

SAFE STREETS FOR ALL ROCKDALE COUNTY

Appendix A Crash Analysis

April 2025

Contents

Introduction.....	1
Historical Crash Analysis.....	1
Annual Distribution	1
Temporal Crash Trends.....	4
Crash Types	7
Roadway Conditions	10
Environmental Circumstances	10
Roadway Characteristics	11
Crash Locations	13
Behavioral Characteristics.....	20
High-Injury Network	22

List of Figures

Figure 1: Total Crashes by Year (2018–2022)	2
Figure 2: Serious Injury Crashes by Year (2018–2022)	3
Figure 3: Fatal Crashes and Fatalities by Year (2018–2022)	3
Figure 4: Serious Injury Crashes by Hour	4
Figure 5: Fatal Crashes by Hour	4
Figure 6: Serious Injury Crashes by Day of the Week	5
Figure 7: Fatal Crashes by Day of the Week	5
Figure 8: Serious Injury Crashes by Month	6
Figure 9: Fatal Crashes by Month	6
Figure 10: Map of Total Crashes	15
Figure 11: Map of Fatal Crash Clusters	16
Figure 12: Map of KSI Crash Clusters	17
Figure 13: KSI Crashes within Equity Areas	19
Figure 14: Crashes by Age Group	22
Figure 15: Local High Injury Network	24

List of Tables

Table 1: Annual Distribution of Total and KSI Crashes, 2018–2022	2
Table 2: Crashes by Manner of Collision	8
Table 3: Crashes by First Harmful Event	8
Table 4: Vulnerable User Crashes	9
Table 5: Crashes by Lighting Condition	10
Table 6: Crashes by Roadway Surface Condition	11
Table 7: Crashes by Roadway Type	11
Table 8: Crashes by Posted Speed Limit	12
Table 9: Crashes by Roadway Jurisdiction	13
Table 10: Crashes by Geographic Jurisdiction	13
Table 11: Crashes within Equity Areas	18
Table 12: Crashes by Safety Equipment Used	20
Table 13: Local High Injury Network Segment Summary	23

Crash Analysis

Introduction

A safety action plan should be developed as a living document capable of being updated to respond to new crash data, public needs, and funding strategies. As such, this analysis represents a starting point from which Rockdale County can continue to evaluate the safety challenges facing their roadway network.

Analysis of historic (2018–2022) crash data to determine when and where fatal and severe injury (KSI) crashes are occurring, how they are occurring, and who they are occurring to is foundational to adopting a Safe System Approach to address roadway safety. Identification of a High Injury Network (HIN) that conveys where the highest concentrations of fatal and serious injury crashes occur allows Rockdale County to align proven countermeasures with priority areas, key locations, and communities. For this analysis fatal crashes are defined as an event where a death occurred as a direct result of a crash within 30 days following the crash event. A serious injury crash is defined as a crash event where any person involved in the crash is reported as having an incapacitating injury that includes disfigurement, dismemberment, burn, broken bones, serious head and spine injuries, and loss of consciousness.

Historical Crash Analysis

Annual Distribution

According to data obtained through the Georgia Electronic Accident Reporting System (GEARS), between the years 2018 and 2022, there were a total of 21,418 crashes on roadways within Rockdale County. Of these, 425 (1.98%) crashes resulted in serious injury and 69 (0.32%) crashes resulted in a fatality (Table 1). Despite seeming like a small piece of the larger pool of crashes, statistics often mask the magnitude of consequences stemming from an individual crash, especially a KSI crash. Serious/incapacitating injuries resulting from a traffic crash have catastrophic impacts such as permanent disability, lost productivity and wages, and ongoing healthcare costs.

Despite a downward trend in total crashes throughout the five-year analysis period (Figure 1), post-2020, the number of total crashes in Rockdale County has been increasing. Serious injury crashes and fatal crashes have been increasing throughout the analysis period; compared to 2018, 2022 witnessed 95% more serious injury crashes and 88% more fatal crashes. As a ratio of total crashes KSI crashes accounted for just over 3% of total crashes in 2022 compared to 1.4% of crashes in 2018, an increase of approximately 1.6%.

There were 75 reported deaths as a result of fatal crashes throughout the five-year period (Figure 3). While the number of deaths or fatalities generally follows fatal crash trends, crashes that result in multiple fatalities occur and can vary from the general crash trend. Fatalities during the analysis period peaked in 2021 with 19 deaths from 16 crashes.

Table 1: Annual Distribution of Total and KSI Crashes, 2018–2022

Year	Total Crashes	Fatal Crashes	Serious Injury Crashes	Percent KSI
2018	4,706	8	59	1.42%
2019	4,895	15	66	1.65%
2020	3,605	15	92	2.97%
2021	3,907	16	93	2.79%
2022	4,305	15	115	3.02%
<i>Total</i>	<i>21,418</i>	<i>69</i>	<i>425</i>	<i>2.31%</i>

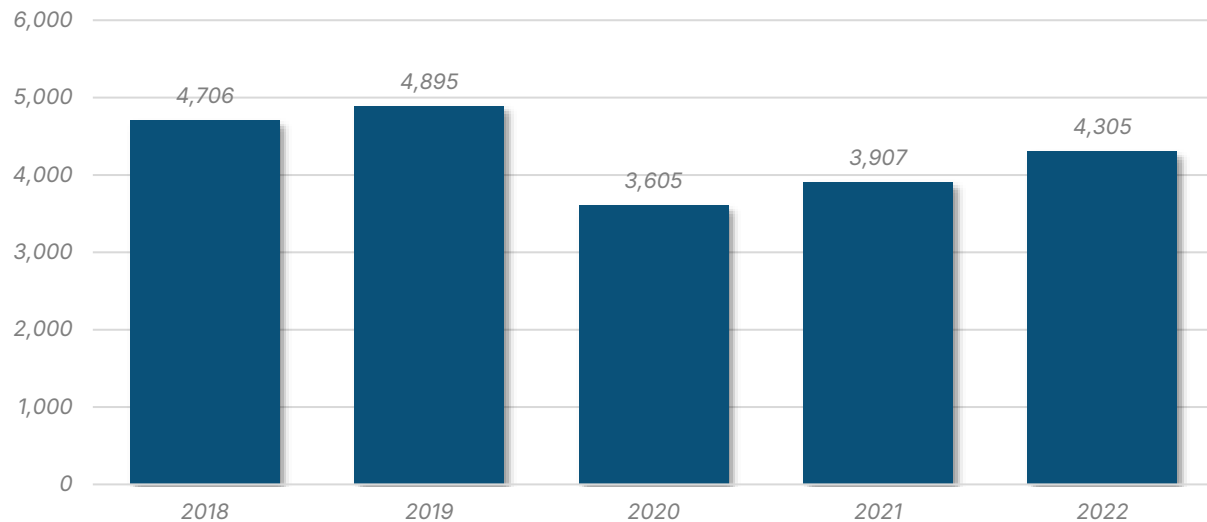


Figure 1: Total Crashes by Year (2018-2022)

CRASH ANALYSIS TECHNICAL MEMORANDUM

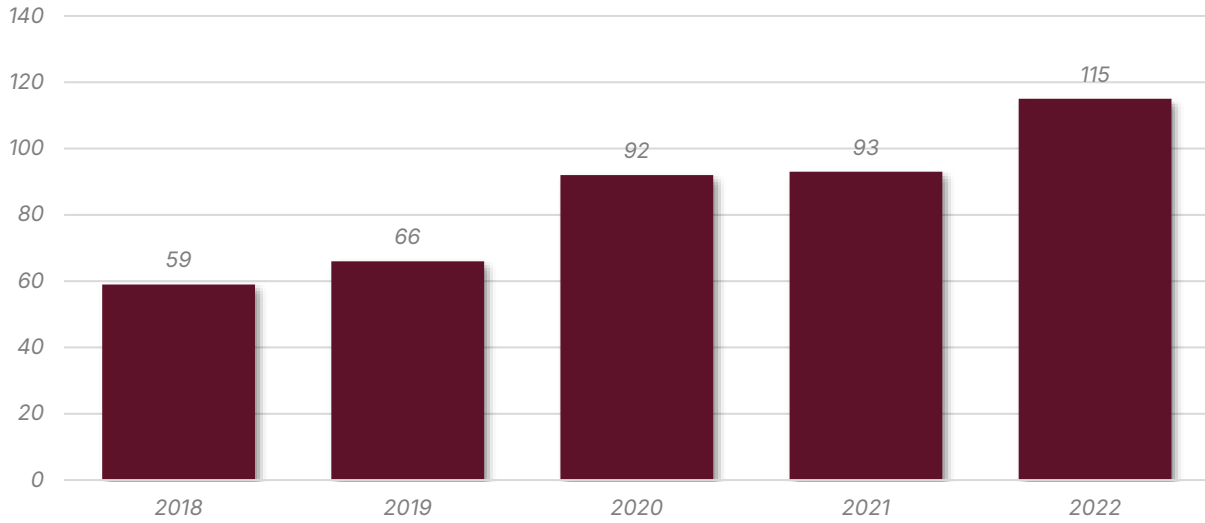


Figure 2: Serious Injury Crashes by Year (2018–2022)

