



SR/CR A1A PEDESTRIAN SAFETY & MOBILITY STUDY FINAL REPORT | MAY 2017



SR/CR A1A Pedestrian Safety and Mobility Study

River to Sea Transportation Planning Organization

Volusia County, Florida

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EXECUTIVE SUMMARY

Purpose and Need

The SR/CR A1A corridor has many destinations including the Atlantic Ocean beaches, Daytona Beach Pier and Boardwalk, Flagler Beach Pier, Ocean Center, Ocean Walk Entertainment Center, Daytona Lagoon Waterpark, Sunglow Pier, the Ponce Inlet Lighthouse and numerous restaurants, retail shopping, hotels, and condominiums. The corridor is home to many local residents and serves as a major tourist destination, making it a key economic driver for eastern Volusia and Flagler Counties. Pedestrian/bicycle activity along this corridor is robust and, as a result, the potential for conflict between pedestrians/bicyclists and automobiles is high. The SR/CR A1A corridor should be a primary area of focus to reduce overall pedestrian/bicycle crashes.

In late 2014, the Florida Department of Transportation (FDOT) released its 2015 Pedestrian and Bicycle Focused Initiative and identified Volusia County as a Top 15 High Priority County. Pedestrians and bicyclists are identified as Vulnerable Road Users in the Florida Strategic Highway Safety Plan (SHSP). One SHSP strategy is to "Develop and use a systematic approach to identify locations and behaviors prone to pedestrian and bicycle crashes and implement multidisciplinary countermeasures." Another 2015 SHSP strategy is to "Increase awareness and understanding of safety issues related to Vulnerable Road Users." The River to Sea Transportation Planning Organization (R2CTPO) has conducted the SR/CR A1A Pedestrian Safety and Mobility Study to help generate a list of suggested improvements addressing the growing need for pedestrian/bicycle safety along SR/CR A1A in Volusia and Flagler Counties.

Study Area

The project's study limits include SR/CR A1A between the southern limits of Bethune Beach to the south and the southern limits of Marineland to the north. The portions where SR A1A coincides with US 1, between Dunlawton Avenue in Port Orange and 3rd Avenue in New Smyrna Beach, were not included within the study area limits. Certain areas of SR/CR A1A have been studied within the last 5 years were also excluded from the study area in an effort to reduce duplication of efforts, but are summarized in **Section 3 – Literature Review**.

Project Stakeholders and Public Presentations

Stakeholder outreach and public presentations were integral parts of the SR/CR A1A Pedestrian Safety and Mobility Action Plan. Throughout the project, two meetings were held with a project stakeholder group and two presentations were given to the R2CTPO committees and Board.

Stakeholder Identification

A stakeholder group was identified by the R2CTPO from local municipalities and transportation agencies associated with the SR/CR A1A corridor who participated throughout the entirety of the SR/CR A1A Pedestrian Safety and Mobility Study. These stakeholders included representatives from the following agencies/jurisdictions:

- Mayors/Commissioners from Local Cities along SR/CR A1A Corridor
- R2CTPO Bicycle/Pedestrian Advisory Committee (BPAC)

- R2CTPO Technical Coordinating Committee (TCC)
- R2CTPO Citizens Advisory Committee (CAC)
- FDOT District 5 Traffic Operations/Safety
- Volusia County Public Works Traffic Engineering
- Flagler County Public Works Traffic Engineering
- Votran
- Town of Beverly Beach
- City of Daytona Beach
- City of Daytona Beach Shores
- City of Edgewater
- City of Flagler Beach
- City of New Smyrna Beach
- City of Ormond Beach
- City of Palm Coast
- Law Enforcement from Local Cities along SR/CR A1A Corridor
- Convention and Visitors Bureau
- Hotel/Motel (Lodging) Association
- Volusia County Association for Responsible Development (VCARD)

Public Presentations

The study team presented to the R2CTPO BPAC, TCC/CAC, and Board three times over the course of the project to review project status:

- 1. October 2015 These presentations were given after the study team had met with the stakeholder group for the first time. The presentation reviewed the goals of the study, the overall project schedule, previous studies performed, and crash data analysis for the SR/CR A1A study corridor. During this meeting, nine total focus areas were discussed for further study but due to project limitations, only three locations could be selected for safety field reviews. During the Board presentation, Board members discussed the need for three additional safety field reviews to accompany the three field reviews in the original project scope. At the January 2016 R2CTPO Board meeting, the Board approved funding for three additional field reviews for a total of six safety field reviews for the project.
- 2. April 2016 These presentations were given the same month as the second stakeholder meeting. The presentation reviewed the work completed from Fall of 2015 to Spring of 2016 and the findings/results from the six safety field reviews.
- 3. February 2017 In July 2016, the R2CTPO partnered with the FDOT to perform safety field reviews on the final three focus areas that were not studied in 2015 and 2016. These field reviews took place in the fall of 2016 and the findings were presented to the TPO Board and Committees in February 2017.

Literature Review

Different segments of the SR/CR A1A study corridor in Volusia and Flagler Counties have been studied for various pedestrian/bicycle safety improvements. As part of the SR/CR A1A Pedestrian Safety and Mobility Study, a literature review was performed on four of the more-recent studies along SR/CR A1A:

- 1. CR A1A Sidewalk Feasibility Study, Daytona Beach Shores, 2008
- 2. Pedestrian Safety Study for South Atlantic Avenue (CR A1A) from New Smyrna Beach City Limits to 3rd Avenue, New Smyrna Beach, 2012
- 3. Pedestrian Safety Audit Report: SR A1A/Atlantic Avenue from Earl Street to Oakridge Boulevard, Daytona Beach, 2014
- 4. SR A1A Pedestrian Safety Study, Daytona Beach Shores, 2015

Data Collection and Analysis

A detailed review and understanding of every pedestrian or bicycle crash over a six-year period was critical to identify location specific and systemic countermeasures. After collecting the pedestrian and bicycle crash data, a detailed GIS analysis was conducted through two separate methods. The sliding window methodology as described in the Highway Safety Manual (HSM), helped identify high crash frequency and severity locations within the study corridor. The Risk Based Safety Analysis, as promoted by the Federal Highway Administration (FHWA), connects roadway and land use characteristics to crashes and identifies locations along the study corridor for high crash probability due to presence of risk factors such as roadway geometrics, adjacent land uses, traffic volumes, and police citation information. The findings of these analyses resulted in identification of nine (9) corridor segments for further detailed study.

Focus Area Safety Field Reviews

The nine focus areas for additional study were:

- Focus Area A: Peninsula Avenue to E 3rd Avenue (0.60 miles) in New Smyrna Beach
- Focus Area B: Park Avenue to Ribault Avenue (1.00 miles) in Daytona Beach Shores/Daytona Beach
- Focus Area C: International Speedway Boulevard to just south of Earl Street (0.55 miles) and just north of Oakridge Boulevard to just north of University Boulevard (0.65 miles)
- Focus Area D: Plaza Boulevard to Rockefeller Drive (1.15 miles) in Daytona Beach and Ormond Beach
- Focus Area E: Sandcastle Drive to Holland Road (1.45 miles) in Ormond Beach and Ormond-by-the-Sea
- Focus Area F: Kathy Drive to Wisteria Drive (0.70 miles) in Ormond-by-the-Sea
- Focus Area G: S 23rd Street to S 11th Street (1.50 miles) in Flagler Beach and at the Beverly Beach Camptown RV Resort
- Focus Area H: S 6th Street to N 13th Street (1.00 miles) in Flagler Beach
- Focus Area I: 19th Road to Apache Drive (1.60 miles) in Flagler County

Pedestrian/bicycle safety reviews were conducted along the nine segments above. The pedestrian/bicycle safety review process involves multi-disciplinary representatives from various stakeholders, including representatives from the R2CTPO, the FDOT District 5, Volusia and Flagler Counties, Votran, local cities, and local law enforcement. The pedestrian/bicycle safety reviews were conducted to develop short-term, near-term, and long-term suggestions to improve pedestrian and bicyclist safety within the study limits in a team collaborative environment. These safety reviews were limited in scope and should not be construed as a comprehensive safety study; nor were they formal Road Safety Audits. Some improvements presented in the safety review reports may be implemented in the short-term while other suggested safety improvements may be considered for future study. Each suggestion identified within these safety reviews were classified into one of three categories:

- Short-Term Maintenance it is anticipated that issues identified for maintenance may be addressed by public agency staff on a short timeframe and at a relatively low cost.
- Near-Term Improvement activities that may be incorporated into an upcoming construction project in the area, including 3R milling and resurfacing projects.
- Long-Term Improvement activities that may be incorporated into upcoming construction projects and may need to be programmed for funding as separate projects.

Systemic Countermeasure Matrix

The study team identified a total of 215 issues with possible suggestions along the nine focus area corridors where safety field reviews were performed. Upon further review of these 215 issues/suggestions, 54 pedestrian and 20 bicycle specific issues/suggestions were found to occur along two or more of the focus area corridors. These 74 issues/suggestions formed the base for the systemic countermeasure matrix, a list of common issues at common roadway locations (signalized intersections, minor street intersections, driveways, beach access points, etc.) tied to engineering, education, and enforcement type countermeasures aimed at addressing pedestrian/bicycle safety.

The countermeasure matrix should be distributed to each of the local jurisdictions along the SR/CR A1A corridor. The vision is that local jurisdictions can utilize the matrix during field reviews along SR/CR A1A to identify potential engineering, education, or enforcement type countermeasures to address pedestrian/bicycle safety concerns/issues. Also, the matrix can be utilized as a checklist to incorporate pedestrian/bicycle safety improvements during the design phase of projects. These projects already have funding which is a great opportunity to incorporate pedestrian/bicycle improvements.

Implementation Strategies

The R2CTPO, along with the partner agencies along SR/CR A1A, has a great opportunity to take a proactive approach of addressing pedestrian/bicycle safety along the SR/CR A1A study corridor. Starting with the nine focus area locations, the R2CTPO can work with partner agencies to implement the suggestions from the safety field reviews. The suggestions from each of the nine safety field reviews have been organized by field review location, maintaining agency, and implementation time frame. It is anticipated the R2CTPO will track the progress of the suggestions by coordinating with the maintaining agency for each suggestion/group of suggestions at regular intervals.

In addition to the suggestions from the nine focus areas, the R2CTPO and partner agencies can utilize the systemic countermeasure matrix during field reviews along SR/CR A1A to identify potential engineering, education, or enforcement type countermeasures to address pedestrian/bicycle safety concerns/issues. Also, the matrix can be utilized as a checklist to incorporate pedestrian/bicycle safety improvements during the design phase of projects. These projects already have funding which is a great opportunity to incorporate pedestrian/bicycle improvements. The remainder of this section describes implementation strategies and possible funding sources for various improvements along the SR/CR A1A corridor.

Implementation Meeting with FDOT

The R2CTPO held a meeting with the FDOT on May 23, 2016 to review the results of the study and discuss implementation strategies for suggestions along the focus area corridors. Based on discussion during the meeting, the following implementation strategies were identified:

During the meeting, FDOT requested the R2CTPO study team prioritize the suggested crosswalks so FDOT has guidance on which areas to study first. The following focus areas had suggested crosswalk installations as part of their suggestions:

- Focus Area A: Peninsula Avenue to E 3rd Avenue (0.60 miles) in New Smyrna Beach
 - o On the east leg at Cooper Street
- Focus Area B: Park Avenue to Ribault Avenue (1.00 miles) in Daytona Beach Shores/Daytona Beach
 - Near the beach access just south of the Holiday Inn Resort, between Ocean Dunes Road and Old Trail Road
 - o Near the beach access just south of the Catalina Beach Club, between Temko Terrace and Bostwick Avenue
 - Near the beach access just south of where the new Hard Rock Hotel is planning to be constructed, between Frances Terrace and Ribault Avenue
- Focus Area C: International Speedway Boulevard to just south of Earl Street (0.55 miles) and just north of Oakridge Boulevard to just north of University Boulevard (0.65 miles)
 - o At the Jessamine Boulevard intersection
- Focus Area D: Plaza Boulevard to Rockefeller Drive (1.15 miles) in Daytona Beach and Ormond Beach
 - o At the River Beach Drive intersection
 - o At the Rockefeller Drive intersection
 - o Proposed mid-block crossings identified by the City of Ormond Beach (included in **Appendix H**)
- Focus Area E: Sandcastle Drive to Holland Road (1.45 miles) in Ormond Beach and Ormond-by-the-Sea
 - o At the Hibiscus Drive intersection
 - Near Laurie Drive or Roberta Road
- Focus Area F: Kathy Drive to Wisteria Drive (0.70 miles) in Ormond-by-the-Sea
 - o At the Sunrise Avenue and Kathy Drive intersections
 - o At the Spanish Waters Drive intersection, if the vacant parcel on the northwest corner is converted to an off beach parking area
 - o At the Ocean Breeze Circle intersection (existing marked crosswalk)
- Focus Area G: S 23rd Street to S 11th Street (1.50 miles) in Flagler Beach and at the Beverly Beach Camptown RV Resort
 - o At the 19th Street, 16th Street, and 13th Street intersections
- Focus Area H: S 6th Street to N 13th Street (1.00 miles) in Flagler Beach
 - o At the S 8th Street and N 4th Street intersections (existing marked crosswalks)
 - o At the S 6th Street or S 5th Street intersection

Based on the frequency and severity of crashes occurring when pedestrians/bicyclists cross SR/CR A1A and the number of proposed crossings, the eight focus areas where crosswalks were suggested are ranked below for FDOT Traffic Operations to perform mid-block crossing studies:

- 1. Focus Area E: Sandcastle Drive to Holland Road (1.45 miles) in Ormond Beach and Ormond-by-the-Sea
 - a. 6 crashes resulting in 3 fatalities and 3 injuries
 - b. 2 proposed crossings

- 2. Focus Area G: S 23rd Street to S 11th Street (1.50 miles) in Flagler Beach and at the Beverly Beach Camptown RV Resort
 - a. 5 crashes resulting in 2 fatalities and 4 injuries
 - b. 3 proposed crossings
- 3. Focus Area F: Kathy Drive to Wisteria Drive (0.70 miles) in Ormond-by-the-Sea
 - a. 6 crashes resulting in 1 fatality and 5 injuries
 - b. 3 new proposed crossings and 1 modification to existing crossing
- 4. Focus Area B: Park Avenue to Ribault Avenue (1.00 miles) in Daytona Beach Shores/Daytona Beach
 - a. 4 crashes resulting in 4 injuries
 - b. 3 proposed crossings
- 3. Focus Area D: Plaza Boulevard to Rockefeller Drive (1.15 miles) in Daytona Beach and Ormond Beach
 - a. 4 crashes resulting in 4 injuries
 - b. 3 proposed crossings
- 5. Focus Area C: International Speedway Boulevard to just south of Earl Street (0.55 miles) and just north of Oakridge Boulevard to just north of University Boulevard (0.65 miles)
 - a. 7 crashes resulting in 1 fatality and 6 injuries
 - b. 1 proposed crossing
- 6. Focus Area A: Peninsula Avenue to E 3rd Avenue (0.60 miles) in New Smyrna Beach
 - a. 2 crashes resulting in 2 injuries
 - b. 1 proposed crossing
- 7. Focus Area H: S 6th Street to N 13th Street (1.00 miles) in Flagler Beach
 - a. 0 crashes
 - b. 1 new proposed crossing and 2 modifications to existing crossings

Possible Implementation Funding Sources

As discussed in the **Focus Area Safety Field Reviews** section, each suggestion identified within the nine safety reviews were classified into one of three categories: short-term, near-term, and long-term. These improvements will have different implementation strategies and possible funding sources. It is anticipated that short-term improvements can be handled by maintenance staff almost immediately. Near-term improvements could be incorporated under FDOT push button contracts or tied to existing projects. Some near-term improvements may require more study before implementation. Long-term improvements will more than likely need additional study, some to the Project Development & Environment (PD&E) level, before implementation. These improvements also tend to need a larger funding source than short- and near-term improvements, thus they may need to be programmed into the FDOT 5-Year Work Program. Specific grants, funding sources, and strategies for engineering, education, and enforcement type countermeasures can be implemented through a variety of funding sources and strategies.

Section 1 Introduction

INTRODUCTION

Purpose and Need

Pedestrian and bicycle-related crash reports filed through the Division of Highway Safety and Motor Vehicles (DHSMV) in 2009 through 2014 recorded 158 crashes on SR/CR A1A in Volusia and Flagler Counties with 14 fatal crashes. In recent years, City of Flagler Beach representatives along with other cities along SR/CR A1A have also expressed concerns regarding pedestrian and bicycle safety along this beachside corridor. The SR/CR A1A corridor has many destinations including the Atlantic Ocean beaches, Daytona Beach Pier and Boardwalk, Flagler Beach Pier, Ocean Center, Ocean Walk Entertainment Center, Daytona Lagoon Waterpark, Sunglow Pier, the Ponce Inlet Lighthouse and numerous restaurants, retail shopping, hotels, and condominiums. The corridor is home to many local residents and serves as a major tourist destination, making it a key economic driver for eastern Volusia and Flagler Counties. The SR/CR A1A corridor includes a concentration of service industry employment and supports special event activities such as Bike Week. Votran bus routes serving SR/CR A1A are some of the busiest in the system and a transfer facility is located between Earl and Ora Streets in Daytona Beach. Pedestrian/bicycle activity along this corridor is robust and, as a result, the potential for conflict between pedestrians/bicyclists and automobiles is high. The corridor presently includes a variety of cross sections with changing pedestrian/bicycle treatments, varied spacing and availability of crosswalks, varied lane widths and posted speeds, signage, lighting, and medians. As development activity increases along the beach peninsula, pedestrian/bicycle activity and the potential for conflict increase. The SR/CR A1A corridor should be a primary area of focus to reduce overall pedestrian/bicycle crashes.

In late 2014, the Florida Department of Transportation (FDOT) released its 2015 Pedestrian and Bicycle Focused Initiative and identified Volusia County as a Top 15 High Priority County. Pedestrians and bicyclists are identified as Vulnerable Road Users in the Florida Strategic Highway Safety Plan (SHSP). One SHSP strategy is to "Develop and use a systematic approach to identify locations and behaviors prone to pedestrian and bicycle crashes and implement multidisciplinary countermeasures." Another 2015 SHSP strategy is to "Increase awareness and understanding of safety issues related to Vulnerable Road Users." The River to Sea Transportation Planning Organization (R2CTPO) has conducted the SR/CR A1A Pedestrian Safety and Mobility Study to help generate a list of suggested improvements addressing the growing need for pedestrian/bicycle safety along SR/CR A1A in Volusia and Flagler Counties.

Study Area

The project's study limits include SR/CR A1A between the southern limits of Bethune Beach to the south and the southern limits of Marineland to the north. The portions where SR A1A coincides with US 1, between Dunlawton Avenue in Port Orange and 3rd Avenue in New Smyrna Beach, were not included within the study area limits. Certain areas of SR/CR A1A have been studied within the last 5 years were also excluded from the study area in an effort to reduce duplication of efforts, but have been summarized in **Section 3 – Literature Review**. The general study limits for the project are illustrated in **Figure 1**.

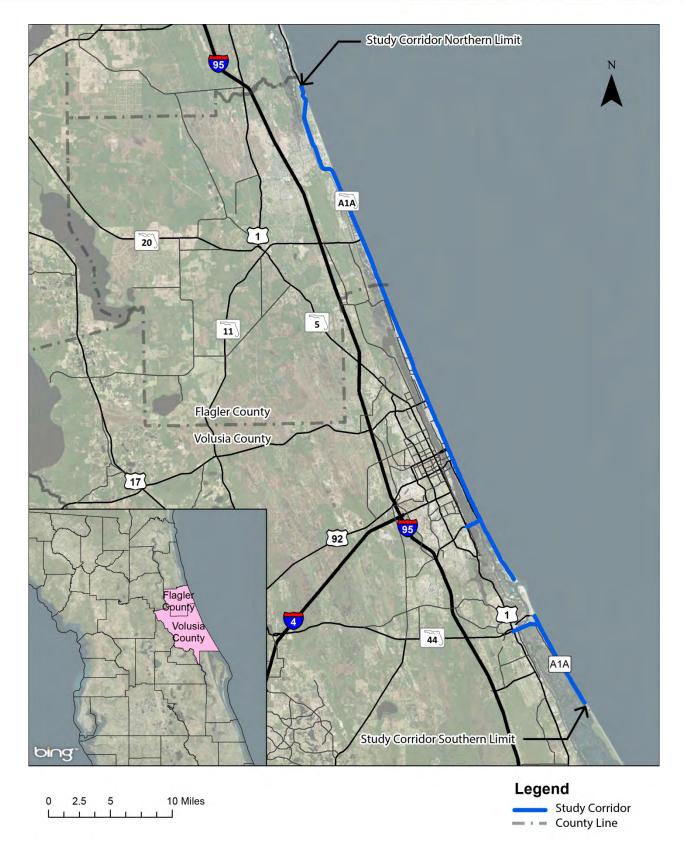


Figure 1 SR/CR A1A Study Area

Section 2 **Project Stakeholders and Public Presentations**

PROJECT STAKEHOLDERS AND PUBLIC PRESENTATIONS

Stakeholder outreach and public presentations were integral parts of the SR/CR A1A Pedestrian Safety and Mobility Action Plan. Throughout the project, two meetings were held with a project stakeholder group and three presentations were given to the R2CTPO committees and Board. A timeline displaying the overall project schedule, including meeting dates with stakeholders and R2CTPO committees, is provided in **Figure 2**. The remainder of this section details the stakeholder outreach and public presentation activities.

Stakeholder Identification

A stakeholder group was identified by the R2CTPO from local municipalities and transportation agencies associated with the SR/CR A1A corridor who participated throughout the entirety of the SR/CR A1A Pedestrian Safety and Mobility Study. These stakeholders included representatives from the following agencies/jurisdictions:

- Mayors/Commissioners from Local Cities along SR/CR A1A Corridor
- R2CTPO Bicycle/Pedestrian Advisory Committee (BPAC)
- R2CTPO Technical Coordinating Committee (TCC)
- R2CTPO Citizens Advisory Committee (CAC)
- FDOT District 5 Traffic Operations/Safety
- Volusia County Public Works Traffic Engineering
- Flagler County Public Works Traffic Engineering
- Votran
- Town of Beverly Beach
- City of Daytona Beach
- City of Daytona Beach Shores
- City of Edgewater
- City of Flagler Beach
- City of New Smyrna Beach
- City of Ormond Beach
- City of Palm Coast
- Law Enforcement from Local Cities along SR/CR A1A Corridor
- Convention and Visitors Bureau
- Hotel/Motel (Lodging) Association
- Volusia County Association for Responsible Development (VCARD)

FIGURE 2 | PROJECT SCHEDULE

SR/CR A1A PEDESTRIAN SAFETY & MOBILITY STUDY

TASK 1: Research Previous Studies and Identify Stakeholders

TASK 1.1: Research Previous Studies

TASK 1.2: Identify Project Stakeholders

TASK 2: Crash Data Collection and **Analysis**

TASK 2.1: Pedestrian/Bicycle Crash Data Collection

TASK 2.2: Historical Crash Analysis

TASK 2.3: Review Citation Information

TASK 2.4: Pedestrian Facility Analysis

TASK 2.5: Risk Based Analysis

TASK 2.6: Identify Potential Focus Areas

TASK 2.7: Stakeholder Meeting

Task 2 Committee/Board Presentations

TASK 3: Site Specific Pedestrian/Bicycle **Road Safety Audits**

TASK 3.1: Road Safety Audit Preparation

TASK 3.2: Initial Field Screening and Supplemental Data Collection

TASK 3.3 and 3.4: Roadway Safety Audits

TASK 4: Matrix of Countermeasures

Generate Draft Matrix

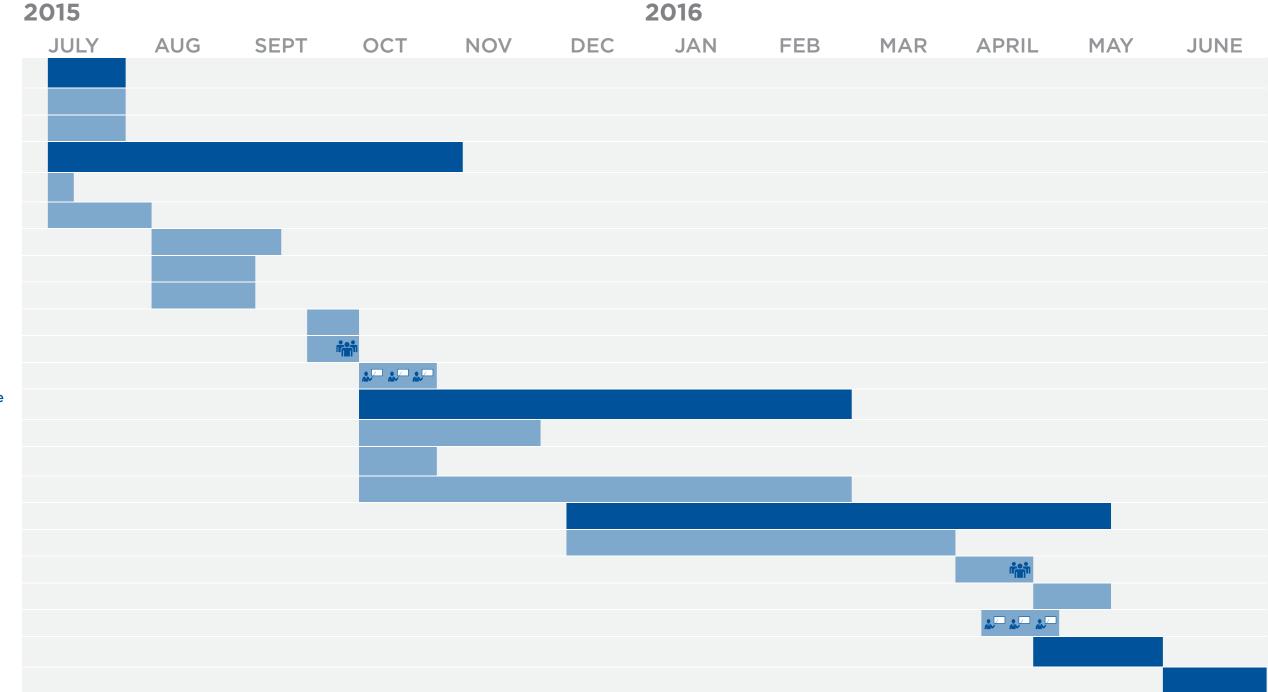
Stakeholder Meeting

Stakeholder Review

Committee/Board Presentations

TASK 5: Prioritize Systemic Countermeasures

TASK 6: Summary Report













Stakeholder Involvement

The stakeholder group met twice throughout the course of the project:

- September 28, 2015 This meeting was held after the study team had researched previous studies and performed crash analysis on the 57 mile long SR/CR A1A study corridor. The purpose of this meeting was to discuss the analysis procedure and focus areas identified for additional study (more information provided in Section 4 Crash Data Collection and Analysis).
- 2. April 20, 2016 This meeting was held once the first six pedestrian/bicycle safety field reviews were completed, spanning from November 2015 through February 2016 (more information provided Section 5 Focus Area Safety Field Reviews). The purpose of this meeting was to discuss the results/suggestions from the first six safety field reviews, review the systemic countermeasure matrix (more information provided in Section 6 Systemic Countermeasure Matrix), and provide information regarding next steps for the project.

Even though the stakeholders only met twice as a large group, several members of the stakeholder group participated in at least one of the pedestrian/bicycle safety field reviews. This involved participating in a kick-off meeting to review site specific crash data and trends, a walking review of the segment to identify pedestrian/bicycle safety issues, and a follow up meeting to discuss suggestions for the issues identified in the field. The stakeholder group was also consulted for comments on a systemic countermeasure matrix. In total, the study team received comments to help improve the matrix from five different participating agencies.

Figure 3 displays stakeholder involvement during the SR/CR A1A Pedestrian Safety and Mobility Action Plan. The presentations given at the two stakeholder meetings can be found in **Appendix A**.

Public Presentations

The study team presented to the R2CTPO BPAC, TCC/CAC, and Board three times over the course of the project to review project status:

- 1. October 2015 These presentations were given after the study team had met with the stakeholder group for the first time. The presentation reviewed the goals of the study, the overall project schedule, previous studies performed, and crash data analysis for the SR/CR A1A study corridor. During this meeting, nine total focus areas were discussed for further study but due to project limitations, only three locations could be selected for safety field reviews. During the Board presentation, Board members discussed the need for three additional safety field reviews to accompany the three field reviews in the original project scope. At the January 2016 R2CTPO Board meeting, the Board approved funding for three additional field reviews for a total of six safety field reviews for the project.
- 2. April 2016 These presentations were given the same month as the second stakeholder meeting. The presentation reviewed the work completed from Fall of 2015 to Spring of 2016 and the findings/results from the six safety field reviews.
- 3. February 2017 In July 2016, the R2CTPO partnered with the FDOT to perform safety field reviews on the final three focus areas that were not studied in 2015 and 2016. These field reviews took place in the fall of 2016 and the findings were presented to the TPO Board and Committees in February 2017.

The three presentations for October 2015, April 2016, and February 2017 can be found in **Appendix A**.









Figure 3 Stakeholder Involvement

Section 3 Literature Review

LITERATURE REVIEW

Different segments of the SR/CR A1A study corridor in Volusia and Flagler Counties have been studied for various pedestrian/bicycle safety improvements. As part of the SR/CR A1A Pedestrian Safety and Mobility Study, a literature review was performed on four of the more-recent studies along SR/CR A1A:

- 5. CR A1A Sidewalk Feasibility Study, Daytona Beach Shores, 2008
- 6. Pedestrian Safety Study for South Atlantic Avenue (CR A1A) from New Smyrna Beach City Limits to 3rd Avenue, New Smyrna Beach, 2012
- 7. Pedestrian Safety Audit Report: SR A1A/Atlantic Avenue from Earl Street to Oakridge Boulevard, Daytona Beach, 2014
- 8. SR A1A Pedestrian Safety Study, Daytona Beach Shores, 2015

The purpose of the literature review is to summarize previously proposed improvements along SR/CR A1A. The following sections summarize the studies related to pedestrian/bicycle safety carried out on SR/CR A1A. **Figure 4** displays the locations of the four studies reviewed.

CR A1A Sidewalk Feasibility Study, Daytona Beach Shores, 2008

The CR A1A Sidewalk Feasibility Study was prepared by Kimley-Horn and Associates, Inc. for the R2CTPO in October 2008. The intent of the study was to determine the feasibility of constructing a meandering sidewalk along both sides of CR A1A from south of Dunlawton Avenue to Marcelle Avenue for a distance of approximately 6,100 feet. The proposed sidewalks would eventually connect to the northern extension of the Ponce Inlet shared-use path, south of Major Street.

The study report begins by introducing the project in the larger context and listing the project objectives related to increasing multi-modal transportation options within Daytona Beach Shores. The report lists existing county and state policies as well as land development codes supporting pedestrian and bicycle facility development within the study area. The report further reviews general principles for design of bicycle and pedestrian facilities developed by AASHTO, ITE, FDOT, and the MUTCD.

The report also documents the existing conditions specifically related to pedestrian and bicycle facilities along the corridor and lists the issues and concerns within the study area. The following findings from the study and are presented as support for study recommendations:

- 1. Substandard sidewalk widths;
- 2. Inconsistent sidewalk alignments;
- 3. Inconsistent alignment of crosswalks at intersections;
- 4. Lack of bicycle lanes;
- 5. Obstacles on or adjacent to sidewalks, such as utility poles, fire hydrants;
- 6. Lack of sidewalks across driveway aprons;
- 7. Lack of marked crosswalks;

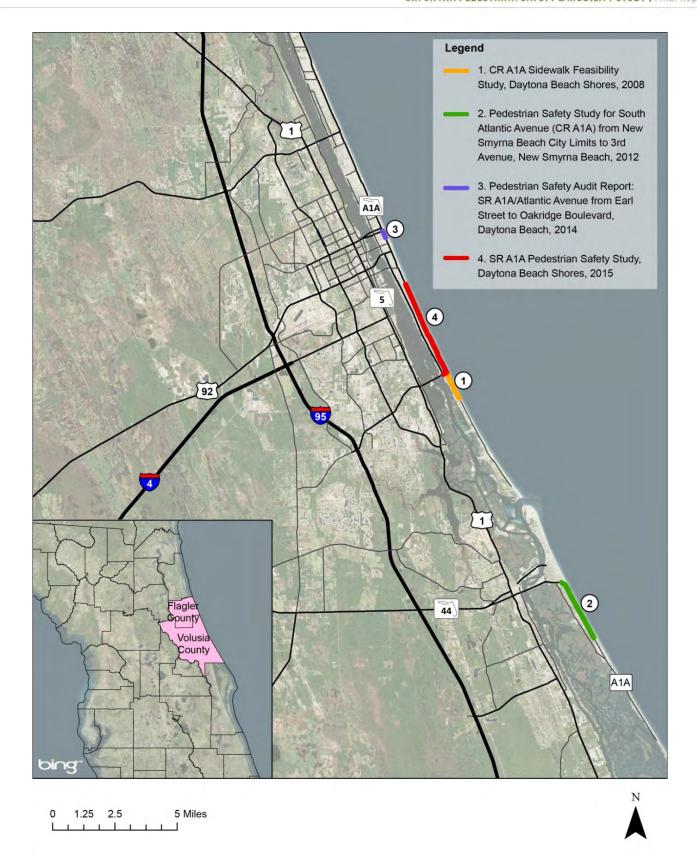


Figure 4 Previous Studies along SR/CR A1A

- 8. Non- Americans with Disabilities Act (ADA) compliant bus stops (no sidewalk connection from bus stop to the edge of roadway;
- 9. Lack of clearly defined pedestrian realm at street edge along parking lots and driveway entrances;
- 10. No clearly defined and consistent bicycle or pedestrian facilities within entire corridor on east and west side:
- 11. Sidewalk gaps located throughout the corridor;
- 12. Abrupt end to sidewalk at Marcelle Avenue beach access crosswalk;
- 13. Limited and inconsistent pedestrian crossings at beach access points;
- 14. Inconsistent curb and gutter infrastructure throughout northern segment;
- 15. Non-ADA compliant pedestrian facilities; and
- 16. Several excessively-wide, shallow driveway throats.

Finally, the report contains a detailed list of recommendations having been developed to address three main principles:

- 1. Address existing pedestrian facility infrastructure within the study area not complying with the ADA minimum requirements to reduce potential non-ADA compliant liability;
- 2. Develop a consistent and continuous sidewalk facility on both sides of the study area corridor connecting to existing east/west beach access pedestrian facilities; and
- 3. Include design recommendations recognizing regional bicycle and pedestrian facilities, efforts, and network goals.

Major design recommendations are listed below addressing each of the three points above. Due to this study being performed in 2008, the recommendations that have been constructed/implemented are noted in the text.

CR A1A NORTH (DUNLAWTON AVENUE TO APPROXIMATELY 750 FEET SOUTH OF PHILLIS AVENUE)

- 1. Remove the outer lanes of the five-lane roadway to provide a three-lane roadway with eight foot wide meandering sidewalks on both sides this recommendation has been constructed.
- 2. Consolidate consecutive driveways and reduce existing driveway throat widths to standard two-lane widths it appears from field review and aerial imagery that driveways have been reconstructed.
- 3. Install eight-foot wide crosswalks and eight-foot wide curb ramps, excluding aprons this recommendation has been implemented.

CR A1A SOUTH (APPROXIMATELY 750 FEET SOUTH OF PHILLIS AVENUE TO MARCELLE AVENUE)

- 1. Construct an eight-foot wide meandering sidewalk beginning at the three-lane typical section just south of Phillis Avenue this recommendation has been constructed.
- 2. The recommended minimum separation between the road and the sidewalk should be at least five feet this recommendation has been implemented.
- 3. Install eight-foot wide longitudinal crosswalk markings ('ladder crosswalks') at all east/west intersections crosswalks have been installed at Emilia Avenue and Marcelle Avenue.

The report concludes with analysis of financial feasibility to implement this project. **Appendix B** contains pages from the report outlining the study area, issues and concerns, recommendations, and financial feasibility for the project.

Pedestrian Safety Study for South Atlantic Avenue (CR A1A) from New Smyrna Beach City Limits to 3rd Avenue, 2012

The Pedestrian Safety Study for South Atlantic Avenue (CR A1A) was prepared by GMB Engineers & Planners, Inc. for the R2CTPO in January 2012. The purpose of the study was to evaluate the corridor and determine what measures could be taken to improve pedestrian and bicyclist safety within it. The study includes traffic data, corridor diagrams, a sign inventory, collision analysis and diagrams, and recommendations.

The report begins by stating the objectives of this study followed by documenting the existing conditions (lane configurations, sidewalk widths, and posted speed limits) along the corridor. A detailed sign inventory throughout the corridor is also presented.

Further, the report chronicles the pedestrian/bicycle analysis, crash history, vehicle gap size analysis, and annual average daily traffic (AADT)/level-of-service (LOS) analysis. Pedestrian and bicycle volume counts at specific locations were collected and analyzed. Crash history data was collected and analyzed based on long and short form crash reports obtained from the Volusia County Traffic Engineering Department. A total of 66 crashes occurred within the study corridor during the crash period between October 3rd, 2007 and April 30th, 2011 (42 months), nine (9) of which involved pedestrians or bikes. Vehicle gap size analysis was conducted near the intersection of S. Atlantic Avenue and 20th Avenue. The gap size results indicated pedestrians would have enough gaps to cross one direction at a time, but not both the directions during one crossing maneuver.

The quantitative analysis was followed by a qualitative assessment based on field observations of the traffic, pedestrian, and bicycle flow conditions occurring within the study corridor. These field observations were performed on a weekend during the peak pedestrian hours. The purpose of the qualitative assessment was to evaluate prevailing operating conditions, vehicular and pedestrian flow patterns, and identify areas where improvements would be potentially beneficial for safety and efficiency reasons. The following observations were noted:

- 1. Sidewalks are not continuous within the project limits.
- 2. Due to overnight rain, ponding was observed in the road at the intersections along the east side of S. Atlantic Avenue.
- 3. Within this section, bicyclists either share the roadway, or make their way to the 6 to 8 foot wide sidewalk running along the west side of S. Atlantic Avenue. There are paved shoulders that can be used as undesignated bicycle facilities from the City limits to 27th Avenue and from 7th Avenue to 3rd Avenue. There are no paved shoulders between 27th Avenue and 7th Avenue.
- 4. There are no pedestrian refuges in the median with the exception of the mid-block crossing between 6th Avenue and 7th Avenue.
- 5. There are 14 marked crosswalks and three mid-block crossing locations within the 2.9 mile project corridor.

Finally, the report recommends a list of beneficial measures to improve pedestrian and bicycle safety along the corridor Due to this study being performed in 2012, the recommendations that have been constructed/implemented are noted in the text.

- 1. Install continuous bicycle facilities along S. Atlantic Avenue;
- 2. Install sidewalk along the east side of S. Atlantic Avenue between 27th Avenue and 7th Avenue;
- 3. Install Rectangular Rapid Flashing Beacons (RRFBs);
- 4. Supply Pedestrian Flags;
- 5. Install Additional Marked Crosswalks at Intersections marked crosswalks have been installed at Oyster Quay, Matthews Avenue, 30th Avenue, 24th Avenue, 21st Avenue, 18th Avenue, 15th Avenue, 12th Avenue, 9th Avenue, and 7th Avenue;
- 6. Install Median Refuge Islands median refuge islands have been installed for the new crosswalks at 21st Avenue, 18th Avenue, 15th Avenue, 12th Avenue, and 9th Avenue;
- 7. Install Advance Yield Markings with Signs advance yield markings with signs have been installed for the new crosswalks at 21st Avenue, 18th Avenue, 15th Avenue, 12th Avenue, and 9th Avenue;
- 8. Install On-Street Parking; and
- 9. Reduce Vehicular Travel Speed.

Each of these recommendations is aided by a brief list of pros and cons and approximate construction cost. A few of the recommendations are also illustrated by diagrams and example photographs. The executive summary from this report is located in **Appendix B**.

Pedestrian Safety Audit Report: SR A1A/Atlantic Avenue from Earl Street to Oakridge Boulevard, Daytona Beach, 2014

The Pedestrian Safety Audit Report was prepared by Kittelson & Associates, Inc. on behalf of the FDOT District 5 in October 2014. The Pedestrian Safety Audit (PSA) was commissioned to develop short-term, near-term, and long-term suggestions to improve pedestrian and bicyclist safety within the study limits.

The report begins by introducing the project and the PRSA process. This safety audit was limited in scope and was not a comprehensive safety study; nor was it a formal Road Safety Audit. The audit was intended to identify potential operational and safety related improvements related to pedestrians and bicyclists.

The report analyzed pedestrian and bicycle crashes reported between 2008 and 2013 utilizing the FDOT's Crash Analysis Reporting System (CARS) database. Seventeen (17) pedestrian or bicycle-related crashes were reported over the six-year study period, 14 of which involved pedestrians. One crash involved a collision between a bicycle and a pedestrian.

Following the historical crash analysis, pedestrian safety assessment findings from a team field review were documented. All the findings were reported by listing and describing the issue aided by photographs, followed by suggestions for improvements. The majority of issues and suggested improvements are related to design of crosswalks, pedestrian ramps and sidewalks, mid-block crossings, night-time visibility, and pedestrian signal timing.

Finally, the report concludes by listing all the issues and suggestions in a tabular format categorized by priority: short-term, near-term, and long-term. These summary tables are located in the **Appendix B**.

SR A1A Pedestrian Safety Study, Daytona Beach Shores, 2014-2015

This draft study was prepared by Traffic Engineering Data Solutions, Inc. (TEDS) for the TPO in October 2014. The goal of this study was to provide a qualitative assessment and conduct a pedestrian crossing study within the City of Daytona Beach Shores. This study focuses on Dunlawton Avenue from Peninsula Drive to SR A1A and SR A1A from Dunlawton Avenue to the northern City limits of Daytona Beach Shores (just south of Frazar Road).

The report begins by stating the objectives of the study followed by documenting the existing conditions (lane configurations, sidewalk widths, posted speed limits, accessibility, and existing land uses) along the corridor. Along with existing conditions analysis, various sources of pedestrian, bicycle, and vehicular data were collected for this study. Twenty-four hour bi-directional (north/south) volume counts along with four hours of manual turning movement counts (vehicles, pedestrians, and bicycles) and four-hour pedestrian/bicycle counts were collected and analyzed.

Pedestrian and bicyclist safety along the corridor was assessed through review of crash reports and field observations. Crash data for SR A1A within the study limits was obtained from the University of Florida's Signal Four Analytics for the five-year period between 2009 and 2013. Based on a review of the data, there were 18 bicyclist or pedestrian crashes reported along the study corridor of which 2 resulted in fatalities and 16 resulted in injuries. Eleven (11) involved pedestrians while seven (7) involved bicyclists.

Apart from quantitative analysis, a qualitative analysis was also conducted along the corridor to evaluate pedestrian/bicyclist activity. As part of this evaluation following points were noted:

- 1. Vehicles on SR A1A are generally traveling at or slightly above (within 5 mph) of the posted speed limit of 35 miles per hour (MPH).
- 2. Walking across SR A1A throughout the study corridor effectively requires a two-stage crossing. The first stage is crossing one direction of traffic and then waiting within the two-way left-turn lane for a gap before crossing the other direction of traffic.
- 3. Pedestrians were observed carrying chairs, toys, and beach equipment across the street.
- 4. Many motorists did not stop for pedestrians within the marked mid-block crosswalks.

The next section of the report evaluated mid-block pedestrian crossings along the study corridor. Based on earlier analysis and inputs received from stakeholders, 14 locations were identified for evaluating the need to provide enhanced pedestrian/bicycle safety. Detailed evaluation of each location includes a brief analysis of existing conditions aided by maps, diagrams, and photographs. Pedestrian volumes and crash history were further reviewed at that particular location and specific recommendations along with cost estimates were provided for each location. This section of the report also analyzes signalized intersections in a similar format. Recommendations common to most locations include:

1. Adding new mid-block crosswalks with refuge islands.

- 2. Modifying pavement markings/signage at existing crosswalks and eliminating vegetation in refuge islands.
- 3. Adding RRFB.

A diagram illustrating the proposed recommendations along the corridor is provided in the **Appendix B**.

Finally, the report concludes with broad recommendations for long term improvements throughout the corridor. The report suggests a road diet north of Dunlawton Avenue should be considered based on the City's decision to perform a road diet on CR A1A, south of Dunlawton Avenue.

Section 4 Crash Data Collection and Analysis

DATA COLLECTION AND ANALYSIS

A detailed review and understanding of every pedestrian or bicycle crash was critical to identify location specific and systemic countermeasures. This section summarizes the data collection efforts, analytical process, and findings for pedestrian and bicycle crashes occurring within the study limits of SR/CR A1A for six (6) years, from 2009 to 2014. After collecting the pedestrian and bicycle crash data, a detailed GIS analysis was conducted through two separate methods. The sliding window methodology as described in the Highway Safety Manual (HSM), helped identify high crash frequency and severity locations within the study corridor. The Risk Based Safety Analysis, as promoted by the Federal Highway Administration (FHWA), connects roadway and land use characteristics to crashes and identifies locations along the study corridor for high crash probability due to presence of risk factors. The findings of these analyses resulted in identification of nine (9) corridor segments for further detailed study. The analytical process and the results were also presented at the stakeholders meeting on September 28, 2015, as discussed in Section 2 – Project Stakeholders and Public Presentations. The remainder of this section discusses the crash data collection and analysis in further detail.

Crash Data Collection

As noted above, six (6) full calendar years of available crash data, 2009 to 2014, was collected for the pedestrian/bicycle crash analysis. Crash data from the FDOT Crash Analysis Reporting System (CARS) was collected for state maintained portions of the corridor, while crashes along the county-maintained portions of the corridor were collected from the University of Florida's Signal Four Analytics (S4) database. S4 was also used to collect supplemental data along the state roadway portions of SR A1A as well. Available crash reports for the pedestrian/bicycle crashes were obtained from these sources as well. By the start date of this project, the 2014 CARS data was not yet FDOT certified thus the reason for six years of crash data instead of the traditional five. The CARS and S4 databases are described in more detail as follows:

FDOT CRASH ANALYSIS REPORTING SYSTEM (CARS)

CARS is a FDOT maintained crash database utilizing information from the DHSMV. This database includes reported crashes which occurred on state roadways. Each crash can be geo-located and is assigned a number of descriptive variables explaining the type of crash, how it occurred, and other conditions surrounding the collision. While the data provided by CARS is comprehensive for state roadways, it does not reliably include non-state roadway crashes and therefore did not provide a complete dataset for the CR A1A portions of the analysis.

UNIVERSITY OF FLORIDA'S SIGNAL FOUR ANALYTICS (S4)

S4 is an interactive, web-based system designed to support crash mapping and analysis needs in the state of Florida. Developed by the GeoPlan Center at the University of Florida, crash reports are collected by Florida Highway Patrol (FHP) officers at crash sites throughout the state and transmitted nightly to the GeoPlan Center to be loaded into the S4 database. The crash data is then geo-located, and includes descriptive variables similar to the CARS data. However, where CARS data lists these variables using the numeric codes found on crash reports, S4

has developed descriptive names for each code to make the crash data more user-friendly. This database was utilized for county-road portions and as a supplement to state maintained portions of the study corridor.

Crash Data Consolidation

After obtaining the raw crash data from the CARS and S4 databases, each dataset was post processed separately. Duplicate crashes were first removed within each raw dataset. The S4 dataset was further post processed by converting the raw crash data "language" for various crash metrics into the numerical CARS code language. This reconciles the coding differences between the two databases to allow for consistent reporting of the crash metrics across both databases when they are combined.

When processing the S4 data for pedestrian and bicycle specific crashes, additional crash metrics can be utilized to "pick up" more pedestrian/bicycle crashes. For example, there are cases where a pedestrian or bicycle crash may initially be coded as a rear-end or angle crash; however, data provided within the S4 dataset could provide additional insight as to whether a crash involved a pedestrian or a bicyclist. The crash data within the S4 dataset includes metrics such as the number of pedestrians and number of bicyclists involved in each crash. When crashes were deemed to be incorrectly coded, the harmful event was revised and the additional pedestrian or bicycle crashes were included in the final dataset. Thus, if a crash was initially coded as a rear-end collision but involved one bicycle, that specific crash was re-coded as a bicycle crash. Utilizing this process, the study team was able to identify 27 additional pedestrian or bicycle crashes in the S4 data set that were coded as a non-pedestrian or bicycle crash.

In order to obtain a more comprehensive set of crash data, the S4 pedestrian and bicycle crash data was merged with the CARS data. The benefit of combining the S4 crash data with the CARS data is that there is potential to capture more pedestrian and bicycle crashes without having to review individual crash reports. Similar to the S4 data, there are cases within the CARS dataset where the harmful event is not properly coded as a pedestrian or bicycle crash. In these cases, the CARS data is cross referenced with the specific S4 pedestrian and bicycle dataset. In the instances where the initial CARS harmful event does not indicate a pedestrian or bicycle crash, but the S4 data indicates otherwise, the CARS harmful event code is revised and included in the final overall pedestrian and bicycle crash data set. Utilizing this process, the study team was able to identify 28 additional pedestrian or bicycle crashes in the CARS data set that were coded as a non-pedestrian or bicycle crash. Once this is complete, the duplicates are removed so there is no double counting of the crash data.

Note that during the above crash data consolidation, and additional 27 unique S4 crashes and 28 unique CARS crashes (55 total) were identified and added to the original data set.

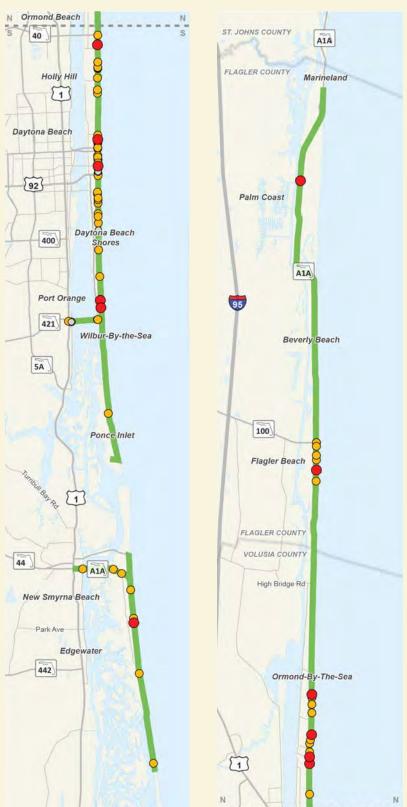
Historical Crash Data Summary – Entire SR/CR A1A Study Corridor

Figure 5 displays the pedestrian and bicycle crash locations along the study corridor while **Figure 6** displays the corridor wide crash summary for SR/CR A1A over the six year study period. Detailed tables/charts for the entire SR/CR A1A study corridor can be found in **Appendix C**.

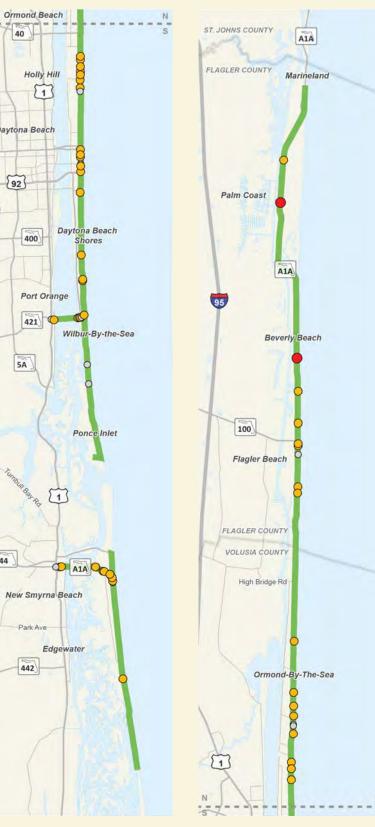
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Study Corridor and Crash Locations

Pedestrian Crashes

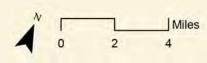


Bicycle Crashes



Legend



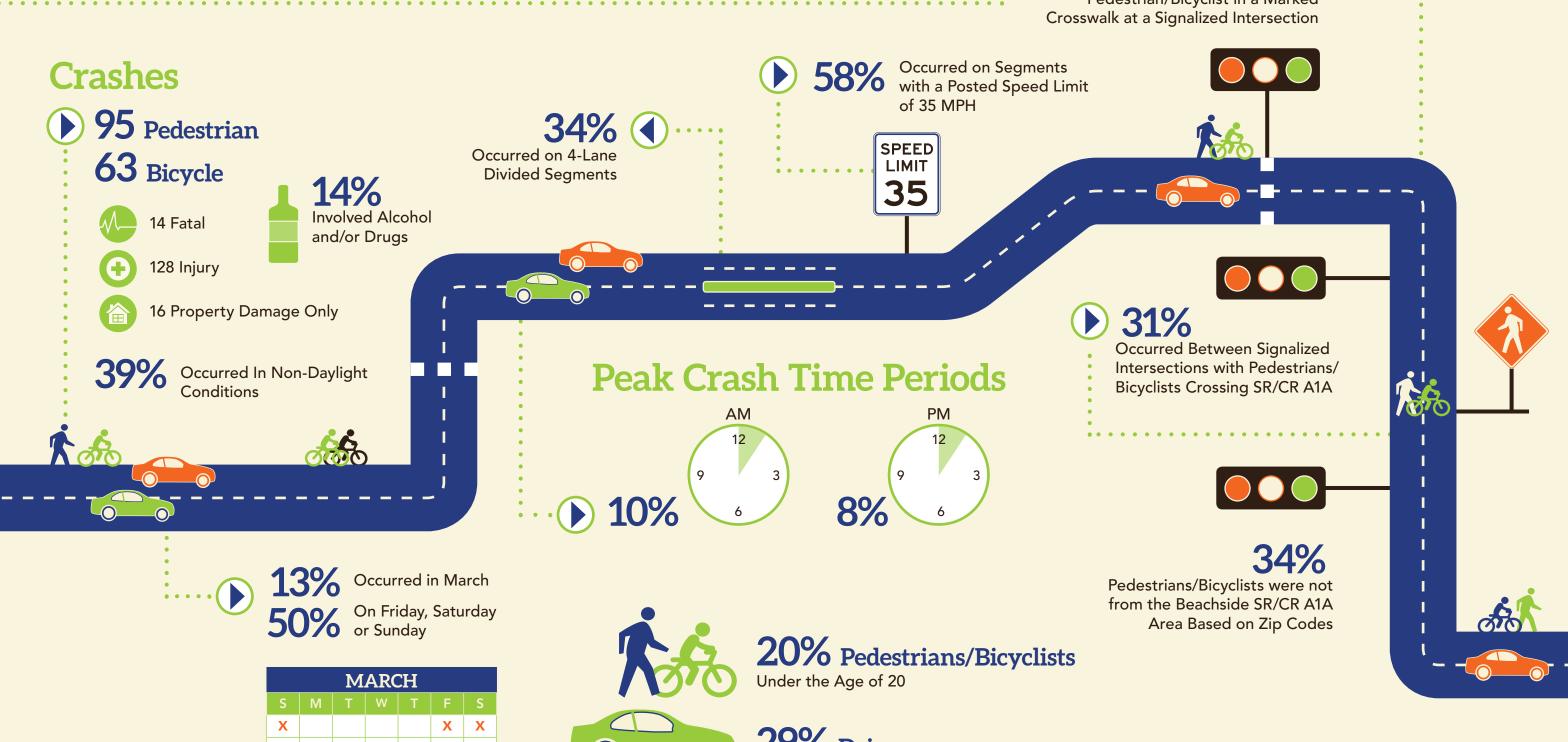


Crash History 2009-2014

Figure 6

SR / CR A1A Corridor Wide Crash Summary

Occurred with a
Pedestrian/Bicyclist in a Marked
Crosswalk at a Signalized Intersection



Under the Age of 25



Crash Analysis

Two methods of crash analysis were utilized to identify focus areas for further study along the SR/CR A1A corridor. This section reviews the sliding window analysis, which analyzes segments based on historical crash frequency and severity; and the risk based safety assessment, which connects roadway and land use characteristics to crashes and identifies locations along the study corridor with the potential for a high crash probability due to presence of risk factors.

SLIDING WINDOW ANALYSIS

Utilizing GIS software, the sliding window analysis reviewed crash frequencies and severities along one-mile windows that were moved in increments of one-quarter mile, creating 228 unique one-mile windows for analysis. **Figure 7** displays a graphic illustrating the sliding window analysis. In the case of **Figure 7**, the first one-mile window has three crashes. When the one-mile window is moved by one-quarter mile, the new one-mile window has four crashes.

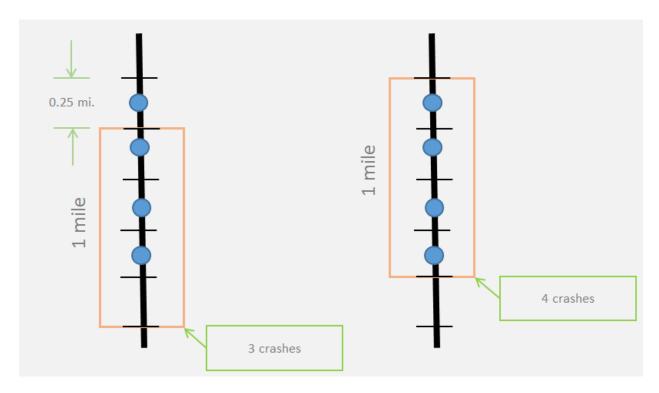


Figure 7 Sliding Window Analysis

The 158 pedestrian/bicycle crashes, along with their injury severity, were assigned across the 228 one-mile windows. At this point, two lists were generated:

- 1. Ranking the 228 one-mile segments by total crash frequency; and
- 2. Ranking the 228 one-mile segments by a crash severity score, which was calculated based on the Highway Safety Manual's Equivalent Property Damage Only Average Crash Frequency method. This method takes into account the FDOT crash costs for property damage, injury, and fatal crashes and

applies a weighting factor based on the ratio between those different crash costs. Locations with a higher crash severity score have experienced more severe crashes, based on the FDOT typical crash costs.

Upon reviewing the crash frequency ranking, a "natural break" was observed with the top 32 one-mile segments with each having pedestrian/bicycle crash frequencies of 10 or more. Upon reviewing the crash severity ranking, a "natural break" was observed with the top 55 one-mile segments that typically had one (1) or more fatal crashes and/or five (5) or more injury crashes. The top 32 segments for crash frequency and the top 55 segments for crash severity were then sorted and grouped by one-mile segments that overlapped or were adjacent to one another. With this grouping, seven (7) individual segments were identified within the 32 crash frequency one-mile segments and 10 individual segments were identified within the 55 crash severity one-mile segments. The seven (7) crash frequency segments and 10 crash severity segments were compared to identify overlapping segments between the two lists. Four (4) of the segments were present on both lists, leaving 13 unique segments:

- Oyster Quay to 16th Avenue in New Smyrna Beach 1.50 miles
- 13th Avenue to Harbour Boulevard in New Smyrna Beach 1.55 miles
- Harbor Point Street to Oceans Boulevard in Daytona Beach Shores 2.00 miles
- Sunrise Boulevard to International Speedway Boulevard in Daytona Beach Shores and Daytona Beach –
 1.60 miles
- International Speedway Boulevard to Nautilus Avenue in Daytona Beach 2.25 miles
- Nautilus Avenue to Neptune Avenue in Daytona Beach and Ormond Beach 3.70 miles
- Royal Dunes Boulevard to Kathy Drive in Ormond Beach and Ormond-by-the-Sea 2.70 miles
- Kathy Drive to Beau Rivage Drive in Ormond-by-the-Sea 1.50 miles
- Fairwinds Circle to North of Coquina Key Drive in Volusia County 1.25 miles
- S 23rd Street to S 6th Street in Flagler Beach 1.75 miles
- S 6th Street to N 13th Street in Flagler Beach 1.00 mile
- Ocean Marina Drive to Driftway Terrace in Beverly Beach and Flagler County 1.75 miles
- Jungle Hut Road to Armand Beach Drive in Flagler County 2.75 miles

RISKED BASED SAFETY ASSESSMENT

Pedestrian/bicycle crashes are generally infrequent, influenced heavily by human factors, and often difficult to predict. Therefore, the sliding window analysis was supplemented with a risk based safety assessment to identify risk factors (e.g., land use and roadway characteristics) that commonly contribute to pedestrian/bicycle crashes. Utilizing readily available (GIS) roadway and land use data, the study corridor was screened to identify locations where multiple risk factors exist. The risk-based approach to safety analysis is promoted by FHWA in their Systemic Safety Project Selection Tool. **Figure 8** outlines the risk based safety assessment process.

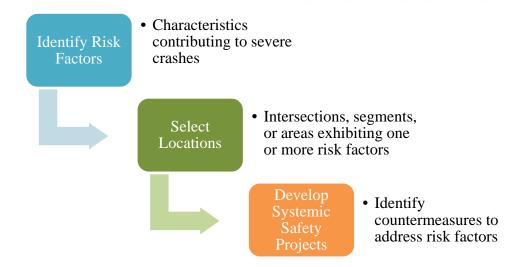


Figure 8 General Steps in a Risk Based Approach to Systemic Safety

Risk factors include a range of roadway or location characteristics associated with higher frequencies of pedestrian and/or bicycle crashes. For this analysis following risk factors were related to crashes to identify higher-risk segments along the SR/CR A1A study corridor:

- Roadway Geometry:
 - o Number of Lanes; and
 - o Roadway Separation Including Presence or Absence of a Raised Median.
- Crossing Locations:
 - o At/Near Signalized Intersections with Marked Crosswalks; and
 - o At/Near Marked Mid-Block Crosswalks.
- Roadway Characteristics:
 - Traffic Volumes;
 - o Presence of Roadway Illumination; and
 - o Speed Limit.
- Land Use Characteristics:
 - Near Civic Land Uses Schools, City Halls, and Libraries;
 - o Near Parks and Beach Access Parking Lots; and
 - Near Bus Stops.

Each of the above risk factors has had a direct correlation to presence of pedestrian and/or bicycle crashes along the SR/CR A1A study corridor. **Figure 9** through **Figure 15** summarize the findings of the risk based safety assessment.

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AADT and Crash Locations

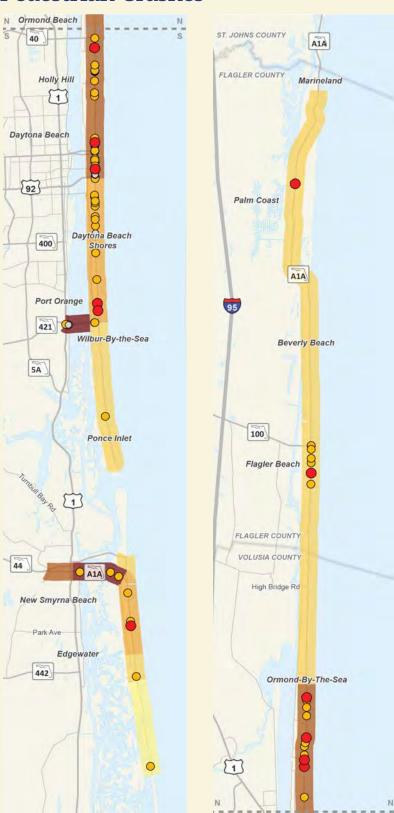
This figure shows the Annual Average Daily Traffic (AADT) along the study corridor and is overlaid with pedestrian and bicycle crash locations. AADT along the study corridor ranges from 2,600 to 28,000 vehicles per day. Higher AADT's are observed along the two bridges connecting SR/CR A1A to US 1 at New Smyrna Beach and Port Orange. Higher AADT's were also observed from International Speedway Boulevard in Daytona Beach to Ormond-by-the-Sea. Higher AADT segments also saw a higher frequency of pedestrian/ bicycle crashes.

Legend

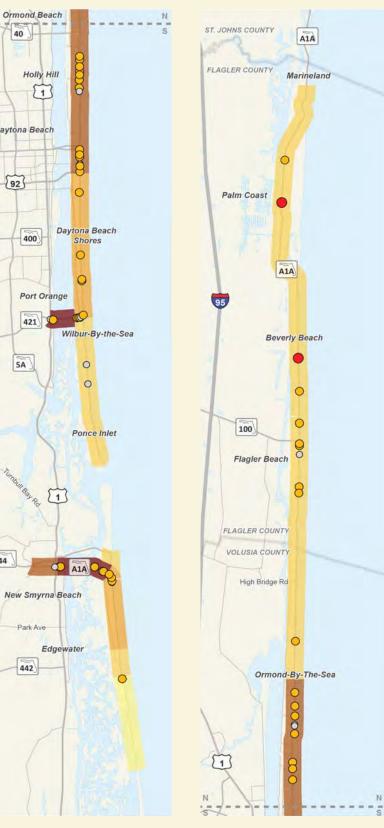


Crash History 2009-2014

Pedestrian Crashes



Bicycle Crashes



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Posted Speed and Crash Locations

This figure shows the posted speed along the study corridor and is overlaid with pedestrian and bicycle crash locations. Posted speed along the study corridor ranges from 30 miles per hour (MPH) to 55 MPH, with a majority of the corridor posted at 35 MPH (Ponce Inlet to Ormond Beach being the longest segment). Ninety-two (92) out of the 158 pedestrian/bicycle crashes occurred in 35 MPH segments of SR/CR A1A. Nine (9) of the 14 fatal crashes occurred along segments where the posted speed limit is 40 MPH or greater.

Legend



Crash History 2009-2014

Pedestrian Crashes



Bicycle Crashes



Roadway Type and Crash Locations



This figure shows roadway type in terms of number of lanes and median type (undivided, two-way left-turn lane (TWLTL), or divided) along the study corridor and is overlaid with pedestrian and bicycle crash locations. Thirty-four (34) percent of crashes occurred on four lane divided segments, while 33 percent of crashes occurred on five lane roadway segments with a TWLTL. Six (6) of the 14 fatal crashes occurred on two lane undivided segments. While two lane undivided segments have smaller roadway widths, they are typically associated with higher speed limits thus more severe pedestrian/bicycle crashes.

Legend



Crash History 2009-2014

Pedestrian Crashes



Bicycle Crashes



Pedestrian Generators and Crash Frequency



Bus Stops and Beach Access Parking

This figure shows crash frequency related to bus stops and beach access parking lots and is overlaid with pedestrian and bicycle crash locations.

Forty-two (42) of the 158 pedestrian/bicycle crashes occurred within a 100 foot radius of a bus stop. Bus stops with highest number of crashes were located in the Daytona Beach

Each of the beach access parking lots located on west side of SR/CR A1A had one pedestrian or bicycle crash occur within a 400 foot radius. The Flagler Beach on-street parking area just south of SR 100 had 6 crashes occur within a 400 foot radius.

Legend

Bus Stops Bus Stops with Crashes within 100 Foot Radius Number of Crashes within 100 Foot 0 Beach Access Parking Lots West of A1A with 1 Crash within 400 Foot Radius Flagler Beach On-Street Parking East of A1A with 6 Crashes

Bus Stops with Nearby Pedestrian / Bicycle Crashes



Beach Access Parking with Nearby Pedestrian / Bicycle Crashes



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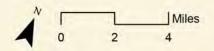
Pedestrian Generators and Crash Frequency

Parks and Civic Land Uses

This figure shows crash frequency related to parks, schools, and city halls and is overlaid with pedestrian and bicycle crash locations. Forty-four (44) crashes occurred within 400 foot radius of a park, with Breakers Oceanfront Park and Ora Street Park & Bandshell having the highest concentration of crashes. Twenty three (23) crashes occurred within a quarter mile radius of schools, with 7 of those occurring near Riverview Learning Center. Flagler Beach City Hall had 6 crashes occur within a quarter mile radius. No crashes occurred within a quarter mile radius of any libraries along the SR/CR A1A corridor.

Parks with Nearby Pedestrian / Bicycle Crashes 40 012 ST. JOHNS COUNTY FLAGLER COUNTY Holly Hill 1 92 Legend Palm Coast Daytona Beach Parks Parks with Crashes within Port Orange Number of Crashes within 400 Foot **4** 421 0 Wilbur-By-the-Sea Beverly Beach 2-5 5A 100 Flagler Beach 1. 27th Avenue Park 2. Callalisa Park [1] 3. Winterhaven Park FLAGLER COUNTY 4. Larry Fornari Park VOLUSIA COUNTY 5. Oceans Racquet & Rec Club High Bridge Rd 6. 2853 S Atlantic Av Park New Smyrna Beach 7. Andrinopoulos (Sea Spray) Park 8. Sun Splash Park 9. Breakers Oceanfront Park 442 Ormond-By-The-Sea 10. Ora Street Park & Bandshell 11. Andy Romano Beachfront Park 12. Birthplace Of Speed Park 13. Al Weeks Sr North Shore Park 14. Tom Renick Park 15. Michael Crotty Bicentennial Park

Civic Land Uses with Nearby Pedestrian / Bicycle Crashes N Ormond Beach ST. JOHNS COUNTY (5 FLAGLER COUNTY Marineland [92] Legend Palm Coast Daytona Beach Civic Land Uses 400 Schools with Crashes within A1A quarter mile radius Port Orange Number of Crashes within quarter mile 421 2 Wilbur-By-the-Sea Beverly Beach 5A Ponce Inlet Flagler Beach City Hall with 6 Flagler Bead Crashes within quarter mile [1] Note: No Library had a Crash within quarter mile radius. FLAGLER COUNTY VOLUSIA COUNTY 1. Knight's Christian Academy 2. Port Orange Elementary School High Bridge Rd New Smyrna Beach 3. Riverview Learning Center 4. Seabreeze High School 5. Osceola Elementary School 442 Ormond-By-The-Sea 6. St Brendan School 7. Flagler Beach City Hall



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Marked Pedestrian Crossings and Crash Frequency

This figure shows pedestrian/bicycle crash frequency within a 400 foot radius of a marked crosswalk at a signalized intersection or within a 100 foot radius of a marked mid-block crosswalk with no active traffic control. This figure also shows crash frequency between a 400 and 800 foot radius of a marked crosswalk at a signalized intersection or between a 100 and 800 foot radius of a marked mid-block crosswalk with no active traffic control.

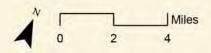
Thirty-seven (37) crashes occurred within a 400 foot radius of a marked crosswalk at a signalized intersection. An additional 18 crashes occurred between a 400 and 800 foot radius of a marked crosswalk at a signalized intersection.

Thirty-six (36) crashes occurred within a 100 foot radius of a marked mid-block crosswalk with no active traffic control. An additional 17 crashes occurred between a 100 and 800 foot radius of a marked mid-block crosswalk with no active traffic control.





Pedestrian/ Bicycle Crashes near Marked Crossings

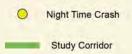


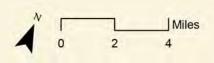
Night Time Crash Locations Crash History 2009-2014



This figure shows the location of night time crashes on the SR/CR A1A study corridor between 2009 and 2014. Sixty-two (62) of the 158 total crashes occurred during non-daylight conditions (dawn, dusk, dark with a streetlight present, dark without a streetlight present) with a majority of those crashes occurring in the Daytona Beach, Ormond Beach, and Ormond-by-the-Sea areas.

Legend





Crash History 2009-2014

Night Time Pedestrian/ Bicycle Crashes



Police Citation Information

Traffic crash data is a proven method for identifying times and places where traffic enforcement might be used as a treatment. The project team gathering of police citation information and envisioned using this uniform traffic citation (UTC) data as a way to further identify when and where violations occur, thereby improving targeted enforcement efforts along the SR/CR A1A corridor. The Florida UTC data, obtained from Florida's Association of Clerks of Courts, unfortunately does not contain detailed location information, like what is found in the traffic crash data set. This is a problem that is not unique to Florida, as there are no states nationally where UTC data is reliably tracked. Florida is making progress in reliably tracking UTC data with electronic reporting and capturing map and/or GSP coordinates, but this is something that is still several years away.

While UTC data lacks geo-location precision, more general location attributes show there is active traffic enforcement within the jurisdictions along the SR/CR A1A corridor in Volusia and Flagler Counties. The specific proportion of enforcement occurring along SR/CR A1A cannot be determined, but discussions with agency representatives noted general enforcement by patrol officers as well as specialized or selective enforcement activities targeting SR/CR A1A.

As part of the study, the project team spoke with most of the Police Chiefs representing agencies bordering SR/CR A1A in Volusia and Flagler Counties. In addition, the project team personally met with most of the traffic supervisors for those agencies to discuss pedestrian safety along the roadway, perceived problem behaviors, and perceived problem locations/situations. The individuals contacted were very positive about the project and supportive of the R2CTPO's initiative to improve safety along SR/CR A1A. The discussions with agency heads and meetings with enforcement personnel proved invaluable to the project team's understanding of behavioral issues along the corridor and historical enforcement practices.

Among the violations cited by law enforcement agencies operating along the SR/CR A1A corridor in Volusia and Flagler Counties, 50,055 of the 97,518 non-crash motor vehicle citations (51 percent) over a three-year period (January 2012 to December 2014) were the type that would be considered hazardous to pedestrians and bicyclists. Overall, this indicates law enforcement is focusing attention on motor vehicle violations specifically relating pedestrian/bicycle safety. In terms of pedestrian/bicycle violations, most jurisdictions have limited engagement with these road users thus citations issued to pedestrians and bicyclists are infrequent.

Focus Areas Identified

As noted in the **Sliding Window Analysis** section on page 28, 13 unique corridors were identified through the sliding window analysis for further review. A detailed review of every pedestrian and bicycle crash report was performed for these 13 corridors to assess the true limits of the corridor and verify specific crash locations. The follow safety metrics were reviewed and summarized for each crash within the 13 corridors:

- Location;
- Injury severity;
- Lighting and road surface conditions;
- Time of day/day of week/month of year;
- Alcohol/drug involvement;

- Pedestrian/bicyclist and driver age;
- Crash location characteristics, as defined in the **Risked Based Safety Assessment** section on page 29;
- Pedestrian/bicycle location within roadway (crossing mid-block, at a signalized intersection, at a driveway opening, etc.);
- Who had the right-of-way based on the crash report; and
- Zip code of the victim's home.

Once the crash data was summarized, collision diagrams were generated for each of the 13 unique corridors. This helped the study team narrow the limits for each corridor, if applicable, and determine if any crashes were improperly geo-located. A sample collision diagram is displayed in **Figure 16**.

Based on the crash report review and previous studies review for the 13 corridors, three locations were removed from focus area consideration:

- Oyster Quay to 16th Avenue in New Smyrna Beach 1.50 miles
 - This section was studied as part of the Pedestrian Safety Study for South Atlantic Avenue (CR A1A) from New Smyrna Beach City Limits to 3rd Avenue.
- Harbor Point Street to Oceans Boulevard in Daytona Beach Shores 2.00 miles
 - This section was studied as part of the SR A1A Pedestrian Safety Study in Daytona Beach Shores.
- Fairwinds Circle to North of Coquina Key Drive in Volusia County 1.25 miles
 - o Two of the three crashes were improperly geo-located and did not occur along this segment.

The remaining 10 locations were modified as follows based on the crash locations, the risked based safety assessment results, citation data, and previous studies review:

- 13th Avenue to Harbour Boulevard in New Smyrna Beach 1.55 miles
 - Based on crash locations, corridor limits were revised from Peninsula Avenue to E 3rd Avenue –
 0.60 miles
- Sunrise Boulevard to International Speedway Boulevard in Daytona Beach Shores and Daytona Beach 1.60 miles
 - Based on crash locations, corridor limits were revised from Park Avenue to Ribault Avenue –
 1.00 miles
- International Speedway Boulevard to Nautilus Avenue in Daytona Beach 2.25 miles
 - Oakridge Boulevard was studied previously, thus the corridor limits were revised from International Speedway Boulevard to just south of Earl Street (0.55 miles) and just north of Oakridge Boulevard to just north of University Boulevard (0.65 miles)
- Nautilus Avenue to Neptune Avenue in Daytona Beach and Ormond Beach 3.70 miles
 - Based on crash locations, corridor limits were revised from Plaza Boulevard to Rockefeller Drive
 1.15 miles
- Royal Dunes Boulevard to Kathy Drive in Ormond Beach and Ormond-by-the-Sea 2.70 miles
 - Based on crash locations, corridor limits were revised from Sandcastle Drive to Holland Road –
 1.45 miles
- Kathy Drive to Beau Rivage Drive in Ormond-by-the-Sea 1.50 miles

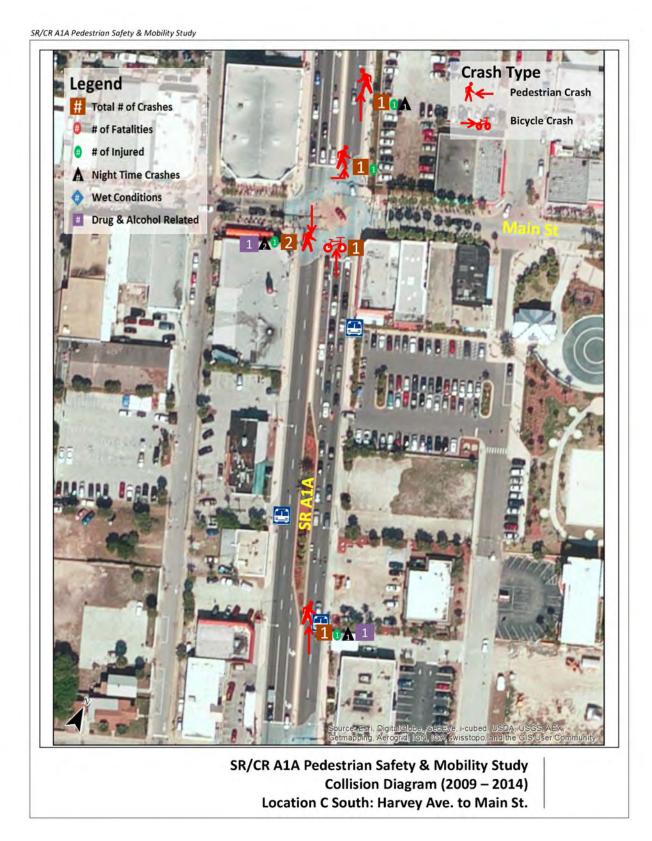


Figure 16 Sample Collision Diagram

- Based on crash locations, corridor limits were revised from Kathy Drive to Wisteria Drive 0.70 miles
- S 23rd Street to S 6th Street in Flagler Beach 1.75 miles
 - Due to no crashes north of S 11th Street, corridor limits were revised from S 23rd Street to S 11th Street 1.50 miles
- S 6th Street to N 13th Street in Flagler Beach 1.00 mile
 - o No change in the limits
- Ocean Marina Drive to Driftway Terrace in Beverly Beach and Flagler County 1.75 miles
 - o This corridor had one fatal crash at the Beverly Beach Camptown RV Resort. This specific location was grouped with the S 23rd Street to S 11th Street location.
- Jungle Hut Road to Armand Beach Drive in Flagler County 2.75 miles
 - Based on crash locations, corridor limits were revised from 19th Road to Apache Drive 1.60 miles

Figure 17 displays the location of the nine (9) focus areas.

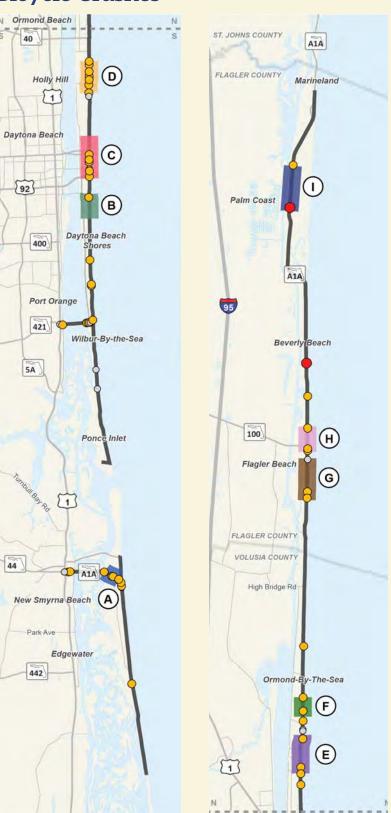
Focus Areas and Crash Locations



Pedestrian Crashes



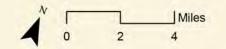
Bicycle Crashes



Legend



Focus Location	Jurisdiction	From	То	Length (Miles)	Property Damage Only	Injury	Fatal	Total Crashes
A	New Smryna Beach	3rd Ave.	Peninsula Dr.	0.60	0	9	0	9
В	Daytona Beach Shores / Daytona Beach	Park Ave.	Frances Ter.	0.95	0	8	0	8
С	Daytona Beach	International Speedway Blvd.	Ocean Shore Resort (Just North of University Blvd.)	1.60	3	32	2	37
D	Daytona Beach / Ormond Beach	Plaza Blvd.	Rockefeller Dr.	1.15	1	15	0	16
E	Ormond Beach / Ormond-by- the-Sea	Sandcastle Dr.	Holland Rd.	1.45	0	7	3	10
F	Ormond-by- the-Sea	Kathy Dr.	Wisteria Dr.	0.70	0	6	1	7
G	Flagler Beach	S 23rd St.	S 11th St.	1.50	1	7	1	9
н	Flagler Beach	S 6th St.	N 13th St.	1.00	0	7	0	7
I	Flagler County	19th Rd.	Apache Dr.	1.60	0	1	2	3



Section 5 Focus Area Safety Field Reviews

FOCUS AREA SAFETY FIELD REVIEWS

As discussed in the **Focus Areas Identified** section on page 38, nine SR/CR A1A corridors were identified as potential focus areas:

- Focus Area A: Peninsula Avenue to E 3rd Avenue (0.60 miles) in New Smyrna Beach
- Focus Area B: Park Avenue to Ribault Avenue (1.00 miles) in Daytona Beach Shores/Daytona Beach
- Focus Area C: International Speedway Boulevard to just south of Earl Street (0.55 miles) and just north of Oakridge Boulevard to just north of University Boulevard (0.65 miles)
- Focus Area D: Plaza Boulevard to Rockefeller Drive (1.15 miles) in Daytona Beach and Ormond Beach
- Focus Area E: Sandcastle Drive to Holland Road (1.45 miles) in Ormond Beach and Ormond-by-the-Sea
- Focus Area F: Kathy Drive to Wisteria Drive (0.70 miles) in Ormond-by-the-Sea
- Focus Area G: S 23rd Street to S 11th Street (1.50 miles) in Flagler Beach and at the Beverly Beach Camptown RV Resort
- Focus Area H: S 6th Street to N 13th Street (1.00 miles) in Flagler Beach
- Focus Area I: 19th Road to Apache Drive (1.60 miles) in Flagler County

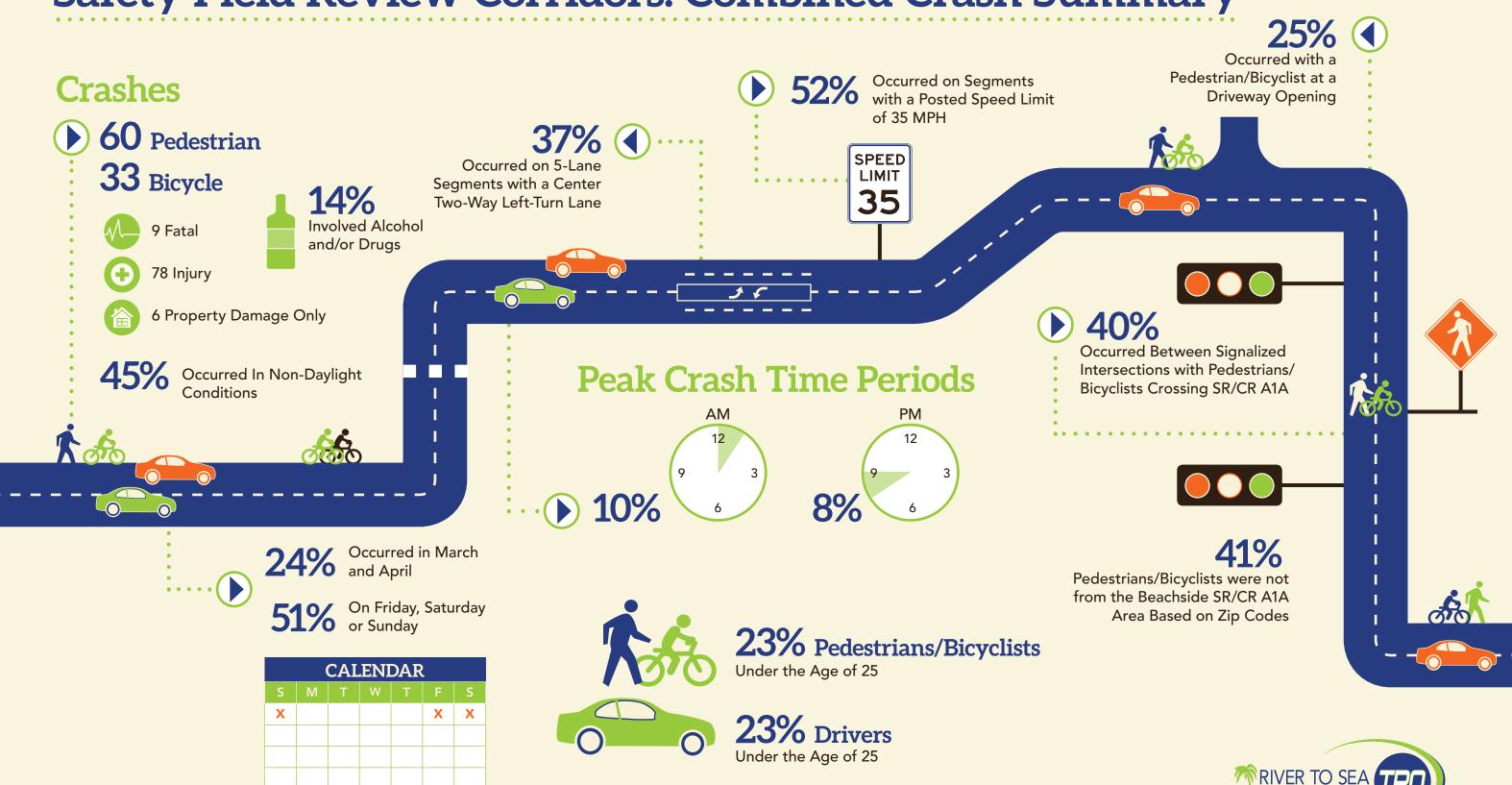
Pedestrian/bicycle safety reviews were conducted along the nine segments above. The pedestrian/bicycle safety review process involves multi-disciplinary representatives from various stakeholders, including representatives from the R2CTPO, the FDOT District 5, Volusia and Flagler Counties, Votran, local cities, and local law enforcement. The pedestrian/bicycle safety reviews were conducted to develop short-term, near-term, and long-term suggestions to improve pedestrian and bicyclist safety within the study limits in a team collaborative environment. These safety reviews were limited in scope and should not be construed as a comprehensive safety study; nor were they formal Road Safety Audits. Some improvements presented in the safety review reports may be implemented in the short-term while other suggested safety improvements may be considered for future study. Each suggestion identified within these safety reviews were classified into one of three categories:

- Short-Term Maintenance it is anticipated that issues identified for maintenance may be addressed by public agency staff on a short timeframe and at a relatively low cost.
- Near-Term Improvement activities that may be incorporated into an upcoming construction project in the area, including 3R milling and resurfacing projects.
- Long-Term Improvement activities that may be incorporated into upcoming construction projects and may need to be programmed for funding as separate projects.

The suggestions from each of the nine safety field reviews can be found in tables located in **Appendix D**. The full report for each safety review can be found on the R2CTPO's Bicycle and Pedestrian Safety Program website at http://www.r2ctpo.org/bicycle-pedestrian-program/safety-program/.

Figure 18 displays the combined crash summary for the nine safety field review corridors over the six year study period. **Figure 19** through **Figure 28** displays the crash summaries for each of the safety field review corridors along with roadway characteristics and a sample of key observations identified during the field review. Tables and charts for the combined data set and each individual safety field review corridor can be found in **Appendix E**.

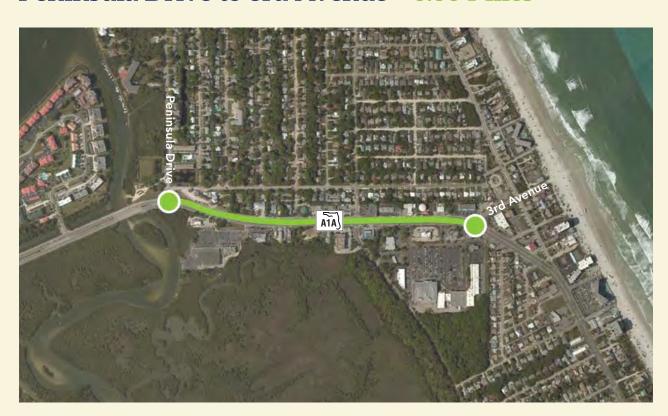
Safety Field Review Corridors: Combined Crash Summary



Focus Area A New Smyrna Beach Corridor Summary

RIVER TO SEA Transportation Planning Organization VISION - PLAN - IMPLEMENT

Peninsula Drive to 3rd Avenue - 0.60 Miles



Roadway Characteristics

Looking West



Looking East



The corridor is a mix of 4 lane divided/5 lane with two-way left-turn lane sections, 40 mph posted speed, with mainly retail, restaurant, and civic land uses

Crash Data

2 Pedestrian

9 Injury

7 Bicycle

Peak Crash

Time Period

22%



33% Drivers Under the Age of 25

CALENDAR

S M T W T F S

X X X

Between the Ages of 60 and 75

44% Pedestrians/Bicyclists

44% Occurred in March and November

67% On Thursday, Friday or Saturday

ed

Pedestrians/Bicyclists were not from the Beachside SR CR A1A Area Based on Zip Codes

44% Occurred Within Signalized Intersection Crosswalks

PM



Minor Street Pedestrian Facilities



Center Two-Way Left-Turn Lane



Lack of Sidewalk Connectivity

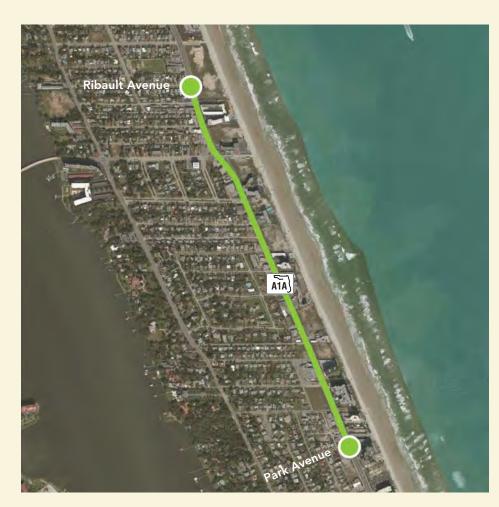


Mid-Block Crosswalk Enhancements

RIVER TO SEA

Focus Area B Daytona Beach Shores/Daytona Beach Corridor Summary

Park Avenue to Ribault Avenue - 1.00 Miles



Roadway Characteristics

Looking South



The corridor is a 5 lane with two-way leftturn lane section, 35 mph posted speed, with mainly hotel on east side and retail on west side

Crash Data

7 Pedestrian

1 Bicycle



8 Injury

25%

Peak Crash Time Periods

25%

38% Drivers Under the Age of 20 50% Near Bus Stops





Occurred Between Signalized Intersections with Pedestrians or Bicyclists Crossing SR/CR A1A

CALENDAR						
S	М	Т	W	Т	F	S
					X	X

On Friday or 63% On Friday Saturday

During Non-Daylight 63% During Non Conditions

Pedestrians/Bicyclists were not from the Beachside SR CR A1A Area Based on Zip Codes



Lack of Formal Crossing Opportunities



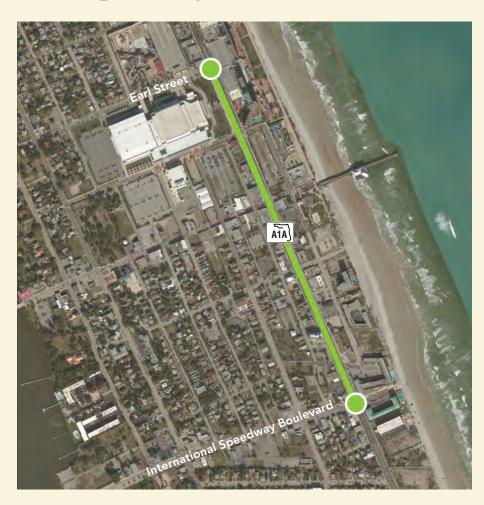


Inconsistent Lighting Minor Streets Pedestrian Facilities

Focus Area C Daytona Beach South Corridor Summary

RIVER TO SEA

International Speedway Blvd. to Earl St. - 0.6 Miles



Roadway Characteristics

Looking North



The corridor is a 4 lane divided section, 35 mph posted speed, with mainly hotels/ parks on east side and retail/civic land uses on west side

Crash Data

9 Pedestrian

7 Injury

2 Bicycle

4 Property Damage Only



18% Involved Alcohol and/or Drugs

Peak Crash Time Periods

36% 27% 46% Pedestrians/Bicyclists



Between the Ages of 20 and 29

27% Drivers Between the Ages of 20 and 24



Near Bus Stops

Occurred in Non-**Daylight Conditions** 46% Occurred in A and October Occurred in April

CALENDAR						
S	М	Т	W	Т	F	S
					X	Х

Occurred on Friday 46% Occurred on or Saturday

Pedestrians/Bicyclists were not fro CR A1A Area Based on Zip Codes Pedestrians/Bicyclists were not from the Beachside SR

46% Occurred Within Signalized Intersection Crosswalks

Field Review Observations

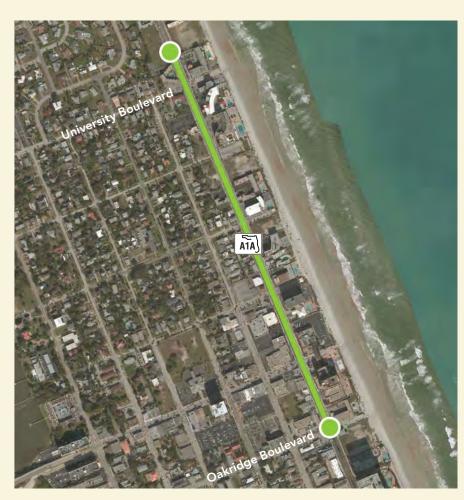


Crosswalk Pavement Marking Visibility

Focus Area C Daytona Beach North Corridor Summary

RIVER TO SEA

Oakridge Blvd. to Just North of University Blvd. - 0.70 Miles.



