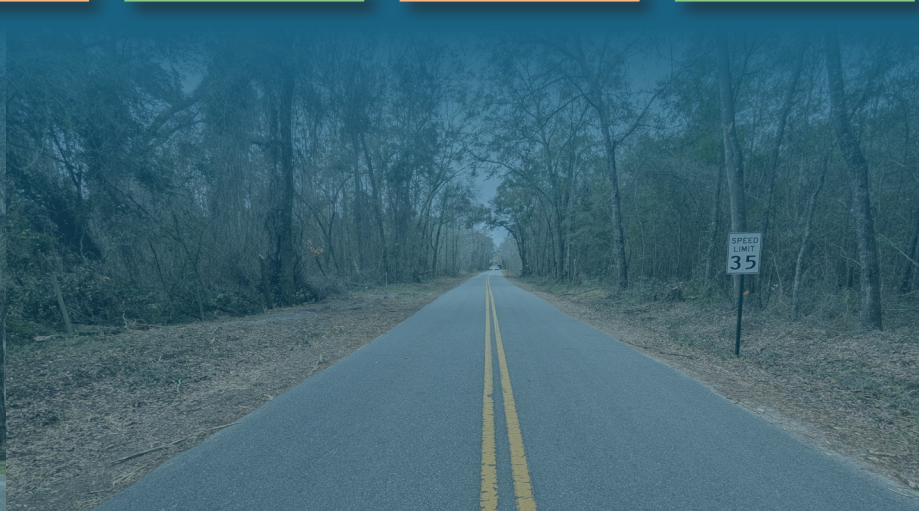
COLUMBIA COUNTY

Comprehensive Safety Action Plan



ACKNOWLEDGMENTS

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A special thank you to the participants in our Task Force, who met regularly throughout the development of this Comprehensive Safety Action Plan, contributed meaningful feedback and new ideas, provided insight about local priorities, and helped promote engagement opportunities with the Columbia County community.

County Staff

Chad Williams, Joe Crackel, Lisa Roberts, Staz Guntek

Lake City Staff

Stephen Brown

Town of Forth White Staff

Connie Brecheen

Emergency Response

Lieutenant Howard Bulthuis, Officer Blake Craig, Jeff Crawford, Shayne Morgan

Suwannee Valley Transit Authority

Christine Bolyard, Candice Kennon

Columbia County School Board

Daniel Taylor, Todd Widergren

Florida Department of Transportation, District 2

Andrea Atran

Contributions from the Task Force were numerous and were invaluable. Their advocacy and passion for safety on the Columbia County transportation network have played a tremendous role in developing a Safety Action Plan that is not only comprehensive and data-driven but also reflects the character of Columbia County.

Consultant Partners

Kimley»Horn

Ali Brighton, Tia Lubbers, Raul Pineda-Mendez, Vincent Spahr, Alyssa Stutzman, Chris Towne, Cavan Wilson

Statement of Protection of Data from Discovery and Admissions

Disclaimer: *Reports, surveys, schedules, lists, or data compiled or collection for the purpose of identifying evaluation, or planning matters in relation to the Comprehensive Safety Action Plan shall not be: i) subject to discovery, ii) admissible as evidence in court proceedings, or iii) considered for any purposes in any action for damages arising from occurrences at locations identified or addressed therein. 23 U.S.C.A §407. Further, no implications are intended regarding locations or issues not specifically identified or addressed by the Comprehensive Safety Action Plan.*

Prior to the implementation of any recommendations contained herein, which are conceptual in nature, a detailed analysis of specific local conditions should be conducted and reflected as appropriate in relevant design and construction documents.

KEY TERMS

Crash – A collision of a motor vehicle with another roadway user or fixed object. It may result in death, injury, or property damage.

Safe System Approach – The USDOT adopted approach to prevent death and serious injuries through proactive, safer transportation planning practices.

Serious Injury – A severe injury that is incapacitating or disabling that typically requires hospitalization and transport to a medical facility.

Vulnerable Road Users – A person utilizing the transportation network not traveling in a vehicle, and therefore at greater risk of fatality or serious injury in a crash. This includes, but not limited to, bicyclists, pedestrians, people on scooters, and wheelchairs users.

ABBREVIATIONS

ACS: American Community Survey
ADA: Americans with Disabilities Act
CCSD: Columbia County School District
CCSO: Columbia County Sheriff's Office
CDC: Center for Disease Control
CSAP: Comprehensive Safety Action Plan
EPA: Environmental Protection Agency
ETC: Equitable Transportation Community
FDOT: Florida Department of Transportation
FHP: Florida Highway Patrol
FHWA: Federal Highway Administration
HSIP: Highway Safety Improvement Program
HUD: Housing and Urban Development
LAP: Local Area Project
LCPD: Lake City Police Department
LOS: Level of Service
PDO: Property Damage Only
RAO: Rural Area of Opportunity
RSD: Road Safety Dashboard
SHSP: Strategic Highway Safety Plan
SRTS: Safe Routes to School
SS4A: Safe Streets and Roads for All
SVTA: Suwannee Valley Transit Authority
TAC: Technical Advisory Committee
TAP: Transportation Alternatives Program
USDOT: United States Department of Transportation
VMT: Vehicle Miles Traveled
VRU: Vulnerable Road Users

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CHAPTER 1

INTRODUCTION

I. INTRODUCTION

Columbia County's Comprehensive Safety Action Plan (CSAP) was developed to help the County eliminate traffic-related deaths and serious injuries on the roadway network of Columbia County. The CSAP will assist County Staff, County leadership, and other local partners in making decisions when identifying and planning projects that will improve the safety of all roadway users in Columbia County.

In an effort to support the County's goal, Columbia County sought out funding from the United States Department of Transportation's (USDOT's) Federal Highway Administration (FHWA) Safe Streets and Roads for All (SS4A) grant program to prepare a comprehensive analysis of the transportation and multimodal infrastructure in Columbia County. The intent of the analysis is to identify areas of safety concern, where attention and safety funds could be directed to improve safety within the County. The County was awarded a SS4A grant in the year 2022 grant cycle.

The CSAP has been prepared in accordance with the FHWA's SS4A grant program. The chapters, data, engagement, and performance metrics outlined herein were developed to adhere to the requirements of a Comprehensive Safety Action Plan, as defined by the SS4A Notice of Funding Opportunity.

I.A. Safe System Approach

The Safe Systems Approach is built on the idea that humans make mistakes on roadways, but that these mistakes should not result in death or serious injury. This approach champions the philosophy that road infrastructure should be managed to account for human error. There are six principles that form the basis of the Safe System Approach:

- Deaths and serious injuries are unacceptable
- Humans make mistakes
- Humans are vulnerable
- Responsibility is shared
- Safety is proactive
- Redundancy is crucial

These principles are utilized to create programming that considers human error, ultimately resulting in programs and transportation networks that are better poised to achieve zero roadway deaths and serious injuries. This approach is heavily focused on five complementary objectives:

- Safer People - Focus on user safety in the transportation system by encouraging responsible behaviors and creating system conditions that allow for safe travel.
- Safer Roads - Design roadways to accommodate potential user mistakes and reduce injury severity and fatalities.
- Safer Vehicles - Improve accessibility to systems and features in vehicles to reduce injury severity and fatalities.
- Safer Speeds - Work to reduce travel speeds within the transportation system through design, education, and targeted enforcement.
- Post-Crash Care - Improve chances of users surviving a crash event through efficient emergency care and preventing secondary crashes.

Source: FHWA.

CHAPTER 2

COLUMBIA COUNTY VISION ZERO RESOLUTION

II. COLUMBIA COUNTY VISION ZERO RESOLUTION

Local leadership has an important role in developing, implementing, and modeling Vision Zero in the community. County leadership helps champion initiatives, set safety goals, and garner the support of the local community. Through collaboration with the public and stakeholders, the County aims to create and implement cohesive and comprehensive safety improvements, education campaigns, and enforcement techniques to achieve their Vision Zero goals and create a safer Columbia County for all who travel in and around the county.

The Columbia County Board of County Commissioners unanimously passed Resolution 2024R-26 on August 1, 2024, which outlines the County's commitment to Vision Zero and their goal of eliminating all traffic death and serious injuries on Columbia County roadways by the year 2045. The adopted Vision Zero Resolution is provided in **Appendix A**.

SW BASCOM NORRIS DRIVE AND SW MARVIN BURNETT ROAD

CHAPTER 3

TASK FORCE

III. TASK FORCE

In support of the Comprehensive Safety Action Plan, Columbia County invited members of several local stakeholders to participate in a Task Force throughout the development of the Plan. In September 2024, the project team invited members of the following groups to participate in the Task Force:

- Columbia County Traffic Operations
- Columbia County Sheriff Department
- Suwannee Valley Transit Authority
- Columbia County Fire Department
- Lake City Public Works
- Lake City Police Department
- Town of Fort White
- Florida Department of Transportation, District Two
- Columbia County Emergency Management
- Columbia County School Board

III.A. Task Force Kickoff Meeting

A virtual kickoff meeting was held on October 29, 2024, with the Task Force. The members of the Task Force in attendance introduced themselves and the project team outlined the SS4A program, including the commitment to Vision Zero, the components of a Comprehensive Safety Action Plan, the types of safety improvements that would be included in the Plan, and the Implementation grant funding for which the County would be eligible upon completion of a Comprehensive Safety Action Plan.

County staff explained the County's vision for the Comprehensive Safety Action Plan, with a focus on driving down fatalities within the County, especially on non-state roadways. The project team then provided insight on the Task Force's role for the project, including providing input, advocating for the project, and monitoring implementation of the safety countermeasures identified in the Comprehensive Safety Action Plan. The project team then shared the project schedule before opening the floor to initial thoughts from the Task Force.

The Task Force members suggested reaching out to companies with fleets in the area, perhaps via the local Chamber of Commerce. County staff indicated that they had communicated with a few of the larger local employers and indicated that such conversations would continue through the development of the Comprehensive Safety Action Plan. Participants from the Suwannee Valley Transit Authority asked the project team to participate in one of their upcoming driver safety meetings to solicit input as well.

A meeting summary from the October 29, 2024, Task Force Kickoff is provided in **Appendix B**.

III.B. Task Force - Meeting 2

A second virtual meeting with the Task Force was held on December 11, 2024. The project team shared updates from the public engagement efforts that had been undertaken and discussed several areas from the preliminary crash analyses that were being considered as potential field review locations. The locations discussed with the Task Force are illustrated in **Map 1**. The Task Force provided information about several ongoing projects for the project team to review for overlapping project concerns.

The project team then updated the TAC on the project schedule, noting that the schedule was oriented around finalizing the Comprehensive Safety Action Plan in time for the County to be eligible for an Implementation grant in the 2025 SS4A grant cycle.

Lastly, the Task Force discussed ongoing Florida Department of Transportation (FDOT) construction in Fort White, reiterated safety concerns about the intersection of State Road 247 and County Road 240, and shared some highlights from the December 10, 2024, Suwannee Valley Transit Authority meeting.

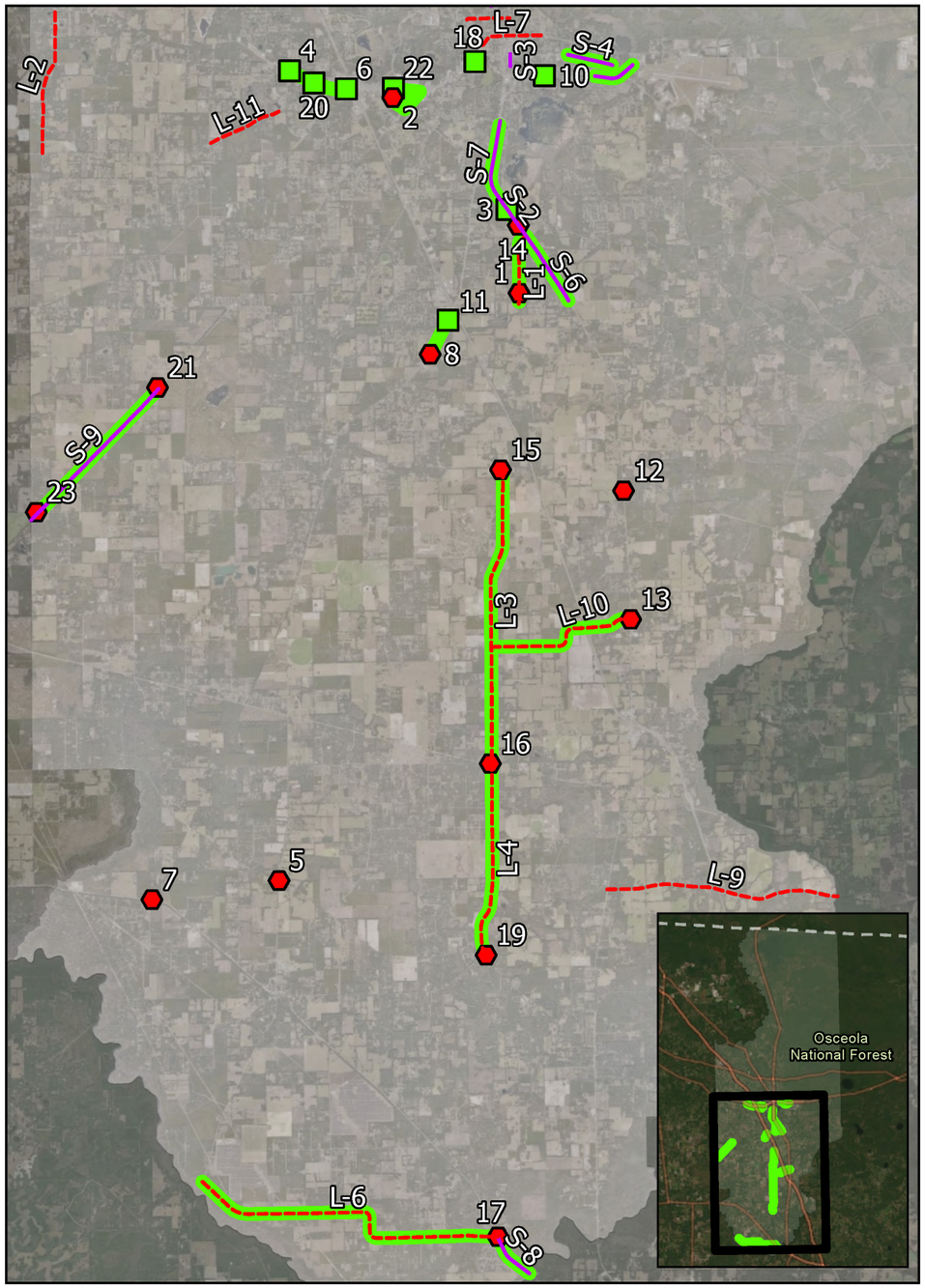
A meeting summary form the December 11, 2024, Task Force Meeting is provided in **Appendix B**.

III.C. Survey

A survey was circulated to the Task Force in December 2024 soliciting additional feedback about road users' perception of safety on the Columbia County roadway network. Fewer than five responses were recorded, but respondents generally traveled primarily by car and reported feeling mostly safe traveling by car, neutral by bicycle, and mostly safe traveling by walking/rolling.

III.D. Ongoing Task Force Participation

The Task Force will be crucial to the future success of the Comprehensive Safety Action Plan after it is adopted by the Board of County Commissioners. The Task Force will assist the County in preparing the Annual Monitoring Report (**see Chapter 10**) which will track the County's progress toward Vision Zero and will quantify the County's investment in safety improvements on the roadway network.



Map 1: Task Force Meeting 2 Field Review Candidates

CHAPTER 4

SAFETY ANALYSIS

IV. SAFETY ANALYSIS

Columbia County's CSAP is data-driven, informed primarily by historical crash data reported on roadways within Columbia County. Reviewing and monitoring crash data will help guide the spending of safety improvement funds. This chapter delves deeper into the historical crash trends in Columbia County, including contributing factors, road user behavior, and geospatial analysis of crashes in the County. In pursuit of Vision Zero, crash patterns presented in this chapter must be addressed through infrastructure or policy actions.

IV.A. Historical Crash Data Review

Crash records were obtained from *Signal Four Analytics*, a crash data repository maintained by the University of Florida. From 2019 to 2023, there were 11,204 crashes reported in Columbia County. Of those, 110 crashes resulted in at least one fatality and 559 crashes resulted in at least one incapacitating injury. The distribution of crashes by injury severity level is shown in **Figure 1** below. Fatal and serious injury crashes accounted for 6% of all crashes in the five-year analysis period.

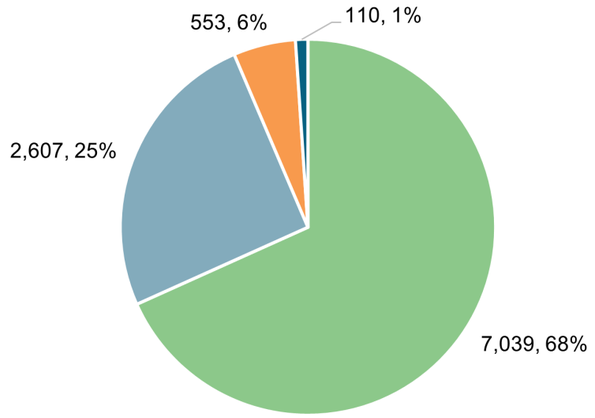
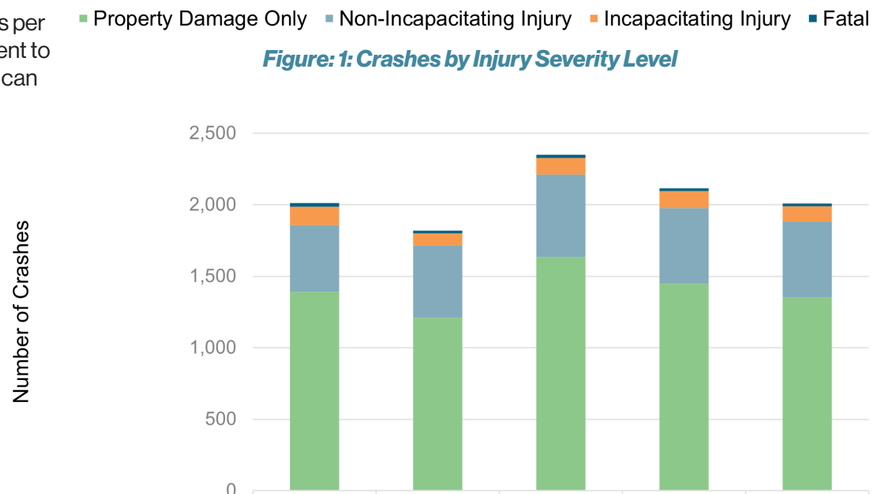


Figure: 1: Crashes by Injury Severity Level

There was an average of approximately 2,241 crashes per year, approximately equivalent to one every 4 hours. Crashes can be translated into societal cost values using **FDOT's Average Crash Costs**. The estimated average annual cost of crashes within Columbia County was $423,486,000. Given the elevated societal cost attributed to fatal and incapacitating injury crashes, an estimated $338,862,000 (approximately 80%) in annual cost of crashes was due to fatal and incapacitating injury crashes alone.



	2019	2020	2021	2022	2023
Fatal	27	20	24	20	19
Incapacitating Injury	128	85	115	118	107
Non-Incapacitating Injury	465	505	575	530	532
Property Damage Only	1,392	1,210	1,637	1,448	1,352

Figure: 2: Crash Severity by Year

On average, there were approximately 22 fatal and 112 incapacitating injury crashes per year during the five-year analysis period. The year 2020 reported the lowest number of crashes, potentially due to reduced traffic exposure from the COVID-19 pandemic.

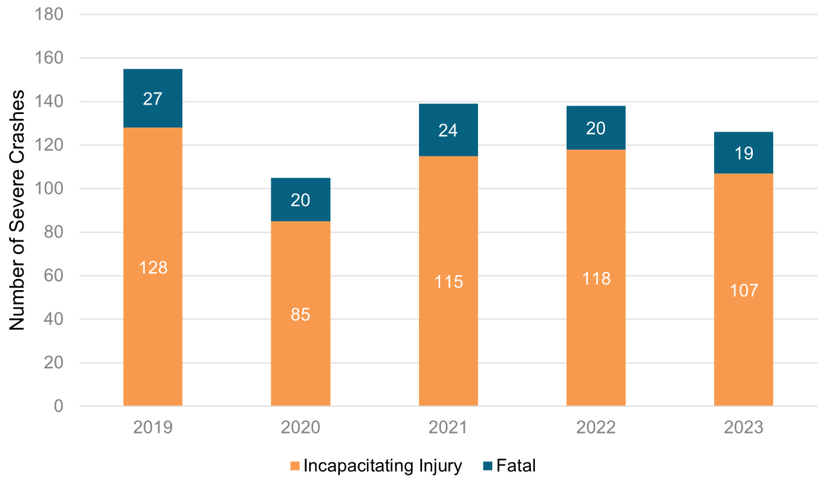


Figure: 3: Number of Severe Crashes by Year

IV.A.1. Crash Characteristics

Certain crash characteristics that were reported to be involved in significant portions of the Columbia County crash history were analyzed for the five-year analysis period. **Table 1** summarizes the crash characteristics, including the percent of overall crashes and the percent of severe crashes represented by each characteristic.

Table 1: Crash Characteristics, 2019 - 2023

Characteristic	Percent of Overall Crashes	Percent of Severe Crashes
Lane Departure	38%	50%
Single Vehicle	33%	49%
Nighttime	32%	38%
Intersection-related	32%	32%
Adverse Weather	26%	30%

Lane departure crashes involve a vehicle crossing an edge line, a center line, or otherwise leaving the travel lane(s) of a roadway. Lane departure crashes may include head-on crashes with opposing traffic, off-road crashes with fixed objects, and rollover crashes. The FHWA has identified lane departure (or "roadway departure" crashes) as one of the most dangerous crash types, especially in rural areas.

Single vehicle crashes are crashes that only involve one vehicle, even if another driver may have contributed to a crash occurring. Many single vehicle crashes are also classified as lane departure crashes, since they most often get reported because of the single vehicle rolling over or crashing into a fixed object.

Nighttime crashes generally refer to crashes that occur between 7:00 PM and 6:59 AM.

Intersection-related crashes are those that occur within the area of influence of an intersection (typically approximated as 250-feet in any direction from an intersection).

Adverse weather includes precipitation or heavy fog that may obstruct a driver's vision, increase stopping distance, cause a driver to lose control, or otherwise impede drivers' abilities to avoid a crash.

Certain less common factors were noted due to their disproportionate involvement in severe crashes. Severe crashes were six times more likely to be cited as involving drugs and three times more likely to be cited as involving alcohol than were overall crashes. Severe crashes involved vulnerable road users (pedestrians, bicyclists, and motorcyclists) five times more often than overall crashes within the five-year analysis period.

IV.A.2. Crash Types

The most common crash type reported in the five-year analysis period was rear end. Rear end crashes accounted for 24% overall crashes and 16% of fatal and incapacitating injury crashes. While off road crashes accounted for only 18% of overall crashes, they accounted for 30% of fatal and incapacitating injury crashes. Same direction sideswipes contributed to 11% of crashes overall and 3% of fatal and incapacitating injury crashes. Angle crashes accounted for 7% of overall crashes and 10% of fatal and incapacitating injury crashes. In addition, 17% of overall crashes and 11% of fatal and incapacitating injury crashes were classified as having a crash type of *Unknown* or *Other*.

Crashes occurred most frequently along major roadways and in the more populated areas of Columbia County. Crashes were particularly frequent near the interchanges I-10 and I-75, US-41 and I-75, and SR-47 and I-75. A large number of crashes also occurred along US-90 between I-75 and SR-100.

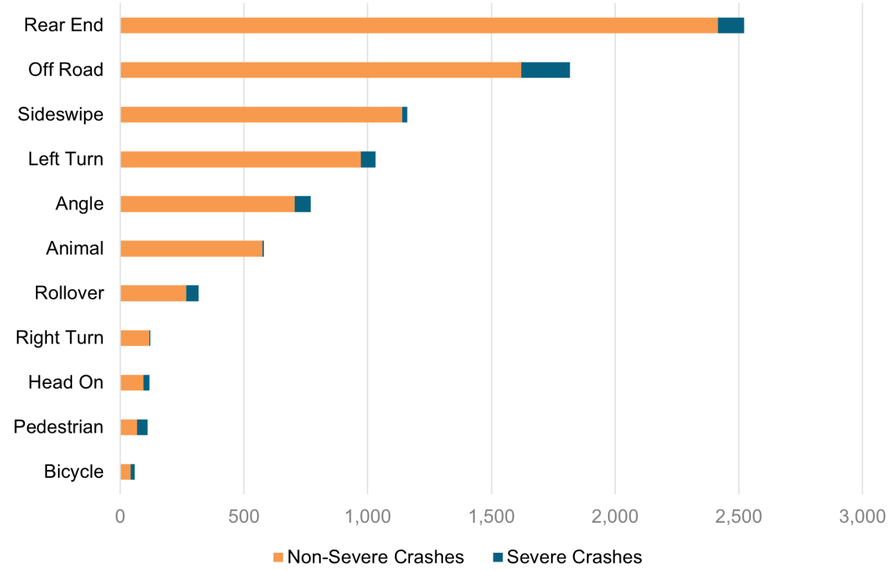


Figure: 4: Crash Types

IV.B. Environmental Factors

Crash risk increases under adverse environmental factors such as nighttime conditions, adverse weather, and wet road surface conditions. The environmental factor with the largest difference between involvement in overall crashes versus severe crashes in Columbia County during the five-year analysis period was lighting conditions. While 20% of overall crashes happened under dark and unlit conditions, 31% of severe crashes occurred under dark and unlit conditions.

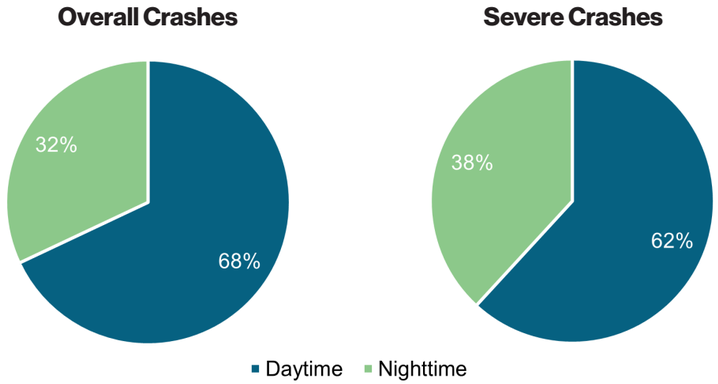


Figure: 5: Environmental Factors, Time of Day

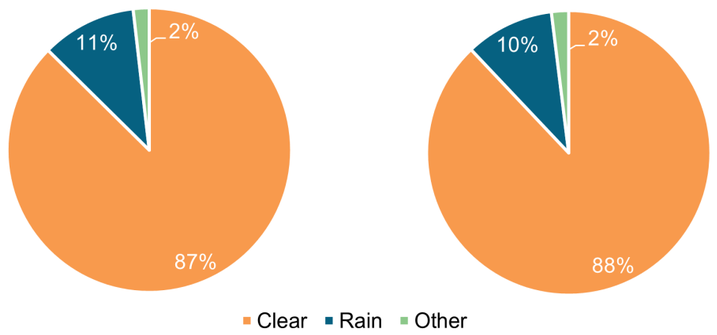


Figure: 6: Environmental Factors, Weather

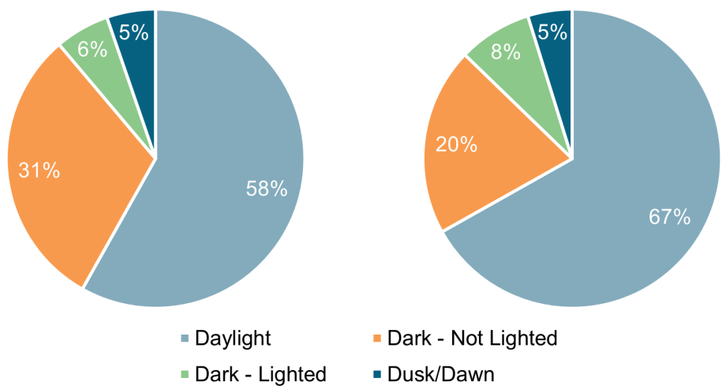


Figure: 7: Environmental Factors, Lighting

IV.C. Driving Behaviors

Unsafe driving behaviors such as speeding, aggressive driving, distracted driving, fatigue, seat belt misuse, and impaired driving due to alcohol and drug consumption have been found to increase the risk of injury crashes. In Columbia County, speeding-related crashes accounted for approximately 3% of all crashes and 16% of fatal crashes.

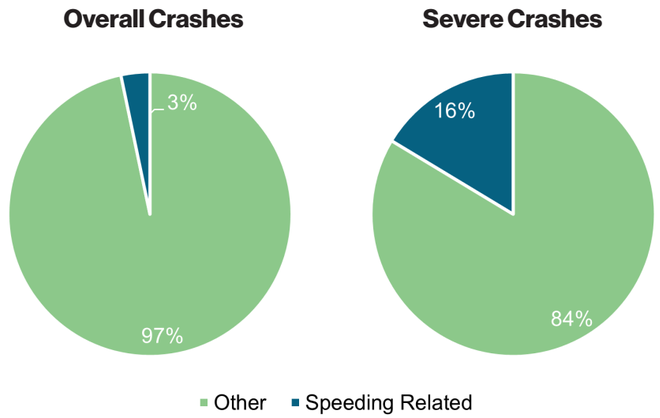


Figure: 8: Driving Behaviors, Speeding

While drivers' alcohol and drug consumption were reported in 5% of all crashes, this behavior was observed in 51% of fatal crashes.

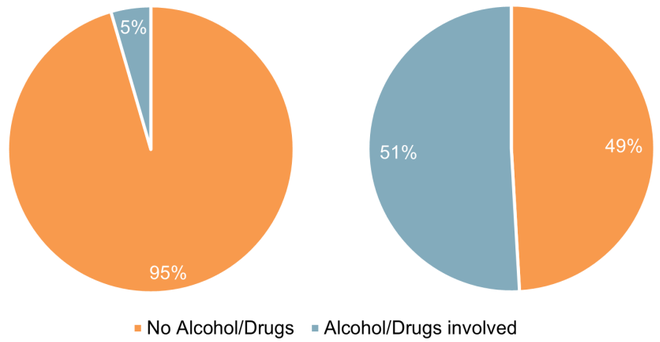


Figure: 9: Driving Behaviors, Alcohol/Drug Involvment

At least one occupant was reported as not wearing a seatbelt in 3% of overall crashes. In contrast, in fatal crashes, it was reported that at least one occupant was not wearing a seatbelt 30% of the time.

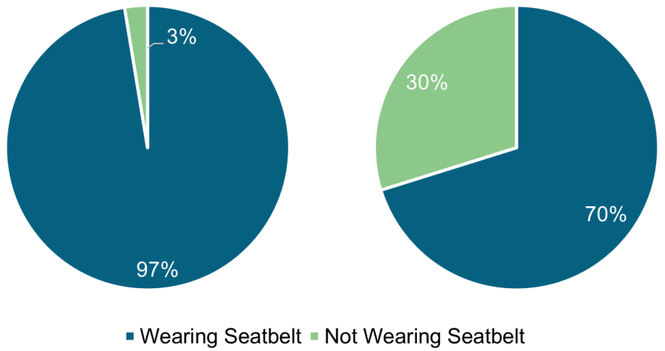


Figure: 10: Driving Behaviors, Seatbelt Use

IV.D. Temporal Trends

The crash frequency by time of day, weekday, and month during the five-year analysis period was analyzed. While overall crash frequency tends to follow activity patterns, studying severe crash trends can reveal specific times when the risk of injury is higher. Time-dependent safety countermeasures such as variable speed limits and targeted enforcement may help mitigate these trends.

IV.D.1. Crash Distribution by Month

Columbia County crashes were distributed relatively uniformly across the 12 months. The figure shows crash distribution by month, with red columns representing overall crashes and a blue line for severe crashes. Severe crashes use a secondary axis on the right due to their different scale. The month with the most crashes was March, with 9% of overall crashes and 11% of severe crashes. February was the month with the least overall crashes with 7%. Crashes for most other months accounted for 8-9% of crashes. According to the FDOT Peak Season Factor Category Report for Columbia County, the peak traffic season in Columbia County is between August 27 and November 25.

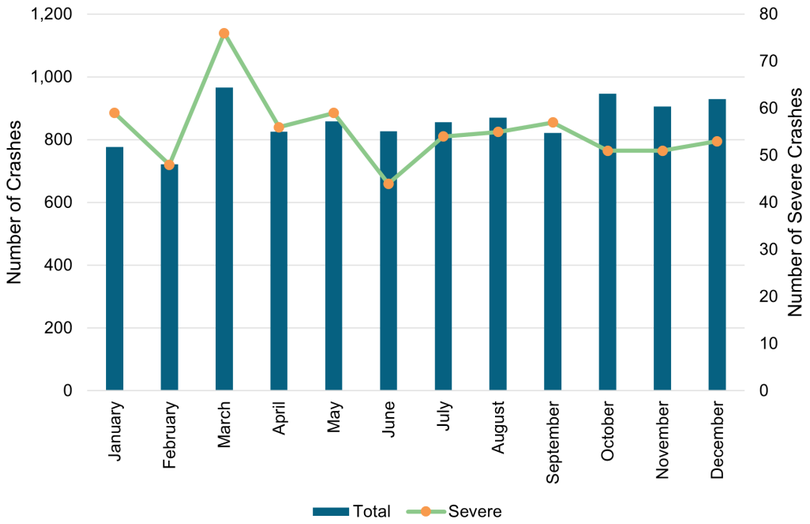


Figure: 11: Crash Distribution by Month

IV.D.2. Crash Distribution by Day of Week

The crash distribution by day of week indicates that the most common day for crashes was Friday (18%). Each of the other four weekdays accounted for 14% or more of the total crashes, and crashes were slightly less likely on the weekend with Saturday and Sunday each accounting for around 12% of crashes. Monday was the most common day of the week for fatal and serious injury crashes.

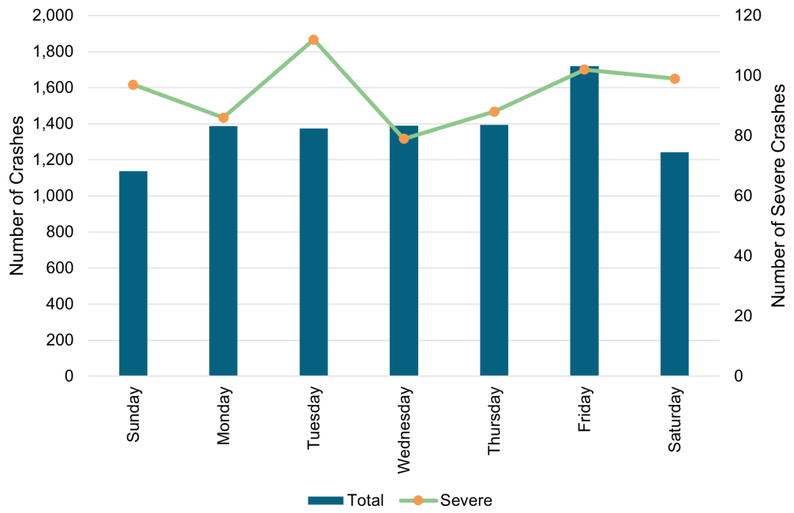


Figure: 12: Crash Distribution by Week

IV.D.3. Crash Distribution by Time of Day

The distribution of crashes by time of day for weekdays (Monday thru Friday) and weekends (Saturday and Sunday) are shown in the figures below. On weekdays, the highest crash frequency on any given 4-hour period was observed from 2:00 PM to 6:00 PM for non-severe crashes and from 4:00 PM to 8:00 PM for severe crashes. On weekends, the highest number of non-severe crashes was also observed from 2:00 PM to 6:00 PM. Severe crashes on weekends peaked from 6:00 PM to 10:00 PM.

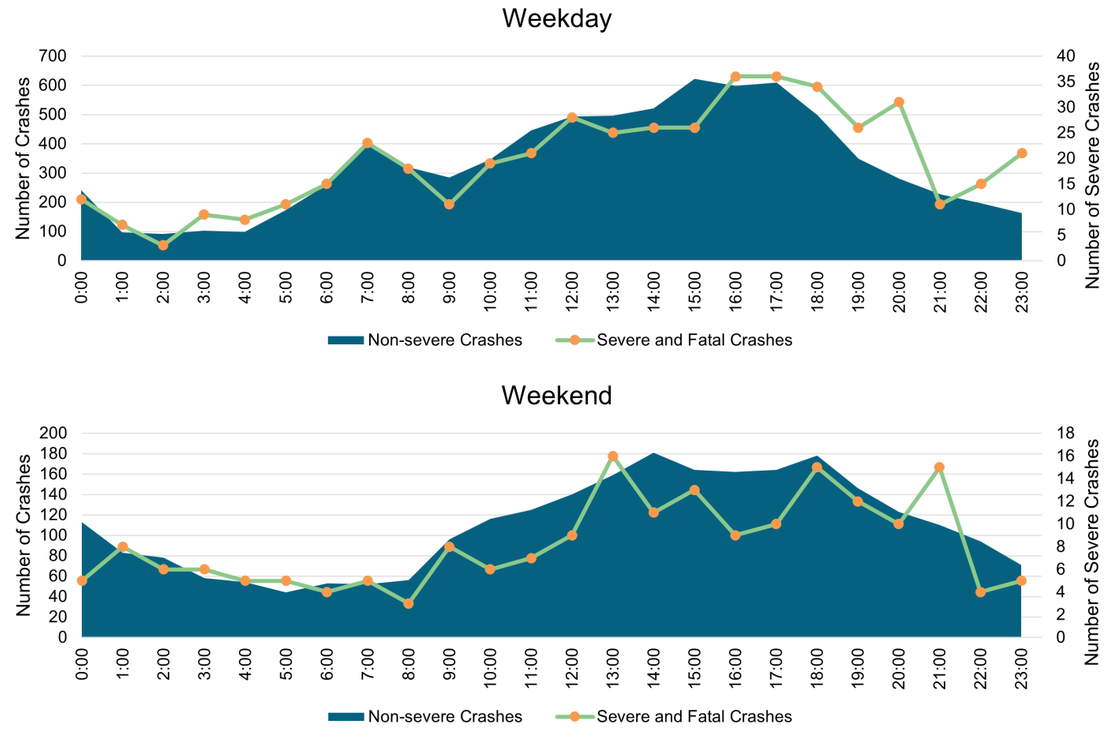
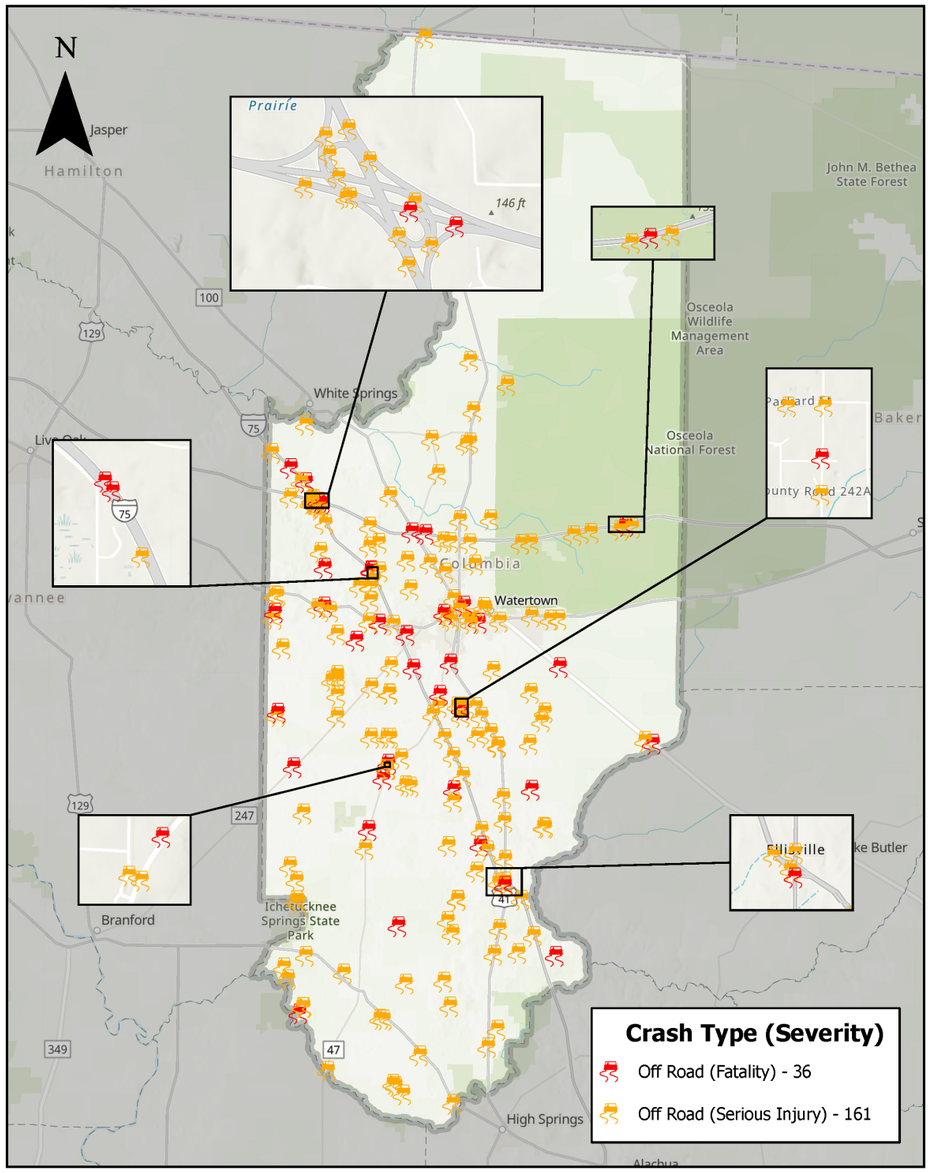


Figure: 13: Crash Distribution by Time of Day

IV.E. Off Road Crashes

Off road crashes accounted for nearly one-third of all fatal and serious injury crashes reported in the five-year analysis period. From 2019 through 2023, 36 fatal and 161 incapacitating injury off road crashes were reported. Many off road crashes occurred on roadways with posted speed limits of 45 mph or higher. **Map 2** illustrates the severe injury off road crashes throughout the County, highlighting several locations with a notably high incidence.



Map 2: Fatal and Serious Injury Off Road Crashes, 2019-2023

IV.F. Vulnerable Road Users

Vulnerable Road Users (VRUs) are those who are not traveling in a vehicle and are therefore at greater risk of fatality or incapacitating injury in a crash. VRUs include pedestrians, bicyclists, and motorcyclists. In Columbia County, there were 371 crashes involving a VRU from 2019 to 2023. Of those 371 crashes, 27 resulted in at least one fatality and 80 resulted in at least one incapacitating injury. While VRU-related crashes account for only 3% of all crashes, VRUs were involved in 25% of fatal crashes.

Figure 14 shows the proportion of crashes by road user type with fatal or incapacitating injury outcomes. VRUs have a disproportionately high percentage of severe crash outcomes compared to motor vehicle occupants. While 5% of motor vehicle crashes result in a fatality or serious injury, 26% of motorcycle crashes, 24% of bicycle crashes, and 37% of pedestrian crashes result in at least one fatality or incapacitating injury.

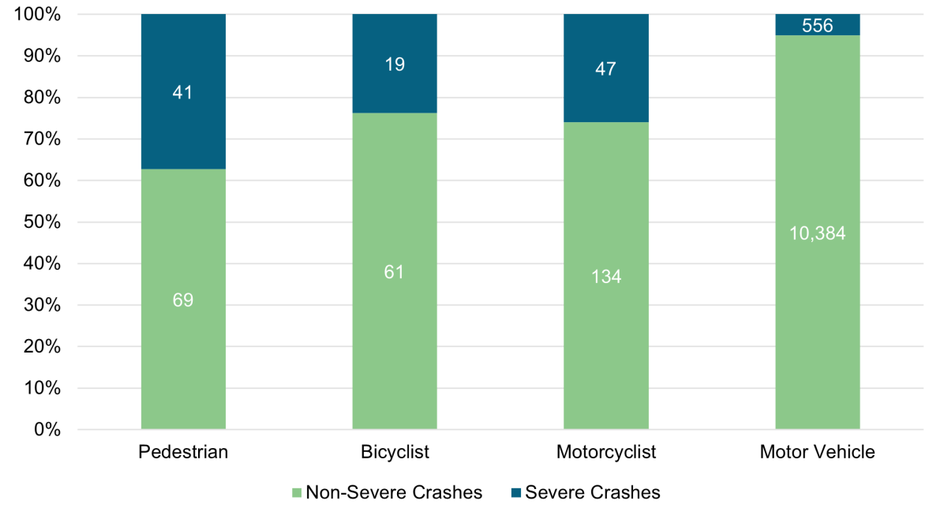
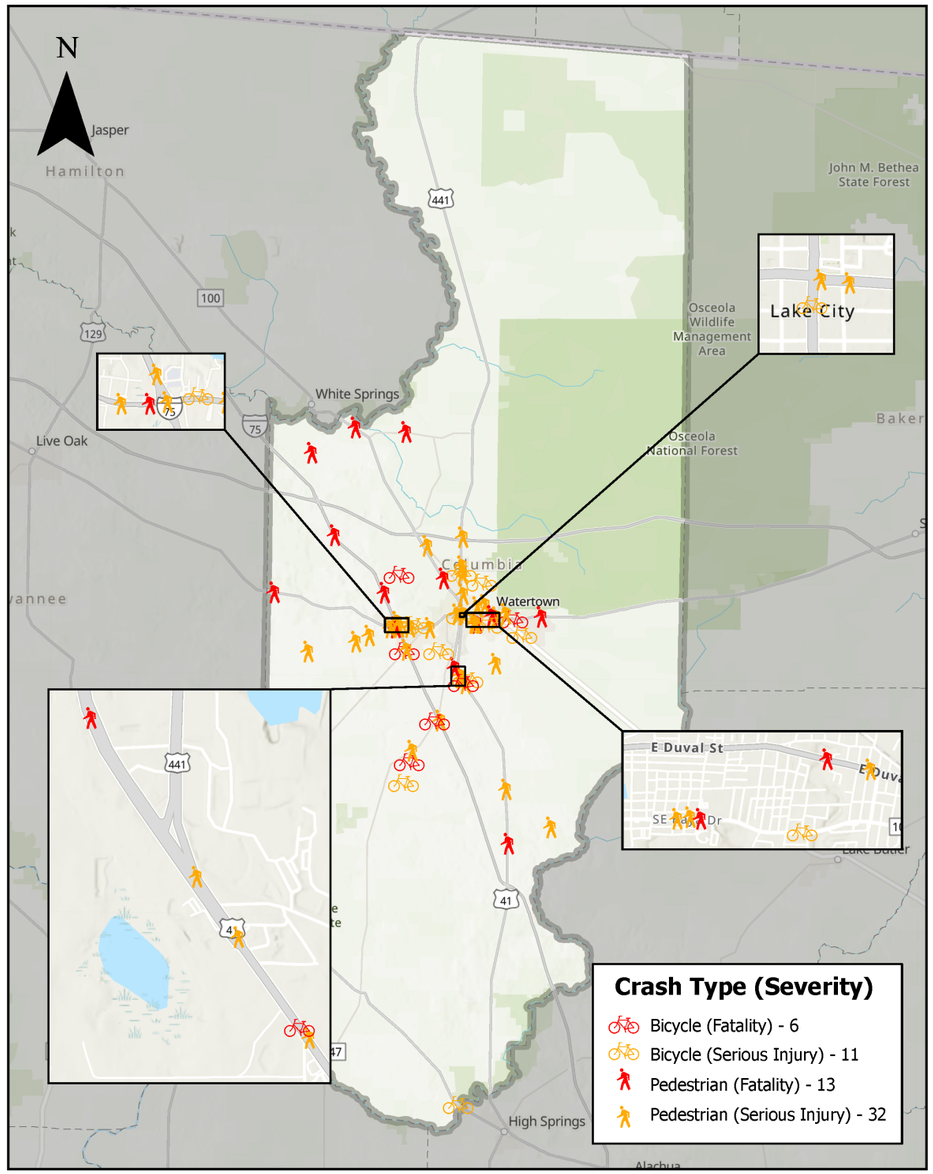


Figure: 14: Vulnerable Road User Crash Severity, 2019-2023

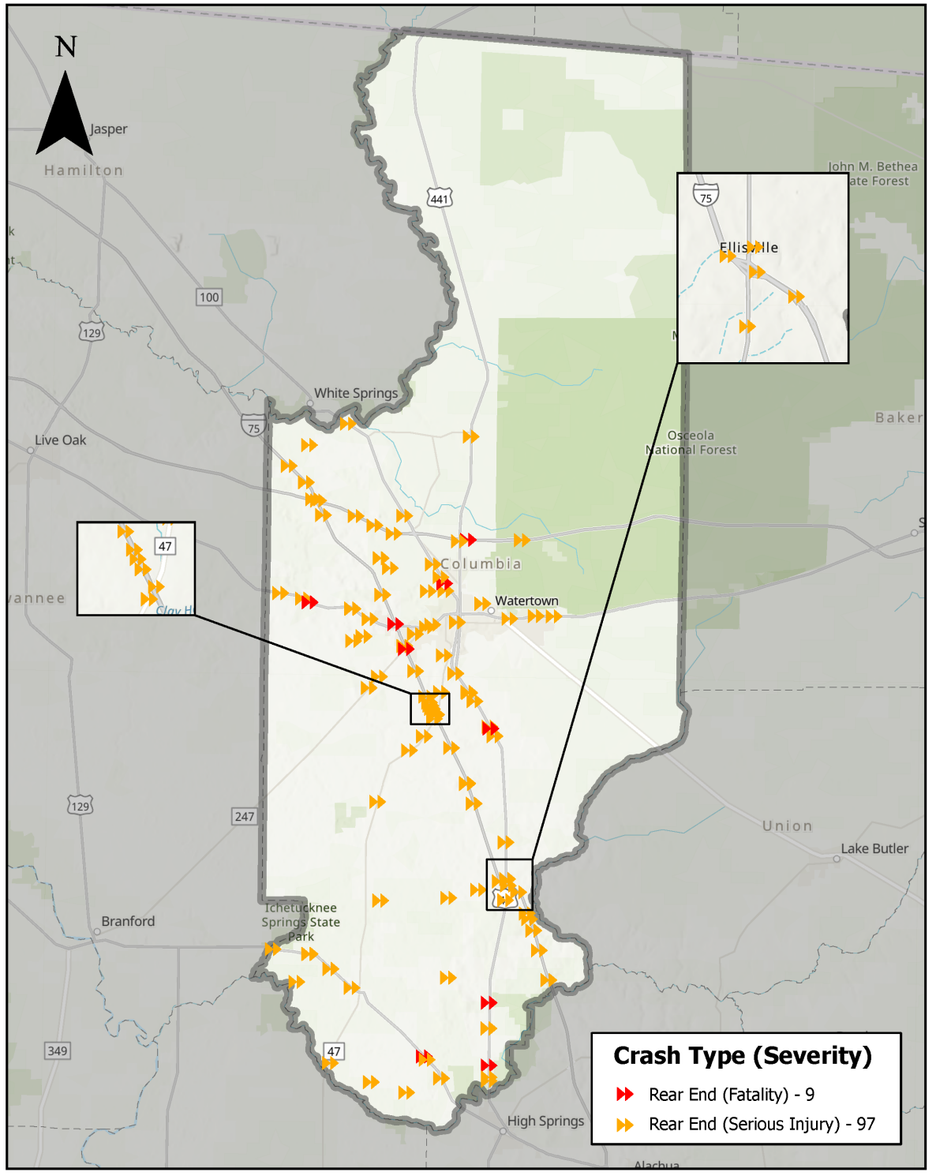
A large number of pedestrian and bicycle crashes occur within Lake City, with higher VRU crash frequencies at the I-75 and US-90 interchange, the intersection between US-441 and US-41, along US-90 from SE CR-245 to US-441, and along SE Baya Drive from US-90 to US-441. Eighty-two out of 362 pedestrian and bicycle crashes occurred under dark, unlit conditions. This is particularly of note at the intersection of US-441 and US-41, with nearly all the reported VRU crashes occurred under dark, unlit conditions.



Map 3: Fatal and Serious Injury Bicycle and Pedestrian Crashes, 2019-2023

IV.G. Rear End Crashes

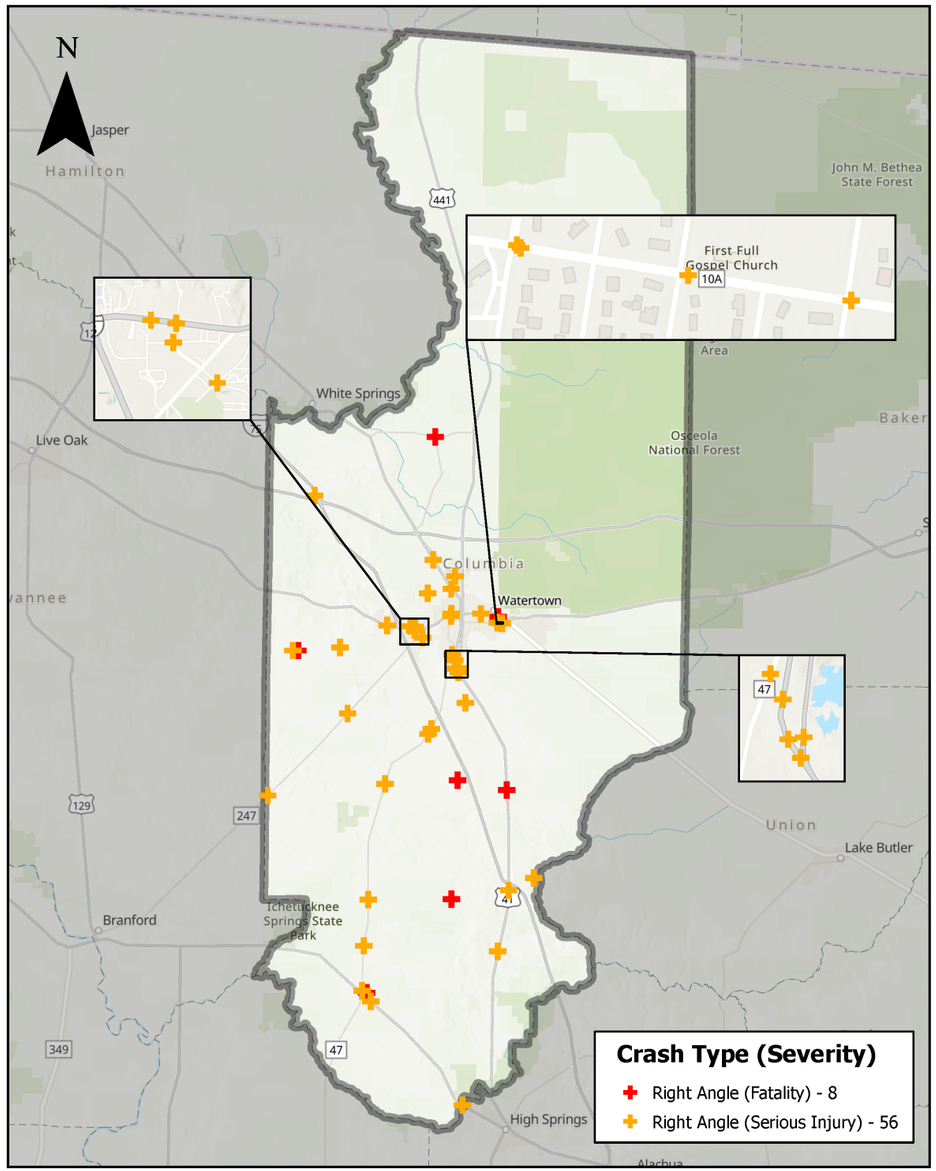
Rear end crashes were the most frequent overall crash type and the second most frequent fatal and incapacitating injury crash type. There were 9 fatal rear end crashes and 97 serious injury rear end crashes. Rear end crashes were particularly prevalent near the intersection of SR-47 and US-90 and near the I-75 and US-41 interchange.



Map 4: Fatal and Serious Injury Rear End Crashes, 2019-2023

IV.H. Angle Crashes

There were 8 fatal and 56 incapacitating injury angle crashes in Columbia County during the five-year analysis period. These crashes were particularly frequent at the intersection of US-41 and US-441, along SW Bascom Norris Drive from SW Faith Road to US-90, and along SE Baya Drive from SE Llewellyn Avenue to SE Country Club Road. Multiple crashes at the intersection of US-41 and US-441 occurred during dark, unlit conditions (similar to the pattern identified for fatal and incapacitating injury VRU crashes).



Map 5: Fatal and Serious Injury Angle Crashes, 2019-2023

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CHAPTER 5

ENGAGEMENT AND COLLABORATION

V. ENGAGEMENT AND COLLABORATION

In addition to the historical crash analysis and identification of high crash locations in Columbia County, the project team recognized the importance of engaging the users who travel in and around the County on a daily basis. The residents of Columbia County have local knowledge of areas where they feel unsafe walking, cycling, or driving even if there have not been a historical pattern of crashes at those locations. Through the identification of areas where community members feel unsafe or have experienced near-miss incidents, the project team can take a proactive approach to safety and recommend countermeasures to reduce the risk of a crash happening in the future.

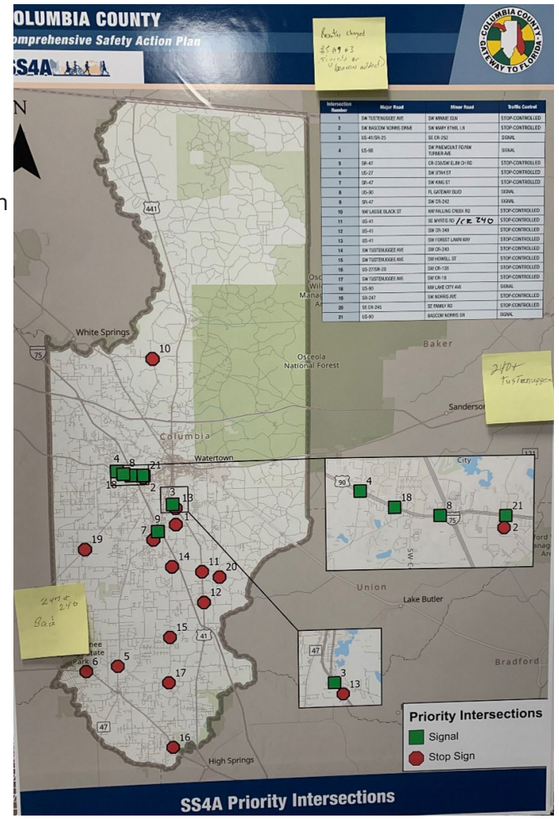
To solicit such information, the project team hosted a Public Kickoff Open House on September 19, 2024, and hosted a booth at the Florida Gateway Fair in late October and early November 2024, where members of the public were asked to share their experiences on the road network for inclusion in the development of the Comprehensive Safety Action Plan.

Residents and County officials proved to be an invaluable resource throughout the process of developing the CSAP. Participants from the public were very helpful in identifying additional locations with safety concerns that were not always captured in historical crash analysis. Input from the public made it clear that residents of Columbia County were invested in improving the safety of their roadway network.

V.A. Public Kickoff Open House

On September 19, 2024, the project team hosted an Open House event in advance of a regularly scheduled Board of County Commissioners meeting at the Columbia County School Board Administrative Complex. The project team provided a brief overview of the SS4A grant program and the goals of the Comprehensive Safety Action Plan, shared preliminary safety data exhibits, and asked participants at the Open House to share their input with the project team through various channels, including sticky notes on the project maps, testimonial-style responses, and general discussion with the project team.

PUBLIC KICKOFF OPEN HOUSE PARTICIPANTS VIEWING MEETING BOARDS



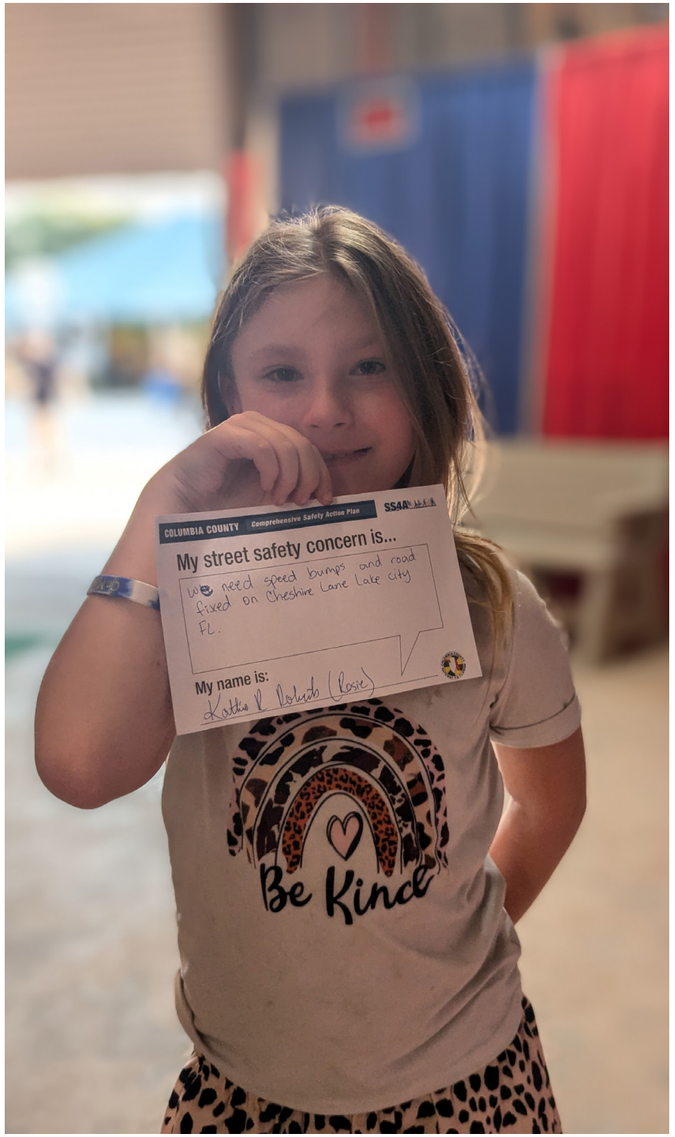
BOARD FROM PUBLIC KICKOFF OPEN HOUSE

OPEN HOUSE FEEDBACK

PUBLIC KICKOFF OPEN HOUSE PARTICIPANTS VIEWING MEETING BOARDS

V.B. Florida Gateway Fair

The Florida Gateway Fair was hosted from October 25, 2024, through November 3, 2024. Columbia County staff and members of the project team attended the Florida Gateway Fair and set up a booth to engage attendees about their safety concerns in Columbia County. The pop-up booth included a map of the County identifying the fatal and serious injury crashes that had been reported in the previous five years. Attendees were asked to share where they felt there were dangerous conditions within their community, potential ideas they had for improvement at these sites, and to share any thoughts they had relating to overall safety on the County roadway network.



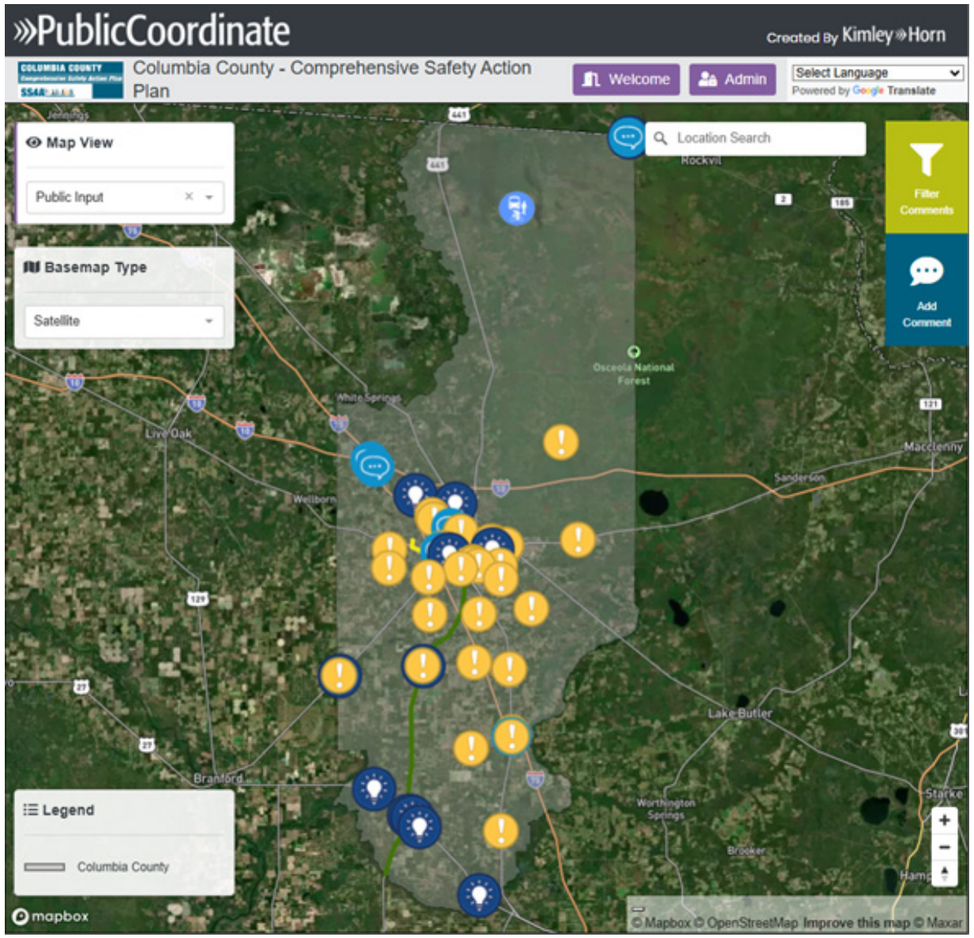
MATERIALS AND PHOTO FROM FLORIDA GATEWAY FAIR

V.C. PublicCoordinate

As an additional mechanism for soliciting public feedback on safety concerns within Columbia County, the project team developed an interactive GIS map of the County on the PublicCoordinate platform.

