



Safety Action Plan



October 2024



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Downtown Beaufort, South Carolina



Lowcountry Safety Action Plan

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Hampton County near Estill, South Carolina

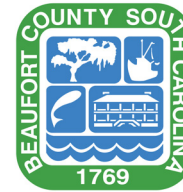


ACKNOWLEDGMENTS



We extend our sincere appreciation and thanks to the residents, community members, advocacy groups, municipality and county staff, and all involved stakeholders who participated in engagement, communication, and coordination throughout the plan process. This input guided the development of this plan and is critical to its implementation.

- Beaufort County
- Beaufort County EMS
- Beaufort County Human Services Alliance
- Beaufort County Public Works
- Beaufort County School District
- Bike Walk Hilton Head Island
- Bluffton Fire Department
- City of Beaufort
- Town of Bluffton
- City of Hardeeville
- City of Walterboro
- Colleton County
- Gullah Geechee Sea Island Coalition
- Hampton County
- Jasper County
- Jasper County School District
- Lowcountry Bike/Walk
- Palmetto Breeze Transit
- South Carolina Department of Transportation
- Spanish Moss Trail
- Town of Edisto Beach
- Town of Hilton Head Island
- Town of Port Royal
- Town of Ridgeland



A. Introduction



INTRODUCTION

The Lowcountry region of South Carolina is rich in history, culture, and community. Reflective of the rest of the state, rural, urban, coastal, and suburban areas define the landscape. The state is ranked second nationally in fatal crash rate and pedestrian fatality rate (NHTSA, 2021) These trends are prevalent in the Lowcountry as well, with two of four counties ranked in the top 10 among South Carolina counties in pedestrian-involved fatal or injury crashes and all four counties ranked in the top 10 for cyclist-involved fatal or injury crashes (SCDOT, 2022).

Study Area

The Lowcountry Council of Governments (LCOG) encompasses the four-county region of Beaufort, Colleton, Hampton, and Jasper counties in southeastern South Carolina. Bridging the region between Charleston, South Carolina, and Savannah, Georgia, the Lowcountry boasts natural beauty that attracts residents and visitors to its beaches, countryside, and marshes. Each county is unique and has its own history, population, and demographics. Together, the four-county region is known for its generally rural and historic landscape with growing, bustling downtown areas and nearby residential areas. Popular destinations such as Hilton Head Island, Beaufort, Bluffton, and Edisto Beach are all located within LCOG, which see hundreds of thousands of tourists per year. However, beyond these well-known locales are small towns and unincorporated communities that line the region’s many state highways and local roadways. **This plan intends to serve as a guide and resource for driving safety improvements across all jurisdictions in the Lowcountry.** The four counties comprising the Lowcountry Region are detailed further in the following subsections. A map with key information within each county is shown in Figure A.1.

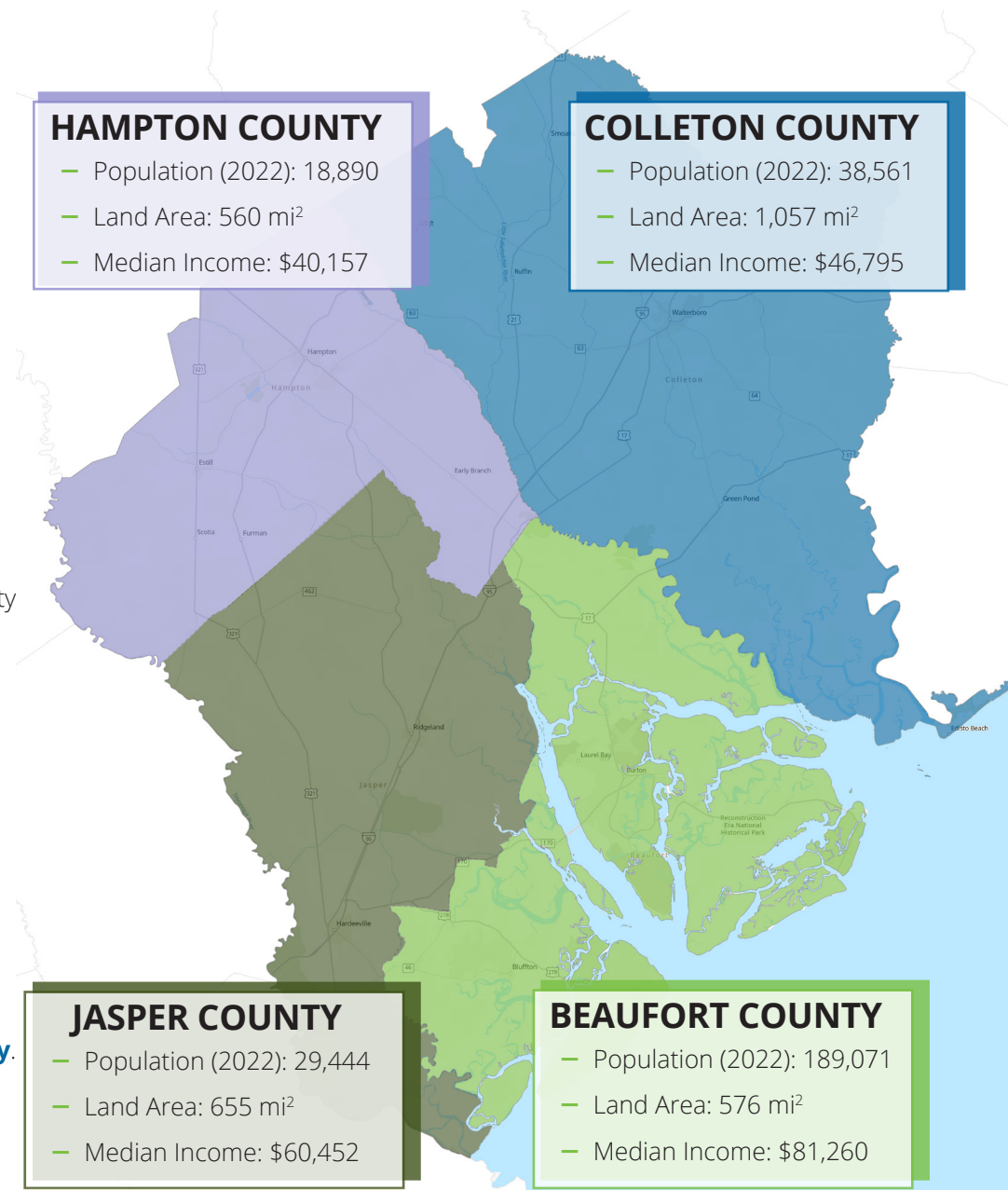


Figure A.1 LCOG county breakdown



SAFETY ACTION PLAN

Beaufort County

Beaufort County was originally inhabited by various Native American tribes. Spanish exploration in the 16th century followed by French and English settlers established the county in 1769. Following the Revolutionary War, Beaufort County became a prominent agricultural region, with large plantations marking the landscape. Despite economic difficulty following the Civil War, recent influxes have been driven by tourism. Today, the region is known for its charming coastal towns, beaches, and its historic districts, such as Beaufort’s Old Point neighborhood, the Town of Bluffton, and Hilton Head Island. Beaufort County holds onto its unique Gullah culture, which is rooted in the traditions of African slaves and their descendants. Historic landmarks, churches, and trees define this beautiful county. A map of Beaufort County is shown in Figure A.2.

Municipal Areas

- Beaufort
- Bluffton
- Hardeeville (partially Jasper County)
- Hilton Head Island
- Port Royal
- Yemassee (partially Hampton County)

Beaufort County is home to countless protected natural areas. The Marine Corps also operates a Recruit Depot on Parris Island and an Air Station in Beaufort. The University of South Carolina has a campus in Beaufort.



Figure A.2 Beaufort County

Colleton County

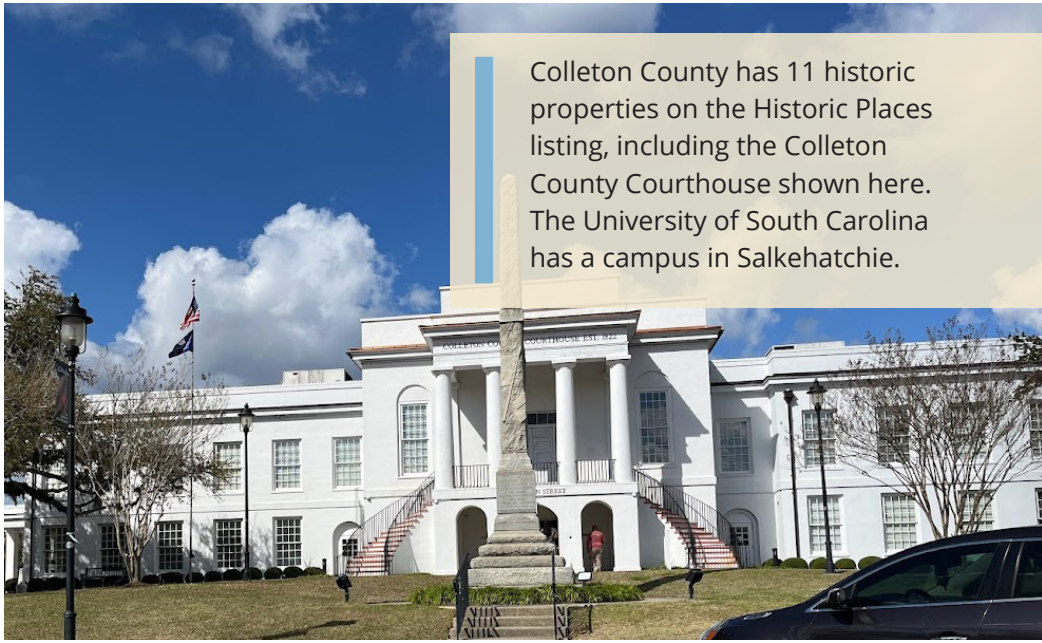
Established in 1682, Colleton County was one of the first three proprietary counties of South Carolina. Its roots, like much of the Lowcountry, are in agriculture, with an emphasis on cattle-raising during the Colonial period. Large plantations, mainly growing cash crops such as sea island cotton and rice, were replaced during Reconstruction by farms with timber, livestock, and crops. Today, Colleton County is predominantly rural and encapsulates the beauty of the Lowcountry, with the ACE Basin Wildlife Refuge and Edisto River defining the landscape. A map showing Colleton County is shown in Figure A.3.

Municipal Areas

- Cottageville
- Edisto Beach
- Lodge
- Smoaks
- Walterboro
- Williams



Figure A.3 Colleton County



SAFETY ACTION PLAN

Hampton County

Founded in 1878, Hampton County was established from the northwest portion of Beaufort County. During the Civil War, many planters fled to Hampton County from Beaufort County and established their farms, many of which stand today. Today, the region has numerous wildlife management areas, small downtowns, and agricultural and timber districts. Corn, soybeans, wheat, and cotton are the major crops, along with timber. Hampton County is known for its wildlife, hunting lands, and rural, untouched lands. A map of Hampton County is shown in Figure A.4.

Municipal Areas

- Brunson
- Estill
- Furman
- Gifford
- Hampton
- Luray
- Scotia
- Varnville
- Yemassee (partially Beaufort County)



The Town of Hampton was founded shortly after Hampton County, where the courthouse is located, shown above.

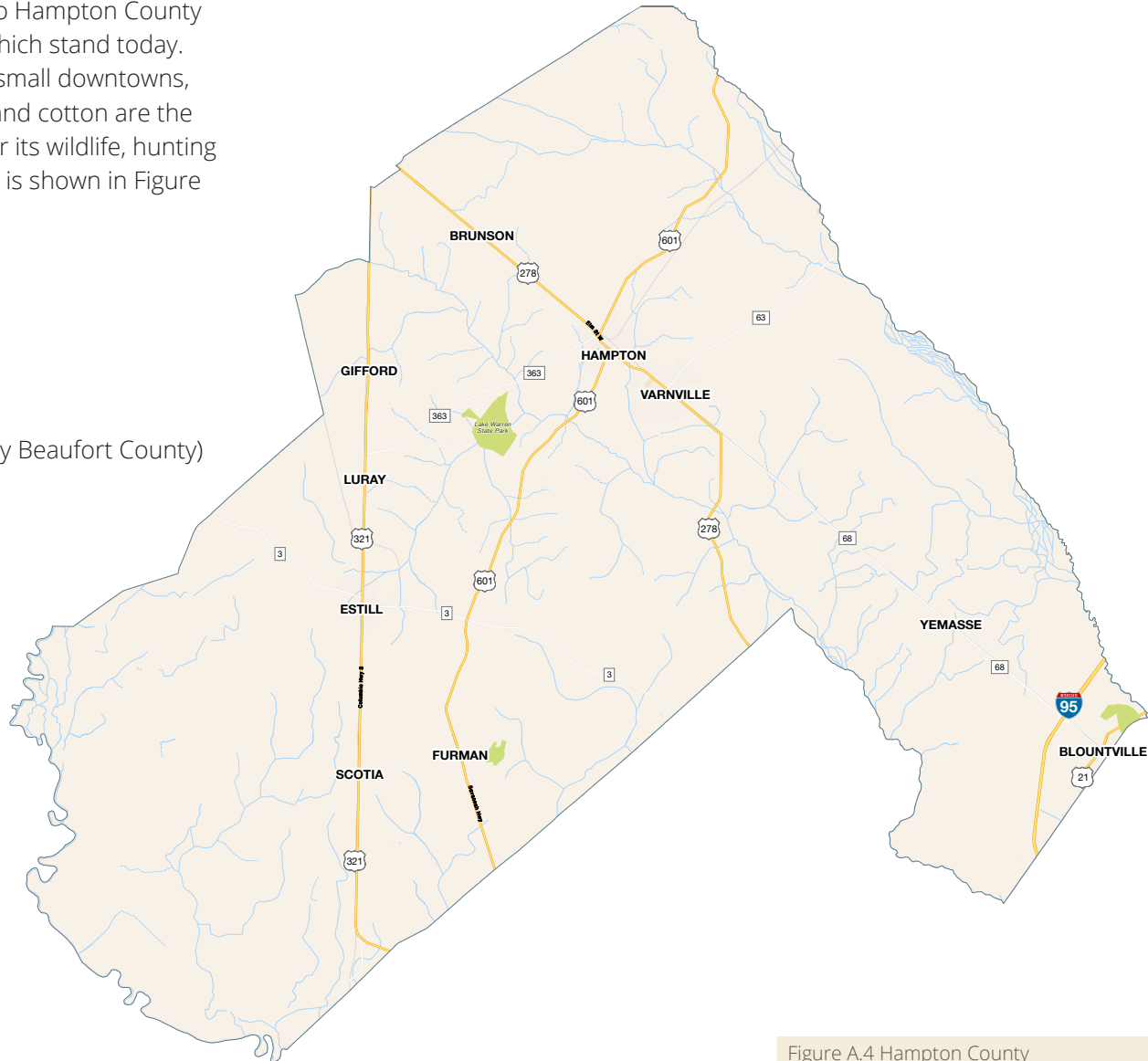


Figure A.4 Hampton County



Figure A.5 Jasper County

Jasper County

Established in 1912, Jasper County was formed from portions of Hampton County and Beaufort County. Prior to colonial times, Jasper County was inhabited by the Yemassee and Coosaw Indians. In the 17th and 18th centuries, rice plantations were built, and many of these still exist as part of the Savannah National Wildlife Refuge. Since 2020, parts of Jasper County have been developing rapidly, particularly around the City of Hardeeville and near the unincorporated community of Okatie. Jasper County is heavily influenced by the I-95 corridor and its proximity to Savannah, Georgia. Jasper County has experienced new growth in tourist and residential areas, complemented by rural and historic towns that many have called home for decades. Jasper County is shown in Figure A.5.

Municipal Areas

- Hardeeville
- Ridgeland

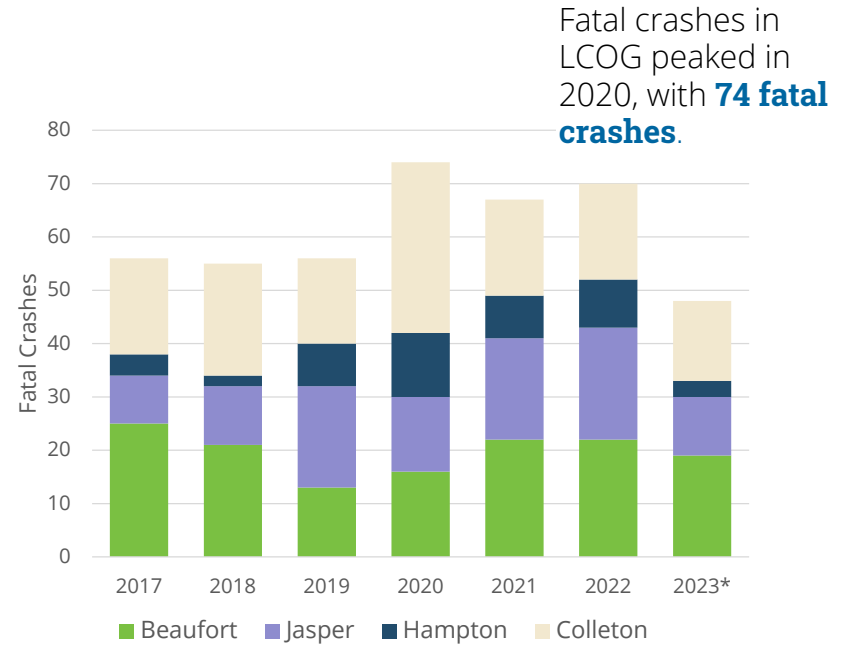


Background

LCOG received funding through the United States Department of Transportation (USDOT) Safe Streets and Roads for All (SS4A) program to develop a Safety Action Plan for its four-county region of Beaufort, Colleton, Hampton, and Jasper counties. This plan will guide investments in safety initiatives and new infrastructure across the region and serve as a basis for individual communities to seek funding through the SS4A program. The statistics summarized in Figure A.6 and on the following page underscore the need for action and serve as the foundation for the steps LCOG is taking to emphasize safety for all users.

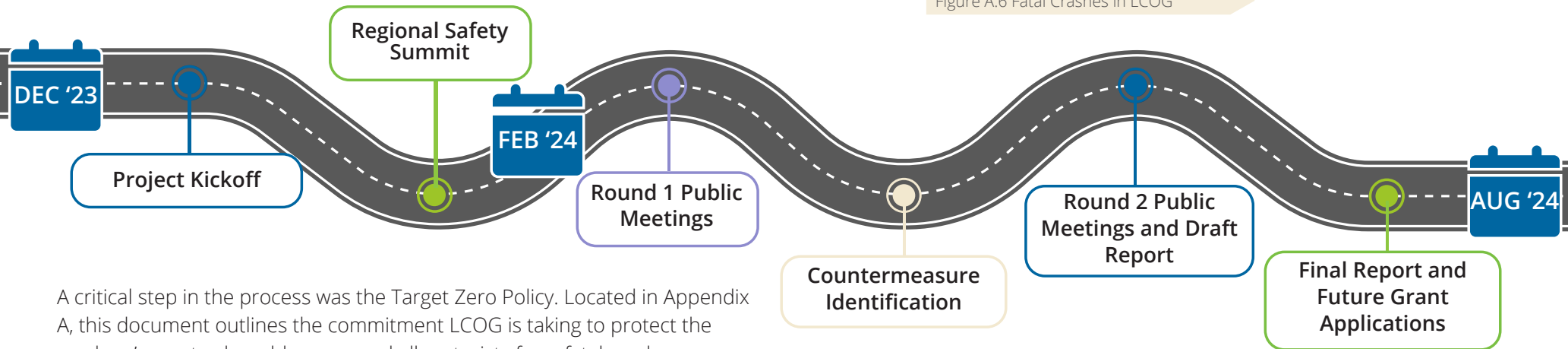
The Process

The Safety Action Plan process was crafted to maximize opportunities with the public and with stakeholders, while allowing time for frequent project team check-ins and detailed crash analysis. The entire project process is displayed in the road map in Figure A.7 and shows the length of the project as well as key milestones.



*2023 crashes include up to October 2023

Figure A.6 Fatal Crashes in LCOG



A critical step in the process was the Target Zero Policy. Located in Appendix A, this document outlines the commitment LCOG is taking to protect the roadway's most vulnerable users and all motorists from fatal crashes.

Figure A.7 Project Roadmap

By the Numbers

Between January 2017 and October 2023,
there were...

400+ Fatalities	13,000+ Injuries	43,000+ Crashes
------------------------	-------------------------	------------------------

reported on Lowcountry COG roadways

In the same time frame, there were...

450+ Bicycle/Pedestrian Crashes	370+ Bicycle/Pedestrian Injuries	70+ Bicycle/Pedestrian Fatalities
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reported on Lowcountry COG roadways




Figure A.8 Crash Breakdown






SAFETY ACTION PLAN

Purpose and Need

As highlighted by the crash statistics on the previous page, there is a clear need for system-wide infrastructure improvements in LCOG. For the purposes of organization and categorization, the data was divided between counties. **However, the goal of serving every individual, regardless of county or municipal area they belong to, and their transportation needs, was prioritized.** A particular focus on schools and the surrounding communities, new development pressures, rural communities, the aging population, tourists/unfamiliar road users, and disadvantaged groups were considered paramount in the planning process.