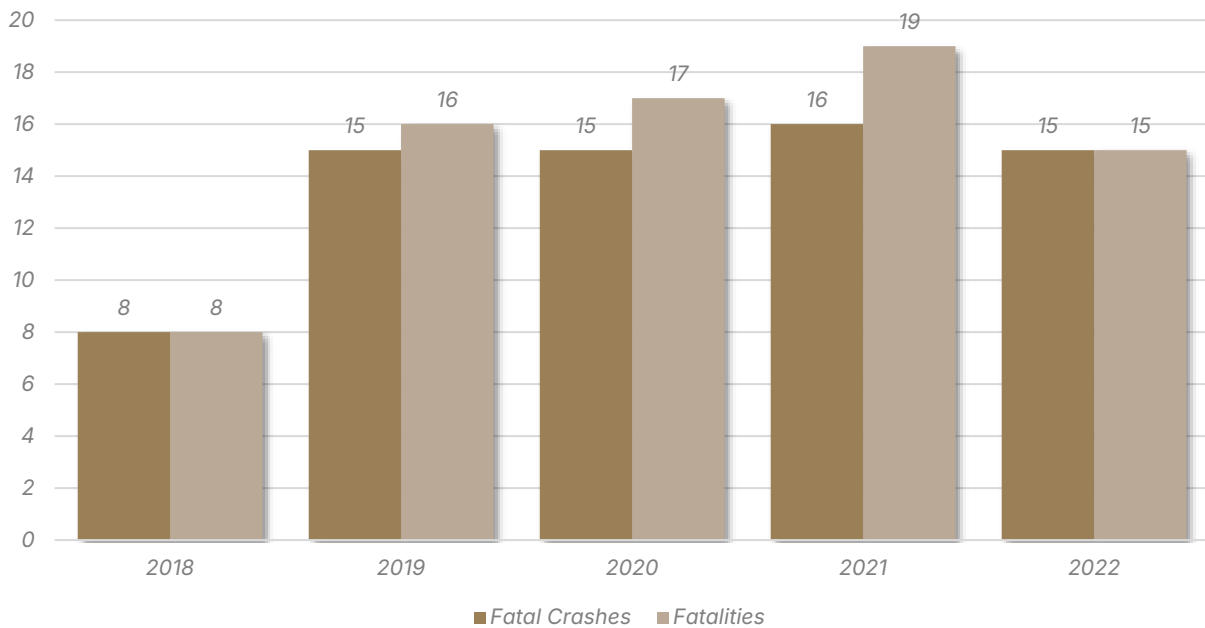


Figure 3: Fatal Crashes and Fatalities by Year (2018–2022)

Temporal Crash Trends

Knowing when crashes occur can help in determining trends and if there are seasonal or daily factors that may influence crash severity. The following pages explore the distribution of crashes by time of day, day of the week, and month.

Time of Day

Figures 4 and 5 show the distribution of serious injury and fatal crashes by time (hour) of day. As shown, serious injury and fatal crashes generally occur at higher frequencies later in the day, this is particularly evident when looking at serious injury crashes (Figure 4) where almost 65% of the crashes occurred after 1:00 pm. Nearly 30% of the fatal crashes occurred after 7:00 pm, with the highest frequency hours occurring between 7:00 pm and 10:00 pm.

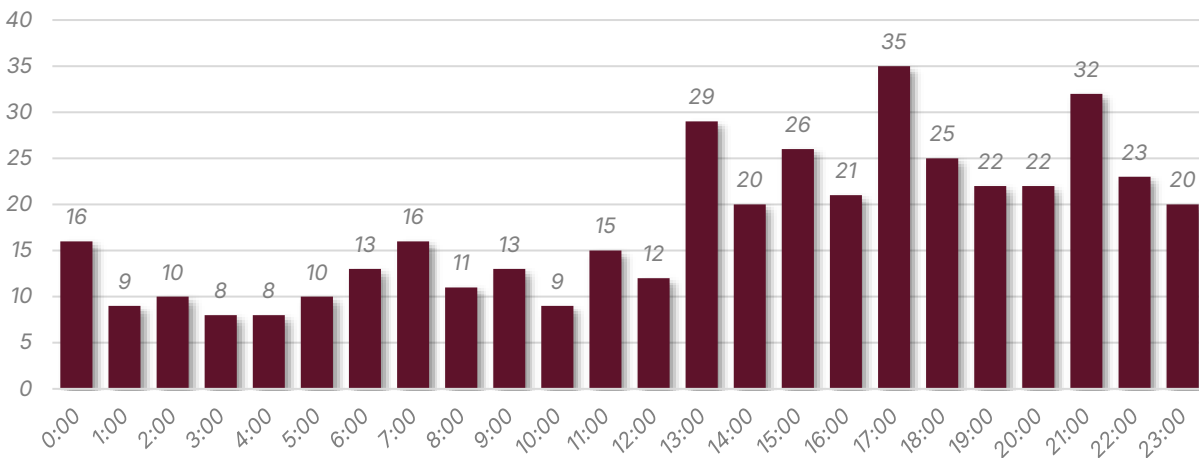


Figure 4: Serious Injury Crashes by Hour

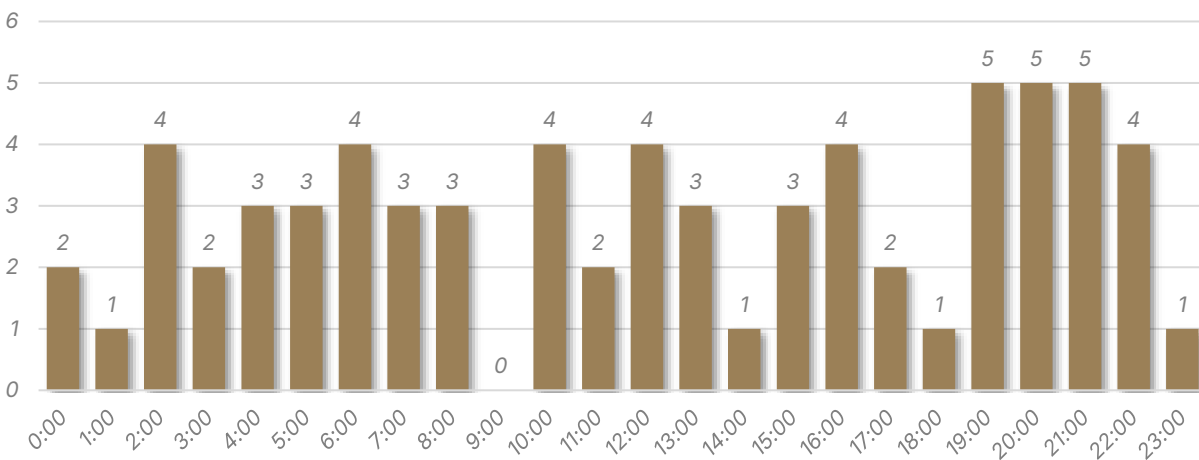


Figure 5: Fatal Crashes by Hour

Crashes by Day of Week

Fridays, Saturdays, and Sundays had the greatest number of KSI crashes (48.3%) during the analysis period. Fridays and Saturdays had the highest number of serious injury crashes with 71 each (Figure 6) and Sundays had the most fatal crashes with 15 (Figure 7).

