



Cobb County Comprehensive Safety Action Plan

Technical Report

June 2023



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List of Acronyms

ADA – Americans with Disabilities Act	LRSP – Local Roadway Safety Plan
APP – Areas of Persistent Poverty	LTWT – Left-Turn with Through Movement
ARC – Atlanta Regional Commission	MARTA – Metropolitan Atlanta Rapid Transit Authority
BCI – Minor Injury, Visible Injury, and Non-Injury Crashes	MPH – Miles Per Hour
CAV – Connected and Autonomous Vehicle	MPO – Metropolitan Planning Organization
CCDOT – Cobb County Department of Transportation	MTP – Metropolitan Transportation Plan
CDAP – Community Development Assistance Program	MUTCD – Manual for Uniform Traffic Control Devices
CDC – Centers for Disease Control	NHTSA – National Highway Traffic Safety Administration
CIP – Capital Improvement Program	NOTO – Notice of Funding Opportunity
CMF – Crash Modification Factor	PDO – Property Damage Only
CTP – Comprehensive Transportation Plan	PHB – Pedestrian Hybrid Beacon
DOT – Department of Transportation	PSC – Proven Safety Countermeasure
DSDS – Dynamic Speed Display Sign	PSRB – Pedestrian Safety Review Board
DUI/DWI – Driving Under the Influence/Driving While Intoxicated	RSA – Road Safety Audit
EJ – Environmental Justice	RRFB – Rectangular Rapid Flashing Beacon
EMS – Emergency Medical Services	RSS – Regional Safety Strategy
FHWA – Federal Highway Administration	RSTF – Regional Safety Task Force
GDOT – Georgia Department of Transportation	SAP – Safety Action Plan
GIS – Geographic Information System	SHSP – Strategic Highway Safety Plan
GOHS – Governor’s Office of Highway Safety	SR – State Route
HDC – Historically Disadvantaged Community	SRTS – Safe Routes to School
HILU – High-Intensity Land Use	SS4A – Safe Streets and Roads For All
HSIP – Highway Safety Improvement Program	SVI – Social Vulnerability Index
KA – Fatal/Serious Injury Crash	TIM – Traffic Incident Management
KABCO – KABCO Crash Severity Scale	TIP – Transportation Improvement Program
LCI – Livable Centers Initiative	TMS – Transportation Management System
LOS – Level of Service	TSM&O – Transportation Safety Management & Operations
LPI – Leading Pedestrian Interval	VZWG – Vision Zero Working Group

Chapter 1 – Safety Action Plan Overview

The Cobb County Department of Transportation (CCDOT) developed this Comprehensive Safety Action Plan beginning in December 2022 to meet goals from the Cobb Forward Comprehensive Transportation Plan (CTP) and the Atlanta Regional Commission’s Regional Safety Strategy (RSS). The planning process for this Safety Action Plan is shown in **Figure 1-1**. It consists of establishing a committee to oversee the Action Plan, analysis of existing conditions and historical trends that provide a baseline understanding of fatal and serious injury crashes, outreach to and engagement of key stakeholders and community members, consideration of equity and policy implications, and development of projects and strategies to address safety issues and concerns. The Safety Action Plan covers all of unincorporated Cobb County as well as the Cities of Acworth, Austell, Kennesaw, Marietta, Powder Springs, and Smyrna as well as the newly incorporated City of Mableton¹ (officially incorporated as a City in June 2023) as shown in **Figure 1-2**.



Figure 1-1: Cobb Safety Action Plan Process & Timeline

Why a Cobb County Safety Action Plan?

On average, more than 600 people die or are seriously injured on roadways in Cobb County each year. In the five-year period from 2018 to 2022, more than 300 people lost their lives on Cobb County roadways. There was a sharp increase in the number of fatalities between 2018 and 2019 – from 55 to 77 – and while that number declined overall from 2019 to 2022, the number of injuries resulting from serious injury crashes also increased over time, from 330 in 2018 to 558 in 2022, with the most injuries (720) occurring in 2021.

The Safety Action Plan focuses on crashes during the most recent five-year period prior to beginning this planning process, 2018 to 2022. As a point of reference, the project team compared fatalities for this analysis period with those reported in the Cobb Forward Comprehensive Transportation Plan (CTP). The overall trend has been an increase in traffic related fatalities over the past eight years: there were 233 fatalities between 2014 and 2018 and 320 fatalities between 2018 and 2022. This represents an increase in the average number of fatalities per year from 47 during 2014-2018 to 64 from 2018-2022.

The Cobb County Comprehensive Safety Action Plan is a framework and strategy to reduce traffic-related serious injuries and deaths, working toward a **long-term goal of zero deaths and serious injuries** on roadways. It will take time, but incremental steps to improve transportation safety through a holistic approach of projects, policies, and strategies can make a difference. This Safety Action Plan supports the **long-term goal by providing information, guidance, and recommendations** grounded by **Safe System principles**.

¹ Even though the City of Mableton was incorporated in June 2023, city services are still being introduced, and streets within the City’s boundaries are maintained by CCDOT.

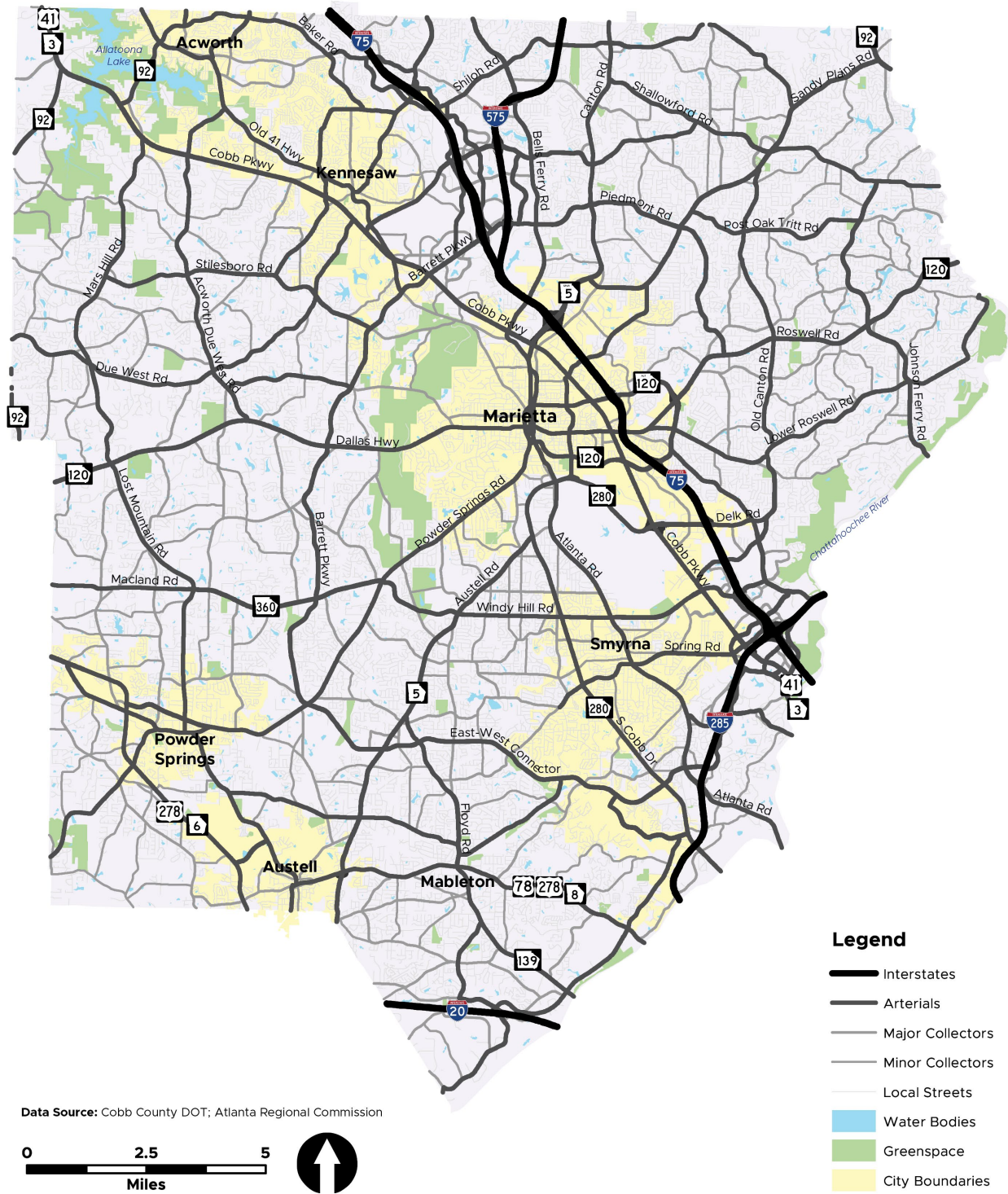


Figure 1-2: Cobb County

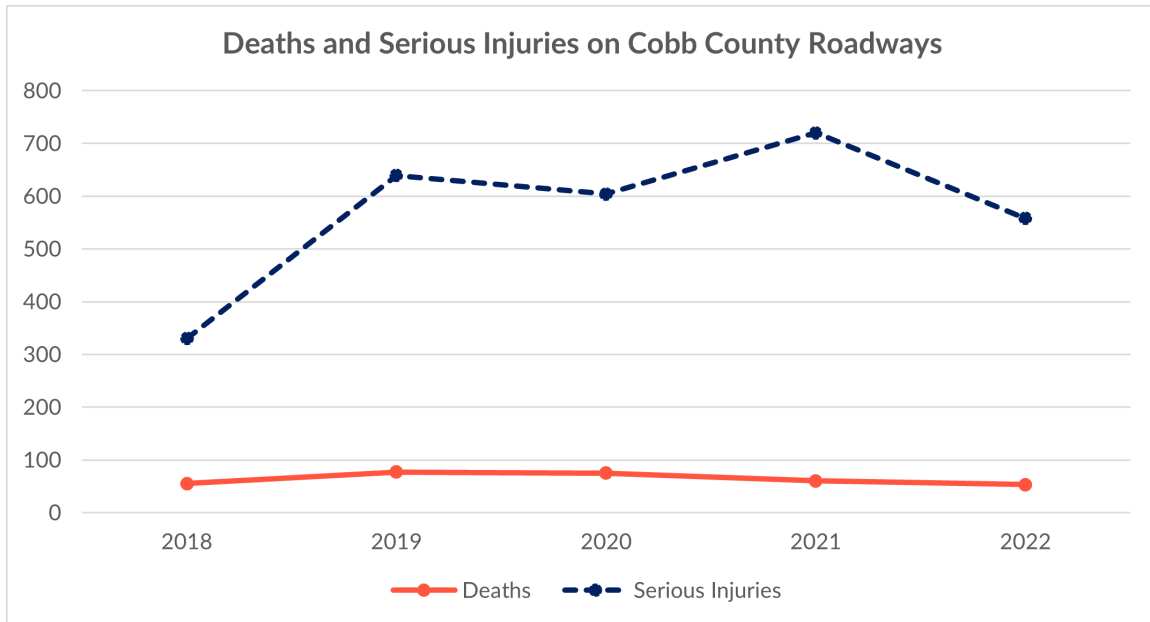


Figure 1-3: Deaths and Serious Injuries on Roadways in Cobb County (2018-2022)

Roadway crashes affect everyone; most people have stories about family members, friends, colleagues, and loved ones whose lives have been significantly altered as the result of a motor vehicle crash. Data indicate, however, that deaths and serious injuries are not experienced equally by all people across the County. Vulnerable community members, including low-income individuals, people with disabilities, minorities, older adults, and younger children tend to be disproportionately impacted by severe crashes. This may be due to a reliance on more affordable forms of transportation, such as walking, biking or public transportation or a lack of investment over time in some communities. As a percentage of total crashes, collisions involving pedestrians, bicyclists, and motorcyclists disproportionately result in fatalities or serious injuries compared to crashes involving other types of vehicles or forms of transportation.

Tackling this problem is a priority for Cobb County. This Safety Action Plan represents the first step in a comprehensive and holistic approach to addressing transportation safety, and ultimately, working toward an **eventual goal of zero deaths and serious injuries on Cobb County roadways**. The goal of achieving zero deaths and serious injuries is daunting, but by focusing on the most pressing safety issues and taking a proactive approach that addresses known risk factors, there is an opportunity to incrementally reduce the number of serious injuries and fatalities. Doing so requires focusing on:

- The types of crashes that disproportionately result in serious injuries and fatalities
- Where severe crashes are most prevalent
- What characteristics and factors are likely to increase the risk of severe crashes

The remainder of this section provides an overview of foundational documents and approaches that have guided the Cobb County Safety Action Plan.

Alignment with ARC Regional Safety Strategy

The Cobb County Safety Action Plan was developed to align with and support ARC's Regional Safety Strategy (RSS) adopted in January 2023. The RSS is a regional safety action plan to help ARC and its partners, including Cobb County, proactively achieve safety goals and build a safe transportation system for all users in the Atlanta region. ARC is committed to eliminating deaths and serious injuries in the Atlanta region through a regional safety approach that is proactive, data-informed, and community-based. The RSS consists of both regional and local components to address roadway safety. Regionally, the RSS strives to serve as a coordinated approach for ARC and other state and regional partners to:

- Shift to a more proactive approach to safety
- Develop regional goals and plans
- Establish and monitor federal safety performance targets
- Evaluate and prioritize projects
- Allocate funds to local governments

The local framework component of the RSS serves as non-regulatory guidance for local agencies, including CCDOT. It provides resources, guidance, and strategies to help local governments:

- Improve safety in their own communities
- Integrate safety in project planning and development
- Identify safety issues and project locations using a proactive, risk-based approach
- Target risk factors with proven safety countermeasures
- Prioritize projects and strategies for funding and implementation

To inform these functions, the RSS conducted a data-driven analysis of crashes across the Atlanta region to identify specific safety issues and actions for member local governments. The RSS considers both motorized and active modes of transportation in tailoring strategies to comprehensively address roadway safety challenges. The RSS addresses federal and state regulations, including safety performance management goals, measures, and targets and provides a regional and local framework to encourage all agencies to work cohesively toward common safety goals and equitable outcomes. The Cobb County Safety Action Plan approach for evaluating crash patterns and identifying risk factors aligns with the RSS.

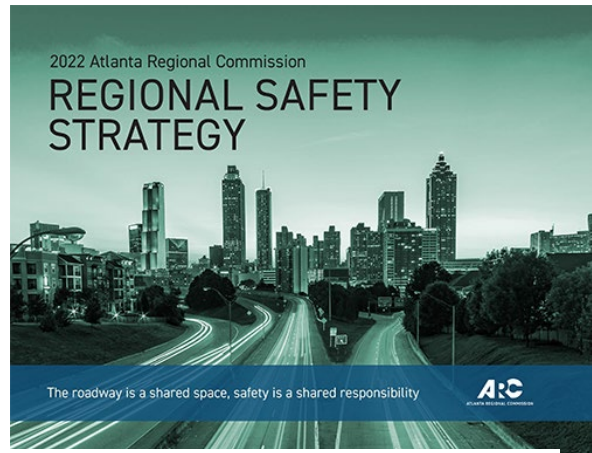


Figure 1-4: ARC Regional Safety Strategy Cover page

The most prevalent severe crash types across the Atlanta region are intersection crashes, roadway departure, and pedestrian and bicycle crashes, which ARC selected as regional emphasis areas. Emphasis areas are not siloed issues in that there is overlap where a single crash could represent multiple emphasis areas (e.g., pedestrian and intersection, young driver, and roadway departure, etc.). Similar to the RSS, the Cobb County Safety Action Plan identified focus crash types prevalent within the County based on crash types that comprise a higher proportion of serious injury and fatal crashes compared to overall crashes across the County.

Implementing the RSS, in part through local mechanisms such as the Cobb County Safety Action Plan, will help achieve the Atlanta region's vision of safe, accessible, and convenient travel for all road users, especially the most vulnerable road users. Taking proactive approaches to safety will better enable planners, designers, and policymakers to develop tangible actionable strategies and resources, improve project development, implement incremental projects, and measure progress towards meeting regional safety targets – all of which promote a culture of safety across the Atlanta region.²

FHWA Safe System Approach

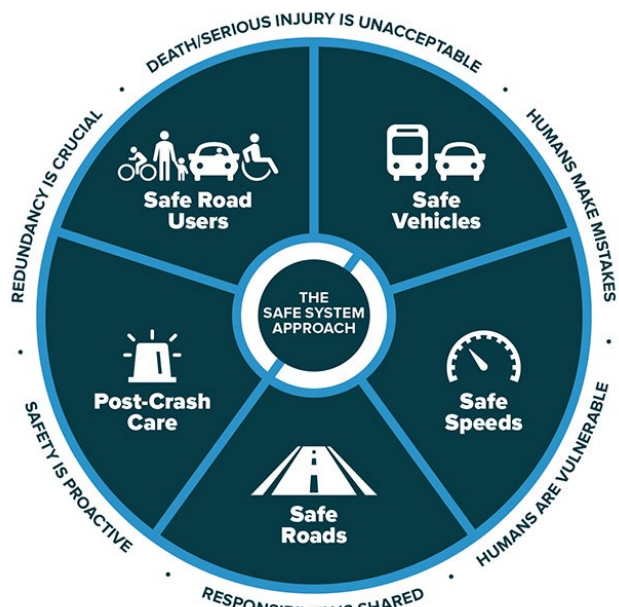


Figure 1-5: FHWA Safe System Approach

The Cobb County Safety Action Plan supports long-term regional safety goals by addressing the safety for all road users through a comprehensive, multidisciplinary, and multimodal approach grounded in the Safe System approach promoted by the Federal Highway Administration (FHWA). The Safe System approach is rooted in a mindset that it is unacceptable to allow deaths and serious injuries to occur on streets and roadways. It also acknowledges that road users are human beings and that humans will inevitably make mistakes, which sometimes lead to crashes, and that steps can be taken to reduce the likelihood of crashes or the severity of those that do occur.

Minimizing or approaching zero roadway deaths and serious injuries requires the implementation of a Safe System approach, in which human error on roadways should never lead to death. Applying the Safe System approach involves designing and

managing road infrastructure to mitigate driver risk of making a mistake. When a mistake results in a crash, the human impact should not result in a fatality or a serious injury. Roadway design and asset management should encourage safe speeds and foster an inclusive environment which emphasizes reduced crash risk and severity. This forms the root difference between traditional approaches to safety that are more reactive and focus on engineering solutions to address crash history (see **Table 1-1**).

² Atlanta Regional Commission (2023). Regional Safety Strategy. <https://atlantaregional.org/transportation-mobility/regional-safety-strategy/>

Table 1-1: Differences Between a Traditional and Safe System Approach to Roadway Safety³

Traditional	Safe System
Prevent crashes	Prevent deaths and serious injuries
Improve human behavior	Design for human mistakes/limitations
Control speeding	Reduce system kinetic energy
Individuals are responsible	Share responsibility
React based on crash history	Proactively identify and address risks

Source: FHWA

Whereas traditional road safety strives to modify human behavior and prevent all crashes, the Safe System approach also refocuses transportation system design and operation on anticipating human mistakes and lessening impact forces to reduce crash severity and save lives. The Safe System approach requires a supporting safety culture that places safety first and foremost in road system investment decisions. To achieve the vision of zero deaths, everyone must accept that fatalities and serious injuries are unacceptable and preventable. Shared responsibility among system managers such as planners, engineers, and designers as well as maintenance workers, vehicle manufacturers, law enforcement, traffic incident management, and transportation system users is essential to a successful Safe System.⁴

Five Safe System Elements

Safe Road Users – The Safe System approach addresses the safety of all road users, including those who walk, bike, drive, ride transit, and travel by other modes.

Safe Vehicles – Vehicles are designed and regulated to minimize the occurrence and severity of collisions using safety measures that incorporate the latest technology.

Safe Speeds – Humans are unlikely to survive high-speed crashes. Reducing speeds can accommodate human injury tolerances in three ways: reducing impact forces, providing additional time for drivers to stop, and improving visibility.

Safe Roads – Designing to accommodate human mistakes and injury tolerances can greatly reduce the severity of crashes that do occur. Examples include physically separating people traveling at different speeds, providing dedicated times for different users to move through a space, and alerting users to hazards and other road users.

Post-Crash Care – When a person is injured in a collision, they rely on emergency first responders to quickly locate them, stabilize their injury, and transport them to medical facilities. Post-crash care also includes forensic analysis at the crash site, traffic incident management, and other activities.

³ Federal Highway Administration (2022). The Safe System Approach. https://highways.dot.gov/sites/fhwa.dot.gov/files/2022-06/FHWA_SafeSystem_Brochure_V9_508_200717.pdf

⁴ M. Doctor & C. Ngo (2022). Making Our Roads Safer Through a Safe System Approach. *Public Roads* – Winter 2022 (Vol. 85 No. 4). <https://highways.dot.gov/public-roads/winter-2022/01>

Six Safe System Principles

- **Deaths and Serious Injuries are Unacceptable** - While no crashes are desirable, the Safe System approach prioritizes crashes that result in death and serious injuries, since no one should experience either when using the transportation system.
- **Humans Make Mistakes** - People will inevitably make mistakes that can lead to crashes, but the transportation system can be designed and operated to accommodate human mistakes and injury tolerances and avoid death and serious injuries.
- **Humans Are Vulnerable** - People have limits for tolerating crash forces before death and serious injury occurs; therefore, it is critical to design and operate a transportation system that is human-centric and accommodates human vulnerabilities.
- **Responsibility is Shared** - All stakeholders (transportation system users and managers, vehicle manufacturers, etc.) must ensure that crashes do not lead to fatal or serious injuries.
- **Safety is Proactive** - Proactive tools should be used to identify and mitigate latent risks in the transportation system, rather than waiting for crashes to occur and reacting afterwards
- **Redundancy is Crucial** - Reducing risks requires that all parts of the transportation system are strengthened, so that if one part fails, the other parts still protect people.

Safe Streets and Roads For All (SS4A) Overview



The Infrastructure Investment and Jobs Act (IIJA) was signed into law by President Joe Biden in November 2021. Among the numerous programs earmarked and authorized by the IIJA, there were several new grant programs, including the Safe Streets and Roads For All (SS4A) discretionary grant program. SS4A was authorized with \$5 billion in appropriated funds over the next five years (through fiscal year 2026) to fund various initiatives to prevent roadway deaths and serious injuries. Through the SS4A program, there are two types of grants which are available: Planning and Demonstration Grants and

Implementation Grants. Planning and Demonstration Grants can be used to develop or update a comprehensive safety action plan as well as to conduct planning, design, and development activities in support of a safety action plan. Implementation grants require completion of a safety action plan by a local jurisdiction in order to be eligible for funds. Implementation funds can be used to carry out projects, recommendations, and strategies in a safety action plan such as infrastructure, behavioral, and operational safety improvements.

In order to apply for future Implementation Grants through the SS4A program, Cobb County will need to certify that it is guided, per the current Notice of Funding Opportunities (NOFO) released by the Federal Highway Administration (FHWA) to the public on March 31, 2023, by an “an existing plan which is substantially similar to an Action Plan.”⁵ The Cobb County Safety Action Plan was developed to be

⁵ U.S. Department of Transportation (2023). Self-Certification Eligibility Worksheet (updated April 13, 2023). <https://www.transportation.gov/sites/dot.gov/files/2023-04/SS4A-Self-Certification-Eligibility-Worksheet-FY23.pdf>

compliant with the SS4A program in order to be eligible for future implementation project funding for the recommendations in the Plan.⁶

Plan Overview

Reported crashes in the Cobb County Safety Action Plan follow the KABCO severity scale as presented in the Georgia Motor Vehicle Crash Report. KABCO is a crash severity scale where:

- K=fatal,
- A=suspected serious injury,
- B=suspected minor injury,
- C=possible injury, and
- O=property damage only.

The Cobb County Safety Action Plan holistically examines safety trends and crash patterns across Cobb County to identify crash risk factors and locations where crashes frequently occur. The Safety Action Plan begins with a review of case studies in **Chapter 2** to understand how counties with suburban development patterns adjacent to major cities (similar to Cobb County's proximity to Atlanta) are approaching safety improvements, policy, and education. This is followed by a plan and policy review in **Chapter 3** as context to guide development of the Safety Action Plan and understand how Cobb County design and traffic policies address safety on roadways and for different modes of transportation.

An initial review of all crashes from January 1, 2018 to December 31, 2022 across Cobb County summarizes overall trends and patterns is summarized in **Chapter 4**. The Safety Action Plan focuses on the most severe crashes, including those that resulted in fatalities and serious injuries to identify risk factors, site-specific, and systemic safety needs. **Chapter 5** discusses the location and patterns of fatal and serious injury crashes. **Chapter 6** explores fatal and serious injury focus crash types in further detail and identifies risk factors associated with those crashes at the corridor level.

In an effort to understand which communities and populations are most affected by historic severe crashes, **Chapter 7** includes an overlay analysis of serious injury and fatal crashes with Census tracts that are designated as historically disadvantaged communities (HDCs), areas of persistent poverty (APP), or in which residents face high barriers to travel, based on data from the U.S. Department of Transportation's Justice40 Initiative. **Chapter 8** summarizes stakeholder engagement and community outreach activities conducted to identify safety concerns, understand priorities, and reach a broad spectrum of the County population.

The Cobb County Safety Action Plan culminates with the identification of potential projects for early implementation as well as policies and strategies that can help improve safety across the County. **Chapter 9** presents strategies for implementation of a range of projects, including application of countermeasures to focus crash types, focus corridors, intersection safety improvements, and recommendations for policies, and strategies.

⁶ U.S. Department of Transportation (2023). Safe Streets and Roads for All (SS4A) Grant Program. <https://www.transportation.gov/grants/SS4A>

Chapter 2 – Peer County and Case Study Review

The purpose of the case study review was to identify key elements of safety action plans in other communities and identify notable practices for consideration by Cobb County officials in developing a stakeholder- and data-informed safety action plan. The intent was to understand the types of engagement activities conducted, the types of recommendations made, and how plans were structured, and to take cues from these plans, incorporating relevant information where applicable. The project team identified four primarily suburban counties across the U.S. to review as case studies, from which to draw information about their processes, goals, and recommendations:

- Macon-Bibb County, Georgia
- Solano County, California
- El Paso County, Colorado
- St. Charles County, Missouri

In conducting this review, the team focused on four core elements of safety action plans and similar efforts:

- Data Utilization – The source of safety data used for the plan.
- Goals and Objectives – The policy framework that drives the plan.
- Outreach Activities – Efforts to seek input for safety issues and solutions.
- Recommendations – The organization and formatting of recommendations within each plan.

General Observations

The case studies have noticeable similarities, as seen in **Table 2-1**. All the plans seek to eliminate roadway fatalities and serious injuries in the coming decades. While the case study counties have different populations and development densities, their approaches to eliminating crash fatalities and injuries were similar. More specifically:

- All four case studies analyzed crash data from the previous five years. While the specific data sources varied by case study, they all looked at variations in the time of day, type of crash, severity, road conditions, weather conditions, and intoxication, among other crash-related variables.
- Public input was sought to identify problematic locations where data sources may fall short. The input identified contributing factors such as consistent use of cell phones while driving, failure to signal, or high speeds in certain areas.
- While the specific public outreach methods varied in each case study, they generally identified a group of stakeholders consisting of some variation of municipal officials, law enforcement, and emergency services. They developed surveys for the public to comment on the plans and give their input on community safety issues. Some of the plans' digital outreach tactics included interactive maps and dashboards allowing the public to submit their comments on high-risk areas.
- The plans also similarly structured their recommendations. These were mostly presented in tabular format, some itemized by action item, differentiated by type, whether they were engineering, policy, or otherwise oriented, and described generally in terms of cost and implementation time. Some plans also completed a road safety audit for a more specific breakdown of safety countermeasures in certain locations.

Table 2-1: Case Study Comparison Table

Case Study	Reduction Goal	Data Sources	Interactive Maps or Dashboard	Road Safety Audits	Emphasis Areas	Countermeasure Types	Organization
Macon-Bibb	100% of fatalities and serious injuries by 2040	County Sheriff's Office, GDOT	✓	✓	Pedestrians, Aggressive Driving, Corridor, Intersections, or General	Vision Zero Program, Safe Roads, Safe Speeds, Safe Road Users, Safe Vehicles, and Post-Crash Care	Gives expected timeline, cost, lead agency, and partners for each countermeasure (Table)
Solano	100% of fatalities and serious injuries by 2040	Statewide Integrated Traffic Records System (SWITRS); Transportation Injury Mapping System (TIMS); Crossroads Collision Database			Vulnerable Road Users, Risky Behaviors, and Infrastructure	Countermeasure recommendation specific to each location based on crash trends involving pedestrians, bicyclists, motorcyclists, alcohol and/or drug involvement, lane departures and intersection conditions	Presents each priority area with a priority ranking, associated emphasis areas, whether it was in the 2018 Solano Travel Safety Plan, and if it was in the Active Transportation Plan (Table). Also has area descriptions, crash data summaries, diagnoses and countermeasure options (Written).
El Paso	100% of fatalities and injuries, unspecified time frame	Colorado DOT; Pikes Peak Area Council of Governments; El Paso County Sheriff's Office; Colorado Springs Police Department; El Paso County	✓	✓	Engineering, Education, Encouragement, Evaluation, and/or Enforcement	Countermeasures are categorized as combinations of the Emphasis Areas	Gives expected time frame, cost, description, and emphasis area (Table).
St. Charles	50% of fatalities and serious injuries by 2030; 100% of fatalities and serious injuries by 2050	MoDOT's Transportation Management Systems (TMS); Statewide Traffic Accident Records System (STARS)			Engineering, Policy, and Programmatic	Infrastructural and engineering related countermeasures are categorized by which crash related issues they address and facility type	Countermeasures are presented on the left side, and the top side is divided between crash conditions and facility type. (Matrix/Table).

Case Study 1: Macon-Bibb County, GA

State: GA
Most Populous City: Macon
Population: 156,762 (US Census 2021)
Population Density: 630.9/sq mi

The Macon-Bibb County Vision Zero Action Plan is a product of the FHWA's assistance to Macon-Bibb County in reaching zero deaths and is part of the pilot implementation of the Federal Highway Safety Administration's guidebook policy on reaching zero traffic fatalities and injuries, titled *Transportation Safety Planning and the Zero Deaths Vision: A Guide for Metropolitan Planning Organizations and Local Communities* report.⁷ It comprises the following elements to succeed: political commitment, multidisciplinary leadership, a safe-system approach, being data-driven, stakeholder and public engagement, and an equitable approach.

Data Utilization

The Vision Zero Action Plan used the previous five full years of crash data provided by the County sheriff's office and GDOT. County staff also gave feedback on crash trends and characteristics to identify focus areas. Injury and fatality figures and locations were heavily used from the crash data throughout the report.

Goals and Objectives

The plan aims to eliminate fatalities and serious injuries by 2040 and achieve safe, healthy, and equitable mobility for all road users. The plan was constructed with engineering elements resulting from road safety audits and data collection, alongside advocacy, workshops, and policy elements to ensure long-term safety related to the roads, driver and pedestrian behavior, and awareness.

Outreach Activities

The Vision Zero Working Group (VZWG) included County planners, engineers, educators, enforcement officials, and others designated as the advisory board in the plan's development. The first meeting was between the VZWG and the Pedestrian Safety Review Board (PSRB), a committee group of public officials seeking ways to improve roadway infrastructure for pedestrian safety. The VZWG then met with the Board of Commissioners, a group of local legislators, to understand the legislative capabilities and expectations of the plan. The VZWG met with federal, regional, and local stakeholders in January 2019. Public input was also taken via an online tool that citizens could use to identify areas of concern on interactive maps. Finally, the Pedestrian Safety Review Board held a workshop with the public, alongside the mayor, commissioners, and representatives, to take public input.

⁷ Macon-Bibb County, GA (2020). Macon-Bibb County Vision Zero Action Plan, https://psrb.maconbibb.us/wp-content/uploads/2021/02/508_Macon-Bibb-VZAP_01Jan2021.pdf

Recommendations

The recommendations of the Action Plan consist of a phased program to help Macon-Bibb achieve its Vision Zero Goal. These are divided into categories that align with Vision Zero and the Safe System approach's tenets – Safe Roads, Safe Speeds, Safe Road Users, Safe Vehicles, and Post-Crash Care. Notable policies, strategies, and initiatives include the following:

Vision Zero Program

- Have the Vision Zero Action Plan endorsed by pedestrian-oriented stakeholders.
- Establish a Vision Zero program within the County, and hire a Transportation Safety Manager to oversee and develop strategies to improve traffic safety.
- Establish a funding source for Vision Zero projects.
- Have future planning, design, and policy documents review, reference, and build upon the Action Plan.
- Incorporate the Action Plan recommendations into future planning efforts.
- Consider approving traffic safety cameras for speed and red light violations.
- Adopt a Complete Streets policy.
- Conduct events to promote use and awareness of bicycles and cycling education.
- Promote driving education programs for seniors, such as *We Need to Talk*.

Safe Roads

- Review transit stop locations and conditions to address gaps in safety and connectivity.
- Implement proven safety treatments on the high-injury network.
- Perform regular road safety audits (RSAs) and implement recommendations.
- Evaluate the County's maintenance of traffic plan to prioritize safe, accessible, and convenient routes for pedestrians and cyclists, and enforce this plan in work zones.
- Conduct crash analyses to identify high-crash pedestrian locations and intersections.
- Complete sidewalk gaps and repairs.
- Review pedestrian signal timing and consider adapting to meet the revised walking speed standard.
- Develop a bike plan and install bikeways and supporting amenities. Phase implementation to facilitate connectivity.

Safe Speeds

- Conduct pilot studies of 25 mph speed limits on select major streets and 20 mph traffic calming in residential neighborhoods.
- Conduct high-visibility enforcement on a corridor on the high-injury network.
- Create messaging on the high-injury network to promote safe speeds and compliance with traffic laws.
- Integrate regional enforcement initiatives into County activities.
- Conduct the Georgia Governor's Office of Highway Safety (GOHS) 100 Days of Summer Highway Enforcement of Aggressive Traffic (HEAT) campaign between Memorial Day and Labor Day.

Safe Road Users

- Install signage at critical intersections permitting increased fines for failing to yield to pedestrians in a marked crosswalk.
- In conjunction with the Safe Routes to School program:
- Distribute a traffic safety curriculum to elementary schools to encourage safe behaviors.
- Supply crossing guard safety kits to schools.
- Increase the number of crossing guards at schools through the use of trained volunteers.
- Initiate pilots for automated school bus and school zone enforcement.
- Develop a Vision Zero website to publish crash information, projects, progress, and annual reports.
- Brand the Vision Zero campaign and standardize the use on documentation, email signatures, etc.
- Regularly share Vision Zero messages through the County's communications channels, including social media.
- Bring more media attention to traffic safety projects.
- Manage the County's SeeClickFix system to manage, track, and prioritize requests related to traffic safety.
- Host an annual Vision Zero safety summit.
- Partner with health systems, walking/biking advocacy groups, transit authorities, and AARP Georgia that pledge to support Vision Zero and disseminate safety and educational information.
- Partner with GDOT and the GOHS to enhance messaging during safety campaigns.
- Survey community members on transportation habits and perceptions about unsafe driving behaviors.

Safe Vehicles

- Expand biking, walking, and transit networks, especially in underserved communities.
- Provide training on the safe operation of County vehicles.

Post-Crash Care

- Review emergency response protocols, including travel time for suspected serious injury crash patients.
- Work with GDOT to train first responders in Traffic Incident Management (TIM).

Case Study 2: Solano County, CA

State: CA
Most Populous City: Vallejo
Population: 451,716 (US Census 2021)
Population Density: 551.8 /sq mi

The Solano Countywide Local Road Safety Plan was prepared by the Solano Transportation Authority (STA) at the encouragement of Caltrans to develop local road safety plans.⁸ The plan provides a data and community-driven framework to identify, analyze, and prioritize areas of safety concern to recommend improvements.

Data Utilization

Data for the plan came from several sources. The plan used the most recent five years' crash data from the Statewide Integrated Traffic Records System (SWITRS), Transportation Injury Mapping System (TIMS), and the Crossroads Collision Database. The data provided valuable insight into crash trends within the County, and how the County's crash trends and characteristics compared against national trends. Lane departures, impaired driving, pedestrians and bicyclists, intersections, and aggressive driving were the causes that were the most distinguishable areas for potential improvement in the area.

Goals and Objectives

The goal of the plan is to eliminate fatal and serious injuries on roadways throughout the County by creating an equitable, sustainable, and multimodal transportation system where people of all ages and abilities can travel safely. The plan identifies crash data and trends, emphasis areas, and implementation measures for the County as well as individual municipalities. For the County, the goals and strategies are divided into three emphasis areas focused on eliminating fatal and serious injury crashes involving: pedestrians, bicyclists, and motorcyclists, all by 2040. Specifically, the plan outlines the following goals:

- Eliminate fatal and serious injury crashes involving pedestrians by 2040.
- Eliminate fatal and serious injury crashes involving bicyclists by 2040.
- Eliminate fatal and serious injury crashes involving motorcyclists by 2040.

The primary strategy to achieve these goals is to facilitate and fund the identification and implementation of safety projects and programs that reduce the rate of crashes involving vulnerable road users.⁹ Similarly, the plan outlines goals related to infrastructure improvements:

- Eliminate fatal and serious injury crashes at intersections by 2040.
- Eliminate fatal and serious injury crashes resulting from lane departure by 2040.

The following sections present crash trends, emphasis areas, goals, and strategies for municipalities. They provide targets and target years for reducing the following fatal and serious injury crashes for the crashes involving pedestrians, cyclists, and motorcyclists; crashes involving impaired drivers; crashes in dark conditions crashes as a result of unsafe speeds; intersection crashes; and lane departure crashes.

⁸ Solano County, CA (2022). Solano Countywide Local Road Safety Plan. <https://sta.ca.gov/wp-content/uploads/2022/07/Solano-Countywide-Local-Road-Safety-Plan-1.pdf>

⁹ Ibid.

Outreach Activities

Stakeholder engagement consisted of discussions among officials in Solano County's cities, including law enforcement, emergency services, and City staff. Stakeholders met at four points during the drafting process from February 2021 to September 2022. Such meetings consisted of presentations, workshops, and document review. Public engagement was a parallel effort with that of the Active Transportation Plan, which also had a heavy focus on safety. The 2019 Pedestrian Safety Outreach program resulted in a symposium attended by members of the public, consultants, and County officials and staff. There were month-long periods for public comment on the plan drafts in the summer of 2022.

Recommendations

The document is structured first with a higher level, county-wide overview, followed by a standardized assessment of each of the municipalities and unincorporated areas where the recommendations become more specific. For each emphasis area, the plan outlines objectives and associated strategies that fall under the categories of education, enforcement, engineering, and emergency medical services (EMS).

The emphasis areas include reducing the number of fatal and severe injury collisions on roadway segments; in fixed object and roadway departure collisions; as a result of improper turning; due to driving under the influence; due to an overturned vehicle; during nighttime; motorcycle collisions; and caused by young adults. The plan includes several strategies to address crash reduction for the different types of collisions:

- Conduct safety and education campaigns for roadway safety laws and to raise awareness of safety needs.
- Target enforcement along high-risk highways.
- Improve or install infrastructure, such as segment lighting, signal hardware, guardrails, fluorescent signs, curve warning signs, edge lines, centerlines, rumble strips, delineators, reflectors, flashing beacons, pavement markings, or raised median; remove objects from clear recovery zone; widen shoulders; flatten side slopes; improve sight distance; convert intersections to roundabouts.
- Install emergency vehicle pre-emption systems.

Case Study 3: El Paso County, CO

The El Paso County Road Safety Plan aims to eliminate transportation-related deaths and serious injuries by making data-driven improvements to infrastructure and driver behavior. This plan was completed with focus areas determined by quantitative, analytical methods, and qualitative data derived from local officials and stakeholders.¹⁰

State: CO

Most Populous City: Colorado Springs

Population: 737,867 (US Census 2021)

Population Density: 343.5/sq mi

Data Utilization

Crash data sources came in different forms for analysts to combine into one complete picture. Crash counts came from the Colorado Department of Transportation; traffic volumes came from the Pikes Peak Area Council of Governments; crash data came from both the El Paso County Sheriff's Office and the Colorado Springs Police Department; and roadway information and jurisdictional boundaries came from El Paso County. Fusing these datasets created a whole picture of what was happening on the roads, how congested they were, the state of their infrastructure, and their posted speeds.

Goals and Objectives

The goal of the plan is to work towards zero transportation-related death and reduce serious injuries throughout the County. It aims to do this by identifying targeted projects and programs tailored to the frequent types of crashes the County experiences. Though the plan does not give a firm date or year when this should be expected to be achieved, its itemized solution table categorizes each item as short-term, long-term, mid-term, and/or ongoing.

Outreach Activities

Four meetings were organized with stakeholders consisting of emergency personnel, regional safety specialists, the Highway Superintendent, representatives from the Public Information Office, the County's Sheriff's Office, State Safety Office and PPACG, trucking industry representatives, and non-motorists, including commercial and multimodal travelers. The meetings served as a vessel for input on the plan, discussion of crash analyses and priority locations for safety infrastructure, and feedback on online commentary tools and solutions. Public outreach consisted of 1) an online dashboard designed to make the crash data clear and accessible, and 2) a public comment period conducted via an interactive map that allowed users to geolocate their comments to determine hotspot locations.

¹⁰ El Paso County, CO (2022). El Paso County Road Safety Plan. https://epcsaferroads.com/assets/El-Paso-LRSP_Web_Draft-1657046805.pdf

Recommendations

The plan's recommendations focus on addressing four emphasis areas: unrestrained occupants, intersection related crashes, lane departure crashes, and speeding. The recommendations consist of a list of prioritized projects and actions to help reduce the number of injuries and serious fatalities in the County. They include the following:

- Conduct pedestrian road safety audits and create a Road Safety Audit team to visit major accident and fatality sites.
- Utilize automated enforcement technology such as speed cameras.
- Continue to update plans for connected bicycle and pedestrian networks.
- Review traffic count data and intersection counts to identify if traffic control changes are warranted.
- Develop a Safety Checklist or template as a tool for local jurisdictions to use during planning and project identification efforts.
- Develop and conduct public education and information campaigns related to pedestrian safety, seat belt use, and training for youth and older drivers.
- Implement a telework policy and encourage jurisdictions to create their own telework policies.
- Conduct child restraint inspection events in the community.
- Support a helmet law for motorcycle riders.
- Increase use of ignition interlocks for first-time impaired driving offenders, impose limits on diversion and plea agreements, and increase requirements for alcohol problem assessment and treatment.
- Encourage citizens to submit service requests when they see safety concerns.
- Evaluate high-crash uncontrolled intersections and recommend improvements. Install improvements such as roundabout, upgrades to traffic signal hardware, striping, expansion of clear zones, widening of shoulders, enhanced delineation treatments, installation of barriers, LED and retroreflective backplates on signal heads, LED-enhanced stop signs, better drainage infrastructure, and similar treatments.

Case Study 4: St. Charles County, MO

State: MO
Most Populous City: O' Fallon
Population: 409,981 (US Census 2021)
Population Density: 723/sq mi

The St. Charles Strategic Highway Safety Plan describes the state, the challenges, and the potential solutions and recommendations for roadway safety in the County. The plan's strategy was to combine data-driven analyses with input from public engagement opportunities to identify hazardous locations to focus on improvement.¹¹

Data Utilization

Crash data from 2017 to 2021 in St. Charles County was sourced from MoDOT's Transportation Management Systems (TMS) and Statewide Traffic Accident Records System (STARS). STARS data consists of crashes that involved fatalities, injuries, or property damage of over \$500. Crashes were analyzed based on hotspot, severity, event type, urban vs. rural, temporal, driver, and infrastructural features.

Goals and Objectives

The plan has a long-term goal of eliminating all death and serious injury crashes by 2050, with an intermediate goal of reducing fatal and serious injury crashes by 50% by 2030. It does this by analyzing existing conditions, conducting an equity analysis, screening the network, identifying priority locations and systemic improvements, and listing countermeasures and action steps.

Outreach Activities

The outreach conducted was primarily digital as a result of the diverse urban-rural mix and varieties of municipalities. A survey was sent out through social media, newsletters, and email, and generated over 300 responses regarding local perspectives on driver behavior and the state of infrastructure and roadway safety. It also polled support for various safety improvements dependent on this feedback.

¹¹ St. Charles County, MO (2022). St. Charles County Strategic Highway Safety Plan.
<https://www.sccmo.org/DocumentCenter/View/19618/Strategic-Highway-Safety-Action-Plan>

Recommendations

The plan concludes with an Action Plan to reduce fatalities and serious injuries by 50% by 2030, and down to zero by 2050. These are designated by strategy types – engineering, policy, and programmatic:

Engineering

- Implement safety countermeasures at priority locations, and implement systematic safety improvements using the provided countermeasures matrix.
- Update and review crash data against the priority location list at least once every three years.
- Routinely review safety goals and priorities.
- Provide safety upgrades during routine transportation network maintenance.

Policy

- Designate a Vision Zero Coordinator and establish a transportation safety committee to ensure implementation.
- Foster collaboration with the County, state DOT, and local municipalities on transportation safety projects.
- Develop a context-sensitive Complete Streets Policy.
- Incorporate equity into project identification and selection.
- Allocate a permanent, dedicated funding source for multimodal safety/facility implementation and coordination.
- Develop and implement access management strategies.

Programmatic

- Partner with law enforcement agencies to develop and enhance enforcement strategies.
- Create targeted safety education and awareness campaigns.
- Establish and support Safe Routes to Schools programs.
- Promote and conduct training for local agencies on innovative strategies/techniques to improve safe for vulnerable road users.
- Establish a replicable process to collect and evaluate safety data, and complete annual reports to track progress.

Chapter 3 – Previous Plans & Policy Review

To guide the Safety Action Plan, it was important to understand the general purpose, goals, and objectives of previously approved plans and studies, as well as to understand existing Cobb County policies as they relate to transportation safety. The project team reviewed plans at the County, regional, and statewide level to provide an understanding of their individual value towards Cobb County's safety policy and their roles in the planning of transportation policy in the County. Each of these documents includes components related to creating a safer and accessible transportation system, with strategies ranging from structural changes for increasing mobility choices, land-use policies, and improvements in equity and accessibility. This section of the report is organized by jurisdiction.

Cobb County

- Cobb County documents reviewed for this effort include:
- Cobb Forward (Comprehensive Transportation Plan) – A long-range transportation plan that includes specific actions to improve safety throughout the County.
- 2040 Comprehensive Plan – A broad policy document that addresses a wide range of topics such as housing, transportation, parks, and economic development.
- Greenways and Trails Master Plan – A long-range plan for providing greenways and trails throughout the County.

The review also included County policies and standards, such as:

- Complete Streets Policy (2009)
- Major Thoroughfare Plan (Originally adopted 1986; most recently 2009)
- Speed Hump Policy (Originally adopted 1996; most recently 2001)
- Dynamic Speed Display Sign Policy (Originally adopted 2013; most recently 2016)
- Roadway Design Standards (Current version online)

CobbForward CTP

The CobbForward Comprehensive Transportation Plan (CTP), adopted in 2021, is the plan that outlines all of the transportation goals and objectives for the County, the assessment of existing conditions and stakeholder needs, and the recommendations for projects and policies to grow transportation in the County safely and equitably. The goals within the Plan encompass a number of priorities within the County, and include improving health and safety for all users of the transportation system, enhancing mobility, supporting equitable access to mobility options for all communities and users, and ensuring connectivity to transportation through land use decisions. There is a substantial amount of relevant information in this document regarding the County's current and projected breakdowns in terms of demographic breakdowns (i.e., income, vehicle ownership, land use, employment, education level, etc.). These variables guide the needs assessment, as they guide the transportation paths of Cobb's residents. A result of its forecasted population growth, Cobb County is expected to face a number of mobility challenges regarding its transportation system. A needs assessment conducted as part of the CTP shows that there are several opportunities present, including:

- Improvements to land-use connectivity, allowing for greater access for all transportation users.
- Implementing various safety strategies which target conditions found to be causing crashes.
- Increasing connectivity in the currently piecemeal bicycle and pedestrian system.

Safety-related issues are also presented visually and covered in crash and walking/biking sections, as the plan presents both hotspot maps and tabular breakdowns of crashes by type over time, as well as noting crash frequency on certain segments and intersections. Regarding crashes, the CTP discusses at length the conditions contributing to certain crash patterns, and how best to mitigate these contributing factors. These factors include geographic, infrastructural, human, environmental, and pedestrian- and bike-related specifics. Additionally, CobbForward identifies intersections and roadway segments in which crashes, and specific crash types, are most likely to occur.

The primary safety issues and concerns were addressed in the analysis of crash history and traffic patterns to identify locations that may benefit from either design, operational, or signage-based countermeasures. Between 2014 and 2018, there were a total of 96,962 crashes resulting in 233 fatalities and 35,175 injuries, with over 23% of crashes occurring in dark conditions, 17% on wet pavement, 73% within 100 feet of an intersection, and 9% on interstates. The most prominent types of crashes observed were rear-end (44%) and same direction sideswipe crashes (17%), as shown in **Figure 3-1**.¹²

Crash Type	2014	2015	2016	2017	2018	Total	Percent
Rear End	7,198	8,250	9,486	8,859	9,028	42,821	44.2%
Sideswipe (Same Direction)	2,582	2,969	3,624	3,700	3,895	16,770	17.3%
Angle	2,073	2,255	2,266	2,256	2,492	11,342	11.7%
Left Turn	1,229	1,384	1,468	1,350	1,187	6,618	11.7%
Run-off-the-Road	1,604	1,946	1,937	2,011	1,905	9,403	9.7%
Pedestrian	87	93	109	88	76	453	0.5%
Bicycle	51	44	41	33	31	200	0.2%
All Others	1,517	1,822	1,956	1,849	2,211	9,355	9.6%
Total	16,341	18,763	20,887	20,146	20,825	96,962	100.0%

Figure 3-1: Crashes by Type Over Time in Cobb County, as Presented in Cobb Forward

Analysis found that areas of higher volume-to-capacity ratios were consistent with high concentrations of these crashes. Such intersections included:¹³

1. Kennesaw Due West Road at Stilesboro Road;
2. Chastain Road at Barrett Lakes Boulevard/Frey Road;
3. Chastain Road at I-75 Northbound;
4. Shiloh Road at Wooten Lake Road/North Booth Road;
5. Due West Road at Kennesaw Due West Road;
6. Sandy Plains Road at Post Oak Tritt Road; SR 3 (US 41/Cobb Parkway) at Windy Hill Road;
7. SR 120 (Dallas Highway/Whitlock Avenue) at John Ward Road; and SR 92 (Woodstock Road) at Sandy Plains Road

¹² Cobb County DOT (2021). CobbForward Comprehensive Transportation Plan. <https://www.cobbcounty.org/transportation/planning/comprehensive-transportation-plan/resources>

¹³ Ibid. p.26

Figure 3-2 shows a map of the public comments on priority areas from the document, with the above intersections called out in overlay.

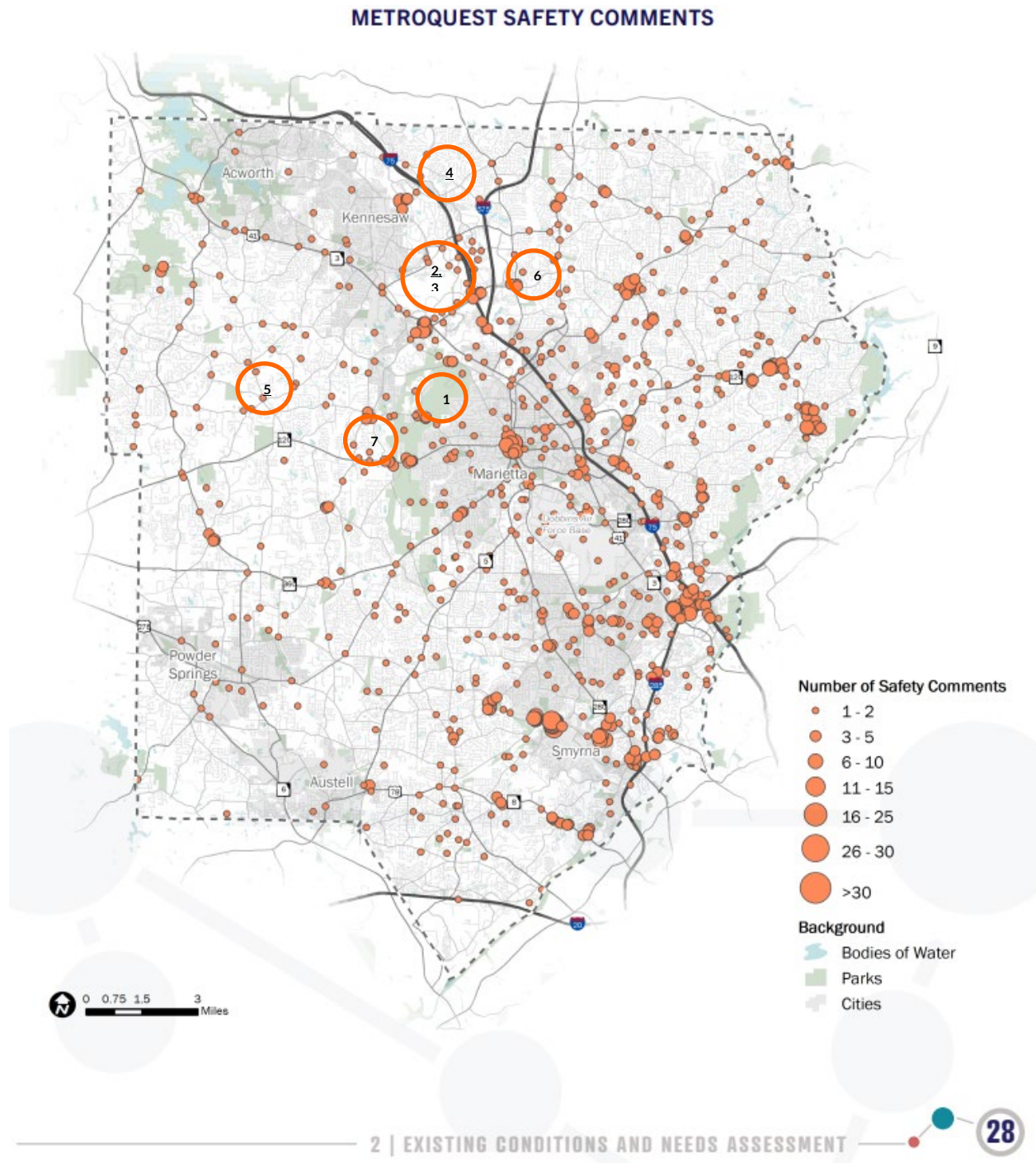


Figure 3-2: Map of Safety Comments found in CobbForward

Included within CobbForward are CCDOT policy and project recommendations, spanning from capacity to freight and land use. Projects in CobbForward are organized by type, such as bridges, capacity, grade separations, intersections, new connections, operational, realignments, and trails, presented in tabular form with the project sponsor, cost, and expected development period. **Figure 3-3** shows an excerpt of the recommendations table. While there is not an explicit safety category, it will be important to incorporate safety countermeasures into planned projects as they are advanced through design and implementation.