Roadway Characteristics

Looking North at Glenview Blvd.



The corridor is a mix of 4 lane divided/5 lane with two-way left-turn lane sections, 35 mph posted speed, with mainly hotels/ parks on east side and retail/civic land uses on west side

Crash Data

O Bicycle

12 Pedestrian

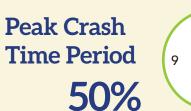
8%

1 Fatal

11 Injury



33% Involved Alcohol and/or Drugs





33% Pedestrians/Bicyclists Under the Age of 25

33% Drivers Between the Ages of 20 and 24

CALENDAR						
S	М	Т	W	Т	F	S
					X	Х

Occurred in Non-**Daylight Conditions**

Occurred in March

50% On Friday or Saturday

Occurred Between Signalized Intersections with Pedestrians or Bicyclists Crossing SR/CR A1A

> Pedestrians/Bicyclists were not from the Beachside SR CR A1A Area Based on Zip Codes



Lack of Formal Bicycle Facilities



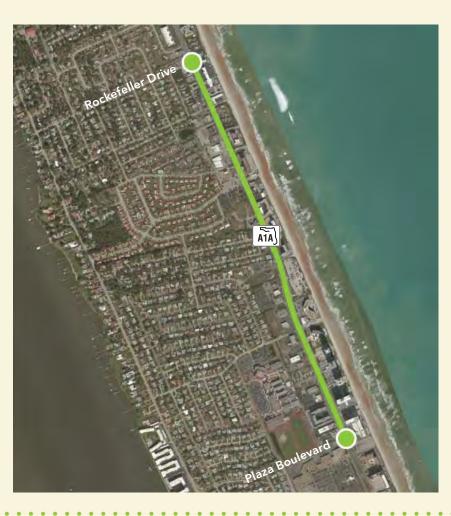


Inconsistent Lighting Pedestrian Facilities at Signals

RIVER TO SEA

Focus Area D Daytona Beach/Ormond Beach Corridor Summary

Plaza Boulevard to Rockefeller Drive - 1.15 Miles



Crash Data

8 Bicycle

8 Pedestrian



15 Injury



1 Property Damage Only

44% Occurred with a Pedestrian/Bicyclist at a **Driveway Opening**

> Occurred Between Signalized Intersections with Pedestrians or Bicyclists Crossing SR/

> > CR A1A

25% Pedestrians/Bicyclists Between the Ages of 25 and 29



Near Bus Stops -



Occurred within a the Lane Section

Occurred within the 4 Lane

CALENDAR						
S	М	Т	W	Т	F	S
						Х

Occurred in Non-**Daylight Conditions**

Occurred on Saturday

Divided Section

Pedestrians/Bicyclists were not from the Beachside SR CR A1A Area Based on Zip Codes

Roadway Characteristics

4 Lane Divided Section



5 Lane Section with Two-Way Left Turn Lane



The corridor is a mix of 4 lane divided/5 lane with two-way left-turn lane sections, 35 mph posted speed, with mainly hotels/parks on east side and retail/restaurant land uses on west side



Lack of Formal Bicycle Facilities



Center Two-Way Left-Turn Lane

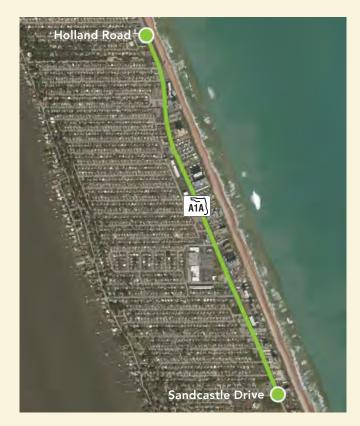


Inconsistent Corridor Lighting

Focus Area E Ormond Beach/Ormond-by-the-Sea Corridor Summary



Sandcastle Drive to Holland Road - 1.45 Miles



Roadway Characteristics

2 Lane Section



3 Lane Section



The corridor is a mix of 2 lane undivided/3 lane with two-way left-turn lane sections, 40 mph posted speed, with mainly hotels/residential on east side and restaurant/ commercial land uses on west side

Crash Data

6 Pedestrian

50% Occurred Between Signalized Intersections with Pedestrians or Bicyclists Crossing SR/CR A1A

4 Bicycle

Occurred in Non-Daylight Conditions

7 Injury

3 Fatal

40% Occurred in April or May

20% Involved Alcohol and/or Drugs

Pedestrians/Bicyclists were not from the Beachside SR CR A1A Area Based on Zip Codes

Occurred within the 2 Lane **Un-Divided Section**

50% Occurred with a Pedestrian/Bicyclist at a Driveway Opening

Occurred within the 3 Lane Section



Inconsistent Corridor Lighting

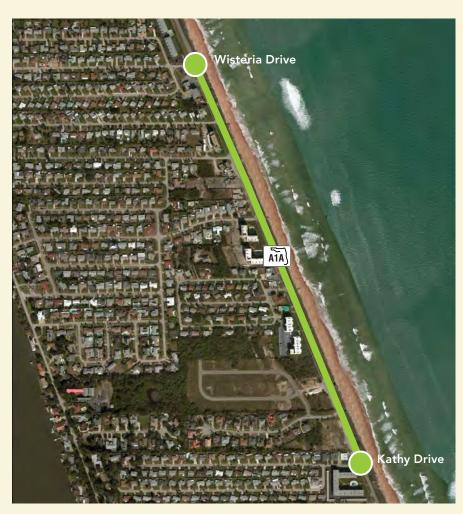


Driveway Widths and Densities

Focus Area F Ormond-by-the-Sea Corridor Summary

RIVER TO SEA

Kathy Drive to Wisteria Drive - 0.75 Miles



Roadway Characteristics

Looking North



Looking North



The corridor is a 2 lane undivided section, 45 MPH posted speed, with beach on the east side and residential land uses on the west side

Crash Data

5 Pedestrian

2 Bicycle

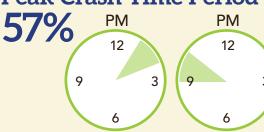


6 Injury



1 Fatal

Peak Crash Time Period



43% Pedestrians/Bicyclists



Under the Age of 25

43% Drivers Under the Age of 25

CALENDAR					
М					
		X	X	Х	

Occurred in January 43% Occurred in Jar through March

On Wednesday,
Thursday or Friday

Occurred Between Signalized Intersections with Occurred Between Signalized Intersection Pedestrians/Bicyclists crossing SR/CR A1A

Pedestrians/Bicyclists were not from the Local Area Pedestrians/Bicyclists
Based on Zip Codes



Lack of Bicycle Facilities



Roadway Lighting



Mid-Block Crossing Locations

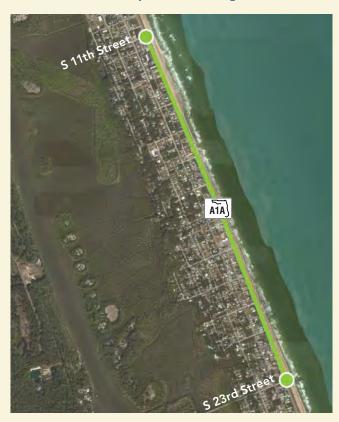


Minor Street Pedestrian Facilities

Focus Area G Flagler Beach/Beverly Beach Corridor Summary



S 23rd St. to S 11th St. and at the Beverly Beach Camptown RV Resort - 1.50 Miles



Roadway Characteristics

Flagler Beach



Beverly Beach Camptown RV Resort



The corridor is a 2 lane undivided section, 45 mph posted speed, with beach on east side and residential land uses on west side

Crash Data

6 Pedestrian

Occurred in Non-Daylight Conditions

4 Bicycle

On Friday, Saturday or Sunday

Pedestrians/Bicyclists were not from the Beachside SR CR A1A Area Based on Zip Codes

7 Injury

1 Property Damage Only

Occurred Between Signalized Intersections with Pedestrians or Bicyclists Crossing SR/CR A1A



Lack of Formal Bicycle Facilities



Minor Street Pedestrian Facilities/ **Pavement Markings**



Mid-Block Crossings Near Beach **Access Points**



Speeding Through Town/Golf Carts Crossing Roadway

Focus Area H Flagler Beach Corridor Summary





Roadway Characteristics

Flagler Pier Crossing



SR 100 / Moody Blvd.



8th Street S Crossing



The corridor is a 2 lane undivided section, 30/35 MPH posted speeds, with beach on the east side and residential/commercial land uses on the west side

Crash Data

4 Pedestrian





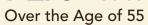
7 Injury

Peak Crash Time Periods

57%



71% Pedestrians/Bicyclists



29% Drivers Over the Age of 70



43% Occurred in September or October

RIVER TO SEA

43% On Wednesday

43% Occurred Within Signalized Intersection Crosswalks

43% Pedestrians/Bicyclists were not from the Local Area Based on Zip Codes



Lack of Bicycle Facilities



Mid-Block Crossings



On-Street Beach Parking

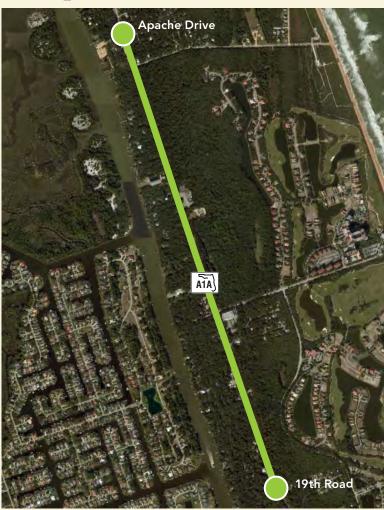


Minor Street Pedestrian Facilities

Focus Area I Flagler County Corridor Summary

RIVER TO SEA

19th Road to Apache Drive - 1.70 Miles



Roadway Characteristics

Looking North



Mala Compra Road



The corridor is a 2 lane undivided section, 50 MPH posted speed, with some residential/institutional land uses located along the corridor

Crash Data

1 Pedestrian



67% Pedestrians/Bicyclists Over the Age of 45



2 Bicycle



1 Injury



2 Fatal



33% Involved Alcohol and/or Drugs

67% Drivers Over the Age of 60



67% Occurred in Non-Daylight Conditions

Pedestrians/Bicyclists were not from the Local Area Based on Zip Codes

Occurred Along the Shoulder of SR A1A





Inconsistent Shared Use Path Signage/Striping



Roadway Lighting



Debris on Pedestrian Facilities

Section 6 Systemic Countermeasure Matrix

Systemic Countermeasure Matrix

The study team identified a total of 215 issues with possible suggestions along the nine focus area corridors where safety field reviews were performed. Upon further review of these 215 issues/suggestions, 54 pedestrian and 20 bicycle specific issues/suggestions were found to occur along two or more of the focus area corridors. These 74 issues/suggestions formed the base for the systemic countermeasure matrix, a list of common issues at common roadway locations (signalized intersections, minor street intersections, driveways, beach access points, etc.) tied to engineering, education, and enforcement type countermeasures aimed at addressing pedestrian/bicycle safety.

Descriptions of the engineering, education, and enforcement type countermeasures are provided below:

- Engineering Countermeasures geared towards improving pedestrian/bicycle safety by modifying the
 physical roadway environment. These types of improvements were the primary outcome of nine safety
 field reviews.
- Education Countermeasures outreach programs/campaigns such as Alert Today/Alive Tomorrow and Best Foot Forward geared towards improving pedestrian/bicycle safety by educating pedestrians/bicyclists/drivers on how to safely navigate within the roadway environment and be aware of other roadway users. The study team in coordination with project stakeholders generated specific outreach programs targeting various pedestrian/bicycle/driver behaviors observed on the safety field reviews. Some of these outreach programs targeted pedestrians/bicyclists who do not utilized marked crosswalks to cross SR/CR A1A, targeted tourists who may not be familiar with Florida pedestrian/bicycle safety laws, or targeted impaired pedestrians/bicyclists.
- Enforcement Countermeasures the study team in coordination with project stakeholders generated a list of programs law enforcement could potentially implement to influence positive changes in pedestrian/bicycle safety. Some of these programs target bicyclists who do not obey traffic laws, motorists who speed along SR/CR A1A, school students who may not be familiar/comfortable with pedestrian/bicycle safety laws, or law enforcement officers who may be reluctant to engage pedestrians/bicyclists when they are breaking common traffic laws.

The goal of the education and enforcement countermeasures is to change pedestrian/bicycle/driver behaviors contributing to pedestrian/bicycle crashes on the SR/CR A1A corridor. By also making physical roadway changes in the way of engineering type countermeasures, good pedestrian/bicycle/driver behaviors can be reinforced leading to a positive change in the way of pedestrian/bicycle safety.

The countermeasure matrix should be distributed to each of the local jurisdictions along the SR/CR A1A corridor. The vision is that local jurisdictions can utilize the matrix during field reviews along SR/CR A1A to identify potential engineering, education, or enforcement type countermeasures to address pedestrian/bicycle safety concerns/issues. Also, the matrix can be utilized as a checklist to incorporate pedestrian/bicycle safety improvements during the design phase of projects. These projects already have funding which is a great opportunity to incorporate pedestrian/bicycle improvements. The remainder of this section discusses the layout of the matrix and gives the steps on how the matrix could be utilized in a field review setting. The full countermeasure matrix can be found in **Appendix F**.

Systemic Countermeasure Matrix Layout

The systemic countermeasure matrix is grouped in three sections: pedestrian issues and countermeasures on pages 7 through 12, bicycle issues and countermeasures on pages 13 through 15, and education/enforcement issues and countermeasures on pages 16 through 18. The pedestrian and bicycle countermeasures are primarily engineering based, where the education/enforcement countermeasures target observed behavioral issues from all roadway users (pedestrians, bicyclists, and motorists). A How-To is presented after the table of contents on pages 1 through 6 which walks through an example on how to use the matrix. This section details the layout of the matrix for the pedestrian/bicycle engineering issues/countermeasures and the education/enforcement issues/countermeasures.

PEDESTRIAN/BICYCLE ISSUES AND COUNTERMEASURES

The pedestrian and bicycle engineering issues and countermeasures matrix is comprised of six columns containing the following information:

- Location this is the general location where the pedestrian/bicycle safety issue is observed. Could be along a roadway segment, at a signalized intersection, at a minor street intersection, at a driveway opening, at/near a beach access point, or at a bus stop.
- General Issue the general issue could range from section lighting along a roadway segment to
 missing/faded crosswalk markings at minor street intersections. The general issue will have one or more
 specific issues depending on the location and issue type.
- Specific Issue this column helps identify a countermeasure if the general issue has multiple specific
 issues. In the example of section lighting along a roadway segment, there are four different specific issues
 ranging from burnt out light bulbs to no lighting present, each of which requiring a different
 countermeasure suggestion.
- Countermeasure this is the engineering based suggestion for the specific issue identified. Each specific issue will have at least one unique engineering based countermeasure.
- Potential Implementation Timeframe the study team, in coordination with project stakeholders, assessed
 the implementation timeframe for each countermeasure consistent with how the suggestions from the nine
 safety field reviews were assessed:
 - o Short-Term Maintenance it is anticipated that issues identified for maintenance may be addressed by public agency staff on a short timeframe and at a relatively low cost.
 - Near-Term Improvement activities that may be incorporated into an upcoming construction project in the area, including 3R milling and resurfacing projects.
 - o Long-Term Improvement activities that may be incorporated into upcoming construction projects and may need to be programmed for funding as separate projects.
- Relative Cost the relative cost column is a qualitative assessment of potential project costs compared across the various countermeasures in the matrix. Typically, single dollar sign (\$) countermeasures denote short-term maintenance projects, two dollar sign (\$\$) countermeasures denote near-term improvement projects, and three dollar sign (\$\$\$) countermeasures denote long-term improvement type projects. Note that no formal cost estimates were performed for the countermeasures in the matrix and that any future project would need a cost estimate before being constructed.

To understand how the matrix could be incorporated in a pedestrian/bicycle safety field review setting, a general example displaying the process to find a potential countermeasure can be found in **Figure 29**. Once the countermeasure is identified, implementation becomes the next phase. The **Implementation Strategies** section outlines various methods a countermeasure can become an implementable safety project.

EDUCATION/ENFORCEMENT ISSUES AND COUNTERMEASURES

The education and enforcement issues and countermeasures matrix is comprised of five columns containing the following information:

- Countermeasure Type this column categorizes the countermeasures by education, combined education/enforcement, or enforcement.
- Target Group within each countermeasure type, the general and specific issues are arranged by target group. In the education countermeasure type, the target groups include pedestrians, bicyclists, motorists, and people interested in teaching pedestrian/bicycle safety courses. In the enforcement countermeasure type, the target groups include pedestrians, bicyclists, motorists, school students (elementary, middle, and high school), law enforcement, and the courts.
- General Issue the general issues relate to the road user behaviors observed during the safety field reviews. The general issues could range from lack of education leading to pedestrians/bicyclists not utilizing marked crosswalks to lack of enforcement leading to bicyclists failing to obey traffic laws.
- Specific Issue this column helps further define the general issue as described in the Pedestrian/Bicycle Issues and Countermeasures section.
- Countermeasure this is the education/enforcement based suggestion for the specific issue identified. Each specific issue will have at least one unique education/enforcement based countermeasure.

In most cases, the education/enforcement matrix could be utilized once the pedestrian/bicycle crash data has been analyzed and pedestrian/bicycle/motorist behavioral trends are observed in the field.

General Countermeasure Matrix Process

The following outlines how to use the Countermeasure Matrix in 5 easy steps.

Flow Chart Steps



Bicycle or Pedestrian Issue?



If the issue is pedestrian related, the pedestrian engineering issues and countermeasures can be found on **Pages 7** through **12**. If the issue is bicycle related, the bicycle engineering issues and countermeasures can be found on **Pages 13** through **15**.



Determine Location



Based on field conditions, review the first column of the matrix and choose from Roadway Section, Signalized Intersection, Minor Street Intersection, Driveway, Beach Access, or Bus Stop. Roadway Section issues can typically be found along a roadway segment between signalized intersections, driveways, or minor streets. Signalized intersection, minor street intersection, and driveway specific issues can be found in their respective sections. The Beach Access and Bus Stop locations identify issues at or near beach access points or bus stops.



Assess the General Issue



Review the second column of the matrix for **General Issues** ranging from lighting along a roadway section to missing/faded crosswalk markings at minor street intersections. The **General Issue** will have one or more **Specific Issues** depending on the location and issue type.



Review Specific 'Stand-Out' Issues



The third column of the matrix helps identify a countermeasure if the **General Issue** has multiple **Specific Issues**. For lighting along a roadway section, there are four different **Specific Issues** ranging from burnt out light bulbs to no lighting present, each of which requiring a different **Countermeasure** suggestion.

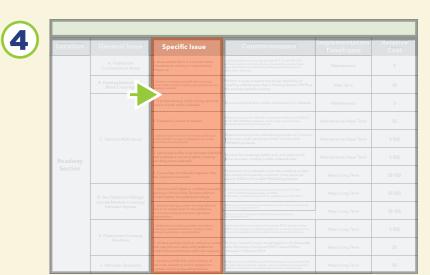


Review Location Issue(s) for Suggested Engineering Countermeasures / Determine Next Steps

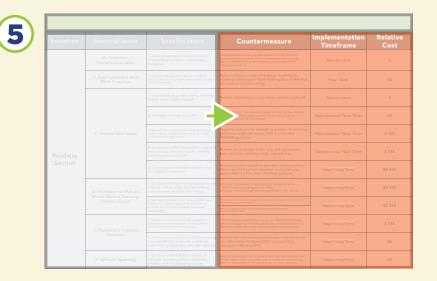


The Countermeasures, Implementation Timeframe, and Relative Cost located in columns three through five will provide information regarding specific Countermeasures for the Issue reviewed. The Implementation Strategies section of the report outlines various methods a countermeasure can become an implementable safety project.











See Appendix F for full Countermeasure Matrix



Section 7 Implementation Strategies

IMPLEMENTATION STRATEGIES

The R2CTPO, along with the partner agencies along SR/CR A1A, has a great opportunity to take a proactive approach of addressing pedestrian/bicycle safety along the SR/CR A1A study corridor. Starting with the nine focus area locations, the R2CTPO can work with partner agencies to implement the suggestions from the safety field reviews. The suggestions from each of the nine safety field reviews have been organized by field review location, maintaining agency, and implementation time frame. The maintaining agency column notes the jurisdiction that would be responsible for following up on that specific suggestion. It is anticipated the R2CTPO will track the progress of the suggestions by coordinating with the maintaining agency for each suggestion/group of suggestions at regular intervals. The tables outlining the above information can be found in **Appendix G**.

In addition to the suggestions from the nine focus areas, the R2CTPO and partner agencies can utilize the systemic countermeasure matrix during field reviews along SR/CR A1A to identify potential engineering, education, or enforcement type countermeasures to address pedestrian/bicycle safety concerns/issues. Also, the matrix can be utilized as a checklist to incorporate pedestrian/bicycle safety improvements during the design phase of projects. These projects already have funding which is a great opportunity to incorporate pedestrian/bicycle improvements. The remainder of this section describes implementation strategies and possible funding sources for various improvements along the SR/CR A1A corridor.

Implementation Meeting with FDOT

The R2CTPO held a meeting with the FDOT on May 23, 2016 to review the results of the study and discuss implementation strategies for suggestions along the nine focus area corridors. Based on discussion during the meeting, the following implementation strategies were identified:

- The short-term maintenance suggestions will be provided to the roadway maintaining agency once the reports are finalized. It is anticipated these suggestions will be implemented in a relatively short timeframe.
- For near-term type suggestions, FDOT has a design-build safety related contract through program management with funding of \$3 to \$3.5 million a year.
- Suggestions pertaining to intersection and corridor lighting
 - o FDOT can be the lead agency to perform lighting justification reports along corridor.
 - o For the most part, Florida Power & Light (FPL) maintains the lighting along the corridor.
 - o If new lighting is implemented along corridor based on results of the FDOT studies, the counties and cities will need to check in with FPL to maintain the lighting levels and replace bulbs when they burn out.
 - The lighting studies should be coordinated with environmental protection for season turtle nesting lighting level requirements.
- Suggestions pertaining to existing marked mid-block crossings
 - o FDOT Traffic Operations can perform a study to review the location to add active traffic control, such as a RRFB.
 - To implement crossing upgrades, FDOT push button contracts or R2CTPO SU funding may be potential sources.

- Projects through FDOT push button program take more time so if the project needs to be completed quicker, the local agency may need to take the lead and develop the project.
 FDOT would be the review agency under these circumstances.
- Suggestions pertaining to proposed marked mid-block crossings
 - o To review new locations for adding a marked mid-block crossing, FDOT Traffic Operations will be able to perform mid-block crossing studies.

The agenda for the meeting and a meeting notes summary can be found in **Appendix H**.

During the meeting, FDOT requested the R2CTPO study team prioritize the suggested crosswalks so FDOT has guidance on which areas to study first. The following focus areas had suggested crosswalk installations as part of their suggestions:

- Focus Area A: Peninsula Avenue to E 3rd Avenue (0.60 miles) in New Smyrna Beach
 - o On the east leg at Cooper Street
- Focus Area B: Park Avenue to Ribault Avenue (1.00 miles) in Daytona Beach Shores/Daytona Beach
 - Near the beach access just south of the Holiday Inn Resort, between Ocean Dunes Road and Old Trail Road
 - o Near the beach access just south of the Catalina Beach Club, between Temko Terrace and Bostwick Avenue
 - Near the beach access just south of where the new Hard Rock Hotel is planning to be constructed, between Frances Terrace and Ribault Avenue
- Focus Area C: International Speedway Boulevard to just south of Earl Street (0.55 miles) and just north of Oakridge Boulevard to just north of University Boulevard (0.65 miles)
 - o At the Jessamine Boulevard intersection
- Focus Area D: Plaza Boulevard to Rockefeller Drive (1.15 miles) in Daytona Beach and Ormond Beach
 - o At the River Beach Drive intersection
 - o At the Rockefeller Drive intersection
 - o Proposed mid-block crossings identified by the City of Ormond Beach (included in **Appendix H**)
- Focus Area E: Sandcastle Drive to Holland Road (1.45 miles) in Ormond Beach and Ormond-by-the-Sea
 - At the Hibiscus Drive intersection
 - Near Laurie Drive or Roberta Road
- Focus Area F: Kathy Drive to Wisteria Drive (0.70 miles) in Ormond-by-the-Sea
 - o At the Sunrise Avenue and Kathy Drive intersections
 - o At the Spanish Waters Drive intersection, if the vacant parcel on the northwest corner is converted to an off beach parking area
 - o At the Ocean Breeze Circle intersection (existing marked crosswalk)
- Focus Area G: S 23rd Street to S 11th Street (1.50 miles) in Flagler Beach and at the Beverly Beach Camptown RV Resort
 - o At the 19th Street, 16th Street, and 13th Street intersections
- Focus Area H: S 6th Street to N 13th Street (1.00 miles) in Flagler Beach
 - o At the S 8th Street and N 4th Street intersections (existing marked crosswalks)
 - o At the S 6th Street or S 5th Street intersection

Based on the frequency and severity of crashes occurring when pedestrians/bicyclists cross SR/CR A1A and the number of proposed crossings, the eight focus areas where crosswalks were suggested are ranked below for FDOT Traffic Operations to perform mid-block crossing studies:

1. Focus Area E: Sandcastle Drive to Holland Road (1.45 miles) in Ormond Beach and Ormond-by-the-Sea

- a. 6 crashes resulting in 3 fatalities and 3 injuries
- b. 2 proposed crossings
- 2. Focus Area G: S 23rd Street to S 11th Street (1.50 miles) in Flagler Beach and at the Beverly Beach Camptown RV Resort
 - a. 5 crashes resulting in 2 fatalities and 4 injuries
 - b. 3 proposed crossings
- 3. Focus Area F: Kathy Drive to Wisteria Drive (0.70 miles) in Ormond-by-the-Sea
 - a. 6 crashes resulting in 1 fatality and 5 injuries
 - b. 3 new proposed crossings and 1 modification to existing crossing
- 4. Focus Area B: Park Avenue to Ribault Avenue (1.00 miles) in Daytona Beach Shores/Daytona Beach
 - a. 4 crashes resulting in 4 injuries
 - b. 3 proposed crossings
- 4. Focus Area D: Plaza Boulevard to Rockefeller Drive (1.15 miles) in Daytona Beach and Ormond Beach
 - a. 4 crashes resulting in 4 injuries
 - b. 3 proposed crossings
- 5. Focus Area C: International Speedway Boulevard to just south of Earl Street (0.55 miles) and just north of Oakridge Boulevard to just north of University Boulevard (0.65 miles)
 - a. 7 crashes resulting in 1 fatality and 6 injuries
 - b. 1 proposed crossing
- 6. Focus Area A: Peninsula Avenue to E 3rd Avenue (0.60 miles) in New Smyrna Beach
 - a. 2 crashes resulting in 2 injuries
 - b. 1 proposed crossing
- 7. Focus Area H: S 6th Street to N 13th Street (1.00 miles) in Flagler Beach
 - a. 0 crashes
 - b. 1 new proposed crossing and 2 modifications to existing crossings

This list should be provided by the R2CTPO to the FDOT to begin performing mid-block crossing studies.

Possible Implementation Funding Sources

As discussed in the **Focus Area Safety Field Reviews** section, each suggestion identified within the nine safety reviews were classified into one of three categories: short-term, near-term, and long-term. These improvements will have different implementation strategies and possible funding sources. It is anticipated that short-term improvements can be handled by maintenance staff almost immediately. Near-term improvements could be incorporated under FDOT push button contracts or tied to existing projects. Some near-term improvements may require more study before implementation. Long-term improvements will more than likely need additional study, some to the Project Development & Environment (PD&E) level, before implementation. These improvements also tend to need a larger funding source than short- and near-term improvements, thus they may need to be programmed into the FDOT 5-Year Work Program. Specific grants and funding sources for engineering, education, and enforcement type countermeasures are discussed below:

- Engineering
 - o FWHA Safety Improvement Program (HSIP) Funding:
 - Can be used on both state and county road portions of SR/CR A1A.
 - Positive net present value or benefit/cost ratio greater than 1.0 would need to be established through a study phase for the engineering countermeasure.

- FDOT would like to receive list from R2CTPO prioritizing various improvements by net present value or benefit/cost ratio.
- Up to 50 percent local match is requested.
- FHWA Grants

http://www.fhwa.dot.gov/environment/bicycle_pedestrian/funding/funding_opportunities.cfm:

- Grants can be applied to engineering type countermeasures such as bicycle lanes, bus shelters/benches, new or retrofit crosswalks, curb cuts and ramps, pedestrian/bicycle scale lighting, sidewalks, or traffic calming, among others.
- o Piggyback on existing/planned FDOT construction/maintenance projects:
 - FDOT District Five is developing a GIS-based tool that can track planning projects such that they can be incorporated into upcoming construction projects.
 - If funding and budget constraints are identified, there is the potential to identify local matching funds to augment FDOT funding.
- Local Funding Sources
 - R2CTPO SU Funding.
 - Leverage development and redevelopment projects.
 - Local or maintaining agency funds.

Education –

- Overall, there are limited funding sources available for pedestrian/bicycle education programs.
 However, the R2CTPO currently participates in outreach programs and could explore partnering with the community school districts to incorporate materials in to current curricula.
- FHWA Grants

http://www.fhwa.dot.gov/environment/bicycle_pedestrian/funding/funding_opportunities.cfm:

- Some grants can also be applied to education type programs/countermeasures such as providing safety brochures/books, safety education positions, and training.
- Safe Routes to School is a primary funding source for pedestrian/bicycle education type programs/countermeasures.
- o FDOT Alert Today Alive Tomorrow Campaign

http://www.alerttodayflorida.com/alerttodayalivetomorrow.html:

- The Alert Today Alive Tomorrow campaign is presented via TV, radio, social media, transit advertising, local education, and enforcement activities.
- The R2CTPO and/or partner agencies along SR/CR A1A could partner with this campaign to possibly fund education programs identified in the systemic countermeasure matrix.

• Enforcement –

- o High Visibility Enforcement (HVE) Overtime http://alerttodayflorida.com/enforcement.html:
 - Funding provides for officer overtime to engage specifically in bicycle/pedestrian enforcement.
 - Enforcement targeted at interaction between pedestrians/bicyclists and motorists, includes both warnings and citations.
 - FDOT funded and 2015 Pedestrian and Bicycle Focused Initiative Top 15 High Priority Counties are eligible for funding consideration.

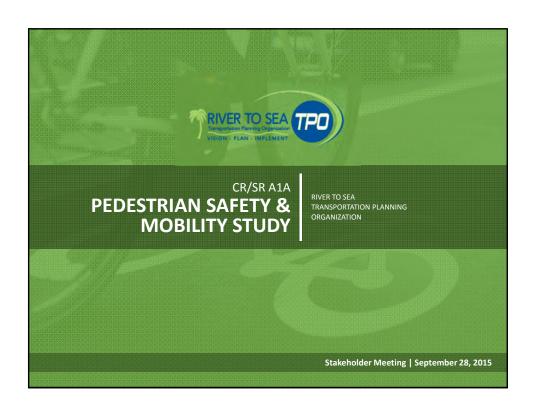
- Some Volusia County law enforcement agencies are currently participating in other parts of the County.
- o R2CTPO could coordinate with local law enforcement executives along SR/CR A1A and throughout county to discuss pedestrian/bicycle safety issues/concerns. This could be in meeting format on a monthly or quarterly basis. Once issues/concerns are identified, discussions could shift towards how law enforcement could help address issues, what additional resources would be needed for law enforcement participation, and allow law enforcement to identify and share their needs with the TPO.

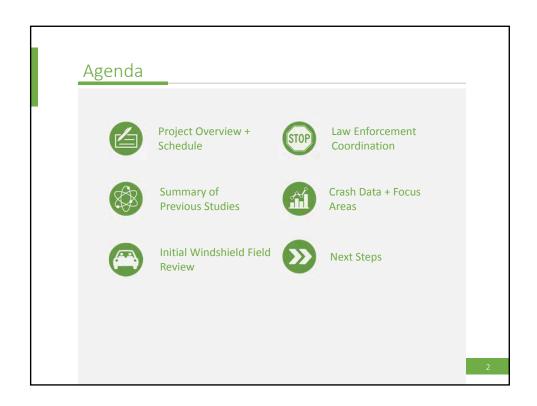
	SR/CR A1A PEDESTRIAN SAFETY & MOBILITY STUDY Final Report
Appendix A	Stakeholder and Public Presentations

A - 2

SEPTEMBER 2015 STAKEHOLDER MEETING PRESENTATION

River to Sea TPO









Study Limits

Bethune Beach (Volusia County) to just south of Marineland (Flagler County) – 56.5 total miles in length

Primary Goal

Recommend implementable pedestrian/bicycle safety improvements/countermeasures at strategic locations along A1A

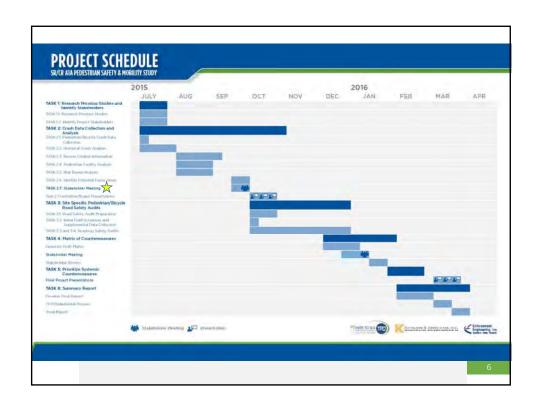
Secondary Goal

Expand countermeasures to be applicable along other sections of A1A in a systemic manner

Project Overview

General Approach to Reach Goals

- Identify project Stakeholders
- Collect, map, and analyze crash data along A1A to determine focus areas
- Perform historical crash analysis and field reviews on selected focus areas
- Identify engineering / education / enforcement countermeasures for each focus area
- Generate draft systemic countermeasure matrix for A1A corridor
- Conduct Stakeholder workshop to review systemic countermeasure matrix
- Identify systemic countermeasures





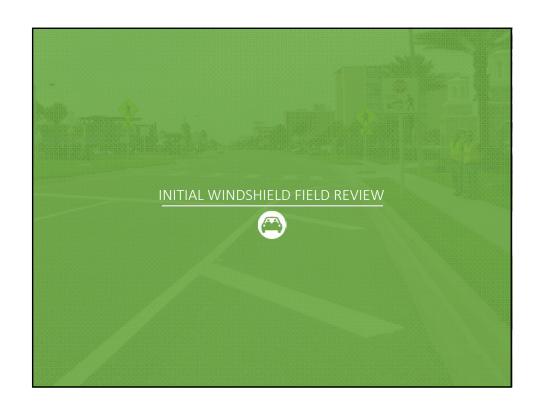
Role of Stakeholder

- Provide guidance and input
- Potentially participate in one field review if focus area is located in your jurisdiction
 - o Two day review:
 - 1. Morning meeting accompanied by afternoon and night review (8 to 10 hours for entire day)
 - 2. Morning meeting to discuss field review observations (Approx. 4 hours)
- Stakeholder Workshop in January
 - o Perform a field review and review systemic countermeasure matrix
- Review of final report in February/March (time commitment up to you)

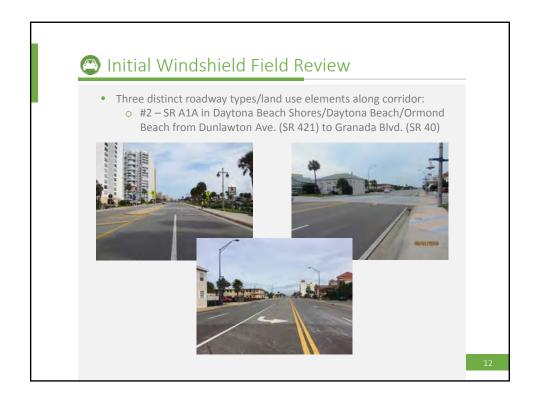


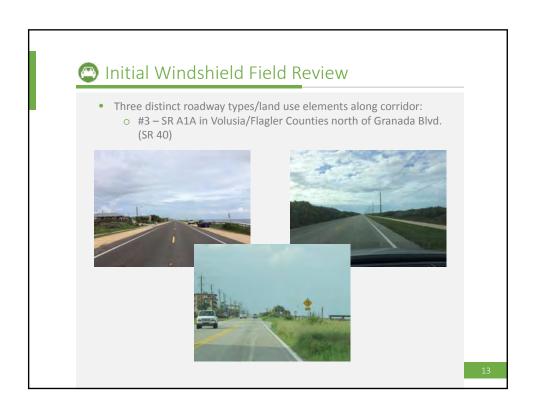


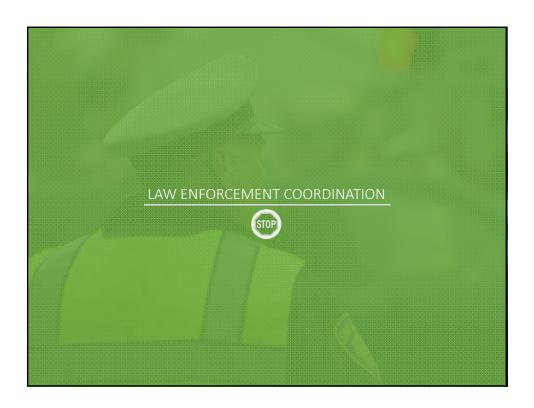
- Four studies performed along A1A between 2008 and 2015:
 - o SR A1A Pedestrian Safety Study, Daytona Beach Shores (2015)
 - Recommendations included adding new mid-block crosswalks, adding Rectangular Rapid Flashing Beacons (RRFBs), and modifying markings/signs at existing crossings
 - o Pedestrian Safety Audit Report, Daytona Beach (2014)
 - FDOT performed a pedestrian road safety audit from Earl Street to Oakridge Boulevard, proposing short, near, and long-term countermeasures along corridor
 - o Pedestrian Safety Study for CR A1A, New Smyrna Beach (2012)
 - Recommendations included installing continuous bike facilities, sidewalks where missing, RRFBs, median refuge islands, among others
 - o CR A1A Sidewalk Feasibility Study, Daytona Beach Shores (2008)
 - Recommendations included road diet, constructing 8' sidewalk, consolidating driveways, and installing crosswalks













Daw Enforcement Coordination

- Obtain Uniform Traffic Citation (UTC) data from law enforcement agencies (10 total) along A1A
- Contact Police Chiefs and traffic supervisors of law enforcement agencies along A1A for input





💿 Law Enforcement Coordination

• Uniform Traffic Citation (UTC)

UTC data does not have location information that lends itself to mapping

Sorted through data by jurisdiction, narrowed non-crash citations to relevant hazardous moving violations

Pedestrian and bicycle citations accounted for 1.1% of overall citation data (role of warnings)

Pedestrian/bicycle citation detail revealed specific subsections and violations



 Face-to-face meetings or phone calls with Police Chiefs and traffic supervisors of law enforcement agencies along A1A

High degree of interest in the project

Consensus that this is a high priority traffic safety issue

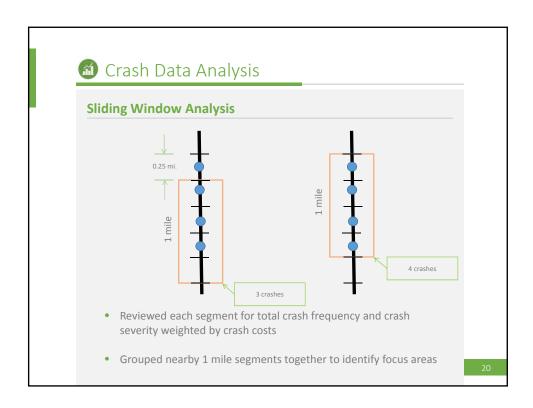
Nature of the problem differs among jurisdictions (road users, roadway conditions, pedestrian features)

Enthusiasm for future participation in project and FDOT HVE funding





- Six years of pedestrian/bicycle crash data collected 2009 2014
- 95 pedestrian and 63 bicycle totaling 158 crashes
 - o 14 fatal, 128 injury, and 16 property damage only
 - o 39% occurred at night, 14% alcohol and/or drug related
 - 20% occurred with a pedestrian/bicyclist under the age of 20 and 18% occurred with 65 and older





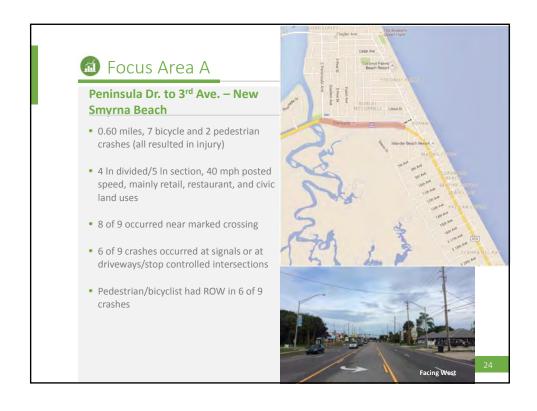
Crash Data Analysis

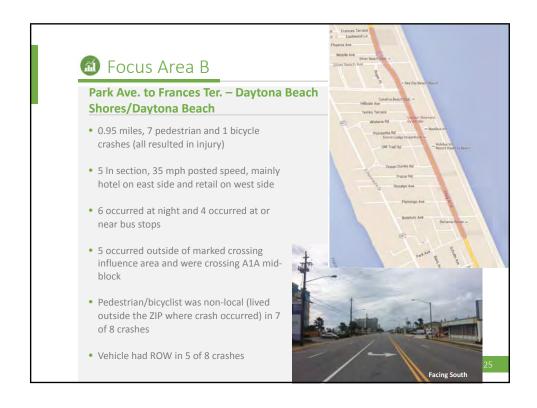
Risked Based Analysis

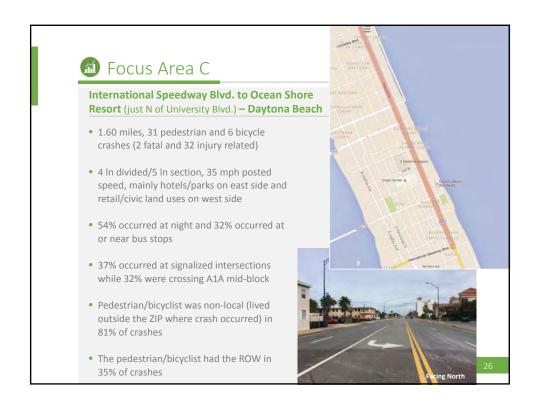
- Reviewed roadway and land use metrics that potentially factor into pedestrian/bicycle crashes:
 - o Figure 2 50% of crashes on segments between 15,000 and 20,000 AADT (11.4 miles/20% of corridor length)
 - o Figure 3 62% of crashes with 30 or 35 mph posted speed
 - o Figure 4 67% of crashes on 4 lane divided (6 miles/11% corridor length) or 5 lane with two-way left-turn lane (10.6 miles/19% corridor length)
 - o Figure 8 32% of crashes away from marked crossings (both with and without active control device)
 - o Figure 9 39% of crashes under dusk, dark without street light, or dark with street light conditions
 - o Figure 5-7 Reviewed crashes relative to ped/bike facilities, bus stops, beach parking, parks, and civic land uses

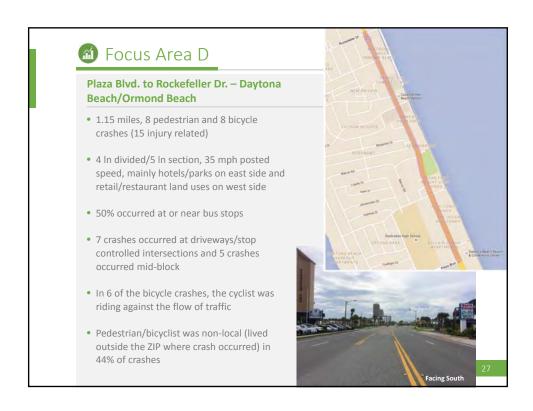


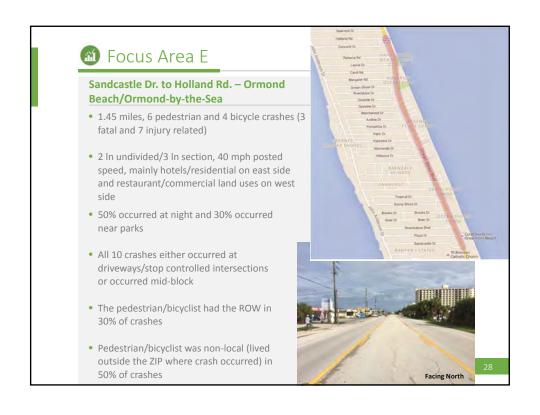


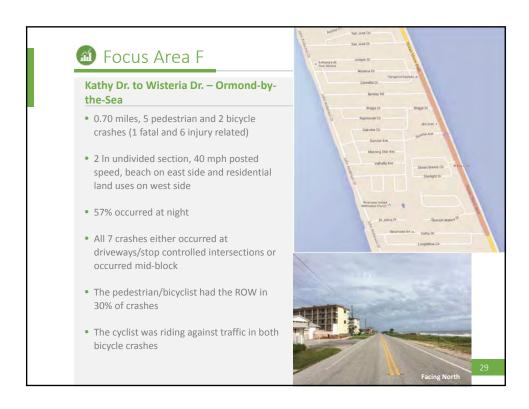


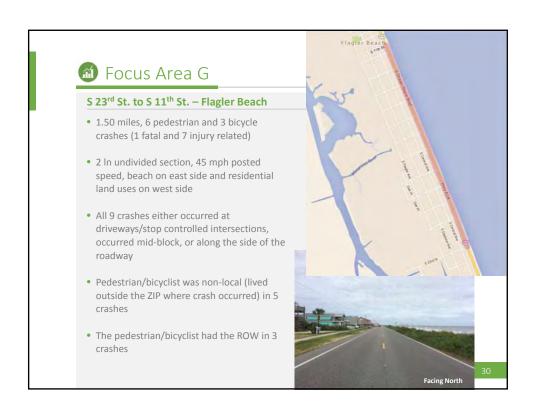


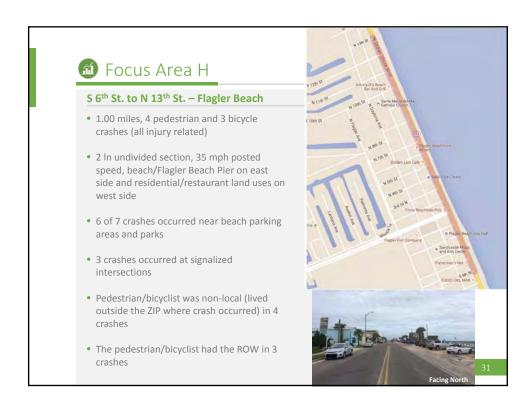


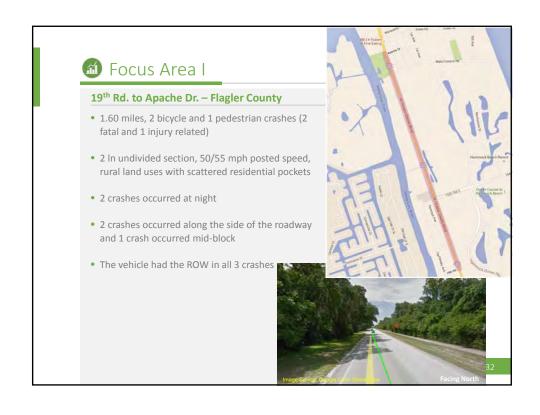














Potential Field Review Locations

- Recommend focus areas D, E, and G for field review
 - o D Daytona Beach/Ormond Beach: 16 crashes, 4 ln divided/5 ln section
 - o E Ormond Beach/Ormond-by-the-Sea: 10 crashes (3 fatal), 2 ln undivided/3 In section
 - o G Flagler Beach: 9 crashes (1 fatal), 2 In undivided section
- Could also look into reviewing focus areas A and C
 - o A New Smyrna Beach: 9 crashes, 4 In divided/5 In section
 - o C Daytona Beach: 37 crashes (2 fatal), 9 total crashes, 4 ln divided/5 In section
 - Segment from Earl St. to Oakridge Blvd. previously studied, 11 crashes from study included in data set



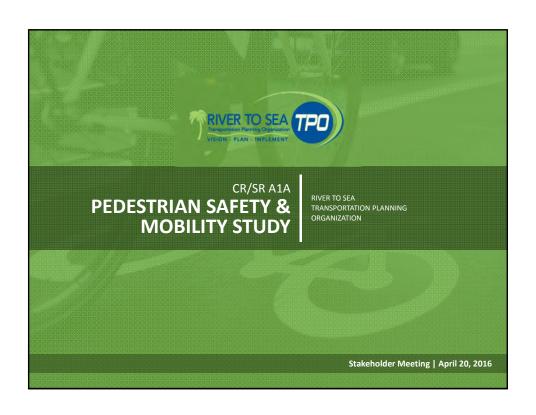
Next Steps

- Project briefing presentations to BPAC, CAC, TCC, and TPO Board October
- Field reviews for three focus areas October through December



APRIL 2016 STAKEHOLDER MEETING PRESENTATION

River to Sea TPO A - 21









Study Limits

Bethune Beach (Volusia County) to just south of Marineland (Flagler County) – 56.5 total miles in length

Primary Goal

Recommend implementable pedestrian/bicycle safety improvements/countermeasures at strategic locations along A1A

Secondary Goal

Expand countermeasures to be applicable along other sections of A1A in a systemic manner



Work Completed

Fall 2015 through Spring 2016

- September to December 2015 -
 - Completed pedestrian/bicycle safety field reviews for Focus Areas D (Daytona Beach/Ormond Beach), E (Ormond Beach/Ormond-by-the-Sea), and G (Flagler Beach)
- Late January 2016
 - Approved for 3 additional safety field reviews
- February 2016 to Present
 - Completed safety field reviews for Focus Areas A (New Smyrna Beach), B (Daytona Beach Shores/Daytona Beach), and C (Daytona Beach)

What is a Pedestrian/Bicycle Safety Field

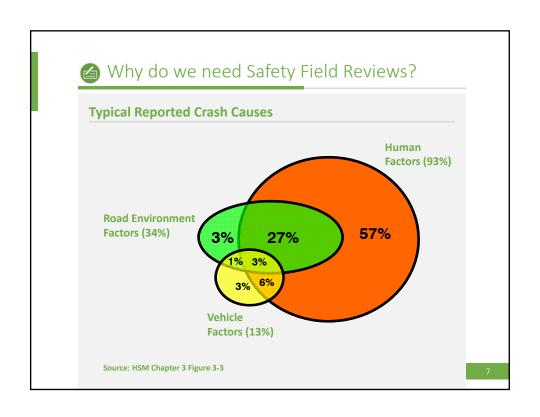


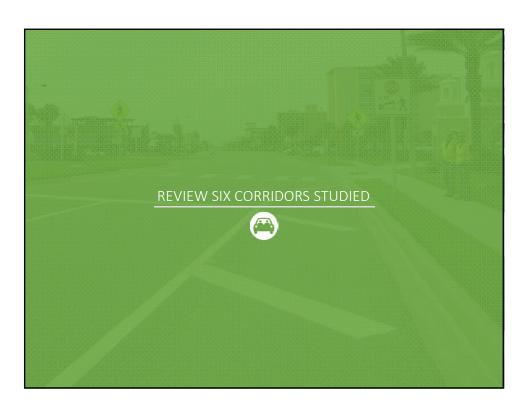
Review?

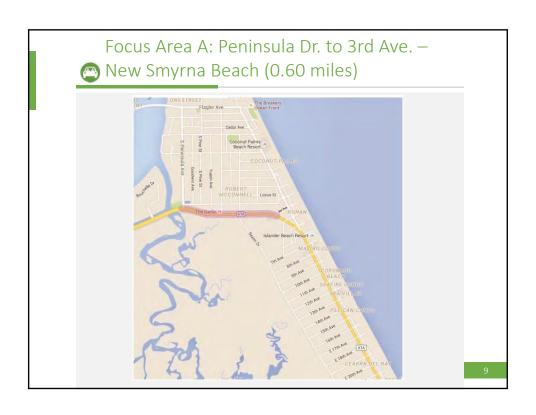
- Formal safety review based on FHWA Road Safety Audit procedures and documentation
- Focuses on the safety of pedestrians/bicyclists but considers interactions of all road users



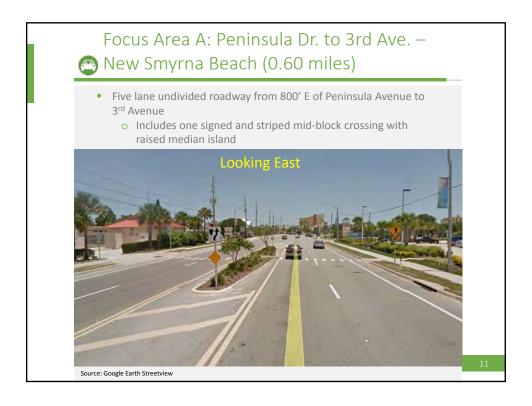
- Performed by a review team consisting of state/county/local agency staff, transit staff, and law enforcement
- Considers interactions at the borders or limits of the project
- Proactively considers mitigation measures

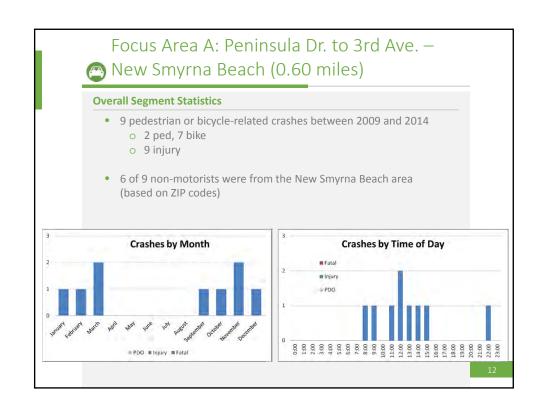






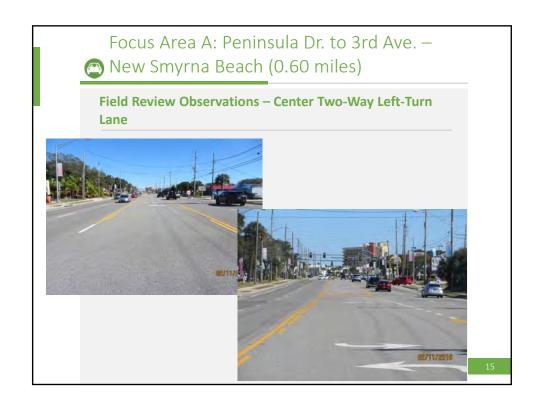




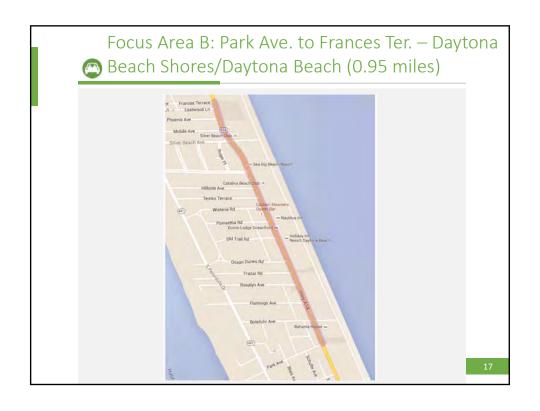


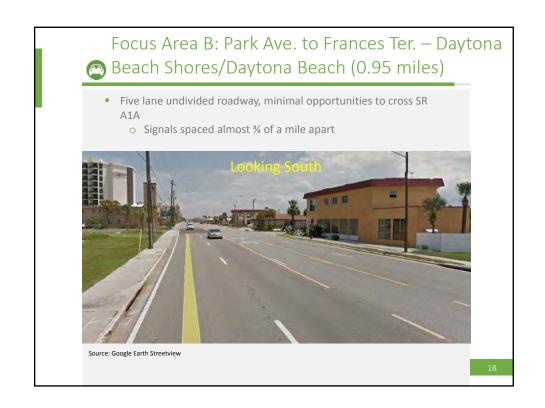




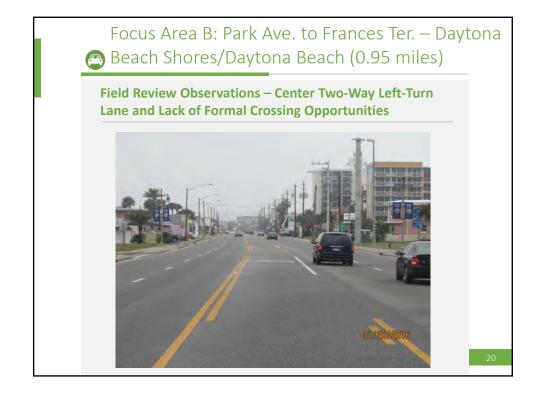


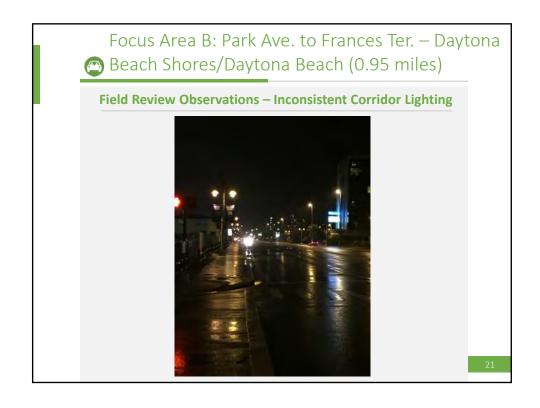




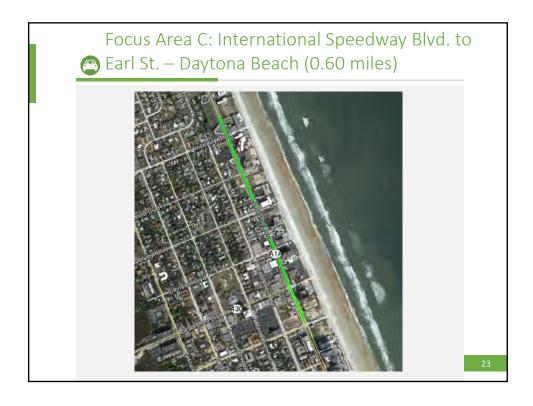


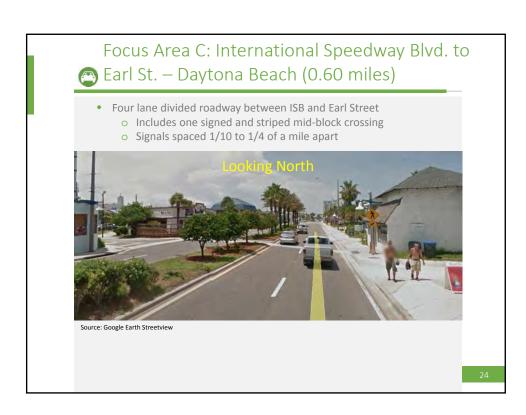
Focus Area B: Park Ave. to Frances Ter. — Daytona Beach Shores/Daytona Beach (0.95 miles) Overall Segment Statistics • 8 pedestrian or bicycle-related crashes between 2009 and 2014 • 7 ped, 1 bike • 8 injury • The vehicle had the right of way in 4 of the 7 pedestrian crashes and in the 1 bicycle crash (all occurred with the non-motorist crossing A1A between signals) Crashes by Day of Week **Crashes by Lighting Condition** **Grashes by Lighting Condition** **Poo** **Daving the Dark w/ Street Dark w/o Street Light Uply to Light Uply

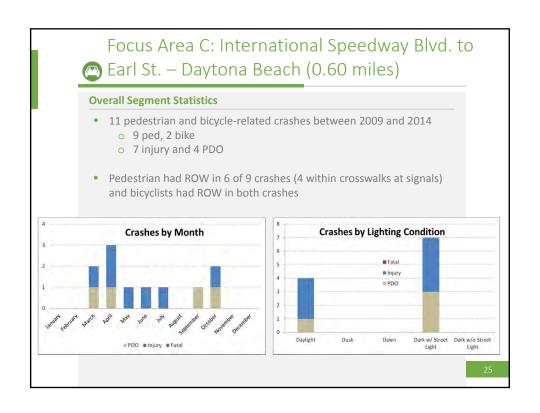


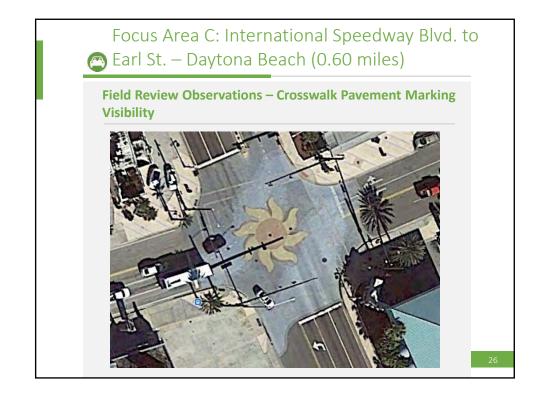












Focus Area C: Oakridge Blvd. to just North of University Blvd. – Daytona Beach (0.70 miles)



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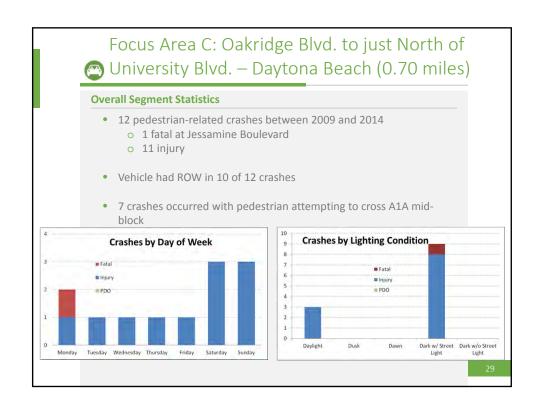
Focus Area C: Oakridge Blvd. to just North of University Blvd. – Daytona Beach (0.70 miles)

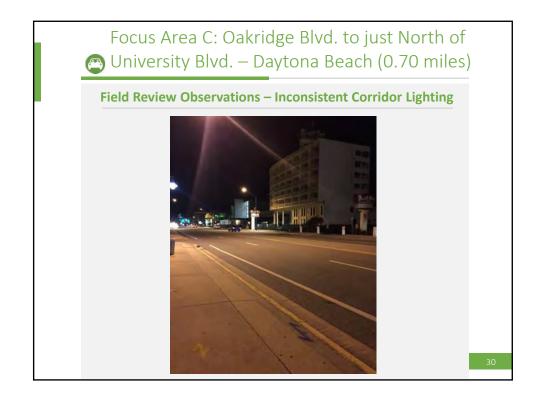
- Four lane divided roadway between Oakridge Blvd. and Seabreeze

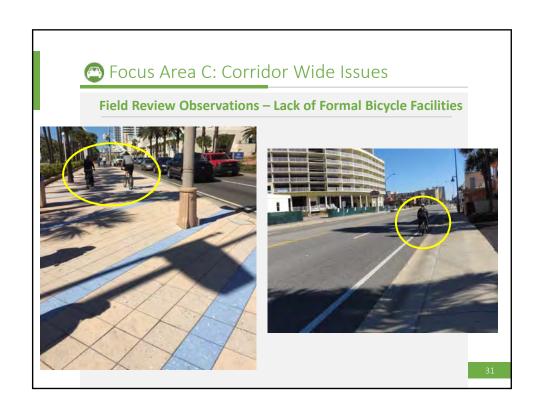
 Rlvd.
- Five lane undivided roadway between Seabreeze Blvd. and University Blvd.
 - o Signals spaced ½ of a mile apart
 - o Crosswalks striped at two unsignalized intersections, both have no pedestrian signage



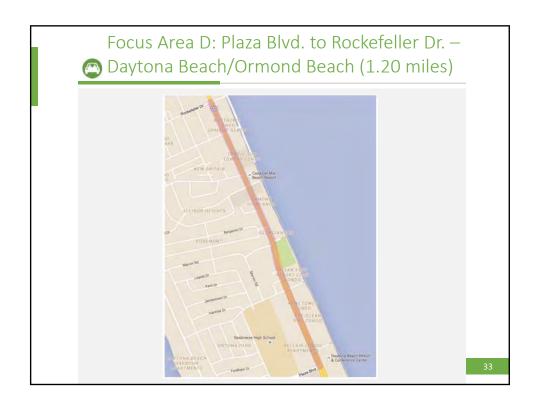
Source: Google Earth Streetview

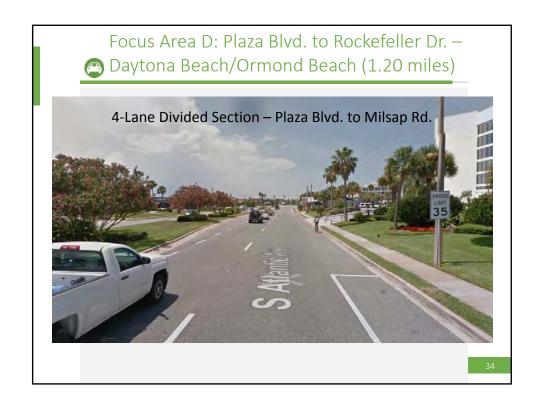


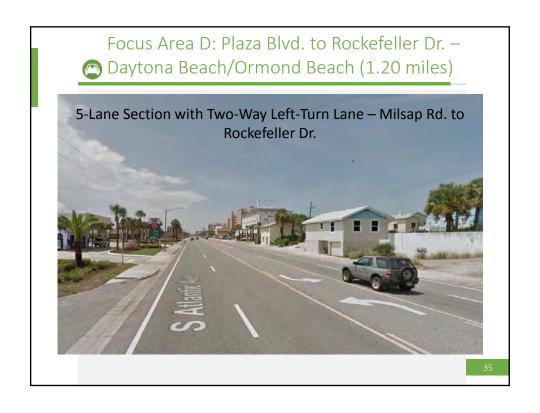


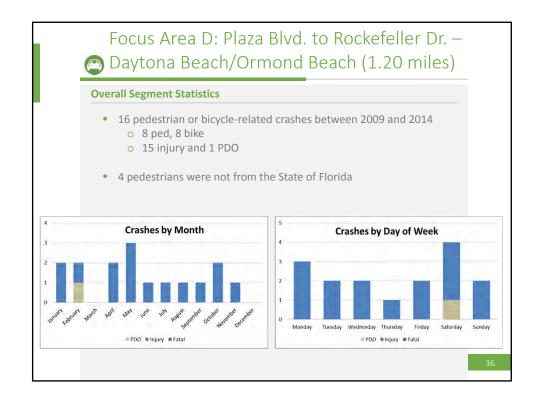


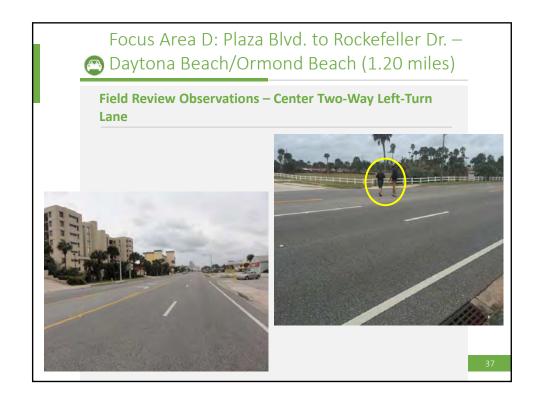




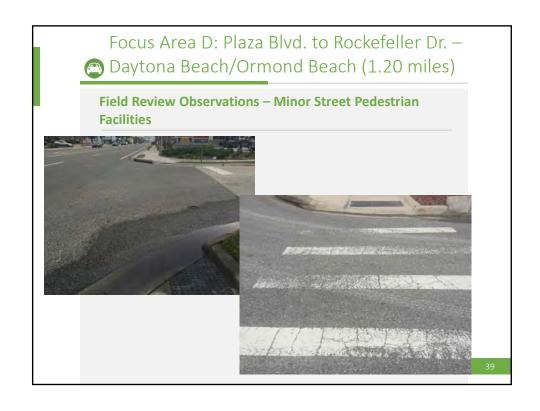


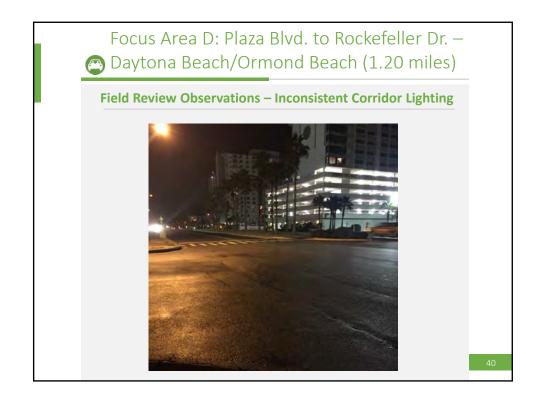


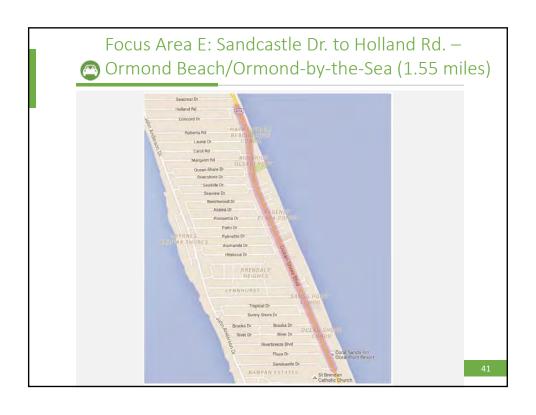




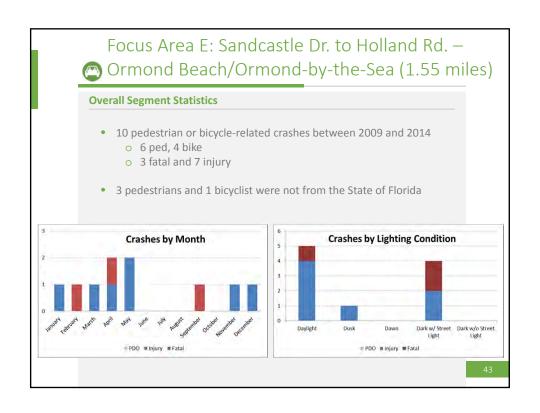


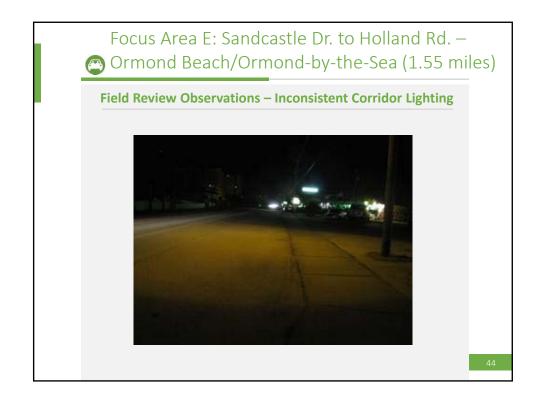


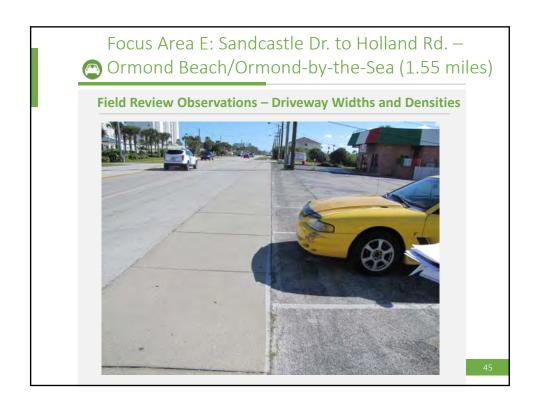


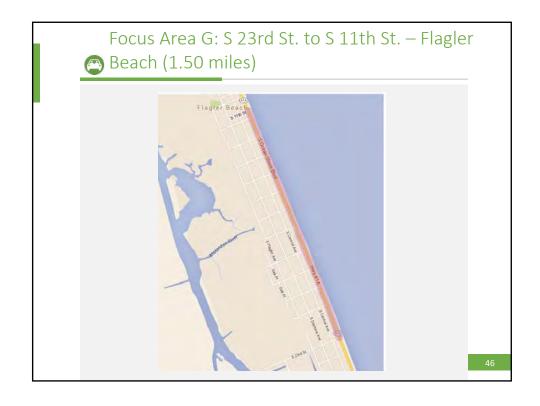


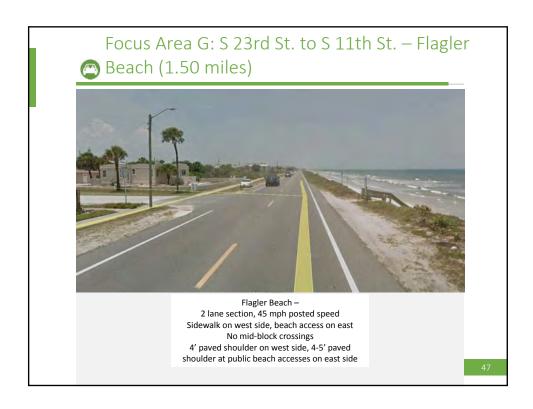


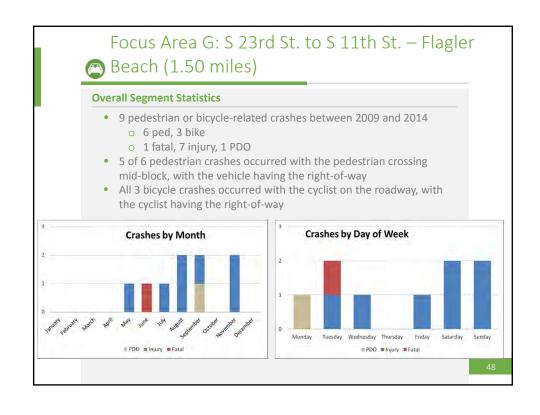






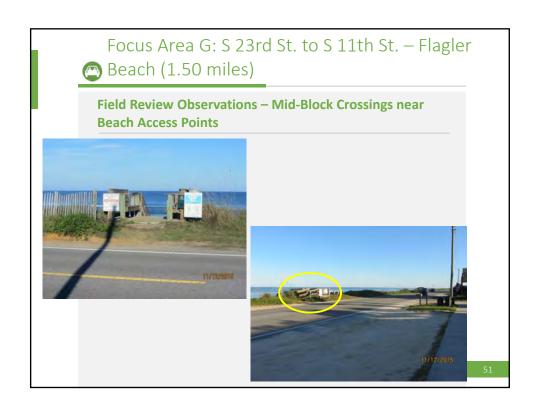


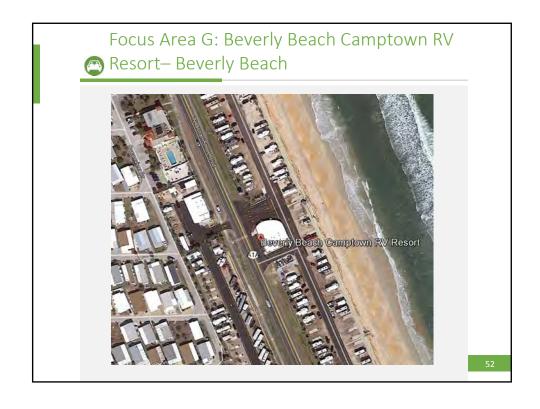




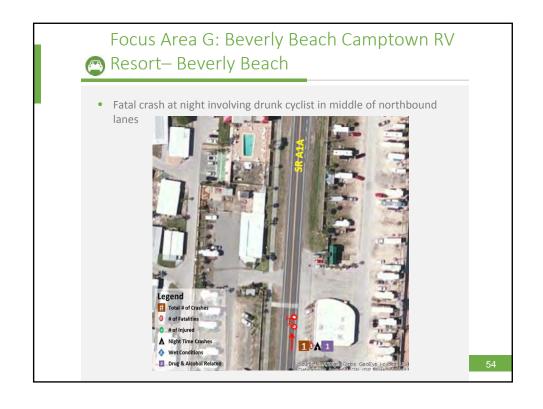






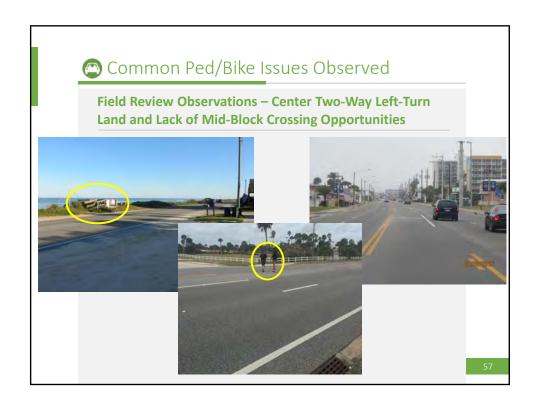




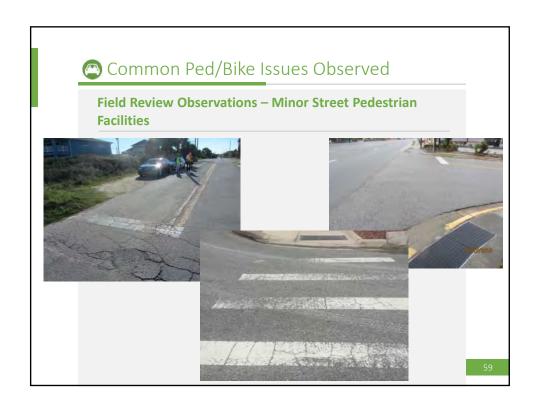


Focus Area G: Beverly Beach Camptown RV Resort—Beverly Beach Field Review Observations Speeding through town – possibility for median island, deflection in roadway, gateway treatment both sides of town limits Golf carts crossing roadway

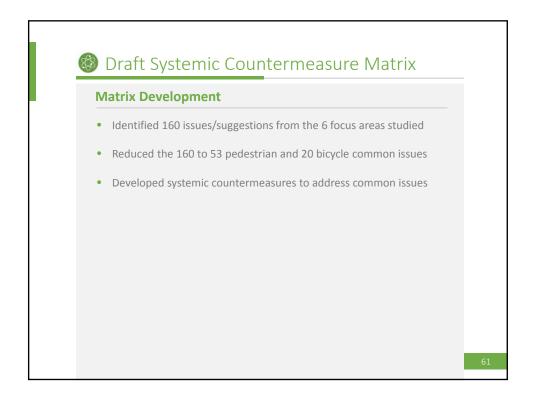


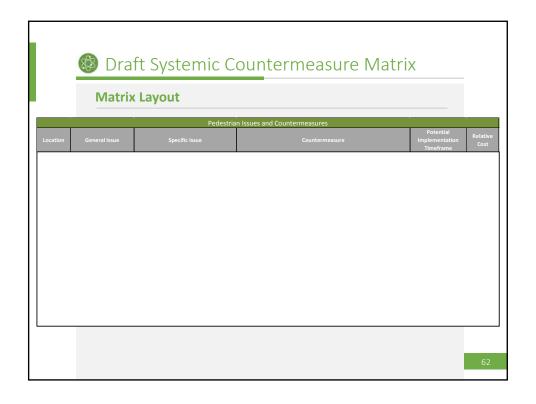




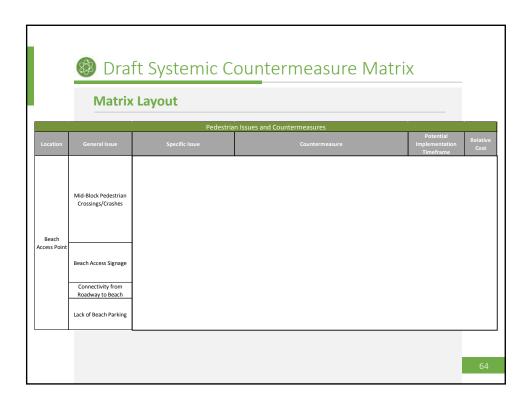




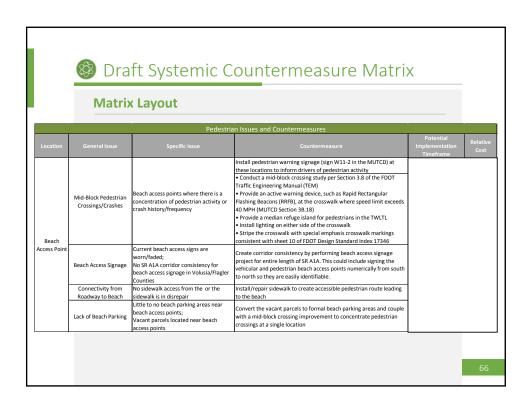




	Ø Draft	Systemic Cou	ntermeasure Ma	atrix
	Matrix L	ayout		
		Pedestrian Issue	es and Countermeasures	
Location	General Issue	Specific Issue	Countermeasure	Potential Relative Implementation Cost Timeframe
Beach ccess Point				
-				63



	Matrix	(Layout		
		Pedestria	n Issues and Countermeasures	
Location	General Issue	Specific Issue	Countermeasure	Potential Relative Implementation Cost
Beach Access Point	Mid-Block Pedestrian Crossings/Crashes	Beach access points where there is a concentration of pedestrian activity or crash history/frequency		
	Beach Access Signage	Current beach access signs are worn/faded; No SR A1A corridor consistency for beach access signage in Volusia/Flagler Counties		
	Connectivity from	No sidewalk access from the or the		
	Roadway to Beach Lack of Beach Parking	sidewalk is in disrepair Little to no beach parking areas near beach access points; Vacant parcels located near beach access points		



	Matrix	Layout			
		Pedestria	n Issues and Countermeasures		
Location	General Issue	Specific Issue	Countermeasure	Potential Implementation Timeframe	Relativ Cost
Beach Access Point	Short Term Maintenance - addressed by public agency staff on a short timeframe at a relatively low cost Near Term (within 3 to 5 years) – suggestions needing additional study; suggestions that could be incorporated into an upcoming construction project (i.e. 3R project)				
	Long Term (5 longer term of for funding a	Near Term Near Term			
	Tor Turnum & u	Near/Long Term			

	Matrix	(Layout			
		. Pedestria	an Issues and Countermeasures		
Location	General Issue	Specific Issue	Countermeasure	Potential Implementation Timeframe	Relative Cost
Beach Access Point	Mid-Block Pedestrian Crossings/Crashes	Beach access points where there is a concentration of pedestrian activity or crash history/frequency	Install pedestrian warning signage (sign W11-2 in the MUTCD) at these locations to inform drivers of pedestrian activity - Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic fingineering Manual (TEM) - Provide an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk where speed limit exceeds 40 MPH (MUTCD Section 38.18) - Provide a median refuge island for pedestrians in the TWLTL - Install lighting on either side of the crosswalk - Stripe the crosswalk with special emphasis crosswalk markings	Maintenance Near/Long Term	\$
	Beach Access Signage	Current beach access signs are worn/faded; No SR A1A corridor consistency for beach access signage in Volusia/Flagler Counties	consistent with sheet 10 of FDOT Design Standard Index 17346 Create corridor consistency by performing beach access signage project for entire length of SR A1A. This could include signing the vehicular and pedestrian beach access points numerically from south to north so they are easily identifiable.	Near Term	\$-\$\$
	Connectivity from Roadway to Beach	No sidewalk access from the or the sidewalk is in disrepair	Install/repair sidewalk to create accessible pedestrian route leading to the beach	Near Term	\$\$-\$\$\$
	Lack of Beach Parking	Little to no beach parking areas near beach access points; Vacant parcels located near beach access points	Convert the vacant parcels to formal beach parking areas and couple with a mid-block crossing improvement to concentrate pedestrian crossings at a single location	Near/Long Term	\$\$-\$\$\$



Draft Systemic Countermeasure Matrix

Matrix Example #1

- Reviewing a roadway segment (between signalized intersections) with 75% of pedestrian and bicycle crashes occurred at night
- Lighting levels are inconsistent (some bulbs burnt out) and portions of the corridor have no lighting present
- Using the matrix, what are potential countermeasures for this situation?



Draft Systemic Countermeasure Matrix

Matrix Example #1

Pedestrian Issues and Countermeasures					
Location	General Issue	Specific Issue	Countermeasure	Potential Implementation Timeframe	Relative Cost
Roadway Section	Vehicular Speeding	Sections of SR A1A with a history of vehicular speeding and/or pedestrian crashes involving speeding vehicles	Study section for possible complete streets type improvements that will help reduce vehicular speeds, such as a reduction in pavement widths or the addition of vertical elements (i.e. curb, chicanes)	Near/Long Term	\$\$
	Section Lighting	Burnt out light bulbs	Contact the owner/maintainer of the lighting system to replace burnt out bulbs	Maintenance	\$
		Inconsistent lighting levels; Light poles spaced unevenly	Perform lighting uniformity study along section and provide lighting based on results of study; To account for turtle season, turtle shielding should be utilized on existing or new light poles where applicable but should not interfere with lighting pedestrian environment where practicable	Near/Long Term	\$\$-\$\$\$
		No lighting present	Perform lighting justification study along section and provide lighting based on results of study; To account for turtle season, turtle shielding should be utilized on existing or new light poles where applicable but should not interfere with lighting pedestrian environment where practicable	Near/Long Term	\$\$-\$\$\$
		Low lighting levels in areas where lighting is present and evenly spaced	If lighting levels along a section meet standard but nighttime crashes are occurring, change from high pressure sodium lighting to LED lighting; The LED lighting could be programmed so it functions at a lower lighting levels during turtle season	Long Term	\$\$-\$\$\$
	No Sidewalks	No sidewalks present in area with pedestrian activity	Construct sidewalks where missing	Near/Long Term	\$-\$\$\$



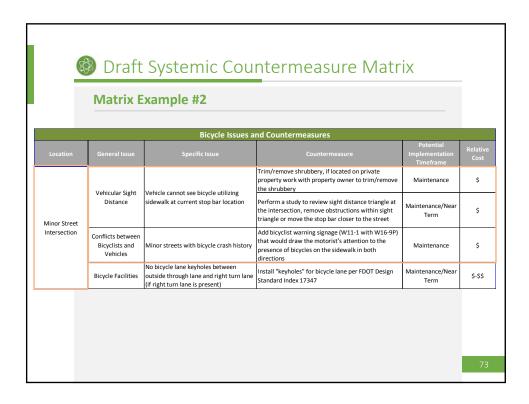
	Burnt out light bulbs	Contact the owner/maintainer of the lighting system to replace burnt out bulbs	Maintenance	\$
	Inconsistent lighting levels; Light poles spaced unevenly	Perform lighting uniformity study along section and provide lighting based on results of study; To account for turtle season, turtle shielding should be utilized on existing or new light poles where applicable but should not interfere with lighting pedestrian environment where practicable	Near/Long Term	\$\$-\$\$\$
Section Lighting	No lighting present	Perform lighting justification study along section and provide lighting based on results of study; To account for turtle season, turtle shielding should be utilized on existing or new light poles where applicable but should not interfere with lighting coedestrian environment where cracticable	Near/Long Term	\$\$-\$\$\$
	Low lighting levels in areas where lighting is present and evenly spaced	If lighting levels along a section meet standard but nighttime crashes are occurring, change from high pressure sodium lighting to LED lighting; The LED lighting could be programmed so it functions at a lower lighting levels during turtle season	Long Term	\$\$-\$\$\$

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Matrix Example #2

- Reviewing a minor street intersection (unsignalized public road)
- History of crashes involving bicycles on the sidewalk and vehicles turning from side street onto main road
- Potential sight distance issues due to shrubbery on one corner
- Using the matrix, what are potential countermeasures for this situation?



Draft Systemic Countermeasure Matrix

Matrix Example #3

- Crash history present with pedestrians crossing mid-block near beach access point
- Commercial land uses on west side of SR A1A across from beach access point
- Using the matrix, what are potential countermeasures for this situation?