The project's **PublicCoordinate page** was used throughout the CSAP's development, serving as a repository for stakeholder and community safety concerns. Residents had multiple opportunities to provide their feedback on PublicCoordinate throughout the project beginning at the Public Kickoff Open House. The link to comment was shared during the Florida Gateway Fair and was available for residents and businesses to comment throughout the development of the CSAP. PublicCoordinate allowed residents to voice their concerns and ideas even if they were not able to make comments at one of the in-person events. It also allowed residents to users to see comments that other participants provided by hovering or clicking on icons.

The Columbia County - Comprehensive Safety Action Plan PublicCoordinate page allowed users to place a point or a line on an interactive map with seven comment types available to most appropriately categorize their comment, such "Safety Concern", "Near Miss Experience", or "Bicycle Route Improvement". Comments were visible to all users and were available throughout the CSAP's development.



PUBLICCOORDINATE SAFETY CONCERNS MAP

V.D. Public Input Trends

Stakeholder and community safety concerns were thoroughly reviewed, resulting in the collection of 63 comments from the CSAP engagement efforts. Of these, 38 comments, accounting for 60%, were labeled as Safety Concerns, making it the most common comment type. Bright Ideas followed as the second most common type, representing 19% of the comments. Other less frequent comment types included General Comments (10%), Pedestrian/Bicycle Route Improvements (9%), and Near Miss Experiences (2%).

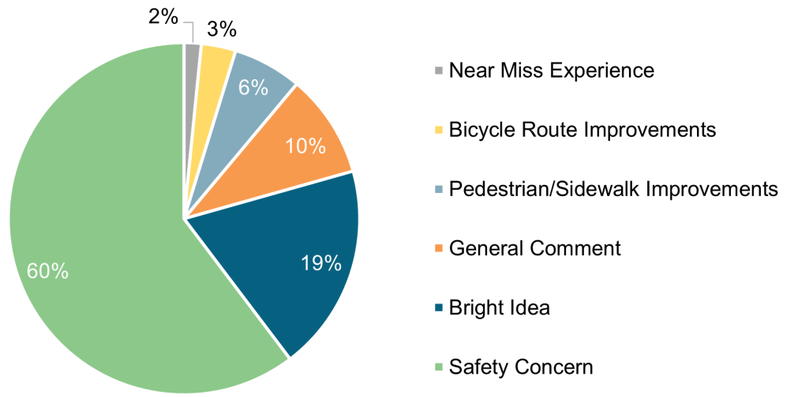


Figure: 15: Public Input Trends

Comments were assigned to various segments and intersections across the Columbia County road network. Notably, 30 intersections received feedback. The most discussed was SR-47 at SW CR-240, followed by SR-247 at SW CR-240, US 41 at SR-47, US 90 at SR-247, US-27 at SW Mapleton St, and US 90 at NE Bascom Norris Dr. Comments highlighted safety concerns, proposed new intersection designs, signal updates, turn lane modifications, lighting issues, and recommendations for pedestrian and bicyclist infrastructure.

The road segment on SR-247, from US 90 to SW Bascom Norris Dr, received numerous comments. Concerns included difficulties with frequent driveway access and inadequate street lighting. Other commented-on segments include NW Lake Jeffery Rd, west of NW Long St, US-27 southeast of the Town of Fort White, and SR-47, from US-27 to SW Elm Church Rd. Feedback for these areas highlighted speed-related safety issues and the need for pedestrian enhancements such as sidewalks and trails.

CHAPTER 6

EQUITY CONSIDERATIONS

VI. EQUITY CONSIDERATIONS

Equity considerations were considered throughout the plan development process and aimed to identify the locations within Columbia County that are disproportionately impacted by socioeconomic disadvantage or a lack of historical transportation investment. Equity considerations factored into the development of potential safety improvements and the prioritization scoring utilized in this Comprehensive Safety Action Plan.

Columbia County is considered underserved or disadvantaged by a variety of metrics. Columbia County has been identified as a Rural Area of Opportunity (RAO), by Florida Commerce, a designation given to rural communities that have been adversely affected by extraordinary economic events or natural disasters and that typically have an economy centered around agricultural or resource-based industries. A US Census Work Area Profile Analysis of Columbia County identified retail trade, health care and social assistance, accommodation and food services, manufacturing, and waste management and remediation as the county's five largest industry sectors, respectively. This same analysis found that 71.3% of the county's workforce earns less than $3,300 per month. Out of Florida's 67 counties, Columbia County ranks 19th for poverty, with approximately 16% of the population living below the poverty level, according to the American Community Survey.

An initial equity analysis for Columbia County's individual census tracts was completed using the Environmental Protection Agency's (EPA) Environmental Justice Screening and Mapping Tool and the USDOT's Equitable Transportation Community (ETC) Explorer. Due to a recent change in administrations, these federal datasets are no longer publicly accessible. The initial equity assessment is provided in **Appendix C**.

The census tract equity assessment described below relied on data pulled from the US Census, American Community Survey, and publications from various governmental agencies. Additionally, the equity analysis compared various publicly available datasets to provide a comprehensive evaluation of Columbia County's disadvantaged communities.

VI.A. Disadvantaged Census Tracts

Using the **SS4A Underserved Communities Tool**, the 12 census tracts in Columbia County were assessed for six indicators of historical disadvantage. Indicators are sourced from existing and publicly available datasets, including but not limited to the Centers for Disease Control and Prevention's (CDC) Vulnerability Index, Census data, the American Community Survey, and the Department of Housing and Urban Development's (HUD) Location Affordability Index. The thresholds for communities considered disadvantaged within the six indicators are described below:

Transportation Access Disadvantage – Identifies communities in which individuals spend disproportionately more money and time on transportation.

Health Disadvantage – Identifies communities with disproportionate levels of adverse health outcomes, disability, and environmental exposure.

Environmental Disadvantage – Identifies communities with disproportionate pollution burden and lower environmental quality.

Economic Disadvantage – Identifies communities with high poverty, low wealth, lack of local jobs, low rates of homeownership, low educational attainment, and high inequity.

Resilience Disadvantage – Identifies communities that are more vulnerable to hazards caused by climate change.

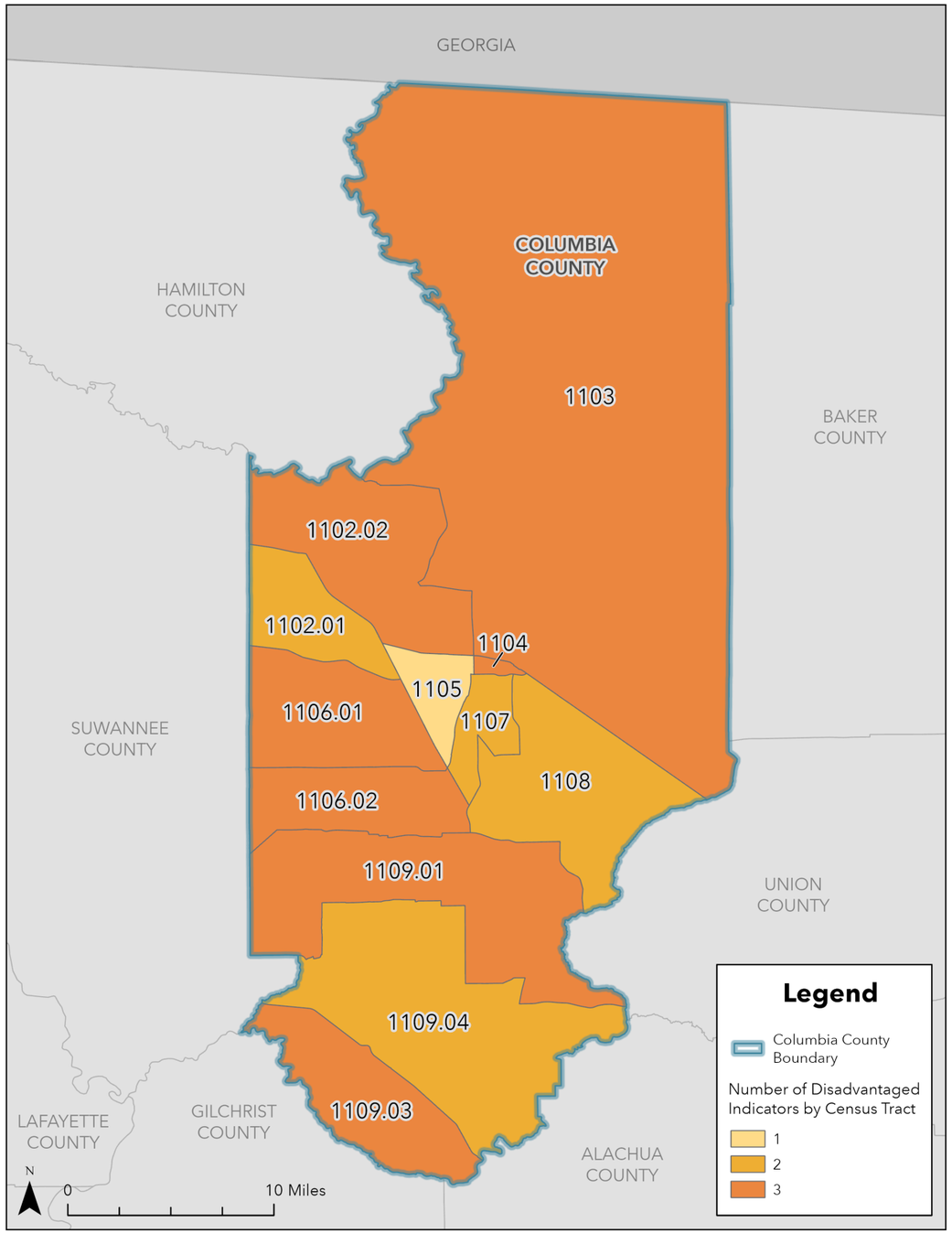
Equity Disadvantage – Identifies communities with a high percentile of residents who do not speak English proficiently.

Within Columbia County, seven census tracts are identified as disadvantaged by three of the six indicators. As reported by the Underserved Community Tool, approximately 58% of the county's population resides within these seven census tracts. **Table 2** below illustrates these census tracts and their indicators of disadvantage.

Table 2: Columbia County Census Tracts with the Most Indicators of Disadvantage

Census Tract	Indicator	Indicator	Indicator
1102.02	Transportation Access	Health	Economic
1103	Transportation Access	Health	Economic
1104	Health	Economic	Environmental
1106.01	Transportation Access	Health	Resilience
1106.02	Transportation Access	Health	Economic
1109.01	Transportation Access	Health	Economic
1109.03	Transportation Access	Health	Economic

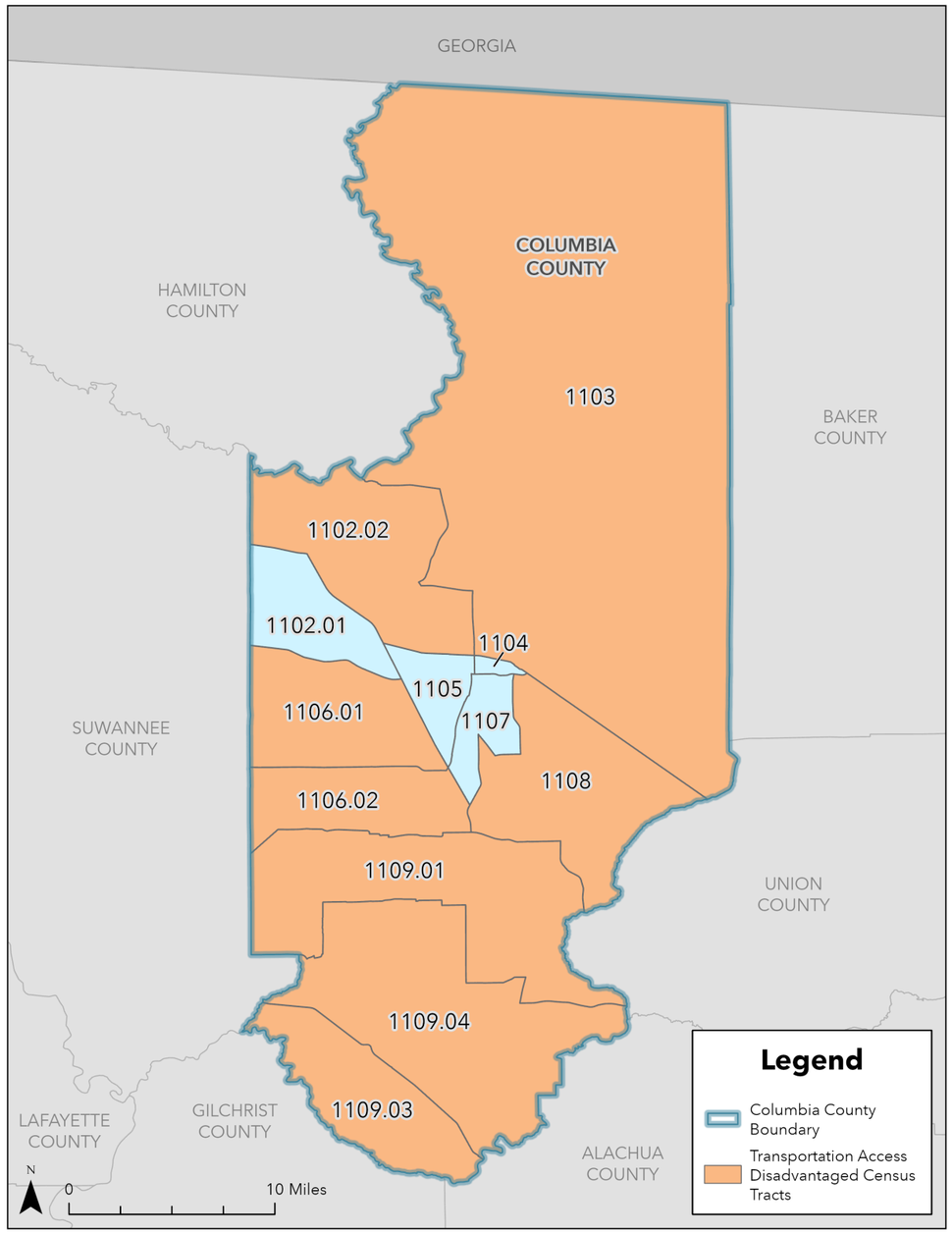
These census tracts are also shown in **Map 6**, which illustrates each of the census tracts and the number of indicators by which each is considered historically disadvantaged. All 12 of Columbia County's census tracts are considered disadvantaged in at least one category. The maps on the following pages illustrate the census tracts considered disadvantaged in each of the categories. No map is provided for Equity Disadvantaged as none of the 12 census tracts in Columbia County were identified as Equity Disadvantaged



Map 6: Census Tracts by Number of Disadvantaged Indicators

VI.B. Transportation Access Disadvantaged

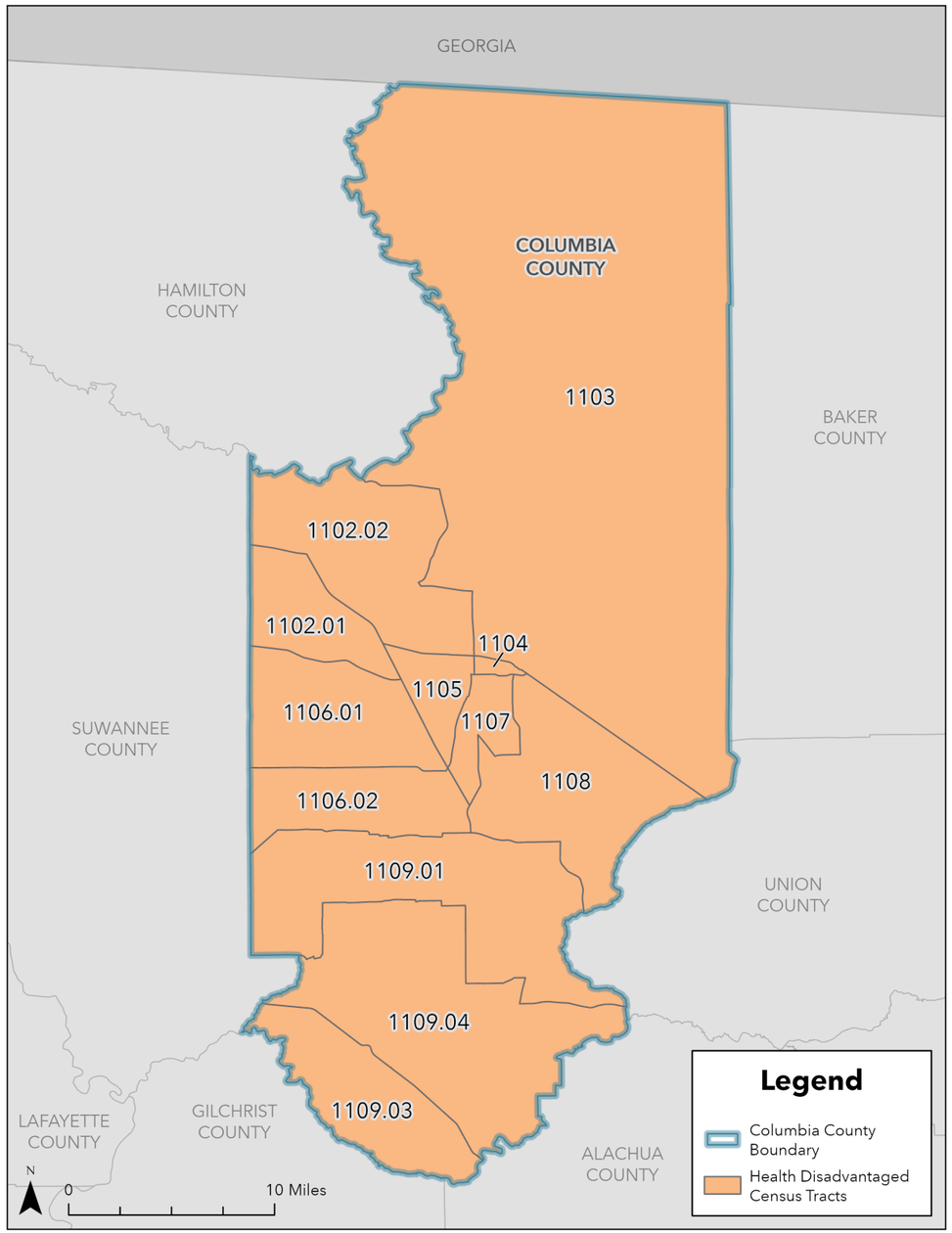
In Columbia County, 8 of the 12 census tracts are identified as Transportation Access Disadvantaged, indicating communities in which individuals spend disproportionately more money and time on transportation.



Map 7: Transportation Access Disadvantaged Census Tracts

VI.C. Health Disadvantaged

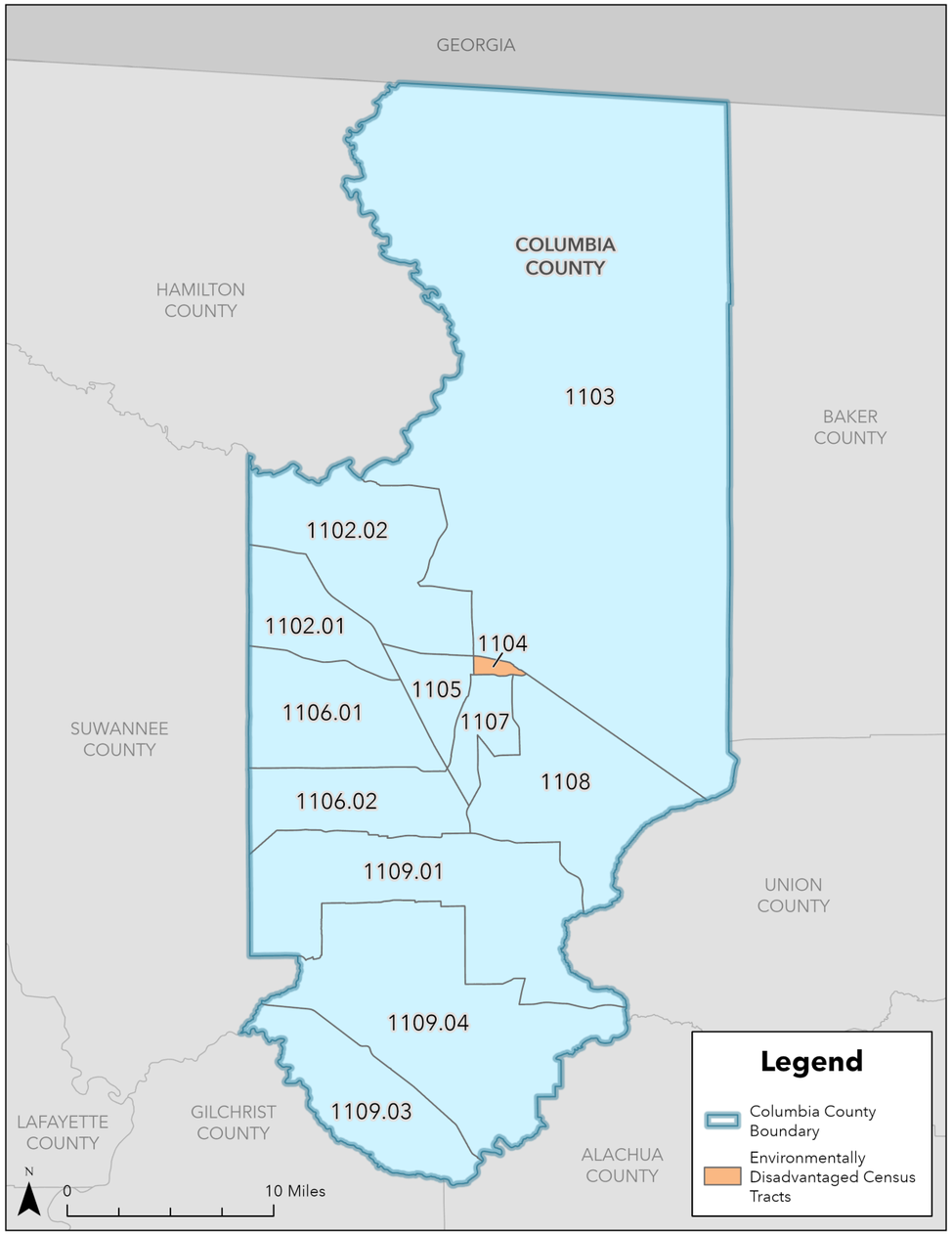
In Columbia County, all 12 census tracts are identified as Health Disadvantaged, indicating communities with disproportionate levels of adverse health outcomes, disability, and environmental exposure.



Map 8: Health Disadvantaged Census Tracts

VI.D. Environmentally Disadvantaged

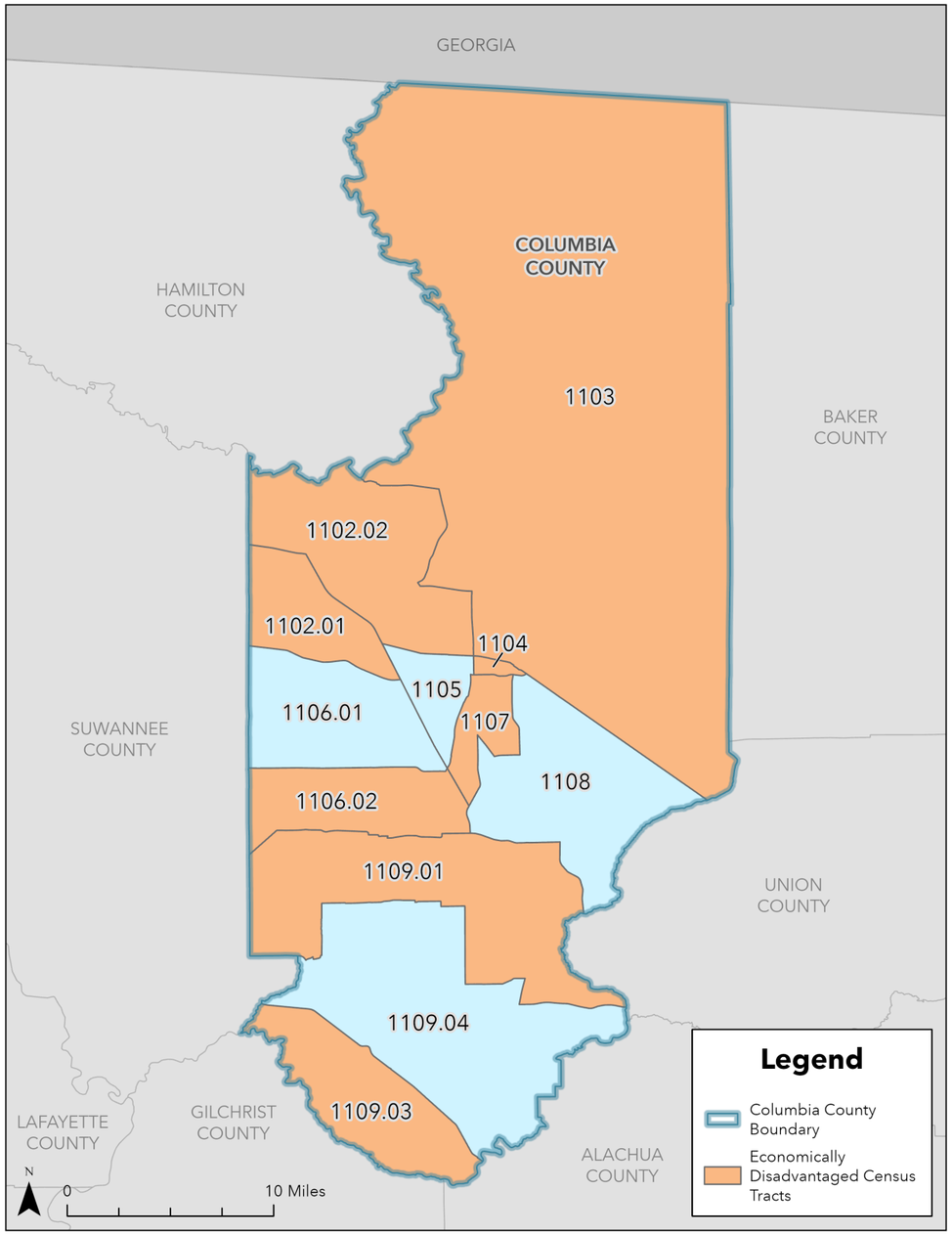
In Columbia County, just 1 of 12 census tracts is identified as Environmentally Disadvantaged, indicating communities with disproportionate pollution burden and lower environmental quality.



Map 9: Environmentally Disadvantaged Census Tracts

VI.E. Economically Disadvantaged

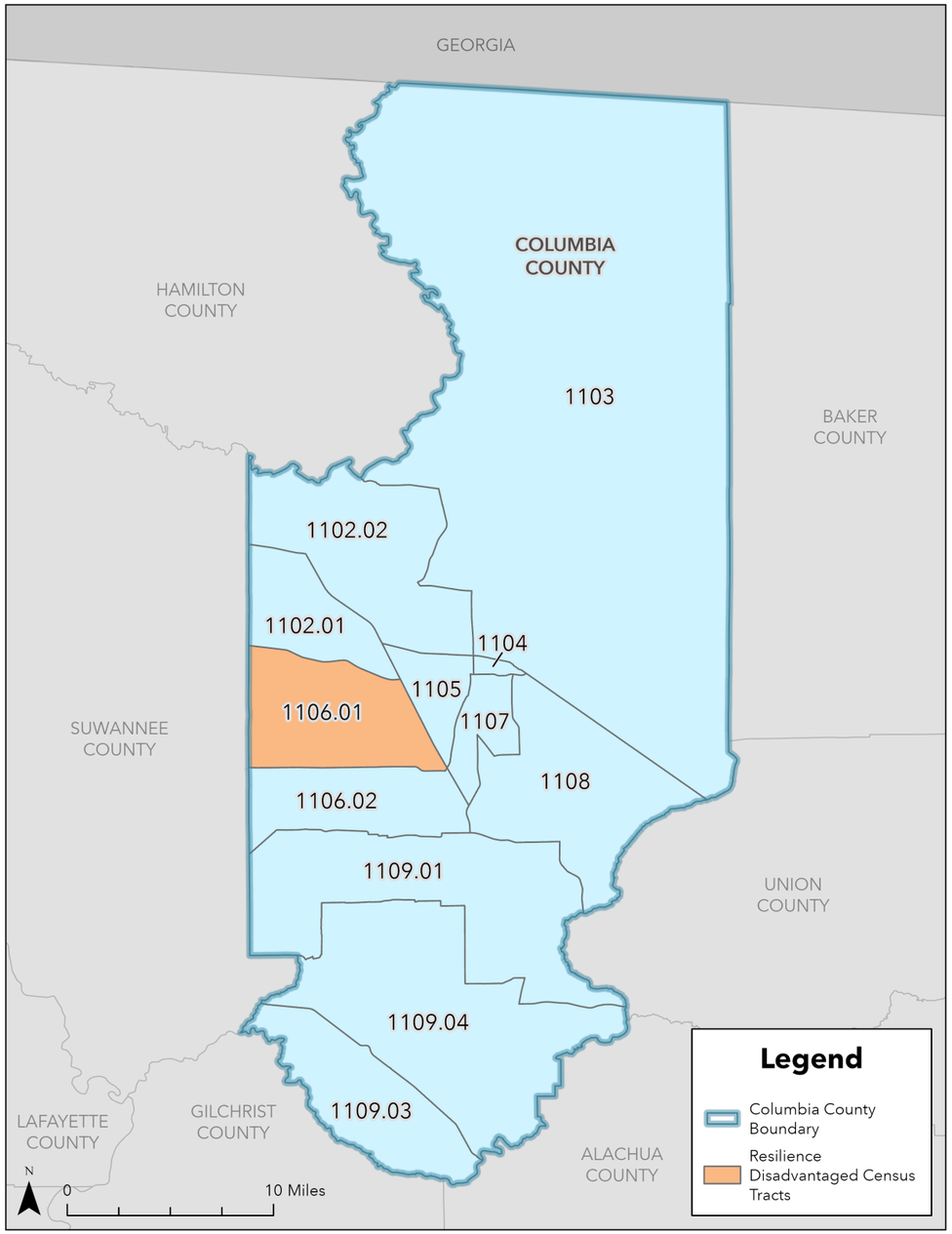
In Columbia County, 8 of 12 census tracts are identified as Economically Disadvantaged, indicating communities with high poverty, low wealth, lack of local jobs, low rates of homeownership, low educational attainment, and high inequity.



Map 10: Economically Disadvantaged Census Tracts

VI.F. Resilience Disadvantaged

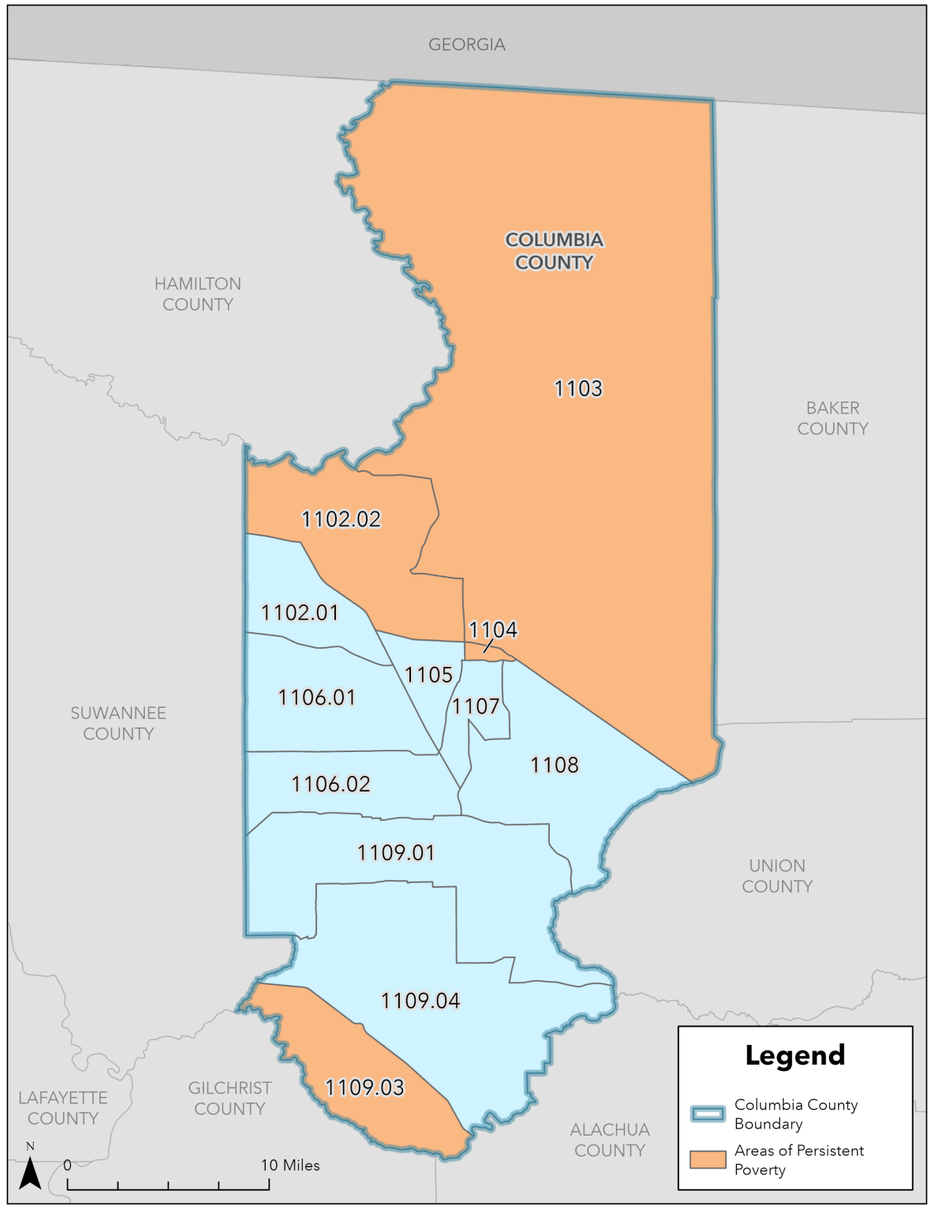
In Columbia County, just 1 of 12 census tracts is identified as Resilience Disadvantaged, indicating communities that are more vulnerable to hazards caused by climate change.



Map 11: Resilience Disadvantaged Census Tracts

VI.G. Areas of Persistent Poverty

A census tract is considered an Area of Persistent Poverty if the tract has a poverty rate of at least 20% or if the county in which the tract is located has 20% or more of the population living in poverty. According to these metrics, four census tracts in the county are identified as Areas of Persistent Poverty. The census tracts identified as Areas of Persistent Poverty are illustrated in **Map 12**.



Map 12: Areas of Persistent Poverty

CHAPTER 7

POLICY AND PROCESS REVIEW

VII. POLICY AND PROCESS REVIEW

Documented policies, processes, and procedures at the local, statewide, and federal levels were reviewed for the preparation of this Comprehensive Safety Action Plan. Past planning and policy efforts provide valuable insight into ongoing challenges in and around Columbia County and the type of strategies that have been employed relating to traffic safety over time. The documents were sorted into three categories for review:

- City and County Plans and Policies
- State Plans and Policies
- Federal Plans and Policies

VII.A. City and County Plans and Policies

VII.A.1. Columbia County Comoprehensive Plan

Published/Adopted: Amended February 2022

Number of Pages: 180

The Columbia County Comprehensive Plan is organized into ten elements, including Future Land Use; Transportation; Housing; Sanitary Sewer, Solid Waste, Drainage, Potable Water, and Natural Groundwater Aquifer Recharge; Conservation; Recreation and Open Space; Intergovernmental Coordination; Capital Improvements; Public School Facilities; and Property Rights.

Similar to the Town of Fort White and City of Lake City, the Transportation Element defined LOS standards for County roadways based on the vehicle capacity of the roadway.

The Public School Facilities Element states that the County school board shall provide bicycle and pedestrian access on public school properties.

VII.A.2. Columbia County Speed Hump Ordinance

Adopted/Published: January 2000

Publishing Agency: Columbia County

Number of Pages: 4

Purpose of the Document: To define clear actionable steps in the process of determining if a speed hump will be installed on a Columbia County road.

There are four sections outlining the steps in which the installation of a speed hump is approved or disapproved. The first section outlines the eligibility for speed humps based on roadway characteristics such as speed limit, number of lanes, adjacent land use, and other factors. The second section defines locations on the roadway where a speed hump can be installed. The third section outlines the required resident support needed for a speed hump to be installed. A vote by mail ballot will be mailed to all effected property owners and they must have a 75% affirmative vote to be considered resident supported. The fourth section give the Board of County Commissioners the final vote on if the speed hump is installed based on the findings of the previous three sections and any other criteria the Board of County Commissioners deems appropriate.

VII.A.3. Town of Fort White Comprehensive Plan

Published/Adopted: November 2016

Number of Pages: 85

The Town of Fort White Comprehensive Plan is comprised of eight major elements: Future Land Use, Traffic Circulation, Housing, Infrastructure, Conservation, Recreation and Open Space, Intergovernmental Coordination, and Capital Improvement.

The Traffic Circulation Element establishes level of service (LOS) standards for roadways within the Town based on the vehicle capacity of the roadway. The Traffic Circulation Element also requires the certain developments provide additional right-of-way for pedestrian and bicycle facilities.

The Capital Improvements Element Policy VIII.1.4 outlines the how capital improvement projects are ranked based on five priorities with the highest priority going to projects that are needed to protect public health and safety.

VII.A.4. City of Lake City Comprehensive Plan

Published/Adopted: Amended December 2021

Number of Pages: 128

The City of Lake City Comprehensive Plan is comprised of nine major elements: Future Land Use, Traffic Circulation, Housing, Infrastructure, Conservation, Recreation and Open Space, Intergovernmental Coordination, Capital Improvement, and Public School Facilities.

The Traffic Circulation Element establishes LOS standards for roadways within the City based on the vehicle capacity of the roadway.

Similar to the Town of Fort White's Capital Improvement Element, the City of Lake City's Capital Improvement Element gives the highest priority to projects needed to protect the health and safety of the public.

The Public School Facilities Element Policy IX.5.1 specifically calls out improving student access and safety by coordinating the construction of new schools with road and sidewalk construction programs.

VII.B. State Plans and Policies

VII.B.1. FDOT and Florida State University's Enhancing Regional Transportation Planning in Rural Areas

Adopted/Published: 2024

Publishing Agency: Florida State University Department of Urban and Regional Planning

Number of Pages: Interactive Website

Document Purpose: To develop guidelines for FDOT and Regional Planning councils that will allow for better assessment of and response to the current and future transportation needs of rural communities.

This study covers both Columbia County and Taylor County and focuses on the state-owned roads in each community. Key findings for Columbia County from the report include the following:

- 25% of respondents highlighted the need for public transit in the community
- 42% of respondents ranked safety as their top priority
- 64% of respondents reported feeling "safe" or "very safe" on Columbia County roadways

The study identifies specific transportation project priorities for Columbia County and are listed below:

- Provide public transportation in Lake City and Fort White
- Create a Non-Motorized Transportation Master Plan for Columbia County
- Install additional street lighting along US 27 and US 90
- Construct turning lane for CR 18 and US 27
- Create a needs assessment for turn lanes along US 27 between Junction Road and SW Mapleton Street
- Create a Safe Walk to School Master Plan and Program
- Create a multi-use pathway from the Santa Fe River Bridge to the SR 47 and US 27 intersection in Fort White
- Construct new sidewalks and improve existing sidewalks along SR 47 between Fort White and Fort White High School
- Create an Intelligent Systems Master Plan to enhance Columbia County's transportation management system
- Reduce speed limits on SR 20 within Fort White city limits (near SW Blue Jay Court)
- Construct bike lanes along SR 20
- Install street lights or reflectors along SR 25
- Introduce traffic signals at hazardous intersections, such as SR 247 and CR 240
- Construct a turning lane at the intersection of SR 47 and US 27
- Expand the O'Leno to Ichetucknee Trail network to connect with Lake City for ecotourism
- Construct bike lanes on SR 47, south of Fort White
- Install turn lanes on US 27 between Fort White and High Springs

VII.B.2. Florida Strategic Highway Safety Plan

Adopted/Published: March 2021

Publishing Agency: Florida Department of Transportation

Number of Pages: 52

Document Purpose: The 2021 – 2025 Strategic Highway Safety Plan (SHSP) provides a framework for eliminating fatalities and serious injuries on all public roads. It echoes USDOT's Safe System Approach, recognizes the complexity of crashes, categorizes emphasis areas (roadway, road user, and road user behavior), and expands past strategies beyond the "4Es" (engineering, education, enforcement, and emergency response) to include the "4Is" (information intelligence, innovation, insight into communities, and investments and policies).

The SHSP identifies the following emphasis areas:

Roadways

- Lane Departures
  - A majority of fatal crashes in Florida occur due to lane departures. Education efforts are focused on underlying driver behaviors that result in lane departures. Roadway design considerations, such as visible and audible cues, can help reduce lane departures.
- Intersections
  - Intersections introduce potential for conflicting movements on the transportation system. Vulnerable roadway users that are often involved in intersection crashes include aging drivers, motorcyclists, bicyclists, and pedestrians. Education, combined with improved design features such as signal upgrades and roadway lighting can help reduce intersection crashes.

Road Users

- Pedestrians and Bicyclists
  - Those who walk/bike are considered the most vulnerable in the transportation system. Efforts to improve safety for pedestrians/cyclists may include reducing roadway speeds, improving lighting, creating dedicated lanes, and developing micromobility options.
- Aging Road Users
  - Aging road users account for a significant number of vehicular crashes in Florida and are at a greater risk of injury and death when involved in a crash incident. Providing safe alternatives to driving and educating users on natural age-related physical changes may help reduce crashes involving aging users.
- Motorcyclists and Motor Scooter Riders
  - Motorcyclists and motor scooter riders have very low protection if involved in a crash event, especially one involving a motor vehicle. Safety coalitions can help educate the public on motorcycle safety, and traffic law enforcement can help address risk-taking behaviors of these users.
- Commercial Motor Vehicle Operators
  - The majority of injuries and/or fatalities that involve commercial motor vehicles occur to individuals in the other vehicle, or to non-vehicle occupants (pedestrians, bicyclists). Safety enforcement programs and driver education may help address concerns common to these users such as distracted and fatigued driving.
- Teen Drivers
  - Motor vehicle crashes are the number one cause of death for teens in the United States. Education and strategies such as Graduated Driver Licensing programs may help reduce the risk associated with less-experienced teen drivers.

User Behavior

- Impaired Driving
  - One out of every four vehicular crashes in Florida involve an impaired driver, and the highest frequency of crashes occur on weekend nights. Targeted education and enforcement programs may help reduce the amount of impaired motor vehicle operators.
- Occupant Protection
  - A vehicle occupant's odds of reduced injury/survival significantly improve with safety belt use. Strengthening laws and implementing high visibility enforcement campaigns may help increase the number of users using seat restraints.
- Speeding and Aggressive Driving
  - Speeding and aggressive driving result in less vehicle control by drivers and increases risk for all system users. The combination of engineering, lane use, and traffic operational changes may help reduce vehicle speeds.
- Distracted Driving
  - Distracted driving includes manual, visual, and cognitive distraction. Increased education and enforcement through specific campaigns may help to reduce distracted driving.

Traffic Records and Information Systems

Florida's Traffic Record systems are built upon six key databases: crash, vehicle, driver, roadway, citation, and emergency medical services. When used in conjunction with each other, these databases can be leveraged to build more understanding of safety within a transportation system. They also may assist in evaluating how successful implemented safety mitigation programs are by comparing trends through before and after implementation.

Evolving Emphasis Areas

The following emphasis areas are being evaluated to understand potential emerging risks and safety innovations that may impact the transportation system.

- Work Zones
- Drowsy and Ill Driving
- Rail Crossings
- Roadway Transit
- Micromobility
- Connected and Automated Vehicles

VII.B.3. Florida Pedestrian and Bicycle Strategic Safety Plan

Adopted/Published: September 2021

Publishing Agency: Florida Department of Transportation

Number of Pages: 41

Document Purpose: To guide the implementation of safety initiatives for people walking and biking throughout Florida for the next 5 years.

The Florida Pedestrian and Bicycle Strategic Safety Plan aligns with the Pedestrian and Bicyclist Emphases area within the Florida Strategic Highway Safety Plan. It demonstrates the importance of prioritizing funding to improve safety and is a comprehensive guide to the challenges pedestrians/cyclists face and emerging trends in safety for those users.

The plan is split into four main parts: Fundamental Principles for People Walking and Biking, Emerging Safety Approaches, Safety Trends and Patterns, and Pedestrian and Bicycle Strategic Plan Emphasis Areas. Overall, the Plan identifies goals and supporting objectives for each of seven (7) emphasis areas: Data, Analysis, and Evaluation; Law Enforcement; Emergency Medical Services; Driver Education and Licensing and Legislation, Regulation, and Policy; Planning, Design, and Operations (Engineering); Communication, Outreach, and Education; Vision Zero Florida.

VII.B.4. Florida Safe Routes to School Toolkit

Adopted/Published: November 2020

Publishing Agency: University of Florida Center for Health and the Build Environment

Number of Pages: 51

Document Purpose: To provide a guide for developing a Safe Routes to School program and how to tailor toolkit items for local municipalities.

The Safe Routes to School Toolkit outlines what they call the "Five E's" expanded from the standard "3 E's" of engineering, education, and enforcement, to also include encouragement and evaluation. The document provides specific items that a municipality can use for each of the "Five E's" which are adaptable to a municipality's specific needs. Recommendations for each of the "Five E's" are listed below:

- Education
  - Bicycle and Pedestrian Safety Education – students should learn about how to be safe as a bicyclist or a pedestrian
  - Bike Rodeos – brief safety clinic in which students are fitted for helmets, learn basic bicyclist safety concepts, and build confidence riding bicycles
  - Safe Routes in Curriculum – challenging students to think about walking or biking in different contexts such as their health, math, science, or English classes
  - Educating parents and guardians – including parents and guardians in education on Safe Routes to School is essential in its success, parents should be informed of plans, events, or any changes in school policies/ practices
- Encouragement
  - Events – special events can build and help sustain community support for Safe Routes to School including walk or bike to school days, mileage club contests, or back to school blitzes
  - Incentives – challenging students to "compete" is a good way to keep sustained engagement this can be done through punch cards, stickers, recognition, or any way the school finds suitable
  - Other forms – these can include programs such as hiring crossing guards or letting students participate in a safety patrol program
- Enforcement
  - Crosswalk Stings – law enforcement can patrol near school crossing areas and catch vehicles that violate crosswalk or school zone rules
  - Feedback trailers signage – post portable speed feedback signs near school zones to serve as a reminder to drivers to comply with the speed limits in school zones
- Engineering
  - Sidewalks, paths, and trails – providing designated spaces for bicyclists and pedestrians helps keep them safer and avoid conflicts with vehicles
  - Traffic calming – this can include signage and hardscaping as well as traffic control devices such as speed feedback signs
- Evaluation
  - Surveys – surveys can be used to gather feedback from students and the community during different stages of implementation or program trails
  - Site Assessments – these assessments can document existing field conditions around the school and provide a better understanding of the walking or biking experience, this can also be used for a before and after assessment for pilot programs or demonstration projects

The document then details the creation of a Safe Routes to School Plan starting with the assembling of a task force, then assessing current conditions and identifying issues, and finally setting a vision and goals. The document states that funding for Safe Routes to School programs is managed through FDOT.

VII.C. Federal Plans and Policies

VII.C.1. Noteworthy Local Policies That Support Safe and Complete Pedestrian and Bicycle Networks

Adopted/Published: November 2016

Publishing Agency: FHWA

Number of Pages: 107

Document Purpose: This document provides a framework for local and state jurisdictions to bolster their policies for improving pedestrian and bicycle networks by defining six key elements in policy:

1. defining success
2. protecting vulnerable road users
3. promoting supportive development
4. designing the network
5. maintaining the network
6. paying for the network
7. continued maintenance

Noteworthy Local Policies breaks down defining success into a hierarchy of planning initiatives starting with a vision, then goals supporting said vision, followed by objectives with are specific, actionable and measurable statements, then defining the performance measures for those goals. The comprehensive plans of Columbia County and local jurisdictions generally already follow this structure and Columbia County has taken the first step by passing their Vision Zero Resolution.

The report notes that protection of nonmotorized users is not just through infrastructure specific policies but through legal protection as well. *Noteworthy Local Policies* outlines a few ways in which policy can be used to protect non-motorized users such as policies that support traffic calming, protect real and perceived safety, reduce conflict points (with an emphasis on driveway spacing and access management), and provide appropriate spaces for each mode.

The report also provides guidance on enforcement campaigns in a way that encourages compliance with the law but does not discourage pedestrians and bicyclists. *Section 2.3* of *Noteworthy Local Policies* covers the role that new and existing development plays in supporting a safe bicycle and pedestrian network. This section provides guidance and examples of both design and development standard strategies for new and existing developments. *Noteworthy Local Policies* also covers design policies for the network itself in *Section 2.4*. The report walks through each step of designing the network from determining routes, designing the facilities, determining level of service indicators, and project prioritization.

Section 2.5 covers the maintenance needed to keep the pedestrian and bicycle networks safe and usable but also the kinds of preventative maintenance that can prolong the life of facilities. Both sections cover funding with *Section 2.5* noting the ways in which existing funding can also support facility maintenance and *Section 2.6* covering funding sources. The report is rounded out with a discussion on how to implement the policies in a way that is appropriate for the jurisdiction and case studies from across the United States.

VII.C.2. National Roadway Safety Strategy

Adopted/Published: January 2022

Publishing Agency: U.S. Department of Transportation

Number of Pages: 42

Document Purpose: The National Roadway Safety Strategy works to reduce serious injuries and deaths on the transportation systems, ultimately working toward a goal of zero roadway fatalities.

The document includes a vision and goal, adopts the Safe System Approach, and identifies actions for the U.S. Department of Transportation to take. The Safe System Approach, discussed in **Chapter 1**, recognizes human mistakes and vulnerabilities, but insists that these mistakes should not result in death or serious injury.

VII.C.3. Small Town and Rural Multimodal Networks

Adopted/Published: December 2016

Publishing Agency: Federal Highway Administration

Number of Pages: 134

Document Purpose: The Small Town and Rural Multimodal Networks document provides a framework for rural areas to work toward a safer transportation system in their communities. It helps local practitioners implement national guidelines in ways that acknowledge conditions unique to rural areas. Conditions common in rural areas include longer non-local trip distances, higher crash rates, and health and income disparities. Rural communities tend to be more auto-oriented to accommodate greater travel distances, and have unique design considerations for their roadways, like the need to accommodate agricultural equipment. Examples are provided throughout the document of projects implemented in rural communities around the United States.

Three types of facilities are addressed in the document: Mixed Use Traffic Facilities, Visually Separated Facilities, and Physically Separated Facilities. Different approaches are identified for each facility type, which include a summary of the approach, benefits and considerations, context appropriate for application, standard geometric design guidelines, roadway marking and signage, intersection considerations, implementation and accessibility guidance, and a case study.

Mixed Use Traffic Facilities include yield roadways, bicycle boulevards, and advisory shoulders. These facilities function well in areas with lower volumes and speeds. They maintain area aesthetics, are relatively inexpensive to implement, and require little maintenance. While safety is often improved with such measures, non-motor vehicle users are still traveling in close proximity to motor vehicles.

Visually Separated Facilities include paved shoulders and bike lanes. These facilities provide dedicated space for all users on roadways with higher volumes or speeds. They improve safety by reducing non-motor vehicle user and motor vehicle conflicts, however, may interfere with roadway aesthetics and require wider roadways.

Physically Separated Facilities include shared use paths, side paths, sidewalks, and separated bike lanes. These facilities allow for non-motor vehicle users to travel separately from motor vehicle traffic, improve visibility, and allow for lower-stress travel by all users. While physically separated facilities are known to greatly improve safety, they require additional space for construction, may be costly to implement, and may require higher levels of maintenance.

VII.D. Policy Recommendations

Key opportunities that Columbia County will continue, expand, or consider pursuing include:

- Develop a Transportation Master Plan, including, but not limited to, elements for non-motorized transportation, transit, and intelligent transportation systems
- Amend the County's Comprehensive Plan with LOS defined for multimodal transportation options (such as transit, bicyclists, pedestrians)
- Assign each local road a context classification and specify speed limit ranges, access management standards, and other design considers for each roadway
- Create a Safe Routes to School Plan in partnership with the Columbia County School Board, and local law enforcement agencies
- Partner with local law enforcement to expand existing safety programs, enforcement and education campaigns including programs such as an Occupant Protection Program, Safe Routes to School, and Click It or Ticket Programs
- Incorporate center/edge-line rumble strips in FDOT resurfacing or maintenance projects with priority to roads that have a history of off-road crashes
- Create a citizen reporting system where residents can easily report safety problems for further investigation
- Create procedures for installing crosswalks on local roads similar to the existing Speed Hump Ordinance
- Work in partnership with Lake City, Fort White, and FDOT to develop proactive safety policies and strategies

VII.E. Planned Improvements

Planned improvements in Columbia County were reviewed to determine if evidence-based safety strategies could be incorporated on conjunction with the planned improvements. Below details a list of the planned improvement occurring in Columbia County.

VII.E.1. Local Projects

The Capital Improvement Elements of the Comprehensive Plans for the City of Lake City, Town of Fort White, and Columbia County were reviewed to identify any overlaps with the priority segments or intersections. No overlaps were found at the time of this report's publication.

VII.E.2. FDOT Projects

Active Projects

- **US 27 (SR 20) Resurfacing, from the Alachua County Line to the Suwannee County Line (Project Number 208418-3)**

  This project consists of updates and replacements to existing asphalt, drainage improvements and rehabilitation, installation of new pavement markings and signage, updates to caution lights, installation of rumble strips and other incidental construction items on US 27 (SR 20) within Columbia County from the Alachua County line to the Suwannee County line. The estimated project cost is $11.9 million. The project started in Spring 2024 and is anticipated to be completed in Spring 2025.

- **US 41 (SR 25) Resurfacing, from I-75 to CR 252 (Project Number 205352-3)**

  This project consists of milling and resurfacing, grade adjustments, drainage improvements and rehabilitation, new signage, and installation of new pavement markings on US 41 from I-75 to CR 252. The estimated project cost is $10.6 million. The project started in Summer 2024 and is anticipated to be completed in Summer 2025.

- **CR 240 Signing and Marking, from SR 247 to CR 131 (Item Number 447473-1)**

  This project consists of preliminary engineering for signing and pavement marking on CR 240 from SR 247 to CR 131. The project is part of the Local Area Projects (LAP) Program and is scheduled for letting in FY 2027.

- **Lighting Maintenance Agreement for State Roads (Item Number 414406-1)**

  This project includes maintenance for the 505 streetlights on state roads within Columbia County, the lightning agreement covers streetlights on SR 47, SR 441, SR 10, SR 10A, and SR 247. The project is funded in FY 2025 for $373,901 and FY 2026 for $385,114.

- **SR 47 Resurfacing, from US 27 to south of I-75 (Item Number 445402-1)**

  This project includes construction for resurfacing on SR 47 from US 27 to south of I-75. Construction for the project is ongoing and anticipated to be completed in Spring 2025.

Future and Planned Projects

- **US 90 (W Duval Street) Milling and Resurfacing, from Baya Drive to Llewellyn Avenue (Project Number 441258-1)**

  This project consists of milling and resurfacing US 90 from Baya Drive to Llewellyn Avenue including updates to ADA facilities, removal of portions of existing on-street parking, and a signalized pedestrian crosswalk just east of Golf Club Avenue. Construction funding has not yet been identified for this project.

- **CR 133 Road Reconstruction (Item Number 447734-2)**

  This project includes roadway reconstruction on CR 133 (Country Club Road) from CR 252 to SE Baya Drive. The project is funded for construction in FY 2026 with an estimated cost of $4 million.

- **SR 10 (US 90) Resurfacing, from Llewellyn Avenue to 2-Lane Section (Item Number 208366-5)**

  This project includes preliminary engineering, railroad and utility work, and construction for the resurfacing of SR 10 (US 90) from Llewellyn Avenue to the 2-lane section of US 90 to the east. The project is funded for preliminary engineering and railroad and utility work in FY 2025. The project is funded for construction in FY 2026 with an estimated cost of $5,793,046.

- **SR 247 (Branford Highway) from Suwannee County Line to I-75 (Item Number 208411-9)**

  This project includes preliminary engineering and construction for resurfacing on SR 247 (Branford Highway) from the Suwannee County Line to I-75. Preliminary engineering is ongoing and is funded for $1,561,641 in FY 2025. The project is funded for construction in FY 2027 with an estimated cost of $15,402,715.

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CHAPTER 8

STRATEGY AND PROJECT SELECTIONS

VIII. STRATEGY AND PROJECT SELECTIONS

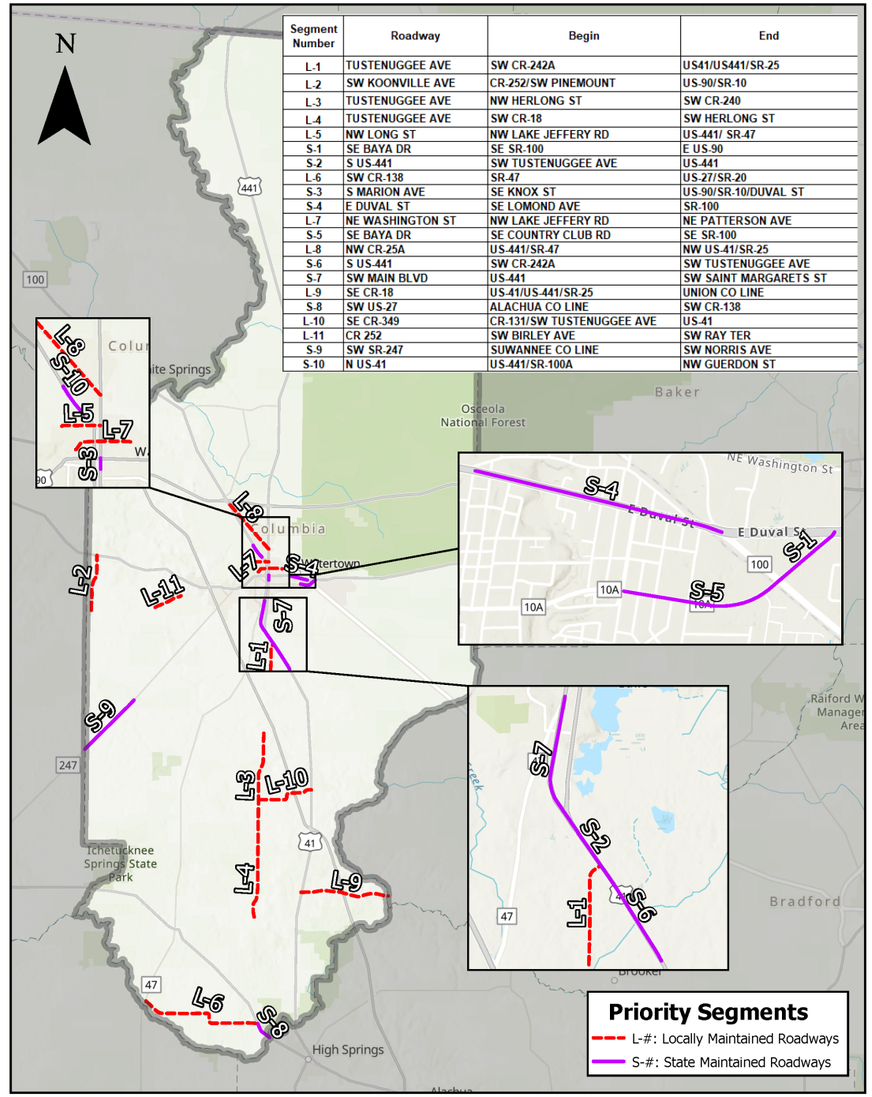
A geospatial analysis was performed on the crash data described in **Chapter 4**. The geospatial analysis helped identify specific locations within Columbia County with the most significant measures of crash severity and crash frequency. Crashes were geospatially assigned to the nearest roadway segments and intersections for the selection of high-crash locations for further analysis. Separate ranking criteria were utilized for roadway segments and intersections.

VIII.A. High Crash Segments

Roadway segments were ranked based on the five-year average crash rate by 100 million vehicle-miles traveled. Crash rates were calculated for all crashes and for severe crashes (those resulting in fatality and/or incapacitating injury). Segments were ranked according to their severe crash rate and the overall crash rate was used as a tiebreaker. Additional feedback from stakeholders was considered to include additional sites to the priority list. The resulting ten (10) state road segments and ten (10) local road segments were identified as high-crash segments. A total of 99 severe crashes and 615 non-severe crashes occurred on the high-crash segments.

The high-crash segments include overall extents of approximately 50 roadway miles, or approximately 6.5% of the overall roadway network in Columbia County. In contrast, the fatal and incapacitating crashes recorded on the high-crash segments account for more than 20% of all Columbia County's fatal and incapacitating injury crashes.