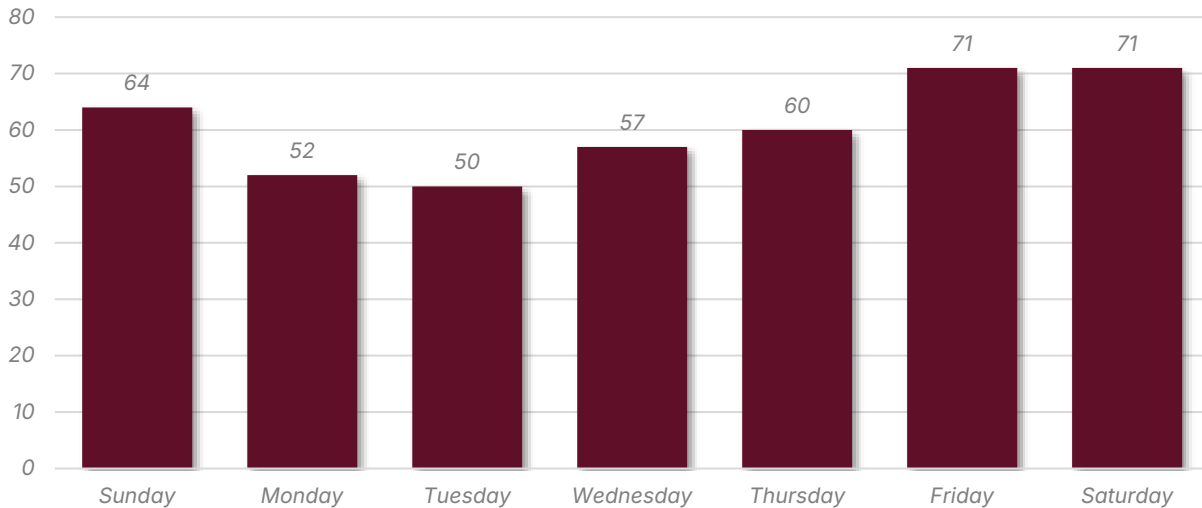


Figure 6: Serious Injury Crashes by Day of the Week

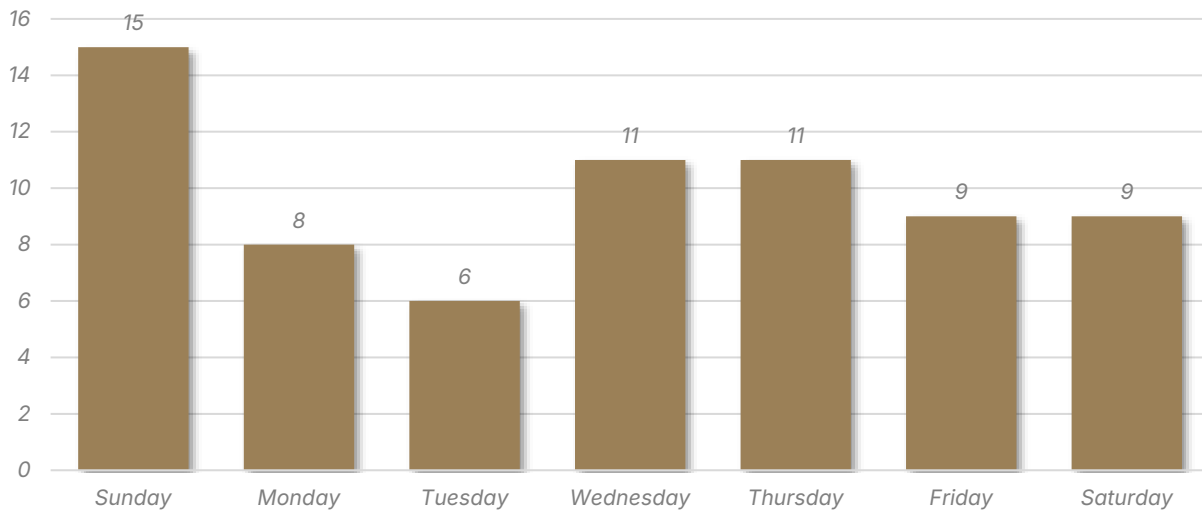


Figure 7: Fatal Crashes by Day of the Week

Crashes by Month

Looking at crashes by month helps in understanding if there are any seasonal trends or variances that factor into crash occurrence and severity. Knowing if there are certain times of the year when severe incidents occur can help in allocating resources and implementing targeted strategies aimed at reducing crash severity. In reviewing KSI crashes September had the greatest number of KSI crashes with 55 (~3%) crashes followed by October with 53 crashes. Serious injury crashes peaked in September with 53 crashes and October with 44 crashes, outside of these two months and some dips in crash numbers in December and February, serious injury crashes remain mostly consistent throughout the year by month. Fatal crashes peaked in October with 9 crashes (Figure 9) and were generally more frequent during the autumn and winter months.

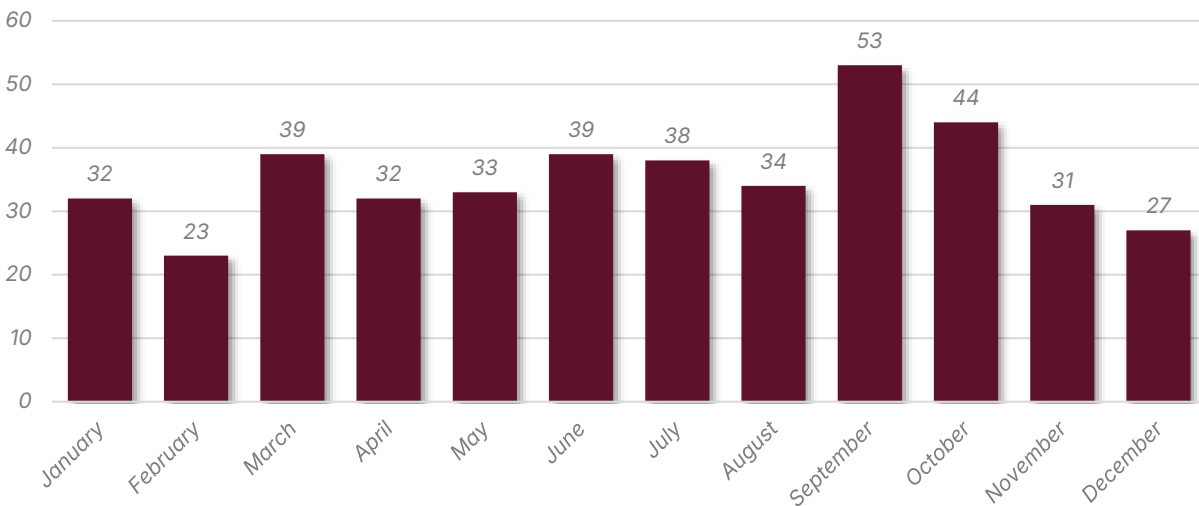


Figure 8: Serious Injury Crashes by Month

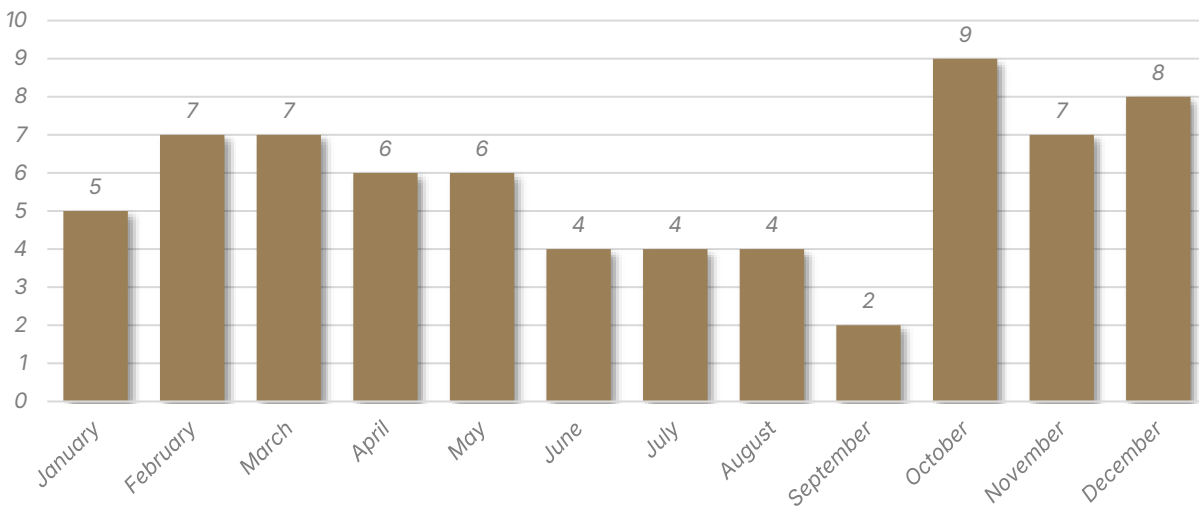


Figure 9: Fatal Crashes by Month

Crash Types

Manner of Collision

The manner of collision field in the crash report data describes the manner in which the collision or crash event occurred. Examining variances between the manner of collision for all crashes versus those that result in severe injury helps in the identification of countermeasures and other crash mitigation efforts. The crash data identifies the following six different collision types, note that for this analysis, sideswipe – same direction and sideswipe – opposite direction were combined as they make up a smaller percentage of KSI crashes.