Draft Systemic Countermeasure Matrix

Matrix Example #3

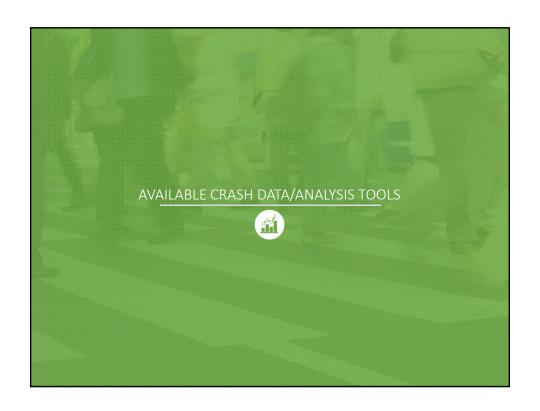
		Pedestria	an Issues and Countermeasures		
Location	General Issue	Specific Issue	Countermeasure	Potential Implementation Timeframe	Relative Cost
Beach Access Point			Install pedestrian warning signage (sign W11-2 in the MUTCD) at these locations to inform drivers of pedestrian activity	Maintenance	\$
	Mid-Block Pedestrian Crossings/Crashes	Beach access points where there is a concentration of pedestrian activity or crash history/frequency	Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) Provide an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk where speed limit exceeds 40 MPH (MUTCD Section 38.18) Provide a median refuge island for pedestrians in the TWLTL Install lighting on either side of the crosswalk Stripe the crosswalk with special emphasis crosswalk markings consistent with sheet 10 of FDOT Design Standard Index 17346	Near/Long Term	\$\$-\$\$\$
	Beach Access Signage	Current beach access signs are worn/faded; No SR A1A corridor consistency for beach access signage in Volusia/Flagler Counties	Create corridor consistency by performing beach access signage project for entire length of SR AJA. This could include signing the vehicular and pedestrian beach access points numerically from south to north so they are easily identifiable.	Near Term	\$-\$\$
	Connectivity from Roadway to Beach	No sidewalk access from the or the sidewalk is in disrepair	Install/repair sidewalk to create accessible pedestrian route leading to the beach	Near Term	\$\$-\$\$\$
	Lack of Beach Parking	Little to no beach parking areas near beach access points; Vacant parcels located near beach access points	Convert the vacant parcels to formal beach parking areas and couple with a mid-block crossing improvement to concentrate pedestrian crossings at a single location	Near/Long Term	\$\$-\$\$\$



Draft Systemic Countermeasure Matrix

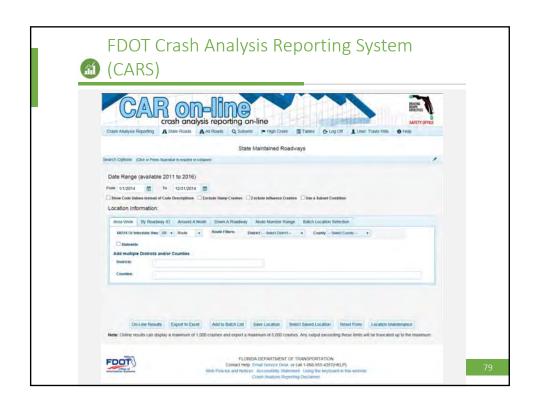
Education and Enforcement Countermeasure Discussion

- Pedestrians/bicyclists not utilizing marked crosswalks or crossing at unmarked locations
- Nighttime pedestrian/bicycle safety campaign
- Target elementary, middle, and high school students in school based programs focused on increasing their awareness about pedestrian/bicycle safety
- Increase law enforcement participation in pedestrian/bicycle safety



FDOT Crash Analysis Reporting System (CARS)

- FDOT's crash report database, utilized for State maintained facilities
- On-line application houses 2011 to current year data, mainframe houses pre-2011 data
- Anyone working in/for local government can request CARS crash data, output can be in PDF or Excel format
 - Specific crash reports can also be requested
- Can also request most current segment/intersection high crash list
- CARS data must be utilized for State facilities when applying for Highway Safety Improvement Program (HSIP) funding



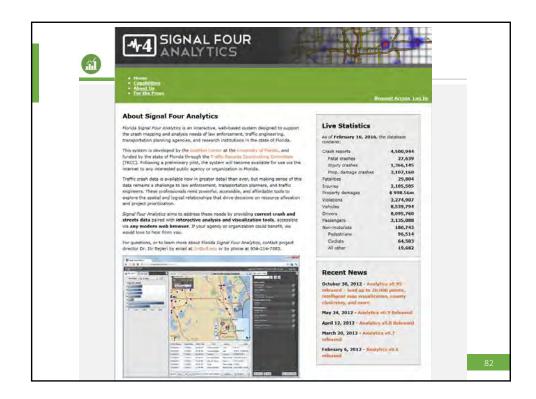


University of Florida's Signal Four (S4) Analytics

• S4 Analytics site: http://s4.geoplan.ufl.edu/

du-s4-analytics

- Statewide map-based crash analytical system hosted at University of Florida's Geoplan Center
- Designed for Florida public agencies and their consultants
 - Access if free can be requested on website
- Crash data 2006 to present, data provided by the Department of Highway Safety and Motor Vehicles (DHSMV)
- Output in Excel and GIS format, can also download PDF copies of the crash reports
- Training webinars available online outlining basic site operations and new crash analysis features https://mediasite.video.ufl.edu/Mediasite/Catalog/catalogs/ilirufle



University of Florida's Signal Four (S4) Analytics

S4 Demonstrations

- Volusia County pedestrian/bicycle 2011-2015 crash data
- 2015 pedestrian crash data in Flagler Beach
- SR A1A in southern part of county, location specific





Implementation Strategies

Final Lists of Issues/Suggestions from Six Focus Areas **Studied**

- Identified 160 issues/suggestions from the 6 Focus Areas studied
 - o Suggestions range from landscape maintenance, to studies, to mid-block crossing installations
- Issues will be provided to the roadway maintaining agency (in most cases this will be FDOT)
- R2CTPO will coordinate with FDOT and other maintaining agencies on plan to address suggestions and actions to be taken
- Votran working on transit stop improvements as funding becomes available



Implementation Strategies

Countermeasure Matrix Implementation – Engineering

- Citizen complaint/CTST identified issue can utilize matrix to identify potential countermeasures
- Use the matrix as a "checklist" to incorporate countermeasures for design/3R projects currently underway or upcoming
 - o \$\$ already coming to a roadway, great time to incorporate ped/bike safety enhancements
 - o Review pedestrian/bicycle improvements within the design at the 30% to 60% level – changes can still be made!



Countermeasure Matrix Implementation – Engineering

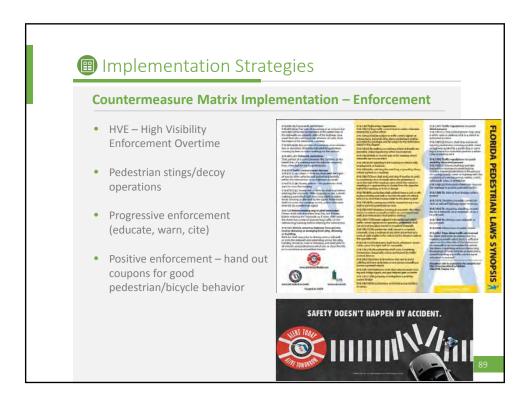
- Highway Safety Improvement Program (HSIP) funding can be used on state and local roadways
 - Study will be required to further analyze identified countermeasures
 - Suggested countermeasures would have to have a positive net present value (NPV) (greater than \$0) or a benefit/cost (B/C) ratio >1.0
 - For pedestrian/bicycle suggestions, limited number of pedestrian/bicycle crash modification factors (CMFs) available for NPV or B/C analysis
 - Local match would be needed for local roadway HSIP projects (sometimes up to 50%)

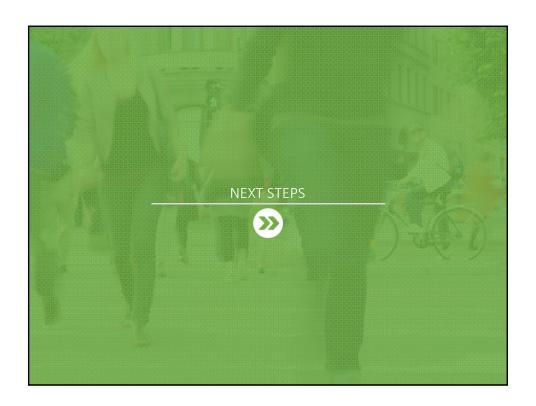
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Countermeasure Matrix Implementation – Education

- Increase in professional development opportunities for transportation professionals and law enforcement personnel
- Limited funding sources available for pedestrian/bicycle education programs
- FHWA Grants http://www.fhwa.dot.gov/environment/bicycle_pedestrian/funding/funding_opportunities.cfm
 - Funding opportunities targeted at providing safety brochures/books, safety education positions, and training





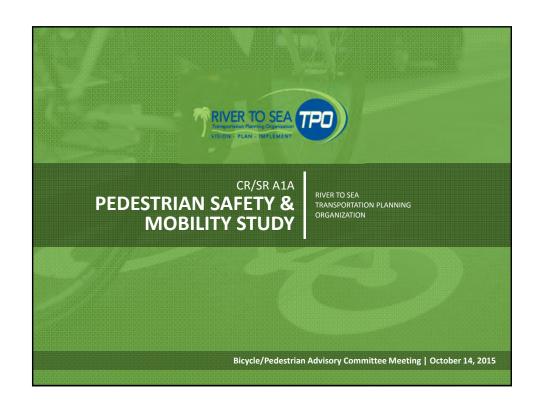


- Stakeholders (you all) review matrix and provide feedback/comments by May 6th
- KAI finishing draft Focus Area reports, individual field review teams will be able to review early/mid-May
- KAI/TPO meeting with FDOT in May to discuss funding/implementation plan
- Completion of project in June



OCTOBER 2015 R2CTPO MEETING PRESENTATIONS

River to Sea TPO







Study Limits

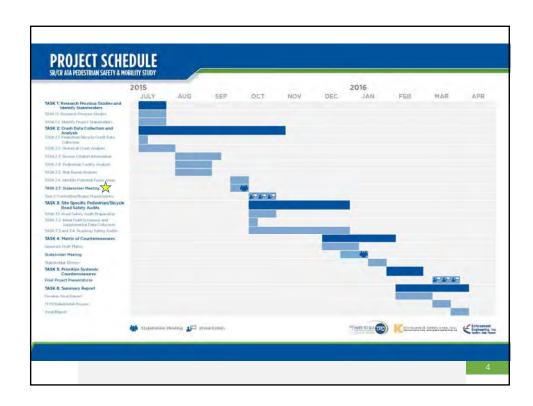
Bethune Beach (Volusia County) to just south of Marineland (Flagler County) – 56.5 total miles in length

Primary Goal

Recommend implementable pedestrian/bicycle safety improvements/countermeasures at strategic locations along A1A

Secondary Goal

Expand countermeasures to be applicable along other sections of A1A in a systemic manner



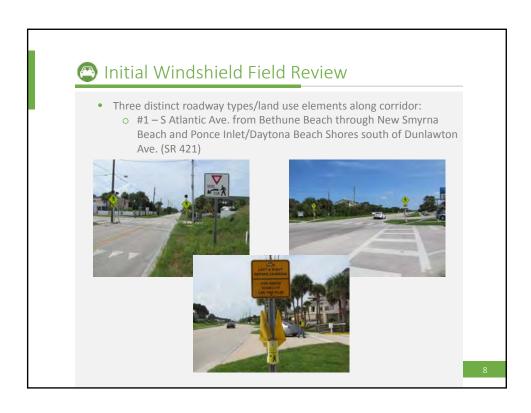


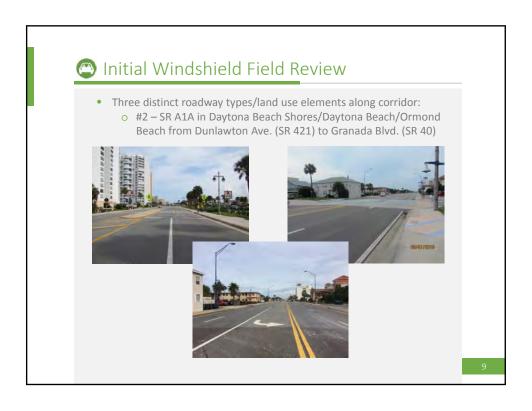


Previous Studies Review

- Four studies performed along A1A between 2008 and 2015:
 - o SR A1A Pedestrian Safety Study, Daytona Beach Shores (2015)
 - Recommendations included adding new mid-block crosswalks, adding Rectangular Rapid Flashing Beacons (RRFBs), and modifying markings/signs at existing crossings
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 - o Pedestrian Safety Study for CR A1A, New Smyrna Beach (2012)
 - Recommendations included installing continuous bike facilities, sidewalks where missing, RRFBs, median refuge islands, among others
 - o CR A1A Sidewalk Feasibility Study, Daytona Beach Shores (2008)
 - Recommendations included road diet, constructing 8' sidewalk, consolidating driveways, and installing crosswalks











Law Enforcement Coordination

• Uniform Traffic Citation (UTC)

UTC data does not have location information that lends itself to mapping

Sorted through data by jurisdiction, narrowed non-crash citations to relevant hazardous moving violations

Pedestrian and bicycle citations accounted for 1.1% of overall citation data (role of warnings)

Pedestrian/bicycle citation detail revealed specific subsections and violations



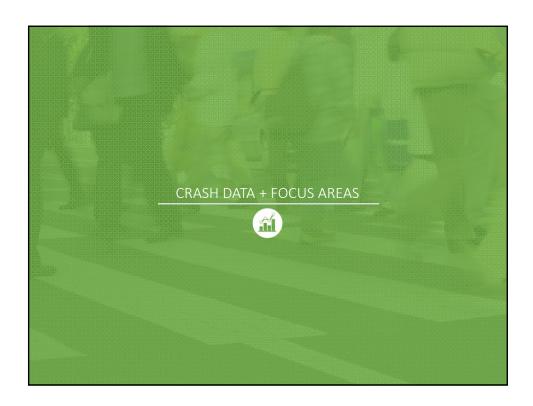
 Face-to-face meetings or phone calls with Police Chiefs and traffic supervisors of law enforcement agencies along A1A

High degree of interest in the project

Consensus that this is a high priority traffic safety issue

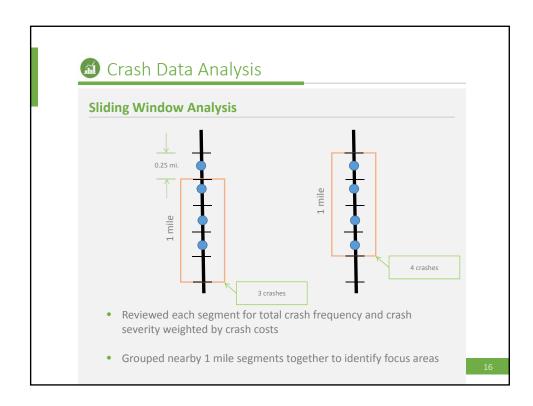
Nature of the problem differs among jurisdictions (road users, roadway conditions, pedestrian features)

Enthusiasm for future participation in project and FDOT HVE funding





- Six years of pedestrian/bicycle crash data collected 2009 2014
- 95 pedestrian and 63 bicycle totaling 158 crashes
 - o 14 fatal, 128 injury, and 16 property damage only
 - o 39% occurred at night, 14% alcohol and/or drug related
 - 20% occurred with a pedestrian/bicyclist under the age of 20 and 18% occurred with 65 and older

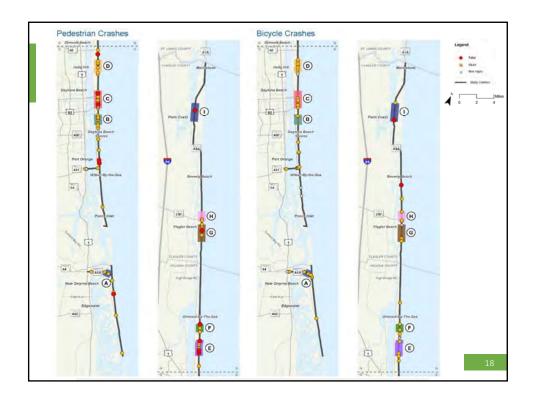




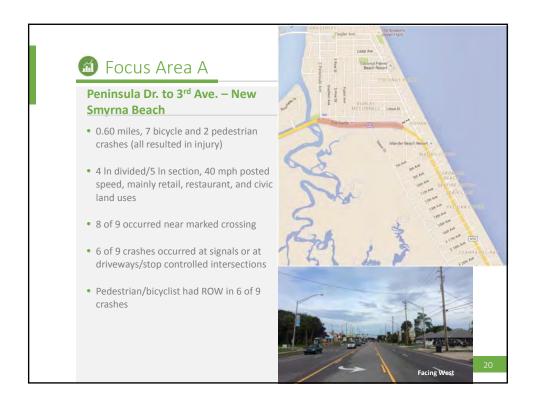
Crash Data Analysis

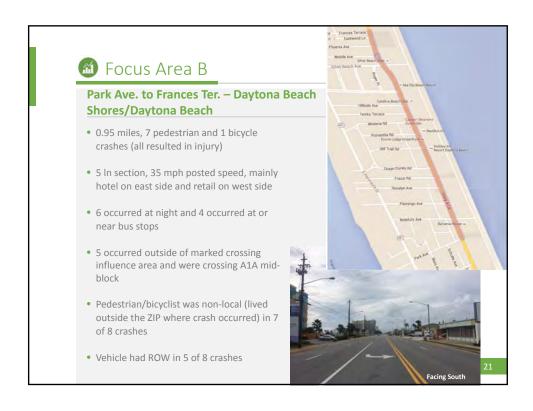
Risked Based Analysis

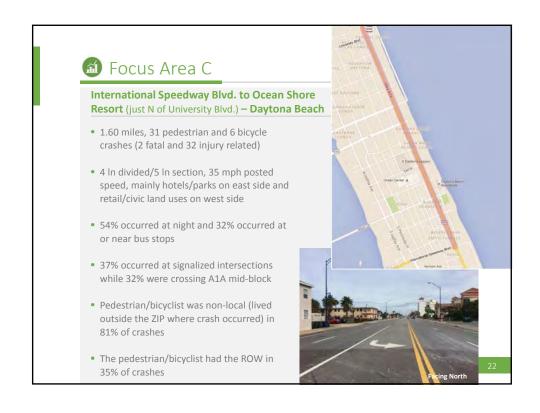
- Reviewed roadway and land use metrics that potentially factor into pedestrian/bicycle crashes:
 - o 50% of crashes on segments between 15,000 and 20,000 AADT (11.4 miles/20% of corridor length)
 - o 62% of crashes with 30 or 35 mph posted speed
 - o 67% of crashes on 4 lane divided (6 miles/11% corridor length) or 5 lane with two-way left-turn lane (10.6 miles/19% corridor length)
 - o 32% of crashes away from marked crossings (both with and without active control device)
 - o 39% of crashes under dusk, dark without street light, or dark with street light conditions
 - o Reviewed crashes relative to ped/bike facilities, bus stops, beach parking, parks, and civic land uses

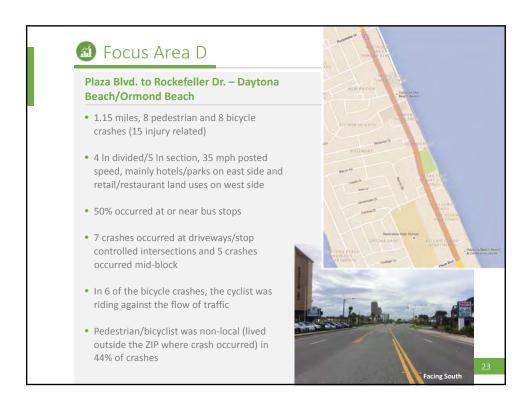


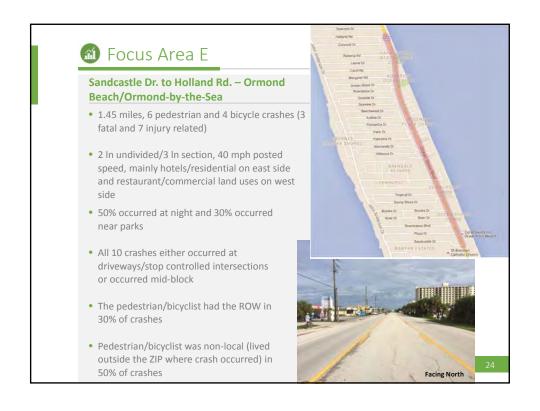


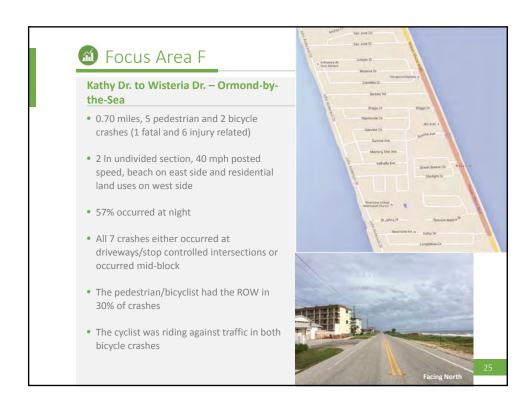


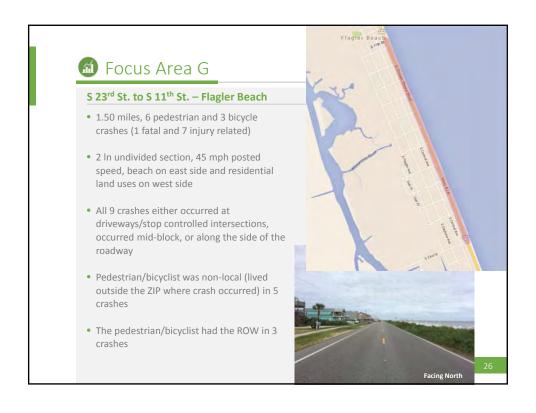




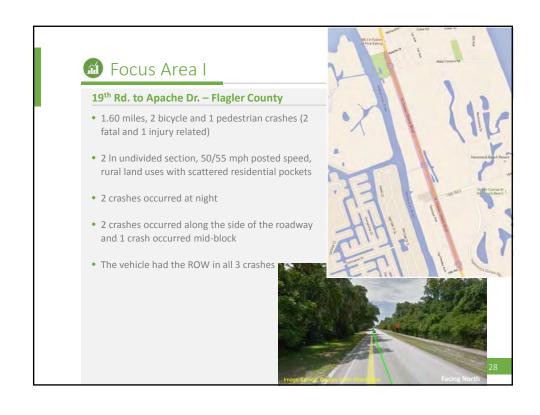














Potential Field Review Locations

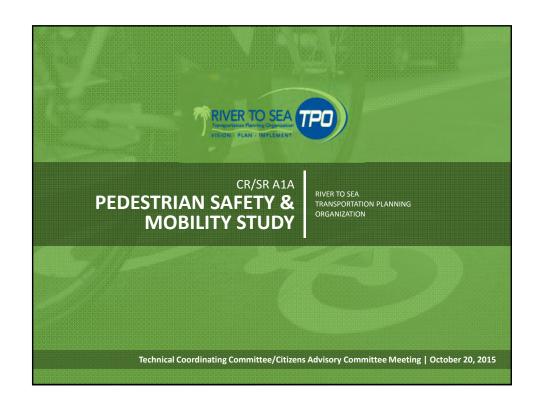
- Recommend focus areas D, E, and G for field review
 - o D Daytona Beach/Ormond Beach: 16 crashes, 4 ln divided/5 ln section
 - o E Ormond Beach/Ormond-by-the-Sea: 10 crashes (3 fatal), 2 ln undivided/3 In section
 - o G Flagler Beach: 9 crashes (1 fatal), 2 In undivided section
- Could also look into reviewing focus areas A and C
 - o A New Smyrna Beach: 9 crashes, 4 In divided/5 In section
 - o C Daytona Beach: 37 crashes (2 fatal), 9 total crashes, 4 ln divided/5 In section
 - Segment from Earl St. to Oakridge Blvd. previously studied, 11 crashes from study included in data set



Next Steps

- Project briefing presentations to CAC, TCC, and TPO Board this month
- Field reviews for three focus areas October through December









Study Limits

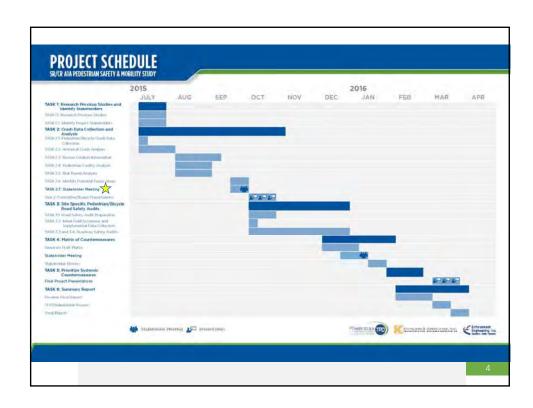
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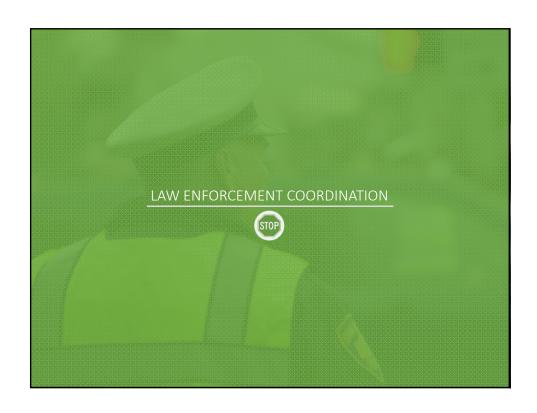






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 - o CR A1A Sidewalk Feasibility Study, Daytona Beach Shores (2008)
 - Recommendations included road diet, constructing 8' sidewalk, consolidating driveways, and installing crosswalks





• Uniform Traffic Citation (UTC)

UTC data does not have location information that lends itself to mapping

Sorted through data by jurisdiction, narrowed non-crash citations to relevant hazardous moving violations

Pedestrian and bicycle citations accounted for 1.1% of overall citation data (role of warnings)

Pedestrian/bicycle citation detail revealed specific subsections and violations



 Face-to-face meetings or phone calls with Police Chiefs and traffic supervisors of law enforcement agencies along A1A

High degree of interest in the project

Consensus that this is a high priority traffic safety issue

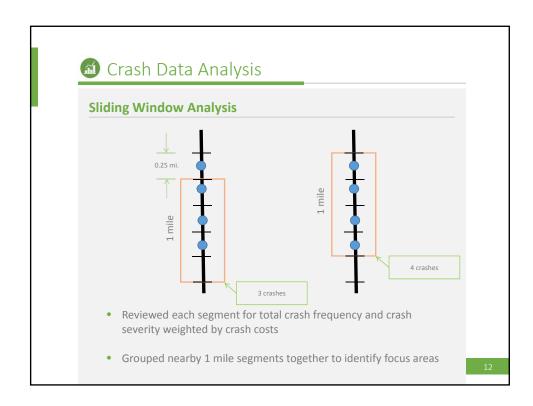
Nature of the problem differs among jurisdictions (road users, roadway conditions, pedestrian features)

Enthusiasm for future participation in project and FDOT HVE funding





- Six years of pedestrian/bicycle crash data collected 2009 2014
- 95 pedestrian and 63 bicycle totaling 158 crashes
 - o 14 fatal, 128 injury, and 16 property damage only
 - o 39% occurred at night, 14% alcohol and/or drug related
 - 20% occurred with a pedestrian/bicyclist under the age of 20 and 18% occurred with 65 and older





Risked Based Analysis

- Reviewed roadway and land use metrics that potentially factor into pedestrian/bicycle crashes:
 - 50% of crashes on segments between 15,000 and 20,000 AADT (11.4 miles/20% of corridor length)
 - o 62% of crashes with 30 or 35 mph posted speed
 - o 67% of crashes on 4 lane divided (6 miles/11% corridor length) or 5 lane with two-way left-turn lane (10.6 miles/19% corridor length)
 - 32% of crashes away from marked crossings (both with and without active control device)
 - o 39% of crashes under dusk, dark without street light, or dark with street light conditions
 - Reviewed crashes relative to ped/bike facilities, bus stops, beach parking, parks, and civic land uses





Potential Field Review Locations

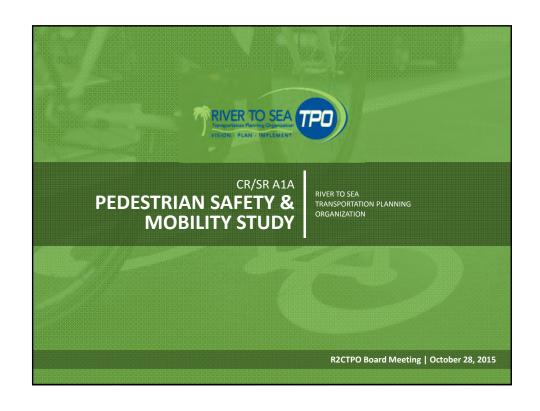
- Recommend focus areas D, E, and G for field review
 - o D Daytona Beach/Ormond Beach: 16 crashes, 4 ln divided/5 ln section
 - o E Ormond Beach/Ormond-by-the-Sea: 10 crashes (3 fatal), 2 ln undivided/3 In section
 - o G Flagler Beach: 9 crashes (1 fatal), 2 In undivided section
- Could also look into reviewing focus areas A and C
 - o A New Smyrna Beach: 9 crashes, 4 In divided/5 In section
 - o C Daytona Beach: 37 crashes (2 fatal), 9 total crashes, 4 ln divided/5 In section
 - Segment from Earl St. to Oakridge Blvd. previously studied, 11 crashes from study included in data set





- Project briefing presentations to TPO Board next week
- Field reviews for three focus areas October through December









Study Limits

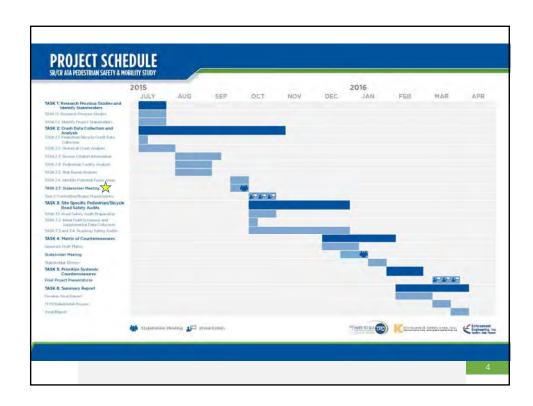
Bethune Beach (Volusia County) to just south of Marineland (Flagler County) – 56.5 total miles in length

Primary Goal

Recommend implementable pedestrian/bicycle safety improvements/countermeasures at strategic locations along A1A

Secondary Goal

Expand countermeasures to be applicable along other sections of A1A in a systemic manner







Previous Studies Review

- Four studies performed along A1A between 2008 and 2015:
 - o SR A1A Pedestrian Safety Study, Daytona Beach Shores (2015)
 - Recommendations included adding new mid-block crosswalks, adding Rectangular Rapid Flashing Beacons (RRFBs), and modifying markings/signs at existing crossings
 - o Pedestrian Safety Audit Report, Daytona Beach (2014)
 - FDOT performed a pedestrian road safety audit from Earl Street to Oakridge Boulevard, proposing short, near, and long-term countermeasures along corridor
 - o Pedestrian Safety Study for CR A1A, New Smyrna Beach (2012)
 - Recommendations included installing continuous bike facilities, sidewalks where missing, RRFBs, median refuge islands, among others
 - o CR A1A Sidewalk Feasibility Study, Daytona Beach Shores (2008)
 - Recommendations included road diet, constructing 8' sidewalk, consolidating driveways, and installing crosswalks







Crash Data Collection

- Six years of pedestrian/bicycle crash data collected 2009 2014
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Crash Data Analysis

Risked Based Analysis

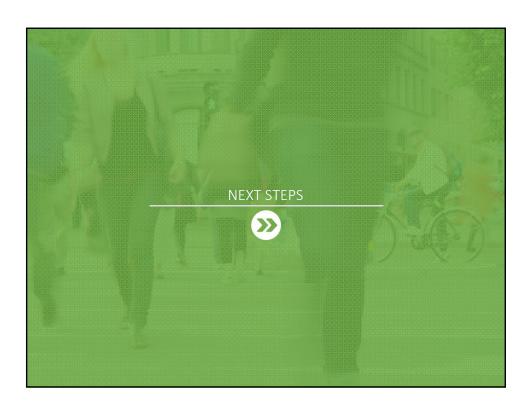
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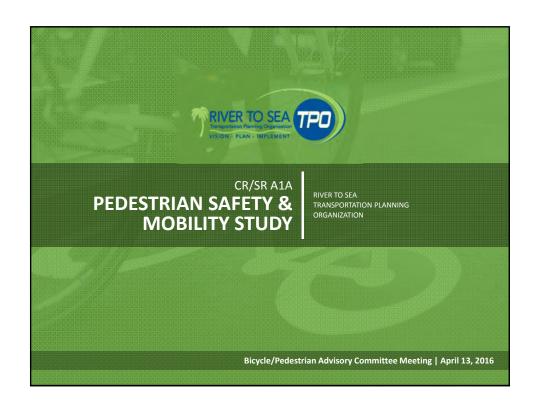






APRIL 2016 R2CTPO MEETING PRESENTATIONS

River to Sea TPO







Project Overview

Study Limits

Bethune Beach (Volusia County) to just south of Marineland (Flagler County) – 56.5 total miles in length

Primary Goal

Recommend implementable pedestrian/bicycle safety improvements/countermeasures at strategic locations along A1A

Secondary Goal

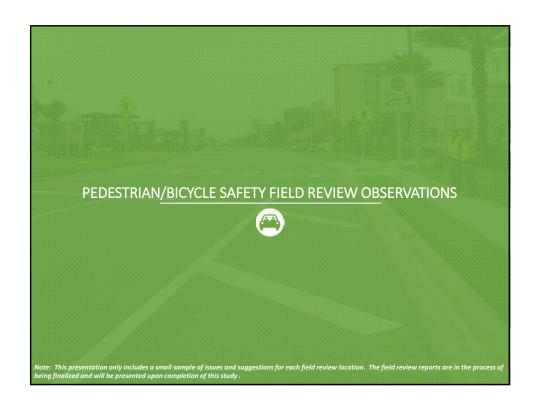
Expand countermeasures to be applicable along other sections of A1A in a systemic manner

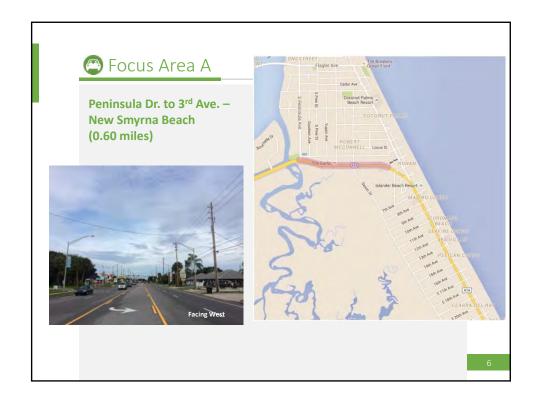


Work Completed

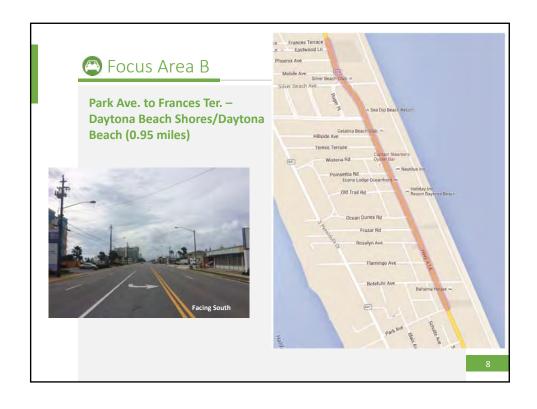
Fall 2015 through Spring 2016

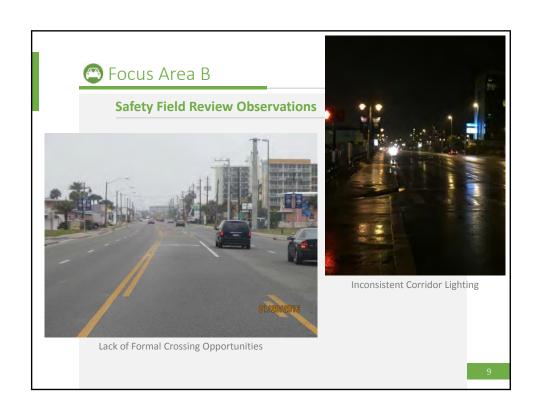
- September to December 2015
 - Completed pedestrian/bicycle safety field reviews for Focus Areas D (Daytona Beach/Ormond Beach), E (Ormond Beach/Ormond-by-the-Sea), and G (Flagler Beach)
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 - Approved for 3 additional safety field reviews
- February 2016 to Present
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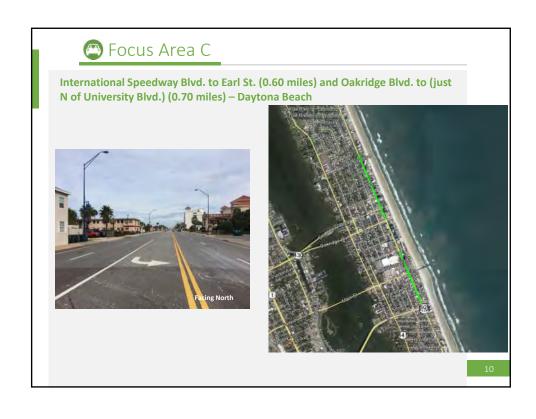


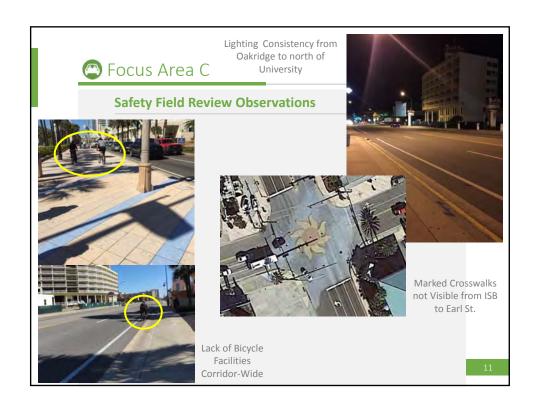


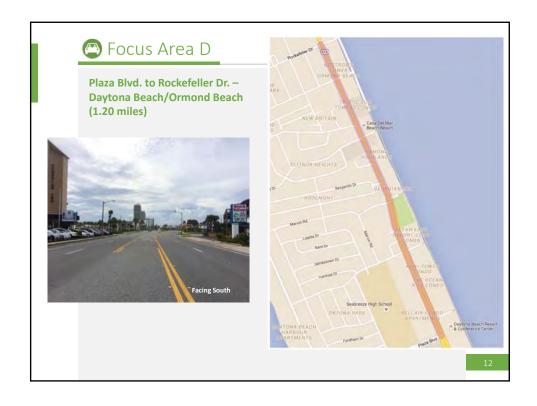


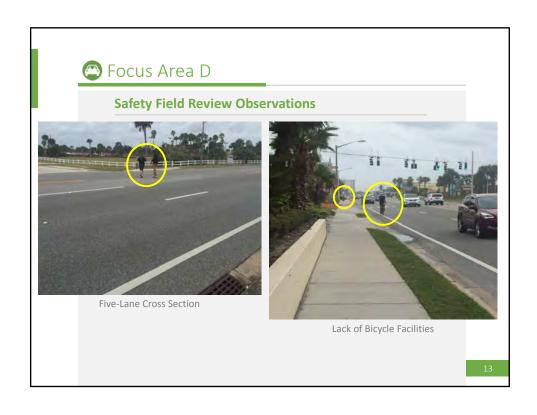




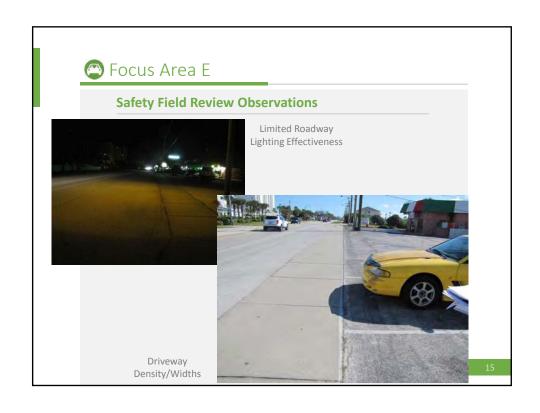


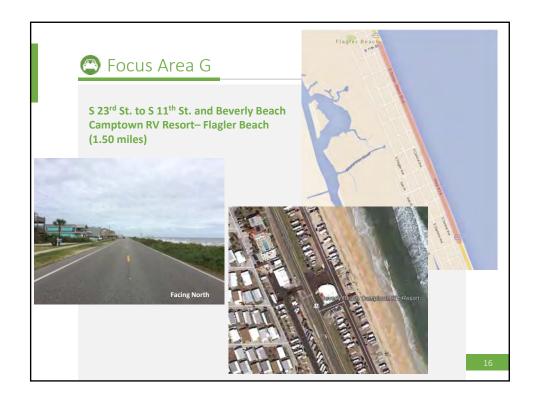




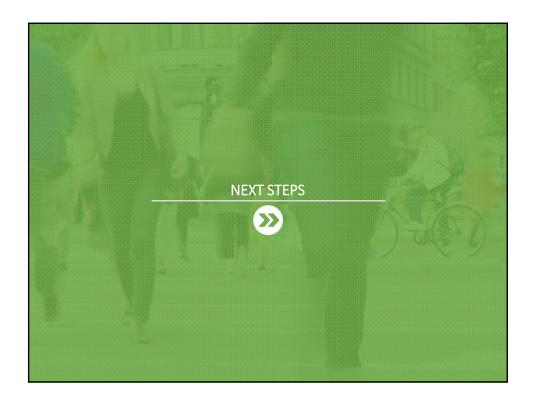








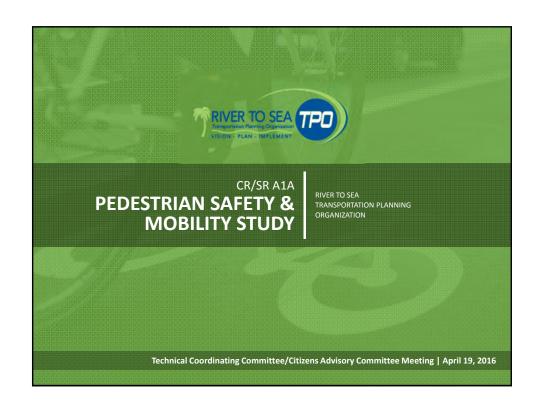






- Finish draft reports
- Create systemic countermeasure matrix
- Meeting with stakeholder group on April 20th to review systemic issues
- Meeting with FDOT to discuss funding options for project implementation May
- Final presentations and final report preparation June









Project Overview

Study Limits

Bethune Beach (Volusia County) to just south of Marineland (Flagler County) – 56.5 total miles in length

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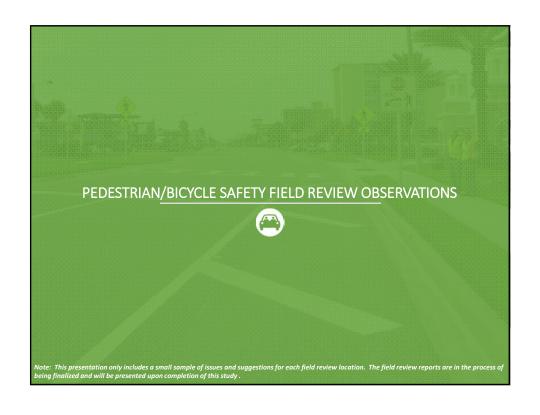
Expand countermeasures to be applicable along other sections of A1A in a systemic manner



Work Completed

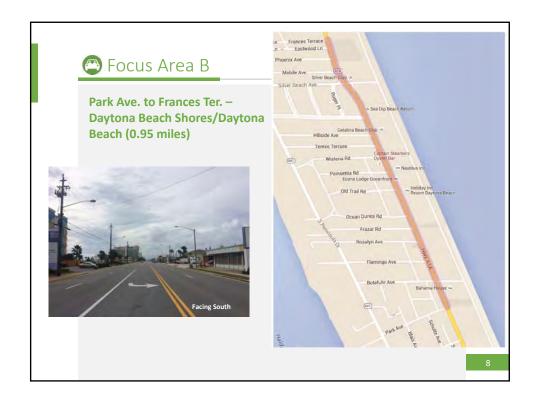
Fall 2015 through Spring 2016

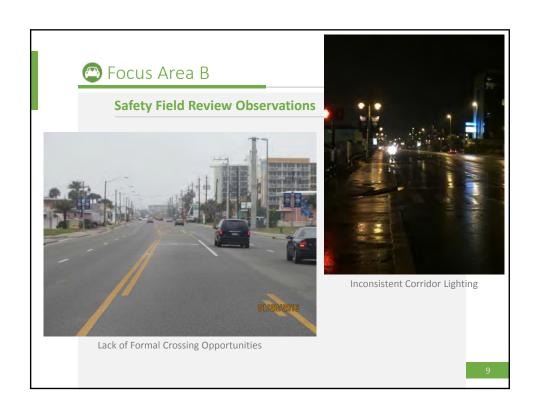
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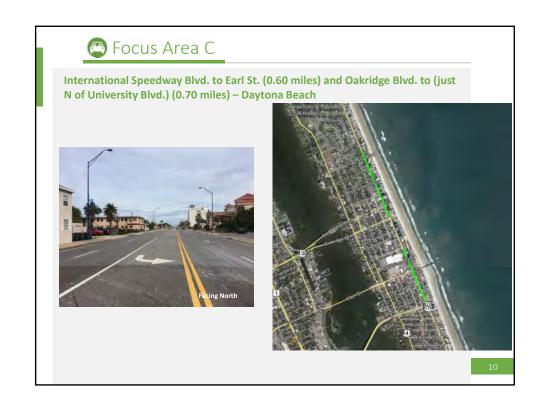


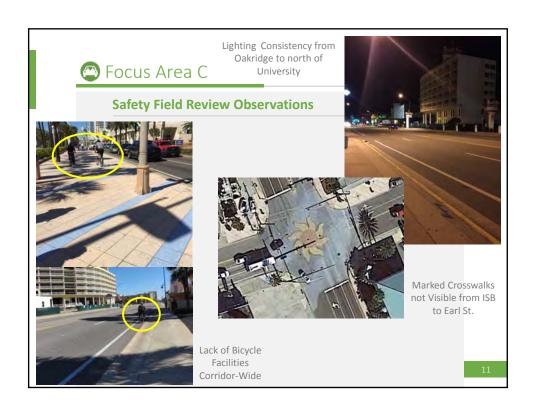


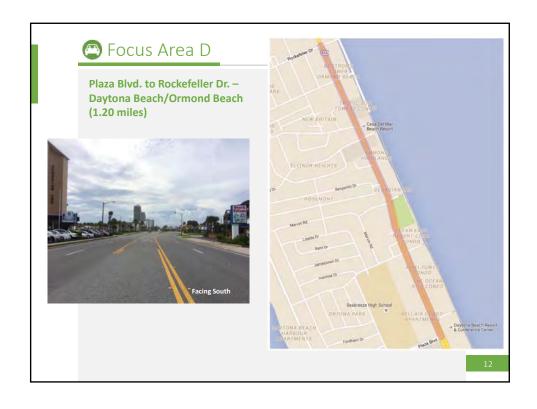


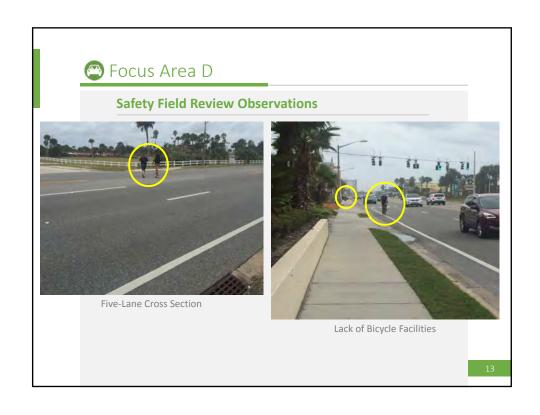


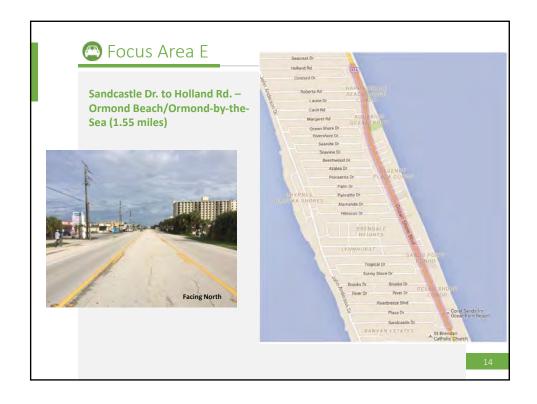


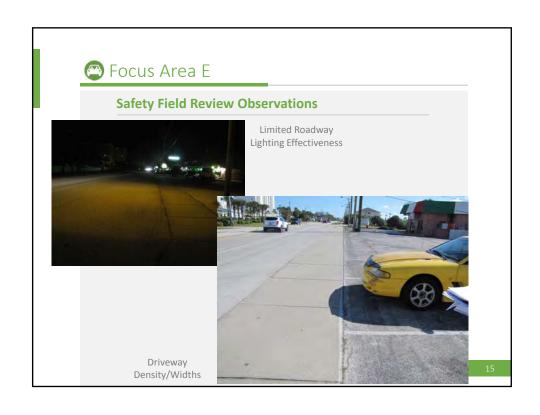


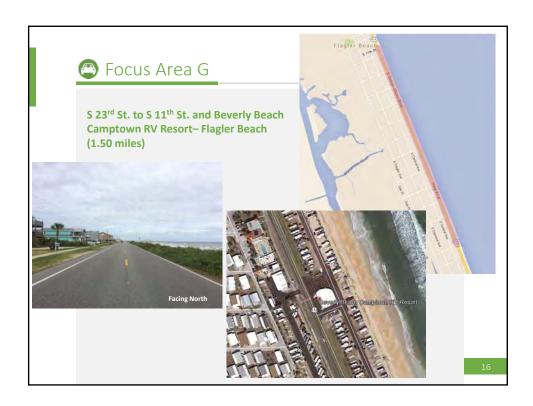












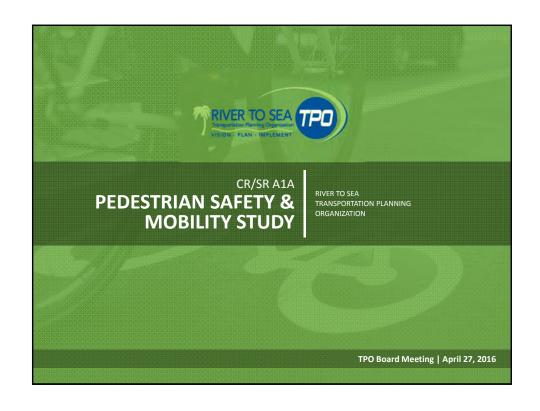






- Finalize draft reports
- Finalize draft countermeasure matrix
- Meeting with stakeholder group on April 20th to review systemic issues and countermeasure matrix
 - April 20, 2016 at 1:30 PM Flagler Beach City Hall, 105 S. 2nd St., Flagler Beach, FL 32136
- Meeting with FDOT and Counties to discuss funding options for project implementation – May
- Final presentations and final report preparation June









阖 Project Overview

Study Limits

Bethune Beach (Volusia County) to just south of Marineland (Flagler County) – 56.5 total miles in length

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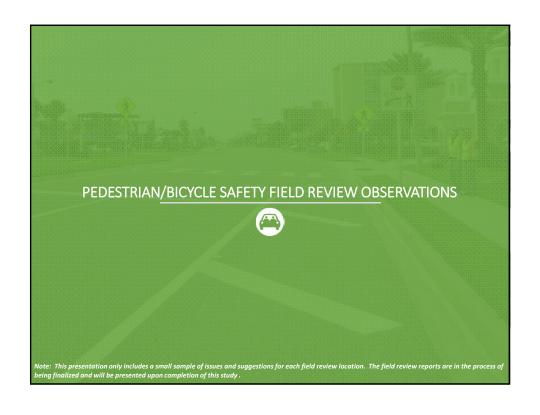
Expand countermeasures to be applicable along other sections of A1A in a systemic manner

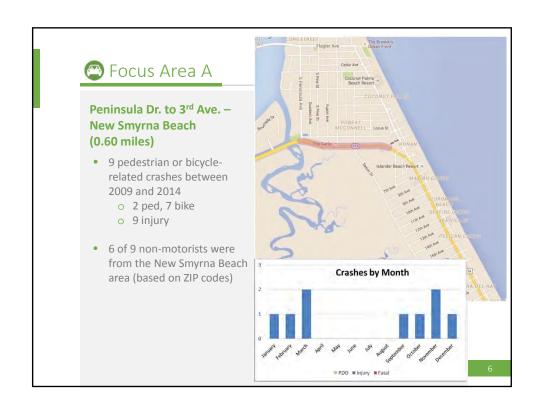


Work Completed

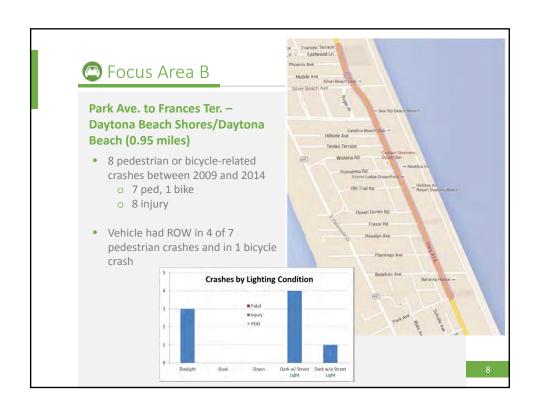
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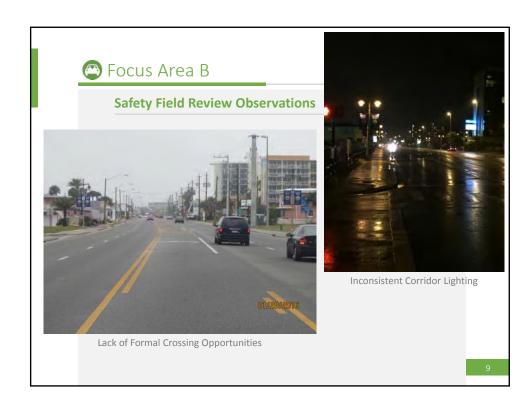
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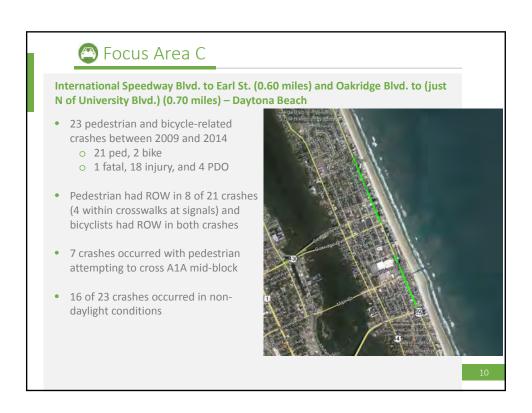


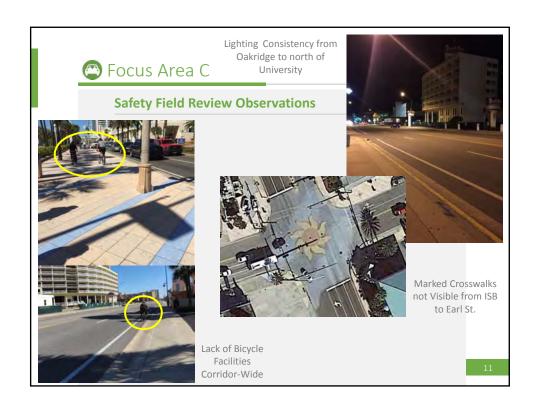


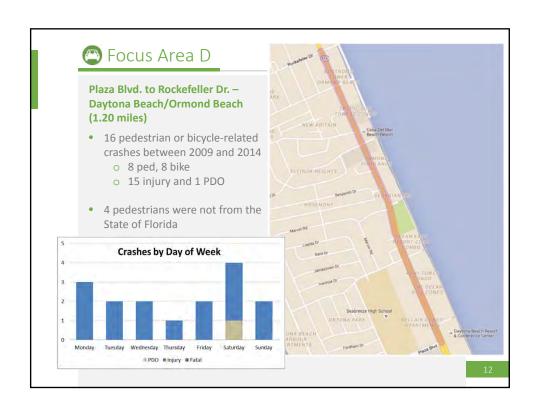


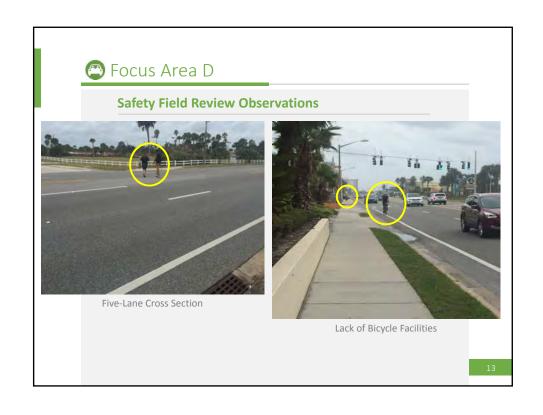




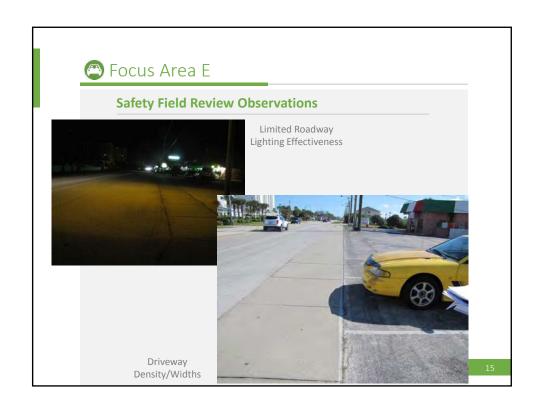




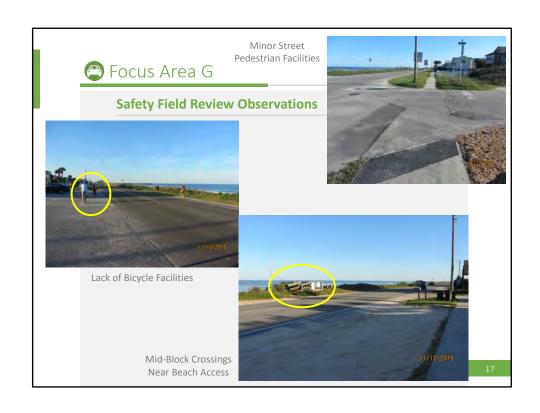














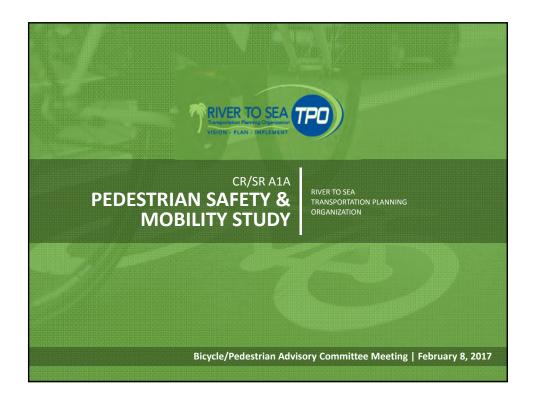


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FEBRUARY 2017 R2CTPO MEETING PRESENTATIONS

River to Sea TPO







Project Overview

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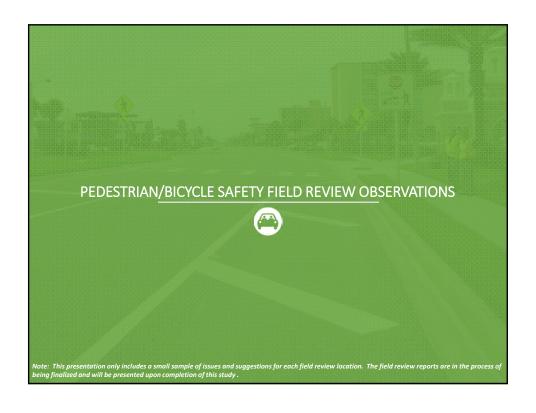
Expand countermeasures to be applicable along other sections of A1A in a systemic manner



Work Completed

Fall 2015 through Winter 2016

- September to December 2015 Completed first round of pedestrian/bicycle safety field reviews
- February 2016 to May 2016 Completed second round of safety field reviews
- June 2016 to August 2016 Finalized first 6 Focus Area reports, draft SR A1A corridor report, and countermeasure matrix
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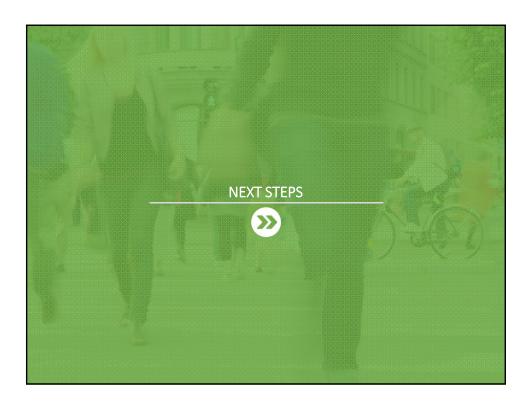








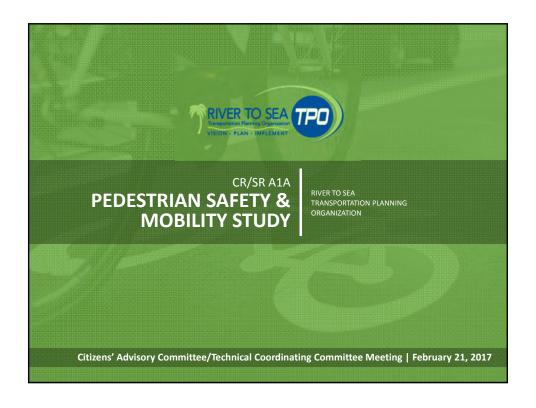




Next Steps

- Present to CAC/TCC and TPO Board at end of month
- Finalize Focus Area F, H, and I draft reports
- Update systemic countermeasure matrix for new observed issues
- Update draft SR A1A overall corridor report with findings from additional Focus Areas









Project Overview

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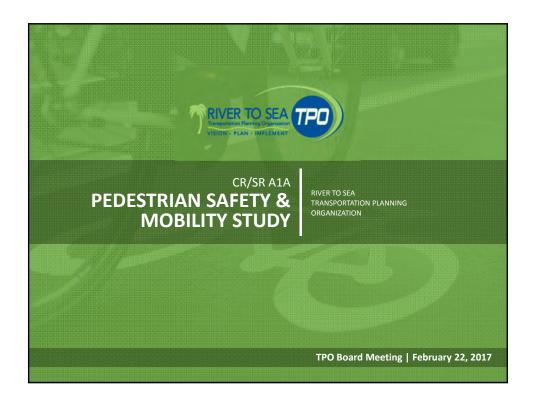


Next Steps

- Present to TPO Board tomorrow
- Finalize Focus Area F, H, and I draft reports
- Update systemic countermeasure matrix for new observed issues
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13









Project Overview

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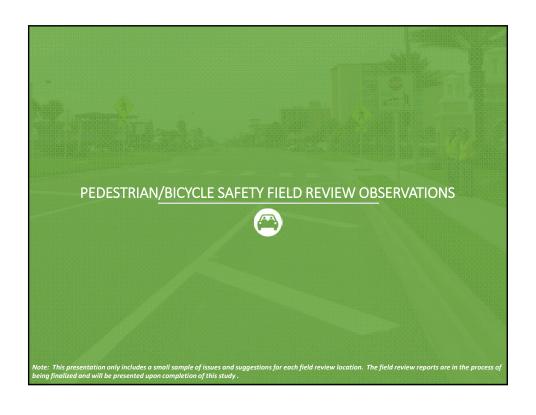
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13



Appendix B Literature Review References

River to Sea TPO

DAYTONA BEACH SHORES SIDEWALK FEASIBILITY ISSUES AND RECOMMENDATIONS

River to Sea TPO B - 2

STUDY AREA DESCRIPTION

The C.R. A1A (South Atlantic Avenue) corridor can be described in two segments; the north and south based on roadway characteristics.

C.R. A1A North (Dunlawton Avenue to approximately 750 feet south of Phillis Avenue)

- Contains an 80-foot public right-of-way (Volusia County)
- Concrete sidewalks on east and west sides, ranging in width from 3-5 feet
- Numerous driveway cuts and poorly designated driveway entrances to adjacent parcels along the corridor (both concrete and asphalt surfaces)
- Five-lane typical section with curb and gutter and landscaped center median or center turn lane
- Roadway section is approximately 63 feet measured from curb to curb
- Travel lanes are approximately 12 feet wide and the turn lane/landscaped median is approximately 13 feet wide
- Land uses on east side generally consist of oceanfront hotel/condo/motel
- Land uses on west side generally consist of commercial north of the pier then hotel/condo/motel
- Power poles at edge of right-of-way on both sides of South Atlantic Avenue
- Approximately three unsignalized mid block crossings pedestrian refuge islands in median
- VOTRAN transit route with bus stops on east and west side (buses have bike racks)
- VOTRAN bus stops typically consist of signs and benches
- Approximately seven VOTRAN bus stops are located within the segment
- Four public beach access points, one has marked pedestrian crossing.

C.R. AIA South (Approximately 750 feet south of Phillis Avenue to Marcelle Avenue)

- Contains an 80-foot public right-of-way (Volusia County)
- Just south of Phillis Avenue: three-lane section is approximately 33 feet wide from outside edges of asphalt, including center turn lane (no curb and gutter)
- Travel lanes are approximately 11 feet wide and the two-way turn lane is approximately 12 feet wide
- Unpaved shoulders are approximately 20 feet wide with natural swales, stormwater inlets, utilities and utility poles
- Concrete sidewalks are located on the east and west side, ranging in width from 4-5 feet
- Numerous driveway cuts and points of conflict
- Concrete power poles at edge of ROW on both sides of project
- Land uses on east side generally consist of oceanfront hotel/condo/motel
- Land uses on west side generally consist of condo/motel/hotel until Emilia Avenue, then west side is generally single family residential
- Southern end of segment is primarily single family residential on the west and east sides of the segment
- VOTRAN transit route with bus stops on east and west side (buses have bike racks)
- VOTRAN bus stops typically consist of signs and benches
- Approximately four VOTRAN bus stops are located within the segment
- Four public beach access points, one has marked pedestrian crossing.

STUDY AREA ISSUES AND CONCERNS

The following issues and concerns were developed based on meetings with the Volusia County MPO, the City of Daytona Beach Shores, field observations, GIS analysis, aerial photo evaluations, and field

inventories (see Figures 5 - 8). The following issues represent findings for the study area and are presented as support for study recommendations.

- Substandard sidewalk widths
- Inconsistent sidewalk alignments
- Inconsistent alignment of crosswalks at intersections
- Lack of bicycle lanes
- Obstacles on or adjacent to sidewalks, such as utility poles, fire hydrants
- Lack of sidewalks across driveway aprons
- Lack of marked crosswalks
- Non-ADA compliant bus stops (no sidewalk connection from bus stop to the edge of roadway
- Lack of clearly defined pedestrian realm at street edge along parking lots and driveway entrances
- No clearly defined and consistent bicycle or pedestrian facilities within entire corridor on east and west side
- Sidewalk gaps located throughout the corridor
- Abrupt end to sidewalk at Marcelle Avenue beach access crosswalk
- Limited and inconsistent pedestrian crossings at beach access points
- Inconsistent curb and gutter infrastructure throughout northern segment
- Non-ADA compliant pedestrian facilities
- Several excessively-wide, shallow driveway throats

RECOMMENDATIONS

The following focus points have been developed to address three main principles for bicycle and pedestrian facility development along C.R. A1A/South Atlantic Avenue within the City of Daytona Beach Shores:

- I. Address existing pedestrian facility infrastructure within the study area that does not comply with the Americans with Disabilities Act (ADA) minimum requirements to reduce potential non-ADA compliant liability
- II. Develop a consistent and continuous sidewalk facility on both sides of the study area corridor that connects to existing east/west beach access pedestrian facilities
- III. Include design recommendations that recognize regional bicycle and pedestrian facilities, efforts, and network goals

The design recommendations listed below address each of the three points above:

C.R. A1A North (Dunlawton Avenue to approximately 750 feet south of Phillis Avenue)

- 1) Remove the outer lanes of the five-lane roadway to provide a three-lane roadway with eight-foot wide meandering sidewalks on both sides (see **Figure 9** and **Figure 10**). The design/construction of this facility should incorporate the following:
 - a. Address the level of pedestrian activity in the study area.
 - b. Provide sufficient width to connect with the required seven-foot dedicated concrete beach access breezeway/visual corridor along oceanfront properties.
 - c. Provide an eight-foot concrete pad for bus stops and associated benches (recommended dimension by FDOT).
 - d. Provide a consistent sidewalk facility within the regional bicycle and pedestrian network
 - e. Allow for adequate lateral clearance from obstacles near the path.
 - i. To provide adequate clearance from any obstructions that may abut the right-of-way line, the path should be placed at least three feet from the right-of-way line.





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STUDY AREA ISSUES

CR A1A SIDEWALK FEASIBILITY STUDY CITY OF DAYTONA BEACH SHORES, FL

SCALE: NTS PROJECT NO. 149288000 September 2008 FIGURE 5





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Port Orrange, Fl. 32127
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Fax (386) 761-0469
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STUDY AREA ISSUES

CR A1A SIDEWALK FEASIBILITY STUDY CITY OF DAYTONA BEACH SHORES, FL

SCALE: NTS PROJECT NO. 149288000	September 2008	FIGURE 6
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STUDY AREA ISSUES

CR A1A SIDEWALK FEASIBILITY STUDY CITY OF DAYTONA BEACH SHORES, FL

FIGURE 7 SCALE: NTS PROJECT NO. 149288000 September 2008



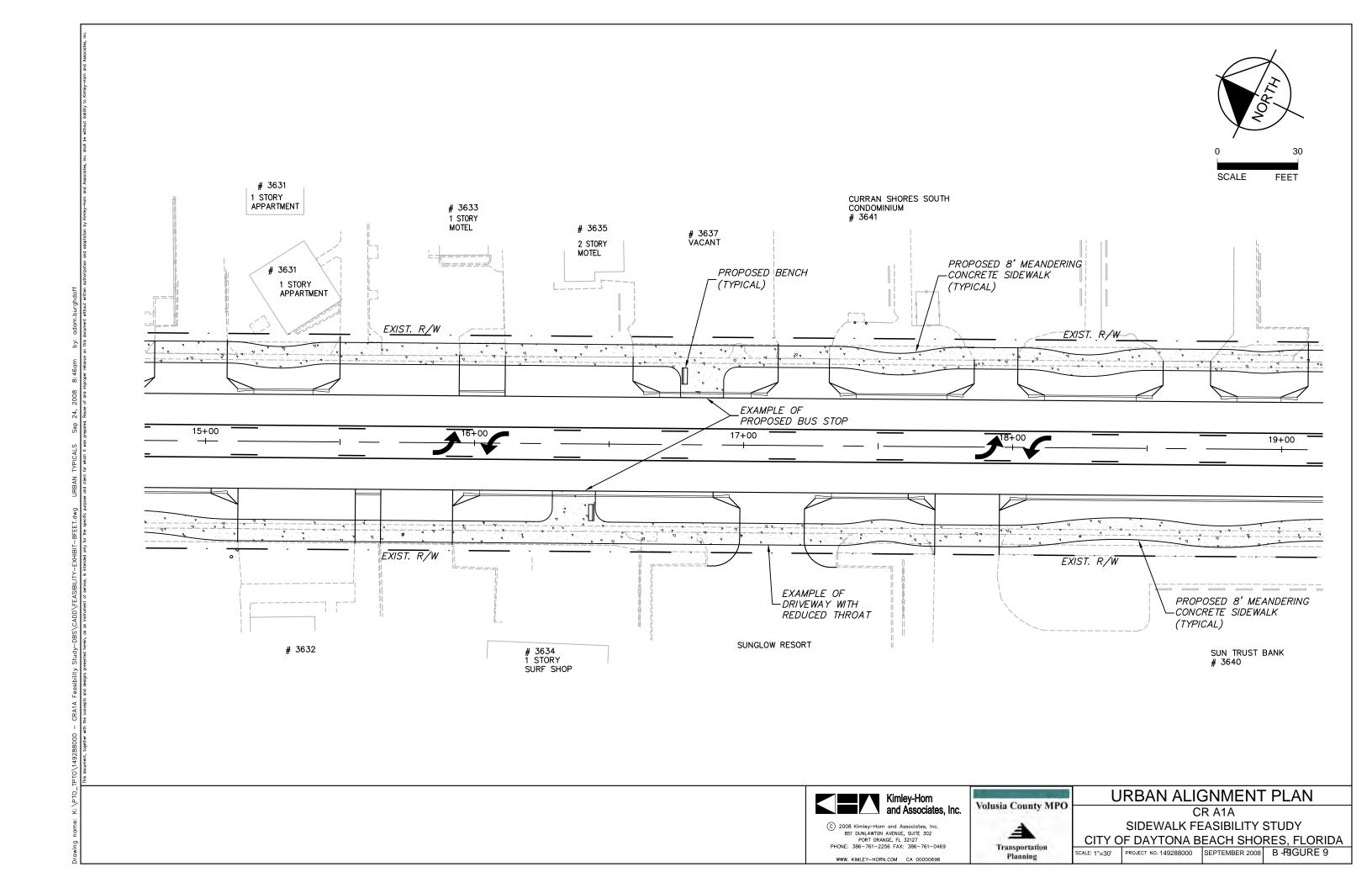


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CR A1A SIDEWALK FEASIBILITY STUDY CITY OF DAYTONA BEACH SHORES, FL

SCALE: NTS PROJECT NO. 149288000 September 2008 FIGURE 8



URBAN TYPICAL SECTION



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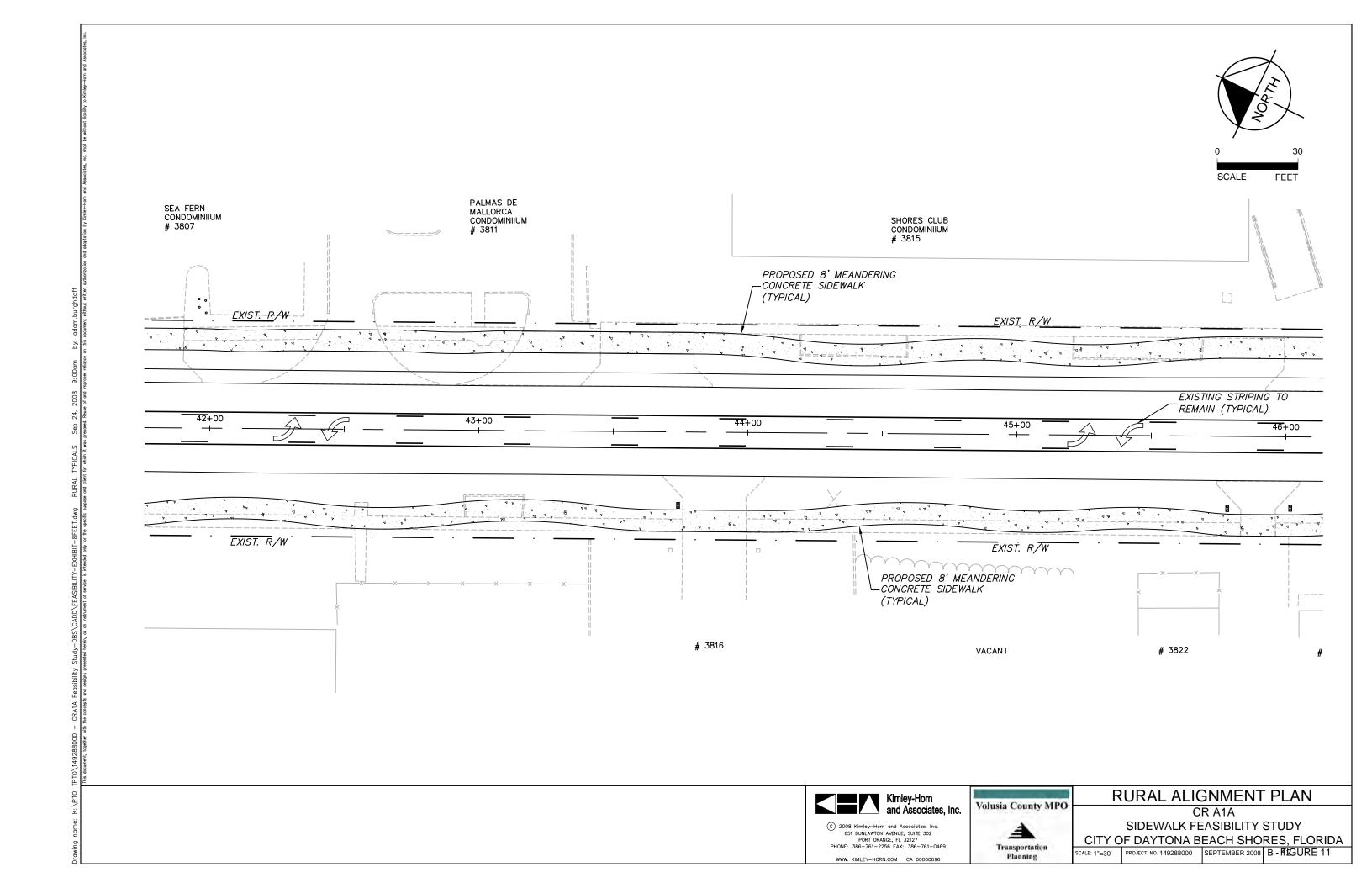
URBAN TYPICAL SECTION CR A1A SIDEWALK FEASIBILITY STUDY CITY OF DAYTONA BEACH SHORES, FLORIDA

PROJECT NO. 149288000 SEPTEMBER 2008 B - FOGURE 10

- 2) Eliminate the existing raised medians that primarily serve as decorative pedestrian-crossing refuge areas as the conversion of the five-lane section to a three-lane section effectively eliminates the need for these refuge areas due to the shorter crossing distance. Though it may have been possible with the five-lane section, the alterations to the roadway, due to the installation of the sidewalk, create an operational hazard for vehicles attempting to make a U-turn within the tighter three-lane section. The elimination of the medians will discourage all U-turns throughout the corridor.
- 3) Modify the southerly leg of the Dunlawton Avenue intersection to one southbound departure lane, one northbound left-turn lane, and one northbound shared through/right-turn lane to provide the necessary area to extend the eight-foot wide sidewalks to Dunlawton Avenue.
- 4) Replace existing asphalt driveway entrance ramps with concrete driveway ramps and aprons, where applicable.
- 5) In an effort to provide an ADA-compliant maximum two percent pathway cross-slope at each individual driveway entrance, there are some instances where driveway ramps may require slopes in excess of the County's maximum allowable slope of eight percent.
 - a. County approval would be needed to allow slopes in excess of eight percent.
- 6) Where feasible, reduce existing driveway throat widths to standard two-lane widths.
- 7) Consolidate consecutive driveways, where feasible, to reduce conflict points with the path.
- 8) Install eight-foot wide curb ramps, excluding aprons, at all east/west intersecting roadways (if curbs exist on intersecting streets).
- 9) Install eight-foot wide longitudinal crosswalk markings ('ladder crosswalks') at all east/west intersections.
- 10) Require the construction of seven-foot breezeway/visual corridor dedicated concrete pathways on oceanfront properties per land development code (14-18.4) to connect the beach to the recommended eight-foot meandering sidewalk along C.R. AIA/South Atlantic Avenue.

C.R. A1A South (Approximately 750 feet south of Phillis Avenue to Marcelle Avenue)

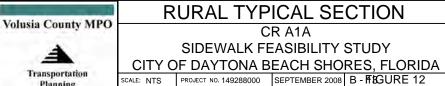
- 1) Construct an eight-foot wide meandering sidewalk beginning at the three-lane typical section just south of Phillis Avenue (see **Figure 11** and **Figure 12**).
- 2) The recommended minimum separation between the road and the sidewalk should be at least five feet. It is important to note that there are not specific clearance guidelines as stated by FDOT; however, the recommended minimum separation between a rural roadway and a shared-use path is five feet. Ultimately, however, the placement of the path shall be determined using the following Florida Greenbook Standards:
 - a. Pedestrian facilities should be placed at least as far from the rural roadway, particularly those with flush shoulders, as stipulated by the following criteria, which are given in a sequence of desirability:
 - i. Outside of the highway right of way in a separately dedicated corridor.
 - ii. At or near the right of way line (ideally, 3 feet width should be provided behind the sidewalk for above ground utilities).
 - iii. Outside the designed roadside clear zone.
 - iv. Outside the minimum required roadside clear zone.
 - v. As far from the edge of the driving lane as possible.
- 3) Use 15-foot utility easements adjacent to public right-of-way in highly constrained areas, or areas with considerable permanent obstacles, to construct portions of recommended sidewalks, if necessary, and if utility easements have been previously dedicated to the City of Daytona Beach Shores for GC-2 Retail/Service Commercial District properties.
- 4) Install eight-foot wide longitudinal crosswalk markings ('ladder crosswalks') at all east/west intersections.





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- 5) Maintain minimum 3-foot horizontal clearance from all lateral obstructions, the tops of slopes with a grade greater than 1:6, and right-of-way lines. Where the path is adjacent to slopes steeper than 1:3, a wider separation should be considered. If the provision of adequate clearance from lateral obstructions is not feasible, provide aluminum pedestrian railings to prevent a fall hazard.
- 6) Construct curbing along the roadway where there are steep-sided ditches and maintaining a three-foot separation from the path is infeasible.

DUNLAWTON AVENUE AT C.R. A1A (S. ATLANTIC AVENUE) INTERSECTION ANALYSIS

The proposed alteration to the northern section from five lanes to three lanes will require alterations to the southerly leg of the Dunlawton Avenue intersection. To identify recommended changes, an analysis of the C.R. A1A/Dunlawton Avenue intersection was conducted. For this analysis, AM and PM peak-hour turning movement counts were obtained during a typical weekday. Then, to account for the time of year that the counts were taken, the Volusia countywide seasonal factor was obtained from FDOT's FTI 2007 software and applied to each of the intersection movements. Following, the adjusted counts were factored up to the 2025 design year using historical annual growth rates. Because the historical traffic volume data indicates that the growth in recent years has been relatively stagnant a default minimum two-percent annual growth rate was applied to the approach and departure volumes at the intersection to provide a conservatively high estimate of the future turning movement volumes for year 2025.

The intersection was then analyzed, using the proposed intersection geometry and future volumes, with *Synchro 7*'s HCM Methodology. The proposed geometry is consistent with the existing geometry with the exception that one southbound departure lane and one northbound left-turn lane were removed to accommodate the sidewalk. Based on the Highway Capacity Manual 2000 (HCM2000), the level of service is a qualitative measure with letters ranging from A to F and each representing a range of operating conditions and driver's perception of those conditions. The specific level of service for signalized intersections is defined in terms of control delay. More expansive descriptions for each level of service (LOS) grade, as obtained from the HCM2000, are provided below:

- LOS A Describes operations with low control delay, up to 10 seconds per vehicle. This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.
- LOS B Describes operations with control delay greater than 10 and up to 20 seconds per vehicle. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.
- LOS C Describes operations with control delay greater than 20 and up to 35 seconds per vehicle. These higher delays may result from only fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles, and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.
- LOS D Describes operations with control delay greater than 35 and up to 55 seconds per vehicle. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and high volume-

to-capacity (v/c) ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

LOS E – Describes operations with control delay greater than 55 and up to 80 seconds per vehicle. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent.

LOS F – Describes operations with control delay in excess of 80 seconds per vehicle. This level, considered unacceptable to most drivers, often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.

Another measure used in evaluating the operating conditions of signalized intersections is the volume-to-capacity (v/c) ratio. The capacity is given for each movement and is effectively defined as the maximum flow of vehicles that can be processed by the specific movement. V/c ratios in excess of 1.0 indicate that the demand exceeds the capacity. However, values below 1.0 indicate that all vehicles can be accommodated.

Based on the Synchro analysis, the intersection is projected to operate well at an overall level of service (LOS) of "C" in both the AM and PM peak hours in 2025 with the proposed configuration of the southerly leg. In fact, all intersection turning movements are projected to operate at LOS "D" or better and exhibit v/c ratios well below 1.0. The Synchro printouts are included in Appendix A.

Other Considerations for Enhanced Bicycle and Pedestrian Facility Improvements

Bus/Bike/Right Turn Only Lanes

One consideration for the C.R. A1A North segment of the study area is to convert the existing outside travel lanes within the five-lane section to Bus/Bike/Right Turn Only lanes. Due to the number of bus stops within the corridor, tourist mobility needs, and the comparable speeds of buses and bicycles this option may provide a viable multimodal function. This type of facility has been successfully implemented in U.S. cities such as Philadelphia, PA and Santa Cruz, CA (*ITE Innovative Bicycle Treatments*). Level of service may be affected by such a facility, however transit currently operates in the corridor and level of service is affected when vehicles must stop behind buses (the corridor does not have dedicated bus pull-outs or paved shoulders).

Volusia County Scenic Roadway Designation

Volusia County has criteria set forth in their Comprehensive Plan (*Chapter 94, Article II, Section 94-31*) to designate corridors as "Scenic Roadways." Scenic roadway designation could provide the County and City of Daytona Beach Shores additional opportunities for funding C.R. A1A corridor improvements. The designation may also provide additional local recognition of the corridor and generate additional beautification, public access, tourism and recreational facility improvement-related initiatives.

FINANCIAL FEASIBILITY

Table 1 provides an **Engineer's Opinion of Probable Cost (EOPC)** to construct the proposed corridor, as described above, based on the FDOT 2008 Basis of Estimates Manual. This estimate is based upon the Area 6 FDOT Item Average Unit Cost (FIAUC) report for the year 2007. The unit costs from the FIAUC report were then increased based on an inflation factor of five percent to bring them to year 2008 costs. As shown in **Table 1**, the projected total estimated cost for design and construction of the sidewalks, and the design and reconstruction costs for three-laning the northern section of C.R. A1A during the year 2008 is \$3,624,312.

To further understand the costs associated with the design and construction of the sidewalks only, another EOPC was developed which assumes that the three-laning of C.R. A1A is in place. The projected cost for this scenario during the year 2008, as indicated in **Table 2**, is **\$1,150,044**.

Table 1

ENGINEER'S OPINION OF PROBABLE COSTS FOR AN 8-FOOT WIDE MEANDERING SIDEWALK ALONG C.R. A1A (S. ATLANTIC AVENUE) DAYTONA BEACH SHORES, FL

THIS OPC IS NOT BASED ON DESIGN AND UTILIZES THE 2007 FDOT AREA 06 ITEM AVERAGE UNIT COSTS ACTUAL CONSTRUCTION COSTS WILL VARY

		Estimated	Unit of	2007 Unit	Inflation				Extend		Cost		
Item Number	Description	Quantity	Measure	Price	Factor					ar			
		CON	STRUCTION 1	TEME			2008	<u> </u>	2009	_	2010	_	2011
	1	COP	ISTRUCTION	ILIVIS		г –		г -					
110-1-1	CLEARING & GRUBBING	6.6	AC	\$ 9,353,34	5%	\$	64.819	\$	68,060	\$	71,463	\$	75,036
110-1-1	REMOVAL OF EXISTING STRUCTURE	30	EA	\$ 10.42	5%	\$	328	\$	345	\$	362	\$	380
110-4	REMOVAL OF EXISTING CONCRETE PAVT	12.910	SY	\$ 15.39	5%	\$	208,619	\$	219.050	\$	230,003	\$	241,503
120-6	EXCAVATION AND EMBANKMENT	10,000	CY	\$ 8.00	5%	\$	84,000	\$	88,200	\$	92,610	\$	97,241
160-4	TYPE B STABILIZATION	2,380	SY	\$ 2.60	5%	\$	6,497	\$	6,822	\$	7,163	\$	7,522
285-7-01	OPTIONAL BASE, BASE GROUP 01	13,730	SY	\$ 6.54	5%	\$	94,284	\$	98,998	\$	103,948	\$	109,145
285-7-09	OPTIONAL BASE, BASE GROUP 09	2,380	SY	\$ 8.97	5%	\$	22,416	\$	23,537	\$	24,714	\$	25,949
286-1	TURNOUT CONSTRUCTION	8,200	SY	\$ 20.44	5%	\$	175,988	\$	184,788	\$	194,027	\$	203,729
327-70-1	MILLING EXIST ASPH PAVT, 1" AVG DEPTH	11,600	SY	\$ 1.99	5%	\$	24,238	\$	25,450	\$	26,723	\$	28,059
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	262	TN	\$ 74.24	5%	\$	20,423	\$	21,445	\$	22,517	\$	23,643
337-7-33	ASPH CONC FC. TRAFFIC C. FC-12.5. RUBBER	638	TN	\$ 92.46	5%	\$	61,939	\$	65,036	\$	68,288	\$	71,702
425-1311	INLETS, CURB, TYPE P-1, <10'	34	EA	\$ 3,615,70	5%	\$	129,080	\$	135,535	\$	142,311	\$	149,427
430-171-101	PIPE CULV OPT MATL, ROUND, 0-24", SS	4,410	LF	\$ 51.00	5%	\$	236,156	\$	247,963	\$	260,361	\$	273,380
520-1-10	CONCRETE CURB & GUTTER, TYPE F	6,300	LF	\$ 17.47	5%	\$	115,564	\$	121,342	\$	127,409	\$	133,780
522-1	SIDEWALK CONC, 4" THICK	7,300	SY	\$ 53.05	5%	\$	406,628	\$	426,960	\$	448,308	\$	470,723
522-2	SIDEWALK CONC, 6" THICK	3,690	SY	\$ 43.96	5%	\$	170,323	\$	178,839	\$	187,781	\$	197,170
570-1-2	PERFORMANCE TURF, SOD	10,530	SY	\$ 2.53	5%	\$	27,973	\$	29,372	\$	30,840	\$	32,382
		MISCELLA	NEOUS TRAFF	IC CONTROI									
	MODIFY EXISTING SIGNAL AT DUNLAWTON	1	LS	\$ 75,000	5%	\$	78,750	\$	82,688	\$	86,822	\$	91,163
	SIGNING AND PAVEMENT MARKINGS	1	LS	\$ 20,000	5%	\$	21,000	\$	22,050	\$	23,153	\$	24,310
	SUBTOTAL BEFORE	F MOT				\$	1.949.027	¢	2.046,478	¢	2.148.802	\$	2,256,242
	SUBTOTAL BEFORE	E MOI				φ	1,949,027	φ	2,040,476	9	2,140,002	9	2,230,242
102-1	MAINTENANCE OF TRAFFIC		LS	15%	5%	\$	292,354	\$	306,972	\$	322,320	\$	338,436
1021	I I I I I I I I I I I I I I I I I I I		2.5	1370	370	Ψ	2,2,00	Ψ	500,772	Ψ	322,320	Ψ	550,150
	SUBTOTAL BEFORE MOBILIZATION					\$	2,241,381	\$	2,353,450	\$	2,471,122	\$	2,594,678
102-2	MOBILIZATION		LS	10%	5%	\$	224,138	\$	235,345	\$	247,112	\$	259,468
	SUBTOTAL BEFORE DESIGNA	CONTINGE	NCY			\$	2,465,519	\$	2,588,795	\$	2,718,234	\$	2,854,146
	n Favor						2 50 05 -	_	200.21		105 55	_	100 15-
	DESIGN		LS	15%	5%	\$	369,828	\$	388,319	\$	407,735	\$	428,122
000.05	CEI	ĺ	LS	12%	5%	\$		\$	310,655		326,188	\$	342,498
999-25	INITIAL CONTINGENCY*		LS	20%	5%	\$	493,104	\$	517,759	\$	543,647	\$	570,829
	l .			Tr	TAL COST	4	2 (24 212	4	2 005 520	4	2 005 004	6	4 105 505
				T	OTAL COST	\$	3,624,312	\$	3,805,528	\$	3,995,804	\$	4,195,595

*AN INITIAL CONTINGENCY OF 20% WAS APPLIED TO ACCOUNT FOR THE UNCERTAIN MISCELLANEOUS COSTS THAT MAY ARISE DURING CONSTRUCTION

THIS OPC DOES NOT INCLUDE THE COSTS FOR ANY RIGHT-OF-WAY OR EASEMENT ACQUISITIONS.

THIS OPC DOES NOT INCLUDE THE COSTS ASSOCIATED WITH THE RELOCATION OF OVERHEAD POWER POLES OR GUY WIRES.

THIS OPC DOES NOT INCLUDE THE COSTS ASSOCIATED WITH OBTAINING PERMITS.

THIS OPC DOES NOT INCLUDE THE COSTS FOR LANDSCAPING OR STREETSCAPING.

THE COSTS FOR YEARS 2008 THROUGH 2011 WERE GENERATED USING A 5% INFLATION RATE.

THE ENGINEER HAS NO CONTROL OVER THE COST OF LABOR, MATERIALS, EQUIPMENT, OR OVER THE CONTRACTOR'S METHODS OF DETERMINING PRICES OR OVER COMPETITIVE BIDDING OR MARKET CONDITIONS. OPINIONS OF PROBABLE COSTS PROVIDED HEREIN ARE BASED ON THE INFORMATION KNOWN TO ENGINEER AT THIS TIME AND REPRESENT ONLY THE ENGINEER'S JUDGMENT AS A DESIGN PROFESSIONAL FAMILIAR WITH THE CONSTRUCTION INDUSTRY. THE ENGINEER CANNOT AND DOES NOT GUARANTEE THAT PROPOSALS, BIDS, OR ACTUAL CONSTRUCTION COSTS WILL NOT VARY FROM ITS OPINIONS OF PROBABLE COSTS.