 <p>Schools</p>	<ul style="list-style-type: none"> There are 63 public schools in LCOG with a total enrollment of approximately 35,000 students (Source: NCES) Approximately 20% of all fatal/serious injury crashes occurring over the study period occurred within 1/2 mile of these schools
<p>Aging Population</p> 	<ul style="list-style-type: none"> Since 2000, the proportion of residents over age 55 has increased from 24% to 39% (Source: LCOG)
<p>Development</p> 	<ul style="list-style-type: none"> Since 2000, LCOG has experienced a total population growth of 37% (Source: LCOG) Beaufort and Jasper counties have grown 56% and 42%, respectively, over this period (Source: LCOG)

 <p>Rural Areas</p>	<ul style="list-style-type: none"> Approximately 95% of LCOG by land area falls outside of urban areas as defined by the 2020 Census (Source: US Census Bureau) Approximately 61% of all fatal and serious injury crashes occurring over the study period occurred within areas classified as rural per the 2020 Census (Source: US Census Bureau)
<p>Tourists</p> 	<ul style="list-style-type: none"> Data indicate that approximately 100,000 trips through the region are made daily by non-residents of LCOG (Source: Replica) Approximately 22,500 daily trips begin and end outside of LCOG but utilize LCOG roadways; US 17 and I-95 are primary contributors to this trend (Source: Replica)
<p>Disadvantaged Groups</p> 	<ul style="list-style-type: none"> 31% of all Census Tracts in LCOG are classified as disadvantaged per USDOT (Source: USDOT ETC Explorer) 76,200 people live within these Census Tracts (Source: USDOT ETC Explorer) 56% of all fatalities and 44% of all serious injuries (48% overall across these categories) occurred within disadvantaged Census Tracts (Source: USDOT ETC Explorer)

Regional Context

While the Lowcountry is a distinct part of South Carolina, home to nearly 280,000 people as of the 2020 Census, the region also serves as a nationally significant tourist destination and regional connector between Georgia and South Carolina. The map in Figure A.8 provides context for how the Lowcountry's four-county region fits into the greater area's infrastructure.

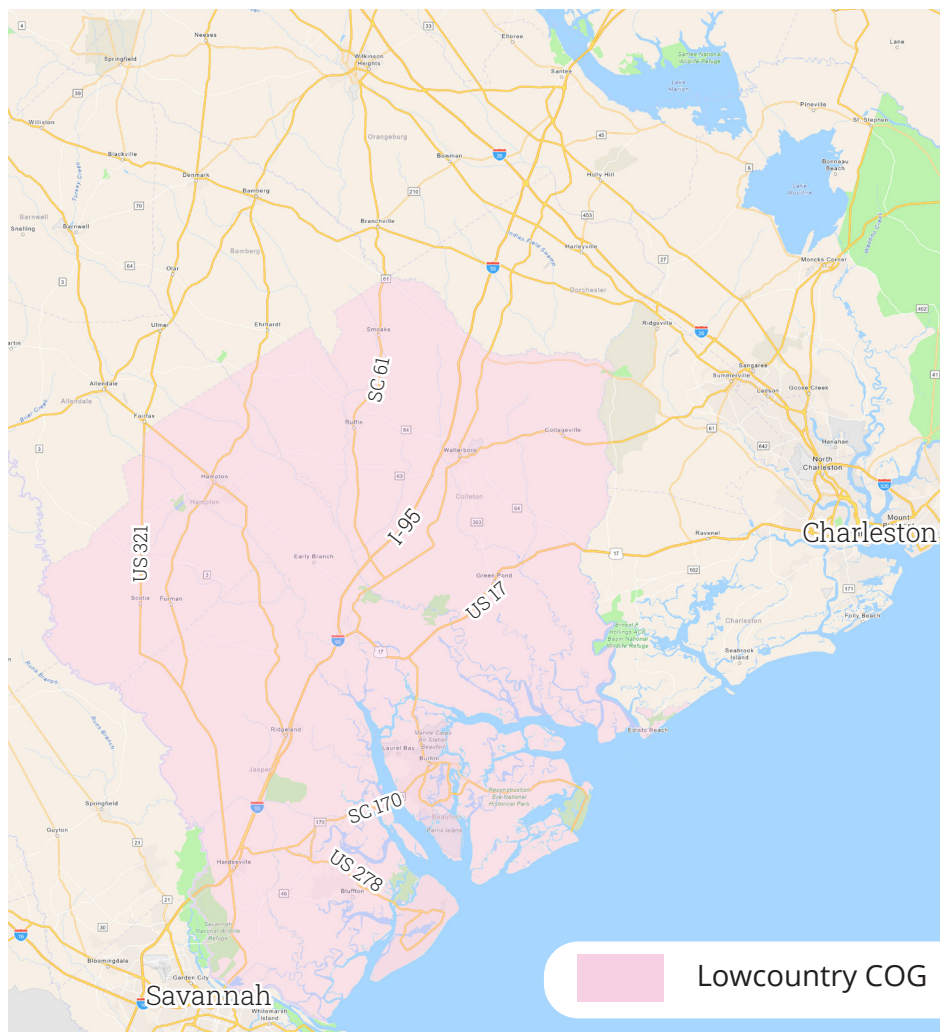
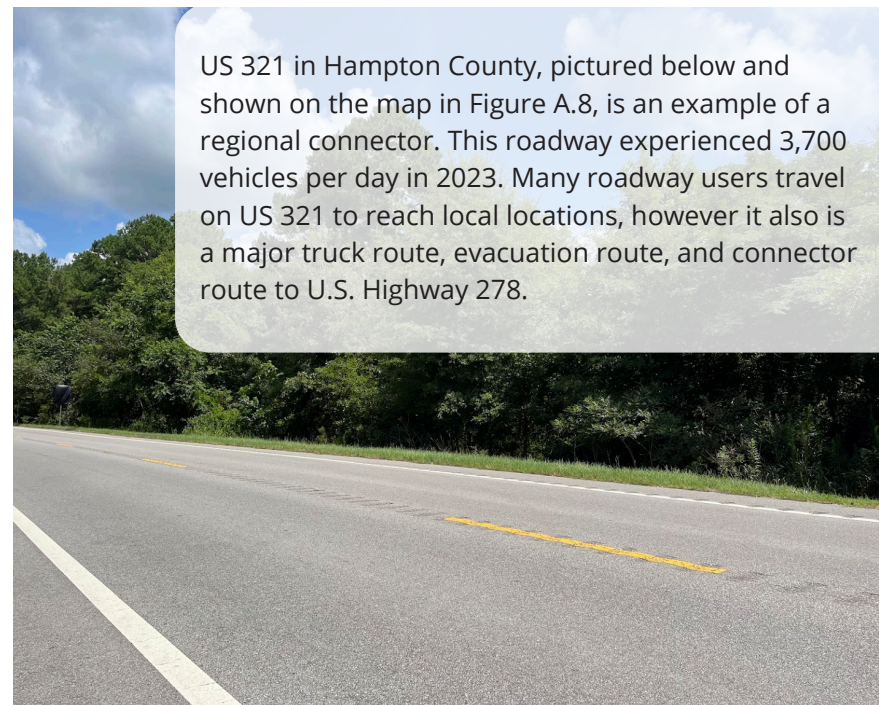


Figure A.9 LCOG Regional Context



US 321 in Hampton County, pictured below and shown on the map in Figure A.8, is an example of a regional connector. This roadway experienced 3,700 vehicles per day in 2023. Many roadway users travel on US 321 to reach local locations, however it also is a major truck route, evacuation route, and connector route to U.S. Highway 278.

The Importance of Connectivity

22,500 trips per day begin and end outside of the region, underscoring the role of principal arterials such as I-95 and US 17 in serving long-distance, inter-state trips. Considering all trips that begin in, end in, or pass through the region, the average trip duration in 2023 was 40.6 minutes, and approximately 30% of all trips exceeded 40 minutes in length. These longer distance trips allude to some of the region's emphasis areas with respect to safety, including high travel speeds and unfamiliar road users. LCOG's roadways are indispensable connectors regionally inside and outside of South Carolina.



B. Goals



GOALS

At the core of the Safety Action Plan are comprehensive goals to guide the planning process. The actions, visioning, and investments developed through this Plan are guided by the following directives.

Safe Systems Approach: Prioritizing Safer Speeds

The LCOG aims to provide facilities that encourage drivers to select speeds consistent with the posted speed and mitigate the risk of serious injuries when crashes do occur. Key actions include:

- Achieve consistency between motorists' speeds and posted speed limits by planning for, redesigning, and monitoring streets to address speed management.
- In urban areas, strategically update roadways to recalibrate speed limits and effectively manage the flow of traffic with signal updates.
- In rural areas, pave dirt roads and implement roadway departure countermeasures on existing paved roadways that currently promote high speeds or provide limited roadside forgiveness, especially at night or during inclement weather. These countermeasures include, but are not limited to, enhanced pavement markings and relocation, removal, or shielding or roadside obstacles.

Throughout this Safety Action Plan, the data analysis and recommendations are divided based on County. This was chosen as the natural division due to the general similarities of attributes within each county, such as demographics and character. While some statistics and sections are organized this way, the Plan is meant to serve as a blend of all four counties and all the municipalities that were involved in the process, from the first rounds of stakeholder engagement to the final public meeting.



Connectivity & Redundancy: Providing Reliable Routes

The LCOG recognizes the need to provide a transportation network that connects people and places, and to invest in system redundancy that accommodates the area's growth and coastal topography. Key actions include:

- Prioritize locations that are currently stressed or over-capacity, particularly in locations with one critical point such as bridges and causeways.
- Consider all users when connecting locations, especially those that are disadvantaged or otherwise rely on pedestrian and bicycle infrastructure for accessible transportation.



Communication, Collaboration, and Coordination

The LCOG is focused on developing a plan that serves all of its towns, cities, and agencies well and to facilitating effective collaboration between these parties and the general public as safety solutions are identified and implemented. Key actions include:

- Devote significant time and resources to active collaboration with the public, stakeholders, and peer agencies as the plan is implemented to ensure that the proposed safety strategies meet the needs of all.
- Serve as a guiding resource for communities seeking to implement the plan's vision and encourage supplemental planning and demonstration activities that enhance the potential benefits of the proposed strategies.



Safe Access for All: Serving a Diverse Population

The LCOG is committed to providing a safe and effective transportation system that caters to the needs of a diverse population with demands unique to the region. These demographics include an aging population of coastal retirees, a population of tourists unfamiliar with the area, and a significant proportion of the population living in rural and underserved communities. Key actions include:

- Invest in proven education and engineering countermeasures that will aid all drivers in making safe decisions and create a forgiving roadway and roadside environment for unfamiliar or disadvantaged road users. These strategies include, but are not limited to, offset turn lanes, roundabouts, updated signage, improved delineation, other roadway departure countermeasures, roadway lighting and targeted educational initiatives.
- Prioritize vulnerable road users by enhancing bicycle and pedestrian infrastructure to provide renewed transportation alternatives in rural areas; create and promote safe routes to school; improve visibility and mitigate crash risk in high-demand locations; and encourage alternate modes of transportation for the native population as well as those visiting.

Demographic highlights for income and race are shown in the following graphics to further express the uniqueness of the region and the need to accommodate recommendations across all types of individuals and communities.

KEY DEMOGRAPHIC HIGHLIGHT: INCOME

Beaufort's median income is over twice that of Hampton, and approximately 1.7 times that of Colleton. Jasper has the second highest median income at \$60,452. These numbers are shown in Figure B.1

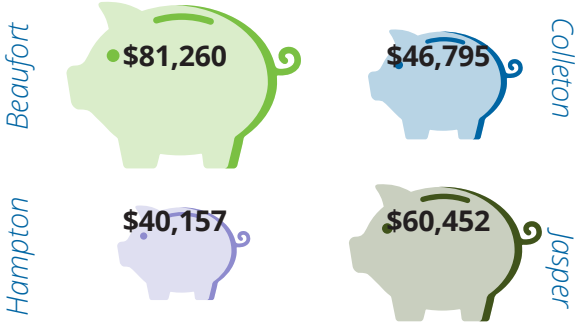


Figure B.1 Median Income

KEY DEMOGRAPHIC HIGHLIGHT: RACE

Beaufort County has the highest percentage of White residents, followed by Colleton. Hampton County has the highest percentage of Black residents, at 52.75%. These percentages are shown in Figure B.2.

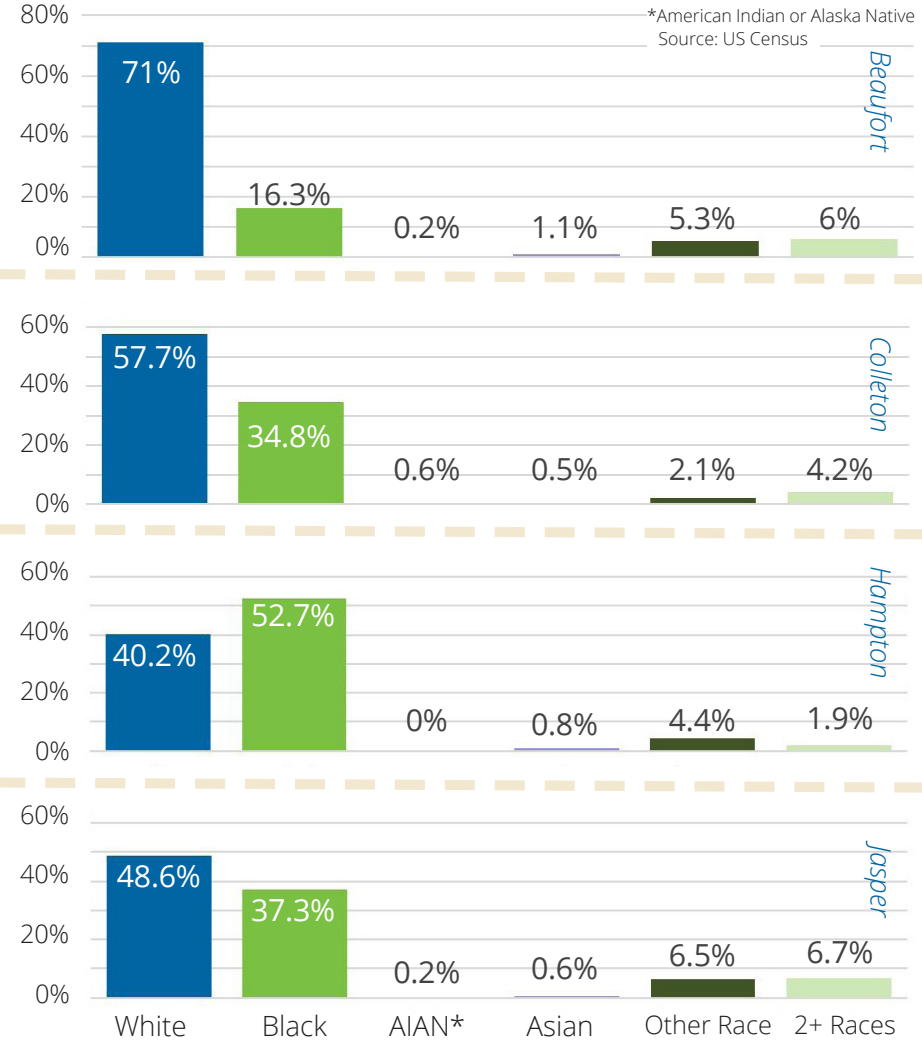


Figure B.2 Demographic Context



C. Data Review



DATA REVIEW

Reviewing crash data and analyzing safety trends and contributing factors was the first quantitative step in identifying actionable projects.

Overall Trends

Analyzing crash data for the entire LCOG region to understand general trends was the primary step in understanding the history, type, and severity of crashes the four-county region has experienced.

Throughout the Years

Crash data was reviewed for the time frame between January 1, 2017 and October 23, 2023. All crashes and fatal/serious injury crashes peaked in 2021, despite the decreased traffic volumes caused by the COVID-19 pandemic, and remained high in 2022, as shown in Figure C.1.

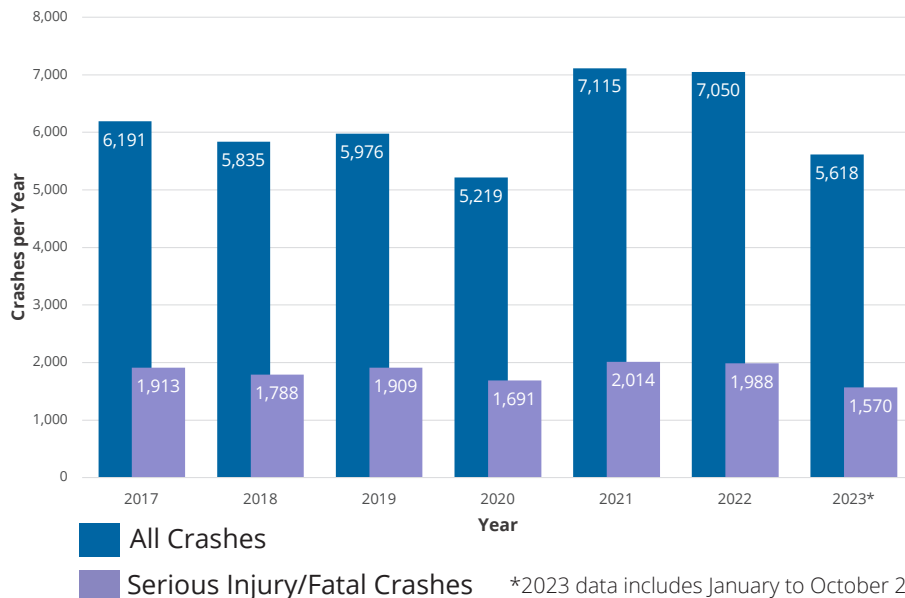


Figure C.1 Crashes per Year

Severity

The KABCO Injury Classification Scale, produced by the Federal Highway Administration (FHWA), was used to classify crashes in LCOG. The following chart in Figure C.2 highlights the different injury classes that occurred over the period between January 2017 and October 2023.

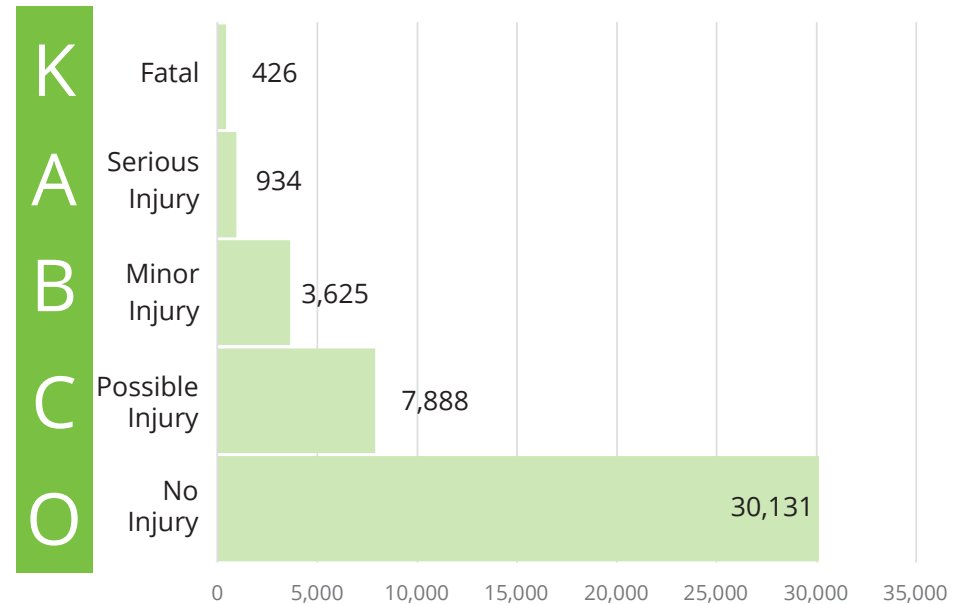


Figure C.2 KABCO Crash Breakdown

43,000+ crashes.
13,000+ injuries.
400+ fatalities.

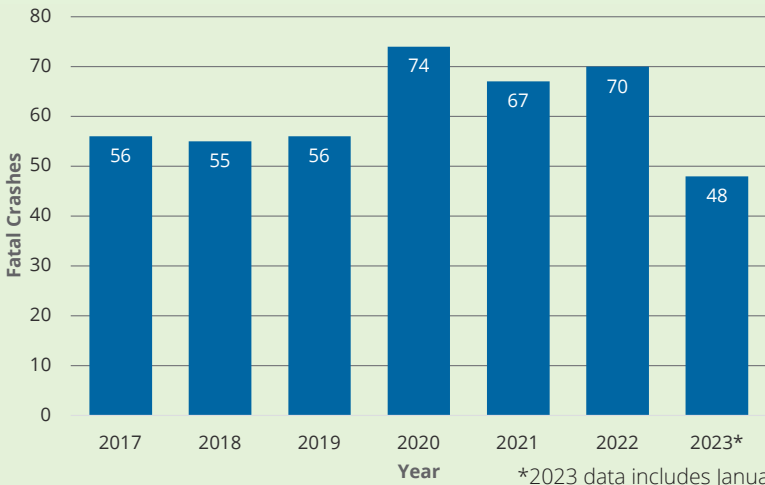


Focus on Fataals

Between January 1, 2017 and October 23, 2023, **426 crashes in LCOG resulted in a fatality**. This equates to approximately 1.2 fatalities per week. The fatal crashes are highlighted in Figure C.3.

Primary Contributing Factors

1. Driver Under Influence (86 fatal crashes)
2. Driving too Fast for Conditions (58 fatal crashes)
3. Ran off Road (42 fatal crashes)
4. Failed to Yield Right-of-Way (38 fatal crashes)
5. Lying and/or Illegally in Roadway (30 fatal crashes)



Fatal crashes peaked in 2020, despite the decrease in traffic volumes caused by the COVID-19 pandemic.