Segment Number	Roadway	Begin	End
L-1	TUSTENUGGEE AVE	SW CR-242A	US41/US441/SR-25
L-2	SW KOONVILLE AVE	CR-252/SW PINEMOUNT	US-90/SR-10
L-3	TUSTENUGGEE AVE	NW HERLONG ST	SW CR-240
L-4	TUSTENUGGEE AVE	SW CR-18	SW HERLONG ST
L-5	NW LONG ST	NW LAKE JEFFERY RD	US-441/ SR-47
S-1	SE BAYA DR	SE SR-100	E US-90
S-2	S US-441	SW TUSTENUGGEE AVE	US-441
L-6	SW CR-138	SR-47	US-27/SR-20
S-3	S MARION AVE	SE KNOX ST	US-90/SR-10/DUVAL ST
S-4	E DUVAL ST	SE LOMOND AVE	SR-100
L-7	NE WASHINGTON ST	NW LAKE JEFFERY RD	NE PATTERSON AVE
S-5	SE BAYA DR	SE COUNTRY CLUB RD	SE SR-100
L-8	NW CR-25A	US-441/SR-47	NW US-41/SR-25
S-6	S US-441	SW CR-242A	SW TUSTENUGGEE AVE
S-7	SW MAIN BLVD	US-441	SW SAINT MARGARETS ST
L-9	SE CR-18	US-41/US-441/SR-25	UNION CO LINE
S-8	SW US-27	ALACHUA CO LINE	SW CR-138
L-10	SE CR-349	CR-131/SW TUSTENUGGEE AVE	US-41
L-11	CR 252	SW BIRLEY AVE	SW RAY TER
S-9	SW SR-247	SUWANNEE CO LINE	SW NORRIS AVE
S-10	N US-41	US-441/SR-100A	NW GUERDON ST

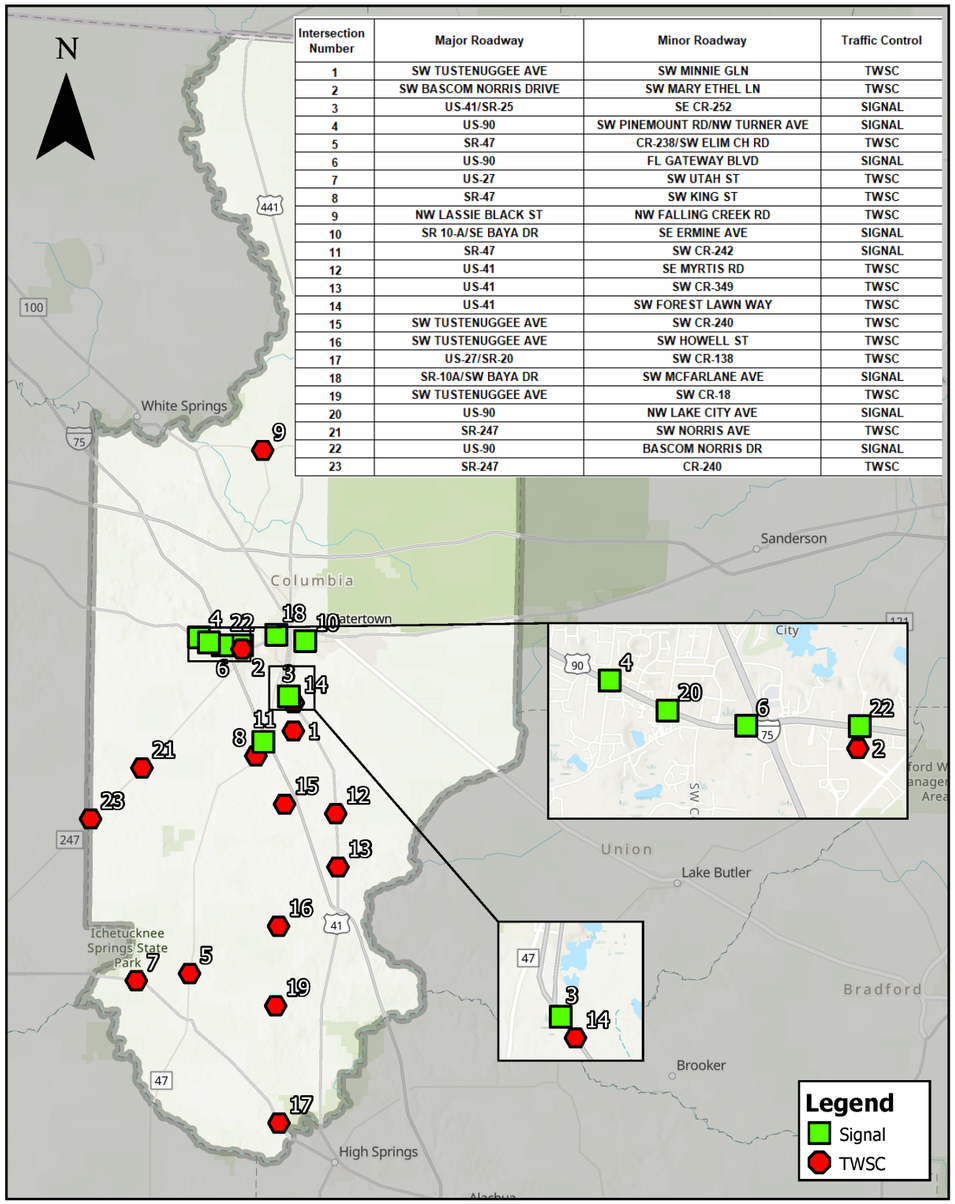


Map 13: High Crash Priority Segments

VIII.B. High Crash Intersections

All Columbia County intersections were ranked on their crash count weighted by the proportional unit crash cost relative to a property damage only crash, or 'Equivalent Property Damage Only'. Twenty-three (23) intersections were identified as high-crash intersections. A total of 58 fatal and serious injury crashes and 600 non-severe crashes were assigned to the 23 priority intersections.

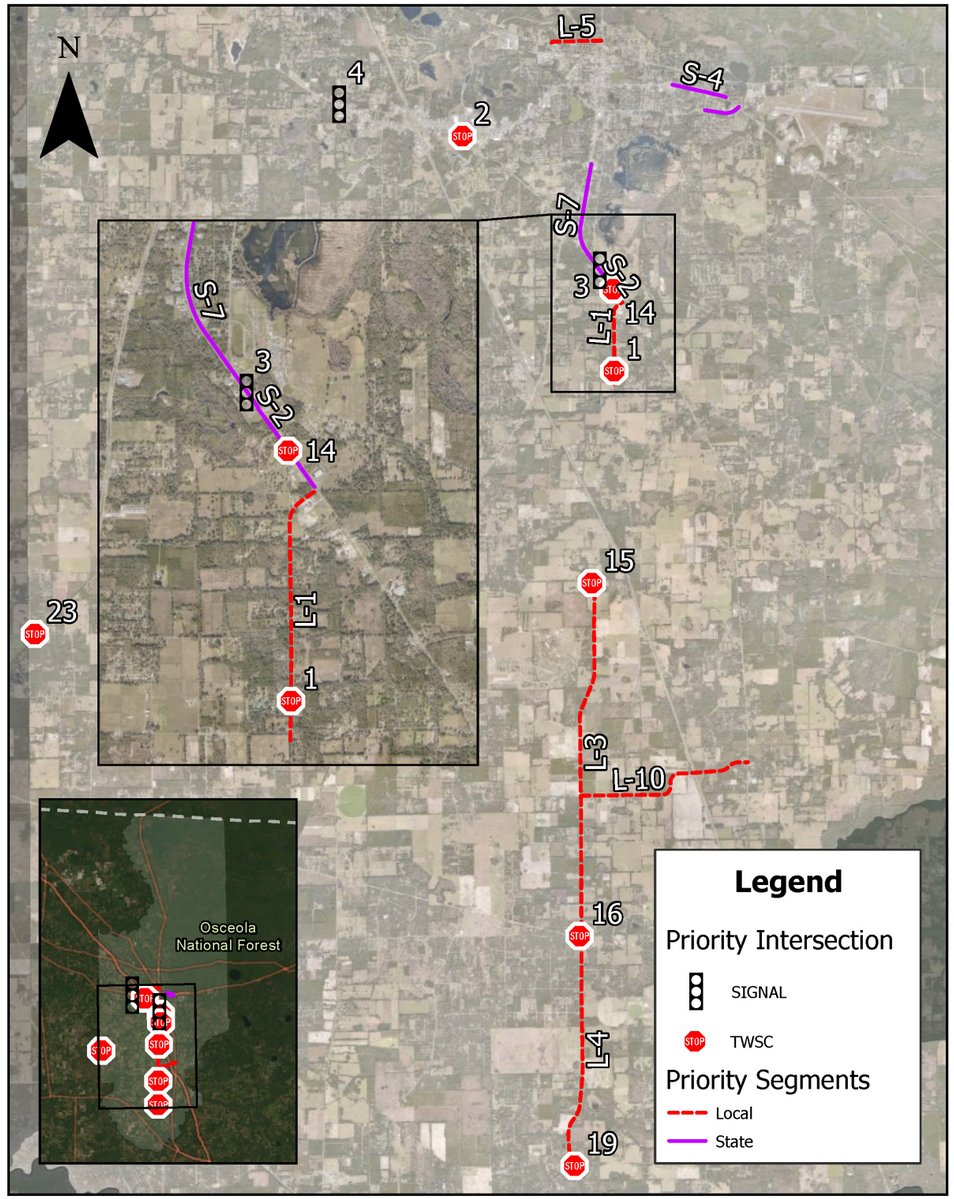
Intersection Number	Major Roadway	Minor Roadway	Traffic Control
1	SW TUSTENUGGEE AVE	SW MINNIE GLN	TWSC
2	SW BASCOM NORRIS DRIVE	SW MARY ETHEL LN	TWSC
3	US-41/SR-25	SE CR-252	SIGNAL
4	US-90	SW PINEMOUNT RD/NW TURNER AVE	SIGNAL
5	SR-47	CR-238/SW ELIM CH RD	TWSC
6	US-90	FL GATEWAY BLVD	SIGNAL
7	US-27	SW UTAH ST	TWSC
8	SR-47	SW KING ST	TWSC
9	NW LASSIE BLACK ST	NW FALLING CREEK RD	TWSC
10	SR 10-A/SE BAYA DR	SE ERMINE AVE	SIGNAL
11	SR-47	SW CR-242	SIGNAL
12	US-41	SE MYRTIS RD	TWSC
13	US-41	SW CR-349	TWSC
14	US-41	SW FOREST LAWN WAY	TWSC
15	SW TUSTENUGGEE AVE	SW CR-240	TWSC
16	SW TUSTENUGGEE AVE	SW HOWELL ST	TWSC
17	US-27/SR-20	SW CR-138	TWSC
18	SR-10A/SW BAYA DR	SW MCFARLANE AVE	SIGNAL
19	SW TUSTENUGGEE AVE	SW CR-18	TWSC
20	US-90	NW LAKE CITY AVE	SIGNAL
21	SR-247	SW NORRIS AVE	TWSC
22	US-90	BASCOM NORRIS DR	SIGNAL
23	SR-247	CR-240	TWSC



Map 14: High Crash Intersections

VIII.C. Priority Site Review

From the 20 high-injury segments and the 23 high-injury intersections, County staff and the Task Force were presented a proposed list of 12 priority sites for further review, including a more comprehensive analysis of the site-specific crash data and field review. Field reviews were conducted to validate findings from crash data, assess existing infrastructure, understand road user behavior, identify additional safety issues, and develop recommended safety improvements. **Map 15** illustrates the priority sites.



Map 15: Priority Site Reviews

PRIORITY 1 – SW TUSTENUGGEE AVENUE FROM SW CR 242A TO US 41/US 441/SR 25

Local Segment 1

Area Characteristics

The segment of SW Tustenuggee Avenue from SW CR 242A to US 41/US 441/SR 25 is surrounded primarily by residential land uses. There is minimal lighting along the corridor. There is a ditch along both sides of the roadway for most of the segment and vegetation lining the roadway for most of the extent, except the northernmost portion of the segment.

SW TUSTENUGGEE AVENUE (FACING SOUTH)

Segment Characteristics

This 1.35-mile segment is a two-lane roadway in unincorporated Columbia County, south of Lake City. SW Tustenuggee Avenue has a posted speed limit of 45 mph and there are no signalized intersections along the length of the segment. There are no pedestrian or bicycle facilities along the segment. This section of SW Tustenuggee Avenue is classified as an urban major collector.

Priority Intersection

The high-crash intersection of SW Tustenuggee Avenue and SW Minnie Glenn (Intersection 1) is located approximately 0.2-mile north of the southern limit of this segment. Crashes at the intersection are included in this analysis, and intersection-specific countermeasures are included in this section.

Equity Considerations

This segment of SW Tustenuggee Avenue is located within Census Tract 1108, which was identified as Transportation Access Disadvantaged and Health Disadvantaged in **Chapter 6**. Census Tract 1108 was not identified as an Area of Persistent Poverty.

Crash Data Review

From 2019 to 2023, a total of 16 crashes were recorded along the study segment, including two (2) fatal crashes and two (2) serious injury crashes.

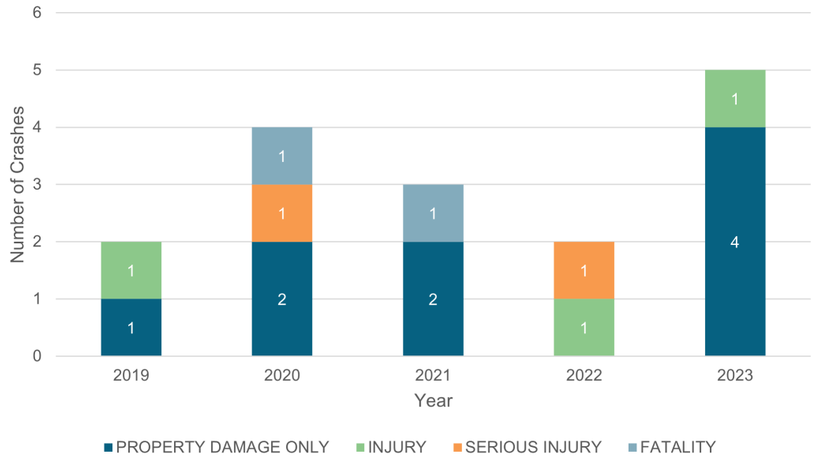
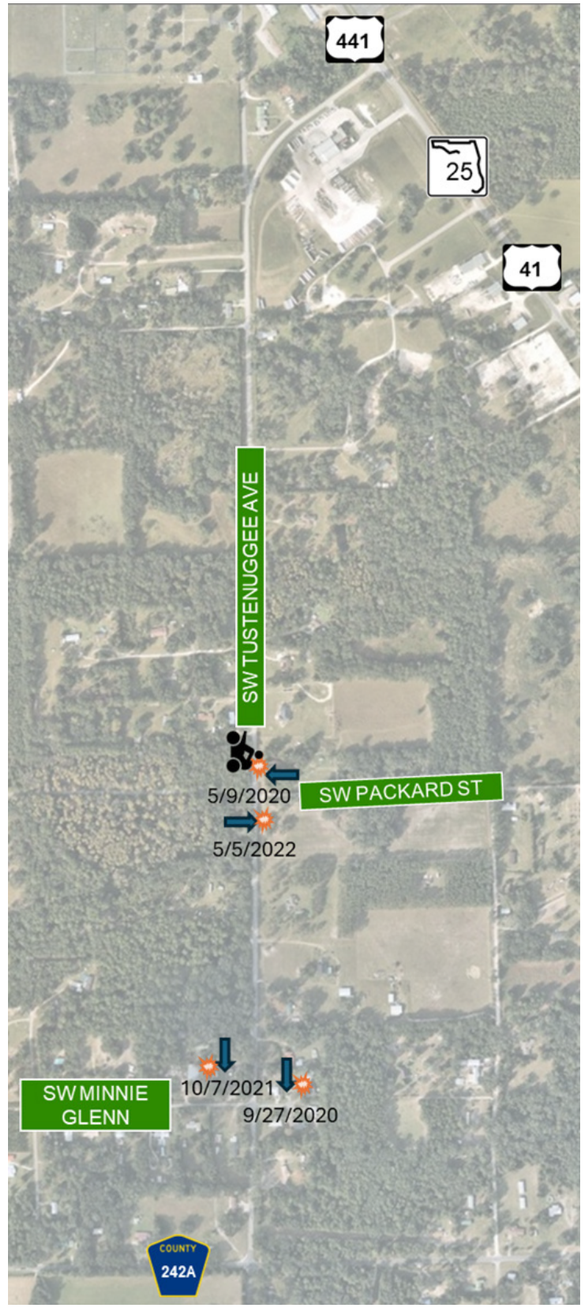


Figure: 16: Crash Severity by Year, Priority 1

Fatal and Serious Injury Crashes

Fatal and serious injury crash reports from 2019 through 2023 within the subject segment were obtained from *Signal Four Analytics* and reviewed in full.

- **Serious Injury - May 9, 2020:** A westbound vehicle on SW Packard Street failed to yield at the intersection with SW Tustenuggee Avenue and struck a motorcycle traveling south. The motorcyclist was ejected and was transported to a nearby medical facility following the crash. The crash occurred under dark - not lighted conditions at approximately 11 PM. No adverse weather conditions were reported at the time of the crash.
- **Fatal - September 27, 2020:** A southbound vehicle on SW Tustenuggee Avenue left the roadway for unknown reasons. The vehicle struck a ditch on the eastern side of the roadway and overturned several times before coming to rest against a tree. The driver of the vehicle expired as a result of the crash. The driver was not wearing a seat belt at the time of the crash, and it was not determined if the driver was legally impaired at the time of the crash. The crash occurred under dark - not lighted conditions at approximately midnight.
- **Fatal - October 7, 2021:** A southbound vehicle on SW Tustenuggee Avenue left the roadway for unknown reasons. The vehicle traveled into a ditch on the western side of the roadway and struck two trees before overturning and coming to rest. The driver and three (3) passengers were transported to a nearby medical facility. One of the passengers was declared deceased at the scene. The driver was speeding, did not have a license, and several of the vehicle passengers (including the deceased passenger) were not wearing a seat belt. The crash occurred under dark - not lighted conditions at approximately 10:30 PM.
- **Serious Injury - May 5, 2022:** An eastbound vehicle on SW Packard Street failed to stop at the stop-controlled intersection with SW Tustenuggee Avenue, traveled across the intersection into a ditch, and collided with a power pole. The driver was under the influence of drugs and was not wearing a seat belt at the time of the crash. Crash occurred under dark - not lighted conditions at approximately 10 PM.



Map 16: Fatal and Serious Injury Crashes, Priority 1

PRIORITY 1 – SW TUSTENUGGEE AVENUE FROM SW CR 242A TO US 41/US 441/SR 25

Crash Types

The most commonly reported crash type on the subject segment during the five-year analysis period was off road crashes, which accounted for approximately 38% of all crashes and 75% of the fatal and incapacitating injury crashes. Left turn crashes accounted for 25% of crashes and angle crashes accounted for 12% of crashes. No other individual crash type accounted for more than 10% of the overall crashes.

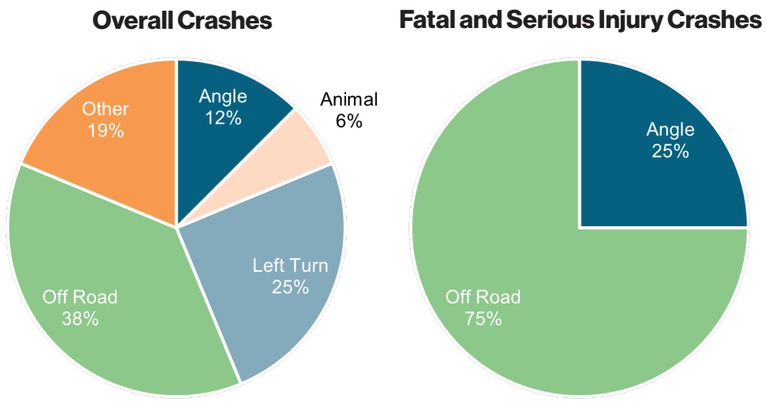


Figure: 17: Crash Types, Priority 1

Contributing Causes

The crash data was evaluated to determine the prevalence of contributing causes such as dark conditions, wet surface conditions, alcohol, and speeding. Approximately 50% of crashes occurred under non-daylight conditions; all four (4) fatal and serious injury crashes occurring under dark – not lighted conditions. Approximately 6% of all crashes occurred with wet roadway conditions. One (1) of the four (4) fatal and serious injury crashes was reported to have been influenced by speeding, one (1) of the fatal and serious injury crashes was determined to be drug-related, and two (2) crashes were determined to be alcohol related (including one (1) of the fatal and serious injury crashes).

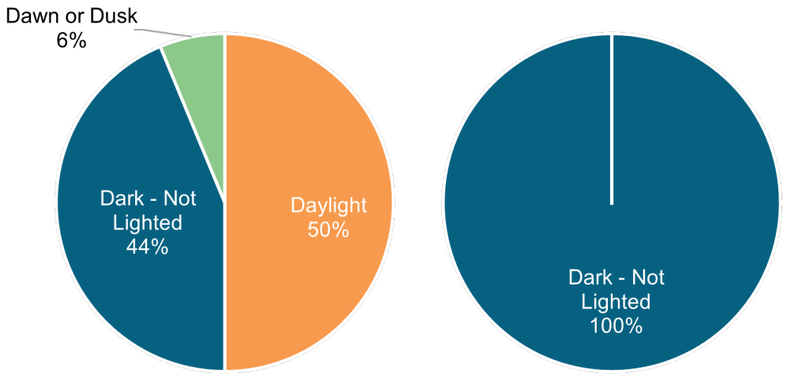


Figure: 18: Lighting Conditions, Priority 1

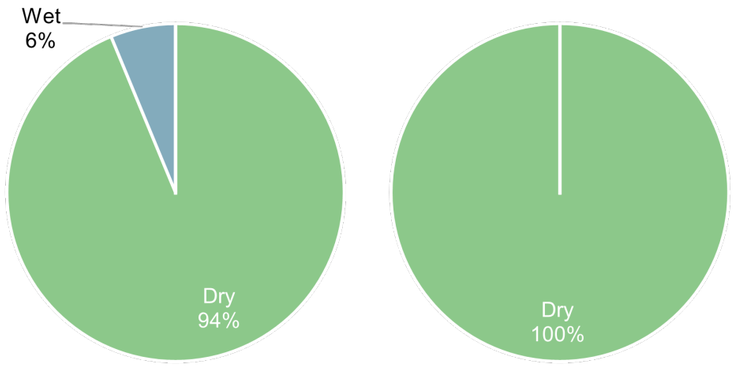


Figure: 19: Surface Conditions, Priority 1

Public and Stakeholder Comments

The intersection of SW Tustenuggee Avenue and CR 242A was identified as a safety concern at the Florida Gateway Fair.

CURVE ON NORTHERN END NEAR US-41

VIEW OF SW PACKARD STREET EASTBOUND APPROACH

UTILITY LINES FOR POTENTIAL LIGHTING IMPROVEMENTS

PRIORITY 1 – SW TUSTENUGGEE AVENUE FROM SW CR 242A TO US 41/US 441/SR 25

Potential Countermeasures for Consideration

Table 3: Potential Countermeasures, Priority 1

Countermeasure	Scale/Timeframe	Justification
A. Install centerline and edge line rumble strips	Short	Frequency of off-road crashes. Observed tire marks on grass shoulders.
B. Speed feedback signs	Short	Observed high speeds and minimal driver friction.
C. Install street lighting	Medium	All fatal and serious injury crashes oc-curred in dark – not lighted conditions.
D. Raised pavement markers	Short	Multiple off-road crashes in dark – not lighted conditions.
E. Move objects outside of clear zone	Short	Multiple fatal and serious injury off-road crashes involving fixed objects.
F. Remove/Maintain foliage	Short	Observed sight distance limitations on minor street approaches.
G. Install LED enhanced flashing stop signs	Medium	Frequency of intersection crashes. Lack of lighting in the area creates poor visibility of signs.

Map 17: Proposed Countermeasures, Priority 1

PRIORITY 2 – SW TUSTENUGGEE AVENUE FROM SW HERLONG STREET TO SW CR 240

Local Segment 3

Area Characteristics

The segment of SW Tustenuggee Avenue from SW Herlong Street to SW CR 240 is surrounded primarily by residential land uses. There is minimal lighting along the corridor. There is vegetation along much of the segment and sporadic ditches running parallel to the roadway throughout the segment.

Segment Characteristics

This 5.84-mile segment is a two-lane roadway in unincorporated Columbia County, south of Lake City and northeast of Fort White. SW Tustenuggee Avenue has a posted speed limit of 55 mph, except where the speed limit is reduced near the intersection with SW CR 240, and there are no signalized intersections along the length of the segment. There are no pedestrian or bicycle facilities along the segment. This section of SW Tustenuggee Avenue is classified as a rural major collector.

SW TUSTENUGGEE AVENUE (FACING NORTH)

Priority Intersections

The high-crash intersection of SW Tustenuggee Avenue and SW CR 240 (Intersection 15) is the northern terminus of this segment. Crashes at the intersection are included in this analysis, and intersection-specific countermeasures are included in this section.

Equity Considerations

This segment of SW Tustenuggee Avenue is located within Census Tract 1109.01 and 1109.04. Census Tract 1109.01 is identified as Transportation Access Disadvantaged, Health Disadvantaged, and Economic Disadvantaged in **Chapter 6**. Census Tract 1109.04 is identified as Transportation Access Disadvantaged and Health Disadvantaged in **Chapter 6**. Neither census tract is identified as an Area of Persistent Poverty.

Crash Data Review

From 2019 to 2023, a total of 33 crashes were recorded along the study segment, including two (2) fatal crashes and six (6) serious injury crashes.

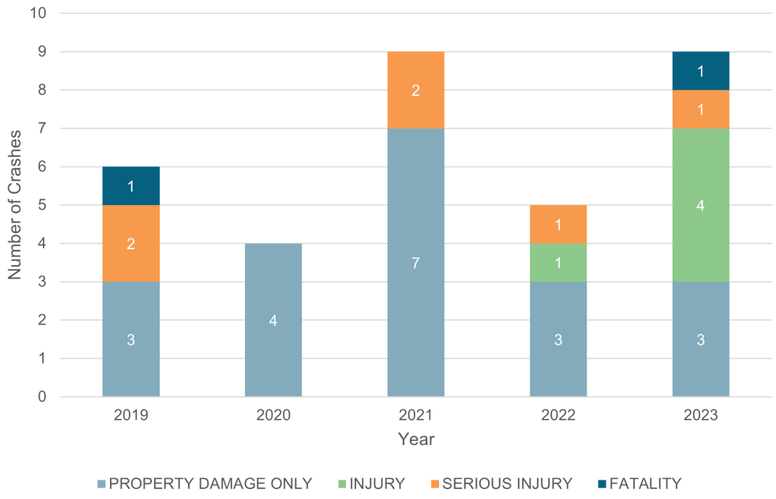
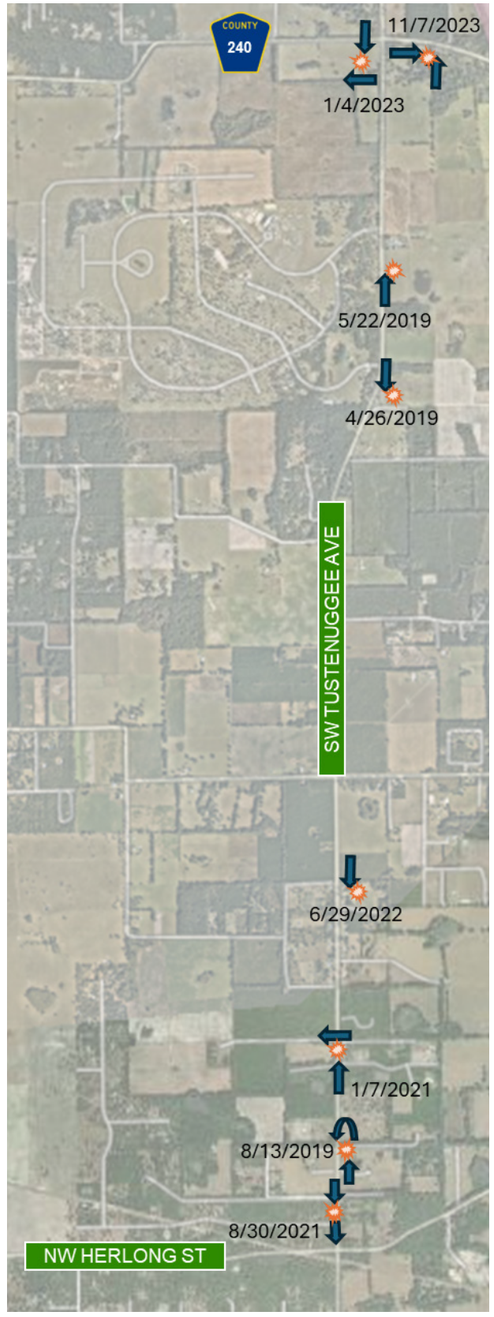


Figure: 20: Crash Severity by Year, Priority 1

Fatal and Serious Injury Crashes

Fatal and serious injury crash reports from 2019 through 2023 within the subject segment were obtained from *Signal Four Analytics* and reviewed in full.

- **Serious Injury – April 26, 2019:** A southbound vehicle on SW Tustenuggee Avenue lost control, traveled across the roadway, and struck a fence on the east side of the road. The driver was transported to a nearby medical facility. The crash occurred under dark - not lighted conditions at approximately 3 AM. The crash occurred while it was raining with wet surface conditions.
- **Fatal – May 22, 2019:** A northbound vehicle on SW Tustenuggee Avenue traveled off the roadway and struck a tree before overturning. The driver of the vehicle expired as a result of the crash. The driver was not wearing a seatbelt at the time of the crash and tested positive for drug use, though it was unknown if the driver was impaired at the time of the crash. The crash occurred at approximately noon with no adverse weather conditions reported.
- **Serious Injury – August 13, 2019:** A northbound vehicle on SW Tustenuggee Avenue attempted to make a U-turn and was struck by a northbound school bus that was traveling behind it. The driver of the vehicle was transported to a nearby medical facility. The crash occurred at approximately 2 PM. No adverse weather conditions were reported at the time of the crash.
- **Serious Injury – January 7, 2021:** A vehicle was stopped on SW Tustenuggee Avenue preparing to back into a driveway, occupying space in both lanes of travel when a northbound vehicle struck it. The driver of the vehicle attempting to pull into the driveway was transported to a nearby medical facility following the crash. The crash occurred at approximately 9:30 PM under dark - not lighted conditions. The crash occurred while it was raining with wet surface conditions.
- **Serious Injury – August 30, 2021:** A rear end crash occurred between two southbound vehicles. The driver of the leading vehicle was transported to a nearby medical facility. The crash occurred at approximately 5 PM. No adverse weather conditions were reported at the time of the crash.
- **Serious Injury – June 29, 2022:** A southbound vehicle on SW Tustenuggee Avenue lost control and traveled into the ditch on the eastern side of the road before hitting a fence. The driver was driving under the influence of alcohol and was transported to a nearby medical facility. The crash occurred under dark - not lighted conditions at approximately 9 PM . The crash occurred with wet surface conditions.
- **Serious Injury – January 4, 2023:** A westbound vehicle on SW CR 240 failed to yield at the stop-controlled approach to the intersection with SW Tustenuggee Avenue and struck a southbound vehicle. Both drivers were transported to a nearby medical facility as a result of the crash. The crash occurred at approximately 3 PM with wet roadway surface conditions.
- **Fatal – November 7, 2023:** An eastbound vehicle on SW CR 240 failed to yield at the stop-controlled approach to the intersection with SW Tustenuggee Avenue and struck a northbound vehicle. A passenger from the eastbound vehicle expired as a result of the crash. Both drivers and another passenger from the eastbound vehicle were transported to a nearby medical facility. The crash occurred at approximately noon and no adverse weather conditions were reported at the time of the crash.



Map 18: Fatal and Serious Injury Map, Priority 2

PRIORITY 2 – SW TUSTENUGGEE AVENUE FROM SW HERLONG STREET TO SW CR 240

Crash Types

The most commonly reported crash type on the subject segment during the five-year analysis period was off road crashes, which accounted for approximately 34% of all crashes and 37% of the fatal and serious injury crashes. Angle crashes accounted for 18% of all crashes and 25% of the fatal and serious injury crashes. Animal crashes consisted of approximately 12% of all crashes. No other crash type accounted for more than 10% of the overall crashes.

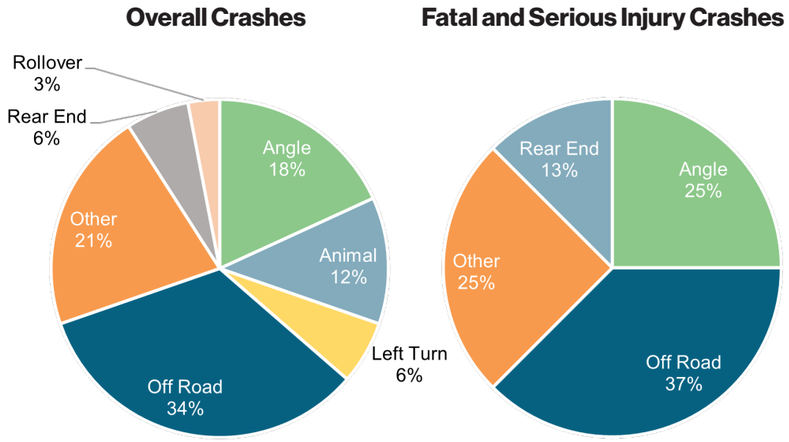


Figure: 21: Crash Types, Priority 2

Contributing Causes

The crash data was evaluated to determine the prevalence of contributing causes such as dark conditions, wet surface conditions, alcohol, and speeding. Approximately 52% of crashes occurred under dark – not lighted conditions and approximately 8% of all crashes occurred with wet roadway conditions. However, 50% of fatal and serious injury crashes occurred with wet roadway conditions. Approximately six (6) crashes were classified as alcohol-related (with two being fatal and serious injury crashes), three (3) crashes were classified as drug-related (including one of the fatal and serious injury crashes), and two (2) crashes were determined to be speeding related (including one of the fatal and serious injury crashes).

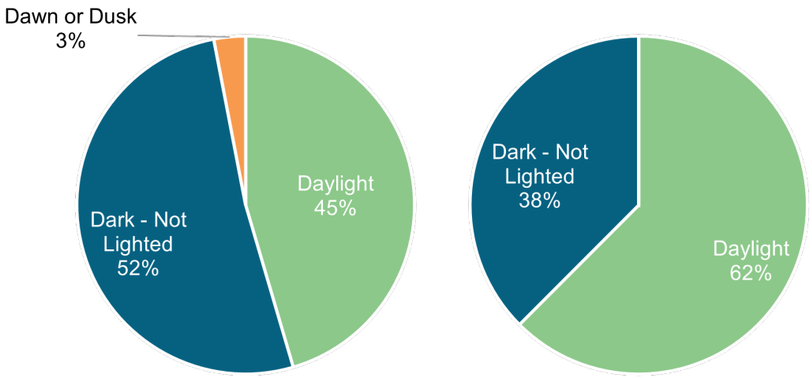


Figure: 22: Lighting Conditions, Priority 2

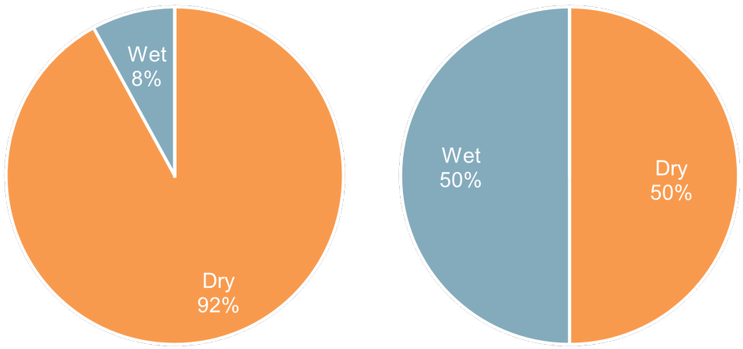


Figure: 23: Surface Conditions, Priority 2

Public and Stakeholder Comments

The intersection of SW Tustenuggee Avenue and SW CR 240 was recommended for intersection improvements at the Open House event on September 19, 2024.

The intersection of SW Tustenuggee Avenue and NW Herlong Street was recommended for intersection improvements at the Open House event on September 19, 2024.

RIGHT-TURN RUTTING FOR NORTHBOUND RIGHT-TURN MOVEMENT AT SW TUSTENUGGEE AVENUE AND SW CR 240

FADED STOP BAR AT INTERSECTION OF SW TUSTENEEGEE AVENUE AND SW CR 240

VIEW OF INTERSECTION OF SW TUSTENUGGEE AVENUE AND SW CR 240 (FACING SOUTHBOUND)

PRIORITY 2 – SW TUSTENUGGEE AVENUE FROM SW HERLONG STREET TO SW CR 240

Potential Countermeasures for Consideration

Table 6: Potential Countermeasures, Priority 2

Countermeasure	Scale/Timeframe	Justification
A. Install centerline and edge line rumble strips	Short	Frequency of off-road crashes.
B. Install chevrons at curves	Short	Frequency of off-road crashes.
C. Install street lighting	Medium	Frequency of crashes occurring in dark – not lighted conditions.
D. Raised pavement markers	Short	Multiple off-road crashes in dark – not lighted conditions
E. Improve pavement friction	Long	Frequency of fatal and serious injury crashes with wet roadway surface conditions.
F. Install slippery when wet signs (W8-5 and W8-10P)	Short	Frequency of fatal and serious injury crashes with wet roadway conditions.
G. Update pavement markings	Short	Pavement markers are faded and worn at the intersections of SW Tustenuggee Avenue with CR 240 and NW Herlong Street
H. Install Roundabout	Long	Multiple fatal or serious injury angle crashes at SW Tustenuggee Avenue and SW CR 240
I. Install intersection warning signs (W2-1)	Short	There is currently no intersection warning sign to the south of the intersection of SW Tustenuggee Avenue and SW CR 240
J. Improve pavement conditions	Medium	Observed large cracks and pavement de-formations on the roadway at the intersection of SW Tustenuggee Avenue and SW CR 240
K. Install intersection lighting	Short	Observed minimal lighting at the intersections of SW Tustenuggee Avenue with CR 240 and NW Herlong Street

VIEW OF SOUTHBOUND VEHICLES FROM WESTBOUND APPROACH AT INTERSECTION OF SW TUSTENUGGEE AVENUE AND SW CR 240

LACK OF LIGHTING ALONG SW TUSTENUGGEE AVENUE

Map 19: Proposed Countermeasures, Priority 2

PRIORITY 3 – SW TUSTENUGGEE AVENUE FROM SW CR 18 TO SW HERLONG STREET

Local Segment 4

Area Characteristics

The segment of SW Tustenuggee Avenue from SW CR 18 to SW Herlong Street is surrounded primarily by residential land uses. There is minimal lighting along the corridor. There is vegetation along much of the segment and sporadic ditches running parallel to the roadway throughout the segment.

SW TUSTENUGGEE AVENUE (FACING SOUTH)

Segment Characteristics

This 3.86-mile segment is a two-lane roadway in unincorporated Columbia County, south of Lake City and northeast of Fort White. SW Tustenuggee Avenue has a posted speed limit of 55 mph and there are no signalized intersections along the length of the segment. There is a shared use path that crosses SW Tustenuggee Avenue on the northern leg of its intersection with SW CR 18. This section of SW Tustenuggee Avenue is classified as a rural major collector.

High Priority Intersection

The high-crash intersection of SW Tustenuggee Avenue and SW Herlong Street/SW Howell Street (Intersection 15) is the northern terminus of this segment and the high-crash intersection of SW Tustenuggee Avenue and SW CR 18 (Intersection 17) is the southern terminus of this segment. Crashes at each of the intersections are included in this analysis, and intersection-specific countermeasures are included in this section.

Equity Considerations

This segment of SW Tustenuggee Avenue is located within Census Tract 1109.01 and 1109.04. Census Tract 1109.01 is identified as Transportation Access Disadvantaged, Health Disadvantaged, and Economic Disadvantaged in **Chapter 6**. Census Tract 1109.04 is identified as Transportation Access Disadvantaged and Health Disadvantaged in **Chapter 6**. Neither census tract is identified as an Area of Persistent Poverty.

Crash Data Review

From 2019 to 2023, a total of 34 crashes were recorded along the study segment, including two (2) fatal crash and four (4) serious injury crashes.

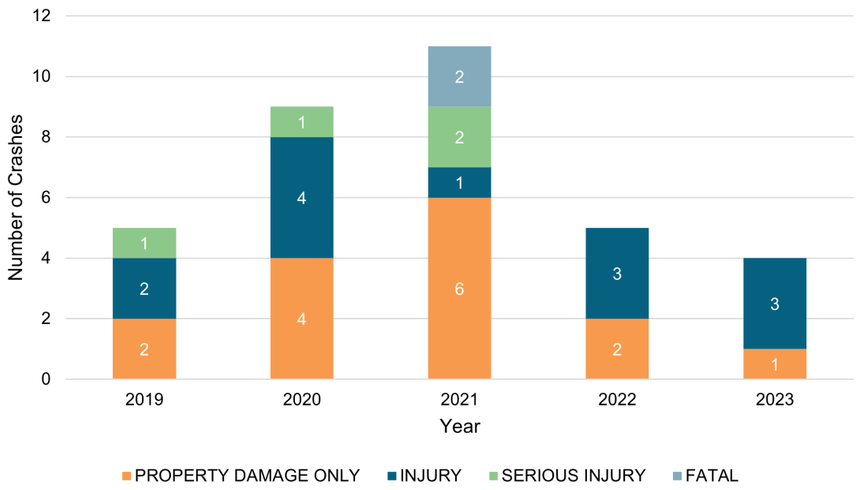


Figure: 24: Crash History by Year, Priority 3

Fatal and Serious Injury Crashes

Fatal and serious injury crash reports from 2019 through 2023 within the subject segment were obtained from *Signal Four Analytics* and reviewed in full.

- **Serious Injury – February 22, 2020:** A southbound vehicle on SW Tustenuggee Avenue collided head-on with a northbound vehicle parked in the southbound lane. The driver and a passenger in the parked vehicle were transported to a nearby medical facility following the crash. The crash occurred at approximately 6 AM under dark - not lighted conditions. No adverse weather conditions were reported at the time of the event.
- **Serious Injury – May 17, 2020:** A southbound vehicle on SW Tustenuggee Avenue ran off the western shoulder of the roadway, lost control, reentered the roadway and began rotating before crossing the roadway into the eastern ditch and overturning. The driver was transported to a nearby medical facility following the crash. The crash occurred around 2 PM with no adverse weather conditions reported at the time of the crash.
- **Serious Injury – February 11, 2021:** An eastbound vehicle was on SW Jasmine Street and continued straight through the intersection with SW Tustenuggee Avenue without stopping. The vehicle continued through the ditch on the other side of the intersection and struck a fence before coming to rest. The driver was not wearing a seatbelt at the time of the crash and was transported to a nearby medical facility. The crash occurred under dark – not lighted conditions just before 10 PM.
- **Serious Injury – July 3, 2021:** A southbound vehicle was traveling on SW Tustenuggee Avenue approaching the intersection with CR 18 when they failed to stop at the stop sign. The driver lost control, and the vehicle began rotating as it traveled off the roadway and into the ditch on the southwestern side of the intersection before hitting a tree. The driver and a passenger were transported to a nearby medical facility to treat injuries sustained during the crash. The driver was determined to have been operating the vehicle under the influence of alcohol. The crash occurred in dark – not lighted conditions around 2 AM with wet roadway conditions while it was raining.
- **Fatal – October 19, 2021:** A westbound vehicle on CR 18 drifted over into the eastbound lanes of travel, causing a head on collision with an eastbound vehicle. The driver of the westbound vehicle was pronounced deceased at the scene and tested positive for several prescription drugs. The crash occurred under dark – not lighted conditions around 7 AM. No adverse weather conditions were reported at the time of the crash.
- **Fatal – October 22, 2021:** A westbound vehicle on SW Herlong Street failed to yield at the intersection with SW Tustenuggee Avenue to a northbound vehicle. The westbound vehicle rotated and overturned after the collision, during which a passenger was ejected from the vehicle The ejected passenger was pronounced deceased at the scene. The driver and passenger of the westbound vehicle were not using seat belts. The driver of the northbound vehicle was transported to a nearby medical facility. The crash occurred around 4 PM. No adverse weather conditions were reported at the time of the event.

Map 20: Fatal and Serious Injury Crashes, Priority 3

PRIORITY 3 – SW TUSTENUGGEE AVENUE FROM SW CR 18 TO SW HERLONG STREET

Crash Types

The most commonly reported crash type on the subject segment during the five-year analysis period was angle crashes, which accounted for approximately 29% of all crashes. Off road crashes accounted for approximately 21% of all crashes and animal crashes accounted for approximately 20% of all crashes. No other individual crash type accounted for more than 10% of the overall crashes. Of the fatal and serious injury crashes, off road and head on crashes accounted for two out of six (33%) each.

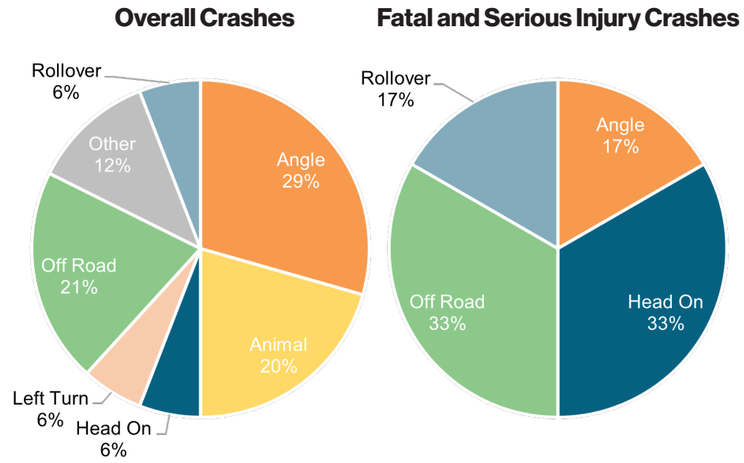


Figure: 25: Crash Types, Priority 3

Contributing Causes

The crash data was evaluated to determine the prevalence of contributing causes such as dark conditions, wet surface conditions, alcohol, and speeding. Approximately 44% of overall crashes occurred under dark – not lighted conditions, but four out of six (67%) of fatal and serious injury crashes occurring under dark – not lighted conditions. Approximately 9% of all crashes occurred with wet roadway conditions. Two (2) of the fatal and serious injury crashes was determined to be speeding related, two (2) crashes were determined to be alcohol related (including one of the fatal and serious injury crashes), and two (2) crashes were determined to be drug related (including one of the fatal and serious injury crashes).

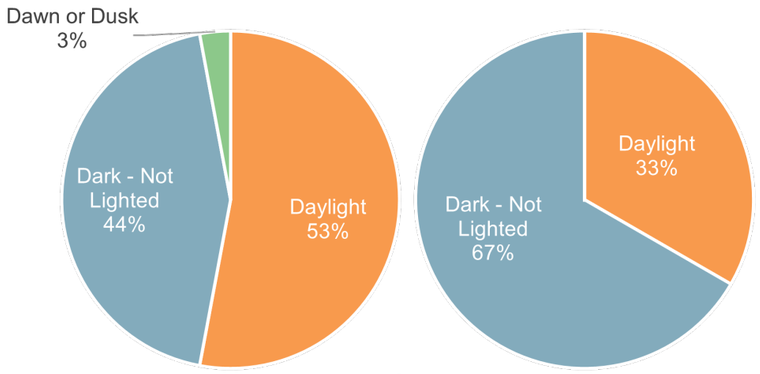


Figure: 26: Lighting Conditions, Priority 3

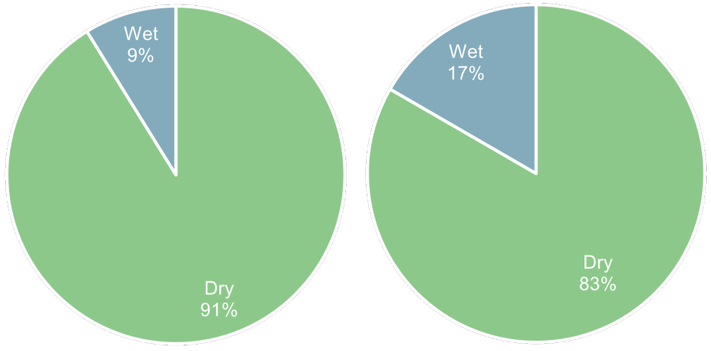


Figure: 27: Surface Conditions, Priority 3

PublicCoordinate Comments

The intersection of SW Tustenuggee Avenue and NW Herlong Street was recommended for intersection improvements at the Open House event on September 19, 2024.

NO MARKINGS FOR SHARED USE PATH

TRASH IN ROADWAY

MEMORIAL MARKER AT CUMORAH HILL

TRUCK PARKED IN ROADWAY

PRIORITY 3 – SW TUSTENUGGEE AVENUE FROM SW CR 18 TO SW HERLONG STREET

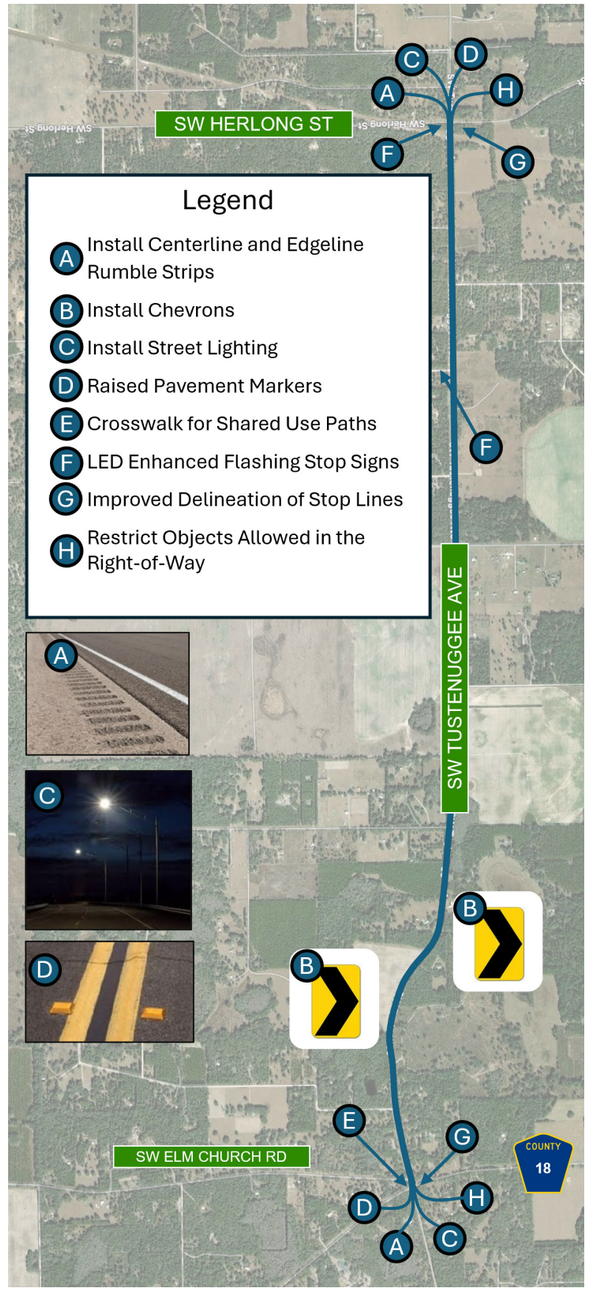
FADED STOP BAR AT SW TUSTENUGGEE AVENUE AND SW HERLONG STREET

FADED STOP BAR AT SW TUSTENUGGEE AVENUE AND CR 18

Potential Countermeasures for Consideration

Table 7: Potential Countermeasures, Priority 3

Countermeasure	Scale/Timeframe	Justification
A. Install centerline and edge line rumble strips	Short	Frequency of off-road crashes
B. Install chevrons at curves	Short	Frequency of off-road crashes
C. Install street lighting	Medium	Large number of crashes occurred in dark – not lighted conditions.
D. Raised pavement markers	Short	Multiple off-road crashes in dark – not lighted conditions
E. Install crosswalk for shared-use path	Short	No markers at the point where shared use path crosses the roadway
F. Install LED enhanced flashing stop signs	Medium	Frequency of angle crashes
G. Improve delineation of stop lines	Short	Poor visibility of stop bars at intersections with SW Herlong Street and SW CR 18
H. Place restriction on allowing objects in the right-of-way	Medium	Observed trash receptacles and vehicles parked in the right of way



Map 21: Proposed Countermeasures, Priority 3

PRIORITY 4 – NW LONG STREET FROM NW LAKE JEFFERY ROAD TO US 441/SR 47

Local Segment 5

Area Characteristics

The segment of NW Long Street from NW Lake Jeffery Road to US 441/SR 47 is surrounded primarily by residential land uses. A railroad crosses NW Long Street at the intersection with NW Texas Avenue.

NW LONG STREET (FACING WEST)

Segment Characteristics

This 0.83-mile segment is a two-lane roadway in northern Lake City. NW Long Street has a posted speed limit of 35 mph and there is one (1) signalized intersection with NW Main Boulevard on the segment. A sidewalk runs along the northern side of the roadway for most of the segment. NW Long Street is classified as an urban major collector.

Equity Considerations

This segment of NW Long Street is located within Census Tract 1102.02, which was identified as Transportation Access Disadvantaged, Health Disadvantaged, and Economic Disadvantaged in **Chapter 6**. Census Tract 1102.02 was also identified as an Area of Persistent Poverty.

Crash Data Review

From 2019 to 2023, a total of 18 crashes were recorded along the study segment, including one (1) serious injury crash. There was a particularly high number of crashes in year 2022, which may be attributable to increased traffic patterns on NW Long Street, which was being used as a detour route when the roundabout at US 41 and NW Bascom Norris Drive was being constructed.

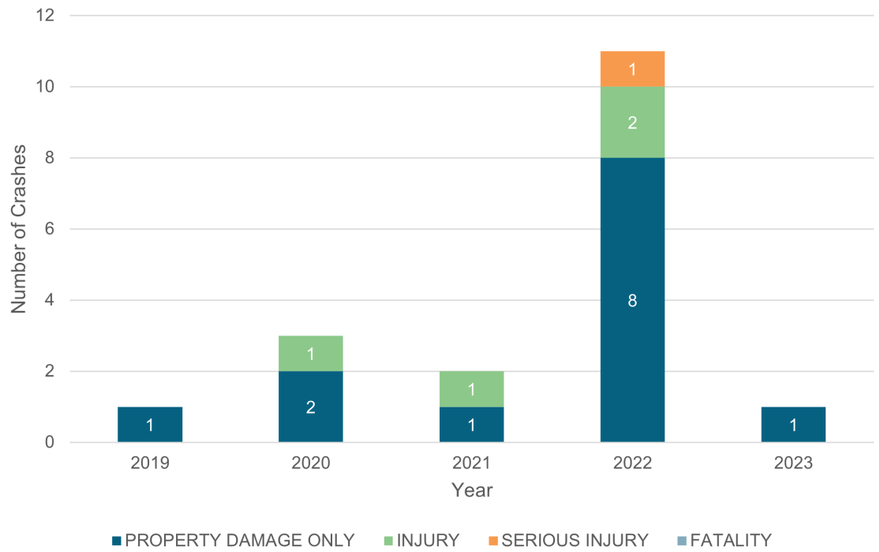
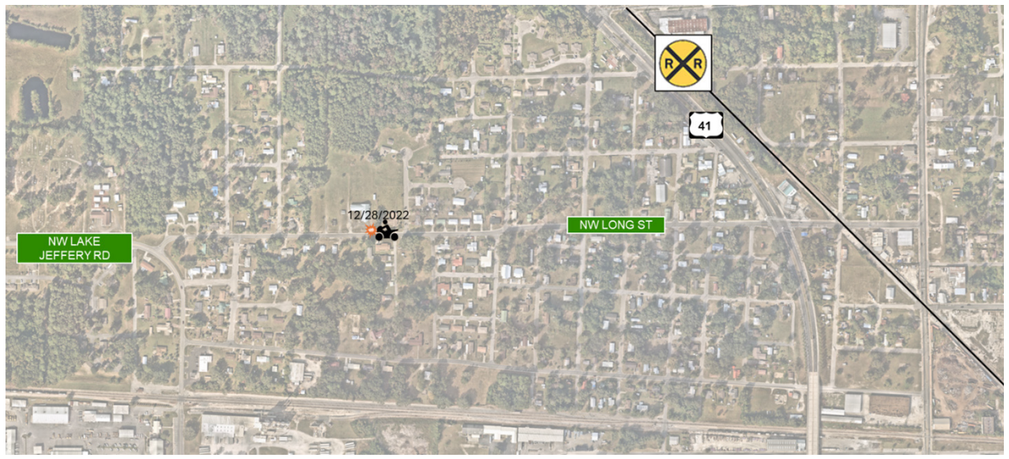


Figure: 28: Crash Severity by Year, Priority 4

Fatal and Serious Injury Crashes

Fatal and serious injury crash reports from 2019 through 2023 within the subject segment were obtained from *Signal Four Analytics* and reviewed in full.

- **Serious Injury – December 28, 2022:** A westbound motorcycle on NW Long Street lost control and traveled off the roadway. The driver was transported to a nearby medical facility as a result of injuries sustained in the crash. The crash occurred at approximately 4 PM and no adverse weather conditions were reported at the time of the crash.



Map 22: Fatal and Serious Injury Crashes, Priority 4

PRIORITY 4 – NW LONG STREET FROM NW LAKE JEFFERY ROAD TO US 441/SR 47

Crash Types

The most commonly reported crash type on the subject segment during the five-year analysis period were off road crashes, which accounted for the one (1) serious injury crash and approximately 28% of all crashes. Angle crashes made up approximately 17% of crashes, left turn crashes made up around 11% of crashes, rear end crashes made up about 11% of crashes, and sideswipes accounted for approximately 11% of crashes. No other crash type accounted for more than 10% of the overall crashes.

Contributing Causes

The crash data was evaluated to determine the prevalence of contributing causes such as dark conditions, wet surface conditions, alcohol, and speeding. Approximately 22% of crashes occurred under non-daylight conditions and approximately 17% of all crashes occurred with wet roadway conditions. Two (2) crashes were determined to be alcohol related, and no crashes were reported to be speeding or drug related.

Public and Stakeholder Comments

No public comments were recorded on the subject segment of NW Long Street.

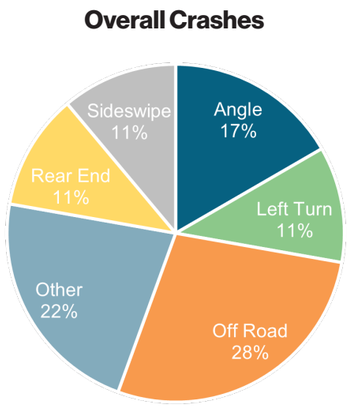


Figure: 29: Crash Types, Priority 4

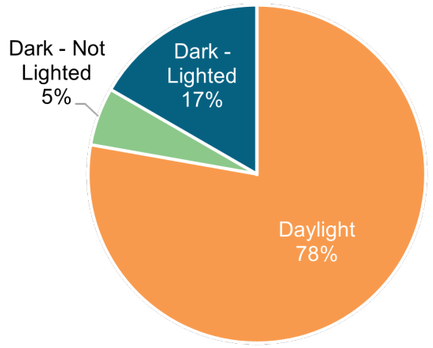


Figure: 30: Lighting Conditions, Priority 4

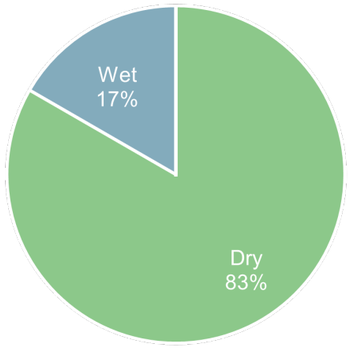


Figure: 31: Surface Conditions, Priority 4

AWKWARD INTERSECTION APPROACHES AT RAILROAD CROSSING

CROSSWALK HAS MINIMAL SIGNAGE

SOUTHBOUND STOP BAR AT RAILROAD CROSSING

RAILROAD CROSSING ON NW LONG STREET

PRIORITY 4 – NW LONG STREET FROM NW LAKE JEFFERY ROAD TO US 441/SR 47

SIDEWALK IS FLUSH WITH ROADWAY AT TIMES

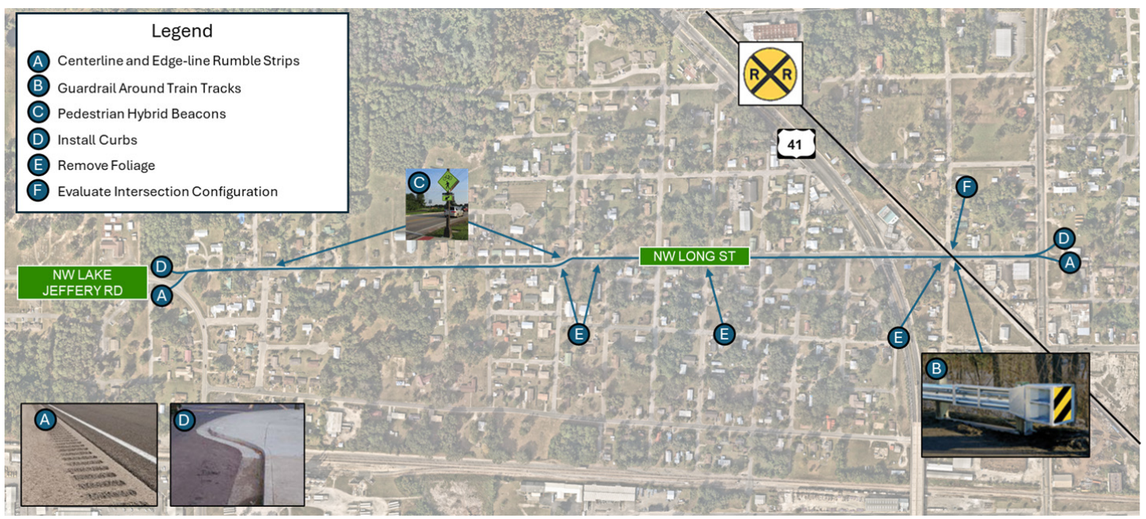
NO DELINEATION BEFORE ROADWAY ENDS ON SOUTHSIDE OF ROAD

Potential Countermeasures for Consideration

Table 8: Potential Countermeasures, Priority 4

Countermeasure	Scale/Timeframe	Justification
A. Install centerline and edge line rumble strips	Short	Frequency of sideswipes and off-road crashes
B. Add additional guardrail around train tracks	Medium	Frequency of off-road crashes Observed few protections to prevent vehicles traveling onto train tracks.
C. Pedestrian hybrid beacons	Medium	There is currently poor visibility and delineation of pedestrian crossings.
D. Install curb	Long	Curb for the sidewalk is inconsistent, with the sidewalk being almost level to the roadway at times and providing no travel barrier to the roadway. Frequency of off-road crashes.
E. Remove/Maintain foliage	Medium	Reduced sight distance at several minor approaches.
F. Evaluate intersection configuration	Medium	Existing intersection has awkward angles and stop bar locations. There is currently limited ability of drivers to view vehicles on other approaches.

CURB IS INCONSISTENT ALONG ROADWAY



Map 23: Proposed Countermeasures, Priority 4

PRIORITY 5 – SE CR 349 FROM CR 131/SW TUSTENUGGEE AVENUE TO US 41

Local Segment 10

Area Characteristics

The segment of SE CR 349 is primarily abutted by residential land uses. There is minimal lighting along the corridor.

Segment Characteristics

This 3.00-mile segment is a two-lane undivided roadway in unincorporated Columbia County, south of Lake City and northeast of Fort White. SE CR 349 has a posted speed limit of 45 mph. There are no signalized intersections along the length of the segment. There are no pedestrian or bicycle facilities along SE CR 349. SE CR 349 is classified as a rural minor collector.

SE CR 349, FACING WEST

Equity Considerations

This segment of SE CR 349 is located within Census Trace 1109.01.
Census Tract 1109.01 is identified as Transportation Access Disadvantaged, Health Disadvantaged, and Economic Disadvantaged in **Chapter 6**. Census Tract 1109.01 is not identified as an Area of Persistent Poverty.

Crash Data Review

From 2019 to 2023, a total of 9 crashes were recorded along the study segment, including one (1) fatal crash.

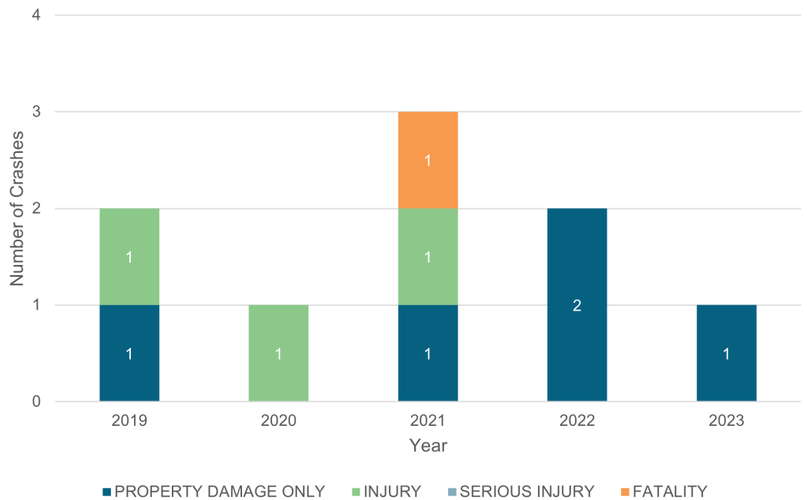


Figure: 32: Crash Severity by Year

Fatal and Serious Injury Crashes

Fatal and serious injury crash reports from 2019 through 2023 within the subject segment were obtained from *Signal Four Analytics* and reviewed in full.

- **Fatal – June 30, 2021:** A westbound vehicle navigating a curve on CR 349 left the roadway and struck a tree. The driver of the vehicle expired as a result of the crash. The driver was not wearing a seatbelt at the time of the crash and tested positive for drug use. It was determined that the driver was speeding. The crash occurred at approximately 11 AM and no adverse weather conditions were reported.

Map 24: Fatal and Serious Injury Crashes, Priority 5

Crash Types

The most commonly reported crash type on the subject segment during the five-year analysis period was off road crashes, which included the fatal crash and accounted for approximately 78% of all crashes. The only other crashes recorded in the five-year analysis period were one head on crash and one animal crash.

Contributing Causes

The crash data was evaluated to determine the prevalence of contributing causes such as dark conditions, wet surface conditions, alcohol, and speeding. Approximately 44% of crashes occurred under non-daylight conditions. One crash occurred with wet roadway conditions and one an area with mud, dirt, or gravel. One (1) crash was determined to be alcohol related and the fatal crash was determined to be both speeding and drug related.