Table 2

ENGINEER'S OPINION OF PROBABLE COSTS FOR AN 8-FOOT WIDE MEANDERING SIDEWALK ALONG C.R. A1A (S. ATLANTIC AVENUE) (SIDEWALK ONLY)

DAYTONA BEACH SHORES, FL

THIS OPC IS NOT BASED ON DESIGN AND UTILIZES THE 2007 FDOT AREA 06 ITEM AVERAGE UNIT COSTS ACTUAL CONSTRUCTION COSTS WILL VARY

		Estimated Unit of		2007 Unit	Inflation	Extended Cost							
Item Number	Description	Quantity	Measure	Price	Factor	Year							
					ractor		2008		2009		2010		2011
		CON	STRUCTION I	TEMS									
										_			
110-1-1	CLEARING & GRUBBING	3.6	AC	\$ 9,353.34	5%	\$	35,356		37,039	\$	38,723	\$	40,406
110-4	REMOVAL OF EXISTING CONCRETE PAVT	100	SY	\$ 15.39	5%	\$	1,616		1,693		1,770	\$	1,847
120-6	EXCAVATION AND EMBANKMENT	1,500	CY	\$ 8.00	5%	\$	12,600		13,200		13,800	\$	14,400
160-4	TYPE B STABILIZATION	11,100	SY	\$ 2.60	5%	\$	30,303	\$	31,746	\$	33,189	\$	34,632
286-1	TURNOUT CONSTRUCTION	1,000	SY	\$ 20.44	5%	\$	21,462	\$	22,484	\$	23,506	\$	24,528
520-1-10	CONCRETE CURB & GUTTER, TYPE F	500	LF	\$ 17.47	5%	\$	9,172	\$	9,609	\$	10,045	\$	10,482
522-1	SIDEWALK CONC, 4" THICK	7,300	SY	\$ 53.05	5%	\$	406,628		425,992	\$	445,355	\$	464,718
522-2	SIDEWALK CONC, 6" THICK	3,700	SY	\$ 43.96	5%	\$	170,785	\$	178,917	\$	187,050	\$	195,182
570-1-2	PERFORMANCE TURF, SOD	5,000	SY	\$ 2.53	5%	\$	13,283	\$	13,915	\$	14,548	\$	15,180
						_				_			
	SUBTOTAL BEFORE	ЕМОТ				\$	701,204	\$	734,594	\$	767,985	\$	801,376
102-1	MAINTENANCE OF TRAFFIC		LS	5%	5%	\$	35,060	\$	36,730	\$	38,399	\$	40,069
102 1	MAINTENANCE OF TRAITIE		LS	370	370	Ψ	33,000	Ψ	30,730	Ψ	30,377	Ψ	40,007
	SUBTOTAL BEFORE MOI	BILIZATION				\$	736,264	\$	771,324	\$	806,384	\$	841,444
102-2	MOBILIZATION		LS	10%	5%	\$	73,626	\$	77,132	\$	80,638	\$	84,144
	SUBTOTAL BEFORE DESIGN/CONTINGENCY						809,890	\$	848,456	\$	887,023	\$	925,589
	I					\$,	Ť	0.10,100	7	,	7	, _,,,,,,,
	DESIGN		LS	15%	5%	\$	121,484	\$	127,268	\$	133.053	\$	138,838
	CEI		LS	12%	5%	\$	97.187		101,815		,	\$	111,071
999-25	INITIAL CONTINGENCY*		LS	15%	5%	\$	121,484	\$	127,268	\$	133,053	\$	138,838
1						Ľ	,	ĺ	,	ĺ	,	ĺ	,
	•	-		TO	OTAL COST	\$	1,150,044	\$	1,204,808	\$	1,259,572	\$	1,314,336

*AN INITIAL CONTINGENCY OF 15% WAS APPLIED TO ACCOUNT FOR THE UNCERTAIN MISCELLANEOUS COSTS THAT MAY ARISE DURING CONSTRUCTION

THIS OPC DOES NOT INCLUDE THE COSTS FOR ANY RIGHT-OF-WAY OR EASEMENT ACQUISITIONS.

THIS OPC DOES NOT INCLUDE THE COSTS FOR ANY DRAINAGE MODIFICATIONS

THIS OPC DOES NOT INCLUDE THE COSTS ASSOCIATED WITH THE RELOCATION OF OVERHEAD POWER POLES OR GUY WIRES.

THIS OPC DOES NOT INCLUDE THE COSTS ASSOCIATED WITH OBTAINING PERMITS.

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NEW SMYRNA BEACH PEDESTRIAN SAFETY STUDY EXECUTIVE SUMMARY

River to Sea TPO

1 EXECUTIVE SUMMARY

GMB Engineers & Planners has performed a Pedestrian Safety Study for S. Atlantic Avenue from the New Smyrna Beach city limits to 3rd Avenue in Volusia County, Florida. Within the study limits, S. Atlantic Avenue is a two-lane undivided roadway with a bi-directional left turn lane and a posted speed limit of 45 mph between the City Limits and 27th Avenue, a four-lane undivided roadway with a bi-directional left turn lane and a posted speed limit of 45 mph from 27th Avenue to 7th Avenue, and a four-lane undivided roadway with a bi-directional left turn lane and a posted speed limit of 40 mph from 7th Avenue to 3rd Avenue. The purpose of the Study is to evaluate the corridor and determine what measures could be taken to improve pedestrian and bicyclist safety within it. Numerous beneficial measures are identified in the report, but it should be noted that these are suggestions only, and it should be incumbent on the City of New Smyrna Beach and Volusia County to reach a consensus of how the road should be classified and determine which measures would be the most beneficial to the community as a whole. Based on the results of pedestrian and vehicular volumes, crash analysis and observations in the field, the following Comparison of Beneficial Measures and Summary of Crosswalk Measures are presented for consideration:

TABLE 1: COMPARISON OF BENEFICIAL MEASURES

		INCREASES	INCREASES	DECREASES	
		PED	BIKE	VEHICULAR	APPROXIMATE
	MEACUDE				
	MEASURE	SAFETY	SAFETY	SPEED	COST
1	Consider installing				
	continuous bicycle facilities				
	along S. Atlantic Avenue	.,	.,	.,	h40.61
	a) 4' Paved Shoulders	N	Y	N	\$136k
	b) 5' Paved Shoulders	N	Y	Р	\$400k
2	Consider installing sidewalk				
	along east side of S. Atlantic	Y	N	N	\$150K
	Ave. between 27th Avenue				
	and 7 th Avenue				
3	Consider installing RRFBs				
	(Rectangular Rapid Flashing	37	, n	D	\$10K/intersection
	Beacons) at Oyster Quay, 24th	Y	P	Р	\$50K Total
	Avenue, 7th Avenue, 18th				
	Avenue & 12th Avenue				
4	Consider supplying				
	pedestrian flags. Can be used				
	at all non-signalized	Y	N	N	\$3.00/flag
	crosswalks. Good candidates				
	are 26 th Avenue, 20 th Avenue,				
-	15th Avenue, 8th Avenue				
5	Consider installing median				
	refuge islands at mid-block	37	37	37	φ4.000 /: 1 1
	crosswalks south of Sea	Y	Y	Y	\$4,000/island
	Woods Boulevard and south of Bahama Drive ¹				
6	Consider installing advance				
	yield markings with signs. Can be used at all crosswalks				
	without existing or proposed	Y	Y	N	\$1,500/intersection
	active treatments. Good candidates are 26th Avenue,	I	I	1N	φ1,500/ mtel Section
	20th Avenue, 15th Avenue, 8th				
	Avenue and 6th Avenue/7th				
	Avenue mid-block crossing				
7	Consider installing on-street				
'	parking along S. Atlantic	P	P	Y	\$400K
	Avenue	r	r	ı	ΦΉUUN
	Voc N-No D-Dogsibly				

Y=Yes, N=No, P=Possibly

 1 Consideration should be given to having an Access Management Study completed to determine the necessity of providing full access along the corridor and left turns into and out of the side streets.

TABLE 2: SUMMARY OF CROSSWALK MEASURES

LOCATION	CROSSWALK TYPE	TRAFFIC CONTROL	CROSSING NUMBER OF LANES	POSTED SPEED LIMIT (MPH)	PED CROSSING SIGNS (W11-2)	LIGHTING	CROSSWALK SPACING (FT)	CUMMULATIVE CROSSWALK SPACING (FT)	POTENTIAI MEASURE
Beginning of Project	N/A	N/A	3	45	No	No		8	_ +
S of Sea Woods Blvd	Mid Block	None	3	45	Yes	No	1,345	1,345	Ped Refuge Island
Oyster Quay	Intersection	None	3	45	Yes	Yes	1,125	2,470	RRFB
Mathews Ave	Intersection	Ped Signal	3	45	Yes	Yes	1,105	3,575	None
S. of Bahama Dr.	Mid Block	None	3	45	Yes	No	560	4,135	Ped Refuge Island
27th Ave	Intersection	Signal	S	45	No	Yes	250	6,685	None
26th Ave	Intersection	None	5	45	Yes	Yes	360	7,045	Flag/Yield Marking
24th Ave	Intersection	None	5	45	Yes	Yes	705	7,750	RRFB
20th Ave	Intersection	None	5	45	Yes	Yes	1,400	9,150	Flag/Yield Marking
18th Ave	Intersection	None	5	45	Yes	Yes	700	9,850	RRFB
15th Ave	Intersection	None	5	45	Yes	Yes	1,050	10,900	Flag/Yield Marking
12th Ave	None	None	5	45	No	Yes	1,040	11,940	RRFB
8th Ave	Intersection	None	5	45	Yes	Yes	2,450	14,390	Flag/Yield Marking
7th Ave	Intersection	None	5	40	No	Yes	360	14,750	RRFB
6th Ave & 7th Ave	Mid Block	None	5	40	Yes	Yes	145	14,895	Yield Markings
3rd Ave	Intersection	Signal	5	40	No	Yes	1,235	16,130	None

13,830

Total =	2.62	miles	

DAYTONA BEACH PEDESTRIAN SAFETY AUDIT REPORT SUMMARY TABLES

River to Sea TPO B - 23



SUMMARY OF RECOMMENDATIONS

This pedestrian safety audit considers operational and safety related issues for pedestrians and bicyclists on SR A1A/Atlantic Avenue from Earl Street to Oakridge Boulevard. This study was commissioned by FDOT District Five to develop short-term, near-term, and long-term recommendations to improve the safety of pedestrians and bicyclists within the study limits. The recommendations of this study, detailed in the report, are summarized in the table below by priority (short-term, near-term, or long-term).

Location	Issue	Suggestion					
	SHORT-TERM PRIORITY						
		It is suggested the City continue the search for a suitable material that will improve the crosswalk visibility and					
Corridor-Wide	Crosswalks	properly adhere to the concrete pavement. In lieu of more visible crosswalk markings, it is suggested that advanced					
		crosswalk signage be provided to notify motorists of the crosswalk location.					
Corridor-Wide	Pedestrian Curb Ramps and	Consider replacing the older pedestrian pushbutton signage with sign FTP-68B-06 (Standard Index No. 17355, Sheet					
Germaer Triac	Pushbuttons	8).					
Corridor-Wide	Nighttime Visibility	Consider sending a maintenance team to check light bulbs and replace as needed.					
Corridor-Wide	Vehicular Speeds	Consider increased law enforcement to enforce the posted speed in this high pedestrian activity area.					
Corridor-Wide	Event Coordination	It is suggested there be improved coordination between events at the Ocean Center and the City staff (i.e. Economic Development, City Manager, Public Works, Police) to provide the appropriate level of traffic control support.					
Earl Street Intersection	Sidewalk and Pedestrian Ramps	Consider painting the edge of the concrete block yellow to call out the curb on the southeast corner. Consider resetting the pavers on the northeast corner to mitigate the potential trip hazard.					
Earl Street Intersection	Sidewalk and Pedestrian Ramps	Consider replacing the detectable warning surfaces on the intersection's pedestrian ramps.					
Earl Street Intersection	Northeast Corner Pedestrian Signal	Consider remounting the pedestrian signal to the east side of the mast arm pole to improve its visibility.					
Earl Street Intersection	Pedestrian Signal Timing	Consider using pedestrian recall in the evening timing plan as well as the afternoon.					
Mid-Block between Earl Street and Ora Street	Hilton Driveway Intersection Sight Distance	Consider adding signing and pavement markings at the driveway to better define the pedestrian realm at the driveway. These may include marking the stop bar, marking the crosswalk, and installing a stop sign (potentially on private property).					
Mid-Block between Earl Street and Ora Street	Burger King Driveway	Consider installing a "Turning Vehicles Yield to Pedestrians" sign facing the exiting vehicle at the driveway.					
Ora Street Intersection	Street Name Sign	Consider replacing the illuminated street name sign for Ora Street on the southbound-facing mast arm.					
Ora Street Intersection	Pedestrian Signal Timing	Consider adjusting the signal timing to provide a minimum of 20 seconds for the intersection's pedestrian clearance intervals					
Ora Street Intersection	Detectable Warning Surfaces	Consider replacing the intersection's detectable warning surfaces.					
Mid-Block between Ora Street and Oakridge Boulevard	Driveway Alley Sight Distance	Consider improving the intersection sight distance by removing and/or managing obstacles (trees, signs, etc.) in front of the business at 411 N Atlantic Avenue.					
Oakridge Boulevard Intersection	Pedestrian Pushbutton Signage	Consider replacing the signs correlating the pedestrian pushbuttons to the appropriate crosswalks on the southwest and southeast corners.					



Location	Issue	Suggestion					
NEAR-TERM PRIORITY							
Corridor-Wide	Crosswalks	Consider wayfinding solutions to provide pedestrian-oriented signage instructing pedestrians to use crosswalks and guiding pedestrians to proper crossing locations (i.e. R9-3, R9-3bP).					
Corridor-Wide	Pedestrian Curb Ramps and Pushbuttons	Consider options to upgrade the standard pedestrian pushbuttons and countdown signals to accessible pedestrian signals (APS) to better accommodate visually-impaired pedestrians.					
Corridor-Wide	Pedestrian Curb Ramps and Pushbuttons	Consider opportunities to realign the existing pedestrian ramps at the signalized intersections to directionally lead pedestrians into the appropriate crosswalks.					
Corridor-Wide	Nighttime Visibility	If the City is licensing the pedicabs, consider options to require upgraded vehicle lighting to reduce the risk of pedicab- automobile conflicts					
Corridor-Wide	Vehicular U-Turns	Consider conducting a study to evaluate opportunities to restrict U-turns where necessary and provide advanced U-turn pockets where appropriate. Potential issues such as the typical section width and the operational impacts of redirected U-turn movements should be considered in the study.					
Earl Street Intersection	Sidewalk and Pedestrian Ramps	Consider opportunities to relocate the pedestrian pushbutton closer to the northwest pedestrian ramp to conform to ADA requirements.					
Mid-Block between Earl Street and Ora Street	Mid-Block Crossings	Consider opportunities to discourage mid-block crossings in the area. Options include but are not limited to the following: • Install wayfinding signage on SR A1A's east side to guide pedestrians to crosswalks • Install a series of knee walls, benches, etc. to channelize pedestrians exiting the parking garage and Votran transfer center through the small park area and to the southwest corner of the Ora Street signalized intersection • Repair the elevator to the pedestrian bridge and add wayfinding signage directing pedestrians the pedestrian bridge. If the elevator will remain out of service, provide wayfinding signage to the parking garage elevator in the vicinity of the staircase.					
Mid-Block between Earl Street and Ora Street	Mid-Block Crossings	Consider installing underdeck lighting on the pedestrian bridge to improve visibility on SR A1A at night.					
Ora Street Intersection	South Crosswalk	Consider relocating the northbound stop bar further south and marking the south crosswalk just south of the Wyndham driveway. This improvement would require pedestrian signals to be installed on the intersection's southwest and southeast corners and modifications to the median traffic separator.					
Ora Street Intersection	Eastbound Right-Turn Movement	Consider installing "Turning Vehicles Yield to Pedestrians" signs and increased law enforcement to improve eastbound vehicles stopping prior to RTOR. If problems persist, consider prohibiting eastbound RTOR at the intersection. Note the additional vehicular demand during the minor street green time could negatively impact the pedestrian/auto conflicts during the pedestrian walk phase.					
Mid-Block between Ora Street and Oakridge Boulevard	Mid-Block Crossings	Consider conducting a study for a the installation of a mid-block pedestrian crosswalk with rectangular rapid flashing beacon (RRFB) or other crossing treatment north of Butler Blvd.					
Oakridge Boulevard Intersection	North Crosswalk	Consider marking the crosswalk and providing pedestrian countdown signals on the intersection's north side. Consider coordinating with the developer to include the crosswalk with pedestrian countdown signals on the intersection's north side when making improvements to the intersection.					
Oakridge Boulevard Intersection	Intersection Sight Distance	Coordinate with the developer rebuilding a portion of the intersection to consider improving the intersection sight distance on the eastbound approach by relocating the signal controller box to the northwest corner. Consider the placement of the signal pole and the trees on the northwest corner. If intersection sight distance cannot be improved for the eastbound movement, consider prohibiting eastbound right-turn-on-red. Note this has the potential to increase vehicle-pedestrian conflicts in the south crosswalk during the eastbound green phase.					



Location	Issue	Suggestion				
LONG-TERM PRIORITY						
Corridor-Wide	Crosswalks	Consider also channelizing locations to appropriate crossings where opportunities exist, including the ground-floor				
Corridor-Wide	CIOSSWAIKS	exit from the parking garage transfer station to the Ora Street signal.				
Corridor-Wide	Nighttime Visibility	Consider upgrading the corridor lighting to be consistent with the latest FDOT guidance, particularly at the				
Corridor-wide	Wignitume visibility	intersections, and consider installing underdeck lighting on the pedestrian bridge.				
		The potential of a road diet through the study area was discussed. If further consideration is given to cross-section				
Corridor-Wide	Truck Loading/Unloading	changes, opportunities to provide designated truck loading/unloading zones should be explored. It is suggested the				
		City and FDOT also consider truck loading/unloading activity as properties redevelop.				
		Consider options to improve bicycle travel and/or reduce bicycle-pedestrian conflicts, including:				
		Coates Street as a possible non-auto path, currently stretching two blocks between Earl Street and Butler Blvd				
Corridor-Wide	Sidewalk Capacity and Bicycle	Potential for SR A1A road diet should consider bike lanes, wider sidewalks, accommodations for events, truck				
Corridor-wide	Conflicts	loading/unloading, and hurricane evacuation activities				
		• Trolley service with 15-min headways to improve mode shift; team members noted Votran has done a trolley				
		service in the area on a limited basis in the past				
		Consider opportunities in the future to reduce the number of (westbound) receiving lanes on Earl Street to one lane				
		and widen the sidewalk, creating additional width around the mast arm and reducing the pedestrian crossing distance				
Earl Street Intersection	Sidowalk and Dodostrian Dames	across Earl Street. Another potential option to consider includes removing the northwest corner mast arm				
Lan street intersection	Sidewalk and Pedestrian Ramps	altogether and relocating the signals to hang from the mast arm in the southwest corner. This improvement would				
		likely require the replacement of the existing southwest corner mast arm assembly with a larger base to support the				
		longer cantilever.				

DAYTONA BEACH SHORES PEDESTRIAN SAFETY STUDY RECOMMENDATIONS

River to Sea TPO



Matchline A





Bus Stop

Traffic Signal

VBA Vehicle Beach Access

PBA Pedestrian Beach Access





Traffic Engineering Data Solutions, Inc.

80 Spring Vista Drive Phone: 386.753.0558 DeBary, FL 32713 Fax: 386.753.0778











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RIVER TO SEA
TRANSPORTATION
PLANNING ORGANIZATION

FIGURE 3 (PAGE 3 OF 5)
OVERALL IMPROVEMENT SCHEME

PAGE NO. B - 30

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Appendix C SR/CR A1A Corridor Wide Crash Analysis Summary Statistics

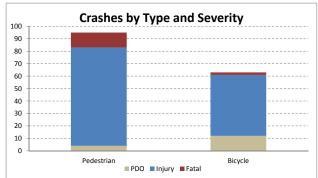
River to Sea TPO C - 1

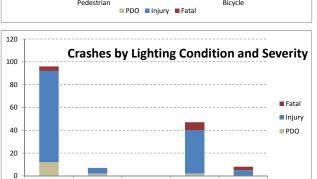
				Analys	is Year				Severity				
		2009	2010		2012	2013	2014	PDO	Injury	Fatal	Total	Average	Percent
	Pedestrian	16	18	29	14	11	7	4	79	12	95	15.83	60.1%
Type of Crash	Bicycle	10	12	9	14	13	5	12	49	2	63	10.50	39.9%
	Total Crashes	26	30	38	28	24	12	16	128	14	158	26.33	100.0%
	PDO	3	3	4	5	0	1				16	2.67	10.1%
Crash Severity	Injury	20	22	32	21	24	9				128	21.33	81.0%
	Fatal	3	5	2	2	0	2				14	2.33	8.9%
	Daylight	12	18	22	19	18	7	12	80	4	96	16.00	60.8%
	Dusk	0	0	2	3	1	1	2	5	0	7	1.17	4.4%
Light Conditions	Dawn	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
3	Dark w/ Street Light	12	11	11	6	5	2	2	38	7	47	7.83	29.7%
	Dark w/o Street Light	2	1	3	0	0	2	0	5	3	8	1.33	5.1%
	Unknown	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
0 (10 0 0 0 177)	Dry	25	28	37	27	24	11	16	122	14	152	25.33	96.2%
Surface Condition	Wet	1	2	1	1	0	1	0	6	0	6	1.00	3.8%
	Other	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	January	1 3	1 2	1 2	2 3	1 2	2	0	8 9	0 2	8 12	1.33 2.00	5.1%
	February March	5	2	6	6	1	0 1	1 4	16	1	21	3.50	7.6% 13.3%
	April	3	3	4	2	2	0	1	11	2	14	2.33	8.9%
	May	3	1	5	2	3	1	0	14	1	15	2.50	9.5%
	June	1	4	2	2	4	2	4	10	1	15	2.50	9.5%
Month	July	1	2	7	2	0	2	3	10	1	15	2.33	9.5% 8.9%
	August	0	1	4	2	3	2	1	9	2	12	2.33	7.6%
	September	0	5	2	2	3	1	1	9	3	13	2.00	7.6% 8.2%
	October	2	3 4	4	2	2	0	1	13	0	13	2.17	8.2% 8.9%
	November	3	2	1	2	1	1	0	10	0	10	2.33 1.67	6.3%
	December	3 4	3	0	1	2	0	0	9	1	10	1.67	6.3%
	Monday	3	4	8	4	1	1	3	14	4	21	3.50	13.3%
	Tuesday	3	3	2	2	2	3	1	11	3	∠1 15	2.50	9.5%
	Wednesday	1	3	6	7	5	ა 1	3	20	0	23	3.83	14.6%
Day of Week	Thursday	2	4	7	2	3	2	1	19	0	20	3.33	12.7%
Day of Week	Friday	4	3	1	7	6	0	0	21	0	21	3.50	13.3%
	Saturday	10	9	7	3	5	0	5	24	5	34	5.67	21.5%
	Sunday	3	4	7	3	2	5	3	19	2	24	4.00	15.2%
	0:00	2	0	7	5	0	1	2	12	1	15	2.50	9.5%
	1:00	2	1	0	0	0	1	0	4	0	4	0.67	2.5%
	2:00	0	1	1	0	0	0	0	2	0	2	0.87	1.3%
	3:00	1	0	0	0	0	0	1	0	0	1	0.33	0.6%
	4:00	0	1	0	0	0	0	0	0	1	1	0.17	0.6%
	5:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	6:00	0	0	1	0	1	0	0	2	0	2	0.33	1.3%
	7:00	1	0	0	1	1	1	0	3	1	4	0.67	2.5%
	8:00	0	1	1	0	2	0	0	4	0	4	0.67	2.5%
	9:00	1	1	1	1	0	0	0	4	0	4	0.67	2.5%
	10:00	1	0	1	2	2	1	1	6	0	7	1.17	4.4%
	11:00	2	3	0	1	1	1	2	5	1	8	1.33	5.1%
Hour of Day	12:00	0	2	2	5	3	1	3	9	1	13	2.17	8.2%
	13:00	1	3	1	1	1	2	0	9	0	9	1.50	5.7%
	14:00	2		2	1	1					7	1.17	
	15:00	2	1 2	2	1	3	0	1 0	6 9	0 1	10	1.17	4.4% 6.3%
	16:00	2	1	4	1	3	0	2	9	0	11	1.83	7.0%
	17:00	0	1	2	3	ა 1	1	1	7	0	8	1.33	7.0% 5.1%
	18:00	2	3	1	1	0	1	1	5	2	8	1.33	5.1%
	19:00	0	2	3	4	2	0	2	8	1	11	1.83	7.0%
	20:00	1	4	2	1	1	0	0	8	1	9	1.50	5.7%
	21:00	2	1	4	0	1	2	0	7	3	10	1.67	6.3%
	22:00	2	1	1	0	1	0	0	5	0	5	0.83	3.2%
	23:00	2	1	2	0	0	0	0	4	1	5	0.83	3.2%
	None	20	25	34	26	22	9	15	114	7	136	22.67	86.1%
	Alcohol Involved	5	4	2	2	2	3	1	12	5	18	3.00	11.4%
Alcohol	Drugs Involved	0	0	1	0	0	0	0	1	0	1	0.17	0.6%
,	Alcohol and Drugs	1	1	1	0	0	0	0	1	2	3	0.50	1.9%
		0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Undetermined			10	8	3	3		,	J	32	5.33	20.3%
	Undetermined 19 and Under	5	.3			L							8.9%
	19 and Under	5 1	3 2	4	2	4	1				14	2.33	
	19 and Under 20-24	1	2	4 5	2 2	4 1	1				14 10	2.33 1.67	
	19 and Under 20-24 25-29	1	2 1	5	2	1	0				10	1.67	6.3%
	19 and Under 20-24 25-29 30-34	1 1 1	2 1 1	5 0	2 0	1	0 0				10 3	1.67 0.50	6.3% 1.9%
	19 and Under 20-24 25-29 30-34 35-39	1 1 1 3	2 1 1 2	5 0 2	2 0 0	1 1 1	0 0 2				10 3 10	1.67 0.50 1.67	6.3% 1.9% 6.3%
	19 and Under 20-24 25-29 30-34 35-39 40-44	1 1 1 3	2 1 1 2 2	5 0 2 2	2 0 0 0	1 1 1	0 0 2 0				10 3 10 6	1.67 0.50 1.67 1.00	6.3% 1.9% 6.3% 3.8%
Age of Pedestrian/Riggelist	19 and Under 20-24 25-29 30-34 35-39 40-44 45-49	1 1 3 1 2	2 1 1 2 2 4	5 0 2 2 3	2 0 0 0 3	1 1 1 1	0 0 2 0				10 3 10 6 12	1.67 0.50 1.67 1.00 2.00	6.3% 1.9% 6.3% 3.8% 7.6%
Age of Pedestrian/Bicyclist	19 and Under 20-24 25-29 30-34 35-39 40-44 45-49 50-54	1 1 1 3 1 2	2 1 1 2 2 4 2	5 0 2 2 3 1	2 0 0 0 3 3	1 1 1 1 0 3	0 0 2 0 0				10 3 10 6 12	1.67 0.50 1.67 1.00 2.00 1.83	6.3% 1.9% 6.3% 3.8% 7.6% 7.0%
Age of Pedestrian/Bicyclist	19 and Under 20-24 25-29 30-34 35-39 40-44 45-49 50-54	1 1 1 3 1 2 1 3	2 1 1 2 2 4 2	5 0 2 2 3 1 3	2 0 0 0 3 3 3	1 1 1 1 0 3 3	0 0 2 0 0 1				10 3 10 6 12 11 14	1.67 0.50 1.67 1.00 2.00 1.83 2.33	6.3% 1.9% 6.3% 3.8% 7.6% 7.0% 8.9%
Age of Pedestrian/Bicyclist	19 and Under 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64	1 1 3 1 2 1 3	2 1 1 2 2 4 2 1	5 0 2 2 3 1 3 4	2 0 0 3 3 3	1 1 1 1 0 3 3	0 0 2 0 0 1 1				10 3 10 6 12 11 14 12	1.67 0.50 1.67 1.00 2.00 1.83 2.33 2.00	6.3% 1.9% 6.3% 3.8% 7.6% 7.0% 8.9% 7.6%
Age of Pedestrian/Bicyclist	19 and Under 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69	1 1 3 1 2 1 3 1	2 1 1 2 2 4 2 1 4	5 0 2 2 3 1 3 4	2 0 0 0 3 3 3	1 1 1 0 3 3 1	0 0 2 0 0 1 1 2				10 3 10 6 12 11 14 12	1.67 0.50 1.67 1.00 2.00 1.83 2.33 2.00	6.3% 1.9% 6.3% 3.8% 7.6% 7.0% 8.9% 7.6% 6.3%
Age of Pedestrian/Bicyclist	19 and Under 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69 70-74	1 1 1 3 1 2 1 3 1 1 4	2 1 1 2 2 4 2 1 4 2	5 0 2 2 3 1 3 4 2	2 0 0 0 3 3 3 0 4	1 1 1 1 0 3 3 1 1	0 0 2 0 1 1 2 0				10 3 10 6 12 11 14 12 10	1.67 0.50 1.67 1.00 2.00 1.83 2.33 2.00 1.67	6.3% 1.9% 6.3% 3.8% 7.6% 7.0% 8.9% 7.6% 6.3% 4.4%
Age of Pedestrian/Bicyclist	19 and Under 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69 70-74 75-79	1 1 1 3 1 2 1 3 1 1 4	2 1 1 2 2 4 2 1 4 2 1	5 0 2 2 3 1 3 4 2	2 0 0 3 3 3 0 4	1 1 1 0 3 3 1 1 1	0 0 2 0 0 1 1 2 0				10 3 10 6 12 11 14 12 10 7	1.67 0.50 1.67 1.00 2.00 1.83 2.33 2.00 1.67 1.17	6.3% 1.9% 6.3% 3.8% 7.6% 7.0% 8.9% 7.6% 6.3% 4.4% 3.2%
Age of Pedestrian/Bicyclist	19 and Under 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69 70-74	1 1 1 3 1 2 1 3 1 1 4	2 1 1 2 2 4 2 1 4 2	5 0 2 2 3 1 3 4 2	2 0 0 0 3 3 3 0 4	1 1 1 1 0 3 3 1 1	0 0 2 0 1 1 2 0				10 3 10 6 12 11 14 12 10	1.67 0.50 1.67 1.00 2.00 1.83 2.33 2.00 1.67	6.3% 1.9% 6.3% 3.8% 7.6% 7.0% 8.9% 7.6% 6.3% 4.4%

				Analys	is Year				Severity	,			
		2009	2010	2011		2013	2014	PDO			Total	Average	Percent
	19 and Under	5	2	6	6	2	5				26	4.33	16.5%
	20-24	1	4	6	2	4	2				19	3.17	12.0%
	25-29	1	0	1	2	2	0				6	1.00	3.8%
	30-34	1	1	2	0	0	0				4	0.67	2.5%
	35-39	2	2	1	1	1	0				7	1.17	4.4%
	40-44	4	1	1	2	1	0				9	1.50	5.7%
	45-49	2	2	2	2	3	2				13	2.17	8.2%
Age of Driver	50-54	1	1	2	2	3	1				10	1.67	6.3%
	55-59	1	3	4	1	0	1				10	1.67	6.3%
	60-64	2	2	1	1	2	0				8	1.33	5.1%
	65-69	1	0	4	3	1	0				9	1.50	5.7%
	70-74	0	2	1	0	0	0				3	0.50	1.9%
	75-79	1	0	2	1	0	0				4	0.67	2.5%
	80-84	0	4	0	2	1	0				7	1.17	4.4%
	85 and Over	3	0	0	0	1	0				4	0.67	2.5%
	2 Lane Undivided	7	6	12	8	4	6	5	32	6	43	7.17	27.2%
	3 Lane w/Two Way Left Turn Lane	0	2	0	3	1	2	0	5	3	8	1.33	5.1%
Roadway Type	4 Lane Divided	10	7	16	7	11	3	9	43	2	54	9.00	34.2%
	4 Lane Undivided	0	0	0	0	1	0	0	1	0	1	0.17	0.6%
	5 Lane w/Two Way Left Turn Lane	9	15	10	10	7	1	2	47	3	52	8.67	32.9%
	30	1	1	3	0	0	1	0	6	0	6	1.00	3.8%
	35	17	15	25	16	16	3	10	77	5	92	15.33	58.2%
Speed Limit	40	4	10	1	5	6	1	3	21	3	27	4.50	17.1%
Speed Limit	45	4	3	7	7	2	7	3	23	4	30	5.00	19.0%
	50	0	0	2	0	0	0	0	1	1	2	0.33	1.3%
	55	0	1	0	0	0	0	0	0	1	1	0.17	0.6%
	2	7	6	12	8	4	6	5	32	6	43	7.17	27.2%
Total Niverbas of Lanca	3	0	2	0	3	1	2	0	5	3	8	1.33	5.1%
Total Number of Lanes	4	10	7	16	7	12	3	9	44	2	55	9.17	34.8%
	5	9	15	10	10	7	1	2	47	3	52	8.67	32.9%
Nasa Dasah Dadisas	No	24	29	34	26	24	11	14	120	14	148	24.67	93.7%
Near Beach Parking	Yes	2	1	4	2	0	1	2	8	0	10	1.67	6.3%
Near Buo Stop	No	20	24	28	16	18	10	11	95	10	116	19.33	73.4%
Near Bus Stop	Yes	6	6	10	12	6	2	5	33	4	42	7.00	26.6%
Near Park	No	18	20	28	22	17	9	13	90	11	114	19.00	72.2%
Near Falk	Yes	8	10	10	6	7	3	3	38	3	44	7.33	27.8%
Near Chile Lend Hea	No	21	27	28	23	19	11	12	105	12	129	21.50	81.6%
Near Civic Land Use	Yes	5	3	10	5	5	1	4	23	2	29	4.83	18.4%
Near Marked Creesing	No	16	13	21	16	11	8	7	67	11	85	14.17	53.8%
Near Marked Crossing	Yes	10	17	17	12	13	4	9	61	3	73	12.17	46.2%
Near Marked Crossing but Outside	No	19	22	31	23	19	9	12	99	12	123	20.50	77.8%
Influence Area^	Yes	7	8	7	5	5	3	4	29	2	35	5.83	22.2%
	Bike Crashes on Sections with Shoulder/Bike Lane	6	7	5	7	7	3	5	28	2	35	5.83	55.6%
Bicycle Crashes	Total Bike Crashes	10	12	9	14	13	5	12	49	2	63	10.50	44.4%
	% Crashes with Facility	60%	58%	56%	50%	54%	60%	42%	57%	100%			
Pedestrian/Bicycle Crashes on Segment	No	17	15	22	17	15	3	10	74	5	89	14.83	56.3%
with Sidewalk or Multi-Use Path	Yes	9	15	16	11	9	9	6	54	9	69	11.50	43.7%
Middin Andria. Zana	No	8	11	14	14	9	9	11	46	8	65	10.83	41.1%
Within Activity Zone	Yes	18	19	24	14	15	3	5	82	6	93	15.50	58.9%
	Mid-Block	8	12	12	7	6	4	0	39	10	49	8.17	31.0%
Pedestrian/Bicycle Crash Location Bicycle Riding Against Traffic	At signalized intersection crosswalk	7	9	10	5	2	1	3	30	1	34	5.67	21.5%
	At driveway crossing	6	2	5	7	9	4	4	29	0	33	5.50	20.9%
	Along side of roadway	3	5	4	2	1	1	2	11	3	16	2.67	10.1%
	At signalized intersection	0	0	0	0	1	0	0	1	0	1	0.17	0.6%
	No	5	8	4	2	4	2	5	18	2	25	4.17	39.7%
Bicycle Riding Against Traffic	Yes	3	1	2	7	5	3	2	19	0	21	3.50	33.3%
Non-Local*	No	10	7	11	9	9	7	4	43	6	53	8.83	33.5%
inon-locai"	Yes	13	18	20	12	9	3	2	65	8	75	12.50	47.5%
	Vehicle	12	16	20	13	12	6	4	62	13	79	13.17	50.0%
Who Had Right-of-Way	Pedestrian	4	5	8	4	2	1	1	22	1	24	4.00	15.2%
	Bicycle	7	7	3	4	5	3	4	25	0	29	4.83	18.4%
^ See report for influence area definition.													_

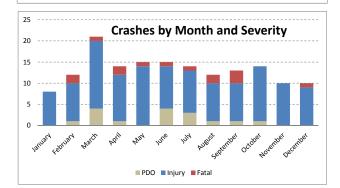
[^] See report for influence area definition.

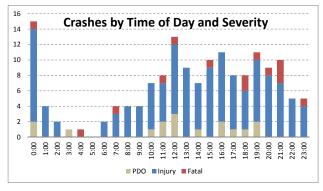
^{*}This was determined by reviewing ZIP codes of ped/bike involved in crash for each specific focus area. If the ZIP code matched that of the focus area, this was deemed a local crash.

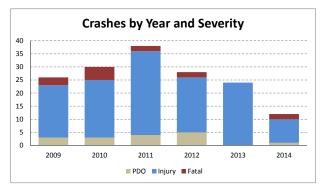


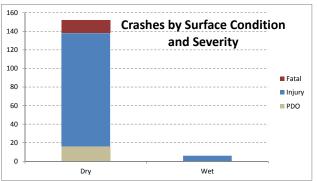


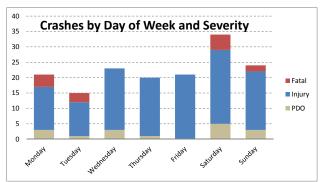
Street Light

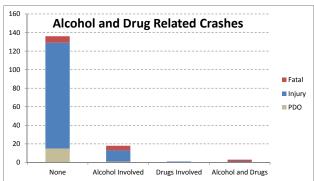


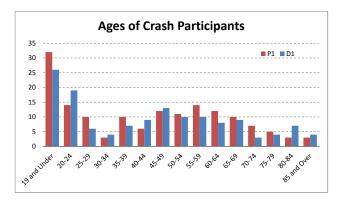


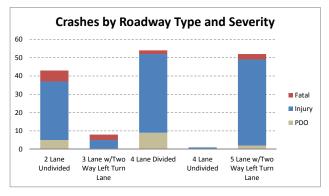


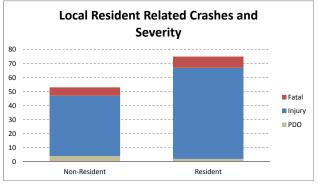


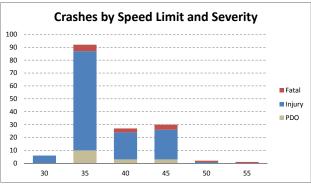












Appendix D Safety Field Review Suggestion Summary Tables

Riverto Sea TPO D - 1

FOCUS AREA A - NEW SMYRNA BEACH

River to Sea TPO

Focus Area A - New Smyrna Beach

Location	Issue Number	Issue	Suggestion
			SHORT-TERM MAINTENANCE
Corridor Wide	2	Detectable Warning Surfaces	Consider replacing/installing detectable warning surfaces at major driveways on the south side of the corridor per FDOT Design Standard Index 304.
Corridor Wide	5	Push Button Placement	Consider rotating the pedestrian push button detectors at each of the signalized intersections so the face of the pedestrian detectors is parallel to the crosswalk to be used, as discussed in section 4E.08 of the 2009 Manual of Uniform Traffic Control Devices (MUTCD).
Corridor Wide	7	Crosswalk Markings	At signalized intersections, consider restriping the crosswalks with special emphasis marked crosswalks as shown on sheet 9 of the FDOT Design Standard Index 17346 during the next resurfacing project. At Cooper Street, consider striping a crosswalk across the stop controlled approach with standard markings as shown on sheet 9 of the FDOT Design Standard Index 17346. Consider restriping the driveway crosswalks with standard crosswalk markings.
Peninsula Avenue Intersection	8	Landscape/Tree Maintenance	As per the date of this report, FDOT submitted a maintenance work order and has since removed the vegetation/canopy so no trees are hanging over the right of way. Regular maintenance to keep the vegetation cut back should be considered around this corner.
Peninsula Avenue Intersection	9	Sidewalk Terminus	The MUTCD does not have a warning sign for the end of a sidewalk, but the PAVEMENT ENDS sign W8-3 could be modified to read SIDEWALK ENDS. A SIDEWALK CLOSED sign R9-9 from section 6F.14 of the MUTCD could also be utilized to inform pedestrians the sidewalk ends. A warning plaque (W16-2aP) reading 200 FT could be installed below the SIDEWALK CLOSED sign to inform pedestrians how far ahead the sidewalk ends. Consider installing the preferred signage on the southwest corner of the Peninsula Avenue intersection to inform pedestrians they need to cross on the west leg crosswalk.
Peninsula Avenue Intersection	11	_	Consider implementing a leading pedestrian interval for the west and east leg crosswalks prior to the onset of the southbound green phase. If implemented, this should be done in concert with a blank-out NO RIGHT TURN ON RED sign facing the southbound approach that is active during the leading pedestrian interval. Blank-out sign options include a NO RIGHT TURN ON RED message that transitions to a YIELD TO PEDESTRIANS message at the onset of the southbound green phase.
Mid-Block between Peninsula Avenue and Horton Street/Saxon Drive	12	Mid-Block Crosswalk Enhancements	The team discussed the following safety enhancements to be considered at the crossing: Restripe the crosswalk with special emphasis crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346 during the next resurfacing project. Remove the trees located in the median that are immediately adjacent to the crosswalk. Signage improvements — o Move the pedestrian warning signage for the westbound direction so it is not obstructed by the light pole. o Add pedestrian warning signage to the median side for each direction of travel. o Move the advanced pedestrian warning signage approximately 150' closer to the crossing so it is 300' away based on sheet 10 of the FDOT Design Index 17346. Trim back the oak tree on the north side so the north side of the crosswalk is illuminated more than it is today.
Mid-Block between Peninsula Avenue and Horton Street/Saxon Drive	14	Pot Hole Just East of Cooper Street	Consider repairing the roadway in the vicinity of the pot hole area.
Horton Street/Saxon Drive Intersection	15		Consider making the blank-out NO TURN ON RED sign facing the southbound approach active during the leading pedestrian interval. Also consider converting the blank-out sign to a sign that transitions between the NO RIGHT TURN ON RED message and a YIELD TO PEDESTRIANS message at the onset of the southbound green phase.
Mid-Block between Horton Street/Saxon Drive and E 3rd Avenue	17	Sidewalk Clutter	Consider coordinating with the City of New Smyrna Beach to either remove the newspaper/magazine stands or move them off the sidewalk so that the effective sidewalk width at those locations is not restricted.

Focus Area A - New Smyrna Beach

Location	Issue Number	Issue	Suggestion				
	SHORT-TERM MAINTENANCE						
Mid-Block between Horton Street/Saxon Drive and E 3rd Avenue	18		The team discussed the following safety enhancements to be considered at the crossing: • Restripe the crosswalk with special emphasis crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346 during the next resurfacing project. • Remove the trees located in the median that are immediately adjacent to the crosswalk. • Signage improvements — o Add pedestrian warning signage to the median side for each direction of travel. o Move the advanced pedestrian warning signage approximately 100′-125′ closer to the crossing so it is 300′ away based on sheet 10 of the FDOT Design Index 17346. • Install a detectable warning surface on the south side of the crossing per FDOT Design Standard Index 304.				
E 3rd Avenue Intersection	19	Driveways Near Intersection	Consider moving the NO LEFT TURN sign (R3-2) to the same sign post the stop sign is located on for the south driveway.				

Location	Issue Number	Issue	Suggestion				
	NEAR-TERM IMPROVEMENT						
Corridor Wide	1	Vehicular Speed	 Reduce amount of cross sectional width for the travel lanes: o Currently 5' unmarked bicycle lanes are present along with four 12' lanes. o Restripe the pavement to have 11' lanes and a 7' buffered bike lane during the next resurfacing project. Increase speed enforcement to encourage vehicles to drive closer to the posted speed limit based on the results of the speed study. Speed feedback signs that display how fast the vehicle is traveling may help deter speeding along the corridor. 				
Corridor Wide	4	Landscape Buffer Strips	Consider removing small landscape buffer strips at locations where water ponding/sand collection is occurring and replace with concrete to create a wider sidewalk area.				
Peninsula Avenue Intersection	8	Landscape/Tree Maintenance	Consider adding a signal ahead warning sign (W3-3 in MUTCD) on the bridge in the eastbound direction. This could be coupled with a flashing beacon to inform approaching drivers to stop for the signal ahead. The beacon would only be active when the light is yellow/red.				
Peninsula Avenue Intersection	10	Intersection Lighting	Consider upgrading the lighting at the intersection to meet the requirements of section 7.3 in Volume 1 of the FDOT Plans Preparation Manual (PPM). This may require the existing lighting to be replaced.				
Peninsula Avenue Intersection	11	Turning Vehicles and Pedestrians in Crosswalk	Consider installing TURNING VEHICLES YIELD TO PEDESTRIANS (R10-15) signs for right and left turns on the southbound approach (would require further study). Consider reducing the curb return radius on the northwest corner to encourage better stop compliance and slower southbound right turns.				
Mid-Block between Peninsula Avenue and Horton Street/Saxon Drive	12	Mid-Block Crosswalk Enhancements	The team discussed the following safety enhancements to be considered at the crossing: Signage improvements — o Consider providing an active warning device, such as Rapid Rectangular Flashing Beacon (RRFB), at the crosswalk. As part of this installation, pedestrian warning signage would be added in the median. RRFBs may also be used on the advance crosswalk signs per FHWA's interim approval memorandum. A mid-block crossing study would be needed for justification. Install pedestrian scale lighting on the north and south sides of the crosswalk.				

Focus Area A - New Smyrna Beach

Location	Issue Number	Issue	Suggestion
			NEAR-TERM IMPROVEMENT
Mid-Block between Peninsula Avenue and Horton Street/Saxon Drive	13	Cooper Street	At Cooper Street specifically, a directional median providing eastbound left turning movements could be constructed. To accommodate SR A1A pedestrian crossings at this location, consider performing a mid-block crossing study at this intersection. As part of this study, a marked crosswalk on the east leg of the intersection could be reviewed. If the intersection was converted to a directional median opening, a median refuge island would be provided on the east leg for the crosswalk. The following safety enhancements should be considered if a marked crosswalk is installed: • Stripe a crosswalk on the east leg of the intersection with special emphasis crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346. • Consider providing an active warning device, such as a RRFB, at the crosswalk. In-roadway warning lights activated by the RRFB may be considered as well. Standards and guidance from section 4N.02 in the MUTCD should be reviewed when considering inroadway lights. • Install lighting on the crosswalk's west and east sides.
Horton Street/Saxon Drive Intersection	15	Pedestrian Facilities	Because APS is already installed for the east leg, consider improving the other crosswalks at the intersection with APS to improve accessibility for visually-impaired users. Refer to MUTCD Section 4E.11 and Chapter 6 of NCHRP 3-62: Guidelines for Accessible Pedestrian Signals (http://www.apsguide.org/chapter6_geometry.cfm).
Horton Street/Saxon Drive Intersection	16	Intersection Lighting	Consider upgrading the lighting at the intersection to meet the requirements of section 7.3 in Volume 1 of the FDOT Plans Preparation Manual (PPM). This may require the existing lighting to be replaced.
Mid-Block between Horton Street/Saxon Drive and E 3rd Avenue	18		The team discussed the following safety enhancements to be considered at the crossing: • Signage improvements — o Consider providing an active warning device, such as a RRFB, at the crosswalk. As part of this installation, pedestrian warning signage would be added in the median. RRFBs may also be used on the advance crosswalk signs per FHWA's interim approval memorandum. A mid-block crossing study would be needed for justification.
E 3rd Avenue Intersection	19	Driveways Near Intersection	Consider the addition of a raised 2' or 4' concrete separator extending approximately 200' west of the 3rd Avenue intersection. The separator should be located between the eastbound left turn lane and the inside westbound through lane.
E 3rd Avenue Intersection	20	Pedestrian Facilities	Consider a blank-out sign that displays a YIELD TO PEDESTRIANS message at the onset of the southbound green phase to make southbound left turn drivers more aware of pedestrians in the east leg crosswalk.
E 3rd Avenue Intersection	21	Sidewalk Drop Off	Due to the steep slope behind the sidewalk on the northeast corner, consider reviewing this location based on FDOT Plans Preparation Manual (PPM) Figure 8.8.1. If railing is needed, install the railing just off the northeast edge of the sidewalk to prevent pedestrians/bicyclists from walking off the back of the sidewalk into the drainage area.

Location	Issue Number	Issue	Suggestion			
	LONG-TERM IMPROVEMENT					
			Perform an access management study to review the feasibility of:			
Corridor Wide	1	Vehicular Speed	o A raised median between Peninsula Avenue and Horton Street/Saxon Drive.			
			o Spot median installations between Horton Street/Saxon Drive and 3rd Avenue.			
		3 Driveway Aprons	Consider driveway reconstruction during the roadway's next 3R project to provide a level path for the sidewalk and meet ADA			
			guidance. As part of this construction, consider reducing the driveway widths down to the 36' maximum per FDOT Standard Index			
Corridor Wide	3		515. Also as part of this future 3R project, consider eliminating unused driveways.			
			These suggestions could also be performed as properties redevelop along the corridor and it appears these improvements can be			
			done without negatively impacting parking or site circulation on the subject parcels.			
Corridor Wido		Sidewalk Connectivity to	As a reporting reduction plane the possible consider a policy in the preparty purpose a post-vice independent by the transport of CD AAA			
Corridor Wide	Ь	Properties	As properties redevelop along the corridor, consider requiring the property owner to construct sidewalks that connect to SR A			

FOCUS AREA B – DAYTONA BEACH SHORES/DAYTONA BEACH

River to Sea TPO

Location	Issue Number	Issue	Suggestion				
	SHORT-TERM MAINTENANCE						
Corridor Wide	1	Lighting	Replace the lights on the corridor that are burnt out.				
Corridor Wide	5	Minor Street Crosswalks and Stop Bars	Consider emphasizing the pedestrian realm across minor street approaches by restriping crosswalk markings as shown on sheet 9 of FDOT Standard Index 17346. Also consider restriping the stop bar as shown on sheets 2 and 4 of FDOT Standard Index 17346 to emphasize where the vehicle needs to stop before making their turning movement. Locations the study team noted during the review included: • Crosswalks at Old Trail Road, Poinsettia Road, Wisteria Road, Bostwick Avenue, and Mobile Avenue; and • Stop bar at Bostwick Avenue.				
Corridor Wide Daytona Beach Section	7	Sidewalk Walkability	At the locations where trip hazards are present at inlets, consider beveling/grinding the inlet top near the sidewalk joint to reduce/eliminate the trip hazard. Consider moving the trash cans so they are located off the sidewalk.				
Mid-Block between Park Avenue and Botefuhr Avenue	10	Sidewalk Sign Obstruction	Consider reinstalling the sign so the secondary sign either does not project more than 4" into the sidewalk or is greater than 7' above the sidewalk. This may be done by moving the sign off the sidewalk or installing the signs on a taller sign post.				
Mid-Block between Park Avenue and Botefuhr Avenue	11	Sight Distance at Bahama House	Consider working with the property owner to trim back or remove the shrubbery to improve sight distance between exiting vehicles and pedestrians/bicyclists approaching the driveway on the sidewalk.				
Botefuhr Avenue Intersection	12	Street Name Signage and Pavement Markings	Consider installing an interior illuminated, overhead LED SR A1A street name sign at Botefuhr Avenue, per Table 2A-1 of the MUTCD. Consider striping a stop bar on the westbound approach as shown on sheet 4 of FDOT Standard Index 17346 to emphasize where the vehicle needs to stop on red.				
Botefuhr Avenue Intersection	13	Pedestrian Facilities	Consider re-striping the four crosswalk markings with special emphasis crosswalk markings consistent with sheet 9 of the FDOT Design Standard Index 17346. Consider installing detectable warning surfaces at the four curb ramps of the intersection per FDOT Standard Index 304. Contact the maintenance department to fix the countdown timers on the southwest corner for the south leg crosswalk.				
Mid-Block between Botefuhr Avenue and Silver Beach Avenue	14	Bus Stops	As per the date of this report, Votran has worked with the City of Daytona Beach Shores to install a bus stop sign for the stop between Botefuhr Avenue and Flamingo Avenue. Consider trimming the palm tree from in front of the Votran sign on the east side between Botefuhr Avenue and Flamingo Avenue. Consider adding a Votran sign for the stop on the east side at Frazar Road.				
Mid-Block between Botefuhr Avenue and Silver Beach Avenue	15	Sidewalk Walkability	Consider the following suggestions to address the sidewalk walkability issues between Botefuhr Avenue and Silver Beach Avenue: • Replace the sidewalk panels that are cracked on the east side of SR A1A north of Poinsettia Road. • Reinstall the speed limit sign on the west side of SR A1A north of Wisteria Road by moving the sign off the sidewalk or installing the sign on a taller sign post. • Remove the tie down cable trip hazard on the east side of SR A1A north of Wisteria Road. • Grind down or cut away the remaining protruding metal pole on the east side of SR A1A near Temko Terrace. • Work with the property owner to install a grate that is level with the sidewalk on east side of the near Bostwick Avenue. • For the sidewalk maintenance north of Bostwick Avenue on the west side of SR A1A: o Consider regular sidewalk maintenance (sweeping debris/sand) along this section. The maintenance may be scheduled regularly or may be performed after a heavy rain event. o Consider reducing the height of landscape strip to be level or just below the sidewalk and replace with new sod. The landscape strip could also be replaced with concrete to create a wider sidewalk in this area. o In lieu of regular sidewalk maintenance by a local jurisdiction, local businesses along the corridor could apply for the FDOT Adopt-A-Highway program. • Replace the gravel sidewalk panel on the east side of the roadway north of Bostwick Avenue with concrete.				

Location	Issue Number	Issue	Suggestion
			SHORT-TERM MAINTENANCE
Silver Beach Avenue	16	Pedestrian Facilities	Consider re-striping the four crosswalk markings with special emphasis crosswalk markings consistent with sheet 9 of the FDOT Design Standard Index 17346. Research and install an approved thermoplastic material that will maintain adhesiveness to the colored pavement at the intersection. Consider replacing all of the faded pedestrian detector signs with R10-3i pedestrian plaques.
Silver Beach Avenue	18	Southbound Channelized Right Turn Lane	To emphasize the pedestrian crosswalk across the channelized southbound right turn lane in the northwest corner, consider adding YIELD HERE FOR PEDESTRIANS (R1-5 or R1-5a) signage to both the Yield sign post on the right side of the roadway and the mast arm located in the channelized island. Yield lines could be installed per section 3B.16 of the MUTCD prior to the crosswalk to give the driver a visual in-pavement cue that they are approaching a crosswalk. Consider removing the palmetto tree on the northwest corner to improve sight distance between southbound right turning vehicles and crosswalk users.
Mid-Block between Silver Beach Avenue and Ribault Avenue	19	Sidewalk Maintenance	Consider regular sidewalk maintenance (sweeping debris/sand) along this section. The maintenance may be scheduled regularly or may be performed after a heavy rain event. Consider reducing the height of the landscape strip to be level or just below the sidewalk and replace with new sod. The landscape strip could also be replaced with concrete to create a wider sidewalk in this area. In lieu of regular sidewalk maintenance by a local jurisdiction, local businesses along the corridor could apply for the FDOT Adopt-A-Highway program.

Location	Issue Number	Issue	Suggestion			
	NEAR-TERM IMPROVEMENT					
Corridor Wide	1	Lighting	The following are considerations for lighting along the corridor: • Consider conducting field measurements of existing lighting levels to evaluate lighting uniformity levels and add lighting where necessary. Consider light poles on the east side that are angled westerly away from the beach. These light poles cast their light to the west and illuminate the roadway as needed. The light bulb is not seen by the turtles due to the angle and orientation of the light fixture. • Consider implementing a lighting plan for the time the sea turtle nesting season is not active as roadway lighting levels should not be reduced at this time. • Consider implementation of pedestrian-level lighting, with less visibility from the beach, to supplement areas where street lighting is not able to provide adequate lamination.			

Location	Issue Number	Issue	Suggestion
		13501.5	NEAR-TERM IMPROVEMENT
Corridor Wide	2	Mid-Block Crossings	The following locations could be considered for mid-block crossing locations: • Near the beach access just south of the Holiday Inn Resort, between Ocean Dunes Road and Old Trail Road. Two bus stops are located in this block and it would be approximately 1/4 to 1/3 of a mile north of the Botefuhr Avenue signal. • Near the beach access just south of the Catalina Beach Club, between Temko Terrace and Bostwick Avenue. Two pedestrian crossing crashes occurred in this section and bus stops are located along this segment. This crossing would be approximately 1/4 mile north of the above suggestion and approximately 0.15 to 0.20 miles south of Silver Beach Avenue. • Near the beach access just south of where the new Hard Rock Hotel is planning to be constructed, between Frances Terrace and Ribault Avenue. Bus stops are present within this segment and it would be approximately 0.15 to 0.20 miles north of the Silver Beach Avenue signal. The following suggestions should be considered at select locations where a mid-block crossing is desired and warranted: • Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) to evaluate if a crosswalk is warranted based upon existing demands. • Ideal locations would be where a beach access is located across the street from commercial development, where a hotel/major land use generator on the east side has parking on the west side, or where bus stops are located near beach access points or major land use generators along the corridor. • As land uses along the corridor develop/redevelop, evaluate if a mid-block crossing is feasible. • Consider an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk. • Provide a median refuge island with a minimum length of 90 feet for pedestrians in the TWLTL. • Install lighting oriented towards the crosswalk could be provided; or • Lighting could turn on when the RRFB is activated and flashing and could turn off when the flashers stop.
Corridor Wide	3	Lighting at Signalized Intersections	• Stripe the crosswalk with special emphasis crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346. Consider upgrading the lighting at the two intersections to meet the requirements of section 7.3.2.2 in Volume 1 of the FDOT Plans Preparation Manual (PPM). This may require the existing lighting to be replaced. FDOT is also considering lighting installed underneath mast arms that hang directly over marked crosswalks at signalized intersections. These two options should be evaluated to see which best meets the lighting requirements for each intersection.
Corridor Wide	4	Lack of Bicycle Facilities	Because right-of-way is not available to provide a bicycle lane or paved shoulder, consider posting BIKES MAY USE FULL LANE (R4-11) signs along the study corridor to encourage bicycles to use the street rather than the sidewalks. Because the posted speed along this section of SR A1A is 35 MPH, consider installing shared lane markings (sharrows) in addition to the R4-11 signs, as specified on pages 1 and 2 of FDOT Standard Index 17347.
Corridor Wide Daytona Beach Section	8	Bus Stops	Consider providing a 5' x 8' bus stop landing pad at each bus stop per section R308.1.1.1 of the ADA PROWAG during the next resurfacing project.
Botefuhr Avenue Intersection	13	Pedestrian Facilities	Consider realigning the north and south leg crosswalks to be more perpendicular with SR A1A. This would require constructing new curb ramps for those two crosswalks. Consider rebuilding the existing curb ramps so they meet the 4' minimum clear width as stated in the ADA PROWAG. As part of separating the curb ramps, consider individual pedestrian detector poles for each crosswalk at the intersection. Consider replacing the pedestrian detector signs with R10-3i pedestrian plaques which includes an arrow and MUTCD street name font indicating which street the pedestrian detector corresponds with. Consider implementing a leading pedestrian interval for the north and south leg crosswalks prior to the onset of the eastbound/westbound green phase.

Location	Issue Number	Issue	Suggestion			
	NEAR-TERM IMPROVEMENT					
Silver Beach Avenue	16	Pedestrian Facilities	Consider realigning the west and south leg crosswalks to be more perpendicular with Silver Beach Avenue and SR A1A. For the west crosswalk, a new curb ramp could be constructed on the south side of Silver Beach Avenue in the southwest corner of the intersection. For the south crosswalk, a new curb ramp could be constructed on the west side of SR A1A in the southwest corner of the intersection. As part of this suggestion, consider implementing a leading pedestrian interval for all four crosswalks prior to the onset of their respective conflicting green phases. The north and east crosswalks are not suggested to be moved due to the potential impacts to drainage inlets on the northeast corner of the intersection. As part of separating the curb ramps, consider individual pedestrian detector poles on the southwest corner of the intersection and building the curb ramps so they are ready for accessible pedestrian signals.			
Silver Beach Avenue	17	Southwest Corner Accessibility	Consider constructing a sidewalk on the back (west) side of the pole that is level with the height of the poles base. From field observations, this improvement may impact right-of-way for the Sunoco gas station so working with the property owner to construct this sidewalk may be needed. If the crosswalks are realigned as described in Issue #16: Pedestrian Facilities, the pedestrian detectors and signals will be on separate poles near the new ramp locations.			

Location	Issue Number	Issue	Suggestion			
	LONG-TERM IMPROVEMENT					
Corridor Wide	1	Lighting	Consider upgrading to an adaptive roadway lighting system along the corridor. Lighting levels could be programmed to be reduced during the sea turtle nesting season and increased to normal levels outside of the nesting season. This could be coupled with replacing the current high pressure sodium lighting with LED lighting.			
Corridor Wide	6	Driveways	Consider driveway reconstruction during the roadway's next 3R project to provide a level path for the sidewalk and meet ADA guidance. As part of this construction, consider reducing the driveway widths down to the 36' maximum per FDOT Standard Index 515. As properties redevelop along the corridor, consider rebuilding the driveways. It appears these improvements can be done without negatively impacting parking or site circulation on the subject parcels. To address the issue of multiple driveways for the same property, consider driveway consolidation during potential redevelopments where feasible.			
Corridor Wide Daytona Beach Section	7	Sidewalk Walkability	During the next roadway resurfacing project, consider rebuilding the curb ramps for the minor streets to meet ADA guidance and provide turning spaces at the top of the ramps. Daytona Beach Shores completed a streetscape project in 2013 where the sidewalks were rebuilt and the utilities along the corridor were put underground. Consider rebuilding the sidewalk in the Daytona Beach section and underground the utilities along the corridor to remove the sidewalk obstructions.			
Corridor Wide Daytona Beach Section	9	Minor Streets with Driveway Connections	Consider removing the driveway connection during the roadway's next 3R project and construct an asphalt connection from these minor streets to SR A1A. Doing so will provide a level path for the sidewalk and meet ADA guidance. As discussed in Issue #5: Minor Street Crosswalks and Stop Bars, consider marking the crosswalk across the minor street and restriping the stop bars. Consider installing detectable warning surfaces at the two curb ramps of the intersection per FDOT Standard Index 304.			

D - 11

FOCUS AREA C – DAYTONA BEACH

River to Sea TPO

Location	Issue Number	Issue	Suggestion
			SHORT-TERM MAINTENANCE - SOUTH SECTION
Corridor Wide - South Section	3	Detectable Warning Surfaces	Consider replacing the worn or deteriorating detectable warning surfaces along the corridor at both the signalized and unsignalized intersections to match the newer detectable warning surfaces along the corridor.
Corridor Wide - South Section	5	Pedestrian Signage Consistency	Consider replacing pedestrian push button signage where necessary to be consistent with the street name signage at each of the signalized intersections along the corridor.
International Speedway Boulevard Intersection	7	Stop Bars	Consider restriping the westbound stop bar at the intersection.
International Speedway Boulevard Intersection	8	Intersection Lighting	Consider replacing the bulb as part of routine lighting maintenance.
Harvey Avenue Intersection	11	Brick Patterned Sidewalk	Consider painting the curb return yellow on the northeast corner to make pedestrians aware of the hazard and direct them around the corner and to the curb ramp. Also consider reviewing this location based on FDOT Plans Preparation Manual (PPM) Figure 8.8.1 to see if a railing is needed along the curb return due to the drop off into the drainage inlet.
Harvey Avenue Intersection	12	Pedestrian Facilities	Replace the outdated push button signage with new signage (R10-3i).
Main Street Intersection	14	Pedestrian Facilities	Dispatch a signal technician to review if all pedestrian push buttons are working properly.
Auditorium Boulevard Intersection	16	Pedestrian Facilities	Consider replacing the existing push button signage with new signage (R10-3i) on the northwest and southwest corners.
Mid-Block between Auditorium Boulevard and Earl Street	17	Hilton Hotel Driveways	Consider striping a stop bar on the exiting approach and using standard crosswalk markings across the driveway, consistent with sheet 9 of the FDOT Design Standard Index 17346.
Corridor Wide - North Section	20	Corridor Lighting	Consider contacting the operator/maintainer of the lighting system to replace the burnt out light bulbs along the corridor.
Corridor Wide - North Section	21	Pedestrian Signage Consistency	Consider replacing pedestrian push button signage where necessary to be consistent with the street name signage at each of the signalized intersections along the corridor.
Mid-Block between Seabreeze Boulevard and University Boulevard	24	Sidewalk Clutter	Consider coordinating with the City of Daytona Beach to either remove the newspaper/magazine stands or move them off the sidewalk so that the effective sidewalk width at those locations is not restricted.
Mid-Block between Seabreeze Boulevard and University Boulevard	25	Glenview Boulevard Pedestrian Facilities	The following are considerations to address the pedestrian facilities issues identified at this intersection: • Consider installing signage and striping pavement markings consistent with sheet 9 of Design Index 17346. o Install pedestrian Crossing signage (W11-2) with the supplemental diagonal downward pointing arrow plaque (W16-7P) for the northbound and southbound approaches of SR A1A. o Install Stop Here for Peds signage (R1-5bL) o Stripe a stop bar in advance of each crosswalk • Repair the broken curb in the northwest corner and reconstruct the northeast curb ramp so that the utility box is flush and will not pose a trip hazard. • Consider increasing the wattage for existing street lights at the intersection.
Mid-Block between Seabreeze Boulevard and University Boulevard	26	Riverview Boulevard Pedestrian Facilities	The following are considerations to address the pedestrian facilities issues identified at this intersection: • Consider installing signage and striping pavement markings consistent with sheet 9 of Design Index 17346. o Install pedestrian Crossing signage (W11-2) with the supplemental diagonal downward pointing arrow plaque (W16-7P) for the northbound and southbound approaches of SR A1A. o Install Stop Here for Peds signage (R1-5bL) o Stripe a stop bar in advance of each crosswalk
Mid-Block between Seabreeze Boulevard and University Boulevard	27	Trip Hazard	Consider replacing the utility box (or cover) to be flush with the sidewalk. If the utility box is no longer in use, consider removing it and patching the sidewalk.
University Boulevard	29	Pedestrian Facilities	Consider replacing the missing push button sign on the pole in the southwest corner and moving the push button signage on the northwest corner to be on the same side as the push button. Also, consider replacing the detectable warning surfaces at the intersection, consistent with the newer surfaces along the corridor (as illustrated in Issue #3: Detectable Warning Surfaces).

Location	Issue Number	Issue	Suggestion			
	NEAR-TERM IMPROVEMENT - SOUTH SECTION					
			Consider removing decorative pavers within the crosswalks and installing material that thermoplastic crosswalk markings will properly			
Corridor Wide - South Section	1	Crosswalk Markings	adhere to. Special emphasis markings as shown on sheet 9 of Design Index 17346 should be used for the signalized crossings at the four			
			signalized intersections included within the study limits.			
			Because right-of-way is not available to provide a bicycle lane or paved shoulder, consider posting BIKES MAY USE FULL LANE (R4-11) signs			
Corridor Wide - South Section	2	Lack of Bicycle Facilities	along the study corridor to encourage bicycles to use the street rather than the sidewalks.			
comment with the control of the cont	_	Zuen er Bieyere i demines	Because the posted speed along this section of SR A1A is 35 MPH, consider installing shared lane markings (sharrows) in addition to the R4-			
			11 signs, as specified on pages 1 and 2 of FDOT Standard Index 17347.			
Corridor Wide - South Section	4	U-Turn Demand	Consider performing a study along this section to restrict NB and SB U-turns at the signalized intersections and review potential			
Corridor Wide South Section	•	o ram bemana	opportunities for U-turns at designated locations.			
International Speedway	6	Decorative Structures and	Consider relocating or removing the structures or installing a separate push button pole on the southeast corner for the southern and			
Boulevard Intersection	0	Pedestrian Signal Detector	eastern crosswalks less than 10' from the pedestrian ramp.			
Mid-Block between ISB and			Consider coordinating with the hotel and/or contractor at the site to verify that a continuous and unobstructed width of at least four feet is			
Harvey Avenue	9	Sidewalk Obstruction	provided (exclusive of the width of curb) based on Americans with Disabilities Act (ADA) guidelines, or that advanced guidance is properly			
narvey Avenue			given to pedestrians needing to cross SR A1A in advance to avoid the temporary obstruction.			
			Consider installing an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk to improve yield			
Mid-Block between ISB and	10	Kemp Street Mid-Block	compliance. Consider trimming the bushes or planting a smaller plant in the median to improve sight distance. Consider removing decorative			
Harvey Avenue	10	Crosswalk	pavers within the crosswalk and marking with special emphasis crosswalk markings as shown on sheet 10 of Design Index 17346.			
			pavers within the crosswark and marking with special emphasis crosswark markings as shown on sheet 10 of Design index 17346.			
	12		The following are considerations to address the pedestrian facilities issues identified at this intersection:			
			• Consider the addition of a crosswalk on the north leg of the intersection as well as the necessary pedestrian signals and signage. The			
			crosswalk would either have to be shifted to the north to avoid the drainage inlet on the northeast corner or the drainage inlet could be			
		Pedestrian Facilities	relocated.			
Harvey Avenue Intersection			• Consider installing a separate push button poles on the southeast and southwest corners for the south and west crosswalks less than 10'			
			from the pedestrian ramp.			
			Replace the outdated push button signage with new signage (R10-3i).			
			• Consider reconstructing the curb ramps on the northwest and southwest corners to address the cross slopes and effective width ADA			
			issues.			
Mid-Block between Harvey			Coordinate with the City of Daytona Beach's Redevelopment Department to review the redevelopment plans for this site. If no			
,	13	Driveways	redevelopment is planned, consider rebuilding the abandoned driveways to provide a level surface and continuous curb. These			
Avenue and Main Street			improvements could be done during the roadway's next 3R project or as a sidewalk maintenance project.			
Main Street Intersection	1.4	Dodostviou Fosiliti	Consider realigning the crosswalk perpendicular to the NE corner to provide a shorter crossing distance for pedestrians during the next			
	14	Pedestrian Facilities	resurfacing project.			
Main Chuant Intonocation	15	Intersection Lighting	Consider upgrading the lighting at the intersection to meet the requirements of section 7.3 in Volume 1 of the FDOT PPM. Installation of			
Main Street Intersection	15	Intersection Lighting	lighting on the existing mast arms could be considered.			
Auditorium Boulevard	16	Dodostrian Facilities	Consider installing a separate push button pedestal and pedestrian signal on the southeast corner for the southern crosswalk within 10' from			
Intersection	16	Pedestrian Facilities	the pedestrian ramp.			

Location	Issue Number	Issue	Suggestion			
	NEAR-TERM IMPROVEMENT - NORTH SECTION					
Corridor Wide - North Section	18	Crosswalk Markings	Consider removing decorative pavers within the crosswalk and installing material that thermoplastic crosswalk markings will properly adhere to. At the signalized intersection of SR A1A and University Boulevard, consider marking special emphasis crosswalk markings as shown on sheet 9 of Design Index 17346. Consider striping special emphasis crosswalk markings consistent with sheet 9 of the Design Index 17346 for the unsignalized intersections at Glenview Boulevard and Riverview Boulevard.			
Corridor Wide - North Section	20	Corridor Lighting	The following are considerations for lighting along the corridor: • Consider conducting field measurements of existing lighting levels to evaluate lighting uniformity levels and add lighting where necessary. Consider light poles on the east side that are angled westerly away from the beach. These light poles cast their light to the west and illuminate the roadway as needed. The light bulb is not seen by the turtles due to the angle and orientation of the light fixture. • Consider implementing a lighting plan for the time the sea turtle nesting season is not active as roadway lighting levels should not be reduced at this time. • Consider implementation of pedestrian-level lighting, with less visibility from the beach, to supplement areas where street lighting is not able to provide adequate lamination.			
Seabreeze Boulevard Intersection	22	Pedestrian Facilities	Consider realigning the crosswalk to tie into the existing curb ramp or reconstructing the curb ramp on the northeast corner to include separate curb ramps for the northern and eastern crosswalks.			
Seabreeze Boulevard Intersection	23	Intersection Lighting	Consider upgrading the lighting at the intersection to meet the requirements of section 7.3.2.2 in Volume 1 of the FDOT PPM. Installation of lighting on the existing mast arms could be considered.			
Mid-Block between Seabreeze Boulevard and University Boulevard	25	Glenview Boulevard Pedestrian Facilities	Consider removing decorative pavers in the crosswalks and installing material that thermoplastic crosswalk markings will properly adhere to.			
Mid-Block between Seabreeze Boulevard and University Boulevard	26	Riverview Boulevard Pedestrian Facilities	Consider removing decorative pavers in the crosswalks and installing material that thermoplastic crosswalk markings could properly adhere to.			
Mid-Block between Seabreeze Boulevard and University Boulevard	28	Mid-Block Crossing	Consider providing a marked crosswalk at the Jessamine Boulevard intersection. If required, conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) to evaluate if a crosswalk is warranted based upon the demands of the hotel and vacant lots being redeveloped. If a marked crosswalk is approved: • Install the crossing on the north side of the intersection due to existing one-way and right-turn only configuration along Jessamine Boulevard. If southbound left-turn volumes are expected to be high, consideration should be given to installing the crosswalk on the south side as a northbound left-turn does not exist at the intersection. • Provide a z-shaped median refuge island for pedestrians in the TWLTL, if possible. • Consider an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk. RRFBs may also be used on the advance crosswalk signs per FHWA's interim approval memorandum. • Install lighting on the crosswalk's west and east sides. • Stripe the crosswalk with Special Emphasis Crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346.			

Location	Issue Number	Issue	Suggestion
			LONG-TERM IMPROVEMENT - SOUTH SECTION
Corridor Wide - South Section	2	Lack of Bicycle Facilities	The City of Daytona Beach has discussed the idea of encouraging bicyclists to use parallel facilities. One parallel facility under consideration based upon lower volumes and vehicular speeds is Grandview Avenue. Grandview Avenue is two blocks west of SR A1A (approximately 475 feet) and is a residential roadway with one travel lane in each direction and areas for on-street parking. Consider conducting a feasibility study to provide enhanced bicycle facilities along Grandview Avenue and install guide signage along SR A1A directing bicyclists to the designated parallel facility.
Corridor Wide - North Section	19	Lack of Bicycle Facilities	Consider reducing the lanes widths to 11 feet to provide for restriping of 4.5 foot bicycle lanes. Consider including the north section of SR A1A in a feasibility study to provide enhanced bicycle facilities along a parallel facility such as Grandview Avenue, and guide signage along SR A1A directing bicyclists to the designated parallel facility.
Corridor Wide - North Section	20	Corridor Lighting	Consider upgrading to an adaptive roadway lighting system along the corridor. Lighting levels could be programmed to be reduced during the sea turtle nesting season and increased to normal levels outside of the nesting season. This could be coupled with replacing the current high pressure sodium lighting with LED lighting.
University Boulevard	29	Pedestrian Facilities	FDOT reported an official request for accessible pedestrian signals (APS) at this location. These upgrades could be implemented at this location as part of a signal upgrade. The signal upgrade could include the conversion from the existing strain wire to mast arms, basic ADA upgrades, and implementation of APS. Installing APS at this signalized intersection could improve crossing performance for visually impaired pedestrians.

FOCUS AREA D - DAYTONA BEACH/ORMOND BEACH

River to Sea TPO

Location	Issue Number	Issue	Suggestion			
	SHORT-TERM MAINTENANCE					
Corridor Wide	1	Four-Lane Divided Section	Consider formalizing right-turn lanes at key intersections/driveways. Consider marking 7-foot buffered bike lanes with right-turn key holes.			
Corridor Wide	3	Bicycle Lanes	Consider marking 7-foot buffered bike lanes with right-turn key holes utilizing the extra pavement width in the existing 4-lane divided cross section.			
Corridor Wide	4	Crosswalk Markings	Consider marking all minor street approaches at unsignalized intersections along the corridor during the next resurfacing project. Standard crosswalk markings as shown on sheet 9 of the FDOT Design Standard Index 17346 should be used for the unsignalized crossings. Special emphasis markings as shown on sheet 9 of Design Index 17346 should be used for the signalized crossings at the three signalized intersections included within the study limits.			
Corridor Wide	5	Consider replacing the pedestrian warning signs with the standard yellow background to the fluorescent yellow-green back consistent signage along the study limits. This will provide a consistent message to roadway users alerting them that pedes in the area. The following summarizes the locations and number of the standard yellow background pedestrian signage to be south of Harvard Drive (northbound direction) o One pedestrian warning sign (W11-2) • Andy Romano Beachfront Park (northbound direction) o One pedestrian warning sign (W11-2) • Ormond Shores Drive (northbound direction) o One pedestrian warning sign (W11-2) • Approximately 150 feet north of River Beach Drive (southbound direction) o One pedestrian warning sign (W11-2) • South of Rockefeller Drive (northbound direction) o One pedestrian warning sign (W11-2) Consider providing consistent push button signage and street name signage at each of the signalized intersections along could eliminate confusion and reduce any unnecessary delay experienced by pedestrians at these locations.				
Corridor Wide	6	Landscape Maintenance	Coordinate with FDOT and local businesses/property owners to trim the obstructions and encourage better landscape maintenance.			
Corridor Wide	7	Sidewalk Maintenance	Consider cleaning the sidewalk to remove excess sand and debris and working with FDOT and/or local business/property owners to continue routine maintenance. Consider coordinating with the City of Daytona Beach and the City of Ormond Beach to either remove the newspaper/magazine stands or move them off the sidewalk so that the effective sidewalk width at those locations is not restricted.			
Corridor Wide	13	Lighting	The following are considerations for lighting along the corridor: Replace or turn on all the lights on the corridor after the turtle nesting season ends. Consider implementing a lighting plan for the time the sea turtle nesting season is not active as roadway lighting levels should not be reduced at this time.			
Plaza Boulevard Intersection	14	Intersection Sight Distance	Consider removing the bush to allow for adequate sight distance. Consider installing a Turning Vehicles Yield to Pedestrians sign (R10-15) on span wire for the eastbound approach in addition to the pedestrian signage on the post near the signal cabinet.			
Plaza Boulevard Intersection	15	Pedestrian Signage	Consider upgrading the Yield to Pedestrians in Crosswalk sign to a Turning Vehicles Yield to Pedestrians sign (R10 15).			
Plaza Boulevard Intersection	16	Landscaping Maintenance	Coordinate with FDOT to trim the bushes back to restore the full median refuge width.			

Location	Issue Number	Issue	Suggestion
			SHORT-TERM MAINTENANCE
Plaza Boulevard Intersection	17	Curb Ramp	Consider patching the curb ramp to remove the potential trip hazard by providing a level surface, and install a detectable warning surface.
Plaza Boulevard to Harvard Drive	19	Water Meter Cover Trip Hazard	Consider patching the concrete sidewalk and/or replacing the cover so that the two surfaces are flush.
Harvard Drive Intersection	20	Intersection Sight Distance	Consider trimming the landscaping back and consider conducting a sight distance evaluation to determine the available sight distance at the intersection. If adequate sight distance cannot be provided due to the strain pole, consider installing a No Turn on Red sign (R10-11 or R10-11) to restrict right-turns on red. This could be effective until mast arms and signal upgrades are implemented at this location.
Harvard Drive Intersection	21	Detectable Warning Surface Maintenance	Consider removing the excess sand and debris from the detectable warning surfaces.
Harvard Drive to Cardinal Drive	24	Sidewalk Hazard	Coordinate with the property owner to adjust the sprinkler head so that it is not directed at the sidewalk.
Benjamin Drive Intersection	25	Intersection Sight Distance	Consider trimming the landscaping back and consider conducting a sight distance evaluation to determine the available sight distance at the intersection.
Wren Road	26	Missing Stop Sign and Detectable Warning Surface	Consider installing a stop sign (R1-1) on the eastbound approach with appropriate street name signage. Consider replacing the detectable warning surface on the southwest corner of the intersection.
Cardinal Drive Intersection	28	Intersection Sight Distance	Consider trimming the landscaping back and consider conducting a sight distance evaluation to determine the available sight distance at the intersection. If adequate sight distance cannot be provided due to the strain pole, consider installing a No Turn on Red sign (R10-11 or R10-11a) to restrict right-turns on red. This could be effective until mast arms and signal upgrades are implemented at this location.
Northshore Drive Intersection	30	Intersection Sight Distance	Consider trimming the landscaping back and consider conducting a sight distance evaluation to determine the available sight distance at the intersection.
Florida Avenue Intersection	31	Intersection Sight Distance	Consider coordinating with the property owner to relocate the sign so that it no longer restricts sight distance.
River Beach Drive Intersection	32	Intersection Sight Distance	Consider trimming the landscaping back and consider conducting a sight distance evaluation to determine the available sight distance at the intersection.
River Beach Drive Intersection	33	Drainage	Consider evaluating the slope, drainage inlet size, drainage inlet locations, etc. near the issue to determine if modifications to the roadway or drainage inlets are necessary to properly remove storm water from the roadway.
River Beach Drive to Rockefeller Drive	35	Intersection Sight Distance	Consider trimming the landscaping back and consider conducting a sight distance evaluation to determine the available sight distance at the intersection.
Rockefeller Drive Intersection	37	Detectable Warning Surface	Consider replacing the detectable warning surface on the northwest corner of the intersection.

Location	Issue Number	Issue	Suggestion			
	NEAR-TERM IMPROVEMENT					
Corridor Wide	2	Five-Lane Section	Consider implementing raised medians in the center TWLTL in select locations.			
Corridor Wide	8	Pedestrian Beach Access	Consider installing new beach access signage for pedestrians/drivers as the existing signage is showing wear and does not display accurate information to the roadway users. Consider prioritizing the implementation of pedestrian facilities at strategic beach access locations. Emphasis on installing sidewalks at the beach locations with signalized or marked crosswalks across SR A1A could be considered. Locations with off beach parking should also be emphasized as beach patrons will park their vehicles at an off beach parking lot before accessing the beach. Also consider pedestrian level lighting at the beach access locations.			
Corridor Wide	9	Potential Mid-Block Crossings	The following could be done at select locations where a mid-block crossing is desired and warranted: • Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) to evaluate if a crosswalk is warranted based upon existing demands. • Consider an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk. RRFBs may also be used on the advance crosswalk signs per FHWA's interim approval memorandum. • Provide a median refuge island for pedestrians in the TWLTL. • Install lighting on the crosswalk's west and east sides. • Stripe the crosswalk with Special Emphasis Crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346.			
Corridor Wide	10	Transit Bus Stop Review	Consider coordinating a transit review of bus stops along the corridor. Items to evaluate should include: Boarding and alighting areas Bus stop locations with consideration to marked crosswalks to cross SR A1A ADA accessibility Illumination Sign visibility (daytime and nighttime) Trash can locations			
Corridor Wide	11	Accessible Pedestrian Signals (APS)	Consider installing APS at the three signalized intersections during the next upgrade(s) to the signalized intersections. The signals at Harvard Drive and Cardinal Drive are planned to be upgraded from the existing strain pole/span wire configuration to mast arms. APS and pedestrian facilities upgrades should be considered as part of the signalization upgrades.			
Corridor Wide	12	Sidewalks at Driveways	Consider rebuilding the abandoned driveways to provide a level surface and continuous curb. These improvements could be done during the roadway's next 3R project.			
Corridor Wide	13	Lighting	The following are considerations for lighting along the corridor: Consider upgrading lighting at the signalized intersections to meet the requirements of section 7.3.2.2 in Volume 1 of the FDOT Plans Preparation Manual (PPM). This may require the existing lighting to be replaced. Consider conducting field measurements of existing lighting levels to evaluate lighting uniformity levels and add lighting where necessary. Consider light poles on the east side that are angled westerly away from the beach. These light poles cast their light to the west and illuminate the roadway as needed. The light bulb is not seen by the turtles due to the angle and orientation of the light fixture.			
Plaza Boulevard Intersection	18	Pedestrian Facilities	Consider installing a separate push button pole on the northeast corner for the northern and eastern crosswalks that is less than 10' from the pedestrian ramp.			
Harvard Drive Intersection	22	Sidewalk Connectivity	Consider constructing a sidewalk on the north side Harvard Drive to facilitate pedestrian connectivity to the sidewalks along SR A1A and the beach access on the east side of the intersection. This could be considered in addition to the basic ADA upgrades and APS implementation as part of the future intersection upgrade from strain wire to mast arms.			
Harvard Drive to Cardinal Drive	23	Mid-Block Crossing at Andy Romano Beachfront Park	The following could be considered at this location to address the yield compliance and lighting issues observed: Consider installing an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk. RRFBs may also be installed on the advance crosswalk warning signs per FHWA's interim approval memorandum. Install lighting on the crosswalk's west side and in the refuge island.			

Location	Issue Number	Issue	Suggestion			
	NEAR-TERM IMPROVEMENT					
Cardinal Drive Intersection	27	Pedestrian Facilities	FDOT has identified this location for a signal upgrade which is planned to include a conversion from strain wire to mast arms, basic ADA upgrades, and implementation of APS.			
Cardinal Drive Intersection	29	Beach Access	The following should be considered as part of the new off beach public parking lot and signal upgrades as mentioned in Issue #28: • Consider design of the parking lot to lead pedestrians out of the parking area toward the southern end or the southeast corner of the parking lot. • Construct a sidewalk and connection on the north side of Cardinal Drive between the new public parking lot and the northwest corner of the intersection. • Construct a sidewalk and connection on the south side of the beach access between the beach and the southeast corner of the intersection. • Stripe a crosswalk with Special Emphasis marking on the south leg of the intersection consistent with sheet 9 of Design Index 17346, and install a countdown pedestrian signal and pedestrian pushbuttons to serve the south crosswalk. • Rebuild the curb ramps to facilitate the new sidewalk connections. • Install appropriate signage indicating the beach access and parking lot to beach patrons.			
River Beach Drive Intersection	34	Potential Marked Crosswalk	The following could be considered at this location: Install pedestrian facilities along one or both sides of the beach access. Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) to evaluate if a crosswalk is warranted based upon existing demands. If a mid-block crossing is warranted: o Install the crossing on the north side of the intersection due to existing left-turn lanes along SR A1A. Left-turn volume into the beach access is likely to be relatively small and comparably less than the northbound left-turn movement. o Provide a median refuge island for pedestrians in the TWLTL. o Install lighting on the crosswalk's west and east sides. o Stripe the crosswalk with Special Emphasis Crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346.			
Rockefeller Drive Intersection	36	Potential Marked Crosswalk	The following could be considered at this location: Install pedestrian facilities along one or both sides of beach access. Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) to evaluate if a crosswalk is warranted based upon existing demands. If a mid-block crossing is warranted: o Install the crossing on the north side of the intersection due to existing left-turn lanes along SR A1A. Left-turn volume into the beach access is likely to be relatively small and comparably less than the northbound left-turn movement. Figure 76 illustrates a potential landing location of a crosswalk on the east side of SR A1A. o Consider an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk. RRFBs may also be used on the advance crosswalk signs per FHWA's interim approval memorandum. o Provide a median refuge island for pedestrians in the TWLTL. o Install lighting on the crosswalk's west and east sides. o Stripe the crosswalk with Special Emphasis Crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346.			

Location	Issue Number	Issue	Suggestion			
	LONG-TERM IMPROVEMENT					
Corridor Wide	2	Five-Lane Section Consider converting the roadway to a 4-lane divided cross section.				
		Ricycle Lanes	Within the 5-lane section the following options could be considered:			
Corridor Wide	2		Consider narrowing lanes to allow for buffered bike lanes to provide continuity between the south and north sections			
Corridor wide	3		Consider using shared lane markings (sharrows) in the outside lane for experienced riders			
			Potential road diet as a long term solution to provide additional pavement to accommodate bicycles and other modes			
Corridor Wide	12	Lighting	Consider upgrading to an adaptive roadway lighting system along the corridor. Lighting levels could be programmed to be reduced during the			
	13		sea turtle nesting season and increased to normal levels outside of the nesting season.			

FOCUS AREA E - ORMOND BEACH/ORMOND-BY-THE-SEA

River to Sea TPO

Location	Issue Number	Issue	Suggestion				
	SHORT-TERM MAINTENANCE						
Corridor-Wide	3	Detectable Warning Surfaces	Consider installing detectable warning surfaces where missing at signalized/unsignalized intersections and crosswalks per the FDOT Design Standard Index 304. Consider constructing a landing pad with detectable warning surfaces at the mid-block locations where no landing pad is present.				
Corridor-Wide	5	Drop-Off Hazards	Consider filling areas adjacent to sidewalks to remove drop-off hazard. Consider material impacts to drainage structures.				
Brooks Drive Intersection	8	Flashing Beacons at Brooks Drive Crosswalk	Repair flashing beacon and consider relocating the sign.				
Ormond Mall Intersection	12	Pedestrian Signal Timings/Equipment	Dispatch a signal technician to review if all pedestrian countdown signals are working properly.				
Ormond Mall Intersection	13	Pedestrian Facilities	Consider installing R10-3i pedestrian plaques on all corners of the intersection indicating the respective pedestrian push button's corresponding street name.				
North of Palm Drive	16	Regions Bank Driveways	Consider grinding potential trip hazards along the corridor as part of regular maintenance.				
Southwest Corner of Seaside Drive	17	Stop Sign Location	Consider moving the STOP sign nearer to the stop bar to reduce right-of-way uncertainty. Consider restriping the stop bar on the eastbound approach at the intersection.				
Just North of Seaside Drive	18	Sidewalk Stub to Roadway	Remove the sidewalk stub on the west side of the roadway.				
Ocean Shore Drive Intersection	20	Crosswalk Sign Location and Crosswalk Visibility	Consider moving the crosswalk signage to be located at the crosswalk. Consider restriping the crosswalk with the same special emphasis markings. Consider installing a new STOP sign at the appropriate height.				
Just North of Roberta Road	22	Beach Crossing Sight Distance and Connectivity	Consider trimming or removing the shrubbery to improve sight distance between northbound vehicles and pedestrians on the crossover.				

Location	Issue Number	Issue	Suggestion				
	NEAR-TERM PRIORITY						
Corridor-Wide	1	Speed Consistency	Reduce width of the roadway section for traffic calming benefits - For parcels with the ability to facilitate onsite circulation of parking maneuvers, consider working with the private property owner to install wheelstops or curbing to direct motorists to access SR A1A via defined driveway locations only. - Consider pedestrian refuge islands or spot medians where feasible.				
Corridor-Wide	2	Sidewalk Inconsistency on East Side	Consider providing sidewalk, as properties redevelop, on the east side of SR A1A to fill in the gaps.				
Corridor-Wide	4	Lighting Inconsistency	 Consider upgrading lighting at the signalized intersections to meet the requirements of section 7.3.2.2 in Volume 1 of the FDOT Plans Preparation Manual (PPM). This may require the existing lighting to be replaced. Consider conducting field measurements of existing lighting levels to evaluate lighting uniformity levels and add lighting where necessary. Consider light poles on the east side that are angled westerly away from the beach. These light poles cast their light to the west and illuminate the roadway as needed. The light bulb is not seen by the turtles due to the angle and orientation of the light fixture. Consider implementing a lighting plan for the time the sea turtle nesting season is not active as roadway lighting levels should not be reduced at this time. Consider conducting a lighting justification study along unlit portions of the corridor to determine if additional lighting is justified. Consider implementation of pedestrian-level lighting, with less visibility from the beach, to supplement areas where street lighting is not able to provide adequate lamination. 				
Corridor-Wide	6	Signage Material	During next signage update or resurfacing project, consider replacing all crosswalk signage with signs using high-visibility, high retroreflectivity coatings (Type 11 sheeting).				
Mid-Block between Sandcastle Drive and Ormond Mall	7	Driveways and Parking Areas Not Defined	For parcels with the ability to facilitate onsite circulation of parking maneuvers, consider working with the private property owner to install wheelstops or curbing to direct motorists to access SR A1A via defined driveway locations only.				
Brooks Drive Intersection	8	Flashing Reacons at Brooks	If the sign cannot be relocated, the following improvements could be considered at this location: Consider an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk. RRFBs may also be used on the advance crosswalk signs per FHWA's interim approval memorandum. Provide a median refuge island with a minimum length of 90 feet and minimum four-foot wide pedestrian access route for pedestrians in the TWLTL. Install lighting on each side of the crosswalk. O Directional lighting oriented towards the crosswalk could be provided; or O Lighting could turn on when the RRFB is activated and flashing and could turn off when the flashers stop. Restripe the crosswalk with Special Emphasis Crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346.				