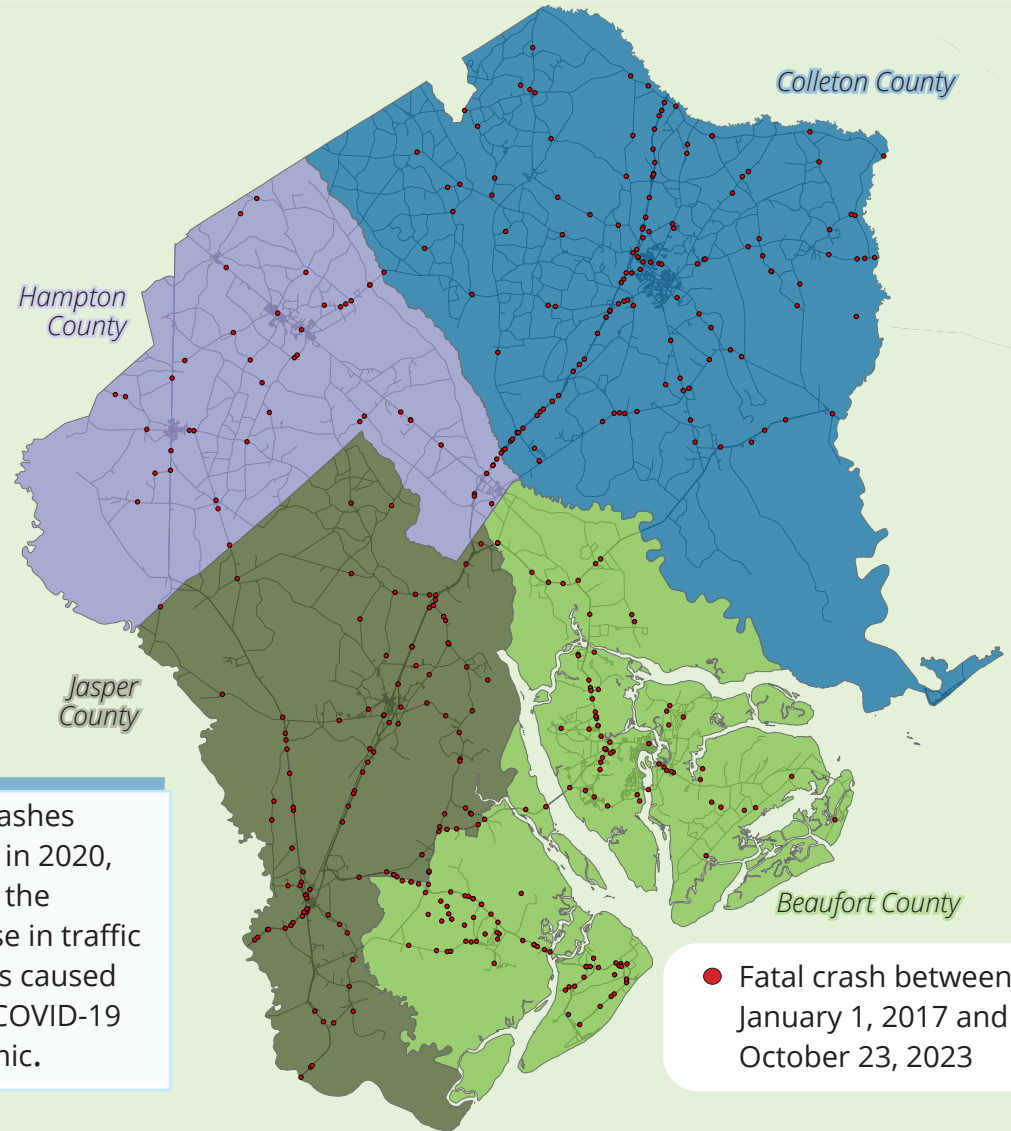


Figure C.3 Fatal Crashes Mapped

Non-Motorized Involvement

In total, 462 pedestrian and bicycle crashes occurred in LCOG between January 1, 2017 and October 23, 2023. **Of these, 15% resulted in a fatality, 81% resulted in an injury, and 4% resulted in no injury.**



PEDESTRIAN CRASHES



BICYCLE CRASHES

- Pedestrian and bicycle crashes are almost 3 times more likely to result in an injury than vehicle-only crashes.
- Pedestrian and bicycle crashes are almost 30 times more likely to result in a fatality than vehicle-only crashes.
- Of all 462 pedestrian and bicycle crashes occurring in LCOG, only 17 resulted in no injury.

Crash severity comparisons between vehicle-only and pedestrian/bicycle-only crashes is displayed in Figure C.4.

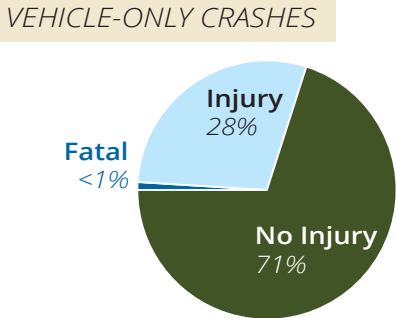
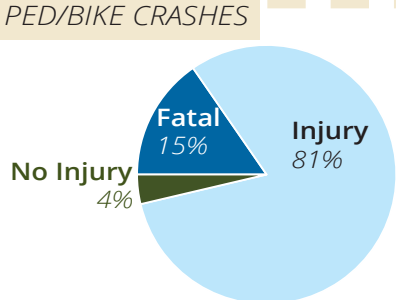


Figure C.4 Crash Severity

THE COST OF CRASHES

Severity	Unit Cost (\$2022)	Crashes	Comprehensive Crash Cost
K - Fatal	\$12,500,000	426	\$5,325,000,000
A - Incapacitating Injury	\$1,188,200	934	\$1,109,778,800
B - Non-Incapacitating Injury	\$233,800	3,625	\$847,525,000
C - Possible Injury	\$111,700	7,888	\$881,089,600
O - No Injury	\$5,000	30,131	\$150,655,000
Total			\$8,314,048,400

SOURCE: *Benefit-Cost Analysis Guidance for Discretionary Grant Programs*

In total, crashes occurring over the studied period between 2017-2023 had a dollar-equivalent societal impact of over 8 billion USD. This is only the direct cost; this does not include the impacts of additional congestion created when travel lanes are blocked by disabled vehicles. Congestion caused by crashes creates opportunities for secondary crashes and additional delay.

Table C.1 Cost of Crashes



County-Specific Trends

As highlighted in the Introduction, each county within LCOG's four-county region is unique and offers different features, landscape, and population. Similarly, crash patterns and statistics vary amongst the counties. The following sections summarize general trends per county as well as note any specific data points or anomalies unique to each county.

Beaufort County

Beaufort County experienced a total of 22,668 crashes between January 1, 2017 and October 23, 2023, representing over two thirds of all crashes occurring in LCOG. Beaufort County also represents over half of the entire population of LCOG; all other counties combined have 100,000 less people than Beaufort County alone. Beaufort County's fatal and serious injury crashes are dispersed throughout the county, as shown in Figure C.5.

Contributing Factors

The top 5 contributing factors to serious injury or fatal crashes in Beaufort County are:

- Failed to Yield Right of Way (148 crashes)
- Driving too Fast for Conditions (88 crashes)
- Driver Under Influence (79 crashes)
- Disregarded Signs/Signals/Etc. (42 crashes)
- Distracted/Inattention (29 crashes)

The first contributing factor, Failed to Yield Right of Way, points to an abundance of intersection crashes which correlates to the more populous and urban nature of Beaufort County.

138 Fatalities.
6,575 Injury Crashes.
22,668 Total Crashes.

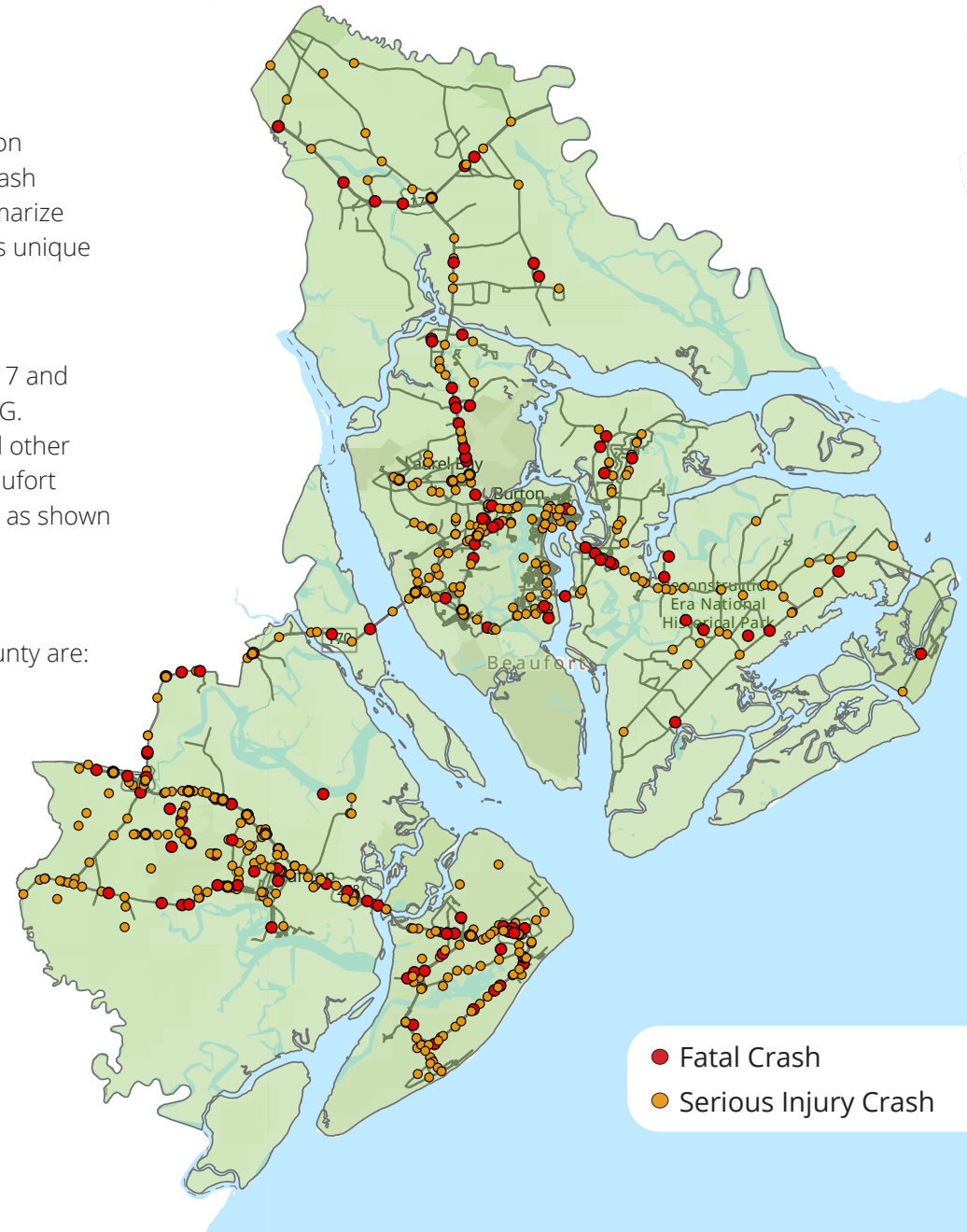


Figure C.5 Beaufort Fatal & Serious Injury Crashes

Nighttime Crashes

Nighttime crashes are more likely to result in a serious injury or death in Beaufort County. When analyzing all crashes, 73% occurred during the daylight, and the remaining 27% occurred during dark, dawn, or dusk conditions. When analyzing just serious injury and fatal crashes, only 53% occurred during the daylight, and the remaining 47% occurred during dark, dawn, or dusk conditions. Fatal and serious injury crashes are significantly more likely to occur during dark conditions.

Pedestrian and Bicycle Crashes

In Beaufort County, 311 bicycle and pedestrian crashes occurred between January 1, 2017 and October 23, 2023, which is displayed in Table C.1.

	Fatal	Serious Injury	Minor Injury	Possible Injury	No Injury
	11	21	90	50	12
	29	29	42	25	2

Table C.2 Bike-Ped Crash Severity



In SCDOT’s Pedestrian and Bicycle Safety Action Plan (PBSAP), the following segments and intersections in Beaufort County were identified as high-crash segments:

- William Hilton Parkway from Union Cemetery Road to Beach City Road
- Palmetto Bay Road from Archer Road to William Hilton Parkway
- William Hilton Parkway and Mathews Drive
- William Hilton Parkway and Palmetto Parkway
- Sea Island Parkway and Lady’s Island Drive

Pedestrian and Bicycle Crashes

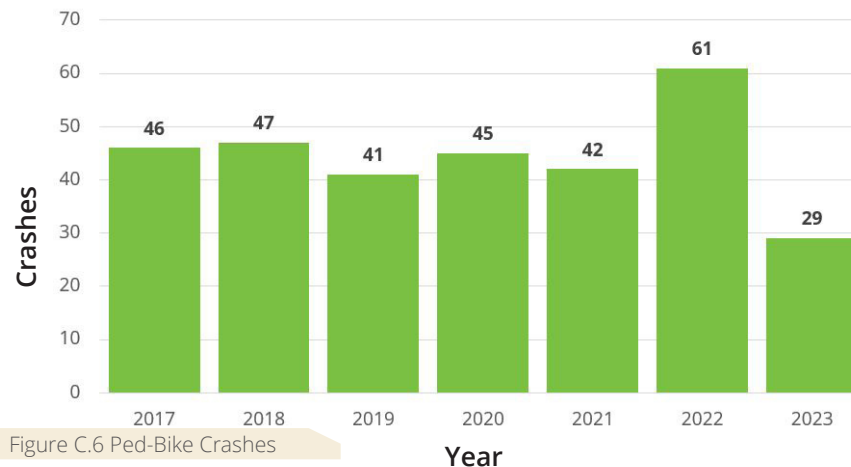


Figure C.6 Ped-Bike Crashes

Over the years, pedestrian and bicycle crashes remained steady between 2017 and 2021, and spiked in 2022, as shown above in Figure C.6. The bar for 2023 only represents crashes between January 1 and October 23; however, if trends continued, 2023 would have ended the year with around 36 crashes, notably less than prior years.

THE SUMMER MONTHS In Beaufort County

In the summer months between the beginning of May and the end of August, 110 of the 311 total pedestrian and bicycle crashes occurred. Four months of the twelve comprised over 35% of the total crashes involving the roadway’s most vulnerable users. Despite longer days of daylight and improved weather, pedestrians and bicycles are still at risk of injury or death on Beaufort County roadways. When involved in a bicycle or pedestrian crash, the likelihood of it resulting in an injury or death is over 95%.

Colleton County

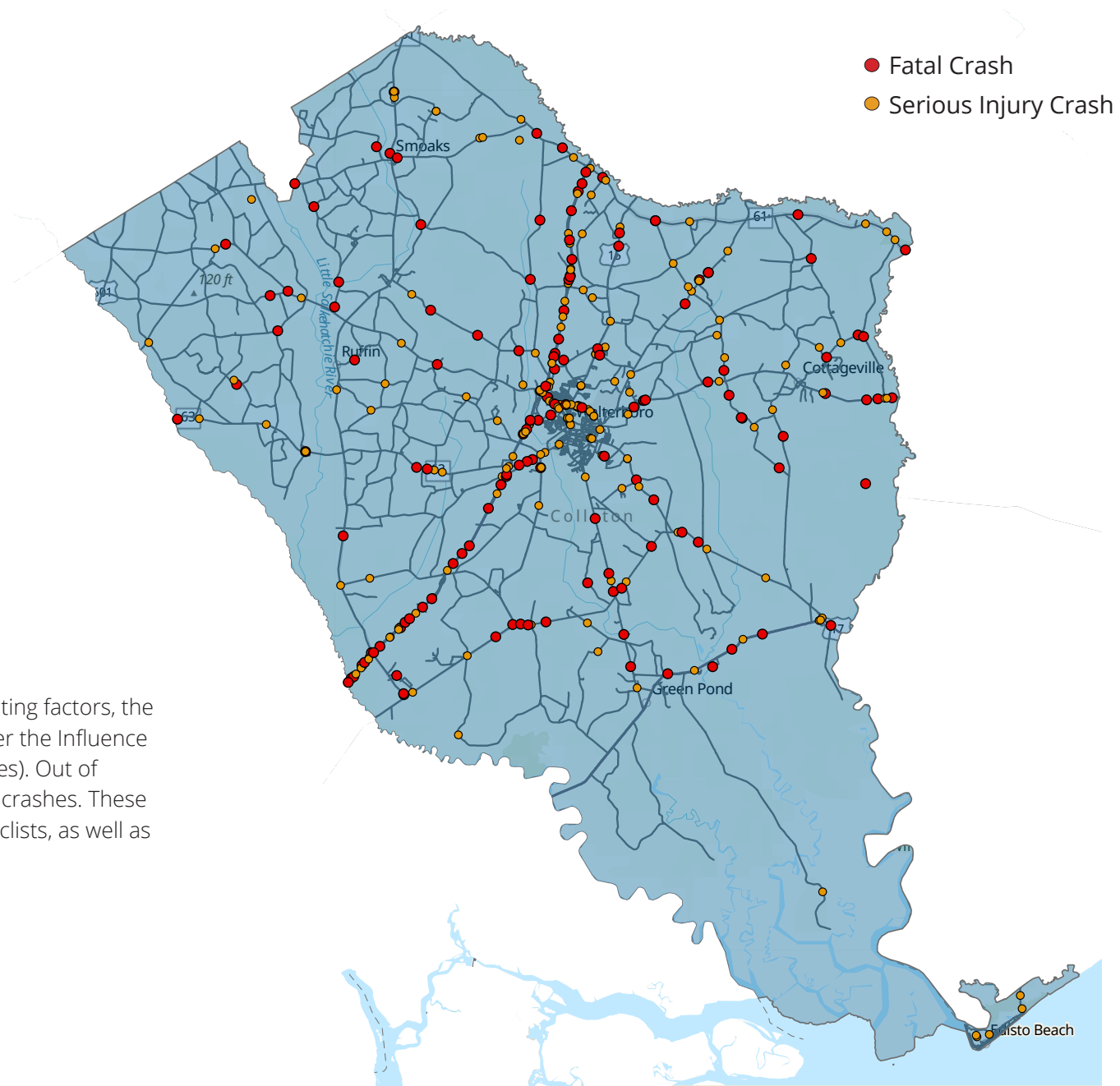
Colleton County experienced a total of 8,701 crashes between January 1, 2017 and October 23, 2023. Colleton County experienced 312 fatal and serious injury crashes during that time frame, which are displayed in Figure C.7. While many of these crashes occurred on Interstate 95, a substantial proportion occurred on local and rural roadways.

Contributing Factors

The top 5 contributing factors to serious injury or fatal crashes in Beaufort County are:

- Driver Under Influence (61 crashes)
- Driving too Fast for Conditions (39 crashes)
- Improper Lane Usage/Change (38 crashes)
- Ran Off Road (37 crashes)
- Wrong Side/Wrong Way (16 crashes)

Analyzing fatal crashes for their primary contributing factors, the largest percentage was attributed to Driver Under the Influence (37 crashes), followed by Ran Off Road (21 crashes). Out of these 138 fatalities, 78 (57%) were single-vehicle crashes. These include crashes that involved pedestrians and cyclists, as well as Ran Off Road crashes and DUIs.



138 Fatalities.
2,614 Injury Crashes.
8,701 Total Crashes.

Figure C.7 Colleton Fatal & Serious Injury Crashes

NON-MOTORIZED INVOLVEMENT

In Colleton County



Between January 1, 2017 and October 23, **4 bicyclists were killed**, 24 were injured, and 2 were hit with no injuries.



Between January 1, 2017 and October 23, **9 pedestrians were killed** and 35 were injured. All crashes with pedestrians lead to an injury or fatality.

Nighttime Crashes

Of the 8,701 crashes in Colleton County, 37% occurred at night. This corresponds with the number of DUI crashes as well as single-vehicle run-off-road crashes.

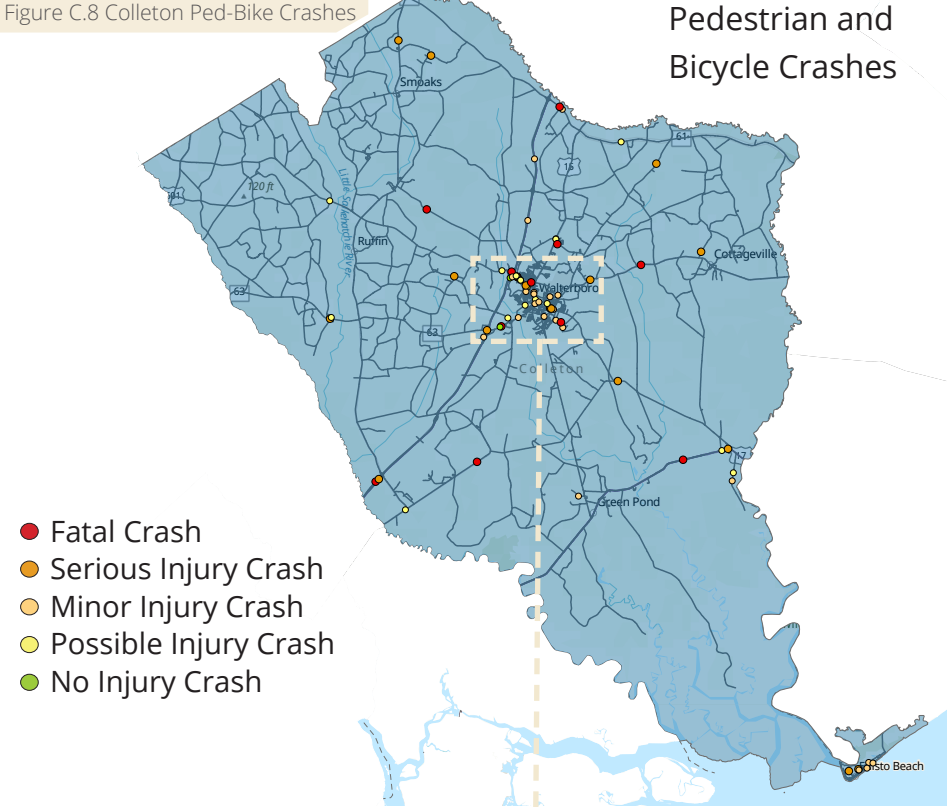
Manner of Collision

The largest percentage of crashes in Colleton County were considered single-vehicle crashes, or non-collision with motor vehicle crashes. Of all 8,701 crashes, 3,711 were classified as single-vehicle crashes. This number includes all run-off-road crashes, pedestrian and bicycle crashes, and DUIs. The next two highest categories were rear-end collisions (1,917) followed by angle collisions(1,831).