- *Angle Crashes* – generally involved two or more motor vehicles traveling in directions that are generally perpendicular.
- *Rear End Crashes* – involves two or more motor vehicles proceeding in the same general direction.
- *Head-On Crashes* – a collision in which the front-end of one motor vehicle collides with the front-end of another motor vehicle while the two vehicles are traveling in opposite directions.
- *Sideswipe – Same Direction* – involves two motor vehicles colliding side to side while proceeding in the same direction.
- *Sideswipe – Opposite Direction* – involves two motor vehicles colliding side to side from generally considered opposite directions.
- *Not a Collision with a Motor Vehicle* – involves a motor vehicle that does not involve a collision with another motor vehicle.

During the analysis period Rear End and Angle crashes accounted for approximately 64.6% of all crashes in Rockdale County (Table 2). When looking at KSI crashes Not a Collision with Motor Vehicle (NCMV) and Angle crashes were the most common collision types, accounting for 73.2% of all KSI crashes.

NCMV crashes, which include collisions with fixed objects and departing the roadway account for the highest percentage of serious injury (38.4%) and fatal crashes (52.2%) compared to 16.6% of the county's total crashes. While the NCMV category is broad, the crash data does provide some insight into the factors that contribute to these types of crashes, these include things like the driver losing control, inattentiveness or other distractions, exceeding the speed limit, driving while under the influence, and aggressive driving. A deeper analysis of the data reveals that many NCMV crashes involved collisions with fixed objects, such as trees and light or utility poles. Others resulted from vehicles leaving the roadway and striking embankments or ditches.

Angle crashes, which are often located at intersections and driveways accounted for 32.9% of the KSI crashes and were the second most common total crash type. A deeper

analysis of KSI Angle crashes reveals that a little more than half of the Angle crashes involved a vehicle making a left turn and were a result of a failure to yield right-of-way.

Table 2: Crashes by Manner of Collision

Manner of Collision	Percent Total Crashes	Percent Serious Injury Crashes	Percent Fatal Crashes	Percent KSI Crashes
Not a Collision with Motor Vehicle	16.6%	38.4%	52.2%	40.2%
Angle	29.4%	35.1%	19.4%	32.9%
Rear End	35.2%	12.2%	7.5%	11.6%
Head-On	2.6%	9.9%	19.4%	11.2%
Sideswipe	15.8%	4.5%	1.5%	4.1%

Crashes by First Harmful Event

When evaluating crash data, the First Harmful Event refers to the initial action or impact in a crash. This data helps categorize crash types by identifying the primary factor contributing to the collision, such as a collision with a vehicle, pedestrian, or fixed object. Combined with the manner of collision data, evaluating first harmful event data can provide key insight into the circumstances surrounding crash events and helps inform strategies targeted at improving roadway safety.

Table 3 shows a summary of first harmful event data related to unit/vehicle 1 in the crash reports. As shown, over 70% of KSI crashes involved a collision with a motor vehicle, but nearly 45% of the fatal crashes involved an action that did not include another motor vehicle. 22.4% of fatal crashes involved hitting a fixed object, 11.9% were pedestrian involved, and 9% were related to running off road.

Table 3: Crashes by First Harmful Event

Harmful Event	Percent Total Crashes	Percent Serious Injury Crashes	Percent Fatal Crashes	Percent KSI Crashes
Motor Vehicle	82.9%	72.9%	55.2%	70.5%
Hit Fixed Object	8.3%	10.4%	22.4%	12.0%
Run Off Road	1.7%	7.8%	9.0%	7.9%
Pedestrian	0.4%	4.7%	11.9%	5.7%
Other	1.4%	3.1%	0.0%	2.6%
Bicycle	0.1%	0.9%	0.0%	0.8%
Animal	4.0%	0.2%	1.5%	0.4%

Crashes by Maneuver

In addition to manner of collision and first harmful event, crashes by vehicle maneuver, for either vehicle 1 or vehicle 2, were evaluated to provide more insight into factors leading to KSI crashes. A couple of vehicle maneuvers stood out as being potentially related to KSI crashes. Crashes where a vehicle was negotiating a curve were involved in 1.5% of all crashes, 5.6% of serious injury crashes, and 12.5% of fatal crashes. This indicates that while the overall number of crashes involving a vehicle that is Negotiating a Curve, they are often associated with a higher risk of severity when they do occur. The other noted vehicle maneuver was Turning Left, crashes where vehicle 1 or vehicle 2 was making a left turn were involved in 10.2% of all crashes, 14.2% of serious injury crashes, and 5.4% of fatal crashes.

Vulnerable Road Users

Vulnerable Road Users (VRUs)¹ are the least physically protected group of road users, this includes pedestrians, bicyclists, and motorcyclists. These users are at an increased risk of injury and fatality from crashes largely due to the lack of physical protection from motor vehicles. Table 4 provides a summary of crash percentages by vulnerable user, one common theme between the different user types is that they all account for a greater percentage of serious injury and fatal crashes compared to total crashes, which supports the statement that vulnerable users are at a higher risk of injury from crashes compared to people inside of a motor vehicle. While representing 1.1% of total crashes, motorcycles were involved in 11.1% of serious injury crashes and 11.9% of fatal crashes. Pedestrian involved crashes accounted for 0.7% of all crashes in Rockdale County, but account for 7.3% of serious injury crashes and 14.9% of fatal crashes. During the five-year analysis period there were 29 crashes involving a bicyclist (0.1%), while this is a lower number, 17.2% of bicycle crashes resulted in a serious injury (1.2% of all serious injury crashes) and 10.3% of bicycle crashes (4.5% of all fatal crashes) resulted in a fatality.

Table 4: Vulnerable User Crashes

User Type	Percent Total Crashes	Percent Serious Injury Crashes	Percent Fatal Crashes	Percent KSI Crashes
Motorcycle	1.1%	11.1%	11.9%	11.2%
Pedestrian	0.7%	7.3%	14.9%	8.3%
Bicycle	0.1%	1.2%	4.5%	1.6%

¹ Vulnerable Road Users (VRUs) are the least physically protected group of road users: unshielded pedestrians, cyclists, and motorcyclists who are at an increased risk of injury and fatality from vehicular accidents. [ITS for Vulnerable Road Users | ITS Deployment Evaluation](#)

Roadway Conditions

Roadway conditions refer to external factors that can affect how drivers interact with the road surface. This includes environmental elements, like lighting and the condition of the road surface at the time of the crash, as well as roadway characteristics, such as the posted speed limit or the type of road.

Environmental Circumstances

Lighting Condition

Time of day and lighting conditions, particularly nighttime and dark conditions, are often associated with higher frequencies of KSI crashes, as shown in Table 5, 42.7% of KSI crashes occurred in "dark" conditions compared to 26.9% of all crashes. A notable takeaway from the crash data was that nearly 40% of the fatal crashes occurred in Dark, Not Lighted conditions which is considerably high when considering that 13.4% of all crashes occurred in Dark, Not Lighted conditions and that at a national level only about 25% of daily traffic occurs in dark conditions.