COUNTY PROJECTS

Project ID	Sponsor	Project Name	Cost to Cobb	5-Year	10-Year	30-Year
Bridges						
BP_321	Cobb DOT	Rindenour Road/Greers Chapel Off or On-Street Bicycle Facilities	\$1,056,000	--	--	X
BP_322	Cobb DOT	Duncan Road On- or Off-Street Bicycle Facility	\$1,494,000	--	--	X
BP_323	Cobb DOT	Cobb Place/Roberts Boulevard On- or Off-Street Bicycle Facility	\$1,729,000	--	--	X
BP_324	Cobb DOT	Town Center Loop - Shiloh Valley Drive, Greers Chapel Drive, Roberts Court	\$1,647,000	--	--	X
BP_327	Cobb DOT	Chastain/Chastain Meadows/Big Shanty On- and Off-Street Bicycle Facilities	\$1,854,000	--	--	X
Capacity						
BPR_629	Cobb DOT	Mars Hill Road/Lost Mountain Road Widening	\$19,466,400	--	X	X
BPR_905	Cobb DOT	Bentley Road Corridor Improvement	\$11,428,060	X	X	X
R_036	Cobb DOT	Smyrna Powder Springs Road Southwest Improvements	\$4,102,000	--	--	X
R_037	Cobb DOT	Windy Hill Road Southwest Improvements	\$3,740,000	--	X	X
R_042	Cobb DOT	Garden Lane Extension	\$2,048,000	--	--	X
R_047	Cobb DOT	Post Oak Tritt Road Northeast Improvements	\$1,563,000	--	X	X
R_052	Cobb DOT	Bells Ferry Road Northwest Improvements	\$6,084,000	--	X	X
R_358	Cobb DOT	US 41 (Cobb Parkway) Widening	\$2,984,164	--	--	X
R_361	Cobb DOT	SR 360 (Macland Road) Widening	\$16,064,200	--	X	X
R_362	Cobb DOT	US 278/SR 6/Thornton Road Widening	\$21,332,400	--	X	X

Figure 3-3: CobbForward Recommendations Table Excerpt

2040 Comprehensive Plan

The Cobb County 2040 Comprehensive Plan, completed in 2022, offers broad policy direction to officials and the public for the future growth and development of the County. The Plan was completed in conjunction with elaborating on the current and projected state of economic development and revitalization initiatives within the County. The plan consists of three core elements:

1. Needs and opportunities, presented as a list of issues that Cobb intends to address with the plan
2. Vision and goals that the community seeks to work toward and policies that provide guidance and direction
3. Community work programs, prioritized action items that the County and partners intend to undertake over the next five years

Transportation-related recommendations in the Community Work Program include: congestion relief/mobility improvements; safety and operational improvements; sidewalk and trails; transit; bridges and culverts; drainage; planning; and traffic management and technology; school zone improvements; DOT facility improvements; Cobb County International Airport improvements; and corridor improvements. The transportation portion comprised 110 work programs expected to be implemented over the next five years.

The 2040 comprehensive plan references safety in several sections. Transportation safety is the first transportation goal, and providing safe and efficient transportation options for all users is the seventh transportation policy in the transportation goals and policies section of the document. There is also a public safety section of the document that describes the goals and policies to achieve safer communities, with measures primarily related to law enforcement and crime prevention measures.

Greenway and Trails Master Plan

The Cobb County Greenways and Trails Master Plan (2018) describes the current state and future projects related to greenways and trails within the County. The plan is grounded in guiding principles and best practices developed through research and consultation with County staff, community members, and key stakeholders. The plan has several stated key purposes:

- To establish a vision and goals to guide the future development of greenways and trails in the County;
- To document the current state of greenways and trails in the County;
- To identify opportunities and challenges that come with expanding the greenway and trail network;
- To establish a tiered list of potential future projects to improve the greenway and trail network;
- To provide guidance on potential partnerships, funding strategies, and operations and maintenance of greenways and trails; and
- To identify priority trail corridors and projects to focus resources on for near-term expansion of the network.

Knowing how and where greenways and trails are planned to be expanded paints a picture of where safety improvements targeting people biking and walking may be needed in the future. The Master Plan also discusses the role that the County's Complete Street Policy and Vision Zero play in creating a safer and more interconnected transportation system. Vision Zero, a policy-driven and action-based response to reducing preventable traffic deaths, and that values human life over mobility, places an emphasis on sharing responsibility of the roadway, mitigating roadway designs that are inhospitable to users (particularly the most vulnerable users), and coordinating change between providers, regulators, and users of the roadway system.¹⁴

Complete Streets Policy

The purpose of Cobb County's Complete Streets Policy, adopted in January 2009,¹⁵ is to assure that new roadway construction and existing roadway improvement projects on County roadways include consideration for infrastructure to safely accommodate, where appropriate and feasible, for bicyclists, pedestrians, users of public transit of all ages and abilities, and the physically disabled. When developed, the Complete Streets Policy aligned with the County's Comprehensive Transportation Plan and Senior Adult Transportation Study, as well as ARC's Bicycle Transportation and Pedestrian Walkways Plan, which each call for the incorporation of Complete Streets principles in the planning, design, and construction of roadways in Cobb County. The official Complete Streets Policy states that the County will implement the Complete Streets concept by considering safe access for all users, including motorists, bicyclists, pedestrians and transit users, those with physical disabilities, and senior citizens, the planning, design, construction, and operation of streets in the County.

Major Thoroughfare Plan

The Cobb County Major Thoroughfare Plan, last updated in 2009 (originally adopted in 1986), lists all the County roadways classified as arterials and major and minor collectors, collectively defined as major thoroughfares. It predominantly comprises tables of roadway names, start and end points for the segments, classifications, and jurisdictions, and closes with a color-coded map of the thoroughfares and interstates throughout the County. The document proves useful when considering implementation of safety practices, as it identifies major thoroughfares, which tend to have higher speeds and daily traffic counts that may require application of different safety countermeasure compared to slower speed, lower volume roadways. For example, major thoroughfares are not generally suitable for on-street bike lanes without physical separation or protection from travel lanes. Likewise, design and use of pedestrian crossing treatments and/or raised medians or refuge islands differs between major thoroughfares and minor streets.¹⁶

Cobb Speed Hump Policy

The Cobb County Speed Hump Policy (initially adopted in 1996, most recently updated in 2001) outlines the policies and procedures required to follow for the qualification and approval of installing speed humps in an area. The document describes the protocol regarding petitioning and study criteria to identify if a speed hump can be implemented. The document outlines the requirement for a study area, the phases of study criteria, the petition process, commission approval, speed hump design standards, installation details,

¹⁴ Cobb County DOT (2018). Cobb County Greenways & Trails Master Plan. https://s3.us-west-2.amazonaws.com/cobbcounty.org.if-us-west-2/prod/2018-09/GTMP_MasterPlan_Document.pdf

¹⁵ Cobb County, GA (2009). Cobb County Complete Streets Policy. <https://s3.us-west-2.amazonaws.com/cobbcounty.org.if-us-west-2/prod/2018-07/ARC-Measure-40-Complete-Streets-Policy.pdf>

¹⁶ Cobb County, GA (2009). Cobb County Major Thoroughfare Plan. https://s3.amazonaws.com/cobbcounty.org.if-us-east-1/s3fs-public/2018-06/2009_Major_Thoroughfare_Plan.pdf

and the removal process. The document provides the conditions under which a speed hump could be installed. Once CCDOT confirms the requested streets are classified as local residential streets with 25 mph posted speeds, as well as meeting the dimensional requirements necessary to accommodate a speed hump, a phase 1 study is initiated. If the data finds that 85th percentile speeds are equal to or greater than 35 miles per hour and ADT is between 300 and 3000 vehicles, the corridor qualifies for phase 2 study. During phase 2, a SMART system speed trailer is placed on the street to notify drivers of their speeds. If the system finds that the 85th percentile of speeds is greater than 28 miles per hour, then CCDOT will develop a layout and schedule a public meeting, where relevant information is compiled, and a petition process is undergone to get a vote from the property owners in the respective district. If the petition is approved by the Cobb County Board of Commissioners, a speed hump is installed.¹⁷

Dynamic Speed Display Sign Policy

The Cobb County Dynamic Speed Display Sign (DSDS) Policy, originally adopted in 2013 and updated in 2016, describes the process for initiating the process to install dynamic speed display signs.¹⁸ This includes study requirements, the study criteria, evaluation and approval processes, and design standards. The safety value in this document is found in the clear description of the roadway properties that meet the evaluation criteria. The criteria, presented in flowchart format, narrow down roadways significantly enough such that if dynamic speed display signs were chosen as a safety countermeasure, they could only be applied to a specific subset of segments within the County – streets classified as local, minor collectors, or major collectors.

Roadway Design Standards

Cobb County's Roadway Design Standards are a series of engineering blueprints for safety, signage, and infrastructure design requirements for all elements involved in the roadway network. These documents provide the technical details of some of the elements involved in the design and engineering of roadways, including safety countermeasures, such as signal dimensions and markings, handrails, and fencing detail.¹⁹

¹⁷ Cobb County DOT (2001). Cobb County Speed Hump Policy, p. 5. https://s3.us-west-2.amazonaws.com/cobbcounty.org.if-us-west-2/prod/2021-03/DOT-Traffic-Speed_Hump_Policy.pdf

¹⁸ Cobb County DOT (2016). Dynamic Speed Display Sign Policy. https://s3.amazonaws.com/cobbcounty.org.if-us-east-1/s3fs-public/2021-03/DOT-Traffic-Dynamic_Speed_Display_Sign_Policy.pdf

¹⁹ Cobb County DOT (2022). Cobb County Roadway Design Elements. <https://www.cobbcounty.org/transportation/policies-permitting/design>

Atlanta Regional Commission

ARC Regional Safety Strategy

The Regional Safety Strategy (RSS), developed by the Atlanta Regional Commission (ARC) and adopted in 2023, is a comprehensive guide for regional and local planning efforts, and focuses on reducing the number of deaths and injuries on roadways in the Atlanta Region. The RSS provides a regional and local framework for advancing safety in ARC's plans and processes, building upon strategies in ARC publications like "The Atlanta Region's Plan – Regional Transportation Plan" (2020) and "Safe Streets for Walking and Bicycling" (2019). These plans introduce important safety concepts, such as the Safe System Approach, the goal of zero traffic deaths and serious injuries across the region, and employing a proactive, data-informed approach to safety that are all furthered in the RSS. The RSS provides the transportation safety action plan for the Atlanta region and will inform future updates to the Regional Transportation Plan (RTP), Transportation Improvement Program (TIP), and other ARC-led plans and programs.

The RSS highlights Safe System principles, which it notes, should guide all project decisions:

- Death/serious injury is unacceptable
- Humans make mistakes
- Humans are vulnerable
- Responsibility is shared
- Safety is proactive
- Redundancy is crucial

The RSS identifies the most pressing safety issues by identifying focus crash types (crash types that are the most prevalent); focus facility types (where severe crash types are most prevalent); and risk factors (characteristics that are most over-represented in severe crashes). The most prevalent crash types within the region are those at intersections, roadway departures, and pedestrian and bicycle crashes. The RSS identifies risk factors for each focus crash types, associated with topics such as functional class, observed and operating speeds, socioeconomic status, and community context.

To address these crash types, the RSS employs a collaborative, multidisciplinary and multimodal approach, aligning with the long-term safety goals of the region. It acknowledges that a safe system is a shared responsibility among planners, designers, engineers, and other transportations professionals, and should recognize that humans are vulnerable, make mistakes, and that mistakes should not result in deaths. The key components of this collaborative approach include:

- Adopting a Safe System approach
- Focusing on fatal and serious injury crashes
- Employing a proactive, data-informed approach to safety
- Identifying locations with the highest risk for severe crashes
- Implementing proven safety countermeasures that design for all users
- Fostering a culture of collaboration and inclusion

The RSS recognizes that intentional, targeted, and coordinated actions that are needed to reverse current conditions and make significant progress towards Vision Zero for the region. ARC identifies a goal of a 5% reduction target each year for all safety performance measures. To achieve this goal, the RSS notes the need for a comprehensive, data-informed approach; steady, incremental investments guided by Safe System principles, and targeted and coordinated efforts from all safety stakeholders throughout the region. It provides guidance for advancing transportation safety at both the regional and local levels.

At the regional level, ARC and its partners should:	Local agencies should:
Shift to a more proactive approach to safety	Improve safety in their own communities
Develop regional goals and plans	Integrate safety in project planning and development
Establish and monitor federal safety performance targets	Identify safety issues and project locations using a proactive, risk-based approach
Evaluate and prioritize projects	Target risk factors with proven safety countermeasures
Allocate funds	Prioritize projects and strategies for funding and implementation

Figure 3-4: Regional and Local Framework Components

Source: ARC Regional Safety Strategy

The RSS also highlights several safety countermeasures to address crashes at intersections, for roadway departures, and for pedestrian and bicycle crashes, and tips for screening and selecting the countermeasures.²⁰

ARC Regional Transportation Plan

The ARC Regional Transportation Plan (most recently adopted in 2020) is a long-range blueprint for funding and transportation projects in the Atlanta metropolitan region, currently through 2050. As with CobbForward, the ARC Plan includes extensive discussion on improving safety outcomes and accessibility for all community members, including the applicability of the Safe System Approach, assessing crash patterns within the Atlanta metro region, and suggestions for removing barriers to safe travel.

Additionally, the Plan also discusses the role of the Regional Safety Task Force (RSTF) in leading the region towards Vision Zero. Convened in 2019, the RSTF is focused on assisting ARC specifically in regards to establishing a regional safety vision; identifying actional strategies and resources for increasing safety outcomes; tracking progress towards meeting identified regional safety targets; promoting better transportation project development; and promoting an overall cultural of safety.

The ARC Plan includes multiple recommendations for improving walking and bicycling on a regional scale, which includes addressing the region's general transportation safety and equity issues. Included in this is the need for first- and last-mile connections to regional transit systems; promoting Complete Streets development; and the completion of a regional scale trail network.²¹

²⁰ Atlanta Regional Commission (2022). Regional Safety Strategy. <https://atlantaregional.org/transportation-mobility/regional-safety-strategy/>

²¹ Atlanta Regional Commission (2022). Regional Transportation Plan. <https://atlantaregional.org/transportation-mobility/transportation-planning/regional-transportation-plan/>

Walk, Bike, Thrive!

A companion document to the ARC Regional Transportation Plan, Walk. Bike. Thrive! (completed in 2016) is the regional active transportation strategy, and serves as a guide that local governments can use to develop policies and standards for active and sustainable transportation options. The plan establishes a policy framework focused on the topics of creating:²²

- A world class infrastructure
- Healthy livable communities
- Competitive economy

The establishment of these recommendations will help in the creation of a high-quality walking and biking system, and an improved transportation system overall. This includes universal access to multimodal transportation options, and an extended walking and biking network. The overall policy goals for implementing these recommendations include, but are not limited to, improving safety for all trail users, and increasing mobility and accessibility.

Appended to this plan is a supplemental report, *Safe Streets for Walking & Bicycling*, which specifically focuses on improving system user safety and the elimination of fatal and serious injury crashes.²³ The report identifies safety as critical to regional transportation, and discusses how the perception of unsafe facilities inhibits many residents from making certain decisions regarding their transportation options, particularly among vulnerable community members.

The following steps are identified to achieve the goals of increasing walking and bicycling activity while increasing safety for those modes:

1. Target and Approach

- Set a Target: Zero Fatalities by 2030
- Embrace a Safe Systems Approach

2. Data-Driven Solutions

- Identify Risks, Demand, and Policy Priorities
- Use Evidence-based Countermeasures to Eliminate Risks

3. Strategies for Action

- Short-Term: Focus Regional Funding on Safety
- Medium-Term: Support Better Projects
- Long-Term: Champion Complete Streets Implementation

4. Evaluation and Research

- Support Improved Data Collection, Crash Analysis, and Evaluation

Source: ARC *Safe Streets for Walking & Bicycling*, p. 5-12.

²² Atlanta Regional Commission (2016). Walk, Bike, Thrive! <https://atlantaregional.org/plans-reports/bike-pedestrian-plan-walk-bike-thrive/>

²³ Atlanta Regional Commission (2020). Safe Streets for Walking & Bicycling. <https://cdn.atlantaregional.org/wp-content/uploads/arc-safe-streets-webview-revjan20.pdf>

State of Georgia

Georgia Strategic Highway Safety Plan

Prepared by the Georgia Governor's Office of Highway Safety (GOHS), the Georgia Strategic Highway Safety Plan (SHSP) serves as Georgia's programmatic guide for the implementation of highway safety initiatives. Most recently completed in 2022, the findings of the plan can be utilized for federal grant applications from the National Highway Traffic Safety Administration. With this plan, the GOHS has goals to reduce the number of crashes, injuries, and fatalities on Georgia's roads, and to provide highway safety data to assist communities in implementing effective programs.

The SHSP presents a number of strategies and campaigns which focus on changing system user behavior, ranging from cell phone usage, to speeding. Additionally, it identified safety emphasis areas, including the following:

- Pedestrian safety
- Motorcycle safety
- Older drivers
- Impaired driving
- Occupant protection
- Distracted driving
- Young adult drivers
- Bicycle safety
- Intersection safety and roadway departure

For each emphasis area, the plan highlights several countermeasures and strategies to help reduce to frequency and severity of crashes. These include programs such as Safe Routes to School, educational campaigns for young drivers, sobriety checkpoints, and car seat inspection programs; design solutions such as pedestrian safety zones; and collaboration between law enforcement, medical personnel, colleges/universities, and other stakeholders to disseminate information and implement programs to address the emphasis areas.

The plan encourages participation from diverse stakeholder groups to most effectively implement strategies that can improve roadway safety. The collective highway safety improvement program should be implemented on a continual basis and regularly evaluated and updated as needed.²⁴

²⁴ Georgia Governor's Office of Highway Safety (2022). 2022-2024 Georgia Strategic Highway Safety Plan. <http://www.gahighwaysafety.org/wp-content/uploads/2022/01/SHSP-2022-24.pdf>

Chapter 4 – Countywide Safety Trends

This chapter of the technical report provides an overview of countywide safety trends and puts them into context with trends experienced nationwide. It begins with background information on national trends related to crashes resulting in a fatality, a discussion on roadway functional classification and differences between CCDOT's and GDOT's classification schemes, the crash data utilized for this Safety Action Plan, and discussion on types of crash severity ranging from non-injury/property damage only to fatal and serious injury crashes. The countywide safety trends begin with an overview of all crashes, including those which occurred on interstate highways, but pivots to focus on crashes which occurred on surface streets including arterials, collectors, and local streets.

Background

National Safety Trends

In April 2023, the National Highway Traffic Safety Administration (NHTSA) reported that roadway fatalities rose between 2018 and 2022 and were among the deadliest years for roadway users in recent decades, with 197,931 roadway fatalities suffered over this five-year period nationwide (see **Table 4-1**). While fatalities rose from 2018 to 2022, 2022 (42,795) had slightly fewer fatalities than 2021 (42,939). Additionally, the report mentions that Georgia's fatalities slightly decreased from 1,797 in 2021, to 1,786 in 2022. This data shows that fatalities rose drastically during the COVID-19 pandemic in 2020 while traffic volumes decreased.²⁵ Analysis conducted by the project team and discussed in this Chapter as well as Chapters 5 and 6 show that Cobb County experienced similar trends.

Table 4-1: Yearly Roadway Fatalities in the United States

Year	# of Fatalities Nationwide	# of Fatalities in Georgia
2018	36,835	1,505
2019	36,355	1,492
2020	39,007	1,658
2021	42,939	1,797
2022	42,795	1,786

Source: NHTSA & Georgia Governor's Office of Highway Safety

Roadway Functional Classification

Major themes of the Cobb County Safety Action Plan are rooted in roadway ownership as well as roadway functional classification. Roads within Cobb County owned, operated, and maintained by the Georgia Department of Transportation (GDOT) consist of interstate and state highways. All roads which are not designated state routes within unincorporated Cobb County and four of the six Cities are maintained by CCDOT; the Cities of Marietta and Smyrna maintain streets within their City limits.

²⁵ National Highway Traffic Safety Administration (2023). Early Estimate of Motor Vehicle Traffic Fatalities in 2022. <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813428>

Functional classification is defined as “the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide.”²⁶ In other words, functional class establishes the role of a given roadway and if it serves local or regional traffic patterns and volumes. Differences arise between roadway functional classification defined by GDOT and CCDOT. Those differences are outlined in **Table 4-2**; the primary difference is that Cobb County does not break arterials into principal and minor arterials like GDOT.

Table 4-2: Roadway Functional Classification Differences

CCDOT	GDOT
Interstates and Expressways	Interstate Other Freeways and Expressways
Arterial	Principal Arterial Minor Arterial
Major Collector	Major Collector
Minor Collector	Minor Collector
Local Street	Local Roadway

GDOT partners with metropolitan planning organizations (MPOs), including ARC, to routinely update roadway functional classifications within the MPO’s urban area boundaries, and this was most recently conducted in 2015.²⁷ GDOT’s roadway functional classification system is based on FHWA’s definitions as well as average annual daily traffic (AADT) and adjacent land uses including the following:

- **Interstate Highways** – The highest classification of arterials which comprises the Interstate Highway System
- **Other Freeways and Expressways** – Freeways and expressways which are not part of the Interstate Highway System
- **Principal Arterials** – Roadways which serve major centers of metropolitan areas and accommodate both local and regional trips including places with high-intensity land uses such as commercial, high-density residential, mixed-use, institutional, and heavy industrial, among others
- **Minor Arterials** – Roadways which provide service trips of moderate length and offer connectivity to principal arterials
- **Major Collectors** – Roadways which serve as traffic circulation within higher density residential areas for larger distances at faster speeds and with more signalized intersections
- **Minor Collectors** – Roadways which serve as traffic circulation within higher density residential areas for shorter distances at lower speeds and with fewer signalized intersections
- **Local Streets** – Streets with minimal traffic and provide access to adjacent land and nearby collectors and arterials²⁸

²⁶ Georgia Department of Transportation (2014). Statewide Functional Classification & Urban Area Boundary Update Guide. https://www.dot.ga.gov/PartnerSmart/Public/Documents/Statewide_FC_UAB_Updates_Document_06.pdf

²⁷ Atlanta Regional Commission (2023). Roadway Functional Classification. <https://atlantaregional.org/transportation-mobility/roads-highways/roadway-functional-classification/>

²⁸ Federal Highway Administration (2017). Highway Functional Classification Concepts, Criteria and Procedures. https://www.fhwa.dot.gov/planning/processes/statewide/related/highway_functional_classifications/section03.cfm

In addition to GDOT's system, CCDOT has established its own functional classification designations for all streets and roadways within the County through the County's Major Thoroughfare Plan, which was most recently updated in 2009.²⁹ The Major Thoroughfare Plan establishes the categorization of public streets based on their intended transportation and land use functions. The County designates more arterial streets than GDOT and sometimes labels roads which are GDOT-designated major collectors as arterials. An example of this is along Jiles Road near the City of Kennesaw. Cobb County functional classes include:

- **Arterial** – A street or road whose primary function is to carry through-traffic over relatively long distances between major areas of the County, or across the County, while retaining a secondary function of providing access to abutting land.
- **Major Collectors** – A street or road whose primary function is to carry traffic over moderate distances between arterial streets and/or activity centers and whose secondary function is to provide access to abutting land.
- **Minor Collectors** – A street or road whose primary function is to carry traffic over minor distances from local streets and subdivisions to an activity center or higher classification street while also providing access to abutting land.
- **Local Street** - A street or road whose primary function is to provide access to abutting land while also providing for local traffic circulation.³⁰

For the purposes of this Safety Action Plan, CCDOT's functional classification system will be used to analyze crash trends and patterns and to tailor recommendations.

²⁹ Cobb County DOT (2009). Cobb County Major Thoroughfare Plan. https://s3.us-west-2.amazonaws.com/cobbcounty.org.if-us-west-2/prod/2018-06/2009_Major_Thoroughfare_Plan.pdf

³⁰ Ibid, p. 5.

Cobb County DOT Crash Data and Classifications

Crash data is based upon reported crashes occurring between January 1, 2018 and December 31, 2022 included in a dataset maintained by the Cobb County Department of Transportation (CCDOT). Crash reporting largely follows the Georgia Uniform Motor Vehicle Accident Report format, but CCDOT reviews locational and attribute data for a select portion of crashes on an annual basis.³¹ Crashes analyzed in this dataset include those which occurred on public right-of-way and excludes private property crashes. Where appropriate, the project team supplemented crash attributes for individual crashes through the use of redacted crash reports acquired through the Georgia Electronic Accident Reporting System (GEARS).

KABCO Crash Severity Scale

The KABCO vehicle accident reporting classification system is used across the nation, including within the state of Georgia and Cobb County, to categorize injury or health impacts that result from roadway crashes.³² This classification scheme dates as far back as 2003, and the different crash classification definitions used within Georgia include the following:

- Fatal Injury (K) – A fatal injury is any injury that results in death within 30 days after the motor vehicle crash in which the injury occurred. If the person did not die at the scene but died within 30 days of the motor vehicle crash in which the injury occurred, the injury classification should be changed from the attribute previously assigned to the attribute “Fatal Injury.”
 - The fatality must be the result of injuries sustained as a result of the crash. Deaths resulting from heart attacks, strokes, etc. while operating a motor vehicle that crashes are not motor vehicle fatalities.
- Suspected Serious Injury (A) - A suspected serious injury is any injury other than fatal which results in one or more of the following:
 - Severe laceration resulting in exposure of underlying tissue/muscle/organs or resulting in significant blood loss.
 - Broken or distorted extremity (arm or leg)
 - Crush injuries
 - Suspected skull, chest or abdominal injury other than bruises or minor lacerations
 - Significant burns (second and third degree burns over 10% or more of the body)
 - Unconsciousness when taken from the crash scene
 - Paralysis
- Suspected Minor or Visible Injury (B) – A minor injury is any injury that is evident at the scene of the crash, other than fatal or serious injuries. Examples include a lump on the head, abrasions, bruises, or minor lacerations.
- Possible Injury/Complaint of Injury (C) – A possible injury is any injury reported or claimed which is not a fatal, suspected serious or suspected minor injury.
 - Possible injuries are those which are reported by the person or are indicated by his/her behavior, but no wounds or injuries are readily evident.
- Non-Injury/Property Damage Only (O) – A crash which does not result in an apparent injury and only results in vehicular and/or real property damage.³³

³¹ Georgia Department of Transportation (2018). Georgia Uniform Motor Vehicle Accident Report. <https://www.dot.ga.gov/DriveSmart/CrashReporting/GeorgiaUniformVehicleAccidentReport.pdf>

³² Federal Highway Administration (n.d.). KABCO Injury Classification Scale and Definitions. https://safety.fhwa.dot.gov/hsip/spm/conversion_tbl/pdfs/kabco_ctable_by_state.pdf

³³ Georgia Department of Transportation (2018). Georgia Uniform Motor Vehicle Accident Report, p. 61- 68. <https://www.dot.ga.gov/DriveSmart/CrashReporting/GeorgiaUniformVehicleAccidentReport.pdf>

Overall Crash Trends & Patterns

Within Cobb County between January 1, 2018 and December 31, 2022, a total of 130,751 crashes occurred on public roadways, including interstate highways. The distribution of crashes across the County by year and by crash severity is shown in **Table 4-3**. The density of these crashes is geographically depicted in **Figure 4-1**.

Overall, the number of reported crashes within Cobb County increased between 2018 and 2019 before a brief decline in 2020 during the COVID-19 pandemic followed by an increase in 2021. While there were fewer crashes in 2020, the severity of crashes worsened with the number of fatal and serious injury crashes staying constant with 2019 numbers at 70 and 320, respectively. The number of serious injury crashes was highest in 2021 with 384 crashes, which is significantly higher than the 187 serious injury crashes reported in 2018. Countywide crashes show that fatal crashes encompassed less than one percent of all crashes while serious injury crashes were approximately one percent of all crashes. A majority of crashes (74%) were property-damage only (PDO) and did not result in injury.

Table 4-3: Countywide Crash Trends by Year and Severity (Including Interstate Crashes)

Year	Fatal Crashes (K)	# of Fatalities	Serious Injury Crashes (A)	# of Injuries in Serious Injury Crashes	Minor Injury Crashes (B)	# of Injuries in Minor Injury Crashes	Complaint of Injury Crashes (C)	PDO Crashes (O)	Total Crashes
	50	55	187	330	1,335	2,174	4,808	19,748	26,128
2018	73	77	331	639	1,779	2,919	5,810	22,781	30,774
2019	70	75	320	604	1,544	2,484	4,369	16,881	23,184
2020	59	60	384	720	1,678	2,670	4,874	20,241	27,236
2021	51	53	312	558	1,528	2,517	4,243	17,295	23,429
2022	303	320	1,534	2,851	7,864	12,764	24,104	96,946	130,751
Total	<1%		1%		6%		18%	74%	100%

As seen in the crash density map, roadway crashes throughout Cobb County were more frequent in areas and corridors with higher-intensity land uses and higher traffic volumes. Some of the highest densities of crashes occurred along the major interstates within Cobb County (most notably I-75 and I-285) as well as most interchanges along those corridors, such as at Barrett Parkway (SR 5 Connector) or North Marietta Parkway (SR 120 Alternate). Additional areas where crashes tend to be concentrated include areas typically centered around intersections between major roadways. Notable instances include major intersections along Atlanta Road in Smyrna and Vinings, Cobb Parkway (US 41/SR 3) southeast of Marietta, and East-West Connector in the vicinity of Austell Road (SR 5) and Floyd Road. Conversely, those areas of the County with fewer major thoroughfares contained very few vehicle crash hotspots.

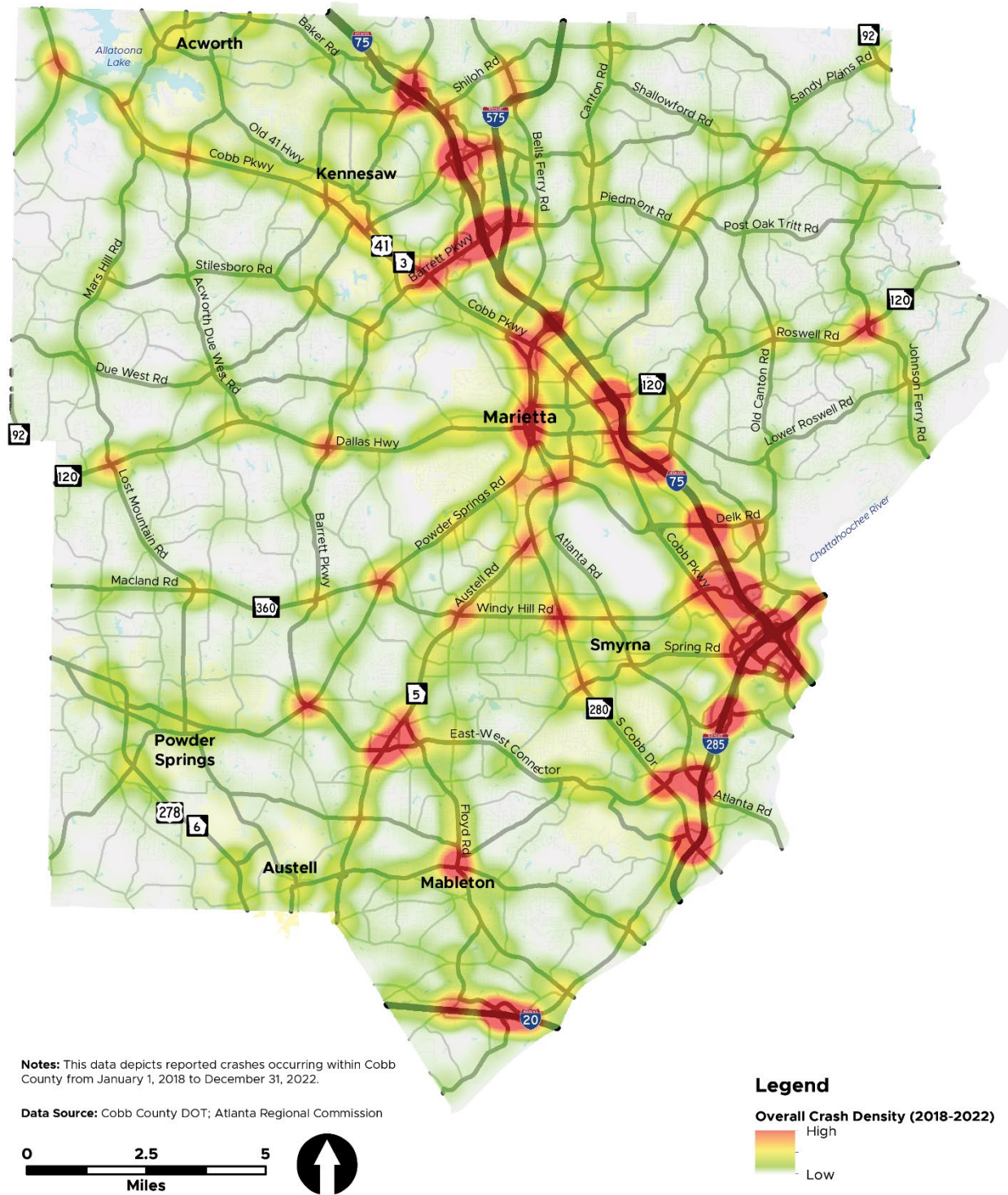


Figure 4-1: Cobb County Overall Crash Density (2018-2022)

Crashes on Surface Streets

While Cobb County owns and operates most of the more than 5,000 miles of roadway within its boundaries, interstates are under the purview of GDOT and FHWA. As such, the Safety Action Plan focuses on crashes that occurred on roads *other than* an interstate highway. Out of the total 130,751 crashes across Cobb County from 2018 to 2022, more than 24,000 reported crashes happened on an interstate corridor including I-75, I-575, I-285, and I-20. The distribution of interstate crashes by severity is as follows:

- 55 - Fatal (K)
- 242 - Serious Injury (A)
- 1,491 - Minor Injury (B)
- 4,160 - Complaint of Injury (C)
- 18,168 - Property Damage Only (O)

The following section discerns trends and patterns among the remaining 106,635 reported crashes which occurred on surface streets, excluding interstates. Crash data depicted in this section is based upon information and attributes from crash reports submitted by law enforcement agencies and then provided to the project team by CCDOT for analysis and processing. A portion of these 106,635 crashes were reviewed by CCDOT for both location and reporting accuracy. Among the countywide crashes, CCDOT reviewed 104,377 (98%) of these crashes based on either their location or reporting accuracy, and DOT staff reviewed 15,502 (15%) crashes for both location and reporting accuracy.

Crashes by Severity

Overall, the number of surface street crashes in Cobb County fluctuated before, during, and after the onset of the COVID-19 pandemic. While the number of surface street crashes may have decreased during the COVID-19 pandemic, crash severity did not sharply decrease. For instance, the number of fatal crashes in 2020 was only five fewer than in 2019 (63 fatal crashes). This followed a sharp increase from 37 fatal crashes in 2018 to 63 fatal crashes in 2019. Since 2020, fatal crashes decreased in both 2021 (50) and 2022 (40). Serious and minor injury crashes showed similar trends in this five-year period with only a slight decrease during 2020 before sharply increasing in 2021 to 322 and 1,395, respectively. Non-injury crashes resulting in property damage only (PDO) comprised of approximately 74% of all surface street crashes between 2018 and 2022; however, the annual share decreased from 76% in 2018 to 65% in 2022. A breakdown of surface street crashes by KABCO classification by year can be found in **Table 4-4**.

Table 4-4: Surface Street Crashes by Severity

Year	Fatal		Injury			PDO	Total Crashes
	K	A	B	C	O		
2018	37 (<1%)	151 (<1%)	1,026 (5%)	4,072 (19%)	16,344 (76%)	21,630	
2019	63 (<1%)	293 (1%)	1,386 (6%)	4,914 (23%)	18,718 (87%)	25,374	
2020	58 (<1%)	271 (1%)	1,254 (6%)	3,565 (17%)	13,563 (63%)	18,711	
2021	50 (<1%)	322 (1%)	1,395 (6%)	3,892 (18%)	16,102 (74%)	21,761	
2022	40 (<1%)	255 (1%)	1,312 (6%)	3,501 (16%)	14,051 (65%)	19,159	
Total	248 <1%	1,292 1%	6,373 6%	19,944 19%	78,778 74%	106,635 100%	

It is beneficial to address safety issues in areas where crashes occur with low frequency but include multiple fatalities and injuries (even if the crash density analysis may not point to the location as a “hot spot”). A detailed breakdown of the number of individual crashes (and their resulting number of deaths, serious injuries, minor injuries, complaint injuries, and property damage only (PDO) crashes) can help better contextualize safety trends as well. A more complete breakdown of crash severity in Cobb County between 2018 and 2022 can be found in **Table 4-5**.

Table 4-5: Surface Street Crashes, Fatalities, and Injuries

Year	Fatal Crashes	# of Fatalities	Serious Injury Crashes	# of Injuries in		Complaint of Injury Crashes	PDO Crashes		
				Serious Injury Crashes	Minor Injury Crashes				
2018	37	40	151	262	1,026	1,709	4,072	16,344	21,630
2019	63	67	293	542	1,386	2,352	4,914	18,718	25,374
2020	58	61	271	525	1,254	2,082	3,565	13,563	18,711
2021	50	51	322	600	1,395	2,243	3,892	16,102	21,761
2022	40	41	255	460	1,312	2,166	3,501	14,051	19,159
Total	248 <1%	260	1,292 1%	2,389	6,373 6%	10,552	19,944 19%	78,778 74%	106,635 100%

Excluding Interstate Crashes

For example, even though there were only 151 individual roadway crash reports that noted the presence of a serious injury in 2018, those crashes resulted in 262 separate persons being injured. So while only one percent of all roadway crashes between 2018 and 2022 are classified as serious injury crashes (1,292 crashes total), the statistic may be masking a more difficult truth – those 1,292 crashes resulted in 2,389 individual injuries. The worst year for fatalities on surface streets in Cobb County was 2019 with 67 fatalities, and while 2020 had the fewest total crashes during the five-year period analyzed, it had the second highest number of fatalities at 61. Among the 6,373 minor injury crashes, there were 10,552 injuries stemming from those crashes.

Crashes by Type

Crash type is based on crash reports submitted by law enforcement agencies and CCDOT’s crash description category includes seven choices – right angle, head on, rear end, sideswipe (both opposite and same direction), left-turn with thru movement (LTWT), single-vehicle crashes or crashes not involving another motor vehicle, and other. This “other” category consists of multiple crash types such as those involving pedestrians, bicyclists, animals, fixed and non-fixed objects, and parked vehicles, among others. Table 4-6 shows surface streets by crash type between 2018 and 2022.

Table 4-6: Surface Street Crashes by Type

Year	Right Angle	Head On	Rear End	Sideswipe	LTWT	Not A Collision With Motor Vehicle	Other	Not Specified	Total Crashes
2018	5,073	417	10,108	2,725	882	1,598	499	328	21,630
2019	6,260	467	11,903	3,380	1,007	1,593	739	25	25,374
2020	4,873	404	8,057	2,447	694	1,470	755	11	18,711
2021	5,723	467	9,278	3,166	817	1,573	723	14	21,761
2022	5,812	415	8,028	2,464	303	1,724	406	7	19,159
Total	27,741	2,170	47,374	14,182	3,703	7,958	3,122	385	106,635
	26%	2%	44%	13%	3%	8%	3%	<1%	100%

Excluding Interstate Crashes

Most of the crashes that occurred between 2018 and 2022 within Cobb County were rear-end (44%) and right-angle (26%) crashes. Unspecified (<1%) and head-on (2%) crashes were the rarest crash types to occur within Cobb County. Figure 4-2 shows the breakdown of each crash type as a percentage of total crashes. It’s important to note that the crash categories often overlap (meaning that some crashes can fall within multiple categories, for example one vehicle collision could be both a sideswipe crash and a rear-end crash – particularly if three or more vehicles are involved).

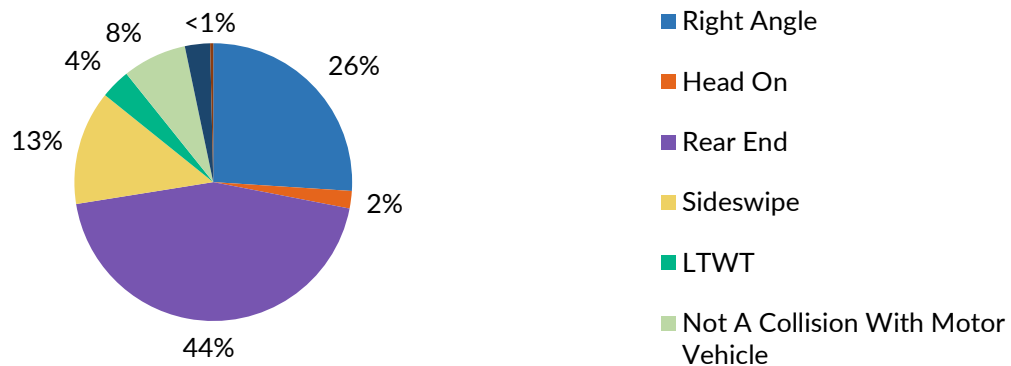


Figure 4-2: Surface Street Crashes by Type

Crashes by Lighting Condition

In addition to including the existence of potential injuries or deaths on roadway crash reports, local emergency response personnel also typically provide observations on whether lighting is present and if so, the type present, the general surface conditions of the roadway, whether the crash involved a vulnerable roadway user (i.e., bicyclist, motorcycle, pedestrian, scooter, etc.), as well as the general severity of the crash (i.e., number of injured and deceased/KABCO classifications).

Per the Federal Highway Administration (FHWA), the number of fatal crashes that occur during the day is relatively equal to the number of fatal crashes that occur in darkness.³⁴ Despite that, the fatality rate of crashes that occur in darkness is three times that of daytime crashes, because only 25 percent of vehicle miles traveled (VMT) occur at night. In this regard, whether or not light is present at the scene of a roadway crash can be an important factor in the crash’s degree of severity.³⁵

Local emergency response personnel, when noting the presence of light at the scene of a roadway crash, categorizes lighting present in one of six ways:

While numbers of fatal crashes during the day and night have been shown to be nearly

- Dawn
- Daylight
- Dusk
- Dark (lit)
- Dark (not lit)
- Not Specified

equal (nationally), the total number of crashes that occur in daylight (regardless of the presence of fatalities) vastly outnumbers the number of crashes in any other category. For example, of the 106,635 roadway crashes between 2018 and 2022, 74% occurred during the daylight, 14% occurred when it was dark but artificial lighting was present, and 8% occurred when it was dark and no artificial light was present. Of the remaining crashes, 1% occurred during dawn, 1% occurred during dusk, and less than one percent were unspecified. The distribution of crashes by lighting condition is shown in **Table 4-7**.

Table 4-7: Surface Street Crashes by Lighting Condition

Year	Dawn	Daylight	Dusk	Dark-Lighted	Dark-Not Lighted	Not Specified	Total Crashes
2018	312	15,324	260	2,785	1,812	1,137	21,630
2019	333	19,144	315	3,500	2,062	20	25,374
2020	223	13,717	304	2,800	1,661	6	18,711
2021	197	16,344	289	3,181	1,736	14	21,761
2022	215	14,402	248	2,769	1,520	5	19,159
Total	1,280	78,931	1,416	15,035	8,791	1,182	106,635
	1%	74%	2%	14%	8%	<1%	100%

Excluding Interstate Crashes

Crashes by Surface Condition

Another important factor in roadway crash severity and frequency is the condition of roadway surface at the time of the collision. Roadway condition refers to the presence of external (often weather) effects that may influence how roadway users interact with the roadway’s surface. For Cobb County, emergency responders denote five categories of road surface condition: dry, wet, snow/ice, other and unknown. Despite the well-documented risks associated with roadway users traveling in wet and snowy/icy

³⁴ Federal Highway Administration (2021). Proven Safety Countermeasures – Lighting. <https://safety.fhwa.dot.gov/provencountermeasures/lighting.cfm>

³⁵ Elvik, R. and Vaa, T. (2004). "Handbook of Road Safety Measures." Oxford, United Kingdom, Elsevier.

conditions, the vast majority of crashes that occurred in Cobb County between 2018 and 2022 took place during dry conditions (81%). The distribution of surface street crashes within Cobb County between 2018 and 2022 by roadway surface condition is shown in **Table 4-8**.

Table 4-8: Surface Street Crashes by Roadway Surface Condition

Year	Dry	Wet	Snow/Ice	Other	Unknown	Total Crashes
2018	15,945	4,383	145	20	1,137	21,630
2019	21,314	4,004	25	14	17	25,374
2020	14,728	3,933	21	22	7	18,711
2021	18,066	3,657	12	11	15	21,761
2022	16,703	2,431	14	6	5	19,159
Total	86,756	18,408	217	73	1,181	106,635
	81%	17%	<1%	<1%	1%	100%

Excluding Interstate Crashes

Crashes by Roadway Site

Understanding the site of crashes will help to identify appropriate safety countermeasures that can mitigate the severity of crashes on public roads. This includes the location of the crash in relation to signalized and minor-stop intersections as well as driveways, designated crosswalks, and turn lane aprons. Approximately 78% of all surface street crashes occurred within 100 feet of an intersection with this number fluctuating annually. Among surface street crashes, approximately 32% occurred within the boundaries of incorporated cities while 68% occurred in unincorporated Cobb County. Surface street crashes in Cobb County by roadway site are shown in **Table 4-9**.

Table 4-9: Surface Street Crashes by Roadway Site

Year	More than 100 Feet Away from Intersection	Within 100 Feet of Intersection	Interstate Ramps	Not Specified	Total Crashes
2018	4,266	16,376	655	333	21,630
2019	5,305	20,063	5	1	25,374
2020	3,930	14,758	21	2	18,711
2021	4,668	17,069	24	0	21,761
2022	3,857	15,301	1	0	19,159
Total	22,026	83,567	706	336	106,635
	21%	78%	1%	<1%	100%

Excluding Interstate Crashes

Crashes by Number of Vehicles or Individuals Involved

Another metric which the project team reviewed were the number of vehicles and individuals involved in a given crash. This helps to pinpoint locations where single-vehicle crashes are a recurring safety challenge and where congestion may be contributing to crash patterns in the case of rear-end crashes. Surface street crashes by number of vehicles and individuals are shown in **Table 4-10**.

Table 4-10: Surface Street Crashes By Number of Vehicles and Individuals Involved

Year	Single-Vehicle	2 Vehicles/Individuals	3 Vehicles/Individuals	4+ Vehicles/Individuals	Not Specified	Total Crashes
2018	1,814	17,170	1,344	195	1,107	21,630
2019	2,097	21,331	1,669	275	2	25,374
2020	2,022	15,229	1,277	182	1	18,711
2021	2,088	18,162	1,336	174	1	21,761
2022	1,920	15,816	1,223	200	0	19,159
Total	9,941	87,708	6,849	1,026	1,111	106,635
	9%	82%	7%	1%	1%	100%

Excluding Interstate Crashes

While only 9% of crashes between 2018 and 2022 are classified as single-vehicle crashes, single-vehicle crashes account for a higher proportion of fatal and serious injury crashes (see Chapter 5). Approximately 82% of all surface street crashes involved two vehicles or individuals. A factor in data reporting identified by the project team is that some crashes classified as single-vehicle involved pedestrians or bicyclists. Bicyclists are technically considered a vehicle type under Georgia law. This inconsistency is further explored in both Chapters 5 and 6 and was taken into consideration when delineating fatal and serious injury (KA) focus types for the Safety Action Plan.

Crashes Involving Vulnerable Roadway Users

Most roadway crashes in Cobb County between 2018 and 2022 involved vehicles exclusively. However, members of the traveling public who utilize multimodal transportation methods (walkers, cyclists, motorcycles, scooters, etc.) are particularly vulnerable to severe injuries or death if involved in a roadway crash. Vulnerable roadway users are often defined as those members of the traveling public that are unprotected by an outside shield.³⁶ Using this definition, the most vulnerable roadway users are pedestrians, bicyclists, motorcyclists, and scooter riders (as typically the most prevalent multimodal options utilized by roadway users). By utilizing traffic crash reporting methods from local emergency responders, the project team was able to discern crashes involving the four specific classes of vulnerable roadway users mentioned above. The number of crashes involving bicyclists, pedestrians, motorcycles, and scooters are shown in **Table 4-11**.

Table 4-11: Surface Street Crashes Involving Vulnerable Roadway Users

Year	Bicycle	Pedestrian	Motorcycle	Scooter	Other	Total Crashes
2018	48	90	163	18	21,311	21,630
2019	54	129	190	23	24,978	25,374
2020	51	89	176	35	18,360	18,711
2021	41	95	188	29	21,408	21,761
2022	45	101	172	21	18,820	19,159
Total	239	504	889	126	104,877	106,635
	<1%	<1%	1%	<1%	98%	100%

Excluding Interstate Crashes

These crashes tend to happen in areas with a mix or higher-intensity of land uses and are usually overrepresented among fatal and serious injury crashes. Significantly, though motorcycles make up a small number of roadway users at any given point, they are involved in one percent of all crashes that occurred in Cobb County between 2018 and 2022 (a total of 889 crashes involving motorcycles were identified during this period of time). The next two highest numbers of crashes within this vulnerable road user group are pedestrians and bicyclists with 504 and 239 reported crashes, respectively.

Most Frequently Cited Contributing Factors

Operator contributing factors were not consistently reported across all crashes within the County between 2018 and 2022., and the dataset has 36 possible values for contributing factors – many of which overlap. For example, there are eight different variations of distracted driving in the crash data including “inattentive or other distraction;” “texting;” “talking on hands-free device;” “talking on hand-held device;” “other activity – mobile device;” “occupant distraction;” “other interior distraction;” and “other exterior distraction.” The project team did document the most cited contributing factors in the crash summary spreadsheets found in **Appendix A**.

For all crashes that occurred between 2018 and 2022, the five most frequently cited contributing factors include following too close (36%), failure to yield (17%), improper lane change (11%), other (6%), and driver lost control (5%).

³⁶National Safety Council (2018). Position/Policy Statement – Vulnerable Road Users.
<https://www.nsc.org/getattachment/d5babe66-582d-4e66-804f-8d06f9b021a4/t-vulnerable-road-users-147>

Chapter 5 – Fatal & Serious Injury Crash Overview and Trends

The Cobb County Safety Action Plan is rooted in the analysis of historical crash trends, particularly with crashes which resulted in fatalities or serious injuries. Together, fatal (K) crashes and serious injury (A) crashes comprise what will be termed as “KA crashes” in this chapter and others which follow to understand the factors, roadway and area characteristics, behaviors, and locations which contributed to these severe crashes within Cobb County. In other words, KA crashes are a subset of the same data presented in the preceding chapter. In total, between 2018 and 2022, there were 1,540 crashes that resulted in a fatality (K) and/or a serious injury (A). The distribution by year and breakdown by severity are shown in **Table 5-1**.

