



October
2014

ISB Pedestrian Connectivity & Safety Assessment Study Field Evaluation Report

Prepared for:
Florida Department of Transportation District 5, Deland, FL



Prepared by: Ghyabi & Associates, Inc.

(This page intentionally left blank)



Table of Contents

List of Figures..... iii

List of Tables..... iii

1 INTRODUCTION 1

2 FIELD EVALUATION 3

 2.1 Existing Conditions 3

 2.2 Constraints 8

 2.3 Observations..... 8

 2.4 Nighttime Observations..... 28

3 SUMMARY OF OVERALL OBSERVATIONS..... 32

 3.1 Location Specific Observations and Resolutions..... 32

4 INNOVATIVE PEDESTRIAN & BICYCLE PROJECT EXAMPLES..... 38

 4.1 Streetside Design 38

 4.2 SR 60/North Meridian Avenue 40

 4.3 SR A1A/Third Street North 41

 4.4 CR 535/Daniels Road..... 42

 4.5 Edgewater Road (Formerly SR 424)..... 43

 4.6 Tanger Outlets The Walk / CR692/694 44

5 NEXT STEPS 45

6 APPENDIX 46

 6.1 Glossary of Terms..... 46



List of Figures

Figure 1: Project Study Area 2

Figure 2: US 92/SR 600 Typical Cross Section (I-95 to Bill France Boulevard) 4

Figure 3: US 92/SR 600 Typical Cross Section (Bill France Boulevard to SR 483) 4

Figure 4: US 92/SR 600 Typical Cross Section (SR 483/Clyde Morris Boulevard to SR 5A/Nova Road)..... 4

Figure 5: SR 5A/Nova Road Typical Cross Section 4

Figure 6: Williamson Boulevard Typical Cross Section 5

Figure 7: SR 483/Clyde Morris Boulevard Typical Cross Section (South of US 92/SR 600)..... 5

Figure 8: SR 483/Clyde Morris Boulevard Typical Cross Section (North of US 92/SR 600) 5

Figure 9: Bill France Boulevard Typical Cross Section 7

Figure 10: Dunn Avenue Typical Cross Section (West of SR 483/Clyde Morris Boulevard) 7

Figure 11: Dunn Avenue Typical Cross Section (East of SR 483/Clyde Morris Boulevard)..... 7

Figure 12: White Street Typical Cross Section 7

Figure 13: Observation Key Map..... 9

List of Tables

Table 1 - Priority Descriptions from Volusia County ADA Transition Plan Phase 1.....37



1 INTRODUCTION

The Pedestrian Connectivity and Safety Assessment Study (PCSA) is a Florida Department of Transportation (FDOT) project in collaboration with the River to Sea Transportation Planning Organization (R2CTPO), Voltran, City of Daytona Beach, Volusia County, International Speedway Boulevard (ISB) Coalition, and other stakeholders in the study area.

The core study area includes the geographic area generally bounded on the west by Interstate (I)-95; on the east by State Road (SR) 5A/Nova Road; on the north by Dunn Avenue; and on the south by a boundary that extends ¼-mile south of State Road (SR) 600/United States Highway (US) 92/International Speedway Boulevard (ISB). The study area also includes the Volusia County Health Department which is located in the Daytona Business Park, off of Bill France Boulevard and just north of Dunn Avenue. The Project Study Area is depicted in Figure 1.

The major purpose of the PCSA is to identify the existing pedestrian facilities along US 92/SR 600/International Speedway Boulevard, as well as along any neighboring roadways that connect to specific pedestrian-generating development, and determine/prioritize the improvements needed for enhanced pedestrian connectivity and safety.

The project will proceed through a series of three tasks, as shown below, and culminate in a final report.

- Task 1.0: Existing Conditions Summary Report
- **Task 2.0: Field Evaluation Report**
- Task 3.0: Development of Draft and Final Report

This project report addresses Task 2.0 and includes the following major sections:

- Field Observation
- Summary of Overall Observations
- Innovative Pedestrian & Bicycle Project Examples
- Next Steps

This report identifies, prioritizes, and advances critical improvements needed for multimodal connectivity and improved accessibility in the study area. It is principally comprised of narrative and annotated photos and graphics of observed existing conditions that identify the gaps, barriers, issues, and opportunities in the study area. It culminates with a preliminary list of pedestrian connectivity projects to improve accessibility between the origins and destinations within the study area.

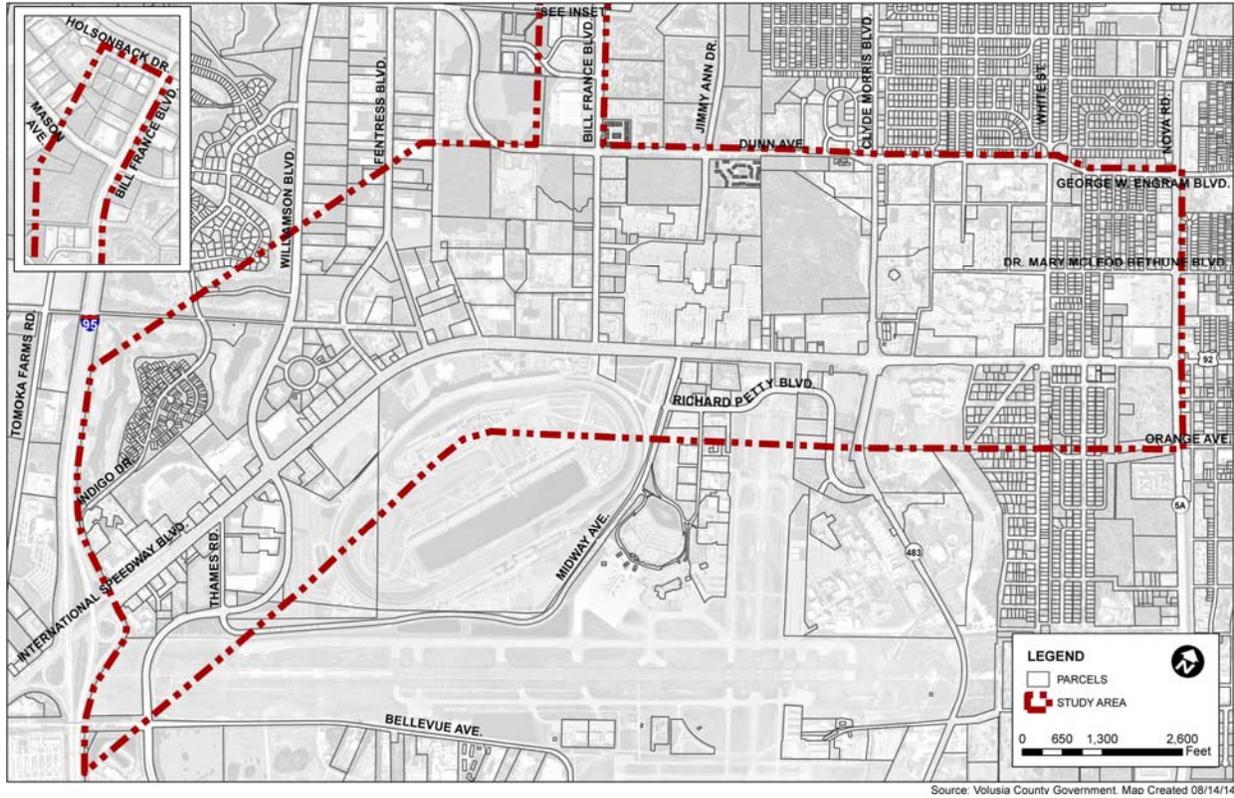


Figure 1: Project Study Area



2 FIELD EVALUATION

On July 8, 2014, field evaluation for the PCSA study area was conducted in a manner similar to a Pedestrian Roadway Safety Audit (PRSA). A PRSA is a performance examination of an existing or future road that qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users. PRSAs provide more detail on pedestrian safety issues than the traditional road safety audit. With an emphasis on improved transit accessibility and pedestrian and bicycling connectivity, the goal of this evaluation was to highlight existing conditions within the corridor that validate the preliminary identification of ADA compliant improvements to better connect origins and destinations within the PCSA study area. Unless otherwise noted, the photographs in this report were taken on July 8, 2014 and are courtesy of Ghyabi & Associates, Inc.

2.1 Existing Conditions

The study area includes several thoroughfares with varying amounts of multimodal traffic. Principal arterials include US 92/SR 600/International Speedway Boulevard, SR 5A/Nova Road, Williamson Boulevard, and SR 483/Clyde Morris Boulevard.

Figures 2, 3 and 4 depict the typical cross sections for US 92/SR 600/International Speedway Boulevard within the study area. All cross sections include Type F curb and gutter, four-foot bike lanes, and five-foot sidewalks on both sides of the facility throughout the study area.

Between I-95 and SR 483/Clyde Morris Boulevard, US 92/SR 600/International Speedway Boulevard is an eight-lane divided roadway with a 200-foot right of way. This section includes eight, twelve-foot through lanes and a 28-foot grass median. East of SR 483/Clyde Morris Boulevard, the right of way narrows to 120 feet and a reduced roadway cross section of six, twelve-foot wide through lanes and a 22-foot median.

The typical cross section SR 5A/Nova Road is depicted in Figure 5. This facility features a six-lane urban section with a grass median. The right of way within the study area varies with a minimum width of 125 feet and has six, twelve-foot through lanes, an 18-foot grass median and Type F curb and gutter on each side. It also includes five-foot sidewalks on both sides of the corridor.

Figure 6 depicts the typical cross section for Williamson Boulevard which is a four-lane urban section with a grass median. The right of way within the study area is 150 feet. This roadway features four, twelve-foot through lanes and a 20-foot grass median. North of US 92/SR 600/International Speedway Boulevard, Williamson Boulevard has Type F curb and gutter, five-foot bike lanes, and five-foot sidewalks on both sides of the corridor.