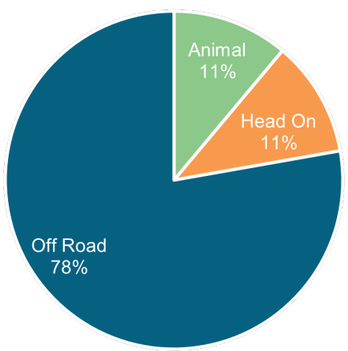


Figure: 33: Crash Types, Priority 5

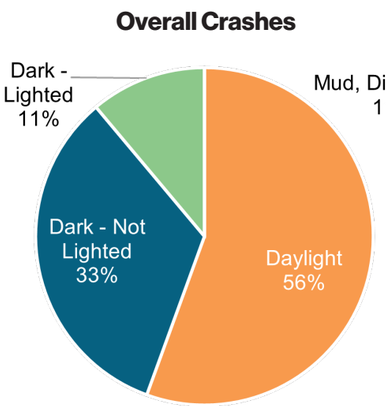


Figure: 34: Lighting Conditions, Priority 5

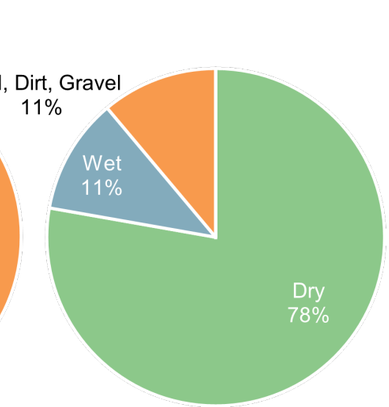


Figure: 35: Surface Conditions, Priority 5

PRIORITY 5 – SE CR 349 FROM CR 131/SW TUSTENUGGEE AVENUE TO US 41

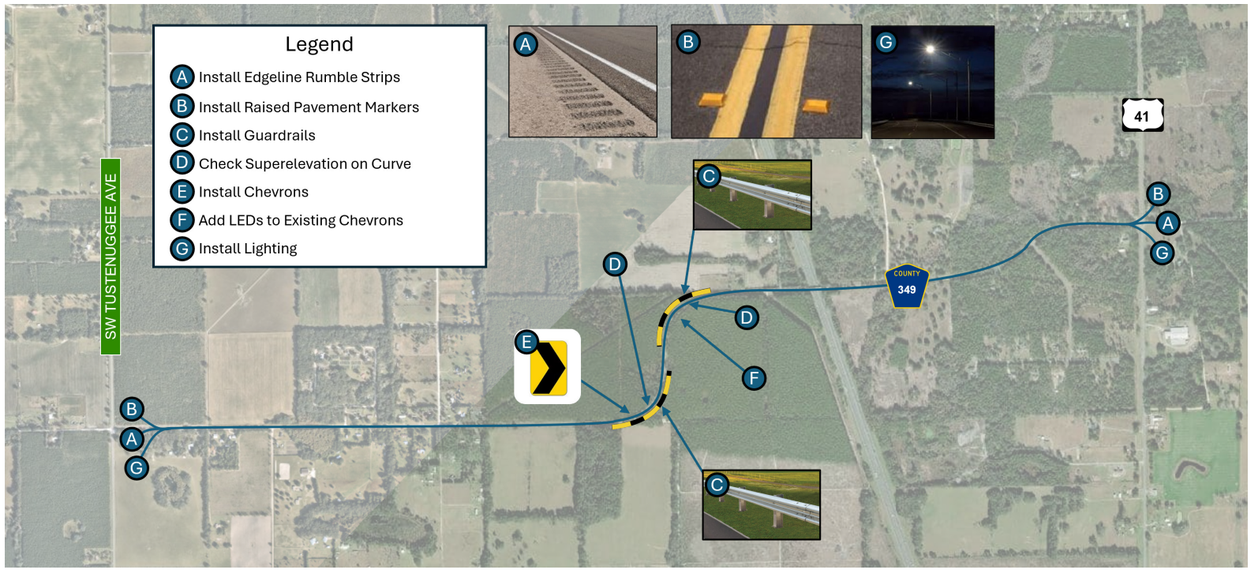
Public and Stakeholder Comments

No public comments were recorded at the subject segment of SE CR 349.

Potential Countermeasures for Consideration

Table 9: Potential Countermeasures, Priority 5

Countermeasure	Scale/Timeframe	Justification
A. Install edge line rumble strips	Short	Frequency of off-road crashes
B. Install raised pavement markers on cirves	Short	Frequency of off-road crashes
C. Install guardrails on curve	Medium	Frequency of off-road crashes
D. Check superelevation on curves	Short	Frequency of off-road crashes
E. Install chevron signs (potentially with fliashing lights or LEDs)	Medium	Frequency of off-road crashes
F. Add LEDs to existing chevron signs	Medium	Frequency of off-road crashes
G. Install lighting	Medium	Frequency of crashes in non-daylight conditions



Map 25: Proposed Countermeasures, Priority 5

INTERSECTION OF SW BASCOM NORRIS DRIVE AND SW MARY ETHEL LANE (LOOKING WEST)

CHEVRON SIGNS ON NORTHERN CURVE

ADVANCE WARNING OF CURVE SIGN

VIEW OF SOUTHERN CURVE

PRIORITY 6 – INTERSECTION OF SW BASCOM NORRIS DRIVE AND SW MARY ETHEL LANE

Two-way Stop Control Intersection

Area Characteristics

The intersection of SW Bascom Norris Drive and SW Mary Ethel Lane is abutted by commercial land uses to the north and the Columbia County Fairgrounds (including the Florida Gateway Arena) to the south. The intersection is one block south of US 90 through Lake City, and SW Bascom Norris Drive serves as the primary connection in southwest Lake City between US 90 west of the city and SR 47 and US-41 south of the city.

INTERSECTION OF SW BASCOM NORRIS DRIVE AND SW MARY ETHEL LANE (FACING WEST)

Intersection Characteristics

This intersection is a two-way stop-controlled intersection with free-flow northbound and southbound traffic. SW Bascom Norris Drive is a 45-mph two-lane urban major collector that travels north and south with dedicated left-turn lanes on both the northbound and southbound approach. There is a sidewalk along the eastern side of SW Bascom Norris Drive on both sides of the subject intersection. SW Mary Ethel Lane does not have a posted speed limit and is a two-lane local roadway that travels east and west and has one shared lane on both the eastbound and westbound approaches. There are no sidewalks along SW Mary Ethel Lane.

Equity Considerations

The subject intersection is not located within a historically transportation disadvantaged area.

Crash Data Review

From 2019 to 2023, a total of 32 crashes were recorded at the subject intersection, including one (1) fatal crash and four (4) serious injury crashes.

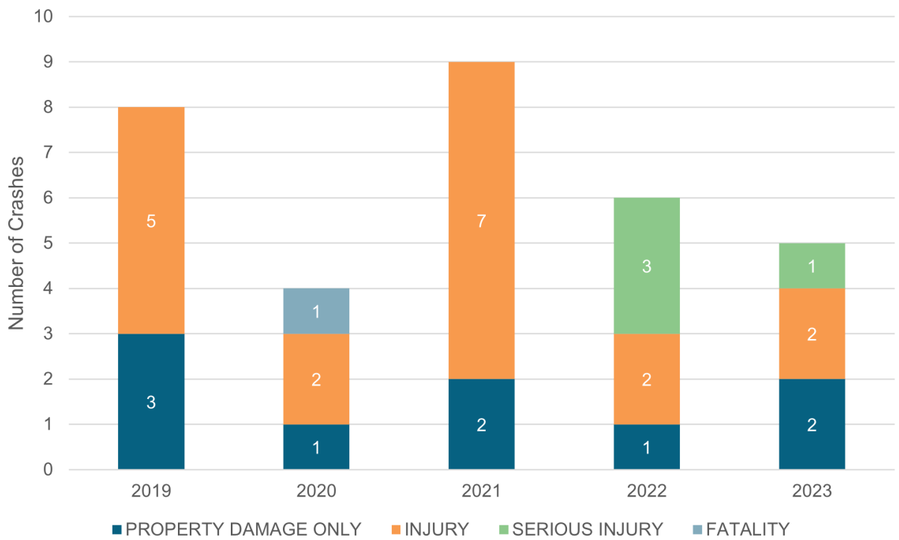
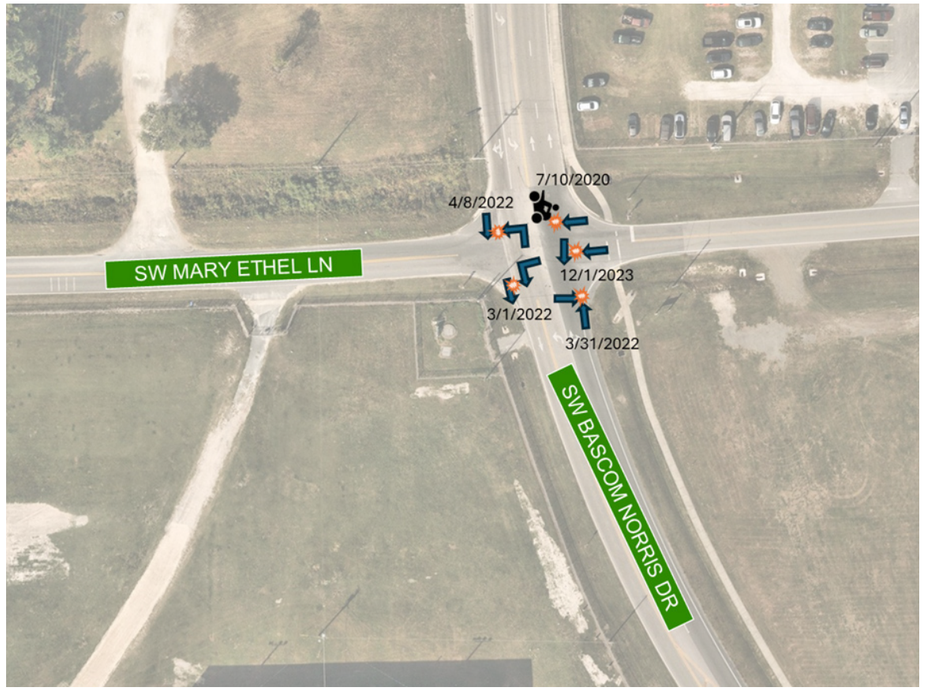


Figure: 36: Crash Severity by Year, Priority 6

Fatal and Serious Injury Crashes

Fatal and serious injury crash reports from 2019 through 2023 at the subject intersection were obtained from *Signal Four Analytics* and reviewed in full.

- **Fatal - July 10, 2020:** A westbound vehicle on SW Mary Ethel Lane failed to stop at the intersection with SW Bascom Norris Drive and struck a southbound motorcycle on SW Bascom Norris Drive. The motorcyclist was ejected as a result of the crash and expired as a result of injuries sustained in the crash. The crash occurred at approximately 11:45 PM and no adverse weather conditions were reported at the time of the crash.
- **Serious Injury - March 1, 2022:** A vehicle attempting a westbound left-turn from SW Mary Ethel Lane failed to yield to a southbound vehicle on SW Bascom Norris Drive. The driver of the southbound vehicle suffered serious injury in the crash and was transported to a nearby medical facility. The crash occurred at approximately 7 AM and no adverse weather conditions reported at the time of the crash.
- **Serious Injury - March 31, 2022:** An eastbound vehicle on SW Mary Ethel Lane failed to stop at the intersection with SW Bascom Norris Drive and struck a northbound vehicle on SW Bascom Norris Drive. The driver of the northbound vehicle, who was not wearing a seatbelt at the time of the crash, suffered serious injury in the crash and was transported to a nearby medical facility. The crash occurred at approximately 7 PM and no adverse weather conditions were reported at the time of the crash.
- **Serious Injury - April 8, 2022:** A northbound vehicle on SW Bascom Norris Drive attempted to turn left onto SW Mary Ethel Lane and failed to yield to an oncoming southbound vehicle on SW Bascom Norris Drive. A passenger in the southbound vehicle suffered serious injury in the crash and was transported to a nearby medical facility. The crash occurred at approximately 7 PM and no adverse weather conditions were reported at the time of the crash.
- **Serious Injury - December 1, 2023:** A westbound vehicle on SW Mary Ethel Lane failed to stop at the intersection with SW Bascom Norris Drive and struck a southbound vehicle. Both drivers suffered serious injury in the crash and were transported to a nearby medical facility. The crash occurred at approximately 5 PM under dark - lighted conditions; no adverse weather conditions were reported at the time of the crash.



Map 26: Fatal and Serious Injury Crashes, Priority 6

PRIORITY 6 – INTERSECTION OF SW BASCOM NORRIS DRIVE AND SW MARY ETHEL LANE

Crash Types

he most frequently reported crash type at the subject intersection during the five-year analysis period was angle crashes, which accounted for approximately 78% of all crashes and 60% of the serious injury and fatal crashes. Left-turn crashes made up approximately 13% of all crashes and 40% of the serious injury and fatal crashes. No other crash type accounted for more than 10% of the overall crashes.

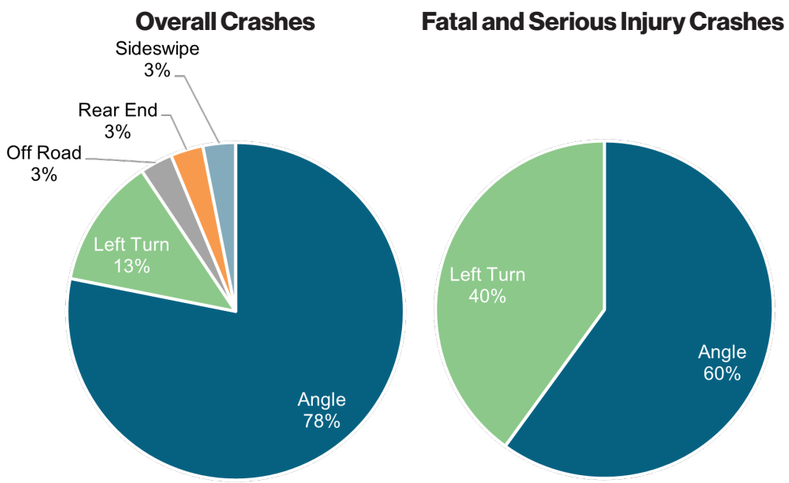


Figure: 37: Crash Types, Priority 6

Contributing Causes

The crash data was evaluated to determine the prevalence of contributing causes such as dark conditions, wet surface conditions, alcohol, and speeding. Approximately 30% of crashes occurred under non-daylight conditions (including dusk and dawn) and 11% occurred with wet roadway conditions. Alcohol, drugs, and speeding were not cited in any the fatal or serious injury crashes as contributing factors.

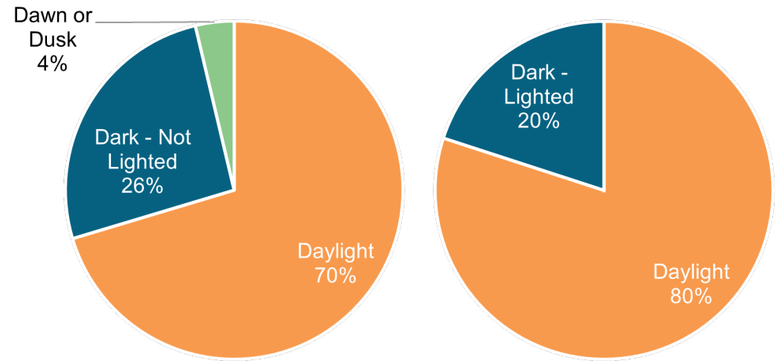


Figure: 38: Lighting Conditions, Priority 6

Public and Stakeholder Comments

No public comments were recorded at the subject intersection of SW Bascom Norris Drive and SW Mary Ethel Lane.

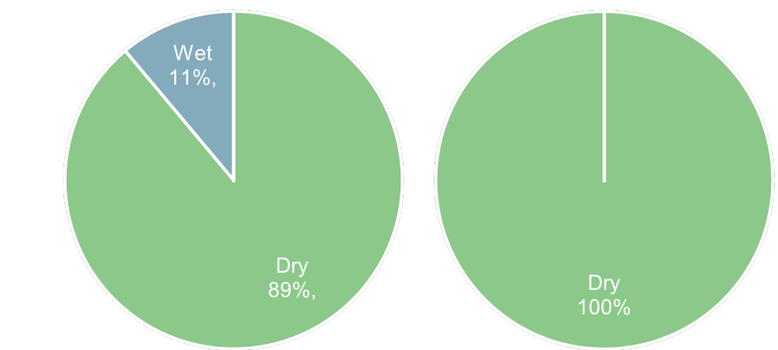


Figure: 39: Surface Conditions, Priority 6

WORN RUMBLE STRIPS ON EB APPROACH

WORN CROSSWALK MARKINGS ON WB APPROACH

BILLBOARD BLOCKING SOUTHBOUND VIEW FOR WB APPROACH

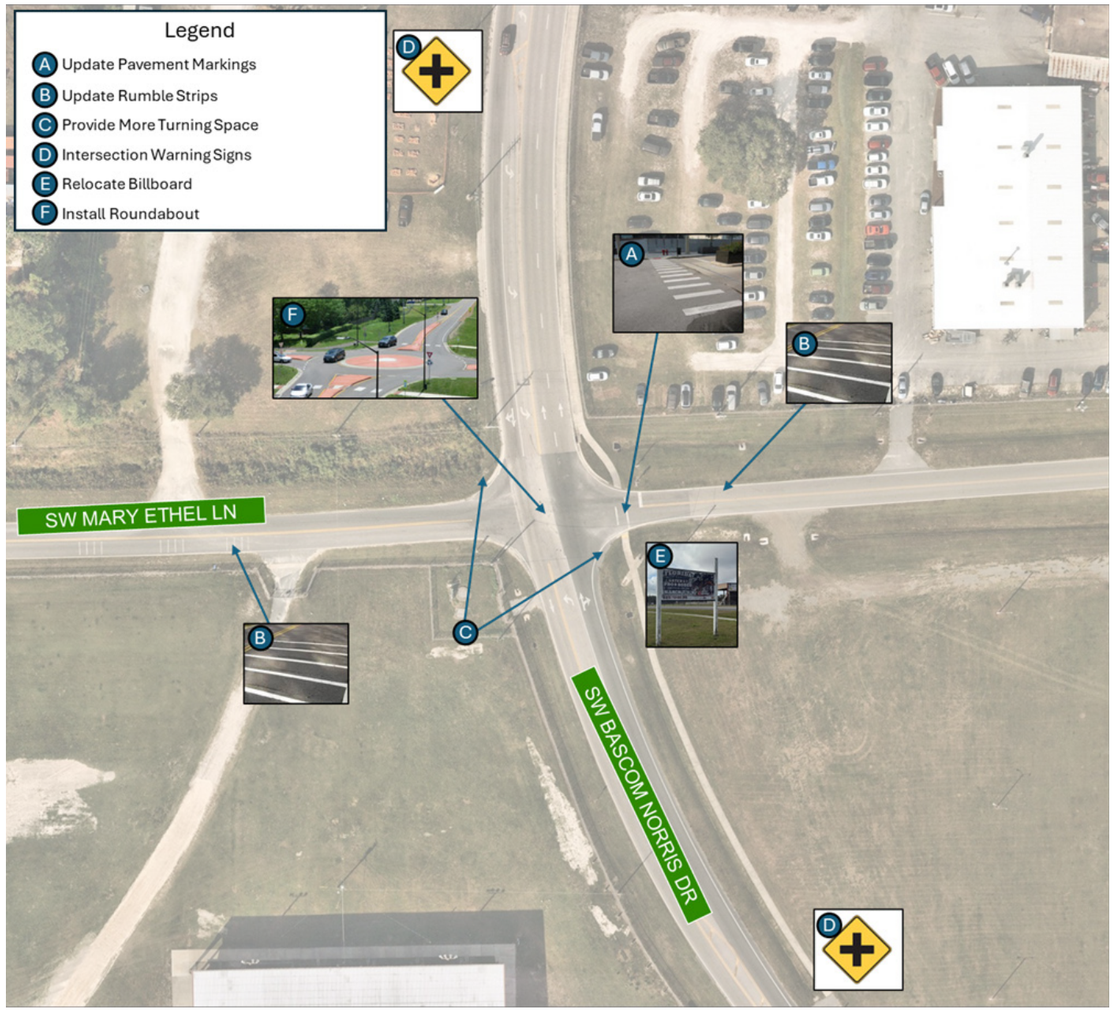
TURNS FROM MAJOR APPROACHES TIGHT FOR TRUCKS

PRIORITY 6 – INTERSECTION OF SW BASCOM NORRIS DRIVE AND SW MARY ETHEL LANE

Potential Countermeasures for Consideration

Table 4: Potential Countermeasures, Priority 6

Countermeasure	Scale/ Timeframe	Justification
A. Update pavement markings	Short	Pavement markings are very faded.
B. Update rumble strips on western approach and install on easten approach	Short	Rumble strips on eastbound approach were very worn, inhibiting their usefulness. No rumble strips currently present on westbound approach.
C. Widen apron for northbound and southbound right turns	Medium	Existing intersection configuration makes it difficult for larger vehicles to stay within lane constraints when making turns.
D. Intersection ahead warning signs (W2-1) on minor approaches	Short	Observed high northbound/southbound speeds. Frequency of angle and left turn crashes.
E. Relocate billboard	Short	Current sign location restricts visibility for westbound vehicles viewing northbound vehicles at the intersection.
F. Install roundabout	Long	Frequency of left turn and angle crashes.



Map 27: Proposed Countermeasures, Priority 6

PRIORITY 7 – INTERSECTION OF US 90 AND SW PINEMOUNT ROAD/NW TURNER AVENUE

Signalized Intersection

Area Characteristics

The intersection of US-90 and SW Pinemount Road/ NW Turner Avenue is abutted primarily by commercial land uses, with some residential land uses nearby. American Lane Park is on the northeast side of the intersection. The intersection is located in unincorporated Columbia County, west of Lake City.

INTERSECTION OF US-90 & SW PINEMOUNT ROAD/NW TURNER AVENUE (VIEW FROM SOUTHEASTERN CORNER)

Intersection Characteristics

This intersection is signalized with a 40-mph posted speed limit to the south, a 45-mph posted speed limit to the east and west, and a 35-mph posted speed limit to the north. US-90 is a four-lane, divided minor urban arterial that travels east and west. US-90 has dedicated left turn lanes for both approaches and a dedicated right turn lane for the westbound approach. SW Pinemount Road is a two-lane urban major collector south of the intersection. NW Turner Avenue is a two-lane local road north of the intersection. Both the northbound and southbound approaches have dedicated left turn lanes and channelized right turn lanes at the intersection. There is a sidewalk and bicycle lane along both sides of US-90, as well as a sidewalk on both sides of SW Pinemount Road.

Equity Considerations

This intersection is located within Census Tract 1102.01, which is identified as Health Disadvantaged and Economic Disadvantaged in **Chapter 6**. Census Tract 1102.01 is not identified as an Area of Persistent Poverty.

Crash Data Review

From 2019 to 2023, a total of 41 crashes were recorded at the subject intersection, including one (1) fatal crash and two (2) serious injury crashes.

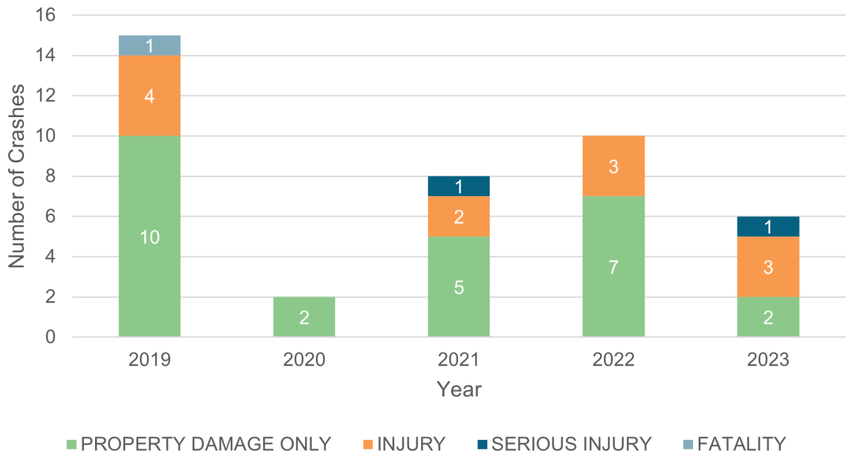
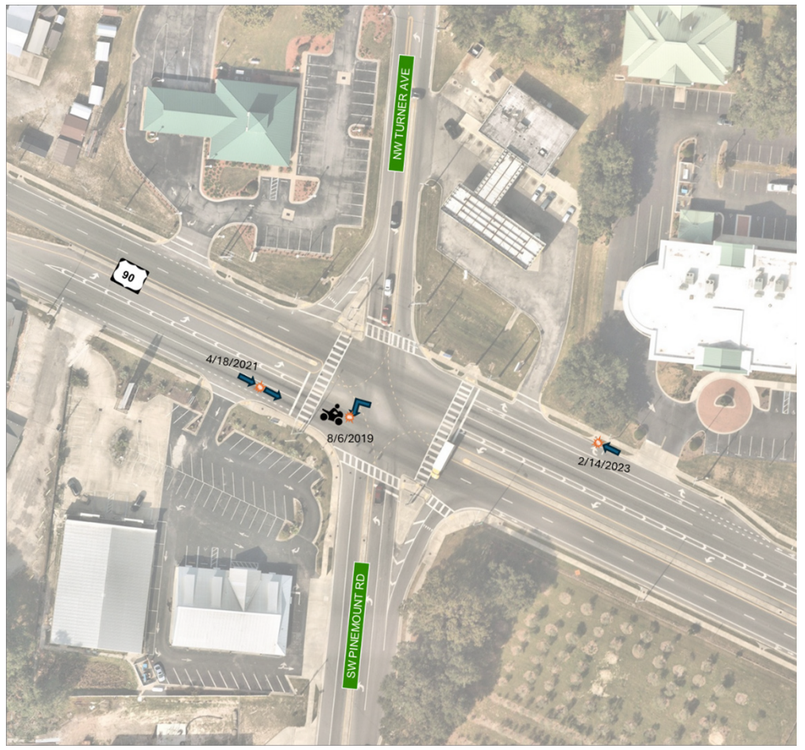


Figure: 40: Crash Severity by Year, Priority 7

Fatal and Serious Injury Crashes

Fatal and serious injury crash reports from 2019 through 2023 at the subject intersection were obtained from *Signal Four Analytics* and reviewed in full.

- **Fatal – August 6, 2019:** A vehicle attempting to make a westbound left turn from US-90 onto SW Pinemount Road did not yield to an eastbound motorcycle on US-90. The motorcyclist expired as a result of the crash. The crash occurred at approximately 8 PM. No adverse weather or surface conditions were reported at the time of the crash.
- **Serious Injury – April 18, 2021:** A rear end crash occurred between two eastbound vehicles on US-90. The driver of the leading vehicle was transported to a nearby medical facility following the crash. The crash occurred at approximately 2 PM while it was raining, and the roadway was wet.
- **Serious Injury – February 14, 2023:** A westbound vehicle on US-90 left the roadway and struck a fixed object north of the road. The driver of the vehicle was reportedly having a medical episode at the time of the crash and was transported to a nearby medical facility. The crash occurred at approximately 2 PM and no adverse weather conditions were reported at the time of the crash.



Map 28: Fatal and Serious Injury Crashes, Priority 7

PRIORITY 7 – INTERSECTION OF US 90 AND SW PINEMOUNT ROAD/NW TURNER AVENUE

Crash Types

The most commonly reported crash type at the subject intersection during the five-year analysis period was rear end crashes, which accounted for approximately 33% of all crashes and one (1) of the three (3) fatal and serious injury crashes. Left-turn crashes made up approximately 24% of all crashes and one (1) of the fatal and serious injury crashes. Right turn crashes and sideswipes each made up 11% of the total crashes. No other individual crash type accounted for more than 10% of the overall crashes.

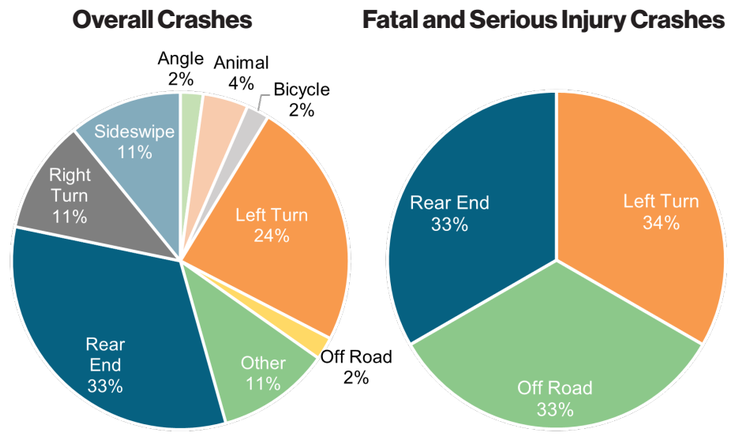


Figure: 41: Crash Types, Priority 7

Contributing Causes

he crash data was evaluated to determine the prevalence of contributing causes such as dark conditions, wet surface conditions, alcohol, and speeding. Approximately 12% of crashes occurred under non-daylight conditions (including dusk and dawn) and 12% occurred with wet roadway conditions. Alcohol was reported as a factor in one (1) crash and drug use was reported as a factor in one (1) of the fatal and serious injury crashes. Speeding was not cited as a factor in any crashes.

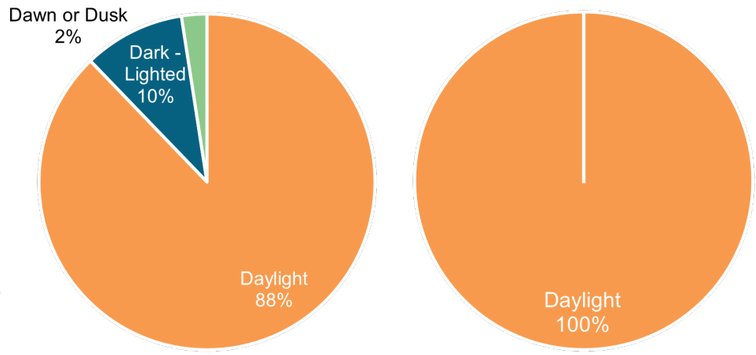


Figure: 42: Lighting Condition, Priority 7

Public and Stakeholder Comments

No public comments were recorded at the subject intersection of US-90 and SW Pinemount Road/NW Turner Avenue.

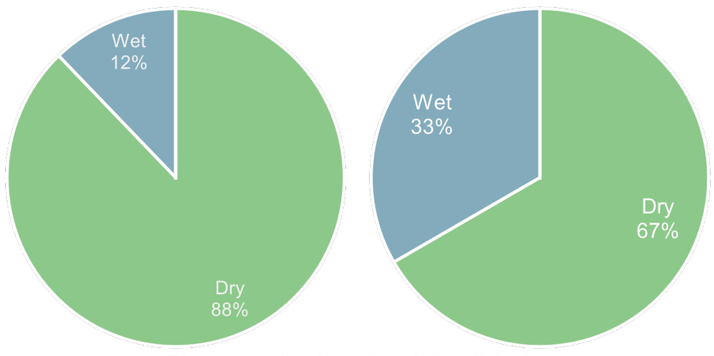


Figure: 43: Surface Condition, Priority 7

PEDESTRIAN SIGNALS AT CHANNELIZING ISLAND (DOES NOT COVER THE ENTIRE PEDESTRIAN CROSSING)

MISSING PEDESTRIAN MARKINGS ON NORTHERN LEG

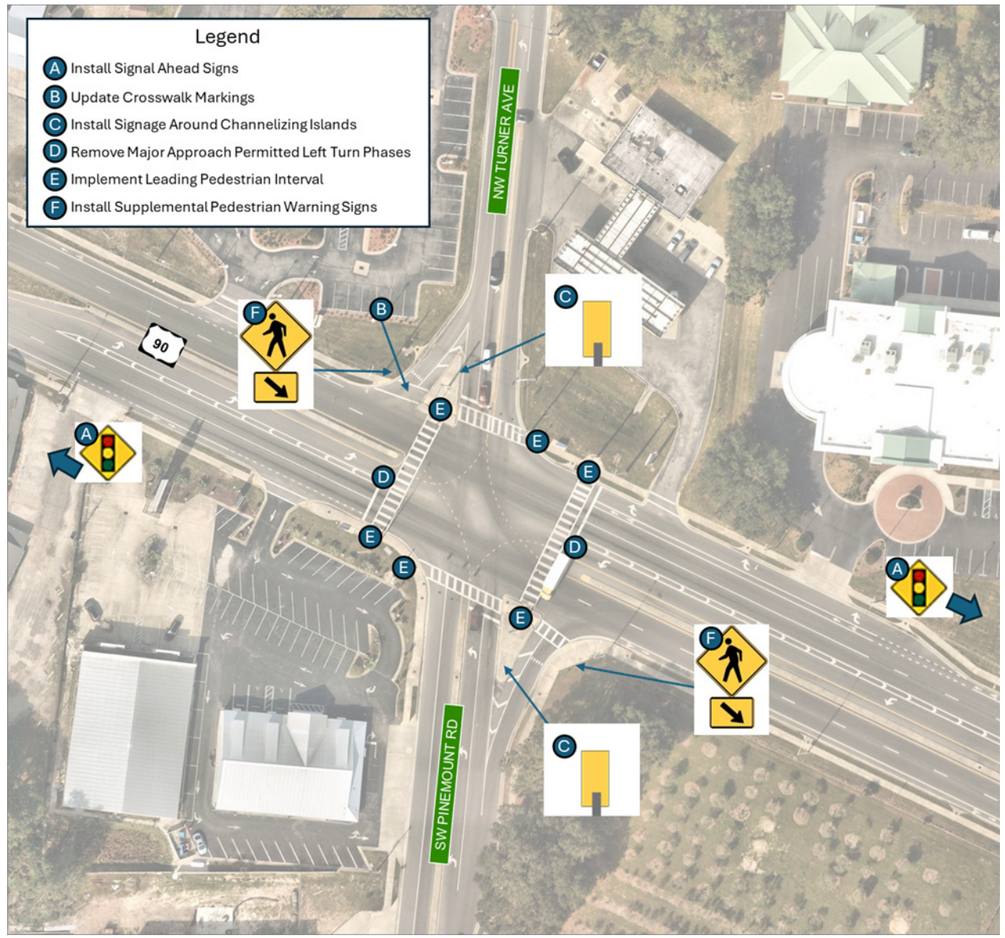
VIEW OF CHANNELIZED RIGHT TURN ISLAND

PRIORITY 7 – INTERSECTION OF US 90 AND SW PINEMOUNT ROAD/NW TURNER AVENUE

Potential Countermeasures for Consideration

Table 5: Potential Countermeasures, Priority 7

Countermeasure	Scale/Timeframe	Justification
A. Install signal ahead signs (W3-3) on major approaches	Short	Frequency of rear end crashes.
B. Update crosswalk markings	Short	Northern leg of crosswalk is missing markings be-tween the channelizing island and northwestern corner of the intersec-tion.
C. Install signage around channelizing islands	Short	Observed minimal delin-eation of channelizing islands at intersection.
D. Remove permitted left turn phases on major approaches	Short	Frequency of left turn crashes.
E. Implement leading pedestrian interval	Short	Pedestrian phases con-flict with permissive left turn movements.
F. Install supplemental pedestrian warning signs (W11-2 with a W16-7PR or W16-7PL)	Short	Existing markings and signage give minimal in-dication of pedestrian ability to cross in front of vehicles making north-bound right turns or southbound right turns.



Map 29: Proposed Countermeasures, Priority 7

PRIORITY 8 – INTERSECTION OF SR 247 AND SW CR 240

Two-way Stop Control Intersection

Area Characteristics

The intersection of SR 247 and SW CR 240 has two commercial developments on the western side of the intersection with some undeveloped land and residential developments in the surrounding area. The intersection is in unincorporated Columbia County, southwest of Lake City and northwest of Fort White. SR 247 serves as the primary connection between Lake City and Branford.

INTERSECTION OF SR 247 AND SW CR 240 (VIEW FROM NORTHEASTERN CORNER)

Intersection Characteristics

This intersection is a two-way stop-controlled intersection with flashing overhead beacons and free-flowing northbound and southbound traffic. SR 247 is a two-lane rural minor arterial with a speed limit that decreases from 60-mph to 45-mph in both directions as it approaches the intersection with SW CR 240. The southbound travel lane on SR 247 has a dedicated right turn lane. SW CR 240 is a 45-mph two-lane rural minor collector that travels east and west and has channelized right turn lanes for both approaches. No pedestrian or bicycle facilities are present at the intersection.

Equity Considerations

This intersection is located within Census Tract 1109.01. Census Tract 1109.01 is identified as Transportation Access Disadvantaged, Health Disadvantaged, and Economic Disadvantaged in **Chapter 6**. Census Tract 1109.01 is not identified as an Area of Persistent Poverty.

Crash Data Review

From 2019 to 2023, a total of 44 crashes were recorded at the subject intersection, including five (5) serious injury crashes.

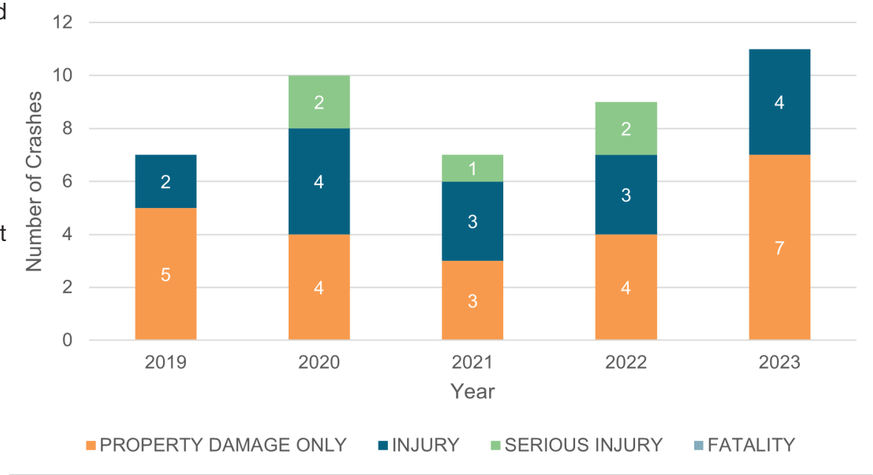
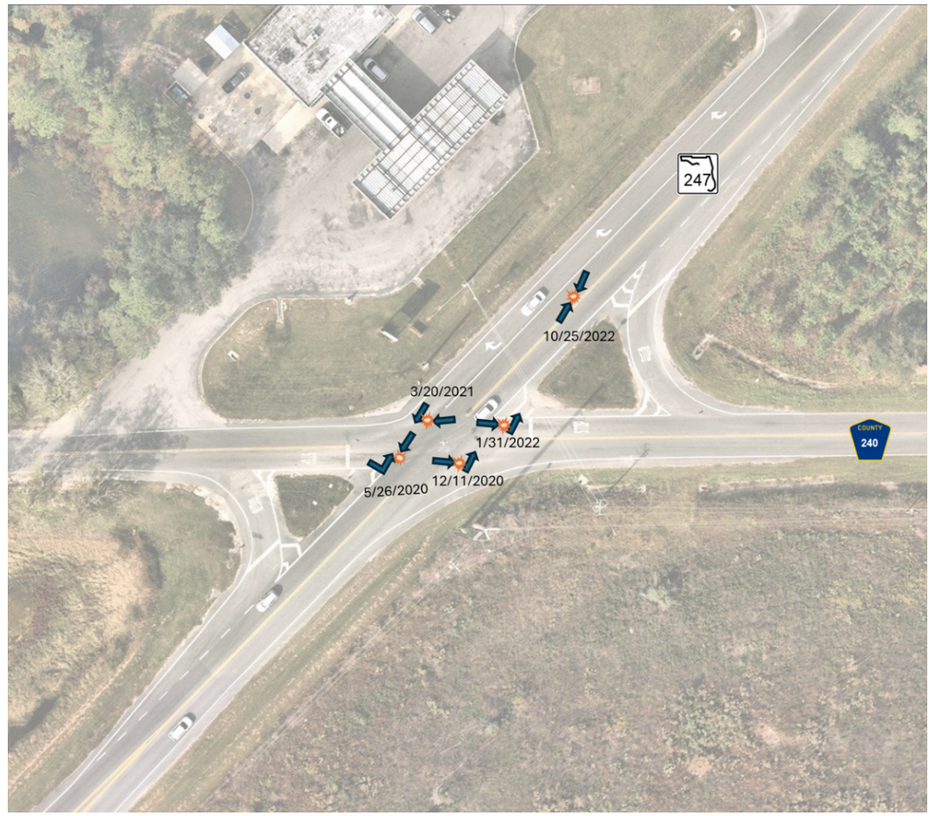


Figure: 44: Crash Severity by Year, Priority 8

Fatal and Serious Injury Crashes

Fatal and serious injury crash reports from 2019 through 2023 at the subject intersection were obtained from *Signal Four Analytics* and reviewed in full.

- **Serious Injury – May 26, 2020:** An eastbound vehicle was attempting to make a left turn from SW CR 240 and failed to yield to a southbound vehicle on SR 247. The driver of the eastbound vehicle was transported to a nearby medical facility. Crash occurred around 6 PM. No adverse weather or lighting conditions were reported at the time of the crash.
- **Serious Injury – December 11, 2020:** An eastbound vehicle on SW CR 240 failed to yield to a northbound vehicle on SR 247. The driver of the eastbound vehicle was transported to a nearby medical facility as a result of the crash. Crash occurred in the afternoon around 1 PM. No adverse weather or lighting conditions were reported at the time of the crash.
- **Serious Injury – March 20, 2021:** A westbound vehicle on SW CR 240 failed to yield the right of way to a southbound vehicle on SR 247, causing the southbound vehicle to be redirected into an eastbound vehicle stopped at the intersection. The driver and three (3) passengers from the stopped, eastbound vehicle were transported to a nearby medical facility as a result of the crash. The crash occurred around 6 PM and no adverse weather or lighting conditions were reported at the time of the crash.
- **Serious Injury – January 31, 2022:** An eastbound vehicle on SW CR 240 failed to yield the right of way to a northbound vehicle on SR 247. The driver of the eastbound vehicle was transported to a medical facility due to injuries sustained during the crash. The crash occurred with dawn lighting conditions around 7 AM. No adverse weather conditions were reported at the time of the crash.
- **Serious Injury – October 25, 2022:** A northbound vehicle on SR 247 drifted into the southbound lanes of travel and a head on collision occurred with a southbound vehicle on SR 247. The driver of the southbound vehicle was transported to a nearby medical facility after the crash. The crash occurred under dark-lighted conditions around 8 PM. No adverse weather conditions were reported at the time of the crash.



Map 30: Fatal and Serious Injury Crashes, Priority 8

PRIORITY 8 – INTERSECTION OF SR 247 AND SW CR 240

Crash Types

The most frequently reported crash type at the subject intersection during the five-year analysis period was angle crashes, which accounted for approximately 61% of all crashes and 80% of the serious injury crashes. Left-turn crashes made up approximately 14% of all crashes. No other crash type accounted for more than 10% of the overall crashes.

Contributing Causes

The crash data was evaluated to determine the prevalence of contributing causes such as dark conditions, wet surface conditions, alcohol, and speeding. Approximately 25% of crashes occurred under non-daylight conditions (including dusk and dawn), and 40% of serious injury crashes occurring under non-daylight conditions. Approximately 16% of all crashes occurred with wet roadway conditions. One (1) crash was reported as alcohol related, and no crashes were cited as drug or speeding related.

Public and Stakeholder Comments

The intersection of SR 247 and CR 240 was labeled as "Bad Intersection. Dangerous Conditions," at the Open House Event on September 19, 2024.

The intersection of SR 247 and CR 240 was identified as a dangerous intersection at the Florida Gateway Fair.

The FSU DURP Study recommended introducing a traffic signal at the intersection of SR 247 and CR 240.

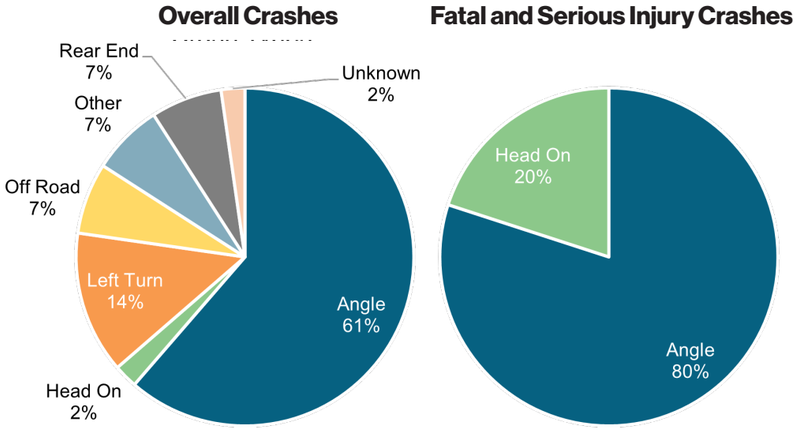


Figure: 45: Crash Types, Priority 8

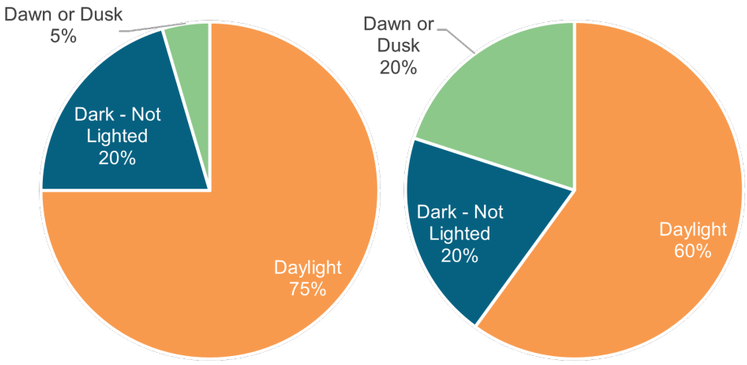


Figure: 46: Lighting Conditions, Priority 8

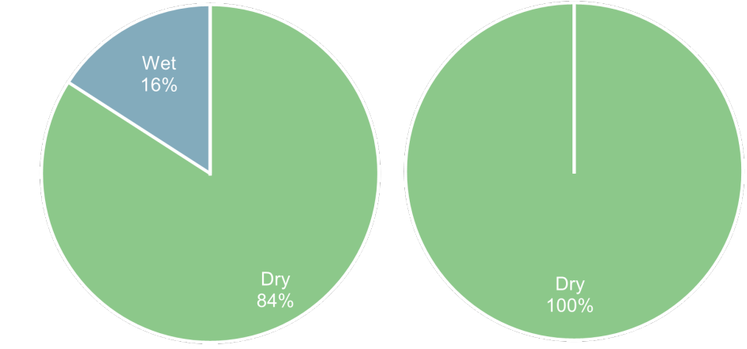


Figure: 47: Surface Conditions, Priority 8

HILL TO THE NORTH OBSTRUCTS VIEW OF VEHICLES TRAVELING WESTBOUND, WESTBOUND RIGHT VEHICLES FURTHER BLOCKS VIEW OF SOUTHBOUND VEHICLES

VISIBLE RUTTING FOR EASTBOUND RIGHT

WESTBOUND APPROACH TRANSVERSE RUMBLE STRIPS

VIEW OF NORTHBOUND APPROACH

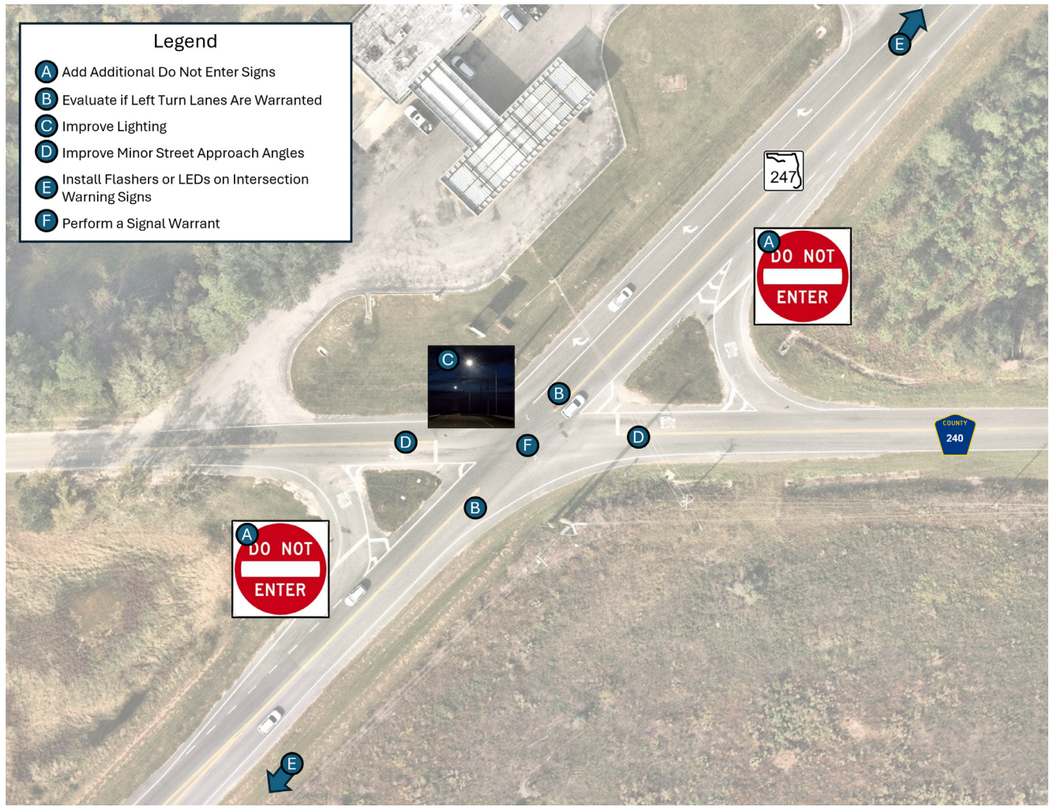
POTENTIAL OFF-ROAD TIRE MARKS

PRIORITY 8 – INTERSECTION OF SR 247 AND SW CR 240

Potential Countermeasures for Consideration

Table 10: Potential Countermeasures, Priority 8

Countermeasure	Scale/Timeframe	Justification
A. Duplicate do no enter signs (R5-1) on the back of the existing stop signs where they are currently not present	Short	Additional signage would provide greater clarity and better visibility to vehicles on SR 247.
B. Evaluate if left turn lanes are warranted on the major approaches	Short	Intersection currently has no mainline queue storage for left-turn movements from SR 247. Visibility of vehicles at or in the intersection is limited by a hill for southbound vehicles.
C. Improve lighting	Medium	Frequency of crashes in non-daylight conditions.
D. Improve minor street appraoch angles	Long	Observed vehicles having difficulty navigating awkward intersection approach angles within the lane constraints.
E. Install flashers or LEDs on intersection warning signs	Medium	Southbound vehicles have limited visibility of the intersection due to a hill to the north of intersection. Observed poor lighting in the area.
F. Perform a signal warrant	Short	Safety suggestion provided from FSU DURP Study.



Map 31: Proposed Countermeasures, Priority 8

VIEW OF SOUTHBOUND VEHICLES FROM EASTBOUND APPROACH

SOUTHBOUND LEFT MOVEMENT IS DANGEROUS DUE TO LACK OF TURN LANE AND DOWNGRADE SLOPE

SOUTHBOUND LEFT IS A TIGHT ANGLE

CAN ADD AN ADDITIONAL DO NOT ENTER SIGN ON THE BACK OF THE STOP SIGN

PRIORITY 9 - US 41 FROM SW TUSTENUGGEE AVENUE TO US 441

State Segment 2

Area Characteristics

The segment of US-41 is abutted by both residential and commercial land uses. Columbia High School is located northeast of the northern terminus of this segment.

US 41 (FACING SOUTH)

Segment Characteristics

This 0.65-mile segment is a two-lane urban principal arterial in unincorporated Columbia County just south of Lake City. At the northern terminus intersection with US 441, US 41 is a four-lane, divided roadway. Approximately 0.33-mile south of US 441, the roadway transitions into a two-lane roadway with a two-way left-turn lane, and then to an undivided two-lane roadway. The posted speed limit is 45-mph for the northern portion of the segment and 55-mph for the southern portion. There is one (1) signalized intersection within the segment at the intersection with CR 252. There are no pedestrian or bicycle facilities along this portion of US 41.

High Priority Intersection

The high-crash intersections of US 41 with CR 252 (Intersection 3) and with SW Forest Lawn Way (Intersection 14) are located on this segment. Crashes at the intersections are included in this analysis, and intersection-specific countermeasures are included in this section.

Equity Considerations

This segment of US 41 is located within Census Tract 1108, which was identified as Transportation Access Disadvantaged and Health Disadvantaged in **Chapter 6**. Census Tract 1108 was not identified as an Area of Persistent Poverty.

Crash Data Review

From 2019 to 2023, a total of 65 crashes were recorded along the study segment, including two (2) fatal and five (5) serious injury crashes.

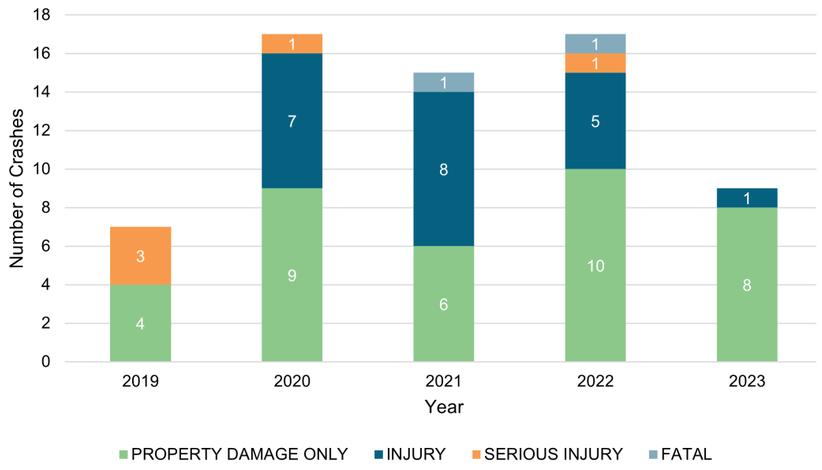
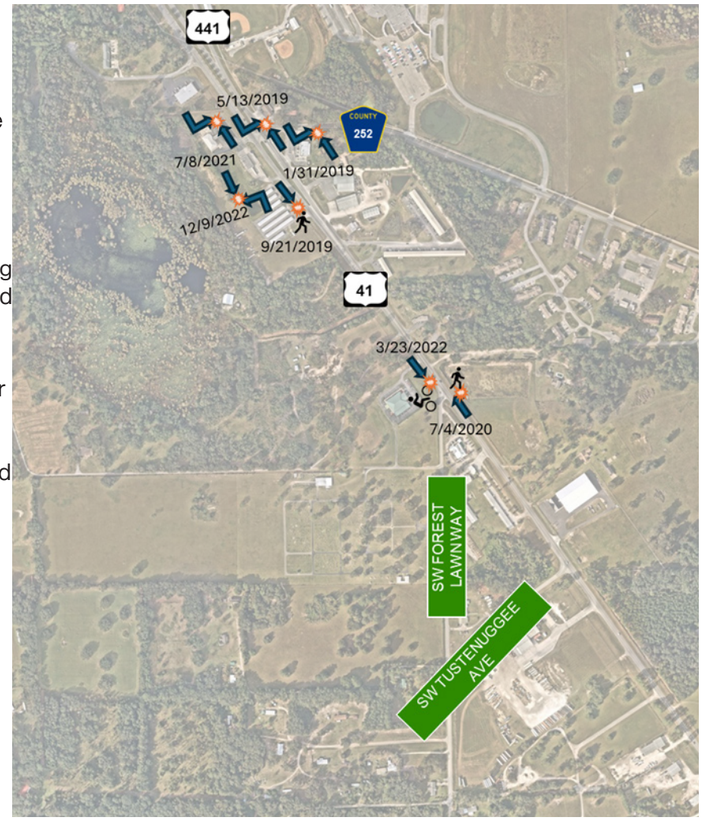


Figure: 48: Crash Severity by Year, Priority 9

Fatal and Serious Injury Crashes

Fatal and serious injury crash reports from 2019 through 2023 within the subject segment were obtained from *Signal Four Analytics* and reviewed in full.

- **Serious Injury - January 31, 2019:** A vehicle was attempting to make a southbound left turn from US 441 at the intersection with CR 252 and failed to yield to a northbound vehicle. The driver and passenger of the southbound vehicle were transported to a nearby medical facility following the crash. The crash occurred at dusk around 5 PM. No adverse roadway or weather conditions were reported at the time of the crash.
- **Serious Injury – May 13, 2019:** A vehicle was attempting to make a southbound left turn from US 441 onto CR 252 and failed to yield to a northbound vehicle on US 441. The driver of the southbound vehicle was transported to a nearby medical facility due to injuries sustained during the crash. The crash occurred around noon and no adverse weather conditions were reported.
- **Serious Injury – September 21, 2019:** A vehicle was traveling south on US 441 while a pedestrian traveled south in the west shoulder. The vehicle began to drift to the western side of the roadway, leading a collision between their side mirror and the pedestrian. Pedestrian 1 was transported to a nearby medical facility as a result of the collision. The crash occurred under dark - not lighted conditions around 1 AM. No adverse weather conditions were reported at the time of the event.
- **Serious Injury – July 4, 2020:** A northbound vehicle was on US 441 while a northbound pedestrian was traveling on the edge of the outside northbound lane on US 441. The front right side of the vehicle collided with the pedestrian, causing the passenger side mirror to break off and strike a passenger in the vehicle. The pedestrian and passenger struck by the car's side mirror were transported to a nearby medical facility following the crash. The crash occurred in dark - not lighted conditions around 9 PM. No adverse weather conditions reported at the time of the event.
- **Fatal – July 8, 2021:** A vehicle was attempting to make a southbound left turn from US 441 onto CR 252 and failed to yield to a northbound vehicle on US 441. Driver 1 expired as a result of the crash and was reported to have not been wearing a seat belt at the time of the crash. The crash occurred around 4 PM and no adverse weather conditions were reported.
- **Fatal – March 23, 2022:** A southbound vehicle was on US 441 while a bicyclist was traveling northbound on US 441 near the solid white line on the western paved shoulder closest to the southbound lanes of travel. The front right of the vehicle collided with the bicyclist, with the bicyclist being pronounced deceased at the scene. The driver had been driving under the influence, was not using their seat belt, and speeding at the time of the crash. The crash occurred under dark - not lighted conditions around midnight while it was raining, and the roadway was wet.
- **Serious Injury – December 9, 2022:** A vehicle was attempting to make a northbound left at the intersection of US-41 and CR 252, but failed to yield to a southbound vehicle on US-41. The two vehicles collided, and the driver of the vehicle making a northbound left was transported to a nearby medical facility as a result of injuries sustained during the crash. The crash occurred around 8 AM, and no adverse weather conditions were reported at the time of the crash.



Map 32: Fatal and Serious Injury Crashes

PRIORITY 9 - US 41 FROM SW TUSTENUGGEE AVENUE TO US 441

Crash Types

The most commonly reported crash type on the subject segment during the five-year analysis period was left turn crashes, which accounted for approximately 28% of all crashes and 57% of fatal and serious injury crashes. Rear end crashes made up approximately 28% of all crashes. Pedestrian and bicycle crashes made up 43% of all fatal and serious injury crashes. No other individual crash type accounted for more than 10% of the overall crashes.

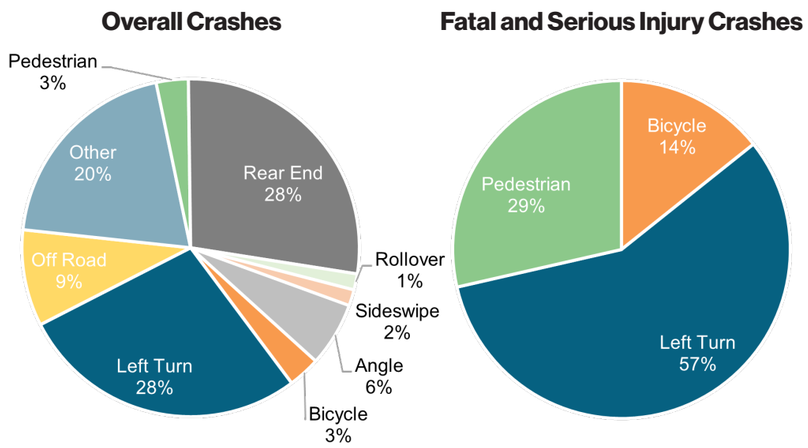


Figure: 49: Crash Types, Priority 9

Contributing Causes

The crash data was evaluated to determine the prevalence of contributing causes such as dark conditions, wet surface conditions, alcohol, and speeding. Approximately 42% of crashes occurred under non-daylight conditions, and 57% of fatal and serious injury crashes occurring under non-daylight conditions. Approximately 9% of all crashes occurred with wet surface conditions, and 14% of the fatal and serious injury crashes occurred with wet surface conditions. Seven (7) crashes were determined to be alcohol related (including one of the fatal and serious injury crashes), one of the fatal and serious injury crashes was determined to be drug related, and one of the fatal and serious injury crashes was determined to be speeding related.

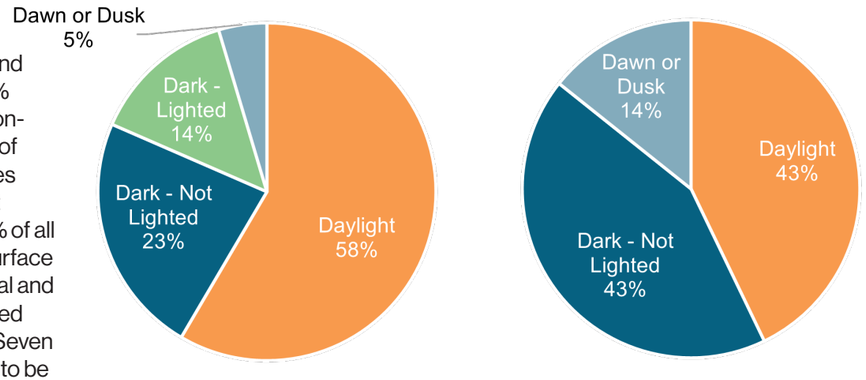


Figure: 50: Lighting Conditions, Priority 9

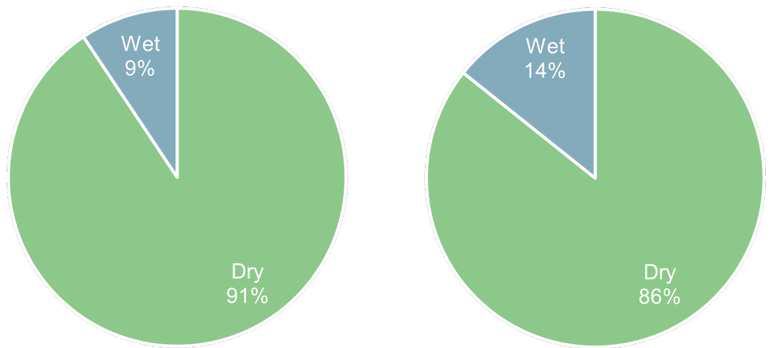


Figure: 51: Surface Conditions, Priority 9

Public and Stakeholder Comments

No public comments were recorded at the subject segment of US-41.