Location	Issue Number	Issue	Suggestion
			NEAR-TERM PRIORITY
Riverbreeze Boulevard and Plaza Drive Intersections	9	Sight Distance	Consider working with the property owners to relocate or remove the decorative walls to improve intersection sight distance between eastbound vehicles and pedestrians/bicyclists on the sidewalk.
Essex Drive Intersection	10	Essex Drive Sidewalk Connectivity	Consider installing sidewalks or designating a clear pedestrian access route (PAR) compliant with the PROWAG.
Between Brooks Drive and Rivershore Drive	11	Crosswalk Spacing	Consider providing the following on the north side of the Essex Drive intersection, between Hibiscus Drive and Sandy Beach Drive, and the north side of the Palm Drive intersection: • Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) to evaluate if a crosswalk is warranted based upon existing demands. • Consider an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk. RRFBs may also be used on the advance crosswalk signs per FHWA's interim approval memorandum. • Where feasible, provide a median refuge island with a minimum length of 90 feet for pedestrians in the TWLTL. • Install lighting on the crosswalk's east side. • Directional lighting oriented towards the crosswalk could be provided; or • Lighting could turn on when the RRFB is activated and flashing and could turn off when the flashers stop. • Stripe the crosswalk with Special Emphasis Crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346.
Ormond Mall Intersection	12	Pedestrian Signal Timings/Equipment	Consider options to improve the response of walk phases during the northbound and southbound phases. Options to consider include: • Extend the pedestrian WALK phase to take better utilize the full northbound/southbound vehicular phase; or • Allow the Walk phase to activate at the start of green and extend the northbound/southbound phase to accommodate the pedestrian clearance time, if needed. beyond seven seconds. The current Walk + Flash Don't Walk time is 19 seconds, but the Max Green time is 40 seconds. • Consider leading pedestrian phase. • Consider setting NB/SB vehicular signal phase to Max Recall • Consider programming signal to begin Flash Don't Walk phase when NB/SB vehicular phase gaps out. • Volusia County Traffic Engineering should request a revision to the signal timings to FDOT for review and concurrence.
Ormond Mall Intersection	13	Pedestrian Facilities	Consider installing a two separate push button poles that are less than ten feet from the pedestrian ramp, one for the south leg crosswalk and one for the west leg crosswalk. On these poles, install the push buttons parallel to the crosswalk to be used, as discussed in section 4E.08 of the MUTCD. Consider providing pedestrian facilities on all four legs of the intersection. To do this, extend the sidewalk on the east side of SR A1A northward to the north side of the intersection. Also consider the addition of a special emphasis marked crosswalk, as shown on sheet 9 of the FDOT Design Standard Index 17346, on the north leg of the intersection. Along with the marked crosswalk, pedestrian push buttons and countdown timers should also be installed. Consider installing R10-3i pedestrian plaques on all corners of the intersection indicating the respective pedestrian push button's corresponding street name.
Ormond Mall	14	Sidewalk Connectivity to Retail	Consider working with the property owner to provide pedestrian connectivity between the traffic signal and the retail shops. Examples of projects that could incorporate this type of project include redevelopment and parking lot resurfacing/restriping.

Location	Issue Number	Issue	Suggestion
			NEAR-TERM PRIORITY
Hibiscus Drive Intersection	15	Crossing to Beach Access	 Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) to evaluate if a crosswalk is warranted based upon existing demands. Consider an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk. RRFBs may also be used on the advance crosswalk signs per FHWA's interim approval memorandum. Install lighting on the crosswalk's east side. Directional lighting oriented towards the crosswalk could be provided; or
			o Lighting could turn on when the RRFB is activated and flashing and could turn off when the flashers stop. • Stripe the crosswalk with Special Emphasis Crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346. • Connect crosswalk to beach access with sidewalk.
Southwest Corner of Seaside Drive	17	Driveway/parking Area Delineation	Consider working with the property owner to clearly mark driveway and parking locations. These types of improvements could be implemented through striping and landscaping. Consider moving the STOP sign nearer to the stop bar.
Just North of Seaside Drive	18	Sidewalk Stub to Roadway	 Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) to evaluate if a crosswalk is warranted based upon existing demands. Consider an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk. RRFBs may also be used on the advance crosswalk signs per FHWA's interim approval memorandum. Install lighting on the crosswalk's east side. Directional lighting oriented towards the crosswalk could be provided; or Lighting could turn on when the RRFB is activated and flashing and could turn off when the flashers stop. Stripe the crosswalk with Special Emphasis Crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346.
Between Oceanshore Drive and Town and Country Lane	19	Connectivity between Parking	Consider installing sidewalk on the east side of SR A1A connecting the public parks and beach access points. Provide a northern connection between the existing sidewalk and the parking area on the west side of SR A1A. Consider an additional crossing of SR A1A near Laurie Drive or Roberta Road: • Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) to evaluate if a crosswalk is warranted based upon existing demands. • Consider an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk. RRFBs may also be used on the advance crosswalk signs per FHWA's interim approval memorandum. • Install lighting on the crosswalk's east side. • Directional lighting oriented towards the crosswalk could be provided; or • Lighting could turn on when the RRFB is activated and flashing and could turn off when the flashers stop. • Stripe the crosswalk with Special Emphasis Crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346.
Ocean Shore Drive Intersection	20	•	Consider an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk. RRFBs may also be used on
Margaret Road Intersection	21	Margaret Road Beach	the advance crosswalk signs per FHWA's interim approval memorandum. Consider providing a hard surface or sidewalk within the designated beach walkway so the crosswalk can be connected to the beach access point.
Just North of Roberta Road	22	Beach Crossing Sight Distance and Connectivity	Consider connecting this beach crossover to the crosswalk discussed in Issue #19 on the east side of SR A1A.

Location	Issue Number	Issue	Suggestion			
	LONG-TERM PRIORITY					
Corridor-Wide	1	Speed Consistency	Implement complete streets strategies such as curbing, bioswales, repurposing wide shoulder areas to improve parking areas with wide driveways, implement buffered bike lanes. Consider a speed study to assess if the posted speeds can be reduced to 35 MPH and speed feedback devices can be used to increase driver awareness of their travel speed.			
Corridor-Wide	2	Sidewalk Inconsistency on East Side	Consider constructing sidewalk on the east side of SR A1A to fill in the gaps as part of a complete streets project or other construction effort.			
Corridor-Wide	4	Lighting Inconsistency	Consider upgrading to an adaptive roadway lighting system along the corridor. Lighting levels could be programmed to be reduced during the sea turtle nesting season and increased to normal levels outside of the nesting season.			
Corridor-Wide	7	Not Defined	For parcels without the ability to facilitate onsite circulation of parking maneuvers, consider relocating parking to areas with better parking access and circulation. Some parcels may not have the ability to relocate parking areas. However, many of these parcels are located in areas with wide shoulders; implementation of complete streets strategies could allow for opportunities to right-size the motorist, bicyclist, and pedestrian facilities and reduce conflicts between bicyclists and pedestrians with parking motorists while making use of available space.			
North of Palm Drive	16	Regions Bank Driveways	To address the issue of multiple driveways for the same property, consider driveway consolidation during potential redevelopments where feasible. For currently undeveloped properties, consolidating these driveways during development will reduce the amount of conflict areas between pedestrians/bicyclists and vehicles. Some local government agencies around Central Florida have incorporated land use policies encouraging pedestrian cross access between adjacent commercial and office properties. Cross-access between adjacent parcels within a block should be a focus on the SR A1A corridor as properties redevelop which would help eliminate unused or underutilized driveways.			
Southwest Corner of Seaside Drive	17	Driveway/parking Area Delineation	Consider complete-streets improvements as discussed in Issue #1.			

FOCUS AREA F - ORMOND-BY-THE-SEA

River to Sea TPO

Location	Issue Number	Issue	Suggestion		
	SHORT-TERM MAINTENANCE				
Corridor Wide	4	Minor Street Intersections	Consider emphasizing the pedestrian realm across minor stop controlled intersection approaches by adding crosswalk markings (standard or special emphasis to be determined on a case-by-case basis) as shown on sheet 9 of FDOT Design Standard Index 17346. Consider installing detectable warning surfaces at public roadway, minor street intersections along the corridor per FDOT Design Standard Index 304. Also consider restriping minor street stop bars and double yellow lines as shown on sheets 2 and 4 of FDOT Design Standard Index 17346 to emphasize where the vehicle needs to stop before making their turning movement.		
Corridor Wide	7	Minor Street Sight Distance	Consider moving the stop bars to be the minimum of 4' away from the marked crosswalks discussed in Issue #4: Minor Street Intersections, per sheets 2 and 4 of FDOT Design Standard Index 17346. A curb and gutter could also be constructed along the radius return of the intersections and the sidewalk could be moved closer to SR A1A. This allows both the sidewalk and crosswalk to be moved closer to SR A1A, potentially reducing some of the existing sight distance issues.		
Corridor Wide	8	Vegetation Maintenance at Beach Access Points	Coordinate with FDOT maintenance to trim the obstructions and encourage regular landscape maintenance.		
Approximately 500' North of Spanish Waters Drive	13	Broken Sidewalk Trip Hazard	Consider reconstructing the sidewalk panels to replace the broken sidewalk and remove the potential trip hazard.		
Briggs Avenue Intersection	17	Transit Stop Bench	Consider coordinating with Votran to relocate the transit stop bench to the new bus stop location.		
Kangaroo Express Gas Station	18	, ,	In addition to the sidewalk, consider striping a stop bar and to emphasize where the vehicle needs to stop before making their turning movement onto SR A1A.		

Location	Issue Number	Issue	Suggestion	
NEAR-TERM IMPROVEMENT				
Corridor Wide	2	Beach Parking Area	Consider converting the vacant parcel on the northwest corner of SR A1A and Spanish Waters Drive to a beach access parking lot (Figure 7). If an off-street beach parking area is constructed, consider installing NO PARKING (R8-3a) signs along the west side of SR A1A to encourage beachgoers to park in the designated beach parking area.	

Location	Issue Number	Issue	Suggestion
			NEAR-TERM IMPROVEMENT
Corridor Wide	3	Mid-Block Crossings	The study team discussed potential crosswalk locations along the corridor and considered evaluating the following locations for crosswalks or updates to existing features: • Sunrise Avenue; • Kathy Drive; • Spanish Waters Drive (consider if the vacant parcel on the northwest corner is converted to be a beach parking area); and • Ocean Breeze Circle (existing crosswalk). The team discussed a tiered approach to implementation. Tier 1 • Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) to evaluate if a crosswalk is warranted based upon existing demands. • Stripe the crosswalk with special emphasis crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346. • Install advanced pedestrian warning signage (W11-2 and W16-9P) consistent with sheet 10 of the FDOT Design Index 17346 to indicate a pedestrian crossing is a head. • Install crosswalk specific lighting. • Directional lighting oriented towards the crosswalk could be provided on the east side; or • LED lighting could turn on when the traffic control device is activated and could turn off when the traffic control device is not active. Tier 2 • Provide a minimum six-foot wide median refuge island with a minimum length of 90 feet for pedestrians. • The roadway would have to be widened to fit the refuge island between the northbound and southbound lanes but this impact could be minimized by reducing the travel lanes to be 11' wide. • Consider replacing the standard yellow background pedestrian warning signs with those having the fluorescent yellow-green background with Type 11 sheeting. Tier 3 • Due to high speeds along SR A1A (45 MPH), install an active warning device. The following active traffic control devices could be considered based on a mid-block crossing study: • Pedestrian Hybrid Beacon; or • Pedestrian Hybrid Beacon (RRFBs); • Pedestrian Hybrid Beacon or
			A higher tier could be implemented if the desired performance (crash mitigation/reduction and/or vehicle yield compliance) was not obtained with the current tier suggestions.

Focus Area F - Ormond-by-the-Sea

Location	Issue Number	Issue	Suggestion			
	NEAR-TERM IMPROVEMENT					
Corridor Wide	5	Signage	Consider replacing street name signage (D3-1) with new retro-reflective signs using applicable font size following the guidance provided in section 2D-43 of the 2009 Manual on Uniform Traffic Control Devices (MUTCD). Table 2D-2 specifies 6" letter height on post mounted street signs at intersections along two-lane roadways. The excess signage at the Sunrise Avenue intersection should be removed to only show the street connecting to SR A1A (Sunrise Avenue). Consider a signage study/plan for the study corridor to evaluate the amount of signage, applicability, retro-reflectivity, and location along the study corridor. This signage study/plan should include replacing the older signs with signs meeting current standards.			
Corridor Wide	6	Lighting	 Consider conducting field measurements of existing lighting levels to evaluate lighting uniformity levels and add lighting where necessary. Consider light poles on the east side that are angled westerly away from the beach. These light poles cast their light to the west and illuminate the roadway as needed. The light bulb is not seen by the turtles due to the angle and orientation of the light fixture. Consider implementing a lighting plan for the time the sea turtle nesting season is not active as roadway lighting levels should not be reduced at this time. Consider conducting a lighting justification study along unlit portions of the corridor to determine if additional lighting is justified. Consider implementation of pedestrian-level lighting, with less visibility from the beach, to supplement areas where street lighting is not able to provide adequate illumination as discussed in Issue 1: Lack of Bicycle Facilities. 			
Between Kathy Drive and Spanish Waters Drive	9	Sidewalk Enhancements	Consider restriping the pavement markings delineating the sidewalk. Consider adding new sidewalk in the worn trail area to create a more direct route to the sidewalk in the northwest corner.			
Spanish Waters Drive Intersection	10	Steep Curb Ramp	Consider reconstructing the curb ramp on the northwest corner to meet ADA standards. This should be done in conjunction with potential sidewalk improvements included in Issue #10: Sidewalk Formalization or potential curb and gutter improvements as part of Issue #8: Minor Street Sight Distance.			
Spanish Waters Drive Intersection	11	Excess Pavement	Consider conducting an eight-hour traffic count at the intersection to understand the number of southbound right-turning movements. Vehicular crash history should also be reviewed at this location. Should traffic demand volumes or vehicular crash history suggest a right-turn lane is needed at this location, consideration could be given to formalize the right-turn lane and provide bicycle lane keyhole markings between the through and right-turn lane. If vehicular crash history and traffic counts do not suggest a right-turn lane is needed, consider removing the striping from the shoulder which creates the de-facto right-turn lane and consider removing the excess pavement to provide a consistently wide shoulder to eliminate the potential conflict area.			
Approximately 300' North of Spanish Waters Drive	12	Exposed Drainage Inlet	Due to the drop/steep slope between the sidewalk and drainage inlet consider reviewing this location based on FDOT Plans Preparation Manual (PPM) Figure 8.8.1 to possibly install a railing. If railing is needed, install the railing just off the east edge of the sidewalk to prevent pedestrians/bicyclists from falling off the sidewalk into the drainage ditch area.			

Location	Issue Number	Issue	Suggestion
			NEAR-TERM IMPROVEMENT
Ocean Breeze Circle Intersection	14	Existing Crosswalk Enhancements	The following considerations are for this specific location because a marked crosswalk already exists. The following suggestions are meant to coincide with the tiered approach to crosswalk treatments as discussed in Issue #3: Mid-Block Crossings. • Consider relocating the crosswalk approximately 15 feet south to correspond with the public beach access point. Restripe the crosswalk with special emphasis crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346. • Consider constructing a curb and gutter along the northwest and southwest intersection radii and tightening the curb radius on the southwest corner of the intersection. This will reduce the crossing distance for pedestrians and bicyclists at the crossing location. As part of this construction of curb ramps and landing pads on either side of the crosswalk should be considered. • Consider installing advanced pedestrian warning signage (W11-2 and W16-9P) consistent with sheet 10 of the FDOT Design Index 17346 to indicate a pedestrian crossing is ahead. • Consider installing crosswalk specific lighting. • Directional lighting oriented towards the crosswalk could be provided on the east side; or • LED lighting could turn on when the traffic control device is activated and could turn off when the traffic control device is not active. Implementation of Tier 2 and Tier 3 suggestions included as part of Issue #3: Mid-Block Crossings could be considered if the desired performance (crash mitigation/reduction and/or vehicle yield compliance) was not obtained from the Tier 1 suggestions.
Seascape Condominiums - Approximately 100' North of Ocean Breeze Circle	15	Sight Distance	Consider reviewing the available sight distance at this location. Should additional sight distance be needed, consideration could be given to installing curb and gutter on the turn radii and reconstructing the sidewalk with a shift away from the driveway towards SR A1A. This improvement could be done in accordance with the suggestions described in Issue #7: Minor Street Sight Distance. This moves the sight lines for drivers and improves their ability to see pedestrians and/or bicyclists using the sidewalk.
Between Sunrise Avenue and Briggs Avenue	16	Drainage	Consider constructing a valley gutter per sheet 1 of the FDOT Design Standard Index 300 between the sidewalk and the edge of roadway to convey water to the nearest drainage ditch.
Kangaroo Express Gas Station	18	•	Consider removing the existing asphalt pavement across the driveway and constructing a sidewalk at a slightly higher elevation. In conjunction with the sidewalk construction, construct a valley gutter. The valley gutter would then serve as the new low point for water to travel to and would convey water to the nearest drainage ditch. Consider constructing the valley gutter consistent with details per sheet 1 of the FDOT Design Standard Index 300.

Location	Issue Number	Issue	Suggestion
			LONG-TERM IMPROVEMENT
Corridor Wide	1		Consider reconstructing the sidewalk on the west side of the roadway to be a 10'-12' wide shared-use path. In order to accommodate the bicycle and pedestrian traffic in the area, a wider multi-use path would serve both of those non-automobile modes.
Corridor Wide	6	Lighting	Consider upgrading to an adaptive roadway lighting system along the corridor. Lighting levels could be programmed to be reduced during the sea turtle nesting season and increased to normal levels outside of the nesting season. This could be coupled with replacing the current high pressure sodium lighting with LED lighting.
Between Kathy Drive and Spanish Waters Drive	9	Sidewalk Enhancements	Consider removing the existing asphalt surface to create a shared use path consistent with the suggestion included in Issue #1: Lack of Bicycle Facilities. In addition, consideration could be given to providing a curb and gutter at the edge of the sidewalk or shareduse path as a long term improvement. The adjacent pavement area between the curb and gutter and southbound travel lane could be utilized as parallel parking with several parking stalls.
Between Sunrise Avenue and Briggs Avenue	16	Drainage	Consider constructing an underground drainage system in this area to convey water off of SR A1A and the sidewalk to reduce the potential for ponding in this area.
Kangaroo Express Gas Station	18	, ,	Consider constructing an underground drainage system in this area to convey water off of SR A1A and the sidewalk to reduce the potential for ponding in this area.

FOCUS AREA G – FLAGLER BEACH

River to Sea TPO

Location	Issue Number	Issue	Suggestion
			SHORT-TERM MAINTENANCE
Corridor Wide	4	Minor Street Intersections	Consider emphasizing the pedestrian realm across minor stop-controlled intersection approaches by adding crosswalk markings (standard or special emphasis to be determined on a case-by-case basis) as shown on sheet 9 of FDOT Design Standard Index 17346. Consider replacing/installing detectable warning surfaces at minor street intersections along the corridor per FDOT Design Standard Index 304. When replacing the detectable warning surfaces, consider installing them perpendicular to the sidewalk instead of at an angle so they are less impacted by right turning vehicles. Consider restriping minor street stop bars and double yellow lines as shown on sheets 2 and 4 of FDOT Design Standard Index 17346 to emphasize where the vehicle needs to stop before making their turning movement.
Corridor Wide	6	Sidewalk Maintenance	Consider regular sidewalk maintenance (sweeping debris/sand) along the corridor. The maintenance may be scheduled (once every one or two weeks, etc.) or may be performed after a heavy rain event. In lieu of regular sidewalk maintenance by a local jurisdiction, local businesses along the corridor could apply for the FDOT Adopt-A-Highway program. According to the website (found at http://www.dot.state.fl.us/statemaintenanceoffice/aah.shtm), volunteers would "enter into a two-year agreement with DOT, during which they agree to conduct litter removal at regularly scheduled intervals. Many miles of highway are adopted statewide by various organizations, allowing civic-minded people to make a difference in their communities. This eases the load of DOT work crews, enabling them to devote more time to other road maintenance and special highway projects." In addition to the program, the volunteers could also trim the grass/shrubbery within the right-of-way and removing sand from the sidewalk.
Corridor Wide	8	Lighting	Replace the lights on the corridor that are burnt out.
Mid-Block between S 23rd Street and S 11th Street	11	Broken Sidewalk	Consider reconstructing the sidewalk panels south of 22nd Street to replace the broken sidewalk and create a walkable pedestrian access route.

Location	Issue Number	Issue	Suggestion			
	NEAR-TERM IMPROVEMENT					
Corridor Wide	1	Lack of Bicycle Facilities	Consider reconstructing the sidewalk on the west side of the roadway to be a 10'-12' multi-use path. To help illuminate pedestrians/bicyclists utilizing the path, low level bollards with lights could be installed along the length of the study area, or at a minimum at unsignalized intersections. These low level bollard lights could be designed so they cannot be seen from the beach, thus reducing the risk of turtles being drawn to the roadway. Because the current sidewalk is approximately 5' to 20' from the edge of pavement, at unsignalized intersections the path can be brought closer to SR A1A so turning vehicles can better see pedestrians crossing the side street.			
Corridor Wide	3	Mid-Block Crossings	Consider constructing mid-block crossings at 16th Street and 13th Street. A mid-block crossing should also be considered at 19th Street if the vacant parcel on the southwest corner is converted to be a beach parking area. The following details considerations for the mid-block crossings: • Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) to evaluate if a crosswalk is warranted based upon existing demands. • Install an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk. Due to the high speed of the roadway, RRFBs should also be considered on advanced crosswalk signs per FHWA's interim approval memorandum. • Provide a median refuge island with a minimum length of 90 feet for pedestrians. • The roadway would have to be widened to fit the refuge island between the northbound and southbound lanes but this impact could be minimized by reducing the travel lanes to be 11' wide. By constructing a raised refuge island, traffic calming may be a positive byproduct, as discussed further in Issue #7: Vehicular Speed. • Install lighting on the crosswalk's east side. • Directional lighting oriented towards the crosswalk could be provided; or • LED lighting could turn on when the RRFB is activated and flashing and could turn off when the flashers stop. • Stripe the crosswalk with special emphasis crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346. • Reconstruct the beach access walkover to have a 90 degree bend in the ramp, preferably facing south towards oncoming northbound traffic.			
Corridor Wide	5	Signage	Consider replacing street name signage (D3-1) with new retro-reflective signs using applicable font size following the guidance provided in section 2D-43 of the 2009 Manual on Uniform Traffic Control Devices (MUTCD). Table 2D-2 specifies 6" letter height on post mounted street signs at intersections along two-lane roadways. The street signs closer to SR 100 were recently upgraded to have 6" letter height with a decorative border so consider replacing the street signs along the study corridor with the same signage type for consistency. During the next resurfacing project, consider a signage study/plan for the study corridor to evaluate the amount of signage, applicability, retro-reflectivity, and location along the study corridor. This signage study/plan should include replacing the older signs with signs meeting current standards.			
Corridor Wide	7	Vehicular Speed	FDOT has approved changing the posted speed limit from 45 MPH to 35 MPH from approximately 100' south of S 13th Street to approximately 50' south of S 8th Street. FDOT has also approved changing the posted speed limit from 35 MPH to 30 MPH from approximately 50' south of S 8th Street to N 3rd Street. As discussed in Issue #3: Mid-Block Crossings, median refuge islands should be considered if any mid-block crossings are to be installed throughout the corridor. To install those medians, the roadway would need to be widened but the lane widths could be reduced to minimize the amount of extra pavement needed. If the lane widths are reduced and a raised median installed at the mid-block crossing locations, vehicles would need to navigate these areas at a slower speed than they do now. Installing two to three mid-block crossings with raised medians along the study corridor would give the driver visual cues they are approaching a higher pedestrian/bicycle activity area and prepare them for the speed limit reduction from 45 mph to 30 mph.			

Location	Issue Number	Issue	Suggestion			
	NEAR-TERM IMPROVEMENT					
Corridor Wide	8	Lighting	The following are considerations for lighting along the corridor: • Consider conducting field measurements of existing lighting levels to evaluate lighting uniformity levels and add lighting where necessary. Consider light poles on the east side that are angled westerly away from the beach. These light poles cast their light to the west and illuminate the roadway as needed. The light bulb is not seen by the turtles due to the angle and orientation of the light fixture. • Consider implementing a lighting plan for the time the sea turtle nesting season is not active as roadway lighting levels should not be reduced at this time. • Consider conducting a lighting justification study along unlit portions of the corridor to determine if additional lighting is justified. • Consider implementation of pedestrian-level lighting, with less visibility from the beach, to supplement areas where street lighting is not able to provide adequate illumination.			
Corridor Wide	10	Minor Street Sight Distance	Consider limiting on street parking immediately adjacent to the minor street intersections. This suggestion could be performed in conjunction with making off street beach parking areas as described in Issue #2: Beach Parking Areas. In addition to limiting on street parking, consider moving the stop bars to be the minimum of 4' away from the marked crosswalks discussed in Issue #4: Minor Street Intersections, per sheets 2 and 4 of FDOT Design Standard Index 17346.			
Mid-Block between S 23rd Street and S 11th Street	12	Parked Cars on Sidewalk	Consider working with the Martins property owner to align their parking stalls so vehicles are not parked over the sidewalk. Consider working with parking enforcement to warn/cite drivers who still park over the sidewalk once the parking stalls have been realigned.			
Mid-Block between S 23rd Street and S 11th Street	13	Missing Pedestrian Facilities	Consider adding a concrete sidewalk in front of the Oceanside Bar. In order to not create a drop off hazard with the new concrete, consider removing an asphalt strip and constructing the sidewalk flush with the existing asphalt. Alternatively, high visibility crosswalk markings could also be used to define the pedestrian area. Consider working with the property owner of the Pope Plaza to expand this sidewalk to be 6'-8' wide and connect to the sidewalk being considered in front of the Oceanside Bar. The two buildings in the Pope Plaza are offset, so a sidewalk connection would need to be made between the southernmost and the northernmost buildings. Consider working with the property owner to widen this sidewalk and connect to the sidewalk on the north side of the property. In pavement concrete could be added on the south side of the property at the S 12th Street intersection to lead pedestrians/bicyclists to the sidewalk running in front of the building. Consider working with the property owner to remove the parking spaces in front the Café as the business has parking the rear of the building.			

Location	Issue Number	Issue	Suggestion			
	NEAR-TERM IMPROVEMENT					
Mid-Block at the Beverly Beach Camptown RV Resort	14	Mid-Block Crossing Enhancements and Vehicular Speed	Consider the following mid-block crosswalk enhancements: Install an active warning device, such as RRFBs, at the crosswalk. Due to the high speed of the roadway, RRFBs should also be considered on advanced crosswalk signs per FHWA's interim approval memorandum. The warning device should be installed at both the side of the roadway and in the median for both directions of travel. Provide a 6' wide median refuge island with a minimum length of 90 feet for pedestrians. The roadway would need to be widened but the lane widths could be reduced to 11' to minimize the amount of extra pavement needed. The shoulder could be utilized for some of the extra pavement width, thus narrowing the roadway for the driver. Install lighting on the crosswalk's east side. Directional lighting oriented towards the crosswalk could be provided; or LED lighting could turn on when the RRFB is activated and flashing and could turn off when the flashers stop. Restripe the crosswalk with special emphasis crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346. Install audible vibratory pavement markers along the centerline and shoulder striping to discourage driving on the shoulder. Add potential landscape features in the median that do not obstruct the sight lines for both vehicles and pedestrians utilizing the crossing. Construct a raised bulb out on the east side of the roadway to define where the pedestrian should be standing in order to cross.			
Mid-Block at the Beverly Beach Camptown RV Resort	15	Golf Cart Crossings	Consider a golf cart study to assess the feasibility of making golf carts "street legal" in the Town of Beverly Beach. In order to become "street legal", the Town could institute an ordinance that golf carts must have brakes, turn signals, a horn, rear-view mirror, reflectors on the front and rear, and seat belts. Golf carts operating at night would also need working headlights. To safety get the golf carts across SR A1A, they could be required to utilize the marked mid-block crossing at the Camptown Resort instead of being permitted to cross anywhere along SR A1A.			

Location	Issue Number	Issue	Suggestion
			LONG-TERM IMPROVEMENT
Corridor Wide	1		Consider widening SR A1A to install buffered bicycle lanes. The eastern pavement line would remain in its current location (so the dune is not impacted) and SR A1A could be widened to the west by approximately 10' (7' for the northbound bicycle lane and an extra 3' for the southbound bicycle lane, because a 4' shoulder is already present). Because most of the existing buffer between the roadway and sidewalk (or multi-use path if the near term suggestion is constructed) would be utilized for new pavement, a curb and gutter cross section should be considered so a vertical obstruction is added between the roadway and pedestrian walking area.
Corridor Wide	2	Beach Parking Areas	Convert the vacant parcel on the southwest corner of SR A1A and 19th Street South to a beach access parking lot. As discussed in Issue #3: Mid-Block Crossings, a mid-block crossing is suggested at 19th Street to accommodate pedestrians crossing SR A1A to the beach access point. This mid-block crossing could be constructed in conjunction with the beach parking lot in order to concentrate pedestrian crossings at a specific location. The vacant parcels on the corners of 17th Street and 13th Street could also be considered for beach parking areas. A mid-block crossing is suggested at 13th Street as discussed in Issue #3: Mid-Block Crossings. If off street beach parking areas are constructed, consider installing NO PARKING (R8-3a) signs along the west side of SR A1A to encourage beachgoers to park in the designated beach parking areas.
Corridor Wide	8	Lighting	Consider upgrading to an adaptive roadway lighting system along the corridor. Lighting levels could be programmed to be reduced during the sea turtle nesting season and increased to normal levels outside of the nesting season. This could be coupled with replacing the current high pressure sodium lighting with LED lighting.
Corridor Wide	9	Residential Driveways	Consider working with Flagler Beach code enforcement to identify properties having and not having approved driveway access onto SR A1A. For the properties having approved driveway access onto SR A1A, consider paving a driveway connection between the edge of pavement and the sidewalk during the next 3R project. For those properties not having approved access, work with the property owner to either get a driveway accessing SR A1A approved/formalized or see if they have access to their home on the west side of their parcel.
Mid-Block at the Beverly Beach Camptown RV Resort	14	Mid-Block Crossing Enhancements and Vehicular	Add gateway features on the south and north sides of the town. The gateway feature could include a 6' median island similar to what is proposed at the mid-block crossing. Audible vibratory pavement markers could also be considered to discourage shoulder driving or a curbed section could be installed along the length of the gateway feature to visually narrow the roadway for the driver. Landscaping could be included both in the median and along the side of the roadway to also help visually narrow the roadway.

FOCUS AREA H – FLAGLER BEACH

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Focus Area H - Flagler Beach

Location	Issue Number	Issue	Suggestion
			SHORT-TERM MAINTENANCE
Corridor Wide	1	Minor Street Intersections	Consider emphasizing the pedestrian realm across minor stop controlled intersection approaches by adding or restriping crosswalk markings (standard or special emphasis to be determined on a case-by-case basis) as shown on sheet 9 of FDOT Design Standard Index 17346. Consider installing detectable warning surfaces at minor street intersections along the corridor per FDOT Design Standard Index 304. The City could consider restriping minor street stop bars and double yellow lines as shown on sheets 2 and 4 of FDOT Design Standard Index 17346.
Corridor Wide	3	Mid-Block Crossings	S 8th Street (existing crosswalk) o Consider adding advanced pedestrian warning signage (W11-2 and W16-9P) along the northbound and southbound approaches to the crossing. N 4th Street (existing crosswalk) o Consider relocation of the southbound pedestrian warning sign to the southwest corner as it is currently blocked by a business sign. o Consider adding advanced pedestrian warning signage (W11-2 and W16-9P) along the northbound approach to the crossing.
Corridor Wide	6	Lighting	Consider reviewing the pedestrian-level lighting fixtures along the corridor and replace any burnt out bulbs and reconnect any hanging covers.
Corridor Wide	7	Sight Distance	Consider moving the stop bars to be the minimum of 4' away from the marked crosswalks discussed in Issue #1: Minor Street Intersections, per sheets 2 and 4 of FDOT Design Standard Index 17346.
Corridor Wide	8	Sidewalk Maintenance	Consider coordinating with FDOT to trim the obstructions and encourage better sidewalk and landscape maintenance along the entire length of the study corridor. Consider creating a routine maintenance schedule to remove sand from the sidewalks and pedestrian warning surfaces.
Between S 6th Street and S 5th Street	11	Landscape Maintenance	Consider coordinating with FDOT or the City to trim the tree so the sign is visible to motorists.
SR A1A at SR 100	14	Vehicle/Pedestrian Crosswalk Conflicts	Consider installing Turning Vehicles Yield to Pedestrian (R10-15) signage on the mast arms next to the left-turn signal head for the northbound and westbound left-turn movements.
Between N 2nd Street and N 3rd Street	16	Landscape Maintenance	Consider coordinating with FDOT maintenance to trim the tree.
Between N 8th Street and N 9th Street	19	Sidewalk Rehabilitation	Consider patching the potholes in the asphalt sidewalk

Location	Issue Number	Issue	Suggestion
			NEAR-TERM IMPROVEMENT
Corridor Wide	2	Beach Parking	Consider converting the parking areas along the east side of SR A1A south of SR 100 to lattice style parking areas. The lattice style parking area has been implemented on adjacent city roads with an example provided in Figure 8 . Implementing this parking area style along the corridor would reduce the risk of bicyclists dropping off into the sand. This also provides a more consistent and level parking area for beach patrons. Providing the lattice style parking area would provide better drainage than paving over the sand with impervious asphalt or concrete.

Focus Area H - Flagler Beach

Location	Issue Number	Issue	Suggestion
Edución	issue rumber	133440	NEAR-TERM IMPROVEMENT
			The team discussed a tiered approach to enhancing the mid-block crossings if the desired performance (crash mitigation/reduction
			and/or vehicle yield compliance) was not obtained with the current tier suggestions:
Corridor Wide	3	Mid-Block Crossings	Tier 1 – 6th Street S or 5th Street S Only • Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) to evaluate if a crosswalk is warranted based upon existing demands. • If warranted, consider removing one parking space in the northeast corner and extending the concrete landing area so a crosswalk can be added on the north leg of the intersection. • If warranted, stripe the crosswalk with special emphasis crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346. • If warranted, install advanced pedestrian warning signage (W11-2 and W16-9P) consistent with sheet 10 of the FDOT Design Index 17346 to indicate a pedestrian crossing is ahead. Tier 2 – 8th Street S, 6th Street S or 5th Street S, and 4th Street N • Provide a median refuge island with a minimum length of 90 feet for pedestrians. • The roadway would have to be widened to fit the refuge island between the northbound and southbound lanes but this impact
			could be minimized by reducing the travel lanes to be 11' wide. Consider replacing the standard yellow background pedestrian warning signs with those having the fluorescent yellow-greer background with Type 11 sheeting. Install crosswalk specific lighting. Directional lighting oriented towards the crosswalk could be provided on the east side; or LED lighting could turn on when the traffic control device is activated and could turn off when the traffic control device is not active. Tier 3 – 8th Street S, 6th Street S or 5th Street S, and 4th Street N Install an active traffic control warning device. The following active traffic control devices could be considered based upon a mid-block crossing study: O Rectangular Rapid Flashing Beacons (RRFBs);
Corridor Wide	4	Signage	o Pedestrian Hybrid Beacon: or Consider coordinating with the City to prioritize replacing old and faded signs with new street name signage (D3-1). Consider a signage study/plan for the study corridor to evaluate the amount of signage, applicability, retro-reflectivity, and location along the study corridor. This signage study/plan should include replacing the older signs with signs meeting current standards.
Corridor Wide	5	Lack of Bicycle Facilities	The parking spaces along the west side of SR A1A are less utilized and could provide opportunity for bicycle lanes without the need to widen SR A1A. The City would be in support of removing some parking spots along the west side of the roadway to add bicycle lanes. Consider conducting a study to evaluate the feasibility of removing parking spaces and implementing Complete Streets-type enhancements along the corridor.
Corridor Wide	6	Lighting	Consider upgrading to an adaptive roadway lighting system along the corridor. Lighting levels could be programmed to be reduced during the sea turtle nesting season and increased to normal levels outside of the nesting season. This could be coupled with replacing the current high pressure sodium lighting with LED lighting.
Corridor Wide	6	Lighting	Consider conducting field measurements of existing lighting levels to evaluate lighting uniformity levels and add lighting where necessary. Consider implementing a lighting plan for the time the sea turtle nesting season is not active as roadway lighting levels should not be reduced at this time.
Corridor Wide	7	Sight Distance	Consider conducting a sight distance study along the corridor to evaluate whether on street parking spaces are restricting sight distance.
9th Street S to 8th Street S	9	Shoulder Width	Consider widening the shoulder to provide a consistent width for bicyclists.
Shell Gas Station just South of 7th Street S	10	Driveway Widths	Consider driveway reconstruction during the roadway's next 3R project to reduce the driveway widths down to the 36' maximum per FDOT Standard Index 515. Also consider eliminating/consolidating unused driveways for the gas station.

Focus Area H - Flagler Beach

Location	Issue Number	Issue	Suggestion
			NEAR-TERM IMPROVEMENT
SR A1A at 5th Street S	12	Sidewalk Width	Consider reviewing right-of-way (ROW) on this corner and if applicable, coordinate with the property owner to relocate the landscaping features within their (ROW).
SR A1A at SR 100	13	Adjacent Intersection Parking	Consider formalizing the emergency vehicle area by paving an asphalt surface and applying yellow striping. Consider increased enforcement of the emergency vehicle parking area to dissuade the general public from parking or unloading their vehicles at this location. Consider removing some of the parking spots southeast of the intersection. If removal of beach parking is not desired, consider constructing a raised median extending south of SR 100 to restrict the southbound left-turn movements into the beach parking spaces.
SR A1A at SR 100	14		Consider programming a leading pedestrian interval phase on the north and west legs. Signal phasing may need to be reviewed and adjusted to allow for this leading pedestrian interval phase.
SR A1A at SR 100	15		Consider installing new pedestals on the northwest corner within ten feet of the pedestrian ramps. Consider installing new pushbuttons oriented with the faces parallel to the crosswalk on the southwest, northeast, and southeast corners.

Location	Issue Number	Issue	Suggestion
			LONG-TERM IMPROVEMENT
Corridor Wide	5	Lack of Bicycle Facilities	Consider reconstructing the sidewalk on the west side of the roadway to be a 10'-12' wide shared-use path. As noted previously, the lack of bicycle facilities along the study corridor encourages a lot of bicyclists to utilize the sidewalk. In order to accommodate both the bicycle and pedestrian traffic in the area, a wider shared-use path would serve both of those modes.
Corridor Wide	6	Lighting	Consider upgrading to an adaptive roadway lighting system along the corridor. Lighting levels could be programmed to be reduced during the sea turtle nesting season and increased to normal levels outside of the nesting season. This could be coupled with replacing the current high pressure sodium lighting with LED lighting.
3rd Street N to 13th Street N	17	Utility Poles	Consider relocating the poles to be at the front or back of the sidewalk as the poles are replaced as part of scheduled maintenance.
4th Street N to 13th Street N	18	Formalize Intersection Turning Radii	Consider formalizing the intersection turning radii at these intersections with a curb and gutter. Installing curb and gutter also allows for the opportunity to create bulb-outs, reducing the distance pedestrians need to cross.
Between 8th Street N and 9th Street N	19	Sidewalk Rehabilitation	Consider removing the asphalt sidewalk and reconstructing the sidewalk in this section with concrete to provide a consistent surface throughout the corridor.

FOCUS AREA I – FLAGLER COUNTY

River to Sea TPO

Focus Area I - Flagler County

Location	Issue Number	Issue	Suggestion
			SHORT-TERM MAINTENANCE
Corridor-Wide	1	Debris on Sidewalk/Shared- Use Path	Consider dispatching a maintenance crew to remove the debris on the sidewalk/shared-use path.
Corridor-Wide	2	Vegetation Encroaching on Sidewalk/Shared-Use Path	Consider dispatching a maintenance crew to trim vegetation so it is not encroaching on the sidewalk/shared-use path and prune overhanging trees to provide an eight-foot vertical clearance. Consider clearing the trees that have fallen onto the sidewalk/shared use path.
Corridor-Wide	3	Striping	Consider dispatching a maintenance crew to replace the stop signs/bars with yield signs/markings at unsignalized intersections and driveways (where appropriate). In addition to the yield signage/markings for the trail, consider installing trail crossing warning signs (W11-15) and plaques (W11-15P) that would draw the motorist's attention to the presence of pedestrians or bicycles on the shared use path.
Corridor-Wide	4	Driveway Crosswalk Markings	Consider restriping the current crosswalk markings at unsignalized intersections (standard or special emphasis determined on a case-by-case basis) as shown on sheet 12 of FDOT Design Standard Index 17346 to provide consistency along the corridor. To emphasize the pedestrian realm at frequently used driveways, consider striping standard crosswalk markings as shown on sheet 12 of FDOT Design Standard Index 17346.
Corridor-Wide	7	Detectable Warning Surfaces	Consider dispatching a maintenance crew to install new detectable warning surfaces per FDOT Design Standard Index 304.
19 th Road to 18 th Road	8	Damaged Concrete Panels	Consider dispatching a maintenance crew to reconstruct the damaged concrete panels.
Malacompra Road Intersection	15	Reflectivity	Consider dispatching a maintenance crew to replace the existing signs (W11-2) and plaques (W16-7P) to enhance their visibility. Due to the lack of roadway lighting near the crossing, consider replacing the standard yellow background with those having the fluorescent yellow-green background with Type 11 sheeting.

Location	Issue Number	Issue	Suggestion
			NEAR-TERM IMPROVEMENT
Corridor-Wide	5	Raised Audible Pavement Markings	Consider implementing ground-in rumble strips or profiled thermoplastic to more effectively alert drivers when they are crossing into the shoulder. If rumble strips are utilized, consider repaving the shoulders and adding pavement to create space for the strips and provide a homogenous surface for bicyclists. If the shoulder is repaved, consider adding enough pavement to provide a 7' buffered bicycle lane.
17 th Road to 16 th Road	9	Church Parking	Consider coordinating with Hammock Community Church to remove the parking or to create another on-site access point to the parking area.
SunTrust Bank Driveway just South of 16 th Road	10	Southeast Curb Return Radius	Consider reconstructing the southeast corner curb return radius based on FDOT Standard Index 515 so the driveway throat width is reduced.
16 th Road Intersection	11	Intersection Sight Distance	Consider realigning the sidewalk/shared-use path closer to the roadway and restriping the crosswalk as discussed in Issue #4: Unsignalized Intersection and Driveway Crosswalk Markings. When reconstructing the sidewalk south of 16th Road, widen from 8' to 10' so the sidewalk to shared-use path transition takes place south of 16th Road instead of at the crosswalk for the intersection.
16 th Road Intersection	12	Northeast and Southeast Curb Return Radii	Consider reconstructing the northeast and southeast corner curb return radius based on FDOT Standard Index 515 so the driveway throat width is reduced.
16 th Road Intersection	13	Intersection Traffic Control	Consider conducting a signal warrant evaluation at this intersection. If the intersection warrants a signal and a signal is constructed, consider installing crosswalks and pedestrian features on the north and south legs to provide crossings across SR A1A for pedestrians and bicyclists.
Adult & Community Education Center	14	Crosswalk Alignment	Consider realigning the crosswalk to the east and providing a 5' landscape buffer between the crosswalk and roadway if right-of-way is available.
Malacompra Road Intersection	17	North Leg Crosswalk	Consider adding a special emphasis crosswalk to the north leg of the intersection per sheet 12 of FDOT Design Standard Index 17346. In addition to the crosswalk, consider installing pedestrian warning signage (W11-2) and arrow plaques (W16-7P) for this crossing.
Apache Drive	18	Sand in Crosswalk Area	Consider paving Apache Drive 50 to 100 feet east from the crosswalk to minimize sand debris tracking onto the crosswalk area.

Focus Area I - Flagler County

			• .
Location	Issue Number	Issue	Suggestion
			LONG-TERM IMPROVEMENT
			Consider conducting a lighting justification study along unlit portions of the corridor to determine if additional lighting is justified.
Corridor-Wide	6	Lighting	Consider implementation of pedestrian-level lighting to supplement areas where roadway lighting is not able to provide adequate
			illumination along the shared-use path between 16th Road and Malacompra Road.
Malacompra Road Intersection	16	Intersection Lighting	Consider implementing pedestrian activated overhead lighting or installing in-pavement lighting along the crosswalk bars to
Maiacompra Road intersection	pad Intersection 16		illuminate crosswalk the crosswalk. See report text for details.

Appendix E Safety Field Review Crash Summary Tables

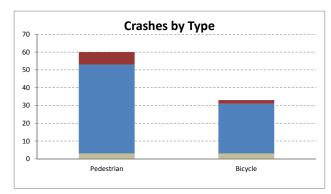
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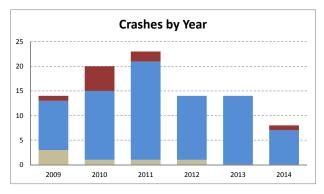
Riverto Sea TPO

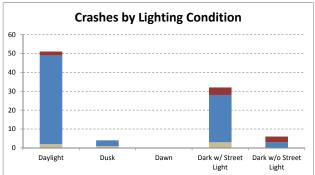
				Analys	sis Year				Severity	,			
		2009	2010		2012	2013	2014	PDO	Injury	Fatal	Total	Average	Percent
	Pedestrian	9	13	18	9	7	4	3	50	7	60	10.00	64.5%
Type of Crash	Bicycle	5	7	5	5	7	4	3	28	2	33	5.50	35.5%
	Total Crashes	14	20	23	14	14	8	6	78	9	93	15.50	100.0%
	PDO	3	1	1	1	0	0				6	1.00	6.5%
Crash Severity	Injury	10	14	20	13	14	7				78	13.00	83.9%
	Fatal	1	5	2	0	0	1				9	1.50	9.7%
	Daylight	7	10	11	8	11	4	2	47	2	51	8.50	54.8%
	Dusk	0	0	2 0	1 0	0	1 0	1 0	3 0	0	<u>4</u> 0	0.67 0.00	4.3% 0.0%
Light Conditions	Dawn Dark w/ Street Light	6	9	7	5	3	2	3	25	4	32	5.33	34.4%
	Dark w/o Street Light	1	1	3	0	0	1	0	3	3	6	1.00	6.5%
	Unknown	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Dry	13	18	23	13	14	7	6	73	9	88	14.67	94.6%
Surface Condition	Wet	1	2	0	1	0	1	0	5	0	5	0.83	5.4%
	Other	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	January	1	1	0	2	1	2	0	7	0	7	1.17	7.5%
	February	3	1	1	0	2	0	1	4	2	7	1.17	7.5%
	March	3	2	3	3	1	0	1	11	0	12	2.00	12.9%
	April	2	1	4	1	2	0	1	8	1	10	1.67	10.8%
	May	1	0	4	1	1	1	0	8	0	8	1.33	8.6%
Month	June	1	1	1	0	2	1	0	5	1	6	1.00	6.5%
	July	0	1	3 2	1 0	0 2	1	0	5 5	1 2	6 7	1.00 1.17	6.5% 7.5%
	August September	0	4	2	2	1	0	2	5 5	2	9	1.17	7.5% 9.7%
	October	2	3	2	2	1	0	1	9	0	10	1.67	9.7% 10.8%
	November	0	2	1	2	1	1	0	7	0	7	1.17	7.5%
	December	1	3	0	0	0	0	0	4	0	4	0.67	4.3%
	Monday	0	2	6	2	1	0	1	7	3	11	1.83	11.8%
	Tuesday	3	2	1	2	1	2	1	7	3	11	1.83	11.8%
	Wednesday	1	3	4	2	2	1	0	13	0	13	2.17	14.0%
Day of Week	Thursday	1	3	3	1	1	2	0	11	0	11	1.83	11.8%
	Friday	2	2	0	5	4	0	0	13	0	13	2.17	14.0%
	Saturday	5	5	5	1	3	0	3	14	2	19	3.17	20.4%
	Sunday	2	3	4	1	2	3	1	13	1	15	2.50	16.1%
	0:00	2	0	2	4	0	1	2	7	0	9	1.50	9.7%
	1:00	1	1	0	0	0	0	0	2	0	2	0.33	2.2%
	2:00	0	1	1	0	0	0	0	2	0	2	0.33	2.2%
	3:00	1	0 1	0	0	0	0	1	0	0 1	1	0.17	1.1%
	4:00 5:00	0	0	0	0	0	0	0	0	0	0	0.17 0.00	1.1% 0.0%
	6:00	0	0	1	0	1	0	0	2	0	2	0.33	2.2%
	7:00	0	0	0	1	1	0	0	2	0	2	0.33	2.2%
	8:00	0	0	0	0	2	0	0	2	0	2	0.33	2.2%
	9:00	1	1	0	1	0	0	0	3	0	3	0.50	3.2%
	10:00	0	0	0	1	1	0	0	2	0	2	0.33	2.2%
Hour of Day	11:00	1	2	0	0	0	0	1	1	1	3	0.50	3.2%
Flour or Day	12:00	0	2	0	2	2	1	0	7	0	7	1.17	7.5%
	13:00	1	2	0	1	1	2	0	7	0	7	1.17	7.5%
	14:00	1	0	2	0	1	0	0	4	0	4	0.67	4.3%
	15:00	2	0	1	1	2	0	0	5	1	6	1.00	6.5%
	16:00	1	0	3	0	1	0	0	5	0	5	0.83	5.4%
	17:00	0	1	2	0	0	1	0	4	0	4	0.67	4.3%
	18:00 19:00	0	2 1	2	1	0	1 0	1	3 2	1	5 4	0.83 0.67	5.4% 4.3%
	20:00	0	3	2	1	1	0	0	6	1	7	1.17	7.5%
	21:00	0	1	3	0	0	2	0	4	2	6	1.00	6.5%
	22:00	1	1	1	0	1	0	0	4	0	4	0.67	4.3%
	23:00	2	1	2	0	0	0	0	4	1	5	0.83	5.4%
	None	11	15	22	13	13	6	5	71	4	80	13.33	86.0%
	Alcohol Involved	3	4	1	1	1	2	1	7	4	12	2.00	12.9%
Alcohol	Drugs Involved	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Alcohol and Drugs	0	1	0	0	0	0	0	0	1	1	0.17	1.1%
	Undetermined	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	19 and Under	4	1	4	1	0	1				11	1.83	11.8%
	20-24	1	2	1	2	3	1				10	1.67	10.8%
	25-29	1	0	4	2	1	0				8	1.33	8.6%
	30-34	1	0	0	0	1	0				2	0.33	2.2%
	35-39	2	1	1	0	0	2				6	1.00	6.5%
	40-44 45-49	0 1	1 4	2	3	0	0				3 10	0.50 1.67	3.2% 10.8%
	143-42		0	1	2	2	1				6	1.00	6.5%
Age of Pedestrian/Pigualist						ı	1 1					1.00	0.5%
Age of Pedestrian/Bicyclist	50-54	0				2	1				7	1 17	7 5%
Age of Pedestrian/Bicyclist	50-54 55-59	0	1	2	1	2 1	1				7 10	1.17 1.67	7.5% 10.8%
Age of Pedestrian/Bicyclist	50-54 55-59 60-64	0 1	1 4	2 3	1 0	1	1				10	1.67	10.8%
Age of Pedestrian/Bicyclist	50-54 55-59 60-64 65-69	0 1 0	1 4 2	2 3 1	1 0 1	1					10 5	1.67 0.83	10.8% 5.4%
Age of Pedestrian/Bicyclist	50-54 55-59 60-64	0 1	1 4	2 3	1 0	1	1 0				10	1.67	10.8%
Age of Pedestrian/Bicyclist	50-54 55-59 60-64 65-69 70-74	0 1 0 2	1 4 2 0	2 3 1 0	1 0 1 0	1 1 0	1 0 1				10 5 3	1.67 0.83 0.50	10.8% 5.4% 3.2%

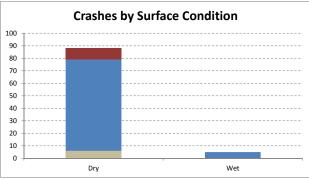
	SII ANALISIS - SN/CK AIA	1 1 010	<i>- 1 1</i>	eiu .	nevi	<i>•••••</i>	<i>310</i>	uii i	Sum	,,,,,,			
	19 and Under	3	1	1	0	0	3				8	1.33	8.6%
	20-24	0	2	5	2	2	2				13	2.17	14.0%
	25-29	1	0	0	2	2	0				5	0.83	5.4%
	30-34	1	1	1	0	0	0				3	0.50	3.2%
	<u></u>												•
	35-39	0	1	1	0	1	0				3	0.50	3.2%
	40-44	3	1	0	0	1	0				5	0.83	5.4%
	45-49	1	1	1	2	3	1				9	1.50	9.7%
Age of Driver	50-54	1	1	1	1	1	1				6	1.00	6.5%
	55-59	0	3	2	1	0	0			1	6	1.00	6.5%
	60-64	0	1	0	0	0	0			·····	1	0.17	1.1%
	65-69	1	0			1	0			ł	9	1.50	9.7%
				4	3								
	70-74	0	2	1	0	0	0				3	0.50	3.2%
	75-79	0	0	1	0	0	0				1	0.17	1.1%
	80-84	0	4	0	1	0	0				5	0.83	5.4%
	85 and Over	2	0	0	0	1	0				3	0.50	3.2%
	2 Lane Undivided	5	5	10	5	3	5	1	26	6	33	5.50	35.5%
		0	2	0	1	1	0	0	2	2	4	0.67	4.3%
Boot of Too	3 Lane w/Two Way Left Turn Lane												
Roadway Type	4 Lane Divided	4	2	7	3	4	2	5	17	0	22	3.67	23.7%
	4 Lane Undivided	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	5 Lane w/Two Way Left Turn Lane	5	11	6	5	6	1	0	33	1	34	5.67	36.6%
	30	1	1	3	0	0	1	0	6	0	6	1.00	6.5%
	35	8	8	13	9	8	2	5	42	1	48	8.00	51.6%
	40	3	9	0	1	5	1	0	16	3	19	3.17	20.4%
Speed Limit										.			
	45	2	1	5	4	1	3	1	13	2	16	2.67	17.2%
	50	0	0	2	0	0	0	0	1	1	2	0.33	2.2%
	55	0	1	0	0	0	0	0	0	1	1	0.17	1.1%
	2	5	5	10	5	3	4	1	26	5	32	5.33	34.4%
	3	0	2	0	1	1	0	0	2	2	4	0.67	4.3%
Total Number of Lanes		4	2	7	3	4	2	5	17	0	22	3.67	23.7%
	4			•		•••••		• • • • • • • • • • • • • • • • • • • •		•			•
	5	5	11	6	5	6	1	0	33	1	34	5.67	36.6%
Near Beach Parking	No	12	19	19	14	14	7	6	70	9	85	14.17	91.4%
real Bodon ranking	Yes	2	1	4	0	0	1	0	8	0	8	1.33	8.6%
No. of Book Control	No	13	17	17	7	11	6	4	58	9	71	11.83	76.3%
Near Bus Stop	Yes	1	3	6	7	3	2	2	20	0	22	3.67	23.7%
	No	11	15	18	11	12	5	4	60	8	72	12.00	77.4%
Near Park													
	Yes	3	5	5	3	2	3	2	18	1	21	3.50	22.6%
Near Civic Land Use	No	10	17	17	12	11	7	5	61	8	74	12.33	79.6%
Trodi Civio Zana Coc	Yes	4	3	6	2	3	1	1	17	1	19	3.17	20.4%
No. Model Const.	No	10	9	15	9	7	4	4	43	7	54	9.00	58.1%
Near Marked Crossing	Yes	4	11	8	5	7	4	2	35	2	39	6.50	41.9%
Near Marked Crossing but Outside	No	8	14	20	11	11	6	4	59	7	70	11.67	75.3%
Influence Area^				•									
lilliderice Area	Yes	6	6	3	3	3	2	2	19	2	23	3.83	24.7%
	Bike Crashes on Sections with Shoulder/Bike Lane	4	5	3	3	5	2	1	19	2	22	3.67	66.7%
Bicycle Crashes	Total Bike Crashes	5	7	5	5	7	4	3	28	2	33	5.50	33.3%
	% Crashes with Facility	80%	71%	60%	60%	71%	50%	33%	68%	100%			
Pedestrian/Bicycle Crashes on Segment	No	8	8	13	8	8	3	5	41	2	48	8.00	51.6%
with Sidewalk or Multi-Use Path	Yes	6	12	10	6	6	5	1	37	7	45	7.50	48.4%
			7			4		1	25	7	33		
Within Activity Zone	No	5		6	6		5			.		5.50	35.5%
•	Yes	9	13	17	8	10	3	5	53	2	60	10.00	64.5%
	Mid-Block	6	9	9	5	5	3	0	31	6	37	6.17	39.8%
	At signalized intersection crosswalk	3	7	6	3	1	1	3	18	0	21	3.50	22.6%
Pedestrian/Bicycle Crash Location	At driveway crossing	4	0	5	4	7	3	1	22	0	23	3.83	24.7%
	Along side of roadway	1	3	3	2	0	1	2	5	3	10	1.67	10.8%
	At signalized intersection	0	0	0	0	1	0	0	1	0	1	0.17	1.1%
Bicycle Riding Against Traffic	No	2	4	3	1	2	2	3	9	2	14	2.33	42.4%
Dioyolo Maing Against Haine	Yes	1	0	2	4	4	2	0	13	0	13	2.17	39.4%
	Non-Resident	5	6	9	6	7	5	2	32	4	38	6.33	40.9%
Non-Local*	Resident	8	11	14	8	6	3	2	43	5	50	8.33	53.8%
	Vehicle	9	13	14	11	9	5	2	50	9	61	10.17	65.6%
Whe Hed Districtive													
Who Had Right-of-Way	Pedestrian	1	3	6	2	0	1	2	11	0	13	2.17	14.0%
	Bicycle	3	4	3	1	5	2	2	16	0	18	3.00	19.4%
^ See report for influence area definition.													

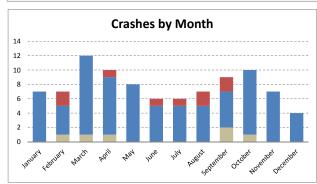
[^] See report for influence area definition.
*This was determined by reviewing ZIP codes of ped/bike involved in crash for each specific focus area. If the ZIP code matched that of the focus area, this was deemed a local crash.

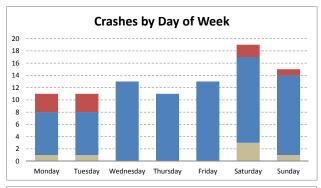


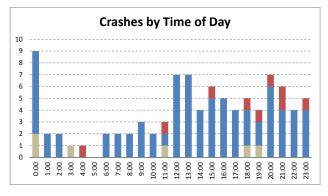


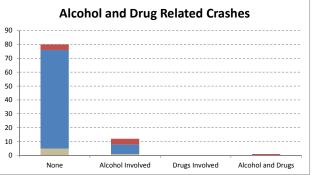


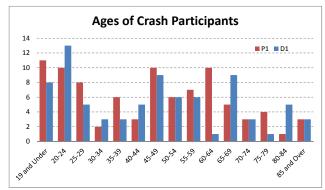


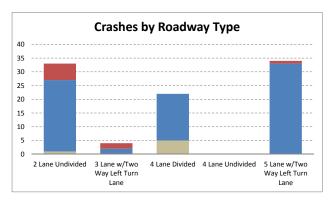


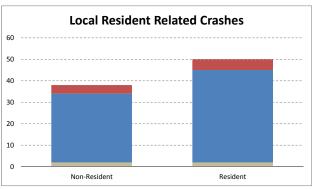












CRASH ANALYSIS - Focus Area A - New Smyrna Beach from Peninsula Ave. to 3rd Ave.

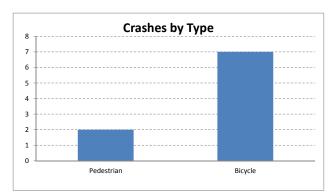
				,a., c	is Year				Severity		Total	Average	Percent
		2009	2010		2012	2013	2014	PDO	Injury	Fatal			
	Pedestrian	0	2	0	0	0	0	0	2	0	2	0.33	22.2%
Type of Crash	Bicycle	1	3	0	0	2	1	0	7	0	7	1.17	77.8%
	Total Crashes	1	5	0	0	2	1	0	9	0	9	1.50	100.0%
	PDO	0	0	0	0	0	0				0	0.00	0.0%
Crash Severity	Injury	1	5	0	0	2	1				9	1.50	100.0%
	Fatal	0	0	0	0	0	0				0	0.00	0.0%
	Daylight	1	4	0	0	2	1	0	8	0	8	1.33	88.9%
	Dusk	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Light Conditions	Dawn	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Light Conditions	Dark w/ Street Light	0	1	0	0	0	0	0	1	0	1	0.17	11.1%
	Dark w/o Street Light	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Unknown	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Dry	1	4	0	0	2	1	0	8	0	8	1.33	88.9%
Surface Condition	Wet	0	1	0	0	0	0	0	1	0	1	0.17	11.1%
	Other	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	January	0	0	0	0	0	1	0	1	0	1	0.17	11.1%
	February	1	0	0	0	0	0	0	1	0	1	0.17	11.1%
	March	0	1	0	0	1	0	0	2	0	2	0.33	22.2%
	April	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	May	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	June	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Month	July	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	August	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	September	0	1	0	0	0	0	0	1	0	1	0.17	11.1%
	October	0	0	0	0	1	0	0	1	0	1	0.17	11.1%
	November	0	2	0	0	0	0	0	2	0	2	0.33	22.2%
	December	0	1	0	0	0	0	0	1	0	1	0.17	11.1%
	Monday	0	0	0	0	1	0	0	1	0	1	0.17	11.1%
	Tuesday	0	1	0	0	0	0	0	1	0	1	0.17	11.1%
	Wednesday	0	0	0	0	1	0	0	1	0	1	0.17	11.1%
Day of Week	Thursday	0	2	0	0	0	0	0	2	0	2	0.33	22.2%
Buy of Week	Friday	0	2	0	0	0	0	0	2	0	2	0.33	22.2%
	Saturday	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Sunday	1	0	0	0	0	1	0	2	0	2	0.33	22.2%
	0:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	1:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	2:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	3:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	4:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	5:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	6:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	7:00	0	0	0			0		0		0	0.00	0.0%
	8:00	0	0	0	0	0 1	0	0	1	0	1	0.00	•
													11.1%
	9:00	0	1	0	0	0	0	0	1	0	1	0.17	11.1%
	10:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Hour of Day	11:00	0	1	0	0	0	0	0	1	0	1	0.17	11.1%
	12:00	0	1	0	0	0	1	0	2	0	2	0.33	22.2%
	13:00	0	1	0	0	0	0	0	1	0	1	0.17	11.1%
	14:00	1	0	0	0	0	0	0	1	0	1	0.17	11.1%
	15:00	0	0	0	0	1	0	0	11	0	1	0.17	11.1%
	16:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	17:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	18:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	19:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	20:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	21:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	22:00	0	1	0	0	0	0	0	1	0	1	0.17	11.1%
	23:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	None	1	5	0	0	2	1	0	9	0	9	1.50	100.0%
AL	Alcohol Involved	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Alcohol	Drugs Involved	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Alcohol and Drugs	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Undetermined	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	19 and Under	0	1	0	0	0	0				1	0.17	11.1%
	20-24	0	0	0	0	1	0				1	0.17	11.1%
	25-29	0	0	0	0	0	0				0	0.00	0.0%
	30-34	0	0	0	0	0	0				0	0.00	0.0%
	35-39	0	0	0	0	0	0				0	0.00	0.0%
	40-44	0	0	0	0	0	0				0	0.00	0.0%
	45-49	0	2	0	0	0	0				2	0.33	22.2%
Age of Pedestrian/Bicyclist	50-54	0	0	0	0	0	0				0	0.00	0.0%
	55-59	0	0	0	0	1	0				1	0.17	11.1%
	60-64	0	1	0	0	0	0				1	0.17	11.1%
	65-69	0	1	0	0	0	0				1	0.17	11.1%
	05 05							1		I	1		1 00 00/
	70-74	1	0	0	0	0	1	ļ			2	0.33	22.2%
		1 0	0 0	0 0	0 0	0 0	1 0				0	0.33 0.00	22.2% 0.0%
	70-74												•

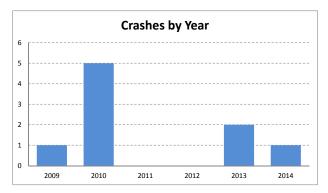
CRASH ANALYSIS - Focus Area A - New Smyrna Beach from Peninsula Ave. to 3rd Ave.

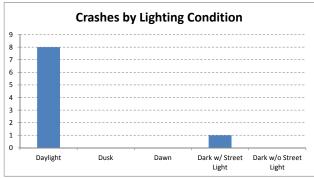
		Analysis			sis Year			Severity			Tetal	A	Boroont	
		2009	2010	2011	2012	2013	2014	PDO	Injury	Fatal	Total	Average	Percent	
	19 and Under	1	0	0	0	0	0				1	0.17	11.1%	
	20-24	0	1	0	0	0	1				2	0.33	22.2%	
	25-29	0	0	0	0	0	0				0	0.00	0.0%	
	30-34	0	0	0	0	0	0				0	0.00	0.0%	
	35-39	0	1	0	0	0	0				1	0.17	11.1%	
	40-44	0	0	0	0	0	0				0	0.00	0.0%	
	45-49	0	0	0	0	2	0				2	0.33	22.2%	
Age of Driver	50-54	0	0	0	0	0	0				0	0.00	0.0%	
	55-59	0	1	0	0	0	0				1	0.17	11.1%	
	60-64	0	0	0	0	0	0				0	0.00	0.0%	
	65-69	0	0	0	0	0	0				0	0.00	0.0%	
	70-74	0	0	0	0	0	0				0	0.00	0.0%	
	75-79	0	0	0	0	0	0				0	0.00	0.0%	
	80-84	0	2	0	0	0	0				2	0.33	22.2%	
	85 and Over	0	0	0	0	0	0				0	0.00	0.0%	
	2 Lane Undivided	0	0	0	0	0	0	0	0	0	0	0.00	0.0%	
	3 Lane w/Two Way Left Turn Lane	0	0	0	0	0	0	0	0	0	0	0.00	0.0%	
Roadway Type	4 Lane Divided	1	1	0	0	0	1	0	3	0	3	0.50	33.3%	
	4 Lane Undivided	0	0	0	0	0	0	0	0	0	0	0.00	0.0%	
	5 Lane w/Two Way Left Turn Lane	0	4	0	0	2	0	0	6	0	6	1.00	66.7%	
	30	0	0	0	0	0	0	0	0	0	0	0.00	0.0%	
	35	0	0	0	0	0	0	0	0	0	0	0.00	0.0%	
Speed Limit	40	1	5	0	0	2	1	0	9	0	9	1.50	100.0%	
opoda ziiiiik	45	0	0	0	0	0	0	0	0	0	0	0.00	0.0%	
	50	0	0	0	0	0	0	0	0	0	0	0.00	0.0%	
	55	0	0	0	0	0	0	0	0	0	0	0.00	0.0%	
	2	0	0	0	0	0	0	0	0	0	0	0.00	0.0%	
Total Number of Lanes	3	0	0	0	0	0	0	0	0	0	0	0.00	0.0%	
Total Number of Lanes	4	1	1	0	0	0	1	0	3	0	3	0.50	33.3%	
	5	0	4	0	0	2	0	0	6	0	6	1.00	66.7%	
Near Beach Parking	No	1	5	0	0	2	1	0	9	0	9	1.50	100.0%	
real beacht aiking	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%	
Near Bus Stop	No	1	5	0	0	2	1	0	9	0	9	1.50	100.0%	
ivear bus stop	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%	
Near Park	No	0	4	0	0	2	0	0	6	0	6	1.00	66.7%	
iveai i aik	Yes	1	1	0	0	0	1	0	3	0	3	0.50	33.3%	
Near Civic Land Use	No	1	5	0	0	2	1	0	9	0	9	1.50	100.0%	
Neal Civic Land Ose	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%	
Near Marked Crossing	No	0	1	0	0	0	0	0	1	0	1	0.17	11.1%	
iveal Marked Clossing	Yes	1	4	0	0	2	1	0	8	0	8	1.33	88.9%	
Near Marked Crossing but Outside	No	1	4	0	0	2	1	0	8	0	8	1.33	88.9%	
Influence Area^	Yes	0	1	0	0	0	0	0	1	0	1	0.17	11.1%	
	Bike Crashes on Sections with Shoulder/Bike Lane	1	3	0	0	2	1	0	7	0	7	1.17	100.0%	
Bicycle Crashes	Total Bike Crashes	1	3	0	0	2	1	0	7	0	7	1.17	0.0%	
	% Crashes with Facility	100%	100%	#####	#####	100%	100%	#####	100%	#####				
Pedestrian/Bicycle Crashes on Segment	No	0	0	0	0	0	0	0	0	0	0	0.00	0.0%	
with Sidewalk or Multi-Use Path	Yes	1	5	0	0	2	1	0	9	0	9	1.50	100.0%	
Mithin Activity Zono	No	1	2	0	0	1	1	0	5	0	5	0.83	55.6%	
Within Activity Zone	Yes	0	3	0	0	1	0	0	4	0	4	0.67	44.4%	
	Mid-Block	0	1	0	0	1	0	0	2	0	2	0.33	22.2%	
	At signalized intersection crosswalk	1	3	0	0	0	0	0	4	0	4	0.67	44.4%	
Pedestrian/Bicycle Crash Location	At driveway crossing	0	0	0	0	1	1	0	2	0	2	0.33	22.2%	
	Along side of roadway	0	1	0	0	0	0	0	1	0	1	0.17	11.1%	
	At signalized intersection	0	0	0	0	0	0	0	0	0	0	0.00	0.0%	
Bicycle Riding Against Traffic	No	0	1	0	0	0	1	0	2	0	2	0.33	28.6%	
bicycle Riding Against Franc	Yes	0	0	0	0	1	0	0	1	0	1	0.17	14.3%	
Non Local*	Non-Resident	1	2	0	0	2	1	0	6	0	6	1.00	66.7%	
Non-Local*	Resident	0	2	0	0	0	0	0	2	0	2	0.33	22.2%	
	Vehicle	0	1	0	0	1	1	0	3	0	3	0.50	33.3%	
Who Had Right-of-Way	Pedestrian	0	1	0	0	0	0	0	1	0	1	0.17	11.1%	
	Bicycle	1	3	0	0	1	0	0	5	0	5	0.83	55.6%	
^ See report for influence area definition.														

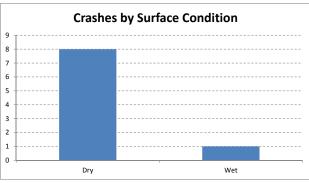
[^] See report for influence area definition.
*This was determined by reviewing ZIP codes of ped/bike involved in crash for each specific focus area. If the ZIP code matched that of the focus area, this was deemed a local crash.

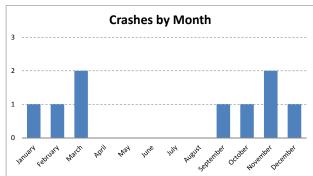
CRASH ANALYSIS - Focus Area A - New Smyrna Beach from Peninsula Ave. to 3rd Ave.

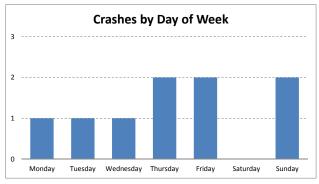


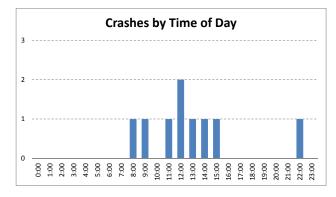


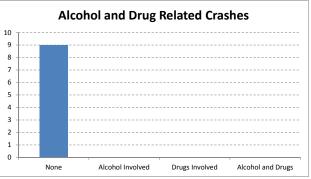




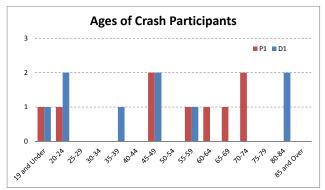


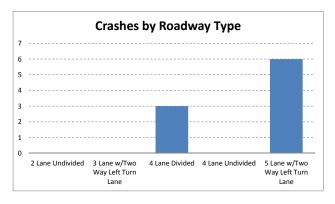


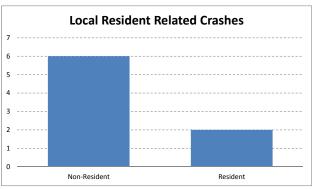




CRASH ANALYSIS - Focus Area A - New Smyrna Beach from Peninsula Ave. to 3rd Ave.







CRASH ANALYSIS - Focus Area B - Daytona Beach Shores/Daytona Beach from Park Ave. to Ribault Ave.

			Analysis Year					Severity	,	T-4-1	A	Damanut	
		2009	2010	2011	2012	2013	2014	PDO	Injury	Fatal	Total	Average	Percent
	Pedestrian	3	2	1	1	0	0	0	7	0	7	1.17	87.5%
Type of Crash	Bicycle	0	1	0	0	0	0	0	1	0	1	0.17	12.5%
	Total Crashes	3	3	1	1	0	0	0	8	0	8	1.33	100.0%
Const. Constitu	PDO	0	0	0	0	0	0				0	0.00	0.0%
Crash Severity	Injury	3	3	1	1	0	0				8	1.33	100.0%
	Fatal	0	0	0	0	0	0	0	3	0	3	0.00	0.0% 37.5%
	Daylight Dusk	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Dawn	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Light Conditions	Dark w/ Street Light	2	1	0	1	0	0	0	4	0	4	0.67	50.0%
	Dark w/o Street Light	0	0	1	0	0	0	0	1	0	1	0.17	12.5%
	Unknown	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Dry	3	3	1	1	0	0	0	8	0	8	1.33	100.0%
Surface Condition	Wet	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Other	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	January	1	0	0	0	0	0	0	1	0	1	0.17	12.5%
	February	1	0	0	0	0	0	0	1	0	1	0.17	12.5%
	March	0	0	1	0	0	0	0	1	0	1	0.17	12.5%
	April	0	0	0	1	0	0	0	1	0	1	0.17	12.5%
	May	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Month	June	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	July	0	1	0	0	0	0	0	1	0	1	0.17	12.5%
	August	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	September	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	October	1	1	0	0	0	0	0	2	0	2	0.33	25.0%
	November	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	December	0	1	0	0	0	0	0	1	0	1	0.17	12.5%
	Monday	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Tuesday	0	0	0	0	0	0	0	0 2	0	0 2	0.00	0.0%
Day of Week	Wednesday Thursday	0	1	1 0	0	0	0	0	1	0	1	0.33 0.17	25.0% 12.5%
Day of Week	Friday	1	0	0	1	0	0	0	2	0	2	0.17	25.0%
	Saturday	2	1	0	0	0	0	0	3	0	3	0.50	37.5%
	Sunday	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	0:00	1	0	0	1	0	0	0	2	0	2	0.33	25.0%
	1:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	2:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	3:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	4:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	5:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	6:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	7:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	8:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	9:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	10:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Hour of Day	11:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
riour or Day	12:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	13:00	0	1	0	0	0	0	0	1	0	1	0.17	12.5%
	14:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	15:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	16:00	1	0	0	0	0	0	0	1	0	1	0.17	12.5%
	17:00	0	1	0	0	0	0	0	1	0	1	0.17	12.5%
	18:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	19:00 20:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0% 0.0%
		0			0	0	0	0	2	0	0		·
	21:00 22:00	1	1 0	1 0	0	0	0	0	1	0	2	0.33 0.17	25.0% 12.5%
	23:00	0	0	0	0	0	0	0	0	0	0	0.17	0.0%
	None	3	3	1	1	0	0	0	8	0	8	1.33	100.0%
	Alcohol Involved	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Alcohol	Drugs Involved	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Alcohol and Drugs	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Undetermined	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	19 and Under	1	0	0	0	0	0				1	0.17	12.5%
	20-24	1	0	0	0	0	0				1	0.17	12.5%
	25-29	0	0	0	0	0	0				0	0.00	0.0%
	30-34	0	0	0	0	0	0				0	0.00	0.0%
	35-39	0	0	0	0	0	0				0	0.00	0.0%
	40-44	0	0	0	0	0	0				0	0.00	0.0%
	45-49	0	1	0	1	0	0				2	0.33	25.0%
Age of Pedestrian/Bicyclist	50-54	0	0	0	0	0	0				0	0.00	0.0%
	55-59	0	0	0	0	0	0				0	0.00	0.0%
	60-64	0	1	0	0	0	0				1	0.17	12.5%
	65-69	0	1	0	0	0	0				1	0.17	12.5%
				0	0	0	0	I			1	0.17	12.5%
	70-74	1	0	•					•	•	4		§
	75-79	0	0	0	0	0	0				0	0.00	0.0%
		•		•			0 0 0				0 0 1	0.00 0.00 0.17	0.0% 0.0% 12.5%

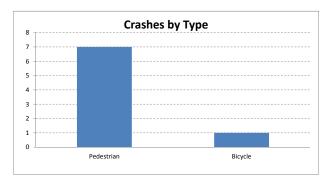
CRASH ANALYSIS - Focus Area B - Daytona Beach Shores/Daytona Beach from Park Ave. to Ribault Ave.

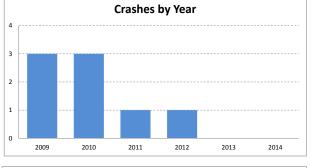
	- Focus Area B - Daytona Be	ucn D	mor c	<u>s/Du</u>	<u>yion</u>	ı Dec	<u></u> j	1 OIII	<u> </u>	LIIV	10 IL	Dunti 117C.
	19 and Under	2	1	0	0	0	0				3	0.50 37.5%
	20-24	0	0	0	0	0	0				0	0.00 0.0%
	25-29	0	0	0	0	0	0				0	0.00 0.0%
		0	0	0	0	0	0				0	
	30-34											
	35-39	0	0	0	0	0	0				0	0.00 0.0%
	40-44	0	0	0	0	0	0				0	0.00 0.0%
	45-49	0	0	1	0	0	0				1	0.17 12.5%
Age of Driver	50-54	1	0	0	0	0	0				1	0.17 12.5%
Ü	55-59	0	2	0	0	0	0				2	0.33 25.0%
	60-64	0	0	0	0	0	0				0	0.00 0.0%
	65-69	0	0	0	1	0	0				1	0.17 12.5%
	70-74	0	0	0	0	0	0				0	0.00 0.0%
	75-79	0	0	0	0	0	0				0	0.00 0.0%
	80-84	0	0	0	0	0	0				0	0.00 0.0%
	85 and Over	0	0	0	0	0	0				0	0.00 0.0%
	2 Lane Undivided	0	0	0	0	0	0	0	0	0	0	0.00 0.0%
											0	
	3 Lane w/Two Way Left Turn Lane	0	0	0	0	0	0	0	0	0	4	0.00 0.0%
Roadway Type	4 Lane Divided	0	0	0	0	0	0	0	0	0	0	0.00 0.0%
	4 Lane Undivided	0	0	0	0	0	0	0	0	0	0	0.00 0.0%
	5 Lane w/Two Way Left Turn Lane	3	3	1	1	0	0	0	8	0	8	1.33 100.0%
	30	0	0	0	0	0	0	0	0	0	0	0.00 0.0%
	35	3	3	1	1	0	0	0	8	0	8	1.33 100.0%
											4	
Speed Limit	40	0	0	0	0	0	0	0	0	0	0	0.00 0.0%
-,	45	0	0	0	0	0	0	0	0	0	0	0.00 0.0%
	50	0	0	0	0	0	0	0	0	0	0	0.00 0.0%
	55	0	0	0	0	0	0	0	0	0	0	0.00 0.0%
	2	0	0	0	0	0	0	0	0	0	0	0.00 0.0%
	3	0	0	0	0	0	0	0	0	0	0	0.00 0.0%
Total Number of Lanes	4											
	4	0	0	0	0	0	0	0	0	0	0	0.00 0.0%
	5	3	3	1	1	0	0	0	8	0	8	1.33 100.0%
Near Booch Barking	No	2	3	1	1	0	0	0	7	0	7	1.17 87.5%
ivear beach Parking	Yes	1	0	0	0	0	0	0	1	0	1	0.17 12.5%
	No	2	2	0	0	0	0	0	4	0	4	0.67 50.0%
Near Bus Stop	Yes	1	1	1	1	0	0	0	4	0	4	0.67 50.0%
Near Park	No	3	3	1	1	0	0	0	8	0	8	1.33 100.0%
	Yes	0	0	0	0	0	0	0	0	0	0	0.00 0.0%
Near Civia Land Llan	No	3	3	1	1	0	0	0	8	0	8	1.33 100.0%
inear Civic Land Use	Yes	0	0	0	0	0	0	0	0	0	0	0.00 0.0%
Total Number of Lanes Near Beach Parking Near Bus Stop Near Park Near Civic Land Use	No	2	1	1	1	0	0	0	5	0	5	0.83 62.5%
Near Marked Crossing	Yes	1	2	0	0	ō	0	0	3	0	3	0.50 37.5%
N. N. I. I. C												
Near Marked Crossing but Outside	No	2	2	1	0	0	0	0	5	0	5	0.83 62.5%
Influence Area^	Yes	1	1	0	1	0	0	0	3	0	3	0.50 37.5%
	Bike Crashes on Sections with Shoulder/Bike Lane	0	0	0	0	0	0	0	0	0	0	0.00 0.0%
Bicycle Crashes	Total Bike Crashes	0	1	0	0	0	0	0	1	0	1	0.17 100.0%
,	% Crashes with Facility	#DIV/0!	0%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0%	#DIV/0!	1	
Pedestrian/Bicycle Crashes on Segment		3	3	1	1	0	0	0	8	0	8	1.33 100.0%
	No Voc											
with Sidewalk or Multi-Use Path	Yes	0	0	0	0	0	0	0	0	0	0	0.00 0.0%
Within Activity Zone	No	0	0	0	0	0	0	0	0	0	0	0.00 0.0%
Willim Activity Zone	Yes	3	3	1	1	0	0	0	8	0	8	1.33 100.0%
	Mid-Block	2	1	1	1	0	0	0	5	0	5	0.83 62.5%
	At signalized intersection crosswalk	1	1	0	0	0	0	0	2	0	2	0.33 25.0%
Pedestrian/Bicycle Crash Location	At driveway crossing	0	0	0	0	0	0	0	0	0	0	0.00 0.0%
r edestriar/bicycle Grasir Location												
	Along side of roadway	0	0	0	0	0	0	0	0	0	0	0.00 0.0%
	At signalized intersection	0	0	0	0	0	0	0	0	0	0	0.00 0.0%
Pigyolo Piding Assisst Troffic	No	0	0	0	0	0	0	0	0	0	0	0.00 0.0%
Bicycle Riding Against Traffic	Yes	0	0	0	0	0	0	0	0	0	0	0.00 0.0%
	Non-Resident	0	1	0	0	0	0	0	1	0	1	0.17 12.5%
Non-Local*	Resident	3	2	1	1	0	0	0	7	0	7	1.17 87.5%
	Vehicle	2	1	1	1	0	0	0	5	0	5	0.83 62.5%
Who Had Right-of-Way	Pedestrian	0	2	0	0	0	0	0	2	0	2	0.33 25.0%
	Bicycle	0	0	0	0	0	0	0	0	0	0	0.00 0.0%
A Soo report for influence area definition			_					_		_		

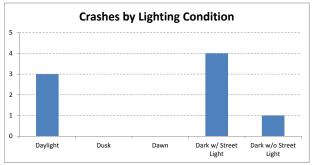
[^] See report for influence area definition.

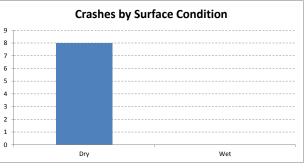
^{*}This was determined by reviewing ZIP codes of ped/bike involved in crash for each specific focus area. If the ZIP code matched that of the focus area, this was deemed a local crash.

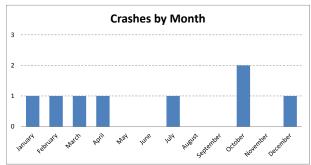
CRASH ANALYSIS - Focus Area B - Daytona Beach Shores/Daytona Beach from Park Ave. to Ribault Ave.

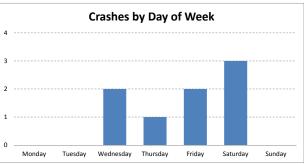


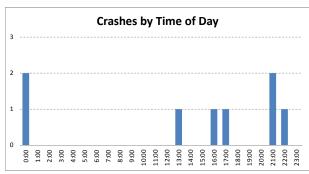


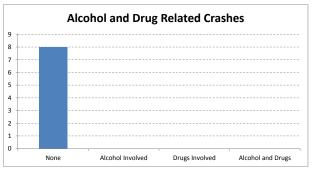


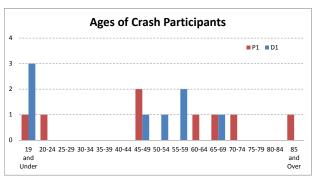


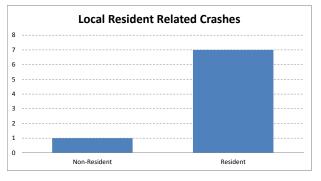












 $CRASH\ ANALYSIS\ -\ Focus\ Area\ C\ -\ Daytona\ Beach\ from\ International\ Speedway\ Blvd.\ to\ Just\ South\ of\ Earl\ St.$

		Analysis Year					Severity			Total	Augus	Davagent	
		2009	2010	2011	2012	2013	2014	PDO	Injury	Fatal	Total	Average	Percent
	Pedestrian	2	0	3	2	2	0	3	6	0	9	1.50	81.8%
Type of Crash	Bicycle Total Crashes	0 2	1	4	0 2	0 2	0	4	7				18.2% 100.0%
	PDO PDO	2	1	0	1	0	0	4	-	U			36.4%
Crash Severity	Injury	0	0	4	1	2	0				7	1.17	63.6%
	Fatal	0	0	0	0	0	0				0	0.00	0.0%
	Daylight	0	11	2	0	1	0	1	3			1.50	36.4%
	Dusk Dawn	0	0	0	0	0	0	0	0				0.0%
Light Conditions	Dark w/ Street Light	2	0	2	2	1	0	3	4				63.6%
	Dark w/o Street Light	0	0	0	0	0	0	0	0	0	0		0.0%
	Unknown	0	0	0	0	0	0	0	0	0	0		0.0%
	Dry	2	11	4	2	2	0	4	7				100.0%
Surface Condition	Wet Other	0	0	0	0	0	0	0	0				0.0%
	January	0	0	0	0	0	0	0	0				0.0%
	February	0	0	0	0	0	0	0	0	0	0		0.0%
	March	1	0	1	0	0	0	1	1	0	2		18.2%
	April	11	0	1	0	1	0	1	2	0	3	1.50 0.33 1.83 0.67 0.00 0.00 0.00 0.00 0.00 0.00 0.00	27.3%
	May	0	0	0	0	0 1	0	0	1				9.1% 9.1%
Month	June July	0	0	1	0	0	0	0	1				9.1%
	August	0	0	0	0	0	0	0	0	0	0		0.0%
	September	0	0	0	1	0	0	1	0	0	1	1.50 0.33 1.83 0.67 1.17 0.00 0.00 0.00 1.17 0.00 0.00 0.0	9.1%
	October	0	1	0	1	0	0	1	1	0	2		18.2%
	November	0	0	0	0	0	0	0	0				0.0%
	December Monday	0	0	2	0	0	0	0	2				0.0% 18.2%
	Tuesday	1	0	0	0	0	0	1	0				9.1%
	Wednesday	0	0	0	0	1	0	0	1	0	1		9.1%
Day of Week	Thursday	0	0	1	0	0	0	0	1	0	1	0.17	9.1%
	Friday	0	0	0	1	0	0	0	1	0	1		9.1%
	Saturday	1	1	0	0	1	0	2	1	0 11 1.83 4 0.67 7 7 1.17 0 0.00 0 4 0.67 0 0 0.00 0 0 0.00 0 0 0.00 0 0 0.00 0 0 0.00 0 0 0.00 0 0 0.00 0 0 0.00 0 0 0.00 0 0 0.00 0 0 0.00 0 0 0.00 0 0 0.00 0 1 0.17 0 1 0.17 0 1 0.17 0 1 0.17 0 1 0.17 0 0 0.00 0 0 0.00 0 0 0.00 0	27.3%		
	Sunday 0:00	0	0	1 2	1	0	0	1 2	1 2				18.2% 36.4%
	1:00	1 0	0	0	0	0	0	0	0				0.0%
	2:00	0	0	0	0	0	0	0	0				0.0%
	3:00	1	0	0	0	0	0	1	0	0	1		9.1%
	4:00	0	0	0	0	0	0	0	0				0.0%
	5:00	0	0	0	0	0	0	0	0				0.0%
	6:00	0	0	0	0	0	0	0	0				0.0%
	7:00 8:00	0	0	0	0	1 0	0	0	1 0				9.1% 0.0%
	9:00	0	0	0	0	0	0	0	0				0.0%
	10:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Hour of Day	11:00	0	0	0	0	0	0	0	0	0	0	1.50 0.33 1.83 0.67 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.0%
riou. or Buy	12:00	0	0	0	0	0	0	0	0				0.0%
	13:00 14:00	0	0	0	0	0	0	0	0				0.0%
	15:00	0	0	0	0	0	0	0	0				0.0%
	16:00	0	0	0	0	0	0	0	0				0.0%
	17:00	0	0	0	0	0	0	0	0				0.0%
	18:00	0	1	0	0	0	0	1	0			•	9.1%
	19:00	0	0	0	1	0	0	0	1				9.1%
	20:00 21 :00	0	0	2 0	0	1 0	0	0	3				27.3% 0.0%
	22:00	0	0	0	0	0	0	0	0				0.0%
	23:00	0	0	0	0	0	0	0	0				0.0%
	None	2	1	4	1	1	0	3	6				81.8%
	Alcohol Involved	0	0	0	1	1	0	1	1			1.50 0.33 1.83 0.67 1.17 0.00 0.00 0.00 1.17 0.00 0.00 0.0	18.2%
Alcohol	Drugs Involved	0	0	0	0	0	0	0	0				0.0%
	Alcohol and Drugs	0	0	0	0	0	0	0	0				0.0%
	Undetermined 19 and Under	0	0	0	0	0	0	0	0	0			0.0%
	20-24	0	0	1	1	1	0						27.3%
	25-29	1	0	1	0	0	0						18.2%
	30-34	0	0	0	0	0	0						0.0%
	35-39	0	0	1	0	0	0						9.1%
	40-44	0	0	1	0	0	0					•	9.1%
Age of Redestrion/Riovalist	45-49 50-54	0	0	0	0	0 1	0						0.0%
Age of Pedestrian/Bicyclist	50-54 55-59	0	0	0	0	0	0						9.1% 0.0%
•	60-64	0	0	0	0	0	0				0		0.0%
	•		0	0	1	0	0				1		9.1%
	65-69	0	U						4		4		
	70-74	0	0	0	0	0	0				0	0.00	0.0%
	70-74 75-79	0 0	0 0	0 0	0 0	0	0				0	0.00	0.0%
	70-74	0	0	0	0								

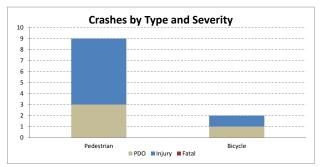
CRASH ANALYSIS - Focus Area C - Daytona Beach from International Speedway Blvd. to Just South of Earl St.