Single Vehicle Collisions

Analyzing only crashes that were classified as single-vehicle crashes, the top 5 contributing factors were Driving Too Fast for Conditions (789), Improper Lane Usage/Change (579), Animal in Road (574), Ran off Road (449), and Driver Under Influence (250).

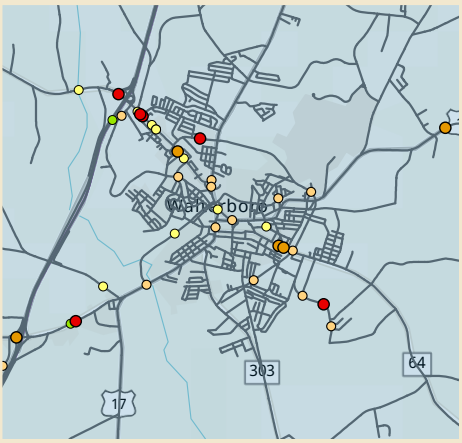
Figure C.8 Colleton Ped-Bike Crashes



- Fatal Crash
- Serious Injury Crash
- Minor Injury Crash
- Possible Injury Crash
- No Injury Crash

The City of Walterboro.

Of the 74 bicycle and pedestrian crashes in Colleton County, 31 (42%) occurred in the City limits of Walterboro, shown in Figure C.8. Five of these, including 2 fatalities, occurred on Bells Highway near the I-95 interchange.



Hampton County

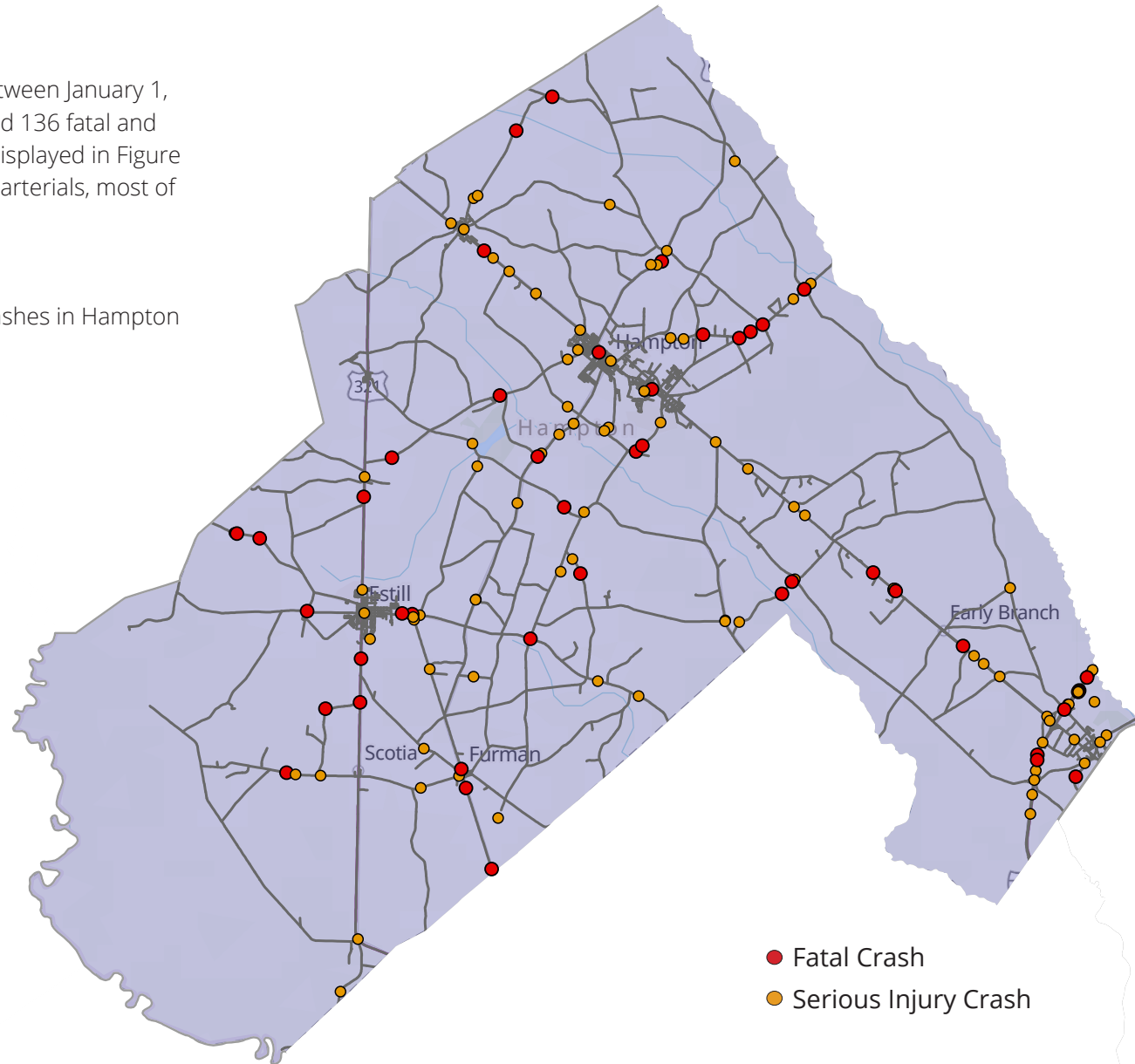
Hampton County experienced a total of 2,285 crashes between January 1, 2017 and October 23, 2023. Hampton County experienced 136 fatal and serious injury crashes during that time frame, which are displayed in Figure C.9. Many of these crashes occurred on major and minor arterials, most of them rural two-lane highways.

Contributing Factors

The top 5 contributing factors to serious injury or fatal crashes in Hampton County are:

- Driving too Fast for Conditions (266 crashes)
- Failed to Yield Right of Way (160 crashes)
- Driver Under Influence (62 crashes)
- Animal in Road (60 crashes)
- Disregarded Signs/Signals/Etc. (49 crashes)

Analyzing fatal crashes for their primary contributing factors, the largest percentage was attributed to Driving Too Fast for Conditions (14 crashes), followed by Driver Under the Influence (6 crashes) and Disregarded Signs/Signals/etc. (6). Out of these 46 fatalities, 29 (63%) were single-vehicle crashes. These include crashes that involved pedestrians and cyclists, as well as run-off-road crashes and DUIs.



46 Fatalities.
865 Injury Crashes.
2,285 Total Crashes.

Figure C.9 Hampton Fatal & Serious Injury Crashes

Pedestrian and Bicycle Crashes

In Hampton County, 21 bicycle and pedestrian crashes occurred between January 1, 2017 and October 23, 2023. All crashes involving these vulnerable road users resulted in an injury or death.



4 fatal crashes, 4 serious injury crashes, 5 minor injury crashes



5 serious injury crashes, 1 minor injury crash, 2 possible injury crashes



Nighttime Crashes

Of the 2,285 crashes in Hampton County, 38% occurred at night, corresponding with many other indicators of high-speed, aggressive, intoxicated driving habits.

Manner of Collision

The largest percentage of crashes in Hampton County were considered single-vehicle crashes, or non-collision with motor vehicle crashes. Of all 2,285 crashes, 1,062 were classified as single-vehicle crashes. This number includes all run-off-road crashes, pedestrian and bicycle crashes, and DUIs. The next two highest categories were angle (474) followed by rear-end (413).

SINGLE-VEHICLE CRASHES

46% of crashes in Hampton County only involved one vehicle

Analyzing only crashes that were classified as single-vehicle crashes, the top 5 contributing factors were:

- Driving Too Fast for Conditions (396)
- Animal in Road (176)
- Ran off Road (80)
- Driver Under Influence (80)
- Fatigued/Asleep (36)

Jasper County

Jasper County experienced a total of 9,350 crashes between January 1, 2017 and October 23, 2023. The county experienced 309 fatal and serious injury crashes during that time frame, which are displayed in Figure C.10. Many of these crashes occurred on or near Interstate 95 and state highways that connect the suburban and rural areas.

Contributing Factors

The top 5 contributing factors to serious injury or fatal crashes in Jasper County are:

- Driving too Fast for Conditions (2,441 crashes)
- Failed to Yield Right of Way (1,541 crashes)
- Followed Too Closely (987 crashes)
- Improper Lane Usage/Change (749 crashes)
- Animal in Road (639 crashes)

Analyzing fatal crashes for their primary contributing factors, the largest percentage was attributed to Driving too Fast for Conditions (18 crashes), followed by Driver Under the Influence (16 crashes) and Ran off Road (10). Out of these 104 fatal crashes, 56 (53%) were single-vehicle crashes. These include crashes that involved pedestrians and cyclists, as well as run-off-road crashes and DUIs.

104 Fatalities.
2,393 Injury Crashes.
9,350 Total Crashes.

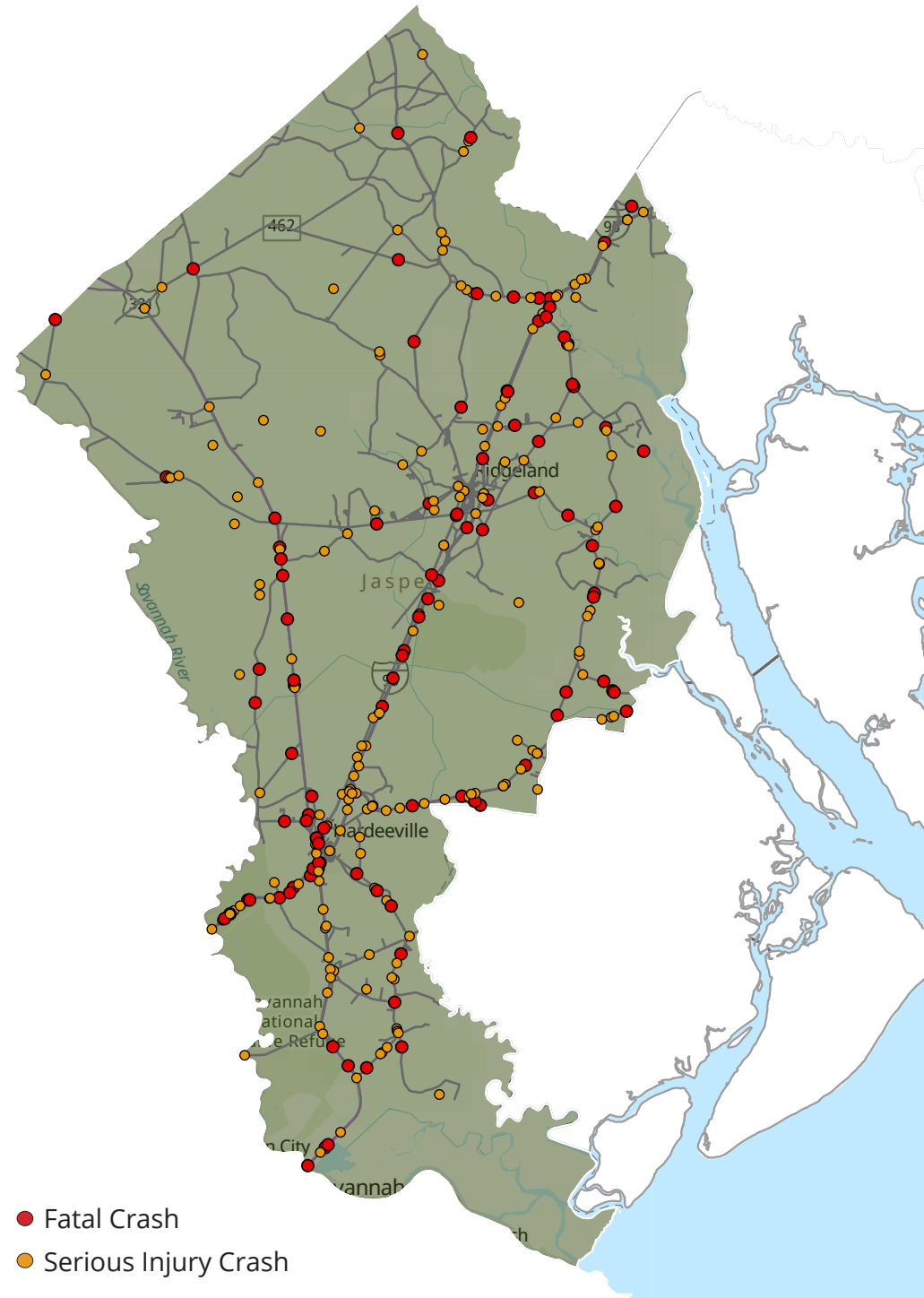


Figure C.10 Jasper Fatal & Serious Injury Crashes

NON-MOTORIZED INVOLVEMENT

In Jasper County



Between January 1, 2017 and October 23, **2 bicyclists were killed**, 13 were injured, and 1 was hit with no injuries.



Between January 1, 2017 and October 23, **12 pedestrians were killed** and 28 were injured. All crashes with pedestrians lead to an injury or fatality.

Pedestrian and Bicycle Crashes

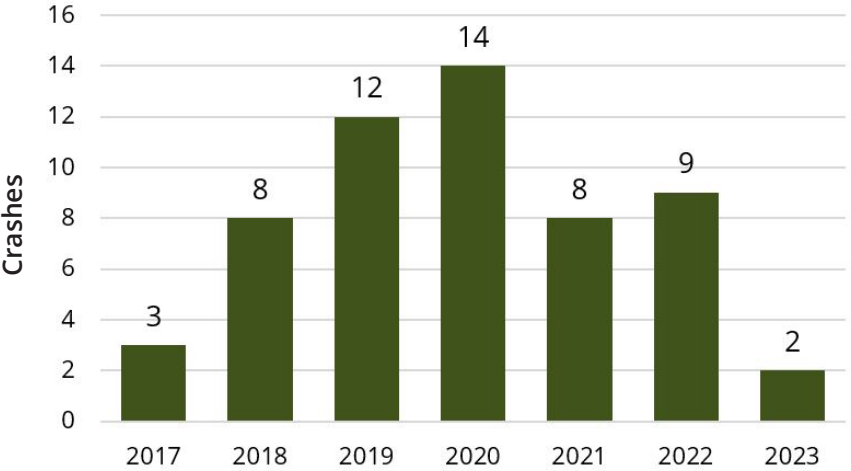


Figure C.11 Jasper Ped-Bike Crashes

Shown in Figure C.11, 56 pedestrian and bicycle crashes occurred in Jasper County, peaking in 2020 with 14 crashes. While numbers have decreased over the last few years, particularly in 2023, the number of fatal crashes has remained consistent since 2018; an average of 3 pedestrians and bicyclists were killed each year studied.

Nighttime Crashes

Of the 9,350 crashes in Jasper County, 34% occurred at night. While this trend is proportionate with traffic patterns, of the 104 fatalities, 59% occurred at night. This trend points to an increased risk of severe crashes to occur at night compared to the daylight.

The City of Hardeeville.

Many of the roadways with a high density of fatal and injury crashes are located within Hardeeville, such as US 278 and interchanges with I-95. Most of the crash hotspots for serious injury and fatal crashes are near or within Hardeeville borders, as shown in Figure C.12.

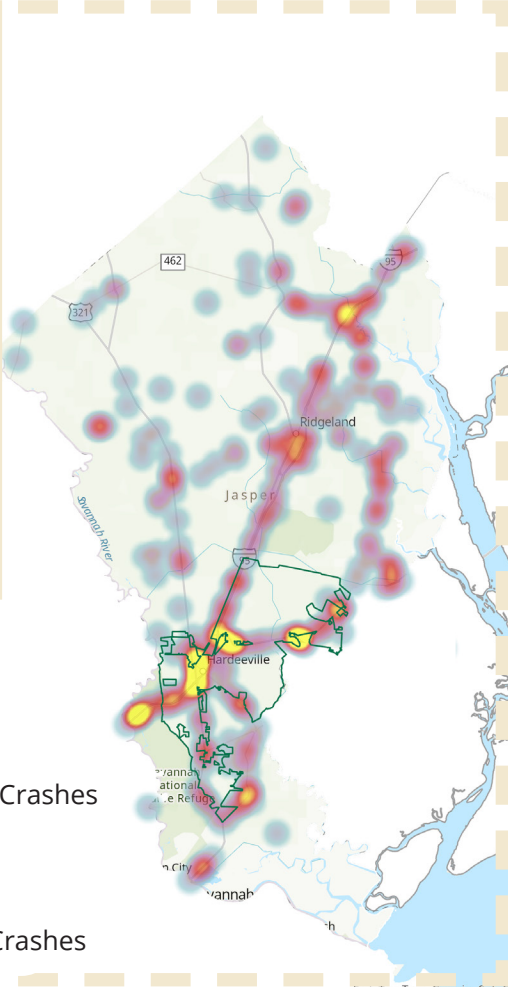
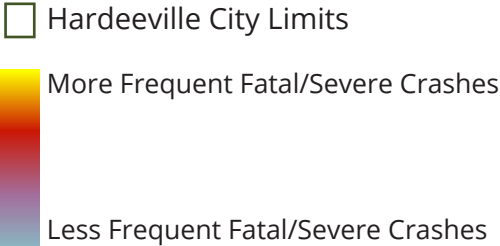


Figure C.12 Hardeeville Crash Heat Map

Demographic and Community Data

Beyond the crash trends, data specific to community assets and demographics was considered as part of the data review. Throughout this section, key information related to poverty and school and community resources are highlighted. These maps and data provide context for some of the strengths and weaknesses that LCOG faces related to infrastructure. Details provided from stakeholders are also provided in this section.

Poverty

Figure C.13. highlights Census Tracts within the region that have the highest poverty percentages according to the United States Census Bureau. The highest poverty levels are found in Hampton and Jasper counties primarily, with pockets of poverty up to and over 50% of the population within individual Census Tracts in Beaufort and Colleton counties. There is a significant disparity within the region, with low-income and impoverished communities lining the Georgia-South Carolina border and wealthier areas closer to the coastline.

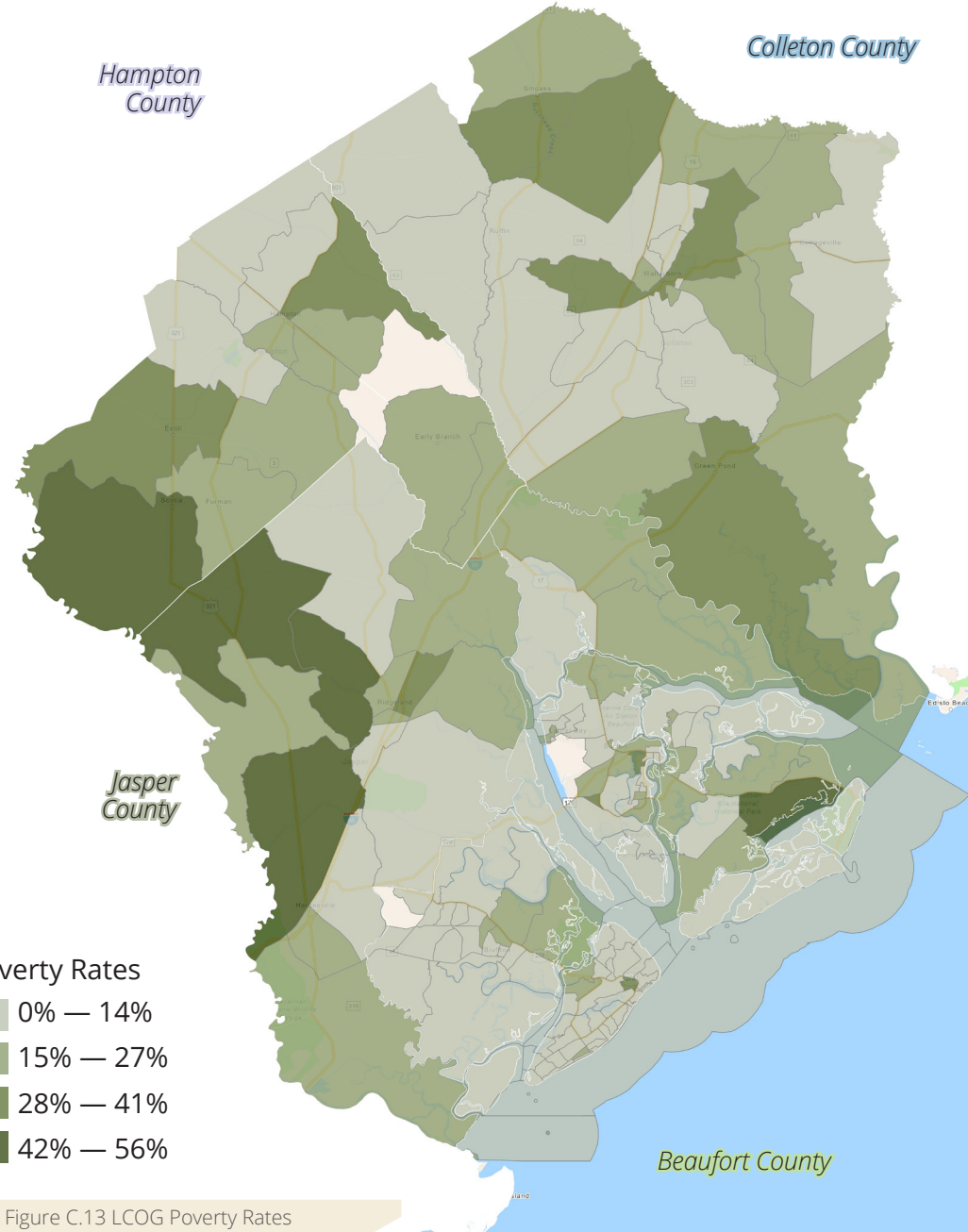


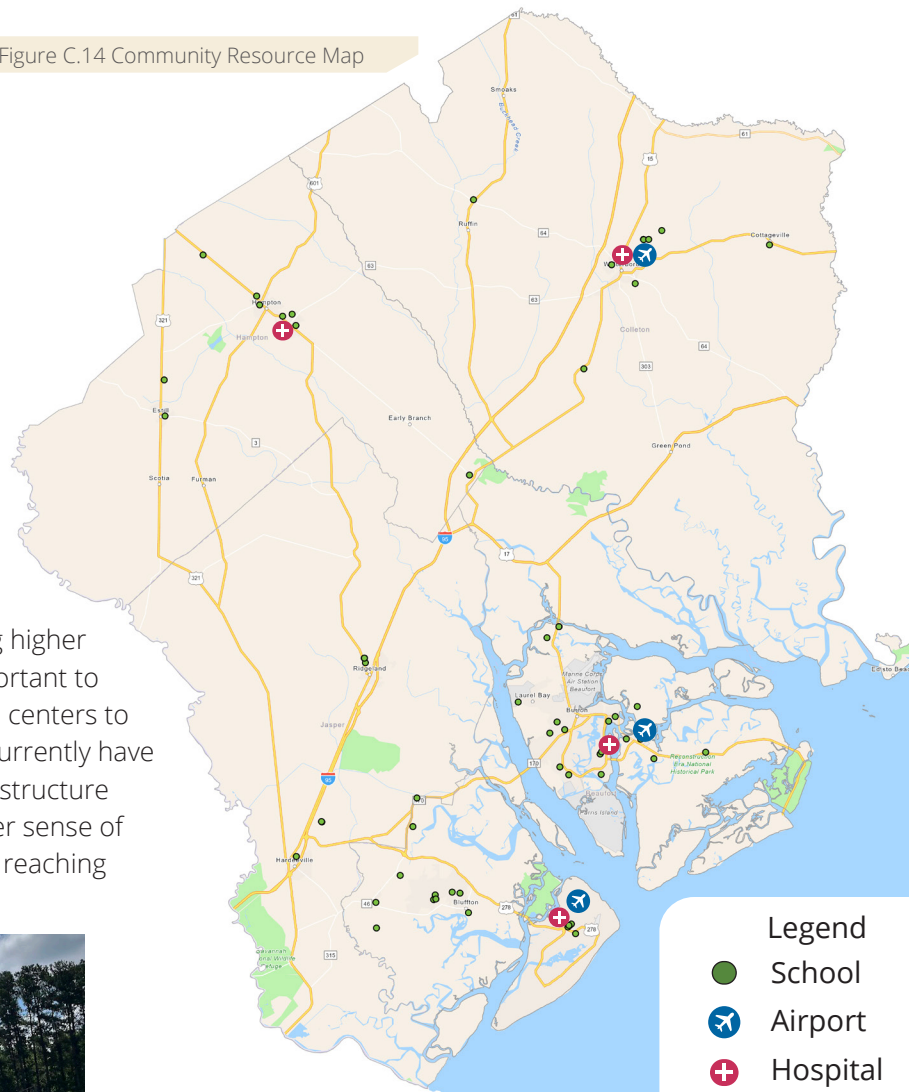
Figure C.13 LCOG Poverty Rates

Community Resources

Schools, airports, and hospitals in the Lowcountry are identified in Figure C.14. As illustrated, most of the schools are clustered around the population centers near the coasts of Beaufort and Jasper counties. These areas have more infrastructure and population to support the nearby community resources.