MISSING SECTION OF SIDEWALK

CYCLIST WITH NO BIKE LANE ON US 41

LACK OF LIGHTING

PRIORITY 9 - US 41 FROM SW TUSTENUGGEE AVENUE TO US 441

Potential Countermeasures for Consideration

Table 11: Potential Countermeasures, Priority 9

Countermeasure	Scale/Timeframe	Justification
A. Revise signal timings at US-41 & CR 252 (either make left turns only permitted-protected during certain hours, shorten cycle length, or make the signal fully actuated)	Short	Frequency and severity of left turn crashes
B. Extend sidewalk on westbound approach up to the intersection at CR 252	Medium	Frequency of serious injury pedestrian crashes Intersection's proximity to high school
C. Install sidewalk (or other bicycle and pedestrian facilities)	Long	Observed pedestrians and bicyclists attempting to use roadway shoulders or grass just off the roadway Frequency of pedestrian crashes
D. Install street lighting	Medium	Frequency of crashes under non-daylight conditions
E. Update pavement markings and raised pavement markers	Short	Observed faded pavement markings at the intersection of US 41 and SW Forest Lawn Way
F. Install transverse rumble strips	Medium	Observed poor sight distance of stop sign for vehicles traveling on SW Forest Lawn Way to the intersection with US 41
G. Reduce posted speed limit	Medium	Frequency of rear end crashes Frequency of fatal and serious injury bicycle and pedestrian crashes

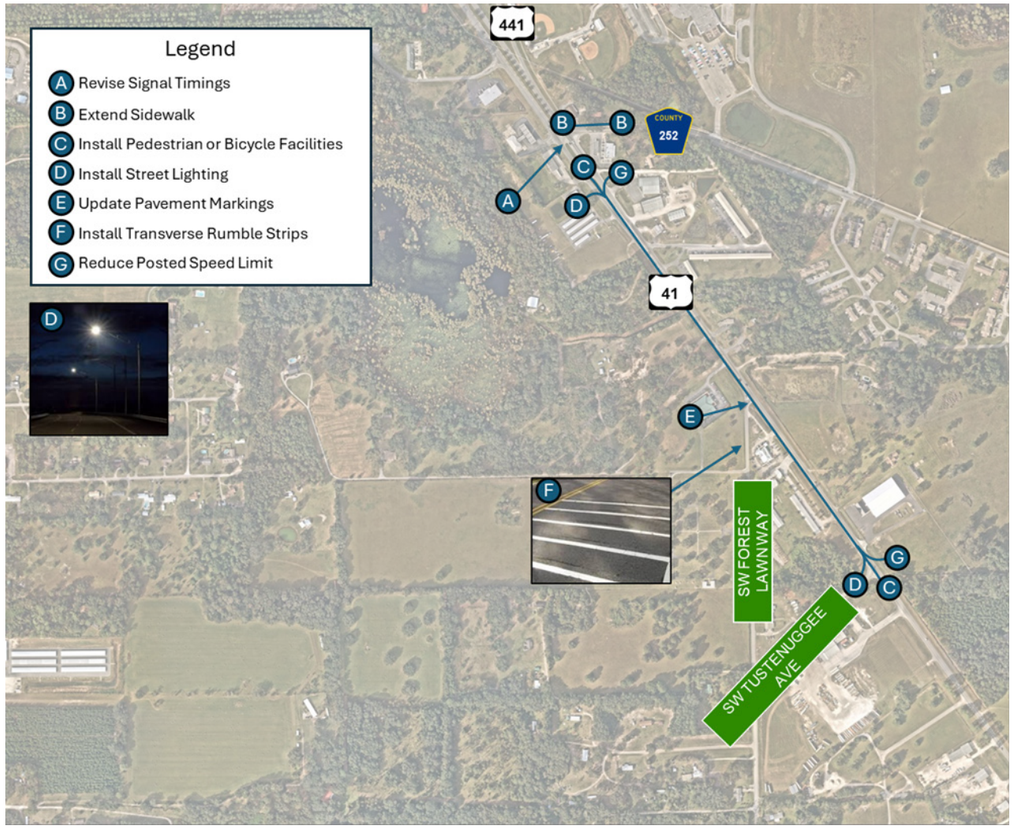


Figure: 52: Proposed Countermeasures, Priority 9

VIEW OF APPROACH TO INTERSECTION OF SW FOREST LAWN WAY WITH US 41

PERSON IN WHEELCHAIR ON GRASS

PRIORITY 10 - US 90 (E DUVAL STREET) FROM SE LOMOND AVENUE TO SR 100

State Segment 4

Area Characteristics

The segment of US 90 (E Duval Street) is abutted by both residential and commercial land uses. There is a railroad that crosses the segment near its intersection with SR 100. Eastside Elementary School is south of the segment.

US 90 (E DUVAL STREET), FACING WEST

Segment Characteristics

This 0.89-mile segment is located in the eastern part of Lake City. US 90 (E Duval Street) is a four-lane, undivided urban minor arterial with a speed limit of 45 mph. There is one (1) signalized intersection with SR 100 and a mid-block High Intensity Activated Crosswalk (HAWK) on US 90 (E Duval Street) between the intersections with Cider Terrace and Defender Drive. There is a sidewalk along both sides of the roadway, except for the easternmost portion from SE Dekle Way to SR 100.

Equity Considerations

This segment of US 90 (E Duval Street) is located within Census Tract 1103 and Census Tract 1104. Census Tract 1103 was identified as Transportation Access Disadvantaged, Health Disadvantaged, and Economically Disadvantaged in **Chapter 6**. Census Tract 1104 was identified as Health Disadvantaged, Economically Disadvantaged, and Environmentally Disadvantaged in **Chapter 6**. Both Census Tract 1103 and Census Tract 1104 were identified as an Area of Persistent Poverty.

Crash Data Review

From 2019 to 2023, a total of 38 crashes were recorded along the study segment, including two (2) fatal and five (5) serious injury crashes.

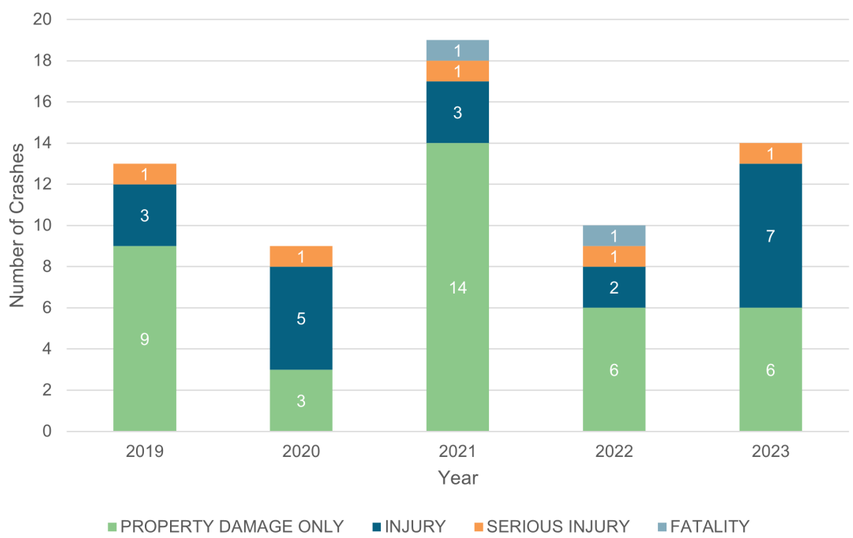
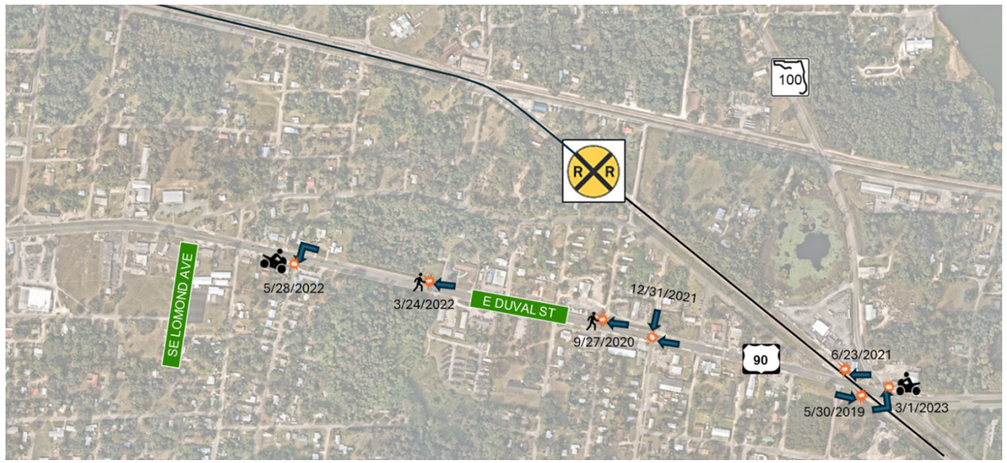


Figure: 53: Crash Severity by Year, Priority 10

Fatal and Serious Injury Crashes

Fatal and serious injury crash reports from 2019 through 2023 within the subject segment were obtained from *Signal Four Analytics* and reviewed in full.

- **Serious Injury – May 30, 2019:** An eastbound vehicle was on US-90 and made a right-turn onto the train tracks, leading to the undercarriage of the vehicle being struck and preventing the vehicle from moving. It was reported that the driver had dementia. The driver was transported to a nearby medical facility. The crash occurred under dark - not lighted conditions around 9 PM. No adverse weather conditions were reported at the time of the crash.
- **Serious Injury – September 27, 2020:** A westbound pedestrian and westbound vehicle were on US-90 when the pedestrian began traveling south and entered the roadway. The vehicle and pedestrian collided, with the pedestrian being transported to a nearby medical facility as a result of injuries from the crash. The crash occurred with dark -lighted conditions around 2 AM. No adverse weather conditions were reported at the time of the crash.
- **Serious Injury – June 23, 2021:** A westbound vehicle was on US-90 when it began to drift off the roadway. This caused the vehicle to strike a railroad crossing, leading to the vehicle rotating and overturning before coming to final rest. The driver was transported to a nearby medical facility following the crash. The crash occurred around 3 PM while it was raining, with wet roadway conditions.
- **Fatal – December 31, 2021:** A southbound vehicle on Country Club Road failed to yield appropriately to a westbound vehicle on US-90. The driver of the southbound vehicle was pronounced deceased at the scene and tested positive for drug use, though it is unknown if they were impaired at the time of the crash. The driver of the westbound vehicle was not wearing their seatbelt at the time of the crash and was transported to a nearby medical facility following the crash. The crash occurred with dark - lighted conditions around 7 PM. No adverse weather conditions were reported at the time of the crash.
- **Fatal – March 24, 2022:** A westbound vehicle was on US-90 when a pedestrian attempted to cross the roadway in front of them. The vehicle and pedestrian collided, and the pedestrian was pronounced deceased at the scene. The crash occurred under dark - not lighted conditions around 9 PM. The crash occurred while it was raining and with wet roadway conditions.
- **Serious Injury – May 28, 2022:** A westbound vehicle was on US-90 when they attempted to make a left turn onto SE Eloise Avenue, failing to yield appropriately to an eastbound motorcycle on US-90. The motorcyclist was ejected from their vehicle and had to be transported to a nearby medical facility. The crash occurred around 4 PM and no adverse weather conditions were reported at the time of the crash.
- **Serious Injury – March 1, 2023:** An eastbound vehicle was on US-90 and a westbound motorcycle was on US-90. The vehicle failed to yield appropriately as they attempted to make a left turn onto SR 100, causing the motorcyclist to be ejected from their vehicle. Both drivers were transported to a nearby medical facility. The crash occurred just after 6 PM, around dusk, and no adverse weather conditions were reported at the time of the crash.



Map 33: Fatal and Serious Injury Crashes, Priority 10

PRIORITY 10 - US 90 (E DUVAL STREET) FROM SE LOMOND AVENUE TO SR 100

Crash Types

The most commonly reported crash type on the subject segment during the five-year analysis period was rear end crashes, which accounted for approximately 22% of all crashes. Left turn crashes made up approximately 17% of all crashes and 28% of fatal and severe injury crashes. Angle crashes made up approximately 12% of all crashes. Overrepresented among the fatal and serious injury crash types were pedestrian crashes (2 of 7) and off-road crashes (2 of 7). No other crash type accounted for more than 10% of the overall crashes.

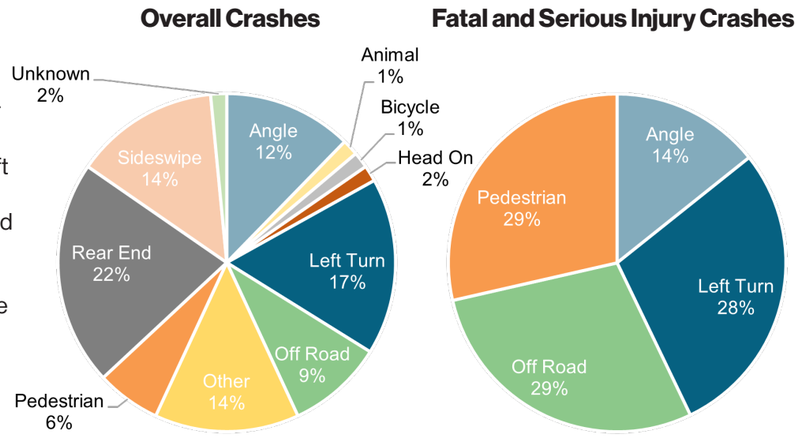


Figure: 54: Crash Types, Priority 10

Contributing Causes

The crash data was evaluated to determine the prevalence of contributing causes such as dark conditions, wet surface conditions, alcohol, and speeding. Approximately 28% of crashes occurred under non-daylight conditions, and 72% of fatal and serious injury crashes occurring in non-daylight conditions. About 14% of all crashes occurred with wet roadway conditions, and 29% of fatal and serious injury crashes occurring with wet roadway surface conditions. One crash was determined to be alcohol related, one of the fatal and serious injury crashes was determined to be drug related, and no crashes were reported to be speeding related.

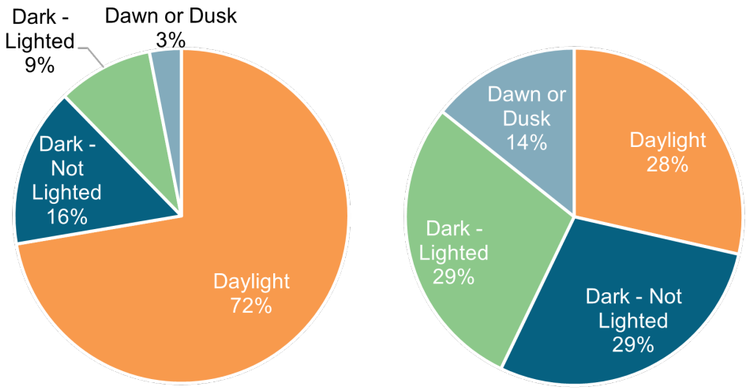


Figure: 55: Lighting Conditions, Priority 10

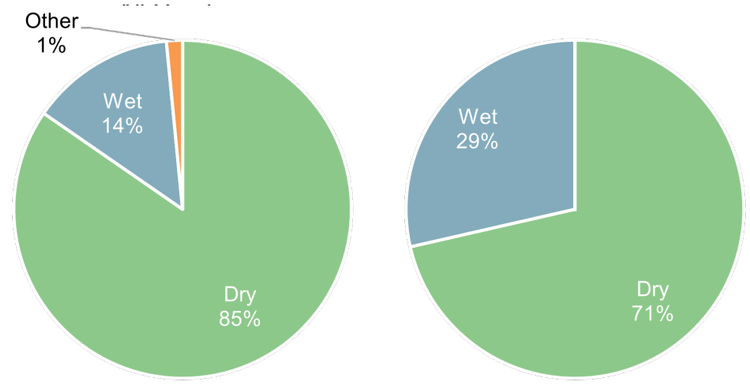


Figure: 56: Surface Conditions, Priority 10

Public and Stakeholder Comments

The FSU DURP Study recommended installing additional street lighting along SR-10/US-90.

The intersection of US 90 (E Duval Street) & SR 100 was identified as a safety concern by two (2) individuals at the Florida Gateway Fair.

SIGN ON HAWK CROSSING NEEDS CLARIFICATION FOR BLINKING RED SIGNAL

HAWK CROSSING

PEDESTRIAN NEAR TRAIN TRACKS WITHOUT PROPER FACILITIES

PAVEMENT EXTENDING BEYOND ROADWAY WITH TRAIN TRACKS

PRIORITY 10 - US 90 (E DUVAL STREET) FROM SE LOMOND AVENUE TO SR 100

Potential Countermeasures for Consideration

Table 12: Potential Countermeasures, Priority 10

Countermeasure	Scale/Timeframe	Justification
A. Review driveway access along segment	Short	Frequency of angle and left-turn crashes
B. Fill in sidewalk gaps at intersection of E Duval Street & SR-100	Medium	Observed pedestrians at this intersection in or near the roadway
C. Road diet (with more space for pedestrian and bicycle facilities	Long	Multiple fatal or serious injury pedestrian crashes Observed many pedestrians attempting to cross E Duval Street
D. Update signs at HAWK crossing (clarify allowed movements for solid and flashing red signals)	Short	Current signs at HAWK crossing do not have a distinction between allowable movements when the signal is solid red and when it is flashing red
E. Install additional midblock crossings	Long	Observed many pedestrians in the area not utilizing HAWK crossing Multiple fatal or serious injury pedestrian crashes
F. Remove eastbound left movement at E Duval Street & SR 100	Short	The current configuration of the intersection of E Duval Street and SR 100 requires a two-stage eastbound left turn and causes vehicles to stop on the railroad tracks before turning left
G. Install guardrail around train tracks	Medium	Observed limited physical separation of the roadway from the train tracks. Multiple serious injury crashes involving train tracks.
H. Install do not enter signs at train tracks	Short	Multiple serious injury crashes involving train tracks
I. Install additional lighting (with emphasis at intersection of E Duval Street & SR 100)	Medium	Observed minimal lighting at intersection of E Duval Street and SR 100 Additional lighting recommended by FSU DURP study

Map 34: Proposed Countermeasures, Priority 10

PRIORITY 11 - SR 10A (SE BAYA DRIVE) FROM COUNTRY CLUB ROAD TO SE SR 100

State Segment 5

Area Characteristics

The segment of SR 10A (SE Baya Drive) from Country Club Avenue to SE SR 100 surrounded by residential and commercial uses to the south and residential, industrial, and Eastside Elementary School to the north. Lighting is provided on both sides of the corridor. There is a railroad crossing at the eastern end of the segment.

SR 10A (SE BAYA DRIVE), FACING WEST

Segment Characteristics

This 0.58-mile segment is a four-lane urban principal arterial roadway with a two-way left-turn lane median in southeastern Lake City. SR 10A (SE Baya Drive) has a posted speed limit of 45 mph. There are three signalized intersections along the length of the segment, including the end points of the segment. There are sidewalks on both sides of SR 10A (SE Baya Drive).

Equity Considerations

This segment of SR 10A (SE Baya Drive) is located within Census Tract 1108, which was identified as Transportation Access Disadvantaged and Health Disadvantaged in **Chapter 6**. Census Tract 1108 was not identified as an Area of Persistent Poverty.

Crash Data Review

From 2019 to 2023, a total of 45 crashes were recorded along the study segment, including four (4) serious injury crashes.

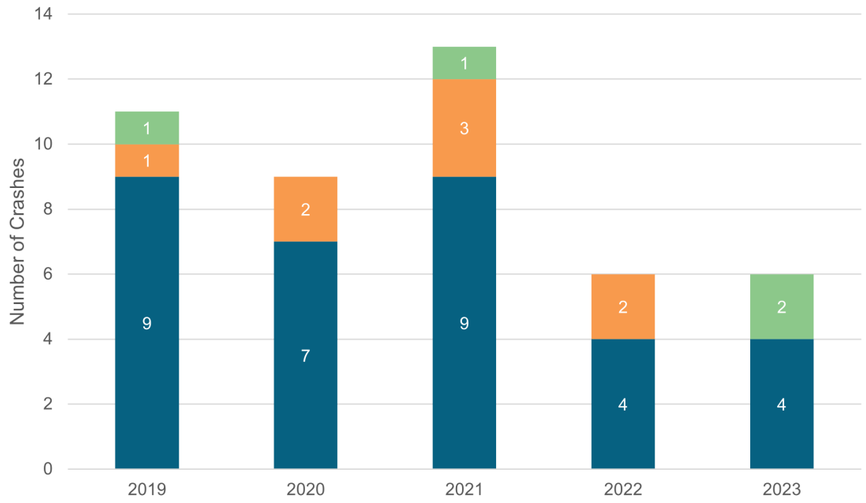


Figure: 57: Crash Severity by Year, Priority 11

Fatal and Serious Injury Crashes

Fatal and serious injury crash reports from 2019 through 2023 within the subject segment were obtained from *Signal Four Analytics* and reviewed in full.

- **Serious Injury – February 1, 2019:** A northbound vehicle on SE Defender Drive failed to yield to an eastbound vehicle on SE Baya Drive. The driver and a passenger of the northbound vehicle were transported to a nearby medical facility. The crash occurred around 1 PM while it was raining with wet roadway conditions.
- **Serious Injury – November 26, 2021:** A westbound vehicle on SE Baya Drive failed to yield at a red signal to a southbound vehicle on SE Country Club Road. The driver of the westbound vehicle was driving under the influence of alcohol. Both drivers were transported to a nearby medical facility. The crash occurred around 6 PM and no adverse weather conditions were reported as a result of the crash.
- **Serious Injury – February 21, 2023:** A northbound vehicle on SE Llewellyn Street did not yield to a westbound vehicle on SE Baya Drive. The driver of the northbound vehicle was not wearing their seatbelt at the time of the crash and both drivers were transported to a nearby medical facility due to injuries sustained during the crash. The crash occurred around 7 AM with no adverse weather conditions reported.
- **Serious Injury – September 19, 2023:** A northbound vehicle attempting to make a left from SE Llewellyn Street did not yield to an eastbound vehicle on SE Baya Drive. The driver of the eastbound vehicle was transported to a nearby medical facility following the crash. The crash occurred around 4 PM. No adverse weather conditions were reported at the time of the crash.

Map 35: Fatal and Serious Injury Crashes, Priority 11

PRIORITY 11 - SR 10A (SE BAYA DRIVE) FROM COUNTRY CLUB ROAD TO SE SR 100

Crash Types

The most commonly reported crash type on the subject segment during the five-year analysis period was angle crashes which accounted for 22% of all crashes and 75% of the serious injury crashes. Rear end crashes accounted for approximately 20% of all cashes, left turn crashes accounted for approximately 16% of all crashes (and the remaining 25% of serious injury crashes), and off-road crashes accounted for approximately 11% of all crashes. No other crash type accounted for more than 10% of the overall crashes.

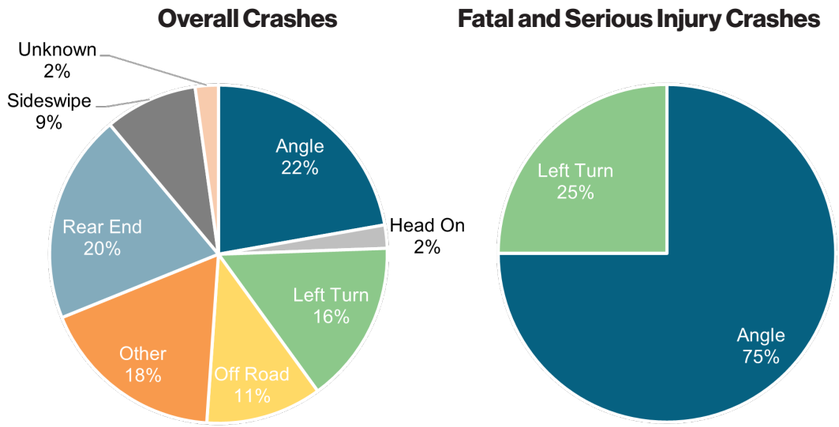


Figure: 58: Crash Types, Priority 11

Contributing Causes

The crash data was evaluated to determine the prevalence of contributing causes such as dark conditions, wet surface conditions, alcohol, and speeding. Approximately 11% of crashes occurred under non-daylight conditions. Approximately 20% of overall crashes and 25% of fatal and severe injury crashes occurred with wet roadway conditions. As mentioned previously, three (3) of the four (4) serious injury crashes were intersection related. One (1) of the serious injury crashes was determined to be drug related. No crashes were determined to be speeding or alcohol related.

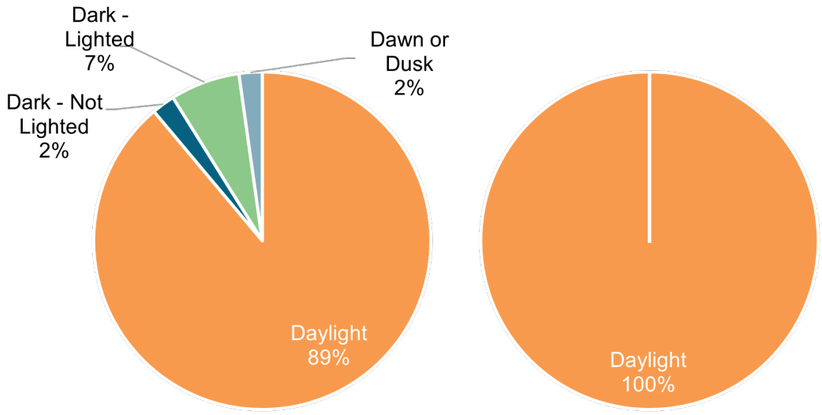


Figure: 59: Lighting Conditions, Priority 11

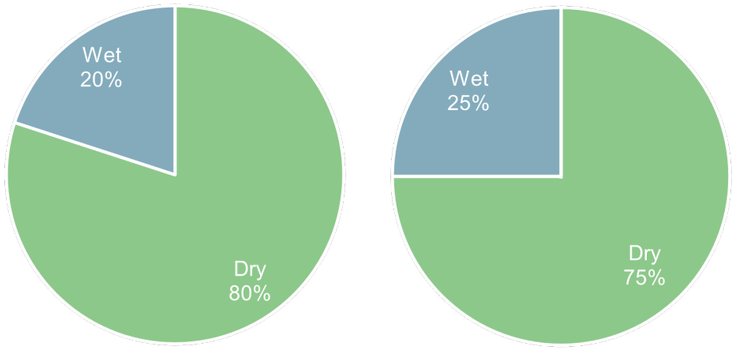


Figure: 60: Lighting Conditions, Priority 11

BICYCLIST UTILIZING SIDEWALK

INTERSECTION OF COUNTRY CLUB LN & SE BAYA DR

PRIORITY 11 - SR 10A (SE BAYA DRIVE) FROM COUNTRY CLUB ROAD TO SE SR 100

SIGNALS AT SE BAYA DRIVE & SE DEFENDER DRIVE (LACK RETROREFLECTIVE SIGNAL BACKPLATES)

FENCE BLOCKS VIEW ON SOUTHBOUND APPROACH FOR SE LLEWELLYN AVENUE

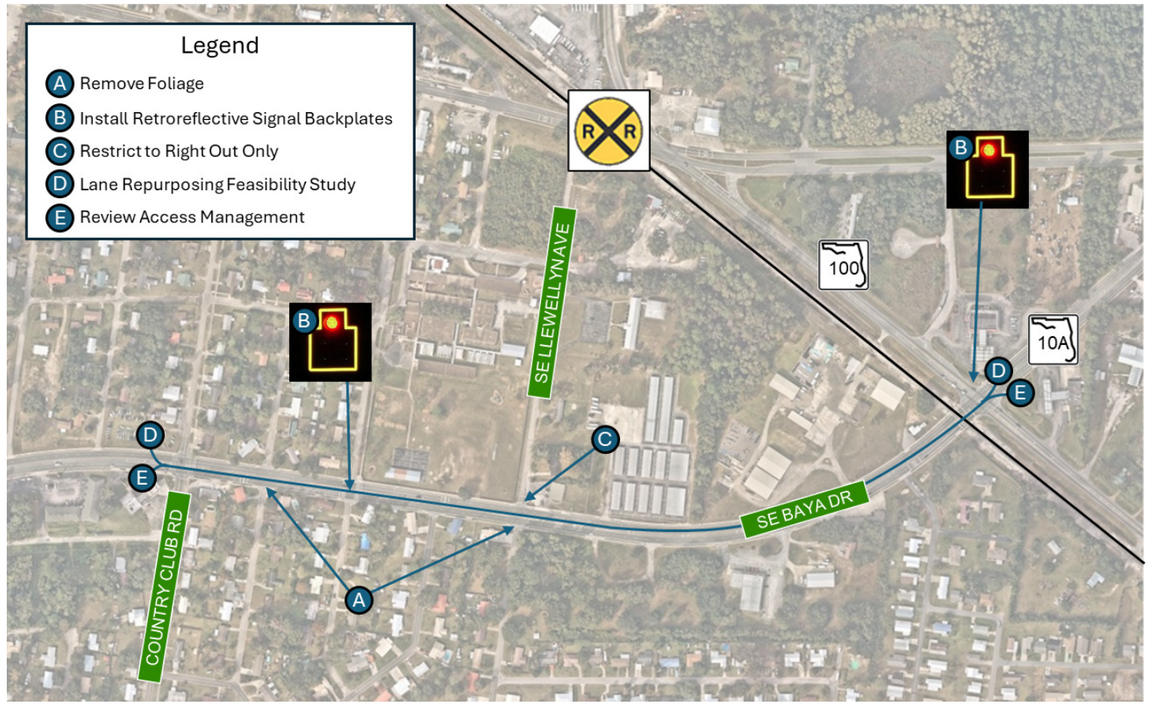
Public and Stakeholder Comments

No public comments were recorded at the subject segment of SR 10A (SE Baya Drive).

Potential Countermeasures for Consideration

Table 13: Potential Countermeasures, Priority 11

Countermeasure	Scale/Timeframe	Justification
A. Remove/Maintain foliage	Short	Visibility is obstructed visibility on some minor street approaches.
B. Install signal backplates with retroreflective borders	Medium	Frequency of intersection crashes at sig-nalized locations
C. Restrict minor street to right out only at Llewellyn Avenue	Long	Frequency of angle and left-turn crashes at Llewellyn Avenue
D. Road Diet/Lane repurposing feasibility study	Long	Frequency of left turn and angle crashes
E. Review Access Management	Medium	Frequency of angle and left-turn crashes



Map 36: Proposed Countermeasures, Priority 11

PRIORITY 12 - US 41 (SW MAIN BOULEVARD) FROM US 441 TO SW ST. MARGARETS STREET

State Segment 7

Area Characteristics

The segment of US 41 (SW Main Boulevard) from US-441 to SW Saint Margarets Steet is surrounded by a mixture of residential and commercial land uses. There is minimal lighting along the corridor.

Segment Characteristics

This 1.84-mile segment is a four-lane, divided urban principal arterial roadway in unincorporated Columbia County, south of Lake City. US 41 (SW Main Boulevard) has a posted speed limit of 45 mph and there are three (3) signalized intersections along the length of the segment. There are minimal pedestrian or bicycle facilities, with some short segments of sidewalks mostly on the eastern side of the roadway at the northernmost and southernmost portions of the segment.

US 41 (SW MAIN BOULEVARD) (FACING SOUTH)

PEDESTRIAN SCHOOL SIGN WITH LIMITED VISIBILITY AND LIGHTING

SHORT DISTANCE FROM NORTHBOUND STOP BAR TO CROSSWALK

Equity Considerations

This segment of US 41 (SW Main Boulevard) is located within Census Tract 1107, which was identified as Health Disadvantaged and Economically Disadvantaged in **Chapter 6**. Census Tract 1107 was not identified as an Area of Persistent Poverty.

Crash Data Review

From 2019 to 2023, a total of 107 crashes were recorded along the study segment, including three (3) fatal crashes and eight (8) serious injury crashes.

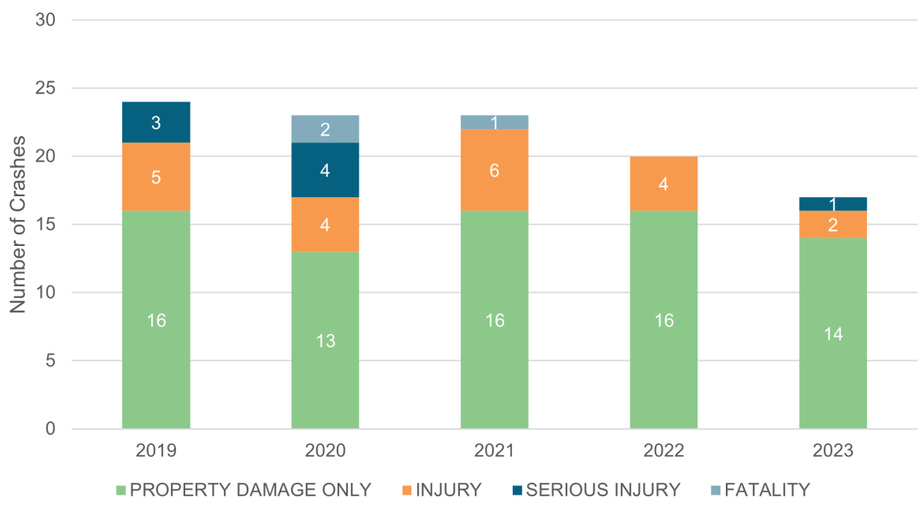


Figure: 61: Crash Severity by Year, Priority 12

EASTBOUND APPROACH TO INTERSECTION OF SR 47 AND US 41

PERSON IN WHEELCHAIR USING ROADWAY SHOULDER

PRIORITY 12 - US 41 (SW MAIN BOULEVARD) FROM US 441 TO SW ST. MARGARETS STREET

Fatal and Serious Injury Crashes

Fatal and serious injury crash reports from 2019 through 2023 within the subject segment were obtained from *Signal Four Analytics* and reviewed in full.

- **Serious Injury – April 29, 2019:** A westbound vehicle on SW High Street failed to yield appropriately to a northbound vehicle on US-41. The driver of the westbound vehicle was transported to a nearby medical facility following the crash. The crash occurred around 1 PM and no adverse weather conditions were reported at the time of the crash.
- **Serious Injury – May 1, 2019:** A northbound vehicle was on US-41 while a pedestrian was traveling east to cross US-41, leading to a collision between the two. The pedestrian was transported to a nearby medical facility due to injuries from the collision. The crash occurred under dark - not lighted conditions around 11 PM. No adverse weather conditions were reported at the time of the crash.
- **Serious Injury – August 21, 2019:** A northbound vehicle on US-41 was attempting to make a left turn onto SW Bascom Norris Drive and failed to yield to a southbound vehicle on US-41. The driver of the northbound vehicle was transported to a nearby medical facility. The crash occurred around 1 PM and no adverse weather conditions were reported at the time of the crash.
- **Fatal – January 12, 2020:** A southbound vehicle was on US-41 when they collided with a pedestrian, who was in the roadway for unknown reasons. The pedestrian was pronounced deceased at the scene and was determined to have been impaired at the time of the crash. The crash occurred in dark - not lighted conditions at 4 AM. No adverse weather conditions were reported at the time of the crash.
- **Serious Injury – February 11, 2020:** A vehicle was attempting to make a westbound left turn from US-441 and failed to yield appropriately to a northbound vehicle on US-41. Following the collision, the northbound vehicle struck a tree before coming to final rest. The driver of the northbound vehicle was transported to a nearby medical facility. The crash occurred around 7 PM under dark – not lighted conditions. No adverse weather conditions were reported at the time of the crash.
- **Serious Injury – March 9, 2020:** A vehicle was making a westbound left turn from US-441 onto US-41 when they struck the rear of a southbound vehicle on US-41. The driver of the southbound vehicle on US-41 was transported to a nearby medical facility following the crash. The crash occurred in dark - not lighted conditions around 6 AM. No adverse weather conditions were reported at the time of the crash.
- **Fatal – May 30, 2020:** A northbound vehicle was on US-441 when they left the roadway and collided with a tree. The driver was pronounced deceased at the scene. The driver was determined to have not been wearing a seatbelt and tested positive for drug use. The crash occurred around 10 AM and no adverse weather conditions were reported at the time of the crash.
- **Serious Injury – June 5, 2020:** A westbound vehicle on SW Michigan Street failed to yield to a southbound vehicle on US-41. Two (2) passengers from the westbound vehicle were transported to nearby medical facilities. The crash occurred around 1 PM and no adverse weather conditions were reported at the time of the crash.
- **Serious Injury – October 29, 2020:** An eastbound vehicle on SW Michigan St failed to yield to a southbound vehicle on US-41. The driver of the eastbound vehicle was transported to a nearby medical facility following the crash. The crash occurred slightly after 11 AM. No adverse weather conditions were reported at the time of the crash.
- **Fatal – September 29, 2021:** A left-turn collision occurred between a vehicle making an eastbound left turn from SR 47 and a southbound vehicle on US-41. One driver was reported to have suffered an incapacitating injury and the other driver expired as a result of the crash. The crash occurred around 9 AM. No adverse weather conditions were reported at the time of the crash. No further details were given.
- **Serious Injury – April 4, 2023:** A vehicle was attempting to make a westbound left turn from US-441 onto US-41 and failed to yield to a northbound vehicle on US-41. The driver of the northbound vehicle on US-41 was transported to a nearby medical facility following the crash. The crash occurred around 10 AM and no adverse weather conditions were reported at the time of the crash.

Map 37: Fatal and Serious Injury Crashes, Priority 12

PRIORITY 12 - US 41 (SW MAIN BOULEVARD) FROM US 441 TO SW ST. MARGARETS STREET

Crash Types

The most commonly reported crash type on the subject segment during the five-year analysis period was rear end crashes, which accounted for approximately 26% of all crashes. Angle crashes accounted for approximately 20% of all crashes (and accounted for approximately 46% of fatal and serious injury crashes) and left turn crashes accounted for 13% of all crashes (and accounted for approximately 18% of fatal and severe injury crashes). Two (2) of the fatal and serious injury crashes were pedestrian crashes. No other crash type accounted for more than 10% of the overall crashes.

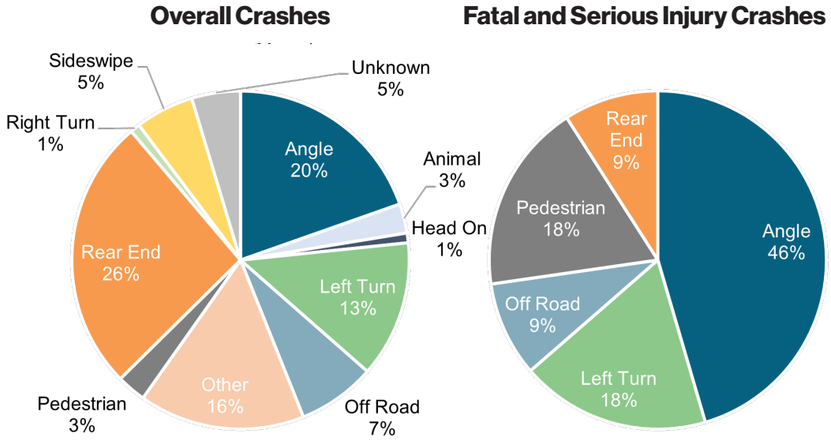


Figure: 62: Crash Types, Priority 12

Contributing Causes

The crash data was evaluated to determine the prevalence of contributing causes such as dark conditions, wet surface conditions, alcohol, and speeding. Approximately 28% of crashes occurred under non-daylight conditions and approximately 36% of fatal and serious injury crashes occurring under dark – not lighted conditions. Approximately 11% of all crashes occurred with wet surface conditions. Three (3) crashes were classified as alcohol related (including one of the fatal and serious injury crashes), one of the fatal and serious injury crashes was classified as drug related, and two (2) crashes were classified as speeding related.

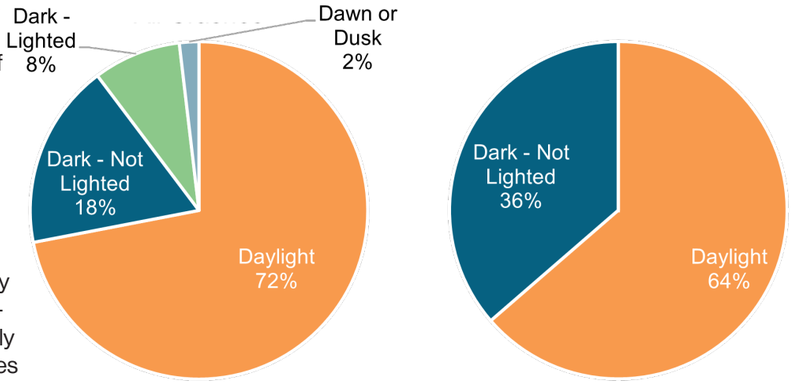


Figure: 63: Lighting Conditions, Priority 12

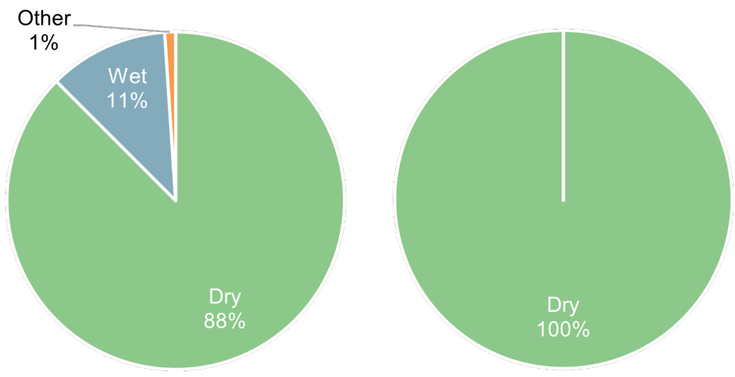


Figure: 64: Surface Condition, Priority 12

Public and Stakeholder Comments

The intersection of US-41/SW Main Boulevard & SR 47 was identified as a safety concern at the Florida Gateway Fair by multiple individuals.

LACK OF LIGHTING

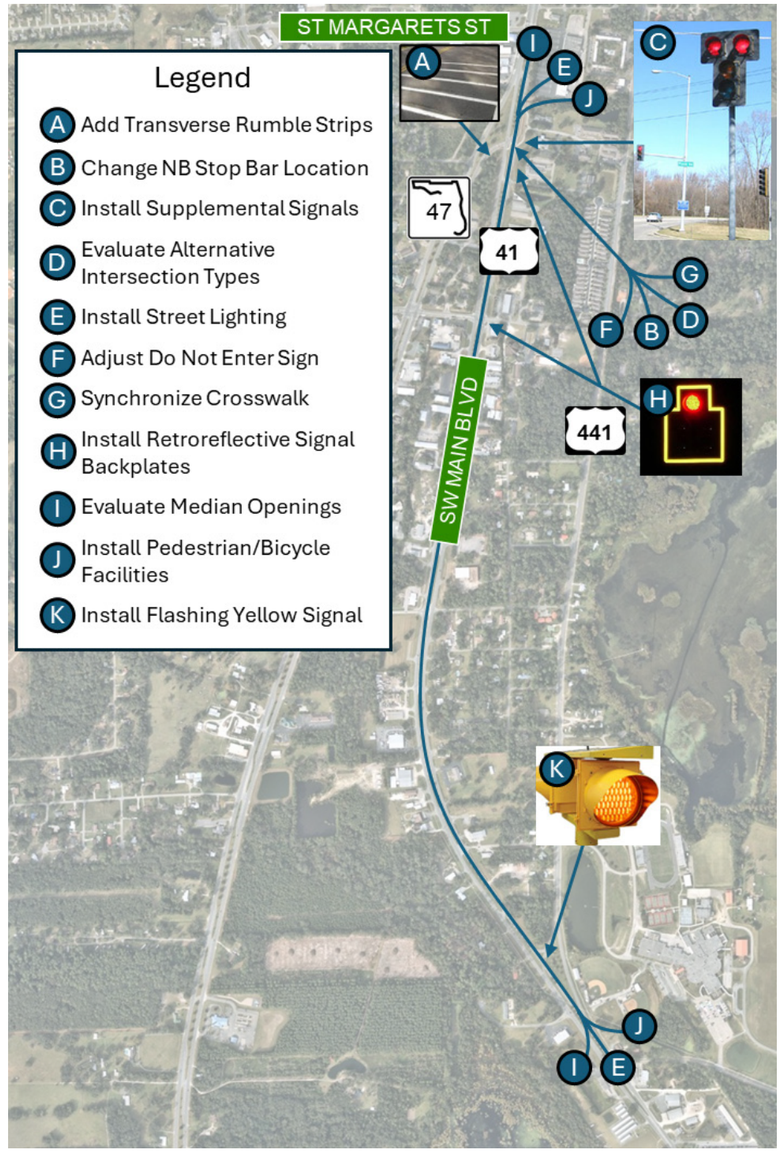
MEDIAN OPENING WITHOUT TURN LANES

PRIORITY 12 - US 41 (SW MAIN BOULEVARD) FROM US 441 TO SW ST. MARGARETS STREET

Potential Countermeasures for Consideration

Table 14: Potential Countermeasures, Priority 12

Countermeasure	Scale/ Timeframe	Justification
A. Add transverse rumble strips on eastbound SR 47 approach	Medium	Eastbound approach has limited sight dis-tance of signals for SR 47 and US 41 (SW Main Boulevard).
B. Relocate northbound stop bar	Short	Existing northbound stop bar is very close to the pedestrian crosswalk at the inter-section of US 41 (SW Main Boulevard) and SR 47.
C. Install supplemental signals for eastbound approach	Medium	Eastbound approach has limited sight dis-tance of signal at the intersection of SR 47 and US 41 (SW Main Boulevard).
D. Evaluate alternative intersection types	Short	Existing intersection configuration features awkward approach angles and conflict points.
E. Install street lighting	Medium	Frequency of fatal and serious injury crashes in dark – not lighted conditions.
F. Adjust eastbound do not enter sign	Short	The do not enter sign on the northern side of the eastbound approach of the intersection of SR 47 and US 41 (SW Main Boule-vard) is in a position that could cause con-fusion.
G. Synchronize the two-stage crosswalk on the southbound leg at US 41 (SW Main Boulevard) and SR 47	Short	The current pedestrian phasing requires pedestrians crossing the northbound lanes of travel to wait in the median to for another cycle before crossing the southbound lanes of travel.
H. Insall retroreflective signal backplates	Short	There is currently poor visibility of the sig-nals at US 41 (SW Main Boulevard) and SR 47 as well as at US 41 (SW Main Boule-vard) and SW Malone Street.
I. Evaluate the need for median openings and left-turn storage bays	Short	Frequency of angle and left turn crashes. Observed multiple turn lanes or median openings without a corresponding street or driveway to turn onto Observed multiple median openings without storage area for vehicles making left turns or U-turns
J. Install sidewalk or shared use path	Long	Observed a wheelchair user and bicyclists traveling on the shoulder of the roadway
K. Install flashing yellow signal for left turn from US-441 onto US-41	Medium	Frequency of fatal and serious injury crashes involving a vehicle making a left turn from US 441 onto US 41



Map 38: Proposed Counter measures, Priority 12

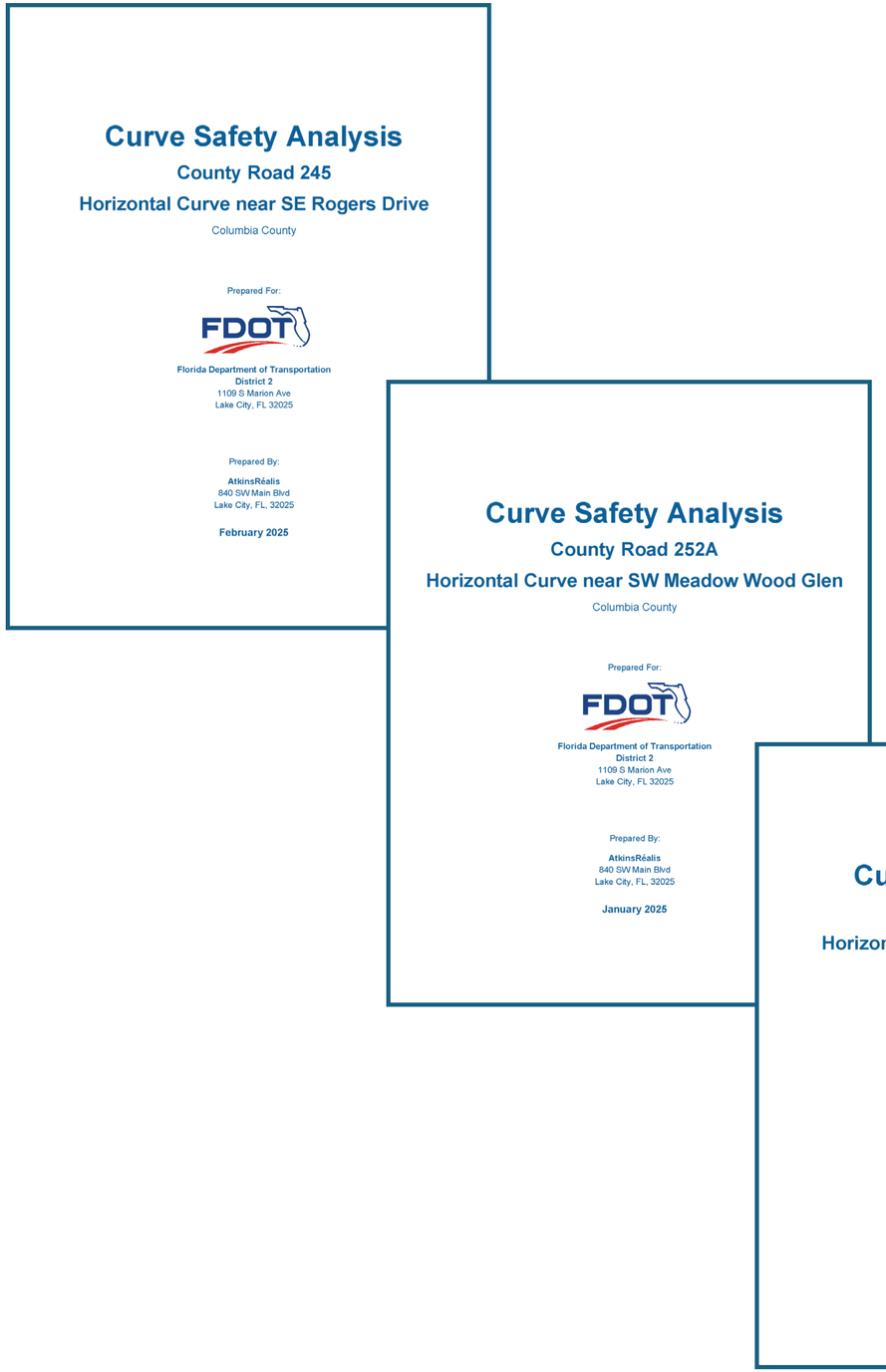
VIII.D. FDOT Countermeasures

In February 2025, the FDOT District 2 safety office analyzed crash history on three horizontal curves in Columbia County. Specifically, curves located on CR-245 near SE Rogers Drive, CR-138 near SW Nantucket Pl, and CR-252A near SW Meadow Wood Glen were analyzed. Individual reports include a historical crash data analysis, findings from field reviews, and recommended short-term and long-term safety improvements at the three curves.

In addition to the recommendations listed in the **Table 15** below, a DUI prevention media campaign was proposed based on the crash history at the CR-138 horizontal curve near SW Nantucket Pl. The safety improvements recommended by FDOT at the three curves were included as projects for scoring and prioritization within Columbia County's CSAP. The complete horizontal curve analysis reports can be found in **Appendix D**.

Table 15: FDOT Countermeasure Rcommendations

Curve Location	Short-Term Recommendations	Long-Term Recommendations
CR-245 near SE Rogers Drive	• Install Curve/Intersection Ahead Combination sign/45mph advisory speed limit • Install Minor Road End-treatment Signs and Pavement Markings • Refurbish stop bar and centerline pavement marking and add edge line pavement markings • Relocate intersection warning sign	• Increase paved shoulder width on the curve
CR-138 near SW Nantucket Pl	• Add yellow retroreflective strips on existing Turn Ahead/25 mph Advisory Speed Limit and Curve/Intersection Ahead combination signposts. • Install double sided Chevron Alignment signs. • Install additional double sided Chevron Alignment signs. • Trim tree branches and vegetation at the curve area.	• Install roadside guardrail for the northbound traffic. • Consider lighting near curve locations. • Increased paved shoulder width on the curve.
CR-252A near SW Meadow Wood Glen	• Install oversized Chevron Alignment double sign assemblies along the curve with retroreflective strips on the signposts. • Refurbish edge line pavement markings.	



CHAPTER 9

SCORING/PRIORITIZATION

IX. SCORING/PRIORITIZATION

IX.A. Project Prioritization

The prioritization approach was developed by the project team to establish a scoring criteria by which the recommended countermeasures could be prioritized for implementation. Four categories were utilized to assess the countermeasures under consideration: Safety, Equity, Public Feedback, and Connectivity. Each category had sub-categories that were allotted a specific number of points to a countermeasure if it met the criteria of that sub-category. The more points a countermeasure received, the higher it was placed on the prioritization list. **Table 16** indicates the criteria scoring that was applied to the countermeasures. Given the centrality of safety to the CSAP, the Safety categories relating to fatal crashes, serious injury crashes, and vulnerable road user crashes were assigned the most weight in the prioritization criteria.

Table 16: Prioritization Criteria

Category	Sub-Category	Measure	Points
Safety	Crash History - Fatal	Occurrence of fatal crash within the last 5 years	4 ea
	Crash History - Serious Injury	Occurrence of serious injury crash within the last 5 years	2 ea
	Crash History - VRU	Occurrence of bicycle, pedestrian, or motorcycle crash within the last 5 years	3 ea
Equity	Areas of Persistent Poverty	Census Tract identified as Area of Persistent Poverty	2
	Disadvantaged Census Tract	Number of Equity Categories Reaching the 90th Percentile	0-6
Public Feedback	PublicCoordinate Feedback	Community Identified Specific Concern(s)	2
	Project Kickoff Feedback	Project was identified as priority during project kickoff meeting	2
	Task Force Recommendation	Project was recommended by the Task Force	1
Connectivity	Planning Consistency	Project previously identified in another plan/program	1
	Network Connectivity	Project connects to an existing or planned multi-modal project	1

To determine the Safety points for each project, each of the countermeasures under consideration was mapped in GIS along with the crashes recorded within the five-year study period. A geospatial buffer was assigned to each project, and the number of fatal, serious injury, or bicycle/pedestrian/motorcycle crashes within that buffer was counted for each project. This methodology does not necessarily distinguish crash types that would specifically be susceptible to correction by the recommended countermeasure.

Segment Projects:

Projects that apply along a certain length, such as a rumble stripe installation or road diet

Point Projects:

Projects that apply specifically at one location, such as mid-block crosswalk markings or traffic signal improvements

Since 'Segment Projects' such as sidewalks, road diets, lighting, and rumble stripes inherently cover a larger geographical area than 'Point Projects', they were found to be disproportionately represented in the Safety criteria scoring of the project prioritization process outlined in **Table 16**, so prioritization for the two project types are summarized separately.

IX.A.1. Project Tiers

The countermeasures developed were separated into three tiers based on how quickly they could be implemented and how they could be funded. The project tiers were short-term, medium-term, and long-term. In the following project lists, those identified as short-term projects are in **GREEN**, medium-term projects are in **ORANGE**, and long-term projects are in **BLUE**.

Projects in the short-term tier could be implemented almost immediately and supported with existing funds. An example of a short-term project would be refreshing/installing high-visibility crosswalks, which can be done by County staff or local city partners with existing supplies.

Projects in the medium-term tier could be implemented within 6–18 months, but may require a new budget line item and may require the acquisition of certain approvals and/or materials. An example of a medium-term project would be adding lighting, which would certainly have significant benefit, especially in reducing crashes occurring under nighttime conditions, but may require a new budget line item to acquire the materials and construct lighting improvements.

Projects in the long-term tier would require larger funding allotments and may require additional planning, design, and collaboration with stakeholders. Most long-term projects involve significant infrastructure improvements such as intersection re-design, sidewalk installation, road diet or lane repurposing projects, or adding bike lanes. Although more expensive and time-consuming, many of the long-term projects are those that would be expected to yield the most impactful safety benefits for the County.

IX.B. Segment Projects

Table 17 summarizes the Segment Project prioritization. The list of projects considered in this table includes all of the countermeasures that were developed to address crash patterns identified in the 12 priority locations, as well as many of the recommended improvements provided by the Task Force and the Columbia County community via the PublicCoordinate site. A breakdown of the prioritization scoring by category detailing the points awarded for each project is provided in **Appendix E**.

The highest ranked Segment Project is reviewing driveway access and implementing a road diet along segment on US 90 (E Duval Street) from SE Lomond Ave to SR-100. These projects were some of the countermeasures developed to address the extensive crash history on US 90 (E Duval Street), received support from the public, are expected to improve network connectivity, and are in a disadvantaged census tract. Other top ranked projects include the evaluation of median openings, installation of sidewalks, and installation of street lighting on SW Main Blvd from US-441 to SW Saint Margarets St.

Many of the other highly ranked projects were devised to addressed pedestrian, bicycle, and motorcycle issues to improve mobility and access for vulnerable road users within Columbia County.

Table 17: Segment Project Prioritization

Project Description	Score
Review Driveway Access on E Duval St from SE Lomond Ave to SR-100	56
Implement a Road Diet on E Duval St from SE Lomond Ave to SR-100	56
Install Additional Street Lighting on E Duval St from SE Lomond Ave to SR-100	55
Evaluate the Need for Median Openings and Left-Turn Storage Bays on SW Main Blvd from US-441 to SW Saint Margarets St	42
Install Sidewalk or Shared Use Path on SW Main Blvd from US-441 to SW Saint Margarets St	42
Install Street Lighting on SW Main Blvd from US-441 to SW Saint Margarets St	41
Install Sidewalk (or Other Bicycle and Pedestrian Facilities) on US-41 from SW Tustenuggee Ave to US-441	33
Install Street Lighting on US-41 from SW Tustenuggee Ave to US-441	32
Update Pavement Markings and Raised Pavement Markers on US-41 from SW Tustenuggee Ave to US-441	32
Install Transverse Rumble Strips on US-41 from SW Tustenuggee Ave to US-441	32
Reduce Posted Speed Limit on US-41 from SW Tustenuggee Ave to US-441	32
Install Centerline And Edge Line Rumble Strips on SW Tustenuggee Ave from NW Herlong St to SW CR-240	30
Install Street Lighting on SW Tustenuggee Ave from NW Herlong St to SW CR-240	30
Install Raised Pavement Markers on SW Tustenuggee Ave from NW Herlong St to SW CR-240	30
Improve Pavement Friction on SW Tustenuggee Ave from NW Herlong St to SW CR-240	30
Improve Pavement Conditions	30
Install Centerline and Edge Line Rumble Strips on SW Tustenuggee Ave from SW CR-18 to SW Herlong St	25

Project Description	Score
Install Street Lighting on SW Tustenuggee Ave from SW CR-18 to SW Herlong St	25
Install Raised Pavement Markers on SW Tustenuggee Ave from SW CR-18 to SW Herlong St	25
Restrict Placing Objects within the Right-of-Way on SW Tustenuggee Ave from SW CR-18 to SW Herlong St	25
Implement a Road Diet and/or Perform a Lane Repurposing Feasibility Study on SE Baya Dr/SR-10A from Country Club Rd to SE SR-100	19
Review Access Management	19
Install Centerline and Edge Line Rumble Strips on SW Tustenuggee Ave from SW CR-242A to US-41/US-441	18
Install Street Lighting on SW Tustenuggee Ave from SW CR-242A to US-41/US-441	18
Install Raised Pavement Markers on SW Tustenuggee Ave from SW CR-242A to US-41/US-441	18
Move Objects Outside of Clear Zone on SW Tustenuggee Ave from SW CR-242A to US-41/US-441	18
Extend Sidewalk on Westbound Approach of US-41 & CR-252 on US-41 from SW Tustenuggee Ave to US-441	14
Install Centerline and Edge Line Rumble Strips on NW Long St from NW Lake Jeffery Road to US-441/SR-47	10
Install Curb on NW Long St from NW Lake Jeffery Road to US-441/SR-47	10
Remove Foliage on NW Long St from NW Lake Jeffery Road to US-441/SR-47	10
Install Edge Line Rumble Strips on SE CR-349 from CR-131/SW Tustenuggee Ave to US-41	7
Install Raised Pavement Markers On Curves on SE CR-349 from CR-131/SW Tustenuggee Ave to US-41	7
Install Street Lighting on SE CR-349 from CR-131/SW Tustenuggee Ave to US-41	7

IX.C. Point Projects

Table 18 summarizes the Point Project prioritization. The list of projects considered in this table includes all of the countermeasures that were developed to address concerns at the priority intersections, as well as improvements recommended by FDOT and countermeasures suggested by the public or stakeholders via the PublicCoordinate site.

The highest ranked Point Project is building a roundabout at the intersection of SW Bascom Norris Dr and SW Mary Ethel Ln. Other highly ranked point projects include the evaluation of left turn lanes warrants, signal warrant, additional signage, and other improvements at the intersection of SR-247 and CR-240.

There are numerous other low-cost, short-term improvements that scored highly among the Point Projects criteria. These improvements would be expected to have a meaningful, positive impact on reducing crashes within Columbia County without a significant burden of additional design or investment. It is recommended that the County pursue as many of these low-cost, short-term improvements as possible in pursuit of Vision Zero.

Table 18: Point Project Prioritization

Project Description	Score
Install Roundabout on SW Bascom Norris Dr and SW Mary Ethel Ln	32
Update Pavement Markings on SW Bascom Norris Dr and SW Mary Ethel Ln	31
Update Rumble Strips on SW Bascom Norris Dr and SW Mary Ethel Ln	31
Widen Apron for Eastbound and Westbound Right Turns on SW Bascom Norris Dr and SW Mary Ethel Ln	31
Install Intersection Ahead Warning Signs (W2-1) on Minor Road Approaches on SW Bascom Norris Dr and SW Mary Ethel Ln	31
Relocate Billboard on SW Bascom Norris Dr and SW Mary Ethel Ln	31
Evaluate if Left Turn Lanes Are Warranted on the Major Road Approaches on SR-247 and CR-240	23
Perform a Signal Warrant on SR-247 and CR-240	23
Install LED Enhanced Flashing Stop Signs on SW Tustenuggee Ave at the SW CR-18 to SW Herlong St Intersections	23
Improved Delineation of Stop Bars on SW Tustenuggee Ave at the SW CR-18 to SW Herlong St Intersections	23
Duplicate Do Not Enter Signs (R5-1) on SR-247 and CR-240	22
Install Additional Street Lighting on SR-247 and CR-240	22
Improve Minor Road Approach Angles on SR-247 and CR-240	22
Install Flashers or LEDs on Intersection Warning Signs on SR-247 and CR-240	22
Install Additional Midblock Crossings on E Duval St from SE Lomond Ave to SR-100	21
Install Curve / Intersection Ahead Combination Sign with retroreflective strips 360 feet ahead of curve on SE CR-245 around SE Rogers Dr curve	19
Install minor road end-treatment signs and pavement markings on SE CR-245 around SE Rogers Dr curve	19
Update pavement markings on SE CR-245 around SE Rogers Dr curve	19
Relocate intersection warning sign at least 360 ft from intersection on SE CR-245 around SE Rogers Dr curve	19
Add yellow retroreflective strips to sign posts on SW CR-138 around Nantucket Pl curve	19
Install Chevron double sign assemblies facing both directions on SW CR-138 around Nantucket Pl curve	19

Project Description	Score
Trim tree branches and vegetation at curve area on SW CR-138 around Nantucket Pl curve	19
Restrict Eastbound Left Movement on the West Leg of E Duval St and SR-100	18
Update Pavement Markings on SW Tustenuggee Ave at the SW Herlong St and SW CR-240 Intersections	18
Install LED Enhanced Flashing Stop Sign on SW Tustenuggee at the SW Packard St and SW Minnie Gln Intersections	18
Install Speed Feedback Signs on SW Tustenuggee Ave from SW CR-242A to US-41/US-441	18
Fill In Sidewalk Gaps at E Duval St and SR-100	17
Revise Signal Timings at US-41 & CR-252	16
Install 3 oversized chevron double assemblies with retroreflective strips facing both directions. on SW CR-252A around SW Meadow Wood Gln curve	14
Refurbish white edge line pavement markings on SW CR-252A around SW Meadow Wood Gln curve	14
Install Roundabout at SW Tustenuggee Avenue and SW CR 240	13
Install Signal Backplates with Retroreflective Borders on SE Baya Dr/SR-10A from Country Club Rd to SE SR-100	13
Install Intersection Warning Sign (W2-1) on the Northbound of SW Tustenuggee Ave and SW CR-240	12
Install Intersection Lighting at SW Tustenuggee Ave and SW CR-240	12
Install Crosswalk for Shared-Use Path at SW Tustenuggee and SW CR-18	12
Remove Permitted Left Turn Phases on Major Approaches on US-90 and SW Pinemount Rd/NW Turner Ave	11
Implement Leading Pedestrian Interval on US-90 and SW Pinemount Rd/NW Turner Ave	11
Install Guardrail around Train Tracks on E Duval St from SE Lomond Ave to SR-100	11
Install Do Not Enter Signs at Train Tracks on E Duval St from SE Lomond Ave to SR-100	11
Remove Foliage on SE Baya Dr/SR-10A from Country Club Rd to SE SR-100	11
Evaluate Alternative Intersection Types at US-41 and SR-47	11
Synchronize the Two-Stage Crosswalk on the Southbound Leg at US-41 and SR-47	11
Install Slippery When Wet Signs (W8-5 and W8-10P) on SW Tustenuggee Ave from NW Herlong St to SW CR-240	11

Project Description	Score
Install Signal Ahead Signs (W3-3) on Major Road Approaches on US-90 and SW Pinemount Rd/NW Turner Ave	10
Update Crosswalk Markings on US-90 and SW Pinemount Rd/NW Turner Ave	10
Install Signage Around Channelizing Islands on US-90 and SW Pinemount Rd/NW Turner Ave	10
Install Supplemental Pedestrian Warning Signs (W11-2 with a W16-7PR or W16-7PL)	10
Remove Foliage on SW Tustenuggee Ave at the SW Packard St and CR-242A Intersections	10
Restrict Minor Street to Right Out Only at Llewellyn Ave on SE Baya Dr/SR-10A from Country Club Rd to SE SR-100	10
Add Transverse Rumble Strips on Eastbound SR-47 approach at US-41 and SR-47	10
Relocate Northbound Stop Bar at US-41 and SR-47	10
Install Supplemental Signals at US-41 and SR-47	10
Adjust Eastbound Do Not Enter Sign on SW Main Blvd from US-441 to SW Saint Margarets St	10
Install Signal Backplates with Retroreflective Borders on SW Main Blvd from US-441 to SW Saint Margarets St	10
Install Flashing Yellow Signal for Left Turn from US-441 onto US-41	9
Install Pedestrian Hybrid Beacons on NW Long St from NW Lake Jeffery Road to US-441/SR-47	8
Install Guardrails on Curves on SE CR-349 from CR-131/SW Tustenuggee Ave to US-41	7
Check Superelevation On Curves on SE CR-349 from CR-131/SW Tustenuggee Ave to US-41	7
Install Chevron Signs (potentially with flashing lights or LEDs) on SE CR-349 from CR-131/SW Tustenuggee Ave to US-41	7
Add LEDs to Existing Chevron Signs on SE CR-349 from CR-131/SW Tustenuggee Ave to US-41	7
Evaluate Alternative Intersection Configurations at NW Long Rd and NW Texas Ave	6
Install Chevrons at Curves on SW Tustenuggee Ave from SW CR-18 to SW Herlong St	6
Extend Guardrail around Train Tracks on NW Long St from NW Lake Jeffery Road to US-441/SR-47	5
Update Signs at HAWK Crossing on E Duval St from SE Lomond Ave to SR-100	5
Install Chevrons at Curves on SW Tustenuggee Ave from NW Herlong St to SW CR-240	3

CHAPTER 10

PROGRESS AND TRANSPARENCY

X. PROGRESS AND TRANSPARENCY

Columbia County has committed to improving its transportation network with the goal of eliminating fatal and serious injury crashes via the Vision Zero resolution adopted in 2024 (**see Chapter 2**). This Comprehensive Safety Action Plan outlines many actionable steps that would help navigate toward that goal, but the Comprehensive Safety Action Plan is only useful insofar as it is utilized. Consistent with the requirements of the federal SS4A program, the Comprehensive Safety Action Plan will be posted publicly, and progress toward the goals outlined herein will be monitored annually to document safety outcomes in Columbia County.