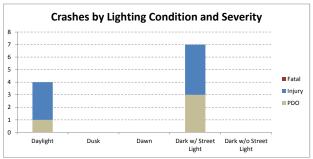
				Analys	ysis Year			Severity					B
		2009	2010	2011	2012	2013	2014	PDO	Injury	Fatal	Iotai	Average	Percent
	19 and Under	0	0	0	0	0	0				0	0.00	0.0%
	20-24	0	0	2	1	0	0				3		27.3%
	25-29	2009 2010 2011 2012 2013 2014 PDO Injury Fatal 0	1	0.17	9.1%								
	30-34	0	0	0	0	0	0				0	0.00	0.0%
	35-39	0	0	0	0	0	0				0	0.00	0.0%
	40-44		0	0	0						0		0.0%
	45-49			0	•								18.2%
Age of Driver	50-54	0	0	0	0								0.0%
, and the second	55-59		•		•	•					0	•	0.0%
	60-64			0							0		0.0%
	65-69			•	•	•							9.1%
	70-74					.							0.0%
	75-79				•								0.0%
	80-84												0.0%
	85 and Over				•							0.50 0.17	0.0%
	2 Lane Undivided							0	0	0			0.0%
	3 Lane w/Two Way Left Turn Lane												0.0%
Pandway Type													
Roadway Type	4 Lane Divided												100.0%
	4 Lane Undivided												0.0%
	5 Lane w/Two Way Left Turn Lane												0.0%
	30												0.0%
	35												100.0%
Speed Limit	40										0.0%		
-1	45												0.0%
	50			L									0.0%
	55												0.0%
	2	0	0	0	0		0	0	0		0	0.00	0.0%
Total Number of Lanes	3		0	0				0	0				0.0%
Total Number of Lanes	4	2	1	4	2	2	0	4	7	0	11	1.83	100.0%
	5	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Near Beach Parking	No	2	1	4	2	2	0	4	7	0	11	1.83	100.0%
Near Beach Parking	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	No	2	0	1	0	2	0	2	3	0	5	0.83	45.5%
Near Bus Stop	Yes	0	1	3	2	0	0	2	4	0	6	1.00	54.5%
= .	No	2	0	2		1		2	3				45.5%
Near Park	Yes				2	1				0			54.5%
	No												100.0%
Near Civic Land Use	Yes								0				0.0%
	No												18.2%
Near Marked Crossing	Yes				•	•						•	81.8%
Near Marked Cressing but Outside	No												81.8%
Near Marked Crossing but Outside Influence Area^	Yes												18.2%
milderide / ilea	Bike Crashes on Sections with Shoulder/Bike Lane												0.0%
Diamela Canabas					•								
Bicycle Crashes	Total Bike Crashes										2	0.33	100.0%
	% Crashes with Facility												
Pedestrian/Bicycle Crashes on Segment	No		.		•								100.0%
with Sidewalk or Multi-Use Path	Yes												0.0%
Within Activity Zone	No			•									0.0%
	Yes								_				100.0%
	Mid-Block	0	0	0	0	2	0	0	2	0	2	0.33	18.2%
	At signalized intersection crosswalk												45.5%
Pedestrian/Bicycle Crash Location	At driveway crossing	1	0	1	0	0	0	1	1	0	2	0.33	18.2%
	Along side of roadway	1	0	0	1	0	0	1	1	0	2	0.33	18.2%
	At signalized intersection	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Discola Diding Assignt Tr-#*-	No			0				1					50.0%
Bicycle Riding Against Traffic	Yes		0	1		0		0	1		1		50.0%
Man 7	Non-Resident			1		_			2				18.2%
Non-Local*	Resident	1	0	3	2	1	0	2					63.6%
	Vehicle	1	1	1	1	2	0	2					54.5%
Who Had Right-of-Way	Pedestrian	1	0	3	1	0	0	2					45.5%
	Bicycle	0	0	0	0	0	0	0	0	0	0		0.0%
								_	_			0.50 0.17 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.070

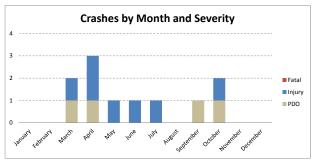
[^] See report for influence area definition

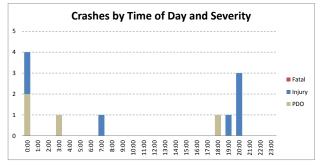
^{*}This was determined by reviewing ZIP codes of ped/bike involved in crash for each specific focus area. If the ZIP code matched that of the focus area, this was deemed a local crash.

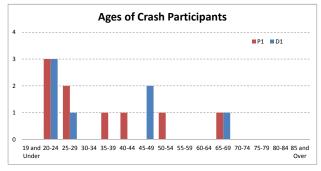
CRASH ANALYSIS - Focus Area C - Daytona Beach from International Speedway Blvd. to Just South of Earl St.

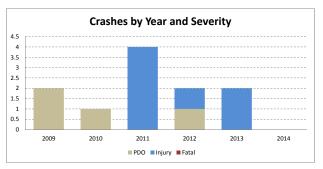


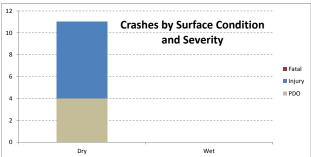


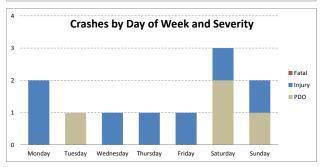


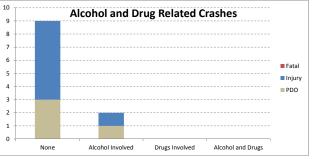


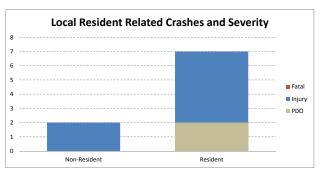












CRASH ANALYSIS - Focus Area C - Daytona Beach from Just North of Oakridge Blvd. to Just North of University Blvd.

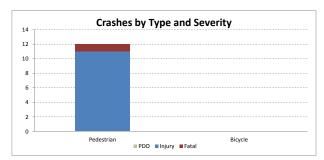
		Ana		Analys	Analysis Year			Severity				1	$\overline{}$	
		2009	2010	2011	2012	2013	2014	PDO	Injury	Fatal	Total	Average	Percent	
	Pedestrian	2	3	4	2	1	0	0	11	1	12	2.00	100.0%	
Type of Crash	Bicycle	0	0	0	0	0	0	0	0	0	0	0.00	0.0%	
	Total Crashes	2	3	4	2	1	0	0	11	1	12		100.0%	
0.10.3	PDO	0	0	0	0	0	0				0		0.0%	
Crash Severity	Injury	2 0	2 1	4 0	2 0	1 0	0	ļ			11 1		91.7% 8.3%	
	Fatal Daylight	0	0	1	1	1	0	0	3	0	3		25.0%	
	Dusk	0	0	0	0	0	0	0	0	0	0		0.0%	
1:1:0	Dawn	0	0	0	0	0	0	0	0	0	0	0.00	0.0%	
Light Conditions	Dark w/ Street Light	2	3	3	1	0	0	0	8	1	9	2.00 0.00 1.83 0.17 0.50 0.00 0.00 1.50 0.00 0.00 0.00 0.00	75.0%	
	Dark w/o Street Light	0	0	0	0	0	0	0	0	0	0	0.00	0.0%	
	Unknown	0	0	0	0	0	0	0	0	0	0		0.0%	
	Dry	2	2	4	2	11	0	0	10	11	11	2.00 2.00 0.00 1.83 0.17 0.50 0.00 0.00 1.83 0.17 0.50 0.00 0.00 0.00 0.00 0.00 0.00 0.0	91.7%	
Surface Condition	Wet	0	1		•			•					8.3%	
	Other January	0	0										0.0% 8.3%	
	February	0	0		•								0.0%	
	March	1	1										41.7%	
	April	0	0	0 0 0 0 1 0 1 0.17 0		8.3%								
	May	0	0	0	•				0			2.00 0.00 1.83 0.17 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.0%	
Month	June	0	0	0	0	0	0	0	0	0	0	0.00	0.0%	
Monut	July	0	0	1	0	0	0	0	1	0	1	0.17	8.3%	
	August	0	1		•			•					16.7%	
	September	0	0										8.3%	
	October	11	0					•					8.3%	
	November	0	0										0.0%	
	December	0	0										0.0%	
	Monday Tuesday	0	0					•					16.7% 8.3%	
	Wednesday	0	0										8.3%	
Day of Week	Thursday	0	0										8.3%	
,	Friday	0	0										8.3%	
	Saturday	1	1										25.0%	
	Sunday	1	1	1		0				0			25.0%	
	0:00	0	0	0	2	0	0	0	2	0	2	0.33	16.7%	
	1:00	1	1	0	0	0	0	0	2	0	2		16.7%	
	2:00	0	1						2				16.7%	
	3:00	0	0										0.0%	
	4:00	0	1					•					8.3%	
	5:00	0	0										0.0%	
	6:00 7:00	0	0		•								0.0%	
	8:00	0	0					•					0.0%	
	9:00	0	0										0.0%	
	10:00	0	0	0	0	0	0	0	0	0	0	2.00 0.00 1.83 0.17 0.50 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.0%	
	11:00	0	0	0	0	0	0	0	0	0	0		0.0%	
Hour of Day	12:00	0	0	0	0	1	0	0	1	0	1	0.17	8.3%	
	13:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%	
	14:00	0	0	0	0	0	0	0	0	0	0		0.0%	
	15:00	0	0	0	0	0	0	0	0	0	0		0.0%	
	16:00	0	0	1	0	0	0	0	1	0	1		8.3%	
	17:00	0	0	0	0	0	0	0	0	0	0		0.0%	
	18:00 19:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%	
					0						0	0 00		
		0	0	0	0	0					0		0.0%	
	20:00	0	0	0 0 1	0 0 0	0 0 0	0	0	0	0	0 0 1	0.00	0.0% 0.0% 8.3%	
		0	0	0	0	0	0	0	0	0	0	0.00 0.17	0.0%	
	20:00	0 0	0 0	0 1	0 0	0 0	0	0 0	0 1	0 0	0 1	0.00 0.17 0.17	0.0% 8.3%	
	20:00 21:00 22:00	0 0 0 1	0 0 0	0 1 1	0 0 0	0 0 0	0 0 0	0 0 0	0 1 1	0 0 0	0 1 1 1 8	2.00 0.00 1.83 0.17 0.50 0.00 0.00 1.83 0.17 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.0% 8.3% 8.3% 8.3%	
	20:00 21:00 22:00 22:00 None Alcohol Involved	0 0 0 1 0	0 0 0 0 1 2	0 1 1 0 4	0 0 0 0 2	0 0 0 0 1	0 0 0 0 0	0 0 0 0	0 1 1 1 7 4	0 0 0 0 1	0 1 1 1 8 4	0.00 0.17 0.17 0.17 1.33 0.67	0.0% 8.3% 8.3% 8.3% 66.7% 33.3%	
Alcohol	20:00 21:00 22:00 23:00 None Alcohol Involved Drugs Involved	0 0 0 1 0 2	0 0 0 0 1 2	0 1 1 0 4 0	0 0 0 0 2 0	0 0 0 0 1 0	0 0 0 0 0	0 0 0 0 0	0 1 1 1 7 4	0 0 0 0 1 0	0 1 1 1 8 4	0.00 0.17 0.17 0.17 1.33 0.67 0.00	0.0% 8.3% 8.3% 8.3% 66.7% 33.3% 0.0%	
Alcohol	20:00 21:00 22:00 23:00 None Alcohol Involved Drugs Involved Alcohol and Drugs	0 0 1 1 0 2	0 0 0 1 2	0 1 1 0 4 0	0 0 0 0 2 0	0 0 0 0 1 0	0 0 0 0 0	0 0 0 0 0	0 1 1 1 7 4	0 0 0 1 0	0 1 1 1 8 4 0	0.00 0.17 0.17 0.17 1.33 0.67 0.00	0.0% 8.3% 8.3% 8.3% 66.7% 33.3% 0.0%	
Alcohol	20:00 21:00 22:00 23:00 None Alcohol Involved Drugs Involved Alcohol and Drugs Undetermined	0 0 0 1 1 0 2 0	0 0 0 0 1 2 0	0 1 1 0 4 0	0 0 0 0 2 0 0	0 0 0 0 1 0 0 0	0 0 0 0 0 0	0 0 0 0 0	0 1 1 1 7 4	0 0 0 0 1 0	0 1 1 1 1 8 4 0	0.00 0.17 0.17 0.17 1.33 0.67 0.00 0.00 0.00	0.0% 8.3% 8.3% 8.3% 66.7% 33.3% 0.0% 0.0%	
Alcohol	20:00 21:00 22:00 23:00 None Alcohol Involved Drugs Involved Alcohol and Drugs Undetermined 19 and Under	0 0 0 1 1 0 2 0 0	0 0 0 0 1 2 0 0	0 1 1 0 4 0 0 0	0 0 0 0 2 0 0 0	0 0 0 0 1 0 0 0	0 0 0 0 0 0 0 0	0 0 0 0 0	0 1 1 1 7 4	0 0 0 1 0	0 1 1 1 8 4 0 0	0.00 0.17 0.17 0.17 1.33 0.67 0.00 0.00 0.00 0.33	0.0% 8.3% 8.3% 66.7% 33.3% 0.0% 0.0% 16.7%	
Alcohol	20:00 21:00 22:00 23:00 None Alcohol Involved Drugs Involved Alcohol and Drugs Undetermined 19 and Under 20-24	0 0 0 1 0 2 0 0 0	0 0 0 0 1 2 0 0 0	0 1 1 0 4 0 0 0	0 0 0 0 2 0 0 0	0 0 0 0 1 0 0 0	0 0 0 0 0 0 0	0 0 0 0 0	0 1 1 1 7 4	0 0 0 1 0	0 1 1 1 8 4 0 0 0 2	0.00 0.17 0.17 0.17 1.33 0.67 0.00 0.00 0.00 0.33 0.33	0.0% 8.3% 8.3% 66.7% 33.3% 0.0% 0.0% 16.7% 16.7%	
Alcohol	20:00 21:00 22:00 23:00 None Alcohol Involved Drugs Involved Alcohol and Drugs Undetermined 19 and Under 20:24 25:29	0 0 0 1 0 2 0 0 0 0	0 0 0 0 1 2 0 0 0 0	0 1 1 0 4 0 0 0 0	0 0 0 0 2 0 0 0 0	0 0 0 0 1 0 0 0 0 0	0 0 0 0 0 0 0 0	0 0 0 0 0	0 1 1 1 7 4	0 0 0 1 0	0 1 1 1 1 8 4 4 0 0 0 2 2 2	0.00 0.17 0.17 0.17 1.33 0.67 0.00 0.00 0.00 0.33 0.33 0.00	0.0% 8.3% 8.3% 66.7% 33.3% 0.0% 0.0% 16.7% 16.7% 0.0%	
Alcohol	20:00 21:00 21:00 23:00 23:00 None Alcohol Involved Drugs Involved Alcohol and Drugs Undetermined 19 and Under 20:24 22:29 30:34	0 0 0 1 0 2 0 0 0 0 0 0	0 0 0 0 1 2 0 0 0 0 0 2	0 1 1 0 4 0 0 0 0 0 1 1 0	0 0 0 0 2 0 0 0 0 1	0 0 0 0 1 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0	0 1 1 1 7 4	0 0 0 1 0	0 1 1 1 8 4 0 0 0 2 2 2	0.00 0.17 0.17 0.17 1.33 0.67 0.00 0.00 0.00 0.33 0.33 0.00 0.17	0.0% 8.3% 8.3% 66.7% 33.3% 0.0% 0.0% 16.7% 0.0% 8.3%	
Alcohol	20:00 21:00 22:00 23:00 None Alcohol Involved Drugs Involved Alcohol and Drugs Undetermined 19 and Under 20:24 25:29 30:34 35:39	0 0 0 1 0 2 0 0 0 0	0 0 0 0 1 2 0 0 0 0	0 1 1 0 4 0 0 0 0 1 1 0 0	0 0 0 0 2 0 0 0 0 1	0 0 0 0 1 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0	0 1 1 1 7 4	0 0 0 1 0	0 1 1 1 8 8 4 0 0 0 0 2 2 2 0	0.00 0.17 0.17 0.17 1.33 0.67 0.00 0.00 0.00 0.33 0.33 0.00 0.17	0.0% 8.3% 8.3% 66.7% 33.3% 0.0% 0.0% 16.7% 0.0% 8.3% 0.0%	
Alcohol	20:00 21:00 21:00 23:00 23:00 None Alcohol Involved Drugs Involved Alcohol and Drugs Undetermined 19 and Under 20:24 22:29 30:34	0 0 0 1 0 2 0 0 0 0 0 0 0	0 0 0 0 1 1 2 0 0 0 0 0 0	0 1 1 0 4 0 0 0 0 0 1 1 0	0 0 0 0 2 0 0 0 0 1	0 0 0 0 1 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0	0 1 1 1 7 4	0 0 0 1 0	0 1 1 1 8 4 0 0 0 2 2 2 0 1 0	0.00 0.17 0.17 0.17 1.33 0.67 0.00 0.00 0.33 0.33 0.30 0.17 0.00	0.0% 8.3% 8.3% 8.3% 66.7% 33.3% 0.0% 0.0% 16.7% 0.0% 8.3% 0.0%	
Alcohol Age of Pedestrian/Bicyclist	20:00 21:00 22:00 23:00 None Alcohol Involved Drugs Involved Alcohol and Drugs Undetermined 19 and Under 20:24 25-29 30:34 35-39 40:44	0 0 0 1 0 2 0 0 0 0 0 0 0	0 0 0 0 0 1 1 2 0 0 0 0 0 0 0	0 1 1 0 4 0 0 0 0 1 0 0 0	0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0	0 1 1 1 7 4	0 0 0 1 0	0 1 1 1 8 8 4 0 0 0 0 2 2 2 0	0.00 0.17 0.17 0.17 1.33 0.67 0.00 0.00 0.33 0.33 0.00 0.17 0.00 0.00	0.0% 8.3% 8.3% 8.3% 66.7% 33.3% 0.0% 0.0% 16.7% 0.0% 8.3% 0.0%	
	20:00 21:00 22:00 23:00 None Alcohol Involved Drugs Involved Alcohol and Drugs Undetermined 19 and Under 20:24 25:29 30:34 35:39 40-44 45:49	0 0 0 0 1 1 0 0 0 0 0 0 0 0 0	0 0 0 0 1 2 0 0 0 0 2 0 0 0 0 0 0 0 0 0	0 1 1 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 1 0 0 0 0	0 0 0 0 1 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0	0 1 1 1 7 4	0 0 0 1 0	0 1 1 1 8 4 0 0 0 2 2 2 0 0	0.00 0.17 0.17 0.17 1.33 0.67 0.00 0.00 0.00 0.33 0.33 0.00 0.17 0.00 0.00	0.0% 8.3% 8.3% 66.7% 33.3% 0.0% 0.0% 16.7% 0.0% 8.3% 0.0%	
	20:00 21:00 21:00 22:00 23:00 None Alcohol Involved Drugs Involved Alcohol and Drugs Undetermined 19 and Under 20:24 25:29 30:34 35:39 40:44 45:49 50:54	0 0 0 1 0 2 0 0 0 0 0 0 0 0	0 0 0 1 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 1 1 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0	0 1 1 1 7 4	0 0 0 1 0	0 1 1 1 1 8 4 4 0 0 0 2 2 2 2 0 1 0 0	0.00 0.17 0.17 0.17 1.33 0.67 0.00 0.00 0.33 0.33 0.30 0.17 0.00 0.00 0.00	0.0% 8.3% 8.3% 8.3% 66.7% 33.3% 0.0% 0.0% 16.7% 0.0% 8.3% 0.0% 16.7% 0.0% 0.0% 0.0%	
	20:00 21:00 21:00 22:00 23:00 None Alcohol Involved Drugs Involved Alcohol and Drugs Undetermined 19 and Under 20:24 25:29 30:34 35:39 40:44 45:49 50:54 55:59 60:64 65:69	0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 1 1 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 1 1 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0	0 1 1 1 7 4	0 0 0 1 0	0 1 1 1 1 8 8 4 0 0 0 0 2 2 2 0 0 0 0 0 0 0 0 0 0 0 0	2.00 0.00 1.83 0.17 0.50 0.00 0.00 1.83 0.17 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.0% 8.3% 8.3% 66.7% 33.3% 0.0% 16.7% 0.0% 16.7% 0.0% 16.7% 0.0% 0.0% 33.3% 0.0%	
	20:00 21:00 21:00 22:00 23:00 None Alcohol Involved Drugs Involved Alcohol and Drugs Undetermined 19 and Under 20:24 25:29 30:34 35:39 40:44 45:49 50:54 55:59 60:64 65:69 70:74	0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 1 1 2 0 0 0 0 0 0 0 0 0 0 0 0 0	0 1 1 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0	0 1 1 1 7 4	0 0 0 1 0	0 1 1 1 1 8 4 0 0 0 0 2 2 2 0 0 1 1 0 0 0 0 0 0 0 0 0		0.0% 8.3% 8.3% 66.7% 33.3% 0.0% 0.0% 16.7% 0.0% 6.0% 0.0% 33.3% 0.0% 0.0% 0.0% 0.0% 0.0%	
	20:00 21:00 21:00 22:00 23:00 None Alcohol Involved Drugs Involved Alcohol and Drugs Undetermined 19 and Under 20:24 25:29 30:34 35:39 40:44 45:49 50:54 55:55 60:64 65:69 70-74	0 0 0 1 1 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0	0 0 0 0 1 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 1 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0	0 1 1 1 7 4	0 0 0 1 0	0 1 1 1 1 8 4 0 0 0 0 2 2 2 0 0 1 0 0 0 0 0 0 0 0 0 0		0.0% 8.3% 8.3% 8.3% 66.7% 33.3% 0.0% 0.0% 16.7% 0.0% 8.3% 0.0% 0.0% 33.3% 0.0% 0.0% 0.0% 0.0%	
	20:00 21:00 21:00 22:00 23:00 None Alcohol Involved Drugs Involved Alcohol and Drugs Undetermined 19 and Under 20:24 25:29 30:34 35:39 40:44 45:49 50:54 55:59 60:64 65:69 70:74	0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 1 1 2 0 0 0 0 0 0 0 0 0 0 0 0 0	0 1 1 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0	0 1 1 1 7 4	0 0 0 1 0	0 1 1 1 1 8 4 0 0 0 0 2 2 2 0 0 1 1 0 0 0 0 0 0 0 0 0		0.0% 8.3% 8.3% 66.7% 33.3% 0.0% 0.0% 16.7% 0.0% 0.0% 0.0% 33.3% 0.0% 0.0% 0.0% 0.	

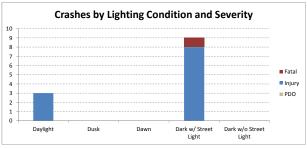
CRASH ANALYSIS - Focus Area C - Daytona Beach from Just North of Oakridge Blvd. to Just North of University Blvd.

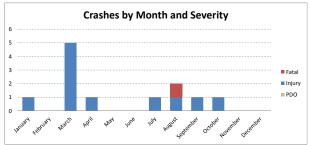
				Analys	sis Year				Severity				
		2009	2010	2011	2012	2013	2014	PDO	Injury	Fatal	Total	Average	Percent
	19 and Under	0	0	0	0	0	0		1 1		0	0.00	0.0%
	20-24	0	1	2	0	1	0				4	0.67	33.3%
	25-29	0	0	0	0	0	0				0	0.00	0.0%
	30-34	0	0	0	0	0	0				0	0.00	0.0%
	35-39	1	0	0	0	0	0				0	0.00	0.0%
	40-44 45-49	0	0	0	0 1	0	0				1	0.17 0.17	8.3% 8.3%
Age of Driver	50-54	0	0	1	0	0	0				1	0.17	8.3%
Age of Enver	55-59	0	0	0	0	0	0				0	0.00	0.0%
	60-64	0	0	0	0	0	0				0	0.00	0.0%
	65-69	0	0	0	0	0	0				0	0.00	0.0%
	70-74	0	0	0	0	0	0				0	0.00	0.0%
	75-79	0	0	0	0	0	0				0	0.00	0.0%
	80-84	0	1	0	0	0	0				1		8.3%
	85 and Over	0	0	0	0	0	0				0		0.0%
	2 Lane Undivided	0	0	0	0	0	0				0		0.0%
	3 Lane w/Two Way Left Turn Lane	0	0	0	0	0	0				0		0.0%
Roadway Type	4 Lane Divided	0	0	1 0	0	0	0				1 0		8.3%
	4 Lane Undivided	2	0 3	3	0 2	0 1	0				11		0.0% 91.7%
	5 Lane w/Two Way Left Turn Lane 30	0	0	0	0	0	0				0		0.0%
	35	2	3	4	2	1	0				12		100.0%
	40	0	0	0	0	0	0			.	0		0.0%
Speed Limit	45	0	0	0	0	0	0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	•	0		0.0%
	50	0	0	0	0	0	0				0	0.00	0.0%
	55	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	2	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Total Number of Lanes	3	0	0	0	0	0	0		0	.	0	0.00	0.0%
Total Number of Earles	4	0	0	1	0	0	0		I	•	1	0.17	8.3%
	5	2	3	3	2	1	0				11		91.7%
Near Beach Parking	No	2	3	4	2	1	0			.	12		100.0%
	Yes No	2	2	3	0	0	0				0 8		0.0% 66.7%
Near Bus Stop	Yes	0	1	1	1	1	0				4		33.3%
	No No	2	3	4	2	1	0				12		100.0%
Near Park	Yes	0	0	0	0	0	0				0		0.0%
	No	1	1	2	1	0	0				5	0.17 0.00 0.00 0.00 1.83 0.00	41.7%
Near Civic Land Use	Yes	1	2	2	1	1	0			1	7		58.3%
Near Marked Crossing	No	1	2	1	1	0	0	0	4	1	5	0.83	41.7%
Near Marked Crossing	Yes	1	1	3	1	1	0			0	7		58.3%
Near Marked Crossing but Outside	No	1	1	3	1	1	0	0	7	0	7	1.17	58.3%
Influence Area^	Yes	1	2	1	1	0	0	0	4	1	5		41.7%
	Bike Crashes on Sections with Shoulder/Bike Lane	0	0	0	0	0	0	0	0	0	0		#DIV/0!
Bicycle Crashes	Total Bike Crashes	0	0	0	0	0	0	0	0	0	0	0.00	#DIV/0!
	% Crashes with Facility	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	40	0.00	400.00/
Pedestrian/Bicycle Crashes on Segment with Sidewalk or Multi-Use Path	No	2 0	3 0	4 0	2	0	0	0	11 0	0	12 0	0.00	100.0%
with Sidewalk of Multi-Ose Fath	Yes No	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Within Activity Zone	Yes	2	3	4	2	1	0	0	11	1	12	2.00	100.0%
	Mid-Block	2	2	2	1	0	0	0	6	1	7	1.17	58.3%
	At signalized intersection crosswalk	0	1	1	1	1	0	0	4	0	4	0.67	33.3%
Pedestrian/Bicycle Crash Location	At driveway crossing	0	0	1	0	0	0	0	1	0	1	0.17	8.3%
•	Along side of roadway	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	At signalized intersection	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Bicycle Riding Against Traffic	No	0	0	0	0	0	0	0	0	0	0	0.00	#DIV/0!
Dioyole Islang Against ITame	Yes	0	0	0	0	0	0	0	0	0	0	0.00	#DIV/0!
Non-Local*	Non-Resident	0	0	0	1	0	0	0	1	0	1	0.17	8.3%
	Resident	2	2	4	1	1	0	0	9	1	10	1.67	83.3%
Whe Hed Diebs of We	Vehicle	2	3	3	2	1	0	0	10	1	11	1.83	91.7%
Who Had Right-of-Way	Pedestrian Biosele	0	0	1 0	0	0	0	0	1 0	0	1 0	0.17	8.3% 0.0%
See report for influence area definition	Bicycle	U	U	U	U	U	U	U	U	U	U	0.00	0.0%

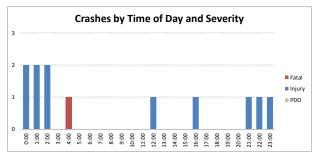
^{*}This was determined by reviewing ZIP codes of ped/bike involved in crash for each specific focus area. If the ZIP code matched that of the focus area, this was deemed a local crash.

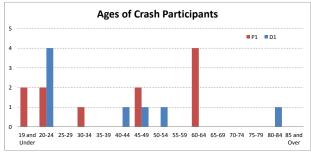
CRASH ANALYSIS - Focus Area C - Daytona Beach from Just North of Oakridge Blvd. to Just North of University Blvd.

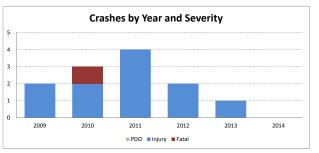


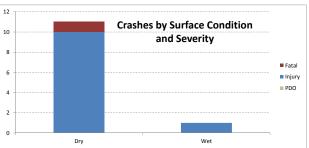


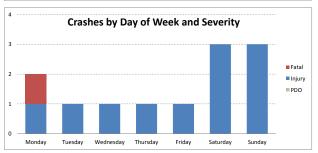


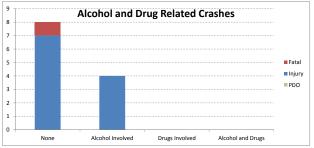


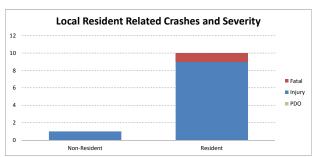












CRASH ANALYSIS - Focus Area D - Daytona Beach/Ormond Beach from Plaza Blvd. to Rockefeller Dr.

				Anal	ysis Year	,			Severit	у	Total	Average	Percent
		2009	2010	2011	2012	2013	2014	PDO	Injury	Fatal	Total		
Torra of Orach	Pedestrian	0	1	3	1	3	0	0	8	0	8	1.33	50.0%
Type of Crash	Bicycle Total Crashes	1 1	0 1	1 4	2 3	2 5	2 2	1	7 15	0 0	8 16	1.33 2.67	50.0% 100.0%
	PDO	1	0	0	0	0	0		13		10	0.17	6.3%
Crash Severity	Injury	0	1	4	3	5	2				15	2.50	93.8%
,	Fatal	0	0	0	0	0	0				0	0.00	0.0%
	Daylight	1	0	3	3	4	1	1	11	0	12	2.00	75.0%
	Dusk	0	0	0	0	0	1	0	1	0	1	0.17	6.3%
Light Conditions	Dawn	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
3	Dark w/ Street Light	0	1	1	0	1	0	0	3	0	3	0.50	18.8%
	Dark w/o Street Light Unknown	0	0	0	0	0	0	0	0	0	0	0.00	0.0% 0.0%
	Dry	1	1	4	3	5	1	1	14	0	15	2.50	93.8%
Surface Condition	Wet	0	0	0	0	Ō	1	0	1	0	1	0.17	6.3%
	Other	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	January	0	0	0	1	0	1	0	2	0	2	0.33	12.5%
	February	1	0	0	0	1	0	1	1	0	2	0.33	12.5%
	March	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	April	0	0	1	0	1	0	0	2	0	2	0.33	12.5%
	May June	0	0	2 0	1 0	0 1	0	0	3 1	0	3 1	0.50 0.17	18.8% 6.3%
Month	July	0	0	1	0	0	0	0	1	0	1	0.17	6.3%
	August	0	0	0	0	1	0	0	1	0	1	0.17	6.3%
	September	0	0	0	0	1	0	0	1	0	1	0.17	6.3%
	October	0	1	0	1	0	0	0	2	0	2	0.33	12.5%
	November	0	0	0	0	0	1	0	1	0	1	0.17	6.3%
	December	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Monday	0	0	2	1	0	0	0	3	0	3	0.50	18.8%
	Tuesday	0	0 1	0	1	1 0	0	0	2	0	2	0.33 0.33	12.5% 12.5%
Day of Week	Wednesday Thursday	0	0	0	0	0	1	0	1	0	1	0.33	6.3%
Day of Week	Friday	0	0	0	0	2	0	0	2	0	2	0.33	12.5%
	Saturday	1	0	2	0	1	0	1	3	0	4	0.67	25.0%
	Sunday	0	0	0	0	1	1	0	2	0	2	0.33	12.5%
	0:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	1:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	2:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	3:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	4:00 5:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0% 0.0%
	6:00	0	0	0	0	1	0	0	1	0	1	0.17	6.3%
	7:00	0	0	0	1	0	0	0	1	0	1	0.17	6.3%
	8:00	0	0	0	0	1	0	0	1	0	1	0.17	6.3%
	9:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	10:00	0	0	0	1	0	0	0	1	0	1	0.17	6.3%
Hour of Day	11:00	1	0	0	0	0	0	1	0	0	1	0.17	6.3%
	12:00	0	0	0	1	0	0	0	1	0	1	0.17	6.3%
	13:00 14:00	0	0	0	0	0 1	0	0	1	0	1	0.17 0.17	6.3% 6.3%
	15:00	0	0	1	0	1	0	0	2	0	2	0.33	12.5%
	16:00	0	0	1	0	1	0	0	2	0	2	0.33	12.5%
	17:00	0	0	0	0	0	1	0	1	0	1	0.17	6.3%
	18:00	0	0	1	0	0	0	0	1	0	1	0.17	6.3%
	19:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	20:00	0	1	0	0	0	0	0	1	0	1	0.17	6.3%
	21:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	22:00 23:00	0	0	0 1	0	0	0	0	0 1	0	0	0.00 0.17	0.0% 6.3%
	None	1	1	4	3	5	2	1	15	0	16	2.67	100.0%
	Alcohol Involved	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Alcohol	Drugs Involved	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Alcohol and Drugs	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Undetermined	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	19 and Under	1	0	1	0	0	0				2	0.33	12.5%
	20-24	0	0	0	0	0	0				0	0.00	0.0%
	25-29 30-34	0	0	1 0	2 0	1	0				4 1	0.67 0.17	25.0% 6.3%
	35-39	0	0	0	0	0	1				1	0.17	6.3%
	40-44	0	0	0	0	0	0				0	0.00	0.0%
	45-49	0	0	1	1	0	0				2	0.33	12.5%
Age of Pedestrian/Bicyclist	50-54	0	0	0	0	1	1				2	0.33	12.5%
	55-59	0	0	0	0	0	0				0	0.00	0.0%
	60-64	0	1	0	0	0	0				1	0.17	6.3%
	65-69	0	0	1	0	0	0				1	0.17	6.3%
	70-74	0	0	0	0	0	0				0	0.00	0.0%
	75-79 80-84	0	0	0	0	0 1	0				0	0.00 0.17	0.0%
	80-84 85 and Over	0	0	0	0	0	0				0	0.17	6.3% 0.0%
	100 000											0.00	0.070

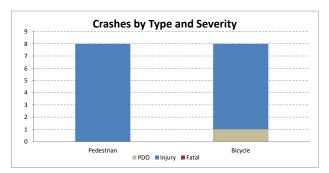
CRASH ANALYSIS - Focus Area D - Daytona Beach/Ormond Beach from Plaza Blvd. to Rockefeller Dr.

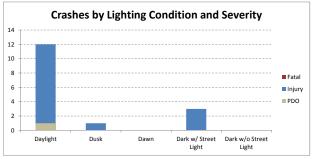
	5 - Focus Area D - Dayiona в	<u>cacii</u> ,	<u> </u>	<u></u>	<u>u D</u> cc	<u>.c.,</u>	<u>om</u> I	mz,c	<u> Dir</u>	<u></u>	<u> Mocne</u> j	ciici I	<u> </u>
	19 and Under	0	0	1	0	0	0				1	0.17	6.3%
	20-24	0	0	0	0	0	0		1	Ì .	0	0.00	0.0%
	25-29	0	0	0	1	2	0	1	1		3	0.50	18.8%
	30-34	0	0	0	0	0	0	1			0	0.00	0.0%
	35-39	0	0	0	0	1	0	1	1		1	0.17	6.3%
	40-44	0	0	0	0	1	0		1	 	1	0.17	6.3%
	45-49	0	0	0	0	0	0	f	†		0	0.00	0.0%
Age of Driver	50-54	0	0	0				ļ	ļ	ļ	3	0.50	18.8%
Age of Driver			0	1	1	1	1 0	ļ	ļ	-			
	55-59	0				0		ļ			2	0.33	12.5%
	60-64	0	0	0	0	0	0				0	0.00	0.0%
	65-69	0	0	2	0	0	0	ļ		ļ	2	0.33	12.5%
	70-74	0	1	0	0	0	0				1	0.17	6.3%
1	75-79	0	0	0	0	0	0				0	0.00	0.0%
1	80-84	0	0	0	0	0	0	ļ	ļi	ļ	0	0.00	0.0%
	85 and Over	1	0	0	0	0	0				1	0.17	6.3%
<u></u>	2 Lane Undivided	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	3 Lane w/Two Way Left Turn Lane	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Roadway Type	4 Lane Divided	1	0	2	1	2	1	1	6	0	7	1.17	43.8%
,	4 Lane Undivided	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	5 Lane w/Two Way Left Turn Lane	0	1	2	2	3	1	0	9	0	9	1.50	56.3%
	30	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	35	1	1	4	3	5	2	1	15	0	16	2.67	100.0%
	40	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Speed Limit		0	0			0	0		0				
	45			0	0			0		0	0	0.00	0.0%
	50	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	55	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	2	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Total Number of Lanes	3	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
. J.a	4	1	0	2	1	2	1	1	6	0	7	1.17	43.8%
	5	0	1	2	2	3	1	0	9	0	9	1.50	56.3%
Near Beach Berlin	No	1	1	3	3	5	2	1	14	0	15	2.50	93.8%
Near Beach Parking	Yes	0	0	1	0	0	0	0	1	0	1	0.17	6.3%
N 5 5	No	1	1	3	0	3	0	1	7	0	8	1.33	50.0%
Near Bus Stop	Yes	0	0	1	3	2	2	0	8	0	8	1.33	50.0%
	No	1	1	4	2	4	1	1	12	0	13	2.17	81.3%
Near Park	Yes	0	0	0	1	1	1	0	3	0	3	0.50	18.8%
	No	0	1	3	2	4	2	0	12	0	12	2.00	75.0%
Near Civic Land Use	Yes	1	0	1	1	1	0	1	3	0	4	0.67	75.0% 25.0%
									10				
Near Marked Crossing	No	1	0	4	1	4	1	1		0	11	1.83	68.8%
-	Yes	0	1	0	2	1	1	0	5	0	5	0.83	31.3%
Near Marked Crossing but Outside	No	11	1	4	3	4	1	1	13	0	14	2.33	87.5%
Influence Area^	Yes	0	0	0	0	1	1	0	2	0	2	0.33	12.5%
	Bike Crashes on Sections with Shoulder/Bike Lane	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Bicycle Crashes	Total Bike Crashes	1	0	1	2	2	2	1	7	0	8	1.33	100.0%
	% Crashes with Facility	0%	#####	0%	0%	0%	0%	0%	0%	#DIV/0!	L		
Pedestrian/Bicycle Crashes on Segment	No	1	1	4	3	5	2	1	15	0	16	2.67	100.0%
with Sidewalk or Multi-Use Path	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	No	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Within Activity Zone	Yes	1	1	4	3	5	2	1	15	0	16	2.67	100.0%
	Mid-Block	0	1	2	0	2	0		5	0			
								0			5 3	0.83	31.3% 18.8%
Pedestrian/Bissel- O	At signalized intersection crosswalk	1	0	1	2	0 2	2	1 0	2 7	0	7	0.50	18.8%
Pedestrian/Bicycle Crash Location	At driveway crossing	0								0		1.17	43.8%
	Along side of roadway	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	At signalized intersection	0	0	0	0	1	0	0	1	0	1	0.17	6.3%
Bicycle Riding Against Traffic	No	1	0	0	0	1	0	1	1	0	2	0.33	25.0%
Dioyole Mulling Against Haille	Yes	0	0	1	2	1	2	0	6	0	6	1.00	75.0%
Non-Local*	Non-Resident	1	0	2	2	2	1	1	7	0	8	1.33	50.0%
INUIT-LUCAL	Resident	0	1	2	1	2	1	0	7	0	7	1.17	43.8%
	Vehicle	0	1	2	2	4	0	0	9	0	9	1.50	56.3%
Who Had Right-of-Way	Pedestrian	0	0	1	1	0	ō	0	2	Ō	2	0.33	12.5%
. J.: 2. 7.03	Bicycle	1	0	1	0	1	2	1	4	0	5	0.83	31.3%
A Soo report for influence area definition	, .,	<u></u>	ٽ	ᆣ	<u> </u>			ھ				0.00	J U /U

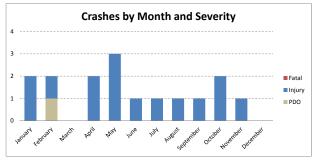
[^] See report for influence area definition.

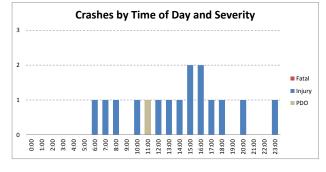
^{*}This was determined by reviewing ZIP codes of ped/bike involved in crash for each specific focus area. If the ZIP code matched that of the focus area, this was deemed a local crash.

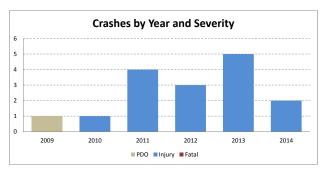
CRASH ANALYSIS - Focus Area D - Daytona Beach/Ormond Beach from Plaza Blvd. to Rockefeller Dr.

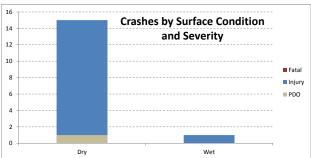


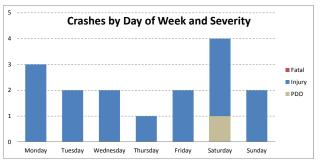


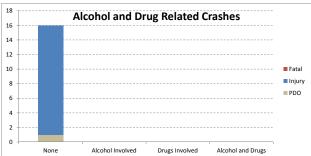




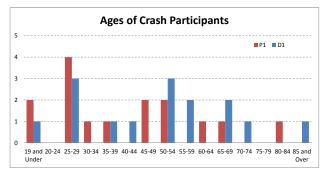


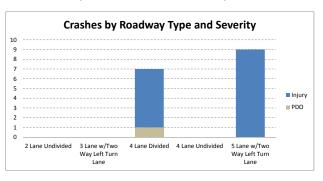


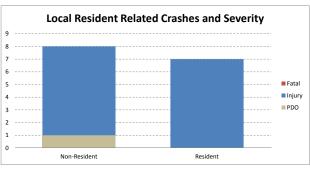




CRASH ANALYSIS - Focus Area D - Daytona Beach/Ormond Beach from Plaza Blvd. to Rockefeller Dr.







 $CRASH\ ANALYSIS\ -\ Focus\ Area\ E\ -\ Ormond\ Beach/Ormond-by-the-Sea\ from\ Sandcastle\ Dr.\ to\ Holland\ Rd.$

				Anal	ysis Yea	7			Severit	у	Total	Average	Percent
	To a second	2009	2010	2011	2012	2013	2014	PDO	Injury	Fatal			
Type of Crash	Pedestrian Bicycle	2	4 0	0	0	2	0	0	3 4	3 0	6 4	1.00 0.67	60.0% 40.0%
Type of Olash	Total Crashes	2	4	0	1	3	0	0	7	3	10	1.67	100.0%
	PDO	0	0	0	0	0	0				0	0.00	0.0%
Crash Severity	Injury	2	1	0	1	3	0				7	1.17	70.0%
	Fatal Double to the control of the c	0	3	0	0	0	0	_	4	-	3	0.50	30.0%
	Daylight Dusk	2 0	1 0	0	0 1	2 0	0	0	4 1	1 0	5 1	0.83 0.17	50.0% 10.0%
	Dawn	0	0	0	0	0	0	0	0	Ö	0	0.00	0.0%
Light Conditions	Dark w/ Street Light	0	3	0	0	1	0	0	2	2	4	0.67	40.0%
	Dark w/o Street Light	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Unknown	2	0	0	0	3	0	0	6	0	0	0.00	0.0%
Surface Condition	Dry Wet	0	4 0	0	1	0	0	0	1	3 0	9	1.50 0.17	90.0% 10.0%
Canade Condition	Other	0	0	0	0	Ö	0	0	0	Ö	0	0.00	0.0%
	January	0	0	0	0	1	0	0	1	0	1	0.17	10.0%
	February	0	1	0	0	0	0	0	0	1	1	0.17	10.0%
	March	0	0	0	1	0	0	0	1	0	1	0.17	10.0%
	April	1	1 0	0	0	0 1	0	0	1 2	1 0	2	0.33 0.33	20.0% 20.0%
	May June	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Month	July	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	August	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	September	0	1	0	0	0	0	0	0	1	1	0.17	10.0%
	October	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	November	0	0	0	0	1	0	0	1	0	1	0.17	10.0%
	December Monday	0	1	0	0	0	0	0	0	0	1	0.17 0.17	10.0% 10.0%
	Tuesday	1	1	0	0	0	0	0	1	1	2	0.17	20.0%
	Wednesday	1	1	0	0	Ō	0	0	2	Ö	2	0.33	20.0%
Day of Week	Thursday	0	0	0	0	1	0	0	1	0	1	0.17	10.0%
	Friday	0	0	0	1	0	0	0	1	0	1	0.17	10.0%
	Saturday	0	1	0	0	1	0	0	1	1	2	0.33	20.0%
	Sunday	0	0	0	0	1	0	0	1	0	1	0.17	10.0%
	0:00 1:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	2:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	3:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	4:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	5:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	6:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	7:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	8:00 9:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0% 0.0%
	10:00	0	0	0	0	1	0	0	1	0	1	0.00	10.0%
	11:00	0	1	0	0	0	0	0	0	1	1	0.17	10.0%
Hour of Day	12:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	13:00	1	0	0	0	1	0	0	2	0	2	0.33	20.0%
	14:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	15:00	1	0	0	0	0	0	0	1	0	1	0.17	10.0%
	17:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0% 0.0%
	18:00	0	1	0	1	0	0	0	1	1	2	0.33	20.0%
	19:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	20:00	0	2	0	0	0	0	0	1	1	2	0.33	20.0%
	21:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	22:00	0	0	0	0	1	0	0	1	0	11	0.17	10.0%
	23:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	None Alcohol Involved	2 0	2	0	1 0	3 0	0	0	7 0	1 2	8 2	1.33 0.33	80.0% 20.0%
Alcohol	Drugs Involved	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Alcohol and Drugs	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Undetermined	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	19 and Under	1	0	0	0	0	0				1	0.17	10.0%
	20-24	0	0	0	0	1	0				1	0.17	10.0%
	25-29	0	0	0	0	0	0				0	0.00	0.0%
	30-34 35-39	0 1	0 1	0	0	0	0			l	0 2	0.00	0.0% 20.0%
	40-44	0	0	0	0	0	0				0	0.00	0.0%
	45-49	0	1	0	0	0	0				1	0.17	10.0%
Age of Pedestrian/Bicyclist	50-54	0	0	0	0	0	0				0	0.00	0.0%
rigo or r odostriari/Dicyclist		0	0	0	0	1	0				1	0.17	10.0%
rigo or r cacottian/bicyclist	55-59												
rige of i edecitial/bioyelist	60-64	0	0	0	0	0	0				0	0.00	0.0%
лус от госолнатилсуста	60-64 65-69	0 0	0	0	0	1	0				1	0.17	10.0%
Age of a coordinate popular	60-64 65-69 70-74	0 0 0	0 0 0	0 0	0 0	1 0	0 0				1 0	0.17 0.00	10.0% 0.0%
Age of a coordinate property	60-64 65-69	0 0	0	0	0	1	0				1	0.17	10.0%

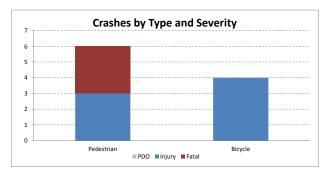
CRASH ANALYSIS - Focus Area E - Ormond Beach/Ormond-by-the-Sea from Sandcastle Dr. to Holland Rd.

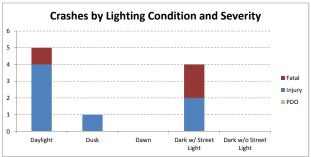
				Anal	ysis Yea	r			Severit	у			
		2009	2010	2011	2012	2013	2014	PDO	Injury	-	Total	Average	Percent
	19 and Under	0	0	0	0	0	0				0	0.00	0.0%
	20-24	0	0	0	0	0	0				0	0.00	0.0%
	25-29	0	0	0	0	0	0	·			0	0.00	0.0%
	30-34	0	0	0	0	0	0	· }	·		0	0.00	0.0%
	35-39	0	0	0	0	0	0	·			0	0.00	0.0%
	40-44	1	0	0	0	0	0				1	0.17	10.0%
	45-49	0	1		0		0				•	0.17	20.0%
Age of Driver		0	1	0	0	1 0	0				2 1	0.33	
Age of Driver	50-54		0	0	0	0	0				0	0.17	10.0%
	55-59	0			.						1		0.0%
	60-64	0	0	0	0	0	0				0	0.00	0.0%
	65-69	1	0	0	0	0	0				1	0.17	10.0%
	70-74	0	1	0	0	0	0				1	0.17	10.0%
	75-79	0	0	0	0	0	0				0	0.00	0.0%
	80-84	0	1	0	0	0	0				1	0.17	10.0%
	85 and Over	0	0	0	0	1	0				1	0.17	10.0%
	2 Lane Undivided	2	2	0	0	2	0	0	5	1	6	1.00	60.0%
	3 Lane w/Two Way Left Turn Lane	0	2	0	1	1	0	0	2	2	4	0.67	40.0%
Roadway Type	4 Lane Divided	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
, .,,,,	4 Lane Undivided	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	5 Lane w/Two Way Left Turn Lane	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
			0				0		0				
	30	0		0	0	0		0		0	0	0.00	0.0%
	35	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Speed Limit	40	2	4	0	1	3	0	0	7	3	10	1.67	100.0%
Opeca Ellilli	45	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	50	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	55	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	2	2	2	0	0	2	0	0	5	1	6	1.00	60.0%
	3	0	2	0	1	1	0	0	2	2	4	0.67	40.0%
Total Number of Lanes	14	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	-										.		
	5	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Near Beach Parking	No	2	4	0	1	3	0	0	7	3	10	1.67	100.0%
	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Near Bus Stop	No	2	4	0	1	3	0	0	7	3	10	1.67	100.0%
Near Bus Stop	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	No	1	2	0	1	3	0	0	5	2	7	1.17	70.0%
Near Park	Yes	1	2	0	0	0	0	0	2	1	3	0.50	30.0%
	No	1	4	0	1	2	0	0	5	3	8	1.33	80.0%
Near Civic Land Use	Yes	1	0	0	0	1	0	0	2	0	2	0.33	20.0%
	No	2	3	0	1	2	0	0	6	2	8	1.33	80.0%
Near Marked Crossing											.		
	Yes	0	1	0	0	1	0	0	1	1	2	0.33	20.0%
Near Marked Crossing but Outside	No	0	2	0	1	1	0	0	2	2	4	0.67	40.0%
Influence Area^	Yes	2	2	0	0	2	0	0	5	1	6	1.00	60.0%
	Bike Crashes on Sections with Shoulder/Bike Lane	2	0	0	0	2	0	0	4	0	4	0.67	100.0%
Bicycle Crashes	Total Bike Crashes	2	0	0	0	2	0	0	4	0	4	0.67	0.0%
	% Crashes with Facility	100%	#####	#####	#DIV/0!	100%	#DIV/0!	#####	100%	#DIV/0!			
Pedestrian/Bicycle Crashes on Segment	No	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
with Sidewalk or Multi-Use Path	Yes	2	4	0	1	3	0	0	7	3	10	1.67	100.0%
mar elacitain el maia eco i ani				0	1	2	0		6	2		1.33	80.0%
Within Activity Zone	No	2	3 1		.	1	0	0	1	1	8		
	Yes	0		0	0			0			2	0.33	20.0%
	Mid-Block	0	4	0	1	0	0	0	2	3	5	0.83	50.0%
	At signalized intersection crosswalk	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Pedestrian/Bicycle Crash Location	At driveway crossing	2	0	0	0	3	0	0	5	0	5	0.83	50.0%
	Along side of roadway	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	At signalized intersection	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
_, , _, , , , , , , , , , , , , , , , ,	No	0	0	0	0	1	0	0	1	0	1	0.17	25.0%
Bicycle Riding Against Traffic	Yes	1	0	0	0	1	0	0	2	Ō	2	0.33	50.0%
	Non-Resident	2	2	0	0	1	0	0	3	2	5	0.83	50.0%
Non-Local*	Resident	0			•								
		U	2	0	1	2	0	0	4	1	5	0.83	50.0%
							-	-					
	Vehicle	1	4	0	1	1	0	0	4	3	7	1.17	70.0%
Who Had Right-of-Way				0 0 0	1 0 0	1 0 2	0 0 0	0 0 0	4 0 3	0 0	7 0	1.17 0.00	70.0% 0.0%

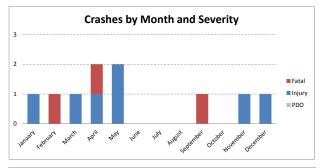
[^] See report for influence area definition

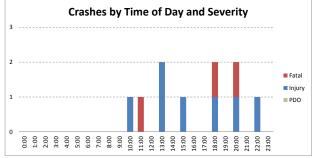
^{*}This was determined by reviewing ZIP codes of ped/bike involved in crash for each specific focus area. If the ZIP code matched that of the focus area, this was deemed a local crash.

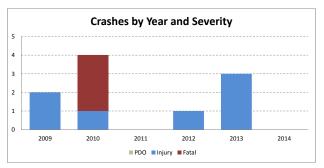
CRASH ANALYSIS - Focus Area E - Ormond Beach/Ormond-by-the-Sea from Sandcastle Dr. to Holland Rd.

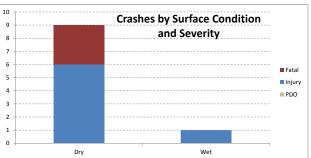


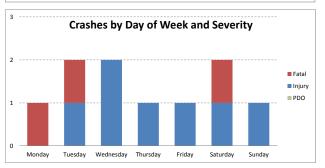


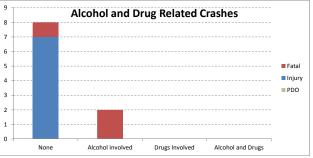




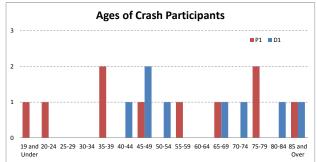


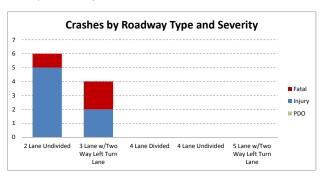


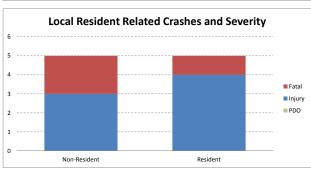




CRASH ANALYSIS - Focus Area E - Ormond Beach/Ormond-by-the-Sea from Sandcastle Dr. to Holland Rd.







CRASH ANALYSIS - Focus Area F - Ormond-by-the-Sea from Kathy Dr. to Wisteria Dr.

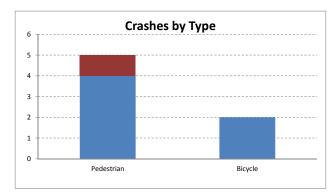
					sis Year				Severity		Total	Average	Percent
		2009	2010		2012	2013		PDO	Injury	Fatal	Total	Aveluge	
	Pedestrian	1	0	2	0	0	2	0	4	1	5	0.83	71.4%
Type of Crash	Bicycle	0	0	0	1	1	0	0	2	0	2	0.33	28.6%
	Total Crashes PDO	0	0	0	0	0	2	0	6	1	7	1.17 0.00	100.0%
Crash Severity	Injury	1	0	1	1	1	2	-	ļ		6	1.00	85.7%
Crash Soromy	Fatal	0	0	1	0	0	0				1	0.17	14.3%
	Daylight	0	0	0	1	1	1	0	3	0	3	0.50	42.9%
	Dusk	0	0	1	0	0	0	0	1	0	1	0.17	14.3%
Light Conditions	Dawn	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Light Conditions	Dark w/ Street Light	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Dark w/o Street Light	1	0	1	0	0	1	0	2	1	3	0.50	42.9%
	Unknown	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Surface Condition	Dry Wet	0 1	0	2 0	1 0	1 0	2 0	0	5 1	1 0	6 1	1.00 0.17	85.7% 14.3%
Surface Condition	Other	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	January	0	0	0	1	0	0	0	1	0	1	0.17	14.3%
	February	0	0	0	0	1	0	0	1	0	1	0.17	14.3%
	March	1	0	0	0	0	0	0	1	0	1	0.17	14.3%
	April	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	May	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Month	June	0	0	0	0	0	1	0	1	0	1	0.17	14.3%
	July	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	August	0	0	1	0	0	1	0	1	1	2 0	0.33	28.6%
	September October	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	November	0	0	1	0	0	0	0	1	0	1	0.00	14.3%
	December	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Monday	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Tuesday	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Wednesday	0	0	1	0	0	1	0	2	0	2	0.33	28.6%
Day of Week	Thursday	0	0	0	0	0	1	0	1	0	1	0.17	14.3%
	Friday	1	0	0	1	1	0	0	3	0	3	0.50	42.9%
	Saturday	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Sunday	0	0	1	0	0	0	0	0	1	1	0.17	14.3%
	0:00 1:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	2:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	3:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	4:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	5:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	6:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	7:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	8:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	9:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	10:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Hour of Day	11:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
•	12:00	0	0	0	0	1 0	0 1	0	1	0	1	0.17	14.3%
	13:00 14:00	0	0	0	0	0	0	0	2 0	0	2 0	0.33 0.00	28.6% 0.0%
	15:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	16:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	17:00	0	0	1	0	0	0	0	1	0	1	0.17	14.3%
	18:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	19:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	20:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	21:00	0	0	1	0	0	1	0	1	1	2	0.33	28.6%
	22:00 23:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	None	0	0	0	0	0	2	0	1 5	0	1 5	0.17 0.83	14.3% 71.4%
	Alcohol Involved	1	0	1	0	0	0	0	1	1	2	0.33	28.6%
Alcohol	Drugs Involved	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Alcohol and Drugs	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Undetermined	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	19 and Under	0	0	1	0	0	1				2	0.33	28.6%
	20-24	0	0	0	0	0	1				1	0.17	14.3%
	25-29	0	0	0	0	0	0				0	0.00	0.0%
	30-34 35-39	0	0	0	0	0	0				0 1	0.00 0.17	0.0% 14.3%
	40-44	0	0	0	0	0	0				0	0.17	0.0%
	45-49	0	0	0	0	0	0				0	0.00	0.0%
Age of Pedestrian/Bicyclist	50-54	0	0	1	1	0	0				2	0.33	28.6%
5	55-59	0	0	0	0	0	0				0	0.00	0.0%
	60-64	0	0	0	0	0	0				0	0.00	0.0%
	65-69	0	0	0	0	0	0	[0	0.00	0.0%
	70-74	0	0	0	0	0	0				0	0.00	0.0%
	75-79	0	0	0	0	1	0				1	0.17	14.3%
		7					,						
	80-84 85 and Over	0	0	0	0	0	0				0 0	0.00 0.00	0.0% 0.0%

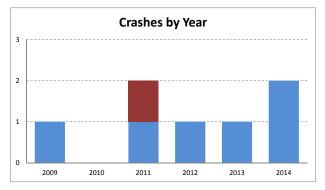
CRASH ANALYSIS - Focus Area F - Ormond-by-the-Sea from Kathy Dr. to Wisteria Dr.

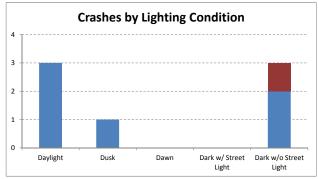
	LISIS - Focus Area F - Ormo	·iiu	Uy i		<u>, cu j</u>	<i>i</i> om	114	<i></i>	<i>D1.</i> 10	, ,,,		<i>O</i> 1.	
	19 and Under	0	0	0	0	0	2				2	0.33	28.6%
	20-24	0	0	0	0	1	0				1	0.17	14.3%
	25-29	0	0	0	0	0	0				0	0.00	0.0%
	30-34	1	0	0	0	0	0				1	0.17	14.3%
	35-39	0	0	0	0	0	0				0	0.00	0.0%
	40-44	0	0	0	0	0	0				0	0.00	0.0%
	45-49	0	0	0	0	0	0				0	0.00	0.0%
Age of Driver	50-54	0	0	0	0	0	0				0	0.00	0.0%
3	55-59	0	0	1	0	0	0				1	0.17	14.3%
	60-64	0	0	0	0	0	0				0	0.00	0.0%
	65-69	0	0	1	1	0	0				2	0.33	28.6%
	70-74	0	0	0	0	0	0				0	0.00	0.0%
	75-79	0	0	0	0	0	0				0	0.00	0.0%
	80-84	0	0	0	0	0	0				0	0.00	0.0%
	85 and Over	0	0	0	0	0	0				0	0.00	0.0%
	2 Lane Undivided	1	0	2	1	1	2	0	6	1	7	1.17	100.0%
	3 Lane w/Two Way Left Turn Lane	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Roadway Type	4 Lane Divided	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	4 Lane Undivided	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	5 Lane w/Two Way Left Turn Lane	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	30	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	35	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
G 111111	40	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Speed Limit	45	1	0	2	1	1	2	0	6	1	7	1.17	100.0%
	150	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	55	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	2	1	0	2	1	1	2	0	6	1	7	1.17	100.0%
	2	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Total Number of Lanes	13 14	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	[4	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	N ₂	1	0	2	1	1	2	0	6	1	7	1.17	
Near Beach Parking	No				I					I			100.0%
	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Near Bus Stop	No	1	0	2	1	1	2	0	6	1	7	1.17	100.0%
	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Near Park	No	1	0	2	1	1	2	0	6	1	7	1.17	100.0%
	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Near Civic Land Use	No	1	0	2	1	1	2	0	6	1	7	1.17	100.0%
recar offic Earla ooc	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Near Marked Crossing	No	1	0	2	1	1	2	0	6	1	7	1.17	100.0%
Near Marked Crossing	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Near Marked Crossing but Outside	No	1	0	2	0	1	1	0	4	1	5	0.83	71.4%
Influence Area^	Yes	0	0	0	1	0	1	0	2	0	2	0.33	28.6%
	Bike Crashes on Sections with Shoulder/Bike Lane	0	0	0	1	1	0	0	2	0	2	0.33	100.0%
Bicycle Crashes	Total Bike Crashes	0	0	0	1	1	0	0	2	0	2	0.33	0.0%
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	% Crashes with Facility	#####	#####	#####	100%	100%	#####	#####	100%	#####			
Pedestrian/Bicycle Crashes on Segment	No	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
with Sidewalk or Multi-Use Path	Yes	1	0	2	1	1	2	0	6	1	7	1.17	100.0%
	No	1	0	2	1	1	2	0	6	1	7	1.17	100.0%
Within Activity Zone	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
			0	2	1	0	2			1			
	Mid-Block	1						0	5		6	1.00	85.7%
Dadastrias/Bissala Crash Louisia	At signalized intersection crosswalk	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Pedestrian/Bicycle Crash Location	At driveway crossing	0	0	0	0	1	0	0	1	0	1	0.17	14.3%
	Along side of roadway	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	At signalized intersection	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Bicycle Riding Against Traffic	No	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Yes	0	0	0	1	1	0	0	2	0	2	0.33	100.0%
Non-Local*	Non-Resident	0	0	2	1	1	2	0	5	1	6	1.00	85.7%
Non Local	Resident	1	0	0	0	0	0	0	1	0	1	0.17	14.3%
	Vehicle	1	0	2	1	0	2	0	5	1	6	1.00	85.7%
Who Had Right-of-Way	Pedestrian	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Bicycle	0	0	0	0	1	0	0	1	0	1	0.17	14.3%
^ See report for influence area definition.													

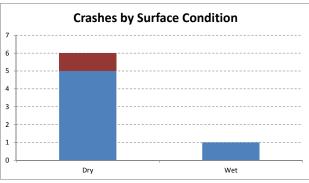
[^] See report for influence area definition.
*This was determined by reviewing ZIP codes of ped/bike involved in crash for each specific focus area. If the ZIP code matched that of the focus area, this was deemed a local crash.

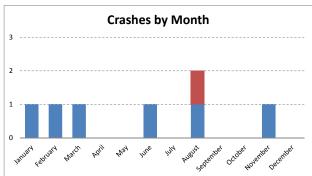
CRASH ANALYSIS - Focus Area F - Ormond-by-the-Sea from Kathy Dr. to Wisteria Dr.

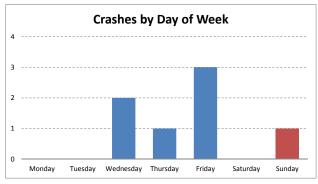


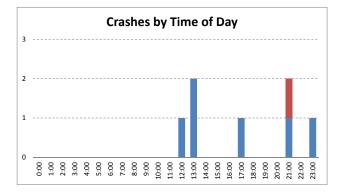


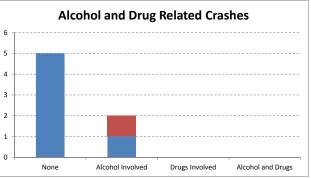




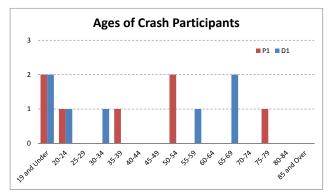


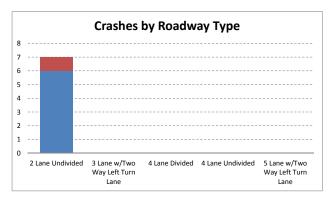


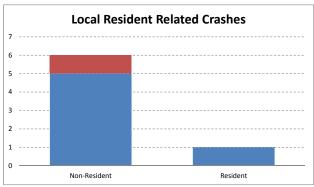




CRASH ANALYSIS - Focus Area F - Ormond-by-the-Sea from Kathy Dr. to Wisteria Dr.







 ${\it CRASH\ ANALYSIS\ -Focus\ Area\ G\ -Flagler\ Beach/Beverly\ Beach\ from\ S\ 23rd\ St.\ to\ S\ 11th\ St.}$

				Analy	sis Yea	ar			Severit	у			
		2009	2010	2011	2012	2013	2014	PDO	Injury	Fatal	Total	Average	Percent
	Pedestrian	1	0	2	2	0	1	0	5	1	6	1.00	60.0%
Type of Crash	Bicycle	0	1	1	1	0	1	1	2	1	4	0.67	40.0%
	Total Crashes	1	1	3	3	0	2	1	7	2	10	1.67	100.0%
Crash Severity	PDO	0	0	2	0	0	0 1				7	0.17	10.0% 70.0%
Crash Seventy	Injury Fatal	1	0	0	3 0	0	1				2	1.17 0.33	20.0%
	Daylight	1	1	2	2	0	0	0	5	1	6	1.00	60.0%
	Dusk	0	0	1	0	0	0	1	0	0	1	0.17	10.0%
Links One distance	Dawn	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Light Conditions	Dark w/ Street Light	0	0	0	1	0	2	0	2	1	3	0.50	30.0%
	Dark w/o Street Light	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Unknown	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Confess Considition	Dry	1	1	3	3	0	2	1	7	2	10	1.67	100.0%
Surface Condition	Wet Other	0	0	0	0	0	0	0	0	0	0	0.00	0.0% 0.0%
	January	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	February	0	0	Ō	0	0	ō	0	0	0	0	0.00	0.0%
	March	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	April	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	May	0	0	1	0	0	0	0	1	0	1	0.17	10.0%
Month	June	1	0	0	0	0	0	0	0	1	1	0.17	10.0%
Wonth	July	0	0	0	1	0	1	0	1	1	2	0.33	20.0%
	August	0	0	1	0	0	1	0	2	0	2	0.33	20.0%
	September	0	1	1	0	0	0	1	1	0	2	0.33	20.0%
	October November	0	0	0	0 2	0	0	0	0 2	0	0 2	0.00 0.33	0.0% 20.0%
	December	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Monday	0	0	1	0	0	0	1	0	0	1	0.00	10.0%
	Tuesday	1	0	1	0	0	1	0	1	2	3	0.50	30.0%
	Wednesday	0	0	0	1	0	0	0	1	0	1	0.17	10.0%
Day of Week	Thursday	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Friday	0	0	0	1	0	0	0	1	0	1	0.17	10.0%
	Saturday	0	0	1	1	0	0	0	2	0	2	0.33	20.0%
	Sunday	0	1	0	0	0	1	0	2	0	2	0.33	20.0%
	0:00	0	0	0	0	0	1	0	1	0	1	0.17	10.0%
	1:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	2:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	3:00 4:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0% 0.0%
	5:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	6:00	0	0	1	0	0	0	0	1	0	1	0.17	10.0%
	7:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	8:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	9:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	10:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Hour of Day	11:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
1.00. 0. 50,	12:00	0	1	0	1	0	0	0	2	0	2	0.33	20.0%
	13:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	14:00	0	0	1	0	0	0	0	1	0	1	0.17	10.0%
	15:00 16:00	1 0	0	0	1 0	0	0	0	1 0	1 0	2 0	0.33 0.00	20.0% 0.0%
	17:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	18:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	19:00	0	0	1	0	0	0	1	0	0	1	0.17	10.0%
	20:00	0	0	0	1	0	0	0	1	0	1	0.17	10.0%
	21:00	0	0	0	0	0	1	0	0	1	1	0.17	10.0%
	22:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	23:00	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	None	1	1	3	3	0	1	1	7	1	9	1.50	90.0%
Aleskel	Alcohol Involved	0	0	0	0	0	1	0	0	1	1	0.17	10.0%
Alcohol	Drugs Involved	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Alcohol and Drugs Undetermined	0	0	0	0	0	0	0	0	0	0	0.00	0.0% 0.0%
	19 and Under	1	0	0	0	0	0	0	U	U	1	0.00	10.0%
	20-24	0	0	0	1	0	0				1	0.17	10.0%
	25-29	0	0	1	0	0	0				1	0.17	10.0%
	30-34	0	0	0	0	0	0	I			0	0.00	0.0%
	35-39	0	0	0	0	0	1	<u> </u>			1	0.17	10.0%
	40-44	0	1	0	0	0	0				1	0.17	10.0%
	45-49	0	0	0	0	0	0				0	0.00	0.0%
Age of Pedestrian/Bicyclist	50-54	0	0	0	1	0	0				11	0.17	10.0%
	55-59	0	0	2	1	0	0				3	0.50	30.0%
	60-64	0	0	0	0	0	1				1	0.17	10.0%
	65-69 70-74	0	0	0	0	0	0				0	0.00 0.00	0.0% 0.0%
	70-74 75-79	0	0	0	0	0	0				0	0.00	0.0%
	80-84	0	0	0	0	0	0				0	0.00	0.0%
	85 and Over	0	0	0	0	0	0				0	0.00	0.0%
	1-1				Ü							0.00	0.070

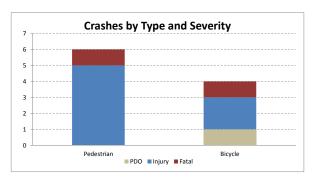
CRASH ANALYSIS - Focus Area G - Flagler Beach/Beverly Beach from S 23rd St. to S 11th St.

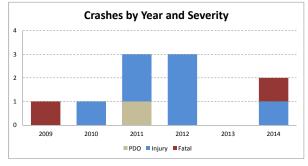
				Analy	sis Yea	ar			Severit	у			
		2009	2010	2011	2012	2013	2014	PDO	Injury	Fatal	Total	Average	Percent
	19 and Under	0	0	0	0	0	1				1	0.17	10.0%
	20-24	0	0	0	1	0	0				1	0.17	10.0%
	25-29	0	0	0	1	0	0	.,			1	0.17	10.0%
	30-34	0	0	0	0	0	0				0	0.00	0.0%
	35-39	0	0	1	0	0	0				1	0.17	10.0%
	40-44	0	1	0	0	0	0				1	0.17	10.0%
A	45-49	0	0	0	0	0	1				1	0.17	10.0%
Age of Driver	50-54	0	0	0	0	0	0				0	0.00	0.0%
	55-59	0	0	0	0	0	0				0	0.00	0.0%
	60-64 65-69	0	0	0 1	0 1	0	0				0 2	0.00 0.33	0.0% 20.0%
	70-74	0	0	0	0	0	0				0	0.00	0.0%
	75-79	0	0	0	0	0	0				0	0.00	0.0%
	80-84	0	0	0	0	0	0				0	0.00	0.0%
	85 and Over	1	0	0	0	0	0				1	0.17	10.0%
	2 Lane Undivided	1	1	3	3	0	2	1	7	2	10	1.67	100.0%
	3 Lane w/Two Way Left Turn Lane	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Roadway Type	4 Lane Divided	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	4 Lane Undivided	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	5 Lane w/Two Way Left Turn Lane	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	30	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	35	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Speed Limit	40	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Opeed Linit	45	1	1	3	3	0	1	1	7	1	9	1.50	90.0%
	50	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	55	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	2	1	1	3	3	0	1	1	7	1	9	1.50	90.0%
Total Number of Lanes	3	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	4	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	5	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Near Beach Parking	No	1		3	3	0	2	1	7	2	10	1.67 0.00	100.0%
	Yes	1	0	3	3	0	0	0	7	0	0 10	1.67	0.0% 100.0%
Near Bus Stop	No Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	No	1	1	3	3	0	2	1	7	2	10	1.67	100.0%
Near Park	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	No	1	1	3	3	0	2	1	7	2	10	1.67	100.0%
Near Civic Land Use	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	No	1	1	3	3	0	1	1	7	1	9	1.50	90.0%
Near Marked Crossing	Yes	0	0	0	0	0	1	0	0	1	1	0.17	10.0%
Near Marked Crossing but Outside	No	1	1	3	3	0	2	1	7	2	10	1.67	100.0%
Influence Area^	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Bike Crashes on Sections with Shoulder/Bike Lane	0	1	1	1	0	1	1	2	1	4	0.67	100.0%
Bicycle Crashes	Total Bike Crashes	0	1	1	1	0	1	1	2	1	4	0.67	0.0%
	% Crashes with Facility	#DIV/0!	100%	100%	100%	#DIV/0!	100%	100%	100%	100%			
Pedestrian/Bicycle Crashes on Segment	No	0	0	0	0	0	1	0	0	1	1	0.17	10.0%
with Sidewalk or Multi-Use Path	Yes	1	1	3	3	0	1	1	7	1	9	1.50	90.0%
Within Activity Zone	No	1	1	2	3	0	2	1	6	2	9	1.50	90.0%
,	Yes	0	0	1	0	0	0	0	1	0	1	0.17	10.0%
	Mid-Block	1	0	1	1	0	1	0	3	1	4	0.67	40.0%
Padastrian/Piavala Crash Lasstian	At signalized intersection crosswalk	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Pedestrian/Bicycle Crash Location	At driveway crossing Along side of roadway	0	0 1	1	2	0	1	0	3 1	0 1	3	0.50 0.50	30.0% 30.0%
	At signalized intersection	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	No	0	1	1	1	0	1	1	2	1	4	0.67	100.0%
Bicycle Riding Against Traffic	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Non-Resident	0	0	2	1	0	1	1	3	0	4	0.67	40.0%
			ı	ı		L					L		60.0%
Non-Local*	Resident	1	1	1	2	0	1	0	4	2	6	1.00	00.0%
Non-Local*		1	1	1	2	0	2	0	5	2	7	1.00	70.0%
Non-Local* Who Had Right-of-Way	Resident												
	Resident Vehicle	1	0	2	2	0	2	0	5	2	7	1.17	70.0%

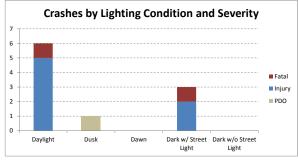
[^] See report for influence area definition

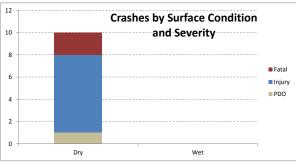
^{*}This was determined by reviewing ZIP codes of ped/bike involved in crash for each specific focus area. If the ZIP code matched that of the focus area, this was deemed a local crash.

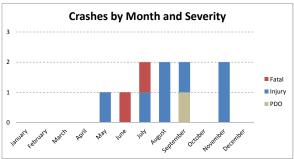
CRASH ANALYSIS - Focus Area G - Flagler Beach/Beverly Beach from S 23rd St. to S 11th St.

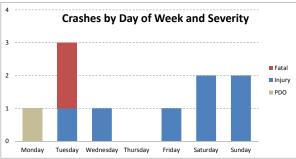


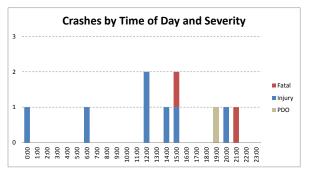


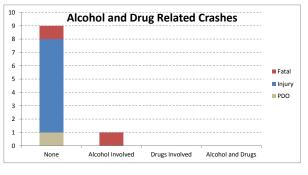


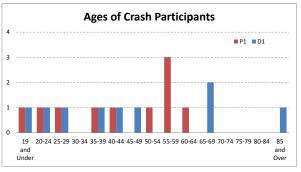


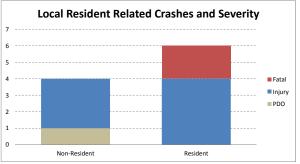












CRASH ANALYSIS - Focus Area H - Flagler Beach from 9th St. S to 13th St. N

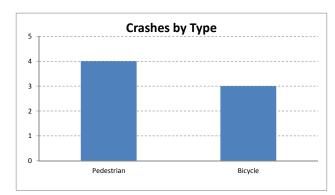
				Analys	is Year	1		Severity	,	Tatal	A	Danasant
		2009	2010	2011	2012	2013 2014	PDO	Injury	Fatal	Total	Average	Percent
	Pedestrian	0	1	2	0	0 1	0	4	0	4	0.67	57.1%
Type of Crash	Bicycle	1	0	1	1	0 0	0	3	0	3	0.50	42.9%
	Total Crashes	1	1	3	1	0 1	0	7	0	7	1.17	100.0%
	PDO	0	0	0	0	0 0				0	0.00	0.0%
Crash Severity	Injury	1	1	3	1	0 1				7	1.17	100.0%
	Fatal	0	0	0	0	0 0				0	0.00	0.0%
	Daylight	1	1	2	1	0 1	0	6	0	6	1.00	85.7%
	Dusk	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
Light Conditions	Dawn	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
3	Dark w/ Street Light	0	0	1	0	0 0	0	1	0	1	0.17	14.3%
	Dark w/o Street Light	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	Unknown	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
Surface Condition	Dry Wet	1	1	3	1	0 1	0	7	0	7	1.17	100.0%
Surface Condition	Other	0	0	0	0	0 0	0	0	0	0	0.00	0.0% 0.0%
	January	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	February	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	March	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	April	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	May	0	0	0	0	0 1	0	1	0	1	0.17	14.3%
	June	0	1	1	0	0 0	0	2	0	2	0.33	28.6%
Month	July	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	August	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	September	0	0	0	1	0 0	0	1	0	1	0.17	14.3%
	October	0	0	2	0	0 0	0	2	0	2	0.33	28.6%
	November	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	December	1	0	0	0	0 0	0	1	0	1	0.17	14.3%
	Monday	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	Tuesday	0	0	0	0	0 1	0	1	0	1	0.17	14.3%
	Wednesday	0	0	1	0	0 0	0	1	0	1	0.17	14.3%
Day of Week	Thursday	1	0	1	1	0 0	0	3	0	3	0.50	42.9%
	Friday	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	Saturday	0	0	1	0	0 0	0	1	0	1	0.17	14.3%
	Sunday	0	1	0	0	0 0	0	1	0	1	0.17	14.3%
	0:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	1:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	2:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	3:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	4:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	5:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	6:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	7:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	8:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	9:00	1	0	0	1	0 0	0	2	0	2	0.33	28.6%
	10:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
Hour of Day	11:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
•	12:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	13:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	14:00	0	0	1	0	0 0	0	1	0	1	0.17	14.3%
	15:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	16:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	17:00	0	0	1	0	0 0	0	1	0	1	0.17	14.3%
	18:00 19:00	0	0 1	0	0	0 1 0	0	1	0	1	0.17	14.3%
										ļ	0.17	14.3%
	20:00 21:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	22:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	23:00	0	0	1	0	0 0	0	1	0	1	0.00	14.3%
	None	1	1	3	1	0 0	0	6	0	6	1.00	85.7%
	Alcohol Involved	0	0	0	0	0 0	0	1	0	1	0.17	14.3%
Alcohol	Drugs Involved	0	0	0	0	0 0	0	0	0	0	0.17	0.0%
Alcolloi	Alcohol and Drugs	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	Undetermined	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	19 and Under	0	0	0	0	0 0	U	U	U	0	0.00	0.0%
	20-24	0	0	0	0	0 0				0	0.00	0.0%
	25-29	0	0	1	0	0 0				1	0.00	14.3%
	30-34	0	0	0	0	0 0	·			0	0.00	0.0%
	35-39	0	0	0	0	0 0				0	0.00	0.0%
	40-44	0	0	1	0	0 0				1	0.17	14.3%
	45-49	0	0	0	0	0 0				0	0.00	0.0%
			0	0	0	0 0				0	0.00	0.0%
Age of Pedestrian/Ricyclist		(1)		J	J		†			1		14.3%
Age of Pedestrian/Bicyclist	50-54	0		0	0	0 1 1					().17	
Age of Pedestrian/Bicyclist	50-54 55-59	0	0	0	0	0 1				.	0.17	
Age of Pedestrian/Bicyclist	50-54 55-59 60-64	0 1	0 1	0	0	0 0				2	0.33	28.6%
Age of Pedestrian/Bicyclist	50-54 55-59 60-64 65-69	0 1 0	0 1 0	0 0	0 0	0 0 0 0				2 0	0.33 0.00	28.6% 0.0%
Age of Pedestrian/Bicyclist	50-54 55-59 60-64 65-69 70-74	0 1 0	0 1 0	0 0 0	0 0 0	0 0 0 0				2 0 0	0.33 0.00 0.00	28.6% 0.0% 0.0%
Age of Pedestrian/Bicyclist	50-54 55-59 60-64 65-69 70-74 75-79	0 1 0 0	0 1 0 0	0 0 0	0 0 0	0 0 0 0 0 0				2 0 0	0.33 0.00 0.00 0.17	28.6% 0.0% 0.0% 14.3%
Age of Pedestrian/Bicyclist	50-54 55-59 60-64 65-69 70-74	0 1 0	0 1 0	0 0 0	0 0 0	0 0 0 0				2 0 0	0.33 0.00 0.00	28.6% 0.0% 0.0%

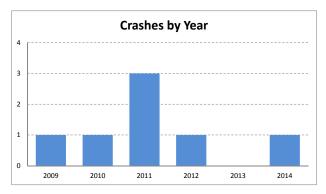
CRASH ANALYSIS - Focus Area H - Flagler Beach from 9th St. S to 13th St. N

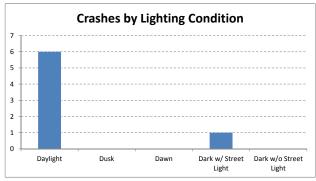
	IVALISIS - Focus Area II - I	mg	I	Juu	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	om .	<i></i>	<i>-</i>	, 10 1	<i>5010</i>)	<i>Ju</i> . 11		
	19 and Under	0	0	0	0	0	0				0	0.00	0.0%
	20-24	0	0	1	0	0	1				2	0.33	28.6%
	25-29	0	0	0	0	0	0				0	0.00	0.0%
	30-34	0	1	0	0	0	0				1	0.17	14.3%
	35-39	0	0	0	0	0	0			l	0	0.00	0.0%
	40-44	1	0	0	0	0	0				1	0.17	14.3%
	45-49	0	0	0	0	0	0				0	0.00	0.0%
Age of Driver	50-54	0	0	0	0	0	0				0	0.00	0.0%
Age of Briver	55-59	0	0	0	0	0	0				0	0.00	0.0%
			I		I							L	
	60-64	0	0	0	0	0	0				0	0.00	0.0%
	65-69	0	0	0	0	0	0				0	0.00	0.0%
	70-74	0	0	1	0	0	0				1	0.17	14.3%
	75-79	0	0	0	0	0	0				0	0.00	0.0%
	80-84	0	0	0	1	0	0				1	0.17	14.3%
	85 and Over	0	0	0	0	0	0				0	0.00	0.0%
	2 Lane Undivided	1	1	3	1	0	1	0	7	0	7	1.17	100.0%
	3 Lane w/Two Way Left Turn Lane	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Roadway Type	4 Lane Divided	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	4 Lane Undivided	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	5 Lane w/Two Way Left Turn Lane	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	30	1	1	3	0	0	1	0	6	0	6	1.00	85.7%
													•
	35	0	0	0	1	0	0	0	1	0	1	0.17	14.3%
Speed Limit	40	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
-,	45	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	50	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	55	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	2	1	1	3	1	0	1	0	7	0	7	1.17	100.0%
	3	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Total Number of Lanes	4	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	5	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	No	0	0	0	1	0	0	0	1	0	1	0.17	14.3%
Near Beach Parking	Yes	1	1	3	0	0	1	0	6	0	6	1.00	85.7%
		1	1	3	1	0	1	0	7	0	7	1.17	
Near Bus Stop	No												100.0%
-	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Near Park	No	0	0	0	1	0	0	0	1	0	1	0.17	14.3%
	Yes	1	1	3	0	0	1	0	6	0	6	1.00	85.7%
Near Civic Land Use	No	0	0	0	1	0	0	0	1	0	1	0.17	14.3%
Near Civic Land Ose	Yes	1	1	3	0	0	1	0	6	0	6	1.00	85.7%
Near Marked Consider	No	0	0	2	1	0	0	0	3	0	3	0.50	42.9%
Near Marked Crossing	Yes	1	1	1	0	0	1	0	4	0	4	0.67	57.1%
Near Marked Crossing but Outside	No	1	1	1	1	0	1	0	5	0	5	0.83	71.4%
Influence Area^	Yes	0	0	2	0	0	0	0	2	0	2	0.33	28.6%
	Bike Crashes on Sections with Shoulder/Bike Lane	1	0	1	1	0	0	0	3	0	3	0.50	100.0%
Bicycle Crashes		1	0	1	1	0	0	0	3	0	3	0.50	0.0%
Bicycle Crasnes	Total Bike Crashes	100%	#####			#####		#####	100%	#####	3	0.30	0.076
	% Crashes with Facility	_			100%		#####				_		0.00/
Pedestrian/Bicycle Crashes on Segment	No	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
with Sidewalk or Multi-Use Path	Yes	1	1	3	1	0	1	0	7	0	7	1.17	100.0%
Within Activity Zone	No	0	0	0	1	0	0	0	1	0	1	0.17	14.3%
VVIIIIII / IOUVILY ZONG	Yes	1	1	3	0	0	1	0	6	0	6	1.00	85.7%
	Mid-Block	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	At signalized intersection crosswalk	0	1	1	0	0	1	0	3	0	3	0.50	42.9%
Pedestrian/Bicycle Crash Location	At driveway crossing	1	0	1	0	0	0	0	2	0	2	0.33	28.6%
	Along side of roadway	0	0	1	1	0	0	0	2	0	2	0.33	28.6%
	At signalized intersection	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	No	1	0	1	0	0	0	0	2	0	2	0.00	66.7%
Bicycle Riding Against Traffic												L	4
	Yes	0	0	0	1	0	0	0	1	0	1	0.17	33.3%
Non-Local*	Non-Resident	1	0	1	1	0	0	0	3	0	3	0.50	42.9%
	Resident	0	1	2	0	0	1	0	4	0	4	0.67	57.1%
	Vehicle	1	1	1	1	0	0	0	4	0	4	0.67	57.1%
Who Had Right-of-Way	Pedestrian	0	0	1	0	0	1	0	2	0	2	0.33	28.6%
	Bicycle	0	0	1	0	0	0	0	1	0	1	0.17	14.3%
^ See report for influence area definition.													

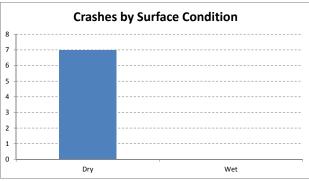
[^] See report for influence area definition.
*This was determined by reviewing ZIP codes of ped/bike involved in crash for each specific focus area. If the ZIP code matched that of the focus area, this was deemed a local crash.