The schools were analyzed additionally within the crash analysis, and pedestrian and bicycle crashes surrounding the schools were noted. These schools and nearby routes to school were given priority. While there were not trends of pedestrian and bicycle crashes correlating higher with school-going individuals, it is still important to give priority and special attention to these centers to proactively plan. While a school may not currently have pedestrians and bicyclists, improving infrastructure surrounding a school can provide a greater sense of safety and security for those interested in reaching school without a vehicle.

Figure C.14 Community Resource Map



Conclusion

Many of the themes identified in the Data Review align with conversations with LCOG staff and the public engagement, as discussed in later sections. Each county within LCOG has unique needs and opportunities, and this trend extends further to the municipality level. Common conclusions within the data include high-risk behaviors, such as driving under the influence, and speeding; vulnerable road user crashes; and crashes influenced by the infrastructure and roadways, such as outdated intersections and the absence of shoulders. These categories relate to the tension between access and mobility throughout all four counties. While the data can share commonalities and themes, the data alone is not enough to fully understand needs and opportunities in LCOG without ample communication and coordination with stakeholders and the public. Additional crash data and displays are found in Appendix B.



D. Community Engagement

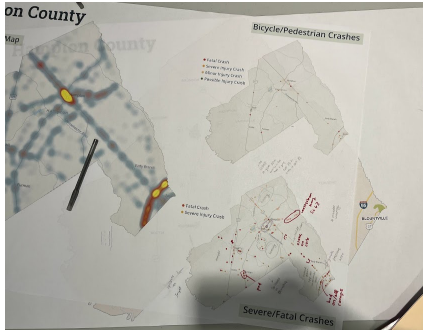


COMMUNITY ENGAGEMENT

As part of the Lowcountry COG Safety Action Plan, stakeholders and the public were engaged through multiple rounds of public involvement.

Steering Committee

To initiate the planning process, a steering committee was assembled with key regional individuals, and a questionnaire was distributed to understand the unique perspectives and goals across the four-county region for this effort. A meeting was held in late 2023 that presented the project’s origins and baseline crash data, and was attended by members of the steering committee. Feedback from that meeting and further details received in the questionnaire provided the foundation for the Regional Safety Summit, described below.



THANK YOU TO OUR STAKEHOLDERS

- Beaufort County
- Beaufort County EMS
- Beaufort County Human Services Alliance
- Beaufort County Public Works
- Beaufort County School District
- Bike Walk Hilton Head Island
- Bluffton Fire Department
- City of Hardeeville
- City of Walterboro
- Colleton County
- Gullah Geechee Sea Island Coalition
- Hampton County
- Jasper County
- Jasper County School District
- Lowcountry Bike/Walk
- Palmetto Breeze Transit
- Port Royal
- SCDOT
- Spanish Moss Trail
- Town of Edisto Beach
- Town of Hilton Head Island
- Town of Port Royal
- Town of Ridgeland



THE REGIONAL SAFETY SUMMIT

To initiate the planning process, a Regional Safety Summit was held on January 25, 2024. This was attended by stakeholders across the region and was hosted at the City of Hardeeville’s recreation center. The Regional Safety Summit provided an opportunity for stakeholders across the region to hear a presentation about potential funding opportunities and learn how their communities could benefit from contributing to and participating in the Safety Action Plan process.

SAFETY ACTION PLAN

Due to the COG's wide geographic nature, four groups were designated so conversation could remain organized by county. Maps for each county were provided and at the end of the Summit, individuals from each table representing the entire county provided location specific details and summary information. Detail from those conversations is summarized by county in Figure D.1.

Regional Safety Summit Takeaways

Information provided by stakeholders during the Regional Safety Summit aided the remainder of the public engagement process. Stakeholders provided the project team with potential locations for future public meetings, ideas for engagement opportunities, and takeaways from previous planning efforts that would shape the Safety Action Plan's process.

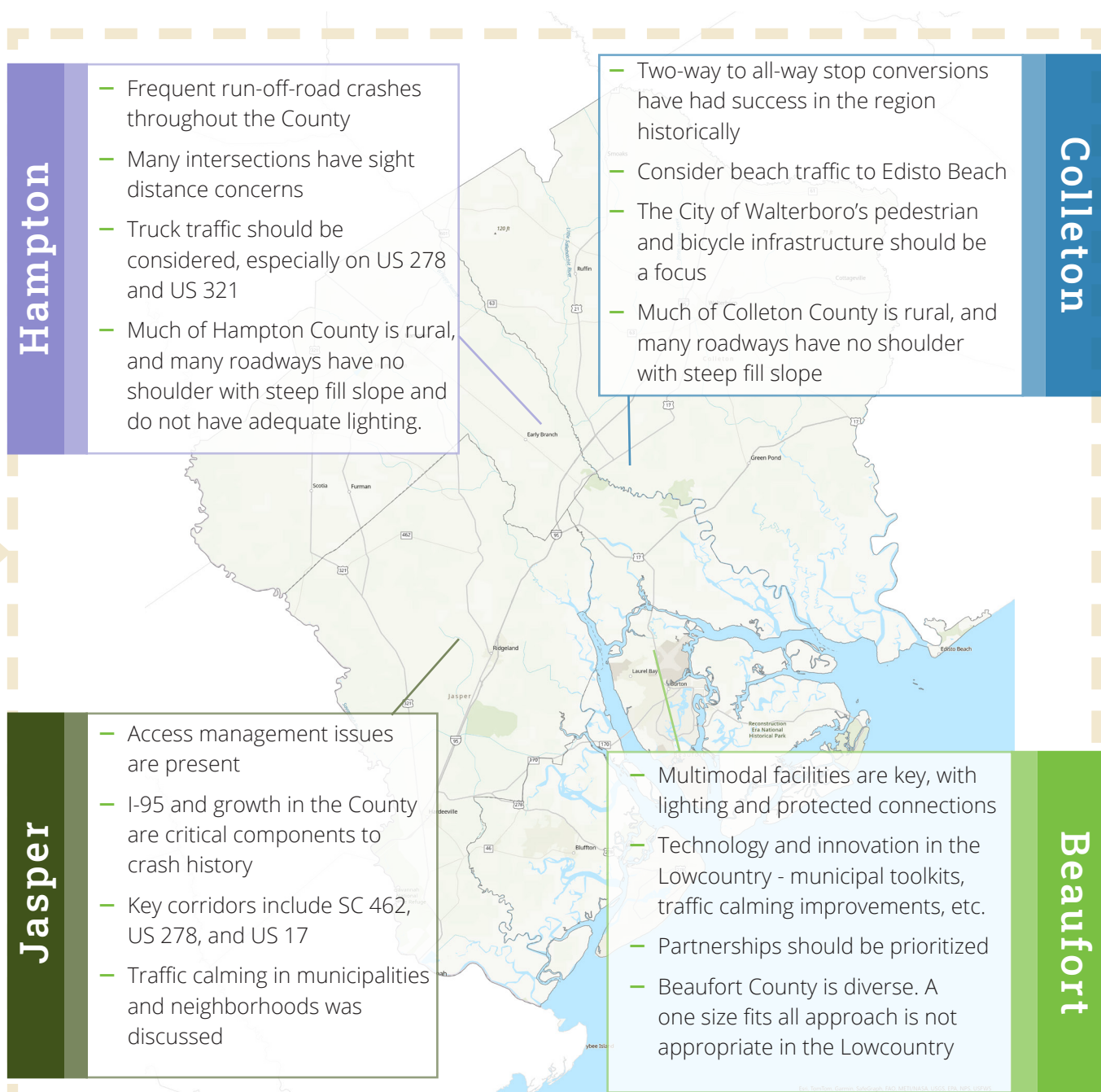


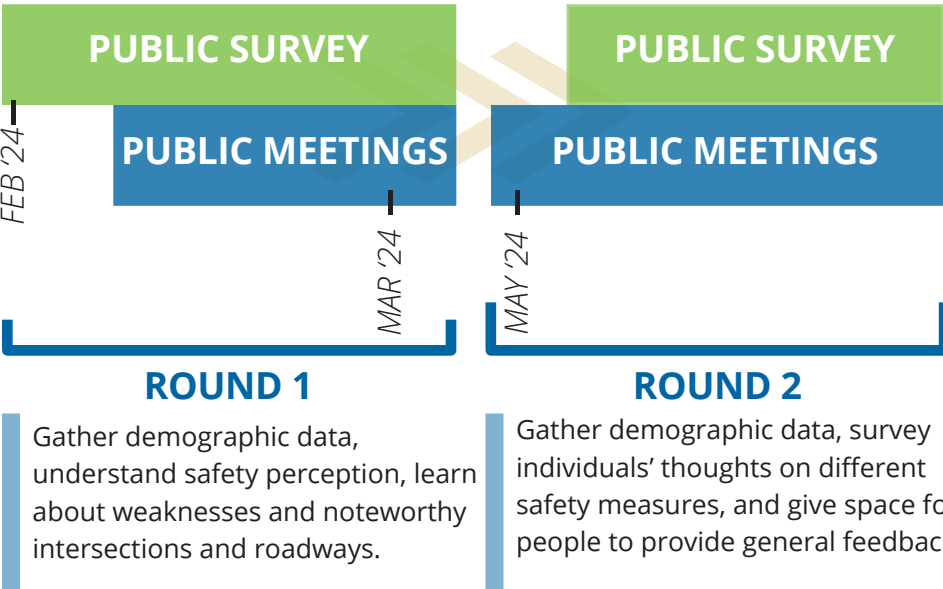
Figure D.1 Regional Safety Summit Takeaways

In addition to the county-specific takeaways, the feedback and conversation during the Regional Safety Summit contributed to the formation of LCOG’s Goals and Objectives. These Goals and Objectives guided the selection of countermeasures and the evaluation of the Plan’s performance against what it seeks to achieve.



Public Outreach

Public engagement was critical to the development of LCOG’s Safety Action Plan. With almost 3,000 square miles of land area, the Lowcountry region has a diverse population that requires a varied approach to reach all individuals. The public engaged with the outreach efforts through the following avenues:

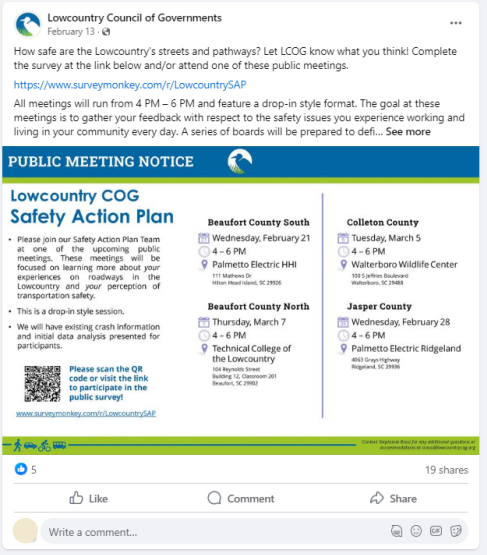


BY THE NUMBERS...

- Public Survey #1 was open between February 11 and March 18, 2024 and had 315 responses.
- Round 1 of Public Meetings were between February 21 and March 7, 2024.
- Public Survey #2 was open between Monday, May 13 and Friday, May 31, 2024 and had 631 responses.
- Round 2 of Public Meetings were between May 4 and May 13, 2024.

Public Survey #1

The first round of public outreach kicked off with a public survey, available to the public for approximately 32 days. This survey was advertised via LCOG’s social media pages and circulated by community pages such as Facebook and NextDoor. Approximately 315 people participated in the public survey during this time.



Hard copies were also available and distributed at public meetings that followed the survey launch.



SAFETY ACTION PLAN

Survey Geography

Table D.1 compares the population of each county with the percentage of respondents that participated in the first public survey:

Based on these results, Hampton and Jasper County results are slightly overrepresented, and Colleton results are underrepresented. It should be noted that approximately 85 respondents did not choose to answer this question.

Survey Demographics

Figure D.2 outlines what percentage of participants were within each age group. **Over 75% of respondents were over the age of 45.** This is higher than the total age composition in LCOG; approximately 51% of LCOG's residents are over the age of 45, according to 2020 Census data.

Figure D.2 Age of Respondents

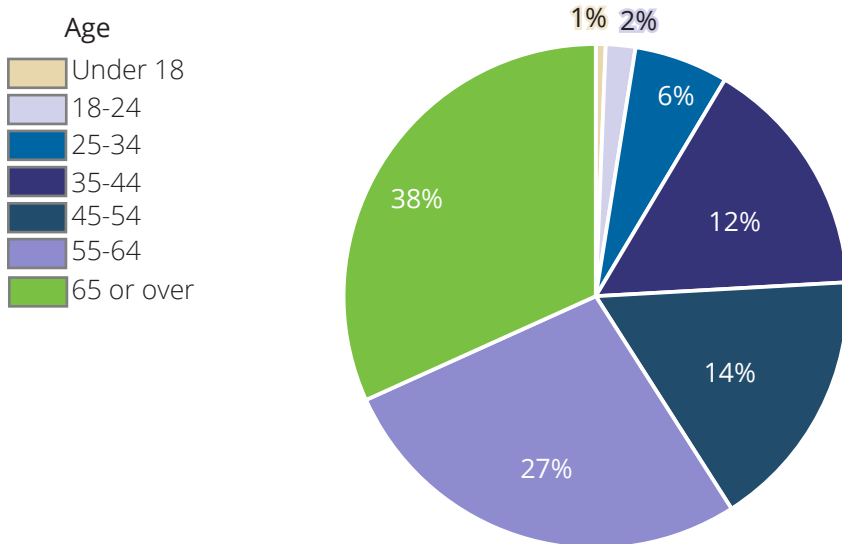


Table D.1 Population & Survey Participants

	Beaufort	Colleton	Hampton	Jasper
Population	187,117	38,604	18,561	28,791
Population % of Total	68%	14%	7%	11%
Survey Participants	87	5	24	31
Participation % of Total	62%	3%	15%	20%
Percent Discrepancy	-6%	-11%	+8%	+9%

Key Themes

The following graphics describe key locations and key themes throughout the county that were represented within the survey. The locations are skewed towards where most of the respondents live, in Beaufort and Jasper counties. US 278 extends throughout three of the four counties. The key themes were widespread across all locations.

KEY LOCATIONS

- US 278
- SC 170
- SC 462
- Hilton Head Lakes
- May River Road

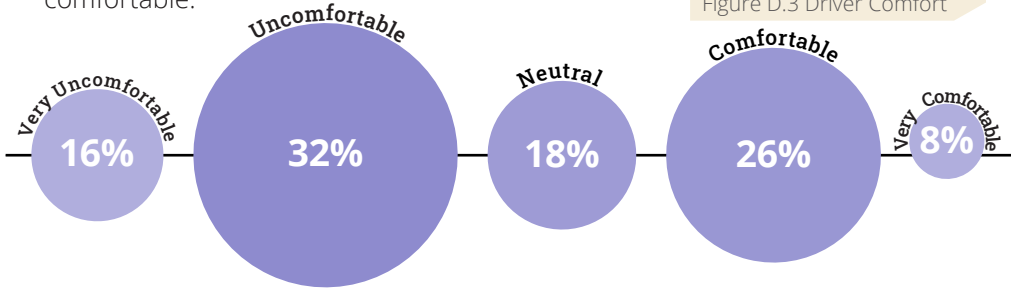
KEY THEMES

-  Distracted Driving
-  Aggressive Driving
-  Protected Phasing
-  Pedestrian/Bicycle Accommodations
-  Road Maintenance

Driver Perception

When asked on a scale of 1-5 how comfortable survey participants feel driving in their communities, the answers ranged from very uncomfortable to very comfortable.

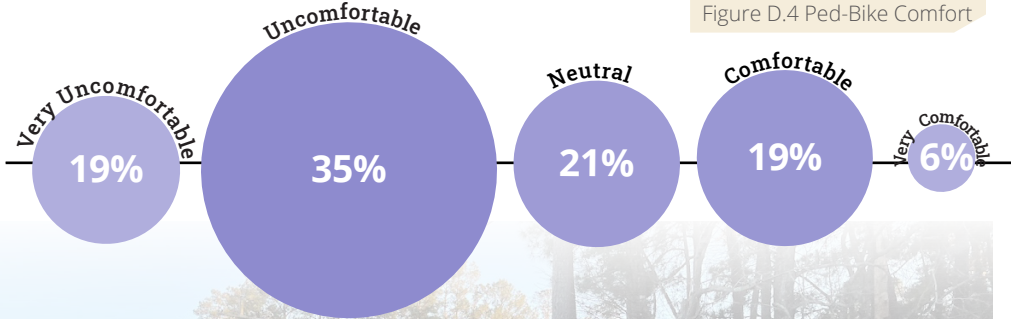
Figure D.3 Driver Comfort



Pedestrian and Bicyclist Perception

When asked on a scale of 1-5 how comfortable survey participants feel walking and biking in their communities, over 50% of respondents answered either very uncomfortable or uncomfortable. Compared to driving, approximately 5% less people responded that they feel comfortable walking and biking.

Figure D.4 Ped-Bike Comfort



Safety Perception Takeaways

“ It is a beautiful area but very dangerous. Way too dark. Need streetlights on the roadway. Pedestrians need to be protected! ”

“ Too much traffic on [the] major roads, speeding, and a lack of respect from cars when walking or biking. Lack of enforcement of traffic rules. ”

“ Fast growth in the community, and the inability for infrastructure to keep up. ”

SAFETY ACTION PLAN

Round #1 Public Meetings

For the first round of public meetings, materials were organized and presented for each county that focused on county-specific crash metrics and maps. While these meetings were advertised for all residents within LCOG, due to the large land area represented, meetings were regionally focused. The five meetings spanned across the Lowcountry:

- Hilton Head Island (Beaufort/Jasper County) on February 21, 2024
- Jasper County on February 28, 2024
- Hampton County on March 4, 2024
- Colleton County on March 5, 2024
- Beaufort County on March 7, 2024

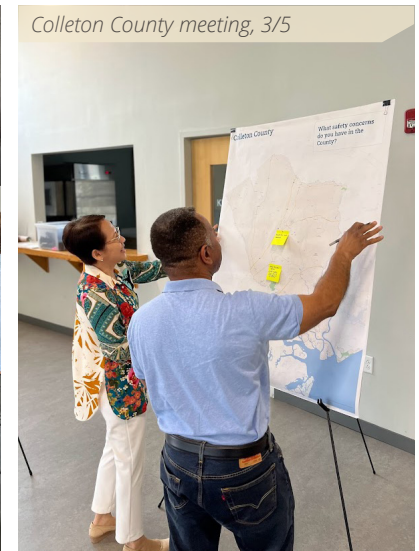
These meetings were hosted throughout LCOG and held between 4 PM and 6 PM. At each meeting, boards with crash data, including bicycle and pedestrian crashes and fatal crashes, were presented to provide attendees with information about what existing trends were analyzed. Boards summarizing the Safety Action Plan process were shared with details about future public engagement opportunities. Finally, a blank map was prepared for attendees to place sticky notes with opportunities and needs that they encounter. **The goals of the first meetings were to share existing data, crash trends, and information about the process while gathering critical feedback from the public.**

PRIMARY CONCERNS *from Round #1*

- Signal installations and conversions to protected-only phasing
- Truck traffic and high-speed rural roadways
- Run-off the road crashes
- Development strains on existing residents, due to construction and vehicular traffic
- Tension between vehicles and bicycles on shared facilities



Meetings, spread throughout the months of February and May, sparked conversation throughout the Lowcountry about traffic safety and pedestrian and bicycle infrastructure. These meetings provided the Project Team with face-to-face conversations about existing pain points, unique struggles to the Lowcountry, and proactive planning ideas. Takeaways are provided in Figure D.5.