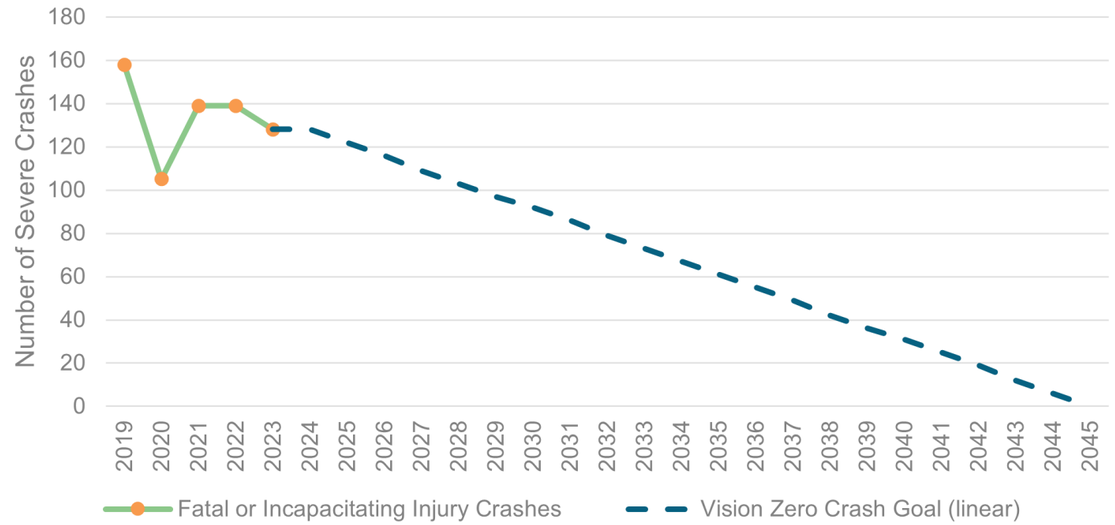


Figure: 65: Projected Crashes

X.A. Transparency

The Comprehensive Safety Action Plan will be posted on (or linked from) the Columbia County website for public consumption and transparency. The website should be updated with information regarding projects from the Comprehensive Safety Action Plan that are funded, planned, under design, under construction, or constructed.

X.B. Comprehensive Safety Action Plan Updates

The Comprehensive Safety Action Plan should in some ways be a 'living document' that reflects the safety of the County's transportation network as the County continues to strive toward Vision Zero. To this end, the County intends to apply for an Implementation Grant from the SS4A program for one or more of the priority safety countermeasures identified in **Chapter 8**.

X.C. Future Crash Analysis Updates

The University of Florida's *Signal Four Analytics* website will be the primary resource for crash data utilized in the preparation of Columbia County's Annual Monitoring Report. At the time of the publication of the Comprehensive Safety Action Plan, *Signal Four Analytics* provides crash data for the State of Florida in compliance with State regulations regarding the publishing of crash data. Columbia County and the Task Force will utilize *Signal Four Analytics* to obtain future year crash data for the Annual Monitoring Report.

X.D. Annual Monitoring Report

An Annual Monitoring Report will be prepared each year once crash data from the prior year is finalized in the *Signal Four Analytics* database. Generally speaking, crash data is available in Signal Four within approximately eight (8) weeks, so it is recommended that the Annual Monitoring Report be completed in March of each year. A draft Annual Monitoring Report is provided opposite this page, which would be posted publicly alongside the Comprehensive Safety Action Plan, once completed each year.

The Task Force that assisted with the development of this Comprehensive Safety Action Plan is expected to be involved in the monitoring of Comprehensive Safety Action Plan implementation and progress. The County will remain open to the Task Force's continued input and feedback as the recommended countermeasures highlighted in the Comprehensive Safety Action Plan are pursued in future years. It is recommended that the Task Force be given the opportunity to review the Annual Monitoring Report upon completion each year.

Columbia County Comprehensive Safety Action Plan

Annual Monitoring Report

Reporting Year: _____

Performance Measure	Source	Previous Year	Reporting Year	% Increase / Decrease
Number of Fatal Crashes	*Signal Four Analytics*			
Number of Serious Injury Crashes	*Signal Four Analytics*			
Number of Fatal/Serious Injury Crashes within Disadvantaged Census Tracts[1]	*Signal Four Analytics/ SS4A Underserved Communities Tool*			
Number of Pedestrian Crashes	*Signal Four Analytics*			
Number of Bicycle Crashes	*Signal Four Analytics*			
Number of Pedestrian/Bicycle Crashes within Disadvantaged Census Tracts[1]	*Signal Four Analytics/ SS4A Underserved Communities Tool*			
Short-Term Safety Improvement Projects Implemented	County Records			
Short-Term Safety Improvement Projects within Disadvantaged Census Tracts[1]	County Records/ SS4A Underserved Communities Tool			
Medium-Term Safety Improvement Projects Implemented	County Records			
Medium-Term Safety Improvement Projects within Disadvantaged Census Tracts[1]	County Records/ SS4A Underserved Communities Tool			
Long-Term Safety Improvement Projects Begun	County Records			
Long-Term Safety Improvement Projects Completed	County Records			
Long-Term Safety Improvement Projects within Disadvantaged Census Tracts[1]	County Records/ SS4A Underserved Communities Tool			
Traffic Calming Projects Implemented	County Records			
Traffic Calming Projects within Disadvantaged Census Tracts[1]	County Records/ SS4A Underserved Communities Tool			

[1]Disadvantaged communities identified per the SS4A Underserved Communities Tool.

Safety improvement projects begun or completed in Reporting Year: _____

_____

_____

Projects (resurfacing, capacity) that incorporated safety improvements in Reporting Year: _____

_____

_____

X.E. Dashboard

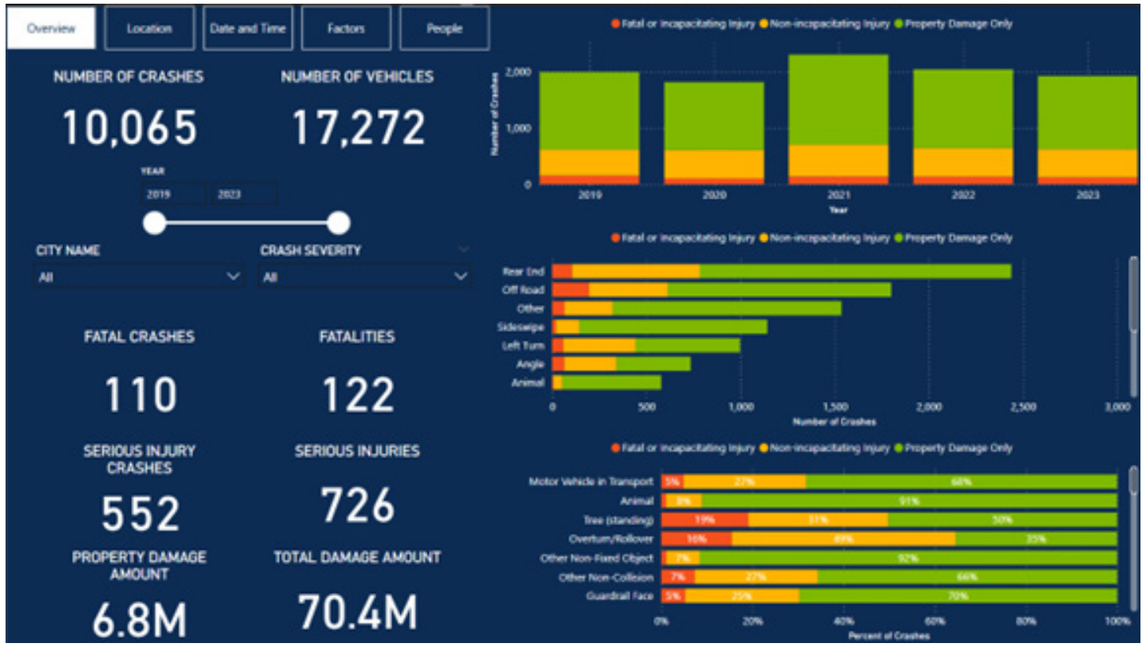
A **Road Safety Dashboard (RSD)** was created for the CSAP progress and transparency efforts using Microsoft Power BI Desktop. Columbia County's RSD tracks various traffic safety metrics, allowing dashboard users to inspect historical crash data trends and monitor the effectiveness of safety interventions.

The dashboard has five primary tabs: Overview, Location, Date and Time, Factors, and People.

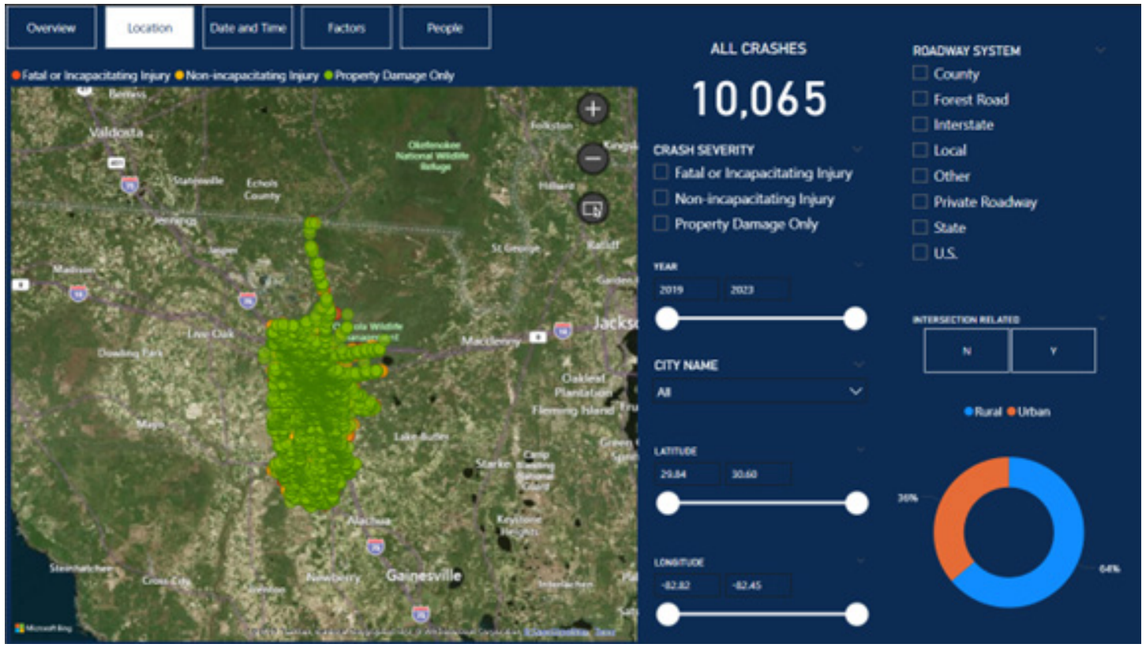
- **Overview:** The Overview tab shows general safety metrics such as the number of crashes by severity, traffic fatalities, serious injuries, number of vehicles involved, and estimated economic damage. Three charts illustrate the annual crash trend, most frequent crash types, and first harmful events, as shown in the crash reports. Safety metrics and charts are linked to three filters that allow the end user to update the dashboard by city name, year, and crash severity.
- **Location:** The Location tab presents a map with the crash location colored by crash severity level. In addition, a donut chart presents the proportion of crashes classified as rural or urban. Several slider filters permit dashboard users to update the map and donut chart, including crash severity, year, city name, geographical coordinates, road system classification, and proximity to an intersection. The crash map can also be accessed using typical navigation features such as mouse scroll zoom and mouse click-and-drag pan, as well as the available zoom-in, zoom-out, and rectangle selection buttons. Dashboard users may click outside the map to reset the view.
- **Date and Time:** The Date and Time tab is focused on the seasonal and daily variability of crashes. Three chart tools are available to inspect the temporal crash trends: a heat matrix of the crash frequency by weekday and hour, a line graph of the number of crashes by hour colored by day of the week, and a stacked bar chart of the number of crashes by severity level and weekday. Three filter slides are available to interact with these charts, including crash severity, day or night, and weekend or weekday. Dashboard users may also interact with the individual charts by clicking on the various elements, such as headers, legends, and axis values.
- **Factors:** A review of the contributing factors is essential to understanding and addressing the root causes of crashes. The Factors tab allows dashboard users to inspect the frequency, impact on injury severity, and location of various crash factors. The available crash factors include the time of day (day or night), proximity to an intersection, single-vehicle involved, lane departure related, aggressive driving, speeding-related, drug-related, alcohol-related, distracted driver, pedestrian-involved, bicyclist-involved, motorcycle-involved, commercial-motor vehicle involved, and trailer involved. In addition, two environmental factors, namely lighting and weather conditions, are illustrated with two pie charts. These charts allow the dashboard user to interact with environmental conditions and crash contributing factors.
- **People:** The people tab summarizes the characteristics of drivers involved in crashes. Driver characteristics available for filtering and exploration include driver origin (Florida or non-Florida license), driver sex (male or female), driver age at the time of the crash, teenage driver indicator, and the aging driver indicator. These filters are linked to four charts that illustrate the crash severity distribution, the number of vehicles involved, the most common crash types, and annual crash trends for each group of people.

The RSD uses *Signal Four Analytics* crash data as its source of information. Crash records from 2019 to 2023 were imported into the RSD. Crash data was filtered to remove non-traffic fatalities and crashes reported outside Columbia County.

It is recommended that the County continues to maintain and update the RSD as an essential tool for CSAP progress monitoring.

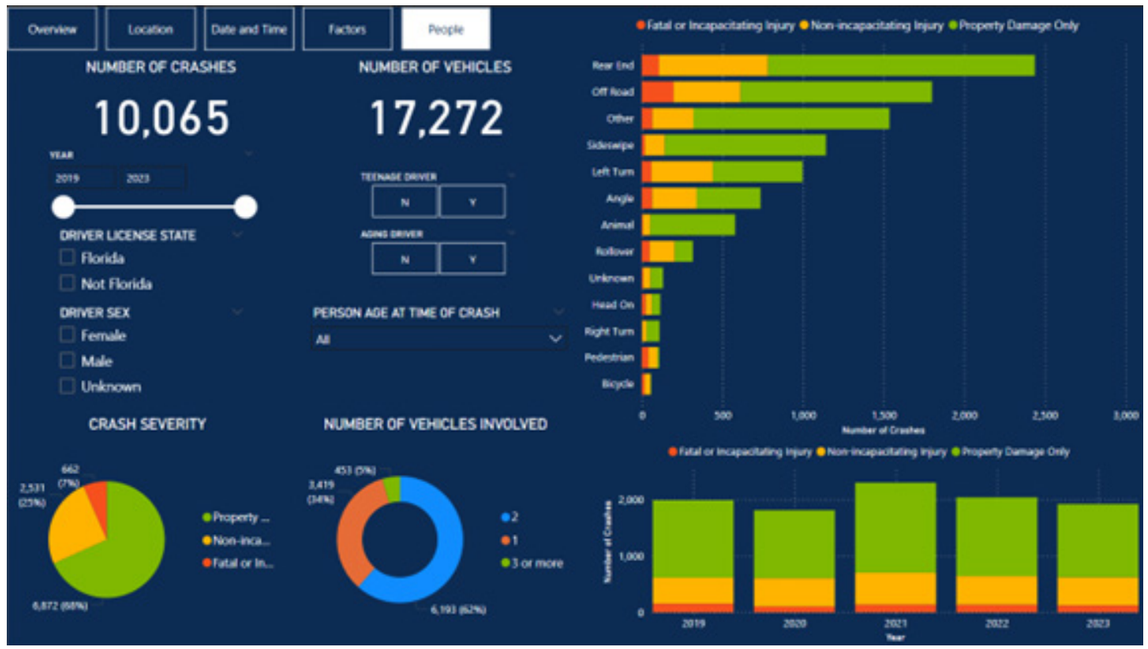


OVERVIEW TAB OF THE SAFETY PERFORMANCE DASHBOARD

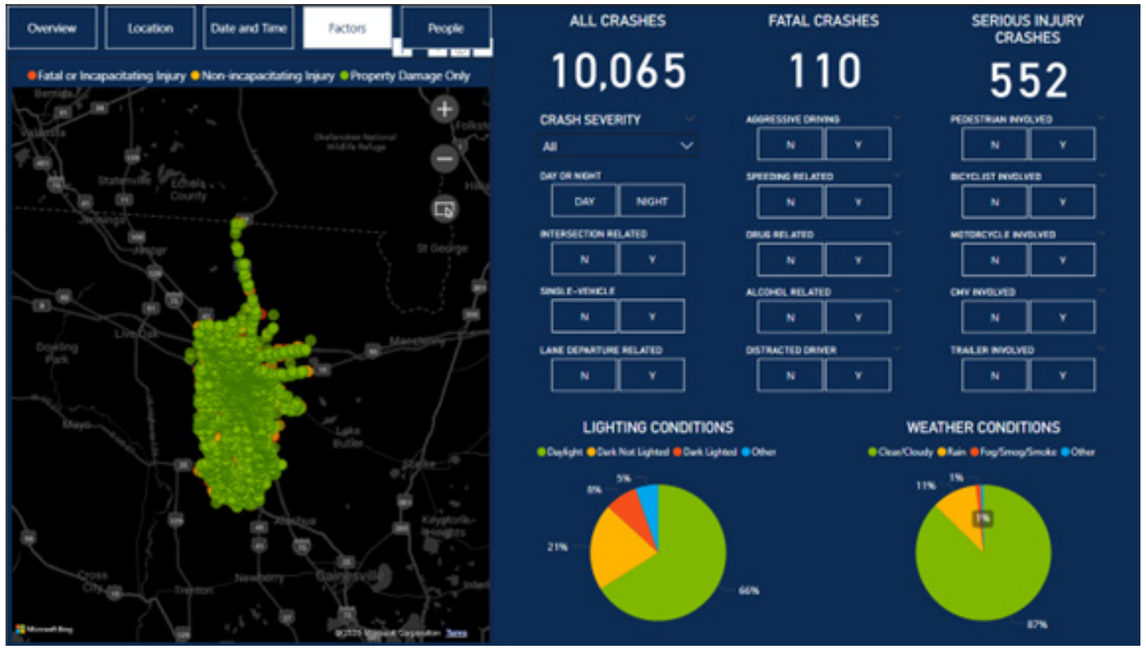


LOCATION TAB OF THE SAFETY PERFORMANCE DASHBOARD

DATE AND TIME TAB OF THE SAFETY PERFORMANCE DASHBOARD



PEOPLE TAB OF THE SAFETY PERFORMANCE DASHBOARD



FACTORS TAB OF THE SAFETY PERFORMANCE DASHBOARD

APPENDIX A

VISION ZERO RESOLUTION

COLUMBIA COUNTY, FLORIDA
RESOLUTION NO. 2024R-26

A RESOLUTION OF THE COLUMBIA COUNTY BOARD OF COUNTY COMMISSIONERS, TO ADOPT A VISION ZERO POLICY, AND SETTING THE GOAL OF ELIMINATING ALL TRAFFIC DEATHS AND SERIOUS INJURIES BY YEAR 2045.

WHEREAS, the life, health, and safety all persons living and traveling in Columbia County are our priority and that no one should die or be seriously injured while utilizing our transportation infrastructure.

WHEREAS, Vision Zero is the concept that traffic deaths and serious injuries on our roadways are unacceptable;

WHEREAS, Vision Zero is a holistic strategy aimed at reducing fatalities and serious injuries for the people who use our roadways for commuting or travel;

WHEREAS, Vision Zero recognizes that people make mistakes; however, the our roadways should be designed so that an inevitable mistake does not result in the loss of life or serious injury; therefore it is our duty in partnership with planners, engineers, and policymakers to improve the state of our roadway system for all users;

WHEREAS, 195 people have lost their lives and 714 people have been seriously injured due to traffic crashes in Columbia County over the past 5 years;

WHEREAS, Columbia County's transportation infrastructure has been serving an increasing number and variety of users;

WHEREAS, making our roadways safer for all users encourages use of other modes of transportation such as walking or biking which in turn encourages a healthier, more active lifestyle, and a reduction in pollution;

WHEREAS, successful implementation of the Vision Zero program involves support from both the government and the community;

NOW, THEREFORE, BE IT RESOLVED, by the Columbia County Board of County Commissioners, as follows:

1. Columbia County adopts the Vision Zero goal of zero traffic deaths and serious injuries, stating that loss of life or serious injury is unacceptable on our roadways.
2. Columbia County adopts the goal of eliminating all traffic deaths and serious injuries by 2045 and endorses Vision Zero as an approach to achieving this goal.
3. Columbia County acknowledges that to achieve this goal it will require support from both the governmental entities and the community at-large and will develop a Comprehensive Safety Action Plan following the passage of this resolution.
4. Vision Zero efforts will be data and community-driven with a commitment to understand the underlying causes of traffic safety issues and prioritize resources based on the greatest needs in a way that is cohesive with the community at-large.
5. Vision Zero will be implemented in an equitable manner, accounting for areas historically underserved by transportation and safety investments.

UNANIMOUSLY PASSED AND ADOPTED by the Board of County Commissioners of Columbia County, Florida, at its regular session on Aug 1, 2024.

BOARD OF COUNTY COMMISSIONERS
COLUMBIA COUNTY, FLORIDA

BY: _____
Ronald Williams, Chair

ATTEST: _____
James M. Swisher, Jr., Clerk of Courts (SEAL)

APPENDIX B

TASK FORCE MEETING SUMMARIES

Columbia County SS4A Comprehensive Safety Action Plan KICKOFF

APRIL 30, 2024, 9:00 AM EST

Columbia County Public Works

I. Attendees
   A. Columbia County
      1. Chad Williams
      2. Kevin Kirby
   B. Kimley-Horn
      1. Vinny Spahr
      2. Chris Towne
      3. Ali Brighton
      4. Tia Lubbers

II. Overview/Purpose
   A. Brief discussion of the Safe Streets and Roads for All (SS4A) program and the overall goal of the Comprehensive Safety Action Plan (CSAP)
   B. Note that the CSAP is meant to be both reactive (address historical crash patterns) and proactive (address near-miss occurrences, areas where road users feel unsafe)
   C. Completion of the CSAP will make the County eligible for SS4A Implementation Grant funding in future grant cycles

III. Scope Walk-Through
   A. Task 1 – Leadership Commitment and Goal Setting
      1. Is County leadership on board with Vision Zero, or will they take some convincing?
      2. Who else should be involved with logistics of preparing, editing, and ultimately adopting a resolution?
      3. Resolution to be provided to Chad, who will circulate with County legal and leadership.
   B. Task 2 – Planning Structure (and Task Force)
      1. Police, Fire, EMS
      2. Lake City, Fort White
      3. Schools, Advocacy Groups
         a. Community Transportation Safety Team (CTST) – Chad can forward invitation to regular meetings
      4. Underserved/Disadvantaged Population
         a. Chad to think on local advocacy groups
      5. Traffic Operations – Joe Crackel
      6. Meeting Venue – Teams
   C. Task 3 – Safety Analysis
      1. Known issues, near misses?
         a. CR 131 (SW Tustenuggee Ave) & SW Herlong St
         b. US 41 & CR 238

        c. SR 247 & CR 240

    2. High-profile fatal/serious injury crashes?

D. Task 4 – Engagement and Collaboration
    1. Venue options
        a. Economic Development
        b. US 90 & Baya Community Center
        c. School Board Building
    2. Pop-up events
        a. Monthly farmers market downtown
        b. County Fair in October
    3. Webpage
        a. Coordinate with County's Public Involvement Coordinator
    4. Branding
        a. Did not have to follow County's color scheme

E. Task 5 – Equity Considerations
    1. Specific advocates?
    2. Specific events?

F. Task 6 – Policy and Process Changes
    1. Specific policies, guidelines, or manuals
        a. Driveway permitting process (update 5/1)
        b. Budgeting to modify Land Development Regulations this coming year

G. Task 7 – Strategy and Project Selections
    1. 20 high-crash segments & 20 high-crash intersections
        a. Aim to de-politicize the issue by following data
    2. Filter to 12 high-crash locations (either type) for field review
    3. Develop conceptual improvements

H. Task 8 – Progress and Transparency
    1. Signal Four access
    2. Dashboard
        a. KH to create for County to maintain

I. Task 9 – Action Plan Documentation
    1. Review frequency
    2. Review timeline

J. Task 10 – Project Management and Grant Administration
    1. Meeting frequency
    2. Communication preferences
    3. Grant Agreement

IV. General Discussion

A. If traffic data is needed, the County can collect

B. Some concern has been expressed by individuals with the County that if they installed solar-powered flashing beacons on stop signs at certain intersections, the County would then be liable for crashes if the beacons ever lost power.

1. Suwannee County has a lot of these flashing beacons, but the Traffic Operations division isn't comfortable with solar-powered and would prefer hard wiring them, but the costs are much higher to run electricity to all locations.

C. Two commissioners are strong advocates for this project

V. Schedule

A. Tentative Project Schedule reviewed

VI. Next Steps/Action Items

A. Kimley-Horn to provide Vision Zero Resolution options

B. County to forward invitation to local CTST meetings

C. Kimley-Horn to inquire as to whether County would increase liability by installing solar-powered flashing beacons

Columbia County SS4A Comprehensive Safety Action Plan KICKOFF

JUNE 24, 2024, 9:00 AM EST

Microsoft Teams Meeting

I. Attendees
   A. Columbia County
      1. Chad Williams
   B. Kimley-Horn
      1. Vinny Spahr
      2. Chris Towne
      3. Ali Brighton
      4. Tia Lubbers
      5. Raul Pineda-Mendez
      6. Cavan Wilson

II. Vision Zero Resolution
   A. Reviewed two versions of a Vision Zero resolution (attached), one that identifies a Vision Zero goal of zero fatal and serious injury crashes by 2045, and one that sets a more moderate goal of reducing fatal and serious injury crashes by 2035 (in case you think your Board will find this more palatable).
   B. One of these resolutions (or some version substantively similar) will need to be adopted by the Board for the Columbia County CSAP to qualify for future SS4A Implementation funds.
      1. Kimley-Horn noted that most municipalities do “full” Vision Zero commitment.
      2. Chad to circulate within the County for questions and comments.
   C. Kimley-Horn to continue research regarding liability associated with Vision Zero resolutions.

III. Preliminary Crash Analysis Results – Priority Segments and Intersections
   A. Kimley-Horn presented a 5-year historical analysis of the crashes reported within Columbia County. Attached are a heatmap of the whole County as well as a few detailed maps illustrating specific locations where fatal and serious injury Bike/Ped crashes occurred and where fatal and serious injury Off-Road crashes occurred.
      1. Note that interstate crashes (including ramps), parking lot crashes, and private roadway crashes were removed from the dataset.
   B. Identified 20 priority segments and 21 priority intersections based on the frequency and severity of crashes.
      1. For segments, crash quantities are normalized to traffic volumes to determine a ‘crash rate per 100 million vehicle-miles traveled’ and prioritize the highest crashes rates first based off KA (fatal and serious injury) crashes and then considering all crashes.
         a. Note that the methodology tends to prioritize low-volume roadways with fatal/serious injury crashes; higher volume roads have a higher denominator in the calculation.
      2. For intersections, societal crash costs are assigned to each crash based on FDOT publications and then assign an ‘Equivalent Property Damage Only’ value to the

crashes, which effectively sets up a ranking system wherein fatal and serious injury crashes are the highest priority.

a) *Since the fatal crash history weighted priorities so heavily, one intersection was included that had a very high crash rate (including some serious injury crashes) but has not experienced a fatal crash in the past 5 years.*

3. Ultimately, these lists will be refined and altered with public and stakeholder input, but it gives us a good starting point to prompt discussion and ultimately identify locations where infrastructure improvements may be recommended.

C. Chad noted that a SCOP grant has been (applied for? won?) for CL-1 (Tustenuggee Ave from CR 242A to US 41)

IV. Public Kickoff Meeting

A. Need to start working toward setting a date for a Public Kickoff Meeting. Mid- to late- July would be ideal. Need time to reserve space and advertise.

1. County would like to provide input before we go to the public for feedback

B. Recommend an Open House format (no formal presentation) with some exhibits and interactive stations for collecting input from the public. Could have a powerpoint running on a loop to present some information, but otherwise envision more of an open forum and the project team can work the room to share project info and solicit input.

C. Most likely meeting location will be at the School Board building.

V. County is submitting a schedule extension request to FHWA, consistent with previous discussions.

VI. Next Steps/Action Items

A. County to circulate Vision Zero resolution options

B. Kimley-Horn to continue researching potential for County liability associated with adopting a Vision Zero resolution

C. County to look into dates for Public Kickoff Meeting

D. County to submit schedule extension to FHWA

Attachments:

Draft Vision Zero Resolutions

Priority Segment/Intersection Methodology and Lists

Crash Maps (Overall Heat Map, KA Heat Map, Bike/Ped Map, Off-Road Map)

A resolution of the Columbia County Board of County Commissioners, to adopt a 'Vision Zero' Policy, and setting the goal of eliminating all traffic deaths and serious injuries by year 2045.

WHEREAS, the life, health, and safety all persons living and traveling in Columbia County are our priority and that no one should die or be seriously injured while utilizing our transportation infrastructure.

WHEREAS, Vision Zero is the concept that traffic deaths and serious injuries on our roadways are unacceptable;

WHEREAS, Vision Zero is a holistic strategy aimed at reducing fatalities and serious injuries for the people who use our roadways for commuting or travel;

WHEREAS, Vision Zero recognizes that people make mistakes; however, the our roadways should be designed so that an inevitable mistake does not result in the loss of life or serious injury; therefore it is our duty in partnership with planners, engineers, and policymakers to improve the state of our roadway system for all users;

WHEREAS, 195 people have lost their lives and 714 people have been seriously injured due to traffic crashes in Columbia County over the past 5 years;

WHEREAS, Columbia County's transportation infrastructure has been serving an increasing number and variety of users;

WHEREAS, making our roadways safer for all users encourages use of other modes of transportation such as walking or biking which in turn encourages a healthier, more active lifestyle, and a reduction in pollution;

WHEREAS, successful implementation of the Vision Zero program involves support from both the government and the community;

NOW, THEREFORE, BE IT RESOLVED, by the Columbia County Board of County Commissioners, as follows:

1. Columbia County adopts the Vision Zero goal of zero traffic deaths and serious injuries, stating that loss of life or serious injury is unacceptable on our roadways.
2. Columbia County adopts the goal of eliminating all traffic deaths and serious injuries by 2045 and endorses Vision Zero as an approach to achieving this goal.
3. Columbia County acknowledges that to achieve this goal it will require support from both the governmental entities and the community at-large and will develop a Comprehensive Safety Action Plan following the passage of this resolution.
4. Vision Zero efforts will be data and community-driven with a commitment to understand the underlying causes of traffic safety issues and prioritize resources based on the greatest needs in a way that is cohesive with the community at-large.
5. Vision Zero will be implemented in an equitable manner, accounting for areas historically underserved by transportation and safety investments.

A resolution of the Columbia County Board of County Commissioners, to adopt a 'Vision Zero' Policy, and setting the ultimate goal of eliminating all traffic deaths and serious injuries on Columbia County roadways.

WHEREAS, the life, health, and safety all persons living and traveling in Columbia County are our priority and that no one should die or be seriously injured while utilizing our transportation infrastructure.

WHEREAS, Vision Zero is the concept that traffic deaths and serious injuries on our roadways are unacceptable;

WHEREAS, Vision Zero is a holistic strategy aimed at reducing fatalities and serious injuries for the people who use our roadways for commuting or travel;

WHEREAS, Vision Zero recognizes that people make mistakes; however, the our roadways should be designed so that an inevitable mistake does not result in the loss of life or serious injury; therefore it is our duty in partnership with planners, engineers, and policymakers to improve the state of our roadway system for all users;

WHEREAS, 195 people have lost their lives and 714 people have been seriously injured due to traffic crashes in Columbia County over the past 5 years;

WHEREAS, Columbia County's transportation infrastructure has been serving an increasing number and variety of users;

WHEREAS, making our roadways safer for all users encourages use of other modes of transportation such as walking or biking which in turn encourages a healthier, more active lifestyle, and a reduction in pollution;

WHEREAS, successful implementation of the Vision Zero program involves support from both the government and the community;

NOW, THEREFORE, BE IT RESOLVED, by the Columbia County Board of County Commissioners, as follows:

1. Columbia County adopts the Vision Zero goal of zero traffic deaths and serious injuries, stating that loss of life or serious injury is unacceptable on our roadways.
2. Columbia County adopts the ultimate goal of reducing all traffic deaths and serious injuries and endorses Vision Zero as an approach to achieving this goal.
3. Columbia County adopts an intermediate goal of reducing traffic deaths and serious injuries by 75% by year 2035 through the implementation of infrastructure, education, enforcement, and emergency response improvements.
4. Columbia County acknowledges that to achieve this goal it will require support from both the governmental entities and the community at-large and will develop a Comprehensive Safety Action Plan following the passage of this resolution.
5. Vision Zero efforts will be data and community-driven with a commitment to understand the underlying causes of traffic safety issues and prioritize resources based on the greatest needs in a way that is cohesive with the community at-large.
6. Vision Zero will be implemented in an equitable manner, accounting for areas historically underserved by transportation and safety investments.

Kimley»Horn

MEMORANDUM

To: Chad Williams, Columbia County Engineer

From: Vincent Spahr, PE, RSP$_1$

Kimley-Horn and Associates, Inc.

Date: June 11, 2024

Subject: Columbia County Comprehensive Safety Action Plan
Preliminary Segment and Intersection Safety Priority Lists

This memorandum outlines the methodology employed to develop preliminary Safety Priority Lists (SPLs) for road segments and intersections in Columbia County as part of the Comprehensive Safety Action Plan being prepared through the Federal Highway Administration's Safe Streets and Roads for All (SS4A) program.

DATA COLLECTION

Data on roadway characteristics, traffic volumes, and crashes were acquired from dependable public data sources. A Geographic Information System (GIS) file was used to compile, map, and process the available data and to develop the segment and intersection SPLs.

Intersection locations in Columbia County were obtained from the Florida Department of Transportation (FDOT) Transportation and Data Analytics Office GIS database. Where necessary, the data was supplemented with information regarding the intersecting road names, number of legs, and traffic control type using aerial imagery from *Google Street View* and *Nearmap*.

Roadway segment information was obtained from the FDOT, including road names, functional classification, maintaining agency, Annual Average Daily Traffic (AADT) volumes, posted speed limit, and segment length. The available information from FDOT includes road segments in the state highway system and much of the off-system network maintained by Columbia County.

Historical crash data was obtained from *SignalFour Analytics* for the five-year period from January 1, 2019, through December 31, 2023. The available crash data includes crash location, injury severity, road users involved, crash types, and additional fields detailing information regarding the circumstances, vehicles, and conditions surrounding each crash, as recorded by the law enforcement officers.

SAFETY PERFORMANCE ASSESSMENT

Roadway Segments

The safety performance of individual roadway segments was assessed by determining a crash rate relative to daily traffic volume. Segment-related crashes were identified using a 250-foot buffer around each roadway segment included in the FDOT GIS data. Crashes that occurred on I-10 and I-75, on freeway ramps, in parking lots, and on private roads were excluded from the analysis. To normalize the crash data to the traffic volumes utilizing the roadways within Columbia County, crash rates per 100 million vehicle miles traveled (MVMT) were calculated for the roadways where traffic data was available. Longer roadway segments were split into segments using engineering judgment to better identify specific locations along roadway segments with higher crash densities. In addition, very short segments from the GIS data were combined with adjacent segments, where appropriate. The segment crash rates per 100 MVMT were calculated as follows:

$$Crash\ Rate\ per\ 100\ MVMT = \frac{N \times 100{,}000{,}000}{365\ days \times (AADT \times 5\ years) \times L}$$

where N is the number of crashes from 2019 to 2023 observed and L is the segment length in miles. The crash rate per 100 MVMT was calculated for three injury severity categories: fatal and serious injury (KA) crashes, all injury (KABC) crashes, and all crashes (KABCO).

Intersections

The safety performance of individual intersections was assessed by determining an Equivalent Property Damage Only (EPDO) value based on the five-year crash history at each intersection. Similar to roadway segments, a 250-foot buffer around each intersection in Columbia County was used to identify intersection-related crashes. Crashes were assigned to the intersection nearest the reported crash location. The EPDO method adds weighting factors based on the societal cost of each crash severity relative to the societal cost of one property damage only (PDO) crash. This method was applied to Columbia County's intersection crashes using FDOT's latest crash costs by injury severity level. The EPDO score for individual intersections was determined by summing the EPDO value of all the crashes associated with each respective intersection.

Table 1: FDOT Societal Crash Costs by Severity

CRASH SEVERITY	KABCO Code	COMPREHENSIVE CRASH COST[1]	EPDO
FATAL	K	$10,890,000	1,414
SEVERE INJURY	A	$888,030	115
MODERATE INJURY	B	$180,180	23
MINOR INJURY	C	$103,950	14
PROPERTY DAMAGE ONLY	O	$7,700	1

1. Source: Florida Department of Transportation State Safety Office's Crash Analysis Reporting (CAR) System, analysis years 2015 through 2019. Published by FDOT State Safety Office on 2/23/2022.

SAFETY PRIORITY LISTS (SPL)

Segment and Intersection SPLs were developed for Columbia County to identify specific sites with crash histories warranting further investigation and potential infrastructure improvements.

The roadway segments SPL was developed by ranking segments by fatal and incapacitating injury (KA) crash rate. If two segments had the same KA crash rate, the fatal and injury (KABC) and overall (KABCO) crash rates were used as additional sorting criteria. Prioritized road segments were individually reviewed to confirm whether high crash rates were more indicative of intersection crashes than segment crashes. Segments that had high crash rates predominately due to intersection crashes were removed from the preliminary SPL. The roadway segment SPL delineates state-maintained facilities and facilities maintained locally.

The intersection SPL was developed by ranking all Columbia County intersections by EPDO score. Intersections with higher EPDO scores were prioritized and recommended for safety improvements. For intersections with the same EPDO score, the frequency of severe crashes was used as a tiebreaker.

Draft segment and intersection SPLs are attached. The lists are summarized in tabular form and illustrated graphically via a series of maps.

ATTACHMENTS

- Columbia County Segment SPL Table
- Columbia County Segment SPL Map
- Columbia County Intersection SPL Table
- Columbia County Intersection SPL Map
- Lake City Intersection and Segment SPL Map

Attachment A

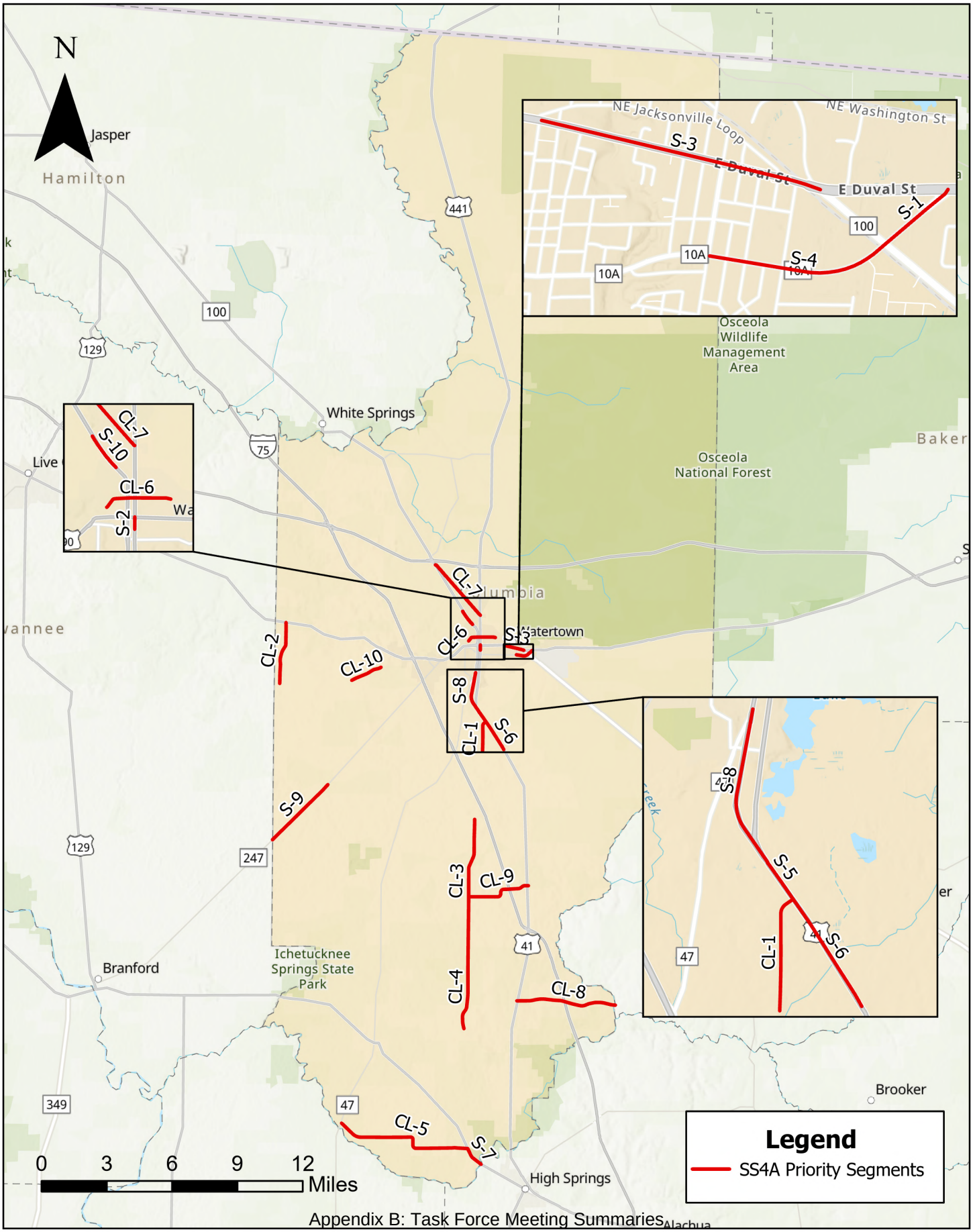
Segment SPL Table

Segment Number	Roadway	Begin	End	Length (mi)	AADT (2022)	KA Crashes (2019-2023)	Max KA Crash Rate per 100 MVMT	All Crashes (2019-2023)	Max Overall Crash Rate per 100 MVMT
CL-1	**SW TUSTENUGGEE AVE**	**SW CR-242A**	**US41/US441/SR-25**	**1.4**	**950**	**4**	**165.7**	**16**	**662.9**
CL-2	**SW KOONVILLE AVE**	**CR-252/SW PINEMOUNT**	**US-90/SR-10**	**2.9**	**500**	**4**	**152.0**	**9**	**342.0**
CL-3	**SW TUSTENUGGEE AVE**	**NW HERLONG ST**	**SW CR-240**	**5.8**	**950**	**8**	**79.7**	**33**	**328.7**
CL-4	**SW TUSTENUGGEE AVE**	**SW CR-18**	**SW HERLONG ST**	**3.9**	**950**	**4**	**58.8**	**27**	**397.2**
S-1	**SE BAYA DR**	**SE SR-100**	**E US-90**	**0.3**	**4,400**	**1**	**49.8**	**6**	**298.6**
CL-5	**SW CR-138**	**SR-47**	**US-27/SR-20**	**6.4**	**1,200**	**7**	**49.6**	**49**	**347.3**
S-2	**S MARION AVE**	**SE KNOX ST**	**US-90/SR-10/DUVAL ST**	**0.2**	**4,800**	**1**	**48.2**	**24**	**1,156.6**
S-3	**E DUVAL AVE**	**SE LOMOND AVE**	**SR-100**	**0.9**	**9,000**	**7**	**47.6**	**59**	**401.2**
CL-6	**NE WASHINGTON ST**	**NW LAKE JEFFERY RD**	**NE PATTERSON AVE**	**1.3**	**1,900**	**2**	**44.1**	**24**	**529.4**
S-4	**SE BAYA DR**	**SE COUNTRY CLUB RD**	**SE SR-100**	**0.6**	**8,700**	**4**	**43.0**	**33**	**354.9**
CL-7	**NW CR-25A**	**US-441/SR-47**	**NW US-41/SR-25**	**3.1**	**1,700**	**4**	**41.4**	**22**	**227.7**
S-5	**S US-441**	**SW TUSTENUGGEE AVE**	**US-41**	**0.7**	**9,500**	**5**	**41.4**	**23**	**190.4**
S-6	**S US-441**	**SW CR-242A**	**SW TUSTENUGGEE AVE**	**1.5**	**6,100**	**7**	**41.0**	**22**	**129.0**
CL-8	**SE CR-18**	**US-41/US-441/SR-25**	**UNION CO LINE**	**4.6**	**1,000**	**3**	**35.7**	**22**	**261.8**
S-7	**SW US-27**	**ALACHUA CO LINE**	**SW CR-138**	**1.0**	**9,600**	**6**	**35.4**	**30**	**177.2**
S-8	**SW MAIN BLVD**	**US-441**	**SW SAINT MARGARETS ST**	**1.8**	**8,900**	**10**	**34.9**	**84**	**293.3**
CL-9	**SE CR-349**	**CR-131/SW TUSTENUGGGE AVE**	**US-41**	**3.0**	**550**	**1**	**33.1**	**9**	**298.3**
CL-10	**CR 252**	**SW BIRLEY AVE**	**SW RAY TER**	**1.5**	**3,400**	**3**	**32.7**	**25**	**272.8**
S-9	**SW SR-247**	**SUWANNEE CO LINE**	**SW NORRIS AVE**	**3.6**	**4,400**	**9**	**31.2**	**71**	**246.4**
S-10	**N US-41**	**US-441/SR-100A**	**NW GUERDON ST**	**0.8**	**9,700**	**4**	**29.9**	**48**	**358.7**

Attachment B

Segment SPL Map

COLUMBIA COUNTY
SS4A PRIORITY SEGMENTS LIST



Attachment C

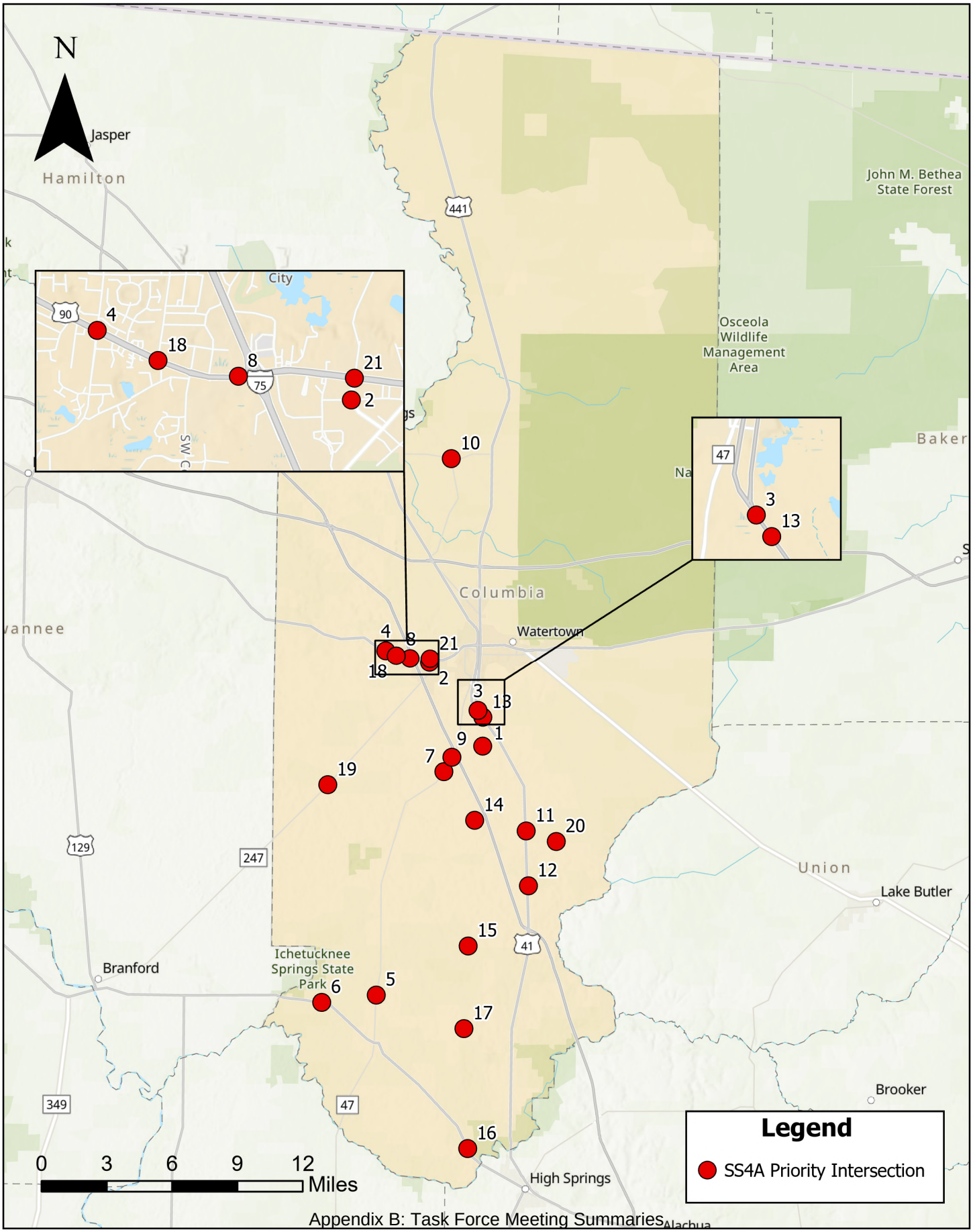
Intersection SPL Table

Intersection Number	Major Roadway	Minor Roadway	Traffic Control	Number of Legs	KA Crashes (2019-2023)	BC Crashes (2019-2023)	All Crashes (2019-2023)	Equivalent PDO Crashes
1	SW TUSTENUGGEE AVE	SW MINNIE GLN	TWSC	4	2	0	2	2,828
2	SW BASCOM NORRIS DRIVE	SW MARY ETHEL LN	TWSC	4	5	18	32	2,198
3	US-41/SR-25	SE CR-252	SIGNAL	4	4	13	34	2,030
4	US-90	SW PINEMOUNT RD/NW TURNER AVE	SIGNAL	4	3	10	33	1,849
5	SR-47	CR-238/SW ELIM CH RD	TWSC	4	4	4	11	1,836
6	US-27	SW UTAH ST	TWSC	3	4	2	10	1,809
7	SR-47	SW KING ST	TWSC	4	3	5	13	1,746
8	US-90	FL GATEWAY BLVD	SIGNAL	4	1	14	74	1,723
9	SR-47	SW CR-242	SIGNAL	3	2	7	27	1,672
10	NW LASSIE BLACK ST	NW FALLING CREEK RD	TWSC	4	3	1	6	1,660
11	US-41	SE MYRTIS RD	TWSC	4	2	6	17	1,649
12	US-41	SW CR-349	TWSC	4	2	5	13	1,623
13	US-41	SW FOREST LAWN WAY	TWSC	3	2	3	6	1,590
14	SW TUSTENUGGEE AVE	SW CR-240	TWSC	4	2	2	13	1,584
15	SW TUSTENUGGEE AVE	SW HOWELL ST	TWSC	4	1	7	14	1,581
16	US-27/SR-20	SW CR-138	TWSC	3	2	3	8	1,574
17	SW TUSTENUGGEE AVE	SW CR-18	TWSC	4	2	2	6	1,568
18	US-90	NW LAKE CITY AVE	SIGNAL	4	1	7	17	1,557
19	SR-247	SW NORRIS AVE	TWSC	3	2	0	4	1,531
20	SE CR-245	SE FAMILY RD	TWSC	3	2	0	2	1,529
21	US-90	BASCOM NORRIS DR	SIGNAL	4	3	47	156	1244

Attachment D

Intersection SPL Map

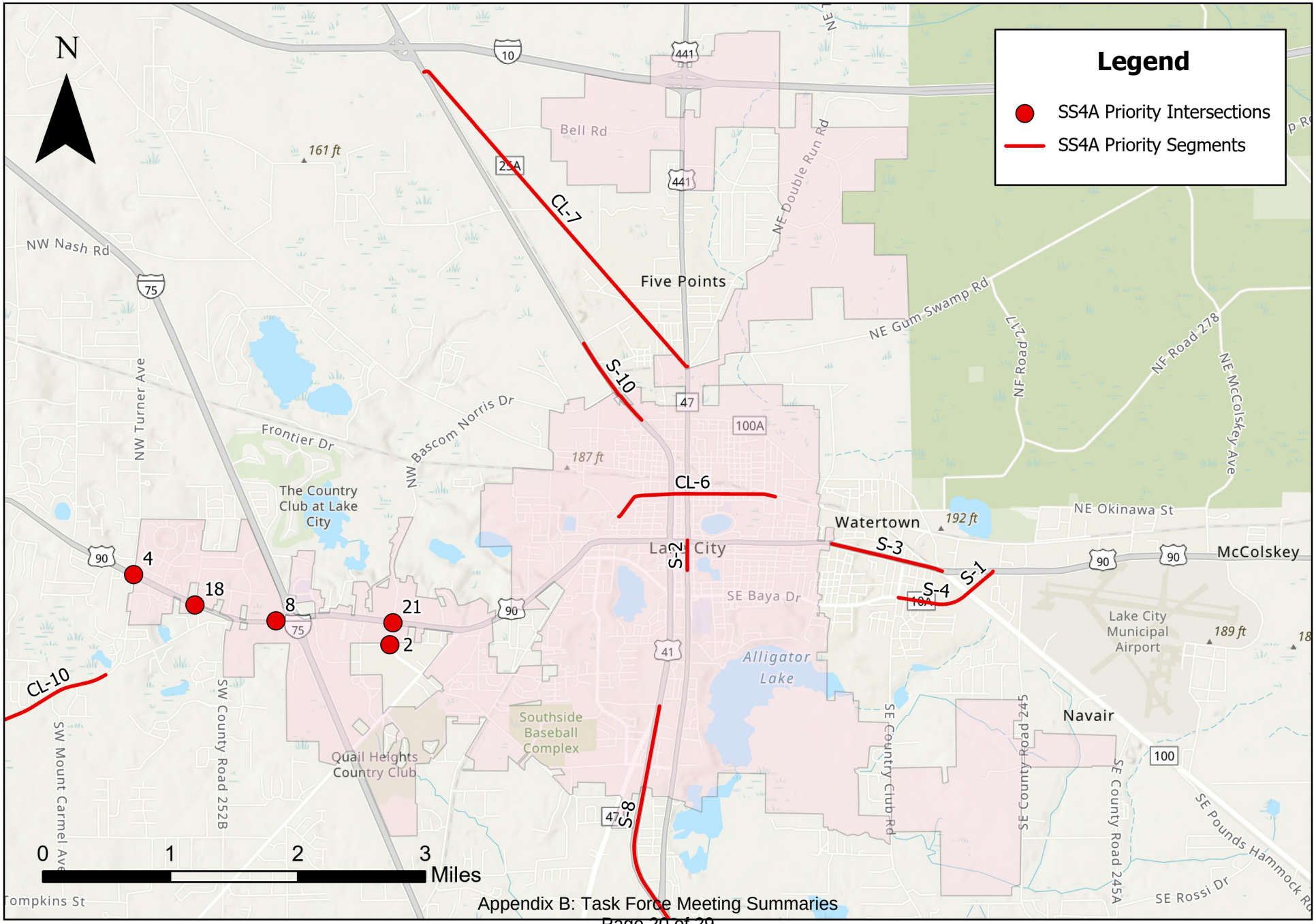
COLUMBIA COUNTY
SS4A PRIORITY INTERSECTIONS LIST



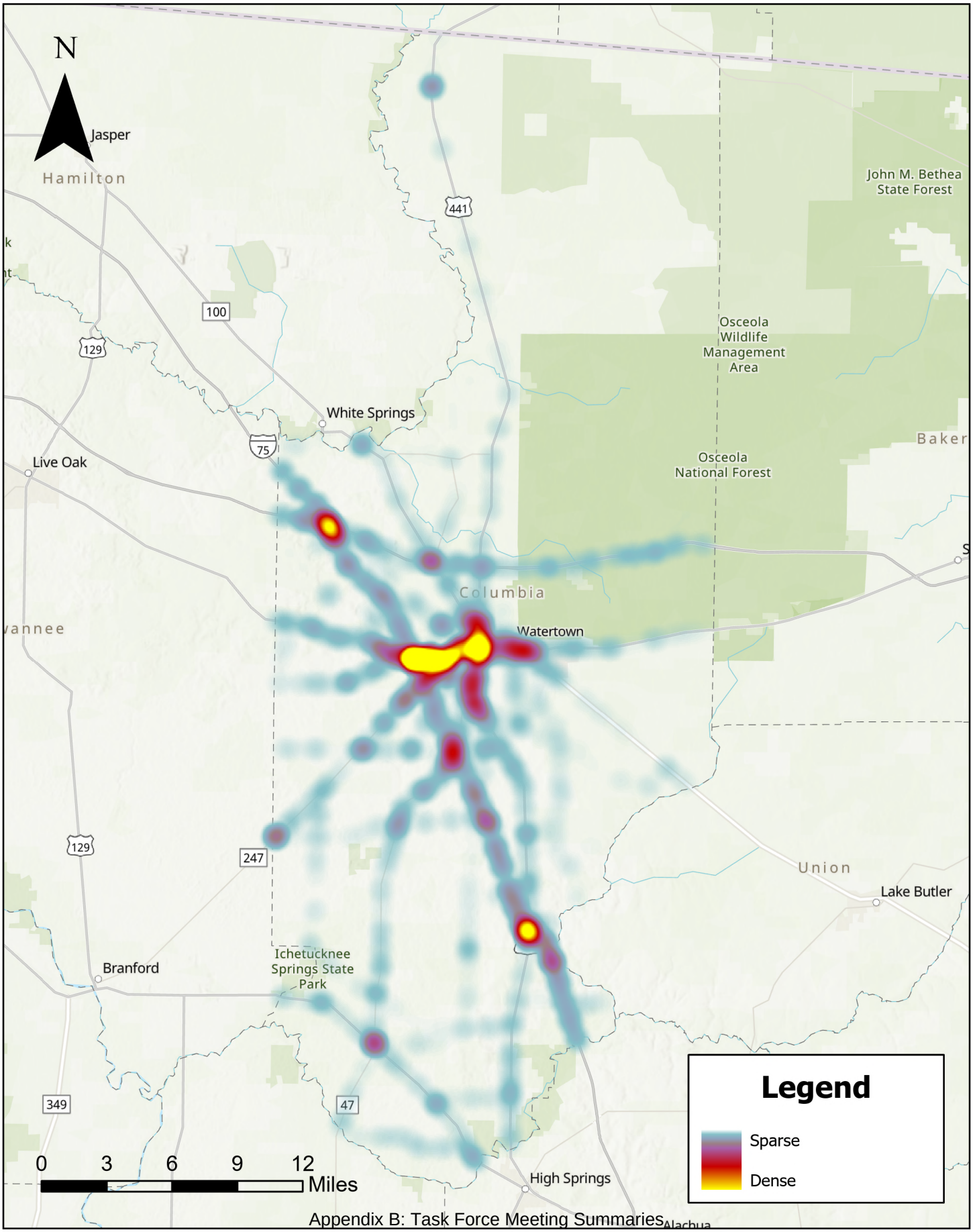
Attachment E

Lake City Intersection and Segment SPL Map

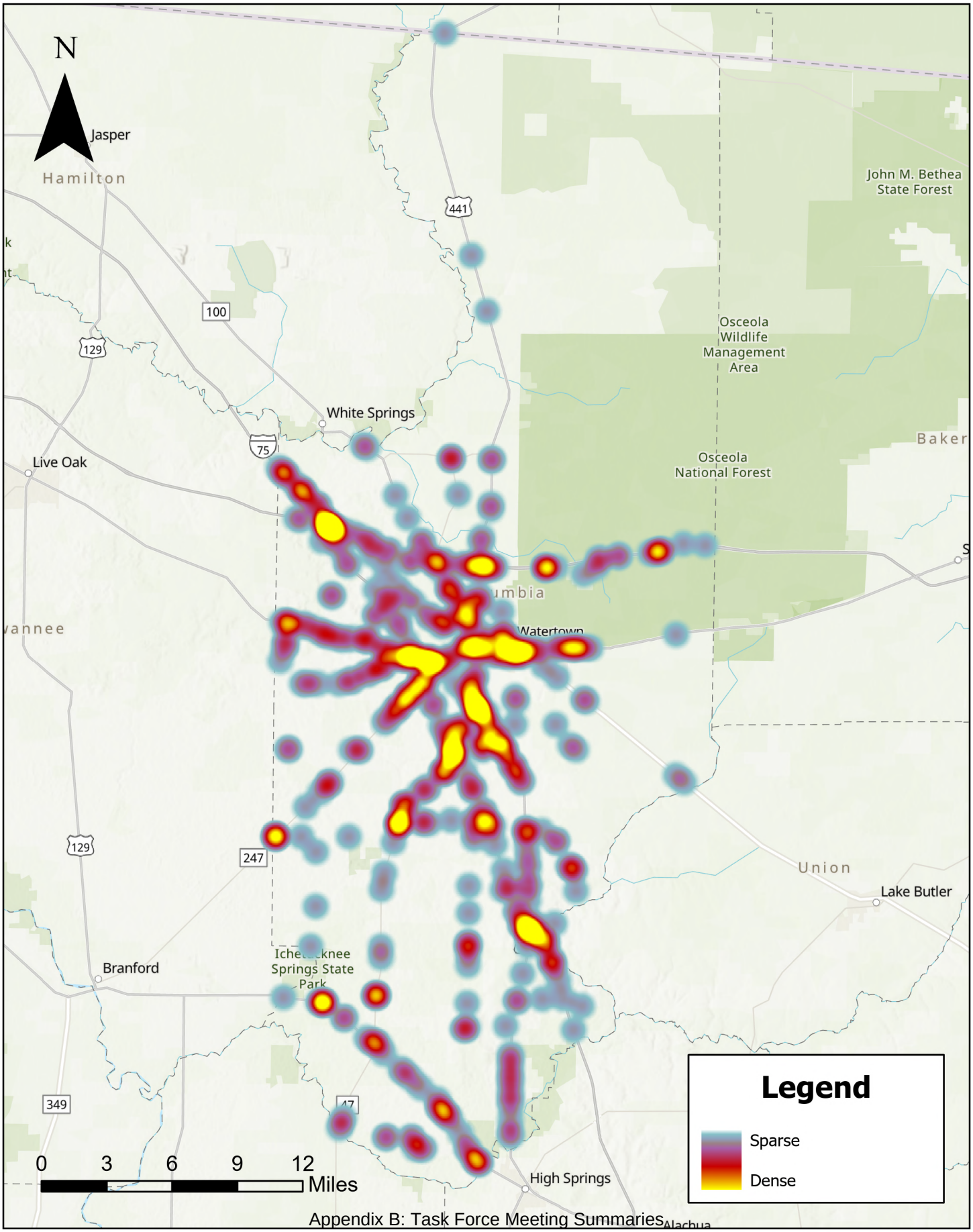
COLUMBIA COUNTY
SS4A PRIORITY SEGMENTS AND INTERSECTIONS IN LAKE CITY



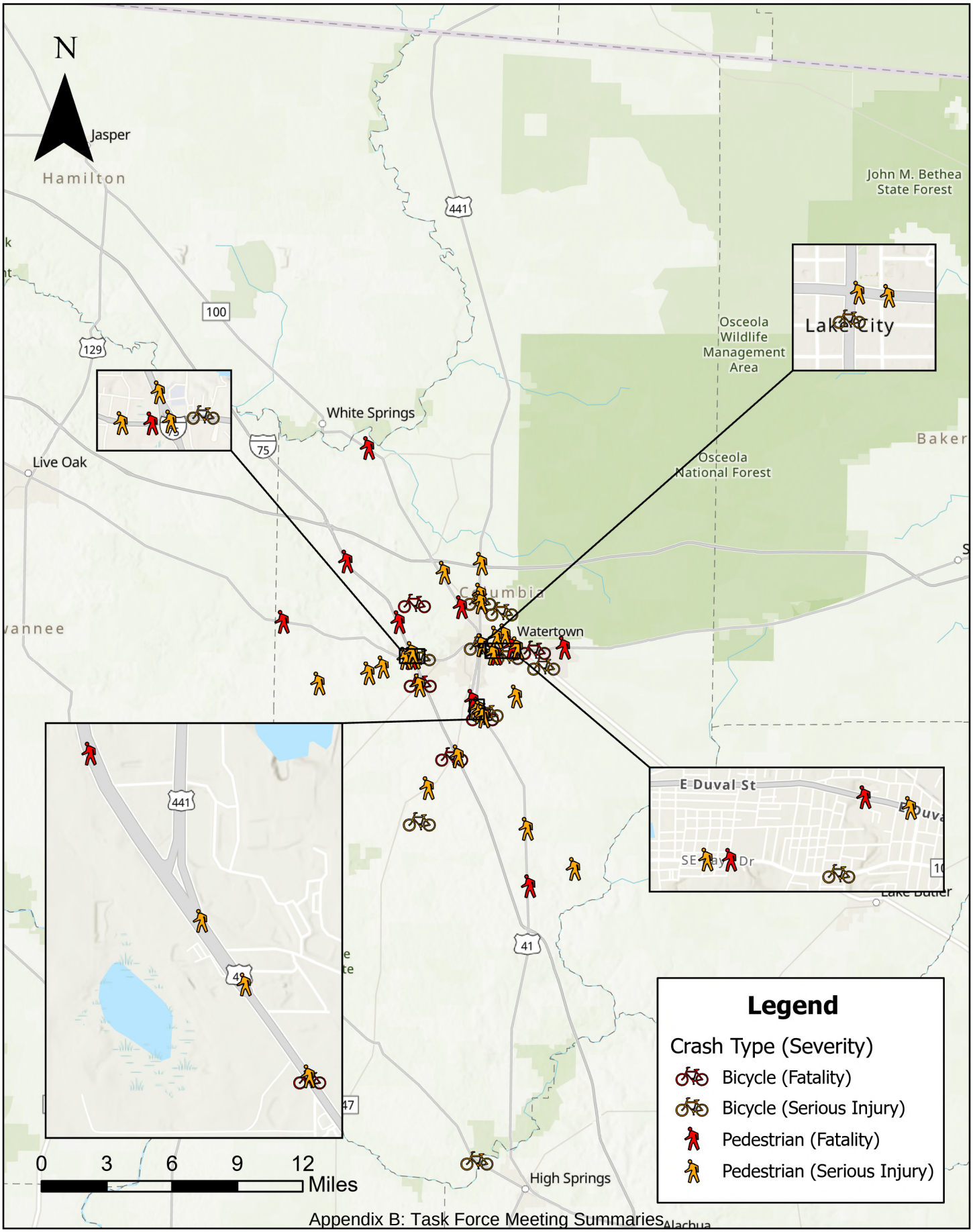
COLUMBIA COUNTY
CRASH DENSITY MAP



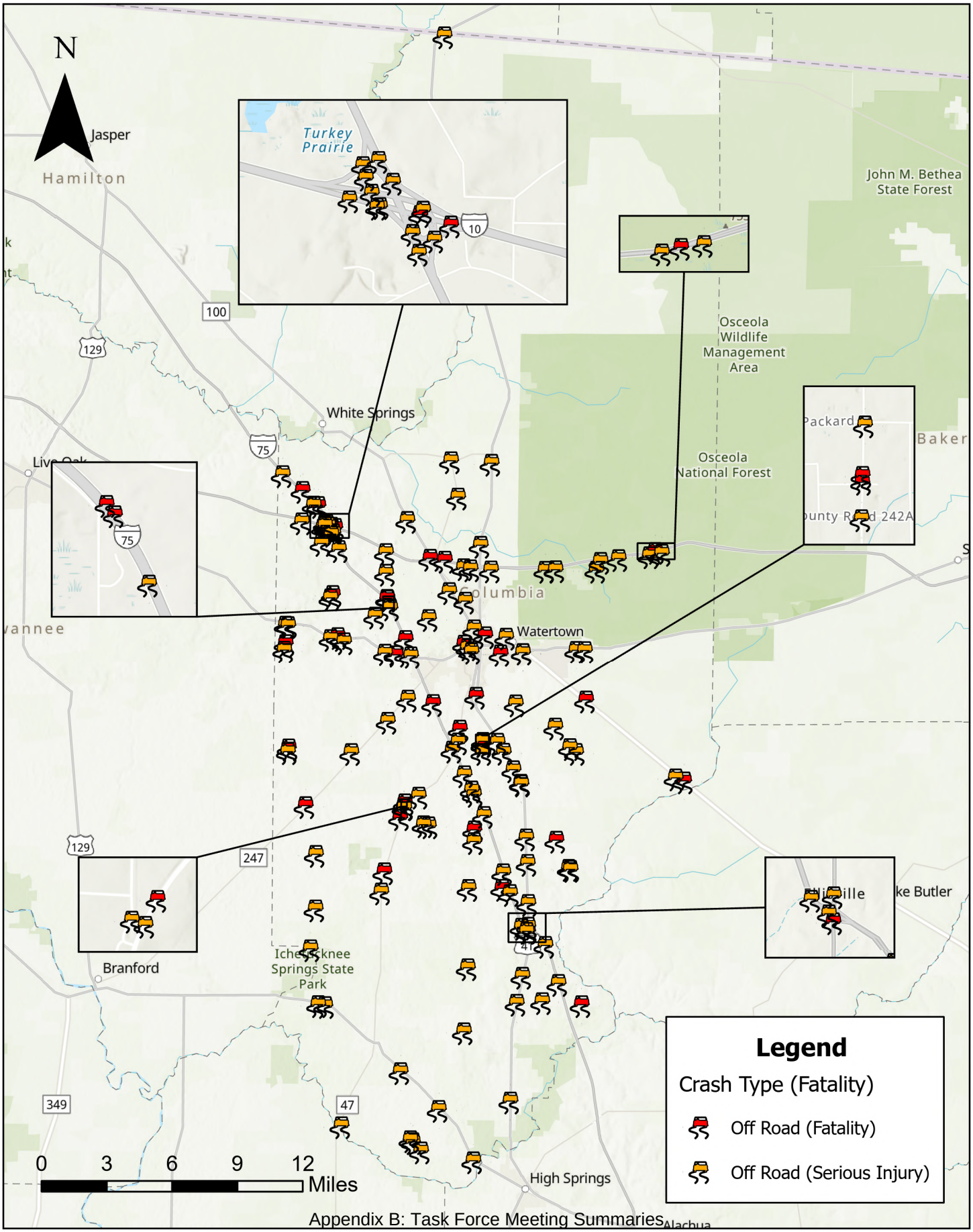
COLUMBIA COUNTY
SERIOUS AND FATAL INJURY CRASH DENSITY MAP



COLUMBIA COUNTY
SERIOUS AND FATAL INJURY BICYCLE AND PEDESTRIAN CRASH MAP



COLUMBIA COUNTY
SERIOUS AND FATAL INJURY OFF ROAD CRASH MAP



COLUMBIA COUNTY SS4A
COMPREHENSIVE SAFETY ACTION PLAN (CSAP)