Table 5-1: Fatalities and Injuries Resulting from KA Crashes

Year	Fatal Crashes (K)	# of Fatalities	# of Injuries in Fatal Crashes	Serious Injury Crashes (A)	# of Injuries in Serious Injury Crashes	Total KA Crashes
2018	37	40	34	151	262	188
2019	63	67	35	293	542	356
2020	58	61	29	271	525	329
2021	50	51	28	322	600	372
2022	40	41	20	255	460	295
Total	248	260	146	1,292	2,389	1,540
	16%			84%		100%

Among the 1,540 reported non-interstate KA crashes, 248 crashes (16%) resulted in at least one fatality and 1,292 (84%) resulted in at least one serious injury. From an overall standpoint, within Cobb County between 2018 and 2022, the number of KA crashes ranged between 188 and 372 per year, peaking in 2021 before receding slightly in 2022, as shown in **Figure 5-1** (next page). While KA crashes declined in 2022, the total that year is more than 100 crashes higher than in 2018, representing an increase of more than 50%.

Fatalities were highest in 2019 and 2020 with 67 and 61 total fatalities, respectively, and although the number of fatalities evened out between 2018 and 2022, the number of injuries sustained in serious injury crashes on an annual basis drastically increased between 2018 and 2022 with the largest increase between 2018 (262 injuries) and 2019 (542 injuries). The highest number of injuries in serious injury crashes came in 2021 with 322 serious injury crashes resulting in 600 reported injuries.

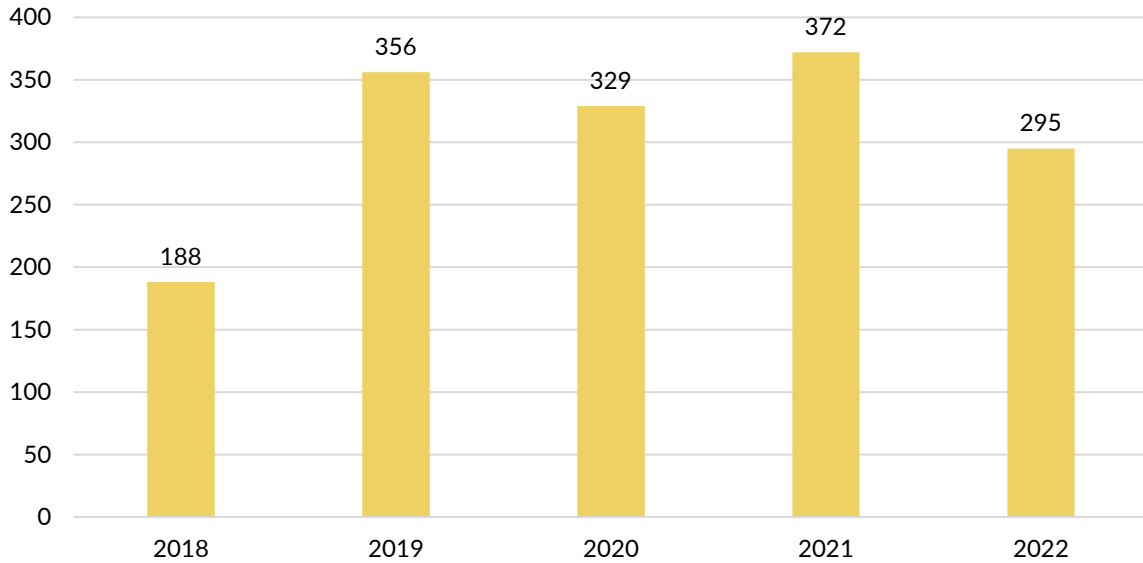


Figure 5-1: KA Crashes by Year

Figure 5-2 (next page) shows the distribution of fatal and serious injury crashes across the county overlaid on top of a heatmap illustrating the density of KA crashes. Clusters of KA crashes are spread across the County, especially in areas with higher-intensity land uses such as commercial, high-density residential, heavy industrial, and mixed-use properties. The highest concentration of non-interstate KA crashes during this period was in a portion of central Cobb County bound by Austell Road (SR 5) and Powder Springs Road (SR 360) to the west; Windy Hill Road to the south; Atlanta Road and I-75 to the east; and North Marietta Parkway (SR 120 Alt) to the north. This largely comprises areas of the City of Marietta southeast of the downtown Marietta Square. This area of high density KA crashes also includes additional arterial corridors such as Roswell Street, Cobb Parkway (US 41/SR 3), Fairground Street, and South Cobb Drive (SR 280), among others.

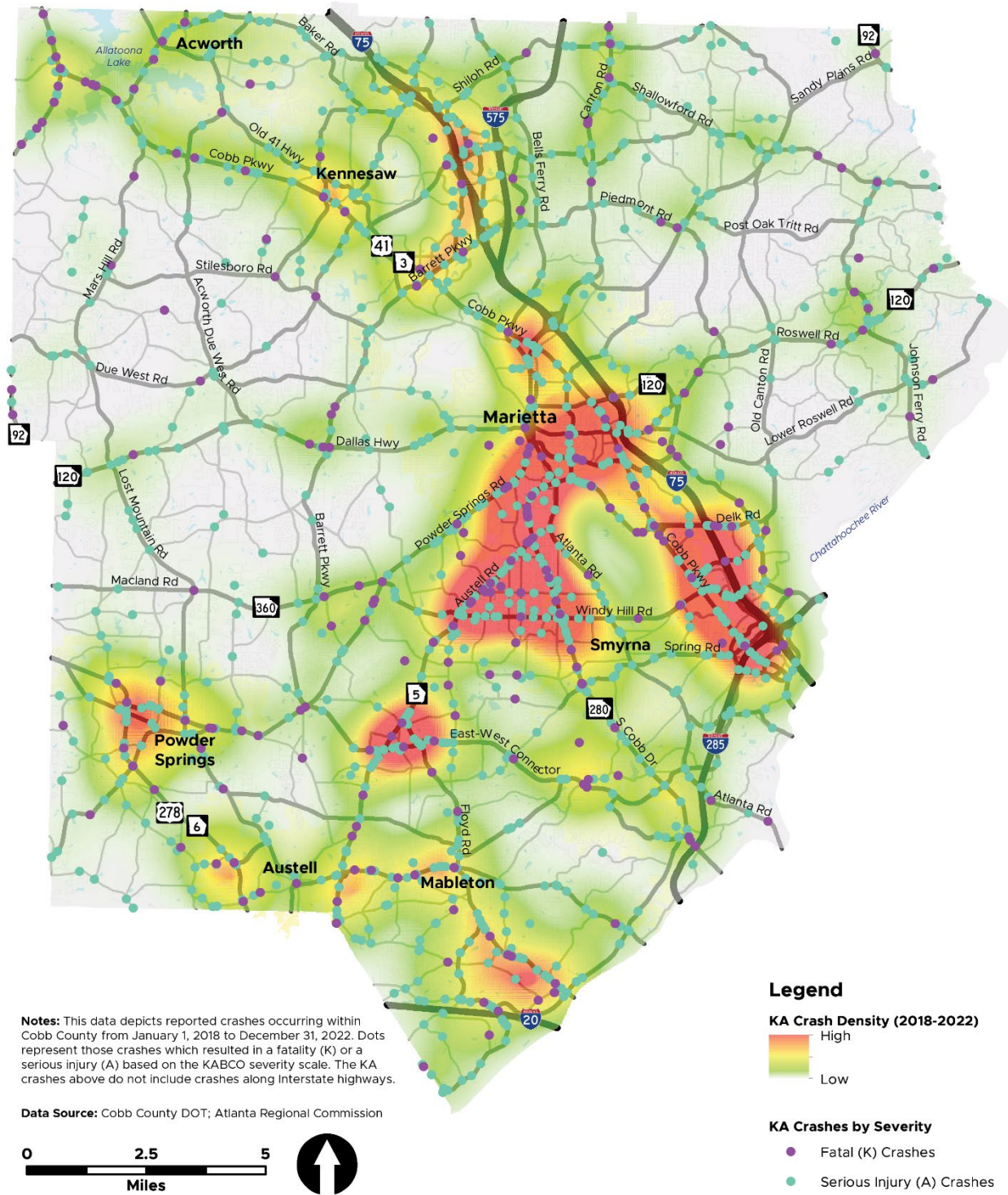


Figure 5-2: Fatal and Serious Injury (KA) Crash Density (2018-2022) With KA Crashes by Severity

Other areas with higher concentrations of KA crashes are observed near central business districts of most incorporated communities within the County, as well as within unincorporated portions of Cobb County. These are reflected in the segments analyzed to identify “Focus Corridors” recommended for consideration among potential early implementation projects to begin addressing corridors with clusters of fatal and serious injury crashes.

Several notable ‘hotspots’ in central business districts and incorporated areas include:

- North of downtown Marietta along Cobb Parkway (US 41/SR 3) at the Canton Road Connector
- Southwest of downtown Marietta along Powder Springs Road (SR 360) between Cunningham Road and South Marietta Parkway (SR 120)/Reynolds Street
- West of downtown Powder Springs along C.H. James Parkway (US 278/SR 6) in the vicinity of the at-grade signalized intersection with Richard D. Sailors Parkway and the above-grade crossing with Powder Springs Dallas Road
- West of downtown Austell, along C.H. James Parkway (US 278/SR 6) between Humphries Hill Road and Garrett Road/Dr Luke Glenn Garrett, Jr Memorial Highway
- Southwest of downtown Kennesaw along Cobb Parkway (US 41/SR 3) near the signalized intersection with Jiles Road
- Northwest of downtown Acworth, along Lake Acworth Drive (SR 92) between the above-grade intersection with North Main Street and Cherokee Street (SR 92)
- In the City of Mableton along Veterans Memorial Highway (US 278/US 78/SR 8) between Old Floyd Road and Floyd Road (SR 139)

Notable concentrations of KA crashes within unincorporated portions of Cobb County include:

- Sections of Austell Road (SR 5) between East-West Connector and Floyd Road, and between Windy Hill Road and Atlanta Road
- South Cobb Drive (SR 280) north of Windy Hill Road near Dobbins Air Reserve Base (ARB)
- Atlanta Road between Windy Hill Road and South Cobb Drive (SR 280)
- Windy Hill Road between Austell Road (SR 5) and Atlanta Road
- Pat Mell Road between Austell Road (SR 5) and South Cobb Drive (SR 280)
- The triangle formed by Austell Road (SR 5), Floyd Road/Mableton Parkway (SR 139), and East-West Connector
- Cobb Parkway (US 41/SR 3) between Akers Mill Road and Delk Road, including portions adjacent to Cumberland Mall, the Cobb Galleria, and the Battery/Truist Park
- Mableton Parkway (SR 139) between South Gordon Road and Lee Industrial Boulevard/Discovery Boulevard
- In the Town Center area along Barrett Parkway (SR 5 Connector) between Cobb Parkway (US 41/SR 3) and Barrett Lakes Boulevard and along Barrett Lakes Boulevard between Barrett Parkway (SR 5 Connector) and Chastain Road

High Crash Intersections

As noted in the Regional Safety Strategy (RSS), intersection-related crashes are prevalent throughout the Atlanta region. The top intersections across the County with at least five KA crashes within 300 feet of an intersection include those listed in **Table 5-2** (note that this table does not reflect total crashes as the intent is to show the locations of crashes which involve serious injury or the loss of life). Intersections with higher numbers of KA crashes are largely on state routes and include multiple intersections along Cobb Parkway (US 41/SR 3), South Cobb Drive (SR 280), and Mableton Parkway (SR 139).

Table 5-2: Intersections with Five or More KA Crashes (2018-2022)

Location	Fatal Crashes (K)	Serious Injury Crashes (A)	Total KA Crashes
Cobb Pkwy (US 41/SR 3) @ Canton Rd Connector NB Ramp	0	10	10
Cobb Pkwy (US 41/SR 3) @ Canton Rd Connector SB Ramp	0	9	9
C.H. James Pkwy (US 278/SR 6) @ Humphries Hill Rd	1	8	9
Barrett Pkwy @ Ridenour Blvd	2	6	8
C.H. James Pkwy (US 278/SR 6) @ Brownsville Rd	1	7	8
East-West Conn @ Cooper Lake Rd	1	6	7
C.H. James Pkwy (US 278/SR 6) @ Garrett Rd/ Dr Luke Glenn Garrett, Jr Memorial Hwy	2	4	6
Cobb Pkwy (US 41/SR 3) @ Jiles Rd/Pine Mountain Rd	1	5	6
Bells Ferry Rd @ Shiloh Rd/Shallowford	0	6	6
C.H. James Pkwy (US 278/SR 6) @ Florence Rd	0	6	6
Delk Rd WB Off-Ramp @ Cobb Pkwy (US 41/SR 3)	1	4	5
Mableton Pkwy (SR 139) @ Hunnicutt Rd	1	4	5
Richard D. Sailors Pkwy @ New Macland Rd	1	4	5
S Cobb Dr (SR 280) @ Austell Rd (SR 5)	1	4	5
Cobb Pkwy (US 41/SR 3) @ I-285 SB Ramp	0	5	5
Cobb Pkwy (US 41/SR 3) @ Windy Hill Rd	0	5	5
Cobb Pkwy (US 41/SR 3) @ S Marietta Pkwy (SR 120 Alt)	0	5	5
Mableton Pkwy (SR 139) @ Lee Industrial Blvd/Discovery Blvd	0	5	5
Powder Springs Rd (SR 360) @ Sandtown Rd	0	5	5

Fatal crashes were also notable near intersections where arterials either intersect other arterials, major collectors, or minor collectors. Across the County, there were 13 intersections – either signalized or unsignalized – where two fatal (K) crashes occurred between 2018 and 2022, listed in **Table 5-3**. Collectively, these resulted in 27 fatalities, or 10% of the total 260 fatalities within the County during this time period. Multiple intersections along Austell Road (SR 5) and South Cobb Drive (SR 280) appear on this list, consistent with the observations about concentrations of KA crashes throughout the County.

Table 5-3: Intersections With Two or More Reported Fatal (K) Crashes (2018-2022)

Location	Fatal Crashes (K)	# of Fatalities	Total KA Crashes
Austell Rd (SR 5) @ Schaffer Rd	2	3	2
Barrett Pkwy @ Ridenour Blvd	2	2	8
C.H. James Pkwy (US 278/SR 6) @ Garrett Rd/ Dr Luke Glenn Garrett, Jr Memorial Hwy	2	2	6
S Cobb Dr (SR 280) @ Concord Rd	2	2	4
Alabama Rd (SR 92) @ Old Mountain Park Rd	2	2	3
Powder Springs Rd (SR 280) @ Chestnut Hill Rd	2	2	3
S Cobb Dr (SR 280) @ Booth Rd	2	2	3
Windy Hill Rd @ Village Pkwy	2	2	3
Austell Rd (SR 5) @ Osborne Rd	2	2	2
Delk Rd @ Powers Ferry Pl	2	2	2
Roswell Rd (SR 120) @ Robinson Rd (E)	2	2	2
S Cobb Dr (SR 280) @ Waldrep Cir	2	2	2
S Marietta Pkwy (SR 120) @ Powers Ferry Rd	2	2	2

Serious injury crashes were also notable near intersections where arterials either intersect other arterials, major collectors, or minor collectors. Across the County, there were 14 intersections – either signalized or non-signalized – which experienced five or more serious injury (A) crashes between 2018 and 2022, listed in **Table 5-4**. Multiple intersections along Cobb Parkway (US 41/SR 3), Austell Road (SR 5), and South Cobb Drive (SR 280) appear on this list. Among these are nine intersections operated and maintained by CCDOT, including three of the top five for number of serious injury crashes.

Table 5-4: Top Intersections by Reported Serious Injury (A) Crashes (2018-2022)

Rank	Location	Serious Injury Crashes (A)	# of Injuries	Total KA Crashes
1	Cobb Pkwy (US 41/SR 3) @ Canton Rd Connector NB Ramp	10	24	10
2	Cobb Pkwy (US 41/SR 3) @ Canton Rd Connector SB Ramp	9	21	9
3	C.H. James Pkwy (US 278/SR 6) @ Humphries Hill Rd	8	22	9
4	C.H. James Pkwy (US 278/SR 6) @ Brownsville Rd	7	21	8
T5	East-West Conn @ Cooper Lake Rd	6	20	7
T5	C.H. James Pkwy (US 278/SR 6) @ Florence Rd	6	17	6
T5	Bells Ferry Rd @ Shiloh Rd/Shallowford	6	15	6
T5	Barrett Pkwy @ Ridenour Blvd	6	12	8
T9	Mableton Pkwy (SR 139) @ Lee Industrial Blvd/Discovery Blvd	5	16	5
T9	Cobb Pkwy (US 41/SR 3) @ Pine Mountain Rd/Jiles Rd	5	13	6
T9	Cobb Pkwy (US 41/SR 3) @ S Marietta Pkwy (SR 120 Alt)	5	11	5
T9	Cobb Pkwy (US 41/SR 3) @ Windy Hill Rd	5	8	5
T9	Powder Springs Rd (SR 360) @ Sandtown Rd	5	7	5
T9	Cobb Pkwy (US 41/SR 3) @ I-285 SB Ramp	5	6	5

In summary, a visual analysis of fatal and serious injury crashes superimposed over roadway functional classification provides a key takeaway: most roadway crashes involving fatalities or serious injuries occur on or in proximity to arterial streets. An examination of the crash density maps shows the highest density of crashes occurred within and along arterial corridors. Conversely, a low number of fatal and serious injury crashes occurred on local streets. Some collectors (minor and major) did see noticeable levels of serious and fatal crashes, particularly in southern portions of Cobb County. However, the total KA crashes for these roadways classifications were far less than arterials.

KA Crash Reported Trends

The following section discerns trends and patterns among the 1,540 reported KA crashes which occurred on surface streets excluding interstates. Information discussed in this section is based upon data and attributes from crash reports submitted by law enforcement agencies within the County and then provided to the project team by CCDOT. Beyond the information in this section of Chapter 5 encompassing all reported KA crashes, additional crash details are listed in **Appendix A** such as the vehicle type, road surface condition, weather condition, first harmful event, and contributing factors cited within crash reports.

Crashes by Type

The largest share of KA crashes were right-angle crashes followed by “other” (17%) and crashes not involving another motor vehicle, or single-vehicle crashes (15%). Among reported right angle crashes, which comprise 25% of all KA crashes, 38 were fatal. As discussed in the previous chapter, the other category consists of multiple crash types such as those involving pedestrians, bicyclists, animals, fixed and non-fixed objects, and parked vehicles, among others; of these, 75 (roughly 28% of other crashes) were fatal. Crashes not with a motor vehicle include those involving pedestrians, cyclists, and scooter users; 42 of these (18%) were fatal. A breakdown of surface street KA crashes by road surface condition and year can be found in **Table 5-5**.

Table 5-5: KA Crashes by Crash Type

Year	Right Angle	Head On	Rear End	Sideswipe	LTWT	Not A Collision With Motor Vehicle	Other	Not Specified	Total KA Crashes
2018	38	19	23	15	28	31	34	0	188
2019	85	30	43	36	39	53	70	0	356
2020	87	38	30	22	44	44	64	0	329
2021	96	40	47	37	45	50	57	0	372
2022	73	32	34	26	39	52	39	0	295
Total	379	159	177	136	195	230	264	0	1,540
	25%	10%	11%	9%	13%	15%	17%	0%	100%

Crashes by Lighting Condition

A majority of KA crashes (56%) occurred in daylight conditions and roughly 13% of these (118 crashes) were fatal. Among the 324 KA crashes which occurred in dark, lighted conditions, 43 (13%) crashes were fatal and of the 299 KA crashes that occurred in dark, not lighted conditions, 80 crashes, or nearly 27%, were fatal. Dark, not lighted crashes have increased during this time period with the increase more pronounced between 2020 and 2021. A breakdown of surface street KA crashes by reported lighting condition and year can be found in **Table 5-6**.

Table 5-6: KA Crashes by Lighting Condition

Year	Dawn	Daylight	Dusk	Dark-Lighted	Dark-Not Lighted	Not Specified	Total KA Crashes
2018	1	107	5	31	44	0	188
2019	2	213	9	74	58	0	356
2020	3	183	5	80	58	0	329
2021	5	202	4	83	78	0	372
2022	5	165	8	56	61	0	295
Total	16	870	31	324	299	0	1,540
	1%	56%	2%	21%	19%	0%	100%

Crashes Involving Vulnerable Roadway Users

Roadway users outside of cars, SUVs, and trucks, are more vulnerable to severe crashes, due to the lack of protection afforded to drivers and passengers inside of vehicles. Crashes involving bicyclists, pedestrians, motorcycle, and scooter riders comprise more than one-quarter of all fatal and serious injury crashes, as shown in **Table 5-7**. While crashes involving these users comprise a relatively small proportion of total crashes, they all comprise a more significant proportion of KA crashes; as such, the Cobb County Safety Action Plan includes these among focus crash types (discussed further in Chapter 6).

Table 5-7: KA Crashes Involving Vulnerable Roadway Users

Year	Bicycle	Pedestrian	Motorcycle	Scooter	Other	Total KA Crashes
2018	4	21	22	5	136	188
2019	7	38	42	5	264	356
2020	8	30	37	12	242	329
2021	6	24	47	6	289	372
2022	6	23	48	2	216	295
Total	31	136	196	30	1,147	1,540
	2%	9%	13%	2%	74%	100%

Crashes by Reported Traffic Flow Pattern

Nearly half of all reported non-interstate KA crashes within Cobb County between 2018 and 2022 occurred on a two-way roadway without any physical separation such as a median or concrete barrier. In other words, these are along streets with no separation between directions of travel. Due to inconsistencies in reporting, crashes in this category sometimes include those along roads with center left-turn lanes; therefore, the two categories should be reviewed in combination with one another. Furthermore, traffic flow pattern was not specified for approximately 26% of KA crashes. A breakdown of surface street KA crashes by reported traffic flow pattern at the crash site and year can be found in **Table 5-8**.

Table 5-8: KA Crashes by Reported Traffic Flow Pattern

Year	2-Way Without Physical Separation	2-Way With Physical Separation	2-Way With Physical Barrier	One-Way Street	Center Left-Turn Lane	Not Specified	Total KA Crashes
2018	25	15	1	0	0	147	188
2019	94	31	2	2	0	227	356
2020	196	92	27	3	3	8	329
2021	227	102	27	1	5	10	372
2022	172	88	29	3	2	1	295
Total	714	328	86	9	10	393	1,540
	46%	21%	6%	1%	1%	26%	100%

Of the 714 KA crashes on streets without physical separation (such as a grass median) and including those with center left-turn lanes, roughly 15% (104) were fatal. Crashes along two-way roadways with physical separation constituted about 21% of KA crashes and among these, 46 crashes (14%) were fatal. Severe crashes along roads with a physical barrier (such as a concrete wall) resulted in fatalities at a higher rate compared to those with and without physical separation. While crashes along roads with physical barriers only comprise 6% of KA crashes, approximately 22% of them (19 crashes) were fatal. These findings suggest there is a correlation (rather than causation) between severe crashes and physical barriers such as concrete walls and guardrails as opposed to forms of physical separation such as a grass or concrete median - a theme that is explored further in Chapter 6. In other words, physical barriers and physical separation are not the sole reason for KA crashes experienced in Cobb County.

Crashes by Number of Vehicles Involved

The greatest share of KA crashes involved two vehicles or individuals. While single-vehicle crashes comprise a relatively small proportion of total non-interstate crashes (approximately 9%), they disproportionately result in serious injuries and fatalities: more than one-quarter of KA crashes reported involved a single vehicle. Furthermore, of the 411 single-vehicle KA crashes, approximately 23% resulted in at least one fatality. By contrast, of the 928 KA crashes involving two vehicles for individuals, only 13% were fatal.

It should be noted that due to reporting inconsistencies, in some cases, single-vehicle crashes also involved a bicyclist or pedestrian. Among the 411 single-vehicle crashes, 86 involved a pedestrian, 43 involved a motorcycle, and 19 involved a bicycle or scooter. Because single-vehicle crashes comprise a higher percentage of KA crashes than total crashes, and because they tend to be more severe than KA crashes involving other numbers of vehicles (meaning, a higher proportion are fatal), they are identified as a focus crash type for this plan and are discussed further in Chapter 6. A breakdown of surface street KA crashes by the number of vehicles or individuals involved is shown in **Table 5-9**.

Table 5-9: KA Crashes by Number of Vehicles Involved

Single-Vehicle	Single-Vehicle	2 Vehicles/ Individuals	3 Vehicles/ Individuals	4+ Vehicles/ Individuals	Not Specified	Total KA Crashes
2018	55	112	19	2	0	188
2019	96	211	39	10	0	356
2020	88	197	33	11	0	329
2021	95	232	33	11	1	372
2022	77	176	30	12	0	295
Total	411	928	154	46	1	1,540
	27%	60%	10%	3%	0%	100%

Crashes by Roadway Site (Proximity to Intersections)

CCDOT crash data indicates whether crashes occurred within 100 feet of an intersection or more than 100 feet from an intersection. Among KA crashes, roughly two-thirds took place within 100 feet of an intersection and of these, roughly 12% were fatal (123 crashes). By contrast, while fewer crashes occurred more than 100 feet from an intersection, a higher proportion - roughly 24% (125 crashes) - were fatal. As a result, the Safety Action Plan conducted additional analysis to evaluate crashes that took place outside the immediate vicinity of intersections, discussed further in Chapter 6. A breakdown of surface street KA crashes by roadway site, or proximity to an intersection with another street or driveway is shown in **Table 5-10**.

Table 5-10: KA Crashes by Roadway Site

Year	More than 100 Ft Away from Intersection	Within 100 Feet of Intersection	Total KA Crashes
2018	69	119	188
2019	124	232	356
2020	110	219	329
2021	118	254	372
2022	95	200	295
Total	516 34%	1,024 66%	1,540 100%

Crashes by Location Within Cobb County

Another way of looking at the distribution of severe crashes is by roads within unincorporated areas and incorporated cities. Within Cobb County there are six incorporated cities, as of May 2023. A majority of severe non-interstate crashes between 2018 and 2022 occurred on roads within unincorporated portions of Cobb County. Roughly 16% of these (168 crashes) were fatal. Similarly, approximately 15% of non-interstate KA crashes on roads within an incorporated City (either Acworth, Austell, Kennesaw, Marietta, Powder Springs, or Smyrna) were fatal (80 crashes). This indicates that other factors are more strongly correlated to severe crashes than jurisdiction, although it is important to understand jurisdiction when it comes to responsibility for maintenance, operations, and programming safety improvements.

A breakdown of KA crashes between incorporated and unincorporated portions of Cobb County is shown in **Table 5-11**. Note that interstate crashes were screened out for the purpose of developing this Safety Action Plan, and are presented in the preceding chapter on overall countywide safety trends.

Table 5-11: KA Crashes by Location Within Cobb County

Year	City	Unincorporated Cobb County	Total Crashes
2018	43	145	188
2019	129	227	356
2020	147	182	329
2021	139	233	372
2022	78	217	295
Total	536 35%	1,004 65%	1,540 100%

Most Frequently Cited Contributing Factors

The project team documented the most cited contributing factors among all KA crashes in the crash summary spreadsheets found in **Appendix A**. For all KA crashes that occurred between 2018 and 2022, the five most frequently cited contributing factors include failure to yield (29%), driver lost control (16%), other (10%), following too close (9%), and under the influence (9%). The percentage share of failure to yield crashes was significantly higher among KA crashes (29%) compared to all crashes (17%) on surface streets. Crashes involving following too close were a smaller share of KA crashes (9%) than all crashes (36%) on surface streets.

Temporal KA Crash Trends

The project team analyzed patterns in the frequency and severity of KA crashes depending on the year, month, time of day, and day of the week to understand patterns and to inform policies and strategies that are presented in later sections of this Safety Action Plan Technical Report.

By Time of Day

Regardless of the year or month, roadway crashes tend to increase later in the afternoon into the evening hours, corresponding to the times of day when there are generally more vehicles on roadways. Most KA crashes occurred between the hours of 3 and 6 PM (287 KA crashes, or 18%) followed by the 6 PM to 9 PM time period (268 KA crashes, 17%), as shown in **Figure 5-3**.

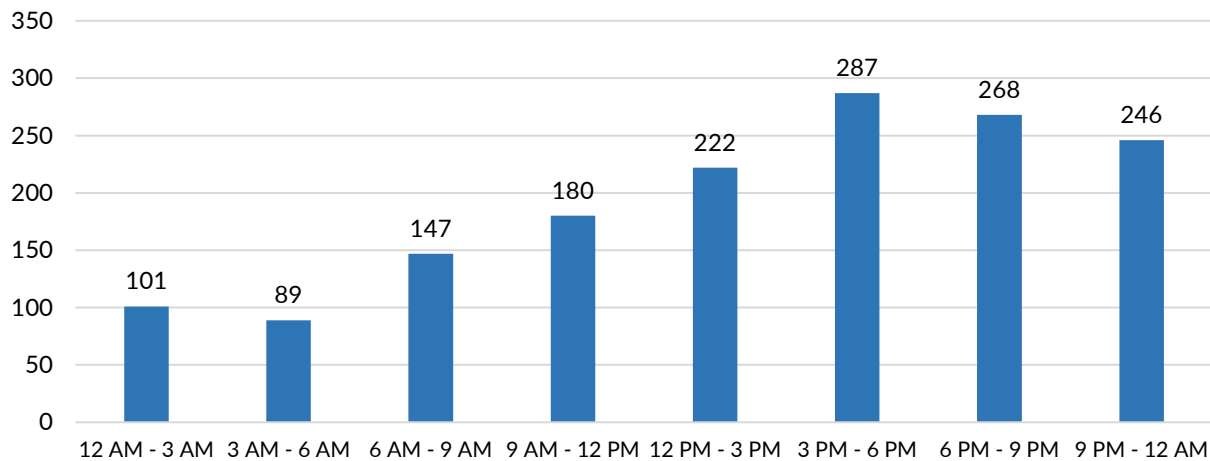


Figure 5-3: KA Crashes by Time of Day

By Month of Year

The largest share of KA crashes occurred in May (146), August (148), and October (158). These months coincide with heavy travel periods and the beginning and end of the school year within Cobb County and collectively account for nearly 30% of severe crashes. KA crashes were lowest in December and January at 110 and 111, respectively. The variation of KA crashes by both month and year is shown in **Figure 5-4**. The top three individual months for KA crashes between 2018 and 2022 were during August 2020 (44 KA crashes), March 2021 (42 KA crashes), October 2021 (48 KA crashes).

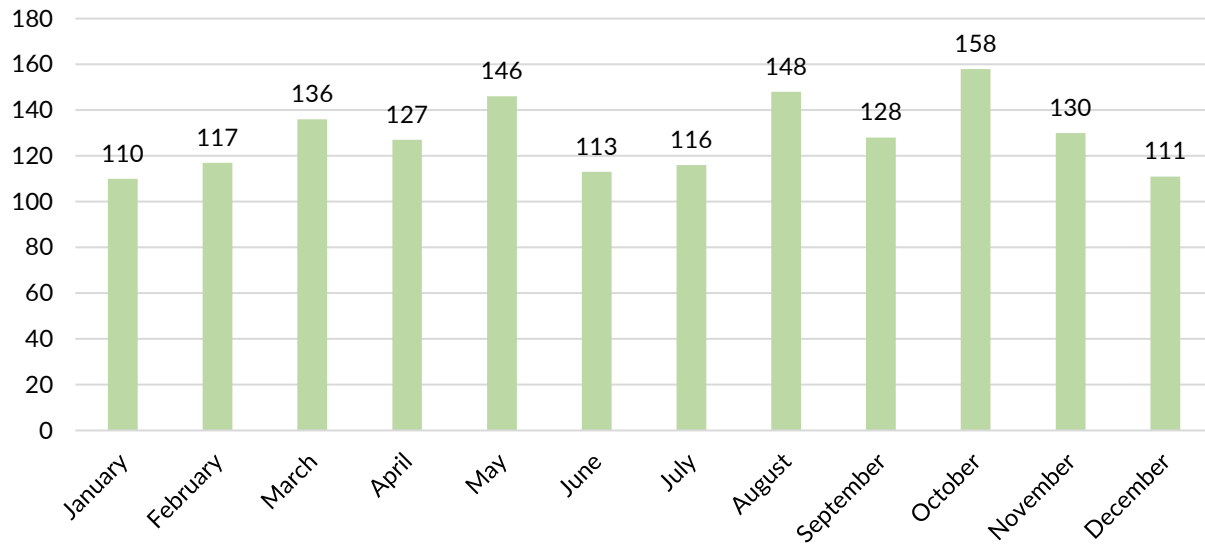


Figure 5-4: KA Crashes by Month

By Day of Week

The greatest number of KA crashes between 2018 and 2022 occurred on Fridays and Saturdays with 258 and 255 KA crashes, respectively, collectively accounting for roughly one-third of all KA crashes. Excluding Fridays, the weekday during which the most KA crashes occurred was Wednesday, as shown in **Figure 5-5**.

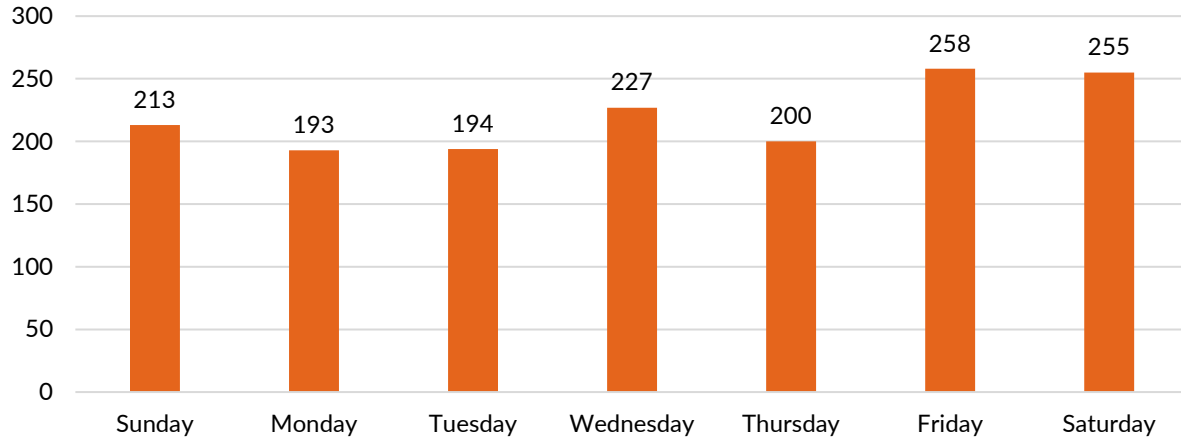


Figure 5-5: KA Crashes by Day of Week

Based on the graph shown on the next page in **Figure 5-6**, a consistent observation is that crashes increase in the afternoon and evening time periods, particularly on Fridays during the 6 PM to 9 PM time period. Morning-hour crashes were highest on Mondays between 9 AM and 12 PM. Within the typical weekend, KA crashes were the highest on Saturdays between 9 PM and 12 AM (52 reported KA crashes). KA crashes were evenly spread across Sundays compared to Saturdays, but the 3 PM to 6 PM time period had slightly more KA crashes compared to other time periods on Sundays.

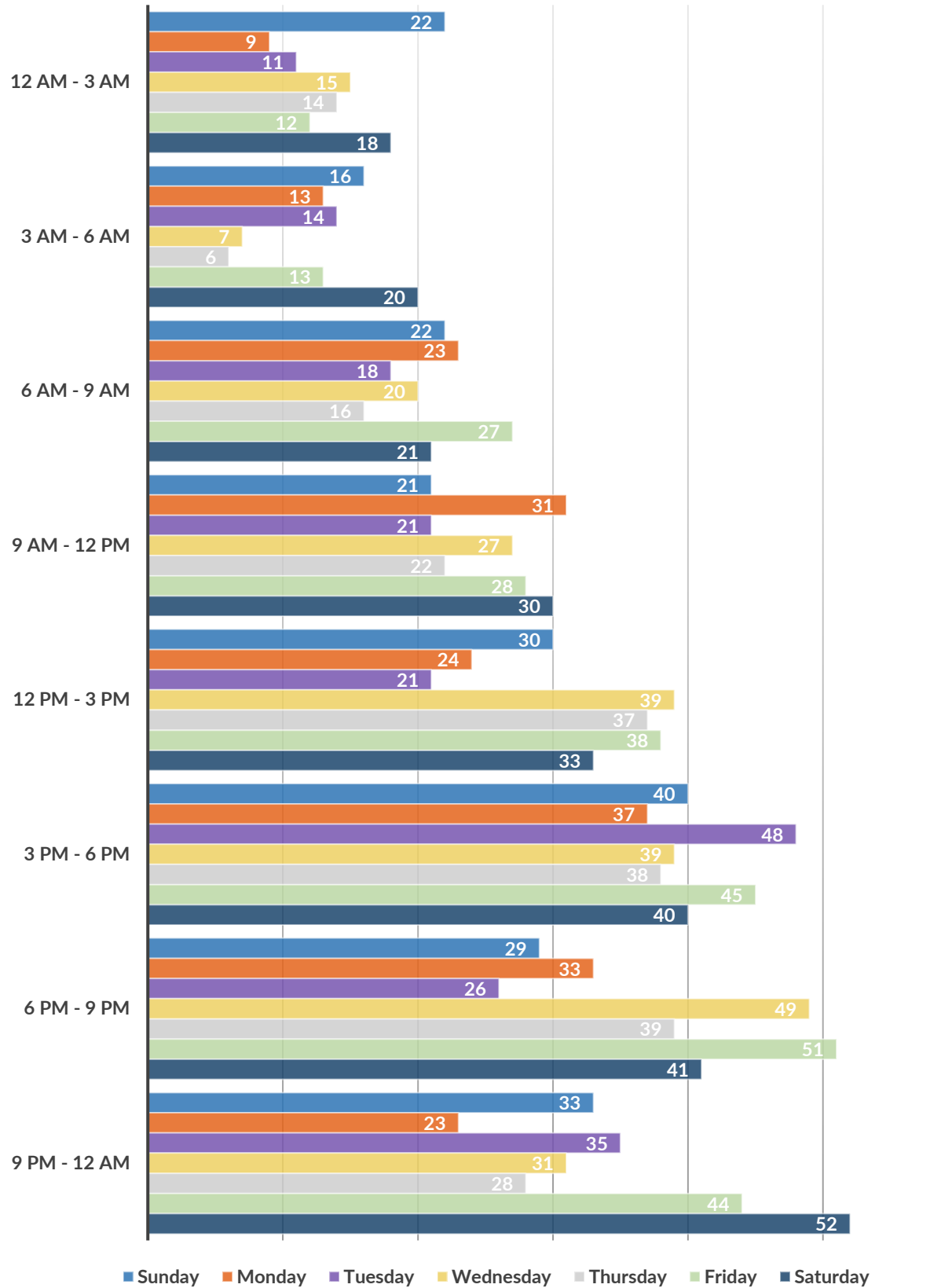


Figure 5-6: KA Crashes by Time of Day and Day of Week

Key Issues: Focus Crash Types

To understand the types of crashes that are among the most severe crashes within Cobb County, the project team compared overall crash figures to both KA crash figures and less severe (BCO) crashes for crash type, geometric site, lighting condition, vulnerable roadway users, and number of vehicles involved, looking for patterns of overrepresentation. Specifically, this involved looking at the types of crashes that disproportionately resulted in serious injuries and fatalities, by comparing the proportion of types of crashes that result in serious injuries and fatalities (KA crashes) to the proportion of total and BCO crashes of that same type.

Alignment with State and Regional Priorities

ARC's Regional Safety Strategy (RSS) identified four emphasis areas for the region based on deaths and serious injuries, comparing the proportion of fatal and serious injury crashes to the proportion of less severe crashes: intersection involved, roadway departure, and bicycle and pedestrian crashes. The report notes that motorcycle and impaired crashes are also highly overrepresented in severe crashes in the Atlanta region, and while they could represent additional emphasis areas, there is overlap with primary emphasis areas.³⁷

ARC analyzed the geographic distribution of crashes associated with each emphasis area, comparing the proportion of more severe (KA) crashes to the proportion of less severe (BCO) crashes. The results revealed counties that were overrepresented in severe focus crashes/emphasis areas. Although Cobb County represents the third highest percentage of KA crashes in the region (12%), it was not shown to be overrepresented for any of the four regionwide focus areas compared to the region as a whole. However, comparing count KA crashes to BCO crashes, ARC's analysis found that pedestrian and roadway departure crashes are overrepresented in Cobb County, findings that helped inform Cobb County's Safety Action Plan and the focus on single-vehicle and pedestrian crashes, among others.

At the state level, the 2022-2024 Georgia Strategic Highway Safety Plan (SHSP) advances a mission of "Striving Toward Zero Deaths" and establishes statewide traffic safety performance goals and emphasis areas where substantial progress can be made to improve traffic safety for all road users. In doing so, the SHSP recognizes that a new approach is needed and calls for embracing a Safe System approach.³⁸ The 2022-2024 SHSP identifies multiple "emphasis areas" considered to be the "top contributing factors of crashes, serious injuries, and fatalities" in the state – several of which align with **focus crashes identified in the Cobb County Safety Action Plan**. The SHSP offers strategies and guidance to implementing comprehensive measures to reduce severe crashes related to each of these emphasis areas.

- **Pedestrian Safety**
- **Motorcycle Safety**
- **Bicycle Safety**
- Impaired Driving
- Intersection Safety & Roadway Departure
- Distracted Driving
- Young Adult Drivers
- Older Drivers
- Occupant Protection³⁹

³⁷ Atlanta Regional Commission (2023). Regional Safety Strategy. <https://cdn.atlantaregional.org/wp-content/uploads/regional-safety-strategy-2023-04-13-vf.pdf>

³⁸ Georgia Governor's Office of Highway Safety (2022). 2022-2024 Strategic Highway Safety Plan, p. 12. <http://www.gahighwaysafety.org/wp-content/uploads/2022/01/SHSP-2022-24.pdf>

³⁹ Ibid., p. 15

Overrepresented Crash Types

The Safety Action Plan builds on the regional and statewide plans by identifying key focus areas for Cobb County based on severity of crashes to build a better understanding of contributing factors, key facilities, and potential risks. Crash data used for this analysis was provided by CCDOT, which provides records of historical crashes and associated attributes from reports completed by law enforcement agencies. CCDOT data does not include the same attributes as crash data available through other sources. For example CCDOT crash data does not delineate the age of drivers. Furthermore, it is worth noting that crash reports may be incomplete (e.g., missing information related to contributing factors), inaccurate (e.g., not correctly assigning a crash to the correct type, or incorrectly determining the severity of the crash), and/or inconsistent. The assessment of focus crashes attempted to focus on attributes that may be more easily checked through other sources, such as facility type, vehicle or user involved, and location of crashes.

As a starting point to identifying focus crash types, the project team examined the proportion of KA crashes relative to total and BCO crashes by categories as reported in the CCDOT crash data, based on the attributes within the crash data provided by CCDOT. The categories considered the following crash attributes for this analysis:

- Crash Type
- Crashes by Vehicle and Roadway User
- Geometric Crash Site
- Number of Vehicles Involved
- Road Surface
- Weather Condition
- Lighting Condition

The following sections highlight some key findings relative to these variables.

While crashes in several categories exhibit overrepresentation in severe crashes, there is significant overlap among many of these as relates to contributing factors that can be distinguished and addressed through countermeasures, with a focus on road users and location. For example, while head on collisions represent 2% of all non-interstate crashes, they comprise ten percent of KA crashes. However, head on crashes may also be single-vehicle crashes or happen outside of the immediate vicinity of an intersection. Similarly, crashes involving motorcycles are significantly overrepresented among severe crashes: while they comprise less than one percent of total crashes and less than one percent of less-severe (BCO) crashes, they make up 13% of KA crashes.

Data indicate that crashes close to intersections (which based on CCDOT’s definition is within a 100 feet radius) were not overrepresented in severe crashes. Crashes within 100 feet of an intersection comprise roughly 79% of BCO crashes and 66% of KA crashes. Recognizing that crashes within 100 feet of an intersection may capture a significant number of rear end collisions corresponding to congestion, the project team expanded the radius to look at patterns of crashes within or outside of 300 feet of an intersection. This analysis revealed that crashes more than 300 feet from an intersection are somewhat overrepresented, when comparing KA crashes to BCO crashes. Additionally, while KA crashes with four or more vehicles had a higher degree of overrepresentation, there were only 46 of them compared to the 411 single-vehicle crashes. Likewise, while head-on collisions are overrepresented among severe crashes, there is likely overlap between these and single-vehicle or crashes more than 300 feet from an intersection or other design factors that may be addressed through countermeasures associated with other types of crashes, such as at intersections. Head-on collisions were not included among the focus types. **Table 5-12** provides examples of crash types in the above categories which are overrepresented among severe crashes. The project team utilized this data to inform selection of focus crash types for further analysis.

Table 5-12: Examples of Overrepresented Crash Types Among KA Crashes - Reported Crash Type

Crash Type/Description	Overall Crashes	Overall Percent	KA Crashes	KA Percent	BCO Crashes	BCO Percent
Head-On	2,170	2%	159	10%	2,011	2%
Not A Collision With Motor Vehicle*	7,958	7%	230	15%	7,728	7%
Scooter	126	<1%	30	2%	96	<1%
Pedestrian	504	<1%	136	9%	368	<1%
Bicycle	239	<1%	31	2%	208	<1%
Motorcycle	889	1%	196	13%	693	1%
More than 300 Ft from Intersection (Midblock)	10,581	10%	238	15%	10,343	10%
Single-Vehicle	9,941	9%	411	27%	9,530	9%

Data in this table does not sum up to the exact total number of crashes because this only presents the key takeaways from this analysis and combines reported crash attributes with analysis conducted by the project team.

*This category encompasses multiple other types of crashes, including those with pedestrians, cyclists, and fixed objects, among others

Cobb County Safety Action Plan KA Focus Crash Types

Through this analysis, using the attributes available in the crash data provided, and in consultation with CCDOT, the project team delineated five KA focus crash types to include bicycle/scooter involved, motorcycle involved, single-vehicle crashes, midblock locations (crashes more than 300 feet from an intersection), and pedestrian involved KA crashes. Altogether, there are 755 KA crashes which belong to a focus type – collectively constituting 49% of all reported KA crashes which occurred on a public roadway in Cobb County between 2018 and 2022. **Figure 5-7** shows the number of KA crashes within each focus type and the number of fatal and serious injury crashes associated with each of these focus types. Chapter 6 explores each of these KA focus crash types in further detail to understand roadway ownership, design, and land use characteristics where these KA crashes belonging to each focus type occurred within the County.

- **Motorcycle Involved** – Crashes reported as involving a motorcyclist where either the motorcyclist was the at-fault vehicle or the motorcyclist was struck by another vehicle. These crashes do include those involving only motorcycles as well as motorcycles striking fixed and non-fixed objects.
- **Bicycle/Scooter Involved** – Crashes involving a non-motorized or motorized bicycle or scooter
- **Pedestrian Involved** – Crashes involving vehicles striking pedestrians along or in a public roadway
- **Midblock Locations** – Any reported crashes, regardless of number of vehicles or individuals involved, occurring more than 300 feet from an intersection with a public street
- **Single-Vehicle Crashes** – These are crashes defined by crash reports as involving only one motor vehicle; however, due to reporting inconsistencies, these crashes sometimes included crashes involving one vehicle striking a pedestrian or bicycle rather than those involving fixed objects such as concrete barriers, medians, or utility poles

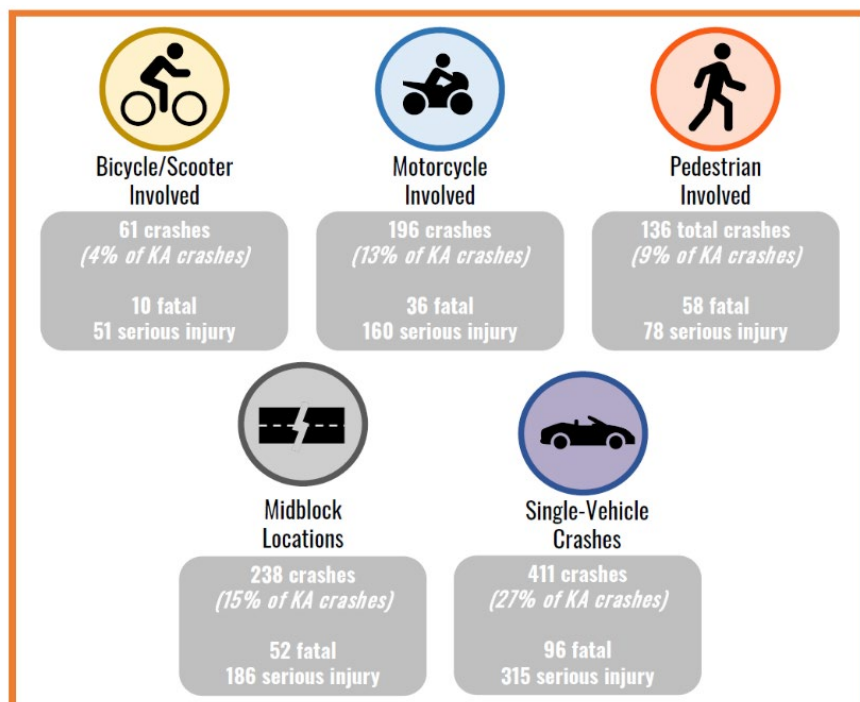


Figure 5-7: KA Focus Crash Types and Percent Composition

Chapter 6 – Focus Crash Types

Having identified what types of crashes are prevalent among severe crashes, this chapter provides further insight into the trends and patterns associated with each of the five KA focus crash types. Drawing from crash data attributes and contributing factors, this chapter discusses the correlation between facility types, roadway design characteristics, community context, and focus crash types.

As a starting point, the team sought to understand the types of facilities on which focus crash types are most likely to occur. This included identifying KA crashes among focus types first by road ownership (GDOT, CCDOT, or municipalities), then by functional classification (categories used by CCDOT), then by the number of lanes (either under four lanes and four lanes or above); and finally whether those facilities are within more urbanized/highly developed areas (for the purposes of this exercise, termed ‘higher-intensity land uses’ – see sidebar for additional information). The purpose of this exercise was to understand the relationship between facility type and KA crashes belonging to focus crash types – where are severe crashes most common. This helps identify priority facilities to target for safety improvements by focus crash type.

Depending on the KA focus crash type, additional factors were considered, such as the presence of bicycle and pedestrian facilities, pavement condition per CCDOT’s roadway inventory, the presence of a median, roadway curvature, proximity to transit service, and proximity to an intersection. These attributes and factors were utilized to construct “crash trees” for each KA focus crash type, looking at the percentage of KA crashes within that focus type that correspond to combinations of factors and variables. The intent of this exercise was to identify factors and characteristics common among focus crash types – in other words, to identify combinations of facility types and characteristics correlated with severe crashes.

A data-informed approach can help focus attention on the most pressing safety issues by identifying:

Focus crash types – crash types overrepresented among severe crashes

Priority facilities – where severe crashes are most common

Contributing factors – characteristics common among severe crashes

It is important to note that **correlation does not equal causation**; this exercise looks at the correlation between facility type, design characteristics, and crashes. Certain factors are more highly correlated to certain types of crashes and contribute to an increased risk of injury or death. For example, higher speeds increase the risk of serious injury or death to people walking. Roads with higher speed limits are highly correlated with severe pedestrian crashes. A high speed limit does not cause a pedestrian crash. Likewise, the presence of a curve in the road may be common among single-vehicle crashes, but the curve is an attribute of the road that may increase the likelihood of a crash, rather than the cause of the crash.

Roads with contributing factors do not necessarily have a KA crash history within the past five years; they represent locations where there may be an increased likelihood of certain types of crashes, based on characteristics and facility types common among severe crashes. They may indicate a potential increased risk of severe crashes. Understanding facility types and characteristics commonly associated with crashes that tend to have severe outcomes can help inform a proactive strategy to systematically address safety issues before they occur.

The following sections provide details on each of the five KA focus crash types:

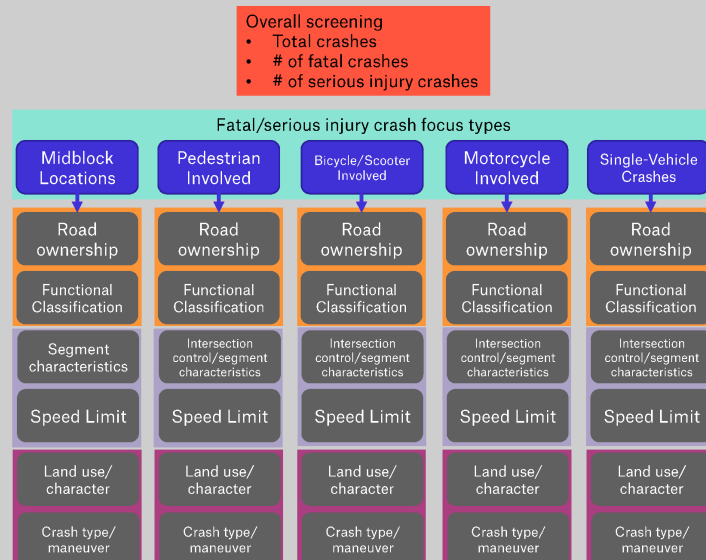
- **Overall Crash Trends:** This portion covers the number of fatalities and serious injuries resulting from focus crash types as well as patterns associated with crash type, road surface, weather, lighting, traffic flow and control, roadway crash site, and jurisdiction crash site.
- **Notable Crash Tree Patterns:** Each KA focus crash type has its own distinct crash tree that examines variables and contributing factors independently and in combination, drilling down from ownership to functional classification, number of lanes, and development patterns, along with other characteristics. This data was compiled using road inventory data courtesy of GDOT and CCDOT. Diagrams of the full crash trees are provided in **Appendix B**; however, highlights for each focus crash type are covered here.
- **Contributing Factors and Priority Facilities:** Notable patterns from each KA focus crash tree are mapped to corridors to identify locations where there may be an increased likelihood of each KA focus crash type based on characteristics and facility types common among severe crashes.
- **Relationship With Other KA Focus crash Types:** There is some overlap among focus crash types; they are not mutually exclusive. This is due, in part, to the fact that some focus crash types are based on vehicle type or user, while others are based on geographic location, as well as inconsistencies in how crashes are categorized in reports by law enforcement. For example, some single-vehicle crashes actually involved pedestrians and bicyclists, but were reported as “single-vehicle” crashes. The overlap is conveyed through a Venn-diagram showing how each focus type reaches into the others.