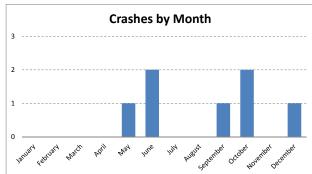
CRASH ANALYSIS - Focus Area H - Flagler Beach from 9th St. S to 13th St. N

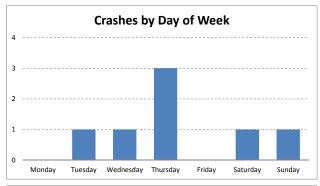


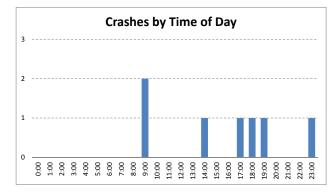


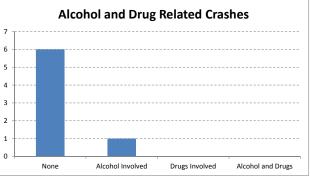




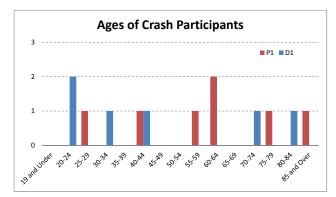


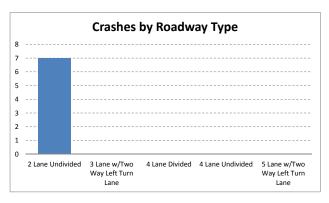


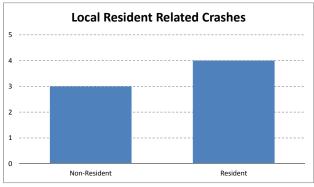




CRASH ANALYSIS - Focus Area H - Flagler Beach from 9th St. S to 13th St. N



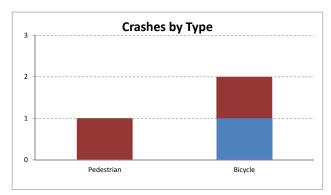


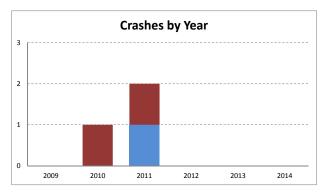


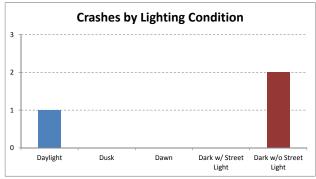
				Δnalvs	is Year			Severity	,		1	
		2009		2011	2012	2013 2014	PDO	Injury	Fatal	Total	Average	Percent
	Pedestrian	0	0	1	0	0 0	0	0	1	1	0.17	33.3%
Type of Crash	Bicycle	0	1	1	0	0 0	0	1	1	2	0.33	66.7%
	Total Crashes	0	1	2	0	0 0	0	1	2	3	0.50	100.0%
0.001 0.000	PDO	0	0	0	0	0 0				0	0.00	0.0%
Crash Severity	Injury Fatal	0	0	1	0	0 0				1 2	0.17	33.3%
	Daylight	0	0	1	0	0 0	0	1	0	1	0.33	66.7% 33.3%
	Dusk	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	Dawn	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
Light Conditions	Dark w/ Street Light	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	Dark w/o Street Light	0	1	1	0	0 0	0	0	2	2	0.33	66.7%
	Unknown	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	Dry	0	1	2	0	0 0	0	1	2	3	0.50	100.0%
Surface Condition	Wet	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	Other	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	January February	0	0	0 1	0	0 0	0	0	0 1	0 1	0.00 0.17	0.0% 33.3%
	March	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	April	0	0	1	0	0 0	0	1	0	1	0.17	33.3%
	May	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	June	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
Month	July	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	August	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	September	0	1	0	0	0 0	0	0	1	1	0.17	33.3%
	October	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	November	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	December	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	Monday	0	0	1	0	0 0	0	0	1	1	0.17	33.3%
	Tuesday Wednesday	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
Day of Week	Thursday	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
Day of Week	Friday	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	Saturday	0	1	0	0	0 0	0	0	1	1	0.17	33.3%
	Sunday	0	0	1	0	0 0	0	1	0	1	0.17	33.3%
	0:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	1:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	2:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	3:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	4:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	5:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	6:00 7:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	8:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	9:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	10:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
Have of Day	11:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
Hour of Day	12:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	13:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	14:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	15:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	16:00	0	0	1	0	0 0	0	1	0	1	0.17	33.3%
	17:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	18:00 19:00	0	0	0 1	0	0 0	0	0	0 1	0 1	0.00 0.17	0.0% 33.3%
	20:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	21:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	22:00	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	23:00	0	1	0	0	0 0	0	0	1	1	0.17	33.3%
	None	0	0	2	0	0 0	0	1	1	2	0.33	66.7%
	Alcohol Involved	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
Alcohol	Drugs Involved	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	Alcohol and Drugs	0	1	0	0	0 0	0	0	1	11	0.17	33.3%
	Undetermined	0	0	0	0	0 0	0	0	0	0	0.00	0.0%
	19 and Under	0	0	1	0	0 0				1	0.17	33.3%
	20-24 25-29	0	0	0	0	0 0				0	0.00	0.0%
	30-34	0	0	0	0	0 0				0	0.00	0.0%
	35-39	0	0	0	0	0 0				0	0.00	0.0%
		0	0	0	0	0 0				0	0.00	0.0%
	40-44	0					1		l	1	0.17	33.3%
		0	0	1	0	0 0					0.17	
Age of Pedestrian/Bicyclist	40-44		0 0	1 0	0	0 0				0	0.00	0.0%
Age of Pedestrian/Bicyclist	40-44 45-49 50-54 55-59	0 0 0	0 1									
Age of Pedestrian/Bicyclist	40-44 45-49 50-54 55-59 60-64	0 0 0	0 1 0	0 0 0	0 0 0	0 0 0 0 0 0				0 1 0	0.00 0.17 0.00	0.0% 33.3% 0.0%
Age of Pedestrian/Bicyclist	40-44 45-49 50-54 55-59 60-64 65-69	0 0 0 0	0 1 0	0 0 0	0 0 0	0 0 0 0 0 0				0 1 0	0.00 0.17 0.00 0.00	0.0% 33.3% 0.0% 0.0%
Age of Pedestrian/Bicyclist	40-44 45-49 50-54 55-59 60-64 65-69 70-74	0 0 0 0	0 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0 0 0 0 0				0 1 0 0	0.00 0.17 0.00 0.00	0.0% 33.3% 0.0% 0.0% 0.0%
Age of Pedestrian/Bicyclist	40-44 45-49 50-54 55-59 60-64 65-69 70-74 75-79	0 0 0 0 0	0 1 0 0	0 0 0 0 0	0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				0 1 0 0	0.00 0.17 0.00 0.00 0.00	0.0% 33.3% 0.0% 0.0% 0.0%
Age of Pedestrian/Bicyclist	40-44 45-49 50-54 55-59 60-64 65-69 70-74	0 0 0 0	0 1 0 0	0 0 0 0	0 0 0 0	0 0 0 0 0 0 0 0				0 1 0 0	0.00 0.17 0.00 0.00	0.0% 33.3% 0.0% 0.0% 0.0%

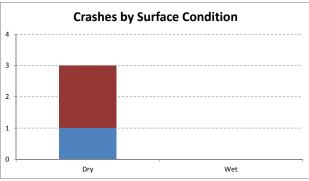
CIUIDII II	NALISIS - Focus Area I - Fi	uzii	,	, uiii	<u>y j r</u> (<i>)</i>		110.	10 11	paci	ic Di.		
	19 and Under	0	0	0	0	0	0				0	0.00	0.0%
	20-24	0	0	0	0	0	0				0	0.00	0.0%
	25-29	0	0	0	0	0	0				0	0.00	0.0%
	30-34	0	0	1	0	0	0				1	0.17	33.3%
	35-39	0	0	0	0	0	0				0	0.00	0.0%
	40-44	0	0	0	0	0	0				0	0.00	0.0%
	45-49	0	0	0	0	0	0				0	0.00	0.0%
Age of Driver	50-54		0			0					0	0.00	0.0%
Age of Driver		0		0	0		0						
	55-59	0	0	0	0	0	0				0	0.00	0.0%
	60-64	0	1	0	0	0	0				1	0.17	33.3%
	65-69	0	0	0	0	0	0				0	0.00	0.0%
	70-74	0	0	0	0	0	0				0	0.00	0.0%
	75-79	0	0	1	0	0	0				1	0.17	33.3%
	80-84	0	0	0	0	0	0				0	0.00	0.0%
	85 and Over	0	0	0	0	0	0				0	0.00	0.0%
	2 Lane Undivided	0	1	2	0	0	0	0	1	2	3	0.50	100.0%
	3 Lane w/Two Way Left Turn Lane	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Roadway Type	4 Lane Divided	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Roadway Type	4 Lane Undivided	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
				•									
	5 Lane w/Two Way Left Turn Lane	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	30	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	35	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Speed Limit	40	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Opoca Emili	45	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	50	0	0	2	0	0	0	0	1	1	2	0.33	66.7%
	55	0	1	0	0	0	0	0	0	1	1	0.17	33.3%
	2	0	1	2	0	0	0	0	1	2	3	0.50	100.0%
		0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Total Number of Lanes	4	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	5	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	No No	0	1	2	0	0	0	0	1	2	3	0.50	100.0%
Near Beach Parking			0	0							0	0.00	
	Yes	0			0	0	0	0	0	0			0.0%
Near Bus Stop	No	0	1	2	0	0	0	0	1	2	3	0.50	100.0%
	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Near Park	No	0	1	2	0	0	0	0	1	2	3	0.50	100.0%
	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Near Civic Land Use	No	0	1	2	0	0	0	0	1	2	3	0.50	100.0%
inear Civic Land Use	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	No	0	1	2	0	0	0	0	1	2	3	0.50	100.0%
Near Marked Crossing	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Near Marked Crossing but Outside	No	0	1	2	0	0	0	0	1	2	3	0.50	100.0%
Influence Area^	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
iiiideiise / ii ed		0	1	1	0	0	0	0	1	1	2	0.33	100.0%
Picyclo Crashas	Bike Crashes on Sections with Shoulder/Bike Lane	0	1	1	0	0	0	0	1	1	2	0.33	
Bicycle Crashes	Total Bike Crashes											0.33	0.0%
	% Crashes with Facility	#####	100%	100%	#####	#####	#####	#####	100%	100%			0.00/
Pedestrian/Bicycle Crashes on Segment	No	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
with Sidewalk or Multi-Use Path	Yes	0	1	2	0	0	0	0	1	2	3	0.50	100.0%
Within Activity Zone	No	0	1	2	0	0	0	0	1	2	3	0.50	100.0%
Within Activity Zone	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Mid-Block	0	0	1	0	0	0	0	1	0	1	0.17	33.3%
	At signalized intersection crosswalk	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Pedestrian/Bicycle Crash Location	At driveway crossing	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
,,,,,,,	Along side of roadway	0	1	1	0	0	0	0	0	2	2	0.33	66.7%
	At signalized intersection	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	,	0	1			0	0	0	1	1	2	0.00	100.0%
Bicycle Riding Against Traffic	No			1	0								4
	Yes	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
Non-Local*	Non-Resident	0	1	1	0	0	0	0	1	1	2	0.33	66.7%
	Resident	0	0	1	0	0	0	0	0	1	1	0.17	33.3%
	Vehicle	0	1	2	0	0	0	0	1	2	3	0.50	100.0%
Who Had Right-of-Way	Pedestrian	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
	Bicycle	0	0	0	0	0	0	0	0	0	0	0.00	0.0%
^ See report for influence area definition.													

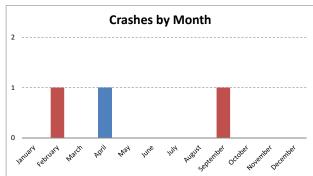
[^] See report for influence area definition.
*This was determined by reviewing ZIP codes of ped/bike involved in crash for each specific focus area. If the ZIP code matched that of the focus area, this was deemed a local crash.

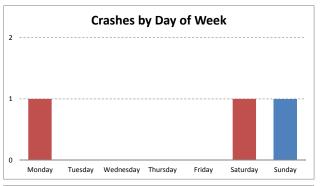


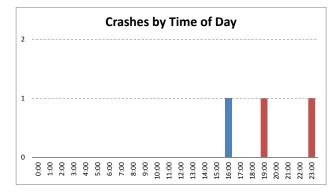


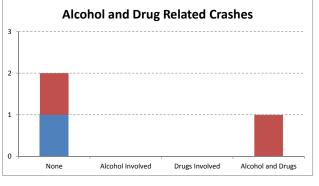


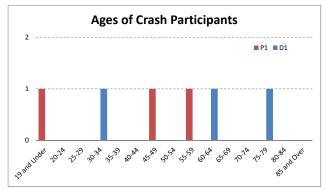


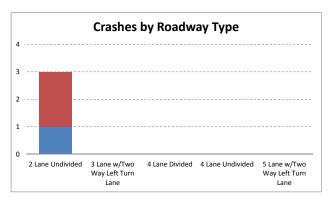


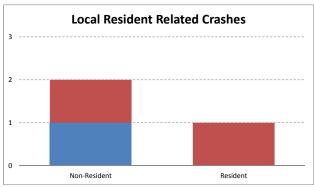






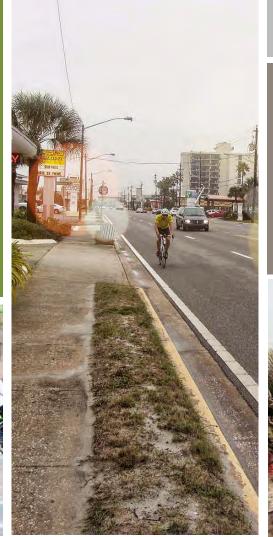


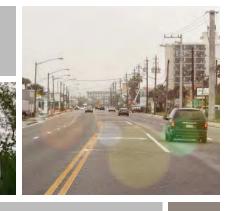




Appendix F Systemic Countermeasure Matrix

River to Sea TPO







SR/CR A1A PEDESTRIAN SAFETY & MOBILITY STUDY



Table of Contents

<u>Countermeasure Matrix How-To – Pages 1 through 6</u>

<u>Pedestrian Issues & Countermeasures – Pages 7 through 12</u>

- Roadway Section Pages 7 and 8
- Signalized Intersection Page 9
- Minor Street Intersection Page 10
- Driveway Page 11
- Beach Access Page 12
- Bus Stop Page 12

Bicycle Issues & Countermeasures - Pages 13 through 15

- Roadway Segment Pages 13 and 14
- Signalized Intersection Page 14
- Minor Street Intersection Page 15
- Driveway Page 15

Education/Enforcement Issues & Countermeasures – Pages 16 through 18

- Education Pages 16 and 17
- Enforcement Pages 17 and 18

Implementation Time Frame Descriptions

- Short-Term Maintenance it is anticipated that issues identified for maintenance may be addressed by public agency staff on a short timeframe and at a relatively low cost.
- Near-Term Improvement activities that may be incorporated into an upcoming construction project in the area, including 3R milling and resurfacing projects.
- Long-Term Improvement activities that may be incorporated into upcoming construction projects and may need to be programmed for funding as separate projects.

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Countermeasure Matrix How-To

The vision is that local jurisdictions can utilize the countermeasure matrix during field reviews along SR/CR A1A to identify potential engineering, education, or enforcement type countermeasures to address pedestrian/bicycle safety concerns/issues. Also, the matrix can be utilized as a checklist to incorporate pedestrian/bicycle safety improvements during the design phase of projects. The countermeasure matrix provides 54 pedestrian and 20 bicycle specific issues/suggestions occurring along two or more of the focus area corridors. The following example will explain how one can find a countermeasure for a specific issue within the countermeasure matrix. For more information regarding the countermeasure matrix, please see the **Systemic Countermeasure Matrix** section of the *SR/CR Pedestrian Safety & Mobility Study Final Report*.

Problem Statement

You are analyzing a location with a crash history involving pedestrians crossing mid-block (between signalized intersections) near a beach access point. Commercial land uses are present on the west side of SR/CR A1A across from the beach access point. Using the matrix, what are potential countermeasures for this situation?

Utilize the following 5 step process for finding countermeasures relating to this specific issue at a beach access point.

1. First determine if this is a pedestrian or bicycle related issue. In the case of this example, there is a pedestrian crash history. Thus the pedestrian engineering matrix should be utilized for this situation, referencing **Pages 7** through **12** of the countermeasure matrix document.



2. The next step is to determine the location of the situation. For this example, we are mid-block at a beach access point. This leads us to "Beach Access Point" of the pedestrian matrix, located on Page 12.

		Pedestrian Is	sues and Countermeasures		
Location	General Issue	Specific Issue	Countermeasure	Potential Implementation Timeframe	Relative Cost
		1	install pedestrian warning signage (sign W11-2 in the MUTCD) at these locations to inform drivers of pedestrian activity. To reduce potential for sign pollution, approved colored pavement or transverse rumble strips could be utilized leading up to the intersection to warn drivers they are approaching an intersection with a concentration of pedestrian activity.	Maintenance	\$
Beach Access Point	A. Mid-Block Pedestrian Crossings/Crashes	Beach access points where there is a concentration of pedestrian activity or crash history/frequency	Tier 1 Suggestions Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) Stripe the crosswalk with special emphasis crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346 Install advanced pedestrian warning signage (W11-2 and W16-9P) consistent with sheet 10 of the FDOT Design Index 17346 Install lighting on either side of the crosswalk Tier 2 Suggestions Provide a median refuge island for pedestrians in the TWLTL Replace the standard yellow background pedestrian warning signs with those having the fluorescent yellow-green background with Type 11 sheeting Tier 3 Suggestions Provide an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk where speed limit exceeds 40 MPH (MUTCD Section 3B.18) A higher tier could be implemented if the desired performance (crash mitigation/reduction and/or vehicle yield compliance) was not obtained with the current tier suggestions	Near/Long Term	\$5-\$\$\$
	B. Landscape Maintenance	Vegetation alongside roadway near beach access point reduces visibility of crossing pedestrians	Coordinate with maintenance crews to trim the obstructions and encourage regular landscape maintenance near the access point	Maintenance	\$
	C. Beach Access Signage	Current beach access signs are worn/faded; No SR A1A corridor consistency for beach access signage in Volusia/Flagler Counties	Create corridor consistency by performing beach access signage project for entire length of SR A1A. This could include signing the vehicular and pedestrian beach access points numerically from south to north so they are easily identifiable.	Near Term	\$-\$\$
	D. Connectivity from Roadway to Beach	No sidewalk access from the roadway or the sidewalk is in disrepair	Install/repair sidewalk to create accessible pedestrian route leading to the beach by local jurisdiction if not within State Road right-ofway.	Near Term	\$\$-\$\$\$
	E. Lack of Beach Parking	Little to no beach parking areas near beach access points; Vacant parcels located near beach access points	Convert the vacant parcels to formal beach parking areas and couple with a mid-block crossing improvement to concentrate pedestrian crossings at a single location.	Near/Long Term	\$\$-\$\$\$

3. The third step is to assess the situation for a general issue. The problem statement discusses crashes occurring between pedestrians crossing between the commercial property on the west side of the roadway to the beach access point on the east side of the roadway. General Issue A "Mid-Block Pedestrian Crossings/Crashes" looks like a good place to start.

		Pedestrian Is	sues and Countermeasures		
Location	General Issue	Specific Issue	Countermeasure	Potential Implementation Timeframe	Relative Cost
			Install pedestrian warning signage (sign W11-2 in the MUTCD) at these locations to inform drivers of pedestrian activity. To reduce potential for sign pollution, approved colored pavement or transverse rumble strips could be utilized leading up to the intersection to warn drivers they are approaching an intersection with a concentration of pedestrian activity.	Maintenance	\$
Beach Access Point	A. Mid-Block Pedestriar Crossings/Crashes	Beach access points where there is a concentration of pedestrian activity or crash history/frequency	Tier 1 Suggestions Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) Stripe the crosswalk with special emphasis crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346 Install advanced pedestrian warning signage (W11-2 and W16-9P) consistent with sheet 10 of the FDOT Design Index 17346 Install lighting on either side of the crosswalk Tier 2 Suggestions Provide a median refuge island for pedestrians in the TWLTL Replace the standard yellow background pedestrian warning signs with those having the fluorescent yellow-green background with Type 11 sheeting Tier 3 Suggestions Provide an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk where speed limit exceeds 40 MPH (MUTCD Section 3B.18) A higher tier could be implemented if the desired performance (crash mitigation/reduction and/or vehicle yield compliance) was not obtained with the current tier suggestions	Near/Long Term	\$5-\$\$\$
	B. Landscape Maintenance	Vegetation alongside roadway near beach access point reduces visibility of crossing pedestrians	Coordinate with maintenance crews to trim the obstructions and encourage regular landscape maintenance near the access point	Maintenance	\$
	C. Beach Access Signage	Current beach access signs are worn/faded; No SRA1A corridor consistency for beach access signage in Volusia/Flagler Counties	Create corridor consistency by performing beach access signage project for entire length of SR ATA. This could include signing the vehicular and pedestrian beach access points numerically from south to north so they are easily identifiable.	Near Term	\$-\$\$
	D. Connectivity from Roadway to Beach	No sidewalk access from the roadway or the sidewalk is in disrepair	Install/repair sidewalk to create accessible pedestrian route leading to the beach by local jurisdiction if not within State Road right-ofway.	Near Term	\$\$-\$\$\$
	E. Lack of Beach Parking	Little to no beach parking areas near beach access points; Vacant parcels located near beach access points	Convert the vacant parcels to formal beach parking areas and couple with a mid-block crossing improvement to concentrate pedestrian crossings at a single location.	Near/Long Term	\$\$-\$\$\$

4. The fourth step in the process is to review the situation for any specific issues that stand out. In the case of General Issue A, there is only one specific issue. This specific issue describes what is occurring in the problem statement.

	Pedestrian Issues and Countermeasures							
Location	General Issue	Specific Issue	Countermeasure	Potential Implementation Timeframe	Relative Cost			
			Install pedestrian warning signage (sign W11-2 in the MUTCD) at these locations to inform drivers of pedestrian activity. To reduce potential for sign pollution, approved colored pavement or transverse rumble strips could be utilized leading up to the intersection to warn drivers they are approaching an intersection with a concentration of pedestrian activity.	Maintenance	\$			
Beach Access Point	A. Mid-Block Pedestrian Crossings/Crashes	Beach access points where there is a concentration of pedestrian activity or crash history/frequency	Tier 1 Suggestions Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) Stripe the crosswalk with special emphasis crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346 Install advanced pedestrian warning signage (W11-2 and W16-9P) consistent with sheet 10 of the FDOT Design Index 17346 Install lighting on either side of the crosswalk Tier 2 Suggestions Provide a median refuge island for pedestrians in the TWLTL Replace the standard yellow background pedestrian warning signs with those having the fluorescent yellow-green background with Type 11 sheeting Tier 3 Suggestions Provide an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk where speed limit exceeds 40 MPH (MUTCD Section 3B.18) A higher tier could be implemented if the desired performance (crash mitigation/reduction and/or vehicle yield compliance) was not obtained with the current tier suggestions	Near/Long Term				
	B. Landscape Maintenance	Vegetation alongside roadway near beach access point reduces visibility of crossing pedestrians	Coordinate with maintenance crews to trim the obstructions and encourage regular landscape maintenance near the access point	Maintenance	\$			
	C. Beach Access Signage	Current beach access signs are worn/faded; No SR A1A corridor consistency for beach access signage in Volusia/Flagler Counties	Create corridor consistency by performing beach access signage project for entire length of SR A1A. This could include signing the vehicular and pedestrian beach access points numerically from south to north so they are easily identifiable.	Near Term	\$-\$\$			
	D. Connectivity from Roadway to Beach	No sidewalk access from the roadway or the sidewalk is in disrepair	Install/repair sidewalk to create accessible pedestrian route leading to the beach by local jurisdiction if not within State Road right-ofway.	Near Term	\$\$-\$\$\$			
	E. Lack of Beach Parking	Little to no beach parking areas near beach access points; Vacant parcels located near beach access points	Convert the vacant parcels to formal beach parking areas and couple with a mid-block crossing improvement to concentrate pedestrian crossings at a single location.	Near/Long Term	\$\$-\$\$\$			

River to Sea TPO 5

5. The final step is to review the suggested engineering countermeasures for the identified issue(s) and determine next steps. In the case of mid-block pedestrian crashes, two countermeasures are applicable: 1. Installing pedestrian warning signage to inform drivers of pedestrian activity, or 2. Conducting a mid-block crossing study and possibly installing a mid-block crosswalk with an active warning device. The **Implementation Strategies** section of the report outlines various methods a countermeasure can become an implementable safety project.

	Pedestrian Issues and Countermeasures							
Location	General Issue	Specific Issue	Countermeasure	Potential Implementation Timeframe	Relative Cost			
	A. Mid-Block Pedestrian Crossings/Crashes	destrian ashes 1. Beach access points where there is a concentration of pedestrian activity or crash history/frequency	Install pedestrian warning signage (sign W11-2 in the MUTCD) at these locations to inform drivers of pedestrian activity. To reduce potential for sign pollution, approved colored pavement or transverse rumble strips could be utilized leading up to the intersection to warn drivers they are approaching an intersection with a concentration of pedestrian activity.	Maintenance	\$			
Beach Access Point			Tier 1 Suggestions Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) Stripe the crosswalk with special emphasis crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346 Install advanced pedestrian warning signage (W11-2 and W16-9P) consistent with sheet 10 of the FDOT Design Index 17346 Install lighting on either side of the crosswalk Tier 2 Suggestions Provide a median refuge island for pedestrians in the TWLTL Replace the standard yellow background pedestrian warning signs with those having the fluorescent yellow-green background with Type 11 sheeting Tier 3 Suggestions Provide an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk where speed limit exceeds 40 MPH (MUTCD Section 3B.18)	Near/Long Term	\$5-\$\$\$			
			A higher tier could be implemented if the desired performance (crash mitigation/reduction and/or vehicle yield compliance) was not obtained with the current tier suggestions					
	B. Landscape Maintenance	Vegetation alongside roadway near beach access point reduces visibility of crossing pedestrians	Coordinate with maintenance crews to trim the obstructions and encourage regular landscape maintenance near the access point	Maintenance	\$			
	C. Beach Access Signage	Current beach access signs are worn/faded; No SR A1A corridor consistency for beach access signage in Volusia/Flagler Counties	Create corridor consistency by performing beach access signage project for entire length of SR A1A. This could include signing the vehicular and pedestrian beach access points numerically from south to north so they are easily identifiable.	Near Term	\$-\$\$			
	D. Connectivity from Roadway to Beach	No sidewalk access from the roadway or the sidewalk is in disrepair	Install/repair sidewalk to create accessible pedestrian route leading to the beach by local jurisdiction if not within State Road right-ofway.	Near Term	\$\$-\$\$\$			
	E. Lack of Beach Parking	Little to no beach parking areas near beach access points; Vacant parcels located near beach access points	Convert the vacant parcels to formal beach parking areas and couple with a mid-block crossing improvement to concentrate pedestrian crossings at a single location.	Near/Long Term	\$\$-\$\$\$			

River to Sea TPO 6

	Pedestrian Issues and Countermeasures						
Location	General Issue	Specific Issue	Countermeasure	Potential Implementation Timeframe	Relative Cost		
	A. Pedestrian Concentration Areas	Areas where there is a concentration of pedestrian activity or crash history/frequency	Install pedestrian warning signage (sign W11-2 in the MUTCD) at these locations to inform drivers of pedestrian activity, these signs could have the fluorescent yellow-green background to make them stand out. To reduce potential for sign pollution, approved colored pavement or transverse rumble strips could be utilized instead of signage to warn drivers they are entering a pedestrian activity area.	Maintenance	\$		
	B. Existing Marked Mid- Block Crossings	Marked crosswalks across SR A1A not having active traffic control to signify when pedestrians are utilizing crosswalk; History of pedestrian crashes at existing marked crosswalk across SR A1A	Perform a study to assess the design feasibility for installing a Rectangular Rapid Flashing Beacon (RRFB) at the existing marked crossing.	Near Term	\$\$		
		1. Trip hazards (e.g. utility wiring, sprinkler line) or clutter within sidewalk	Remove trip hazard or clutter obstruction(s) in sidewalk.	Maintenance	\$		
		2. Sidewalk is uneven or broken	Repair/reconstruct the sidewalk in accordance with section R302.7.2 of the ADA PROWAG guidance, which states vertical surface discontinuities shall be 0.5" maximum.	Maintenance/Near Term	\$\$		
	3. Sidewalk does not have 4' minimum continuous width, both for a length of sidewalk or at a single point around an obstruction 4. Landscape buffer strip between sidewalk and roadway is not permeable, creating ponding across sidewalk 5. Cross slope of sidewalk is greater than the 2 percent maximum 3. Sidewalk does not have 4' minimum Repair/reconstruct the sidewalk to width per section R302.3 of the AD width per section R302.3 of	Repair/reconstruct the sidewalk to provide a 4' minimum continuous width per section R302.3 of the ADA PROWAG guidance.	Maintenance/Near Term	\$-\$\$\$			
		and roadway is not permeable, creating	Remove the landscape buffer strip and replace with extra concrete, creating a wider sidewalk area.	Maintenance/Near Term	\$-\$\$\$		
Roadway Section		-	Reconstruct the sidewalk to provide a walking surface that meets the 2 percent maximum cross slope per section R302.6 of the ADA PROWAG guidance.	Near/Long Term	\$\$-\$\$\$		
Section	D. No Pedestrian Refuge Islands/Marked Crossings between Signals	1. Sections with signal or marked crosswalk spacing >1/4 of a mile; Sections with no raised median for pedestrian refuge	Tier 1 Suggestions Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) Stripe the crosswalk with special emphasis crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346 Install advanced pedestrian warning signage (W11-2 and W16-9P) consistent with sheet 10 of the FDOT Design Index 17346 Install lighting on either side of the crosswalk Tier 2 Suggestions Provide a median refuge island for pedestrians in the TWLTL Replace the standard yellow background pedestrian warning signs with those having the fluorescent yellow-green background with Type 11 sheeting Tier 3 Suggestions Provide an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk where speed limit exceeds 40 MPH (MUTCD Section 3B.18) A higher tier could be implemented if the desired performance (crash mitigation/reduction and/or vehicle yield compliance) was not obtained with the current tier suggestions	Near/Long Term	\$\$-\$\$\$		
		Sections having a center two-way left- turn lane or no refuge areas for the pedestrian to cross the roadway between signalized intersections	Review potential locations for spot medians, located in places where they do not restrict turning movements at minor streets or major driveways (this is not a marked pedestrian crossing). Perform a study to assess the feasibility of removing the center two-way left-turn lane and constructing a raised median.	Near/Long Term	\$\$-\$\$\$		

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	Pedestrian Issues and Countermeasures						
Location	General Issue	Specific Issue	Countermeasure	Potential Implementation Timeframe	Relative Cost		
	E. Pedestrians Crossing Roadway	Pedestrians not utilizing marked crosswalks or crossing at unmarked locations, locations with a history of pedestrian crossing crashes	Install pedestrian channelization barrier per FDOT Standard Index D804 or landscaping prohibiting pedestrian crossing movements to channelize pedestrians to the nearest marked crossing location.	Near/Long Term	\$-\$\$\$		
		2. >2 lane sections (with or without a center two-way left-turn lane) with pedestrian crash history and excess vehicular capacity	Perform lane elimination study based on the Statewide Lane Elimination Guidance FDOT Central Office released in February 2014.	Near/Long Term	\$\$		
	F. Vehicular Speeding	Sections of SR A1A with a history of vehicular speeding and/or pedestrian crashes involving speeding vehicles	Study section for possible complete streets type improvements that will help reduce vehicular speeds, such as a reduction in pavement widths or the addition of vertical elements (i.e. curb, chicanes). See Plans Preparation Manual Volume 1, Chapter 21 - Transportation Design for Livable Communities for design criteria related to complete streets improvements.	Near/Long Term	\$\$		
		1. Burnt out light bulbs	Contact the owner/maintainer of the lighting system to replace burnt out bulbs.	Maintenance	\$		
Roadway		Inconsistent lighting levels; Light poles spaced unevenly	Conduct field measurements of existing lighting levels to evaluate lighting uniformity levels and add lighting where necessary. Install light poles on the east side that are angled westerly away from the beach. These light poles cast their light to the west and illuminate the roadway as needed. The light bulb is not seen by the turtles due to the angle and orientation of the light fixture. Implement a lighting plan for the time the sea turtle nesting season is not active as roadway lighting levels should not be reduced at this time. Implement pedestrian-level lighting, with less visibility from the beach, to supplement areas where street lighting is not able to provide adequate lamination. Replace obsolete lighting with full cut-off LED luminaires.	Near/Long Term	\$\$-\$\$\$		
Section	F. Section Lighting	3. No lighting present	Perform lighting justification study along section and provide lighting based on results of study. Install light poles on the east side that are angled westerly away from the beach. These light poles cast their light to the west and illuminate the roadway as needed. The light bulb is not seen by the turtles due to the angle and orientation of the light fixture. Implement a lighting plan for the time the sea turtle nesting season is not active as roadway lighting levels should not be reduced at this time. Implement pedestrian-level lighting, with less visibility from the beach, to supplement areas where street lighting is not able to provide adequate lamination. Replace obsolete lighting with full cut-off LED luminaires.	Near/Long Term	\$\$-\$\$\$		
	4. Low lighting levels in areas wi is present and evenly spaced	4. Low lighting levels in areas where lighting is present and evenly spaced	If lighting levels along a section meet standard but nighttime crashes are occurring, change from high pressure sodium lighting to LED lighting. The LED lighting could be programmed so it functions at a lower lighting levels during turtle season. Pedestrian level lighting could also be provided in lieu of overhead street lighting.	Long Term	\$\$-\$\$\$		
	G. School Zones	at intersections	Add/update signage and/or update pavement markings at intersections consistent with FDOT Standard Index 17344 and MUTCD Section 2A.07-08	Maintenance/Near Term	\$-\$\$		
	C. 30301 20 1103	Sidewalk connectivity lacking between school and roadway or between roadway and surrounding neighborhoods	Construct sidewalks where missing; For State roadways, reference the FDOT gaps list in the Space Coast TPO's State of the System report;	Near/Long Term	\$-\$\$\$		
	H. No Sidewalks	No sidewalks present in area with pedestrian activity	Construct sidewalks where missing.	Near/Long Term	\$\$-\$\$\$		

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		Pedestrian Is	sues and Countermeasures		
Location	General Issue	Specific Issue	Countermeasure	Potential Implementation Timeframe	Relative Cost
	A. Missing/Faded Crosswalk Markings	Missing crosswalk markings to facilitate pedestrian movements Crosswalk markings are faded or are the old style of marking	Add/restripe special emphasis crosswalk markings consistent with sheet 9 of FDOT Design Standard Index 17346.	Maintenance/Near Term	\$-\$\$
	B. Conflicts between Pedestrians and Vehicles	Crosswalks with a pedestrian crash history	Add TURNING VEHICLES YIELD TO PEDESTRIANS (sign R10-15 in the MUTCD) signage at the intersection crosswalk, could be static single post mounted sign, static sign mounted on a mast arm, or an electronic "blank-out" sign mounted on a mast arm.	Maintenance/Near Term	\$-\$\$
		1. Burnt out light bulbs	Contact the owner/maintainer of the lighting system to replace burnt out bulbs.	Maintenance	\$
	C. Intersection Lighting	Intersection does not have lighting or lighting does not illuminate all marked crosswalks	Add/upgrade intersection lighting according to section 7.3.2.2 of the FDOT Plans Preparation Manual. Implement a lighting plan for the time the sea turtle nesting season is not active as roadway lighting levels should not be reduced at this time.	Near Term	\$\$
	D. Decorative Pavers add within Crosswalk De	Crosswalk markings do not properly adhere to decorative pavers at crosswalk; Decorative pavers distort crosswalk or turning area visibility	Remove decorative pavers within the crosswalks and install material that thermoplastic crosswalk markings will properly adhere to. Possibly redesign the intersection and change the pattern to following driving lanes. Change the color palette to contrasting colors so the crosswalk is visible. Special emphasis markings as shown on sheet 9 of Design Index 17346 should be used at signalized intersections.	Maintenance/Near Term	\$-\$\$
		1. Push button pole not accessible or <10' away from curb ramp	Install pole that is accessible or <10' from curb ramp, as defined in section 4E.08 of the 2009 MUTCD.	Maintenance/Near Term	\$-\$\$
		Detectable warning surfaces for vision impaired pedestrians damaged/missing	Install/replace detectable warning surfaces per FDOT Design Standard Index 304.		\$
Signalized Intersection		Need for accessible (audible) pedestrian signals	Install accessible (audible) pedestrian signals per section R209 of the ADA PROWAG guidance or section 3.7 from the FDOT Traffic Engineering Manual.	Maintenance/Near Term	\$-\$\$
		Pedestrian clearance time (flashing don't walk) does not meet the minimum time (crosswalk length multiplied by a 3.5 feet/second walking speed)	Increase the pedestrian clearance time based on a 3.5 feet/second walking speed, as defined in section 4E.06 of the 2009 MUTCD.	Maintenance	\$
			If not working properly, dispatch a signal technician to review if all pedestrian push buttons are working properly.	Maintenance	\$
	E. General ADA Issues	5. Pedestrian push buttons	To meet guidance in section 4E.08 of the MUTCD, push button faces need to be parallel with the crosswalk to be used.	Maintenance/Near Term	\$-\$\$
		6. Pedestrian push button signage	Replace worn/faded/outdated push button signage with a new push button sign (R10-3i).	Maintenance	\$
			Replace pedestrian push button signage to be consistent with the street name signage at signalized intersections.	Maintenance	\$
		7. Crosswalk is not perpendicular to roadway or multiple crosswalks may come to the same curb ramp which is pointing to the middle of the intersection	Orient the crosswalk so it is perpendicular to the roadway, reducing the crossing distance for pedestrians.	Near/Long Term	\$\$-\$\$\$
		8. Multiple crosswalks come to the same curb ramp which is pointing to the middle of the intersection	Reconstruct so there are separate curb ramps for each of the crosswalks facing perpendicular to the roadway, providing a clear walking direction for visually impaired pedestrians.	Near/Long Term	\$\$-\$\$\$
	F. Pedestrian Crossing Time	Crash history between pedestrians and turning (left or right) vehicles	Implement a leading pedestrian interval, which would delay the turning green phase until after the pedestrians have had a chance to begin crossing (note some controller cabinets cannot perform this type of programming).	Maintenance/Near Term	\$-\$\$
		2. No countdown pedestrian signals	Upgrade the pedestrian signal to have the countdown feature as defined in section 4E.07 of the 2009 MUTCD.	Maintenance/Near Term	\$-\$\$

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	Pedestrian Issues and Countermeasures						
Location	General Issue	Specific Issue	Countermeasure	Potential Implementation Timeframe	Relative Cost		
	A. Vehicular Sight Distance	Vehicle cannot see pedestrian utilizing sidewalk at current stop bar location	Trim/remove shrubbery, if located on private property work with property owner to trim/remove the shrubbery. Perform a study to review sight distance triangle at the intersection, remove obstructions within sight triangle or move the stop bar closer to the street.	Maintenance Maintenance/Near Term	\$		
	B. Missing/Faded Crosswalk Markings and Stop Bar	Missing crosswalk markings to facilitate pedestrian movements or missing stop bar Crosswalk markings and stop bars are faded or are the old style of marking	Add standard or special emphasis crosswalk markings (determined on case-by-case basis) across the minor street consistent with sheet 9 of the FDOT Design Standard Index 17346.	Maintenance/Near Term	\$-\$\$		
	Pedestrians and Vehicles	Minor streets with pedestrian crash history	Add pedestrian warning signage that would draw the motorist's attention to the presence of pedestrians on the sidewalk in both directions. To reduce potential for sign pollution, approved colored pavement or transverse rumble strips could be utilized leading up to the intersection to warn drivers they are approaching an intersection with a concentration of pedestrian activity.	Maintenance/Near Term	\$-\$\$		
	D. Missing Detectable Warning Surfaces	Detectable warning surfaces for vision impaired pedestrians damaged/missing	Install/replace detectable warning surfaces per FDOT Design Standard Index 304.	Maintenance	\$		
	E. Steep Curb Ramps	1. Curb ramps have running slopes greater than 8.3 percent	Reconstruct the curb ramp to meet section R304.3.2 of the ADA PROWAG.	Maintenance/Near Term	\$-\$\$		
Minor Street Intersection			Install pedestrian warning signage (sign W11-2 in the MUTCD) at these locations to inform drivers of pedestrian activity. To reduce potential for sign pollution, approved colored pavement or transverse rumble strips could be utilized leading up to the intersection to warn drivers they are approaching an intersection with a concentration of pedestrian activity.	Maintenance	\$		
	F. Pedestrian Crossings/Crashes	Minor street intersections where there is a concentration of pedestrian activity or crash history/frequency crossing the major roadway	Tier 1 Suggestions Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) Stripe the crosswalk with special emphasis crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346 Install advanced pedestrian warning signage (W11-2 and W16-9P) consistent with sheet 10 of the FDOT Design Index 17346 Install lighting on either side of the crosswalk Tier 2 Suggestions Provide a median refuge island for pedestrians in the TWLTL Replace the standard yellow background pedestrian warning signs with those having the fluorescent yellow-green background with Type 11 sheeting Tier 3 Suggestions Provide an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk where speed limit exceeds 40 MPH (MUTCD Section 3B.18) A higher tier could be implemented if the desired performance (crash mitigation/reduction and/or vehicle yield compliance) was not obtained with the current tier suggestions	Near/Long Term	\$\$-\$\$\$		
	G. No Sidewalks	No sidewalk connectivity from major street back to businesses/neighborhoods along minor street	Construct sidewalks along minor streets where missing to provide connectivity into neighborhoods and commercial developments.	Near/Long Term	\$-\$\$\$		

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		Pedestrian Is	sues and Countermeasures		
Location	General Issue	Specific Issue	Countermeasure	Potential Implementation Timeframe	Relative Cost
	A. No Crosswalk Markings	At major driveways with a concentration of pedestrian activity or crash history/frequency and no marked crosswalk	Add standard or special emphasis crosswalk markings (determined on case-by-case basis) across the minor street consistent with sheet 9 of the FDOT Design Standard Index 17346.	Maintenance/Near Term	\$-\$\$
	B. Conflicts between Pedestrians and Vehicles	At driveways with a concentration of pedestrian activity or crash history/frequency	Add pedestrian warning signage that would draw the motorist's attention to the presence of pedestrians on the sidewalk in both directions. To reduce potential for sign pollution, approved colored pavement or transverse rumble strips could be utilized leading up to the intersection to warn drivers they are approaching an intersection with a concentration of pedestrian activity.	Maintenance/Near Term	\$-\$\$
	C Vahiadas Siaha	4 Mahida ayan karana da katan attista	Trim/remove shrubbery, if located on private property work with property owner to trim/remove the shrubbery.	Maintenance	\$
Driveway	C. Vehicular Sight Distance	Vehicle cannot see pedestrian utilizing sidewalk at current stop bar location	Perform a study to review sight distance triangle at the intersection, remove obstructions within sight triangle or move the stop bar closer to the street.	Maintenance/Near Term	\$
	D. Fast Turning Vehicles	Vehicles making fast turning movements into/out of driveways; Vehicles not slowing down enough to see pedestrians/bicyclists on sidewalk	Perform driveway reconstruction during the roadway's next 3R project to reduce curb return radii on one/both of the corners of the driveway.	Near/Long Term	\$-\$\$\$
	E. Pedestrian Exposure on Sidewalk	Large areas of pedestrian exposure across driveways	Perform driveway reconstruction during the roadway's next 3R project to reduce the driveway widths down to the 36' maximum per FDOT Standard Index 515.	Near/Long Term	\$-\$\$\$
	on sidewark	High driveway frequency increases pedestrian exposure on sidewalk	Perform driveway consolidation during potential redevelopment or during the roadway's next 3R project, where feasible.	Near/Long Term	\$-\$\$\$
	F. No Sidewalks	No sidewalk connectivity from major street back to businesses accessed by driveways	Construct sidewalks along driveways where missing to provide connectivity into commercial developments.	Near/Long Term	\$-\$\$\$
	G. Sidewalk Slope Across Driveway	Sidewalk slope does not meet standard because it merges with the slope of the driveway	Perform driveway reconstruction during the roadway's next 3R project to provide a level path for the sidewalk and meet ADA guidance.	Near/Long Term	\$\$-\$\$\$

		Pedestrian Is	sues and Countermeasures		
Location	General Issue	Specific Issue	Countermeasure	Potential Implementation Timeframe	Relative Cost
			Install pedestrian warning signage (sign W11-2 in the MUTCD) at these locations to inform drivers of pedestrian activity. To reduce potential for sign pollution, approved colored pavement or transverse rumble strips could be utilized leading up to the intersection to warn drivers they are approaching an intersection with a concentration of pedestrian activity.	Maintenance	\$
Beach Access Point	A. Mid-Block Pedestrian Crossings/Crashes	Beach access points where there is a concentration of pedestrian activity or crash history/frequency	Tier 1 Suggestions Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) Stripe the crosswalk with special emphasis crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346 Install advanced pedestrian warning signage (W11-2 and W16-9P) consistent with sheet 10 of the FDOT Design Index 17346 Install lighting on either side of the crosswalk Tier 2 Suggestions Provide a median refuge island for pedestrians in the TWLTL Replace the standard yellow background pedestrian warning signs with those having the fluorescent yellow-green background with Type 11 sheeting Tier 3 Suggestions Provide an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk where speed limit exceeds 40 MPH (MUTCD Section 3B.18) A higher tier could be implemented if the desired performance (crash mitigation/reduction and/or vehicle yield compliance) was not obtained with the current tier suggestions	Near/Long Term	\$\$-\$\$\$
	B. Landscape Maintenance	Vegetation alongside roadway near beach access point reduces visibility of crossing pedestrians	Coordinate with maintenance crews to trim the obstructions and encourage regular landscape maintenance near the access point	Maintenance	\$
	C. Beach Access Signage	Current beach access signs are worn/faded; No SR A1A corridor consistency for beach access signage in Volusia/Flagler Counties	Create corridor consistency by performing beach access signage project for entire length of SR A1A. This could include signing the vehicular and pedestrian beach access points numerically from south to north so they are easily identifiable.	Near Term	\$-\$\$
	D. Connectivity from Roadway to Beach	No sidewalk access from the roadway or the sidewalk is in disrepair	Install/repair sidewalk to create accessible pedestrian route leading to the beach by local jurisdiction if not within State Road right-of-way.	Near Term	\$\$-\$\$\$
	E. Lack of Beach Parking	Little to no beach parking areas near beach access points; Vacant parcels located near beach access points	Convert the vacant parcels to formal beach parking areas and couple with a mid-block crossing improvement to concentrate pedestrian crossings at a single location.	Near/Long Term	\$\$-\$\$\$
	A. Missing Signage	No Votran signage to let a pedestrian know a bus stop is present	Install Votran signage at bus stop location.	Maintenance	\$
Bus Stop	B. Bus Stop Location	Bus stop location needs to be adjusted to better align with land uses and/or beach access points	Review bus stop locations and move the bus stop so it is closer to major commercial/residential land uses, signalized intersections, or beach access points. If bus stops are located mid-block (between signalized intersections), review if a pedestrian crossing treatment should also be installed.	Maintenance/Near Term	\$-\$\$
	C. Missing Pedestrian Facilities	Bus stop does not have paved boarding and alighting area, pedestrian level lighting	Provide a 5' x 8' bus stop landing pad at each bus stop per section R308.1.1.1 of the ADA PROWAG. Add street lighting at or near the bus stop.	Maintenance/Near Term	\$-\$\$

		Bicycle Issues a	nd Countermeasures		
Location	General Issue	Specific Issue	Countermeasure	Potential Implementation Timeframe	Relative Cost
	A. Vehicular Speeding	Sections of SR A1A with a history of vehicular speeding and/or bicycle crashes involving speeding vehicles	Study section for possible complete streets type improvements that will help reduce vehicular speeds, such as a reduction in pavement widths or the addition of vertical elements (i.e. curb, chicanes). See Plans Preparation Manual Volume 1, Chapter 21-Transportation Design for Livable Communities for design criteria related to complete streets improvements.	Near/Long Term	\$\$-\$\$\$
		No bicycle lanes or paved shoulder; No opportunity to add bicycle lanes; Section has 35 mph or less posted speed	Install BIKES MAY USE FULL LANE (sign R4-11 in the MUTCD) signage mounted on single posts along the side of the roadway. Shared lane markings (per sheets 1 and 2 in FDOT Standard Index 17347) could also be installed along with the signage. Encourage bicyclists to utilize parallel bicycle routes if one is provided nearby, this could be coupled with an education/outreach program on appropriate places to ride bicycles.	Maintenance	\$
Roadway Segment		No bicycle lane markings on existing paved shoulder	Formalize the paved shoulder by adding bicycle lane markings per FDOT Design Standard Index 17347, "keyholes" (sheet 5 of 17347) should be installed at right turn locations (if not currently present).	Near/Long Term	\$\$-\$\$\$
	B. Bicycle Facilities	Bicycle lane connectivity surrounding study location	Review bicycle lane connectivity north/south of the study section and on adjoining roadways to verify proposed improvements are appropriate and connect to adjacent roadway sections.	Near Term	\$
		Standard bicycle lane/shoulder is present but space is available or lane widths can be reduced to install buffered bicycle lanes; High speed sections where bicycle lanes are present	Expand the current bicycle lane to be a seven foot buffered bicycle lane (5' wide bike lane with a 2' striped buffer), "keyholes" should be installed at right turn locations (if not currently present).	Near/Long Term	\$\$-\$\$\$
		5. >2 lane sections (with or without a center two-way left-turn lane) with no bicycle lanes, bicycle crash history, and excess vehicular capacity	Perform lane elimination study based on the Statewide Lane Elimination Guidance FDOT Central Office released in February 2014.	Near/Long Term	\$\$-\$\$\$
		6. No bicycle lanes or paved shoulder	Add pavement to edge of roadway to provide a bicycle facility, preferably 7' for a buffered bicycle lane.	Long Term	\$\$-\$\$\$
		but space is available to include bicycle facilities	Construct a 10'-12' multi-use path on one or both sides of roadway to facilitate bicycle as well as pedestrian traffic if adding pavement to roadway is not a feasible option.	Long Term	\$\$-\$\$\$

		Bicycle Issues a	nd Countermeasures		
Location	General Issue	Specific Issue	Countermeasure	Potential Implementation Timeframe	Relative Cost
		1. Burnt out light bulbs	Contact the owner/maintainer of the lighting system to replace burnt out bulbs.	Maintenance	\$
		2. Inconsistent lighting levels; Light poles spaced unevenly	levels to evaluate lighting uniformity levels and add lighting where necessary. Install light poles on the east side that are angled westerly away from the beach. These light poles cast their light to the west and illuminate the roadway as needed. The light bulb is not seen by the turtles due to the angle and orientation of the light fixture. Implement a lighting plan for the time the sea turtle nesting season is not active as roadway lighting levels should not be reduced at this time. Implement pedestrian-level lighting, with less visibility from the beach, to supplement areas where street lighting is not able to provide adequate lamination. Replace obsolete lighting with full cut-off LED	Near/Long Term	\$\$-\$\$\$
Roadway Segment	C. Corridor Lighting	3. No lighting present	Perform lighting justification study along section and provide lighting based on results of study. Install light poles on the east side that are angled westerly away from the beach. These light poles cast their light to the west and illuminate the roadway as needed. The light bulb is not seen by the turtles due to the angle and orientation of the light fixture. Implement a lighting plan for the time the sea turtle nesting season is not active as roadway lighting levels should not be reduced at this time. Implement pedestrian-level lighting, with less visibility from the beach, to supplement areas where street lighting is not able to provide adequate lamination. Replace obsolete lighting with full cut-off LED luminaires.	Near/Long Term	\$\$-\$\$\$
		Low lighting levels in areas where lighting is present and evenly spaced	If lighting levels along a section meet standard but nighttime crashes are occurring, change from high pressure sodium lighting to LED lighting. The LED lighting could be programmed so it functions at a lower lighting levels during turtle season. Pedestrian level lighting could also be provided in lieu of overhead street lighting.	Long Term	\$\$-\$\$\$
Signalized Intersections	A. Bicycle Facilities	No bicycle lane keyholes between outside through lane and right turn lane	Install "keyholes" for bicycle lane per FDOT Design Standard Index 17347.	Maintenance/Near Term	\$-\$\$

		Bicycle Issues a	nd Countermeasures		
Location	General Issue	Specific Issue	Countermeasure	Potential Implementation Timeframe	Relative Cost
	A Vehicular Sight	Vehicle cannot see bicycle utilizing	Trim/remove shrubbery, if located on private property work with property owner to trim/remove the shrubbery.	Maintenance	\$
	Distance	sidewalk at current stop bar location	Perform a study to review sight distance triangle at the intersection, remove obstructions within sight triangle or move the stop bar closer to the street.	Maintenance/Near Term	\$
Minor Street Intersection	B. Conflicts between Bicyclists and Vehicles	Minor streets with bicycle crash history	Add bicyclist warning signage (W11-1 with W16-9P) that would draw the motorist's attention to the presence of bicycles on the sidewalk in both directions. To reduce potential for sign pollution, approved colored pavement or transverse rumble strips could be utilized leading up to the intersection to warn drivers they are approaching an intersection with a concentration of bicycle activity.	Maintenance	\$
	C. Bicycle Facilities	No bicycle lane keyholes between outside through lane and right turn lane (if right turn lane is present)	Install "keyholes" for bicycle lane per FDOT Design Standard Index 17347.	Maintenance/Near Term	\$-\$\$
	A. Conflicts between Bicyclists and Vehicles	1. Driveways with bicycle crash history	Add bicyclist warning signage (W11-1 with W16-9P) that would draw the motorist's attention to the presence of bicycles on the sidewalk in both directions. To reduce potential for sign pollution, approved colored pavement or transverse rumble strips could be utilized leading up to the intersection to warn drivers they are approaching an intersection with a concentration of bicycle activity.	Maintenance/Near Term	\$-\$\$
	B. Vehicular Sight	Vehicle cannot see bicycle utilizing	Trim/remove shrubbery, if located on private property work with property owner to trim/remove the shrubbery.	Maintenance	\$
Driveway	Distance	sidewalk at current stop bar location	Perform a study to review sight distance triangle at the intersection, remove obstructions within sight triangle or move the stop bar closer to the street.	Maintenance/Near Term	\$
	C. Fast Turning Vehicles	Vehicles making fast turning movements into/out of driveways; Vehicles not slowing down enough to see bicyclists on sidewalk	Perform driveway reconstruction during the roadway's next 3R project to reduce curb return radii on one/both of the corners of the driveway.	Near/Long Term	\$-\$\$\$
	D. Bicycle Exposure on Sidewalk	Large areas of bicycle exposure across driveways	Perform driveway reconstruction during the roadway's next 3R project to reduce the driveway widths down to the 36' maximum per FDOT Standard Index 515.	Near/Long Term	\$-\$\$\$
		High driveway frequency increases bicycle exposure on sidewalk	Perform driveway consolidation during potential redevelopment or during the roadway's next 3R project, where feasible.	Near/Long Term	\$-\$\$\$

Systemic Countermeasure Matrix - Education/Enforcement

Countermeasure Type	Target Group	General Issue	Specific Issue	Countermeasure
		Pedestrians/Bicyclists Not Utilizing Marked Crosswalks or Crossing at Unmarked Locations	Pedestrians/bicyclists crossing roadways between signals at unmarked locations or crossing at intersections where no crosswalk markings are present.	Outreach program to educate pedestrians and bicyclists about utilizing marked crosswalks, signalized crossings, legal crossing locations, helmets, etc. This outreach program could also be utilized to teach pedestrians and bicyclists about how to cross at signalized/unsignalized intersections without marked crosswalks. Program could also be coupled with the River to Sea TPO, local law enforcement, Bike Walk Central Florida/Best Foot Forward, the FDOT Alert Today Alive Tomorrow campaign.
		2. Tourist Familiarity with Florida Pedestrian and Bicycle Traffic Laws	Pedestrians and bicyclists who are non- residents fail to obey pedestrian/bicycle traffic laws.	Outreach program at hotels and bicycle rental establishments to provide cards and other information about walking and biking safety. Signage may indicate law/instruction at key locations.
	A. Pedestrians and Bicyclists	3. Adult Pedestrians and Bicyclists	Adult pedestrians and bicyclists fail to follow safe practices when on, near, or crossing roadways.	Outreach program at hotels and bicycle rental establishments to provide rack cards and other information about walking and biking safety. Signage may indicate law/instruction at key locations.
		4. Lack of Lighting Along Roadway	Drivers unable to see bicyclists and pedestrians due insufficient or no street lighting.	Consider an education program promoting nighttime pedestrian/bicycle safety by distributing and/or installing free bike lights/reflectors and making pedestrians/bicyclists aware that they should wear reflective clothing if they are traveling at night. This may be a program in partnership with River to Sea TPO, law enforcement, Bike Walk Central Florida/Best Foot Forward, and/or FDOT's Alert Tonight Alive Tomorrow program.
		5. Impaired (Drug/Alcohol) Pedestrians/Bicyclists	Locations where crashes involving impaired pedestrians/bicyclists are occurring; and/or Locations where alcohol establishments are across the street from beach.	Education program to target bars/alcohol establishments, some type of visual plaques letting people know the dangers of impaired walking/cycling. Couple this with law enforcement program that engages road users using alcohol/drugs.
Education		Bicyclists Riding on Sidewalk Against Flow of Traffic Traffic	Bicyclists riding on sidewalks in high traffic volume/minor street/driveway density areas; and/or Areas with crash history/frequency at minor streets/driveways with bicyclists riding on sidewalk against the flow of traffic.	Outreach program to educate bicyclists about the risks associated with riding on the sidewalk against the flow of traffic. Program could be coupled with the FDOT Alert Today, Alive Tomorrow campaign. This could also be taught at a quarterly Cycling Savvy Course in Volusia County, which would need to be started (http://cyclingsavvy.org/). Shops along SR A1A that rent bicycles could hand out cards explaining common pedestrian/bicycle laws, especially to those visiting from outside the state of Florida.
	B. Bicyclists	Cyclists Fail to Obey Traffic Laws Applicable to Either Vehicles or Bicyclists	Cyclists ride in the road but do not obey traffic control devices, do not utilize bicycle facilities properly, ride against traffic, misuse sidewalks/crosswalks, do not use lights an helmets, or wear headphones.	Outreach program to provide training to cyclists about all Florida laws that pertain to vehicles and those specifically for bicycles. Program could be coupled with the FDOT Alert Today, or Alive Tomorrow campaign. This could be a grass-roots campaign where it could attend community events and go to common local gathering locations. This could also be taught at a quarterly Cycling Savvy Course in Volusia County, which would need to be started (http://cyclingsavvy.org/). Shops along SR A1A that rent bicycles could hand out cards explaining common pedestrian/bicycle laws, especially to those visiting from outside the state of Florida.
	C. Motorists	Conflicts Between Bicyclists/Pedestrians and Vehicles	Bicyclist or pedestrians traveling in opposite direction of traffic flow on sidewalk. Turning vehicles not yielding to pedestrians/bicyclists at signalized intersections.	driveways. This program could also warn drivers about the dangers of not looking/yielding to pedestrians/bicyclists when making right or left turns at signalized intersections. Program could be coupled with the FDOT Alert Today, Alive Tomorrow campaign in partnership with law enforcement. Social media could be a platform for distributing this message and billboards could be posted along SR A1A with some
		Driver Familiarity with Florida Pedestrian and Bicycle Traffic Laws	Most drivers may not know the traffic laws regarding pedestrians/bicyclists.	When drivers have to renew their license, provide a voluntary survey on pedestrian/bicycle safety/laws that the driver can take. This survey would be able to provide instant feedback on how well the driver knows pedestrian/bicycle safety/laws for the state of Florida. Hopefully through this process, drivers who take the test will learn something they did not know about the various laws.

Systemic Countermeasure Matrix - Education/Enforcement

Countermeasure Type	Target Group	General Issue	Specific Issue	Countermeasure
Education	D. Bicyclists and Motorists	1. Bicyclists Riding in the Roadway	No bicycle lanes or paved shoulder; and/or No opportunity to add bicycle lanes.	Outreach program to provide training to cyclists about riding in the flow of traffic and utilizing full travel lane. Program could also educate drivers on how to pass bicyclists when they take a full lane in the roadway both on multi-lane roadway cross sections and two-lane cross sections. Program could be coupled with the FDOT Alert Today, or Alive Tomorrow campaign. This could be a grass-roots campaign where it could attend community events and go to common local gathering locations. To target motorists specifically, social media could be a platform for distributing this message and billboards could be posted along SR A1A with some type of attention grabbing graphic.
	E. Folks Interested in Teaching Pedestrian/ Bicycle Safety		Not enough people trained in teaching pedestrian/bicycle safety.	Increase available pedestrian/bicycle safety education resources by developing a program to train local people on how to conduct pedestrian/bicycle education program. For example, teachers, parks and recreation staff, transportation professional staff, etc. could be trained on how to conduct programs such as a bicycle rodeo or lead a walking school bus. Program could be coupled with the FDOT Alert Today, Alive Tomorrow campaign because pamphlets, resources, and educational material are already available.
Education/ Enforcement	A. Pedestrians, Bicyclists, and Motorists	1. Conflicts between Road Users and Golf Carts	Golf carts using sidewalks, roadway, and crosswalks.	Outreach program to provide information to those who use golf carts or similar modes of transportation. Consult with other communities where such vehicles are common and use information and materials already developed where possible. This could be a grass-roots campaign where it could attend community events and go to common local gathering locations.
	A. Bicyclists	Cyclists Fail to Obey Traffic Laws Applicable to Either Vehicles or Bicyclists	Cyclists ride in the road but do not obey traffic control devices, do not utilize bicycle facilities properly, ride against traffic, misuse sidewalks/crosswalks, do not use lights an helmets, or wear headphones.	Progressive enforcement (educate, warn, cite); Use "Fair Game Rules" (all road users engaged, some violations are more serious than others); and/or A quarterly Cycling Savvy Course in Volusia County could also be started (http://cyclingsavvy.org/).
	B. Pedestrians	Pedestrians Violate Pedestrian Laws	Pedestrians walk in road, improperly cross, and/or do not obey traffic control devices.	Progressive enforcement (educate, warn, cite); and/or Use "Fair game rules" (all road users engaged, some violations are more serious than others).
	C. Motorists	Motorists Endanger Bicyclists and Pedestrians	Motor vehicles fail to yield ROW, make improper turns, and/or speed.	Progressive enforcement (educate, warn, cite); Use "Fair game rules" (all road users engaged, some violations are more serious than others); and/or Post the fine for vehicles not stopping for pedestrians/bicyclists on the stop sign pole.
Enforcement		2. Speeding Vehicles	Motor vehicles fail to obey posted speed limits.	Use speed feedback signs or speed trailers, increase visible enforcement, and/or progressive enforcement (educate, warn, cite).
Emorcement	D. Pedestrians	1. Non-Resident Pedestrian Familiarity with Florida Laws	Walk in roadway and/or cross improperly.	Progressive enforcement (educate, warn, cite); and/or Use "Fair game rules" (all road users engaged, some violations are more serious than others).
	and Bicyclists	2. Non-Resident Bicyclist Familiarity with Florida Laws	Ride bikes on sidewalk, wrong direction, and/or in unsafe way.	Progressive enforcement (educate, warn, cite); and/or Use "Fair game rules" (all road users engaged, some violations are more serious than others).
	E. Pedestrians, Bicyclists, and	1. Road Users Endanger Others		Daily patrol awareness among all patrol officers through the use of roll call training videos for bike/ped; Progressive enforcement (educate, warn, cite); and/or Use "Fair game rules" (all road users engaged, some violations are more serious than others).
	Motorists	2. Observation of Appropriate Behaviors Among Road Users	Desire to promote appropriate pedestrian/bicycle habits.	Positive reinforcement and positive enforcement and/or coupons for good pedestrian/bicycle behavior given out by law enforcement and school crossing staff.

Systemic Countermeasure Matrix - Education/Enforcement

Countermeasure Type	Target Group	General Issue	Specific Issue	Countermeasure
	F. School Students	1. Inexperienced Vulnerable Road Users	Increase elementary, middle, and high school students awareness about traffic safety laws, both as a pedestrian/bicyclist and as a driver.	School resource officer teaches classes at schools about common laws officers enforce, Include increased emphasis on traffic safety in these classes; and/or Schools could teach class on how to drive/be aware of pedestrians/bicyclists on roadway (high schoolers) and teach pedestrians/bicyclists to be aware of vehicles.
		1. Increase Law	causes of pedestrian and bicycle crashes	Use of NHTSA and FDOT Bike/Ped Law Enforcement Roll Call Videos; Distribution of Florida Bike/Ped law visor cards; and/or Distribution of Florida Bicycle Law Enforcement Guide.
Enforcement	G. Law Enforcement	Law Enforcement Participation percement in Pedestrian and Bicycle th	Officer may be reluctant to engage in pedestrian and bicycle enforcement because they do not understand the cause of crashes and/or applicable laws.	Use of NHTSA and FDOT Bike/Ped Law Enforcement Roll Call Videos; Distribution of Florida Bike/Ped law visor cards; and/or Distribution of Florida Bicycle Law Enforcement Guide.
			Officers may not have opportunity to target pedestrian and bicycle issues because of other priorities.	Participation in High Visibility Enforcement; Dovetail enforcement with related activities (RLR, Speed, Aggressive Driving); and/or Use enforcement decoy operations.
	H. Courts	1. Educate Judges and Hearing Officers	Some Judges and hearing officers don't support	Meet/work with the administrative office of the courts or the chief judge; Show Law Enforcement roll call videos and provide copy of visor cards; and/or Use "Fair Game Rules" and ticket quality violations, particularly where bike and ped statutes are concerned.

Appendix G Suggestions from Nine Safety Field Reviews by Jurisdiction

G - 1

River to Sea TPO

Focus Area	Location	Issue Number	Issue	Suggestion	Responsible Agency	Status	Completed (Y/N)
				SHORT-TERM MAINTENANCE			('/'')
C - Daytona Beach	Mid-Block between Seabreeze Boulevard and University Boulevard	24	Sidewalk Clutter	Consider coordinating with the City of Daytona Beach to either remove the newspaper/magazine stands or move them off the sidewalk so that the effective sidewalk width at those locations is not restricted.	Daytona Beach		
D - Daytona Beach / Ormond Beach	Benjamin Drive Intersection	25	Intersection Sight Distance	Consider trimming the landscaping back and consider conducting a sight distance evaluation to determine the available sight distance at the intersection.	Daytona Beach / Ormond Beach		
A - New Smyrna Beach	Corridor Wide	2	Detectable Warning Surfaces	Consider replacing/installing detectable warning surfaces at major driveways on the south side of the corridor per FDOT Design Standard Index 304.	FDOT		
A - New Smyrna Beach	Corridor Wide	7	Crosswalk Markings	At signalized intersections, consider restriping the crosswalks with special emphasis marked crosswalks as shown on sheet 9 of the FDOT Design Standard Index 17346 during the next resurfacing project. At Cooper Street, consider striping a crosswalk across the stop controlled approach with standard markings as shown on sheet 9 of the FDOT Design Standard Index 17346. Consider restriping the driveway crosswalks with standard crosswalk markings.	FDOT		
A - New Smyrna Beach	Peninsula Avenue Intersection	8	Landscape/Tree Maintenance	As per the date of this report, FDOT submitted a maintenance work order and has since removed the vegetation/canopy so no trees are hanging over the right of way. Regular maintenance to keep the vegetation cut back should be considered around this corner.	FDOT		
A - New Smyrna Beach	Peninsula Avenue Intersection	9	Sidewalk Terminus	The MUTCD does not have a warning sign for the end of a sidewalk, but the PAVEMENT ENDS sign W8-3 could be modified to read SIDEWALK ENDS. A SIDEWALK CLOSED sign R9-9 from section 6F.14 of the MUTCD could also be utilized to inform pedestrians the sidewalk ends. A warning plaque (W16-2aP) reading 200 FT could be installed below the SIDEWALK CLOSED sign to inform pedestrians how far ahead the sidewalk ends. Consider installing the preferred signage on the southwest corner of the Peninsula Avenue intersection to inform pedestrians they need to cross on the west leg crosswalk.	FDOT		
A - New Smyrna Beach	Mid-Block between Peninsula Avenue and Horton Street/Saxon Drive	12	Mid-Block Crosswalk Enhancements	The team discussed the following safety enhancements to be considered at the crossing: Restripe the crosswalk with special emphasis crosswalk markings constitute with sheet 10 of the FDOT Design Index 17346 during the next resurfacing project. Remove the trees located in the median that are immediately adjacent to the crosswalk. Signage improvements – o Move the pedestrian warning signage for the westbound direction so it is not obstructed by the light pole. o Add pedestrian warning signage to the median side for each direction of travel. o Move the advanced pedestrian warning signage approximately 150° closer to the crossing so it is 300° away based on sheet 10 of the FDOT Design Index 17346. Trim back the oak tree on the north side so the north side of the crosswalk is illuminated more than it is today.	FDOT		
A - New Smyrna Beach	Mid-Block between Peninsula Avenue and Horton Street/Saxon Drive	14	Pot Hole Just East of Cooper Street	Consider repairing the roadway in the vicinity of the pot hole area.	FDOT		
A - New Smyrna Beach	Mid-Block between Horton Street/Saxon Drive and E 3rd Avenue	18	Mid-Block Crosswalk	The team discussed the following safety enhancements to be considered at the crossing: Restripe the crosswalk with special emphasis crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346 during the next resurfacing project. Remove the trees located in the median that are immediately adjacent to the crosswalk. Signage improvements— o Add pedestrian warning signage to the median side for each direction of travel. o Move the advanced pedestrian warning signage approximately 100'-125' closer to the crossing so it is 300' away based on sheet 10 of the FDOT Design Index 17346.	FDOT		
A - New Smyrna Beach	E 3rd Avenue Intersection	19	Driveways Near Intersection	Consider moving the NO LEFT TURN sign (R3-2) to the same sign post the stop sign is located on for the south driveway.	FDOT		
B - Daytona Beach Shores / Daytona Beach	Corridor Wide	5	Minor Street Crosswalks and Stop Bars	Consider emphasizing the pedestrian realm across minor street approaches by restriping crosswalk markings as shown on sheet 9 of FDOT Standard Index 17346. Also consider restriping the stop bar as shown on sheets 2 and 4 of FDOT Standard Index 17346 to emphasize where the vehicle needs to stop before making their turning movement. Locations the study team noted during the review included: • Crosswalks at Old Trail Road, Poinsettia Road, Wisteria Road, Bostwick Avenue, and Mobile Avenue; and • Stop bar at Bostwick Avenue.	FDOT		
B - Daytona Beach Shores / Daytona Beach	Corridor Wide Daytona Beach Section	7	Sidewalk Walkability	At the locations where trip hazards are present at inlets, consider beveling/grinding the inlet top near the sidewalk joint to reduce/eliminate the trip hazard. Consider moving the trash cans so they are located off the sidewalk.	FDOT		
B - Daytona Beach Shores / Daytona Beach	Mid-Block between Park Avenue and Botefuhr Avenue	10	Sidewalk Sign Obstruction	Consider reinstalling the sign so the secondary sign either does not project more than 4" into the sidewalk or is greater than 7' above the sidewalk. This may be done by moving the sign off the sidewalk or installing the signs on a taller sign post.	FDOT		
B - Daytona Beach Shores / Daytona Beach	Mid-Block between Park Avenue and Botefuhr Avenue	11	Sight Distance at Bahama House	Consider working with the property owner to trim back or remove the shrubbery to improve sight distance between exiting vehicles and pedestrians/bicyclists approaching the driveway on the sidewalk.	FDOT		
B - Daytona Beach Shores / Daytona Beach	Botefuhr Avenue Intersection	12	Street Name Signage and Pavement Markings	Consider installing an interior illuminated, overhead LED SR A1A street name sign at Botefuhr Avenue, per Table 2A-1 of the MUTCD. Consider striping a stop bar on the westbound approach as shown on sheet 4 of FDOT Standard Index 17346 to emphasize where the vehicle needs to stop on red.	FDOT		
B - Daytona Beach Shores / Daytona Beach	Botefuhr Avenue Intersection	13	Pedestrian Facilities	Consider re-striping the four crosswalk markings with special emphasis crosswalk markings consistent with sheet 9 of the FDOT Design Standard Index 17346. Consider installing detectable warning surfaces at the four curb ramps of the intersection per FDOT Standard Index 304. Contact the maintenance department to fix the countdown timers on the southwest corner for the south leg crosswalk.	FDOT		

Focus Area	Location	Issue Number	Issue	Suggestion SHORT-TERM MAINTENANCE	Responsible Agency	Status	Completed (Y/N)
B - Daytona Beach Shores / Daytona Beach	Mid-Block between Botefuhr Avenue and Silver Beach Avenue	15	Sidewalk Walkability	Consider the following suggestions to address the sidewalk walkability issues between Botefuhr Avenue and Silver Beach Avenue: * Replace the sidewalk panels that are cracked on the east side of SR A1A north of Poinsettia Road. * Reinstall the speed limit sign on the west side of SR A1A north of Wisteria Road by moving the sign off the sidewalk or installing the sign on at latler sign post. * Remove the tie down cable trip hazard on the east side of SR A1A north of Wisteria Road. * Grind down or cut away the remaining protruding metal pole on the east side of SR A1A near Temko Terrace. * Work with the property owner to install a grate that is level with the sidewalk to east side of the near Bostwick Avenue. * For the sidewalk maintenance north of Bostwick Avenue on the west side of SR A1A: * o Consider regular sidewalk maintenance (sweeping debris/sand) along this section. The maintenance may be scheduled regularly or may be performed after a heavy rain event. • Consider reducing the height of landscape strip to be level or just below the sidewalk and replace with new sod. The landscape strip could also be replaced with concrete to create a wider sidewalk in this area. • In lieu of regular sidewalk maintenance by a local jurisdiction, local businesses along the corridor could apply for the FDOT Adopt-A-Highway program. • Replace the gravel sidewalk panel on the east side of the roadway north of Bostwick Avenue with concrete.	FDOT		
B - Daytona Beach Shores / Daytona Beach	Silver Beach Avenue	16	Pedestrian Facilities	Consider re-striping the four crosswalk markings with special emphasis crosswalk markings consistent with sheet 9 of the FDOT Design Standard Index 17346. Research and install an approved thermoplastic material that will maintain adhesiveness to the colored pavement at the intersection. Consider replacing all of the faded pedestrian detector signs with R10-3i pedestrian plaques.	FDOT		
B - Daytona Beach Shores / Daytona Beach	Silver Beach Avenue	18	Southbound Channelized Right Turn Lane	To emphasize the pedestrian crosswalk across the channelized southbound right turn lane in the northwest corner, consider adding YIELD HERE FOR PEDESTRIANS (R1-5 or R1-5a) signage to both the Yield sign post on the right side of the roadway and the mast arm located in the channelized island. Yield lines could be installed bye section 38.16 of the MUTCD prior to the crosswalk to give the driver a visual in-pavement cue that they are approaching a crosswalk. Consider removing the palmetto tree on the northwest corner to improve sight distance between southbound right turning vehicles and crosswalk users.	FDOT		
C - Daytona Beach	Corridor Wide - South Section	3	Detectable Warning Surfaces	Consider replacing the worn or deteriorating detectable warning surfaces along the corridor at both the signalized and unsignalized intersections to match the newer detectable warning surfaces along the corridor.	FDOT		
C - Daytona Beach	International Speedway Boulevard Intersection	7	Stop Bars	Consider restriping the westbound stop bar at the intersection.	FDOT		
C - Daytona Beach	Harvey Avenue Intersection	11	Brick Patterned Sidewalk	Consider painting the curb return yellow on the northeast corner to make pedestrians aware of the hazard and direct them around the corner and to the curb ramp. Also consider reviewing this location based on FDOT Plans Preparation Manual (PPM) Figure 8.8.1 to see if a railing is needed along the curb return due to the drop of fit to the drainage inlet.	FDOT		
C - Daytona Beach	Mid-Block between Auditorium Boulevard and Earl Street	17	Hilton Hotel Driveways	Consider striping a stop bar on the exiting approach and using standard crosswalk markings across the driveway, consistent with sheet 9 of the FDOT Design Standard Index 17346.	FDOT		
C - Daytona Beach	Mid-Block between Seabreeze Boulevard and University Boulevard	25	Glenview Boulevard Pedestrian Facilities	The following are considerations to address the pedestrian facilities issues identified at this intersection: • Consider installing signage and striping pavement markings consistent with sheet 9 of Design Index 17346. • Install pedestrian Crossing signage (W11-2) with the supplemental diagonal downward pointing arrow plaque (W16-7P) for the northbound and southbound approaches of SR A1A. • Install Stop Here for Peds signage (R1-5bL) • Stripe a stop bar in advance of each crosswalk • Repair the broken curb in the northwest corner and reconstruct the northeast curb ramp so that the utility box is flush and will not pose a trip hazard. • Consider increasing the wattage for existing street lights at the intersection.	FDOT		
C - Daytona Beach	Mid-Block between Seabreeze Boulevard and University Boulevard	26	Riverview Boulevard Pedestrian Facilities	The following are considerations to address the pedestrian facilities issues identified at this intersection: • Consider installing signage and striping pavement markings consistent with sheet 9 of Design Index 17346. o Install pedestrian Crossing signage (W11-2) with the supplemental diagonal downward pointing arrow plaque (W16-7P) for the northbound and southbound approaches of SR A1A. o Install Stop Here for Peds Signage (R1-5bL) o Stripe a Stop bar in advance of each crosswalk	FDOT		
C - Daytona Beach	Mid-Block between Seabreeze Boulevard and University Boulevard	27	Trip Hazard	Consider replacing the utility box (or cover) to be flush with the sidewalk. If the utility box is no longer in use, consider removing it and patching the sidewalk.	FDOT		
D - Daytona Beach / Ormond Beach	Corridor Wide	1	Four-Lane Divided Section	Consider formalizing right-turn lanes at key intersections/driveways. Consider marking 7-foot buffered bike lanes with right-turn key holes.	FDOT		
D - Daytona Beach / Ormond Beach	Corridor Wide	3	Bicycle Lanes	Consider marking 7-foot buffered bike lanes with right-turn key holes utilizing the extra pavement width in the existing 4-lane divided cross section.	FDOT		
D - Daytona Beach / Ormond Beach	Corridor Wide	4	Crosswalk Markings	Consider marking all minor street approaches at unsignalized intersections along the corridor during the next resurfacing project. Standard crosswalk markings as shown on sheet 9 of the FDOT Design Standard Index 17346 should be used for the unsignalized crossings. Special emphasis markings as shown on sheet 9 of Design Index 17346 should be used for the signalized crossings at the three signalized intersections included within the study limits.	FDOT		
D - Daytona Beach / Ormond Beach	Corridor Wide	5	Pedestrian Signage Consistency	Consider replacing the pedestrian warning signs with the standard yellow background to the fluorescent yellow-green background to provide consistent signage along the study limits. This will provide a consistent message to roadway users alerting them that pedestrians are crossing in the area. The following summarizes the locations and number of the standard yellow background pedestrian signage to be replaced: South of Harvard Drive (northbound direction) o One pedestrian warning sign (W11-2) and one diagonal downward pointing arrow plaque (W16-7P) Andy Romano Beachfront Park (northbound direction) o One pedestrian warning sign (W11-2) Ormond Shores Drive (northbound direction) o One pedestrian warning sign (W11-2) Approximately 150 feet north of River Beach Drive (southbound direction) o One pedestrian warning sign (W11-2) South of Rockefeller Drive (northbound direction) o One pedestrian warning sign (W11-2) Consider providing on sistent push button signage and street name signage at each of the signalized intersections along the corridor. This could eliminate confusion and reduce any unnecessary delay experienced by pedestrians at these locations.	FDOT		

Focus Area	Location	Issue Number	Issue	Suggestion	Responsible Agency	Status	Completed (Y/N)
				SHORT-TERM MAINTENANCE			(1) 11)
D - Daytona Beach / Ormond Beach	Corridor Wide	6	Landscape Maintenance	Coordinate with FDOT and local businesses/property owners to trim the obstructions and encourage better landscape maintenance.	FDOT		
D - Daytona Beach / Ormond Beach	Corridor Wide	13	Lighting	The following are considerations for lighting along the corridor: • Replace or turn on all the lights on the corridor after the turtle nesting season ends. • Consider implementing a lighting plan for the time the sea turtle nesting season is not active as roadway lighting levels should not be reduced at this time.	FDOT		
D - Daytona Beach / Ormond Beach	Plaza Boulevard Intersection	14	Intersection Sight Distance	Consider removing the bush to allow for adequate sight distance. Consider installing a Turning Vehicles Yield to Pedestrians sign (R10-15) on span wire for the eastbound approach in addition to the pedestrian signage on the post near the signal cabinet.	FDOT		
D - Daytona Beach / Ormond Beach	Plaza Boulevard Intersection	15	Pedestrian Signage	Consider upgrading the Yield to Pedestrians in Crosswalk sign to a Turning Vehicles Yield to Pedestrians sign (R10 15).	FDOT		
D - Daytona Beach / Ormond Beach	Plaza Boulevard Intersection	16	Landscaping Maintenance	Coordinate with FDOT to trim the bushes back to restore the full median refuge width.	FDOT		
D - Daytona Beach / Ormond Beach	Plaza Boulevard Intersection	17	Curb Ramp	Consider patching the curb ramp to remove the potential trip hazard by providing a level surface, and install a detectable warning surface.	FDOT		
D - Daytona Beach / Ormond Beach	Plaza Boulevard to Harvard Drive	19	Water Meter Cover Trip Hazard	Consider patching the concrete sidewalk and/or replacing the cover so that the two surfaces are flush.	FDOT		
D - Daytona Beach / Ormond Beach	Harvard Drive Intersection	20	Intersection Sight Distance	Consider trimming the landscaping back and consider conducting a sight distance evaluation to determine the available sight distance at the intersection. If adequate sight distance cannot be provided due to the strain pole, consider installing a No Turn on Red sign (R10-11 or R10-11a) to restrict right-turns on red. This could be effective until mast arms and signal upgrades are implemented at this location.	FDOT		
D - Daytona Beach / Ormond Beach	Harvard Drive Intersection	21	Detectable Warning Surface Maintenance	Consider removing the excess sand and debris from the detectable warning surfaces.	FDOT		
D - Daytona Beach / Ormond Beach	Wren Road	26	Missing Stop Sign and	Consider installing a stop sign (R1-1) on the eastbound approach with appropriate street name signage. Consider replacing the detectable warning surface on the southwest corner of the intersection.	FDOT		
D - Daytona Beach / Ormond Beach	Cardinal Drive Intersection	28	Intersection Sight Distance	Consider trimming the landscaping back and consider conducting a sight distance evaluation to determine the available sight distance at the intersection. If adequate sight distance cannot be provided due to the strain pole, consider installing a No Turn on Red sign (R10-11 or R10-11a) to restrict right-turns on red. This could be effective until mast arms and signal upgrades are	FDOT		
D - Daytona Beach / Ormond	Northshore Drive Intersection	30	Intersection Sight Distance	implemented at this location. Consider trimming the landscaping back and consider conducting a sight distance evaluation to determine the available sight	FDOT		
Beach D - Daytona Beach / Ormond	Florida Avenue Intersection	31		distance at the intersection. Consider coordinating with the property owner to relocate the sign so that it no longer restricts sight distance.	FDOT		
Beach D - Daytona Beach / Ormond	River Beach Drive Intersection	32	Intersection Sight Distance	Consider trimming the landscaping back and consider conducting a sight distance evaluation to determine the available sight	FDOT		
Beach D - Daytona Beach / Ormond Beach	River Beach Drive Intersection	33	Drainage	distance at the intersection. Consider evaluating the slope, drainage inlet size, drainage inlet locations, etc. near the issue to determine if modifications to the	FDOT		
D - Daytona Beach / Ormond Beach	River Beach Drive to Rockefeller Drive	35	Intersection Sight Distance	roadway or drainage inlets are necessary to properly remove storm water from the roadway. Consider trimming the landscaping back and consider conducting a sight distance evaluation to determine the available sight distance at the intersection.	FDOT		
D - Daytona Beach / Ormond Beach	Rockefeller Drive Intersection	37	Detectable Warning Surface	consider replacing the detectable warning surface on the northwest corner of the intersection.	FDOT		
E - Ormond Beach / Ormond- by-the-Sea	Corridor-Wide	5	Drop-Off Hazards	Consider filling areas adjacent to sidewalks to remove drop-off hazard. Consider material impacts to drainage structures.	FDOT		
E - Ormond Beach / Ormond- by-the-Sea	Brooks Drive Intersection	8	Flashing Beacons at Brooks Drive Crosswalk	Repair flashing beacon and consider relocating the sign.	FDOT		
E - Ormond Beach / Ormond- by-the-Sea	Ormond Mall Intersection	12	Pedestrian Signal Timings/Equipment	Dispatch a signal technician to review if all pedestrian countdown signals are working properly.	FDOT		
E - Ormond Beach / Ormond- by-the-Sea	North of Palm Drive	16	Regions Bank Driveways	Consider grinding potential trip hazards along the corridor as part of regular maintenance.	FDOT		
E - Ormond Beach / Ormond- by-the-Sea	Southwest Corner of Seaside Drive	17	Stop Sign Location	Consider moving the STOP sign nearer to the stop bar to reduce right-of-way uncertainty. Consider restriping the stop bar on the eastbound approach at the intersection.	FDOT		
E - Ormond Beach / Ormond- by-the-Sea	Just North of Seaside Drive	18	Sidewalk Stub to Roadway	Remove the sidewalk stub on the west side of the roadway.	FDOT		
E - Ormond Beach / Ormond- by-the-Sea	Ocean Shore Drive Intersection	20	Crosswalk Sign Location and Crosswalk Visibility	Consider moving the crosswalk signage to be located at the crosswalk. Consider restriping the crosswalk with the same special emphasis markings. Consider installing a new STOP sign at the appropriate height.	FDOT		
E - Ormond Beach / Ormond- by-the-Sea	Just North of Roberta Road	22	Beach Crossing Sight Distance and Connectivity	Consider training or removing the shrubbery to improve sight distance between northbound vehicles and pedestrians on the crossover.	FDOT		
F - Ormond-by-the-Sea	Corridor Wide	4	Minor Street Intersections	Consider emphasizing the pedestrian realm across minor stop controlled intersection approaches by adding crosswalk markings (standard or special emphasis to be determined on a case-by-case basis) as shown on sheet 9 of FDOT Design Standard Index 17346. Consider installing detectable warning surfaces at public roadway, minor street intersections along the corridor per FDOT Design Standard Index 304. Also consider restriping minor street stop bars and double yellow lines as shown on sheets 2 and 4 of FDOT Design Standard Index 17346 to emphasize where the vehicle needs to stop before making their turning movement.	FDOT		
F - Ormond-by-the-Sea	Corridor Wide	7	Minor Street Sight Distance	Consider moving the stop bars to be the minimum of 4" away from the marked crosswalks discussed in Issue #4: Minor Street Intersections, per sheets 2 and 4 of FDOT Design Standard Index 17346. A curb and gutter could also be constructed along the radius return of the intersections and the sidewalk could be moved closer to SR A1A. This allows both the sidewalk and crosswalk to be moved closer to SR A1A, potentially reducing some of the existing sight distance issues.	FDOT		_
F - Ormond-by-the-Sea	Approximately 500' North of Spanish Waters Drive	13	Broken Sidewalk Trip Hazard	Consider reconstructing the sidewalk panels to replace the broken sidewalk and remove the potential trip hazard.	FDOT		
F - Ormond-by-the-Sea	Kangaroo Express Gas Station	18		in addition to the sidewalk, consider striping a stop bar and to emphasize where the vehicle needs to stop before making their turning movement onto SR A1A.	FDOT		