Round 1 Public Meetings Takeaways

Hampton

- Crosswalks and distracted driving are issues
- Animals (deer) in roadways
- Truck traffic
- US 278 - road maintenance and potholes
- Highway 63 has many concerns - speeding, truck traffic

Jasper

- SC 462
- US 278
- Potholes and maintenance
- Prioritize completion of greenways
- Signalization of intersections
- Local, curvy roadways

Colleton

- Narrow local roadways with no shoulders
- Vegetation on or near roadways
- Highways such as SC 63 are a concern
- Rural roadways with high speeds
- Poor pavement condition

Beaufort

- Hurricane evacuations with population growth are a challenge
- Sidewalks near community resources, like hospitals and schools
- Bicycle facilities
- Sidewalk widths
- Speeding
- No shoulders on rural roadways



Figure D.5 Round 1 Takeaways



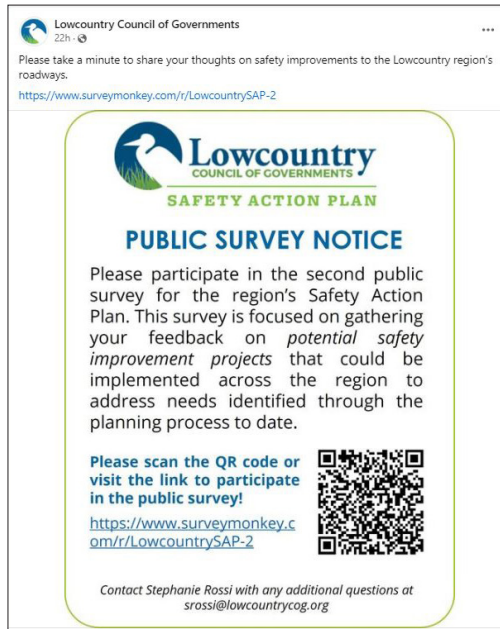
SAFETY ACTION PLAN

Public Survey #2

The second public survey focused on gathering respondents' ideas and preferences on potential countermeasures. Due to the large area the LCOG encompasses, specific locations for these countermeasures were not surveyed. The survey was active between May 13, 2024 and May 31, 2024.

The public survey had a positive turnout, similar to Public Survey #1. By the close of the survey, 631 people had completed the survey. This survey was advertised on LCOG's social media as well as through smaller channels, such as municipality Facebook pages. In total, almost 1,000 people participated in the public surveys.

The purpose of this survey was to understand preferences on countermeasures and understand any safety concerns through open-ended opportunities for respondents to share their thoughts.



Survey Geography

Unlike Public Survey #1, Beaufort and Jasper counties were overrepresented. Over 75% of the survey responses were completed by individuals living in Beaufort County, as shown in Table D.2.

	Beaufort	Colleton	Hampton	Jasper
Population	187,117	38,604	18,561	28,791
Population % of Total	68%	14%	7%	11%
Survey Participants	438	24	40	84
Participation % of Total	76%	4%	6%	14%
Percent Discrepancy	+8%	-10%	-1%	+3%

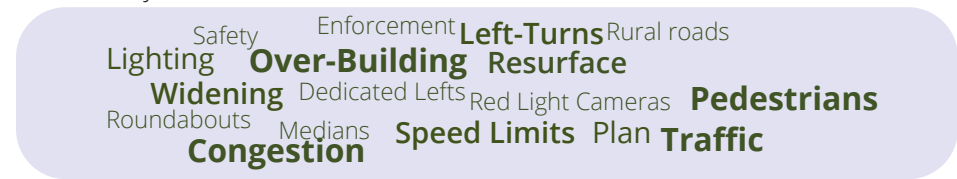
Table D.2 Population & Survey 2 Participation

Survey Demographics

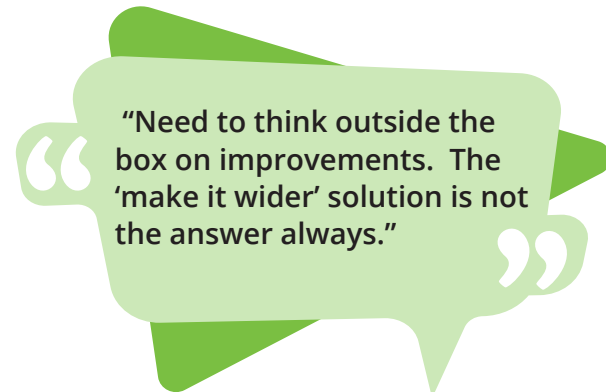
Over 80% of respondents were over the age of 45. This is higher than the total age composition in LCOG; approximately 51% of LCOG's residents are over the age of 45, according to 2020 Census data. This is in line with the responses from Public Survey #1. This aligns with the percentage of individuals that responded they are retired; approximately 40% of responses were completed by people that are no longer in the workforce.

Key Themes

The following word cloud describes some of the feedback received in the open-ended portions of the survey, which provided opportunity for individuals to state their thoughts and opinions on general safety concerns in the Lowcountry.



The remainder of the survey asked respondents to rank and comment on the following 8 countermeasures: edge treatments, resurfacing, road diets, access management, intersection treatments, pedestrian/bicycle facilities, roundabouts, and lighting. These are found in Figure D.6 and Figure D.7.



How do you feel about...

Edge Treatments

81% very favorable or favorable

Almost all respondents that chose "unfavorable" expanded on their choice by ensuring cyclists are accounted for. Edge treatments limit the space bicyclists can use.

"These are the best thing since installing reflectors on the highway"

"It seems the rumble strips live less rooms for bicyclists, I do like them for vehicles though"



Resurfacing

95% very favorable or favorable

Resurfacing is a very popular countermeasure, with most respondents agreeing it is necessary in the Lowcountry.

"It makes for a safer driving surface, particularly in bad weather"

"Resurfacing is good but complete the entire surface I am not favorable of the patchwork completed on roads."



Road Diets

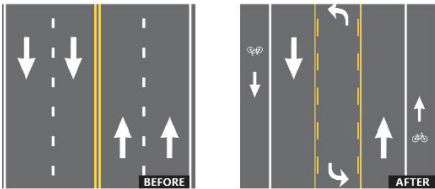
53% very favorable or favorable

Of the potential recommendations, this was one of the most controversial. Many respondents cited traffic and increased congestion. Others said road diets are good for bikes, but negative for drivers.

"Bike lanes would help cyclists, but traffic volumes may prohibit their practicality."

"These may make sense in certain locations."

"We need more lanes, not less"



Access Management

64% very favorable or favorable

Similar to road diets, access management solutions are very divisive:

"Very inconvenient and bad for business"

"Boundary Street in Beaufort shows the challenges for Fire/EMS caused by medians"

"Not a one-size fits all solution, but works on the right roadways"

"These provide for greater safety but also increase the visual appearance."



Figure D.6 Survey 2 Results

How do you feel about...

Intersection Treatments

83% very favorable or favorable

Intersection treatments were largely positive. Negative responses include the cost of these improvements and existing intersections that could benefit from new signal designs.

"Distinct pavement for pedestrian crossings is good."

"Much clearer signal visibility"



Pedestrian/Bicycle Facilities

85% very favorable or favorable

The main controversy with pedestrian/bicycle improvements involve the separation or integration of these vulnerable road users on the roadway.

"Cyclists don't use paths, they ride in the road anyway"

"Love the idea, we use the Spanish Moss Trail often."



Roundabouts

50% very favorable or favorable

Roundabouts prove to be the most controversial improvement. Many respondents have bad experiences with them in the past, and struggle with their operation.

"Clearer signage OR single lane roundabouts."

"No one knows how to use them!"

"If constructed properly, roundabouts can function well."

"Reduce congestion and delay"



Lighting

87% very favorable or favorable

Lighting improvements are generally favorable. Most people believe lighting should be implemented at strategic locations, especially where pedestrians and bicyclists are frequent users.

"This is a great improvement to implement at all intersections"

"Just not everywhere - then it becomes light pollution"



Round #2 Public Meetings

For the second round of public meetings, the project team presented potential countermeasures. Two meetings were held:

- Hampton County on May 3, 2024
- Beaufort/Jasper County on May 13, 2024

Hampton County's meeting was hosted on Saturday during the Hampton County Citizens for the Active Restoration (HCCAR) Field Day. This was an opportunity to reach Hampton County citizens and engage with members of the public that may not have the time or means to attend a public meeting on a weekday. At this meeting, crash data specific to Hampton County was provided, as well as potential countermeasures that could be considered for implementation. These included roundabouts, road diets, bicycle/pedestrian accommodations, lighting, and more.



The Hampton County Field Day Public Meeting pop-up was held at a pre-existing event, meeting residents and visitors where they were already going to be.

KEY LOCATIONS AND NOTES

- Highway 64 to Walterboro
- Dirt Roads
- Walkability/safety on shoulders
- Signage for areas with children
- Old Sheldon Church Road
- Yemassee Railroad Crossing
- Highway 321
- Highway 68 to Yemassee

On the following Monday, another public meeting was held. This meeting was at the Technical College of the Lowcountry in Okatie, South Carolina, near the Beaufort County and Jasper County border. Similar information was shared at this meeting, with recommendations and countermeasures specific to Jasper and Beaufort counties presented. Information prepared for the first public meetings was also shared in case attendees had no exposure to the Safety Action Plan process.



Stakeholder Interviews

In April 2024, interviews were conducted with key stakeholders throughout the four counties. The invitation was extended to a wide range of individuals and groups in the Lowcountry, and attached with the invitation was an informational document, shown in Figure D.8, which provided details to understand the project and its goals.

“The project team plans to host a series of virtual stakeholder interviews between Monday, April 15 and Friday, April 26. During these interviews, we will provide a bit of background on the plan we’re developing, but the remainder of our time will consist of an open dialogue; We’re here to gather your input on the safety issues you have experienced and the priorities that you see for your community and the region as a whole.”



Individuals from all of the groups and organizations listed below were contacted in April with the intention of organizing an informal interview, either in-person or virtual.

- Beaufort Marine Corps Air Station
- Parris Island Marine Corps Recruit Depot
- Beaufort County Human Services Alliance
- Palmetto Breeze Transit
- Beaufort County School District
- Colleton County School District
- Hampton County School District
- Jasper County School District
- Beaufort County Police/EMS
- Colleton County Police/EMS
- Hampton County Police/EMS
- Jasper County Police/EMS
- State Highway Patrol - Troop 6
- State Highway Patrol - Troop 7
- Gullah Geechee Sea Island Coalition



Figure D.8 Info Document

Results from these conversations reflect much of what was expressed during public meetings as well as what was discovered through analyzing crash data.

Notes from select interviews are highlighted on the following page.

Beaufort County School District

- There has been an emphasis on Safe Routes to School, with some successful implementation at some schools like Red Cedar Elementary.
- The Bike/Pathways Task Force developed recommendations via the Beaufort Connects Plan to provide better connectivity throughout Beaufort County.

Beaufort County Police

- SC 170, US 278, and SC 46/May River Road are particularly problematic.
- Old Sheldon Church Road has a lower frequency of crashes, but those that occur are severe.
- Safety issues are most problematic at night.

Jasper County School District

- Much of the school's population takes a vehicle to school, although some walk and take the bus.
- Ridgeland Elementary School ingress and egress is problematic.
- Bus drivers' main complaint is with poor pavement condition.



Beaufort County Human Services Alliance

- There are many low-income communities with low vehicle ownership, high bike-ped activity, and limited infrastructure.
- On Hilton Head Island, there is poor lighting and tourist unfamiliarity that contribute to crashes.
- Differing views/objectives associated with the diverse populations in the area, including older individuals, younger individuals, developers, and underserved communities.

Beaufort County Human Services Alliance

- There are many low-income communities with low vehicle ownership, high bike-ped activity, and limited infrastructure.
- On Hilton Head Island, there is poor lighting and tourist unfamiliarity that contribute to crashes.
- There is hesitation and confusion with roundabouts.

South Carolina State Highway Patrol

- Roundabouts are concerning due to driver unfamiliarity.
- Many roads have small shoulders or no shoulders.
- There is limited availability to enforce speed limits
- Cell phone usage is very difficult to enforce.



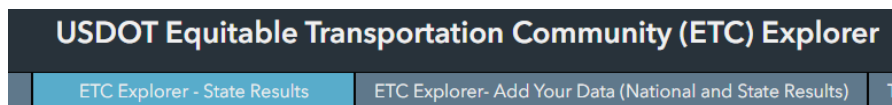
E. Safety Analysis



SAFETY ANALYSIS

Moving beyond the initial data gathering, the robust safety analysis combines the raw data and its conclusions, public and stakeholder input, as well as equity factors.

The primary quantitative data used within the holistic safety analysis includes the raw crash data, the National Highway Traffic Safety Administration (NHTSA) Fatality Analysis Reporting System (FARS) data, Census information, and school locations. The qualitative data includes anecdotal and submitted information through rounds of public engagement.



Emphasis Area Analysis

Proximity to Schools

Ensuring the statewide commitment to Safe Routes to School, focusing on roadways within LCOG that connect school-aged pedestrians and bicyclists, as well as teenage drivers, to their places of education was a particular focus within the safety analysis.

Disadvantaged Census Tracts

Taking a special look at roadways and communities that reside in Census Tracts that are highlighted as Disadvantaged by the USDOT Equitable Transportation Community Explorer (ETC) was another noteworthy step within the analysis. In locations where a high-crash or high-injury roadway crosses or is fully within a Census Tract meeting this criteria, the routes were noted and prioritized. It was important to consider that the highest traffic roadways would show up first in the analysis process, and to emphasize the need to analyze roadways that may have a lower annual average daily traffic because of low vehicular access or a high percentage of pedestrians and bicyclists.



Severity

In addition to analyzing the crash data for frequency of crashes along LCOG roadways, the maximum injury code was analyzed. Along the roadways within the four-county region, segments that experienced fatalities or serious injuries were noted and further analyzed for potential high-risk features. Certain segments experienced a high crash frequency despite all fatal crashes occurring at a particular dangerous intersection.

Vulnerable Road Users

When crashes involve pedestrians or cyclists, the likelihood that a pedestrian or bicyclist is killed or seriously injured increases dramatically on LCOG roadways. High speeds, a lack of facilities in some areas, and dark conditions create dangerous conditions for the most vulnerable roadway users. When determining what roadways to focus on, those that experience a high crash frequency or particularly severe pedestrian and bicycle crash history were considered. Pedestrian and bicycle crashes are indicators of a larger pedestrian and bicycle community that traffic data cannot capture. Although a roadway may have only a few bicycle injury crashes reported, that could indicate a significant cyclist population, and could correspond with frequent near misses.

The Lowcountry's High-Injury Network

Synthesizing the 43,004 crashes studied, the public input received, and stakeholder input given was necessary in determining what corridors to prioritize. It was critical to expand the analysis beyond the heat map, and look beyond the raw data to gather information on near-misses, areas that may not have existing crash history but are experiencing rapid growth.

It was important to not only analyze total crashes on LCOG's roadways, but also serious injury and fatal crashes, pedestrian and bicycle crashes, crashes located in disadvantaged census tracts, and crashes located near schools.

DEVELOPING THE HIGH-INJURY NETWORK (HIN)

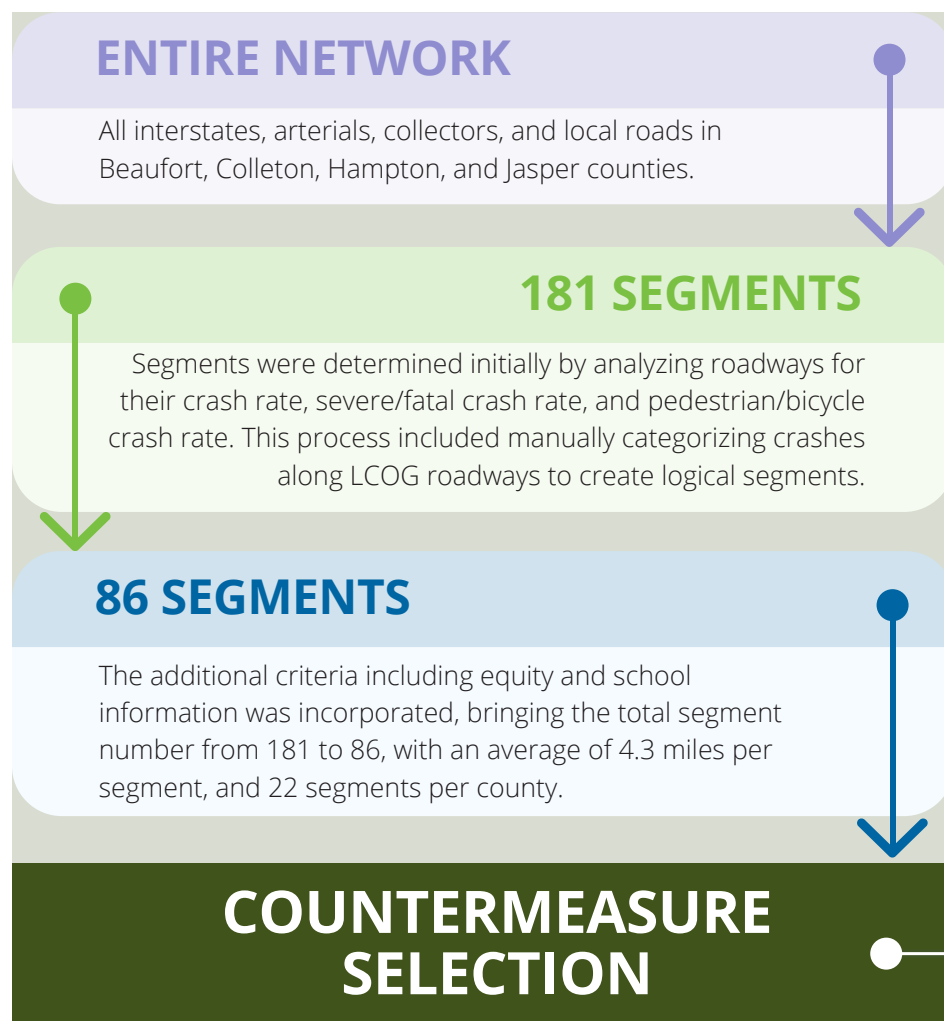
The purpose of developing a HIN is to focus detailed countermeasure identification on the subset of the network that offers the greatest opportunity to reduce the frequency of fatal and severe injury crashes. However, actionable countermeasures developed as part of this plan should not be limited to those identified on the HIN; rather, similar strategies should be applied throughout the region as appropriate based on the potential for positive safety impact. Implementation of solutions is discussed further in the next section.

As the initial data analysis was completed, and the general summary of data was established — including common crash causes, commonalities and differences among counties, and how different modes and severities are dispersed throughout the region — the next step was to determine which roadways to focus on for implementable projects. This process kicked off by mapping the crashes and grouping them together based on logical endpoints, including but not limited to county lines, large intersections, and contextual changes. This process resulted in approximately 181 segments with an average of 4.0 miles per segment across the four counties. To trim this process further and isolate the HIN, the following criteria were applied.

HIGH-INJURY NETWORK CRITERIA

- Minimum of 10 total crashes per segment
- Minimum of 1,000 AADT per segment
- Target: 20% or less of the total roadway miles represented on the regional high-injury network
- Target: 50% or more of the total fatal and severe injury crashes represented on the high-injury network by county and as a region
- Target: 25 or fewer segments per county on the high-injury network

The four major features were considered as part of the safety analysis, and each corridor was then analyzed individually. The resulting network includes 86 total segments, with an average of 4.3 miles per segment. This list served as the foundation for countermeasure identification and prioritization. The following graphic describes the process of trimming the crash data and incorporating additional features to reach the final segment count.



Segment Attributes

Each of the 86 segments were analyzed qualitatively and quantitatively, for both crash history and general context of each area, including functional class, connectivity, and any high-risk features. Table E.1 below shows an example of the data associated with each segment that was used in determining countermeasures.

Attribute	Value
County	Hampton
Segment Name	SC-3 from US 321 to US 601
In Disadvantaged Census Tract?	Yes
Schools?	Estill Elementary
Pedestrian and Bicycle Crash Notes	1 bicycle crash
Severity Notes	2 serious crashes, 2 fatal crashes
Functional Class	Rural Major Collector
High Risk Features?	Narrow shoulders and passing allowed
High-Crash/High-Risk Intersections?	SC 3 and Southern Road
High-Crash/High-Risk Subsegments	None

Table E.1 Attribute Table Example

The next step in the process will be discussed in the following section on Implementation.

High-Injury Network Segments

The segments selected for countermeasure identification are provided on the map in Figure E.1 and a summary table below in Table E.2 provides county-specific data. The segments are spread out throughout the counties and provide diversity of context, including rural and urban areas and type of segment, including a short curve compared to a long stretch of roadway with no shoulders. This list of areas is comprehensive, but not exhaustive; as projects are implemented throughout the region, it is anticipated that successful countermeasures and ideas will permeate throughout surrounding areas and impact other areas of growth.