About Crash Trees

The Cobb County Safety Action Plan utilizes the “crash tree” presentation method to understand correlations between roadway crashes and geospatial traffic and roadway attributes. Crash trees are one way to facilitate examining systemic issues and characteristics that may be common across multiple facilities or locations.

Each of the KA focus type crash trees are structured in three tiers: the first level includes roadway ownership and functional classification; the second tier includes intersection or segment characteristics such as medians, posted speed limits, pavement condition, and the presence of bicycle or pedestrian facilities (depending on the focus type being analyzed); the third tier discerns land use intensity and outlines the reported crash type (i.e. head-on, rear end, etc.) along with other harmful events and contributing factors cited in crash reports.

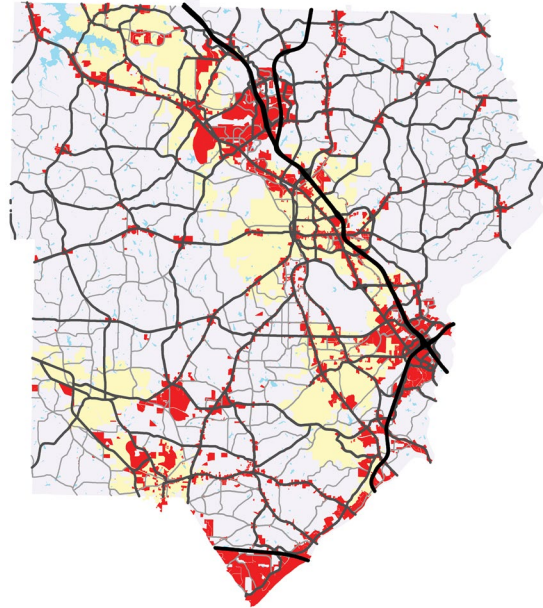
Cobb Safety Action Plan Proposed Crash Tree



About Higher-Intensity Land Uses

As there is a strong relationship between land use and transportation, characteristics of the built environment and development patterns have bearing on roadway safety. For example, closely spaced driveways in commercial areas may contribute to a higher incidence of turning movement conflicts. Likewise, urbanized areas with higher population densities and denser development patterns tend to correlate with pedestrian crashes. To help inform an understanding of the relationship between land use and areas where KA crashes are likely to occur, the team developed a composite dataset representing higher-intensity land uses across Cobb County, as a way of representing more urbanized areas consisting of:

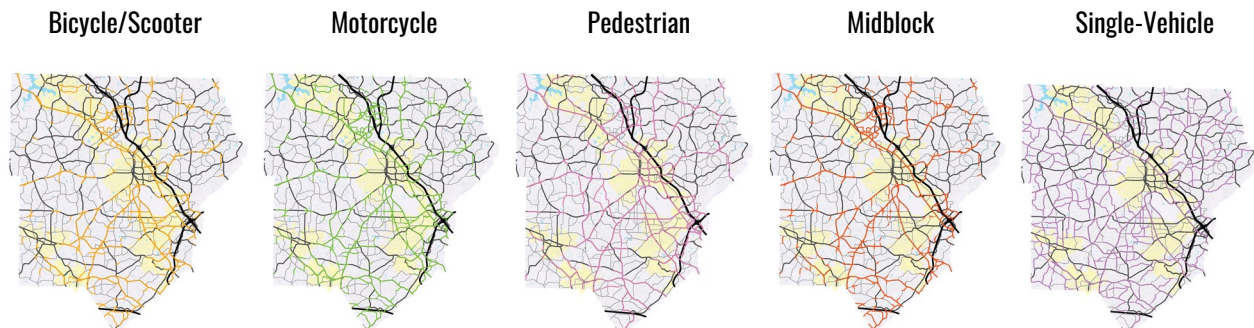
- General, neighborhood, and regional commercial
- Multi-family and high-density residential
- Public and office institutional
- Central business district
- Mixed-use
- Heavy industrial



KA crashes within 100 feet of these areas were considered 'adjacent to higher-intensity land uses.'

About Contributing Factors and Priority Facilities

Facility types of contextual factors correlated with each KA focus crash type were identified to understand where focus crash types are most likely to occur and what roadway design characteristics or other attributes are common along those types of roads. Locations highlighted in this analysis will not always have a history of crashes within the past five years. Rather, the intent is to identify and illustrate locations that exhibit characteristics correlated with prevailing KA focus crash types, including roadway ownership, functional class, design, and community context. This can help Cobb County move towards a more proactive approach to address safety issues by identifying target locations where focus crash types are most prevalent and working to mitigate contributing factors and characteristics correlated with those crashes.



Bicycle/Scooter Involved

Overall Crash Trends

Bicycle and scooter crashes were overrepresented among severe crashes based on comparisons to total and less severe non-interstate crashes reported between 2018 and 2022, as shown in **Table 6-1**.

Table 6-1: Bicycle/Scooter Total, KA, and BCO Crashes

KA Focus Crash Type	Overall Crashes	Overall Percent	KA Crashes	KA Percent	BCO Crashes	BCO Percent
Bicycle / Scooter Crashes	365	<.5%	61	4%	304	<.3%

Between 2018 and 2022, there were 61 KA crashes involving bicycles or scooters across Cobb County, as shown in **Figure 6-1**. Of these 61 crashes, 31 involved a bicyclist and 30 involved a scooter rider. The distribution of bicycle/scooter KA crashes by jurisdiction is as follows:

City of Acworth: three crashes

- Two along Lake Acworth Drive (SR 92)
- One fatal crash along Cobb Parkway (US 41/SR 3) near North Shores Road

City of Austell: two crashes

- One fatal crash along Austell Road (SR 5) at Perkerson Mill Road
- One serious injury crash along Veterans Memorial Highway (US 278/US 78/SR 8) west of Austell Road/Maxham Road (SR 5)

City of Kennesaw: five crashes

- Three serious injury crashes along Cherokee Street: near Shiloh Road, near Shirley Drive, and near Weeks Drive
- One serious injury crash along Cobb Parkway (US 41/SR 3) at Jiles Road
- One fatal crash along Barrett Parkway at Crater Lake Drive

City of Marietta: eight crashes

- Largely serious injury crashes along state routes including Cobb Parkway (US 41/SR 3), North Marietta Parkway (SR 120 Alt), Roswell Road (SR 120), and Powder Springs Street (SR 360) and one on Merritt Road at Lockheed Elementary School
- One fatal crash along North Marietta Parkway (SR 120 Alt) at the I-75 NB ramp

City of Powder Springs: no crashes

City of Smyrna: three crashes

- One fatal crash on South Cobb Drive (SR 280) near Concord Road
- Two on Windy Hill Road: one serious injury crash near Reed Street and one fatal crash near Village Parkway

Unincorporated Cobb County: 41 crashes

- Five along Cobb Parkway (US 41/SR 3) near the intersections of Jiles Road, North Marietta Parkway (SR 120 Alt), Polytechnic Lane, North Shores Road, and Cedarcrest Road
- Four crashes along East-West Connector between Floyd Road and Hicks Road
- Three crashes along Windy Hill Road at Atoka Drive, Reed Street, and Village Parkway

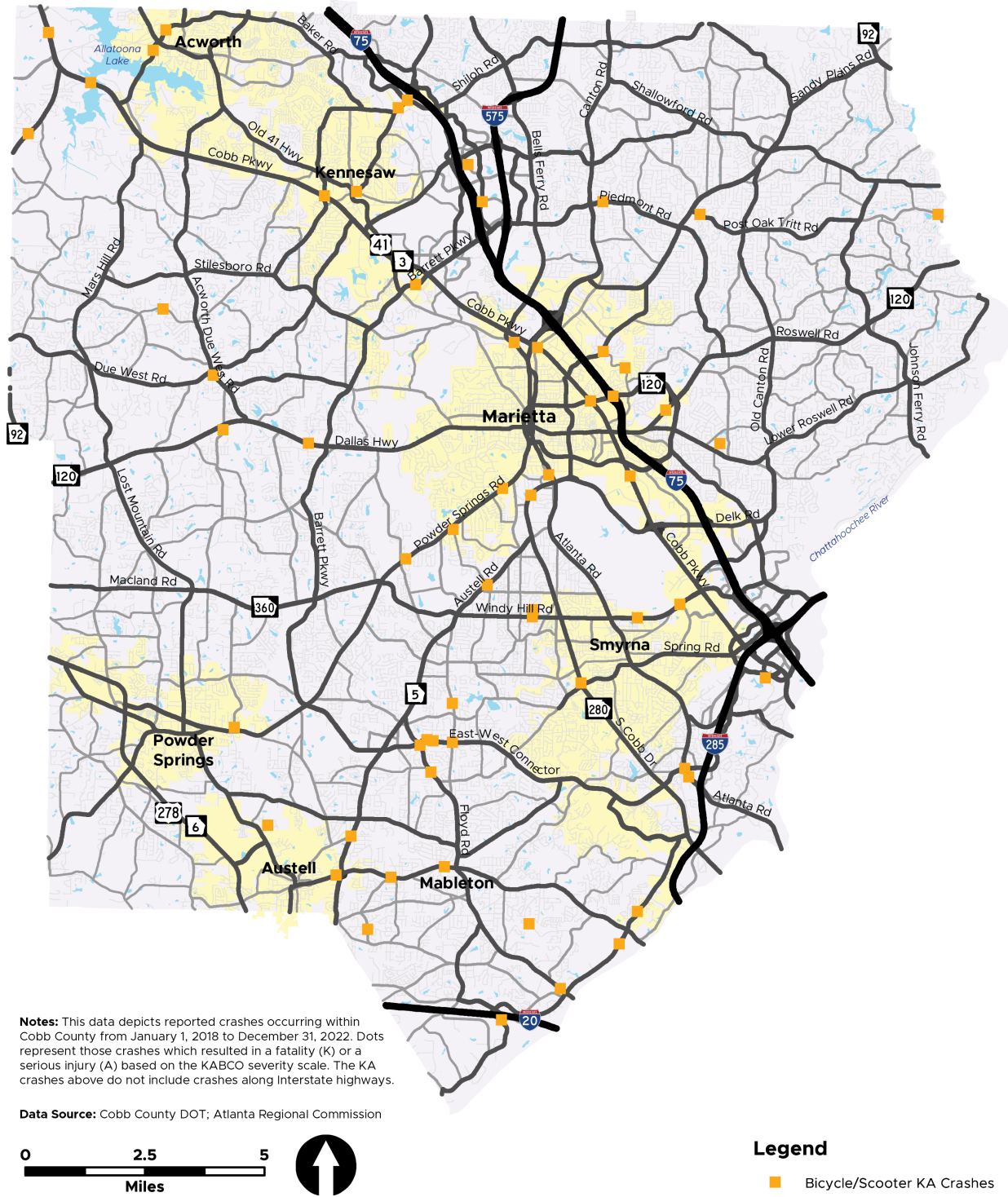


Figure 6-1: Bicycle/Scooter KA Crashes (2018-2022)

As shown in **Table 6-2**, fatalities and serious injuries were both at their highest in 2020 at five and 17, respectively, but otherwise remained relatively constant. Likewise, the number of bicycle/scooter KA crashes was highest in 2020 with 20 reported crashes.

The vast majority of bicycle/scooter crashes occurred in dry road surface conditions (79%) with the remaining 21% on wet road surfaces and five fatal crashes in each category. Similarly, just 15% of bicycle/scooter crashes took place during rainy or foggy weather, with the rest in cloudy or clear conditions. As noted above and shown in **Figure 6-2**, two-thirds of bicycle/scooter crashes took place in unincorporated Cobb County. Similarly, proximity to an intersection was split 60/40 between within 100 feet of an intersection or more than 100 feet from an intersection, as shown in **Figure 6-3**. Seven of the ten fatal bicycle/scooter crashes occurred more than 100 feet from an intersection.

Bicycle/Scooter KA Crashes by Jurisdiction

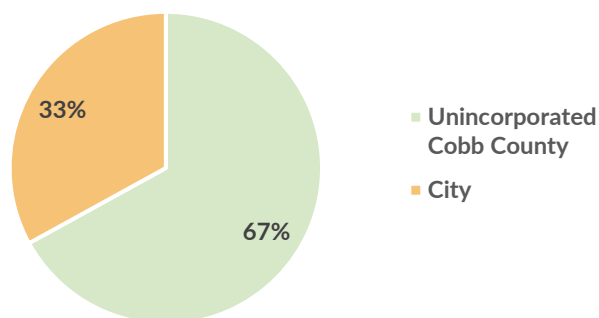


Figure 6-2: Bicycle/Scooter KA Crashes by Jurisdiction

Table 6-2: Bicycle/Scooter Fatalities and Injuries

Year	Fatal Crashes	# of Fatalities	# of Injuries in Fatal Crashes	Serious Injury Crashes	# Injuries in Serious Injury Crashes	Total Crashes
2018	0	0	0	9	10	9
2019	2	2	0	10	10	12
2020	5	5	0	15	17	20
2021	2	2	0	10	10	12
2022	1	1	0	7	7	8
Total	10	10	0	51	54	61
	16%			84%		100%

Bicycle/Scooter KA Crashes: Proximity to Intersections

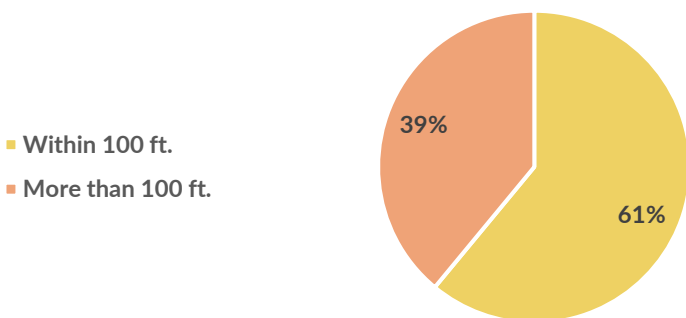


Figure 6-3: Bicycle/Scooter KA Crashes Proximity to Intersections

Crash Type

In terms of crash type, most bicycle/scooter crashes were reported as “other” or “not a collision with a motor vehicle,” while some were reported as right angle crashes and rear end crashes, as shown in Table 6-3.

Table 6-3: Bicycle/Scooter KA Crashes by Crash Type

Year	Right Angle	Head On	Rear End	Sideswipe	LTWT	Not A Collision With Motor Vehicle	Other	Total Crashes
2018	3	0	2	0	0	0	4	9
2019	1	0	2	0	0	2	7	12
2020	2	2	2	0	1	5	8	20
2021	0	1	2	1	2	1	5	12
2022	1	0	1	1	0	0	5	8
Total	7	3	9	2	3	8	29	61
	11%	5%	15%	3%	5%	13%	48%	100%

Lighting Condition

As shown in Table 6-4, lighting appears to be an important factor in severe bicycle/scooter crashes, as nearly half occurred in either dark lighted or dark unlighted conditions (49% total), including six of the ten fatal bicycle/scooter crashes – two in dark lighted conditions and four in dark unlighted conditions.

Table 6-4: Bicycle/Scooter KA Crashes by Lighting Condition

Year	Dawn	Daylight	Dusk	Dark-Lighted	Dark-Not Lighted	Total Crashes
2018	0	5	0	2	2	9
2019	0	7	1	3	1	12
2020	1	8	0	8	3	20
2021	0	3	0	4	5	12
2022	0	6	0	1	1	8
Total	1	29	1	18	12	61
	2%	47%	2%	29%	20%	100%

Traffic Flow and Traffic Control

Crash attributes include information about traffic flow, indicating whether the road is one-way or two-way and whether or not physical separation or a barrier is present. More than half of severe bicycle/scooter crashes occurred on two-way streets without physical separation, as shown in Table 6-5, including four of ten fatal crashes. In crash reports, responding officers are asked to indicate the type of traffic control, with options for lanes, traffic signals, railroad signals, warning signs, stop/yield signs, no passing zones, flashing lights, gates or other. Most severe bicycle/scooter crashes were reported as occurring where lanes were present (69%), however about 21% were reported as being at or near traffic signals, two of which were fatal.

Table 6-5: Bicycle/Scooter KA Crashes by Traffic Flow Pattern

Year	2-Way Without Physical Separation	2-Way With Physical Separation	2-Way With Physical Barrier	One-Way Street	Center Left-Turn Lane	Not Specified	Total Crashes
2018	3	0	0	0	0	6	9
2019	3	0	0	0	0	9	12
2020	13	4	3	0	0	0	20
2021	9	2	1	0	0	0	12
2022	5	2	1	0	0	0	8
Total	33	8	5	0	0	15	61
	54%	13%	8%	0%	0%	25%	100%

Notable Crash Tree Patterns

The crash tree for severe bicycle/scooter crashes follows the same basic structure as those used to assess other focus crash types, with three primary tiers (see page 65) using roadway and crash data attributes. On the third level, the team looked at land use, presence or absence of transit facilities, and the crash description (or type).

The team first looked at primary attributes of each level independently, assessing what percentage of severe bicycle/scooter crashes occurred on GDOT-owned roads, County-owned roads, and City-owned roads. Next, number of lanes, pavement condition, posted speed limit, presence of a median, presence of a bicycle facility, and presence of pedestrian facility were assessed. Finally, this exercise looked at proximity to higher-intensity land uses, presence of transit facilities, and the crash description.

This exercise revealed a few key patterns:

- Almost half (49%) of severe bicycle/scooter crashes occurred on County-owned roadways while 35% took place on GDOT-owned roads
- Nearly two-thirds (62%) of severe bicycle/scooter crashes occurred on roads classified as arterials
- More than half (58%) of severe bicycle/scooter crashes occurred on roads with four or more lanes and on roads with posted speed limits of 45 MPH or higher (56%)
- Approximately two-thirds (67%) of severe bicycle/scooter crashes occurred on roads without a median present
- A vast majority of severe bicycle/scooter crashes occurred on roads without bicycle facilities
- Slightly less than one-third of severe bicycle/scooter crashes occurred near a bus stop or shelter

Next, the team reviewed these attributes in combination with one another, broken down by road ownership, functional classification, number of lanes, and land use. High-level observations and patterns among crashes by road ownership are briefly described below.

GDOT-Owned Roads

GDOT-owned arterials with four or more lanes account for roughly one-quarter of all severe bicycle/scooter crashes. Roughly 23% were on roads with speed limits of 45 MPH or higher and roughly 21% were in close proximity to higher-intensity land uses. These were primarily along Cobb Parkway (US 41/SR 3), North Marietta Parkway (SR 120 Alt), South Cobb Drive (SR 280), and Veterans Memorial Highway (US 278/US 78/SR 8). Collectively, these resulted in two fatalities and 13 injuries. Seven were in close proximity to transit stops.

County-Owned Roads

Cobb County-owned arterials with four or more lanes in more densely developed areas comprise about 15% of severe bicycle/scooter crashes and resulted in two fatalities and seven injuries. These were mainly along Atlanta Road near Cumberland Parkway and I-285 and two crashes along East-West Connector between Floyd Road and Hicks Road near a shopping center anchored by Walmart.

County-owned arterials with fewer than four lanes tended to be less severe, resulting in seven injuries and were widely distributed across the County along roads such as Floyd Road, Allgood Road at Merritt Road, Church Street Extension at EMC Parkway, Due West Road at Kennesaw-Due West Road, Oakdale Road, and Post Oak Tritt Road.

County-owned collectors with fewer than four lanes in more densely developed areas accounted for two fatalities and four injuries. These occurred in locations such as Hadaway Road at Twin Oaks Drive (two crashes), Hicks Road at Hurt Road, Busbee Drive at Chastain Road, South Gordon Road at Creveis Road, and Post Oak Tritt Road at Roswell Oaks Parkway near the county line.

City-Owned Roads

City-owned roads were the site of 16% of severe bicycle/scooter crashes (ten crashes). Of these, four were on roads with four or more lanes, none with bicycle facilities present but all with sidewalk present, and split evenly between speed limits above and below 45 MPH.

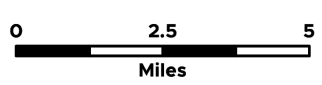
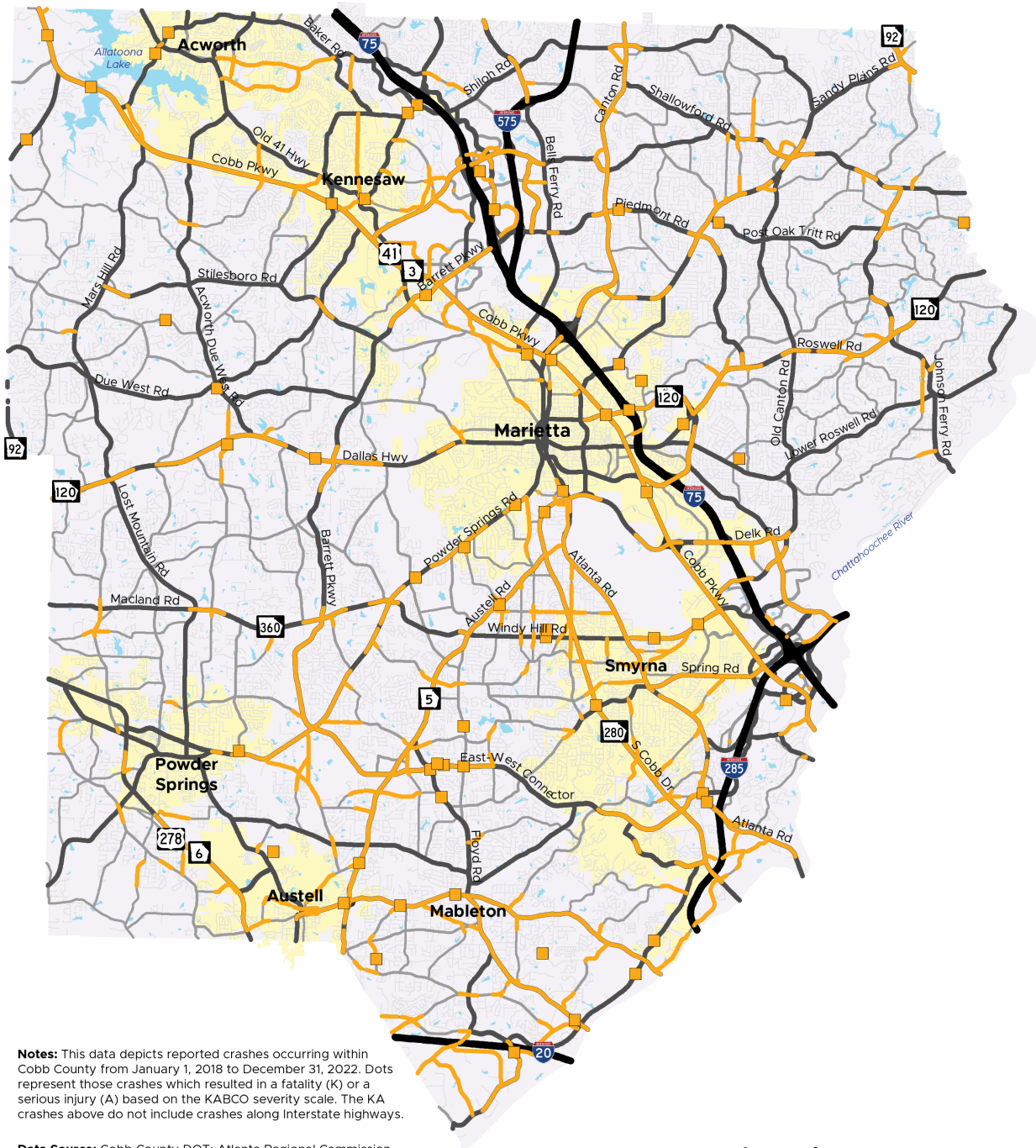
Contributing Factors and Priority Facilities

Notable crash tree patterns and observed characteristics point to factors correlated with severe bicycle/scooter crashes and priority facilities to target for safety improvements based on characteristics correlated with past incidences of these types of crashes. Priority facilities were identified at each level of road ownership: state, county, and city, to help jurisdictions target improvements within their respective road networks. They represent roads where there is a potential to improve safety through countermeasures and treatments that would help mitigate bicycle/scooter crashes.

Priority facilities for bicycle/scooter crashes are shown in **Figure 6-4** and include:

- GDOT-owned arterials with 4+ lanes, 45+ MPH speed limit
- County-owned arterials with 4+ lanes, 45+ MPH speed limit
- County-owned arterials with <4 lanes, 45+ MPH speed limit
- County-owned collectors with <4 lanes, 35-40 MPH speed limit
- City-owned arterials with 4+ lanes, 45+ MPH speed limit

Other characteristics common among severe bicycle/scooter crashes include proximity to higher-intensity land uses or more urbanized areas and a lack of dedicated bicycle facilities. Factors that may increase the likelihood of bicycle/scooter crashes include higher speeds, proximity to intersections, and lack of lighting.

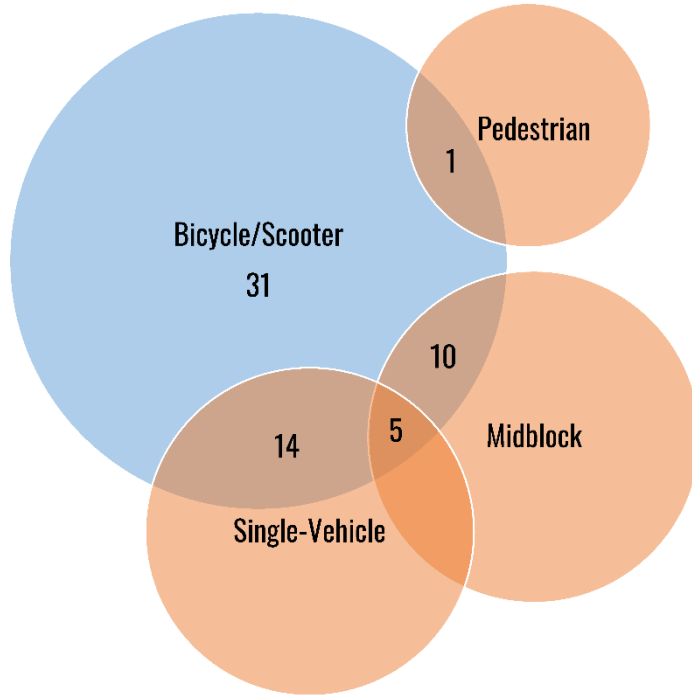


- Legend**
- Bicycle/Scooter KA Crashes
 - Bicycle/Scooter Priority Facilities

Figure 6-4: Priority Facilities for Bicycle/Scooter Crashes



Bicycle/Scooter Involved 61 KA Crashes



As noted there is some overlap between each of the focus crash types. Among severe bicycle/scooter crashes, there is overlap with single-vehicle, midblock, and pedestrian crashes based on crash reports submitted by law enforcement, as illustrated in **Figure 6-5**.

Figure 6-5: Relationship Between Bicycle/Scooter KA Crashes and Other Focus Crash Types

Motorcycle Involved

Overall Crash Trends

Motorcycle crashes were overrepresented among severe crashes based on comparisons to total and less severe non-interstate crashes reported between 2018 and 2022, as shown in **Table 6-6**.

Table 6-6: Motorcycle Total, KA, and BCO Crashes

KA Focus Crash Type	Overall Crashes	Overall Percent	KA Crashes	KA Percent	BCO Crashes	BCO Percent
Motorcycle Crashes	889	<1%	196	12.7%	693	<.7%

Between 2018 and 2022, nearly 900 serious injury and fatal motorcycle crashes were reported on non-interstate roads across Cobb County, as shown in **Figure 6-7**. A summary of severe motorcycle crashes by jurisdiction is provided below.

City of Acworth: nine crashes, none fatal

- Three total on Cobb Parkway (US 41/SR 3) near Blue Spring Road, Creek Chase, and Acworth Summit Boulevard
- Two on Lake Acworth Drive (SR 92) near Lake Acworth Lane and Cobb Parkway (US 41/SR 3)

City of Austell: three crashes

- One fatal crash on Veterans Memorial Highway (US 278/US 78/SR 8) at Harris Street
- The other two were on Powder Springs Road and Tate Drive

City of Kennesaw: six crashes

- Two fatal motorcycle crashes at Cobb Parkway (US 41/SR 3) at Vaughn Road and one on Jiles Road at English Oaks Way
- Serious injury crashes on Wade Green Road at Shiloh Road, one on Cherokee Street at Jiles Road, one on Jiles Road at Jiles Court, and one on Cobb Parkway (US 41/SR 3) at Watts Drive.

City of Marietta: 24 crashes

- Two fatal motorcycle crashes on Atlanta Street near Old Clay Street and on Fairground Street near Roswell Street
- Serious injury crashes were scattered throughout the City: six along Cobb Parkway (US 41/SR 3), four on Delk Road, three on Roswell Road, and two on North Marietta Parkway (SR 120 Alt), among others
- The vast majority of these (21 of 24) were within 100 feet of an intersection

City of Powder Springs: nine crashes, none fatal

- Two each on C.H. James Parkway (US 278/SR 6) (both at Hill Road), New Macland Road, Richard D. Sailors Parkway

City of Smyrna: seven crashes, none fatal

- Three along Cobb Parkway (US 41/SR 3) at Lake Park Drive, Windy Ridge Parkway, and Calibre Brooke Way

Unincorporated Cobb County: 138 crashes

- Fourteen crashes along Austell Road/Maxham Road (SR 5), eight on Cobb Parkway (US 41/SR 3), seven along Veterans Memorial Highway (US 278/US 78/SR 8), six on Barrett Parkway, and four each on Dallas Highway (SR 120), Macland Road (SR 360), Roswell Road (SR 120), and South Cobb Drive (SR 280)

As noted, there is overlap between focus crash types. Severe motorcycle crashes overlap with midblock crashes (more than 300 feet from an intersection) and with single-vehicle crashes, as well as with pedestrian crashes (which may be due in part to discrepancies in reporting practices by law enforcement). **Figure 6-6** shows the overlaps in the form of a Venn diagram.

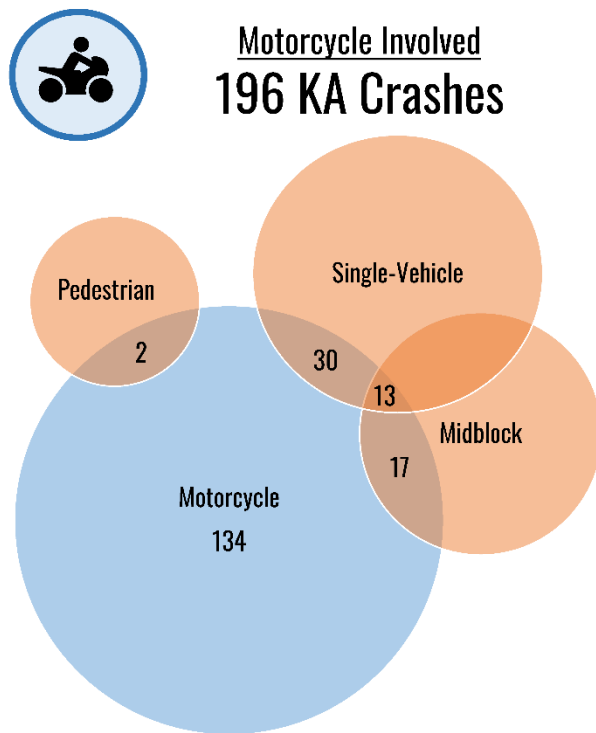


Figure 6-6: Relationship Between Motorcycle KA Crashes and Other Focus Types

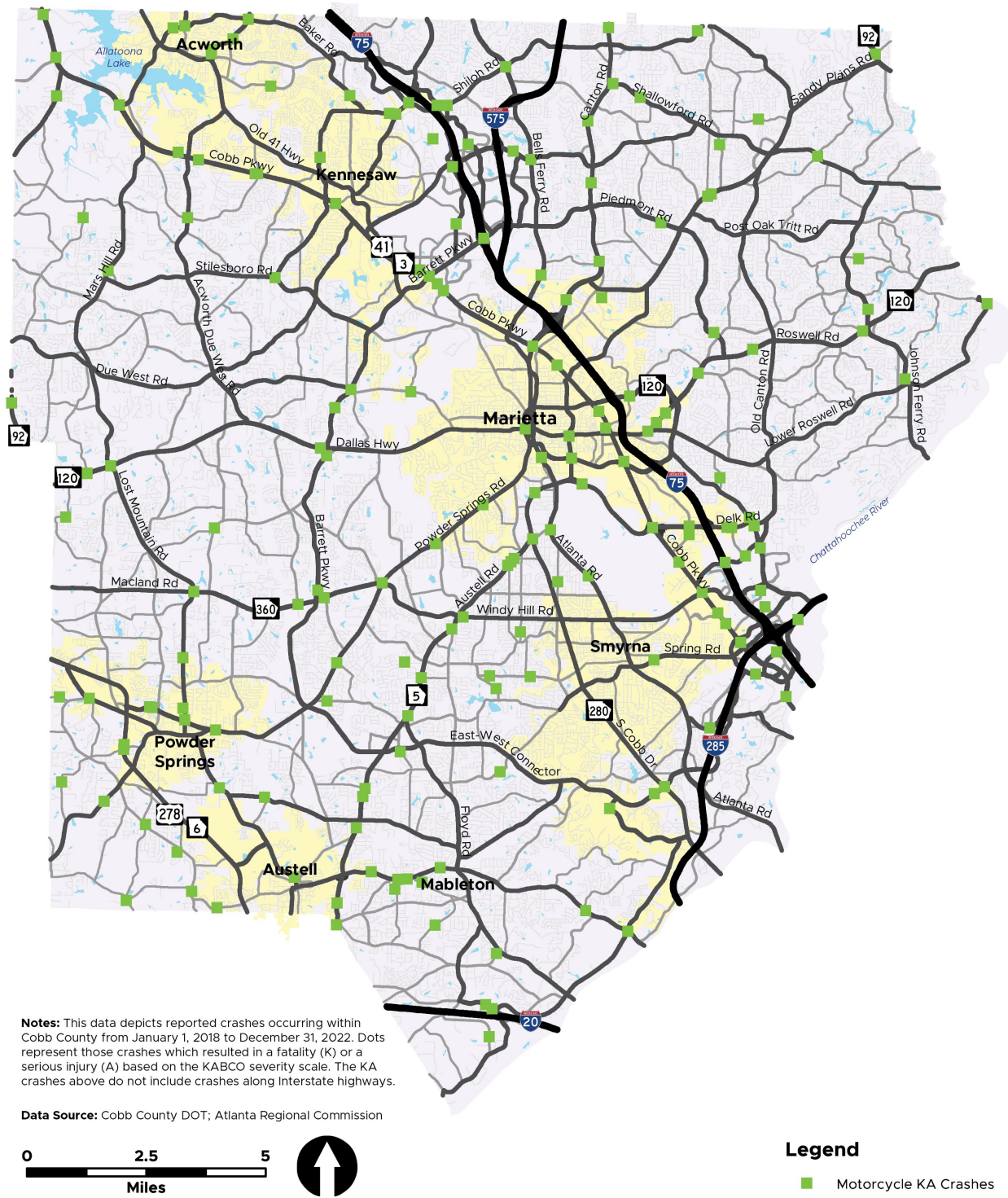


Figure 6-7: Motorcycle KA Crashes (2018-2022)

As shown in **Table 6-7**, the highest number of fatalities in severe motorcycle crashes occurred in 2021 and 2022 saw the highest number of serious injuries. Overall, the number of severe motorcycle crashes increased from 2018 (22) to 2022 (48). The vast majority of severe motorcycle crashes occurred on dry road surfaces (97%). Two fatal crashes occurred on dry surfaces and two occurred on wet surfaces. Likewise, the majority of severe motorcycle crashes occurred in clear weather conditions (75%), with none reported in rain, snow, or sleet. Of the 36 fatal motorcycle crashes, 28 occurred in clear conditions and eight were in cloudy conditions.

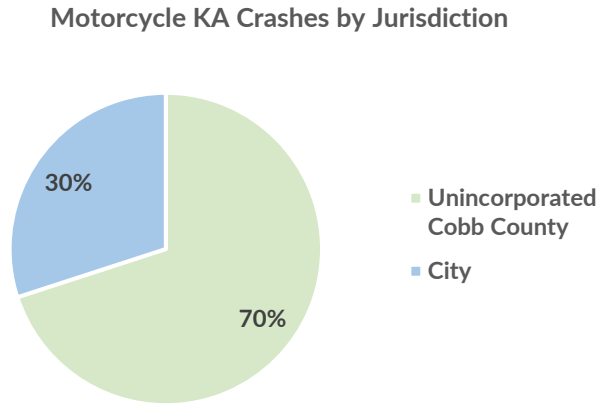


Figure 6-8: Motorcycle KA Crashes by Jurisdiction

As noted above and shown in **Figure 6-8**, more than two-thirds of severe motorcycle crashes were reported in unincorporated Cobb County, as were 31 of the 36 fatal motorcycle crashes. Also notable is that motorcycle crashes in unincorporated Cobb County increased from 14 in 2018 to 38 in 2022. Most severe motorcycle crashes occurred within 100 feet of an intersection (72%) as shown in **Figure 6-9**, accounting for 25 of the 36 fatal motorcycle crashes during this period.

Table 6-7: Motorcycle Fatalities and Injuries

Year	Fatal Crashes	# of Fatalities	# of Injuries in Fatal Crashes	Serious Injury Crashes	# Injuries in Serious Injury Crashes	Total Crashes
2018	6	6	2	16	18	22
2019	7	7	5	35	43	42
2020	7	7	0	30	36	37
2021	9	9	3	38	47	47
2022	7	7	1	41	55	48
Total	36	36	11	160	199	196
	18%			82%		100%

Motorcycle KA Crashes: Proximity to Intersections

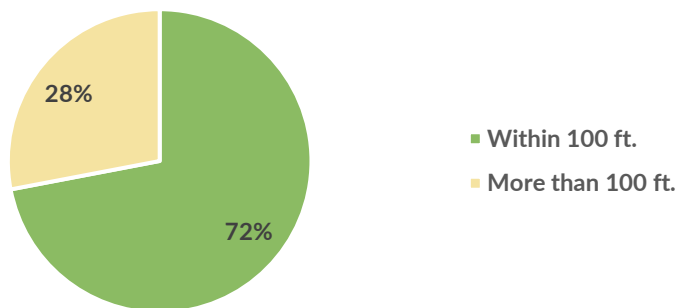


Figure 6-9: Motorcycle KA Crashes – Proximity to Intersections

Crash Type

Roughly one-third of motorcycle crashes were reported as right angle crashes, while one quarter were collisions between left-turning and through moving vehicles (LTWT), as shown in **Table 6-8**.

Table 6-8: Motorcycle KA Crashes by Crash Type

Year	Right Angle	Head On	Rear End	Sideswipe	LTWT	Not A Collision With Motor Vehicle	Other	Total Crashes
2018	9	2	2	1	3	1	4	22
2019	11	0	6	2	11	7	5	42
2020	12	2	1	0	12	5	5	37
2021	16	1	4	7	10	5	4	47
2022	16	0	2	5	14	8	3	48
Total	64	5	15	15	50	26	21	196
	33%	2%	8%	8%	25%	13%	11%	100%

Lighting Condition

Most severe motorcycle crashes occurred during daylight conditions, including most of the fatal motorcycle crashes (25 of 36), as shown in **Table 6-9**. Ten fatal motorcycle crashes were in dark conditions – four in lighted areas and six in unlighted areas.

Table 6-9: Motorcycle KA Crashes by Lighting Condition

Year	Dawn	Daylight	Dusk	Dark-Lighted	Dark-Not Lighted	Total Crashes
2018	0	15	1	2	4	22
2019	0	28	0	8	6	42
2020	0	27	1	5	4	37
2021	1	27	2	9	8	47
2022	0	34	1	8	5	48
Total	1	131	5	32	27	196
	<1%	67%	3%	16%	14%	100%

Traffic Flow and Traffic Control

Nearly half of all severe motorcycle crashes took place along two-way streets without physical separation, as shown in **Table 6-10**. Of these, 13 of these (15%) were fatal. A slightly higher proportion of severe motorcycle crashes on two-way streets with physical separation were fatal (16% or ten of 61 crashes). One-third of severe motorcycle crashes were reported as being near a traffic signal (based on traffic control noted in crash reports). Crashes listed as being near a traffic signal account for 17 of the 36 fatal motorcycle crashes (47%) during this time period. Four fatal crashes took place at locations with stop or yield signs present.

Table 6-10: Motorcycle KA Crashes by Traffic Flow Pattern

Year	2-Way Without Physical Separation	2-Way With Physical Separation	2-Way With Physical Barrier	One-Way Street	Center Left-Turn Lane	Not Specified	Total Crashes
2018	5	3	0	0	0	14	22
2019	7	6	0	0	0	29	42
2020	24	11	2	0	0	0	37
2021	28	11	5	0	1	2	47
2022	22	17	6	1	2	0	48
Total	86	48	13	1	3	45	196
	44%	24%	7%	1%	2%	23%	100%

Notable Crash Tree Patterns

The crash tree for severe motorcycle crashes follows the same basic structure as those used to assess other focus crash types, with three primary tiers (see page 65) using roadway and crash data attributes. Where the attributes investigated differ is on the third tier: for motorcycle crashes the team looked at land use, proximity to intersections, crash description (type), and crashes involving curve negotiation or turning maneuvers. The assessment of primary attributes in each tier revealed a few notable patterns:

- Severe motorcycle crashes were split evenly between GDOT-owned roads (42%) and County-owned roads (44%)
- Most severe motorcycle crashes occurred on arterials 57% or at the intersection of arterials and major or minor collectors (42%)
- More than two-thirds (68%) of severe motorcycle crashes happened along roads with four or more lanes and along roads with posted speed limits of 45 MPH or higher (67%)
- While 72% of severe motorcycle crashes took place within 100 feet of an intersection, just slightly more than half of them involved a driver making a turn (52%)

Like with bicycle/scooter crashes, the review of combinations of factors and attributes began by first grouping crashes by road ownership, then looking at functional classification, number of lanes, and land use, followed by other factors and attributes. High-level observations and patterns among crashes by road ownership are briefly described below.

GDOT-Owned Roads

GDOT-owned arterials with four or more lanes account for roughly one-quarter of all severe motorcycle crashes (47 crashes). Almost all of these were in close proximity to areas with higher-intensity land uses and most were on roads with posted speed limit of 45 MPH or higher. Collectively, these resulted in seven fatalities and 53 injuries. The two GDOT-owned arterials with most severe motorcycle crashes include Cobb Parkway (US 41/SR 3) and Veterans Memorial Highway (US 278/US 278/SR 8).

Roughly 16% of severe motorcycle crashes were in locations where GDOT arterials intersect collectors. These resulted in eight fatalities and 31 injuries. All were along roads with posted speed limit of 45 MPH or higher and most have a median present. These were primarily on Austell Road (SR 5) southwest of Marietta or on Cobb Parkway (US 41/SR 3) within Kennesaw. Intersections where two motorcycle crashes occurred and were classified within this branch of the motorcycle KA crash tree include Austell Road (SR 5) at Pair Road, Alabama Road (SR 92) at Old Mountain Park Road, North Marietta Parkway (SR 120 Alt) at Wallace Road, and Roswell Road (SR 120) at East Lake Parkway.

County-Owned Roads

Cobb County-owned arterials with four or more lanes in more densely developed areas comprise about 14% of severe motorcycle crashes. These resulted in eight fatalities and 27 injuries. Many of these occurred along county arterials within one mile of an interstate highway. These include: four on Canton Road and two each on Barrett Lakes Boulevard, Bells Ferry Road, Chastain Road/New Chastain Road, Johnson Ferry Road, Maxham Road, and Riverside Parkway.

A slightly lower percentage of severe motorcycle crashes occurred on County-owned collectors with fewer than four lanes (26 crashes or 13% of all KA motorcycle crashes). These resulted in just three fatalities, but 29 injuries. All but one of these were along roads with speed limits under 45 MPH and all were along roads with a median present.

City-Owned Roads

City-owned roads were the site of 14% of severe motorcycle crashes (27 crashes); most of these (63%) were on arterials with fewer than four lanes.

Contributing Factors and Priority Facilities

Notable crash patterns and observed characteristics point to factors correlated with severe motorcycle crashes and priority facilities to target for safety improvements based on characteristics correlated with past incidences of these types of crashes. Like for bicycle/scooter crashes, priority facilities for motorcycle crashes were identified at each level of road ownership: state, county, and city, to help jurisdictions target improvements within their respective road networks. They represent locations where there is a potential to improve safety through countermeasures and treatments to mitigate motorcycle crashes.

Priority facilities for severe motorcycle crashes are shown in **Figure 6-10** and include:

- GDOT-owned arterials with 4+ lanes, 45+ MPH speed limit
- County-owned arterials with 4+ lanes, 45+ MPH speed limit
- County-owned collectors with <4 lanes, <45 MPH speed limit
- City-owned arterials with <4 lanes, 45+ MPH speed limit

Other characteristics common among severe motorcycle crashes include proximity to higher-intensity land uses and proximity to intersections. Factors that may increase the likelihood of motorcycle crashes include higher speeds, proximity to intersections, or turning movements.

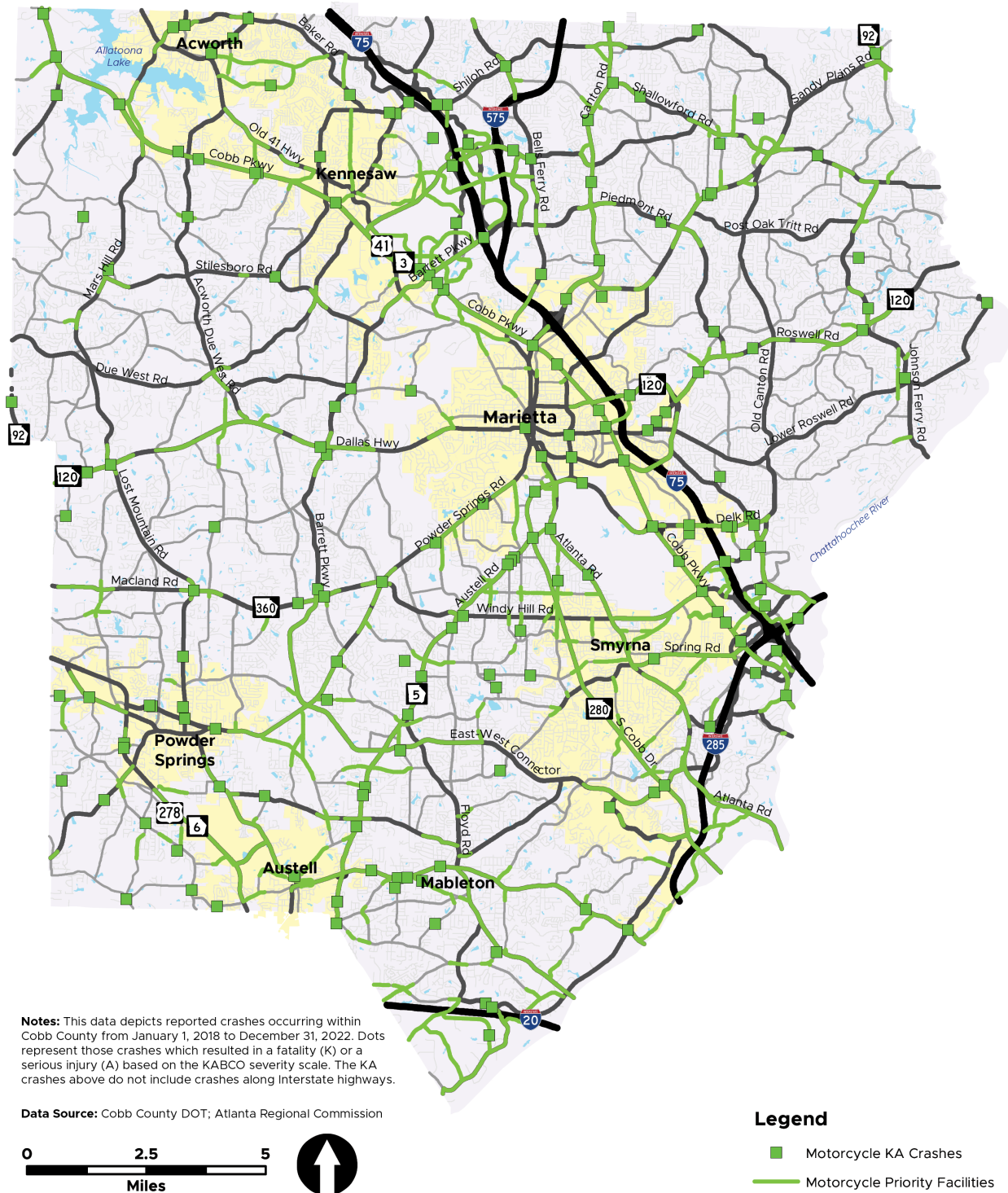


Figure 6-10: Priority Facilities for Motorcycle Crashes

Pedestrian Involved

Overall Crash Trends

Pedestrian crashes were overrepresented among severe non-interstate crashes in Cobb County from 2018-2022 based on comparisons to total and less severe crashes, as shown in **Table 6-11**.

Table 6-11: Pedestrian Total, KA, and BCO Crashes

KA Focus Crash Type	Overall Crashes	Overall Percent	KA Crashes	KA Percent	BCO Crashes	BCO Percent
Pedestrian Crashes	504	<.5%	136	9%	368	<.4%

Between 2018 and 2022, there were 136 KA crashes involving pedestrians across Cobb County, as shown in **Figure 6-12**. Distribution of severe pedestrian crashes by jurisdiction is briefly summarized below:

City of Acworth: six crashes

- Three fatal and one serious injury crash on Cobb Parkway (US 41/SR 3); fatal crashes near Acworth Summit Boulevard, near North Shores Road, and near Jim Owens Road
- Two others on Lake Acworth Drive (SR 92) and Hickory Grove Road

City of Austell: two crashes

- One fatal crash on Powder Springs Road near Humphries Hill Road
- One serious injury crash on Rolly Street

City of Kennesaw: six crashes

- Two fatal pedestrian crashes on Cobb Parkway (US 41/SR 3) – one at Keene Street and one at Pine Mountain Road
- One serious injury crash at each of the following: Cobb Parkway (US 41/SR 3) at McCollum Parkway, Barrett Parkway at Ridenour Boulevard, Pine Mountain Court at Cobb Parkway (US 41/SR 3), and Kennesaw Due West Road at Westover Way

City of Marietta: 22 crashes

- Nine fatal pedestrian crashes at various locations
 - Powder Springs Street (SR 360) near Chestnut Hill Road
 - South Marietta Parkway (SR 120) near Fairground Street, near Aviation Road, and near Victory Drive
 - Cobb Parkway (US 41/SR 3) at Atlantic Avenue, and near Gresham Road
 - Powder Springs Street (SR 360) near Chestnut Hill Road
 - Franklin Gateway near Northwest Parkway
 - Wright Street at Trammell Street in June
- Serious injury crashes were clustered on Powder Springs Streets (near or at Chestnut Hill Road); South Marietta Parkway (SR 120) near South Fairground Street, Lockheed Avenue, and Lower Roswell Road; and Delk Road near Northchase Parkway and I-75 NB

City of Powder Springs: two crashes

- One fatal crash on Powder Springs Road at Flint Hill Road
- One fatal crash on C.H. James Parkway (US 278/SR 6) at Oglesby Road (which resulted in two fatalities)

City of Smyrna: eight crashes

- Two fatal crashes on South Cobb Drive (SR 280) near Highlands Parkway and at Ask Kay Drive
- Six serious injury crashes scattered throughout the City including on Atlanta Road, Cobb Parkway (US 41/SR 3), Cumberland Boulevard, Pat Mell Road, South Park Place, and Spring Road

Unincorporated Cobb County: 90 crashes

- Thirty eight (38) fatal crashes and 52 serious injury crashes
- Clusters of KA pedestrian crashes:
 - Thirteen along Austell Road/Maxham Road (SR 5), including three at or near Pat Mell Road and two at Osborne Road
 - Eight on South Cobb Drive (SR 280)
 - Four on Canton Road, including three at or near Jamerson Road
 - Four each on Powder Springs Road (SR 360) and Riverside Parkway
 - Three each on Piedmont Road and Terrell Mill Road

As discussed elsewhere, there is overlap between focus crash types. In part this may be due to inconsistencies in the way responding officers classify or categorize crashes (e.g., sometimes pedestrian crashes are recorded as single-vehicle crashes). The overlap is also attributable to the fact that midblock crashes are based on geographic site and therefore could involve any type of user or vehicle. As shown in **Figure 6-11**, more than half of pedestrian crashes were also classified as single-vehicle crashes.