Technical Advisory Committee – Kickoff Meeting

October 29, 2024, 3:30 PM EST

Microsoft Teams Meeting

Attendees

Name	Organization/Role
Chad Williams	**Columbia County Project Manager**
Joe Crackel	**Columbia County Traffic Operations**
Lisa Roberts	**Columbia County, Management Services Director**
Staz Guntek	**Columbia County Projects Development Manager**
Vincent Spahr	**Kimley-Horn Project Manager**
Chris Towne	**Kimley-Horn**
Raul Pineda Mendez	**Kimley-Horn**
Andrea Atran	**FDOT District Two**
Candice Kennon	**Suwannee Valley Transit Authority**
Christine Bolyard	**Suwannee Valley Transit Authority**
Connie Brecheen	**Town of Fort White**
Lt. Howard Builthuis	Columbia County Sheriff
Shayne Morgan	Columbia County Safety Team
Todd Widergren	Columbia County School Board
Daniel Taylor	Columbia County School Board
Stephen Brown	Lake City Public Works
Officer Blake Craig	Lake City Police Department
Jeff Crawford	Columbia County Fire Rescue

I. Introductions

II. Outline of the SS4A Program

Vincent

Safe Streets and Roads for All Grants – Planning & Demonstration; Implementation

Vision Zero – in spite of human error and the many obstacles we face, no fatal or serious injury crash is "acceptable"

Safety Action Plan – Data-driven, reactive to crash history; public engagement, proactive to perceived issues

Identify infrastructure improvements, but also policies, programs, and educational opportunities to improve the safety within the city.

There will be an intentional extra focus on providing equity in this analysis to ensure priority projects are distributed in an equitable manner through historically underserved parts of the County.

The SS4A Program has a second pool of funding (Implementation Grants) for design and construction, to implement Action Plan recommendations.

III. Columbia County's Vision for the CSAP

Chad

- Drive down fatalities within the County
- Board committed to reducing/eliminating crashes
- Identify areas for improvement
- Serious about this
- Utilize this study to define area where we can make improvements
- Identify low-cost, high-yield solutions
- Focus

IV. The Role of the Technical Advisory Committee

Vincent

- The TAC is another voice in the room, to solicit feedback so we can guide our recommendations and become champions in the community.
- TAC will be a source of accountability with a set of monitoring tasks, and to see if implemented changes are reducing crashes, particularly fatal and serious injury crashes, over time.

V. Project Schedule

Vincent

- Hosted an Open House Thursday, September 19 before a County Commission Meeting
    - Introduced project
    - Displayed preliminary data and preliminary priority intersections and segments
    - Introduced PublicCoordinate page: https://app.publiccoordinate.com/#/projects/ColumbiaCountyFL-CSAP/map
- Table at the Florida Gateway Fair through November 3
    - Soliciting input
    - Passing out bookmarks with the PublicCoordinate link
- Next few months:
    - More detailed crash data analysis
    - Literature review, best practices review
    - Other opportunities for public engagement?
- February-March: Prioritize projects based on crash data, public feedback, and input from the TAC
- March-April: Finalize CSAP for adoption by the County.

The project schedule has us ending in time to apply for Implementation Funding in the 2025 grant cycle.

VI. Open Forum

Chris – deadline for input? Not in particular, but February prioritization will limit opportunity to add new projects or re-prioritize the list.

Chris – if someone has a comment about a particular intersection?

Andrea – 3 counties doing this at the same time. Haven't heard anyone mention- reaching out to employers with fleets. Could be a good opportunity for community feedback/engagement. Through Chamber, perhaps?

Chad – reached out to landfill and WastePro; talking with property appraiser, public works drivers since they're around the network frequently. There is a local company with a very large fleet of vehicles that we could reach out.

Vincent – As a good next step, we would develop a short survey to supplement public engagement efforts.

Connie – school bus drivers; FSU recently did some community focus meetings on transportation issues – meeting in Fort White was very well attended and they got lots of input. Meetings inviting the general public will inform us better about bike paths, sidewalks, etc.

Chad – we might have access to the FSU data that we could share with the consulting team.

Candice – would be interested in a survey for Suwannee Valley Transit Authority – picking up people all over the County for medical appointments, grocery pickups.

Candice – November 12 at 6:00 PM – Driver Safety Meeting; December 10 the next one (Live Oak)

Andrea – are implementation funds available for expansion of public transportation? Vincent mentioned that the program allows certain flexibility and looks for solutions with significant benefits/return of investment.

The next TAC meeting will be mid-November or early December to avoid the Thanksgiving holiday.

COLUMBIA COUNTY SS4A
COMPREHENSIVE SAFETY ACTION PLAN (CSAP)

Technical Advisory Committee – Meeting 2

December 11, 2024, 3:30 PM EST

Microsoft Teams Meeting

Attendees

Name	Organization/Role
Chad Williams	**Columbia County Project Manager**
Lisa Roberts	**Columbia County, Management Services Director**
Joe Crackel	**Columbia County Traffic Operations**
Vincent Spahr	**Kimley-Horn Project Manager**
Tia Lubbers	**Kimley-Horn**
Raul Pineda Mendez	**Kimley-Horn**
Cavan Wilson	**Kimley-Horn**
Andrea Atran	**FDOT District Two**
Candice Kennon	**Suwannee Valley Transit Authority**
Christine Bolyard	**Suwannee Valley Transit Authority**
Connie Brecheen	**Town of Fort White**
Shayne Morgan	**Columbia County Emergency Management (Safety Team)**
Lt. Howard Builthuis	Columbia County Sheriff
Staz Guntek	Columbia County Projects Development Manager
Todd Widergren	Columbia County School Board
Daniel Taylor	Columbia County School Board
Stephen Brown	Lake City Public Works
Officer Blake Craig	Lake City Police Department
Jeff Crawford	Columbia County Fire Rescue

I. Introductions

II. Summary of previous public involvement efforts

- Pop-up engagement at the Florida Gateway Fair
    - Shared information about the project
    - Allowed participants to comment on specific locations or travel modes of concerns
    - Advertised the PublicCoordinate page for additional input

III. Tentative Field Review Options

- The TAC commented on specific field review areas:
    - Area 1 is currently under construction. Signal reflective backplates and video detection with advanced detection to be installed at US-441 and CR-240 as part of a FDOT project.
    - Area 3 is currently under construction. Signal reflective backplates will be installed.
    - Area 4 – the city will update the signals on SW Bascom Norris Dr.

    - Area 5 – the traffic signal at US-90 and NW Centurion Ct will be updated by the city
    - Area 10 – focus on the intersection of SR-247 and CR-240.
    - Area 11 has had recent signal improvements, including reflective backplates and a flashing yellow arrow.
- Kimley-Horn will review ongoing construction projects, approved projects, and planned projects regardless of scope.

IV. Project Schedule

- December-January: Prioritize projects based on crash data, public feedback, and input from the TAC
- January-February: Field review schedule. Be on the lookout for site-specific memos for TAC Review.
- March-April: Finalize CSAP for adoption by the County.

The project schedule is oriented to adopt the CSAP in time to apply for Implementation Funding in the 2025 grant cycle.

V. Open Forum

- Additional sites of concern were listed:
    - Ft White:
        - CR 18 and US 27 – adding pedestrian signals in concert with construction project (FPID 208418-3). Pedestrian crossing moved north from intersection and will include two ground-mounted RRFBs added.
            - Could a SBL turn lane be installed in lieu of the on-street parking? Currently, queued SBL vehicles sometimes back up, which can be a hazard for eastbound/southbound vehicles approaching from around the curve
            - On-street parking used primarily for food truck park to the northwest.
            - Additionally, traffic (including truck traffic) sometimes uses Yulan St to bypass this section of US 27, which has led to degradation along Yulan Street.
            - WBR at US-27 and SR-47 NE corner: Trucks clip sidewalk and other pedestrian infrastructure. The business on the corner had to modify their roofline because trucks were clipping it.
    - Reiterated concern for Bradford Hwy/SR-247 and CR-240
- Highlights from SVTA Meeting 12/10
    - I-10 & US 441 interchange, particularly vehicles traveling on I-10 EB and turning to US-441 SB. Difficult to merge due to high speeds and angle of off-ramp EBR.
- Kimley-Horn will share survey with stakeholders.

APPENDIX C

USDOT ETC EXPLORER EQUITY ANALYSIS

Columbia County is identified as historically transportation disadvantaged or undeserved by several metrics. According to the EPA's environmental justice screening and mapping tool, the following equity identifiers were identified:

- Percent of low-income households: up to 39%
- Persons of color: up to 29%
- Unemployment rate: up to 8%
- Population over 64: up to 19%
- Low life expectancy: up to 22%

Location: Columbia County (General Area)			
Socioeconomic Indicator	Value (National Percentile)	Disadvantaged	Source
Demographic Index [1]	58	--	EPA EJ Screen
Supplemental Demographic Index [2]	70	--	EPA EJ Screen
Climate & Disaster Risk Burden	34	No	USDOT ETC
Environmental Burden	25	No	USDOT ETC
Health Vulnerability	62	No	USDOT ETC
Social Vulnerability	73	Yes	USDOT ETC
Transportation Insecurity	77	Yes	USDOT ETC
Overall Census Equity Score	69	Yes	USDOT ETC
Justice40 (CEJST) [3]	--	Yes	EPA EJ Screen
EPA IRA [4]	--	Yes	EPA EJ Screen

The tracts within Columbia County are disadvantaged within two of the five component score areas stated within the USDOT Equitable Transportation Community (ETC) Explorer: Social Vulnerability and Transportation Insecurity. Columbia County ranks at the 73rd percentile nationally in Social Vulnerability due to a high volume of mobile homes (93rd percentile), persons with disabilities (84th percentile), and uninsured residents (77th percentile). In addition, the county is ranked at the 77th percentile in

Transportation Insecurity due to a lack of transportation safety (84th percentile), limited transportation access throughout the county (77th percentile), and transportation cost burden (74th percentile).

DISADVANTAGED TRACTS

Tract: 12023110901 Location: Southeastern portion of the County, Encompassing the Ellisville Community, and partially bordering Ichetucknee Springs State Park			
Socioeconomic Indicator	Value (National Percentile)	Disadvantaged	Source
Demographic Index [1]	52	--	EPA EJ Screen
Supplemental Demographic Index [2]	61	--	EPA EJ Screen

Climate & Disaster Risk Burden	44	No	USDOT ETC
Environmental Burden	21	No	USDOT ETC
Health Vulnerability	86	Yes	USDOT ETC
Social Vulnerability	80	Yes	USDOT ETC
Transportation Insecurity	89	Yes	USDOT ETC
Overall Census Equity Score	--	Yes	USDOT ETC
Justice40 (CEJST) [3]	--	Yes	EPA EJ Screen
EPA IRA [4]	--	Yes	EPA EJ Screen

Tract 12023110901 is located on the southeastern portion of Columbia County. It encompasses the Ellisville community and partially borders the Ichetucknee Springs State Park. The tract is considered disadvantaged in three of the five indicators in the USDOT ETC: Health Vulnerability, Social Vulnerability, and Transportation Insecurity. The tract has a high prevalence of many conditions, such as low mental health (89th percentile), high blood pressure (87th percentile), and cancer (84th percentile). Socially, the tract contains a high volume of mobile homes (100th percentile), an uneven distribution of wealth (endemic inequality) (88th percentile), and individuals with disabilities (88th percentile). The tract is also disadvantaged in transportation safety (96th percentile), access to transportation (89th percentile), and a high transportation cost burden (81st percentile).

Tract: 12023110904 Location: Southern portion of Columbia County, Emcompassing the Mikesville Community and Part of Ichetucknee Springs State Park, and Bordering Fort White			
Socioeconomic Indicator	Value (National Percentile)	Disadvantaged	Source
Demographic Index [1]	55	--	EPA EJ Screen
Supplemental Demographic Index [2]	62	--	EPA EJ Screen
Climate & Disaster Risk Burden	45	No	USDOT ETC
Environmental Burden	19	No	USDOT ETC
Health Vulnerability	87	Yes	USDOT ETC
Social Vulnerability	72	Yes	USDOT ETC
Transportation Insecurity	83	Yes	USDOT ETC
Overall Census Equity Score	--	Yes	USDOT ETC
Justice40 (CEJST) [3]	--	Yes	EPA EJ Screen
EPA IRA [4]	--	Yes	EPA EJ Screen

Tract 12023110904 is located on the southern portion of Columbia County and encompasses the Mikesville community and part of Ichetucknee Springs State Park. The tract also borders Fort White. The tract is disadvantaged in three of the five indicators based on the USDOT ETC: Health Vulnerability, Social Vulnerability, and Transportation Security. Prevalence to serious health conditions, such as high blood pressure (90th percentile), cancer (88th percentile), and low mental health conditions (85th percentile) is

present within the tract. Additionally, there is a high volume of mobile homes (100th percentile), residents living with disabilities (97th percentile), residents older than 65 years of age (78th percentile), and uninsured residents (74th percentile). The tract has a high transportation insecurity due to its lack of transportation safety (88th percentile), the cost burden of transportation (73rd percentile), and lack of proper access to transportation (83rd percentile).

Tract: 12023110903 Location: Southern Columbia County, Bordered by the Santa Fe River, Ichetucknee River, and US 27			
Socioeconomic Indicator	Value (National Percentile)	Disadvantaged	Source
Demographic Index [1]	46	--	EPA EJ Screen
Supplemental Demographic Index [2]	70	--	EPA EJ Screen
Climate & Disaster Risk Burden	43	No	USDOT ETC
Environmental Burden	22	No	USDOT ETC
Health Vulnerability	95	Yes	USDOT ETC
Social Vulnerability	83	Yes	USDOT ETC
Transportation Insecurity	86	Yes	USDOT ETC
Overall Census Equity Score	--	Yes	USDOT ETC
Justice40 (CEJST) [3]	--	Yes	EPA EJ Screen
EPA IRA [4]	--	Yes	EPA EJ Screen

Census tract 12023110903 is in southern Columbia County and is bordered by the Santa Fe River, Ichetucknee River, and US 27. The tract is classified as disadvantaged in three of the five indicators according to the USDOT ETC: Health Vulnerability, Social Vulnerability, and Transportation Insecurity. The tract has a high prevalence to high blood pressure (95th percentile), diabetes (93rd percentile), low mental health (92nd percentile), and cancer (91st percentile). The tract also has a high volume of mobile homes (99th percentile) and residents with disabilities (98th percentile), in addition to residents that are uninsured (86th percentile) and below the 200% poverty line (86th percentile). Transportation issues are also prevalent within the tract, as there is a high-cost burden (91st percentile), lack of access (86th percentile), and unsafe transportation (76th percentile).

Tract: 12023110300 Location: Northern Columbia County, Encompassing the Osceola National Forest and Fiarview, Bordered by the Suwanee River			
Socioeconomic Indicator	Value (National Percentile)	Disadvantaged	Source
Demographic Index [1]	83	--	EPA EJ Screen
Supplemental Demographic Index [2]	93	--	EPA EJ Screen
Climate & Disaster Risk Burden	18	No	USDOT ETC

Environmental Burden	15	No	USDOT ETC
Health Vulnerability	44	No	USDOT ETC
Social Vulnerability	81	Yes	USDOT ETC
Transportation Insecurity	89	Yes	USDOT ETC
Overall Census Equity Score	--	Yes	USDOT ETC
Justice40 (CEJST) [3]	--	Yes	EPA EJ Screen
EPA IRA [4]	--	Yes	EPA EJ Screen

Census tract 12023110300 is in northern Columbia County and encompasses the Osceola National Forest and the Fairview community. It is bordered by the Suwanee River. The tract is classified as disadvantaged by two out of the five USDOT ETC indicators: Social Vulnerability and Transportation Insecurity. This tract is high in social vulnerability due to the high volume of mobile homes (97th percentile), residents that have disabilities (99th percentile), no high-school diploma (95th percentile), and no insurance (84th percentile). In addition, transportation access is limited (89th percentile) in addition to having a high-cost burden (86th percentile). Transportation within the tract is also unsafe (88th percentile).

Tract: 12023110800 Location: Eastern Columbia County, Encompassing the Ebenezer Community and Part of the Navair Community, Bordered by the Olustee Creek			
Socioeconomic Indicator	Value (National Percentile)	Disadvantaged	Source
Demographic Index [1]	40	--	EPA EJ Screen
Supplemental Demographic Index [2]	66	--	EPA EJ Screen
Climate & Disaster Risk Burden	49	No	USDOT ETC
Environmental Burden	21	No	USDOT ETC
Health Vulnerability	89	Yes	USDOT ETC
Social Vulnerability	61	No	USDOT ETC
Transportation Insecurity	83	Yes	USDOT ETC
Overall Census Equity Score	--	Yes	USDOT ETC
Justice40 (CEJST) [3]	--	Yes	EPA EJ Screen
EPA IRA [4]	--	Yes	EPA EJ Screen

Census tract 12023110800 is in eastern Columbia County and encompasses both the Ebenezer and part of the Navair communities and is bordered by the Olustee Creek. The tract is classified as disadvantaged in two of the five component score indicators based on the USDOT ETC: Health Vulnerability and Transportation Insecurity. Health conditions such as cancer (93rd percentile), high blood pressure (90th percentile), and low mental health (85th percentile) are highly prevalent within the tract. In addition, transportation access is limited (83rd percentile) and it comes with a high-cost burden (78th percentile).

Tract: 12023110202 Location: Western Columbia County, Encompassing the Winfield and Springville Communities, Bordered by Interstate 10 and US Highway 441			
Socioeconomic Indicator	Value (National Percentile)	Disadvantaged	Source
Demographic Index [1]	40	--	EPA EJ Screen
Supplemental Demographic Index [2]	66	--	EPA EJ Screen
Climate & Disaster Risk Burden	49	No	USDOT ETC
Environmental Burden	26	No	USDOT ETC
Health Vulnerability	95	Yes	USDOT ETC
Social Vulnerability	82	Yes	USDOT ETC
Transportation Insecurity	56	No	USDOT ETC
Overall Census Equity Score	--	Yes	USDOT ETC
Justice40 (CEJST) [3]	--	Yes	EPA EJ Screen
EPA IRA [4]	--	Yes	EPA EJ Screen

Census tract 12023110202 is in western Columbia County and encompasses the Winfield and Springville communities. The tract is also bordered by Interstate 10 and US Highway 441. Within the tract, two out of the five USDOT ETC indicators are classified as disadvantaged: Health Vulnerability and Transportation Insecurity. Health conditions such as high blood pressure (95th percentile), diabetes (94th percentile), low mental health (93rd percentile), and asthma (85th percentile) are highly prevalent within the tract. In addition, high volumes of mobile housing (99th percentile), residents with disabilities (97th percentile), wealth inequality (95th percentile), and high rates of unemployment (91st percentile) make the tract socially vulnerable.

Tract: 12023110201 Location: Western Columbia County, bordered by Interstate 75, Interstate 10, and West US Highway 90			
Socioeconomic Indicator	Value (National Percentile)	Disadvantaged	Source
Demographic Index [1]	52	--	EPA EJ Screen
Supplemental Demographic Index [2]	56	--	EPA EJ Screen
Climate & Disaster Risk Burden	20	No	USDOT ETC
Environmental Burden	14	No	USDOT ETC
Health Vulnerability	40	No	USDOT ETC
Social Vulnerability	79	Yes	USDOT ETC
Transportation Insecurity	85	Yes	USDOT ETC
Overall Census Equity Score	--	Yes	USDOT ETC

Justice40 (CEJST) [3]	--	Yes	EPA EJ Screen
EPA IRA [4]	--	Yes	EPA EJ Screen

Census tract 120231110201 is in western Columbia County, and it is bordered by Interstate 75, Interstate 10, and West US Highway 90. Two out of the five indicators within this tract are classified as disadvantaged according to the USDOT ETC: Social Vulnerability and Transportation Insecurity. High volumes of mobile housing (95th percentile), residents with disabilities (83rd percentile), and the uneven distribution of wealth (endemic inequality) (95th percentile). In addition, the tract lacks adequate transportation access (85th percentile) and safe means of transportation (93rd percentile), while also having a high transportation cost burden (74th percentile).

Tract: 12023110601 Location: Mid-western Columbia County, bordered by West US Highway 90, SW Birley Avenue, and SW County Road 242			
Socioeconomic Indicator	Value (National Percentile)	Disadvantaged	Source
Demographic Index [1]	34	--	EPA EJ Screen
Supplemental Demographic Index [2]	68	--	EPA EJ Screen
Climate & Disaster Risk Burden	15	No	USDOT ETC
Environmental Burden	3	No	USDOT ETC
Health Vulnerability	36	No	USDOT ETC
Social Vulnerability	83	Yes	USDOT ETC
Transportation Insecurity	93	Yes	USDOT ETC
Overall Census Equity Score	--	Yes	USDOT ETC
Justice40 (CEJST) [3]	--	Yes	EPA EJ Screen
EPA IRA [4]	--	Yes	EPA EJ Screen

Census tract 12023110601 is in mid-west Columbia County, bordered by West US Highway 90, SW Burley Avenue, and SW County Road 242. Two of the five USDOT ETC indicators are classified as disadvantaged within the tract: Social Vulnerability and Transportation Insecurity. Many residents live in mobile housing (99th percentile), live with disabilities (91st percentile), and are not insured (93rd percentile). In addition, the tract experiences a high rate of unemployment (95th percentile)

APPENDIX D

FDOT HORIZONTAL CURVE SAFETY ANALYSES

Curve Safety Analysis

County Road 245

Horizontal Curve near SE Rogers Drive

Columbia County

Prepared For:

Florida Department of Transportation
District 2
1109 S Marion Ave
Lake City, FL 32025

Prepared By:

AtkinsRéalis
840 SW Main Blvd
Lake City, FL, 32025

February 2025

PROFESSIONAL ENGINEERING CERTIFICATION

I hereby certify that I am a registered professional engineer with an active license in the State of Florida, practicing with AtkinsRéalis, and that I have prepared or directly supervised the preparation, analysis, findings, opinions, conclusions, and technical advice hereby reported for:

PROJECT: COLUMBIA COUNTY ROAD 245 NEAR SE ROGERS DRIVE – CURVE SAFETY STUDY

LOCATION: COLUMBIA COUNTY, FL

REPORT: CURVE SAFETY STUDY

The engineering work presented in this document was performed through the following duly authorized engineering firm:

ATKINSRÉALIS INC
482 SOUTH KELLER ROAD, ORLANDO, FL 32810

This item has been electronically signed and sealed by **Christopher Russo, PE #74684** on the date adjacent to the seal, using a Digital Signature.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

SIGNATURE:

Christopher Russo

Christopher Russo
2025.02.13
11:33:07-05'00'

Christopher Russo, P.E., PTOE, RSP1
(407) 806-4233
AtkinsRéalis
482 S Keller Rd Suite 300
Orlando, FL 32801

Contents

Tables

Figures

1. Introduction

A curve safety study was performed on the Columbia County Road CR 245 at the horizontal curve near SE Rogers Drive. The study location is in Columbia County, south of Lake City, approximately 2 miles east of US Highway 441. At the curve CR 245 is a 45-mph two-lane undivided, rural major collector road. The estimated horizontal curve radius is 1920 feet. From FDOT Traffic Online, the 2023 AADT on this road is 1,000 vehicles per day (vpd). The minor approach SE Rogers Drive is an unpaved two-lane undivided local road that intersects CR 245 on the curve.

The study location is shown in **Figure 1-1**.

This study presents a crash analysis of historical data, findings from a field review and recommendations for potential safety improvements at the curve.

Figure 1-1 – Curve on County Road 245 near SE Rogers Drive

2. Historical Crash Data

Crash data for the study area was downloaded from the Florida Signal Four Analytics Database system (S4 Analytics) for the period between January 1st, 2019, to December 31st, 2023. Florida Traffic Crash Reports from Highway Safety and Motor Vehicles (HSMV) Traffic Crash Records were reviewed for additional insights on the crash occurrences. Crash summary tables are provided in the following section. Crash details and the collision diagram are provided in **Appendix A.**

A summary of crash data and observed crash patterns is provided as follows:

- **Crash Type:** Of the total 6 crashes, the crash types included 2 single vehicle off-road, 2 rollover, 1 pedestrian , and 1 angle.
- **Crash Severity:** The crashes resulted in the following levels of severity: 4 were incapacitating injury, 1 was non-incapacitating injury and 1 was possible injury.
- **Crash Conditions:** Of the total 6 crashes, 2 occurred at nighttime and 1 occurred during wet pavement conditions. Of the nighttime crashes, one resulted in an incapacitating injury and one in a non-incapacitating injury. There is no curve lighting present.
- **Curve Related Lane Departure Crashes:** 1 pedestrian, 1 rollover, 1 angle, and 1 off-road crash were located on the study curve.
    - One (1) pedestrian incapacitating injury crash occurred at the intersection of SE Rogers Drive on the curve. The northbound vehicle hit a crossing pedestrian walking west towards a stopped bus on the southbound approach of CR 245.
    - One (1) rollover non-incapacitating injury crash involved a vehicle traveling southbound on CR 245 who experienced a blackout medical episode. This caused the vehicle to drift off the roadway to the right into the west ditch, colliding with a culvert causing the vehicle to overturn.
    - One (1) angle crash incapacitating injury crash occurred when a westbound vehicle on Leslie Wood Lane attempted to make a left turn onto southbound CR 245 failing to see a northbound motorcyclist on the curve causing them to collide.
    - One (1) off road crash resulted in a possible injury crash. The vehicle was traveling south on CR 245 approaching the intersection of SE Rogers Drive at the curve when an unidentified animal entered the roadway. This caused the driver to attempt an evasive maneuver to avoid a collision with the animal. The vehicle left the roadway to the left and traveled in a southeast direction through the ditch before colliding with a standing tree.

Table 2-1 – Crash Summary - Crash Severity

Year	Fatal	Incapacitating Injury	Non-Incapacitating Injury	Possible Injury	No Injury	*Total*
2019	0	0	0	0	0	*0*
2020	0	0	0	0	0	*0*
2021	0	2	1	0	0	*3*
2022	0	1	0	1	0	*2*
2023	0	1	0	0	0	*1*
Total	***0***	***4***	***1***	***1***	***0***	***6***

Table 2-2 – Crash Summary - Crash Type

Crash Type	Fatal	Incapacitating Injury	Non-Incapacitating Injury	Possible Injury	No Injury	*Total*
Off Road	0	1	0	1	0	*2*
Rollover	0	1	1	0	0	*2*
Angle	0	1	0	0	0	*1*
Pedestrian	0	1	0	0	0	*1*
Total	***0***	***4***	***1***	***1***	***0***	***6***

3. Field Review

A field review was performed on Tuesday, July 10, 2024. The objective of the field review was to verify site conditions, including presence, location, and condition of singing and pavement markings. Additionally, an advisory speed study was performed along the curves in the study area.

A condition diagram with all existing signs is present in **Appendix B**. Photos taken during the field visit are presented in **Appendix C**.

From the field visit, the following notes were identified:

Signing and Pavement Markings:

- All existing signage was visible and in legible condition during daytime observations. However, northbound “Intersection Ahead” warning sign is legible but faded.
- There was no minor street termination signage present on the southbound approach of SE Rogers Drive.
- SE Rogers Drive approach is unpaved with no pavement markings.
- On the Leslie Wood Lane westbound approach there is a faded stop-bar pavement marking and no white edge line pavement markings near the intersection.
- On CR 245, the yellow center lines and white edge line pavement markings are legible near the curve.

Lighting Conditions:

- No lighting present along curve and minor approach intersections.

Roadway and Shoulder:

- Narrow shoulder present. Less than 12 inches along CR 245.

Driving Observations:

- It was noted there could be potential intersection visibility issues for vehicles travelling westbound at SE Rogers Drive not seeing vehicles travelling on CR 245 due to some encroaching vegetation on west side of intersection.

3.1 Advisory Speed Study – "Ball Bank Study"

An Advisory Speed Study was conducted to determine the maximum comfortable and safe speed a vehicle can negotiate the curves within the study area. The methodology used to perform the study was based on the 2021 Florida Manual on Uniform Traffic Studies (MUTS). The results of the study are used to determine where turn and curve signs with advisory speed plaques are recommended for horizontal curves.

For the advisory speed study, a ball-bank indicator was used to measure the overturning force, measured in degrees, on a vehicle negotiating a horizontal curve. If an advisory speed warning is recommended, it shall be installed with the posted advisory speed matching the nearest 5 mph increment less than the maximum negotiable safe speed. An advisory speed value is determined separately for each direction of travel.

According to Table 10-2 of the FDOT MUTS, the recommended maximum ball-bank reading for roadways with a speed limit greater than 35 mph is 12 degrees.

The results of the ball-bank runs indicated the following:

- The study was first performed by driving the curve at the posted speed limit of 45 mph. At 45 mph the ball-bank indicator resulted in 3 degrees in the northbound direction and 2 degrees in the southbound direction. Given this was less than the 12-degree threshold an advisory speed is not warranted in this location.

4. Results & Recommendations

From the crash analysis, four off road crashes were identified where westbound vehicles failed to negotiate the curve and collided with roadside structures or canals. Based on these findings, countermeasures that address the following objectives were developed: 1) encourage slower speed, 2) improve the conspicuity of the curve, 3) protect errant vehicles. Selection and placement of warning signs and plaque sizes were obtained from 'MUTCD Chapter 2C. Warning Signs and Object Markers'.

The recommendations are shown as follows in the list below. A maintenance work order is provided in **Appendix D** for the signing and pavement marking recommendations.

Signing and Pavement Marking (Short Term Improvements)

1. Install a Curve / Intersection Ahead combination sign (w1- 10) / 45mph Advisory Speed Limit plaque with retroreflective strips on the signpost facing the northbound and southbound traffic. Sign size is 36"x36". The warning sign should be placed at least 360 ft ahead of the beginning of the curve based on MUTCD table 2C-3. On the northbound direction, W1-10 should be installed at 720 ft ahead of the curve to maintain spacing with other proposed warning signs.

2. At Rogers Drive and Leslie Wood Lane intersections, Install minor road end-treatment signs and pavement markings according to FDM Exhibit 230-13 for minor street termination.

3. On Leslie Wood Lane, refurbish stop bar and centerline pavement marking for westbound approach and add edge line pavement markings from intersection to at least 50-feet back.

4. Relocate intersection warning sign to be at least 360 ft behind Leslie Wood Ln intersection based on MUTCD Table 2C-3.

Infrastructure Recommendations (Long Term Improvements) – Not included in Maintenance Work Order

- Increase paved shoulder width on the curve to 5-feet to align with FDM standard shoulder widths.

Appendices

Appendix A. Historical Crash Data

Crash Type	Frequency
Failure to Yield (Angle/Turning)	1
Rear End	0
Single Vehicle (Off-Road / Fixed Object / Animal)	4
Bike / Ped	1
Lane Departure Collision (Sideswipe/Head on)	0

Unless stated otherwise assume crash was occurred in daylight on dry surface conditions

Crash Types

Pedestrian, Bicycle, Animal, Head-On, Left-Turn, Rollover, Off-Road, Rear-End, Angle, Right-Turn, Sideswipe

Crash Severity

Fatal **Serious Injury**

Abbreviations

FTY - Failure To Yield
DFT - Decelerating For Turn
SFTV – Stopped for Turning Vehicle

SE Price Creek Rd around SE Rogers Dr Crash Diagram

N

Sheet No. 1

System: Columbia County
Data Date: 1/1/19-12/31/23
Drawn By: AtkinsRéalis (AS)
Drawn Date: 4/3/24

CRASH SUMMARY

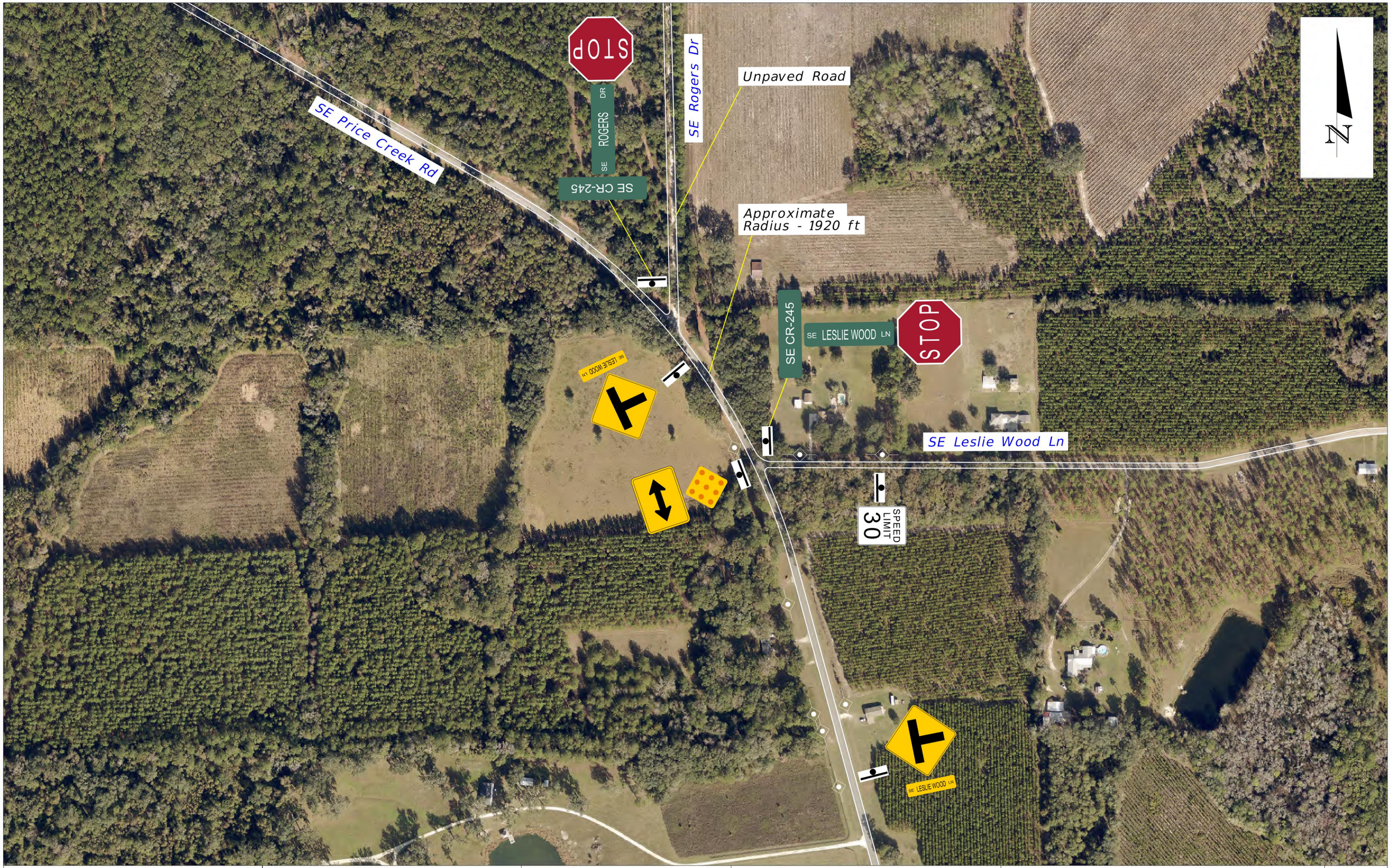
SECTION: CR 245
STATE ROUTE:
ROADWAY LIMIT: CR 245 & SE Rogers Dr
M.P. - to -

STUDY PERIOD: 1/1/2019 to 12/31/2023
DATA SOURCE: S4
COUNTY: Columbia
MPH: 45

ENGINEER: AtkinsRéalis

No.	Crash Number	Date	Day	Time	Crash Type	Severity	Fatal	Injuries	Day/ Night	Wet/ Dry	DUI Involved ?	Contributing Cause	Direction of Vehicle 1	Direction of Vehicle 2	Notes
1.	88374903	01/05/21	Tue	7:50	Rollover	Incapacitating Injury	0	1	DAY	Dry	No	Operated MV in Careless or Negligent Manner	South		
2.	88441077	03/02/21	Tue	22:40	Rollover	Non-Incapacitating Injury	0	2	NIGHT	Wet	No	Failed to Keep in Proper Lane	South		
3.	89564611	11/27/21	Sat	4:03	Off Road	Incapacitating Injury	0	1	NIGHT	Dry	No	Swerved or Avoided	South		
4.	24912521	02/28/22	Mon	7:15	Pedestrian	Incapacitating Injury	0	1	DAY	Dry	No	No Contributing Action	North	South	
5.	24891668	03/26/22	Sat	14:30	Off Road	Possible Injury	0	1	DAY	Dry	No	No Contributing Action	South		
6.	89625020	08/26/23	Sat	17:02	Angle	Incapacitating Injury	0	1	DAY	Dry	No	Failed to Yield Right-of-Way	West	North	

Appendix B. Condition Diagram



Legend	Notes
- Utility Pole	1. Sign locations are approximated and not field measured 2. Street name signs are double sided

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(407) 647-7275

COUNTY	Roadway	Posted Speed
Columbia	SE Price Creek Rd	45 mph

Condition Diagram
SE Price Creek Rd around SE Rogers Dr

SHEET NO.
1

Appendix C. Field Review

Northbound approaching Curve

Southbound approaching Curve

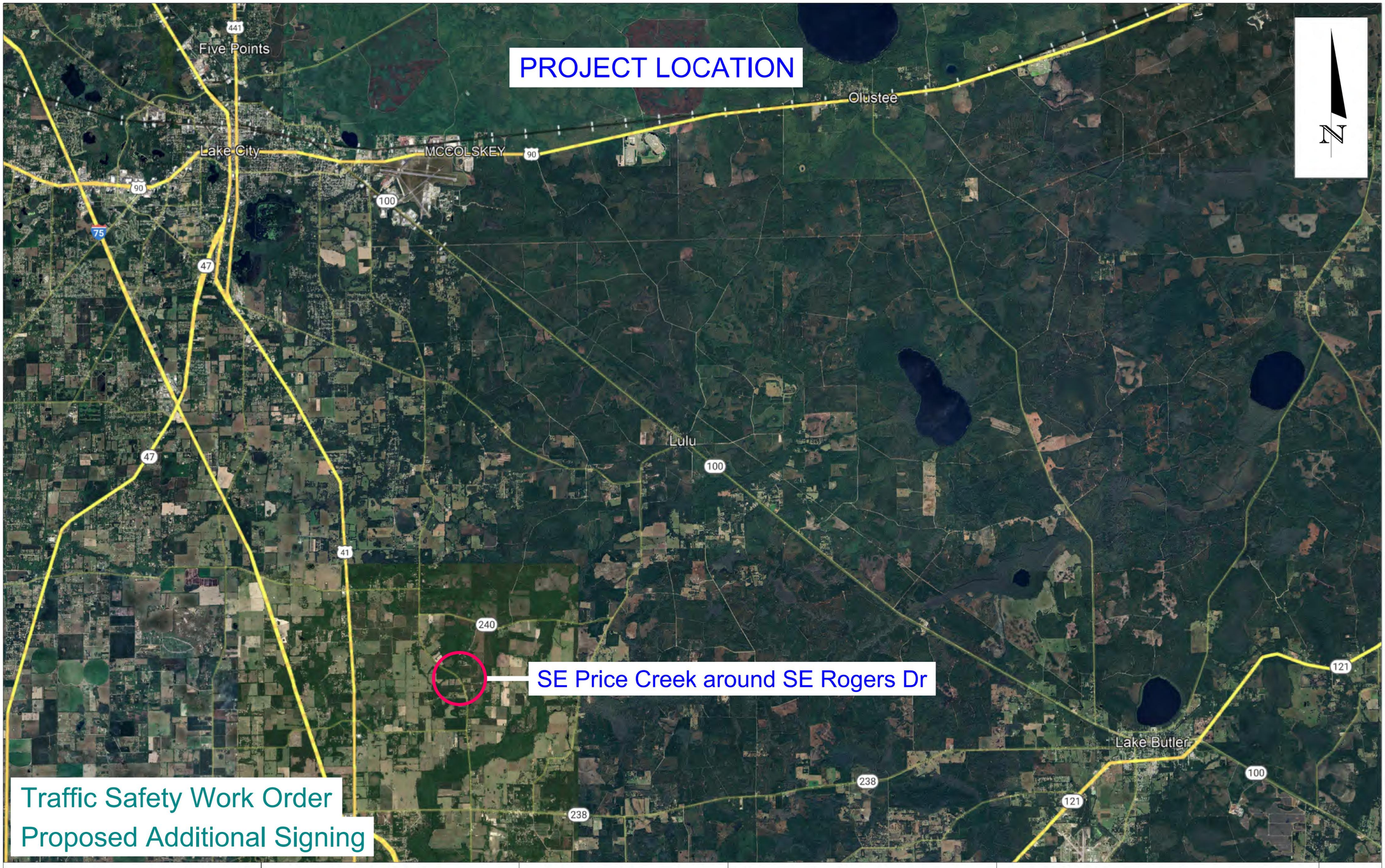
Sight distance from SE Leslie Wood Ln WB stop bar facing North

Sight distance from SE Leslie Wood Ln WB stop bar facing South

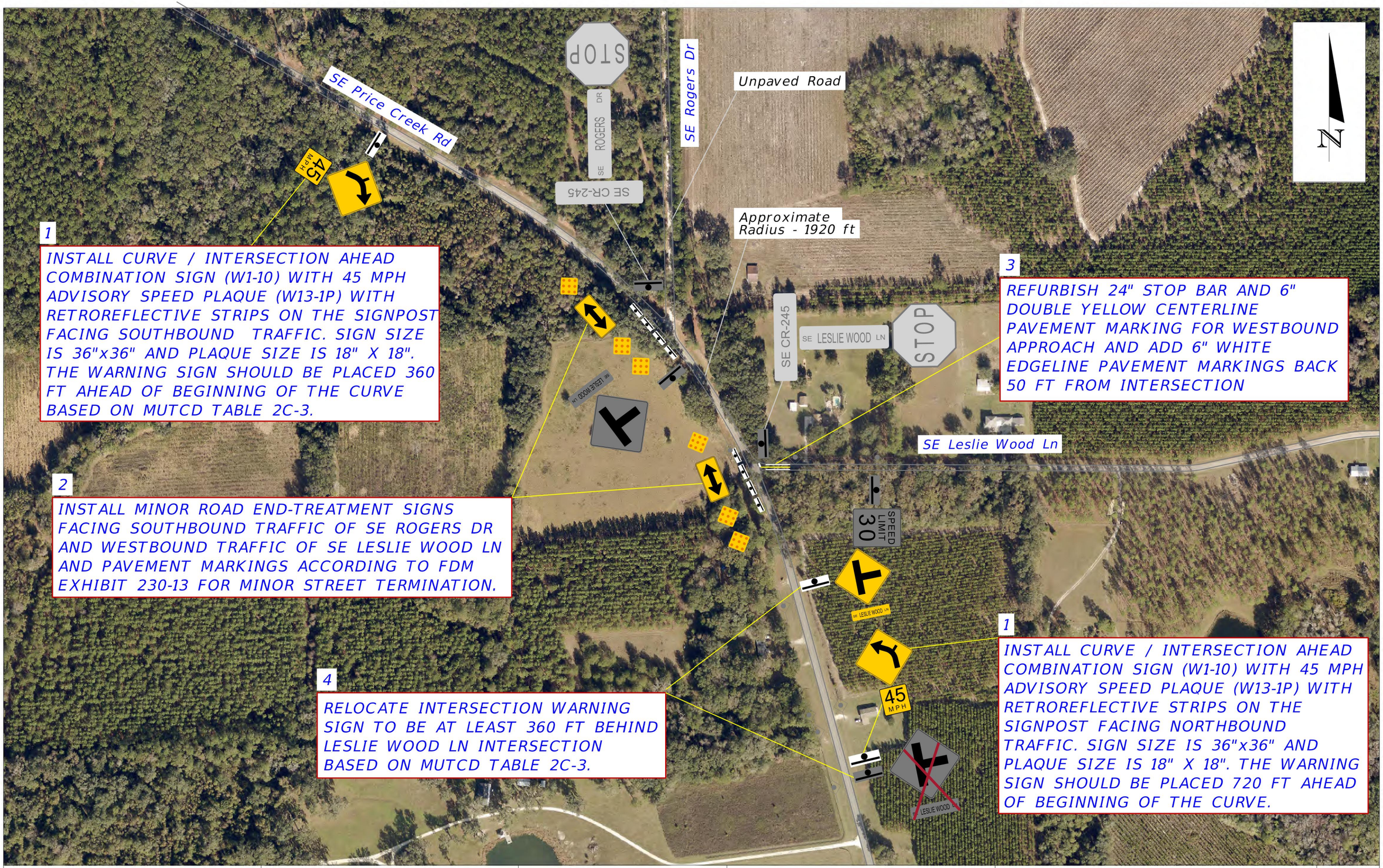
Sight distance from SE Rogers Drive SB stop bar facing North

Sight distance from SE Rogers Drive SB stop bar facing South

Appendix D. Maintenance Work Order



		AtkinsRéalis ATKINS REALIS, INC. 482 SOUTH KELLER RD, ORLANDO, FL 32810 (407) 647-7275			SHEET NO.
			COUNTY	Roadway / Posted Speed	
			Columbia	SE Price Creek Rd — 45 MPH	1
				Project Location *SE Price Creek Road around SE Rogers Drive*	



Legend	Notes
- Utility Pole	1. Sign locations are approximated and not field-measured 2. Street name signs are double-sided

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(407) 647-7275

COUNTY	Roadway	Posted Speed
Columbia	Price Creek Rd	45 mph

Work Directive Map
SE Price Creek Rd Around SE Rogers Dr

SHEET NO. 2

Pay Item	Description	Quantity	Units
700-1-111	SINGLE COLUMN GROUND SIGN ASSEMBLY, F&I GROUND MOUNT, LESS THAN 12 SF	4	EA
700-13-15	RETROREFLECTIVE SIGN STRIP FURNISH AND INSTALL, 5'	2	EA
705-10-1	OBJECT MARKER, TYPE 1	6	EA
711-16-101	THERMOPLASTIC, STANDARD-OTHER SURFACES, WHITE, SOLID, 6"	0.064	GM
711-12-201	THERMOPLASTIC, REFURBISHMENT, YELLOW, SOLID, 6"	0.064	GM
711-11-125	THERMOPLASTIC, STANDARD, WHITE, SOLID, 24" FOR STOP LINE AND CROSSWALK	10	LF
700-1-500	SINGLE COLUMN GROUND SIGN ASSEMBLY, RELOCATE	1	EA

Legend	Notes					SHEET NO.
		AtkinsRéalis ATKINS REALIS, INC. 482 SOUTH KELLER RD, ORLANDO, FL 32810 (407) 647-7275	COUNTY	Roadway	Posted Speed	Work Directive Quantities SE Price Creek Rd Around SE Rogers Dr	3
			Columbia	Price Creek Rd	45 mph		

Curve Safety Analysis

County Road 252A

Horizontal Curve near SW Meadow Wood Glen

Columbia County

Prepared For:

Florida Department of Transportation
District 2
1109 S Marion Ave
Lake City, FL 32025

Prepared By:

AtkinsRéalis
840 SW Main Blvd
Lake City, FL, 32025

January 2025

PROFESSIONAL ENGINEERING CERTIFICATION

I hereby certify that I am a registered professional engineer with an active license in the State of Florida, practicing with AtkinsRéalis, and that I have prepared or directly supervised the preparation, analysis, findings, opinions, conclusions, and technical advice hereby reported for:

PROJECT:	COUNTY ROAD 252A (SW KOONVILLE AVE) NEAR SW MEADOW WOOD GLEN – CURVE SAFETY STUDY
LOCATION:	COLUMBIA COUNTY, FL
REPORT:	CURVE SAFETY STUDY

The engineering work presented in this document was performed through the following duly authorized engineering firm:

ATKINSRÉALIS INC
482 SOUTH KELLER ROAD, ORLANDO, FL 32810

This item has been electronically signed and sealed by **Christopher Russo, PE #74684** on the date adjacent to the seal, using a Digital Signature.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

SIGNATURE:

Christopher Russo

Christopher Russo
2025.01.22
12:21:01
-05'00'

Christopher Russo, P.E., PTOE, RSP1
(407) 806-4233
AtkinsRéalis
482 S Keller Rd Suite 300
Orlando, FL 32801

Contents

Tables

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1. Introduction

A curve safety study was performed on Columbia County Road 252A (SW Koonville Ave) at the horizontal curve near SW Meadow Wood Glen. The study location is in Columbia County, near Wellborn City, approximately 1 mile south of US Highway 10. CR 252A is an undivided two-lane rural minor collector road with 45 mph posted speed limit. At the curve CR 252A has 35 mph advisory speed limit signs. The estimated horizontal curve radius is 510 feet. From FDOT Traffic Online, the 2023 AADT on CR 252A is 500 vehicles per day. At the curve, SW Meadow Wood Glen is a two-lane local road that intersections CR 252A at the curve with a stop-controlled westbound approach.

The study location is shown in **Figure 1-1**.

This study presents a crash analysis of historical data, findings from a field review and recommendations for potential safety improvement at the curve.

Figure 1-1 – Curve on County Road 252A near SW Meadow Wood Glen

2. Historical Crash Data

Crash data on CR 252A near SW Meadow Wood Glen between January 1, 2019 to December 31, 2023 was downloaded from the Florida Signal Four Analytics Database system (S4 Analytics). Florida Traffic Crash Reports from Highway Safety and Motor Vehicles (HSMV) Traffic Crash Records were reviewed for additional insights on the crash occurrences. Crash summary tables are provided in the following section. Crash details and the collision diagram are provided in **Appendix A.**

A summary of crash data and observed crash patterns is provided as follows:

- Crash Severity - There were 3 crashes identified within the study area including 1 fatal, 1 incapacitating injury, and 1 property damage only.
- Crash Types - Among the 3 crashes, there was 1 rollover, 1 off road, and 1 animal crash.
- Crash Conditions – All 3 crashes were nighttime and on dry pavement conditions.
- Fatal Crash Summary: A fatal crash occurred involving a vehicle traveling northbound on CR 252A. At the time of this crash, the driver was under the influence of alcohol and was determined to be traveling at a minimum speed of 62 mph. As a result, the driver failed to negotiate a curve to the left in the roadway and entered the northbound grass shoulder. The front of the vehicle then collided with a protruding metal culvert and became airborne and overturned before coming to final rest.
- DUI Related Crashes: There were 2 DUI related crashes on the study curve – 1 fatal rollover and 1 incapacitating injury off-road crash Both crashes occurred on Monday morning, between midnight and 3 am
- Curve Related Lane Departure Crashes: 2 of the 3 crashes in the area were curve related.
    - 1 fatal rollover crash was identified on the study curve. The at-fault vehicle was traveling northbound on CR 252A at 62 mph. The driver was under the influence of alcohol as he operated the vehicle. As a result, failed to negotiate the curve and entered the northbound grass shoulder of CR 252A. The vehicle collided with a protruding metal culvert, became airborne, and overturned.
    - 1 incapacitating injury off-road crash was located on the study curve. The at-fault motorcycle was traveling south on CR 252A while he was under the influence of alcohol and failed to negotiate the curve. The vehicle traveled off the roadway to the left into the east ditch, collided with a fence.

Table 2-1 – Crash Summary - Crash Severity

Year	Fatal	Incapacitating Injury	Non-Incapacitating Injury	Possible Injury	No Injury	*Total*
2019	0	1 (off-road)	0	0	0	*1*
2020	0	0	0	0	1 (animal)	*1*
2021	1 (rollover)	0	0	0	0	*1*
2022	0	0	0	0	0	*0*
2023	0	0	0	0	0	*0*
Total	***1***	***1***	***0***	***0***	***1***	***3***

3. Field Review

A field review was performed on Tuesday, July 1, 2024. The objective of the field review was to verify site conditions, including presence, location, and condition of singing and pavement markings. Additionally, an advisory speed study was performed along the curves in the study area.

A condition diagram with all existing signs is present in **Appendix B**. Photos taken during the field visit are presented in **Appendix C**.

From the field visit, the following notes were identified:

Signing and Pavement Markings:

- All existing signage was visible and in legible condition during daytime observations.
- All existing stop-bar pavement markings and white edge line pavement markings was visible condition near the curve. However, white edge line pavement markings were faded.

Roadway and Shoulder:

- There is no paved shoulder on either side of the roadway.
- North of the curve there is pavement cracking causing uneven pavement.

Driving Observations:

- Due to there being no paved shoulder the grass is encroaching onto the pavement and blocking some edge striping.
- There is no lighting at curve.

3.1 Advisory Speed Study – "Ball Bank Study"

An Advisory Speed Study was conducted to determine the maximum comfortable and safe speed a vehicle can negotiate the curves within the study area. The methodology used to perform the study was based on the 2021 Florida Manual on Uniform Traffic Studies (MUTS). The results of the study are used to determine where turn and curve signs with advisory speed plaques are recommended for horizontal curves.

For the advisory speed study, a ball-bank indicator was used to measure the overturning force, measured in degrees, on a vehicle negotiating a horizontal curve. Based on the test results, if an advisory speed warning is recommended it shall be installed with the posted advisory speed matching the nearest 5 mph increment less than the maximum negotiable safe speed. An advisory speed value is determined separately for each direction of travel.

According to Table 10-2 of the FDOT MUTS, the recommended maximum ball-bank reading for roadways with a speed limit greater than 35 mph is 12 degrees.

The results of the ball-bank runs indicated the following:

The study was performed by driving the curve at the existing advisory speed of 35 mph. At 35 mph the ball-bank indicator resulted in 5 degrees in the southbound direction and 4 degrees in the northbound direction. Given this was less than the 12-degree threshold a revised advisory speed is not warranted in this location.

4. Results & Recommendations

From the crash analysis, off-road crashes were identified where vehicles failed to negotiate the curve. In addition, there were crashes occurring where the drivers were under the influence whilst driving on the curve. Based on these findings, countermeasures that address one, or multiple, safety objectives were developed. Countermeasures objectives were to: 1) encourage slower speed, 2) improve the conspicuity of the curve, 3) protect errant vehicles. Selection and placement of warning signs and plaque sizes were obtained from 'MUTCD Chapter 2C. Warning Signs and Object Markers'.

The recommendations are shown as follows in the list below. A maintenance work order is provided in **Appendix D** for the signing and pavement marking recommendations.

Signing and Pavement Marking (Short Term Improvements)

1. Install three (3) oversized Chevron Alignment double sign assemblies (W1-8) along the curve with retroreflective strips on the signposts facing the northbound and southbound traffic. Chevron signs are recommended to be installed at 120 ft spacing based on MUTCD Table 2C-5 guidelines. Recommended plaque size is (24" x 30").