Figure 2: US 92/SR 600 Typical Cross Section (I-95 to Bill France Boulevard)



Figure 3: US 92/SR 600 Typical Cross Section (Bill France Boulevard to SR 483)

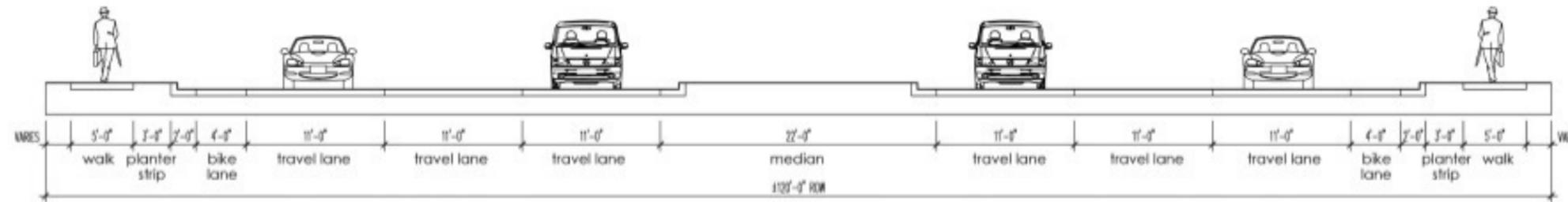


Figure 4: US 92/SR 600 Typical Cross Section (SR 483/Clyde Morris Boulevard to SR 5A/Nova Road)

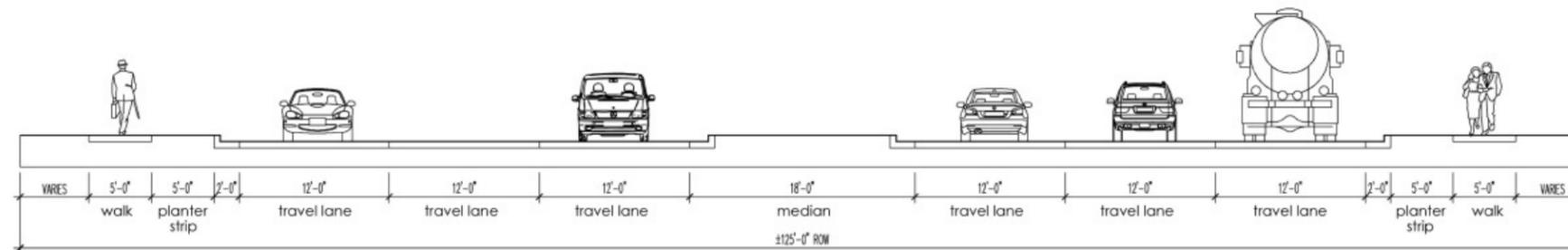


Figure 5: SR 5A/Nova Road Typical Cross Section

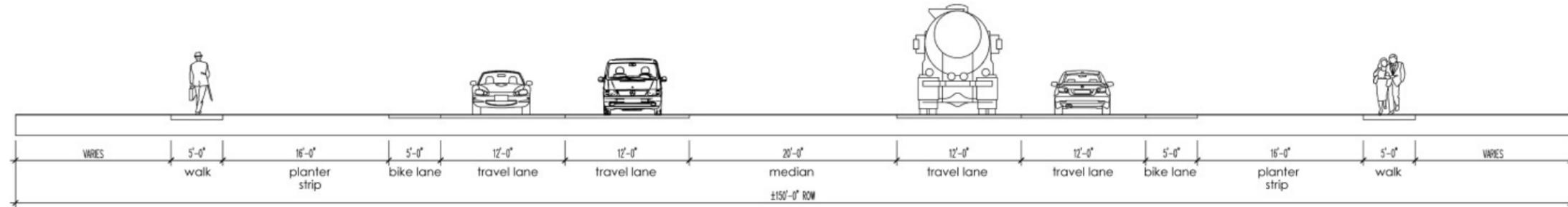


Figure 6: Williamson Boulevard Typical Cross Section

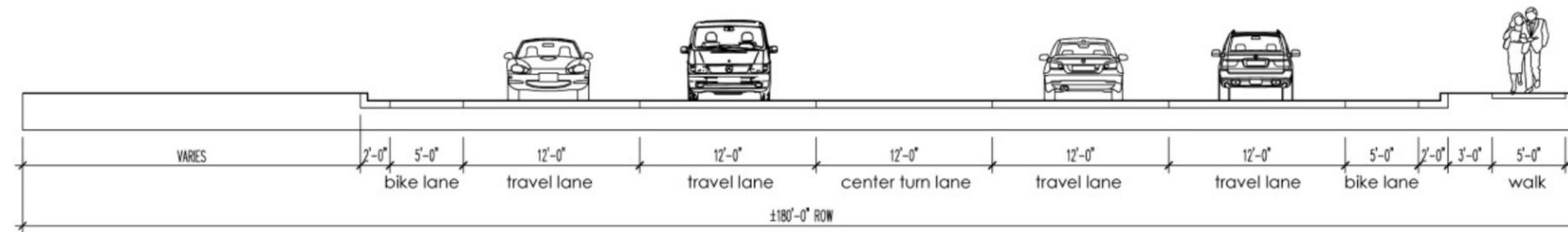


Figure 7: SR 483/Clyde Morris Boulevard Typical Cross Section (South of US 92/SR 600)

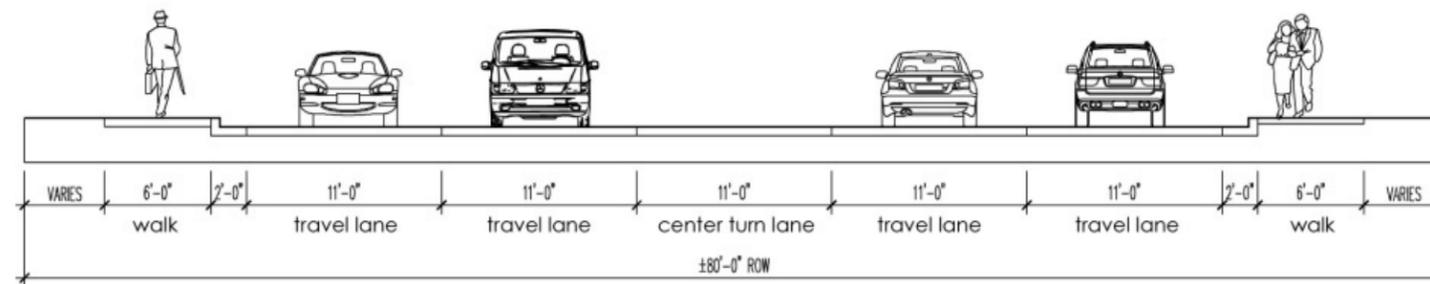


Figure 8: SR 483/Clyde Morris Boulevard Typical Cross Section (North of US 92/SR 600)



As shown in Figure 7, SR 483/Clyde Morris Boulevard, south of US 92/SR 600/International Speedway Boulevard, consists of four through lanes, a continuous center turn lane, Type F curb and gutter, bike lanes and a sidewalk adjacent to the northbound through lanes. The right of way varies but is approximately 180 feet.

SR 483/Clyde Morris Boulevard, north of US 92/SR 600/International Speedway Boulevard, is depicted in Figure 8. It features four through lanes, a continuous center turn lane, Type F curb and gutter and sidewalks on both sides. This segment of the arterial roadway has a right of way of 80 feet.

Four-lane collector roadways within the study area include Bill France Boulevard, Midway Avenue, Richard Petty Boulevard, Dunn Avenue and White Street. Two-lane collectors include Jimmy Ann Drive, Dr. Mary McLeod Bethune Boulevard and Orange Avenue. Figures 9, 10, 11 and 12 depict the typical cross sections for these collector roadways within the study area.

Generally, operating speeds on major roadways within the study area are between 30 and 45 miles per hour. However, a significant portion of US 92/SR 600/International Speedway Boulevard, west of SR 483/Clyde Morris Boulevard, operates at 50 miles per hour.

While there are sidewalks on both sides of most major roadway facilities within the study area, significant gaps within the sidewalk network are present on a number of roadways. The existing bicycle network within the study area also has a lack of connectivity, as most bicycle lane projects have been added in recent years as part of isolated roadway capacity improvement projects.

Transit service within the PCSA study area is provided by Votran with bus stops located throughout the study area. There are five bus routes with 60-minute headways and one with 30-minute headways that serve a variety of commercial, entertainment, educational and residential uses within the study area. During field evaluation, numerous people were observed walking, biking and using transit within the PCSA study area.

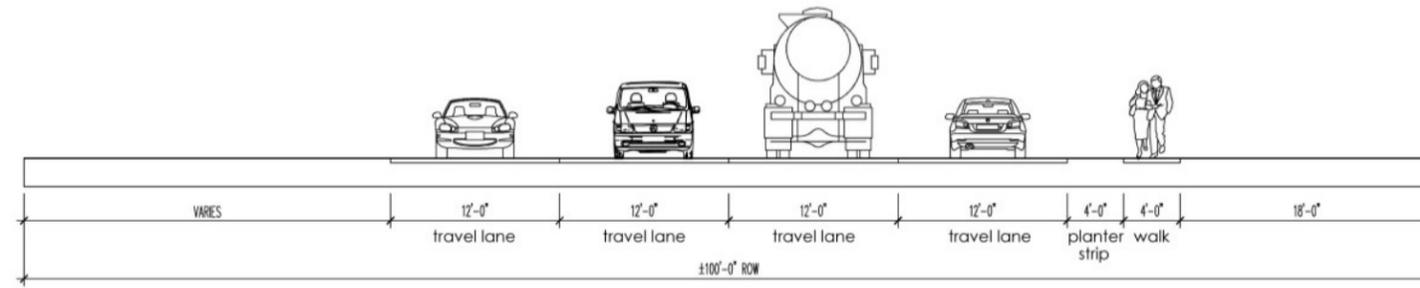


Figure 9: Bill France Boulevard Typical Cross Section

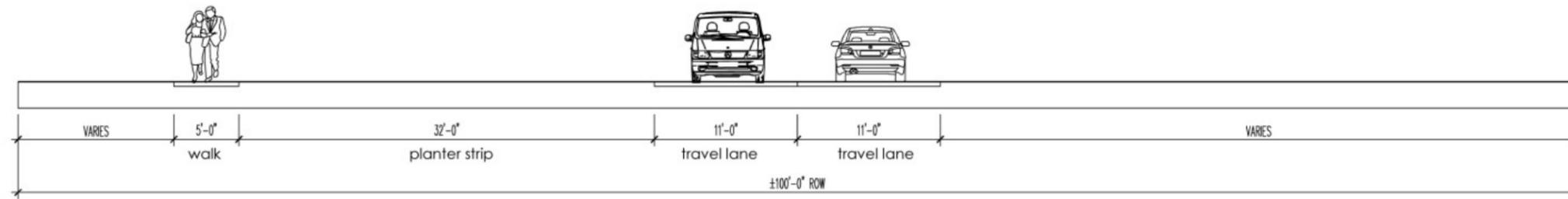


Figure 10: Dunn Avenue Typical Cross Section (West of SR 483/Clyde Morris Boulevard)

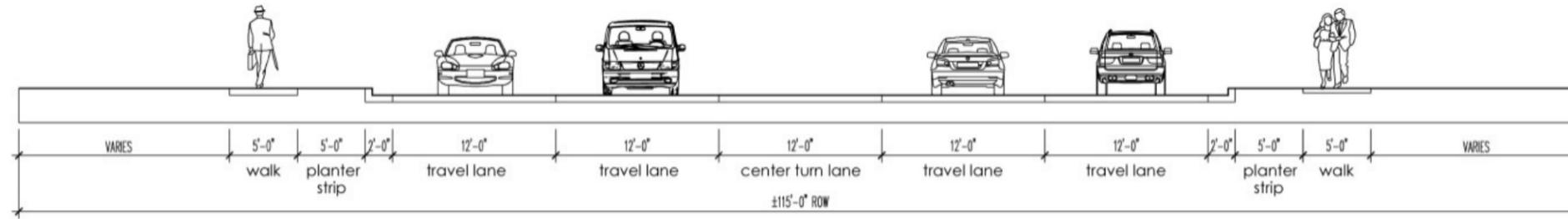


Figure 11: Dunn Avenue Typical Cross Section (East of SR 483/Clyde Morris Boulevard)