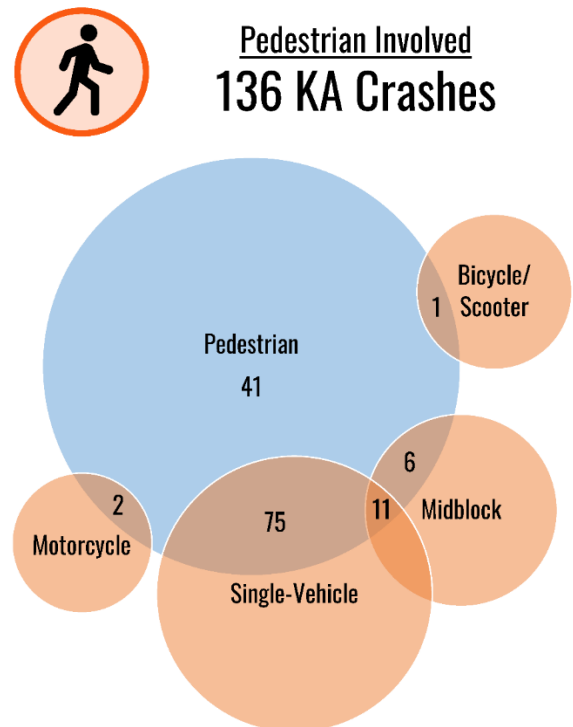


Figure 6-11: Relationship Between Pedestrian KA Crashes and Other Focus Types

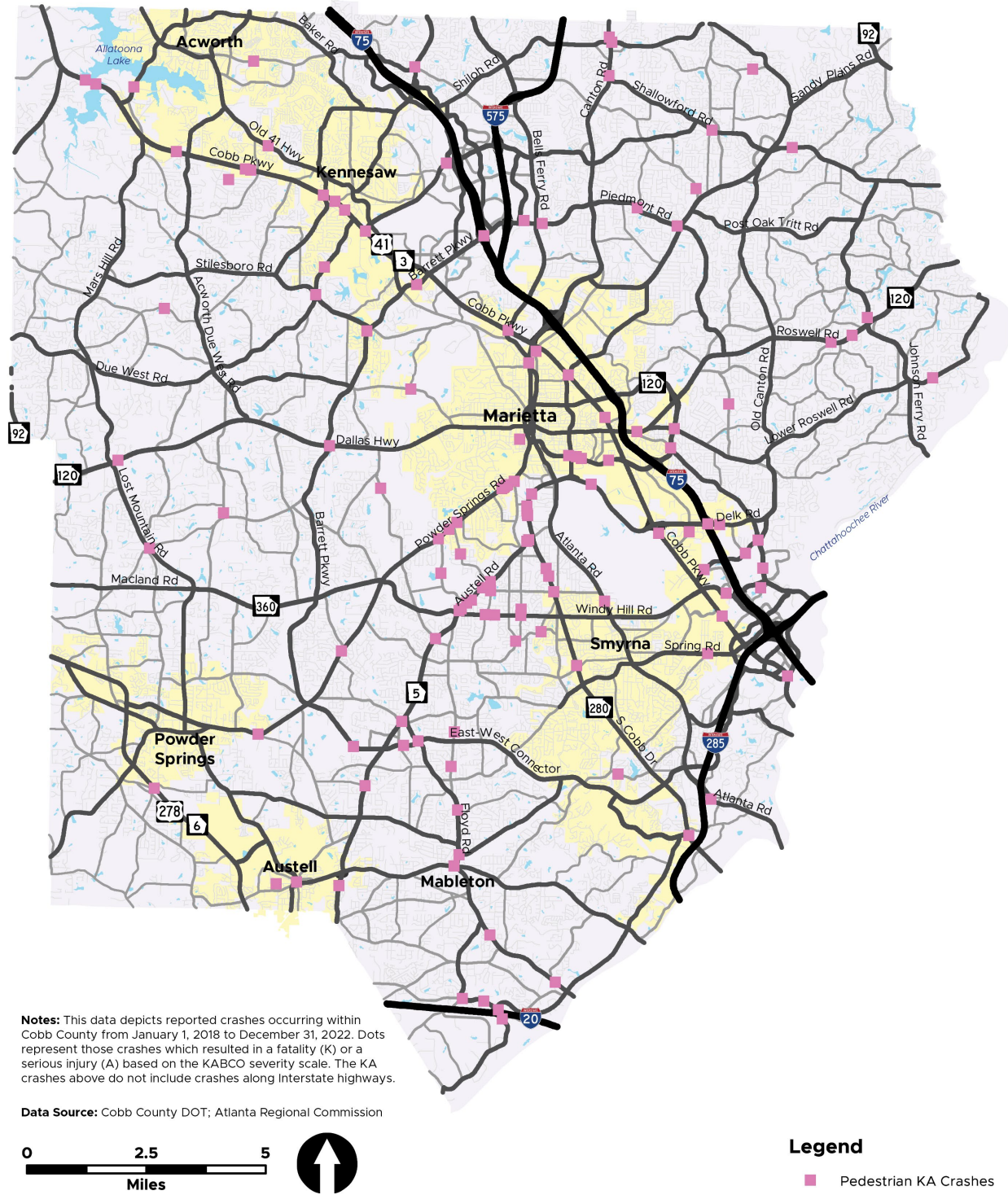


Figure 6-12: Pedestrian KA Crashes (2018-2022)

The majority of severe pedestrian crashes occurred on dry road surfaces (75%) which also accounts for most of the fatal pedestrian crashes (43 of 58). The remaining fatal pedestrian crashes were on wet or “other” surfaces. Interestingly, 50% of severe pedestrian crashes were reported in clear weather conditions, while 23% were during cloudy conditions and 16% were in rainy conditions. Specifically, nine fatal pedestrian crashes occurred in rainy conditions.

Pedestrian KA Crashes by Jurisdiction

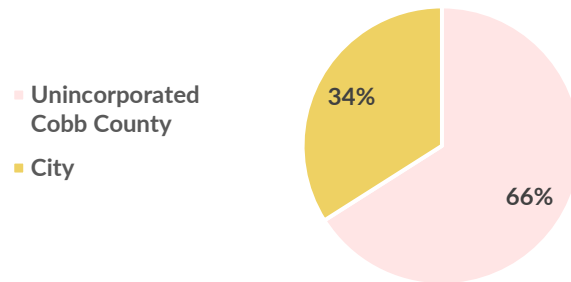


Figure 6-13: Pedestrian KA Crashes by Jurisdiction

As shown in **Table 6-12**, fatalities and injuries were both at their highest in 2019 at 17 and 25, respectively. There was a significant increase in severe pedestrian crashes between 2018 and 2019 which stayed high in 2020 and decreased the next two years.

As noted previously and shown in **Figure 6-13** two-thirds of severe pedestrian crashes took place in unincorporated Cobb County with one-third in cities. Severe pedestrian crashes were evenly split between within or more than 100 feet from an intersection, as shown in **Figure 6-14**, although slightly more fatal crashes were more than 100 feet from an intersection (55% vs. 45% within 100 feet of an intersection).

Table 6-12: Pedestrian Fatalities and Injuries

Year	Fatal Crashes	# of Fatalities	# of Injuries in Fatal Crashes	Serious Injury Crashes	# Injuries in Serious Injury Crashes	Total Crashes
2018	8	8	1	13	15	21
2019	17	17	1	21	24	38
2020	15	15	4	15	17	30
2021	7	7	0	17	18	24
2022	11	12	1	12	12	23
Total	58	59	7	78	86	136
	43%			57%		100%

Pedestrian KA Crashes: Proximity to Intersections

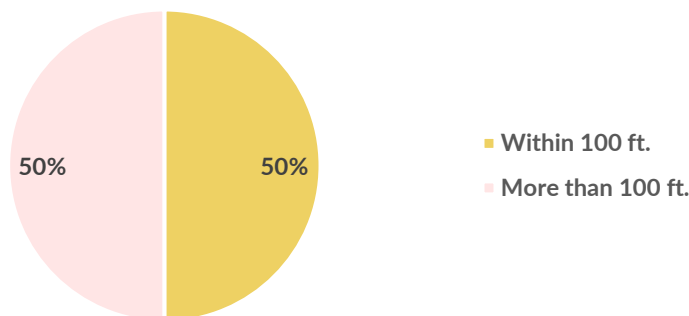


Figure 6-14: Bicycle/Scooter KA Crashes Proximity to Intersections

Lighting Condition

Lighting appears to play a significant role in severe pedestrian crashes – just 25% of KA pedestrian crashes occurred during daylight, as shown in **Table 6-13**. Of the 58 total fatal pedestrian crashes, more than half of them (58%) happened under dark unlighted conditions and nearly one-third (31%) occurred in dark, lighted conditions.

Table 6-13: Bicycle/Scooter KA Crashes by Lighting Condition

Year	Dawn	Daylight	Dusk	Dark-Lighted	Dark – Not Lighted	Not Specified	Total Crashes
2018	0	6	0	7	8	0	21
2019	0	9	3	9	17	0	38
2020	0	8	0	11	11	0	30
2021	0	6	1	3	14	0	24
2022	2	5	0	5	11	0	23
Total	2	34	4	35	61	0	136
	1%	25%	3%	26%	45%	0%	100%

Traffic Flow and Traffic Control

Reporting on traffic flow and traffic control among pedestrian crashes is somewhat inconsistent. Crash reports indicated 34% of severe pedestrian crashes occurred along two-way streets without physical separation including 22 crashes that were fatal. Thirty severe pedestrian crashes were along a two-way with either a physical separation or a physical barrier, including 14 fatal crashes. Notably, although just one percent of severe pedestrian crashes were along a two-way center left-turn lane, this did include two fatal crashes. Notably, traffic control was not specified for 43% of severe pedestrian crashes, as shown in **Table 6-14**.

The form of traffic control was reported more consistently. Most severe pedestrian crashes were reported as being along traffic lanes; however, 18% were reported near a traffic signal and 4% near gates. Three were reported near a stop or yield sign or where no traffic control was present. Notably, of the 58 fatal pedestrian crashes, just four were reported as being at or near a traffic signal.

Table 6-14: Bicycle/Scooter KA Crashes by Traffic Flow Pattern

Year	2-Way Without Physical Separation	2-Way With Physical Separation	2-Way With Physical Barrier	One-Way Street	Center Left-Turn Lane	Not Specified	Total Crashes
2018	1	1	0	0	0	19	21
2019	6	0	0	0	0	32	38
2020	15	4	4	0	1	6	30
2021	13	7	2	0	0	2	24
2022	11	8	4	0	0	0	23
Total	46	20	10	0	1	59	136
	34%	15%	7%	0%	1%	43%	100%

Notable Crash Tree Patterns

The crash tree for severe pedestrian crashes follows the same basic structure as those used to assess other focus crash types, with three primary tiers (see page 65) using roadway and crash data attributes. The main difference between severe pedestrian crashes and some of the other focus types is that the team also looked at the presence of pedestrian and transit facilities for this crash type.

As with other focus crash types, the team first looked at primary attributes of each level independently, assessing what percentage of severe pedestrian crashes occurred on GDOT-owned roads, County-owned roads, and City-owned roads. Next, number of lanes, pavement condition, posted speed limit, presence of a median, and presence of a pedestrian facility were assessed. Drilling down, the third tier examined proximity to higher-intensity land uses, presence of transit facilities, and the crash description. A few observations from the assessment of each category on its own are provided below:

- Nearly half (46%) of severe pedestrian crashes occurred on GDOT-owned roadways and most of the other half (43%) were on County-owned roads
- Approximately two-thirds (68%) occurred on arterials, compared to just 15% each on major or minor collectors or intersections between arterials and collectors
- A substantial majority of severe pedestrian crashes (77%) were on roads with four or more lanes
- Nearly two-thirds (60%) were on roads without medians present
- The vast majority (94%) of severe pedestrian crashes occurred on roads with a posted speed limit of 45 MPH or higher
- A majority of pedestrian KA crashes (90%) occurred where pedestrian facilities such as sidewalks or sidepaths existed – this could be partly due to induced demand*
- Roughly half of all severe pedestrian crashes were near a bus stop or shelter

Combinations and permutations of attributes were then reviewed, broken down first by road ownership, along with functional classification, number of lanes, and land use in combination with factors such as the presence of a median, pavement condition, presence of pedestrian facilities, and transit service. High-level observations and patterns among crashes by road ownership are briefly described below.

GDOT-Owned Roads

More than one-third of severe pedestrian crashes (37%) occurred along GDOT-owned arterials with four or more lanes, most of which were in higher-intensity land use areas, and all of which have a posted speed limit of 45 MPH or higher. Crashes on these facilities resulted in 27 fatalities and 24 injuries. Notable corridors where these crashes occurred include: Cobb Parkway (US 41/SR 3) – 12 crashes; South Cobb Drive (SR 280) – eight crashes; Powder Springs Road (SR 360) – eight crashes; and Austell Road (SR 5) – six crashes.

County-Owned Roads

Nearly one-quarter of severe pedestrian crashes (22%) were along Cobb County-owned arterials with four or more lanes, and most of these were in higher-intensity land use areas. Of those in a high-intensity land use area, all had posted speed limits of 45 MPH or higher, primarily outside of incorporated cities. Collectively these resulted in nine fatalities and 20 injuries. Key locations include: Canton Road (four crashes total, three at/near Jamerson Road), Riverside Parkway, East-West Connector, Floyd Road, Piedmont Road, and Terrell Road.

**The presence of a sidewalk or multi-use path does not necessarily indicate a safety issue. These facilities are correlated with severe pedestrian crashes, but it is not clear whether they generate demand that would not be present if they were not there (induced demand) or if these facilities have been built because of the already high demand in the area. What is indicated is that some additional safety improvements may be needed to reduce serious injury and fatal crashes (e.g., midblock crossings, filling sidewalk gaps, etc.)*

Fewer severe crashes occurred along County-owned arterials with fewer than four lanes. In total, 11 severe pedestrian crashes occurred along these types of roads outside of higher-intensity land use areas, which resulted in four fatalities and 11 injuries. All but one were along roads with a speed limit of 45 MPH or higher. Two such crashes were along Smyrna Powder Springs Road. Other locations include Burnt Hickory Road, Casteel Road, Ebenezer Road, Hicks Road, and Olive Springs Road, among others.

City-Owned Roads

City-owned roads were the site of just 15 severe pedestrian crashes (11%).

Contributing Factors and Priority Facilities

Notable crash patterns and observed characteristics point to factors correlated with severe pedestrian crashes and priority facilities to target for safety improvements based on characteristics correlated with these types of crashes. Like for other focus crash types, priority facilities for severe pedestrian crashes were identified to help jurisdictions target improvements within their respective road networks. They represent locations where there is a potential to improve safety through countermeasures and treatments that mitigate pedestrian crashes.

Priority facilities for severe pedestrian crashes are shown in **Figure 6-15** and include:

- GDOT-owned arterials with 4+ lanes, 45+ MPH speed limit
- County-owned arterials with 4+ lanes, 45+ MPH speed limit
- County-owned arterials with <4 lanes, 45+ MPH speed limit
- County-owned collectors with <4 lanes, 35-40 MPH speed limit

Other characteristics common among severe pedestrian crashes include proximity to higher-intensity land uses or urbanized areas, lack of medians, and presence of sidewalk. Factors that may increase the likelihood of pedestrian crashes include higher speeds, multi-lane/wider roads, and the presence of transit facilities.

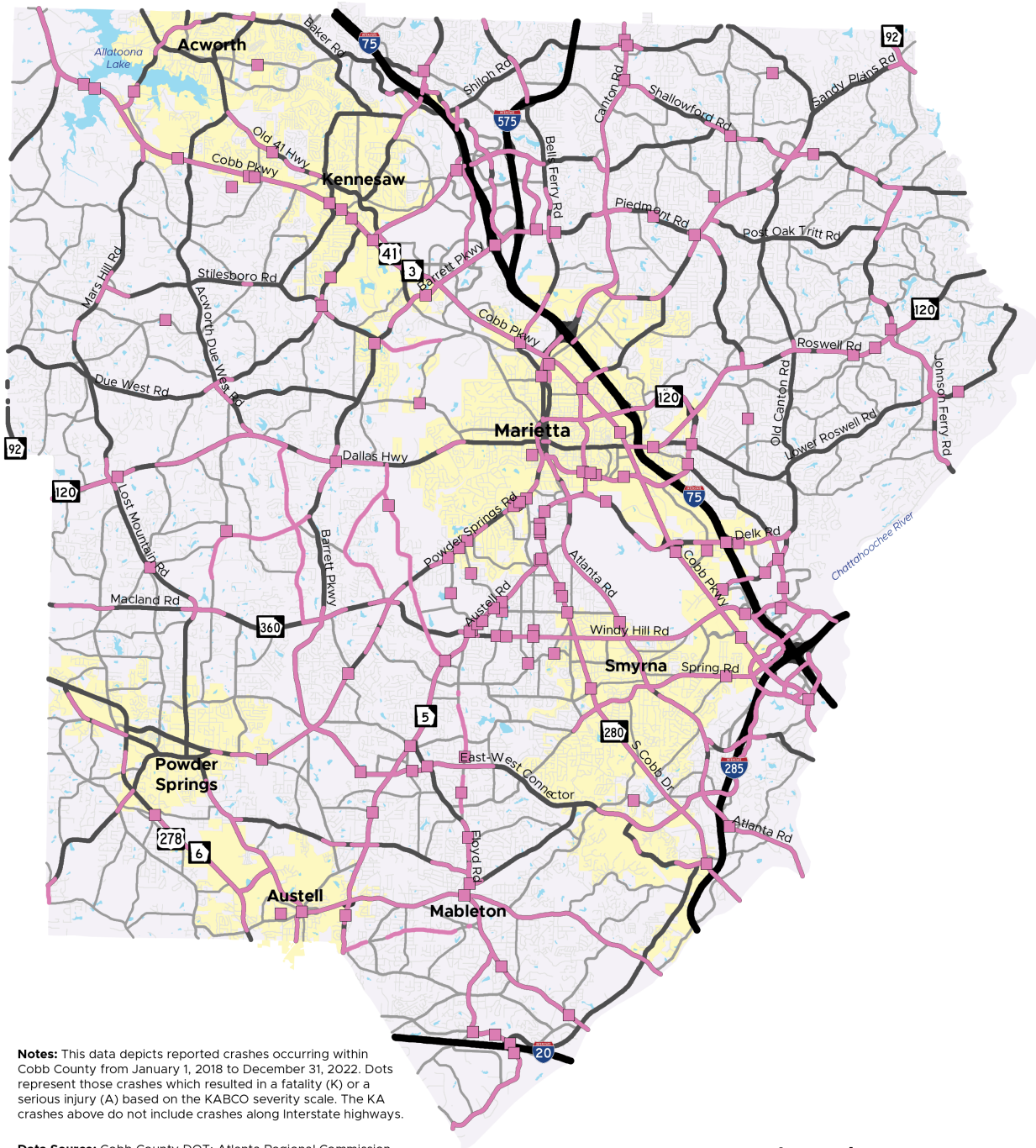


Figure 6-15: Priority Facilities for Pedestrian Crashes

Midblock Locations (Crashes More than 300 Feet from an Intersection)

Overall Crash Trends

Crashes that occurred more than 300 feet from an intersection (midblock crashes) were overrepresented among severe crashes based on comparisons to total and less severe non-interstate crashes reported between 2018 and 2022, as shown in **Table 6-15**.

Table 6-15: Midblock Total, KA, and BCO Crashes

KA Focus Crash Type	Overall Crashes	Overall Percent	KA Crashes	KA Percent	BCO Crashes	BCO Percent
Midblock Crashes	10,581	10%	238	15%	304	10%

Between 2018 and 2022, there were 238 severe non-interstate crashes at locations more than 300 feet from an intersection. These were spread across Cobb County, as shown in **Figure 6-17**. They also involved a number of types of vehicles or users; therefore, there is some overlap between midblock crashes and other focus types, as illustrated in **Figure 6-16** at right.

The distribution of bicycle/scooter KA crashes by jurisdiction is as follows:

City of Acworth: 12 crashes

- Eight along Cobb Parkway (US 41/SR 3), including two fatal crashes near North Shores Road and two serious injury crashes each near Blue Springs Road and Acworth Summit Boulevard
- Others on Lake Acworth Drive (SR 92), Old 41 Highway, and Hickory Grove Road, among others

City of Austell: three crashes

- Two on C.H. James Parkway (US 278/SR 6) north of Garrett Road
- One along Austell Road, near Sweetwater Lane

City of Kennesaw: four crashes

- One fatal crash on Cobb Parkway (US 41/SR 3) west of Jim Owens Road
- Serious injury crashes on Cobb Parkway (US 41/SR 3) between Kennesaw Due West Road and McCollum Parkway, on Jiles Road north of Cobb Parkway (US 41/SR 3), and on Big Shanty Drive between Sardis Street and Pine Hill Drive

City of Marietta: 27 crashes

- Eight fatal midblock crashes at various locations
 - Powder Springs Street (SR 360) near South Marietta Parkway (SR 120)

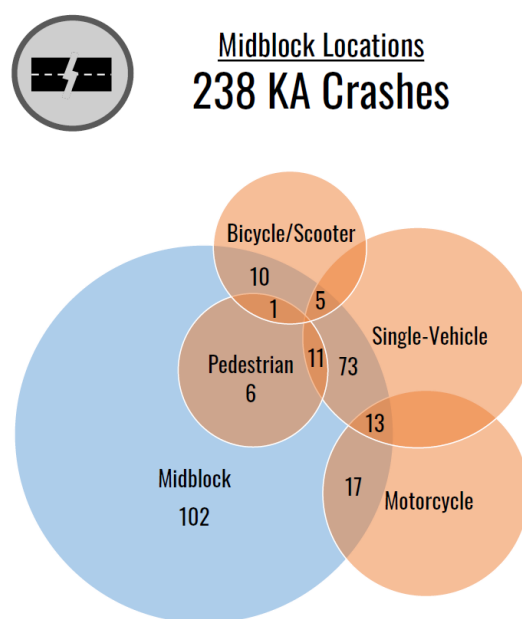


Figure 6-16: Relationship Between Midblock KA Crashes and Other Focus Crash Types

- North Woodland Drive near South Woodland Drive
- Three on South Marietta Parkway (SR 120) near Victory Drive (all in fall of 2020) and one near Aviation Road
- North Marietta Parkway (SR 120 Alt) near I-75 NB
- Cobb Parkway (US 41/SR 3) near Trade Center Parkway
- The 19 serious injury crashes concentrated along South Marietta Parkway (SR 120) near I-75 NB, Powder Springs Street (SR 360) near Chestnut Hill Road, Cobb Parkway (US 41/SR 3), and three on Canton Road Connector – two near I-75 NB and a third near Sandy Plains Road

City of Powder Springs: ten crashes

- One fatal crash on C.H. James Parkway (US 278/SR 6) at Florence Road
- One fatal crash on Austell-Powder Springs Road near Louise Street
- Serious injury crashes were spread along roads such as Brownsville Road, C.H. James Parkway (US 278/SR 6), Powder Springs Road, and Richard D. Sailors Parkway among others

City of Smyrna: ten crashes

- Two fatal crashes on South Cobb Drive (SR 280) – near Windy Hill Road and near Bank Street
- Serious injury crashes scattered along South Cobb Drive (SR 280) – two near Windy Hill Road and one each near Glendale Place and King Springs Road, as well as Cobb Parkway (US 41/SR 3), East-West Connector, and Highlands Parkway

Unincorporated Cobb County: 172 crashes

- Thirty seven (37) fatal crashes
 - Three on South Cobb Drive (SR 280)
 - Two each on Dallas Acworth Highway (SR 92), East-West Connector, Six Flags Parkway, and Maxham Road (SR 5)
- Clusters of KA midblock crashes across the County:
 - Nine each on Barrett Parkway and Austell Road/Maxham Road (SR 5), including four on Maxham Road near Old Alabama Road
 - Seven on East-West Connector
 - Five on Barrett Lakes Boulevard, including two near Cobb Place Boulevard
 - Four each on Dallas Highway (SR 120), South Cobb Drive (SR 280), Riverside Parkway, and Floyd Road

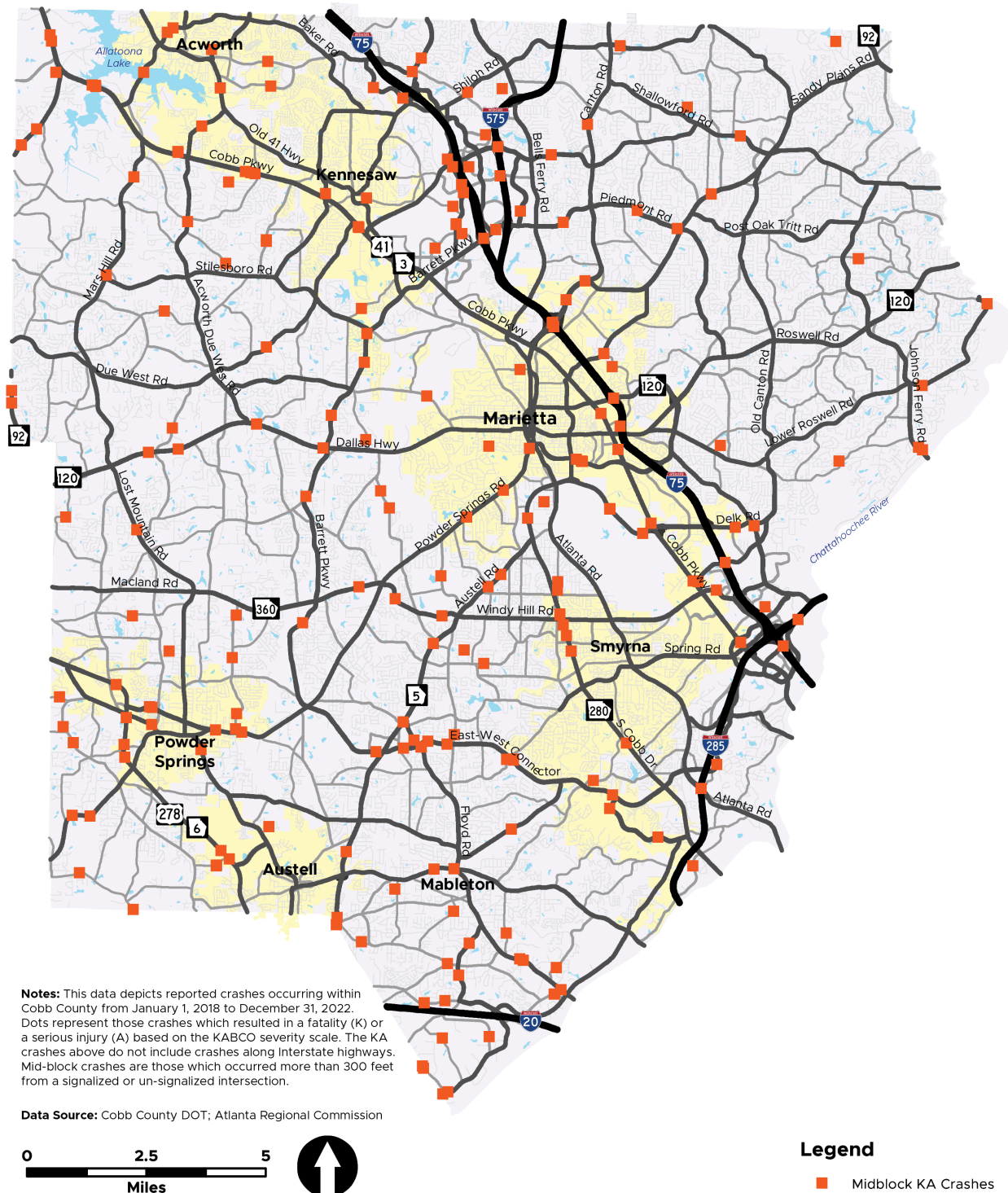


Figure 6-17: Midblock KA Crashes (2018-2022)

As shown in **Table 6-16**, fatalities among midblock crashes were highest in 2020 while the greatest number of injuries was in 2019. There was a sharp increase in severe midblock crashes between 2018 and 2019 but have since decreased to 49 KA crashes in 2022.

The vast majority of midblock crashes occurred on dry road surfaces (83%) and while more than half occurred during clear weather conditions (56%), 12% of severe midblock crashes occurred in rainy weather. Lighting condition was also relatively evenly split between daylight (49%) and dark conditions (47%) with and without lighting.

As noted at the beginning of this section and shown in **Figure 6-18**, three-quarters of midblock crashes took place in unincorporated Cobb County, and while the vast majority of severe midblock crashes involved passenger cars or similar vehicles, a small proportion of midblock crashes involved pedestrians (8%), bicycles (3%), and motorcycles (13%). Severe midblock crashes were split evenly between collisions involving one vehicle (43%) and crashes involving two vehicles (42%). Twenty-five of 102 single-vehicle midblock KA crashes resulted in a fatality while 19 of the 101 two-vehicle midblock KA crashes and seven of the 27 three-vehicle midblock KA crashes resulted in a fatality. There was an additional fatal crash involving four vehicles or individuals.

Table 6-16: Midblock Fatalities and Injuries

Year	Fatal Crashes	# of Fatalities	# of Injuries in Fatal Crashes	Serious Injury Crashes	# Injuries in Serious Injury Crashes	Total Crashes
2018	7	8	3	25	42	32
2019	13	15	10	45	73	58
2020	15	17	6	33	69	48
2021	9	9	5	42	67	51
2022	8	8	7	41	69	49
Total	52	57	31	186	320	238
	22%			78%		100%

Midblock KA Crashes by Jurisdiction

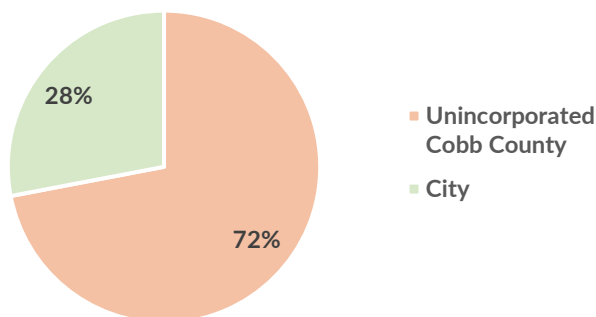


Figure 6-18: Midblock KA Crashes by Jurisdiction

Crash Type

Midblock crashes were reported as a variety of crash types, as illustrated in **Table 6-17**. Nearly one-third (30%) were considered “not a collision with a motor vehicle”. Of these 15 were fatal. Roughly 11% each were head-on and rear end collisions, eight and two of which were fatal, respectively. Six right-angle midblock crashes were fatal.

Table 6-17: Midblock KA Crashes by Crash Type

Year	Right Angle	Head On	Rear End	Sideswipe	LTWT	Not A Collision with Motor Vehicle	Other	Total Crashes
2018	3	2	4	5	1	12	5	32
2019	9	4	6	4	2	24	9	58
2020	7	6	4	4	1	12	14	48
2021	13	3	7	3	5	10	10	51
2022	6	11	5	3	5	12	7	49
Total	38	26	26	19	14	70	45	238
	16%	11%	11%	8%	6%	29%	19%	100%

Cited Factors and Vehicle Maneuver

In addition to “vehicle in motion,” commonly listed “most harmful event” for severe midblock crashes included things like hitting a wall/fence/mailbox/tree/or other fixed object (49 crashes or 21%), hit curb/ditch (18 crashes, 8%) and utility pole collisions (6 crashes, 3%). Median barriers, bridges, and other fixed objects accounted for few midblock severe crashes.

Among operator factors, the most commonly cited factor was driver losing control of the vehicle, which accounted for 28% of midblock crashes. Other factors include failure to yield (15%), under the influence (12%), driving on the wrong side of the road (8%), driving too fast for conditions (7%), distracted driving (5%), and improper lane changes (5%), among others.

Traffic Flow and Traffic Control

Roughly 40% of midblock crashes occurred on two-way streets without physical separation and among these, 23 (24%) were fatal. Just over one-quarter of severe midblock crashes occurred on two-way streets with physical separation or physical barrier; ten of these (15%) were fatal. **Table 6-18** shows traffic flow patterns. Among reported traffic control devices, most severe midblock crashes were listed as having lanes present, although 4% were reported as stop or yield sign.

Table 6-18: Midblock KA Crashes by Traffic Flow Pattern

Year	2-Way Without Physical Separation	2-Way With Physical Separation	2-Way With Physical Barrier	One-Way Street	Center Left-Turn Lane	Not Specified	Total Crashes
2018	5	1	0	0	0	26	32
2019	7	5	0	1	0	45	58
2020	30	11	3	1	1	2	48
2021	27	20	3	0	0	1	51
2022	25	18	5	1	0	0	49
Total	94	55	11	3	1	74	238
	39%	23%	5%	1%	<1%	31%	100%

Notable Crash Tree Patterns

The crash tree for severe midblock crashes follows the same basic structure as those used to assess other focus crash types, with three primary tiers (see page 65) using roadway and crash data attributes. The team first looked at primary attributes of each level independently, assessing what percentage of severe midblock crashes occurred on GDOT-owned roads, County-owned roads, and City-owned roads. Next, number of lanes, pavement condition, posted speed limit, presence of a median, and presence of bicycle and pedestrian facilities were assessed. On the third level, curve negotiation and driver losing control of the vehicle were also considered, along with proximity to transit stops, land use, vulnerable user involvement. This exercise revealed a few key patterns:

- One-third of severe midblock crashes took place on GDOT-owned roadways while more than half (56%) occurred on County-owned roadways
- Two-thirds of severe midblock crashes occurred on arterials, while roughly 23% occurred on collectors
- Roughly half (51%) of midblock KA crashes took place on roads with four or more lanes
- Just over two-thirds (67%) of midblock crashes occurred on roads without a median present
- Slightly more than half of severe midblock crashes occurred on a roadway with a posted speed limit of 45 MPH or greater
- Slightly more than one-quarter (28%) of midblock KA crashes involved a driver losing control, and 24% involved negotiating a curve

Next, the team reviewed these attributes in combination with one another, broken down by road ownership, functional classification, number of lanes, and land use. High-level observations and patterns among crashes by road ownership are briefly described below.

GDOT-Owned Roads

Slightly more than one-quarter of all severe midblock crashes occurred on GDOT-owned roads with four or more lanes. Most of these were along roads near higher-intensity land uses. Collectively these 55 crashes resulted in 17 fatalities and 77 injuries. A majority of these crashes were along roads with a 45 MPH posted speed limit or higher and approximately half had a median present. Common locations include: Cobb Parkway (US 41/SR 3) (14 crashes); South Cobb Drive (SR 280) (eight crashes); North Marietta Parkway (SR 120 Alt) (six crashes); Austell Road (SR 5) (five crashes); and Powder Springs Road (SR 360), Barrett Parkway (SR 5 Conn), and South Marietta Parkway (SR 120) (four each). Eight crashes in this category involved the driver losing control of their vehicle and three occurred while trying to negotiate a curve.

County-Owned Roads

Cobb County-owned arterials with four or more lanes in more densely developed areas comprise about 17% of severe midblock crashes and resulted in ten fatalities and 67 injuries. Slightly more than half of these (60%) had a speed limit of 45 MPH or higher and were mainly outside of city limits. Common locations in this group include East-West Connector (six), Barrett Lakes Boulevard (five), and Akers Mill Road, Barrett Parkway, and Piedmont Road (three each). Eight crashes involved the driver losing control of their vehicle and six occurred while trying to negotiate a curve.

County-owned arterials with fewer than four lanes outside of more densely developed areas accounted for 10% of severe midblock crashes, two fatalities, and 32 injuries. Roughly half of these had speed limits of 45 MPH or higher and few were along roads without a median.

A higher proportion of severe midblock crashes occurred along Cobb County-owned collectors with fewer than four lanes, outside of more densely developed areas (18%). These collectively resulted in 13 fatalities

and 61 injuries. All but two crashes in this group had high speed limits (over 45 MPH). Common locations include: Paper Mill Road, Cheatham Hill Road, Garrett Road, Hiram Lithia Springs Road, Riverside Parkway, and others. Of these, 20 involved the driver losing control of their vehicle and 17 occurred while drivers were trying to negotiate a curve.

City-Owned Roads

City-owned roads were the site of 10% of severe midblock crashes (26 crashes).

Contributing Factors and Priority Facilities

Notable crash patterns and observed characteristics point to factors correlated with severe pedestrian crashes and priority facilities to target for safety improvements based on characteristics correlated with these types of crashes. They represent locations where there is potential to improve safety through countermeasures and treatments that mitigate midblock crashes.

Priority facilities for severe midblock crashes are shown in **Figure 6-19** and include:

- GDOT-owned arterials with 4+ lanes, 45+ MPH speed limit
- County-owned arterials with 4+ lanes, 45+ MPH speed limit
- County-owned arterials with <4 lanes, 45+ MPH speed limit
- County-owned collectors with <4 lanes, 35-45 MPH speed limit

Other characteristics common among severe midblock crashes include proximity to higher-intensity land uses or urbanized areas, lack of medians, roads with curves, and lack of midblock pedestrian crossings. Factors such as higher speeds, roadway curves, and lack of median may increase the likelihood of midblock crashes.

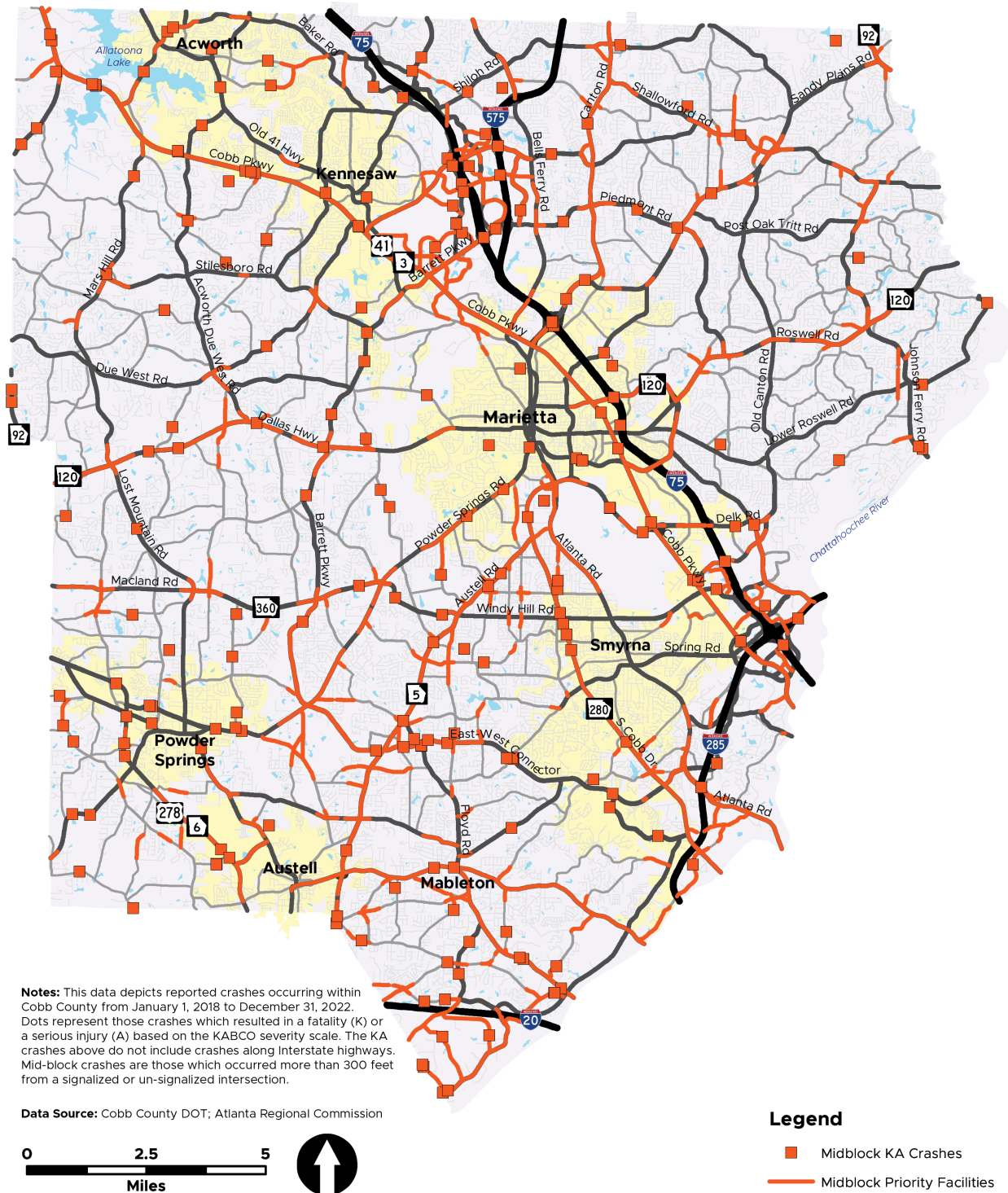


Figure 6-19: Priority Facilities for Midblock Crashes

Single-Vehicle Crashes

Overall Crash Trends

Single-vehicle crashes were overrepresented among severe crashes based on comparisons to total and less severe non-interstate crashes reported between 2018 and 2022, as shown in **Table 6-19**.

Table 6-19: Single-Vehicle Total, KA, and BCO Crashes

KA Focus Crash Type	Overall Crashes	Overall Percent	KA Crashes	KA Percent	BCO Crashes	BCO Percent
Single-Vehicle Crashes	9,941	9.3%	411	26.7%	9,530	9%

Between 2018 and 2022, there were 411 KA single-vehicle crashes throughout Cobb County, as shown in **Figure 6-20**. Collectively, they represent nearly 30% of all fatal and serious injury crashes during 2018 to 2022. The distribution of single-vehicle KA crashes by jurisdiction is as follows:

- City of Acworth – nine crashes
 - Three fatal crashes along Lake Acworth Drive (SR 92) near Collins Circle and Ragsdale Road
 - One fatal crash each along Cobb Parkway (US 41/SR 3) at Acworth Summit Boulevard, Cherokee Street at Lake Acworth Drive (SR 92), and New McEver Road near Cantrell Road
- City of Austell – three crashes
 - One fatal crash along Powder Springs Road north of Humphries Hill Road
 - Two serious injury single-vehicle crashes on Rolly Street and Veterans Memorial Highway (US 278/US 78/SR 8)
- City of Kennesaw – 17 crashes
 - One fatal crash along Cobb Parkway (US 41/SR 3) near Jim Owens Road
 - Three serious injury crashes each along Cherokee Street and Cobb Parkway (US 41/SR 3), and others scattered throughout the City
- City of Marietta – 51 crashes
 - Fourteen fatal crashes: two on Powder Springs Streets (SR 360) near Chestnut Hill Road; five along South Marietta Parkway (SR 120) – three near Victory Drive, one near Aviation Road, and one near Powers Ferry Road; others on Delk Road, Franklin Drive, North Woodland Drive, Cobb Parkway (US 41/SR 3), Franklin Gateway, and Wright Street
 - Serious injury crashes distributed among multiple streets, with concentrations along: Powder Springs Street (SR 360) - five crashes, three near Chestnut Hill Road; South Marietta Parkway (SR 120) – four crashes; and three each on Delk Road and North Marietta Parkway (SR 120 Alt)
- City of Powder Springs – ten crashes
 - One fatal single-vehicle crash each on C.H. James Parkway (US 278/SR 6) near Florence Road and Powder Springs Road at Flint Hill Road
 - Serious injury crashes occurred on major streets throughout the City

- City of Smyrna – 20 crashes
 - Seven fatal single-vehicle crashes, five of which were on South Cobb Drive (SR 280), each near a different cross street, and one on East-West Connector near Cooper Lake Road and on Bell Drive at Afton Way
 - Serious injury crashes were distributed among multiple streets throughout the City including five on South Cobb Drive (SR 280) and two each on Atlanta Road and Concord Road
- Unincorporated Cobb County – 301 crashes
 - Sixty-five fatal crashes
 - Clusters of severe single-vehicle crashes were along state routes and County-owned arterials, including: eight along Austell Road/Maxham Road (SR 5) – including two at Osborne Road; seven along South Cobb Drive (SR 280); four on Cobb Parkway (US 41/SR 3); and two each on Canton Road, Dallas Highway (SR 120), Powers Ferry Road, Riverside Parkway, Six Flags Parkway, and Stilesboro Road, among other locations

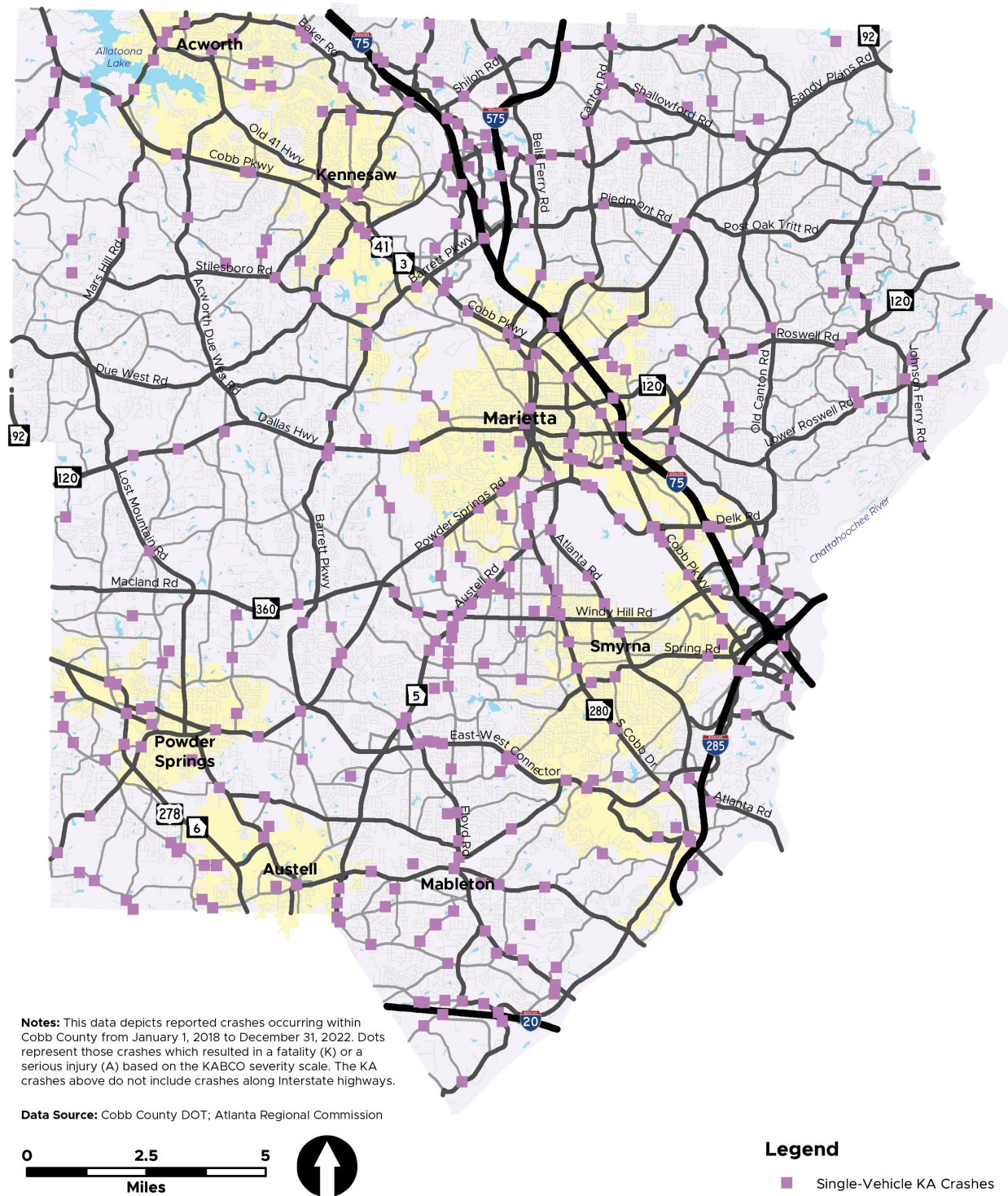


Figure 6-20: Single-Vehicle KA Crashes (2018-2022)

As shown in **Table 6-20**, the greatest number of single-vehicle fatalities occurred in 2019 and 2020, with fatalities representing a higher proportion of severe single-vehicle crashes in 2020. Injuries were at their highest in 2021, corresponding with the greatest number of serious injury single-vehicle crashes.

Dry road surfaces were reported among nearly 80% of severe single-vehicle crashes. Of severe single-vehicle crashes reported on wet road, snowy, or icy surfaces, 19 (21%) were fatal. Reported weather conditions varied somewhat more in this category compared to others, although similarly most crashes occurred in clear conditions, with less than 13% of severe single-vehicle crashes taking place in rain, snow, sleet, or fog. All three of the reported single-vehicle crashes in foggy weather were fatal.

As noted previously in this section and shown in **Figure 6-21**, nearly three-quarters of severe single-vehicle crashes happened in unincorporated Cobb County, a higher proportion than most of the other focus crash types, including 65 fatal crashes. The split of severe single-vehicle crashes that occurred within or more than 100 feet of an intersection was nearly even, as shown in **Figure 6-22**. More than half of fatal single-vehicle crashes happened more than 100 feet from an intersection (56 of 96).

Single-Vehicle KA Crashes by Jurisdiction

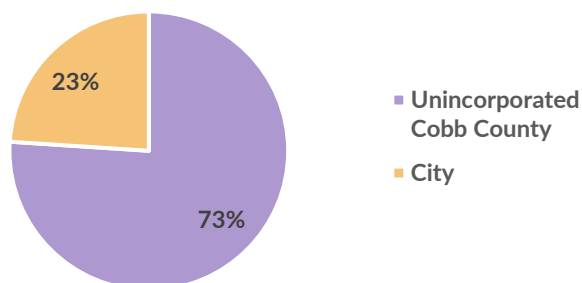


Figure 6-21: Single-Vehicle KA Crashes by Jurisdiction

Table 6-20: Single-Vehicle Fatalities and Injuries

Year	Fatal Crashes	# of Fatalities	# of Injuries in Fatal Crashes	Serious Injury Crashes	# Injuries in Serious Injury Crashes	Total Crashes
2018	17	18	5	38	47	55
2019	25	26	4	71	86	96
2020	24	26	6	64	87	88
2021	17	17	1	78	96	95
2022	13	13	4	64	84	77
Total	96	100	20	315	400	411
	23%			77%		100%

Single-Vehicle KA Crashes: Proximity to Intersections

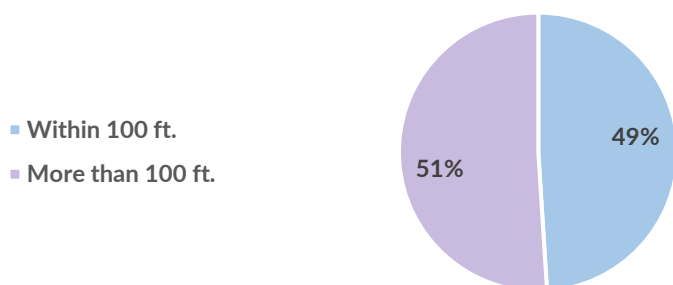


Figure 6-22: Single-Vehicle KA Crashes Proximity to Intersections

Crash Type

Severe single-vehicle crashes were largely reported as either “other” or “not a collision with a motor vehicle,” accounting for 97% of all crashes in this category. All of the fatal crashes except for two fell into these categories; two right angle crashes were also fatal.

Lighting Condition

Lighting appears to also be an important factor in severe single-vehicle crashes, as more than 60% occurred in either dark lighted or dark unlighted conditions – shown in **Table 6-21**. Of the 96 fatal single-vehicle crashes, 41 of them happened in dark unlighted conditions (43%) and 23 in dark lighted conditions (24%).

Table 6-21: Single-Vehicle KA Crashes by Lighting Condition

Year	Dawn	Daylight	Dusk	Dark-Lighted	Dark - Not Lighted	Total Crashes
2018	0	22	0	13	20	55
2019	0	37	4	23	32	96
2020	1	34	1	24	28	88
2021	1	33	1	23	37	95
2022	1	24	0	19	33	77
Total	3	150	6	102	150	411
	1%	37%	1%	25%	36%	100%

Traffic Flow and Traffic Control

Nearly half of severe single-vehicle crashes occurred on two-way streets without physical separation, as shown in **Table 6-22**, with roughly 18% of those being fatal. Two-way streets with physical separation or barriers account for roughly 22% of severe single-vehicle crashes (89 crashes), and among these 28 were fatal (31%). Two additional fatal single-vehicle crashes occurred on a roadway with a center left-turn lane. In terms of traffic control, the most commonly reported forms were lanes, as is the case with most crashes, followed by traffic signals, which represent about 8% of severe single-vehicle crashes and five fatal crashes.