2. On CR 525A refurbish edge line pavement markings 1700-feet along the curve.

Appendices

Appendix A. Historical Crash Data

Crash Type	Frequency
Failure to Yield (Angle/Turning)	0
Rear End	0
Single Vehicle (Off-Road / Fixed Object / Animal)	3
Bike / Ped	0
Lane Departure Collision (Sideswipe/Head on)	0

Unless stated otherwise assume crash was occurred in daylight on dry surface conditions

Crash Types

Pedestrian, Bicycle, Animal, Head-On, Left-Turn, Rollover, Off-Road, Rear-End, Angle, Right-Turn, Sideswipe

Crash Severity

Fatal **Serious Injury**

Abbreviations

FTY - Failure To Yield
DFT - Decelerating For Turn
SFTV – Stopped for Turning Vehicle
TFFC – Too Fast Tor Conditions

CR 252A around SW Meadow Wood Gln Crash Diagram

N

Sheet No. 1

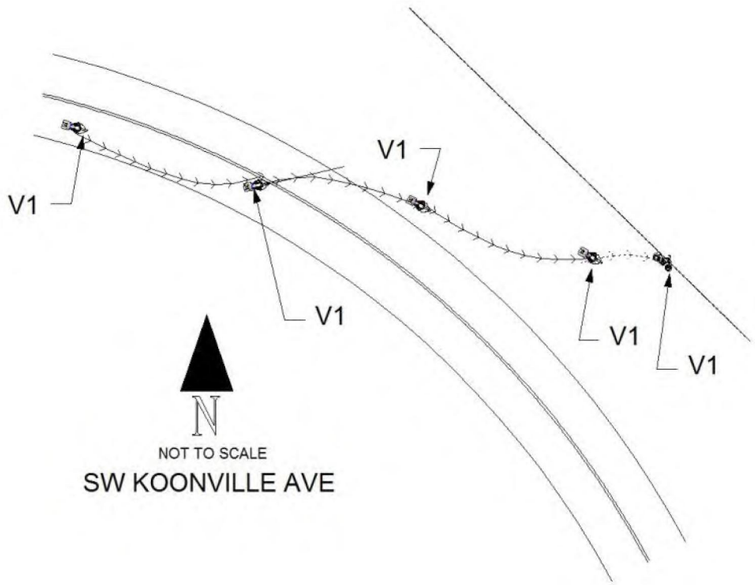
System: Columbia County
Data Date: 1/1/19-12/31/23
Drawn By: AtkinsRéalis (AS)
Drawn Date: 4/3/24

CRASH SUMMARY

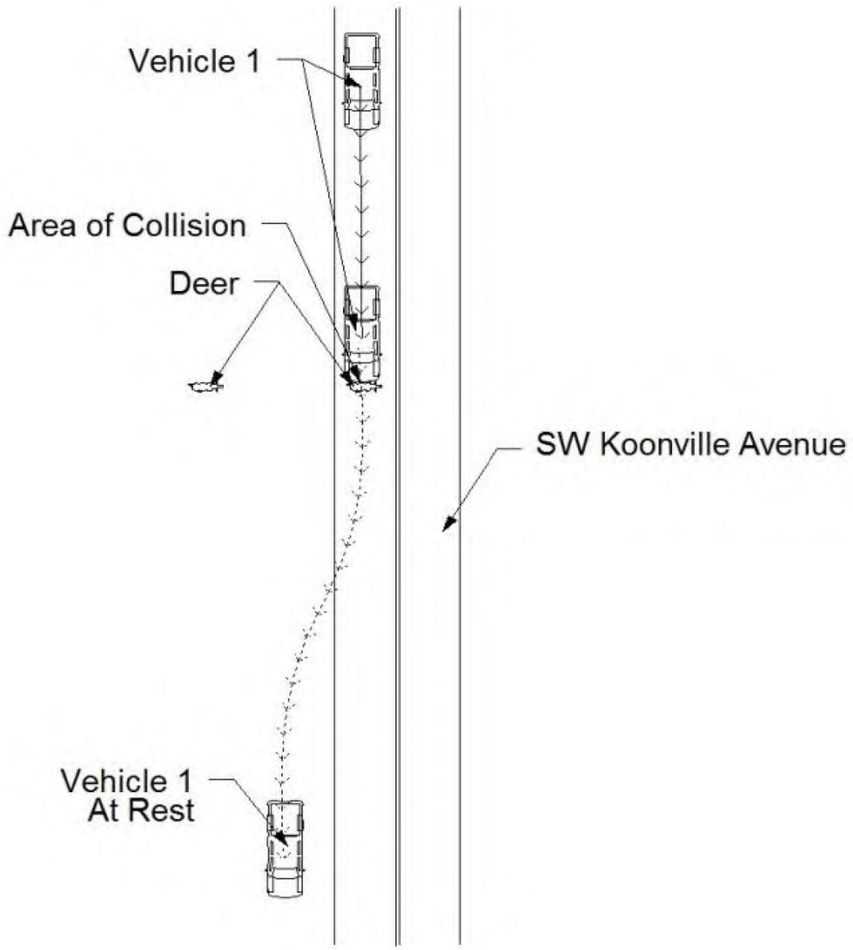
SECTION:	SW Koonville Ave	STUDY PERIOD:	1/1/2019 to #######		
STATE ROUTE:		DATA SOURCE:	S4		
ROADWAY LIMITS:	SW Koonville Ave & SW M	COUNTY:	Columbia		
M.P.	- to -	MPH:	45	ENGINEER:	Atkins

No.	Crash Number	Date	Day	Time	Crash Type	Severity	Fatal	Injuries	Day/ Night	Wet/ Dry	Contributing Cause	Direction of Vehicle 1	Direction of Vehicle 2
1.	88195488	08/25/19	Sun	1:32	Off Road	Incapacitating Injury	0	1	NIGHT	Dry	Failed to Keep in Proper Lane	South	
2.	88280360	03/02/20	Mon	18:55	Animal	No Injury	0	0	DAY	Dry	No Contributing Action	South	
3.	85253278	08/01/21	Sun	2:50	Rollover	Fatal (within 30 days)	1	0	NIGHT	Dry	Ran Off Roadway	North	

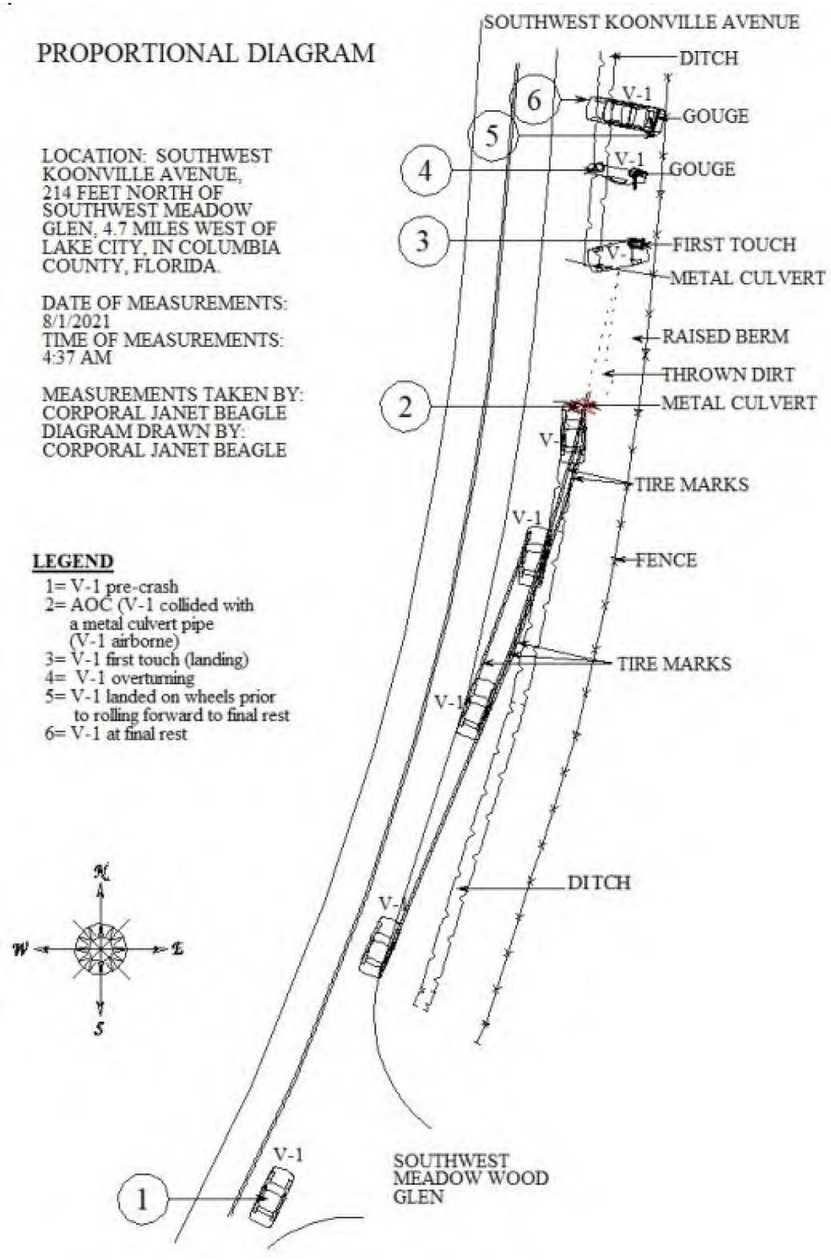
Crash 1



Crash 2



Crash 3



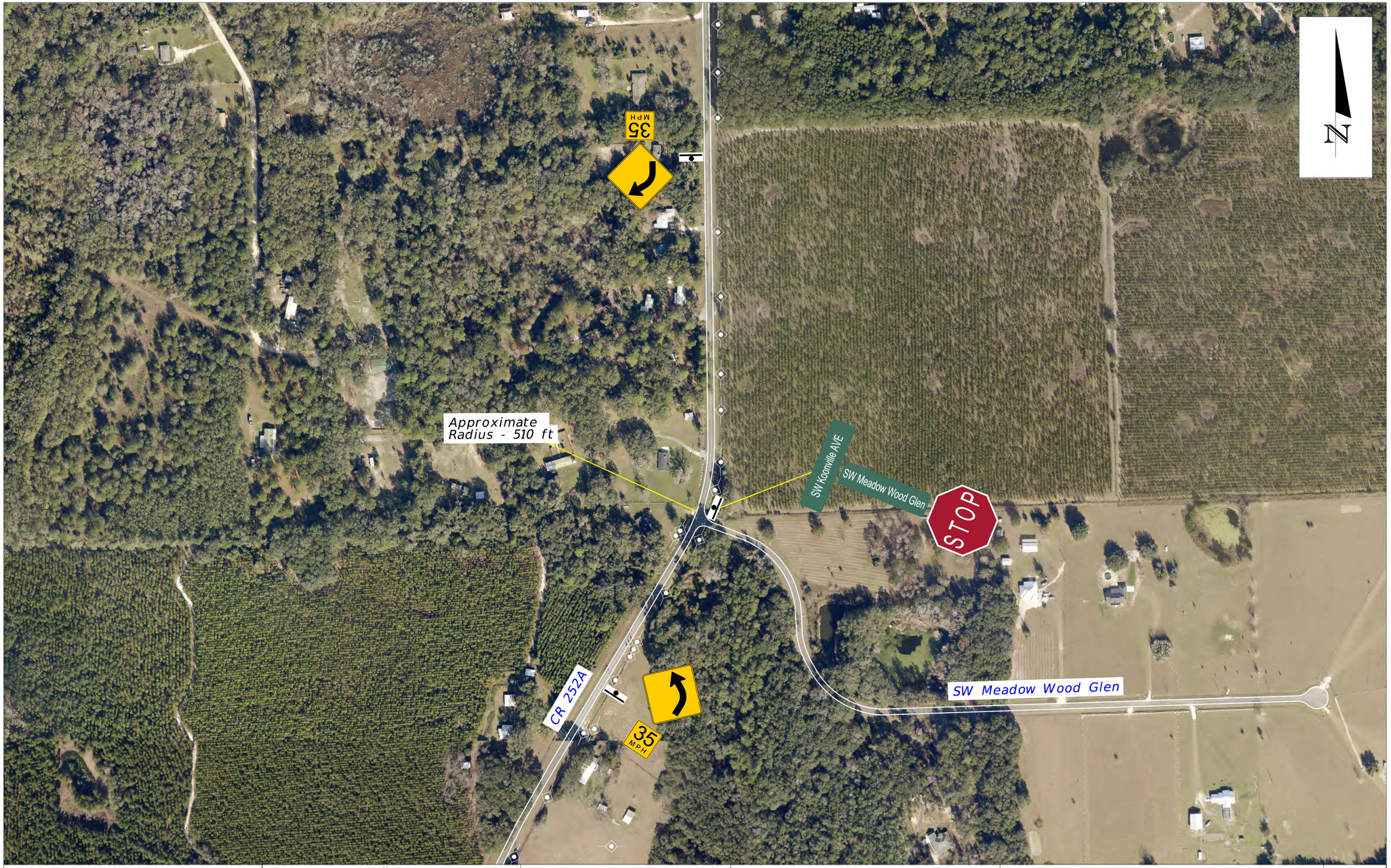

CR 252A
SW MEADOW WOOD GLN

CRASH SUMMARY

SECTION:	CR 252A	STUDY PERIOD:	1/1/2019 to 12/31/2023		
STATE ROUTE:		DATA SOURCE:	S4		
ROADWAY LIMIT	CR 252A & Meadow Wood Gln	COUNTY:	Columbia		
M.P.	- to -	MPH:	45	ENGINEER:	AtkinsRéalis

No.	Crash Number	Date	Day	Time	Crash Type	Severity	Fatal	Injuries	Day/ Night	Wet/ Dry	DUI Involved ?	Contributing Cause	Direction of Vehicle 1	Direction of Vehicle 2	Notes
1.	88195488	08/25/19	Sun	1:32	Off Road	Incapacitating Injury	0	1	NIGHT	Dry	Yes	Failed to Keep in Proper Lane	South		
2.	88280360	03/02/20	Mon	18:55	Animal	No Injury	0	0	DAY	Dry	No	No Contributing Action	South		
3.	85253278	08/01/21	Sun	2:50	Rollover	Fatal (within 30 days)	1	0	NIGHT	Dry	Yes	Ran Off Roadway	North		

Appendix B. Condition Diagram



Legend	Notes
- Utility Pole	1. Sign locations are approximated and not field measured 2. Street name signs are double sided

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COUNTY	Roadway	Posted Speed
Columbia	CR 252A	45 mph

Condition Diagram
CR 252A around SW Meadow Wood Glen

SHEET NO. 1

Appendix C. Field Review

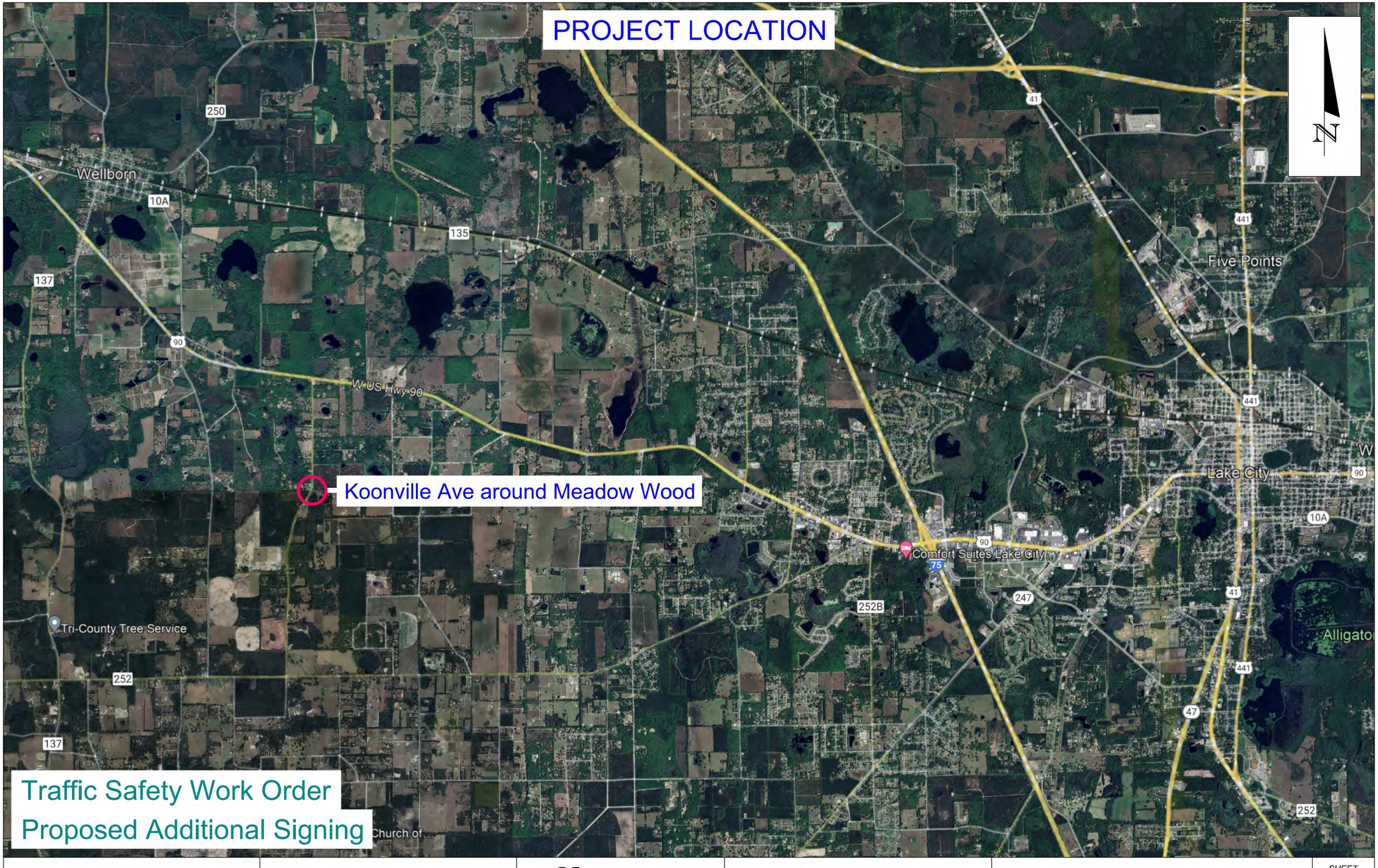
Northbound approaching Curve

Southbound approaching Curve

Sight distance from SW Meadow Wood Gln WB stop bar facing North

Sight distance from SW Meadow Wood Gln WB stop bar facing South

Appendix D. Maintenance Work Order



		AtkinsRéalis ATKINS REALIS, INC. 482 SOUTH KELLER RD, ORLANDO, FL 32810 (407) 647-7275	COUNTY	Roadway	Posted Speed	*Project Location* *SW Koonville Ave around* *SW Meadow Wood Glen*
			Columbia	Koonville Ave	45 MPH	

SHEET NO. 1

Legend	Notes
- Utility Pole	1. Sign locations are approximated and not field-measured 2. Street name signs are double-sided

AtkinsRéalis
ATKINS REALIS, INC.
482 SOUTH KELLER RD, ORLANDO, FL 32810

COUNTY	Roadway	Posted Speed
Columbia	CR 252A	45 mph

Work Directive Map
CR 252A Around SW Meadow Wood Glen

SHEET NO. 2

Pay Item	Description	Quantity	Units
700-1-111	SINGLE COLUMN GROUND SIGN ASSEMBLY, F&I GROUND MOUNT, LESS THAN 12 SF	3	EA
700-13-15	RETROREFLECTIVE SIGN STRIP, FURNISH AND INSTALL, 5'	3	EA
711-16-101	THERMOPLASTIC, STANDARD-OTHER SURFACES, WHITE, SOLID, 6"	0.627	GM

Legend	Notes

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ATKINS REALIS, INC.
482 SOUTH KELLER RD, ORLANDO, FL 32810
(407) 647-7275

COUNTY	Roadway	Posted Speed
Columbia	CR 252A	45 mph

Work Directive Quantities
CR 252A Around SE Meadow Wood Glen

SHEET NO. 3

Curve Safety Analysis

County Road 138

Horizontal Curves near SW Nantucket Pl

Columbia County

Prepared For:

Florida Department of Transportation
District 2
1109 S Marion Ave
Lake City, FL 32025

Prepared By:

AtkinsRéalis
840 SW Main Blvd
Lake City, FL, 32025

January 2025

PROFESSIONAL ENGINEERING CERTIFICATION

I hereby certify that I am a registered professional engineer with an active license in the State of Florida, practicing with AtkinsRéalis, and that I have prepared or directly supervised the preparation, analysis, findings, opinions, conclusions, and technical advice hereby reported for:

PROJECT: COUNTY ROAD 138 NEAR SW NANTUCKET PL – CURVE SAFETY STUDY

LOCATION: COLMUBIA COUNTY, FL

REPORT: CURVE SAFETY STUDY

The engineering work presented in this document was performed through the following duly authorized engineering firm:

ATKINSRÉALIS INC
482 SOUTH KELLER ROAD, ORLANDO, FL 32810

This item has been electronically signed and sealed by **Christopher Russo, PE #74684** on the date adjacent to the seal, using a Digital Signature.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

SIGNATURE:

Christophe r Russo

Christopher Russo
2025.02.13
08:52:28-05'00'

Christopher Russo, P.E., PTOE, RSP1
(407) 806-4233
AtkinsRéalis
482 S Keller Rd Suite 300
Orlando, FL 32801

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1. Introduction

A curve safety study was performed on the Columbia County Road 138 (CR 138) at the two horizontal curves near SW Nantucket Place. The study location is in Columbia County, between Fort White and High Springs, approximately 2.5 miles west of US 27. At the curves, CR 138 is a 45-mph two-lane undivided, rural minor collector road. At the northern curve "Curve 1" has an estimated horizontal curve radius of 570-ft. Don Cook Road, a local road near "Curve 1", is an unpaved road that connects to CR 138. The curve on the southern end of the project area, "Curve 2", has a horizontal curve radius of 740-ft. The minor approach of SW Nantucket Place is rural local road that connects at CR 138 on "Curve 2". Prior to both curves there is a curve warning sign with supplemental 25-mph advisory speed. From FDOT Traffic Online, the 2023 AADT on CR 138 is 1,200 vehicles per day.

The study location is shown in **Figure 1-1**.

This study presents a crash analysis of historical data, findings from a field review and recommendations for potential safety improvement at the curve.

Figure 1-1 – Curve on County Road 138 near SW Nantucket Place

2. Historical Crash Data

Crash data for the study area was downloaded from the Florida Signal Four Analytics Database system (S4 Analytics) for the period between January 1st, 2019 to December 31st, 2023. Florida Traffic Crash Reports from Highway Safety and Motor Vehicles (HSMV) Traffic Crash Records were reviewed for additional insights on the crash occurrences. Crash summary tables are provided in the following section. Crash details and a collision diagram are provided in **Appendix A.**

A summary of crash data and observed crash patterns is provided as follows. Tables summarizing results are provided in **Table 2-1** through **Table 2-4**.

CR 138 at Don Cook Road: "Curve 1" (North):

- **Crash Type - Curve-Related Lane Departure Crashes:**
    - All four (4) single-vehicle off-road crashes were reported along the study curve. All crashes included instances of drivers losing control of the vehicle whilst negotiating the curve and colliding with a tree. Additional factors that influenced these accidents included one driver under the influence and one avoiding a crossing deer. Two (2) of the reported curve-related crashes occurred along the eastbound direction and two (2) in the westbound direction.

- **Crash Severity:** The crashes resulted in the following levels of severity: 2 (50%) incapacitating injury crashes, 1 (25%) possible injury crash, and 1 (25%) property damage only.

- **Lighting Conditions:** Of the total 4 crashes, 3 (75%) occurred at nighttime resulting in 1 incapacitating injury crash and 1 possible injury. There is no curve lighting present along the curve.

- **DUI Related Crashes:** There was 1 DUI related crash on the study curve which resulted in a possible injury crash.

    - The crash was an off-road single vehicle crash which occurred at 8:20 pm on a Saturday in 2022. A northbound vehicle approached the left curve and travelled off of the roadway into a ditch east of CR 138.

Table 2-1 – Curve 1 Crash Summary: Crash Severity (All Off-Road Crashes)

Year	Fatal	Incapacitating Injury	Non-Incapacitating Injury	Possible Injury	No Injury	Total
2019	0	0	0	0	0	***0***
2020	0	1	0	0	0	***1***
2021	0	0	0	0	0	***0***
2022	0	0	0	1	0	***1***
2023	0	1	0	0	1	***2***
Total	***0***	***2***	***0***	***1***	***1***	***4***

Note: All crashes are Off-Road

CR 138 at SW Nantucket Place: "Curve 2" (South):

- **Crash Type - Curve-Related Lane Departure Crashes:**

  There were four (4) reported crashes in within the study area, all involving curve lane departures. All crashes included instances of drivers losing control of the vehicle whilst negotiating the curve and colliding with a tree. Additional factors that influenced these accidents included two drivers under the influence and one driving at high speeds. One (1) of the reported curve-related crashes occurred along the eastbound direction and three (3) in the westbound direction.

- **Crash Severity:** The crashes resulted in the following levels of severity: 1 (25%) incapacitating injury crash and 3 (75%) property damage only crashes were recorded.

- **Lighting Conditions:** Of the total 4 crashes, 3 (75%) occurred at nighttime resulting in 1 incapacitating injury crash and 1 possible injury. There is no intersection lighting present.

- **DUI Related Crashes:** There were 2 DUI related crashes on the study curve. Both were rollover crashes resulting in "no-injury". One crash occurred on Wednesday at 2 am and the another occurred on a Friday at 9 pm.

Table 2-2 – Curve 2 Crash Summary: Crash Severity

Year	Incapacitating Injury	Non-Incapacitating Injury	Possible Injury	No Injury	Total
2019	0	0	0	0	***0***
2020	0	0	0	1	***1***
2021	0	0	0	1	***1***
2022	0	0	0	0	***0***
2023	1	0	0	1	***2***
Total	***1***	***0***	***0***	***3***	***4***

Table 2-3 – Curve 2 Crash Summary: Crash Type

Year	Off Road	Rollover	Total
2019	0	0	***0***
2020	0	1	***1***
2021	0	1	***1***
2022	0	0	***0***
2023	1	1	***2***
Total	***1***	***3***	***4***

Table 2-4 – Curve 2 Crash Summary Crash Summary: Crash Type & Severity

Crash Type	Incapacitating Injury	Non-Incapacitating Injury	Possible Injury	No Injury	Total
Off Road	0	0	0	1	***1***
Rear End	0	0	0	0	***0***
Rollover	1	0	0	2	***3***
Total	***1***	***0***	***0***	***3***	***4***

3. Field Review

A field review was performed on Tuesday, July 10, 2024. The objective of the field review was to verify site conditions, including presence, location, and condition of signage and pavement markings. Additionally, an advisory speed study was performed along the curves in the study area.

A condition diagram showing all existing signage is present in **Appendix B.** Field visit photos are shown in **Appendix C**

From the field visit, the following notes were identified:

Don Cook Road at CR 138 "Curve 1":

Signing and Pavement Markings:

- Double yellow centerlines visible during daytime but on both sides of the road solid white edge lines were faded along the curve and tangent of CR 138.
- All existing signage was visible and in legible condition during daytime observations.
- Curve-related warning signs with advisory speeds were present for both eastbound and westbound directions on the curve.
- A stop sign was present at the Don Cook Road approach connecting with CR 138.

Roadway and Shoulder:

- No paved shoulder present along CR 138.
- The roadway profile along the curve was approximately flat.

Driving Observations:

- Available sight distance did not obstruct turning movement decisions of the field operators at Don Cook Road south approach.
- Roadside vegetation encroaching on the roadway was noted in a few places approaching the curve.
- Blind residential driveways were located along the curve in the study area

SW Nantucket Place at CR 138 "Curve 2":

Signing and Pavement Markings:

- Double yellow centerlines visible during daytime but on both sides of the road. Solid white edge lines were faded along the curve and tangent of CR 138.
- All existing signage was visible and in legible condition during daytime observations
- Curve-related warning signs with advisory speeds were present for both eastbound and westbound directions on the curve.
- A stop sign was present at the Truluck Terrace and Nantucket Place approaches connecting with CR 138.
- Chevron sign panels (W1-8) with guardrails were located on the outside of the southern curve .

Roadway and Shoulder:

- No shoulder present along CR 138.
- The roadway profile along the curve was approximately flat.

Driving Observations:

- Available sight distance obstructed turning movement decisions at northbound approach on SW Nantucket Place and left turn vehicles on Truluck Terrace due to vegetation.
- Roadside vegetation encroaching on the roadway was noted in a few places approaching the curve.
- Blind driveways were located along the curve in the study area

3.1 Advisory Speed Study – "Ball Bank Study"

An Advisory Speed Study was conducted to determine the maximum comfortable and safe speed a vehicle can negotiate the curves within the study area. The methodology used to perform the study was based on the 2021 Florida Manual on Uniform Traffic Studies (MUTS). The results of the study are used to determine where turn and curve signs with advisory speed plaques are recommended for horizontal curves.

For the advisory speed study, a ball-bank indicator was used to measure the overturning force, measured in degrees, on a vehicle negotiating a horizontal curve. Based on the test results, if an advisory speed warning is recommended, it should be installed with the posted advisory speed matching the nearest 5 mph increment less than the maximum negotiable safe speed. An advisory speed value was determined separately for each direction of travel.

According to Table 10-2 of the FDOT MUTS, the recommended maximum ball-bank reading for roadways with a speed limit greater than 25 mph is 12 degrees.

The results of the ball-bank runs indicated the following:

- The study was first performed by driving both curves at the posted speed limit of 45 mph. At 45 mph the ball-bank indicator resulted in 8 degrees in the eastbound direction and 9 degrees in the westbound direction. Given this was less than the 12-degree threshold it is not recommended to modify the existing advisory speed signs present at this location.

4. Results & Recommendations

From the crash analysis, a trend of eastbound and westbound off-road and rollover crashes was identified where vehicles are failing to negotiate the curve, leading to lane departures. Based on these findings, countermeasures that address this crash pattern were developed; they are: (1) Improve the conspicuity of the curve and (2) protect errant vehicles. Selection and placement of warning signs and plaque sizes were obtained from 'MUTCD Chapter 2C. Warning Signs and Object Markers'.

4.1 Recommendations

The recommendations are shown as follows in the list below. A maintenance work order is provided in **Appendix D** for the signing and pavement marking recommendations.

Signing and Pavement Marking (Short Term Improvements)

1. Add yellow retroreflective strips on the existing four (4) Turn Ahead (W1-1) / 25 mph Advisory Speed Limit combination signposts and two (2) Curve / Intersection Ahead combination (W1- 10) signposts in the study area.
2. Install ten (10) double sided Chevron Alignment signs (W1-8) along the curve near Don Cook Road. Chevron signs are recommended to be installed at 80 ft spacing based on Manual on Uniform Traffic Control Devices (MUTCD) Table 2C-5 guidelines. Recommended plaque size is (18 x 24)
    - Justification: The curve radius is measured to be approximately 570 ft and the existing advisory speed limit is posted at 20 mph less than the posted speed (25 mph compared to the posted speed limit of 45 mph).
3. Install additional four (4) double sided Chevron Alignment signs (W1-8) along the curve near SW Truluck Terrace Road at spacing 80 ft. Recommended plaque size is (18 x 24)
4. Trim tree branches and vegetation at curve area.

Infrastructure Recommendations (Long-Term Improvements) – Not included in Maintenance Work Order

- Install a roadside guardrail for the northbound traffic on curve near Don Cook Road in order to mitigate the severity of a potential crash occurrence.
- Consider lighting near curve locations to improve visibility of curved roads at night.
- Increase paved shoulder width on the curve to 5-feet to align with FDM standard shoulder widths.

DUI Campaign

- A high visibility enforcement campaign focusing on consequences of drunk driving and supported by law enforcement is recommended during the latter half of the week (Wednesday-Saturday) and between 8 PM to 2 AM in order to address the pattern of DUI related crashes on the study area.
    - Justification: Among the three DUI crashes, all occurred at night between 8PM and 2 AM. Two of the three occurred on Friday or Saturday night.

Appendices

Appendix A. Historical Crash Data

Crash Type	Frequency
Failure to Yield (Angle/Turning)	0
Rear End	0
Single Vehicle (Off-Road / Fixed Object / Animal)	8
Bike / Ped	0
Lane Departure Collision (Sideswipe/Head on)	0

Unless stated otherwise assume crash was occurred in daylight on dry surface conditions

Crash Types

Pedestrian, Bicycle, Animal, Head-On, Left-Turn, Rollover, Off-Road, Rear-End, Angle, Right-Turn, Sideswipe

Crash Severity

Fatal Serious Injury

Abbreviations

FTY - Failure To Yield
DFT - Decelerating For Turn
SFTV – Stopped for Turning Vehicle
DUI – Driving Under Influence

SW Bridlewood Rd near SW Nantucket Pl Crash Diagram

N

Sheet No. 1

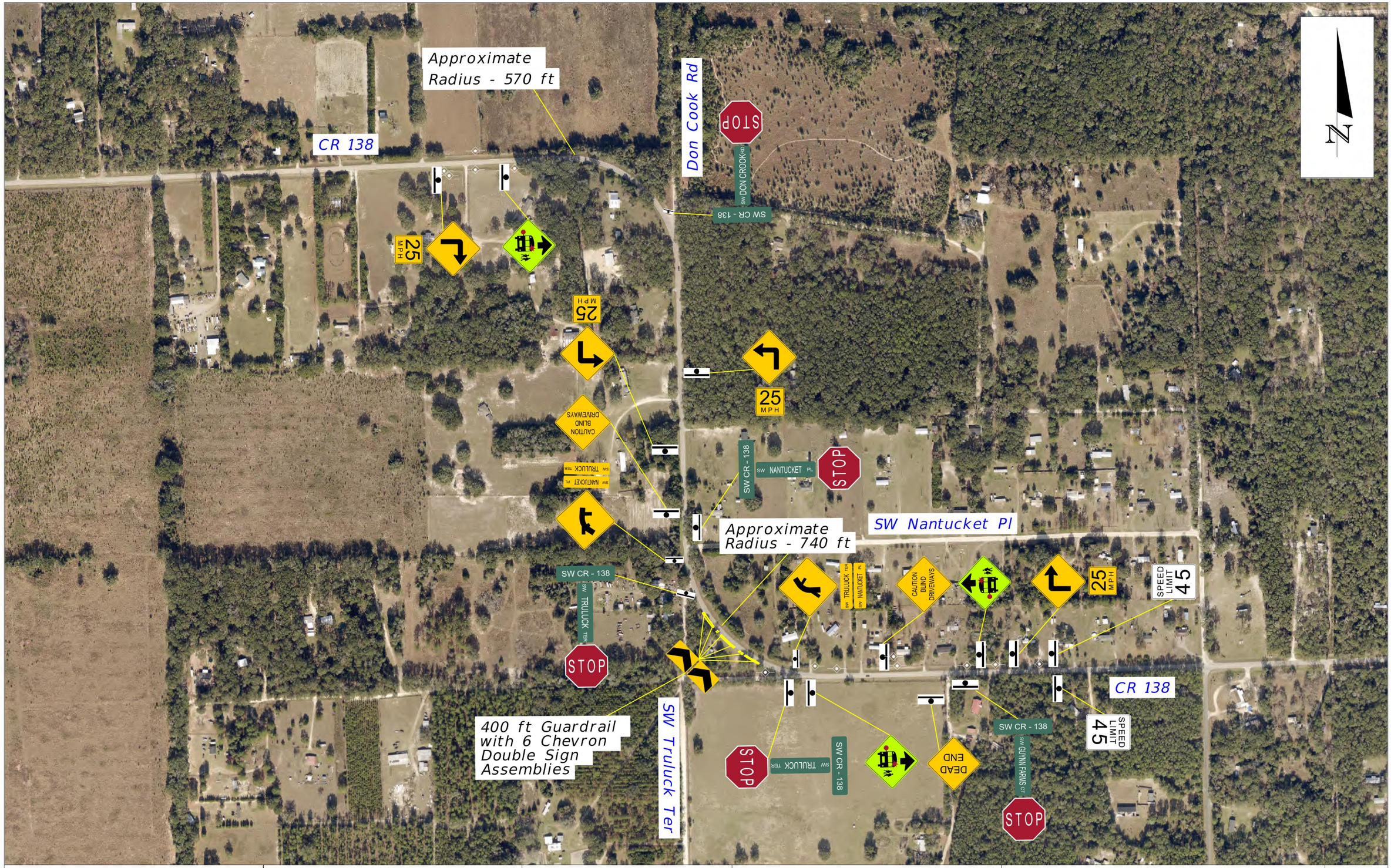
System: Columbia County
Data Date: 1/1/19-3/31/24
Drawn By: AtkinsRéalis (AS)
Drawn Date: 4/3/24

CRASH SUMMARY

SECTION:	SW Bridlewood Rd	STUDY PERIOD:	1/1/2019 to 12/31/2023		
STATE ROUTE:		DATA SOURCE:	S4		
ROADWAY LIMITS:	SW Bridlewood Rd & SW N	COUNTY:	Columbia		
M.P.	8.145 to 8.215	MPH:	45	ENGINEER:	AtkinsRéalis

No.	Crash Number	Date	Day	Time	Crash Type	Severity	Fatal	Injuries	Day/ Night	Wet/ Dry	DUI Involved?	Contributing Cause	Direction of Vehicle 1	Direction of Vehicle 2	Notes
1.	88221857	01/25/20	Sat	20:20	Off Road	Incapacitating Injury	0	4	NIGHT	Dry	No	Ran Off Roadway	South		
2.	88347361	11/06/20	Fri	21:12	Rollover	No Injury	0	0	NIGHT	Dry	Yes	Ran Off Roadway	East		
3.	88485788	05/12/21	Wed	2:05	Rollover	No Injury	0	0	NIGHT	Dry	Yes	Operated MV in Careless or Negligent Manner	West		
4.	24915052	05/14/22	Sat	20:20	Off Road	Possible Injury	0	1	NIGHT	Dry	Yes	Operated MV in Careless or Negligent Manner	North		
5.	89562003	04/03/23	Mon	10:50	Off Road	No Injury	0	0	DAY	Dry	No	Ran Off Roadway	East		
6.	89638448	09/02/23	Sat	2:15	Off Road	No Injury	0	0	NIGHT	Dry	No				
7.	89650340	09/10/23	Sun	15:20	Off Road	Incapacitating Injury	0	1	DAY	Dry	No	Operated MV in Careless or Negligent Manner	East		
8.	89641561	10/19/23	Thu	22:14	Rollover	Incapacitating Injury	0	1	NIGHT	Dry	No	Operated MV in Careless or Negligent Manner	West		

Appendix B. Condition Diagram



Legend	Notes
—◈— - Utility Pole	1. Sign locations are approximated and not field measured 2. Street name and chevron signs are double sided

AtkinsRéalis
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(407) 647-7275

COUNTY	Roadway	Posted Speed
Columbia	CR 138	45 mph

Condition Diagram
CR 138 Around Nantucket Pl

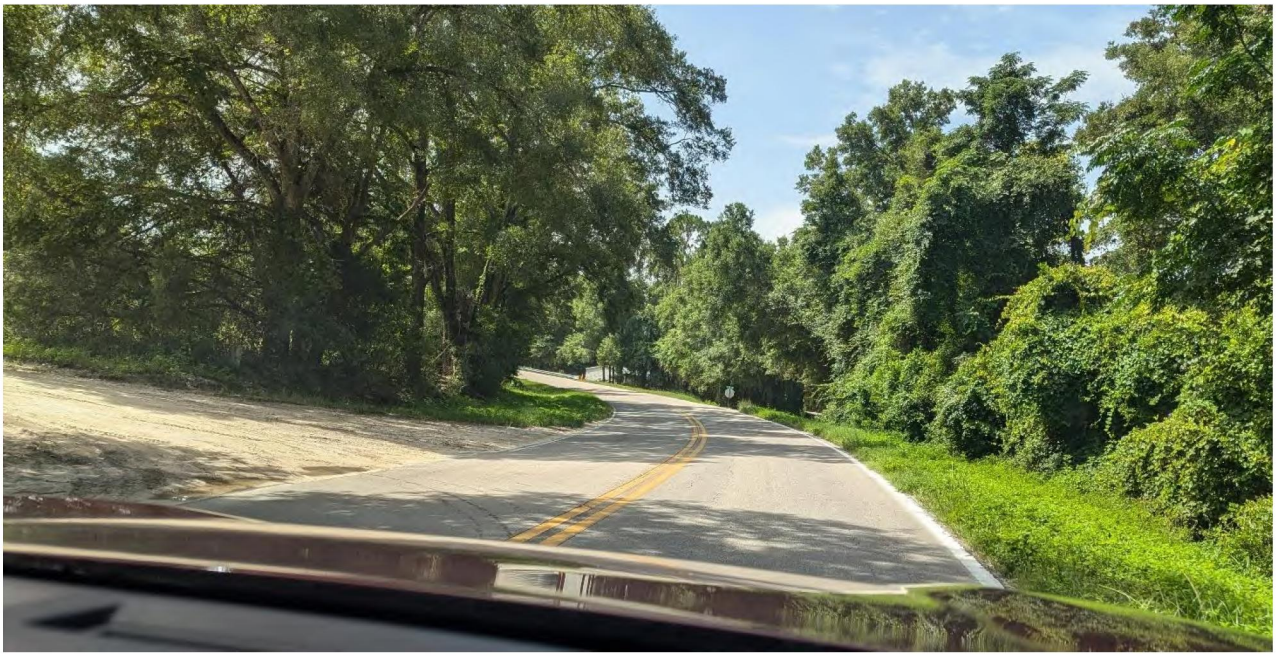
SHEET NO. 1

Appendix C. Field Review

Eastbound approaching Northern “Curve 1”

Westbound approaching Northern “Curve 1”

Eastbound approaching Southern “Curve 2”



Westbound approaching Southern “Curve 2”

Sight distance from SW Truluck Terrace EB stop bar facing East

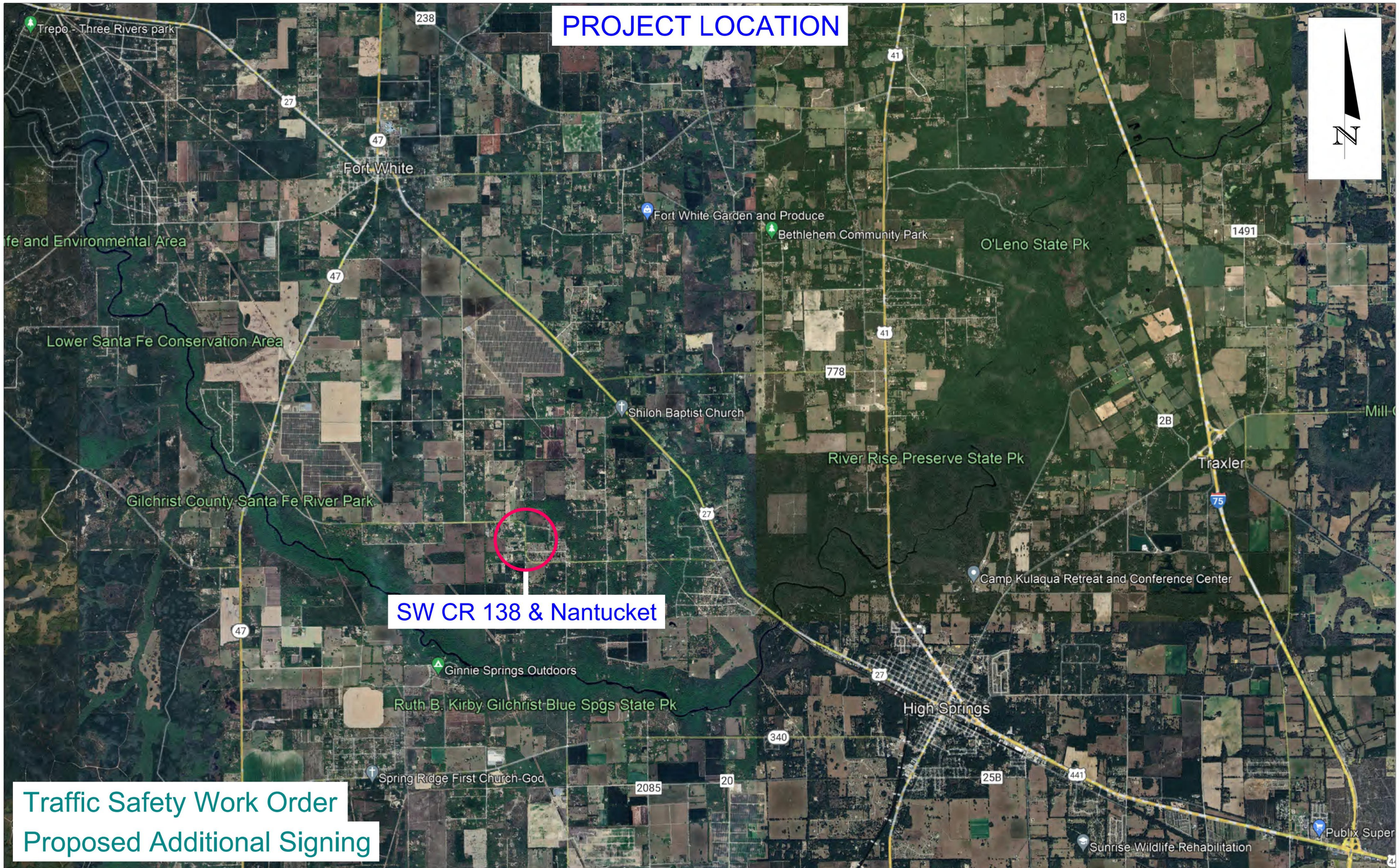
Sight distance from SW Truluck Terrace EB stop bar facing West

Sight distance from SW Truluck Terrace WB stop bar facing East

Sight distance from SW Truluck Terrace WB stop bar facing West

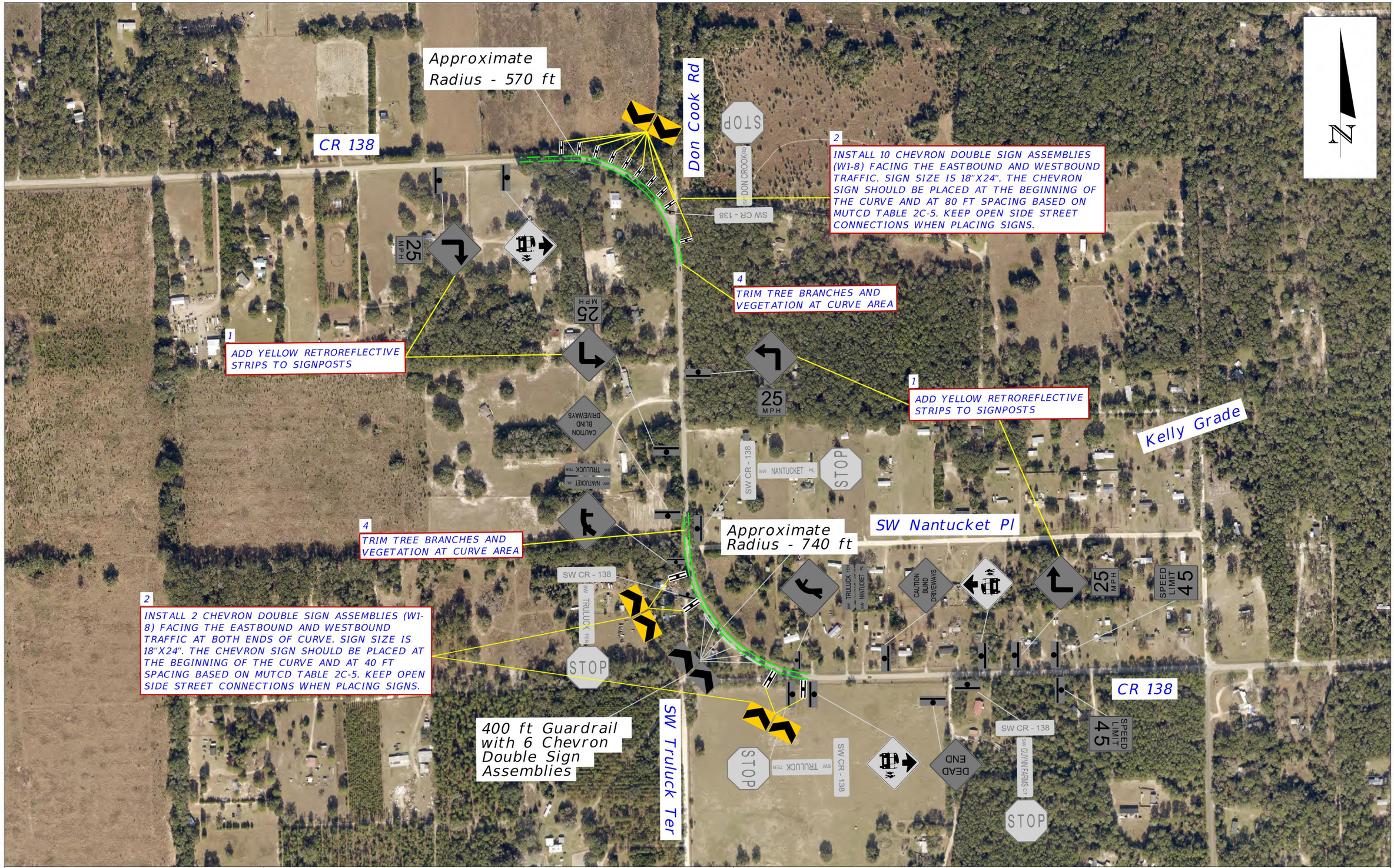
Appendix D. Maintenance Work Order

PROJECT LOCATION



Traffic Safety Work Order
Proposed Additional Signing

		AtkinsRéalis ATKINS REALIS, INC. 482 SOUTH KELLER RD, ORLANDO, FL 32810 (407) 647-7275			*Project Location* *CR 138 around Nantucket Pl*	*SHEET NO.*
			COUNTY	*Roadway*	*Posted Speed*	1
			Columbia	CR 138	45 MPH	



Legend	Notes
	1. Sign locations are approximated and not field-measured 2. Street name signs are double-sided

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(407) 647-7275

COUNTY	Roadway	Posted Speed
Columbia	CR 138	45 mph

Work Directive Map
CR 138 Around Nantucket Pl

SHEET NO. 2

Pay Item	Description	Quantity	Units
700-1-111	SINGLE COLUMN GROUND SIGN ASSEMBLY, F&I GROUND MOUNT, LESS THAN 12 SF	14	EA
700-13-15	RETROREFLECTIVE SIGN STRIP FURNISH AND INSTALL, 5'	4	EA
110-1-1	CLEARING AND GRUBBING	1.6	AC

Legend	Notes

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COUNTY	Roadway	Posted Speed
Columbia	CR 231	45 mph

Work Directive Quantities
CR 138 Around Nantucket Pl

SHEET NO. 3

APPENDIX E

FULL PROJECT PRIORITIZATION SCORING MATRIX

Project Description	Score	Safety			Equity		Stakeholder Input			Connectivity	
		Crash History - Fatal (5 years)	Crash History - Serious Injury (5 years)	Crash History - VRU (5 years)	Areas of Persistent Poverty	Disadvantaged Census Tract	PublicCoordinate Feedback	Project Kickoff Feedback	Task Force Recommendation	Planning Consistency	Network Connectivity
Maximum Points		*4*	*2*	*3*	*2*	*6*	*2*	*2*	*1*	*1*	*1*
Review Driveway Access on E Duval St from SE Lomond Ave to SR-100	56	8	10	30	2	3	2	0	0	0	1
Implement a Road Diet on E Duval St from SE Lomond Ave to SR-100	56	8	10	30	2	3	2	0	0	0	1
Install Additional Street Lighting on E Duval St from SE Lomond Ave to SR-100	55	8	10	30	2	3	2	0	0	0	0
Evaluate the Need for Median Openings and Left-Turn Storage Bays on SW Main Blvd from US-441 to SW Saint Margarets St	42	12	16	9	0	2	2	0	0	0	1
Install Sidewalk or Shared Use Path on SW Main Blvd from US-441 to SW Saint Margarets St	42	12	16	9	0	2	2	0	0	0	1
Install Street Lighting on SW Main Blvd from US-441 to SW Saint Margarets St	41	12	16	9	0	2	2	0	0	0	0
Install Sidewalk (or Other Bicycle and Pedestrian Facilities) on US-41 from SW Tustenuggee Ave to US-441	33	8	10	12	0	2	0	0	0	0	1
Install Street Lighting on US-41 from SW Tustenuggee Ave to US-441	32	8	10	12	0	2	0	0	0	0	0
Update Pavement Markings and Raised Pavement Markers on US-41 from SW Tustenuggee Ave to US-441	32	8	10	12	0	2	0	0	0	0	0
Install Transverse Rumble Strips on US-41 from SW Tustenuggee Ave to US-441	32	8	10	12	0	2	0	0	0	0	0
Reduce Posted Speed Limit on US-41 from SW Tustenuggee Ave to US-441	32	8	10	12	0	2	0	0	0	0	0
Install Centerline And Edge Line Rumble Strips on SW Tustenuggee Ave from NW Herlong St to SW CR-240	30	12	12	3	0	3	0	0	0	0	0
Install Street Lighting on SW Tustenuggee Ave from NW Herlong St to SW CR-240	30	12	12	3	0	3	0	0	0	0	0
Install Raised Pavement Markers on SW Tustenuggee Ave from NW Herlong St to SW CR-240	30	12	12	3	0	3	0	0	0	0	0
Improve Pavement Friction on SW Tustenuggee Ave from NW Herlong St to SW CR-240	30	12	12	3	0	3	0	0	0	0	0
Improve Pavement Conditions	30	12	12	3	0	3	0	0	0	0	0
Install Centerline and Edge Line Rumble Strips on SW Tustenuggee Ave from SW CR-18 to SW Herlong St	25	8	6	6	0	3	0	2	0	0	0
Install Street Lighting on SW Tustenuggee Ave from SW CR-18 to SW Herlong St	25	8	6	6	0	3	0	2	0	0	0
Install Raised Pavement Markers on SW Tustenuggee Ave from SW CR-18 to SW Herlong St	25	8	6	6	0	3	0	2	0	0	0
Restrict Placing Objects within the Right-of-Way on SW Tustenuggee Ave from SW CR-18 to SW Herlong St	25	8	6	6	0	3	0	2	0	0	0
Implement a Road Diet and/or Perform a Lane Repurposing Feasibility Study on SE Baya Dr/SR-10A from Country Club Rd to SE SR-100	19	0	10	3	2	3	0	0	0	0	1
Review Access Management	19	0	10	3	2	3	0	0	0	0	1
Install Centerline and Edge Line Rumble Strips on SW Tustenuggee Ave from SW CR-242A to US-41/US-441	18	8	4	3	0	2	0	0	1	0	0
Install Street Lighting on SW Tustenuggee Ave from SW CR-242A to US-41/US-441	18	8	4	3	0	2	0	0	1	0	0
Install Raised Pavement Markers on SW Tustenuggee Ave from SW CR-242A to US-41/US-441	18	8	4	3	0	2	0	0	1	0	0
Move Objects Outside of Clear Zone on SW Tustenuggee Ave from SW CR-242A to US-41/US-441	18	8	4	3	0	2	0	0	1	0	0
Extend Sidewalk on Westbound Approach of US-41 & CR-252 on US-41 from SW Tustenuggee Ave to US-441	14	4	4	3	0	2	0	0	0	0	1
Install Centerline and Edge Line Rumble Strips on NW Long St from NW Lake Jeffery Road to US-441/SR-47	10	0	2	3	2	3	0	0	0	0	0
Install Curb on NW Long St from NW Lake Jeffery Road to US-441/SR-47	10	0	2	3	2	3	0	0	0	0	0
Remove Foliage on NW Long St from NW Lake Jeffery Road to US-441/SR-47	10	0	2	3	2	3	0	0	0	0	0
Install Edge Line Rumble Strips on SE CR-349 from CR-131/SW Tustenuggee Ave to US-41	7	4	0	0	0	3	0	0	0	0	0
Install Raised Pavement Markers On Curves on SE CR-349 from CR-131/SW Tustenuggee Ave to US-41	7	4	0	0	0	3	0	0	0	0	0
Install Street Lighting on SE CR-349 from CR-131/SW Tustenuggee Ave to US-41	7	4	0	0	0	3	0	0	0	0	0
Install Roundabout on SW Bascom Norris Dr and SW Mary Ethel Ln	32	8	16	6	0	1	0	0	0	0	1
Update Pavement Markings on SW Bascom Norris Dr and SW Mary Ethel Ln	31	8	16	6	0	1	0	0	0	0	0
Update Rumble Strips on SW Bascom Norris Dr and SW Mary Ethel Ln	31	8	16	6	0	1	0	0	0	0	0
Widen Apron for Eastbound and Westbound Right Turns on SW Bascom Norris Dr and SW Mary Ethel Ln	31	8	16	6	0	1	0	0	0	0	0
Install Intersection Ahead Warning Signs (W2-1) on Minor Road Approaches on SW Bascom Norris Dr and SW Mary Ethel Ln	31	8	16	6	0	1	0	0	0	0	0
Relocate Billboard on SW Bascom Norris Dr and SW Mary Ethel Ln	31	8	16	6	0	1	0	0	0	0	0
Evaluate if Left Turn Lanes Are Warranted on the Major Road Approaches on SR-247 and CR-240	23	0	8	6	0	3	2	2	1	0	1
Perform a Signal Warrant on SR-247 and CR-240	23	0	8	6	0	3	2	2	1	0	1

Install LED Enhanced Flashing Stop Signs on SW Tustenuggee Ave at the SW CR-18 to SW Herlong St Intersections	23	8	2	6	0	3	2	2	0	0	0
Improved Delineation of Stop Bars on SW Tustenuggee Ave at the SW CR-18 to SW Herlong St Intersections	23	8	2	6	0	3	2	2	0	0	0
Duplicate Do Not Enter Signs (R5-1) on SR-247 and CR-240	22	0	8	6	0	3	2	2	1	0	0
Install Additional Street Lighting on SR-247 and CR-240	22	0	8	6	0	3	2	2	1	0	0
Improve Minor Road Approach Angles on SR-247 and CR-240	22	0	8	6	0	3	2	2	1	0	0
Install Flashers or LEDs on Intersection Warning Signs on SR-247 and CR-240	22	0	8	6	0	3	2	2	1	0	0
Install Additional Midblock Crossings on E Duval St from SE Lomond Ave to SR-100	21	4	0	9	2	3	2	0	0	0	1
Install Curve / Intersection Ahead Combination Sign with retroreflective strips 360 feet ahead of curve on SE CR-245 around SE Rogers Dr curve	19	0	8	6	0	3	0	0	1	1	0
Install minor road end-treatment signs and pavement markings on SE CR-245 around SE Rogers Dr curve	19	0	8	6	0	3	0	0	1	1	0
Update pavement markings on SE CR-245 around SE Rogers Dr curve	19	0	8	6	0	3	0	0	1	1	0
Relocate intersection warning sign at least 360 ft from intersection on SE CR-245 around SE Rogers Dr curve	19	0	8	6	0	3	0	0	1	1	0
Add yellow retroreflective strips to sign posts on SW CR-138 around Nantucket Pl curve	19	0	6	6	2	3	0	0	1	1	0
Install Chevron double sign assemblies facing both directions on SW CR-138 around Nantucket Pl curve	19	0	6	6	2	3	0	0	1	1	0
Trim tree branches and vegetation at curve area on SW CR-138 around Nantucket Pl curve	19	0	6	6	2	3	0	0	1	1	0
Restrict Eastbound Left Movement on the West Leg of E Duval St and SR-100	18	0	6	6	2	3	0	0	0	0	1
Update Pavement Markings on SW Tustenuggee Ave at the SW Herlong St and SW CR-240 Intersections	18	8	2	3	0	3	2	0	0	0	0
Install LED Enhanced Flashing Stop Sign on SW Tustenuggee at the SW Packard St and SW Minnie Gln Intersections	18	8	4	3	0	2	0	0	1	0	0
Install Speed Feedback Signs on SW Tustenuggee Ave from SW CR-242A to US-41/US-441	18	8	4	3	0	2	0	0	1	0	0
Fill In Sidewalk Gaps at E Duval St and SR-100	17	0	6	3	2	3	2	0	0	0	1
Revise Signal Timings at US-41 & CR-252	16	4	6	3	0	2	0	0	0	0	1
Install 3 oversized chevron double assemblies with retroreflective strips facing both directions. on SW CR-252A around SW Meadow Wood Gln curve	14	4	2	3	0	3	0	0	1	1	0
Refurbish white edge line pavement markings on SW CR-252A around SW Meadow Wood Gln curve	14	4	2	3	0	3	0	0	1	1	0
Install Roundabout at SW Tustenuggee Avenue and SW CR 240	13	4	0	3	0	3	2	0	0	0	1
Install Signal Backplates with Retroreflective Borders on SE Baya Dr/SR-10A from Country Club Rd to SE SR-100	13	0	2	6	2	3	0	0	0	0	0
Install Intersection Warning Sign (W2-1) on the Northbound of SW Tustenuggee Ave and SW CR-240	12	4	0	3	0	3	2	0	0	0	0
Install Intersection Lighting at SW Tustenuggee Ave and SW CR-240	12	4	0	3	0	3	2	0	0	0	0
Install Crosswalk for Shared-Use Path at SW Tustenuggee and SW CR-18	12	4	0	3	0	2	0	2	0	0	1
Remove Permitted Left Turn Phases on Major Approaches on US-90 and SW Pinemount Rd/NW Turner Ave	11	4	0	3	0	3	0	0	0	0	1
Implement Leading Pedestrian Interval on US-90 and SW Pinemount Rd/NW Turner Ave	11	4	0	3	0	3	0	0	0	0	1
Install Guardrail around Train Tracks on E Duval St from SE Lomond Ave to SR-100	11	0	6	0	2	3	0	0	0	0	0
Install Do Not Enter Signs at Train Tracks on E Duval St from SE Lomond Ave to SR-100	11	0	6	0	2	3	0	0	0	0	0
Remove Foliage on SE Baya Dr/SR-10A from Country Club Rd to SE SR-100	11	0	6	0	2	3	0	0	0	0	0
Evaluate Alternative Intersection Types at US-41 and SR-47	11	4	2	0	0	2	2	0	0	0	1
Synchronize the Two-Stage Crosswalk on the Southbound Leg at US-41 and SR-47	11	4	2	0	0	2	2	0	0	0	1
Install Slippery When Wet Signs (W8-5 and W8-10P) on SW Tustenuggee Ave from NW Herlong St to SW CR-240	11	4	4	0	0	3	0	0	0	0	0
Install Signal Ahead Signs (W3-3) on Major Road Approaches on US-90 and SW Pinemount Rd/NW Turner Ave	10	4	0	3	0	3	0	0	0	0	0
Update Crosswalk Markings on US-90 and SW Pinemount Rd/NW Turner Ave	10	4	0	3	0	3	0	0	0	0	0
Install Signage Around Channelizing Islands on US-90 and SW Pinemount Rd/NW Turner Ave	10	4	0	3	0	3	0	0	0	0	0
Install Supplemental Pedestrian Warning Signs (W11-2 with a W16-7PR or W16-7PL)	10	4	0	3	0	3	0	0	0	0	0
Remove Foliage on SW Tustenuggee Ave at the SW Packard St and CR-242A Intersections	10	0	4	3	0	2	0	0	1	0	0
Restrict Minor Street to Right Out Only at Llewellyn Ave on SE Baya Dr/SR-10A from Country Club Rd to SE SR-100	10	0	4	0	2	3	0	0	0	0	1
Add Transverse Rumble Strips on Eastbound SR-47 approach at US-41 and SR-47	10	4	2	0	0	2	2	0	0	0	0
Relocate Northbound Stop Bar at US-41 and SR-47	10	4	2	0	0	2	2	0	0	0	0
Install Supplemental Signals at US-41 and SR-47	10	4	2	0	0	2	2	0	0	0	0
Adjust Eastbound Do Not Enter Sign on SW Main Blvd from US-441 to SW Saint Margarets St	10	4	2	0	0	2	2	0	0	0	0
Install Signal Backplates with Retroreflective Borders on SW Main Blvd from US-441 to SW Saint Margarets St	10	4	2	0	0	2	2	0	0	0	0
Install Flashing Yellow Signal for Left Turn from US-441 onto US-41	9	0	6	0	0	2	0	0	0	0	1
Install Pedestrian Hybrid Beacons on NW Long St from NW Lake Jeffery Road to US-441/SR-47	8	0	2	0	2	3	0	0	0	0	1
Install Guardrails on Curves on SE CR-349 from CR-131/SW Tustenuggee Ave to US-41	7	4	0	0	0	3	0	0	0	0	0
Check Superelevation On Curves on SE CR-349 from CR-131/SW Tustenuggee Ave to US-41	7	4	0	0	0	3	0	0	0	0	0
Install Chevron Signs (potentially with flashing lights or LEDs) on SE CR-349 from CR-131/SW Tustenuggee Ave to US-41	7	4	0	0	0	3	0	0	0	0	0
Add LEDs to Existing Chevron Signs on SE CR-349 from CR-131/SW Tustenuggee Ave to US-41	7	4	0	0	0	3	0	0	0	0	0

Evaluate Alternative Intersection Configurations at NW Long Rd and NW Texas Ave	6	0	0	0	2	3	0	0	0	0	1
Install Chevrons at Curves on SW Tustenuggee Ave from SW CR-18 to SW Herlong St	6	0	2	0	0	2	0	2	0	0	0
Extend Guardrail around Train Tracks on NW Long St from NW Lake Jeffery Road to US-441/SR-47	5	0	0	0	2	3	0	0	0	0	0
Update Signs at HAWK Crossing on E Duval St from SE Lomond Ave to SR-100	5	0	0	0	2	3	0	0	0	0	0
Install Chevrons at Curves on SW Tustenuggee Ave from NW Herlong St to SW CR-240	3	0	0	0	0	3	0	0	0	0	0