Table 5: Crashes by Lighting Condition

Lighting Condition	Percent Total Crashes	Percent Serious Injury Crashes	Percent Fatal Crashes	Percent KSI Crashes
Daylight	69.3%	54.6%	46.3%	53.5%
Dark, Not Lighted	13.4%	22.6%	38.8%	24.8%
Dark, Lighted	13.5%	19.1%	10.4%	17.9%
Dawn	1.6%	1.9%	3.0%	2.0%
Dusk	1.7%	1.9%	1.5%	1.8%

Roadway Surface Condition

Approximately 82.7% of KSI crashes in Rockdale County occur in dry roadway surface conditions (Table 6). Combining all non-dry conditions together accounts for less than 20% of KSI crashes, this trend is present within the separate serious injury and fatal crash groups as well. This may indicate that roadway surface conditions are not a primary driver of the majority of KSI crashes happening within Rockdale County.

Table 6: Crashes by Roadway Surface Condition

Roadway Surface Condition	Percent Total Crashes	Percent Serious Injury Crashes	Percent Fatal Crashes	Percent KSI Crashes
Dry	83.7%	83.1%	80.6%	82.7%
Wet	14.8%	16.5%	17.9%	16.7%
Water (Standing or Moving)	0.4%	0.2%	1.5%	0.4%
Other	0.2%	0.2%	0.0%	0.2%

Roadway Characteristics

Roadway Type

The type of roadway and its general function can influence crash patterns and severity. Roadway networks are classified or designated by the character of service and connectivity provided, this classification also creates a hierarchy and establishes the relative importance of different roadway types as part of the overall transportation network. Crashes were assigned a roadway network type based on the location of the crash, if the crash occurred at an intersection the higher type was assigned to the crash, e.g., a crash occurred at the intersection of a minor arterial and a local street then the minor arterial classification would be assigned to the crash.

Table 7 provides a breakdown of crashes by roadway type and a summary of centerline miles of roadway type. Despite accounting for 12.7% of the centerline network, 30.1% of all crashes, 32.5% of serious injury crashes, and 25.4% of fatal crashes occurred along minor arterial roadways. Compared to local streets which comprise approximately 61.4% of the centerline miles and had 12% of all crashes, 11.3% of serious injury crashes, and 9% of fatal crashes occur along them.

Table 7: Crashes by Roadway Type

Roadway Type	Percent of Centerline Network	Percent Total Crashes	Percent Serious Injury Crashes	Percent Fatal Crashes	Percent KSI Crashes
Minor Arterial	12.7%	30.1%	32.5%	25.4%	31.5%
Principal Arterial – Other	6.8%	26.2%	19.3%	25.4%	20.1%
Interstate	8.9%	17.6%	17.9%	20.9%	18.3%
Major Collector	7.0%	7.6%	12.5%	16.4%	13.0%
Minor Collector	3.3%	2.0%	11.3%	9.0%	11.0%
Local	61.4%	12.0%	11.3%	9.0%	11.0%
Other (Private, etc.)	-	4.3%	2.4%	1.5%	2.2%

Posted Speed Limits

Vehicular speed and speed differential is a well-documented factor in the injury severity and survivability of a crash. Higher speeds are associated with more severe injuries and death. Table 8 provides a summary of crashes by posted speed limit; "NA" includes locations such as parking lots and driveways where there are not posted speed limits along with locations where the speed limit could not be determined. Approximately 63% of the KSI crashes occurred on roadways with a posted speed limit of 45 mph. Roadways with a posted speed limit of 45–55 mph accounted for approximately 77.6% of the fatal crashes. Understanding the exact speeds at which vehicles were traveling at the time of a crash and how speed may or may not have contributed to the event is often difficult to determine from the crash data, but analyzing posted speed limits of where crashes occur offers insight into how speeds impact crash severity.

Table 8: Crashes by Posted Speed Limit

Posted Speed Limit (MPH)	Percent Total Crashes	Percent Serious Injury Crashes	Percent Fatal Crashes	Percent KSI Crashes
Less than 30 mph	23.3%	9.4%	3.0%	8.5%
30 mph	0.6%	0.5%	1.5%	0.6%
35 mph	8.8%	6.1%	3.0%	5.7%
40 mph	1.4%	2.6%	1.5%	2.4%
45 mph	53.4%	63.3%	61.2%	63.0%
50 – 55 mph	4.2%	7.5%	16.4%	8.7%
60 – 65 mph	0.5%	0.5%	0.0%	0.4%
70 mph	7.3%	9.9%	13.4%	10.4%
NA	0.3%	0.2%	0.0%	0.2%

Roadway Maintenance Jurisdiction

Roadways throughout the county are designed, operated, and maintained by various jurisdictions. The majority (61.2%) of the centerline roadway network is owned and maintained by Rockdale County. The State of Georgia owns approximately 24.9% of the roadways, with 16% being non-interstate roadways, the City of Conyers owns approximately 8.9%, and the remaining (5%) roadways are mostly privately owned and maintained. State-owned non-interstate roadways accounted for 45.7% of all crashes, 44.7% of severe injury crashes, and 44.8% of fatal crashes (Table 9). Rockdale County roadways accounted for 21.4% of all crashes, 32.2% of serious injury crashes, and 31.3% of fatal crashes.

Table 9: Crashes by Roadway Jurisdiction

Roadway Jurisdiction	Percent Total Crashes	Percent Serious Injury Crashes	Percent Fatal Crashes	Percent KSI Crashes
Rockdale County	21.4%	32.2%	31.3%	32.1%
City of Conyers	7.5%	5.4%	4.5%	5.3%
State – Non-Interstate	45.7%	44.7%	44.8%	44.7%
State – Interstate	9.6%	11.8%	14.9%	12.2%
Other (Private)	15.8%	5.9%	4.5%	5.7%

Geographic Jurisdiction

Evaluating the location of crashes by geographic jurisdiction of their occurrence shows that nearly three quarters of KSI crashes occurred within unincorporated Rockdale County and approximately 26.2% within the City of Conyers boundary (Table 10).

Table 10: Crashes by Geographic Jurisdiction

Geographic Jurisdiction	Percent Total Crashes	Percent Serious Injury Crashes	Percent Fatal Crashes	Percent KSI Crashes
Unincorporated County	67.1%	73.9%	73.1%	73.8%
City of Conyers	32.9%	26.1%	26.9%	26.2%

Crash Locations

While a large part of the Safe Systems Approach is to focus on evaluating crashes and identifying solutions at the system or network level, it is important to know and understand where crashes are occurring and if there are site specific challenges or issues that are contributing to KSI crashes. Figure 10 shows the location and frequency of Total Crashes throughout Rockdale County. To form the crash frequency clusters shown in Figure 10 and the additional crash frequency maps, crashes that occurred within a specified distance of each other were grouped (clustered) and the number of crash events that occurred within each group is used to calculate the crash frequency. As shown, the highest frequency crash locations are primarily located in the central portion of the county and are near I-20, other higher crash frequency locations are mainly located at various intersections throughout the county. While total crashes are not the focus of this effort, being able to compare the higher frequency locations for all crashes verse KSI and fatal-only crashes helps in determining if areas with more severe injury crashes are mainly the result of a high frequency of crashes or if there are locational factors that are contributing to crash severity.

Figure 11 shows the location and frequency of KSI crashes throughout the county. As shown, the highest frequency KSI crash locations are at/near the intersections of Salem Road at Flat Shoals Road, Sigman Road at Highway 128, and Georgia 20/Loganville Highway at Hightower Trail. Additionally, Figure X shows that while they may not be heavily concentrated within a couple of locations that there are higher frequencies of KSI crashes along the I-20 corridor.

Figure 12 shows the location and frequency of fatal crashes throughout Rockdale County. The fatal crash clusters show that crashes are dispersed throughout the county, Georgia 20 just north of Big Haynes Creek was the only cluster that had more than one fatal crash. Like the KSI crash clusters, while there are not grouped concentrations of fatal crashes along the I-20 corridor, it is evident that fatal crashes are prevalent along the interstate.