Table 6-22: Single-Vehicle KA Crashes by Traffic Flow Pattern

Year	2-Way Without Physical Separation	2-Way With Physical Separation	2-Way With Physical Barrier	One-Way Street	Center Left-Turn Lane	Not Specified	Total Crashes
2018	5	2	0	0	0	48	55
2019	25	3	0	1	0	67	96
2020	50	22	8	1	1	6	88
2021	66	18	8	0	1	2	95
2022	45	24	4	2	1	1	77
Total	191	69	20	4	3	124	411
	46%	17%	5%	1%	1%	30%	100%

Notable Crash Tree Patterns

The crash tree for severe single-vehicle crashes follows the same basic structure as those used to assess other focus crash types, with three primary tiers (see page 65) using roadway and crash data attributes. The team first looked at primary attributes of each level independently, assessing what percentage of severe single-vehicle crashes occurred on GDOT-owned roads, County-owned roads, and City-owned roads. Next, number of lanes, pavement condition, posted speed limit, and presence of a median were assessed, and lastly, this exercise looked at proximity to higher-intensity land uses, curve negotiation, and presence of transit stops. This exercise revealed a few key patterns:

- More than half of severe single-vehicle crashes occurred on roads owned by CCDOT (57%) and slightly less than one-third (29%) occurred on GDOT-owned roads
- More than half of severe single-vehicle crashes occurred on roads classified as arterials (54%) and approximately 27% occurred on roads classified as major or minor collectors
- Slightly fewer than half occurred on roads with four or more lanes
- Most severe single-vehicle crashes happened on roads that do not have a median present (68%)
- Slightly more than half occurred on roads with a posted speed limit of 45 MPH or higher (51%)
- Approximately 24% of severe single-vehicle crashes occurred on road segments with marginal or poor pavement condition
- Slightly more than one-quarter of single-vehicle KA crashes were reported as involving curve negotiation
- In more than half of these crashes, hitting a fixed object (53%) was reported as a contributing factor; this includes hitting a ditch or curb (21%), utility poles (12%), and other objects

Next, the team reviewed these attributes in combination with one another, broken down by road ownership, functional classification, number of lanes, and land use. High-level observations and patterns among crashes by road ownership are briefly described below.

GDOT-Owned Roads

GDOT-owned arterials with four or more lanes account for slightly less than one-quarter of all severe single-vehicle crashes (22%) and 19% were also in areas with higher-intensity land uses. Collectively these resulted in 35 fatalities and 58 injuries. Most were along roads with posted speed limit of 45 MPH or higher and slightly fewer than half were along segments with a median present. Key facilities in this category include: Cobb Parkway (US 41/SR 3) – 19 crashes; South Cobb Drive (SR 280) – 18 crashes; South Marietta Parkway (SR 120) and Austell Road (SR 5) – eight each. Of the 79 crashes in this group, 20 involved vehicles hitting fixed objects.

County-Owned Roads

Although Cobb County-owned roads were the site of 57% of severe single-vehicle crashes, they were evenly split between arterials and collectors. Approximately 14% occurred on Cobb County-owned arterials with four or more lanes (57 crashes) and most of these (44 crashes) also had posted speed limits of 45 MPH or higher.

There were 39 single-vehicle crashes on County-owned arterials with four or more lanes in higher-intensity land use areas, most of which had posted speed limit of 45 MPH or higher and a median in the road. Nearly one-third of these occurred on roads with poor pavement condition. Collectively these resulted in 13 fatalities and 34 injuries. Common locations include Riverside Parkway (four crashes) and Atlanta Road, Canton Road, East-West Connector, Floyd Road, and Piedmont Road (three crashes each). Nearly half of these involved hitting a fixed object and seven involved curve negotiation.

County-owned major and minor collectors were the site of 88 severe single-vehicle crashes (21%) and most of these outside of higher-intensity land use areas. Seventy of these crashes were along roads with fewer than four lanes. Collectively crashes in this group resulted in 12 fatalities and 86 injuries. Common locations include Stout Parkway and Hicks Road (four crashes each). A majority of crashes in this group were attributed in part to drivers losing control of their vehicles (57 crashes) and 26 involved curve negotiation.

City-Owned Roads

City-owned roads were the site of 14% of severe single-vehicle crashes (57 crashes), about half of which were on arterials (28 crashes), and 17 of which were on roads with fewer than four lanes. Single-vehicle crashes in these locations tended to be less severe, resulting in just two fatalities and 18 injuries. Slightly more than half of these (9 crashes) were on roads with speed limits of 45 MPH or higher. Roads in this group include Concord Road, Cowan Road, and Kennesaw Due West Road, among others.

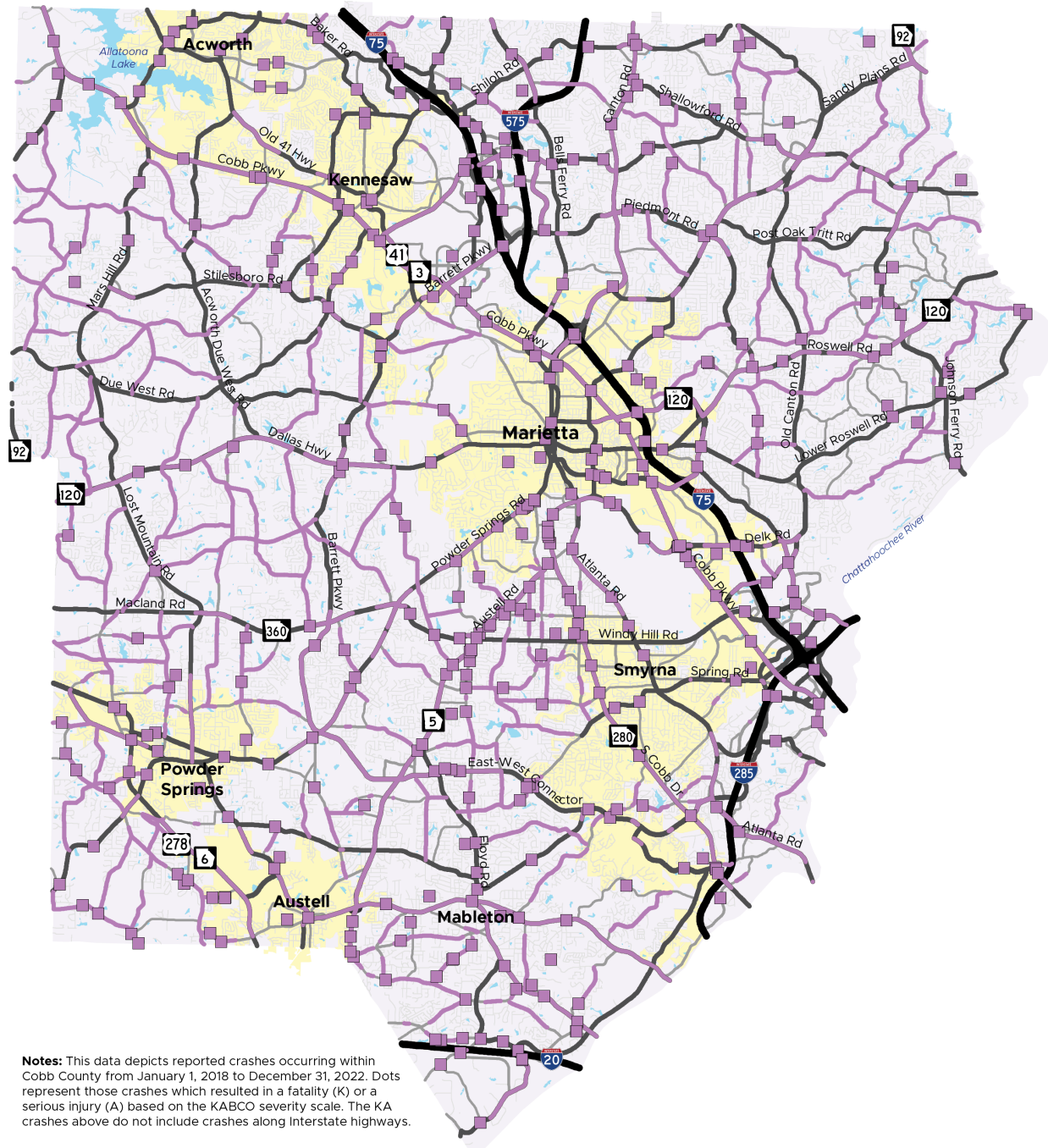
Contributing Factors and Priority Facilities

Notable crash patterns and observed characteristics point to factors correlated with severe pedestrian crashes and priority facilities to target for safety improvements based on characteristics correlated with these types of crashes. They represent locations where there is a potential to improve safety through countermeasures and treatments that mitigate midblock crashes.

Priority facilities for severe midblock crashes are shown in **Figure 6-23** and include:

- GDOT-owned arterials with 4+ lanes, 45+ MPH speed limit, in higher-intensity land use areas
- County-owned arterials with 4+ lanes, 45+ MPH speed limit, in higher-intensity land use areas
- County-owned collectors with <4 lanes, 35-45 MPH speed limit, outside of higher-intensity land use areas, and without a median
- City-owned arterials with <4 lanes, 45+ MPH speed limit, without a median

Other characteristics common among severe single-vehicle crashes include lack of medians and striking fixed objects, which may be attributed to driver behavior or may indicate a need for wider shoulders or clear zones. Higher speeds and curves in the road may contribute to an increased likelihood of severe single-vehicle crashes.



Legend

- Single-Vehicle KA Crashes
- Single-Vehicle Priority Facilities

0 2.5 5
Miles



Figure 6-23: Priority Facilities for Single-Vehicle Crashes

Chapter 7 – Incorporating Equity

Transportation safety is a concern for everyone; most people have stories about family members, friends, colleagues, and loved ones whose lives have been significantly altered as the result of a motor vehicle crash. However, deaths and serious injuries are not experienced equally by all people. Vulnerable community members, including low-income individuals, people with disabilities, minorities, older adults, and younger children tend to be disproportionately impacted by severe crashes. This may be due to a reliance on more affordable forms of transportation, such as walking, biking, or public transportation or a lack of investment over time in some communities. As a percentage of total crashes, collisions involving pedestrians, bicyclists, and motorcyclists disproportionately result in fatalities or serious injuries compared to crashes involving other types of vehicles or forms of transportation.

Understanding patterns and trends of how historic crashes have affected historically disadvantaged and underserved communities is an important step in identifying strategies to improve safety outcomes in communities that have disproportionately experienced negative impacts. Identifying vulnerable road users and underserved populations in Cobb County is an important component of the Safety Action Plan process. Inclusion and consideration of equity within the transportation planning process is a top priority for the current federal administration, as well as for Cobb County, and is reflected in federal policies and funding programs, including Safe Streets and Roads For All (SS4A).

While there are many ways to identify and define disadvantaged and underserved populations, for the purposes of this Safety Action Plan, the process focused on three main components that are part of the United States Department of Transportation’s (U.S. DOT) Justice40 Initiative:⁴⁰

- Historically Disadvantaged Communities
- Areas of Persistent Poverty
- Transportation Insecurity/Travel Barriers

The project team overlaid serious injury and fatal crashes with Census tracts considered by U.S. DOT definitions to be Historically Disadvantaged Communities (HDC), Areas of Persistent Poverty (APP), and Travel Barriers (see **Figure 7-5**). The following sections summarize key findings.



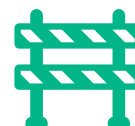
Historically Disadvantaged Communities

A composite measure of Census tracts that experience disadvantages in six key categories: transportation access, health, environmental, economic, resilience, and equity.



Areas of Persistent Poverty

Census tracts which have a poverty rate of at least 20% as measured by 5-year data series from the U.S. Census Bureau’s American Community Survey.



Transportation Insecurity / Travel Barriers

Census tracts with populations facing high barriers to travel – that are unable to regularly and reliably satisfy the travel needed to meet day-to-day needs.

⁴⁰U.S. Department of Transportation (2023). Justice40 Initiative. <https://www.transportation.gov/equity-Justice40>

Historically Disadvantaged Communities and Areas of Persistent Poverty

The U.S. DOT defines historically disadvantaged communities (HDCs) – also sometimes called transportation disadvantaged census tracts – at the Census tract level based on various indicators and variables, including transportation access disadvantage, health disadvantage, economic disadvantage, resilience, and equity.⁴¹ These indicators are then used to calculate a score which indicates the overall disadvantage of a community. Areas of persistent poverty (APP) are Census tracts with a poverty rate of at least 20% consistently recorded in 5-year American Community Survey Estimates of the U.S. Census Bureau.⁴² **Figure 7-2** shows Census tracts across Cobb County that include HDCs and/or APPs.

Key Findings

The majority of the Census tracts within the southern half of the County (generally bounded by SR 120 to the north) are classified as historically disadvantaged communities, with three tracts (308.00, 304.00, and 304.12, bordered by I-75 to the east) classified as areas of persistent poverty. A significant cluster of tracts located southwest of Mableton Parkway (SR 139), and west of I-75, extending west to C.H. James Parkway (US 278/SR 6), are categorized as both historically disadvantaged communities, and areas of persistent poverty. These include: 304.14; 309.04; 310.01; 310.02; 310.04; 311.01; 311.13; 311.15; and 311.16. Additionally, the two southernmost Census tracts within Cobb County, on either side of I-20, are classified as both historically disadvantaged and as areas of persistent poverty. Three tracts within the northern portion of the County are classified as either historically advantaged communities, or as an area of persistent poverty, with tract 301.04 classified as historically disadvantaged and tract 302.28 classified as an area of persistent poverty.

The KA crashes within and in proximity to the southernmost and northernmost HDC and APP areas, tend to be concentrated along arterial roads and adjacent to interstates. The greatest concentration of KA crashes within Cobb County is within the central portion, south of Marietta, within tracts that are both historically disadvantaged and areas of persistent poverty. Powder Springs Road (SR 360), Austell Road (SR 5), Pat Mell Road, and South Cobb Drive (SR 280) west of Dobbins Air Reserve Base, as well as Cobb Parkway (US 41/SR 3), east of the Base and west of I-75 have particularly heavy concentrations.



Figure 7-1: Looking West Along Pat Mell Road Toward Austell Road

Serious injury and fatal crashes within southern Cobb County are particularly prevalent along Riverside Parkway, Mableton Parkway (SR 139), Austell Road (SR 5), and the southern portion of Factory Shoals Road, approaching I-20. Although the overall and KA crash densities for some of the tracts, or portions of the tracts, may not be high, the overlap between communities with greater barriers to transportation, and those considered disadvantaged or historically poverty-stricken indicates the overall burden that exists for many generally disadvantaged communities.

⁴¹ U.S. Department of Transportation (2023). Areas of Persistent Poverty and Historically Disadvantaged Communities. <https://www.transportation.gov/RAISEgrants/raise-app-hdc>

⁴² Ibid.

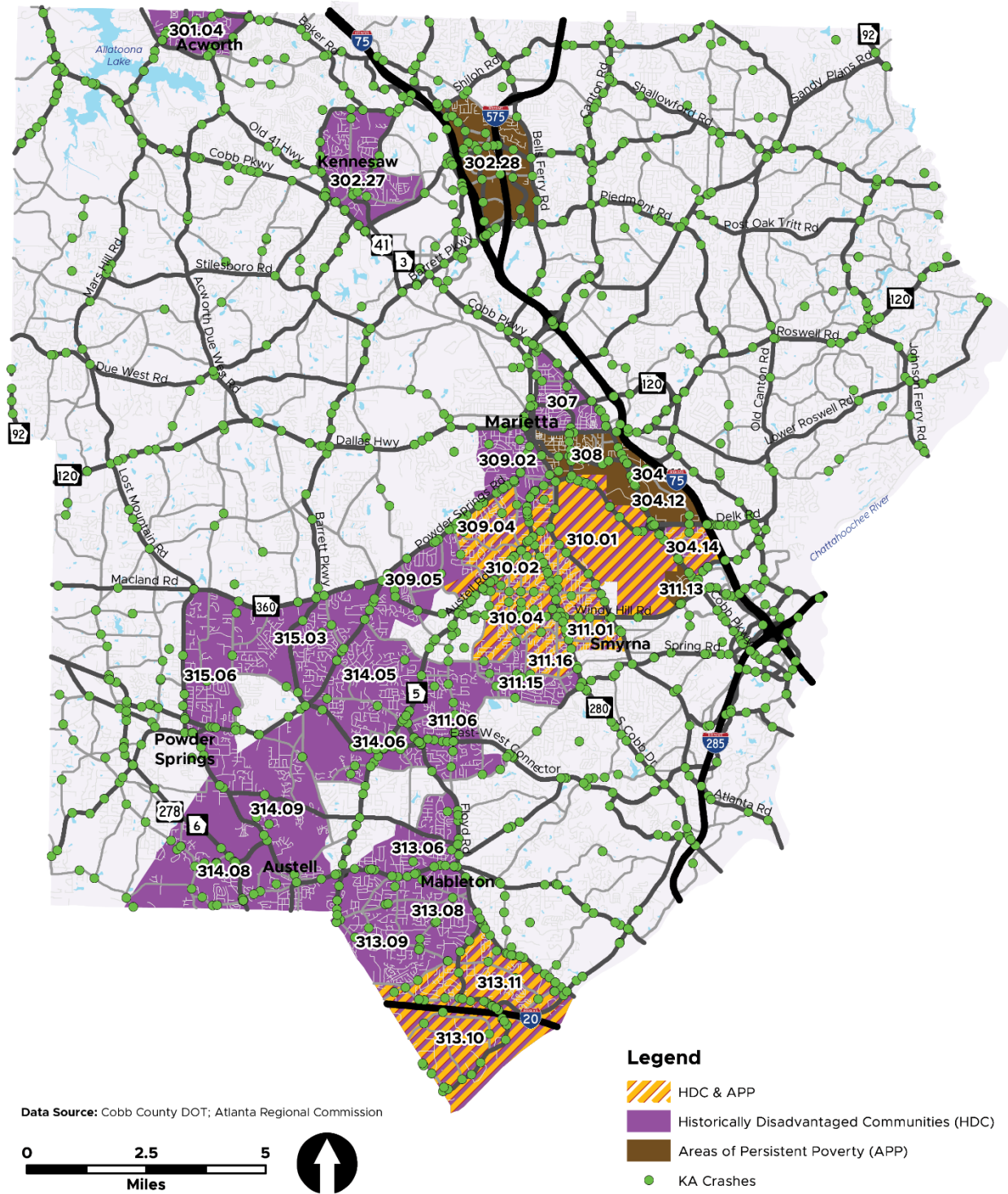


Figure 7-2: HDC and APP Community Designations and KA Crashes

Justice40 and Travel Barriers

In order to ensure this process reflects consideration of social equity principles, the Safety Action Plan considered transportation insecurity. Communities experiencing barriers and burdens to travel are those which are unable to regularly and reliably meet day-to-day needs as a result of access to transportation. While not all lower-income and historically disadvantaged communities face transportation barriers and insecurity, many do, contributing to persistent poverty. Travel barriers not only limit occupation and economic opportunities, but can result in increased rates of injury and fatalities, particularly for pedestrians, bicyclists, and more elderly residents.⁴³

The goal of the Justice40 Initiative is to ensure that disadvantaged communities which have been traditionally marginalized, underserved, and overburdened by pollution and transportation barriers, receive at least 40 percent of the benefits from Federal investments.

Key Findings

As shown in **Figure 7-4**, the most traditionally overburdened and underserved areas within Cobb County are concentrated within and around Marietta south of Powder Springs Road (SR 360). Likewise, the southernmost portion of Cobb County, south of Mableton, and the southwest corner of Cobb County west of Powder Springs also have populations that face considerable barriers to transportation, generally ranking among the highest percentiles for transportation barriers among Census tracts in Cobb County.

The majority of the tracts facing relatively high barriers to travel within the Marietta area are located west of Dobbins Air Reserve Base, bounded roughly by Powder Springs Road (SR 360), South Cobb Drive (SR 280), and Milford Church Road and Smyrna Powder Springs Road to the south. These areas rank near the 90th percentile or higher in terms of travel barriers. Factors contributing to this include limited public



Figure 7-3: View from Austell Road Along South Cobb Drive Show Recent Resurfacing Work

transportation service and lower incomes that mean reliable transportation requires a higher proportion of household income. These include a variety of development, including commercial and retail, light industrial, educational institutions, and Dobbins Air Reserve Base, with large amounts of both single-family and multi-family residential concentrated to the east and west of Dobbins Air Reserve Base (located in tract 310.01). People in this area also are also exposed to higher-volume roads, which contributes to increased exposure to diesel particulate matter, compounding travel time and cost challenges.

⁴³ Ibid.

Not only are serious injury crashes more prevalent than fatal crashes within these Census tracts, there is also a greater number of crash clusters. As with fatal crash clusters, serious injury crash clusters are not necessarily confined to or concentrated in areas with high overall crash densities. The area west of Dobbins Air Reserve Base has small pockets of severe crash density, but these areas are concentrated primarily around three specific intersections, with lower overall densities than many other higher-density locations within adjacent tracts. Despite this, a comparatively high number of serious injury and fatal crashes have occurred in a specific triangular segment of the tract, particularly on Austell Road (SR 5) to the west, South Cobb Drive (SR 280) to the east, and somewhat along Pat Mell Road to the south. High levels of serious injury crashes also occur along Powder Springs Road (SR 360).

Similarly, the area west of Powder Springs is characterized by a mix of residential, commercial, and more industrial uses, especially along C.H. James Parkway (US 278/SR 6). Several major thoroughfares crisscross this area although connectivity between these roads is more limited. While portions of Powder Springs and Austell are served by CobbLinc's Flex service, public transportation is limited in this area. Like with the areas west of Dobbins Air Reserve base, people living west of Powder Springs also face challenges associated with having multiple high-volume roads and significant truck traffic from the nearby intermodal yard and therefore are faced with higher levels of exposure to particulate matter, compounding travel challenges.

In the southernmost part of the County, south of Mableton, CobbLinc Routes 25 and 30 provide service to Mableton Parkway (SR 139), Riverside Parkway, Factory Shoals Road, and Hillcrest Drive, among others. However, transit service is not provided south of I-20 and relatively lower household incomes in this area contribute to transportation barriers. Tract 313.10 ranks above the 90th percentile for this metric. Compounding the already high levels of particulate matter exposure, as well as traffic exposure and noise pollution, residents and workers must contend with higher transportation costs and travel times.

Severe crashes in this area (Tracts 313.08, 313.11, and 313.10) tend to be concentrated along Riverside Parkway, Veterans Memorial Highway (US 278/US 78/SR 6), and Mableton Parkway (SR 139). Four fatal crashes were recorded in this area: two along Riverside Parkway, a third on Hartman Road, and a fourth along Six Flags Road. Two of the fatal crashes are included within two separate, but adjacent, crash clusters. The first cluster extends from west of the Riverside Parkway and Cityview Drive intersection, with the other beginning at and extending to just southeast of the Riverside Parkway and I-20 intersection. A small cluster of three serious injury crashes is located at the southernmost point of Riverside Parkway, south of the mobile home park, at the intersection of Lower River Road and Riverside Parkway.

Similar to patterns observed in the southernmost portion of the County, severe crashes to the west of Powder Springs tend to be concentrated along higher-volume roadways. These include but are not limited to Hiram-Lithia Springs Road, Veterans Memorial Highway (US 278/US 78/SR 6), C.H. James Parkway (US 278/SR 6), and Powder Springs Road/Richard D. Sailors Parkway. A cluster of eight KA crashes was recorded on Hiram Lithia Springs Road near Brown Road, while a higher concentration was recorded along portions of C.H. James Parkway (US 278/SR 6) between Brownsville Road and Richard D. Sailors Parkway, and another 13 KA crashes were reported along Powder Springs Road and Richard D. Sailors Parkway near Silver Springs Boulevard.

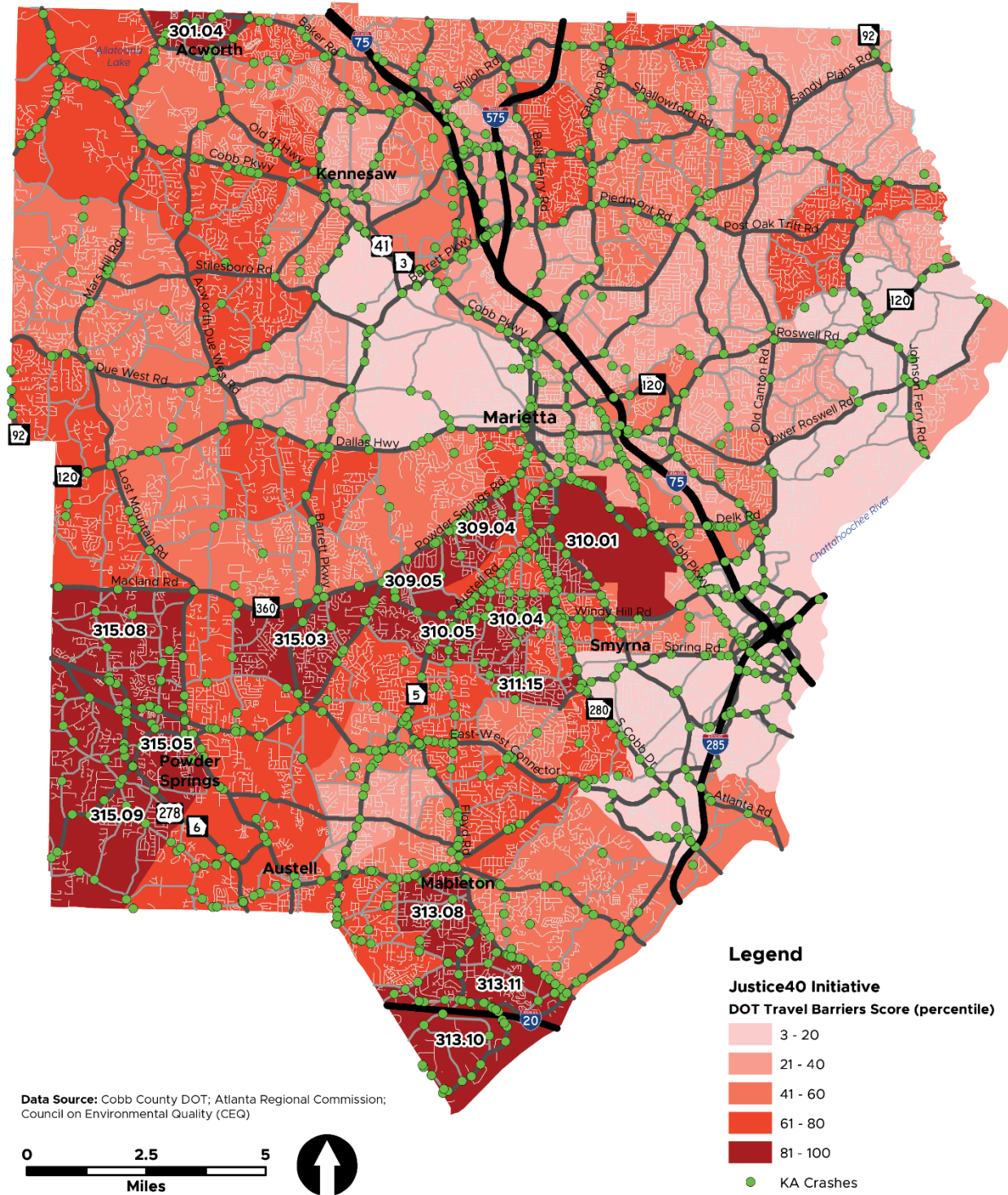


Figure 7-4: Justice40 Initiative Travel Barriers Score with KA Crashes

Assessment

Communities that have traditionally been deprived of economic opportunities, adequate multimodal transportation infrastructure, and safe and maintained infrastructure, have much higher risks of experiencing negative impacts. These include an increased burden in accessing transportation; decreased socioeconomic opportunities and household income; poor health outcomes; and risk to both man-made and natural disasters, among other consequences.

Not every Census tract or area within Cobb County that experiences increased travel barriers, or that is classified as an area of persistent poverty (APP) or historically disadvantaged community (HDC), overlaps with concentrations of KA crashes. However, many of them do include numerous clusters of severe crashes, highlighting the negative effects that many low-income communities lack in safe transportation opportunities. As compared to the County as a whole, funding and project development efforts should be concentrated within these areas.

Many of these areas have not benefitted from the same levels of investment or have faced other historic challenges associated with land use, economic circumstances, public transportation, and access to jobs. Residents in areas of persistent poverty and historically disadvantaged communities also face challenges that present barriers to convenient and timely travel, making investments in transportation safety even more important. If all of the safety improvements in areas that are both APP and HDC were implemented, this could represent a total investment of at least \$15 million in safety improvements based on current planning-level estimated costs, outlined in Chapter 9.

Priority facilities for crash types exist throughout the County. Recognizing the importance of investments in historically disadvantaged communities, areas of persistent poverty, and other communities that have faced historic challenges related to environmental justice issues, Cobb County has included APPs and HDCs as two factors to consider in identifying priority projects for early implementation.

Of the 23 Focus Corridors for early implementation, ten of them (43%) fall partially or fully within an APP and 18 of them (78%) are partly or fully within an HDC. In total, nine early implementation priorities are partly or fully within both an APP and HDC. Implementing safety improvements along these corridors would represent a significant investment in historically underserved communities. Likewise, of the 13 Intersection Safety Improvements identified (that are not along Focus Corridors), eight of them (roughly 61%) fall partly within an APP and/or HDC.

More broadly, of the 106 KA crash corridors identified across the County - which represent opportunities for future investigation of safety patterns and identification of potential projects - 30 of them (28%) are partly or fully within an APP and 52 of them (48%) are fully or partly within HDCs. In total, 25 of the KA crash corridors are partly or fully within both an APP and HDC. Beyond the specific locations identified as needing safety improvements, corridors that share characteristics correlated with certain types of crashes are also opportunities to invest in safety improvements in underserved communities.

Collectively, findings from the Safety Action Plan represent a significant opportunity to invest in communities with higher proportions of residents and households that do not have the same economic resources as more affluent communities or who may face other challenges associated with health, transportation, and access to jobs due to historic practices and policies. Investing in safety in these communities can have significant positive impacts - both at the neighborhood and community level.

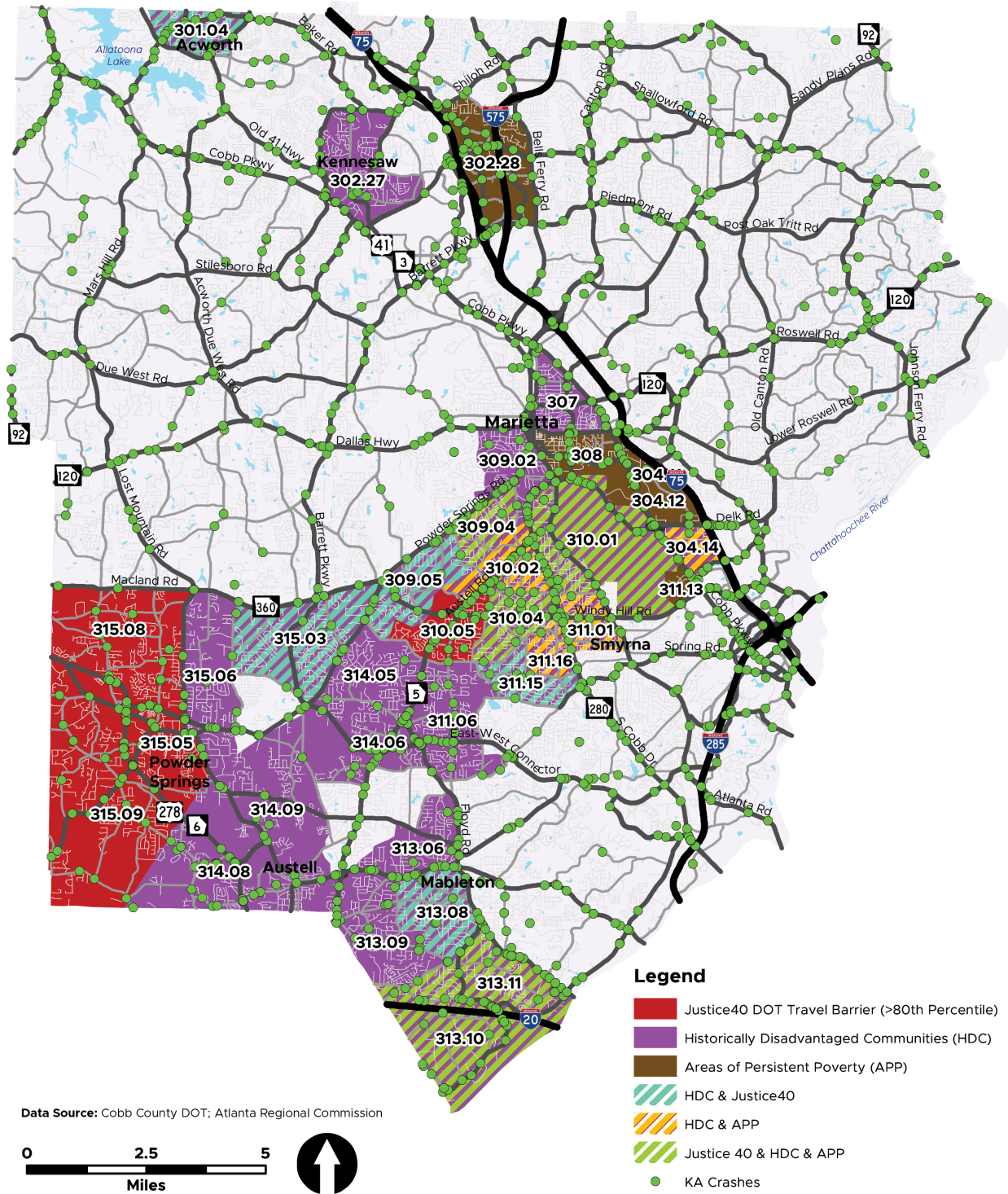


Figure 7-5: Justice40 Initiative Travel Barriers Score (Above 80th Percentile) With HDC and APP Community Designations and KA Crashes

Chapter 8 – Stakeholder and Community Engagement

Public engagement processes are crucial aspects of transportation planning projects. When conducted successfully, public engagement helps ensure that the resulting plans and infrastructure meet the needs of the communities they serve. The involvement of community members can help to identify and address concerns and issues that may not be immediately apparent to transportation planners and can provide valuable feedback on the potential impact of proposed projects. In addition, key stakeholders – such as local advocacy groups, or agencies that operate and maintain transportation infrastructure and systems – can help bring subject matter expertise to the planning process that may otherwise not be included.

There are various methods for involving the public in transportation planning projects, including public meetings, workshops, surveys, and online platforms. It is important to ensure that these methods are accessible and inclusive, so that all members of the community have an opportunity to participate and provide input. To facilitate stakeholder engagement and community input, the Safety Action Plan focused on three primary types of activities: a stakeholder committee, focus groups and stakeholder interviews, and attending community festivals or events. The intention of this strategy is to ensure inter- and intra-governmental collaboration with participation by representatives of staff from Cobb County, incorporated cities, jurisdictions and agencies outside of the County, and partner agencies such as law enforcement. The strategy was also an attempt to make community participation easy and convenient. The project team intentionally chose established community events as a way of reaching people “where they are.”

Each of these activities helped inform and steer the plan development process and identification of priority strategies and recommendations. The following sections provide some context for and summarize the engagement activities completed as part of the Safety Action Plan. More detail is provided in **Appendix D**.

Focus Group & Interviews

Focus groups and individual interviews can be important tools during a planning process as they provide an opportunity to gather feedback and insights directly from key stakeholders and members of the community who are affected by (or have oversight of) transportation safety issues. By engaging with a diverse range of focus group members and individuals, including bicyclists, medical professionals, advocacy groups, large employers, and statewide agencies, the project team was able to gain a better understanding of some of the specific safety concerns facing Cobb County.

Focus Groups

During the plan development process, the project team held a focus group session with representatives from Community Improvement Districts and the CCDOT’s Transit Division, which operates CobbLinc. The session provided key insights into how leadership from organizations with specific transportation oversight functions think about the issue of transportation safety within Cobb County. During the focus group – which took place virtually – team members provided an overview of the planning effort, shared key findings from data analysis, and answered key questions regarding specific transportation safety concerns from each represented organization.

The focus group also proved useful by helping provide important context from two significant perspectives: transit operators and Community Improvement Districts, which are often involved with transportation infrastructure planning and projects in their respective jurisdictions. Participants stressed the importance of considering all roadway users, including people with disabilities, and raised important points about the evolving thinking and design for bicycle facilities – that protected facilities are growing more common, especially in busy commercial areas.

Other comments pointed to the growing need to consider the impact of rideshare services on transportation safety. For example, in areas without designated pick-up/drop-off zones, drivers may make unexpected maneuvers to pull off to the side of the road, or let out passengers from a travel lane, and in designated pick-up/drop-off locations, there is likely a greater mix of pedestrians and vehicular traffic.

Feedback from CobbLinc and CCDOT's transit division helped highlight that transportation safety is not simply a single-user vehicle or pedestrian issue – but rather one that extends to all roadway users. Transit-affiliated focus group participants also highlighted the importance of keeping bus-riders safe as they wait for transit to arrive.

One-on-One Interviews

To ensure a diverse range of feedback and insight, the project team also conducted a series of one-on-one stakeholder interviews. The dual purpose of the interviews included obtaining more in-depth guidance from some individual stakeholders, as well as ensuring feedback from some stakeholders that were unable to make the larger Focus Group meetings. Specific interviewees included representatives from:

- WellStar Health (a large local employer)
- Atlanta Regional Commission (ARC)
- Gateway Marietta Community Improvement District (GMCID)
- Cobb County Chamber of Commerce (Cobb Chamber)
- Governor's Office of Highway Safety (GOHS)
- Georgia Department of Transportation (GDOT)

Each interview provided the project team with specific individual context and feedback that helped inform the needs assessment and recommendations. For example, those agencies with specific transportation oversight roles (such as GDOT, ARC and GOHS) were able to provide guidance on how Cobb County's overall transportation safety strategies could fit into larger regional and statewide initiatives. ARC's ability to contextualize the Safety Action Plan within their larger Regional Safety Strategy (RSS) proved informative, while the feedback received from the GOHS showed how CCDOT's outreach efforts fit into larger statewide campaigns.

Individual interviews also allowed the project team to engage with countywide business interests, specifically by engaging with the Cobb Chamber and WellStar Health. While engaging with individual members can provide important context, information from the business community provided the team with insight into those safety and transportation issues that were most important to large employers. In both interviews, issues related to intersection bottlenecks and safety were highlighted – with the Cobb Chamber in particular emphasizing the importance to large businesses of their employees being able to commute to work quickly and safely. The representative from WellStar Cobb Hospital also stressed how important commute times are to employers; it affects their ability to attract and retain talent.

Discussions with GOHS, the Chamber, and GMCID all revealed opportunities for potential continued partnerships in future outreach and educational campaigns. Several interviewees also contributed observations about some localized site-specific issues, including:

- The skew angle and long crossing distances at the intersection of South Marietta Parkway (SR 120) and Powers Ferry Road
- General concerns about high speeds, lighting, and the importance of multimodal infrastructure throughout the Gateway Marietta CID area
- High speeds and general safety concerns along Delk Road
- General concerns about being able to cross large, busy roads safely on foot and how that ties into access to businesses and job sites – specifically along Circle 75 and Cobb Parkway (US 41/SR 3)
- Issues potentially related to sun glare on key east-west corridors, like East-West Connector during sunrise and sunset
- Lack of amenities for people waiting for buses along Austell Road (SR 5) near WellStar Cobb Hospital
- Permissive turning movements at the intersection of East-West Connector and Lipson Drive, which is a major access point to the hospital

Pop-Up Events



Figure 8-1: Safety Action Plan Table at Taste of East Cobb 2023

To facilitate engagement of a wide range of community members, the project team worked closely with CCDOT staff to identify convenient and popular community festivals to attend and share information about the Safety Action Plan process. Community festivals can be good places to solicit feedback on transportation plans, particularly if the festival is well-attended and draws a diverse range of participants. Festivals provide opportunities to engage with numerous community members in a festive and relaxed setting, which can make it easier to build relationships and gather feedback.

During the Safety Action Plan process, the project team attended several community events – including at least one in each Commission District – ranging from festivals, activity centers, townhalls and farmer’s markets. The project team sought to promote the planning effort at events that were both geographically and demographically diverse, utilizing locations in a wide range of locations and venues. The project team paid particular attention to select events that took place in or would be attended by representatives of historically disadvantaged communities. Details on the dates and locations of each pop-up event can be found in **Table 8-1**.

Table 8-1: Pop-Up Events

Event	Location	Date
Cobb County Dist. 4 Town Hall	Public Safety Police Academy Austell, GA 30106	7:00PM – 9:00PM Tuesday, March 14, 2023
2023 Noonday Shanty	Town Center at Cobb Mall Kennesaw, GA 30144	7:30AM – 12:00PM Saturday, March 25, 2023
Mavell Road Trailhead Silver Comet Trail	Mavell Road Smyrna, GA 30082	4:00PM – 6:00PM Thursday, April 20, 2023
2023 Bloomin’ Fest	Legion Park Austell, GA 30106	11:AM – 6:00PM Saturday, April 29, 2023
Kennesaw Farmers Market	2820 S. Main Street Kennesaw, GA 30144	3:00PM – 7:00PM Monday, May 1, 2023
Taste of East Cobb	Johnson Ferry Baptist Church Marietta, GA 30068	11:00AM – 5:00PM Saturday, May 6, 2023

Each event was staffed by one to two project team members. During each event, project team members provided community members with a fact sheet about the Safety Action Plan process and transportation safety in general. Pop-up events also included an engagement activity asking participants to identify their greatest transportation safety concerns and priorities and a posterboard with an overview of the Safety Action Plan and how it relates to SS4A and the Safe System approach.

In total, the project team engaged 212 community members who provided feedback or perspective on roadway safety across the County. While the participants were invited to share general transportation safety concerns and priorities with the project team, several went into more detail and provided specific safety locations. **Table 8-2** lists some those safety concern locations and the events where they were shared with the project team.

Specific locations where members of the public had specific safety concerns were noted in real time, summarized, and shared with CCDOT for consideration as part of the planning process. The total number of people who “voted for” or indicated their safety “concerns” are shown in **Figure 8-3** and “priorities” are shown in **Figure 8-4**.



Figure 8-2: Public Engagement on the Silver Comet Trail Mavell Trailhead

Table 8-2: Safety Concerns Shared at Pop-Up Events

Specific Safety Concern	Location
Suboptimal roadway design along the East-West Connector (near Safety Training Center)	Cobb County District 4 Town Hall
More use of protected bus lanes, and priority signalization	Cobb County District 4 Town Hall
Trees, vegetation, and landscaping often limit visibility along roadways	2023 Noonday Shanty
More lighting along sidewalks	Mavell Road Trailhead
More lighting and emergency callboxes along the Silver Comet Trail	Mavell Road Trailhead
East-West Connector at Cooper Lake Rd needs intersection improvements and dedicated/signalized turning movements	Mavell Road Trailhead
East-West Connector at the Creekside at Vinings development could benefit from intersection improvements and dedicated/signalized turning movements	Mavell Road Trailhead
The County needs more public transportation	2023 Bloomin' Fest
Too many distracted drivers/driving while texting or calling	2023 Bloomin' Fest
There are too many unsafe intersections along Main St in downtown Kennesaw	Kennesaw Farmers Market
The intersection at Ben King Rd and Cherokee St needs safety improvements	Kennesaw Farmers Market
The intersection of Jiles Rd and the entrance to Kennesaw Elementary needs safety improvements	Kennesaw Farmers Market
Drainage and sewage issues along Johnson Ferry Rd, especially where it intersects with Woodlawn Dr	Taste of East Cobb
Numerous sidewalk gaps along Roswell Rd that should be filled in	Taste of East Cobb

Cobb County Safety Action Plan

When it comes to transportation safety, what are your biggest concerns?



10	6	8	26
<p>Insufficient Sidewalk & Bikeways</p>	<p>Exceeding the Speed Limit</p>	<p>Lighting</p>	<p>Roadway (Surface) Maintenance</p>
<p>Suboptimal Roadway Design (Sight Distance, Width, etc.)</p> <ul style="list-style-type: none"> • East-West Connector (near safety training center) 	<p>High-Speed Roads</p>	<p>Insufficient Enforcement</p>	<p>Driver Behavior</p> <ul style="list-style-type: none"> • Texting while driving/cell phone use
17	5	4	14

Figure 8-3: Transportation Safety Concerns from Pop-Ups

Cobb County Safety Action Plan

When it comes to improving transportation safety, what are your biggest priorities?



19	2	7	2
<p>Sidewalks and Bikeways <i>(Sidewalks, Separated Bike Lanes, Multi-Use Paths)</i></p> <ul style="list-style-type: none"> • More lighting and emergency call boxes 	<p>Speed Enforcement <i>(Speed Display Devices, Speed Safety Cameras)</i></p>	<p>Improved Lighting & Signage <i>(Advanced Warning Signs for Traffic Signals or Intersections, Curve Warning Signs)</i></p> <ul style="list-style-type: none"> • More lighting on Silver Comet Trail 	<p>Educational Campaigns <i>(Safe Driving Awareness, Motorcycle/Bicycle/Pedestrian Awareness, Distracted/Impaired Driving Awareness)</i></p>
<p>Pedestrian Crossing Improvements <i>(Enhanced Crosswalks, Midblock Crossings with Flashing Signals or Pedestrian Hybrid Beacons, Raised Medians or Refuge Islands, Leading Pedestrian Intervals)</i></p>	<p>Design for Lower Speeds <i>(Narrower Lanes, Raised Medians, Road Diets/Roadway Reconfigurations)</i></p>	<p>Intersection Improvements <i>(Reduced Conflict Left-Turns, Roundabouts, Dedicated Turn Lanes)</i></p> <ul style="list-style-type: none"> • East-West Connector @ Cooper Lake Dr • East-West Connector @ Creekside at Vinings • Main St. in Kennesaw • Ben King Rd @ Cherokee St • Jiles Rd @ Kennesaw Elementary • I-285 @ Exit 24 • Roswell Rd @ SR 120 • Holly Springs Rd @ Davis Rd • Jamerson Rd @ Irickum Rd • Canton Rd @ Kensington Dr • Johnson Ferry Rd @ Princeton Lakes Community 	<p>Other Ideas?</p> <ul style="list-style-type: none"> • Trees/vegetation can sometimes limit visibility • More protected bus lanes, priority signals for transit • More public transportation • Wider use of roundabouts to keep traffic flowing • More buses per route
6	2	27	5

Figure 8-4: Transportation Safety Priorities from Pop-Ups

Stakeholder Committee

To guide development of the Safety Action Plan, Cobb County established a Stakeholder Committee which served as a sounding board and forum for discussion, dialogue, and education around key transportation safety issues and opportunities. The Stakeholder Committee consisted of representatives of each of the six cities in Cobb County, including public works or transportation departments as well as law enforcement and public safety agencies. Additionally, representatives from the Georgia Department of Transportation (GDOT) and the Atlanta Regional Commission (ARC) participated.

The Stakeholder Committee met three times during the Safety Action Plan process. Committee meetings were held in-person at different locations throughout the County. During each Stakeholder Committee meeting, the project team provided information regarding the project process and status of key work tasks, shared key findings, and engaged committee members in discussion, responding to questions and seeking input and feedback.

Stakeholder Committee Meeting #1

The first Stakeholder Committee meeting was held on March 10th at the Switzer Library. Committee members present represented various groups including GDOT, various law enforcement and fire departments, and other partner agencies. The purpose of the meeting was to provide an overview of the Safety Action Plan process, its purpose, and to collect initial feedback regarding the project.

The group discussion following the presentation was wide-ranging, and included, but was not limited to, discussion on the impact of COVID-19 on data collection, the influence of roadway design on driver behavior, intersection improvements, and funding for implementation.

Stakeholder Committee Meeting #2

The second meeting was held at the South Cobb Regional Library on April 21st. Attendees included representatives from various police and fire departments, as well as representatives from the Cities of Austell, Smyrna, and Powder Springs. The Committee was provided with a refresher on the project, as well as updates on the crash analysis, an overview on the project prioritization framework, and information regarding proven safety countermeasures.

The group discussion included feedback and questions concerning infrastructure for non-motorists, the use of speed safety cameras in enforcing driver behavior, and the application of proven safety countermeasures.



Figure 8-5: Presentation During the First Stakeholder Committee Meeting

Stakeholder Committee Meeting #3



Figure 8-6: Project Team Member Presents to Stakeholders at Cobb County Safety Village

The final committee meeting was held on May 15th at Cobb County's Safety Village. As with the previous two meetings, committee members present included representatives from departments and agencies throughout the County, as well as Cities. The project team provided participants with a project update and overview, including a summary of the engagement opportunities and community feedback received by the project team. Preliminary ideas for draft recommendations were also discussed, including key corridors and policy and strategy examples.

Discussion following the presentation included questions regarding achieving incremental targets for reductions of fatalities and serious injuries and eligibility for funding under the SS4A program and other strategies for implementation.

Incorporating Input

Inviting and incorporating community input and feedback into any planning process is critical. Often, there are things that people who live, work, and play in a community see and experience in their day-to-day lives that are not readily reflected in data used and analysis conducted during a technical process such as this. Being able to gather these types of insights to supplement and complement data and analysis helps ensure that projects and plans are more reflective of the communities they serve. In the case of the Safety Action Plan, several of the key locations noted by stakeholders and community members have been incorporated into key recommendations for early implementation. The community engagement process does not stop with plan development and project identification though; there will be future opportunities for engagement and input as Cobb County and its partners pursue next steps in project selection, design, and implementation.

Chapter 9 – Implementation

Complex Problems, Comprehensive Solutions

This report, thus far, has presented extensive site-specific and systemic analyses of the deficiencies and opportunities related to user safety on Cobb County roadways. Addressing these safety issues requires a dynamic toolbox of strategies and solutions that can be called upon to both address pressing hotspots and pursue more general safety improvements throughout the County. To this end, this section discusses the tools available to Cobb County in the deployment of a holistic approach to safety management, including both *site-specific* and *systemic* analyses, along with policies and strategies.

With the ultimate goal of eliminating fatalities and serious injuries, it will be important to employ a multifaceted strategy of infrastructure design and engineering, policies and strategies, and education and enforcement. The primary focus should be on implementing proven safety countermeasures as part of a holistic approach grounded by Safe System principles:

- Death/Serious Injury is Unacceptable
- Humans Make Mistakes
- Humans Are Vulnerable
- Responsibility is Shared
- Safety is Proactive
- Redundancy is Crucial

Eliminating roadway fatalities and serious injuries will require a multifaceted strategy focused on proven safety countermeasures and Safe System principles.

What this means for Cobb County is that planners, designers, practitioners, law enforcement, and local leaders should accept and commit to sharing the responsibility for improving transportation safety. This requires working across agencies with partners to plan, design, construct, operate, and maintain a transportation system that is safer for everyone.

The ultimate goal for Cobb County is to eliminate roadway deaths and serious injuries. In an effort to work towards that goal, the County will adopt strategic targets for incremental reductions over time. The Atlanta Regional Commission (ARC), in its Regional Safety Strategy (RSS), adopted an overall target of an annual 5% reduction for all safety performance measures.⁴³ At the State level, between 2015 and 2019, there was an increase in the five-year rolling average number of traffic fatalities. The State's 2022-2024 SHSP set the target – 1,671 fatalities – to maintain roadway deaths under the projected rolling average from 2018-2022 (1,696 deaths). Although this represents an increasing target, it is lower than the 2021 HSP target.⁴⁴

Looking at five-year average annual roadway fatalities in Cobb County, a 3% annual decrease would achieve a 57% reduction by 2050, while a 5% annual decrease would achieve a 76% reduction by 2050, and a 7% annual decrease would achieve an 87% reduction in fatalities by 2050, as shown in **Figure 9-1**. **Cobb County proposes targets in line with the ARC and will aim for a 5% annual reduction in safety performance measures.**

⁴³ Atlanta Regional Commission (2023). Regional Safety Strategy, p. 10. <https://cdn.atlantaregional.org/wp-content/uploads/regional-safety-strategy-2023-04-13-vf.pdf>

⁴⁴ Federal Highway Administration (2020). Transportation Performance Management. State Highway Safety Report – Georgia. <https://www.fhwa.dot.gov/tpm/reporting/state/safety.cfm?state=georgia>

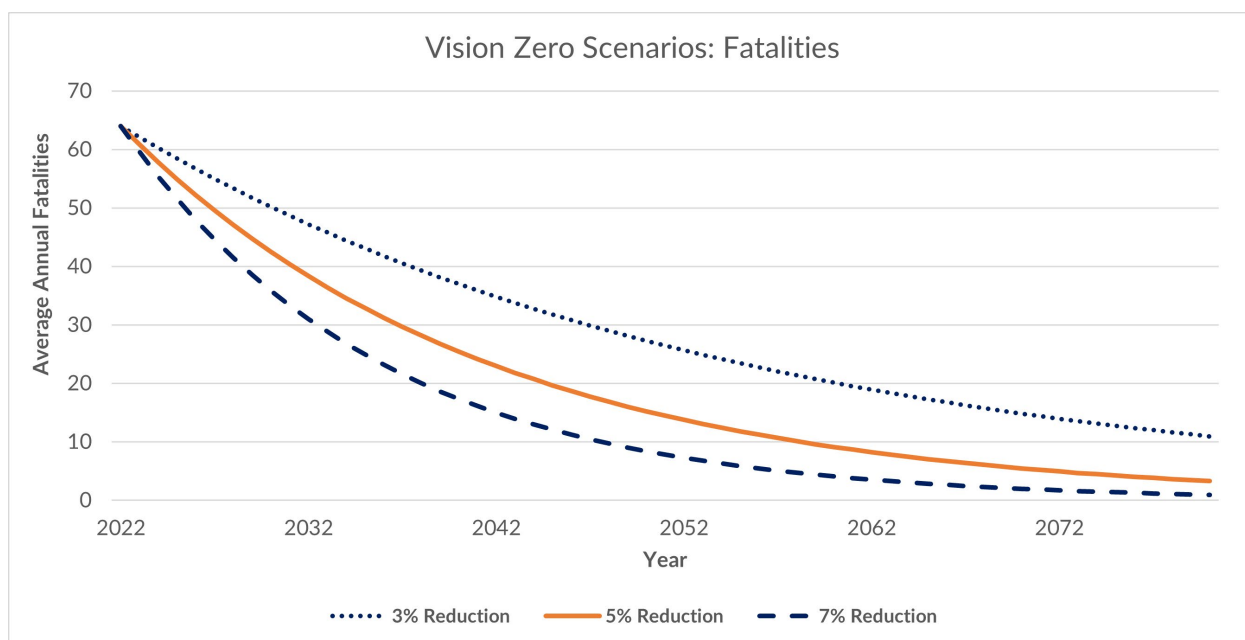


Figure 9-1: Projections for Potential Reduction of Annual Roadway Fatalities in Cobb County

While a goal of zero may seem daunting, it can be achieved through coordinated efforts that incorporate site-specific and systemic approaches, thoughtful planning, strategic deployment of resources, and regular monitoring and tracking of progress. The basic components of a comprehensive safety management process are as follows:



Planning to identify problems, screen and prioritize candidate locations, and select countermeasures



Implementing countermeasures, striking a balance between systemic and traditional safety investments



Evaluating the effectiveness of the overall approach and program.⁴⁵

The intent is to apply a combination of strategies in planning for, implementing, and evaluating safety improvements as part of an overall approach to safety management. Ideally this should include both site-specific and systemic approaches to identify opportunities with the highest potential to improve safety, as well as policies and strategies.