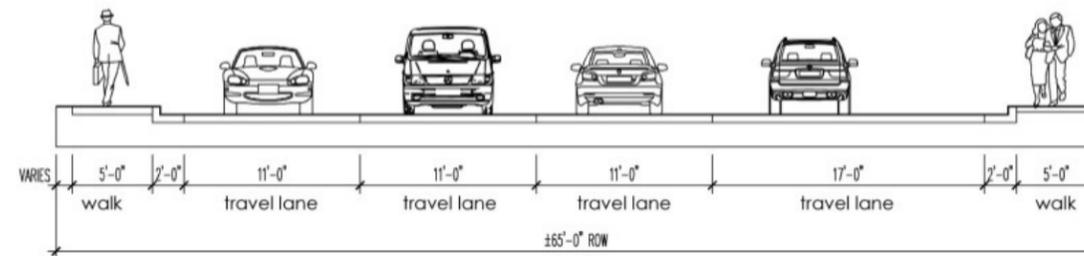
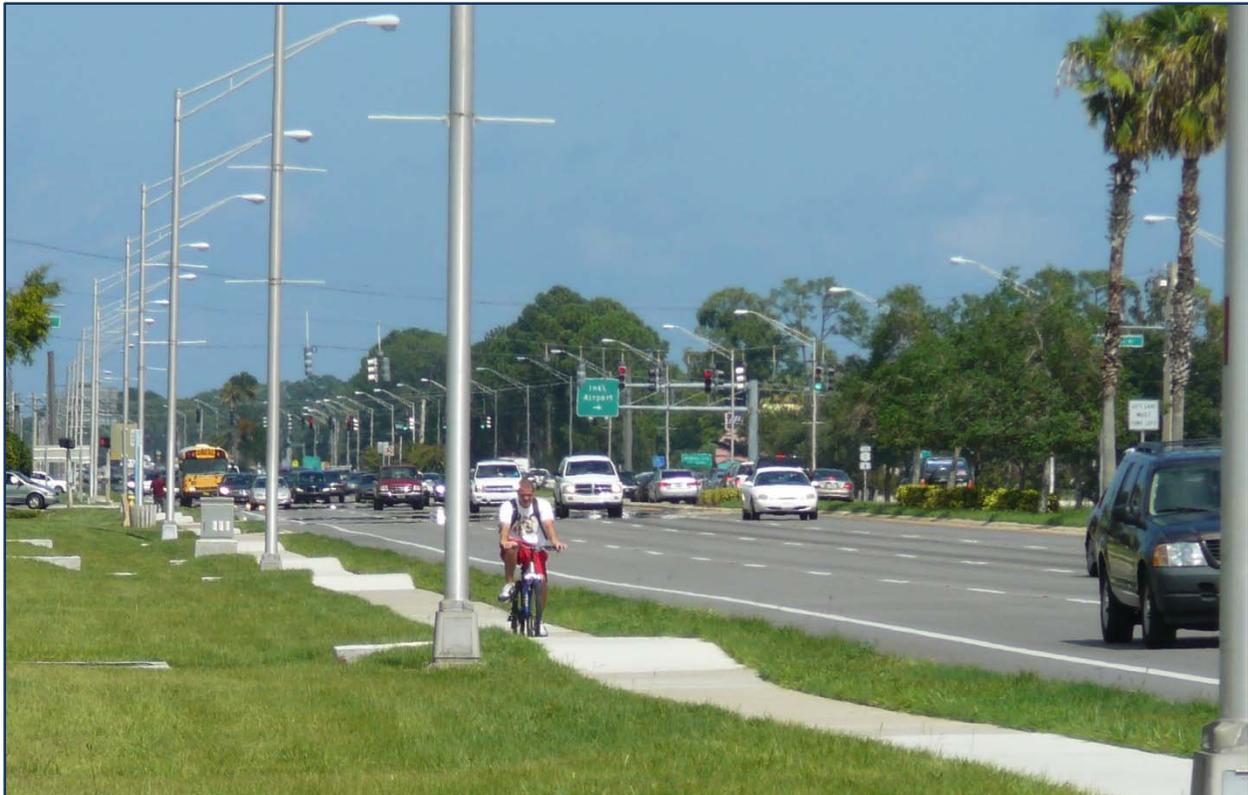


Figure 12: White Street Typical Cross Section

2.2 Constraints

Pedestrian and bicyclist safety and connectivity are key issues for the PCSA study area. Despite a significant number of commercial and institutional uses within the area, the multimodal network could be improved. The sidewalk network within the study area lacks strong connectivity, discouraging pedestrian use and compromising pedestrian safety. Bike lanes are limited and, where they do exist, their location adjacent to high speed traffic lanes negatively impacts their utilization.

As cited in Smart Growth America's *Dangerous by Design 2014* (May 2014), the risk of death for bicyclists and pedestrians on roads with 45 mph speed limits is 11 times greater than that for roads with 20 mph speed limits. As depicted in the photo below, many bicyclists choose to ride on adjacent sidewalks, which may be perceived as safer but creates conflict with pedestrians.



A bicyclist rides on the sidewalk, despite the availability of bike lanes.

2.3 Observations

Field observation efforts within the PCSA study area occurred throughout the day on July 8, 2014. The observations noted below begin with the east/west streets at the north border of the study area and proceed south. Observations related to the north/south streets start at the west border of the study area and end at the east end of the study area. Observation locations are depicted in Figure 13.

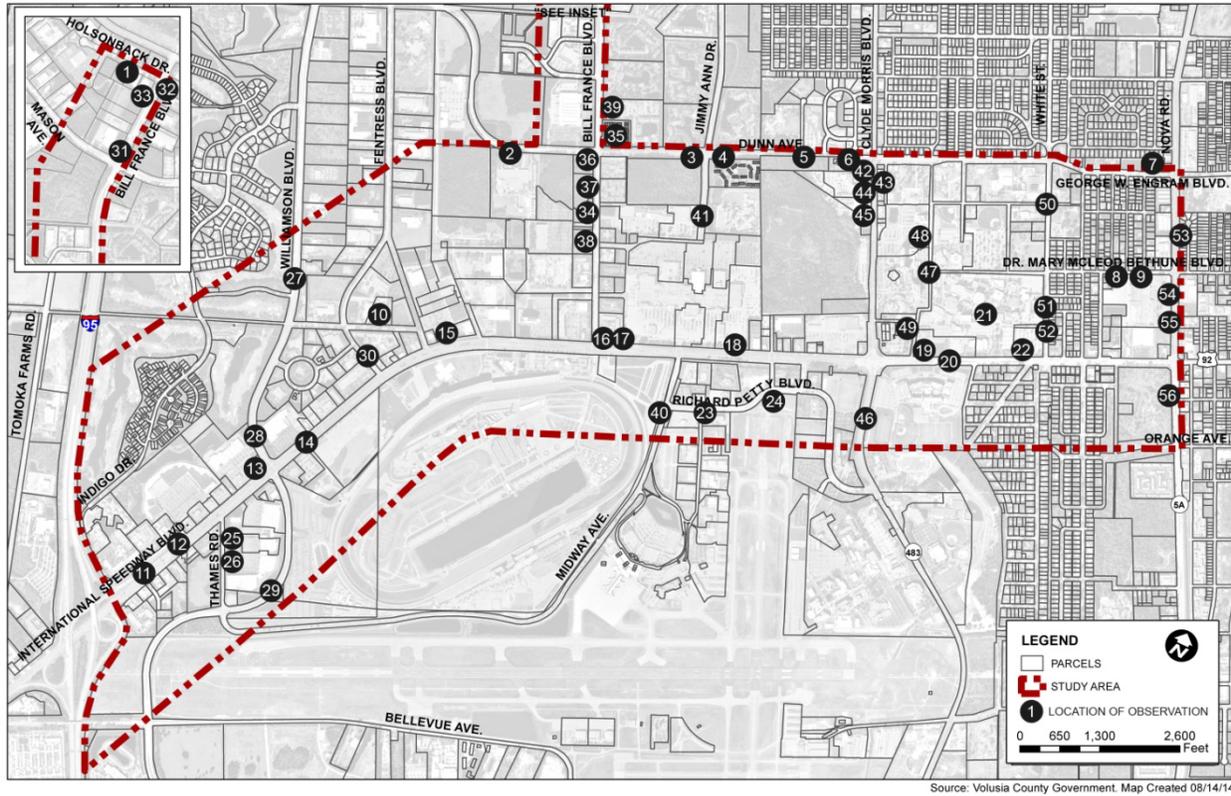


Figure 13: Observation Key Map



Holsonback Drive:

1. There are no sidewalks on Holsonback Drive.



A view of Holsonback Dr, which lacks sidewalks.

Dunn Avenue:

2. At Palm Terrace Elementary School, the sidewalk on the south side of Dunn Avenue terminates at the school's entrance. Pedestrians are directed to a marked crosswalk across Dunn Avenue that does not connect with the sidewalk on the north side of Dunn Avenue. Consideration should be given to providing an ADA compliant connection at this location.



There is a gap between the marked crosswalk and the sidewalk at Palm Terrace Elementary School. Photograph courtesy of Google Streetview taken in June 2011.

3. Several intersections along Dunn Avenue/George Engram Boulevard are not ADA compliant and lack detection pads. These intersections include: the US Post office driveways, Bill France Boulevard, Par Brook Avenue, Windy Pines Apartment Driveways, Wood Pine Driveway, Jimmy Ann Drive, White Fawn Drive, National Health Care Drive, Health Boulevard, Colfax Drive, Seneca Street, Frederick Avenue, Fletcher Avenue, Jackson Avenue, and Wilson Avenue.



There are no detection pads at Jimmy Anne Dr & Dunn Ave.

- 4. The eastern sidewalk approach on White Fawn Drive lacks a curb ramp. This should be corrected as required under ADA regulations.



There is no curb ramp at White Fawn Dr.

- 5. Several bus stops located along Dunn Avenue, including near Jimmy Ann Drive and National Healthcare Drive, are not ADA compliant or connected to the existing sidewalk network. The relocation of bus stops or addition of ADA compliant sidewalk and stop improvements should be considered at these locations.



A bus stop on Dunn Avenue near National Health Care Dr.

- 6. There is no sidewalk or bicycle lane on the south side of the Dunn Avenue and SR 483/Clyde Morris Boulevard intersection between National Health Care Drive and White Fawn Drive. Adding these features, as well as resolving non-ADA compliant bus stops along this stretch of roadway, should be considered.