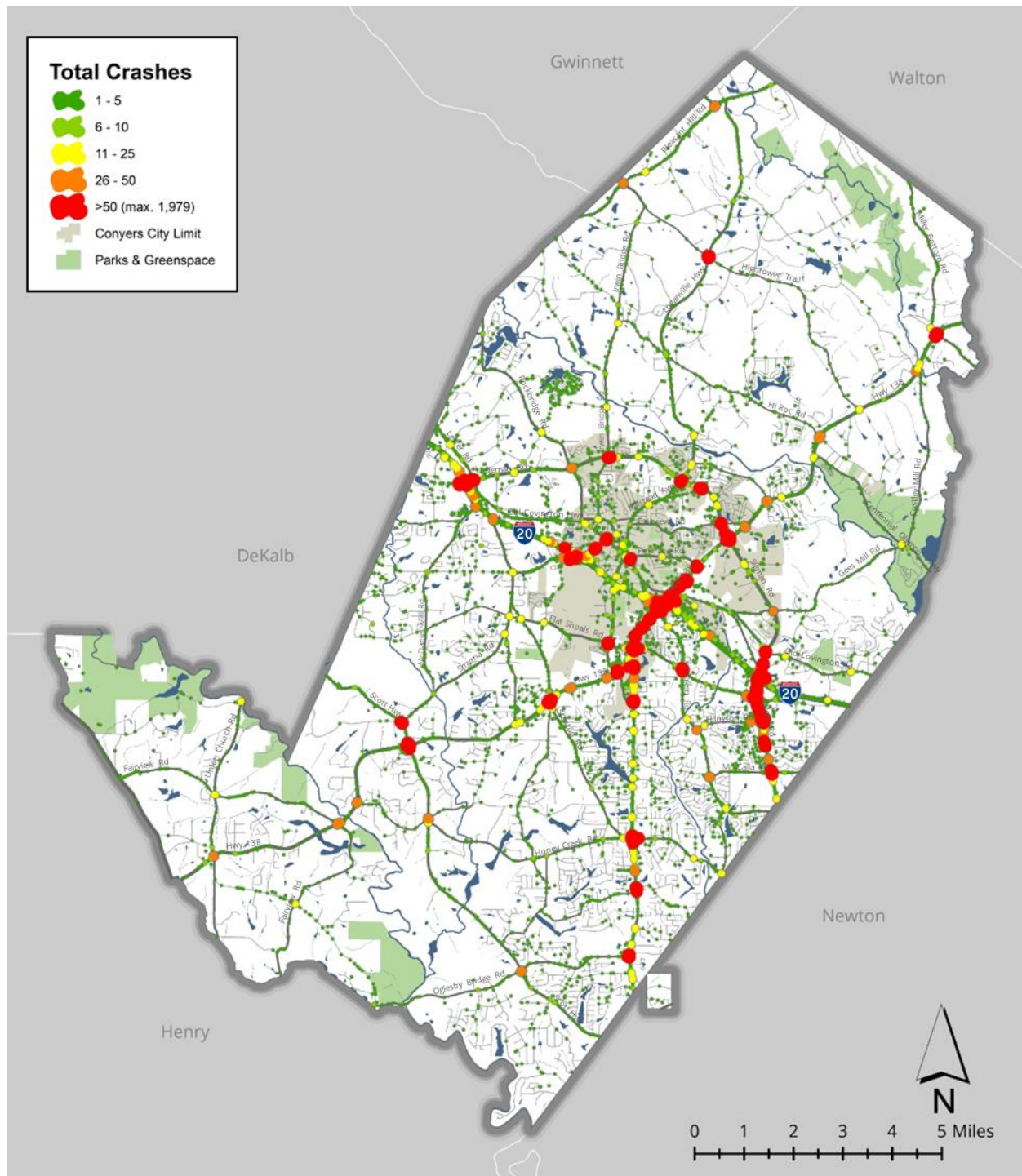


Figure 10: Map of Total Crashes



CRASH ANALYSIS TECHNICAL MEMORANDUM

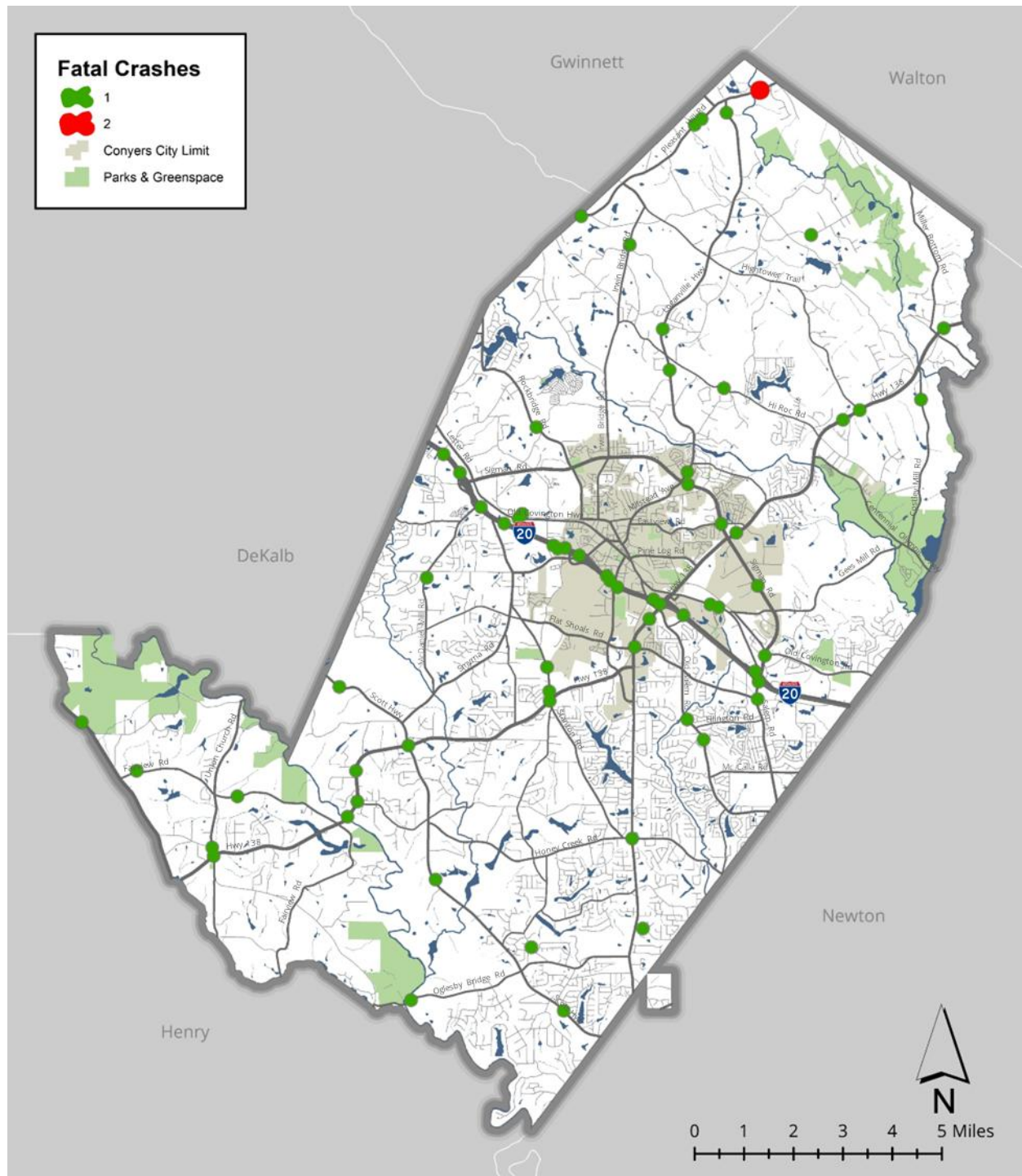


Figure 11: Map of Fatal Crash Clusters

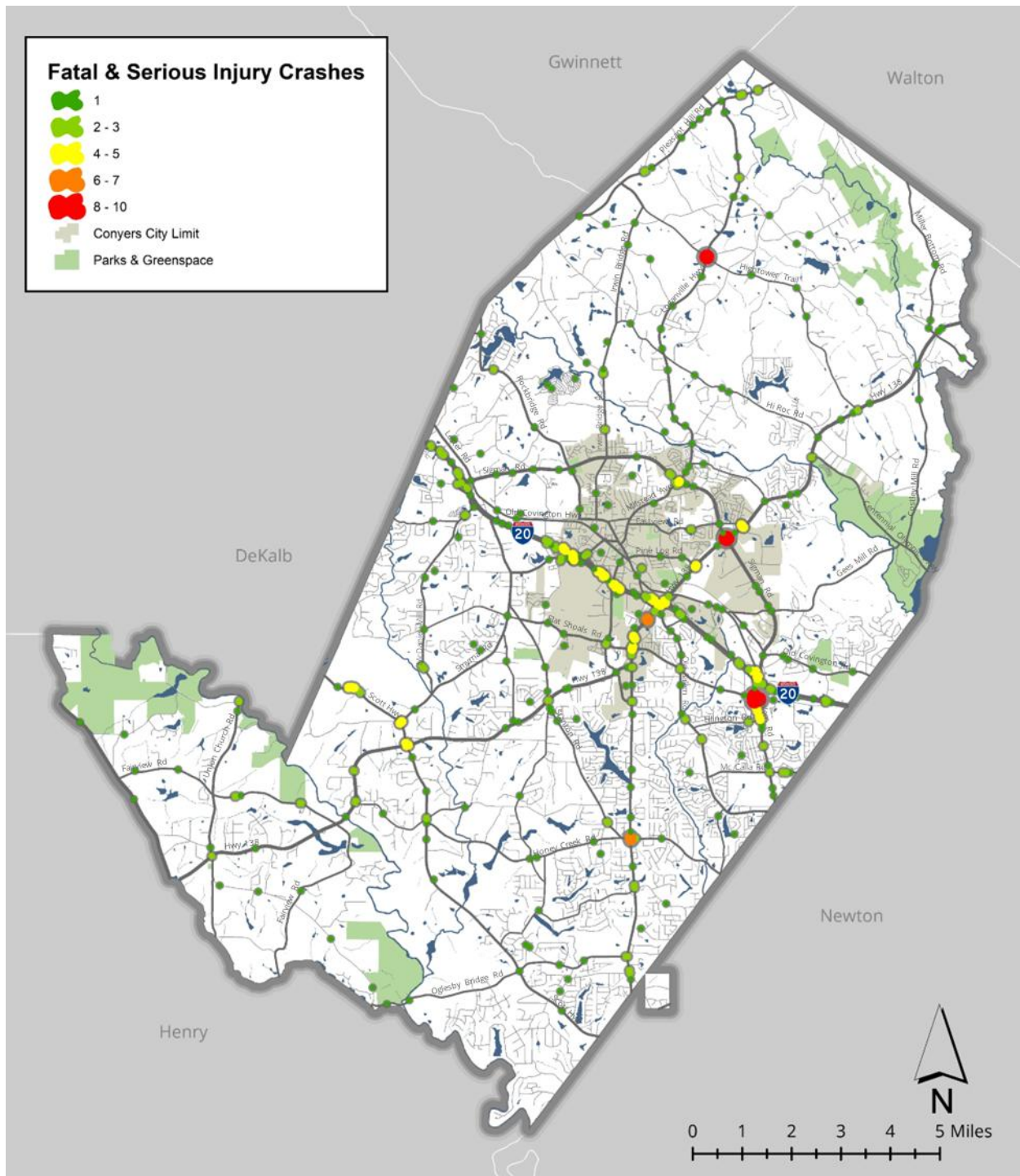


Figure 12: Map of KSI Crash Clusters

Crashes in Underserved Communities

Transportation and traffic safety impact the lives of everyone, unfortunately in many communities the impacts of traffic-related deaths are serious injuries are not experienced equally by all people. Historically disadvantaged community members, including low-income individuals, people with disabilities, minorities, older adults, and younger children tend to have barriers to mobility and are often disproportionately impacted by severe crashes. The U.S. Department of Transportation (USDOT) is committed to ensuring that SS4A plans, projects, and activities significantly improve safety for all people using the road and that equity within the transportation planning process is a top priority.

Using data from the USDOT the Equitable Transportation Community (ETC) Explorer tool, which analyzes different geographies to identify underserved and disadvantaged communities, underserved locations (Census tracts) were compared to where crashes occurred. As shown in Table 