County	Segments	Average Length
Beaufort	24	3.97
Colleton	19	5.40
Hampton	25	3.13
Jasper	18	4.59
Total	86	4.3

Table E.2 County Countermeasure Segments

While this map represents roadways and intersections that have been identified for countermeasures, the list of locations is not exhaustive. The goal is to apply countermeasures systemically.

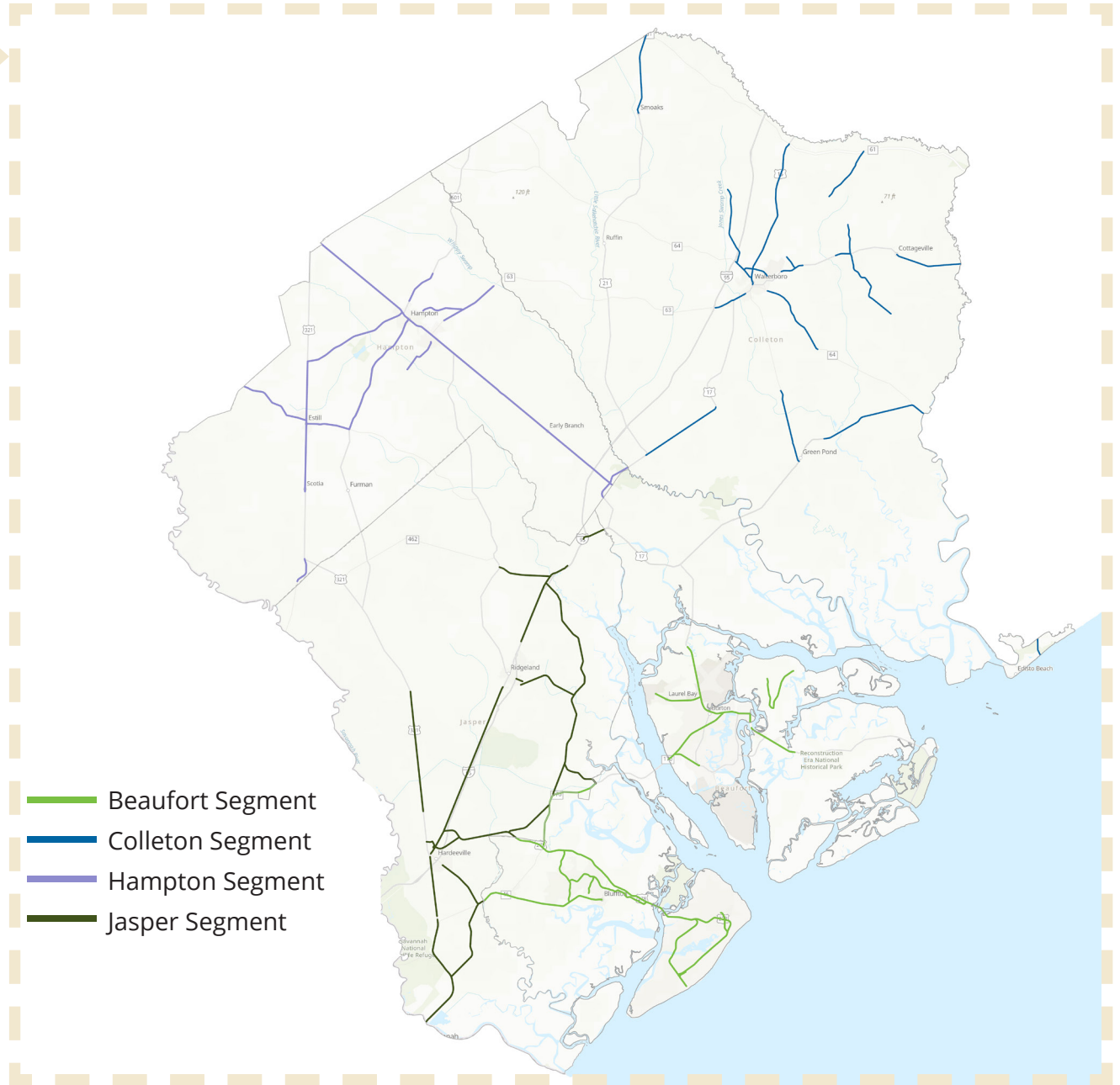





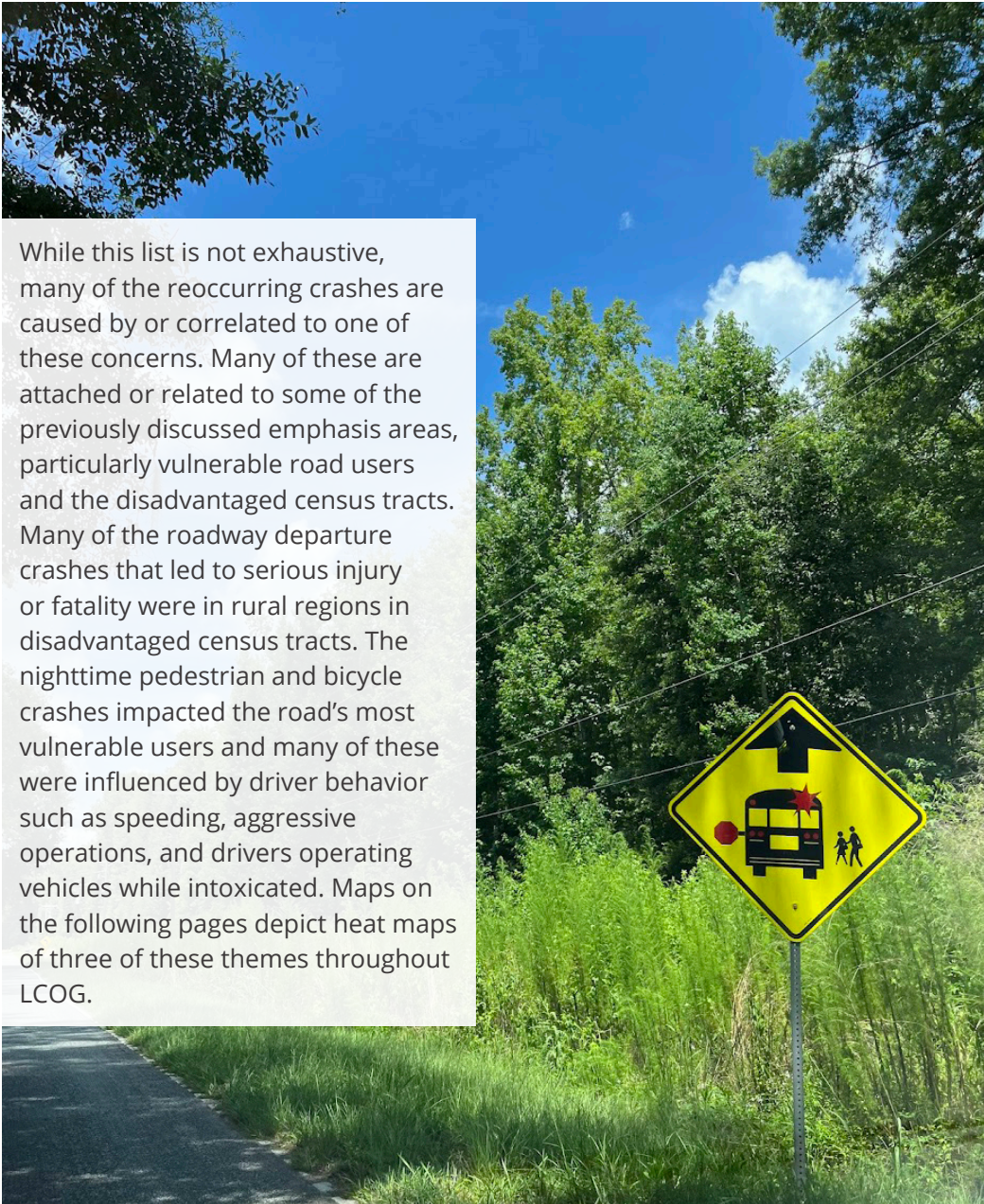
Figure E.1 Identified Countermeasure Segments

Crash History Input

With the foundation of the Lowcountry's network identified, the next step of identifying countermeasures must be informed by the type of crashes that systemically affect the roadway. Applying a one-size-fits-all solution to the region will not be effective, as the region has a variety of factors that affect it.

The following graphics represent some of the common themes among the crash data throughout LCOG. These themes point to potential system-wide improvements that go beyond the individual intersections and segments.

 <p>HIGH-RISK BEHAVIORS</p>	<ul style="list-style-type: none">- Excessive speeding- Impaired driving- Distracted driving
 <p>VULNERABLE ROAD USERS</p>	<ul style="list-style-type: none">- Older drivers- Visitors and unfamiliar road users- Pedestrians and cyclists
 <p>INFRASTRUCTURE</p>	<ul style="list-style-type: none">- Roadway departure crashes - rural highways- Intersections and urban highways- Undivided highways - urban and suburban 4+ lane highways



While this list is not exhaustive, many of the reoccurring crashes are caused by or correlated to one of these concerns. Many of these are attached or related to some of the previously discussed emphasis areas, particularly vulnerable road users and the disadvantaged census tracts. Many of the roadway departure crashes that led to serious injury or fatality were in rural regions in disadvantaged census tracts. The nighttime pedestrian and bicycle crashes impacted the road's most vulnerable users and many of these were influenced by driver behavior such as speeding, aggressive operations, and drivers operating vehicles while intoxicated. Maps on the following pages depict heat maps of three of these themes throughout LCOG.

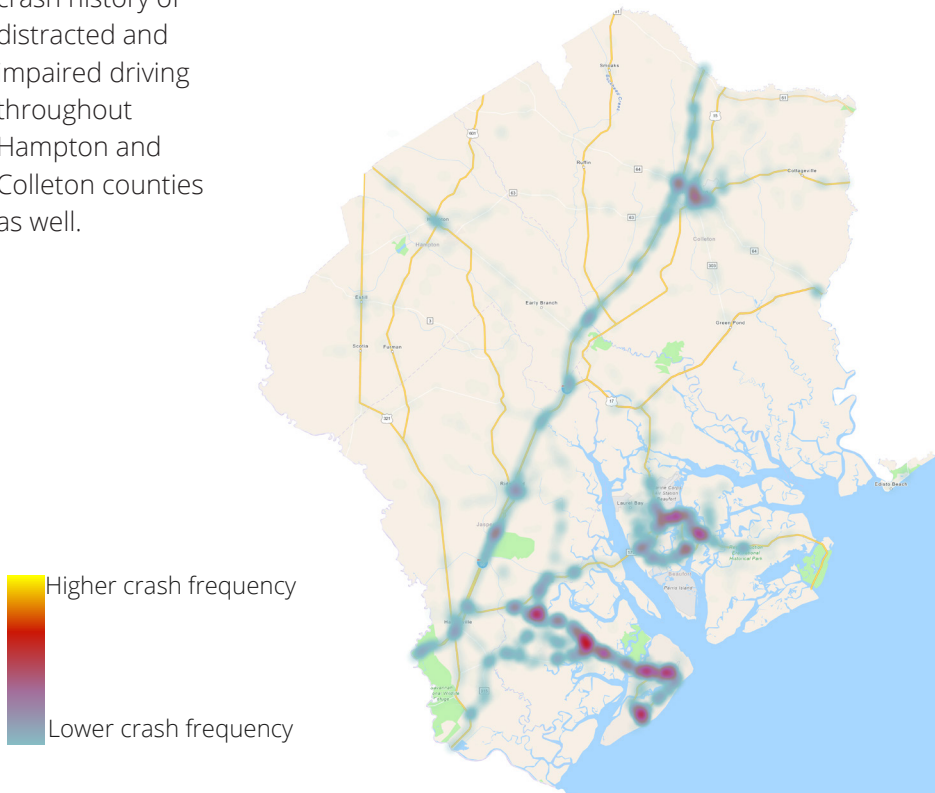
SAFETY ACTION PLAN



High-Risk Behaviors

An important takeaway from the crash analysis was the prevalence of behavioral concerns, particularly with injury and fatal crashes. Speeding, driving under the influence, aggressive driving, and distracted driving are all issues that affect

the Lowcountry. While certain issues may be more pervasive in certain regions of the LCOG, the entire four-county region has suffered the effects of high-risk driving. The map shown in Figure E.2 shows a heat map of where crashes impacted by these behaviors occurred. Many crashes are clustered around the more population areas of Beaufort and Bluffton; however, there is a crash history of distracted and impaired driving throughout Hampton and Colleton counties as well.



Vulnerable Road Users

Another emphasis area in LCOG is vulnerable road users. This grouping includes the pedestrians and bicyclists on the roadways, as well as construction workers in work zones and individuals that may have stepped out of their vehicles following a vehicular crash.

Vulnerable road users are susceptible to crashes throughout the entire region. However, there are some factors that increase the chance of a serious or fatal crash; nighttime/dark conditions, wet conditions, and a lack of sidewalk or bicycle facility all contribute to the pedestrian and bicycle safety issues in LCOG. The map below in Figure E.3 highlights nighttime pedestrian and bicycle crashes that resulted in injury or death during the studied time period. Pockets of crashes throughout the region are apparent, with a particular focus in Walterboro, Beaufort, Bluffton, and Hilton Head Island.

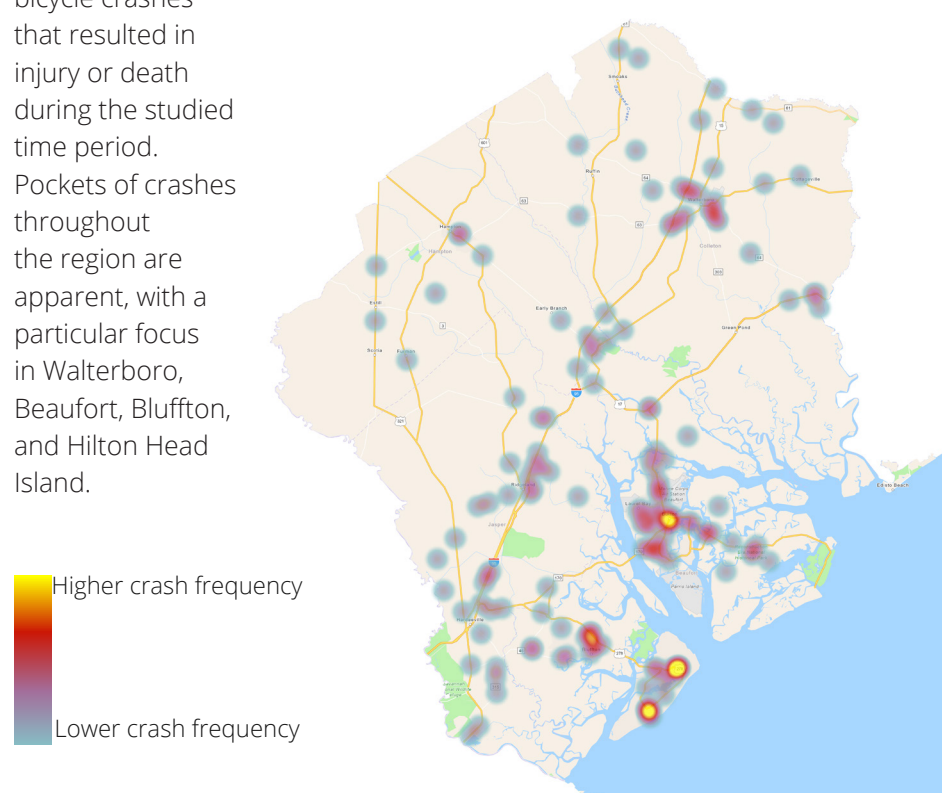


Figure E.2 High Risk Behavior Heat Map

Figure E.3 Vulnerable Road Users Heat Map

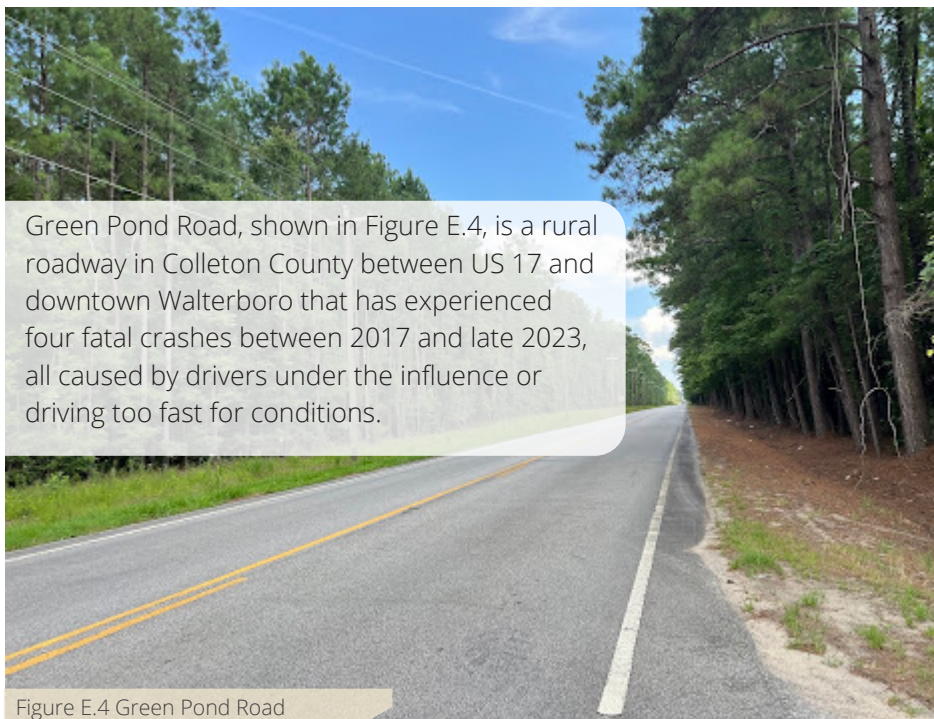


INFRASTRUCTURE

Infrastructure

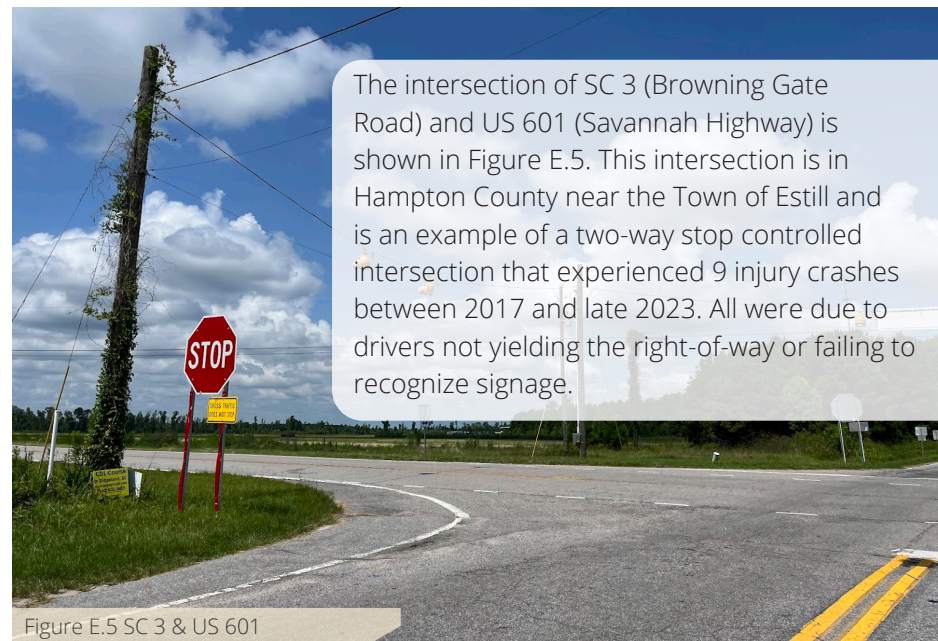
The third emphasis area involves the infrastructure within LCOG. A common theme across the region are roadway departure crashes on rural highways. These are primarily single-vehicle crashes, and they frequently occur during nighttime conditions at rural

intersections where conflicts are common. Rural roadways in LCOG are often associated with poor pavement condition, narrow shoulders, and outdated infrastructure. Certain roadways have been improved recently with rumble strips and wider shoulders. Along with the rural roadway concerns, urban intersections and segments are also opportunities for improvements. Figures E.4, E.5, and E.6 are three examples of infrastructure that could be improved upon with engineering strategies.



Green Pond Road, shown in Figure E.4, is a rural roadway in Colleton County between US 17 and downtown Walterboro that has experienced four fatal crashes between 2017 and late 2023, all caused by drivers under the influence or driving too fast for conditions.

Figure E.4 Green Pond Road



The intersection of SC 3 (Browning Gate Road) and US 601 (Savannah Highway) is shown in Figure E.5. This intersection is in Hampton County near the Town of Estill and is an example of a two-way stop controlled intersection that experienced 9 injury crashes between 2017 and late 2023. All were due to drivers not yielding the right-of-way or failing to recognize signage.

Figure E.5 SC 3 & US 601



The intersection of Johnny Morrall Circle and SC 281 (Ribaut Road) is located in Port Royal and is shown in Figure E.6. This intersection has experienced a number of angle and injury crashes. This is an example of a more urban, signalized intersection.

Figure E.6 Johnny Morrall Circle & SC 281

F. Implementation



IMPLEMENTATION

The following section outlines LCOG's plan for addressing safety needs through a variety of strategies. These strategies are divided into three categories: Engineering, Enforcement, and Education.

Implementation Overview

The crash history indicates that between 2020 and 2021 there was an increase of 350 fatal and serious injury crashes. Pedestrians and bicyclists contribute to this increase, and remain the road's most vulnerable users. These trends are unacceptable and unfortunately are likely to continue as growth envelops the region. However, they are not without actionable opportunities for solutions. The following section highlights LCOG's plan for addressing crashes through three primary categories:



A countermeasure toolbox was developed based on a comprehensive literature review and is provided in Appendix C. This toolbox should be utilized to supplement the specific engineering countermeasures identified across the HIN with systemic applications across the region that adapt to the changing needs and opportunities of each jurisdiction

Engineering Solutions

The first category of implementation solutions is engineering. This encompasses physical infrastructure that will be applied to new or existing roadway segments or intersections. LCOG has excellent examples throughout the four-county region of effective solutions previously installed. Engineering solutions mirror the conclusions of the safety analysis; where recurring issues were identified, potential infrastructure-based solutions were proposed. These solutions were classified into 7 categories, as shown in Figure F.1.