The sidewalk on the south side of Dunn Ave ends abruptly just west of SR 483/Clyde Morris Blvd. A bus stop, located in a ditch, can be seen in the background.

In addition and within the current fiscal year, Volusia County plans to construct paved shoulders between Bill France Boulevard and Clyde Morris Boulevard.

7. Sections of the sidewalks on Dunn Avenue, near SR 5A/Nova Road, are cracked and broken. As this may cause a tripping hazard, they should be repaired as soon as practical.



The sidewalk on Dunn Avenue, near the Nova Rd intersection, has several large cracks.

Dr. Mary McLeod Bethune Boulevard:

8. There are no sidewalks on the north side of Dr. Mary McLeod Bethune Boulevard. Transit riders must either walk in the grass, in the gutter or cross to the other side of the street to get to the sidewalk.



A transit rider maneuvers between moving automobiles to access the sidewalk on the south side of Bethune Blvd.

9. Travel lanes on Dr. Mary McLeod Bethune Boulevard are potentially wide enough to incorporate additional bicycle and pedestrian improvements between SR 5A/Nova Road and Daytona State College. Since there is insufficient right of way available on US 92/SR 600/International Speedway Boulevard to accommodate significant changes in the bicycle/pedestrian network, Dr. Mary McLeod Bethune Boulevard, which is a few blocks south, should be considered as a potential alternative corridor to strengthen network connectivity.



The width of Bethune Blvd offers opportunity for the inclusion of bicycle and pedestrian improvements without the need to acquire additional right of way.

Bayless Boulevard:

10. There are no sidewalk or bicycle facilities on Bayless Boulevard, despite the presence of transit service. Consideration should be given to the development of an ADA compliant bus stop at the intersection of Bayless Boulevard and Fentress Boulevard.



Looking west at a bus stop, from the intersection of Bayless Blvd and Fentress Blvd.

US 92/SR 600/International Speedway Boulevard:

11. There is no sidewalk on the north side of US 92/SR 600/International Speedway Boulevard between I-95 and Indigo Drive. A twelve-foot shared use path is proposed for this area as a part of FDOT's planned widening of the road between I-95 and the I-4 interchange, west of the PCSA study area.



This section of US 92/SR 600/International Speedway Blvd, west of Indigo Dr, lacks sidewalks on the north side.

12. The signalized intersection with Indigo Drive is shown in the adjacent photo. On the northeast corner, the sidewalk on Indigo Drive abruptly ends, forcing pedestrians into the street to access the sidewalk along US 92/SR 600/International Speedway Boulevard. Consideration should be given to eliminating this sidewalk network gap.



A gap in the sidewalk network at US 92/SR 600/International Speedway Blvd and Indigo Dr. Photograph courtesy of Google Streetview taken in June 2011.

13. At the intersection of US 92/SR 600/International Speedway Boulevard and Williamson Boulevard, there is no direct path across the utility access point. The travelway is also obstructed by grass and concrete bollards on the FDOT right of way.



Unmaintained sidewalk conditions near the Williamson Blvd traffic signal.

14. The sidewalk on the south side of US 92/SR 600/International Speedway Boulevard, between Thames Road and Midway Avenue, is bounded by adjacent travel lanes, with vehicular speeds of 50 mph, and large ditches containing water and weeds. This situation is a potential safety hazard in an area where major events attract large crowds of pedestrians on a regular basis. The situation will be improved in 2015 as a part of a \$20 million pedestrian safety enhancement project along US 92/SR 600/International Speedway Boulevard between Williamson Boulevard and Midway Avenue. This project will eliminate the existing open ditches on both sides of US 92/SR 600/International Speedway Boulevard and widen, landscape and buffer sidewalks from high speed vehicular traffic.



The eastbound US 92/SR 600/International Speedway Blvd sidewalk conditions between Thames Rd and Midway Ave.

15. Throughout the US 92/SR 600/International Speedway Boulevard corridor, there are multiple examples of bus stops and other amenities obstructing sidewalks, which limits their effective width and ADA accessibility. Examples of this can be found near Best Buy Plaza, the Fentress Boulevard traffic signal, Volusia Square shopping center, Cracker Barrel restaurant, and the intersection of Turn One Drive and International Speedway Boulevard.



Bus stop amenities are located on the sidewalk near the entrance of Best Buy Plaza.

16. Sidewalks along US 92/SR 600/International Speedway Boulevard in the PCSA study area are interrupted by multiple driveways into private properties, creating points of conflict between motorized and non motorized traffic. These crossings are generally unmarked, with the driveway connection holder or Use Permit owner having maintenance responsibility. During the private development approval process, consideration should be given to marking and maintaining obvious conflict points between motorized and non-motorized traffic to limit the situation over time. An example is shown in the adjacent photo.



A sidewalk comes into conflict with a private driveway near Bill France Blvd.

17. Some of the newer establishments have constructed connecting sidewalks to provide pedestrian access from the public sidewalks to their front door. These businesses, which include Olive Garden and Bahama Breeze, serve as a good example of strengthening pedestrian connectivity through better integration of public and private land uses.



A pedestrian entrance to Bahama Breeze ties into US 92/SR 600/International Speedway Blvd's westbound sidewalk. Vehicular traffic is located behind the building, reducing pedestrian and vehicular conflict points along the thoroughfare.

18. Over time, pedestrians have created a “cattle trail,” extending through the shrubbery, to access the east entrance parking lot of the Volusia Mall. This path serves as a pedestrian short cut between the mall’s entrance and the sidewalk on the north side of US 92/SR 600/International Speedway Boulevard.



A “cattle trail” leading from the westbound sidewalk of US 92/SR 600/International Speedway Blvd to Volusia Mall.

19. Despite the presence of bike lanes, cyclists frequently use the sidewalks to travel, potentially due to the designated maximum speed limit of US 92/SR 600/International Speedway Boulevard varying between 45-50 mph within the PCSA study area. Use of the sidewalk by bicyclists is dangerous to both pedestrians and cyclists



On International Speedway Blvd near the campus of Daytona State College, a cyclist rides on the sidewalk despite the availability of bike lanes.

According to Bicycle Quarterly, statistics show that separated bike lanes (with a physical barrier) typically cut in half the accident risk on high-speed roads (45 mph), such as those within the PCSA study area. Where possible, corridors that physically separate bicycle traffic from high-speed vehicular traffic should be considered as an option to strengthen and improve multimodal network connectivity and safety.

20. US 92/SR 600/International Speedway Boulevard, just east of SR 483/Clyde Morris Boulevard, is bounded on both sides by Daytona State College and Mainland High School. With a number of students enrolled in both campuses and the nearest marked crosswalk at 0.25 mile west, pedestrians tend to cross US 92/SR 600/International Speedway Boulevard mid-block between Highland Avenue and Central Avenue.



A pedestrian crosses US 92/SR 600/International Speedway Blvd to get from a bus stop in front of Daytona State College to Mainland High School.

21. Major activities centers within the PCSA study area, such as Daytona State College, are already bicycle and pedestrian oriented. In most cases, there is a lack on direct connectivity of these internal uses with the streets that surround their campuses. Coordinated land use planning between public and private agencies offers the opportunity to tie the heart of existing internal activity centers with improved study area wide multimodal networks.



The heart of Daytona State College caters to pedestrian movement.

22. On the north side of the street, between SR 483/Clyde Morris Boulevard and White Street, street lights are located within the sidewalk. These protrusions reduce the effective width of the sidewalk and create ADA accessibility challenges. In areas where right of way may be constrained, it may be desirable to expand the sidewalk within the grass planter strip adjacent to the roadway.



A street light reduces the usable width of the sidewalk.

Richard Petty Boulevard:

23. Richard Petty Boulevard, an important collector roadway and thoroughfare through the campus of Embry-Riddle Aeronautical University, is depicted in the adjacent photo. The facility lacks sidewalks on both sides for significant distances.



There is no sidewalk on this stretch of Richard Petty Blvd. Photograph courtesy of Google Streetview taken in June 2011.

24. The bus stop on Richard Petty Boulevard, east of Corsair Drive, is not ADA compliant.



A non ADA compliant bus stop and sidewalk gap on Richard Petty Blvd at Corsair Dr. The bus stop is located on the utility pole above the bench in the background.

Thames Road:

25. Thames Road lacks sidewalks on both sides between US 92/SR 600/ International Speedway Boulevard and Williamson Boulevard. It appears that a pedestrian “cattle trail” has developed along the southbound lanes of Thames Road near area shopping centers.



Due to a lack of sidewalks, a pedestrian “cattle trail” has formed along Thames Rd. Photograph courtesy of Google Streetview taken in June 2011.

26. A bus stop on Thames Road is disconnected from the sidewalk network and is not ADA compliant.



A bus stop on Thames Rd.

Williamson Boulevard:

27. Several bus stops located along Williamson Boulevard are not ADA compliant or connected to the existing sidewalk network. The relocation of bus stops or addition of ADA compliant sidewalk and stop improvements should be considered at these locations.



This bus stop on Williamson Blvd near Indigo Dr is located in a ditch.

28. There is a 0.15 mile gap in the bike lane network, along Williamson Boulevard, just north of US 92/SR 600/ International Speedway Boulevard.



The Williamson Blvd bicycle lane, north of Target's rear entrance.

29. There are no sidewalks on either side of Williamson Boulevard, south of US 92/SR 600/International Speedway Boulevard.



Williamson Blvd, just south of US 92/SR 600/International Speedway Blvd.

Fentress Boulevard:

30. Fentress Boulevard connects several office and industrial uses with US 92/SR 600/International Speedway Boulevard. There is also a Votran bus route along Fentress Boulevard between US 92/SR 600/International Speedway Boulevard and Bayless Boulevard. Fentress Boulevard lacks sidewalks on both sides and transit stops along the roadway are non ADA compliant. During field observation, pedestrians were observed walking on the side of the road in gravel and grass to reach their destination.



A bus stop is located in an area without sidewalks on Fentress Blvd.

Bill France Boulevard:

31. The sidewalk at the intersection of Mason Avenue and Bill France Avenue is disconnected from the sidewalk on the east side of Bill France Boulevard. Also, the east side sidewalk is hidden from view and in need of repair. Pedestrians were observed walking on the side of the road because they were unaware that there was a sidewalk.



The east side, disconnected sidewalk is hidden by trees, on the right side of the picture near the signs. The inset picture displays the condition of the sidewalk.

32. Several bus stops located along Bill France Boulevard are not ADA compliant or connected to the existing sidewalk network. The relocation of bus stops or addition of ADA compliant sidewalk and stop improvements should be considered at these locations.



This bus stop on Bill France Blvd near Mason Avenue is located in a ditch.