⁴⁵ Federal Highway Administration (2019). About the Systemic Approach. <https://safety.fhwa.dot.gov/systemic/about.cfm>

A Systemic Approach

The Federal Highway Administration (FHWA) Office of Safety defines the systemic approach to safety management as one in which the decision-making process does not just identify the most appropriate countermeasure for each individual location, as done when addressing crash hot spots. Instead, the systemic approach considers multiple locations with similar risk characteristics, selecting the preferred countermeasure(s) appropriate and affordable for widespread implementation. Because countermeasures are intended to be widely implemented, it is necessary to identify low-cost solutions.⁴⁶

Complementing the traditional site-specific approach to safety mitigation, a systemic approach can yield several key benefits for local jurisdictions, according to FHWA. Generally speaking, by addressing safety systematically based on common risk characteristics, communities can reduce the volume and severity of crashes on *all* local roadways, including those that may not have obvious clusters of severe crashes. Taken together, the key components of a systemic approach can yield greater crash reduction over time than simply using site-specific countermeasures alone.

It is important to note that just as there may be variations in how agencies conduct site-analysis, the approach to systemic analysis will vary from one jurisdiction to another. One size does not fit all. As with site-analysis, there may be data limitations (availability, completeness, etc.), limited resources available for analysis or implementation, and local priorities that influence the direction and strategy.

Systemic analysis starts with a different premise for identifying safety problems, leading to a different set of projects. It focuses on crash types and contributing factors that are common among crashes at many locations. Instead of identifying appropriate countermeasures for individual locations, the systemic approach considers multiple locations with similar characteristics that make it likely to experience certain types of crashes, or at higher risk of certain types of crashes. The systemic approach examines crash history on an aggregate basis to identify high-risk roadway characteristics. While the traditional site analysis approach results in safety investments at high-crash locations, the systemic approach leads to widespread implementation of projects to reduce the potential for severe crashes. Because the intent is to implement countermeasures systemwide, it is important to identify relatively low-cost measures that can be deployed widely and are appropriate in a range of conditions.

A Site-Specific Approach

The site-specific approach focuses on identifying and addressing high-crash locations – either at intersections or along road segments. These are based on observations of trends and patterns among crashes that happened in the past. Understanding characteristics and contributing factors reported in the data can help point to design or other built environment issues that may contribute to crashes, as well as behavioral and other factors. As with all sources of data, there are limitations in crash data. These include inconsistencies in reporting, inaccurate or incomplete data, and human interpretation of circumstances and contributing factors.

Additionally, field visits and firsthand observation can greatly improve the understanding of what factors might be contributing to severe crashes in a certain location. Often, there are circumstances that may not be revealed through data analysis or available technology. Addressing clusters of severe crashes in multiple nearby locations represent significant opportunities to improve safety as a series of packaged projects or corridor improvements.

⁴⁶ Ibid.

Systemic analysis does not replace the site analysis approach. It is a complementary technique intended to supplement site analysis and provide a more comprehensive and proactive approach to safety management efforts. Reducing crashes at individual locations clearly requires continued attention. At the same time, the systemic approach aims to reduce the risk of and the potential for the occurrence of future crashes. Furthermore, it acknowledges that crashes alone are not sufficient to identify and implement countermeasures across a system; patterns of crashes change over time and are subject to aberrations and anomalies in weather and other conditions. Plus, in areas with lower traffic volumes or lower densities of crashes, a relatively few number of incidents may skew the results. The underlying goal is to treat locations with the most potential to improve safety.

The Cobb County Safety Action Plan identifies systemic and location-specific safety needs and a range of strategies for addressing these through a combination of infrastructure improvements, policies, and strategies. It serves as a guide – helping pinpoint specific and systemic safety needs that can inform future updates to the County’s CTP and other transportation plans, and can help identify projects for inclusion in funding applications, whether the Transportation Improvement Program (TIP) or other sources.

A collaborative, multidisciplinary approach is needed to target high-risk locations and improve safety outcomes for all road users. Working with partners including Cities, CIDs, GDOT and others, Cobb County can spearhead a coordinated approach to improving transportation safety. Guidance included in this plan, used in combination with the ARC RSS, State, and federal resources can help Cobb County and its partners:

- Shift to a more proactive approach to safety
- Incorporate review of systemic risk factors into safety analysis and project identification
- Establish targets for improvements and monitor them over time
- Incorporate safety into project planning and development
- Identify, evaluate, and implement projects that target severe crashes and risk factors.

The Cobb County Safety Action Plan identifies systemic and location-specific safety needs and a range of strategies for addressing these through a combination of infrastructure improvements, policies, and strategies.

A collaborative, multidisciplinary approach is needed to target high-risk locations and improve safety outcomes for all road users. Working together with its partners, Cobb County should pursue an intentional, targeted, and incremental effort to reduce the number of fatalities and serious injuries over time.

- Embrace a Safe System Approach
- Employ a proactive, data-informed approach to safety
- Focus on fatal and serious injury crashes
- Implement proven safety countermeasures for all road users
- Collaborate with partners and consider equity in implementing solutions



Proactive, data-informed approach



Incremental investments that target severe crashes



Collaborative partnerships that embrace the Safe System approach

Solutions and Strategies

Reaching zero roadway deaths and fatalities will take a comprehensive and incremental approach to address safety for all users. This section provides a combination of strategies to address both site-specific and systemic safety issues, including projects, policies, and strategies that together form a comprehensive approach. Cobb County can build up on the initial analyses and information to advance a wide range of implementation strategies – from identification of additional sites or strategies to project selection, prioritization, and implementation. Funding and policies are also important components of the safety management process. While there are many lower-cost safety solutions out there, adequate resources are needed to support strategic investment in safety improvements. The toolkit of strategies for creating a safer transportation system in Cobb County includes tactics such as:

- **Implementing roadway design and operational strategies that anticipate human mistakes and acknowledge human vulnerability.** This should include designing to reduce the severity of crashes when they do occur in order to minimize the chance of death or serious injury.
- **Focus on locations that present highest risks for severe crashes.** Implement proven safety countermeasures that address locations with a history of severe crashes and to address risk factors associated with pedestrian, bicycle, motorcycle, and single-vehicle crashes, as well as crashes that happen outside of the vicinity of intersections.
- **Routinely identify and implement countermeasures proven to reduce the likelihood and the severity of crashes.** The Safety Action Plan presents a wide variety of countermeasures that address focus crash types for Cobb County. While those presented here are structured around focus crash types, individual countermeasures may address multiple safety issues simultaneously. Likewise, combining or packaging countermeasures is another way to ensure a holistic solution to observed safety issues.
- **Behavioral and aged-based safety issues are more difficult to address through infrastructure solutions and proven safety countermeasures.** Addressing issues such as speeding, distracted or impaired driving, and older or younger drivers requires a combination of strategies, including education and enforcement.



Figure 9-2: Right Turn Slip Lane on South Cobb Drive at Austell Road

Cobb County has already taken a number of steps to improve transportation safety throughout the County. In fact, just earlier this month (May 2023), Cobb County launched the 2023 **Click It or Ticket** Campaign in partnership with the U.S. DOT's National Highway Traffic Safety Administration (NHTSA) national **Click It or Ticket** high-visibility enforcement effort. This national seatbelt campaign is scheduled to run concurrently with the Memorial Day holiday travel period, from May 22 through June 4, 2023.

Other examples of recent efforts to improve traffic safety include the following:

- Deployment of flashing yellow arrows (FYAs) into traffic signal assemblies to more clearly indicate to drivers when they must yield before turning left across traffic;
- Design and construction of roundabouts at key locations, which have fewer conflict points than conventional intersections;
- Development of [“Pete’s Street Smarts” Video](#) in partnership with the Cobb County Safety Village, Cobb and Douglas Public Health, Safe Kids Cobb County, and Mock, The Agency;
- Passage of a Complete Streets Policy; and
- Development of a Dynamic Speed Display Sign policy and a Speed Hump Policy to support speed management and traffic calming.

Resources

There are a number of proven countermeasures and strategies for addressing observed safety issues – both systemic and site-specific. The following sections provide resources and guidance on a range of countermeasures and strategies to address roadway safety.

FHWA Proven Safety Countermeasures

FHWA’s Proven Safety Countermeasures initiative (PSCi) is a collection of 28 countermeasures and strategies effective in reducing roadway fatalities and serious injuries on our Nation’s highways.⁴⁷ Transportation agencies are strongly encouraged to consider the widespread adoption and deployment of the PSCi elements as part of an overall approach to roadway user safety. The countermeasures are designed for all road users on all road types and addresses at least one safety focus area, with many addressing multiple focus areas. They can be used reactively to address high-crash locations and site-specific safety issues as well as proactively to address high-risk locations and systemic safety issues.

Figure 9-3 lists the measures grouped by safety focus area. For more detailed information on the countermeasures, refer to FHWA’s *Making Our Roads Safer | One Countermeasure at a Time* or the [Proven Safety Countermeasures website](#).⁴⁸ It is important to note that not all countermeasures are appropriate to address all types of crashes. The key is to select countermeasures that target underlying risks and to apply them sensitively within the unique context of selected locations.

Additional details on appropriate countermeasures for focus crash types and intersections along with applications and benefits are discussed in relation to focus crash types and intersections later in this section.

⁴⁷ Federal Highway Administration (2023). Proven Safety Countermeasures. <https://highways.dot.gov/safety/proven-safety-countermeasures>

⁴⁸ Federal Highway Administration (2021). Making Our Roads Safer | One Countermeasure at a Time. https://safety.fhwa.dot.gov/provencountermeasures/pdf/FHWA-SA-21-071_PSC%20Booklet_508.pdf

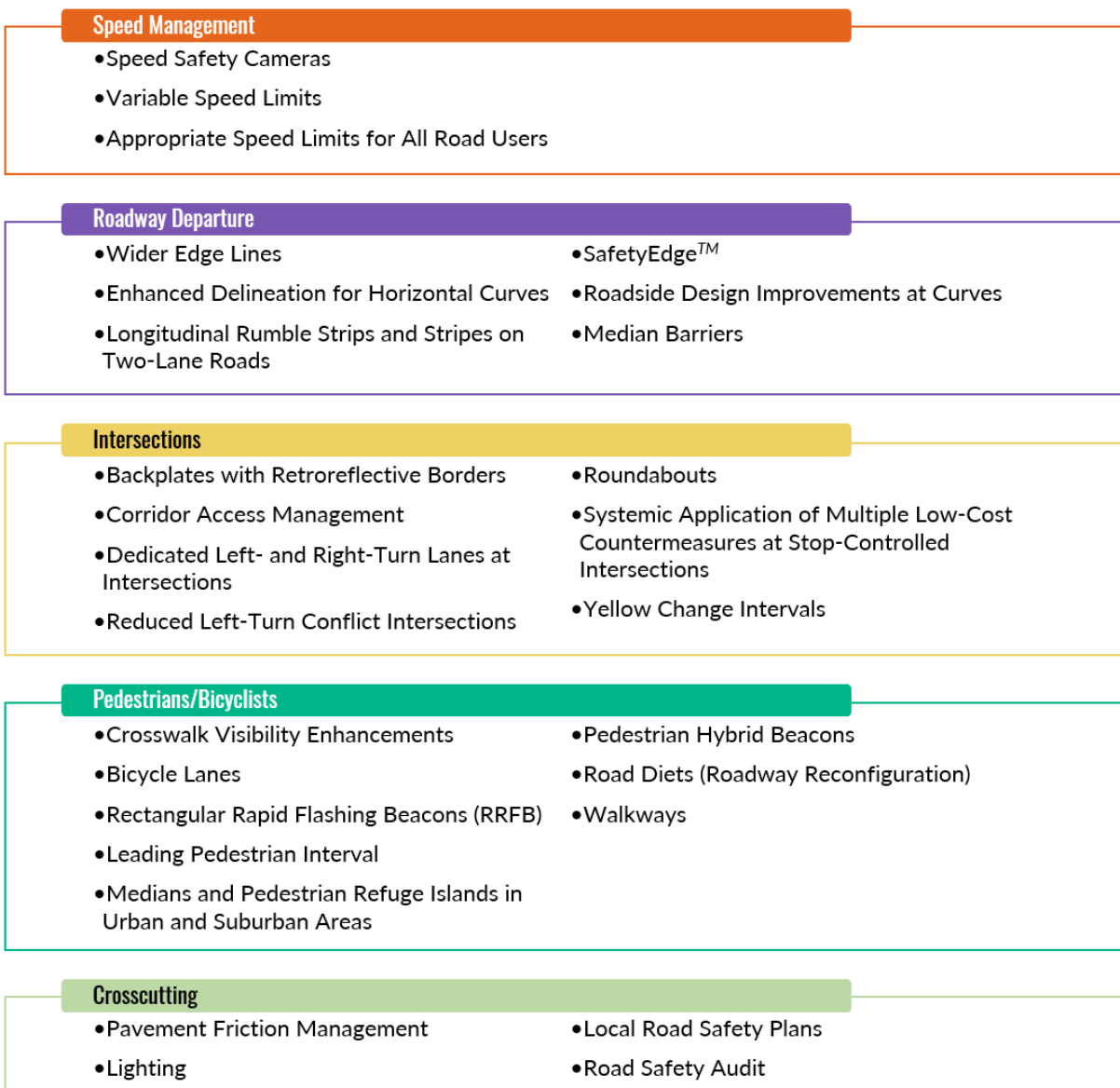


Figure 9-3: Proven Safety Countermeasures

FHWA Office of Safety Programs

The FHWA [Office of Safety Programs](#) provides information and resources on a number of important roadway safety topics and issues, including intersection safety, rural and local road safety, pedestrian and bicycle safety, roadway departure safety, speed management, and data management. It also has resources related to a number of safety initiatives ranging from motorcycle safety to older road users, and includes overviews of broader initiatives such as the systemic approach to safety, zero deaths, and work zones.

Georgia SHSP

The [Georgia Strategic Highway Safety Plan](#) is a data-driven, comprehensive, multidisciplinary plan that integrates the Four Es of safety: Engineering, Education, Enforcement, and Emergency Medical Services. It establishes safety performance goals and emphasis areas that represent opportunities to improve roadway safety for all users. It provides countermeasures and strategies for each of the nine emphasis areas,

focused on driver training, enforcement strategies, education, guidance for design strategies, programs, research, and others:

- Pedestrian Safety
- Motorcycle Safety
- Older Drivers
- Impaired Driving
- Occupant Protection
- Distracted Driving
- Young Adult Drivers
- Bicycle Safety
- Intersection Safety and Roadway Departure

Pedestrian Safety Guide and Countermeasure Selection System (PEDSAFE)

FHWA's [Pedestrian Safety Guide and Countermeasure Selection System](http://www.pedbikesafe.org/pedsafe/index.cfm) (PEDSAFE) includes a wealth of resources and strategies for local transportation officials to improve the safety and mobility of members of the public who walk.⁴⁹ PEDSAFE provides interactive resources that provide end-to-end guidance and assistance – from collecting field data at candidate countermeasure locations to the facility selection and design of countermeasures that achieve safety, mobility, aesthetic, equity, and/or connectivity goals.

PEDSAFE provides information and guidance for over 67 engineering, education, and enforcement countermeasures. Importantly, a systemic approach to pedestrian safety should not only focus on the provision of pedestrian facilities or crossing improvements; non-infrastructure initiatives (e.g., education and enforcement) provide the reinforcement of walking as a legitimate, accessible form of transportation within a community. The project, program, and policy countermeasures encompass nine overarching countermeasure groups:

- Along Roadway
- Crossing Locations
- Transit
- Roadway Design
- Intersection Design
- Traffic Calming
- Traffic Management
- Signals / Signs
- Other Measures

At a high level, local practitioners can select appropriate countermeasures based on more site-specific concerns, such as crash types, or more general systemic performance objectives. **Table 9-1** and **Table 9-2** show the relationship between the seven countermeasure groups and the 12 crash types or the eight model performance measures, respectively.

⁴⁹ Federal Highway Administration (n.d.). PedSafe. <http://www.pedbikesafe.org/pedsafe/index.cfm>

Table 9-1: PEDSAFE Crash Type Countermeasure Matrix

Crash Type	Along Roadway	Crossing Locations	Transit	Roadway Design	Intersection Design	Traffic Calming	Traffic Mgmt.	Signals / Signs	Other Measures
Dart / Dash	X	X	X	X		X	X	X	
Multiple Threat / Trapped		X	X	X	X	X		X	X
Unique Midblock		X		X		X		X	X
Through Vehicle at Unsignalized Location		X	X	X	X	X		X	X
Bus-Related	X	X	X	X				X	X
Turning Vehicle		X	X	X	X	X	X	X	X
Through Vehicle at Signalized Location		X	X	X	X	X	X	X	X
Walking Along Roadway	X	X	X	X				X	X
Working or Playing in Roadway	X	X		X		X	X	X	X
Non-Roadway	X	X		X	X	X		X	X
Backing Vehicle	X	X		X		X			X
Crossing an Expressway		X						X	X

Table 9-2: PEDSAFE Performance Objective Matrix

Objective Type	Along Roadway	Crossing Locations	Transit	Roadway Design	Intersection Design	Traffic Calming	Traffic Mgmt.	Signals / Signs	Other Measures
Reduce Speed of Motor Vehicles	X	X		X	X	X		X	X
Improve Sight Distance and Visibility for Motor Vehicles and Pedestrians		X	X	X	X	X		X	X
Reduce Volume of Motor Vehicles				X		X	X		X
Reduce Exposure for Pedestrians		X	X	X	X	X	X	X	X
Improve Pedestrian Access and Mobility	X	X	X	X	X	X	X	X	X
Encourage Walking by Improving Aesthetics	X	X	X	X	X	X			X
Improve Compliance with Traffic Laws						X	X	X	X
Eliminate Behaviors that Lead to Crashes		X			X	X	X	X	X

Countermeasures that Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices

Countermeasures that Work is a guide published by the National Highway Traffic Safety Administration (NHTSA) in 2020. It provides resources for selecting effective, evidence-based countermeasures for traffic safety issues including but not limited to: impaired driving, seatbelts and child restraints, speed management, distracted driving, motorcycle safety, younger drivers, older drivers, pedestrian safety, bicycle safety, and drowsy driving.⁵⁰

Crash Modification Factors Clearinghouse

An additional tool identified by FHWA for system safety planning is the [Crash Modification Factors \(CMF\) Clearinghouse](#).⁵¹ Firstly, the Clearinghouse provides a platform for identifying and selecting countermeasures that address focus crash types for various focus facility types, along with information regarding the likely reduction of crashes following implementation.

The Clearinghouse can also generally identify countermeasures based on specific roadway risk characteristics, such as narrow travel lanes or shoulder surface type, as well as specific crash type, such as rural roadway lane departures. When using CMFs in this way, agencies should ensure the facility types in the study are representative of the systemic safety program's focus facility types.

When using CMFs from the Clearinghouse or any other source, it is important to note that some CMFs were developed from before-after studies when the countermeasure was implemented at a high crash location. Like the other resources discussed in this section, CMFs are not an end-all solution to systemic transportation system safety, but rather an additional tool available for a holistic approach to user safety.

Design Guidelines and Policies

Existing design guidelines and standards should be comprehensively reviewed and updated to ensure consistency and meet current national best practices related to transportation system user safety. Common elements of the transportation system, including those outlined in the Manual for Uniform Traffic Control Devices (MUTCD), are often focused more on automobile mobility and less on multimodal user safety.

To this end, there are several resources available for transportation agencies seeking pursuing a more intentional approach to implementing safety considerations into their new or existing design guidance.

A common policy tool for ensuring that the transportation system is safe and accessible to *all* users is a Complete Streets policy. According to Smart Growth America, a Complete Streets policy codifies an approach to planning, designing, building, operating, and maintaining streets that enables safe access for all people who need to use them, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities.

Cobb County's own Complete Streets Policy was enacted in 2009 and while it is a great start and conveys the importance of considering all road users in the design, maintenance, and operations of roadways, it could be stronger. Specifics about how the County will plan, design, and maintain streets for all users, along with a focus on prioritizing communities and places that have not historically been invested in, and some type of mechanism(s) for accountability or measuring progress would all go a long way toward strengthening the existing policy.

⁵⁰ National Highway Traffic Safety Administration (2020). Countermeasures that Work.

https://www.nhtsa.gov/sites/nhtsa.gov/files/2021-09/Countermeasures-10th_080621_v5_tag.pdf

⁵¹ Federal Highway Administration (2023). Crash Modification Factors. <https://www.cmfclearinghouse.org/>

Smart Growth America provides a Policy Atlas for communities seeking to implement or update their own policy, with examples of more and less effective policy examples. Just this month (May 2023), the organization released a report on the [Best Complete Streets Policies](#), which identifies ten key elements that make for a strong Complete Streets policy:

- 1) Establishes commitment and vision
- 2) Prioritizes underinvested and underserved communities
- 3) Applies to all projects and phases
- 4) Allows only clear exceptions
- 5) Mandates coordination
- 6) Adopts excellent design guidance
- 7) Requires proactive land-use planning
- 8) Measures progress
- 9) Sets criteria for choosing projects
- 10) Creates a plan for implementation⁵²

In addition to Cobb County's own Roadway Design Standards and Development Standards, there are many resources available for implementing or updating local guidelines to conform with Complete Streets principles. These include, but are not limited to:

- GDOT Design Policy Manual;
- GDOT Pedestrian and Streetscape Guide;
- NACTO Urban Street Design Guide;
- NACTO Urban Bikeway Design Guide;
- FHWA Bikeway Selection Guide; and
- FHWA Improving Safety for Pedestrians and Bicyclists Accessing Transit.

⁵² Smart Growth America and National Complete Streets Coalition (2023). Best Complete Streets Policies 2023. https://smartgrowthamerica.org/wp-content/uploads/2023/05/BestCompleteStreetsPolicies2023_5.17.pdf

Recommendations

Matching Countermeasures to Crash Types

Proven safety countermeasures can be used by agencies to reactively address high-crash locations and site-specific safety issues as well as to proactively address high-risk locations and systemic safety issues. FHWA groups countermeasures by national safety priorities and describes them individually; however, many can be implemented in combination with one another to address multiple safety issues. It is also important to note that a single countermeasure can address safety issues related to multiple crash types or facility types. Here suggestions are made for countermeasures that can help address safety issues related to non-motorized transportation, motorcycle crashes, single-vehicle crashes, midblock/non-intersection crashes, as well as intersection crashes. Not all countermeasures are appropriate for all crash types. The key is to target underlying risk factors and implement them sensitively, with consideration for the unique features and characteristics of a given location.

Bicycle/Scooter Crashes

Crashes involving bicyclists and scooter users overrepresented among severe crashes in Cobb County, accounting for roughly 4% of KA crashes and resulting in 10 fatalities and 54 injuries. Addressing these types of crashes presents an opportunity to improve safety, especially among historically disadvantaged communities and areas of persistent poverty. A few examples of widely applicable countermeasures to address bicycle/scooter crashes are listed below.

Target facilities for bicycle/scooter crashes identified in the Safety Action Plan are similar to findings of ARC's RSS. They primarily consist of GDOT-owned urban arterials with four or more lanes and posted speed limits of 45 MPH and County-owned urban arterials with four or more lanes and posted speed limits of 45 MPH or higher and tend to be in more densely developed areas. Other facility types correlated with bicycle/scooter crashes include County-owned major and minor collectors with fewer than four lanes and moderate speed limits, also generally in more densely developed or urban areas. Other characteristics that tend to be correlated with bicycle/pedestrian and pedestrian crashes include higher speeds, higher traffic volumes, a greater number of travel lanes, and a lack of dedicated bicycle facilities. As with all crashes, driver perception and behavior also play a role.

Design of bicycle facilities should consider the context of the roadway and surrounding characteristics, especially traffic volumes and speeds. FHWA's [Bikeway Selection Guide](#) and the [PSC website](#) offer additional guidance, along with resources such as GDOT's [Pedestrian and Streetscape Guide](#), and numerous others.

Bicycle/Scooter Crash Factors: Examples of typical factors that are highly correlated with bicycle/scooter crashes in Cobb County include high speeds, high traffic volumes, multiple lanes/wider roads, lack of facilities, limited sight distance, and others. Further detail on contributing factors to bicycle/scooter crashes can be found in **Appendix A**.

Table 9-3: Bicycle/Scooter Countermeasures

Countermeasures	Risk Factors				
	High Speeds	High Volume	Multiple Lanes	Lack of Facilities	Limited Sight Distance
Advance warning signs	●				●
Dedicated bicycle facilities	●	●	●	●	
High visibility crossings				●	
Lighting				●	
Road diet/roadway reconfiguration	●	●	●	●	
Separate multi-use path	●	●		●	



Bicycle Lanes: According to FHWA, bicycle lanes can reduce total crashes on urban four-lane undivided collectors and local roads by up to 49%. Separated bicycle lanes (physically separated by a wide striped buffer or physical barrier) may offer even more benefits, especially on higher volume, higher speed roadways.⁵³



Road Diets (Roadway Reconfiguration): Reducing the number of lanes and repurposing travel lanes for or adding dedicated pedestrian and bicycle facilities can provide a number of benefits, even beyond pedestrian and cyclist safety. According to FHWA, converting a four-lane road to a three-lane road can yield 19-47% reduction in total crashes. Typically, road diets are most appropriate on roads with fewer than 25,000 ADT.⁵⁴

Pedestrian Crashes

Crashes involving pedestrians account for a disproportionate share of serious injury and fatal crashes (9%) in Cobb County as compared to less severe and total crashes (less than one percent). Between 2018 and 2022, 136 crashes involving pedestrians resulted in 59 fatalities and 93 injuries. Addressing pedestrian crashes has the potential to significantly improve overall roadway safety. Examples of pedestrian crash countermeasures are provided below.

Target facilities for pedestrian crashes identified in the Safety Action Plan are similar to findings of ARC’s RSS. They primarily consist of GDOT-owned urban arterials with four or more lanes and posted speed limits of 45 MPH or higher and County-owned arterials for four or more lanes and posted speed limits of 45 MPH or higher. County-owned collectors with fewer than four lanes and speed limits of 45 MPH or higher also tend to be correlated with pedestrian crashes. Characteristics that tend to be associated with pedestrian crashes include higher speeds, wider roads or a greater number of travel lanes, higher traffic volumes, and more urban areas or denser development patterns. As with all crashes, driver perception and behavior also play a role. As noted in the RSS, socioeconomic status and environmental justice are also generally correlated with pedestrian crashes with factors such as access to personal vehicles or dependence on public transportation potentially playing a role.

Pedestrian Crash Factors: Typical factors that are highly correlated with pedestrian crashes in Cobb County include high speeds, high traffic volumes, wide roads/higher number of lanes, urban areas/denser development patterns, lack of median, lack of walkways, and limited sight distance. Further detail on contributing factors to pedestrian crashes can be found in **Appendix A**.

⁵³ Federal Highway Administration (2021). Bicycle Lanes. <https://highways.dot.gov/safety/proven-safety-countermeasures/bicycle-lanes>

⁵⁴ Federal Highway Administration (2021). Road Diets. <https://highways.dot.gov/safety/proven-safety-countermeasures/road-diets-roadway-configuration>

Table 9-4: Pedestrian Countermeasures

Countermeasures	Risk Factors					Limited Sight Distance
	High Speeds	High Volume	Multiple Lanes	Lack of Median	Lack of Facilities	
Advance warning signs	•	•	•			•
Curb extensions			•	•	•	•
High visibility crosswalks					•	
Leading pedestrian intervals	•	•	•			
Lighting					•	
Pedestrian hybrid beacons	•	•	•	•		•
Prohibited right turn on red		•				•
Protected left-turn phases	•	•				•
Raised median/pedestrian refuge island	•	•	•	•	•	•
Rectangular rapid-flashing beacon	•	•	•	•		
Road diet/roadway reconfiguration	•		•	•		
Sidewalk	•	•	•		•	



Leading Pedestrian Intervals: Leading Pedestrian Intervals (LPIs) give pedestrians the opportunity to begin crossing a road before vehicles are given a green signal. According to FHWA, they can reduce vehicle-pedestrian crashes at intersections by up to 13%.⁵⁵ Guidance on use of LPIs is provided in the MUTCD.



Rectangular Rapid-Flashing Beacons: According to FHWA, rectangular rapid-flashing beacons (RRFBs) can reduce pedestrian crashes by up to 47% and can increase motorist yielding rates at marked crosswalks.⁵⁶ GDOT guidance notes RRFBs may be installed at uncontrolled crossings (intersections or midblock) on streets with speed limit of 35 MPH or less, and refers to FHWA and MUTCD for further guidance.⁵⁷



Pedestrian Hybrid Beacons: Research cited by FHWA finds that Pedestrian Hybrid Beacons (PHBs) can reduce serious injury and fatal crashes by up to 15%. PHBs are generally suitable for locations roads with three or more lanes and greater than 9,000 ADT.⁵⁸ GDOT guidance notes that PHBs may be installed at uncontrolled midblock locations on roads with a speed limit of 45 MPH or less, and refers to FHWA and the MUTCD for further guidance.⁵⁹

⁵⁵ Federal Highway Administration (2021). Leading Pedestrian Intervals. <https://highways.dot.gov/safety/proven-safety-countermeasures/leading-pedestrian-interval>

⁵⁶ Federal Highway Administration (2021). Rectangular Rapid Flashing Beacons. <https://highways.dot.gov/safety/proven-safety-countermeasures/rectangular-rapid-flashing-beacons-rrfb>

⁵⁷ Georgia Department of Transportation (2021). Pedestrian and Streetscape Guide, section 5.3.1. <https://www.dot.ga.gov/DriveSmart/Travel/BikePed/PSG.pdf>

⁵⁸ Federal Highway Administration (2021). Pedestrian Hybrid Beacons. <https://highways.dot.gov/safety/proven-safety-countermeasures/pedestrian-hybrid-beacons>

⁵⁹ Georgia Department of Transportation (2021). Pedestrian and Streetscape Guide, section 5.3.2. <https://www.dot.ga.gov/DriveSmart/Travel/BikePed/PSG.pdf>

Motorcycle Crashes

Crashes involving motorcycles comprise roughly 13% of serious injury and fatal crashes in Cobb County. Between 2018 and 2022, nearly 200 motorcycle crashes resulted in 36 fatalities and 210 injuries, indicating that addressing motorcycle crashes represent an important opportunity to improve safety. It should be noted that there is some overlap between motorcycle crashes and other crash types, including at and away from intersections, those involving pedestrians and cyclists, and single-vehicle crashes. Examples of some countermeasures potentially applicable to motorcycle crashes are provided below.

Priority facilities for motorcycle crashes in Cobb County include GDOT-owned urban arterials with four or more lanes and speed limits of 45 MPH or more and County-owned urban arterials with four or more lanes and speed limits of 45 MPH or higher. County-owned collectors with fewer than four lanes and more moderate speed limits are also correlated with motorcycle crashes. Generally, these all tend to be within more densely developed or more urban areas. Characteristics that tend to be associated with motorcycle crashes higher speed limits, wider roads, and proximity to intersections. As with all crashes, driver perception and behavior also play a role.

Motorcycle Crash Factors: Many of the typical factors correlated with motorcycle crashes in Cobb County are similar to those associated with other types of crashes, including high speeds, wide roads/higher number of lanes, proximity to intersections, permissive left turns, and limited sight distance. Further detail on contributing factors to motorcycle crashes can be found in **Appendix A**.

Table 9-5: Motorcycle Countermeasures

Countermeasures	Risk Factors				
	High Speeds	Multiple Lanes	Proximity to Intersections	Permissive Left-Turns	Limited Sight Distance
Advance warning signs	•		•		
Backplates with retroreflective borders	•	•	•		
Corridor access management	•	•	•		
Curve warning signs and delineation	•				
Dedicated turn lanes	•	•	•	•	
Flashing yellow arrows	•	•		•	
Improve intersection angle or geometry	•	•	•	•	•
Pavement friction management	•		•		
Protected left-turn phases	•	•		•	•
Reduced left-turn conflict intersections	•		•	•	•
Roundabout	•		•	•	
Speed management	•				
Yellow change intervals	•	•	•	•	
Wider edge lines	•				
Wider shoulders	•				



Curve Delineation Techniques: Enhanced signs, reflective strips, delineators, and in lane pavement markings are all techniques that can be implemented in advance of or within curves to reduce the likelihood of crashes in these areas. According to FHWA, chevron signs can reduce non-intersection fatal and injury crashes by up to 16%.⁶⁰



Yellow Change Intervals: Applying appropriate yellow change intervals to signalized intersections has been shown by FHWA to potentially reduce red-light running by 36-50% and injury crashes by up to 12%.⁶¹

Crashes More than 300 Feet from Intersections

Crashes that occur away from intersections in Cobb County account for roughly 15% of all KA crashes between 2018 and 2022. Collectively these resulted in 57 fatalities and 351 injuries. There is some overlap between these crashes and other focus types, including motorcycle, pedestrian, and single-vehicle crashes. In fact, nearly half of crashes more than 300 feet from intersections were also single-vehicle crashes. The following sections provide some suggestions for countermeasures potentially applicable to midblock crashes.

Similar to other categories that overlap with midblock crashes, priority facilities for crashes more than 300 feet from an intersection include GDOT-owned urban arterials with four or more lanes and speed limits of 45 MPH or higher and County-owned urban arterials with four or more lanes and speeds limits of 45 MPH or higher. County-owned collectors with fewer than four lanes and more moderate speed limits are also somewhat correlated with crashes more than 300 feet from intersections. Generally, these all tend to be within more densely developed or more urban areas. Characteristics that tend to be associated with motorcycle crashes consist of higher speed limits, darker conditions, and roadway curves.

Midblock Crash Factors: Many of the typical factors associated with midblock crashes in Cobb County are similar to those associated with motorcycle, bicycle/pedestrian, and single-vehicle crashes. These include high speeds, lighting condition, multiple lanes, and roadway curves. Factors such as the presence of fixed objects and narrower shoulders, as well as driver perception and behavior may also contribute to these types of crashes. Further detail on contributing factors to midblock crashes can be found in **Appendix A**.

⁶⁰ Federal Highway Administration (2021). Enhanced Delineation Horizontal Curves. <https://highways.dot.gov/safety/proven-safety-countermeasures/enhanced-delineation-horizontal-curves>

⁶¹ Federal Highway Administration (2021). Yellow Change Intervals. <https://highways.dot.gov/safety/proven-safety-countermeasures/yellow-change-intervals>

Table 9-6: Midblock/Non-Intersection Countermeasures

Countermeasures	Risk Factors			
	High Speeds	Multiple Lanes	Curves	Dark Conditions
Advance warning signs	●		●	●
Curve warning signs and delineation	●		●	●
Enhanced/raised pavement markers	●	●	●	●
Lighting				●
Pedestrian hybrid beacon	●	●		●
Raised median/pedestrian refuge island	●	●		●
Rectangular rapid-flashing beacon	●	●		●
Roadside design improvements	●		●	●
Rumble strips/strips	●		●	●
Pavement friction management	●		●	
Speed management	●		●	
Wider edge lines	●		●	
Wider shoulders	●		●	



Roadside Design Improvements for Curves: Strategies to improve roadside design in curves can provide for safe recovery by drivers to help them regain control of their vehicles and can also reduce severity of crashes when they do occur. Techniques like providing adequate clear zone, flattening slopes, and increasing shoulder width can help. Flattening sideslopes can reduce single-vehicle crashes by up to 12%.⁶²



Wider Edge Lines: While particularly effective against roadway departure crashes, wider edge lines can potentially reduce non-intersection fatal and injury crashes on rural two-lane roads by up to 37%. They increase drivers' perception of the edge of the travel lane and can provide benefits on all types of facilities. Wider edge lines are generally six inches wide, compared to the four-inch lines typically used.⁶³

Single-Vehicle Crashes

Single-vehicle crashes account for roughly 27% of all serious injury and fatal crashes in Cobb County between 2018 and 2022. More than 400 single-vehicle crashes resulted in 100 fatalities and 420 injuries during this time. More than half of these involved vehicles striking fixed objects. As noted in other sections, there is some overlap between single-vehicle crashes, midblock crashes, motorcycle crashes, and even pedestrian crashes (due in part to how crashes are reported). Examples of countermeasures potentially applicable to single-vehicle crashes are provided below.

⁶² Federal Highway Administration (2021). Roadside Design Improvements at Curves. <https://highways.dot.gov/safety/proven-safety-countermeasures/roadside-design-improvements-curves>

⁶³ Federal Highway Administration (2021). Wider Edge Lines. <https://highways.dot.gov/safety/proven-safety-countermeasures/wider-edge-lines>

Similar to midblock and motorcycle crashes, priority facilities for addressing single-vehicle crashes are generally GDOT- and County-owned urban arterials with four or more lanes and posted speed limits of 45 MPH or higher in more densely developed areas. County-owned collectors with fewer than four lanes and speed limits of 35-45 MPH were also correlated with single-vehicle crashes. There is also a correlation with City-owned arterials with speed limits of 45 MPH or greater, regardless of laneage or development patterns. Characteristics that can be indicators of single-vehicle crashes include higher speed limits, the presence of medians, horizontal curves, and lighting. As with all crashes, driver perception and behavior also play a role.

Single-Vehicle Crash Factors: Typical factors correlated with single-vehicle crashes in Cobb County include high speeds, multiple lanes, dark conditions, and roadway curves. Further detail on contributing factors to single-vehicle crashes can be found in **Appendix A**.

Table 9-7: Single-Vehicle Countermeasures

Countermeasures	Risk Factors			
	High Speeds	Multiple Lanes	Curves	Dark Conditions
Advance warning signs	●		●	●
Curve warning signs and delineation	●		●	●
Enhanced /raised pavement markers	●	●	●	●
Lighting				●
Median buffer	●	●		
Pavement friction management	●		●	
Roadside design improvements	●		●	●
Rumble strips/strips	●		●	●
Speed management	●		●	
Wider edge lines	●		●	
Wider shoulders	●		●	



Pavement Friction Management: Pavement friction treatments, such as High Friction Surface Treatment (HFST) can be used alongside pavement friction and crash data to target improvements. HFST uses a durable, anti-abrasion aggregate with pavement binders to enhance friction and reduce skidding. According to FHWA, HFST can reduce injury crashes at horizontal curves by up to 28% and total crashes at intersections by up to 20%.⁶⁴



Lighting: Lighting is a crosscutting countermeasure that can be applied in a wide variety of settings to reduce crashes of all types. Installation of lighting can reduce nighttime injury crashes on rural and urban highways by 28% and nighttime crashes at rural and urban intersections by 33-38%.⁶⁵

⁶⁴ Federal Highway Administration (2021). Pavement Friction Management. <https://highways.dot.gov/safety/proven-safety-countermeasures/pavement-friction-management>

⁶⁵ Federal Highway Administration (2021). Lighting. <https://highways.dot.gov/safety/proven-safety-countermeasures/lighting>

Intersection Crashes

Although intersection crashes were not identified as a focus type for this plan (in part, because of the overlap with other focus crash types), they are an important factor in roadway safety. As noted elsewhere in this report, about 66% of severe crashes in Cobb County between 2018 and 2022 occurred within 100 feet of an intersection. A few examples of widely applicable intersection crash countermeasures are listed below.

ARC’s RSS identified urban, GDOT-owned principal and minor arterials with four lanes, GDOT-owned minor arterials with two lanes, and County-owned major collectors with two lanes as priority facilities to target for intersection crashes. Indicators of potential severe intersection crashes across the Atlanta region include higher approach speeds, development patterns, signalized intersections on higher functional class roads and unsignalized intersections on lower functional class roads.⁶⁶

Risk Factors: Typical risk factors that are highly correlated with intersection crashes include high approach speeds, high traffic volumes, permissive left-turn movements, limited sight distance, and skewed geometry or locations on a roadway curve.

Table 9-8: Intersection Countermeasures

Countermeasures	Risk Factors				
	High Speeds	High Volume	Skew Angle	Permissive Left-Turns	Limited Sight Distance
Advance warning signs	●				●
Backplates with retroreflective borders	●	●			
Corridor access management	●	●			
Dedicated turn lanes	●	●			
Flashing yellow arrows	●	●		●	
Improve intersection angle or geometry	●	●	●	●	●
Multiple low cost countermeasures	●	●			●
Protected left-turn phases	●	●		●	●
Reduced left-turn conflict intersections	●	●			●
Roundabout	●		●		
Yellow change intervals	●	●		●	

⁶⁶ Atlanta Regional Commission (2023). Regional Safety Strategy, p. 31. <https://cdn.atlantaregional.org/wp-content/uploads/regional-safety-strategy-2023-04-13-vf.pdf>



Retroreflective Backplates: According to FHWA, retroreflective backplates on traffic signals can reduce total crashes by up to 15%. They are recommended for systematically improving performance and safety at signalized intersections.⁶⁷



Dedicated Turn Lanes: Turn lanes can be designed to provide for deceleration prior to a turn as well as storage for vehicles waiting to make a turn. They can provide benefits at many types of intersections: left-turn lanes have been shown to reduce total crashes by 28-48% and right-turn lanes to reduce total crashes by 14-26%.⁶⁸



Systemic Application of Multiple Low-Cost Countermeasures at Stop-Controlled Intersections: A number of low-cost countermeasures including signage and pavement markings can be systematically applied to stop-controlled intersections across a jurisdiction to improve roadway safety. A combination of double-indicated signs, retroreflective markings on sign posts, enhanced pavement markings, oversized signs, and stop bars are all potentially applicable. Together, these can reduce fatal and injury crashes at nighttime by up to 15%.⁶⁹

⁶⁷ Federal Highway Administration (2021). Backplates with Retroreflective Borders. <https://highways.dot.gov/safety/proven-safety-countermeasures/backplates-retroreflective-borders>

⁶⁸ Federal Highway Administration (2021). Dedicated Left- and Right-Turn Lanes at Intersections. <https://highways.dot.gov/safety/proven-safety-countermeasures/dedicated-left-and-right-turn-lanes-intersections>

⁶⁹ Federal Highway Administration (2021). Yellow Change Intervals. <https://highways.dot.gov/safety/proven-safety-countermeasures/yellow-change-intervals>

Focus Corridors

To help Cobb County focus attention on key corridors with high potential for improving safety, the project team undertook a multifaceted analysis, beginning with identification of corridors that experienced five or more serious injury and/or fatal crashes within a distance of two miles between 2018 and 2022. This yielded more than 100 “KA Crash Corridors,” shown in **Figure 9-4**, which were further evaluated based on a number of factors in several categories as part of a prioritization process to identify “Focus Corridors.”

Initially, data was compiled for each of the more than 100 KA crash corridors in 12 categories, ranging from the number of KA crashes, fatalities, and injuries along the segment to whether the segment is in unincorporated Cobb County or a City, and which Commission District(s) the segment falls within.

To narrow down the list of corridors with need for safety improvement and inform potential projects for early implementation, the project team developed a framework to prioritize “focus corridors” in consultation with CCDOT staff and key stakeholders. It included eight factors grouped into five overarching categories, as listed in **Table 9-9**. The team compiled and assessed a range of geospatial and other data, determining input values or measures for each of the factors.

Table 9-9: KA Crash Corridor Prioritization Framework

Category	Factor	Score Input Value
Safety Impact	Total KA crashes	Above or below median value among KA crash corridors
	Number of fatalities	More or less than one fatality
	Number of injuries	Above or below median value among KA crash corridors
Equity Considerations	Segment is within Areas of Persistent Poverty (APP)	Yes or no
	Segment is within Historically Disadvantaged Communities (HDC)	Yes or no
Collaboration and Partnerships	Segment spans multiple jurisdictions and boundaries (such as incorporated cities, unincorporated areas, and community improvement districts)	Yes or no
Local Control	Segment is on a State Route (on-system) or a local road (off-system)	Yes or no
Evidence of Systemic Challenges	Degree to which the segment overlaps with priority facilities for focus crash types, or in other words exhibits factors and characteristics highly correlated with focus crash types	Number of focus crash priority facility types

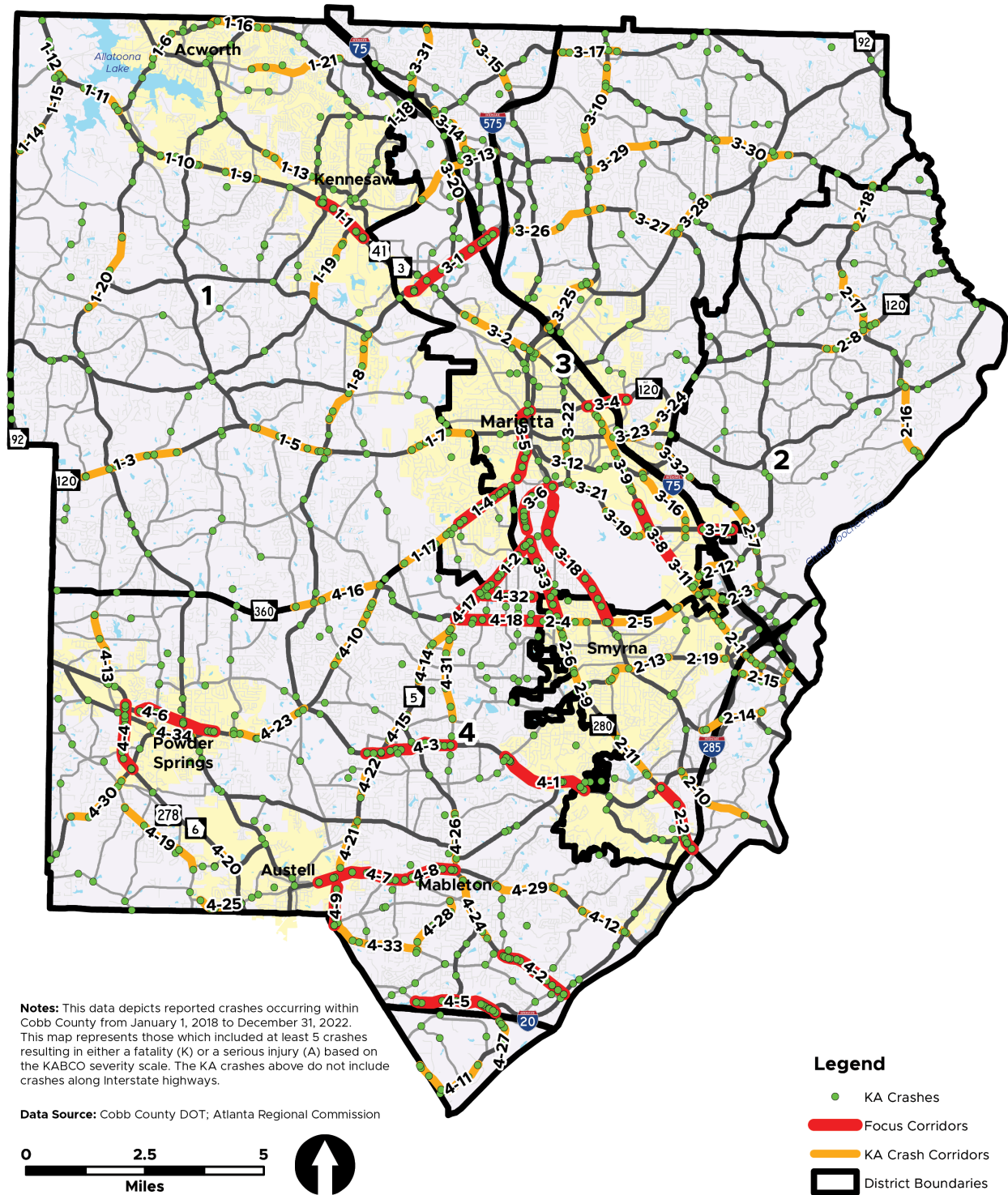


Figure 9-4: All KA Crash Corridors Evaluated

Following the input of raw data and input values, a corresponding numeric score was assigned for each factor for all of the corridors. Each project was awarded one point per factor. Scores by category were summed and then multiplied by a weighting factor, determined in consultation with stakeholders and CCDOT staff: safety impact – 40%; evidence of systemic challenges – 25%; equity considerations – 25%; local control – 10%; and collaboration and partnerships – 5%. Each project was awarded up to a total of 180 points, as shown in **Table 9-10**. The intent of this exercise was not to produce a rank-ordered list of corridors with significant potential for safety improvement, but rather to indicate the relative priority of corridors to inform potential project identification and implementation.

Table 9-10: KA Crash Corridor Prioritization Scoring

Category	Factor	Total Weighted Score
Safety Impact	KA crashes	
	Fatalities	120
	Injuries	
Equity Considerations	APP	20
	HDC	
Collaboration and Partnerships	Spans multiple jurisdictions /boundaries	5
Local Control	On-System/Off System	10
Evidence of Systemic Challenges	Overlap with Priority Facilities for Focus Crash Types	25
Total		180

The results of this scoring and prioritization process yielded a three-tier list of corridors in need of safety improvements. Tier 1 corridors correspond to higher priority corridors where safety improvements should be considered in the short-term, while Tier 2 corridors correspond to medium priority corridors, and Tier 3 corridors correspond to lower priority corridors. It is important to note that this process was not intended to produce a rank-ordered list, but rather to help Cobb County address the most pressing safety needs by identifying relative priorities. It should also be noted that this does not mean that projects along lower priority corridors are not beneficial, would not improve safety, or that they should not be implemented in the short-term, should the opportunity arise. As the County and its partners pursue and implement safety-focused projects, priorities may shift based on new data, the status of ongoing projects, funding availability and other factors.

The tables below list the more than 100 KA crash corridors by tier. They are sorted first by the total number of KA crashes, then by number of fatalities and number of injuries. Examples of key focus corridors by jurisdiction as well as within unincorporated Cobb County are also highlighted on the following pages. A full table of all 106 KA crash corridors with additional data is provided in **Appendix C**.