A comprehensive database of the proposed engineering countermeasures, including detailed descriptions, crash reduction potential, and planning-level cost estimates, are provided in the project sheets in Appendix D.

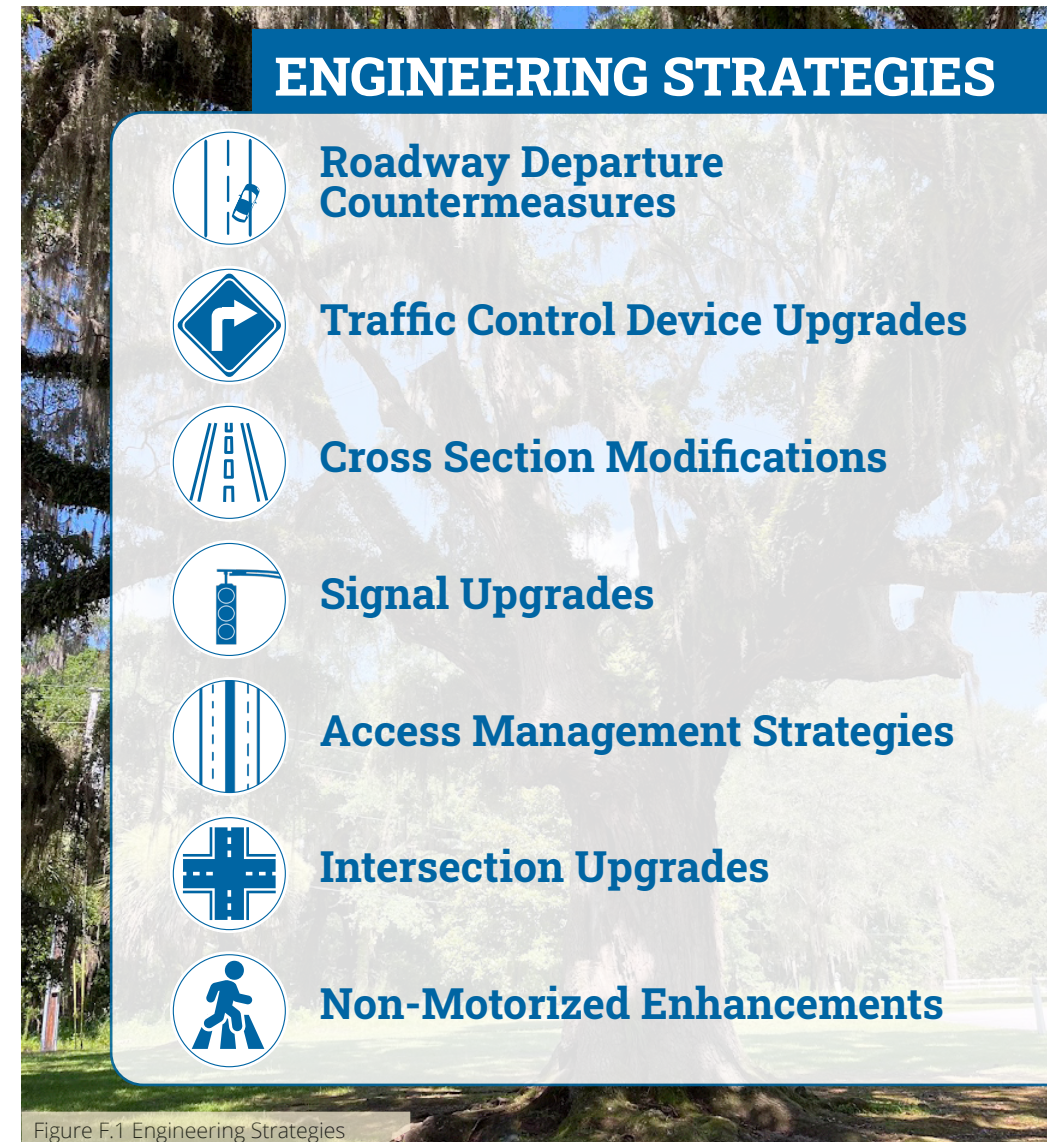


Figure F.1 Engineering Strategies

Roadway Departure Countermeasures

Roadway departure crashes are frequent and deadly in LCOG. Throughout the four-county region, approximately 1,321 crashes were attributed to “Ran Off Road.” This number also underscores crashes that involved aggressive driving or speeding that resulted in a roadway departure. Roadway departure crashes are common, particularly in the most rural regions of Hampton and Colleton counties, where deer are commonly in the roadways. When the roadside is not clear, this creates secondary conflicts, such as crashes with utility poles, culverts, and trees. An example of an existing roadway departure countermeasure as shown in Figure F.2.

POTENTIAL COUNTERMEASURES

- Widen shoulders
- Install wider edge lines
- Install rumble strips with centerline rumble strips
- Install raised retroreflective pavement markers
- Resurface pavement



Figure F.2 Example of new edge lines, wide shoulders, and rumble strips on Highway 64 in Colleton County

EXAMPLE PROJECTS

RD-05 **Jurisdiction:** Brunson, Hampton County

Location: US 278 from Mill Street to Broader Road

Notes:

- Within disadvantaged census tract
- Within 1/2 mile of Brunson Elementary

Project Description: Widen shoulders and install wider edge lines with rumble stripes and centerline rumble strips with raised retroreflective pavement markers

RD-09 **Jurisdiction:** Hardeeville, Jasper County

Location: Hardeeville Industrial Park Road near Phillips Road

Notes:

- Within disadvantaged census tract
- Within 1/2 mile of Royal Live Oaks Charter School

Project Description: Install guardrail and W1-8 signage in the horizontal curve near Phillips Road.

Traffic Control Device Upgrades

Technology upgrades and signalized intersection updates can be solutions for intersections and areas with a myriad of concerns. These are innovative tools that can be applied to existing intersections or roadway segments that provide an upgraded experience for vehicles, pedestrians, bicyclists, and all other roadway users. There is a benefit in providing consistency across a region, as it affords less reaction time for drivers; signage, striping, and supplemental beacons at unsignalized intersections are potential options for this recommendation. An example of a warning light in advance of a signal is shown in Figure F.3.

POTENTIAL COUNTERMEASURES

- Install speed feedback signs
- Install supplemental flashing beacons
- Install advance transverse rumble strips
- Implement a no-passing zone
- Install new regulatory, warning, or guide signage



Figure F.3 Flashing signal ahead signs along US 278 on Hilton Head Island.

EXAMPLE PROJECTS

TCD-03	Jurisdiction:	Beaufort, Beaufort County
	Location:	US 21 from US 17 to US 21/Parris Island Gateway
	Notes:	- Within disadvantaged census tract
	Project Description:	Install up to 3 speed feedback sign assemblies and increase enforcement between US 17 and US 21/Parris Island Gateway to reduce travel speeds.

TCD-08	Jurisdiction:	Edisto Beach, Colleton County
	Location:	Intersection: SC 174 at Live Oak Campground Driveway
	Notes:	- Within disadvantaged census tract
	Project Description:	Provide appropriate guide signage in both directions on SC 174 upstream of the Live Oak Campground and Edisto Island Beach park driveways

SAFETY ACTION PLAN

Cross Section Modifications

Many of the Lowcountry's roadways have wide, expansive pavement without parking or bike lanes. These create opportunities for conflicts from turning vehicles and encourage higher speeds. Reducing the existing cross section by reallocating pavement provides space for adding other modes of travel or turn lanes. This improvement can include road diets but is not limited at that; reducing lane width without changing the entire cross section is also a potential solution. In congested areas, such as in portions of Jasper and Beaufort counties, roadway widening is a potential solution, but capacity expansion should only be considered after other alternatives are thoroughly explored. An example of this improvement is portrayed in Figure F.4.

POTENTIAL COUNTERMEASURES

- Narrow lanes
- Add bike lanes
- Add on-street parking
- Reallocate existing pavement

Figure F.4 Sea Island Parkway connecting St. Helena Island to Beaufort has bike lanes, 11' lanes, and a center median.



EXAMPLE PROJECTS

CS-01 Jurisdiction: Walterboro, Colleton County

Location: US 15 from Bells Highway to Lafayette Lane

Notes:

- Within 1/2 mile of Colleton County Middle & High School
- Within 1/2 mile of Forest Hills Elementary

Project Description: Reduce the existing cross section from 4 lanes to 2 lanes with a center two-way left-turn lane and buffered bike lanes

CS-02 Jurisdiction: Estill, Luray, Hampton County

Location: US 321 from Baker Boulevard to 4th Street

Notes:

- Within disadvantaged census tract
- Within 1/2 mile of Estill Elementary & Middle School

Project Description: Reallocate existing pavement to include one through lane in each direction and a center two-way left-turn lane with ped-bike facilities and/or on-street parking as appropriate.

Signal Upgrades

While the Lowcountry has many signalized intersections, much of the infrastructure is outdated, from the phasing and operations to the actual detection and signals. Many locations are lacking pedestrian signal infrastructure including countdown signals and push buttons. These improvements benefit all roadway users, particularly pedestrians, and provide a safer experience for vehicles approaching intersections. An example of a newly upgraded intersection is displayed in Figure F.5 and new pedestrian signals are shown in Figure F.6.

POTENTIAL COUNTERMEASURES

- Install pedestrian countdown signals
- Upgrade pedestrian crossing infrastructure
- Rebuild signal to include mast arms & retroreflective backplates
- Modify phasing of signals



Figure F.5 Flashing yellow arrow and new signal heads on Boundary Street in Beaufort.



Figure F.6 Pedestrian crossing infrastructure on US 278 on Hilton Head Island.

EXAMPLE PROJECTS

S-02

Jurisdiction: Walterboro, Colleton County

Location: Intersection: US 15 at Ireland Creek Drive

Notes: — Within 1/2 mile of Forest Hills Elementary

Project Description: Rebuild existing traffic signal to include mast arms, pedestrian countdown signals, flashing yellow arrow signal heads, retroreflective backplates, and high-visibility crosswalk markings as appropriate

S-06

Jurisdiction: Bluffton, Beaufort Country

Location: Buckwalter Pkwy between Parkside Dr and SC 46

Notes: — Within 1/2 mile of Bluffton Middle, & High School
— Within 1/2 mile of HE McCracken Middle School

Project Description: Upgrade the existing signals on Buckwalter Parkway to include modified phasing, equipment, markings, and lighting as appropriate. Install a signal at Parkside Drive and Pinellas Drive (south) when warranted.

SAFETY ACTION PLAN

Access Management Strategies

Access Management solutions include limiting access along corridors via driveway consolidation or the use of medians. Variations of this improvement include reduced conflict intersections (RCIs). These projects typically convert five lane sections with a two-way left-turn lane to a landscaped or concrete median with strategic breaks for left-turn access. Figures F.7 and F.8 depict examples throughout the Lowcountry.

POTENTIAL COUNTERMEASURES

- Install a raised median
- Implement a reduced conflict intersection (RCI)
- Construct a landscaped median
- Convert intersection to 3/4 access

Figure F.7 Example of raised and landscaped median in Walterboro on S Jefferies Boulevard. This project was completed in 2023 and the medians replaced a center two-way left-turn lane.



Figure F.8 Example of raised and landscaped median in Port Royal on US 21.

EXAMPLE PROJECTS

AM-2 **Jurisdiction:** Beaufort, Beaufort County

Location: US 21 from Pap Kee Lane to Huspa Creek bridge crossing

Notes: — Within disadvantaged census tract

Project Description: Construct a landscaped median within the existing undivided section between Pap Kee Lane and the Huspa Creek bridge crossing to manage access and reduce travel speeds.

AM-3 **Jurisdiction:** Yemassee, Jasper County

Location: US 17 from 1,000 ft west of Frampton Dr to Lowcountry Ln

Notes: — Within disadvantaged census tract

Project Description: Construct a raised median to restrict access at Frampton Dr and the BP driveway to right-in/right-out only. Construct appropriate U-turn accommodations in both directions on US 17.

Intersection Upgrades

Intersection upgrades is a comprehensive category that includes a wide range of improvements. This could include installing a traffic signal at an existing four-way stop-controlled intersection or converting an existing signalized intersection to a roundabout. An example of the overhead signage prior to a roundabout is shown in Figure F.9 and the same roundabout is shown in Figure F.10.

POTENTIAL COUNTERMEASURES

- Realign intersection
- Remove vegetation within sight triangles
- Construct left & right turn lanes
- Install a traffic signal



Figure F.9 Bluffton Parkway/Bluffton Road signage



Figure F.10 Bluffton Parkway/Bluffton Road one-lane roundabout

EXAMPLE PROJECTS

I-05

Jurisdiction: Hampton County

Location: Intersection: SC 63 at Old Salkehatchie Road

Notes:

- Within disadvantaged census tract
- Within 1/2 mile of North District Middle

Project Description: Remove vegetation within the sight triangles for each approach on Old Salkehatchie Road to improve sight distance and reduce the risk for severe angle crashes.

I-17

Jurisdiction: Hardeeville, Jasper County

Location: Argent Boulevard at New River Parkway/Hampton Pointe Loop Road

Notes:

- Within disadvantaged census tract
- Within 1/2 mile of Okatie Elementary

Project Description: Install a traffic signal and appropriate geometric upgrades when warranted.

SAFETY ACTION PLAN

Non-Motorized Enhancements

Protecting the road's most vulnerable users through transportation accommodations includes crossing improvements as well as connectivity improvements. Figures F.11 and F.12 provide two examples, one rural (left) and one more urban (right). These improvements can range from full shared use paths to pedestrian signals and crosswalks.

POTENTIAL COUNTERMEASURES

- Install high-visibility crossings
- Install a midblock crossing
- Upgrade unsignalized crossings
- Upgraded signage



Figure F.11 The ACE Basin Greenway in Colleton County provides an unpaved walking and biking trail.



Figure F.12 The Spanish Moss Trail in Beaufort County is a paved multi-use path with clear markings.

EXAMPLE PROJECTS

N-02 **Jurisdiction:** Estill, Luray, Hampton County

Location: US 321 from Estill High School to Inez Street

Notes:

- Within disadvantaged census tract
- Within 1/2 mile of Estill Elementary, Middle, & High School

Project Description: Construct new shared use path to fill gaps in the existing network and provide safe access for walking/cycling to school.

N-06 **Jurisdiction:** Bluffton, Beaufort County

Location: SC 46 from SC 170 to Buckwalter Road

Notes:

- N/A

Project Description: Construct a shared use path from SC 170 to Buckwalter Parkway (Phase 2). Adapt recommendations for consistency with findings from the SC 46 Corridor Study.

Engineering Solutions

The categories described encompass a wide range of projects in the Lowcountry, spanning all four counties and covering spots and segments throughout the region. The map shown in Figure F.13 displays the locations of spot improvements, such as intersections, and segment improvements, such as road diets. The split of projects in the four counties is detailed in Table F.1. The countermeasure toolbox provided in Appendix C and noted at the beginning of this chapter should be utilized to inform systemic application of engineering countermeasures across locations along and outside of the HIN.

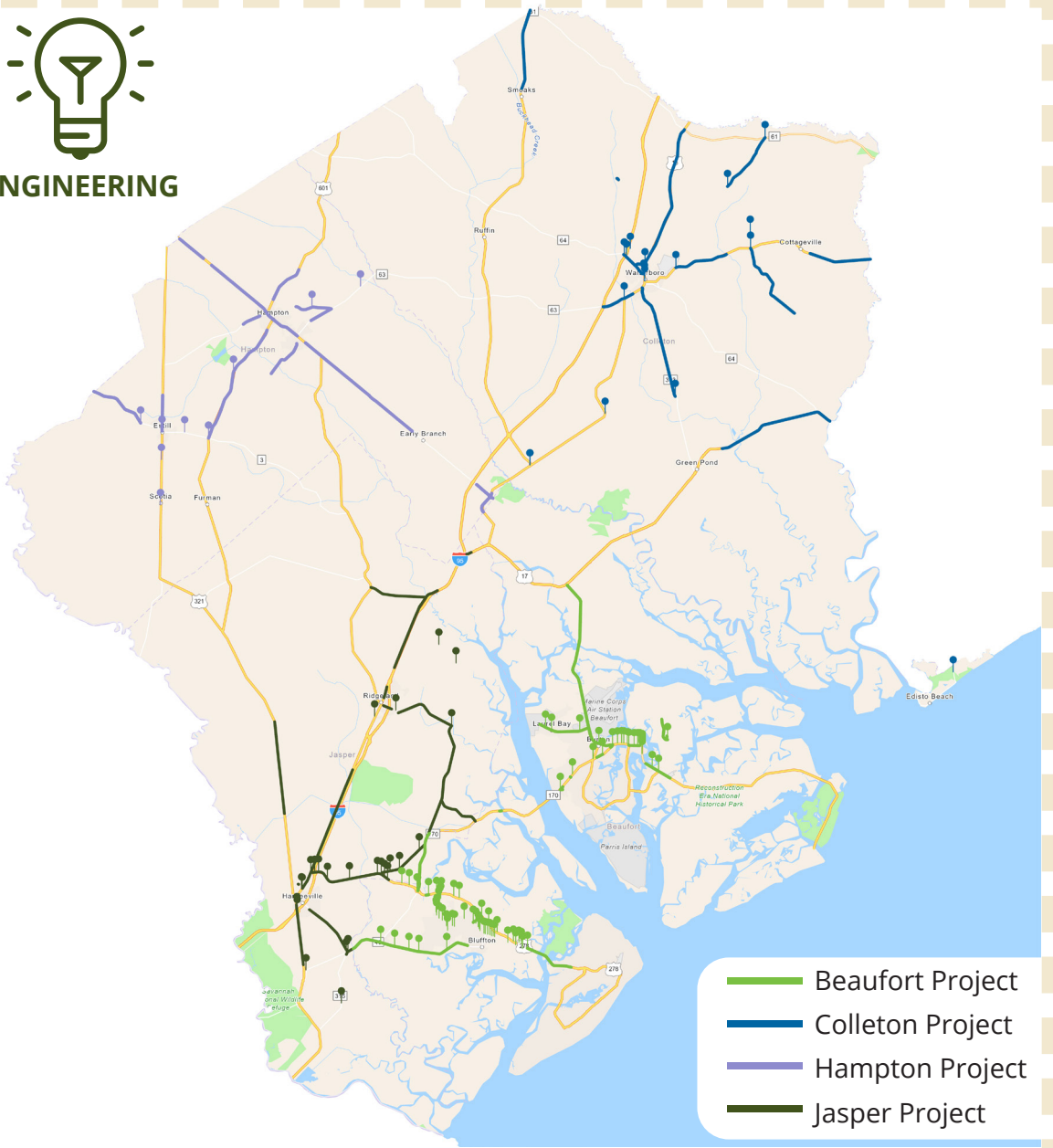
Project Locations

County	Identified Projects
Beaufort	42
Colleton	33
Hampton	32
Jasper	43
Total	150

Table F.1 Project Location Split



ENGINEERING



- Beaufort Project
- Colleton Project
- Hampton Project
- Jasper Project

Figure F.13 Project Map



Education and Enforcement



While the Lowcountry has many factors contributing to crashes, it is noteworthy that **approximately 36% of all studied crashes were attributed to drivers' behavior, such as texting while driving, exceeding the authorized speed limit, and distracted driving.** These issues are pervasive throughout the Lowcountry and do not discriminate a certain area or roadway. LCOG is committed to prioritizing safe streets and their Target Zero policy on fatal roadway crashes points to this emphasis.

Strategies in this category are described here.

- **E.1. Create a Target Zero website** within the LCOG main website where the public can review this document and associated publications and news.
- **E.2. Encourage community partnerships** where the counties, municipalities, local schools, business, and neighborhoods within LCOG can engage with each other and share strategies and resources region-wide.
- **E.3. Conduct awareness campaigns** aimed at raising awareness of common traffic concerns, such as texting while driving, speeding, impaired driving, and proper navigation of roundabouts. These campaigns should be conducted at regular intervals, such as quarterly.



Social media is one avenue that the municipal and county law enforcement agencies can enforce and educate the population of new traffic patterns, safe driving tips, and create a connection between the public and the agencies patrolling the roadways.



In conversations with the Beaufort County Police and the State Highway Patrol, those interviewed frequently mentioned struggles to monitor every location within the jurisdiction due to the sheer size of the region, limited staff, and conflicting calls for service.

Evaluation

In addition to the project categories and locations identified within the engineering section, keeping detailed record of progress with the proposed strategies and allowing the plan to adapt to changing crash trends and transportation needs and opportunities is a key next step in implementation. The steps outlined below provide a roadmap for this process.

PROJECTS AND STRATEGIES

The projects and strategies shown within this report, including all the engineering categories.

REFINEMENT AND EVALUATION

Project lists should be continually refined as data trends and community needs remain dynamic in the Lowcountry.

ADDITIONAL PROJECTS

Additional projects and locations will be added to the list based on successes and lessons learned from the first round of projects.

Strategies in this category are described here.

- **V.1. Conduct pedestrian and bicycle counts** across the Lowcountry, with an emphasis on locations that are being impacted by new or improved infrastructure.
- **V.2. Collaborate with partners** to share data, results, and potential projects to ensure resources are being leveraged and targets can be reached together.
- **V.3. Publish results** to promote transparency and provide information to interested parties on successful project implementation and enforcement strategies.

The evaluation section of this plan is intended to guide LCOG beyond the next few years and provide a framework for how LCOG will continue to use the data and strategies contained in the strategies previously described. This plan and the proposed strategies and countermeasures identified should continue to evolve based on the outcomes of regular evaluation across the region