33. As illustrated in the adjacent photo, Bill France Boulevard has significant gaps within the sidewalk network.



A bus stop on Bill France Blvd near Holsonback Dr.

34. Bus stops on Bill France Boulevard are non-ADA compliant and lack sidewalk access.



A bus stop on Bill France Blvd.

35. Just north of Dunn Avenue, a drop-off exists at the edge of the sidewalk. This creates a potential hazard for pedestrians and could be especially problematic for elderly pedestrians or others with a mobility disadvantage. As with roadways, the ground should be brought up flush with the sidewalk travel surface and maintained at that level.



Edge drop-off north of Dunn Ave.

36. There is no connection between the sidewalk and the pedestrian crossing button at the southwest corner of the Bill France Boulevard/Dunn Avenue intersection.



Pedestrian button with no access to sidewalk.

37. The sidewalk on the west side of Bill France Boulevard abruptly ends roughly 200 feet south of Dunn Avenue. Pedestrians using this sidewalk facility must backtrack or attempt to cross a ditch and Bill France Boulevard, mid-block, to access the sidewalk located on the east side of the street. Consideration should be given to eliminating this gap within the sidewalk network.



The sidewalk on the west side of Bill France Blvd, looking south from Dunn Ave.

38. There are no sidewalks on the west side of Bill France Boulevard, north of Volusia Mall.



Bill France Blvd north of Volusia Mall.

39. There are no sidewalks on the west side of Bill France Boulevard, between Dunn Avenue and SR 483/Clyde Morris Boulevard.



A view of the west side of Bill France Blvd north of Dunn Ave.

Midway Avenue:

40. Excluding a short sidewalk segment on the east side between US 92/SR 600/ International Speedway Boulevard and Richard Petty Boulevard, there are no sidewalks or bicycle facilities on Midway Avenue.



There are no sidewalks on Midway Avenue.

Jimmy Ann Drive:

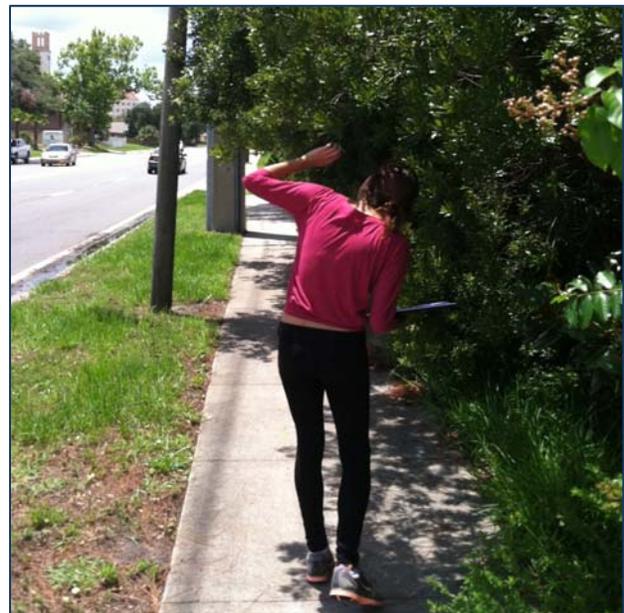
41. There is no sidewalk on the east side of Jimmy Ann Drive. As shown in the photo, a “cattle trail” has formed from pedestrians using the corridor.



Jimmy Ann Dr at Dunn Ave. Photograph courtesy of Google Streetview taken in June 2011.

SR 483/Clyde Morris Boulevard:

42. Vegetation is obstructing the walking area on the west side of SR 483/Clyde Morris Boulevard, near Halifax Health. Trees, bushes and other vegetation should be maintained such that pedestrian movement is not impeded.



Vegetation obstructs walkway on Clyde Morris Blvd.

43. The driveway shown in the photo, located just south of Dunn Avenue, is affected by poor drainage after rainfall events. This creates an obstacle for pedestrians.



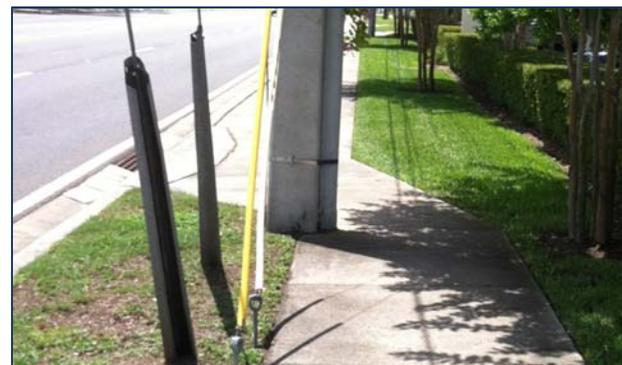
A driveway just south of the Dunn Ave intersection.

44. On the west side of SR 483/Clyde Morris Boulevard, the sidewalk ramps in the adjacent photo lack truncated domes (handicapped pads) and the driveway has a cracked and uneven surface.



The ramps at this sidewalk lack truncated domes and the driveway has an uneven surface.

45. There is a utility pole in the SR 483/Clyde Morris Boulevard sidewalk, just north of National Health Care Drive. Although it appears that its location exceeds the ADA minimums, consideration should be given to relocating the pole outside of the sidewalk in the event of a future roadway project.



A utility pole obstructs the sidewalk.

46. There is a gap within the sidewalk and bicycle network on the west side of SR 483/Clyde Morris Boulevard, between US 92/SR 600/International Speedway Boulevard and the campus of Embry-Riddle Aeronautical University.

As per the River to Sea TPO's 2035 Long Range Transportation Plan (LRTP), sidewalks will be installed on SR 483/Clyde Morris Boulevard south of US 92/SR 600/International Speedway Boulevard as a part of FDOT's plans to widen SR 483/Clyde Morris Boulevard from four to six lanes. FDOT anticipates right of way acquisition for this project to begin in 2018.



Driving south on SR 483/Clyde Morris Blvd, between US 92/SR 600/International Speedway Blvd and Richard Petty Blvd.

Heineman Street/Highland Avenue:

47. Travelling south on Heineman Street, the sidewalk on the east side of road, between Mayberry Avenue and Hilton Avenue, ends at a parking lot entrance to Daytona State College. There is no connecting sidewalk to the parking area. In addition, to continue south to US 92/SR 600/International Speedway Boulevard, pedestrians must cross to the west side of the road.



There is no connecting sidewalk from Heineman St into the adjacent parking area. In addition, puddles form following rain events.

48. There are several sidewalk gaps on the west side of Heineman Street between Dunn Avenue and US 92/SR 600/International Speedway Boulevard. Missing segments include the block between Dunn Avenue and Willis Avenue and Redding Avenue to Bird Avenue/Mayberry Avenue. The last section of sidewalk starts at Pinecrest Avenue and ends 90 feet north of US



The sidewalk on the west side of Heineman St begins just south of Bird Ave/Mayberry Ave.

92/SR 600/International Speedway Boulevard. This stretch of sidewalk is broken in several places and should be repaired as soon as practical.

49. The sidewalk on the west side of Highland Avenue is in poor condition and ends abruptly before the intersection with US 92/SR 600/International Speedway Boulevard. To reach the intersection, pedestrians must either walk on the grass or in the street. As shown in the adjacent photo, water ponds along the edge of the roadway.



The sidewalk on the west side of Highland Ave abruptly ends before reaching US 92/SR 600/International Speedway Blvd. It is also in poor condition.

White Street:

50. With the exception of the White Street/Dr. Mary McLeod Bethune Boulevard intersection, sidewalk ramps at intersections on the east side of White Street lack ADA compliant detection pads.



The intersection of Willis Ave and White Blvd.

51. The White Street intersections at Milligan Avenue, Raiford Avenue and Warnock Street lack ADA accessible sidewalk ramps on the east side of the street. Consideration should be given to rectifying this situation as soon as reasonably feasible.



There are no ADA accessible ramps at the intersection of White St and Milligan Ave.

52. Vegetation obstructs the sidewalk on the east side of White Street. Trees, bushes and other vegetation should be maintained such that pedestrian movement is not impeded.



Vegetation obstructs the sidewalk on White St.

SR 5A/Nova Road:

53. On the east side of SR 5A/Nova Road, between George Engram Boulevard and Dr Mary McLeod Bethune Boulevard, vegetation obstructs the sidewalk. Trees, bushes, and other vegetation should be maintained such that pedestrian movement is not impeded.



Vegetation reduces the useable width of sidewalks on SR 5A/Nova Rd.

54. There are no bicycle facilities along SR 5A/Nova Road within the study area north of US 92/SR 600/International Speedway Boulevard. Due to high automobile speeds within the corridor, cyclists frequently utilize the sidewalks rather than travelling on the roadway, creating a potential conflict with pedestrians.



Cyclists ride on the sidewalk along SR 5A/Nova Rd.

55. Street lights are located within the sidewalks between George Engram Boulevard and Orange Avenue. Although it appears that its location exceeds the ADA minimums, consideration should be given to relocating the pole outside of the sidewalk in the event of a future roadway project.



A utility pole located in the sidewalk at Midtown Plaza on SR 5A/Nova Rd.

56. The sidewalk on the west side of SR 5A/Nova Road, changes width in front of Tuscawilla Park, just south of US 92/SR 600/International Speedway Boulevard. Consideration should be given to widening the existing sidewalk into a shared use path for both cyclists and pedestrians.



The sidewalk on the west side of SR 5A/Nova Rd varies.

2.4 Nighttime Observations

Dunn Avenue:

57. This road was inadequately lit from Bill France Boulevard to SR 483/Clyde Morris Boulevard. There was some street lighting at the SR 483/Clyde Morris Boulevard and Nova Road intersections, with partial blockage from trees. From SR 483/Clyde Morris Boulevard to SR 5A/Nova Road, there was sparse lighting which originated from houses. The south side of the road, to Nova Road, was dark. There was no visibility provided from either streetlights or commercial lighting.

**Dr. Mary McLeod Bethune Boulevard:**

58. The westbound direction was lit from SR 5A/Nova Road to Seneca Street. However, the bus stop located near N Frederick Avenue was not well lit. The eastbound side was lit from White Street to Seneca Street.

US 92/SR 600/International Speedway Boulevard:

59. Streetlights provided good visibility along this road. Bus stop signs were visible, as well as street signs and marked crosswalks.

Richard Petty Boulevard:

60. Richard Petty Boulevard lacks streetlights from Midway Avenue to Corsair Drive. The bus stop located in front of the Residence Inn Hotel was not adequately lit. The only lighting along this stretch of road was commercial lighting from the Residence Inn hotel. Streetlights provided adequate lighting past Corsair Drive.

Williamson Boulevard:

61. Streetlights on Williamson Boulevard were only located between Bayless Boulevard and US 92/SR 600/International Speedway Boulevard. It was observed that the bus stop located between US 92/SR 600/International Speedway Boulevard and Bayless Boulevard was not adequately visible. There were also streetlights that were not operating.