11 and Figure 13, approximately 48% of the KSI crashes occurred within an area identified as underserved and almost 51% of the fatal crashes occurred within underserved areas. Comparing this to the distribution of population, approximately 38% of the county's population is located within the identified underserved areas and land area, underserved areas comprise approximately 30.66% of the county's land area, shows that there may be some relationship between crash frequency and disadvantaged communities. Equity considerations will continue to be evaluated as part of the development and implementation of the Action Plan and are included in the identification of the High Injury Network discussed later in this document.

Table 11: Crashes within Equity Areas

Equity Area	Percent Total Crashes	Percent Serious Injury Crashes	Percent Fatal Crashes	Percent KSI Crashes
No	40.5%	52.5%	49.3%	52.0%
Yes	59.5%	47.5%	50.7%	48.0%

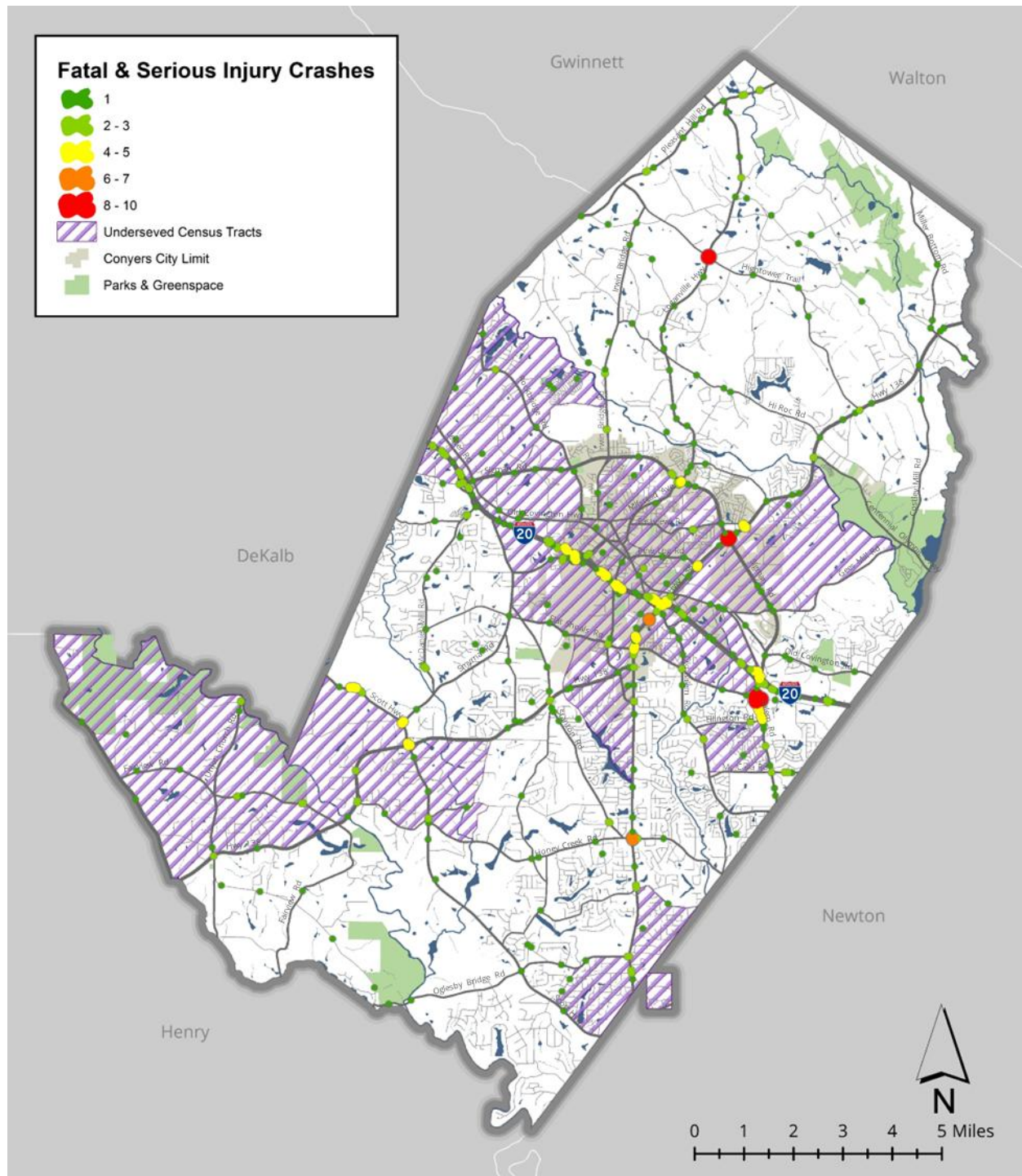


Figure 13: KSI Crashes within Equity Areas

Behavioral Characteristics

Behavior factors and choices by individuals play a significant role in the outcome of a crash. The simple act of buckling a seatbelt, not driving while impaired, and avoiding looking at that text can be the difference between life and death.

