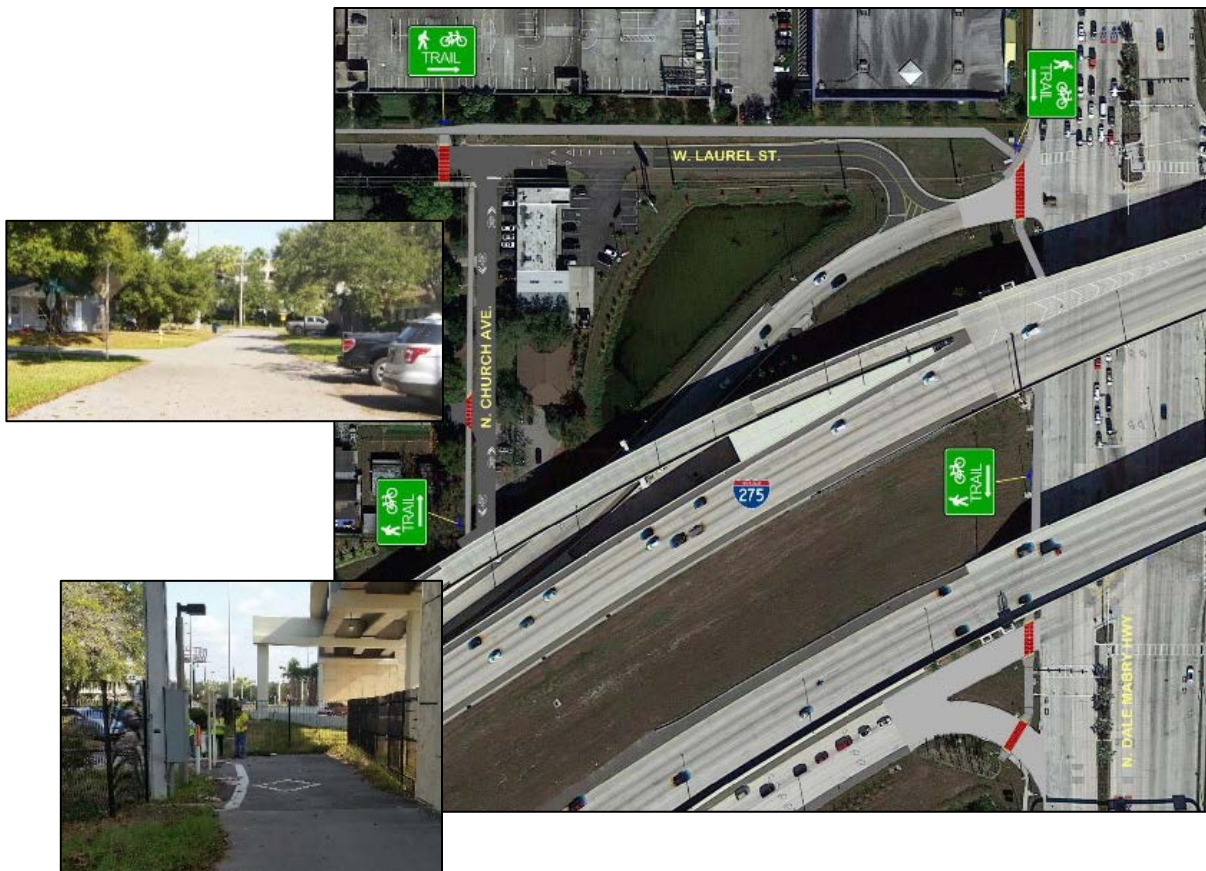


Figure 13: Rendering of Recommended At-Grade Improvements

K. Cost Comparison

A detailed cost estimate was prepared for each of the three alternative alignments and can be found in Appendix P. A breakdown for different structure alternates previously discussed as well as the approaches, are included. The cost comparison revealed total construction costs between

\$4.0 M and \$6.2 M, depending on the selected structure alternate. The least expensive structure type for each of the alternative alignments is the Florida I-beams. Alternative Alignment C had the lowest construction costs, while Alternative Alignment B had the highest construction costs.

VII. CONCLUSIONS AND RECOMMENDATIONS

After thoroughly investigating all existing information, constraints, impacts and opportunities, the data fully supports the construction of a pedestrian overpass south of the I-275 interchange with Dale Mabry Highway, as well as concurrent at-grade improvements. The overpass will serve to complete a critical gap in the local and regional trail system, thereby improving mobility, recreation, health, and overall community wellbeing. It also aligns with the proposed land-use and transit plans, as well as agency priorities. It will serve to increase multi-modal transportation options, thereby improving economic opportunities and the safety of our traveling public. Furthermore, a pedestrian overpass will assist with the environmental stewardship by increasing the amount of non-motorized trips and inversely decreasing the amount of motorized trips.

In an effort to summarize the evaluation criteria that is likely to produce very different outcomes for each of the alternative alignments, a Summary Impact Evaluation was prepared and is shown in Table 3. Although Alternative Alignment B has the highest estimated construction cost and may incur the greatest Maintenance of Traffic (MOT) impacts, the alignment may produce the most aesthetic design in relation to the existing and proposed (as part of Tampa Bay 1) infrastructure. It is anticipated that a pedestrian overpass that is immediately adjacent to the I-275 overpass will complement the overpass and preserve the architectural value of the interchange. Renderings of how the overpass could look are shown in Figures 14 and 15. Furthermore the overall geometry of Alternative Alignment B will deliver the best radii for trail continuity and flow, such that bicyclists using the trail will be able to maintain a consistent speed while traversing the overpass. Alternative Alignment A and C both have the potential to impact the stormwater pond. As a result, the current stormwater pond maintenance agreement will likely need to be reevaluated. This could generate stakeholder opposition and delays or uncertainties. Alternative Alignment B has the least amount of impact to the stormwater pond in the southeast quadrant. This will streamline long term maintenance responsibility, as existing maintenance agreements will remain as is. Considering the data and impacts, the alternative analysis has determined that Alternative Alignment B is the recommended alternative.

EVALUATION FACTORS	ALTERNATIVE ALIGNMENT		
	A	B	C
Total Cost	\$5,320,142	\$5,919,422	\$4,022,721
Aesthetics	Skewed; close to proposed building footprint	Parallel to I-275; no anticipated conflicts	Perpendicular to Dale Mabry; passes thru stormwater pond
MOT Impacts	Moderate	High	Moderate
Stormwater pond impacts	Moderate	Low	High
Significant stakeholder opposition	Possible	Unlikely	Possible
Possible project delays / uncertainties	Possible	Unlikely	Possible

Note: All costs were based on the Florida I-Beam structure type for purpose of consistency.

Table 3: Summary Impact Evaluation

Although positive impacts on community cohesion, community services, and surrounding minority neighborhoods are anticipated, a public meeting to discuss the preferred alternative could be beneficial to gain community support of the project. Therefore, the study team recommends follow-up public engagement.



Figure 14: Rendering of Potential Pedestrian Overpass Looking Northwest along Dale Mabry



Figure 15: Rendering of Potential Pedestrian Overpass Looking North along Dale Mabry