Fentress Boulevard:

62. Streetlights were observed only the southbound side from Dunn Avenue approximately to the area where the Technetics Group building is located. From that point forward until Bayless Boulevard, streetlights were only located on the northbound side of the road. No streetlights or lighting from other sources was observed on Fentress Boulevard, from Bayless Boulevard to US 92/SR 600/International Speedway Boulevard.

Bill France Boulevard:

63. On Bill France Boulevard, between US 92/SR 600/International Speedway Boulevard and Dunn Avenue, there were streetlights on the southbound side of the street. No streetlights were observed northbound, with lighting from commercial establishments allowing partial visibility of the sidewalk.

**Midway Avenue:**

64. On Midway Avenue, traveling westbound towards Williamson Boulevard, both sides of the road were well lit. However, the entrance to the airport was not well lit and there were no streetlights (or commercial lighting) after the airport, including no streetlights at the intersection of Williamson Boulevard and Thames Road.

Jimmy Ann Drive:

65. There were streetlights on the northbound side but in the southbound direction there was only commercial lighting.

SR 483/Clyde Morris Boulevard:

66. There were no streetlights at SR 483/Clyde Morris Boulevard and Dunn Avenue intersection. The area in front of the Halifax Hospital Medical Center was generally well lit. Past the hospital, traveling in the northbound direction, vegetation caused some blockage of streetlights. Streetlights were observed intermittently throughout SR 483/Clyde Morris Boulevard past the hospital area, with patches of road that were inadequately lit. South of the US 92/SR 600/International Speedway Boulevard and SR 483/Clyde Morris Boulevard intersection, streetlights lit both sides of the street adequately.

White Street:

67. At the White Street and US 92/SR 600/International Speedway Boulevard intersection, it was difficult to read street signs due to poor lighting. The northbound side of White Street was dark, except for the occasional light from a commercial facility. The southbound side of the road was well lit throughout White Street.

SR 5A/Nova Road:

68. On Nova Road, from Dunn Avenue to US 92/SR 600/International Speedway Boulevard, street lighting is sparse; however, there is an adequate amount of lighting coming from commercial facilities. The sidewalk in front of the Midtown Plaza is very well lit due to commercial lighting. There was adequate street lighting at both the Dunn Avenue and US 92/SR 600/International Speedway Boulevard intersections.



Overall:

Many bus stops were not well lit or visible to vehicles on the road. This visibility issue potentially causes a risk for pedestrians who are using transit services at night. There are also areas in which the majority of lighting comes from commercial facilities, rather than street lighting. Blockage from trees and other vegetation was minimal on most roads. Overall, marked crosswalks and signs were visible in the nighttime environment. Approximately three to five streetlights were observed that were not operational.



3 SUMMARY OF OVERALL OBSERVATIONS

This PRSA has identified a number of preliminary potential resolutions that have the potential to improve bicycle and pedestrian safety performance and connectivity within the PCSA study area.

3.1 Location Specific Observations and Resolutions

Where feasible, the following location specific resolutions should be considered:

ID	Location	Description	Lead Agency	Potential Resolution
1	Holsonback Dr	No sidewalks on Holsonback Dr	City of Daytona Beach	Construct sidewalk
2	Dunn Ave at Palm Terrace Elementary School	No connection between marked crosswalk and adjacent sidewalk.	Volusia County	Provide new sidewalk connection
3	Dunn Ave	Lack of detection pads at several intersections.	Volusia County	Install detection pads
4	Dunn Ave at White Fawn Dr	No curb ramps	Volusia County	Install curb ramps
5	Dunn Ave near Jimmy Ann Dr and National Healthcare Dr	Several bus stops aren't ADA compliant or connected to adjacent sidewalks.	City of Daytona Beach	Provide ADA accessible stops
6	Dunn Ave between White Fawn Dr and National Healthcare Dr	No sidewalk on south side of street.	Volusia County	Construct sidewalk or shared use path. Volusia County to add shoulders this fiscal year
7	Dunn Ave, west of SR 5A/Nova Rd	Broken sections of sidewalk.	Volusia County	Repair broken sidewalk sections
8	Dr. Mary McLeod Bethune Blvd west of SR 5A/Nova Rd	No sidewalk on north side of street.	City of Daytona Beach	Construct sidewalk
9	Dr. Mary McLeod Bethune Blvd	There are no bicycle lanes but roadway width can accommodate these facilities.	City of Daytona Beach	Add cycle track or bicycle lanes through restriping
10	Bayless Blvd	No sidewalks on Bayless Blvd.	City of Daytona Beach	Construct sidewalk
11	US 92/ International Speedway Blvd	No sidewalk on north side of street between I-95 and Indigo Dr.	FDOT	12' wide shared use path included in future roadway widening project
12	US 92/ International Speedway Blvd	Gap in sidewalk network at northeast corner of Indigo Dr intersection.	FDOT	Provide new sidewalk connection
13	US 92/ International Speedway Blvd	Sidewalk on north side of street disrupted by grass and concrete bollards.	FDOT	Provide new maintained sidewalk connection



ID	Location	Description	Lead Agency	Potential Resolution
14	US 92/ International Speedway Blvd	Sidewalks surrounded by vehicular speeds of 50 mph and large open ditches.	FDOT	Planned safety project between will resolve issue between Williamson Blvd and Midway Ave. Consider extending improvements for remaining corridor within study area.
15	US 92/ International Speedway Blvd	Bus stops obstruct sidewalks, limiting their effective width throughout study area.	FDOT	Planned safety project between will resolve issue between Williamson Blvd and Midway Ave. Consider extending improvements for remaining corridor within study area.
16	US 92/ International Speedway Blvd	Pedestrian and vehicular conflict points (other crossings) are common at access roadways through study area.	FDOT	Require marking crossings as a part of redevelopment and new development projects.
17	US 92/ International Speedway Blvd	Olive Garden and Bahama Breeze entrances are directly connected to sidewalks	City of Daytona Beach	City of Daytona Beach already requires new development to connect to existing sidewalk network.
18	US 92/ International Speedway Blvd east of Midway Ave	There is no direct sidewalk link between roadway and Volusia Mall. Pedestrians have created a "cattle trail" in shrubbery.	N/A	Coordination between FDOT, City of Daytona Beach, and private property owners as property redevelops or renovates over time.
19	US 92/ International Speedway Blvd from I-95 to Clyde Morris Blvd	The 50 mph maximum speed limit results in cyclists riding on sidewalks instead of in designated bicycle lanes.	FDOT	Add shared use path between Indigo Dr and White St. Consider marking widened sidewalks in safety enhancement project between Williamson Blvd and Midway Ave to accommodate cyclist and pedestrians.
20	US 92/ International Speedway Blvd between SR 483/Clyde Morris Blvd and White St.	Pedestrians make mid block crossings due to the long block length (over 0.50 miles apart).	FDOT Daytona State College Volusia County School Board	Addition of mid-block crossing or channeling pedestrians to signalized intersections. Provide stronger connectivity between US 92/ISB and adjacent land uses.



ID	Location	Description	Lead Agency	Potential Resolution
21	US 92/ International Speedway Blvd at Daytona State College	The center of Daytona State College, Embry-Riddle Aeronautical University and other major destinations in the study area are pedestrian friendly environments.	Private Sector	Coordination of campus master planning with FDOT, City of Daytona Beach, and Volusia County to enhance future connectivity between each entity's facilities.
22	US 92/ International Speedway Blvd between SR 483/Clyde Morris Blvd and White St	Street lights are located within the sidewalk on north side of street, compromising sidewalk width and ADA accessibility.	CODB	Increase sidewalk width by extending it into 3' planter strip in the vicinity of street lights
23	Richard Petty Blvd between Midway Ave and Corsair Dr	No sidewalks on either side of street.	Volusia County	Construct sidewalks
24	Richard Petty Blvd west of Corsair Dr	Bus stops are not ADA accessible.	City of Daytona Beach	Upgrade stops to be ADA accessible
25	Thames Rd	There are no sidewalks on either side of roadway. Pedestrian "cattle trails" have been established.	City of Daytona Beach	Construct sidewalk
26	Thames Rd	Bus stops are not ADA accessible.	City of Daytona Beach	Upgrade stops to be ADA accessible
27	Williamson Blvd north of US 92/ International Speedway Blvd	Bus stops are located in ditches and not connected to adjacent sidewalks.	City of Daytona Beach	Provide ADA accessible bus stops
28	Williamson Blvd north of US 92/ International Speedway Blvd	0.15-mile gap in bicycle network between rear of Target store and US 92/ International Speedway Blvd intersection.	Volusia County	Expand width of sidewalks to accommodate pedestrians and cyclists
29	Williamson Blvd south of US 92/ International Speedway Blvd	No sidewalks on either side of street.	Volusia County	Construct sidewalks
30	Fentress Blvd between US 92/ International Speedway Blvd and Bayless Blvd	"Cattle trail" created by pedestrians and transit riders at bus stops on roadway with no sidewalks.	City of Daytona Beach	Construct sidewalk and ADA accessible bus stops
31	Bill France Blvd north of Mason Ave	Sidewalk on east side of roadway is disconnected from intersection.	City of Daytona Beach	Construct sidewalk connection
32	Bill France Blvd between Mason Ave & Holsonback Dr	Bus stops are located in ditches and not connected to adjacent sidewalks.	City of Daytona Beach	Provide ADA accessible bus stops
33	Bill France Blvd at Holsonback Dr	Bus stops are not ADA accessible.	City of Daytona Beach	Upgrade stops to be ADA accessible