Key Focus Corridors: Non-State Routes in Unincorporated Cobb County

4-5: Riverside Parkway (Summerstone Ln SW to I-20)

4-10: Powder Springs Road (Brandon Lee Dr SW to Pair Rd SW)

4-3: East-West Connector (Lipson Dr to Hicks Rd SW)

Key Focus Corridors: State Routes in Unincorporated Cobb County

1-2: Austell Road (Arkose Dr SW to Pair St SE)

3-6: South Cobb Drive (Walthall Ave SE to Atlanta Rd SE)

4-2: Mableton Parkway (Dodgen Rd SW to Discovery Blvd SE)

Table 9-11: Tier 1 KA Crash Corridors

Corridor ID	Location	KA Crashes	Fatalities	Injuries
1-2	Austell Rd (Pat Mell Rd SW to Cochran Rd SW)	26	8	37
4-2	Mableton Pkwy (Dodgen Rd SW to Discovery Blvd SE)	22	3	55
3-1	Ernest Barrett Pkwy (Crater Lake Dr to Mall Blvd NW)	22	3	48
4-3	East-West Conn (Lipson Dr to Hicks Rd SW)	20	3	38
4-1	East-West Conn (Concord Rd SE to Cooper Lake Rd SE)	19	4	43
4-4	CH James Pkwy (Brownsville Rd SW to Richard D Sailors Pkwy SW)	19	3	41
4-18	Windy Hill Rd (Austell Rd SW to S Cobb Dr)	19	1	42
3-3	S Cobb Dr (Windy Hill Rd SE to Austell Rd SE)	18	6	30
1-1	Cobb Pkwy (McCollum Pkwy NW to Jiles Rd NW)	16	2	28
4-5	Riverside Pkwy (Summerstone Ln SW to I-20)	14	2	22
3-6	S Cobb Dr (Walthall Ave SE to Atlanta Rd SE)	13	5	18
3-8	Cobb Pkwy (Barclay Cir SE to Enterprise Way SE)	13	4	23
4-6	Powder Springs Rd & Richard D Sailors Pkwy (Silver Springs Blvd to Ponderosa Ln SW)	13	3	25
3-5	Powder Springs St & N Marietta Pkwy (Garrison Rd SE to Cherokee St SE)	13	3	19
3-7	Delk Rd (I-75 to Plantation Crossing Apts)	13	3	14
3-18	Atlanta Rd (Perrin Rd to Windy Hill Rd SE)	13	1	22
3-4	N Marietta Pkwy (N Cobb Pkwy NE to Wallace Rd NE)	13	1	21
4-7	Veterans Memorial Hwy (Cousins St SW to Powell Dr SW)	12	3	27
4-8	Veterans Memorial Hwy (Old Powder Springs Rd SW to Mableton Pkwy SW)	12	3	23
4-9	Maxham Rd (Old Alabama Rd SW to Creekside Overlook Way)	12	3	19
2-2	South Cobb Dr (East-West Conn SE to I-285)	12	3	14
1-4	Powder Springs St (Bellmeade Dr SW to Chestnut Hill Rd SW)	12	2	12
1-5	Dallas Hwy (Barrett Pkwy NW to Old Trave Rd SW)	11	4	14
4-10	Powder Springs Rd (Brandon Lee Dr SW to Pair Rd SW)	11	3	23
3-9	Cobb Pkwy (Richard St NE to south of Wylie Rd SE)	11	3	15
4-11	Six Flags Rd/Riverside Pkwy (Third Flag Dr to Troon Cir)	11	1	18
2-4	Windy Hill Rd (Atoka Dr SE to Cherokee Trl SE)	11	0	28
2-5	Windy Hill Rd (Atlanta Rd SE to Village Pkwy SE)	10	3	19
2-6	S Cobb Dr (Bourne Dr SE to Church Rd SE)	10	2	15
4-14	Austell Rd (Hicks Rd SW to Pair Rd SW)	10	2	11
3-11	Cobb Pkwy (Airport Industrial Park Dr to Windy Hill Rd SE)	10	1	17
3-12	S Marietta Pkwy (Manget St SE to BP Gas Station driveway)	9	4	10
2-8	Roswell Rd (E Cobb Dr NE to Robinson Rd NE)	9	3	18
4-17	Austell Rd (Chamberlain Cir SW to Windy Hill Rd SW)	9	3	13
4-16	Macland Rd (W Sandtown Rd SW to Powder Springs Rd SW)	9	3	12

Table 9-12: Tier 2 KA Crash Corridors

Corridor ID	Location	KA Crashes	Fatalities	Injuries
2-1	Cobb Pkwy (Lake Park Dr SE to Akers Mill Rd SE)	25	1	47
3-2	Cobb Pkwy (Hamilton Grove Blvd to Canton Rd NE)	19	1	37
1-3	Dallas Highway (Holland Rd SW to County Rd NW)	12	1	17
2-3	Windy Hill Road (Cobb Pkwy SE to Powers Ferry Rd SE)	12	0	23
3-10	Canton Rd (Elnora Dr NE to Chastain Corner Rd)	11	3	11
4-25	Humphries Hill Rd (Windchase Ct SW to CH James Pkwy/Thornton Rd)	11	1	24
4-12	Veterans Memorial Hwy (Azalea Dr SE to east of Discovery Blvd SE)	10	1	14
4-13	Florence Rd (Hiram Rd SW/Gaydon Rd SW to CH James Pkwy)	10	0	25
4-15	Austell Rd (Park Brooke Cir SW to Mulkey Rd SW)	9	2	12
3-13	Chastain Rd (McCollum Pkwy NW to I-575)	9	1	13
3-14	George Busbee Pkwy (Camden Shiloh Apts to Skip Spann Conn)	9	1	13
2-7	Powers Ferry Rd (Chipmunk Trl SE to Balearic Dr)	9	1	11
3-15	Bells Ferry Rd (Larkspur Blvd NW to Hawkins Store Rd NW)	9	0	22
4-23	Powder Springs Rd (Hopkins Rd SW to Barrett Pkwy NW)	8	4	10
2-9	S Cobb Dr (Church St SE to Brown Rd SE)	8	2	18
4-20	CH James Pkwy (north of Garrett Rd SW, along intermodal yard)	8	2	12
4-21	Austell Rd (Clay Rd SW to Landington Dr)	8	2	10
4-24	Mableton Pkwy (Ridge Ave SW to Nash Cir SW)	8	1	22
4-19	Hiram Lithia Springs Rd (Brown Rd SW to Hiram Ct SW)	8	1	20
2-10	S Atlanta Rd (Cumberland Pkwy SE to Plant Atkinson Rd SE)	8	1	17
4-22	Austell Rd (Kohl's shopping center to Seayes Rd SW)	8	1	16
1-6	Lake Acworth Dr (W Lakeshore Dr NW to Lake Acworth Ln)	8	1	15
2-11	S Cobb Dr (Walton Way SE to Cooper Lake Rd SE)	8	1	15
3-16	Franklin Gateway (S Marietta Pkwy SE to Newmarket Pkwy SE)	8	1	14
2-12	Terrell Mill Rd (Cobb Pkwy SE to Woodchase Ln SE)	8	1	13
2-13	Concord Rd SE (King Springs Rd SE to Strathmoor Rd SE)	8	0	18
1-11	Cobb Pkwy (Lake Acworth Dr NW to North Shores Rd NW)	7	4	5
3-19	S Cobb Dr SE (Northwest of Ridenour Dr SE to Cobb Pkwy SE)	7	3	13
1-10	Cobb Pkwy (Creel Chase Way to Lakeside Marketplace)	7	2	18
4-32	Pat Mell Rd (Lorene Dr SW to Wakita Dr SE)	6	3	10
4-31	Hicks Rd (Birchwood Rd SW to Hurt Rd SW)	6	3	4
3-21	S Cobb Dr SE (Walker St SW to Alumni Dr SE)	6	1	8
4-27	Riverside Pkwy (Twin Hill Rd SW to Six Flags Pkwy)	6	0	14
1-17	Powder Springs St (Cheatham Hill Rd SW to Cunningham Rd SW)	6	0	10
3-32	Powers Ferry Rd (Oakland Dr/Wood Glen Ln SE to Scott Dr SE)	5	5	3
3-27	Piedmont Rd (west of Shaw Rd NE to Sandy Plains Rd)	5	2	3

Table 9-13: Tier 3 KA Crash Corridors

Corridor ID	Location	KA Crashes	Fatalities	Injuries
1-8	Ernest Barrett Pkwy NW (Stilesboro Rd NW to McDaniel Rd NW)	8	2	11
3-17	Shallowford Rd (Kings Crossing Dr NE to Nevilly Way NE)	8	1	11
1-7	Whitlock Ave (Dallas Cir SW to Lindley Ave NW)	8	0	10
1-12	Cobb Pkwy (Jeff Davis Ln NW to Cedarcrest Rd NW)	7	2	9
1-9	Cobb Pkwy (Blue Springs Rd to Loring Rd)	7	1	13
3-20	Barrett Lakes Blvd (Chastain Rd NW to Big Shanty Rd NW)	7	1	13
4-26	Floyd Rd (White Blvd SW to Fontaine Rd SW)	7	1	10
2-14	Paces Mill Rd (Orchard Rd to Grove Gate Ln)	7	0	10
1-14	Dallas Acworth Hwy (Cheatham Rd NW to Cheatham Dr NW)	6	3	10
1-15	Dallas Acworth Hwy (Belhaven Cv NW to Bridgemont Pl NW)	6	2	6
3-22	Fairground St (Washington Ave NE to Haley St SE)	6	1	11
4-30	Brownsville Rd (east of Hill Rd SW to Oglesby Rd SW)	6	1	9
2-16	Johnson Ferry Rd (Olde Towne Pkwy to Columns Dr)	6	1	8
3-23	Roswell Rd (Hagood Cir to Amanda Ln NE)	6	1	8
3-24	Roswell Rd (Greenbriar Pkwy NE to Hamilton Ct SE)	6	1	8
4-28	Pisgah Rd (north of S Gordon Rd SW to Old Alabama Rd SW)	6	1	5
3-25	Canton Rd Conn (I-75 to Sandy Plains Rd)	6	0	13
1-16	Lake Acworth Dr (Wall Dr NW to Baker Plantation Way NW)	6	0	12
1-13	Old 41 Hwy (Jiles Rd to Liberty Commons Dr)	6	0	11
2-15	Cumberland Blvd (I-75 to Cumberland Pkwy SE)	6	0	11
1-18	Cherokee St (Jiles Rd NW to Shiloh Rd NW)	6	0	8
4-29	Veterans Memorial Hwy (Lee Rd SW to Cobblestone Creek Cir)	6	0	8
1-20	Mars Hill Rd (Thornapple Dr to Hyatt Dr)	5	2	7
2-17	Johnson Ferry Rd (Blackwell Park Dr to East Cobb Shopping Center)	5	2	6
1-19	Kennesaw Due West Rd (Stilesboro Rd to Burn Wood Dr)	5	1	7
2-18	Johnson Ferry Rd (Shallowford Rd to Post Oak Tritt Rd NW)	5	1	7
4-34	Powder Springs Dallas Rd/Marietta St (east of Old Lost Mountain Rd SW to Austell Powder Springs Rd)	5	0	11
4-33	Cardell Rd/S Gordon Rd (Old Alabama Rd SW to Pisgah Rd SW)	5	0	10
2-19	Spring Rd (Campbell Rd SE to Sports Ave)	5	0	9
3-26	Ernest Barrett Pkwy (Barrett Creek Blvd to Piedmont Dr NE)	5	0	9
3-29	Blackwell Rd (Canton Rd NW to Willow Wind Dr)	5	0	7
3-30	Shallowford Rd (Trickum Rd NE to Bramblewood Way NE)	5	0	7
1-21	Hickory Grove Rd (Baker Grove Rd NW to Carina Dr NW)	5	0	6
3-28	Sandy Plains Rd (Beaver Shop Rd to Piedmont Rd NE)	5	0	6
3-31	Wade Green Rd (Wade Green Cir NW to George Busbee Pkwy NW)	5	0	6

Key Focus Corridors: Acworth

1-10: Cobb Parkway (Creek Chase Way to Lakeside Marketplace entrance)

1-6: Lake Acworth Drive (W Lakeshore Dr NW to Lake Acworth Ln)

1-16: Lake Acworth Drive (Wall Dr NW to Baker Plantation Way NW)

Key Focus Corridors: Austell

4-9: Maxham Road (Old Alabama Rd SW to Creekside Overlook Way)

4-7: Veterans Memorial Highway (Cousins St SW to Powell Dr SW)

4-20: CH James Parkway (north of Garrett St SW along NS Intermodal Yard)

Key Focus Corridors: Kennesaw

1-1: Cobb Parkway (McCollum Parkway NW to Jiles Rd NW)

3-1: Ernest Barrett Parkway (Crater Lake Dr to Mall Blvd NW)

3-26: George Busbee Parkway (Camden Shiloh Apartments to Skip Spann Connector)

Key Focus Corridors: Marietta

2-5: Windy Hill Road (Atlanta Rd SE to Village Pkwy SE)

3-8: Cobb Parkway (Barclay Cir SE to Enterprise Way SE)

3-9: Cobb Parkway (Richard St NE to Wylie Rd SE)

Key Focus Corridors: Powder Springs

4-6: Powder Springs Road and Richard D Sailors Parkway (Silver Springs Blvd to Ponderosa Ln)

4-4: C.H. James Parkway (Brownsville Rd SW to Richard D Sailors Pkwy SW)

4-13: Florence Road (Hiram Rd SW/Gaydon Rd SW to CH James Pkwy)

Key Focus Corridors: Smyrna

3-3: South Cobb Drive (Windy Hill Rd SE to Austell Rd SE)

2-6: South Cobb Drive (Bourne Dr SE to Church Rd SE)

2-4: Windy Hill Rd (Atoka Dr SE to Cherokee Trl SE)

Early Implementation Priorities

To help the County identify a subset of “Focus Corridors” for early implementation, in addition to the information gleaned from the prioritization exercise described previously, the project team and County staff considered geographic distribution of KA crash corridors by Commission District and incorporated city, and whether the County’s Comprehensive Transportation Plan (CTP) recommends improvements along the corridor segment. In total, a subset of 23 “Focus Corridors” were identified as priorities for early implementation, as shown in **Figure 9-6** and listed in **Table 9-14** and described on the following pages. (*Appendix C includes corridor profiles for each of the early implementation priorities*).

For each of the early implementation priorities, the project team reviewed crash details, design, and other characteristics of the corridor, and identified potentially applicable countermeasures. Using aerial imagery to supplement roadway and crash data, potential recommendations were developed, with a focus on shorter-term strategies. These initial recommendations will form the basis of future projects to be programmed and implemented by the County and its partners. In some cases where projects have already been identified by the CTP, additional suggestions for safety improvements are offered to complement previously identified projects. Going forward, additional assessment of the remaining corridors and systemic application of countermeasures can address needed improvements on remaining corridors and segments.



Figure 9-5: Austell Road at Pat Mell Road

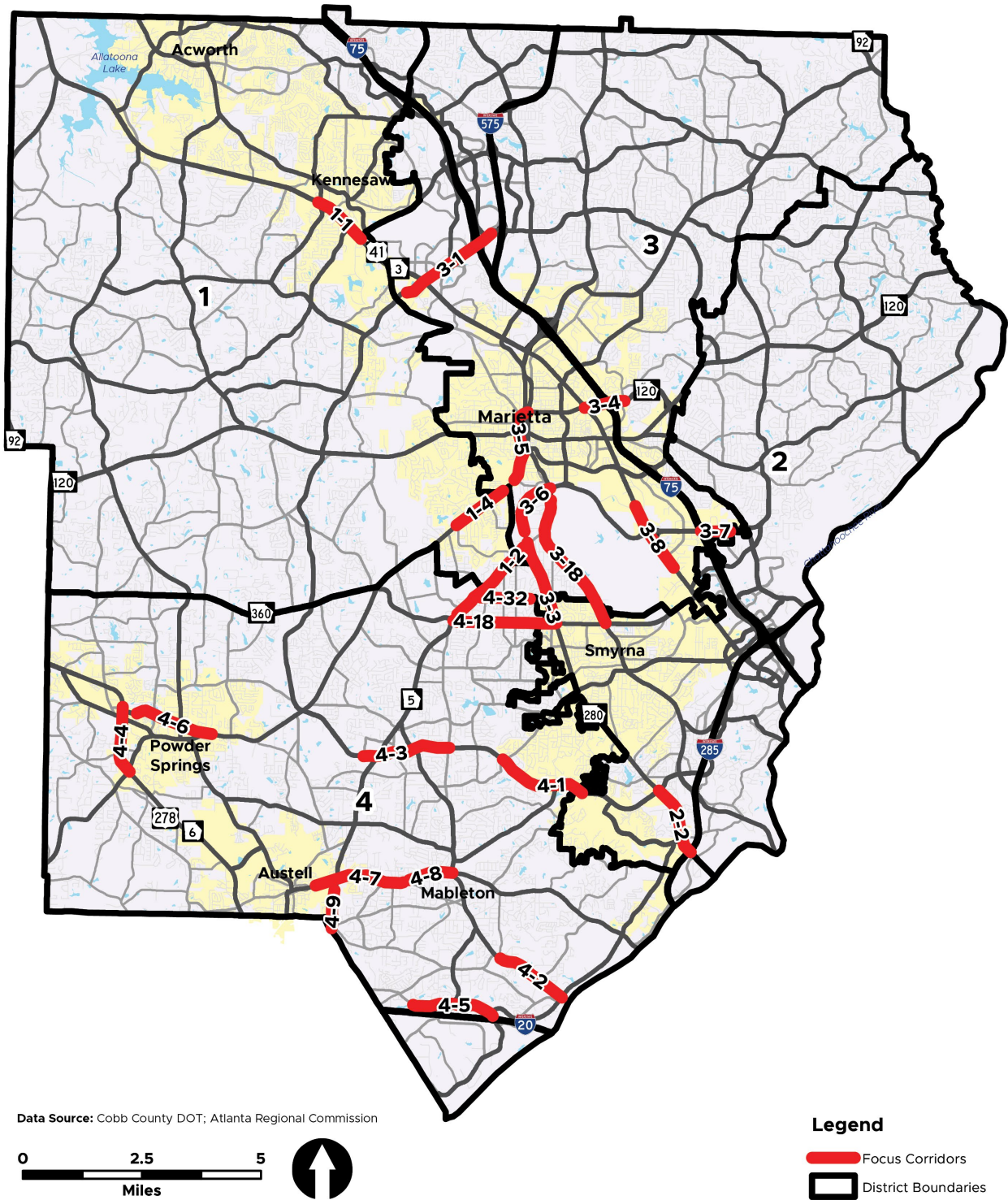


Figure 9-6: Priority Focus Corridors for Early Implementation

Table 9-14: Early Implementation Priorities

Corridor ID	Location	Recommendation Description	Est. Cost
1-1	Cobb Parkway (US 41/SR3) (McCollum Pkwy NW to Jiles Rd NW)	Fill sidewalk gaps on the corridor (note: may require widening bridge over railroad or parallel pedestrian bridge). Install retroreflective backplates, intersection lighting, and pedestrian warning signs at signalized intersections. Evaluate intersection geometry at Watts Dr/Pine Mountain Ct and at Keene St/Dobbs Dr for further safety enhancements. Coordinate improvements with findings from Cobb Pkwy/McCollum Pkwy realignment study.	\$5.0 - \$5.1 million
1-2	Austell Road (SR 5) (Arkose Dr SW to Pair St SE)	Conduct a Road Safety Audit (RSA) to identify specific needs along the corridor and study for re-alignment of Austell Rd and Favor Rd to improve intersection geometry and sight distance issues. Upgrade traffic and pedestrian signals to include Leading Pedestrian Intervals (LPIs) and flashing yellow arrows (FYAs) as appropriate. Extend medians at Pat Mell Rd and Cunningham Rd to provide additional pedestrian protection. Evaluate and install Pedestrian Hybrid Beacons (PHBs) along with roadway lighting near 8 bus stops at which Austell Road is uncontrolled.	\$3.5 - \$3.6 million
1-4	Powder Springs Street (SR 360) (Bellmeade Dr SW to Chestnut Hill Rd SW)	Install segments of raised medians throughout the corridor. Upgrade traffic and pedestrian signals to include FYAs and LPIs at Bellemeade Dr and Chestnut Hill Rd. Review and adjust yellow change intervals. Install Traffic Signal Ahead signs at both signalized intersections and advance pedestrian warning signs at Chestnut Hill Rd. As part of Laurel Springs Ln intersection improvement, consider opportunities for raised median, signalized pedestrian crossing (consider a PHB if intersection does not meet signal warrants), and intersection lighting. Evaluate recent improvements at Chestnut Hill Rd to see if these result in reductions in serious injury and fatal crashes.	\$2.4 - \$2.5 million
2-2	South Cobb Drive (SR 280) (East-West Conn SE to I-285)	Conduct an RSA and implement priority recommendations. Study the impacts of installing a raised median south of the Shops at South Cobb and implement if feasible. Analyze intersections of Oak Dr/Tibarron Pkwy, Shops at South Cobb, Valley Pkwy/Lois St to evaluate possible signalization. Fill sidewalk gaps. Upgrade signals at I-285, Highlands Pkwy, Wright Dr/S Cobb Industrial Blvd, Oakdale Rd/Church Rd/Kenwood Rd, and East-West Conn/Cumberland Pkwy with mast arms and retroreflective backplates. Consider access management improvements such as consolidating driveways or convert to right-in/right-out, especially south of Oakdale Rd.	\$7.7 - \$7.8 million

Table 9-14 Continued

Corridor ID	Location	Recommendation Description	Est. Cost
3-1	Ernest Barrett Parkway (Crater Lake Dr to Mall Blvd NW)	Install bicycle and pedestrian advance warning signs prior to signalized crossings throughout corridor. Install "Turning Vehicles Yield to Pedestrian Signs" in advance of Kennesaw Marketplace driveway and Crater Lake Dr/Ridenour Blvd (where Noonday Creek Trail parallels Barrett Pkwy); add LPI to signal at Crater Lake Dr/Ridenour Blvd. Remove right-turn slip lane on Crater Lake Dr, install Stop Bar for right-turning vehicles; install skip lines to guide left-turning vehicles through intersection to appropriate receiving lanes. Incorporate lighting into R_807 and R_808.	\$200,000 - \$300,000
3-3	South Cobb Drive (SR 280) (Windy Hill Rd SE to Austell Rd SE)	Install advance intersection and pedestrian warning signs throughout corridor. Study intersection of Benson Poole/Old Concord Rd to identify specific safety improvements and need for turn lanes, to improve intersection geometry and improve pedestrian crossings. Upgrade two traffic signals to mast arms. Add protected left-turn phases at intersections with Old Concord Rd and Austell Rd. Evaluate and install PHBs and lighting near 8 bus stops where S Cobb Dr is uncontrolled. <i>In the long-term, consider reducing lane widths, installing raised median to improve pedestrian safety, slow traffic, and improve access management.</i>	\$3.3 - \$3.4 million
3-4	N Marietta Parkway (SR 120 Alt) (N Cobb Pkwy NE to Wallace Rd NE)	Restripe pavement markings at I-75 interchanges; upgrade traffic signals at I-75 NB with mast arms and retroreflective backplates. Rebuild/repair raised median at Wallace Rd, upgrade pavement markings at intersection. Review yellow change intervals throughout corridor and adjust as needed. Install wider edge line throughout corridor (especially between Wallace Rd and I-75 NB).	\$200,000-\$300,000
3-5	Powder Springs Street (SR 360) & N Marietta Parkway (SR 120 Alt) (Garrison Rd SE to Cherokee St SE)	Construction already under way. Monitor and evaluate Powder Springs St for reduction in crashes; identify additional improvements as needed.	Staff time

Table 9-14 *Continued*

Corridor ID	Location	Recommendation Description	Est. Cost
3-6	South Cobb Drive (SR 280) (Walthall Ave SE to Atlanta Rd SE)	Install a raised median throughout the corridor and improve lighting. At signalized intersections, review and adjust yellow change intervals as needed. Install signal ahead signs at Pearl St and Atlanta Rd. In conjunction with planned improvements at Pearl St (R_026), upgrade signals to include protected left-turns onto S. Cobb Dr, retroreflective backplates, and LPIs. Add retroreflective backplates to signals at Appleton Dr, Austell Rd, and Atlanta Rd and upgrade signal to mast arm at Atlanta Rd. Install advanced pedestrian warning signs at Leader Rd. Consider future access management improvements such as driveway consolidation. Evaluate and install PHBs and lighting near 6 bus stops at which S Cobb Dr is uncontrolled. <i>In the long-term, consider opportunities to expand buffer between sidewalk and travel lanes if right-of-way permits.</i>	\$3.3 - \$3.4 million
3-7	Delk Road (I-75 to Plantation Crossing Apts)	Conduct an RSA to identify specific improvements. Throughout the corridor, restripe marked crosswalks, install street and pedestrian lighting, and add retroreflective backplates to traffic signals. Install crosswalks and pedestrian signals to north and east legs of the Northchase Pkwy intersection. <i>In the future, consider opportunities to consolidate driveways, convert driveways to right-in/right-out or install a raised median east of Northchase Pkwy (with traffic study to evaluate rerouting).</i>	\$1.1 - \$1.2 million
3-8	Cobb Parkway (US 41/SR 3) (Barclay Cir SE to Enterprise Way SE)	Throughout the corridor, install a raised median, widen shoulders, and sidewalks on both sides of the road. Install signal ahead signs in advance of signalized intersections. Upgrade traffic signals to mast arms with retroreflective backplates and flashing yellow arrows at Barclay Cir, Spinks Dr, Atlantic Ave, Franklin Gateway, and Enterprise Way. Install advanced pedestrian warning signage near bus stop at Franklin Gateway.	\$16.6 - \$16.7 million
3-18	Atlanta Road (Perrin Rd to Windy Hill Rd)	Conduct a speed study using USLIMITS2 to evaluate possible reduction of speed limit. Install short segments of raised median throughout the corridor to help visually calm traffic and serve as pedestrian refuges. Study the feasibility of installing two mid-block crossings with PHBs between signalized intersections. Install signal ahead signs in advance of the three signalized intersections on the corridor. Enhance crosswalks at George McMillan Dr, add signage to stop for pedestrians in the sidewalk, and reconstruct both corners. Re-stripe crosswalks at Taylor Dr, Old Concord Rd, Austell Rd, and at the Chevron gas station driveway. Upgrade signal at Atlanta Rd at Austell Rd to mast arms. Add a crosswalk and pedestrian signal to north leg of Old Concord Rd and to the north leg of Austell Rd. <i>In the long-term, consider landscaping to buffer between Mountain-to-River Trail and travel lanes.</i>	\$2.7 - \$2.8 million

Table 9-14 Continued

Corridor ID	Location	Recommendation Description	Est. Cost
4-1	East-West Connector (Concord Rd SE to Cooper Lake Rd SE)	Install wider edge lines. Implement intersection improvements at Cooper Lake Rd (R_106) and Fontaine Rd (R_107), including pedestrian improvements, addressing intersection geometry, and adding lighting. Include wider shoulder and lighting as part of East-West Connector Corridor Improvement (R_578). Consider extending western limits to Felton Hill Rd (one mile west).	\$800,000 - \$900,000
4-2	Mableton Parkway (SR 139) (Dodgen Rd SW to Discovery Blvd SE)	Conduct an RSA to identify specific safety needs. Conduct a signal warrant study for the intersections of Bonanza Tr, Hunnicutt Rd (two intersections), Queen Mill Rd, and S. Gordan Rd. Install a raised median and additional lighting throughout the corridor. Install signal ahead signs in advance of Discovery Blvd. In conjunction with the planned trail on Mableton Pkwy (BP_451) and trailhead at Lee Industrial Blvd/Discovery Blvd (R_220), implement pedestrian improvements at Lee Industrial Blvd/Discovery Blvd such as enhanced crosswalks and LPIs. In conjunction with R_360, consider consolidating driveways between Discovery Blvd on Hunnicutt Rd on the north side of the corridor.	\$3.1 - \$3.2 million
4-3	East-West Connector (Lipson Dr to Hicks Rd SW)	Throughout the corridor, review and adjust yellow change intervals as needed, and install Signal Ahead signs in advance of signalized intersections, and lighting throughout the corridor. Upgrade signals at Brookwood Dr and Austell Rd to mast arms with retroreflective backplates. Improve worn pavement markings, including crosswalks, at Floyd Rd. Consider future access management improvements near Austell Rd such as driveway consolidation.	\$600,000 - \$700,000
4-4	C.H. James Parkway (US 278/ SR 6) (Brownsville Rd SW to Richard D Sailors Pkwy SW)	Conduct a speed study on the corridor using USLIMITS2 to evaluate possible reduction of speed limit. Throughout the corridor, review and adjust yellow change intervals as needed, and install signal ahead signs in advance of signalized intersections. Upgrade signals at Brownsville Rd, Hill Rd, Richard D Sailors Pkwy with mast arms and retroreflective backplates. Install a new traffic signal at Sweetwater Ave in conjunction with planned improvement (R_991), along with pedestrian signals and crosswalks. Improve worn pavement markings, including crosswalks, at Hill Rd.	\$1.5 - \$1.6 million

Table 9-14 Continued

Corridor ID	Location	Recommendation Description	Est. Cost
4-5	Riverside Parkway (Summerstone Ln SW to I-20)	Install a raised median west of Factory Shoals Rd. Install lighting along the corridor. Install curb extensions at the intersections of Cityview Dr, Premier Ln, and Factory Shoals Dr. At Cityview Dr, install protected left-turn phase at the traffic signal and prohibit permissive left-turns. South of Cityview Dr, install pedestrian crossing ahead signs and associated pavement markings. At the I-20 off-ramp, install a sign that flashes when a pedestrian is crossing at the crosswalk at the end of the ramp.	\$3.6 - \$3.7 million
4-6	Powder Springs Road & Richard D. Sailors Parkway (Silver Springs Blvd to Ponderosa Ln SW)	Throughout the corridor, add retroreflective backplates to signals and review and adjust yellow change intervals as needed. Install signal ahead signs in advance of signalized intersections throughout the corridor. At Powder Springs Rd, install crosswalk and pedestrian signal across the east leg of the intersection.	\$100,000 - \$150,000
4-7	Veterans Memorial Highway (US 78/US 278/SR 6) (Cousins St SW to Powell Dr SW)	Install a raised median between Powell Dr and Collins Blvd. Consider extending planned road diet on Veterans Pkwy in Austell, eastward to Powell Dr, along with planned bike facilities and traffic calming features. Upgrade traffic signal at Maxham Rd to mast arms with retroreflective backplates. Consider future access management improvements along the corridor such as driveway consolidation.	\$1.7 - \$1.8 million
4-8	Veterans Memorial Highway (US 78/US 278/SR 6) (Old Powder Springs Rd SW to Mableton Pkwy SW)	Install a raised median between Old Powder Springs Rd and Mableton Pkwy. Conduct study to evaluate removing the permissive left-turn phase for westbound traffic on Veterans Memorial Dr at Floyd Rd, and to evaluate adding a protected left-turn phase for northbound and southbound traffic on Old Floyd Rd turning left on Veterans Memorial Hwy. Upgrade signals at Old Floyd Rd and Glore Rd to mast arms with retroreflective backplates, upgrade signals at Floyd Rd/Mableton Pkwy to mast arms. Consider future access management improvements such as driveway consolidation.	\$2.3 - \$2.4 million
4-9	Maxham Road (Old Alabama Rd SW to Creekside Overlook Way)	Throughout the corridor, install additional lighting, wider edge lines, and widen shoulders. In conjunction with planned improvements at Old Alabama Rd (R_103), install signal ahead signs in advance of the intersection. Conduct a signal warrant study for the intersection of Polder Way/Pontiac Cir; if warrants is not met, install an overhead intersection control flashing beacon.	\$600,000 - \$700,000

Table 9-14 Continued

Corridor ID	Location	Recommendation Description	Est. Cost
4-18	Windy Hill Road (Austell Rd SW to S Cobb Dr)	<p>Conduct an RSA to determine specific safety needs. In the two-way left turn-lane, implement flush median treatments (striping, stamping, or colored pavement). Study the feasibility of installing a mid-block crossing with PHB between Sandtown Rd and Favor Rd, and between Favor Rd and Austell Rd. Evaluate and install PHBs with lighting near 6 bus stops at which Windy Hill Rd is uncontrolled and upgrade signal at S Cobb Dr to a mast arm. Consider expanding school zone further east and west in advance of Kennedy Ln and Favor Rd (access points to school). Install dynamic speed display signs on either end of the school zone. Work with Safe Routes to School Program to identify additional crossing improvements at Kennedy Ln and Favor Rd. <i>Re-evaluate prior recommendation for widening and in the long-term, consider installing median(s) to separate direction of travel, perhaps as part of R_633.</i></p>	\$4.0 - \$4.1 million
4-32	Pat Mell Road (Lorene Dr SW to Wakita Dr SE)	<p>Conduct an RSA to identify specific safety needs. Study opportunities to streamline turning movements at Pat Mell Dr (just east of Austell Rd), due to proximity to adjacent intersections and driveways. Add intersection/signal ahead signs to Lorene Dr, Ethel Rd, and Lynn Rd in the eastbound direction, and to Lynn Rd, Favor Rd, and Lorene Dr in the westbound direction. Add one dynamic speed display sign in each direction. Fill sidewalk gaps and upgrade traffic signal at Olives Springs Rd to mast arms. <i>Re-evaluate prior recommendations to add center two-way left turn lane and consider feasibility of adding dedicated left turn lanes and U-turn accommodations at intersections.</i></p>	\$4.2 - \$4.3 million

Intersection Safety Improvements

Many of the intersections with significant numbers of serious injury and fatal crashes throughout Cobb County are located along Focus Corridors that are identified as Early Implementation Priorities. **Table 9-15** lists recommendations for additional intersections that did not fall along an Early Implementation Priority corridor but were observed to have at least two fatal crashes or at least five KA crashes (see Chapter 5). Relatively priority was identified based on the number of fatalities and injuries reported in crashes at a given intersection.

While the Safety Action Plan has flagged these intersections based on the incidence of KA crashes and fatal crashes, a more detailed investigation of crash details and contributing factors alongside systemic issues should be undertaken to identify patterns in crashes and how that indicates the appropriate countermeasures to introduce in the design of safety improvements. The level of complexity in the table is based on how complex each intersection is each with respect to the number of lanes, signal heads, and intersection legs, as well as the presence of raised median, and anticipated need for right-of-way, among other characteristics.

Table 9-15: Intersection Safety Improvements

ID	Location	Description	Complexity
I-1	C.H. James Pkwy (US 278/SR 6) at Garrett Rd/Dr. Luke Glenn Garrett Jr Mem Hwy	Safety improvements to address intersection crash factors and noted patterns including angle and head on collisions, lighting (may be combined with I-7, I-13)	Moderate
I-2	Austell Rd (SR 5) at Schaffer Rd	Safety improvements to address intersection crash factors and noted patterns including pedestrian crashes (may be combined with I-3)	Low
I-3	Austell Rd (SR 5) at Osborn Rd	Safety improvements to address intersection crash factors and noted patterns including skew angle and pedestrian crashes (may be combined with I-2)	Low
I-4	Windy Hill Rd at Village Pkwy	Safety improvements to address intersection crash factors and noted patterns including offset intersection, access management, and bicycle crashes	Moderate
I-5	S Cobb Dr (SR 280) at Concord Rd	Safety improvements to address intersection crash factors and noted patterns including angle and bicycle crashes	High
I-6	Delk Rd WB Off-Ramp at Cobb Pkwy	Safety improvements to address intersection crash factors and noted patterns including fixed object crashes	Moderate
I-7	C.H. James Pkwy (US 278/SR 6) at Humphries Hill Rd	Safety improvements to address intersection crash factors and noted patterns including left-turn with through and pedestrian crashes, lighting (may be combined with I-1, I-13)	High
I-8	Alabama Rd (SR 92) at Old Mountain Park Rd	Safety improvements to address intersection crash factors and noted patterns including motorcycle crashes	Moderate
I-9	Roswell Rd (SR 120) at Robinson Rd/E Lake Pkwy	Safety improvements to address intersection crash factors and noted patterns including pedestrian crashes and left-turn with through movement crashes	Low
I-10	S Marietta Pkwy (SR 120) at Powers Ferry Rd	Safety improvements to address intersection crash factors and noted patterns including pedestrian crashes	High
I-11	Cobb Pkwy (US 41/SR 3) at Canton Rd Conn NB and SB ramps	Safety improvements to address intersection crash factors and noted patterns including lighting and motorcycle crashes	Moderate
I-12	Bells Ferry Rd at Shiloh Rd/Shallowford Rd	Safety improvements to address intersection crash factors and noted patterns including motorcycle crashes and left-turn with through movements	Moderate
I-13	C.H. James Pkwy (US 278/SR 6) at Florence Rd	Safety improvements to address intersection crash factors and noted patterns including angle and head-on collisions (may be combined with I-1 and I-7)	Moderate

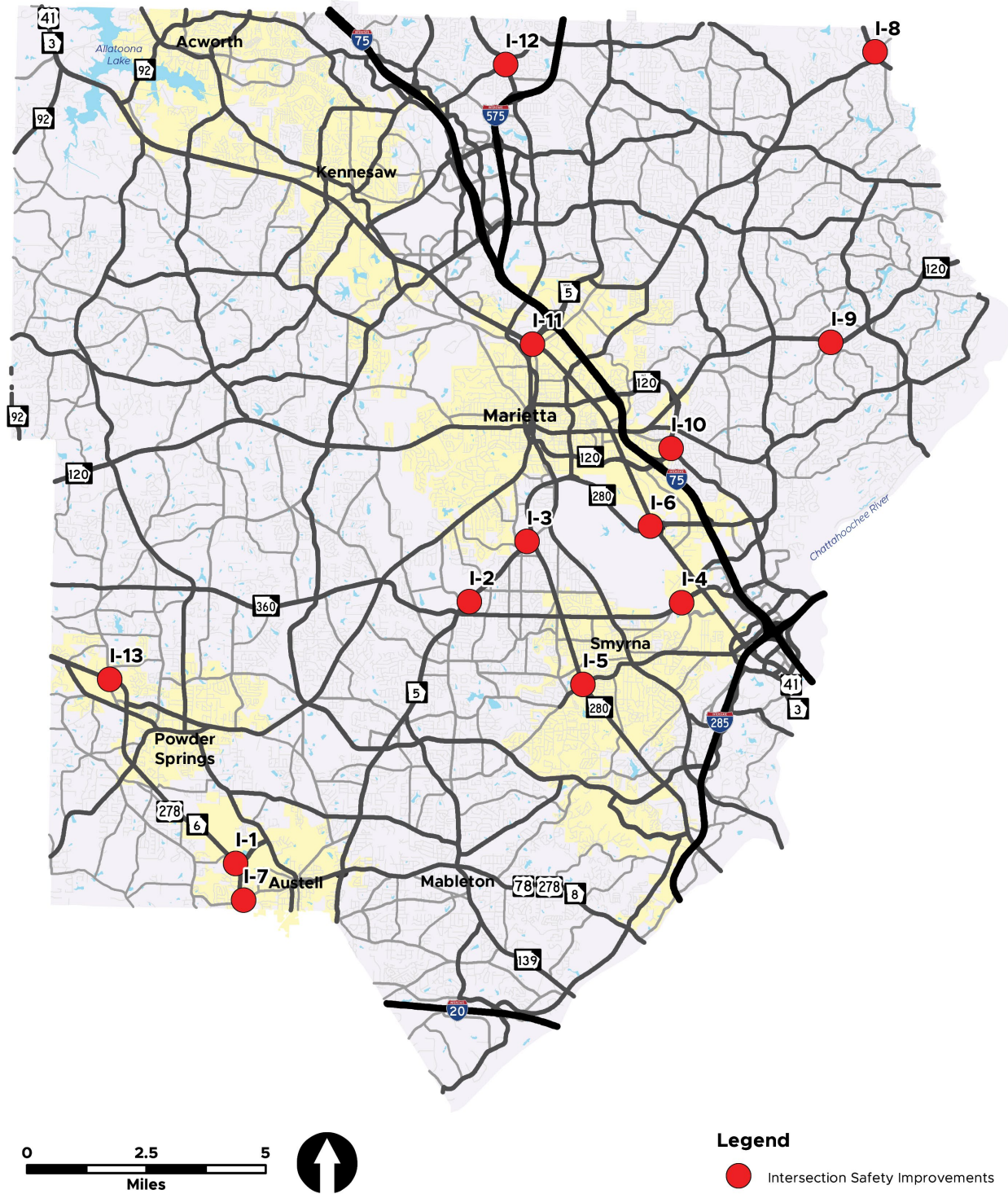


Figure 9-7: Intersection Safety Improvements

Policies and Strategies

Reaching the ultimate goal of zero deaths and injuries on roadways in Cobb County will take a combination of infrastructure solutions, policies, and strategies. County staff should work across departments and with partner agencies to pursue a robust set of actions aimed at reducing serious injuries and fatalities, targeting focus facilities, and addressing locations with a history of severe crashes.

Beyond implementing countermeasures, strategies such as speed management, linking land use development and transportation decision making, and encouraging travel by modes other than driving can help improve safety outcomes. ARC's RSS provides a number of examples and resources for these and other topics. Building on these and drawing from case studies of other safety action plans, local road safety plans, and best practices, the following represent a range of actions, policies, and strategies for consideration by Cobb County.

Encouragement

- Work toward an eventual goal of Zero deaths and serious injuries on Cobb County roadways, by achieving incremental reductions over time, such as a 5% annual reduction in fatalities or equivalent, which would reduce the number of serious injuries and fatalities on Cobb County's roadway network by 80% by the year 2055.
- Request adoption of the Safety Action Plan by all relevant County agencies, including CCDOT and Cobb County Police Department. Seek endorsements by partner agencies such as WellStar Health, bicycle and walking advocacy groups, and Cobb County Schools.

Enforcement

- Consider developing a program to conduct targeted enforcement on high-risk/high-crash corridors.
- Monitor legislation related to advanced monitoring applications to detect and enforce traffic laws, such as red light cameras at high-crash intersections, radar speed signs on roadways where drivers regularly exceed the speed limit, and school zone speed detection cameras. Consider policies to utilize these technologies as appropriate.

A successful strategy to achieve zero roadway deaths and fatalities will also include techniques that can complement design and infrastructure solutions.

Speed Management

Managing speeds can reduce deaths and serious injuries. Comprehensive speed management involves not just design and countermeasures, but also strategies such as setting appropriate speed limits using tools like USLIMITS2, enforcing speed limits, raising awareness, and establishing appropriate policies around road operations and design.

Developing Complete Streets

Encouraging people to travel by modes other than driving is one way to improve transportation safety. Research shows that public transportation is significantly safer than traveling by car. Providing complete streets, encouraging and expanding public transportation, and increasing access to transit stops by filling sidewalk gaps, providing bicycle facilities, and improving crossing opportunities can all encourage more people to use other modes than driving.

Linking Land Use Development and Transportation Decision-Making

As seen in patterns around focus crash types, there is a connection between land development patterns and serious injury and fatal crashes. Acknowledging how development patterns affect how people get around can lead to improved decision making about siting uses in relation to transportation facilities, mixing uses, improving street connectivity, driveway access, block length, and other factors.

Implementing Safety Policies

Codifying practices through codes and policies can go a long way toward ensuring best practices are implemented and holding communities accountable. In addition to common policies around traffic calming, communities in the Atlanta region have recently had success in implementing policies around Vulnerable Road Users ([Brookhaven](#) and [Dunwoody](#)) and in speed management, including lowering speed limits on local roads ([Atlanta](#)).

- Consider the installation of speed detection cameras in accordance with local and state law.

Education

General Education

- Develop outreach/messaging campaign to promote safer speeds and compliance with traffic laws.
- Consider hosting an annual transportation safety summit.

Targeted Education

- Work with Cobb County Communications and relevant agencies to participate in safety and educational awareness campaigns about young adult drivers, senior drivers, impaired driving, bicycle and pedestrian safety, and other campaigns to help address safe behaviors.
- Install permanent signage or temporarily utilize dynamic message signs on high-injury/high-crash corridors with targeted messages to help mitigate unsafe driving behavior. (e.g., “Slow down – speed kills!” or “Don’t drink and drive.”)
- Partner with non-profits and advocacy groups in environmental justice communities to understand safety concerns and needs for travelers – particularly pedestrians, bicyclists, and transit users.

Coordination with Partner Agencies

- Work with Cobb County Safety Village to host events to promote safe use and awareness of bicycles, motorcycles, and pedestrians.
- Coordinate with GDOT and GOHS on outreach and educational campaigns.
- Partner with Cobb & Douglas Public Health, health systems/hospitals, AARP, and other agencies to distribute educational information about roadway safety.

Engineering

Processes

- Strengthen the County’s Complete Streets policy with context sensitive design guidance.
- Integrate the Complete Streets Policy into the planning, design, and construction of transportation projects in Cobb County. Incorporate a section in the Cobb DOT Concept Report to evaluate what types of elements or facilities are most appropriate, based on the land uses, demographics of the area, and other factors that would generate traffic from pedestrians, cyclists, and transit users.
- In the supporting data section of the CCDOT Concept Report, include a checklist or matrix that identifies safety risk factors and potential safety countermeasures to be considered in the design.
- Incorporate low-cost safety measures (raised pavement markers, wider edge lines, upgraded signage and markings, etc.) into routine maintenance activities.
- Create standard plans and/or a design manual to implement proven safety countermeasures systemwide.



Figure 9-8: Sidewalk Along Austell Road near Sandtown Road

Policies

- Create a policy for use and deployment of Rectangular Rapid Flashing Beacons and Pedestrian Hybrid Beacons following FHWA, GDOT, and MUTCD guidance.
- Prioritize separated bicycle lanes or multi-use paths over striped bike lanes where possible.
- Work with GDOT to complete Road Safety Audits (RSAs) on high-injury roadways in Cobb County annually. Develop phased implementation programs from the RSA recommendations, leveraging funds from GDOT. Consider allocating specific funds from CCDOT for high-impact safety projects.
- At intersections with high levels of pedestrian activity, evaluate pedestrian signal timing to confirm that pedestrians have enough “walk” time, and adapt as needed. Consider utilizing leading pedestrian intervals (LPIs) at select intersections.
- Work with the Safe Routes to School Program to identify infrastructure/design projects, or safety programming, around schools in high-crash areas. These may include lower-cost treatments like higher-visibility sidewalks or enhanced school zone signs, or funds to train and equip volunteer crossing guards.

Projects

- Incorporate equity into project selection by prioritizing safety investments in historically disadvantaged and/or underserved communities.
- Review bus stop locations and identify where sidewalk gaps should be filled and locations for potential mid-block crossings.
- Implement proven safety countermeasures on high-risk/high-crash corridors.
- Consider the use of connected signals to install emergency vehicle pre-emption (emergency vehicle priority) to enhance post-crash care.
- Incorporate Emergency Location Markers (ELM) routinely into all multi-use trail projects throughout the County.

Evaluation

- Establish baselines for federal safety performance measures and develop procedures for updating and monitoring data on a regular basis. Consider a performance dashboard to track over time.
- Consider the use of SeeClickFix to receive and prioritize reported safety issues on roadways.
- Develop a process to prioritize safety needs by comparing individual corridor and intersection crash rates to established baseline averages in the County that are organized by consideration of functional classification and area types.

Funding Mechanisms

There are a variety of programs and funding mechanisms available to Cobb County for funding and implementing safety improvements. Ranging from local and regional to state and federal sources, Cobb County can take advantage of partnerships with other agencies and grant opportunities to fund and implement safety projects, programs, and strategies. Cobb County relies heavily on Special-Purpose Local Option Sales Tax (SPLOST) to fund roadway improvements. Brief summaries of key potential sources other than SPLOST are provided on the following pages. Of course, it is ultimately up to Cobb County to decide what mechanisms and sources are most appropriate given program parameters, eligibility requirements, and other factors.

Transportation Improvement Program

The Transportation Improvement Program (TIP), administered by ARC, allocates federal funds for the planning, design, and construction of high-priority projects in the Regional Transportation Plan (RTP), and represents the short-term, fiscally-constrained portion of the long-range plan. Both infrastructure and planning projects are eligible for funding, with an emphasis on those which enhance mobility and access, equity, safety, and resiliency within the Atlanta region. The most recent TIP award included \$235 million in transportation investments across the Atlanta region.

ARC staff matches appropriate federal funds to project applications, awarding funding for up to 80% of the cost of the project, with the remaining local match provided by local project sponsors and their partners. To access TIP funding for identified safety improvement projects, Cobb County would apply through ARC during upcoming calls for projects.

Georgia Smart Communities Challenge

The Georgia Smart Communities Challenge is organized by the Georgia Institute of Technology in partnership with ARC and several other regional and state agencies. It offers up to \$50,000 in direct funding and technical assistance to enable visioning, exploration, and planning for “smart” futures. A 20% local match is required for this program since federal funds are involved.

Safe Streets and Roads For All

A program of the Infrastructure Investment and Jobs Act (IIJA) or Bipartisan Infrastructure Law established the new Safe Streets and Roads for All (SS4A) discretionary grant program with \$5 billion appropriated over five years. It funds local, regional, and Tribal initiatives through grants focused on preventing deaths and serious injuries on roadways. As discussed elsewhere in this report, two types of grants are available: planning grants for activities to identify the most significant roadway safety concerns in a community and implementation grants for projects and strategies to address identified roadway safety issues. In fiscal year 2022, USDOT awarded \$800 million to over 500 communities for the first round of funding.⁷⁰ Eligibility criteria include:

- Planning and Demonstration Grants: 1) safety impact; 2) equity; 3) additional safety context. Budget will also be considered.
- Implementation Grants: 1) safety impact; 2) equity, engagement, and collaboration; 3) effective practices and strategies; 4) other DOT strategic goals; and 5) supplemental planning and demonstration activities (only for applicable projects).

⁷⁰ U.S. Department of Transportation (2023). Safe Streets and Roads For All (SS4A). <https://www.transportation.gov/grants/SS4A>

Surface Transportation Block Grant Program

The Surface Transportation Block Grant Program (STBG) aims to preserve and improve conditions and performance on Federal-aid highways, bridges, and public roads, including bicycle and pedestrian infrastructure. It is a flexible Federal-aid program and can fund highways, bridges, trails, and vulnerable road user safety assessments, although not on local functional classification roads. Administered by ARC through the competitive TIP application process, the STBG program promotes flexibility to address local needs.

Highway Safety Improvement Program

The Highway Safety Improvement Program (HSIP) provides funding for infrastructure and safety-related projects on public roads, including those owned by local governments. HSIP requires a data-driven strategic approach to improving highway safety performance on public streets. It consists of three programs.⁷¹ HSIP funds are apportioned to each state DOT, including GDOT, to advance highway safety projects.

Strategic Highway Safety Plan (SHSP): A state-coordinated safety plan that provides a comprehensive framework for reducing highway fatalities and serious injuries on all public roads.⁷² The current 2022-2024 Georgia SHSP is discussed elsewhere in this report.

State Highway Safety Improvement Program (HSIP): The goal of the HSIP process is to reduce the number of crashes, injuries, and fatalities by eliminating certain prevalent types of crashes through engineering solutions. The Georgia HSIP provides for a continuous and systematic procedure to identify and review specific safety issues around the state to identify locations with high potential for safety improvement.⁷³

Railway-Highway Crossing Program (RHCP): The RHCP provides funds for safety improvements to reduce fatalities, injuries, and crashes at public highway-railway grade crossings.⁷⁴

Local Maintenance & Improvement Grant

The Local Maintenance and Improvement Grant (LMIG) program was developed to support a range of activities to allow local governments greater flexibility and quicker project delivery, while allowing GDOT to effectively administer the program. Eligible activities include, but are not limited to, preliminary engineering, construction supervision and inspection, intersection improvements, turn lanes, bridge repair and replacement, sidewalk adjacent to public roads, signs, striping, guardrail installation, and signal installation or improvement. The amount of allocation for each County and City is based on the total centerline road miles for local road systems and the total population of the County or City compared to statewide numbers.⁷⁵

⁷¹ Federal Highway Administration (2021). Highway Safety Improvement Program (HSIP). <https://safety.fhwa.dot.gov/hsip/>

⁷² Federal Highway Administration (2023). Strategic Highway Safety Plan. <https://highways.dot.gov/safety/hsip/shsp>

⁷³ Federal Highway Administration (2023). Georgia HSIP 2021 Annual Report. https://highways.dot.gov/sites/fhwa.dot.gov/files/2022-10/2021_GA_HSIP_Report.pdf

⁷⁴ Federal Highway Administration (2022). Highway Crossing Program Overview. <https://highways.dot.gov/safety/hsip/xings/railway-highway-crossing-program-overview>

⁷⁵ Georgia Department of Transportation (n.d.). Local Maintenance & Improvement Grant. <https://www.dot.ga.gov/GDOT/Pages/LMIG.aspx>

Quick Response

The Quick Response (QR) Project Program administered by GDOT funds operational projects such as restriping, intersection improvements, and turn lane additions and extensions that can be implemented between three and four months for under \$200,000. GDOT's QR Program can be used for lower-cost, short term safety projects such as raised pedestrian islands or rectangular rapid-flashing beacons, signage enhancements or others. Projects are typically identified by GDOT staff, stay within state right-of-way, and require little utility relocation.

Safe Routes to School (SRTS)

Georgia's Safe Routes to School (SRTS) program is intended to improve health and well-being of children in grades K-8, including those with disabilities, by making it safe, convenient, and fun to walk or bike to school. Eligible applicants are state, regional, county and city governments, and school districts. A school must be actively engaged in non-infrastructure activities (e.g., SRTS Plan, Education, Encouragement and/or Enforcement activities) and enrolled in the Georgia SRTS Resource Center.

SRTS funds must be applied to infrastructure projects within public right-of-way and a two-mile radius of a K-8 school. Eligible projects include sidewalk improvements, traffic calming and speed reduction, pedestrian and bicycle crossings, on- and off-street bicycle facilities, secure bicycle parking, and traffic diversion projects. Other project types may be eligible if they aim to reduce speeds and improve pedestrian and bicycle safety and access. Applications are limited to \$500,000 and no is match required.⁷⁶

Off-System Safety Program (OSS)

GDOT established the Off-System Safety (OSS) Program in 2005 to reduce the severity and frequency of crashes on off-system routes (local roads – not part of the state route system). Funds are dispersed through federal safety program to enhance safety on local routes through low-cost countermeasures, such as striping, sign replacement, rumble strips, and raised pavement marker installations within existing right-of-way. Local governments should contact the State Aid Coordinator for the local district if they are interested in receiving funds through OSS.

Beyond these, there are numerous other potential funding sources available for consideration, including less traditional, alternative funding mechanisms and programs. The ARC RSS provide a synopsis of funding programs and gives examples of potential safety strategies eligible for various funding sources.

⁷⁶ Georgia Department of Transportation (2023). Georgia Safe Routes to School. <https://saferoutesga.org/>