	Location	Issue Number	Issue	Suggestion	Responsible Agency	Status	Completed (Y/N)
G - Flagler Beach / Beverly Beach	Corridor Wide	4	Minor Street Intersections	Consider emphasizing the pedestrian realm across minor stop-controlled intersection approaches by adding crosswalk markings (standard or special emphasis to be determined on a case-by-case basis) as shown on sheet 9 of PDOT Design Standard index 17346. Consider replacing/installing detectable warning surfaces at minor street intersections along the corridor per FDOT Design Standard Index 304. When replacing the detectable warning surfaces, consider installing them perpendicular to the sidewalk instead of at an angle so they are less impacted by right turning vehicles. Consider restriping minor street stop bars and double yellow lines as shown on sheets 2 and 4 of FDOT Design Standard Index 17346 to emphasize where the vehicle needs to stop before making their turning movement.	FDOT		
G - Flagler Beach / Beverly Beach	Mid-Block between S 23rd Street and S 11th Street	11	Broken Sidewalk	Consider reconstructing the sidewalk panels south of 22nd Street to replace the broken sidewalk and create a walkable pedestrian access route.	FDOT		
H - Flagler Beach	Corridor Wide	1	Minor Street Intersections	Consider emphasizing the pedestrian realm across minor stop controlled intersection approaches by adding or restriping crosswalk markings (standard or special emphasis to be determined on a case-by-case basis) as shown on sheet 9 of FDOT Design Standard Index 17346. Consider installing detectable warning surfaces at minor street intersections along the corridor per FDOT Design Standard Index 304. The City could consider restriping minor street stop bars and double yellow lines as shown on sheets 2 and 4 of FDOT Design Standard Index 17346.	FDOT		
H - Flagler Beach	Corridor Wide	3	Mid-Block Crossings	S 8th Street (existing crosswalk) o Consider adding advanced pedestrian warning signage (W11-2 and W16-9P) along the northbound and southbound approaches to the crossing. N 4th Street (existing crosswalk) o Consider relocation of the southbound pedestrian warning sign to the southwest corner as it is currently blocked by a business sign. o Consider adding advanced pedestrian warning signage (W11-2 and W16-9P) along the northbound approach to the crossing.	FDOT		
H - Flagler Beach	Corridor Wide	7	Sight Distance	Consider moving the stop bars to be the minimum of 4' away from the marked crosswalks discussed in Issue #1: Minor Street Intersections, per sheets 2 and 4 of FDOT Design Standard Index 17346.	FDOT		
H - Flagler Beach	SR A1A at SR 100	14	Vehicle/Pedestrian Crosswalk Conflicts	Consider installing Turning Vehicles Yield to Pedestrian (R10-15) signage on the mast arms next to the left-turn signal head for the northbound and westbound left-turn movements.	FDOT		
H - Flagler Beach	Between N 8th Street and N 9th Street	19	Sidewalk Rehabilitation	Consider patching the potholes in the asphalt sidewalk	FDOT		
I - Flagler County	Corridor-Wide	3	Shared-Use Path Signage and Striping	Consider dispatching a maintenance crew to replace the stop signs/bars with yield signs/markings at unsignalized intersections and driveways (where appropriate). In addition to the yield signage/markings for the trail, consider installing trail crossing warning signs (W11-15) and plaques (W11-15P) that would draw the motorist's attention to the presence of pedestrians or bicycles on the shared use path.	FDOT		
I - Flagler County	Corridor-Wide	4	Driveway Crosswalk Markings	Consider restriping the current crosswalk markings at unsignalized intersections (standard or special emphasis determined on a case by-case basis) as shown on sheet 12 of FDOT Design Standard Index 17346 to provide consistency along the corridor. To emphasize the pedestrian realm at frequently used driveways, consider striping standard crosswalk markings as shown on sheet 12 of FDOT Design Standard Index 17346.	FDOT		
I - Flagler County	Corridor-Wide	7 8	Detectable Warning Surfaces Damaged Concrete Panels	Consider dispatching a maintenance crew to install new detectable warning surfaces per FDOT Design Standard Index 304. Consider dispatching a maintenance crew to reconstruct the damaged concrete panels.	FDOT FDOT		
I - Flagler County	19 th Road to 18 th Road						
I - Flagler County	Malacompra Road Intersection	15	Pedestrian Signage Retro- Reflectivity	Consider dispatching a maintenance crew to replace the existing signs (W11-2) and plaques (W16-7P) to enhance their visibility. Due to the lack of roadway lighting near the crossing, consider replacing the standard yellow background with those having the	FDOT		
	Malacompra Road Intersection Mid-Block between Silver Beach Avenue and Ribault Avenue		Pedestrian Signage Retro-	Consider dispatching a maintenance crew to replace the existing signs (W11-2) and plaques (W16-7P) to enhance their visibility. Due			
B - Daytona Beach Shores / Daytona Beach D - Daytona Beach / Ormond Beach	Mid-Block between Silver Beach	15	Pedestrian Signage Retro- Reflectivity	Consider dispatching a maintenance crew to replace the existing signs (W11-2) and plaques (W16-7P) to enhance their visibility. Due to the lack of roadway lighting near the crossing, consider replacing the standard yellow background with those having the fluorescent yellow-green background with Type 11 sheeting. Consider regular sidewalk maintenance (sweeping debris/sand) along this section. The maintenance may be scheduled regularly or may be performed after a heavy raine event. Consider reducing the height of the landscape strip to be level or just below the sidewalk and replace with new sod. The landscape strip could also be replaced with concrete to create a wider sidewalk in this area. In lieu of regular sidewalk maintenance by a local jurisdiction, local businesses along the corridor could apply for the FDOT Adopt-A-	FDOT / Daytona Beach FDOT / Daytona Beach / Ormond Beach		
B - Daytona Beach Shores / Daytona Beach D - Daytona Beach / Ormond	Mid-Block between Silver Beach Avenue and Ribault Avenue	15	Pedestrian Signage Retro- Reflectivity Sidewalk Maintenance	Consider dispatching a maintenance crew to replace the existing signs (W11-2) and plaques (W16-7P) to enhance their visibility. Due to the lack of roadway lighting near the crossing, consider replacing the standard yellow background with those having the fluorescent yellow-green background with Type 11 sheeting. Consider regular sidewalk maintenance (sweeping debris/sand) along this section. The maintenance may be scheduled regularly or may be performed after a heavy rain event. Consider reducing the height of the landscape strip to be level or just below the sidewalk and replace with new sod. The landscape strip could also be replaced with concrete to create a wider sidewalk in this area. In lieu of regular sidewalk maintenance by a local jurisdiction, local businesses along the corridor could apply for the FDOT Adopt-A-Highway program. Consider cleaning the sidewalk to remove excess sand and debris and working with FDOT and/or local business/property owners continue routine maintenance. Consider coordinating with the City of Daytona Beach and the City of Ormond Beach to either remove the newspaper/magazine stands or move them off the sidewalk so that the effective sidewalk width at those locations is	FDOT / Daytona Beach /		
B - Daytona Beach Shores / Daytona Beach D - Daytona Beach / Ormond Beach D - Daytona Beach / Ormond	Mid-Block between Silver Beach Avenue and Ribault Avenue Corridor Wide	15	Pedestrian Signage Retro- Reflectivity Sidewalk Maintenance Sidewalk Maintenance	Consider classatching a maintenance crew to replace the existing signs (W11-2) and plaques (W16-7P) to enhance their visibility. Due to the lack of roadway lighting near the crossing, consider replacing the standard yellow background with those having the fluorescent yellow-green background with Type 11 sheeting. Consider regular sidewalk maintenance (sweeping debris/sand) along this section. The maintenance may be scheduled regularly or may be performed after a heavy raine vent. Consider reducing the height of the landscape strip to be level or just below the sidewalk and replace with new sod. The landscape strip could also be replaced with concrete to create a wider sidewalk in this area. In lieu of regular sidewalk maintenance by a local jurisdiction, local businesses along the corridor could apply for the FDOT Adopt-A-Highway program. Consider cleaning the sidewalk to remove excess sand and debris and working with FDOT and/or local business/property owners to continue routine maintenance. Consider coordinating with the City of Daytona Beach and the City of Ormond Beach to either remove the newspaper/magazine stands or move them off the sidewalk so that the effective sidewalk width at those locations is not restricted.	FDOT / Daytona Beach / Ormond Beach / FDOT / Daytona Beach /		
B - Daytona Beach Shores / Daytona Beach D - Daytona Beach / Ormond Beach D - Daytona Beach / Ormond G - Flagler Beach / Beverly	Mid-Block between Silver Beach Avenue and Ribault Avenue Corridor Wide Harvard Drive to Cardinal Drive Corridor Wide Corridor Wide	15 19 7 24	Pedestrian Signage Retro- Reflectivity Sidewalk Maintenance Sidewalk Maintenance Sidewalk Hazard	Consider regular sidewalk maintenance crew to replace the existing signs (W11-2) and plaques (W16-7P) to enhance their visibility. Due to the lack of roadway lighting near the crossing, consider replacing the standard yellow background with those having the fluorescent yellow-green background with Type 11 sheeting. Consider regular sidewalk maintenance (sweeping debris/sand) along this section. The maintenance may be scheduled regularly or may be performed after a heavy raine vent. Consider reducing the height of the landscape strip to be level or just below the sidewalk and replace with new sod. The landscape strip could also be replaced with concrete to create a wider sidewalk in this area. In lieu of regular sidewalk maintenance by a local jurisdiction, local businesses along the corridor could apply for the FDOT Adopt-A-Highway program. Consider cleaning the sidewalk to remove excess sand and debris and working with FDOT and/or local business/property owners to continue routine maintenance. Consider coordinating with the City of Daytona Beach and the City of Ormond Beach to either remove the newspaper/magazine stands or move them off the sidewalk so that the effective sidewalk width at those locations is not restricted. Coordinate with the property owner to adjust the sprinkler head so that it is not directed at the sidewalk. Consider regular sidewalk maintenance (sweeping debris/sand) along the corridor. The maintenance may be scheduled (once every one or two weeks, etc.) or may be performed after a heavy rain event. In lieu of regular sidewalk maintenance after a heavy rain event. In lieu of regular sidewalk maintenance and ster a heavy rain event. In lieu of regular sidewalk maintenance for the website (found at http://www.doc.statef.fus/statemaintenanceoffice/aah.stml), volunteers would "enter into a two-year agreement with DOT, during which they agree to conduct litter removal at regularly scheduled intervals. Many miles of highway are adopted statewide by various organizations, allowing civic	FDOT / Daytona Beach / Ormond Beach / Ormond Beach / Ormond Beach / Ormond Beach /		
B - Daytona Beach Shores / Daytona Beach D - Daytona Beach / Ormond Beach D - Daytona Beach / Ormond Beach G - Flagler Beach / Beverly Beach	Mid-Block between Silver Beach Avenue and Ribault Avenue Corridor Wide Harvard Drive to Cardinal Drive Corridor Wide	15 19 7 24	Pedestrian Signage Retro- Reflectivity Sidewalk Maintenance Sidewalk Maintenance Sidewalk Hazard Sidewalk Maintenance	Consider relaming the sidewalk maintenance by a local jurisdiction, local businesses along the corridor could apply for the FDOT Adopt-A-Highway program. Consider replacing the standard yellow background with those having the fluorescent yellow-green background with Type 11 sheeting. Consider regular sidewalk maintenance (sweeping debris/sand) along this section. The maintenance may be scheduled regularly or may be performed after a heavy raine vent. Consider reducing the height of the landscape strip to be level or just below the sidewalk and replace with new sod. The landscape strip could also be replaced with concrete to create a wider sidewalk in this area. In lieu of regular sidewalk maintenance by a local jurisdiction, local businesses along the corridor could apply for the FDOT Adopt-A-Highway program. Consider cleaning the sidewalk to remove excess sand and debris and working with FDOT and/or local business/property owners to continue routine maintenance. Consider coordinating with the City of Daytona Beach and the City of Ormond Beach to either emove the newspaper/magazine stands or move them off the sidewalk so that the effective sidewalk width at those locations is not restricted. Coordinate with the property owner to adjust the sprinkler head so that it is not directed at the sidewalk. Consider regular sidewalk maintenance (sweeping debris/sand) along the corridor. The maintenance may be scheduled (once every one or two weeks, etc.) or may be performed after a heavy rain event. In lieu of regular sidewalk maintenance by a local jurisdiction, local businesses along the corridor could apply for the FDOT Adopt-A-Highway program. According to the website (found at http://www.docs.tatel.high.stys.tatemaintenanceoffice/abs.htm), volunteers would "enter into a two-year agreement with DOT, during which they agree to conduct litter removal at regularly scheduled intervals. Many miles of highway are adopted statewide by various organizations, allowing civic-minded people to make a difference in their c	FDOT / Daytona Beach / Ormond Beach / Ormond Beach / Ormond Beach / Ormond Beach / FDOT / Daytona Beach / FDOT / Flagler Beach		
B - Daytona Beach Shores / Daytona Beach D - Daytona Beach / Ormond Beach D - Daytona Beach / Ormond Beach G - Flagler Beach / Beverly Beach H - Flagler Beach	Mid-Block between Silver Beach Avenue and Ribault Avenue Corridor Wide Harvard Drive to Cardinal Drive Corridor Wide Corridor Wide Between S 6th Street and S 5th	15 19 7 24 6	Pedestrian Signage Retro- Reflectivity Sidewalk Maintenance Sidewalk Maintenance Sidewalk Hazard Sidewalk Maintenance	Consider regular sidewalk maintenance crew to replace the existing signs (W11-2) and plaques (W16-7P) to enhance their visibility. Due to the lack of roadway lighting near the crossing, consider replacing the standard yellow background with those having the fluorescent yellow-green background with Type 11 sheeting. Consider regular sidewalk maintenance (sweeping debris/sand) along this section. The maintenance may be scheduled regularly or may be performed after a heavy raine vent. Consider reducing the height of the landscape strip to be level or just below the sidewalk and replace with new sod. The landscape strip could also be replaced with concrete to create a wider sidewalk in this area. In lieu of regular sidewalk maintenance by a local jurisdiction, local businesses along the corridor could apply for the FDOT Adopt-A-Highway program. Consider relaming the sidewalk to remove excess sand and debris and working with FDOT and/or local business/property owners to continue routine maintenance. Consider coordinating with the City of Daytona Beach and the City of Ormond Beach to either remove the newspaper/magazine stands or move them off the sidewalk so that the effective sidewalk width at those locations is not restricted. Coordinate with the property owner to adjust the sprinkler head so that it is not directed at the sidewalk. Consider regular sidewalk maintenance (sweeping debris/sand) along the corridor. The maintenance may be scheduled (once every one or two weeks, etc.) or may be performed after a heavy rain event. In lieu of regular sidewalk maintenance by a local jurisdiction, local businesses along the corridor could apply for the FDOT Adopt-A-Highway program. According to the website (found at http://www.dot.state.fl.us/statemaintenanceoffice/aba.shtml), voluntear own of the sidewalk. Many miles of highway are adopted statewide by various organizations, allowing civic-minded people to make a difference in their communities. This eases the load of DOT work crews, enabling them to devote more t	FDOT / Daytona Beach FDOT / Daytona Beach / Ormond Beach / Ormond Beach / Ormond Beach		
B - Daytona Beach Shores / Daytona Beach D - Daytona Beach / Ormond Beach D - Daytona Beach / Ormond Beach G - Flagler Beach / Beverly Beach H - Flagler Beach	Mid-Block between Silver Beach Avenue and Ribault Avenue Corridor Wide Harvard Drive to Cardinal Drive Corridor Wide Corridor Wide Between S 6th Street and S 5th Street Between N 3 fd Street and N 3rd	15 19 7 24 6	Pedestrian Signage Retro- Reflectivity Sidewalk Maintenance Sidewalk Maintenance Sidewalk Hazard Sidewalk Maintenance Sidewalk Maintenance Landscape Maintenance	Consider relayating a maintenance crew to replace the existing signs (W11-2) and plaques (W16-7P) to enhance their visibility. Due to the lack of roadway lighting near the crossing, consider replacing the standard yellow background with those having the fluorescent yellow-green background with Type 11 sheeting. Consider regular sidewalk maintenance (sweeping debris/sand) along this section. The maintenance may be scheduled regularly or may be performed after a heavy raine vent. Consider reducing the height of the landscape strip to be level or just below the sidewalk and replace with new sod. The landscape strip could also be replaced with concrete to create a wider sidewalk in this area. In lieu of regular sidewalk maintenance by a local jurisdiction, local businesses along the corridor could apply for the FDOT Adopt-A-Highway program. Consider relaying the sidewalk to remove excess sand and debris and working with FDOT and/or local business/property owners to continue routine maintenance. Consider coordinating with the City of Daytona Beach and the City of Ormond Beach to either remove the newspaper/magazine stands or move them off the sidewalk so that the effective sidewalk width at those locations is not restricted. Coordinate with the property owner to adjust the sprinkler head so that it is not directed at the sidewalk. Consider regular sidewalk maintenance (sweeping debris/sand) along the corridor. The maintenance may be scheduled (once every one or two weeks, etc.) or may be performed after a heavy rain event. In lieu of regular sidewalk maintenance after a heavy rain event. In lieu of regular sidewalk maintenance after a heavy rain event. In lieu of regular sidewalk maintenance with the proper and event would "enter into a two-year agreement with DOT, during which they agree to conduct litter removal at regularly scheduled intervals. Many miles of highway are adopted statewide by various organizations, allowing civic-minded people to make a difference in their communities. This eases the load	FDOT / Daytona Beach / Ormond Beach / Ormond Beach / Ormond Beach / Ormond Beach / FDOT / Flagler Beach		
B - Daytona Beach Shores / Daytona Beach D - Daytona Beach / Ormond Beach O - Daytona Beach / Ormond Beach G - Flagler Beach / Beverly Beach H - Flagler Beach H - Flagler Beach	Mid-Block between Silver Beach Avenue and Ribault Avenue Corridor Wide Harvard Drive to Cardinal Drive Corridor Wide Corridor Wide Estween S 6th Street and S 5th Street Between N 2nd Street and N 3rd	15 19 7 24 6 8 11 16	Pedestrian Signage Retro- Reflectivity Sidewalk Maintenance Sidewalk Maintenance Sidewalk Maintenance Sidewalk Maintenance Landscape Maintenance Landscape Maintenance Landscape Maintenance Lendscape Maintenance Debris on Sidewalk/Shared-	Consider releaning the sidewalk to remove excess sand and debris and working with FDOT and/or local business/property owners to continue routine maintenance. Consider replacing the sidewalk with the property owners to continue routine maintenance. Consider replacing the sidewalk with the property owners to continue revenue and the property owners to continue routine maintenance. The property owners to continue routine maintenance of the property owners to continue routine maintenance of the property owners to continue routine maintenance. Consider replace with new sod. The landscape strip to be level or just below the sidewalk and replace with new sod. The landscape strip could also be replaced with concrete to create a wider sidewalk in this area. In lieu of regular sidewalk maintenance by a local jurisdiction, local businesses along the corridor could apply for the FDOT Adopt-A-Highway program. In consider cleaning the sidewalk to remove excess sand and debris and working with FDOT and/or local business/property owners to continue routine maintenance. Consider coordinating with the City of Daytona Beach and the City of Ormond Beach to either remove the newspaper/magazine stands or move them off the sidewalk so that the effective sidewalk width at those locations is not restricted. Coordinate with the property owner to adjust the sprinkler head so that it is not directed at the sidewalk. Consider regular sidewalk maintenance (sweeping debris/sand) along the corridor. The maintenance may be scheduled (once every one or two weeks, etc.) or may be performed after a heavy rain event. In lieu of regular sidewalk maintenance and ster a heavy rain event. In lieu of regular sidewalk maintenance and ster a heavy rain event. In lieu of regular sidewalk maintenance and ster a heavy rain event. In lieu of regular sidewalk maintenance and ster a heavy rain event. In lieu of regular sidewalk maintenance and ster a heavy rain event. In lieu of regular sidewalk maintenance and ster a heavy rain event. In lieu of re	FDOT / Daytona Beach / Ormond Beach / FDOT / Flagler Beach		

							Completed
Focus Area	Location	Issue Number	Issue	Suggestion	Responsible Agency	Status	(Y/N)
				SHORT-TERM MAINTENANCE			
E - Ormond Beach / Ormond- by-the-Sea	Corridor-Wide	3	Detectable Warning Surfaces	Consider installing detectable warning surfaces where missing at signalized/unsignalized intersections and crosswalks per the FDDT Design Standard Index 304. Consider constructing a landing pad with detectable warning surfaces at the mid-block locations where no landing pad is present.	FDOT in Coordination with Local Law Enforcement		
B - Daytona Beach Shores / Daytona Beach	Corridor Wide	1	Lighting	Replace the lights on the corridor that are burnt out.	Florida Power and Light		
C - Daytona Beach	International Speedway Boulevard Intersection	8	Intersection Lighting	Consider replacing the bulb as part of routine lighting maintenance.	Florida Power and Light		
C - Daytona Beach	Corridor Wide - North Section	20	Corridor Lighting	Consider contacting the operator/maintainer of the lighting system to replace the burnt out light bulbs along the corridor.	Florida Power and Light		1
G - Flagler Beach / Beverly Beach	Corridor Wide	8	Lighting	Replace the lights on the corridor that are burnt out.	Florida Power and Light		
H - Flagler Beach	Corridor Wide	6	Lighting	Consider reviewing the pedestrian-level lighting fixtures along the corridor and replace any burnt out bulbs and reconnect any hanging covers.	Florida Power and Light		
A - New Smyrna Beach	Mid-Block between Horton Street/Saxon Drive and E 3rd Avenue	17	Sidewalk Clutter	Consider coordinating with the City of New Smyrna Beach to either remove the newspaper/magazine stands or move them off the sidewalk so that the effective sidewalk width at those locations is not restricted.	New Smyrna Beach		
A - New Smyrna Beach	Corridor Wide	5	Push Button Placement	Consider rotating the pedestrian push button detectors at each of the signalized intersections so the face of the pedestrian detectors is parallel to the crosswalk to be used, as discussed in section 4E.08 of the 2009 Manual of Uniform Traffic Control Devices (MUTCD).	Volusia County		
C - Daytona Beach	Corridor Wide - South Section	5	Pedestrian Signage Consistency	Consider replacing pedestrian push button signage where necessary to be consistent with the street name signage at each of the signalized intersections along the corridor.	Volusia County		
C - Daytona Beach	Harvey Avenue Intersection	12	Pedestrian Facilities	Replace the outdated push button signage with new signage (R10-3i).	Volusia County		1
C - Daytona Beach	Main Street Intersection	14	Pedestrian Facilities	Dispatch a signal technician to review if all pedestrian push buttons are working properly.	Volusia County		
C - Daytona Beach	Auditorium Boulevard Intersection	16	Pedestrian Facilities	Consider replacing the existing push button signage with new signage (R10-3i) on the northwest and southwest corners.	Volusia County		
C - Daytona Beach	Corridor Wide - North Section	21	Pedestrian Signage Consistency	Consider replacing pedestrian push button signage where necessary to be consistent with the street name signage at each of the signalized intersections along the corridor.	Volusia County		
E - Ormond Beach / Ormond- by-the-Sea	Ormond Mall Intersection	13	Pedestrian Facilities	Consider installing R10-3i pedestrian plaques on all corners of the intersection indicating the respective pedestrian push button's corresponding street name.	Volusia County		
A - New Smyrna Beach	Peninsula Avenue Intersection	11	Turning Vehicles and Pedestrians in Crosswalk	Consider implementing a leading pedestrian interval for the west and east leg crosswalks prior to the onset of the southbound green phase. If implemented, this should be done in concert with a blank-out NO RIGHT TURN ON RED sign facing the southbound approach that is active during the leading pedestrian interval. Blank-out sign options include a NO RIGHT TURN ON RED message that transitions to a YIELD TO PEDESTRIANS message at the onset of the southbound green phase.	Volusia County in Coordination with FDOT		
A - New Smyrna Beach	Horton Street/Saxon Drive Intersection	15	Pedestrian Facilities	Consider making the blank-out NO TURN ON RED sign facing the southbound approach active during the leading pedestrian interval. Also consider converting the blank-out sign to a sign that transitions between the NO RIGHT TURN ON RED message and a YIELD TO PEDESTRIANS message at the onset of the southbound green phase.	Volusia County in Coordination with FDOT		
C - Daytona Beach	University Boulevard	29	Pedestrian Facilities	Consider replacing the missing push button sign on the pole in the southwest corner and moving the push button signage on the northwest corner to be on the same side as the push button. Also, consider replacing the detectable warning surfaces at the intersection, consistent with the newer surfaces along the corridor (as illustrated in Issue #3: Detectable Warning Surfaces).	Volusia County in Coordination with FDOT		
B - Daytona Beach Shores / Daytona Beach	Mid-Block between Botefuhr Avenue and Silver Beach Avenue	14	Bus Stops	As per the date of this report, Votran has worked with the City of Daytona Beach Shores to install a bus stop sign for the stop between Botefuhr Avenue and Flamingo Avenue. Consider triming the palm tree from in front of the Votran sign on the east side between Botefuhr Avenue and Flamingo Avenue. Consider raming the Votran sign for the stop on the east side at Frazar Road.	Votran		
F - Ormond-by-the-Sea	Briggs Avenue Intersection	17	Transit Stop Bench	Consider coordinating with Votran to relocate the transit stop bench to the new bus stop location.	Votran		

Focus Area	Location	Issue Number	Issue	Suggestion	Responsible Agency	Status	Completed (Y/N)
				NEAR-TERM IMPROVEMENT			(17.17)
C - Daytona Beach	Corridor Wide - South Section	1	Crosswalk Markings	Consider removing decorative pavers within the crosswalks and installing material that thermoplastic crosswalk markings will properly adhere to. Special emphasis markings as shown on sheet 9 of Design Index 17346 should be used for the signalized crossings at the four signalized intersections included within the study limits.	Daytona Beach		
C - Daytona Beach	Mid-Block between Harvey Avenue and Main Street	13	Driveways	Coordinate with the City of Daytona Beach's Redevelopment Department to review the redevelopment plans for this site. If no redevelopment is planned, consider rebuilding the abandoned driveways to provide a level surface and continuous curb. These improvements could be done during the roadway's next 8n project or as a sidewalk maintenance project.	Daytona Beach		
A - New Smyrna Beach	Corridor Wide	1	Vehicular Speed	 Reduce amount of cross sectional width for the travel lanes: Ourrently 5' unmarked bicycle lanes are present along with four 12' lanes. Restripe the pavement to have 11' lanes and a 7' buffered bike lane during the next resurfacing project. Increase speed enforcement to encourage vehicles to drive closer to the posted speed limit based on the results of the speed study. Speed feedback signs that display how fast the vehicle is traveling may help deter speeding along the corridor. 	FDOT		
A - New Smyrna Beach	Corridor Wide	4	Landscape Buffer Strips	Consider removing small landscape buffer strips at locations where water ponding/sand collection is occurring and replace with concrete to create a wider sidewalk area.	FDOT		
A - New Smyrna Beach	Peninsula Avenue Intersection	8	Landscape/Tree Maintenance	Consider adding a signal ahead warning sign (W3-3 in MUTCD) on the bridge in the eastbound direction. This could be coupled with a flashing beacon to inform approaching drivers to stop for the signal ahead. The beacon would only be active when the light is yellow/red.	FDOT		
A - New Smyrna Beach	Peninsula Avenue Intersection	10	Intersection Lighting	Consider upgrading the lighting at the intersection to meet the requirements of section 7.3 in Volume 1 of the FDOT Plans Preparation Manual (PPM). This may require the existing lighting to be replaced.	FDOT		
A - New Smyrna Beach	Peninsula Avenue Intersection	11	Turning Vehicles and Pedestrians in Crosswalk	Consider installing TURNING VEHICLES VIELD TO PEDESTRIANS (R10-15) signs for right and left turns on the southbound approach (would require further study). Consider reducing the curb return radius on the northwest corner to encourage better stop compliance and slower southbound right turns.	FDOT		
A - New Smyrna Beach	Mid-Block between Peninsula Avenue and Horton Street/Saxon Drive	12	Mid-Block Crosswalk Enhancements	The team discussed the following safety enhancements to be considered at the crossing: • Signage improvements — • Ocnsider providing an active warning device, such as Rapid Rectangular Flashing Beacon (RRFB), at the crosswalk. As part of this installation, pedestrian warning signage would be added in the median. RRFBs may also be used on the advance crosswalk signs per FHWA's interim approval memorandum. A mid-block crossing study would be needed for justification. • Install pedestrian scale lighting on the north and south sides of the crosswalk.	FDOT		
A - New Smyrna Beach	Mid-Block between Peninsula Avenue and Horton Street/Saxon Drive	13	Cooper Street	At Cooper Street specifically, a directional median providing eastbound left turning movements could be constructed. To accommodate SR A1A pedestrian crossings at this location, consider performing a mid-block crossing study at this intersection. As part of this study, a marked crosswalk on the east leg of the intersection could be reviewed. If the intersection was converted to a directional median opening, a median refuge island would be provided on the east leg for the crosswalk. The following safety enhancements should be considered if a marked crosswalk is installed: • Stripe a crosswalk on the east leg of the intersection with special emphasis crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346. • Consider providing an active warning device, such as a RRFB, at the crosswalk. In-roadway warning lights activated by the RRFB may be considered as well. Standards and guidance from section 4N.02 in the MUTCD should be reviewed when considering inroadway lights. Install lighting on the crosswalk's west and east sides.	FDOT		
A - New Smyrna Beach	Horton Street/Saxon Drive Intersection	16	Intersection Lighting	Consider upgrading the lighting at the intersection to meet the requirements of section 7.3 in Volume 1 of the FDOT Plans Preparation Manual (PPM). This may require the existing lighting to be replaced.	FDOT		
A - New Smyrna Beach	Mid-Block between Horton Street/Saxon Drive and E 3rd Avenue	18	Mid-Block Crosswalk	The team discussed the following safety enhancements to be considered at the crossing: • Signage improvements – • O Consider providing an active warning device, such as a RRFB, at the crosswalk. As part of this installation, pedestrian warning signage would be added in the median. RRFBs may also be used on the advance crosswalk signs per FHWA's interim approval memorandum. A mid-block crossing study would be needed for justification.	FDOT		
A - New Smyrna Beach	E 3rd Avenue Intersection	19	Driveways Near Intersection	Consider the addition of a raised 2' or 4' concrete separator extending approximately 200' west of the 3rd Avenue intersection. The separator should be located between the eastbound left turn lane and the inside westbound through lane.	FDOT		
A - New Smyrna Beach	E 3rd Avenue Intersection	21	Sidewalk Drop Off	Due to the steep slope behind the sidewalk on the northeast corner, consider reviewing this location based on FDOT Plans Preparation Manual (PPM) Figure 8.3.1 if railing is needed, install the railing just off the northeast edge of the sidewalk to prevent pedestrians/bicyclists from walking off the back of the sidewalk into the drainage area.	FDOT		
B - Daytona Beach Shores / Daytona Beach	Corridor Wide	1	Lighting	The following are considerations for lighting along the corridor: Consider conducting field measurements of existing lighting levels to evaluate lighting uniformity levels and add lighting where necessary. Consider light poles can the east die that are angled westerly away from the beach. These light poles cast their light to the west and illuminate the roadway as needed. The light bulb is not seen by the turtles due to the angle and orientation of the light fixture. Consider implementing a lighting plan for the time the sea turtle nesting season is not active as roadway lighting levels should not be reduced at this time. Consider implementation of pedestrian-level lighting, with less visibility from the beach, to supplement areas where street lighting is not able to provide adequate lamination.	FDOT		

Focus Area	Location	Issue Number	Issue	Suggestion	Responsible Agency	Status	Completed (Y/N)
				NEAR-TERM IMPROVEMENT			
				The following locations could be considered for mid-block crossing locations: Near the beach access just south of the Hollday Inn Resort, between Ocean Dunes Road and Old Trail Road. Two bus stops are located in this block and it would be approximately 1/4 to 1/3 of a mile north of the Botefuhr Avenue signal. Near the beach access just south of the Catalina Beach Club, between Temko Terrace and Bostwick Avenue. Two pedestrian crossing crosshes occurred in this section and bus stops are located along this segment. This crossing would be approximately 1/4 mile north of the above suggestion and approximately 0.15 to 0.20 miles south of Silver Beach Avenue. Near the beach access just south of where the new Hard Rock Hotel is planning to be constructed, between Frances Terrace and Ribault Avenue. Bus stops are present within this segment and it would be approximately 0.15 to 0.20 miles north of the Silver Beach Avenue signal.			
B - Daytona Beach Shores / Daytona Beach	Corridor Wide	2	Mid-Block Crossings	The following suggestions should be considered at select locations where a mid-block crossing is desired and warranted: • Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) to evaluate if a crosswalk is warranted based upon existing demands. o Ideal locations would be where a beach access is located across the street from commercial development, where a hotel/major land use generators on the east side has parking on the west side, or where bus stops are located near beach access points or major land use generators along the corridor. o As land uses along the corridor develop/redevelop, evaluate if a mid-block crossing is feasible. • Consider an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk. • Provide a median refuge island with a minimum length of 90 feet for pedestrians in the TWLTL. • Install lighting at the crosswalk. o Directional lighting oriented towards the crosswalk could be provided; or o Lighting could turn on when the RRFB is activated and flashing and could turn off when the flashers stop. • Stripe the crosswalk with special emphasis crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346.	FDOT		
				Consider upgrading the lighting at the two intersections to meet the requirements of section 7.3.2.2 in Volume 1 of the FDOT Plans			
B - Daytona Beach Shores / Daytona Beach	Corridor Wide	3	Lighting at Signalized Intersections	Preparation Manual (PPM). This may require the existing lighting to be replaced. FDOT is also considering lighting installed underneath mast arms that hang directly over marked crosswalks at signalized intersections. These two options should be evaluated to see which best meets the lighting requirements for each intersection.	FDOT		
B - Daytona Beach Shores / Daytona Beach	Corridor Wide	4	Lack of Bicycle Facilities	Because right-of-way is not available to provide a bicycle lane or paved shoulder, consider posting BIKES MAY USE FULL LANE (R4- 11) signs along the study corridor to encourage bicycles to use the street rather than the sidewalks. Because the posted speed along this section of SR A1A is 35 MPH, consider installing shared lane markings (sharrows) in addition to the R4-11 signs, as specified on pages 1 and 2 of FDOT Standard Index 17347.	FDOT		
B - Daytona Beach Shores / Daytona Beach	Botefuhr Avenue Intersection	13	Pedestrian Facilities	Consider realigning the north and south leg crosswalks to be more perpendicular with SR A1A. This would require constructing new curb ramps for those two crosswalks. Consider rebuilding the existing curb ramps so they meet the 4' minimum clear width as stated in the ADA PROWAG. As part of separating the curb ramps, consider individual pedestrian detector poles for each crosswalk at the intersection. Consider replacing the pedestrian detector signs with R10-3i pedestrian plaques which includes an arrow and MUTCD street name font indicating which street the pedestrian detector corresponds with. Consider implementing a leading pedestrian interval for the north and south leg crosswalks prior to the onset of the eastbound/westbound green phase.	FDOT		
B - Daytona Beach Shores / Daytona Beach	Silver Beach Avenue	16	Pedestrian Facilities	Consider realigning the west and south leg crosswalks to be more perpendicular with Silver Beach Avenue and SR A1A. For the west crosswalk, a new curb ramp could be constructed on the south side of Silver Beach Avenue in the southwest corner of the intersection. For the south crosswalk, a new curb ramp could be constructed on the west side of SR A1A in the southwest corner of the intersection. As part of this suggestion, consider implementing a leading pedestrian interval for all four crosswalks prior to the onset of their respective conflicting green phases. The north and east crosswalks are not suggested to be moved due to the potential impacts to drainage inlets on the northeast corner of the intersection. As part of separating the curb ramps, consider individual pedestrian detector poles on the southwest corner of the intersection and building the curb ramps to they are ready for accessible pedestrian signals.	FDOT		
B - Daytona Beach Shores / Daytona Beach	Silver Beach Avenue	17	Southwest Corner Accessibility	Consider constructing a sidewalk on the back (west) side of the pole that is level with the height of the poles base. From field observations, this improvement may impact right-of-way for the Sunoco gas station so working with the property owner to construct this sidewalk may be needed. If the crosswalks are realigned as described in Issue #16: Pedestrian Facilities, the pedestrian detectors and signals will be on separate poles near the new ramp locations.	FDOT		
C - Daytona Beach	Corridor Wide - South Section	2	Lack of Bicycle Facilities	Because right-of-way is not available to provide a bicycle lane or paved shoulder, consider posting BIKES MAY USE FULL LANE (R4- 11) signs along the study corridor to encourage bicycles to use the street rather than the sidewalks. Because the posted speed along this section of SR A1A is 35 MPH, consider installing shared lane markings (sharrows) in addition to the R4-11 signs, as specified on pages 1 and 2 of FDOT Standard Index 17347.	FDOT		
C - Daytona Beach	Corridor Wide - South Section	4	U-Turn Demand	Consider performing a study along this section to restrict NB and SB U-turns at the signalized intersections and review potential opportunities for U-turns at designated locations.	FDOT		
C - Daytona Beach	Mid-Block between ISB and Harvey Avenue	10	Kemp Street Mid-Block Crosswalk	Consider installing an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk to improve yield compliance. Consider trimming the bushes or planting a smaller plant in the median to improve sight distance. Consider removing decorative pavers within the crosswalk and marking with special emphasis crosswalk markings as shown on sheet 10 of Design Index 17346.	FDOT		
C - Daytona	Main Street Intersection	14	Pedestrian Facilities	Consider realigning the crosswalk perpendicular to the NE corner to provide a shorter crossing distance for pedestrians during the	FDOT		
Beach C - Daytona Beach	Main Street Intersection	15	Intersection Lighting	next resurfacing project. Consider upgrading the lighting at the intersection to meet the requirements of section 7.3 in Volume 1 of the FDOT PPM. Installation of lighting on the existing mast arms could be considered.	FDOT		
C - Daytona Beach	Corridor Wide - North Section	18	Crosswalk Markings	Consider removing decorative pavers within the crosswalk and installing material that thermoplastic crosswalk markings will properly adhere to. At the signalized intersection of SR A1A and University Boulevard, consider marking special emphasis crosswalk markings as shown on sheet 9 of Design Index 17346. Consider striping special emphasis crosswalk markings consistent with sheet 9 of the Design Index 17346 for the unsignalized intersections at Glenview Boulevard and Riverview Boulevard.	FDOT		

Focus Area	Location	Issue Number	Issue	Suggestion	Responsible Agency	Status	Completed (Y/N)
				NEAR-TERM IMPROVEMENT			
C - Daytona Beach	Corridor Wide - North Section	20	Corridor Lighting	The following are considerations for lighting along the corridor: Consider conducting field measurements of existing lighting levels to evaluate lighting uniformity levels and add lighting where necessary. Consider light poles on the east side that are angled westerly away from the beach. These light poles cast their light to the west and illuminate the roadway as needed. The light bulb is not seen by the turtles due to the angle and orientation of the light fixture. Consider implementing a lighting plan for the time the sea turtle nesting season is not active as roadway lighting levels should not be reduced at this time. Consider implementation of pedestrian-level lighting, with less visibility from the beach, to supplement areas where street lighting is not able to provide adequate lamination.	FDOT		
C - Daytona Beach	Seabreeze Boulevard Intersection	22	Pedestrian Facilities	Consider realigning the crosswalk to tie into the existing curb ramp or reconstructing the curb ramp on the northeast corner to include separate curb ramps for the northern and eastern crosswalks.	FDOT		
C - Daytona Beach	Seabreeze Boulevard Intersection	23	Intersection Lighting	Consider upgrading the lighting at the intersection to meet the requirements of section 7.3.2.2 in Volume 1 of the FDOT PPM. Installation of lighting on the existing mast arms could be considered.	FDOT		
C - Daytona Beach	Mid-Block between Seabreeze Boulevard and University Boulevard	25	Glenview Boulevard Pedestrian Facilities	Consider removing decorative pavers in the crosswalks and installing material that thermoplastic crosswalk markings will properly adhere to.	FDOT		
C - Daytona Beach	Mid-Block between Seabreeze Boulevard and University Boulevard	26	Riverview Boulevard Pedestrian Facilities	Consider removing decorative pavers in the crosswalks and installing material that thermoplastic crosswalk markings could properly adhere to.	FDOT		
C - Daytona Beach	Mid-Block between Seabreeze Boulevard and University Boulevard	28	Mid-Block Crossing	Consider providing a marked crosswalk at the Jessamine Boulevard intersection. If required, conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) to evaluate if a crosswalk is warranted based upon the demands of the hotel and vacant lots being redeveloped. If a marked crosswalk is approved: Install the crossing on the north side of the intersection due to existing one-way and right-turn only configuration along Jessamine Boulevard. If southbound left-turn volumes are expected to be high, consideration should be given to installing the crosswalk on the south side as a northbound left-turn does not exist at the intersection. Provide a z-shaped median refuge island for pedestrians in the TWLTL, if possible. Consider an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk. RRFBs may also be used on the advance crosswalk signs per FHHWA's interim approval memorandum. Install lighting on the crosswalk's west and east sides. Stripe the crosswalk with Special Emphasis Crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346.	FDOT		
D - Daytona Beach / Ormond Beach	Corridor Wide	2	Five-Lane Section	Consider implementing raised medians in the center TWLTL in select locations.	FDOT		
D - Daytona Beach / Ormond Beach	Corridor Wide	8	Pedestrian Beach Access	Consider installing new beach access signage for pedestrians/drivers as the existing signage is showing wear and does not display accurate information to the roadway users. Consider prioritizing the implementation of pedestrian facilities at strategic beach access locations. Emphasis on installing sidewalks at the beach locations with signalized or marked crosswalks across SR A1A could be considered. Locations with of beach parking should also be emphasized as beach patrons will park their vehicles at an off beach parking lot before accessing the beach. Also consider pedestrian level lighting at the beach access locations.	FDOT		
D - Daytona Beach / Ormond Beach	Corridor Wide	9	Potential Mid-Block Crossings	The following could be done at select locations where a mid-block crossing is desired and warranted: Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) to evaluate if a crosswalk is warranted based upon existing demands. Consider an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk. RRFBs may also be used on the advance crosswalk sings per FHWA'S interim approval memorandum. Provide a median refuge island for pedestrians in the TWLTL Install lighting on the crosswalk's west and east sides. Stripe the crosswalk with Special Emphasis Crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346.	FDOT		
D - Daytona Beach / Ormond Beach	Corridor Wide	12	Sidewalks at Driveways	Consider rebuilding the abandoned driveways to provide a level surface and continuous curb. These improvements could be done during the roadway's next 3R project.	FDOT		
D - Daytona Beach / Ormond Beach	Corridor Wide	13	Lighting	The following are considerations for lighting along the corridor: Consider upgrading lighting at the signalized intersections to meet the requirements of section 7.3.2.2 in Volume 1 of the FDOT Plans Preparation Manual (PPM). This may require the existing lighting to be replaced. Consider conducting field measurements of existing lighting levels to evaluate lighting uniformity levels and add lighting where necessary. Consider light poles on the east side that are angled westerly away from the beach. These light poles cast their light to the west and illuminate the roadway as needed. The light bulb is not seen by the turtles due to the angle and orientation of the light fixture.	FDOT		
D - Daytona Beach / Ormond Beach	Harvard Drive to Cardinal Drive	23	Mid-Block Crossing at Andy Romano Beachfront Park	The following could be considered at this location to address the yield compliance and lighting issues observed: Consider installing an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk. RRFBs may also be installed on the advance crosswalk warning signs per Fl4MVs interim approval memorandum. Install lighting on the crosswalk's west side and in the refuge island.	FDOT		
D - Daytona Beach / Ormond Beach	Cardinal Drive Intersection	29	Beach Access	The following should be considered as part of the new off beach public parking lot and signal upgrades as mentioned in Issue #28: Consider design of the parking lot to lead pedestrians out of the parking area toward the southern end or the southeast corner of the parking lot. Construct a sidewalk and connection on the north side of Cardinal Drive between the new public parking lot and the northwest corner of the intersection. Construct a sidewalk and connection on the south side of the beach access between the beach and the southeast corner of the intersection. Stripe a crosswalk with Special Emphasis marking on the south leg of the intersection consistent with sheet 9 of Design Index 17346, and install a countdown pedestrian signal and pedestrian pushbuttons to serve the south crosswalk. Rebuild the curb ramps to facilitate the new sidewalk connections. Install appropriate signage indicating the beach access and parking lot to beach patrons.	FDOT		

Focus Area	Location	Issue Number	Issue	Suggestion	Responsible Agency	Status	Completed (Y/N)
				NEAR-TERM IMPROVEMENT			
D - Daytona Beach / Ormond Beach	River Beach Drive Intersection	34	Potential Marked Crosswalk	The following could be considered at this location: • Install pedestrian facilities along one or both sides of the beach access. • Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) to evaluate if a crosswalk is warranted based upon existing demands. If a mid-block crossing is warranted: o Install the crossing on the north side of the intersection due to existing left-turn lanes along SR A1A. Left-turn volume into the beach access is likely to be relatively small and comparably less than the northbound left-turn movement. o Provide a median refuge island for pedestrians in the TWLTL. o Install lighting on the crosswalk's west and east sides. o Stripe the crosswalk is Repeal Emphasis Crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346.	FDOT		
D - Daytona Beach / Ormond Beach	Rockefeller Drive Intersection	36	Potential Marked Crosswalk	The following could be considered at this location: Install pedestrian facilities along one or both sides of beach access. Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) to evaluate if a crosswalk is warranted based upon existing demands. If a mid-block crossing is warranted: o Install the crossing on the north side of the intersection due to existing left-turn lanes along SR A1A. Left-turn volume into the beach access is likely to be relatively small and comparably less than the northbound left-turn movement. Figure 76 illustrates a potential landing location of a crosswalk on the east side of SR A1A. o Consider an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk. RRFBs may also be used on the advance crosswalk signs per FHWA's interim approval memorandum. o Provide a median refuge island for pedestrians in the TWLTL. o Install lighting on the crosswalk's west and east sides. o Stripe the crosswalk with Special Emphasis Crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346.	FDOT		
E - Ormond Beach / Ormond- by-the-Sea	Corridor-Wide	1	Speed Consistency	Reduce width of the roadway section for traffic calming benefits - For parcels with the ability to facilitate onsite circulation of parking maneuvers, consider working with the private property owner to install wheelstops or curbing to direct motorists to access SR A1A via defined driveway locations only. - Consider pedestrian refuge islands or spot medians where feasible.	FDOT		
E - Ormond Beach / Ormond- by-the-Sea	Corridor-Wide	2	Sidewalk Inconsistency on East Side	Consider providing sidewalk, as properties redevelop, on the east side of SR A1A to fill in the gaps.	FDOT		
E - Ormond Beach / Ormond- by-the-Sea	Corridor-Wide	4	Lighting Inconsistency	 Consider upgrading lighting at the signalized intersections to meet the requirements of section 7.3.2.2 in Volume 1 of the FDOT Plans Preparation Manual (PPM). This may require the existing lighting to be replaced. Consider conducting field measurements of existing lighting levels to evaluate lighting uniformity levels and add lighting where necessary. Consider light poles on the east side that are angled westerly away from the beach. These light poles cast their light to the west and illuminate the roadway as needed. The light bulb is not seen by the turtles due to the angle and orientation of the light fixture. Consider implementing a lighting plan for the time the sea turtle nesting season is not active as roadway lighting levels should not be reduced at this time. Consider conducting a lighting justification study along unlit portions of the corridor to determine if additional lighting is justified. Consider implementation of pedestrian-level lighting, with less visibility from the beach, to supplement areas where street lighting is not able to provide adequate lamination. 	FDOT		
E - Ormond Beach / Ormond- by-the-Sea	Corridor-Wide	6	Signage Material	During next signage update or resurfacing project, consider replacing all crosswalk signage with signs using high-visibility, high retro- reflectivity coatings (Type 11 sheeting).	FDOT		
E - Ormond Beach / Ormond- by-the-Sea	Brooks Drive Intersection	8	Flashing Beacons at Brooks Drive Crosswalk	If the sign cannot be relocated, the following improvements could be considered at this location: Consider an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk. RRFBs may also be used on the advance crosswalk signs per FHWA's interim approval memorandum. Provide a median refuge island with a minimum length of 90 feet and minimum four-foot wide pedestrian access route for pedestrians in the TWLTL. Install lighting on each side of the crosswalk. o Directional lighting oriented towards the crosswalk could be provided; or o Lighting could turn on when the RRFB is activated and flashing and could turn off when the flashers stop. Restripe the crosswalk with Special Emphasis Crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346.	FDOT		
E - Ormond Beach / Ormond- by-the-Sea	Between Brooks Drive and Rivershore Drive	11	Crosswalk Spacing	Consider providing the following on the north side of the Essex Drive intersection, between Hibiscus Drive and Sandy Beach Drive, and the north side of the Palm Drive intersection: • Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) to evaluate if a crosswalk is warranted based upon existing demands. • Consider an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk. RRFBs may also be used on the advance crosswalk signs per FHWA's interim approval memorandum. • Where feasible, provide a median refuge island with a minimum length of 90 feet for pedestrians in the TWLTL. • Install lighting on the crosswalk's east side. • Directional lighting oriented towards the crosswalk could be provided; or • Lighting could turn on when the RRFB is activated and flashing and could turn off when the flashers stop. • Stripe the crosswalk with Special Emphasis Crosswalk imarkings consistent with sheet 10 of the FDOT Design Index 17346.	FDOT		
E - Ormond Beach / Ormond- by-the-Sea	Hibiscus Drive Intersection	15	Crossing to Beach Access	Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) to evaluate if a crosswalk is warranted based upon existing demands. Consider an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk. RRFBs may also be used on the advance crosswalk signs per FHWA's interim approval memorandum. Install lighting on the crosswalk's east side. O Directional lighting oriented towards the crosswalk could be provided; or O lighting could turn on when the RRFB is activated and flashing and could turn off when the flashers stop. Stripe the crosswalk with Special Emphasis Crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346. Connect crosswalk to beach access with sidewalk.	FDOT		

Focus Area	Location	Issue Number	Issue	Suggestion	Responsible Agency	Status	Completed (Y/N)
			1	NEAR-TERM IMPROVEMENT	1		
E - Ormond Beach / Ormond- by-the-Sea	Just North of Seaside Drive	18	Sidewalk Stub to Roadway	 Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) to evaluate if a crosswalk is warranted based upon existing demands. Consider an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk. RRFBs may also be used on the advance crosswalk signs per FHWA's interim approval memorandum. Install lighting on the crosswalk's east side. o Directional lighting oriented towards the crosswalk could be provided; or o Lighting could turn on when the RRFB is activated and flashing and could turn off when the flashers stop. Stripe the crosswalk with Special Emphasis Crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346. 	FDOT		
E - Ormond Beach / Ormond- by-the-Sea	Between Oceanshore Drive and Town and Country Lane	19	Connectivity between Parking Areas and Beach Access	Consider installing sidewalk on the east side of SR A1A connecting the public parks and beach access points. Provide a northem connection between the existing sidewalk and the parking area on the west side of SR A1A. Consider an additional crossing of SR A1A near Laurie Drive or Roberta Road: • Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) to evaluate if a crosswalk is warranted based upon existing demands. • Consider an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk. RRFBs may also be used on the advance crosswalk signs per FHWA's interim approval memorandum. • Install lighting on the crosswalk's east side. • o Directional lighting oriented towards the crosswalk could be provided; or o Lighting could turn on when the RRFB is activated and flashing and could turn off when the flashers stop. • Stripe the crosswalk with Special Emphasis Crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346.	FDOT		
E - Ormond Beach / Ormond- by-the-Sea	Ocean Shore Drive Intersection	20	Crosswalk Sign Location and Crosswalk Visibility	Consider an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk. RRFBs may also be used on the advance crosswalk signs per FHWA's interim approval memorandum.	FDOT		
E - Ormond Beach / Ormond- by-the-Sea	Margaret Road Intersection	21	Margaret Road Beach Walkway Access	Consider providing a hard surface or sidewalk within the designated beach walkway so the crosswalk can be connected to the beach access point.	FDOT		
F - Ormond-by- the-Sea	Corridor Wide	3	Mid-Block Crossings	The study team discussed potential crosswalk locations along the corridor and considered evaluating the following locations for crosswalks or updates to existing features: • Sunrise Avenue; • Starthy Drive; • Spanish Waters Drive (consider if the vacant parcel on the northwest corner is converted to be a beach parking area); and • Ocean Breeze Circle (existing crosswalk). The team discussed a tiered approach to implementation. Tier 1 • Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) to evaluate if a crosswalk is warranted based upon existing demands. • Stripe the crosswalk with special emphasis crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346. • Install advanced pedestrian warning signage (W11-2 and W16-9P) consistent with sheet 10 of the FDOT Design Index 17346 to indicate a pedestrian crossing is ahead. • Install crosswalk specific lighting. • Directional lighting oriented towards the crosswalk could be provided on the east side; or • LED lighting could turn on when the traffic control device is activated and could turn off when the traffic control device is not active. Tier 2 • Provide a minimum six-foot wide median refuge island with a minimum length of 90 feet for pedestrians. • The roadway would have to be widened to fit the refuge island between the northbound and southbound lanes but this impact could be minimized by reducing the travel lanes to be 11' wide. • Consider replacing the standard yellow background pedestrian warning signs with those having the fluorescent yellow-green background with Type 11 sheeting. Tier 3 • Due to high speeds along SR A1A (45 MPH), install an active warning device. The following active traffic control devices could be considered based on a mid-block crossing study: • Provide to the provide of the following active traffic control devices could be considered based on a mid-block crossing study: • Provide the provide of the provided of the provided of the provided of the provided of	FDOT		
F - Ormond-by- the-Sea	Corridor Wide	5	Signage	Consider replacing street name signage (D3-1) with new retro-reflective signs using applicable font size following the guidance provided in section 2D-43 of the 2009 Manual on Uniform Traffic Control Devices (MUTCD). Table 2D-2 specifies 6" letter height on post mounted street signs at intersections along two-lane roadways. The excess signage at the Sunrise Avenue intersection should be removed to only show the street connecting to SR A1A (Sunrise Avenue). Consider a signage study/plan for the study corridor to evaluate the amount of signage, applicability, retro-reflectivity, and location along the study corridor. This signage study/plan should include replacing the older signs with signs meeting current standards.	FDOT		

Focus Area	Location	Issue Number	Issue	Suggestion	Responsible Agency	Status	Completed (Y/N)
				NEAR-TERM IMPROVEMENT			
F - Ormond-by-	Corridor Wide	6	Lighting	The following are considerations for lighting along the corridor: • Consider conducting field measurements of existing lighting levels to evaluate lighting uniformity levels and add lighting where necessary. Consider light poles on the east side that are angled westerly away from the beach. These light poles cast their light to the west and illuminate the roadway as needed. The light bulb is not seen by the turtles due to the angle and orientation of the light fixture.	FDOT		
the-Sea	Dr. Well Dr.			 Consider implementing a lighting plan for the time the sea turtle nesting season is not active as roadway lighting levels should not be reduced at this time. Consider conducting a lighting justification study along unlit portions of the corridor to determine if additional lighting is justified. Consider implementation of pedestrian-level lighting, with less visibility from the beach, to supplement areas where street lighting is not able to provide adequate illumination as discussed in Issue 1: Lack of Bicycle Facilities. 			
F - Ormond-by- the-Sea	Between Kathy Drive and Spanish Waters Drive	9	Sidewalk Enhancements	Consider restriping the pavement markings delineating the sidewalk. Consider adding new sidewalk in the worn trail area to create a more direct route to the sidewalk in the northwest corner.	FDOT		
F - Ormond-by- the-Sea	Spanish Waters Drive Intersection	10	Steep Curb Ramp	Consider reconstructing the curb ramp on the northwest corner to meet ADA standards. This should be done in conjunction with potential sidewalk improvements included in Issue #10: Sidewalk Formalization or potential curb and gutter improvements as part of Issue #8: Minor Street Sight Distance.	FDOT		
F - Ormond-by- the-Sea	Spanish Waters Drive Intersection	11	Excess Pavement	Consider conducting an eight-hour traffic count at the intersection to understand the number of southbound right-turning movements. Vehicular crash history should also be reviewed at this location. Should traffic demand volumes or vehicular crash history suggest a right-turn lane is needed at this location, consideration could be given to formalize the right-turn lane and provide bicycle lane keyhole markings between the through and right-turn lane. If vehicular crash history and traffic counts do not suggest a right-turn lane is needed, consider removing the striping from the shoulder which creates the de-factor right-turn lane and consider removing the excess pavement to provide a consistently wide shoulder to eliminate the potential conflict area.	FDOT		
F - Ormond-by- the-Sea	Approximately 300' North of Spanish Waters Drive	12	Exposed Drainage Inlet	Due to the drop/steep slope between the sidewalk and drainage inlet consider reviewing this location based on FDOT Plans Preparation Manual (PPM) Figure 8.8.1 to possibly install a railing. If railing is needed, install the railing just off the east edge of the sidewalk to prevent pedestrians/bicyclists from falling off the sidewalk into the drainage ditch area.	FDOT		
F - Ormond-by- the-Sea	Ocean Breeze Circle Intersection	14	Existing Crosswalk Enhancements	The following considerations are for this specific location because a marked crosswalk already exists. The following suggestions are meant to coincide with the tiered approach to crosswalk treatments as discussed in Issue #3: Mid-Block Crossings. • Consider relocating the crosswalk approximately 15 feet south to correspond with the public beach access point. Restripe the crosswalk with special emphasis crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346. • Consider constructing a curb and gutter along the northwest and southwest intersection radii and tightening the curb radius on the southwest corner of the intersection. This will reduce the crossing distance for pedestrians and bicyclists at the crossing location. As part of this construction of curb ramps and landing pads on either side of the crosswalk should be considered. • Consider installing advanced pedestrian warning signage (W11-2 and W16-9P) consistent with sheet 10 of the FDOT Design Index 17346 to indicate a pedestrian crossing is ahead. • Consider installing crosswalk specific lighting. • Directional lighting oriented towards the crosswalk could be provided on the east side; or o LED lighting could turn on when the traffic control device is activated and could turn off when the traffic control device is not active. Implementation of Tier 2 and Tier 3 suggestions included as part of Issue #3: Mid-Block Crossings could be considered if the desired performance (crash mitigation/reduction and/or vehicle yield compliance) was not obtained from the Tier 1 suggestions.	FDOT		
F - Ormond-by- the-Sea	Seascape Condominiums - Approximately 100' North of Ocean Breeze Circle	15	Sight Distance	Consider reviewing the available sight distance at this location. Should additional sight distance be needed, consideration could be given to installing curb and gutter on the turn radii and reconstructing the sidewalk with a shift away from the driveway towards SR A1A. This improvement could be done in accordance with the suggestions described in Issue #7: Minor Street Sight Distance. This moves the sight lines for drivers and improves their ability to see pedestrians and/or bicyclists using the sidewalk.	FDOT		
F - Ormond-by- the-Sea	Between Sunrise Avenue and Briggs Avenue	16	Drainage	Consider constructing a valley gutter per sheet 1 of the FDOT Design Standard Index 300 between the sidewalk and the edge of roadway to convey water to the nearest drainage ditch.	FDOT		
F - Ormond-by- the-Sea	Kangaroo Express Gas Station	18	Driveway Drainage and Pedestrian Facility Delineation	Consider removing the existing asphalt pavement across the driveway and constructing a sidewalk at a slightly higher elevation. In conjunction with the sidewalk construction, construct a valley gutter. The valley gutter would then serve as the new low point for water to travel to and would convey water to the nearest drainage ditch. Consider constructing the valley gutter consistent with details per sheet 1 of the FDOT Design Standard Index 300.	FDOT		
G - Flagler Beach / Beverly Beach	Corridor Wide	1	Lack of Bicycle Facilities	Consider reconstructing the sidewalk on the west side of the roadway to be a 10°-12′ multi-use path. To help illuminate pedestrians/bicyclists utilizing the path, low level bollards with lights could be installed along the length of the study area, or at a minimum at unsignalized intersections. These low level bollard lights could be designed so they cannot be seen from the beach, thus reducing the risk of turtles being drawn to the roadway. Because the current sidewalk is approximately 5' to 20' from the edge of pavement, at unsignalized intersections the path can be brought closer to SR A1A so turning vehicles can better see pedestrians crossing the side street.	FDOT		

Focus Area	Location	Issue Number	Issue	Suggestion	Responsible Agency	Status	Completed (Y/N)
				NEAR-TERM IMPROVEMENT			
G - Flagler Beach / Beverly Beach	Corridor Wide	3	Mid-Block Crossings	Consider constructing mid-block crossings at 16th Street and 13th Street. A mid-block crossing should also be considered at 19th Street if the vacant parcel on the southwest corner is converted to be a beach parking area. The following details considerations for the mid-block crossings: • Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) to evaluate if a crosswalk is warranted based upon existing demands. • Install an active warning device, such as Rapid Rectangular Flashing Beacons (RRFB), at the crosswalk. Due to the high speed of the roadway, RRFBs should also be considered on advanced crosswalk signs per FHWA's interim approval memorandum. • Provide a median refuge Island with a minimum length of 90 feet for pedestrians. o The roadway would have to be widened to fit the refuge island between the northbound and southbound lanes but this impact could be minimized by reducing the travel lenaes to be 11' wide. By constructing a raised refuge Island, traffic calming may be a positive byproduct, as discussed further in Issue #7: Vehicular Speed. • Install lighting on the crosswalk's east side. o Directional lighting oriented towards the crosswalk could be provided; or o LED lighting could turn on when the RRFB is activated and flashing and could turn off when the flashers stop. • Stripe the crosswalk with special emphasis crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346. • Reconstruct the beach access walkover to have a 90 degree bend in the ramp, preferably facing south towards oncoming northbound traffic.	FDOT		
G - Flagler Beach / Beverly Beach	Corridor Wide	7	Vehicular Speed	FDOT has approved changing the posted speed limit from 45 MPH to 35 MPH from approximately 100' south of \$ 13th Street to approximately 50' south of \$ 8th Street. FDOT has also approved changing the posted speed limit from 35 MPH to 30 MPH from approximately 50' south of \$ 8th Street to N 3rd Street. As discussed in Issue #3: Mid-Block Crossings, median refuge islands should be considered if any mid-block crossings are to be installed throughout the corridor. To install those medians, the roadway would need to be widened but the lane widths could be reduced to minimize the amount of extra pavement needed. If the lane widths are reduced and a raised median installed at the mid-block crossing locations, vehicles would need to navigate these areas at a slower speed than they do now. Installing two to three mid-block crossings with raised medians along the study corridor would give the driver visual cues they are approaching a higher pedestrian/bicycle activity area and prepare them for the speed limit reduction from 45 mph to 30 mph.	FDOT		
G - Flagler Beach / Beverly Beach	Corridor Wide	8	Lighting	The following are considerations for lighting along the corridor: Consider conducting field measurements of existing lighting levels to evaluate lighting uniformity levels and add lighting where necessary. Consider light poles on the east side that are angled westerly away from the beach. These light poles cast their light to the west and illuminate the roadway as needed. The light bulb is not seen by the turtles due to the angle and orientation of the light fixture. Consider implementing a lighting plan for the time the sea turtle nesting season is not active as roadway lighting levels should not be reduced at this time. Consider conducting a lighting justification study along unlit portions of the corridor to determine if additional lighting is justified. Consider implementation of pedestrian-level lighting, with less visibility from the beach, to supplement areas where street lighting is not able to provide adequate illumination.	FDOT		
G - Flagler Beach / Beverly Beach	Corridor Wide	10	Minor Street Sight Distance	Consider limiting on street parking immediately adjacent to the minor street intersections. This suggestion could be performed in conjunction with making off street beach parking areas as described in Issue #2: Beach Parking Areas. In addition to limiting on street parking, consider moving the stop bars to be the minimum of 4' away from the marked crosswalks discussed in Issue #4: Minor Street Intersections, per sheets 2 and 4 of FDOT Design Standard Index 17346.	FDOT		
G - Flagler Beach / Beverly Beach	Mid-Block between S 23rd Street and S 11th Street	13	Missing Pedestrian Facilities	Consider adding a concrete sidewalk in front of the Oceanside Bar. In order to not create a drop off hazard with the new concrete, consider removing an asphalt strip and constructing the sidewalk flush with the existing asphalt. Alternatively, high visibility crosswalk markings could also be used to define the pedestrian area. Consider working with the property owner of the Pope Plaza to expand this sidewalk to be 6'.8' wide and connect to the sidewalk being considered in front of the Oceanside Bar. The two buildings in the Pope Plaza are offset, so a sidewalk connection would need to be made between the southermost and the northermost buildings. Consider working with the property owner to widen this sidewalk and connect to the sidewalk on the north side of the property. In pavement concrete could be added on the south side of the property at the 5 12th Street intersection to lead pedestrians/bicyclists to the sidewalk running in front of the building. Consider working with the property owner to remove the parking spaces in front the Café as the business has parking the rear of the building.	FDOT		
G - Flagler Beach / Beverly Beach	Mid-Block at the Beverly Beach Camptown RV Resort	14	Mid-Block Crossing Enhancements and Vehicular Speed	Consider the following mid-block crosswalk enhancements: Install an active warning device, such as RRFBs, at the crosswalk. Due to the high speed of the roadway, RRFBs should also be considered on advanced crosswalk signs per FIMA's interim approval memorandum. o The warning device should be installed at both the side of the roadway and in the median for both directions of travel. Provide a 6' wide median refuge island with a minimum length of 90 feet for pedestrians. o The roadway would need to be widened but the lane widths could be reduced to 11' to minimize the amount of extra pavement needed. The shoulder could be utilized for some of the extra pavement width, thus narrowing the roadway for the driver. Install lighting on the crosswalk's east side. o Directional lighting oriented towards the crosswalk could be provided; or o LED lighting could turn on when the RRFB is activated and flashing and could turn off when the flashers stop. Restripe the crosswalk wis special emphasis crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346. Install audible vibratory pavement markers along the centerline and shoulder striping to discourage driving on the shoulder. Add potential landscape features in the median that do not obstruct the sight lines for both vehicles and pedestrians utilizing the crossing. Construct a raised bulb out on the east side of the roadway to define where the pedestrian should be standing in order to cross.	FDOT		
G - Flagler Beach / Beverly Beach	Mid-Block at the Beverly Beach Camptown RV Resort	15	Golf Cart Crossings	Consider a golf cart study to assess the feasibility of making golf carts "street legal" in the Town of Beverly Beach. In order to become "street legal", the Town could institute an ordinance that golf carts must have brakes, turn signals, a horn, rear-view mirror, reflectors on the front and rear, and seat belts. Golf carts operating at night would also need working headlights. To safety get the golf carts across SR A1A, they could be required to utilize the marked mid-block crossing at the Camptown Resort instead of being permitted to cross anywhere along SR A1A.	FDOT		

Focus Area	Location	Issue Number	Issue	Suggestion	Responsible Agency	Status	Completed (Y/N)
			<u> </u>	NEAR-TERM IMPROVEMENT			
H - Flagler Beach	Corridor Wide	3	Mid-Block Crossings	The team discussed a tiered approach to enhancing the mid-block crossings if the desired performance (crash mitigation/reduction and/or vehicle yield compliance) was not obtained with the current tier suggestions: Tier 1 – 6th Street S or 5th Street S Only Conduct a mid-block crossing study per Section 3.8 of the FDOT Traffic Engineering Manual (TEM) to evaluate if a crosswalk is warranted based upon existing demands. If warranted, consider removing one parking space in the northeast corner and extending the concrete landing area so a crosswalk can be added on the north leg of the intersection. If warranted, stripe the crosswalk with special emphasis crosswalk markings consistent with sheet 10 of the FDOT Design Index 17346. If warranted, install advanced pedestrian warning signage (W11-2 and W16-9P) consistent with sheet 10 of the FDOT Design Index 17346 to indicate a pedestrian crossing is ahead. Tier 2 – 8th Street 5, 6th Street 5 or 5th Street 5, and 4th Street N Provide a median refuge island with a minimum length of 90 feet for pedestrians. o The roadway would have to be widened to fit the refuge island between the northbound and southbound lanes but this impact could be minimized by reducing the travel lanes to be 11' wide. Consider replacing the standard yellow background pedestrian warning signs with those having the fluorescent yellow-green background with Type 11 sheeting. Install crosswalk specific lighting. o Directional lighting oriented towards the crosswalk could be provided on the east side; or o LED lighting could turn on when the traffic control device is activated and could turn off when the traffic control device is not active. Tier 3 – 8th Street 5, 6th Street 5 or 5th Street 5, and 4th Street N Install crosswalk specific lontrol warning device. The following active traffic control devices could be considered based upon a mid-block crossing study: o Rectangular Rapid Flashing Beacons (RRFBs); o Pedestrian Hybrid Beacon; or	FDOT		
				o Pedestrian Traffic Signal.			
H - Flagler Beach	Corridor Wide	6	Lighting	Consider upgrading to an adaptive roadway lighting system along the corridor. Lighting levels could be programmed to be reduced during the sea turtle nesting season and increased to normal levels outside of the nesting season. This could be coupled with replacing the current high pressure sodium lighting with LED lighting.	FDOT		
H - Flagler Beach	Corridor Wide	6	Lighting	Consider conducting field measurements of existing lighting levels to evaluate lighting uniformity levels and add lighting where necessary. Consider implementing a lighting plan for the time the sea turtle nesting season is not active as roadway lighting levels should not be reduced at this time.	FDOT		
H - Flagler Beach	9th Street S to 8th Street S	9	Shoulder Width	Consider widening the shoulder to provide a consistent width for bicyclists.	FDOT		
H - Flagler Beach	Shell Gas Station just South of	10	Driveway Widths	Consider driveway reconstruction during the roadway's next 3R project to reduce the driveway widths down to the 36' maximum	FDOT		
H - Flagler Beach	7th Street S SR A1A at SR 100	14	Vehicle/Pedestrian Crosswalk		FDOT		
-			Conflicts Pedestrian Pushbutton	adjusted to allow for this leading pedestrian interval phase. Consider installing new pedestals on the northwest corner within ten feet of the pedestrian ramps. Consider installing new			
H - Flagler Beach	SR A1A at SR 100	15	Accessibility	pushbuttons oriented with the faces parallel to the crosswalk on the southwest, northeast, and southeast corners. Consider implementing ground-in rumble strips or profiled thermoplastic to more effectively alert drivers when they are crossing	FDOT		
I - Flagler County	Corridor-Wide	5	Raised Audible Pavement Markings	consider implementing ground-in runing strips or promise thermophastic to more effectively afect drivers when they are crossing into the shoulder. If runble strips are utilized, consider repaving the shoulders and adding pavement to create space for the strips and provide a homogenous surface for bicyclists. If the shoulder is repaved, consider adding enough pavement to provide a 7' buffered bicycle lane.	FDOT		
I - Flagler County	SunTrust Bank Driveway just South of 16 th Road	10	Southeast Curb Return Radius	Consider reconstructing the southeast corner curb return radius based on FDOT Standard Index 515 so the driveway throat width is reduced.	FDOT		
I - Flagler County	16 th Road Intersection	11	Intersection Sight Distance	Consider realigning the sidewalk/shared-use path closer to the roadway and restriping the crosswalk as discussed in Issue #4: Unsignalized Intersection and Driveway Crosswalk Markings. When reconstructing the sidewalk south of 16th Road, widen from 8' to 10' so the sidewalk to shared-use path transition takes place south of 16th Road instead of at the crosswalk for the intersection.	FDOT		
I - Flagler County	16 th Road Intersection	12	Northeast and Southeast Curb Return Radii	Consider reconstructing the northeast and southeast corner curb return radius based on FDOT Standard Index 515 so the driveway throat width is reduced.	FDOT		
I - Flagler County	16 th Road Intersection	13	Intersection Traffic Control	Consider conducting a signal warrant evaluation at this intersection. If the intersection warrants a signal and a signal is constructed, consider installing crosswalks and pedestrian features on the north and south legs to provide crossings across SR A1A for pedestrians and bicyclists.	FDOT		
I - Flagler County	Adult & Community Education Center	14	Crosswalk Alignment	Consider realigning the crosswalk to the east and providing a 5' landscape buffer between the crosswalk and roadway if right-of- way is available.	FDOT		
I - Flagler County		17	North Leg Crosswalk	way is available. Consider adding a special emphasis crosswalk to the north leg of the intersection per sheet 12 of FDOT Design Standard Index 17346. In addition to the crosswalk, consider installing pedestrian warning signage (W11-2) and arrow plaques (W16-7P) for this crossing.	FDOT		
G - Flagler Beach / Beverly Beach	Corridor Wide	5	Signage	Consider replacing street name signage (D3-1) with new retro-reflective signs using applicable font size following the guidance provided in section 2D-43 of the 2009 Manual on Uniform Traffic Control Devices (MUTCD). Table 2D-2 specifies 6" letter height on post mounted street signs at intersections along two-lane roadways. The street signs closer to SR 100 were recently upgraded to have 6" letter height with a decorative border so consider replacing the street signs along the study corridor with the same signage type for consistency. During the next resurfacing project, consider a signage study/plan for the study corridor to evaluate the amount of signage, applicability, retro-reflectivity, and location along the study corridor. This signage study/plan should include replacing the older signs with signs meeting current standards.	FDOT / Flagler Beach		

Focus Area	Location	Issue Number	Issue	Suggestion	Responsible Agency	Status	Completed (Y/N)
				NEAR-TERM IMPROVEMENT			
H - Flagler Beach	Corridor Wide	2	Beach Parking	Consider converting the parking areas along the east side of SR A1A south of SR 100 to lattice style parking areas. The lattice style parking area has been implemented on adjacent city roads with an example provided in Figure 8. Implementing this parking area style along the corridor would reduce the risk of bicyclists dropping off into the sand. This also provides a more consistent and level parking area for beach patrons. Providing the lattice style parking area would provide better drainage than paving over the sand with impervious asphalt or concrete.	FDOT / Flagler Beach		
H - Flagler Beach	Corridor Wide	4	Signage	Consider coordinating with the City to prioritize replacing old and faded signs with new street name signage (03-1). Consider a signage study/plan for the study corridor to evaluate the amount of signage, applicability, retro-reflectivity, and location along the study corridor. This signage study/plan should include replacing the older signs with signs meeting current standards.	FDOT / Flagler Beach		
H - Flagler Beach	Corridor Wide	5	Lack of Bicycle Facilities	The parking spaces along the west side of SR A1A are less utilized and could provide opportunity for bicycle lanes without the need to widen SR A1A. The City would be in support of removing some parking spots along the west side of the roadway to add bicycle lanes. Consider conducting a study to evaluate the feasibility of removing parking spaces and implementing Complete Streets-type enhancements along the corridor.	FDOT / Flagler Beach		
H - Flagler Beach	Corridor Wide	7	Sight Distance	Consider conducting a sight distance study along the corridor to evaluate whether on street parking spaces are restricting sight distance.	FDOT / Flagler Beach		
H - Flagler Beach	SR A1A at SR 100	13	Adjacent Intersection Parking	Consider formalizing the emergency vehicle area by paving an asphalt surface and applying yellow striping. Consider increased enforcement of the emergency vehicle parking area to dissuade the general public from parking or unloading their vehicles at this location. Consider removing some of the parking spots southeast of the intersection. If removal of beach parking is not desired, consider constructing a raised median extending south of SR 100 to restrict the southbound left-turn movements into the beach parking spaces.	FDOT / Flagler Beach		
H - Flagler Beach	SR A1A at 5th Street S	12	Sidewalk Width	Consider reviewing right-of-way (ROW) on this corner and if applicable, coordinate with the property owner to relocate the landscaping features within their (ROW).	FDOT / Flagler Beach in Coordination with Local Property Owners		
I - Flagler County	17 th Road to 16 th Road	9	Church Parking	Consider coordinating with Hammock Community Church to remove the parking or to create another on-site access point to the parking area.	FDOT / Flagler County in Coordination with Local Property Owners		
E - Ormond Beach / Ormond- by-the-Sea	Mid-Block between Sandcastle Drive and Ormond Mall	7	Driveways and Parking Areas Not Defined	For parcels with the ability to facilitate onsite circulation of parking maneuvers, consider working with the private property owner to install wheelstops or curbing to direct motorists to access SR A1A via defined driveway locations only.	FDOT / Volusia County in Coordination with Local Property Owners		
E - Ormond Beach / Ormond- by-the-Sea	Riverbreeze Boulevard and Plaza Drive Intersections	9	Sight Distance	Consider working with the property owners to relocate or remove the decorative walls to improve intersection sight distance between eastbound vehicles and pedestrians/bicyclists on the sidewalk.	FDOT / Volusia County in Coordination with Local Property Owners		
E - Ormond Beach / Ormond- by-the-Sea	Ormond Mall	14	Sidewalk Connectivity to Retail	Consider working with the property owner to provide pedestrian connectivity between the traffic signal and the retail shops. Examples of projects that could incorporate this type of project include redevelopment and parking lot resurfacing/restriping.	FDOT / Volusia County in Coordination with Local Property Owners		
E - Ormond Beach / Ormond- by-the-Sea	Southwest Corner of Seaside Drive	17	Driveway/parking Area Delineation	Consider working with the property owner to clearly mark driveway and parking locations. These types of improvements could be implemented through striping and landscaping. Consider moving the STOP sign nearer to the stop bar.	FDOT / Volusia County in Coordination with Local Property Owners		
F - Ormond-by- the-Sea	Corridor Wide	2	Beach Parking Area	Consider converting the vacant parcel on the northwest corner of SR A1A and Spanish Waters Drive to a beach access parking lot (Figure 7). If an off-street beach parking area is constructed, consider installing NO PARKING (R8-3a) signs along the west side of SR A1A to encourage beachgoers to park in the designated beach parking area.	FDOT / Volusia County in Coordination with Local Property Owners		
C - Daytona Beach	Mid-Block between ISB and Harvey Avenue	9	Sidewalk Obstruction	Consider coordinating with the hotel and/or contractor at the site to verify that a continuous and unobstructed width of at least four feet is provided (exclusive of the width of curb) based on Americans with Disabilities Act (ADA) guidelines, or that advanced guidance is properly given to pedestrians needing to cross SR A1A in advance to avoid the temporary obstruction.	FDOT in Coordination with Local Property Owner		
D - Daytona Beach / Ormond Beach	Cardinal Drive Intersection	27	Pedestrian Facilities	FDOT has identified this location for a signal upgrade which is planned to include a conversion from strain wire to mast arms, basic ADA upgrades, and implementation of APS.	FDOT in Coordination with Volusia County		
E - Ormond Beach / Ormond- by-the-Sea	Just North of Roberta Road	22	Beach Crossing Sight Distance and Connectivity	Consider connecting this beach crossover to the crosswalk discussed in Issue #19 on the east side of SR A1A.	FDOT in Coordination with Volusia County		
G - Flagler Beach / Beverly Beach	Mid-Block between S 23rd Street and S 11th Street	12	Parked Cars on Sidewalk	Consider working with the Martins property owner to align their parking stalls so vehicles are not parked over the sidewalk. Consider working with parking enforcement to warn/cite drivers who still park over the sidewalk once the parking stalls have been realigned.	Flagler Beach		
I - Flagler County	Apache Drive	18	Sand in Crosswalk Area	Consider paving Apache Drive 50 to 100 feet east from the crosswalk to minimize sand debris tracking onto the crosswalk area.	Flagler County		
D - Daytona Beach / Ormond Beach	Harvard Drive Intersection	22	Sidewalk Connectivity	Consider constructing a sidewalk on the north side Harvard Drive to facilitate pedestrian connectivity to the sidewalks along SR A1A and the beach access on the east side of the intersection. This could be considered in addition to the basic ADA upgrades and APS implementation as part of the future intersection upgrade from strain wire to mast arms.	Ormond Beach		
A - New Smyrna Beach	Horton Street/Saxon Drive Intersection	15	Pedestrian Facilities	Because APS is already installed for the east leg, consider improving the other crosswalks at the intersection with APS to improve accessibility for visually-impaired users. Refer to MUTCD Section 4E.11 and Chapter 6 of NCHRP 3-62: Guidelines for Accessible Pedestrian Signals (http://www.apsguide.org/chapter6_geometry.cfm).	Volusia County		
C - Daytona Beach	International Speedway Boulevard Intersection	6		Consider relocating or removing the structures or installing a separate push button pole on the southeast corner for the southern and eastern crosswalks less than 10' from the pedestrian ramp.	Volusia County		

Focus Area	Location	Issue Number	Issue	Suggestion	Responsible Agency	Status	Completed (Y/N)
				NEAR-TERM IMPROVEMENT			
C - Daytona Beach	Auditorium Boulevard Intersection	16	Pedestrian Facilities	Consider installing a separate push button pedestal and pedestrian signal on the southeast corner for the southern crosswalk within 10' from the pedestrian ramp.	Volusia County		
D - Daytona Beach / Ormond Beach	Corridor Wide	11	Accessible Pedestrian Signals (APS)	Consider installing APS at the three signalized intersections during the next upgrade(s) to the signalized intersections. The signals at Harvard Drive and Cardinal Drive are planned to be upgraded from the existing strain pole/span wire configuration to mast arms. APS and pedestrian facilities upgrades should be considered as part of the signalization upgrades.	Volusia County		
D - Daytona Beach / Ormond Beach	Plaza Boulevard Intersection	18	Pedestrian Facilities	Consider installing a separate push button pole on the northeast corner for the northern and eastern crosswalks that is less than 10' from the pedestrian ramp.	Volusia County		
E - Ormond Beach / Ormond- by-the-Sea	Essex Drive Intersection	10	Essex Drive Sidewalk Connectivity	Consider installing sidewalks or designating a clear pedestrian access route (PAR) compliant with the PROWAG.	Volusia County		
E - Ormond Beach / Ormond- by-the-Sea	Ormond Mall Intersection	12	Pedestrian Signal Timings/Equipment	Consider options to improve the response of walk phases during the northbound and southbound phases. Options to consider include: Extend the pedestrian WALK phase to take better utilize the full northbound/southbound vehicular phase; or Allow the Walk phase to activate at the start of green and extend the northbound/southbound phase to accommodate the pedestrian clearance time, if needed. beyond seven seconds. The current Walk + Flash Don't Walk time is 19 seconds, but the Max Green time is 40 seconds. O consider leading pedestrian phase. O Consider setting NB/Sa vehicular signal phase to Max Recall O Consider programming signal to begin Flash Don't Walk phase when NB/SB vehicular phase gaps out. Volusia County Traffic Engineering should request a revision to the signal timings to FDOT for review and concurrence.	Volusia County		
E - Ormond Beach / Ormond- by-the-Sea	Ormond Mall Intersection	13	Pedestrian Facilities	Consider installing a two separate push button poles that are less than ten feet from the pedestrian ramp, one for the south leg crosswalk and one for the west leg crosswalk. On these poles, install the push buttons parallel to the crosswalk to be used, as discussed in section 4E.08 of the MUTCD. Consider providing pedestrian facilities on all four legs of the intersection. To do this, extend the sidewalk on the east side of SR A1A northward to the north side of the intersection. Also consider the addition of a special emphasis marked crosswalk, as shown on sheet 9 of the FDOT Design Standard Index 17346, on the north leg of the intersection. Along with the marked crosswalk, pedestrian push buttons and countdown timers should also be installed. Consider installing R10-31 pedestrian plaques on all corners of the intersection indicating the respective pedestrian push button's corresponding street name.	Volusia County		
A - New Smyrna Beach	E 3rd Avenue Intersection	20	Pedestrian Facilities	Consider a blank-out sign that displays a YIELD TO PEDESTRIANS message at the onset of the southbound green phase to make southbound left turn drivers more aware of pedestrians in the east leg crosswalk.	Volusia County in Coordination with FDOT		
C - Daytona Beach	Harvey Avenue Intersection	12	Pedestrian Facilities	The following are considerations to address the pedestrian facilities issues identified at this intersection: Consider the addition of a crosswalk on the north leg of the intersection as well as the necessary pedestrian signals and signage. The crosswalk would either have to be shifted to the north to avoid the drainage inlet on the northeast corner or the drainage inlet could be relocated. Consider installing a separate push button poles on the southeast and southwest corners for the south and west crosswalks less than 10' from the pedestrian ramp. Replace the outdated push button signage with new signage (R10-3i). Consider reconstructing the curb ramps on the northwest and southwest corners to address the cross slopes and effective width ADA issues.	Volusia County in Coordination with FDOT		
B - Daytona Beach Shores / Daytona Beach	Corridor Wide Daytona Beach Section	8	Bus Stops	Consider providing a 5' x 8' bus stop landing pad at each bus stop per section R308.1.1.1 of the ADA PROWAG during the next resurfacing project.	Votran		
D - Daytona Beach / Ormond Beach	Corridor Wide	10	Transit Bus Stop Review	Consider coordinating a transit review of bus stops along the corridor. Items to evaluate should include: Boarding and alighting areas Bus stop locations with consideration to marked crosswalks to cross SR A1A ADA accessibility Illumination Sign visibility (daytime and nighttime) Trash can locations	Votran		

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E - Ormond Sidewalk Inconsistency on Consider constructing sidewalk on the east side of SR AIA to fill in the gaps as part of a complete streets project or other
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by-the-Sea
E - Ormond Consider upgrading to an adaptive roadway lighting system along the corridor. Lighting levels could be programmed to be reduced
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by-the-Sea
To address the issue of multiple driveways for the same property, consider driveway consolidation during potential
redevelopments where feasible. For currently undeveloped properties, consolidating these driveways during development will
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hu the Sea
properties. Cross-access between adjacent parcers within a block should be a focus on the six ALA comounds properties redevelop
which would help eliminate unused or underutilized driveways.
F-Ormand
Southwest Corner of Seaside Driveway/parking Area Consider complete street improvements as discussed in Jerus #1
Beach / Ormono Drive 1/ Delineation Consider complete-streets improvements as discussed in Issue #1.
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Consider reconstructing the sidewalk on the west side of the roadway to be a 10'-12' wide shared-use path. In order to
F - Ormond-by- Corridor Wide 1 Lack of Ricycle Eacilities accommodate the bicycle and pedestrian traffic in the area, a wider multi-use nath would serve both of those non-automobile FDOT
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the-Sea Comoor wide o Lighting our replacing the current high pressure sodium lighting with LED lighting.
Consider removing the existing asphalt surface to create a shared use path consistent with the suggestion included in Issue #1: Lack
Consider removing the existing asphalt surface to create a shared use path consistent with the suggestion included in Issue #1: Lack of Bicycle Facilities. In addition, consideration could be given to providing a curb and gutter at the edge of the sidewalk or shared-
Consider removing the existing asphalt surface to create a shared use path consistent with the suggestion included in Issue #1: Lack

Focus Area	Location	Issue Number	Issue	Suggestion	Responsible Agency	Status	Completed (Y/N)
LONG-TERM IMPROVEMENT							
F - Ormond-by- the-Sea	Between Sunrise Avenue and Briggs Avenue	16	Drainage	Consider constructing an underground drainage system in this area to convey water off of SR A1A and the sidewalk to reduce the potential for ponding in this area.	FDOT		
F - Ormond-by- the-Sea	Kangaroo Express Gas Station	18	Driveway Drainage and Pedestrian Facility Delineation	Consider constructing an underground drainage system in this area to convey water off of SR A1A and the sidewalk to reduce the potential for ponding in this area.	FDOT		
G - Flagler Beach / Beverly Beach	Corridor Wide	1	Lack of Bicycle Facilities	Consider widening SR A1A to install buffered bicycle lanes. The eastern pavement line would remain in its current location (so the dune is not impacted) and SR A1A could be widened to the west by approximately 10° (7° for the northbound bicycle lane and an extra 3° for the southbound bicycle lane, because a 4° shoulder is already present). Because most of the existing buffer between the roadway and sidewalk (or multi-use path if the near term suggestion is constructed) would be utilized for new pavement, a curb and gutter cross section should be considered so a vertical obstruction is added between the roadway and pedestrian walking area.	FDOT		
G - Flagler Beach / Beverly Beach	Corridor Wide	2	Beach Parking Areas	Convert the vacant parcel on the southwest corner of SR A1A and 19th Street South to a beach access parking lot. As discussed in Issue 83: Mid-Block Crossings, a mid-block crossing is suggested at 19th Street to accommodate pedestrians crossing SR A1A to the beach access point. This mid-block crossing could be constructed in conjunction with the beach parking lot in order to concentrate pedestrian crossings at a specific location. The vacant parcels on the corners of 17th Street and 13th Street could also be considered for beach parking areas. A mid-block crossing is suggested at 13th Street as discussed in Issue #3: Mid-Block Crossings. If off street beach parking areas are constructed, consider installing NO PARKING (R8-3a) signs along the west side of SR A1A to encourage beachgoers to park in the designated beach parking areas.	FDOT		
G - Flagler Beach / Beverly Beach	Corridor Wide	8	Lighting	Consider upgrading to an adaptive roadway lighting system along the corridor. Lighting levels could be programmed to be reduced during the sea turtle nesting season and increased to normal levels outside of the nesting season. This could be coupled with replacing the current high pressure sodium lighting with LED lighting.	FDOT		
G - Flagler Beach / Beverly Beach	Mid-Block at the Beverly Beach Camptown RV Resort	14	Mid-Block Crossing Enhancements and Vehicular Speed	Add gateway features on the south and north sides of the town. The gateway feature could include a 6' median island similar to what is proposed at the mid-block crossing. Audible wibratory pavement markers could also be considered to discourage shoulder driving or a curbed section could be installed along the length of the gateway feature to visually narrow the condway for the driver. Landscaping could be included both in the median and along the side of the roadway to also help visually narrow the roadway.	FDOT		
H - Flagler Beach	Corridor Wide	5	Lack of Bicycle Facilities	Consider reconstructing the sidewalk on the west side of the roadway to be a 10'-12' wide shared-use path. As noted previously, the lack of bicycle facilities along the study corridor encourages a lot of bicyclists to utilize the sidewalk. In order to accommodate both the bicycle and pedestrian traffic in the area, a wider shared-use path would serve both of those mode.	FDOT		
H - Flagler Beach	Corridor Wide	6	Lighting	Consider upgrading to an adaptive roadway lighting system along the corridor. Lighting levels could be programmed to be reduced during the sea turtle nesting season and increased to normal levels outside of the nesting season. This could be coupled with replacing the current high pressure sodium lighting with LED lighting.	FDOT		
H - Flagler Beach	3rd Street N to 13th Street N	17	Utility Poles	Consider relocating the poles to be at the front or back of the sidewalk as the poles are replaced as part of scheduled maintenance.	FDOT		
H - Flagler Beach	4th Street N to 13th Street N	18	Formalize Intersection Turning Radii	Consider formalizing the intersection turning radii at these intersections with a curb and gutter. Installing curb and gutter also allows for the opportunity to create bulb-outs, reducing the distance pedestrians need to cross.	FDOT		
H - Flagler Beach	Between 8th Street N and 9th Street N	19	Sidewalk Rehabilitation	Consider removing the asphalt sidewalk and reconstructing the sidewalk in this section with concrete to provide a consistent surface throughout the corridor.	FDOT		
I - Flagler County	Corridor-Wide	6	Lighting	Consider conducting a lighting justification study along unlit portions of the corridor to determine if additional lighting is justified. Consider implementation of pedestrian-level lighting to supplement areas where roadway lighting is not able to provide adequate illumination along the shared-use path between 16th Road and Malacompra Road.	FDOT		
I - Flagler County	Malacompra Road Intersection	16	Intersection Lighting	Consider implementing pedestrian activated overhead lighting or installing in-pavement lighting along the crosswalk bars to illuminate crosswalk the crosswalk. See report text for details.	FDOT		
G - Flagler Beach / Beverly Beach	Corridor Wide	9	Residential Driveways	Consider working with Flagler Beach code enforcement to identify properties having and not having approved driveway access onto SR A1A. For the properties having approved driveway access onto SR A1A, consider paving a driveway connection between the edge of pavement and the sidewalk during the next 3R project. For those properties not having approved access, work with the property owner to either get a driveway accessing SR A1A approved/formalized or see if they have access to their home on the west side of their parcel.	FDOT / Flagler Beach		
E - Ormond Beach / Ormond- by-the-Sea	Corridor-Wide	7	Driveways and Parking Areas Not Defined	For parcels without the ability to facilitate onsite circulation of parking maneuvers, consider relocating parking to areas with better parking access and circulation. Some parcels may not have the ability to relocate parking areas. However, many of these parcels are located in areas with wide shoulders; implementation of complete streets strategies could allow for opportunities to right-size the motorist, bicyclist, and pedestrian facilities and reduce conflicts between bicyclists and pedestrians with parking motorists while making use of available space.	FDOT / Volusia County in Coordination with Local Property Owners		
A - New Smyrna Beach	Corridor Wide	6	Sidewalk Connectivity to Properties	As properties redevelop along the corridor, consider requiring the property owner to construct sidewalks that connect to SR A1A.	New Smyrna Beach in Coordination with Local Property Owners		
C - Daytona Beach	Corridor Wide - South Section	2	Lack of Bicycle Facilities	The City of Daytona Beach has discussed the idea of encouraging bicyclists to use parallel facilities. One parallel facility under consideration based upon lower volumes and vehicular speeds is Grandview Avenue. Grandview Avenue is two blocks west of SR A1A (approximately 475 feet) and is a residential roadway with one travel lane in each direction and areas for on-street parking. Consider conducting a feasibility study to provide enhanced bicycle facilities along Grandview Avenue and install guide signage along SR A1A directing bicyclists to the designated parallel facility.	River to Sea TPO / Daytona Beach		
C - Daytona Beach	University Boulevard	29	Pedestrian Facilities	FDOT reported an official request for accessible pedestrian signals (APS) at this location. These upgrades could be implemented at this location as part of a signal upgrade. The signal upgrade could include the conversion from the existing strain wire to mast arms, basic ADA upgrades, and implementation of APS. Installing APS at this signalized intersection could improve crossing performance for visually impaired pedestrians.	Volusia County		

Appendix H FDOT Implementation Meeting Agenda and Notes Summary

River to Sea TPO

Implementation Meeting Agenda

SR/CR A1A Pedestrian Safety & Mobility Study

Date: May 23rd, 2016 Project #: 13376.05

FDOT District Five District Office, 719 South Woodland Boulevard, DeLand 32720,

Magnolia Conference Room 11:00 AM - 12:00 PM

1. Project Background and Overview

a. Goals of project

2. Review 6 Focus Areas Studied: New Smyrna Beach, Daytona Beach Shores, Daytona Beach, Ormond Beach, Ormond-by-the-Sea, Flagler Beach, Beverly Beach

a. Overview of locations and key issues identified for each field review

3. Review Draft Short-, Near-, and Long-Term Suggestions from Studies

- a. Definitions:
 - i. Short-Term Maintenance it is anticipated that issues identified for maintenance may be addressed by public agency staff on a short timeframe and at a relatively low cost.
 - ii. Near-Term Improvement activities that may be incorporated into an upcoming construction project in the area, including 3R milling and resurfacing projects.
 - iii. Long-Term Improvement activities that may be incorporated into upcoming construction projects and may need to be programmed for funding as separate projects.

4. Next Steps

At:

- a. FDOT will receive final lists of suggestions from the six corridors studied
- b. R2CTPO to work with FDOT and local jurisdictions along corridor to track progress of suggestions
- c. Remaining three focus areas not reviewed

FDOT Implementation Meeting Notes SR/CR A1A Pedestrian Safety & Mobility Study

Meeting May 23, 2016 11:00 AM – 12:00 PM

Date & Time:

Location: FDOT District 5 Office, 719 S Woodland Blvd, DeLand, FL 32720 – Magnolia

Conference Room

Attendees

Attendees participated by attending the meeting. Those that participated in the meeting were:

- Amir Asgarinik FDOT
- Tony Nosse FDOT
- Michael Sanders FDOT
- Joan Carter FDOT
- Gene Ferguson FDOT
- Stephan Harris River to Sea TPO
- Jack Freeman Kittelson & Associates, Inc.
- Adam Burghdoff Kittelson & Associates, Inc.
- Travis Hills Kittelson & Associates, Inc.

Discussion Topics

Adam Burghdoff began the meeting by presenting a PowerPoint reviewing the overall goals of the SR/CR A1A Pedestrian Safety & Mobility Study. This presentation also reviewed the six focus areas where safety reviews were performed. After the presentation, the group discussed the various suggestions from the study. The following discussions took place during the meeting:

- The short-term maintenance suggestions will be provided to the roadway maintaining agency once the reports are finalized. It is anticipated these suggestions will be implemented in a relatively short timeframe.
- How to implement specific types of near-term improvements were discussed by the group:
 - o Suggestions pertaining to signalized intersections
 - If it involves the signal equipment, this would have to be implemented by the signal maintaining agency such as Volusia County, Daytona Beach, or Flagler Beach
 - Suggestions pertaining to intersection and corridor lighting
 - \$100 million in funding for lighting projects Statewide over the next 5 years
 - D5 has 400 to 500 potential locations for lighting improvements

Project #: 13376.05

- FDOT can be the lead agency to perform lighting justification reports along corridor
 - CUTR has new technology that can be installed on a car that senses where the roadway has lighting and where it does not have lighting
- For the most part, Florida Power & Light (FPL) maintains the lighting along the corridor
 - If new lighting is implemented along corridor based on results of the FDOT studies, the County and cities will need to check in with FPL to maintain the lighting levels and replace bulbs when they burn out
- The lighting studies should be coordinated with environmental protection for season turtle nesting lighting level requirements
- Suggestions pertaining to mid-block crossings
 - Adding active traffic control to existing marked mid-block crossings
 - FDOT Traffic Operations can perform a study to review the location
 - To implement the upgrade to the crossing, FDOT Push Button or River to Sea TPO SU funding may be potential sources
 - Projects through Push Button program take a little more time so if the project needs to be done quicker, the local agency may need to take the lead and develop the project. FDOT would be the review agency.
 - FDOT has design-build safety related contract
 - o Funding of 3 to 3.5 million dollars a year
 - o Contract performed through program management
 - Firm will be under contract in a few months, anticipated start of work is January of 2017
 - o Already have 8 projects identified for this contract
 - To review new locations for adding a marked mid-block crossing, FDOT Traffic Operations will be able to perform mid-block crossing studies.
 - FDOT would like the study team to prioritize the Focus Areas so they know which areas to study first
- Suggestions pertaining to beach access points
 - FDOT's jurisdiction ends at the right-of-way line, the County or local city will need to implement suggestions outside of the FDOT right-of-way
- The group discussed ways to fund safety field reviews for the final three focus areas that were identified but not studied as part of the project
 - o FDOT will work with the TPO to identify funding for these safety field reviews

Discussion of Next Steps and Questions

The following are next steps in the project:

a) The study team will provide the list of suggestions from the six focus areas to FDOT once the project is complete

June 13, 2016 Page 2

- b) The study team will provide a scope and fee estimate for the final three safety field reviews to FDOT
- c) The study team will prioritize Focus Area locations for FDOT to review mid-block crossing implementations

These notes are Travis Hills' understanding of the discussions during this meeting. Comments or corrections to the information reported above should be directed to him at 407-373-1125 or thills@kittelson.com.

Copies to:

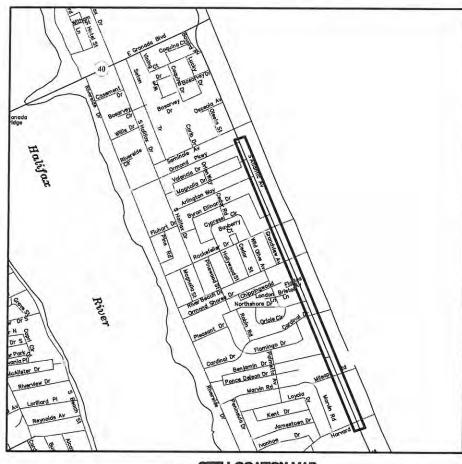
- All team members and attendees
- File 13376 Task 05

CITY OF ORMOND BEACH

A1A SOUTH PENINSULA PEDESTRIAN AND TRAFFIC SAFETY MODIFICATIONS

BID NO. 2014-XX

- SITE LOCATION



SITE LOCATION MAP

MAYOR

ED KELLEY



COMMISSIONERS

JAMES STOWERS, ZONE 1 TROY KENT, ZONE 2

RICK BOEHM, ZONE 3 BILL PARTINGTON, ZONE 4 CITY MANAGER

JOYCE SHANAHAN

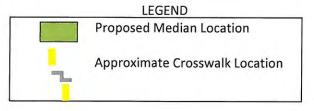


Ormond Parkway

Valencia/Magnolia

Arlington Way

Note: Median locations schematic, intended to show extent of proposed medians. Final turn lane design and locations to be calculated and determined by FDOT during design. Crosswalk locations approximate. Final locations to be determined by FDOT during design.

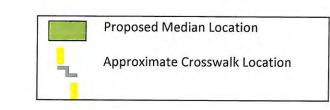




Rockefeller

River Beach

Note: Median locations schematic, intended to show extent of proposed medians. Final turn lane design and locations to be calculated and determined by FDOT during design. Crosswalk locations approximate. Final locations to be determined by FDOT during design.





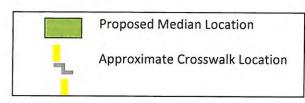
River Beach

Cardinal

Note: Median locations schematic, intended to show extent of proposed medians.

Final turn lane design and locations to be calculated and determined by FDOT during design.

Crosswalk locations approximate. Final locations to be determined by FDOT during design.





Cardinal

Milsap

Note: Median locations schematic, intended to show extent of proposed medians.

Final turn lane design and locations to be calculated and determined by FDOT during design.

Crosswalk locations approximate. Final locations to be determined by FDOT during design.