ID	Location	Description	Lead Agency	Potential Resolution
34	Bill France Blvd. between Volusia Mall and Dunn Ave.	Bus stops on west side of street lack amenities and aren't ADA accessible.	City of Daytona Beach	Provide ADA accessible bus stops
35	Bill France Blvd north of Dunn Ave	A drop-off exists at the edge of sidewalk.	City of Daytona Beach	Repair grade to make ground flush with sidewalk travel surface
36	Bill France Blvd at southwest corner of Dunn Ave intersection.	No connection between sidewalk and pedestrian crossing button.	City of Daytona Beach	New sidewalk connection
37	Bill France Blvd south of Dunn Ave	Sidewalk on west side of street ends 200' south of Dunn Ave.	City of Daytona Beach	Construct sidewalk or shared use path on west side of street
38	Bill France Blvd north of Volusia Mall	There are no sidewalks on the west side of street north of Volusia Mall.	City of Daytona Beach	Construct sidewalk or shared use path on west side of street
39	Midway Ave	Excluding a short segment on the east side of street, north of Richard Petty Blvd, there are no sidewalks on Midway Ave.	Volusia County	Construct sidewalk
40	Jimmy Ann Dr	There is no sidewalk on the east side of street. A pedestrian "cattle trail" has formed as a result.	City of Daytona Beach	Construct sidewalk
41	SR 483/Clyde Morris Blvd just south of Dunn Ave	Vegetation obstructs the sidewalk on the west side of street near Halifax Health.	FDOT	Maintenance of vegetation
42	SR 483/Clyde Morris Blvd south of Dunn Ave.	Existing condition of sidewalk on east side of street creates obstruction for pedestrians after rain events.	FDOT	Upgrade existing sidewalk conditions
43	SR 483/Clyde Morris Blvd. south of Dunn Ave	Access points in sidewalk on west side of road lack truncated domes. The sidewalk is broken with loose concrete.	FDOT	Upgrade existing sidewalk conditions
44	SR 483/Clyde Morris Blvd south of Dunn Ave	A utility pole is located within the sidewalk on the west side of the road.	FDOT	Verify the clearance meets minimal ADA accessibility requirements
45	SR 483/Clyde Morris Blvd and US 92/ International Speedway Blvd	Gap in sidewalk network on west side of street, north and south of US 92/ International Speedway Blvd.	FDOT	New shared use path is planned as a part of the widening of SR 483/Clyde Morris Blvd between US 92/International Speedway Blvd and Beville Rd
46	Heineman St/ Highland Ave	No sidewalk on east side of street, south of Bird Ave.	City of Daytona Beach	Construct sidewalk
47	Heineman St/ Highland Ave	Several missing gaps in the existing sidewalk network on west side of street. Existing sections of sidewalk also broken in significant sections.	City of Daytona Beach	Construct sidewalks and repair existing broken sections



ID	Location	Description	Lead Agency	Potential Resolution
48	White St between US 92/ International Speedway Blvd and Dunn Ave	Excluding Dr. Mary McLeod Bethune Blvd, all intersections on east side of street lack truncated domes for the visually impaired.	City of Daytona Beach	Add truncated domes on sidewalks at intersections.
49	White St between US 92/ International Speedway Blvd and Dunn Ave	There are no ADA accessible ramps on the sidewalk on the east side of the street at Willis Ave, Milligan Ave, Raiford Ave, and Warnock St intersections.	City of Daytona Beach	Add ADA accessible ramps at these intersections.
50	White Street	Vegetation obstructs the sidewalk on the east side of the street.	City of Daytona Beach	Maintenance of vegetation
51	SR 5A/Nova Rd north of Dr. Mary McLeod Bethune Blvd	Vegetation obstructs the sidewalk on the east side of the street.	FDOT	Maintenance of vegetation
52	SR 5A/Nova Rd throughout study area	There are no bicycle facilities within corridor. Cyclist ride on the sidewalks.	FDOT	Coordinate with the City of Daytona Beach to seek designation of safe routes that parallel SR 5A/Nova Rd.
53	SR 5A/Nova Rd throughout study area	Utility poles are located in sidewalk.	FDOT	Verify the clearance meets minimal ADA accessibility requirements.
54	SR 5A/Nova Rd south of US 92/ International Speedway Blvd	Sidewalk abruptly changes width on west side of roadway between US 92/ International Speedway Blvd and Orange Ave.	FDOT	Consider widening sidewalk into a shared use path paralleling SR 5A/Nova Rd.



Because of the broad range of possible connectivity improvements that should be considered within the PCSA study area, the priority classification utilized for the Volusia County ADA Transition Plan and displayed in the table below should be considered when determining the priority of the suggested improvements.

Table 1 - Priority Descriptions from Volusia County ADA Transition Plan Phase 1

Priority		Description
High	Highest 1A	Existing Curb Ramp with running slope greater than 12%; Sidewalk Cross Slope greater than 2% located within ½ mile of a Hospital, School, Transit Stop, Government Building or Similar Facility
	1B	No Curb Ramp or Flares where sidewalk or pedestrian path exists; Information Barriers (intersection detection, lack of street crossing information); Insufficient Pedestrian Signals located within ½ mile of a Hospital, School, Transit Stop, Government Building or Similar Facility
Medium	2A	Existing Curb Ramp with running slope greater than 12%; Sidewalk Cross Slope greater than 2% located more than ½ mile away from a Hospital, School, Transit Stop or Government Building
	2B	No Curb Ramp or Flares where sidewalk or pedestrian path exists; Information Barriers (intersection detection, lack of street crossing information); Insufficient Pedestrian Signals located more than ½ mile away from a Hospital, School, Transit Stop or Government Building
Low	3	Insufficient Sidewalk Surface (trip hazards, surface materials, grating, changes in level/elevation, uneven transitions and improper landing pads)
	4	Movement Barriers (obstructions, insufficient widths, sidewalk gaps, median or island crossings that are inaccessible)

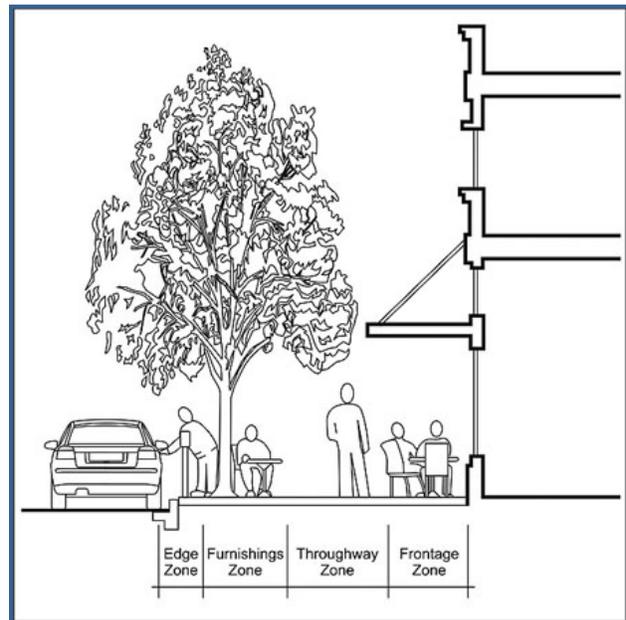
4 INNOVATIVE PEDESTRIAN & BICYCLE PROJECT EXAMPLES

When identifying and evaluating recommended pedestrian and bicycle improvements that can better connect origins and destinations within the PCSA study area, understanding a thoroughfare’s streetside and the specific elements that compromise the streetside are important considerations. The streetside is the portion of the thoroughfare that accommodates non-vehicular activity – walking as well as the business and social activities – of the street. It extends from the face of the buildings or edge of the private property to the face of the curb. A well-designed streetside is important to the thoroughfare's function as a "public place."

4.1 Streetside Design

Several principles should be included when creating a walkable environment that is inviting for pedestrians, encourages interaction between streetside activities and adjacent land uses, and provides inviting areas to wait for transit. Within the streetside, which is depicted in the illustration below, there should generally be well-defined zones so that the throughway zone is clearly delineated and clear of obstacles such as utilities, signage and landscaping.

The furnishings zone, shown as the planter strip in Figures 2 - 12 on pages 4 - 12 of this report, can contain a number of elements – street furniture, street lighting, transit stops with shelters, bicycle racks and landscaping – and should be located in a manner without interference with the pedestrian way (“throughway zone”). The various elements also serve as a barrier between the roadway and the pedestrian zone, which serves to increase pedestrian comfort. An important consideration in Florida’s environment is the use of shade trees, canopies and/or shelters to provide shade and protection from the elements. The adjacent illustration depicts a typical streetside layout with commercial frontage. However, the principles of a free and clear pedestrian way and a clearly demarcated furnishings zone can also apply to other land uses as they exist within the PCSA study area.



Source: *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach.* (ITE)

Streetside design principles can be implemented through zoning or other land development regulations, such as special corridor overlay zones, and through investment in the public right-of-way such as the possible reconstruction of roadways with sidewalks, landscaping and streetscape amenities. As the PCSA study area redevelops in the future, commercial frontage with zero or minimal right-of-way setbacks can create opportunities for an inviting, pedestrian-scale



environment. Even with the current context that has relatively large building setbacks, moving or relocating obstacles – such as signs and utility poles while adding lighting, landscaping and street furniture to the edge of the curb – can create a clear pedestrian way to facilitate pedestrian movements. An example of a well defined Streetside Zone is shown below.



US 20/Euclid Avenue in Cleveland, OH is a good example of a walkable street. Photograph courtesy of MetroJacksonville.com taken in June 2013.



The following streetsides are examples of recent innovative pedestrian and bicycle safety and accessibility projects located in the State of Florida for roadways similar in design, scale and contextual landscape to those within the PCSA study area. Project innovation varies in each community, depending on the existing pedestrian and bicycle infrastructure and culture toward walking and biking. For example, walking and bicycling facilities that are common in some communities may be less familiar or have never been tried in another community.

4.2 SR 60/North Meridian Avenue

Agency: FDOT District 7

City: Tampa, FL

Cost: \$17 million

Length: 0.60 miles

Potential Application: US 92/SR 600/International Speedway Boulevard west of SR 483/Clyde Morris Boulevard

Project Description:

Meridian is a \$17 million six-lane gateway project to downtown Tampa that was completed by the Tampa Hillsborough Expressway Authority (THEA) in 2006. The 0.60 mile "Complete Streets" project connects SR 618A/Lee Roy Selmon Expressway's reversible express lanes (REL) and SR 60 with Channelside Drive. Bicycle and pedestrian features include 20-foot wide ADA compliant sidewalks, a 12-foot wide shared use path, median-based pedestrian refuges, benches, trash cans, sheltered bus stops, and adequately spaced decorative light fixtures and shade trees. There are four signalized intersections and maximum vehicle speed limits are 35 mph. In addition, Meridian Avenue's light fixtures are designed to resemble cranes that pay homage to the Channel District's maritime related past. Prior to its completion, the corridor consisted of a seldom used railroad yard and a two-lane street serving industrial uses within the vicinity.



A shared use path, themed lighting and infill development along SR 60/Meridian Avenue. Photographs courtesy of Google Streetview, taken in March 2013.

4.3 SR A1A/Third Street North

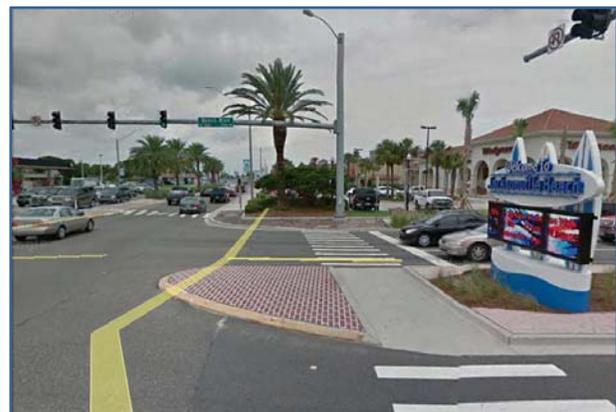
Agency: City of Jacksonville Beach/FDOT District 2
City: Jacksonville Beach, FL
Cost: \$2 million
Length: 0.60 miles
Potential Application: SR 5A/Nova Road

Project Description:

In March 2010, the City of Jacksonville Beach completed a \$2 million roadway beautification and pedestrian enhancement project on SR A1A/Third Street North, between Sixth Avenue North and Third Avenue South. The project, which began in January 2009 and was funded by downtown redevelopment taxes, was considered a first step in the implementation of the city's long term Downtown Vision Plan to make the 4-lane arterial road more attractive to pedestrians and mixed-use infill development.

Pedestrian enhancements included new intersection crosswalks, landscaped center medians, parking lane "bulb-out islands," new sidewalks, and ADA compliant ramps at intersections. Pedestrian refuges were added at busy intersections to provide pedestrians and cyclists a safe break in the center of the roadway. Pedestrian countdown timers were also installed at crosswalks at signalized intersections.

This project was coordinated with a separate \$7.7 million FDOT District 2 roadway resurfacing project on SR A1A/Third Street, between Downtown Jacksonville Beach and the St. Johns County line. Streetscape enhancements are now underway for parallel local streets that are popular bicycle corridors within the City of Jacksonville Beach.



Marked crosswalks, a landscaped median, and pedestrian refuge along SR A1A/Third Street. Photographs, courtesy of Google Streetview, taken in July 2013.

4.4 CR 535/Daniels Road

Agency: Orange County Government

City: Winter Garden, FL

Costs: N/A

Length: 0.60 miles

Potential Application: Infill development opportunities on US 92/International Speedway Boulevard, SR 5A/Nova Road, and SR 483/Clyde Morris Boulevard

Project Description:

Winter Garden Village is an open-air shopping center located at SR 429/Daniel Webster Western Beltway's interchange with CR 535 in southwest Orange County, FL. In 2007, already exceeding its design capacity, CR 535 was redirected by The Sembler Company of St. Petersburg to a 0.6-mile six-lane extension of Daniels Road to facilitate the shopping center's development.

Completed in 2007 and now the dominant power center in the western Orlando market, the 1.15 million-square foot, 175-acre retail complex was designed to promote walkability and enhance pedestrian safety, while also accommodating suburban oriented automobile movement and travel.

The design of Daniels Road contains a 6-foot wide sidewalk adjacent to southbound lanes and a 12-foot wide concrete path next to northbound lanes. This width is sufficient for bicycle traffic, efficiently reducing conflict points between motorized and non-motorized traffic. While marked crosswalks are typically present at urban signalized intersections, a unique feature of the Daniels Road project is that marked crosswalks are included at all driveways accessing private land uses within the corridor. Furthermore, the land development regulations require adjacent land uses to be designed to integrate with and activate the pedestrian network within the Daniels Road Right-of-Way.



A marked crosswalk and retail buildings tied to the sidewalk along CR 535/Daniels Road. Photographs, courtesy of Google Streetview, taken in April 2014.



4.5 Edgewater Road (Formerly SR 424)

Agency: City of Orlando/FDOT District 5

City: Orlando, FL

Cost: \$589,000

Length: 1.5 miles

Potential Application: White Street, Bill France Boulevard, Dr. Mary McLeod Bethune Boulevard

Project Description:

In November 2001, as a part of a FDOT roadway resurfacing project, Edgewater Drive in Orlando's College Park neighborhood was converted from a narrow undivided four-lane facility to a three-lane roadway featuring bike lanes and parallel parking. This complete streets road diet project involved a transfer of jurisdiction and maintenance from FDOT to the City of Orlando.

The restriping of Edgewater Lane played into "The Horizon Plan," an intended blueprint for planning future neighborhood improvement projects, in order to reinvent Edgewater Drive into a vibrant, pedestrian friendly commercial district with cafés and shops.

As a result of the road diet, Edgewater Drive has seen a 23% increase in pedestrian traffic (2,632 trips after versus 2,136 trips before), a 30% increase in bicycle traffic (486 trips after versus 375 trips before), and automobile travel delays increased by only 10 seconds during the morning peak hours. Furthermore, the automobile daily traffic volume for this roadway has decreased 12%, from 20,501 trips before improvements to 18,131 trips four months after the project's completion.



Edgewater Drive (formerly SR 424) road diet concept in Orlando's College Park neighborhood may be applicable to collector streets within the PCSA study area such as White Street, Bill France Boulevard, and Dr. Mary McLeod Bethune Boulevard. Photographs courtesy of MetroJacksonville.com taken in August 2010.

4.6 Tanger Outlets The Walk / CR692/694

Agency: Casino Reinvestment Development Authority (CRDA)

City: Atlantic City, NJ

Cost: N/A

Length: 9 blocks

Potential Application: Infill development opportunities on US 92/International Speedway Boulevard

Project Description:

Completed in 2003 by the Cordish Company, Tanger Outlets The Walk is a 109-store open-air mixed-use infill development spanning three blocks of County Road (CR) 692/694 in Atlantic City, NJ. Serving as a gateway to this tourist community, the 1.3 million square foot project is developed around an eight-lane highway (similar in scale to US 92/SR 600/International Speedway Boulevard) leading to the Atlantic City Expressway.

Its unique layout includes a municipal bus terminal, surface parking behind buildings, and retail stores with awnings, and a landscaped buffered sidewalk protecting pedestrians from vehicular traffic. In addition, a large landscaped median separates CR 692 and CR 694, speed limits are restricted to 25 mph and all intersection and driveway entrances have marked crosswalks, creating a safe pedestrian environment.



Tanger Outlets The Walk is infill retail adjacent to CR692/694 in Atlantic City, NJ. Photographs courtesy of MetroJacksonville.com taken in July 2014.



5 NEXT STEPS

The purpose of this report is to identify, prioritize and advance critical improvements needed for multimodal connectivity and improved accessibility in the study area. Project identification of needs were accomplished using methodology similar to that for pedestrian roadway safety audits but emphasizing improved transit accessibility and pedestrian and bicycling connectivity within the study area. Identified preliminary recommendations for review, focus on improvements that can better connect origins and destinations within the corridor and are ADA compliant.

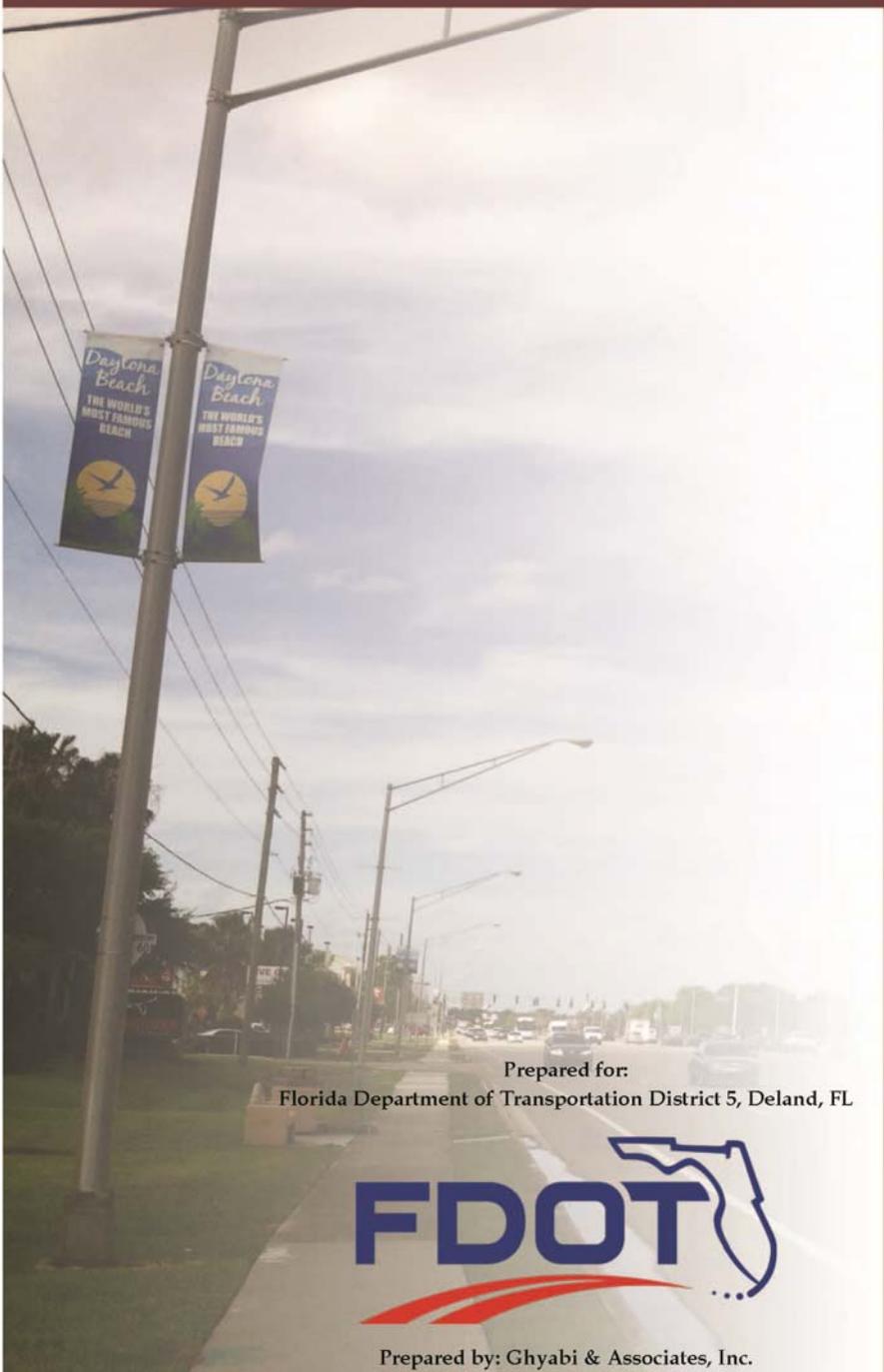
The next phase of the PCSA study will evaluate Long-Range Needs Assessment, Safety Needs (review of crash data), and include the development of Initial Concept Plans and Assessment following a context-sensitive approach that emphasizes the livability and multimodal planning vision for the corridor. This phase of the PCSA will conclude with the development of draft and final PCSA report.



6 APPENDIX

6.1 Glossary of Terms

1. PCSA – Pedestrian Connectivity & Safety Assessment Study
2. FDOT – Florida Department of Transportation
3. R2CTPO – River to Sea Transportation Planning Organization
4. I – Interstate
5. SR – State Road
6. CR – County Road
7. US – United States
8. ISB – International Speedway Boulevard
9. PRSA – Pedestrian Roadway Safety Audit
10. ADA – American Disabilities Act
11. ROW – Right of Way
12. THEA – Tampa Hillsborough Expressway Authority
13. REL – Roy Selmon Expressway
14. CPNA – College Park Neighborhood Association
15. ITE – Institution of Transportation Engineers



Prepared for:
Florida Department of Transportation District 5, Deland, FL



Prepared by: Ghyabi & Associates, Inc.