Safety Equipment Used

Seatbelts and other safety equipment such as helmets, can often be a determining factor in the severity of a crash. Seatbelts are widely considered the single most effective safety technology in the history of the automobile and encouraging and enforcing their usage is viewed as an effective way to improve safety. The Georgia Strategic Highway Safety Plan has established an Occupant Protection Task Team (OPTT) to focus on strategies to increase the number of restrained vehicle occupants and reduce the number of deaths and injuries because of unrestrained passengers. During the analysis period the crash data reported (Table 12) that nearly 60% of total crash occupants, 45% of serious injury crash occupants, and 34% of fatal crash occupants were correctly wearing a seatbelt. According to the crash data 10.2% of KSI crashes and 15% of fatal crashes were reported as no safety equipment used. Unfortunately, the crash data is limited, which is evident with the percentage of crashes where the safety equipment field was marked as unknown or was left empty (NA).

Table 12: Crashes by Safety Equipment Used

Safety Equipment Used	Percent Total Crashes	Percent Serious Injury Crashes	Percent Fatal Crashes	Percent KSI Crashes
Lap and Shoulder Belt Used	59.8%	45.2%	34.2%	43.5%
Lap or Shoulder Belt Only Used	1.2%	1.5%	0.8%	1.4%
None Used	2.7%	9.4%	15.0%	10.2%
Motorcycle Helmet	0.6%	7.1%	8.3%	7.3%
Bicycle Helmet	0.0%	0.0%	0.0%	0.0%
NA	20.1%	24.2%	25.8%	24.4%
Unknown	15.4%	12.5%	14.2%	12.8%
Other	0.2%	0.2%	1.7%	0.4%

Impaired Driving

According to the crash data impaired driving or driving under the influence of alcohol or drugs accounted for approximately 1.5% of all crashes, 5.4% of serious injury crashes, and 4.5% of fatal crashes.

Distracted Driving

Distracted driving, defined as anything that takes a driver's hands off the wheel, eyes off the road, or mind off driving plays a key role in crashes, but it is often difficult to determine if distraction contributed to a crash without a driver admitting to being distracted or a witness providing evidence that the driver was distracted. While often just thought of as using a cellphone and/or texting while driving, distractions including tending to or interacting with children, passengers, or pets, eating, looking at signs or roadside activity, grooming, adjusting the radio or climate control, or simply daydreaming are all distractions that too often lead to dangerous driving behavior. Based on the available crash data, distracted driving was confirmed in 2.6% of all crashes, 5.2% of serious injury crashes, and 3% of fatal crashes.

Age

Although not a behavioral factor like alcohol/drug use or proper use of safety equipment, age is a commonly analyzed factor in crashes. As people age, their ability to recover from high-energy impacts such as those experienced in a collision is reduced, which can lead to increased injury severity. Younger road users are often less experienced, less risk-averse, and may make decisions that contribute to higher levels of injury severity. Analyzing data related to the age of persons seriously injured or killed in traffic crashes provides insight into strategies that may or may not be the most effective at reducing KSI crashes.

Figure 14 shows the percentage of total, serious injury, and fatal crashes by age group, based on data obtained through the Georgia Crash Data Portal. As shown, the 25–34 age group had the highest percentage of total crashes with 21.1%, the 15–24 age group was the highest for serious injury crashes with 22.3%, and the 35–44 age group had the highest percentage of fatal crashes with 22.9%. When combined, the 15–44 age group was involved in approximately 61.4% of the KSI crashes.

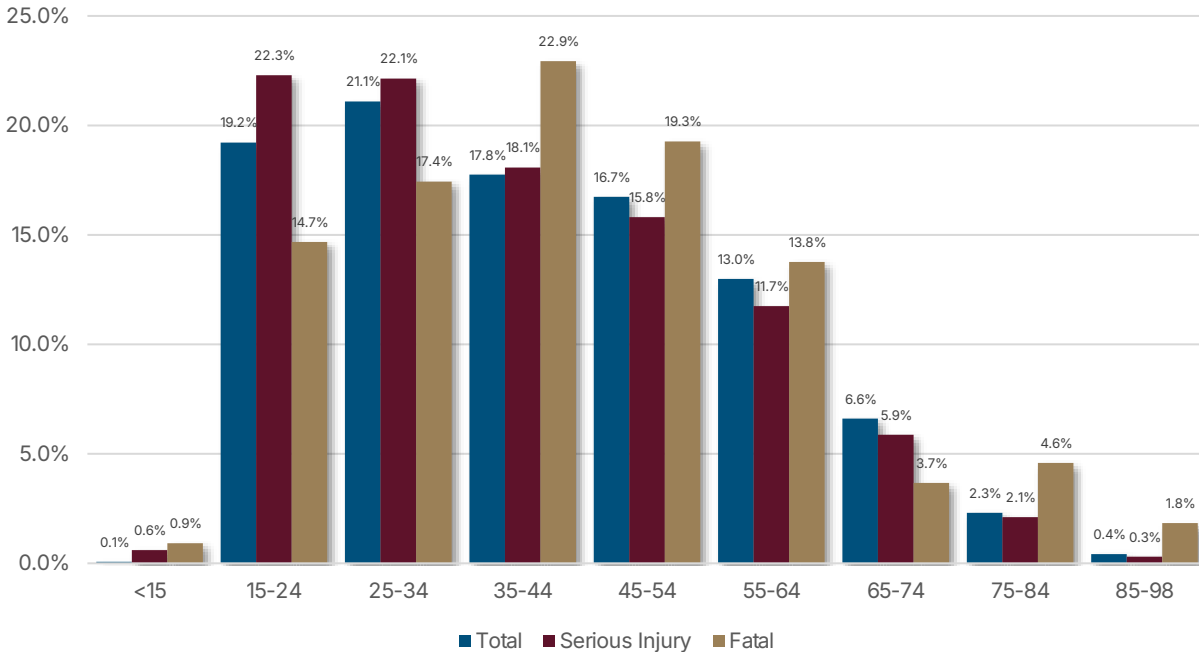


Figure 14: Crashes by Age Group

Gender

Research into driving behavior has consistently found gender differences in actions involving risk-taking. The research has shown that males are generally more likely to drive at faster speeds, are less likely to wear seat belts, and have a higher likelihood of driving under the influence. According to data from the Georgia Crash Data Portal, males were involved in 52% of all crashes in Rockdale County, almost 61% of the KSI crashes, and 67% of the fatal crashes.

High-Injury Network

The elimination of traffic-related deaths and serious injuries from Rockdale County's streets requires data-informed decisions on where safety-related investments will be most effective. The identification of a high-injury network (HIN), which is a collection of street segments that have a higher frequency of fatal and serious injury crashes, can help guide decisions on safety project development and investment. In theory, addressing safety issues along the HIN will help to accelerate progress towards the goal of eliminating all traffic-related deaths and serious injuries.

Developing the HIN involved assigning non-interstate related KSI crashes to individual street segments, analyzing those segments based on the number of KSI crashes, and reviewing and combining individual street segments to create the HIN. In addition to excluding the interstate, state maintained roadways were not included in the development of the Rockdale HIN, as mentioned earlier, it is important to recognize that 57% of the KSI

crashes in Rockdale County occurred along state-maintained roadways and that GDOT is and will be a partner in helping the county reach its goal of zero, but for local implementation and project-based decisions it was determined that the HIN would only include locally maintained roadways.

The local HIN shown in Figure 15 and listed in Table 13, consists of 20 segments that represent approximately 7.2% of the local centerline street network (approximately 5.4% of the total network) and were responsible for 48.6% of the local network KSI crashes and 59.3% of the local network fatal crashes. A more detailed summary of each HIN segment is provided on the pages following Figure 15.

Table 13: Local High Injury Network Segment Summary

HIN ID	On Street	From-To Street	KSI Crashes
1	Old Salem Road SE	Underwood Road SE to GA 20	15
2	Klondike Road SE/West Avenue SW	Smyrna Road SW to Dogwood Drive SW/Hardin Street SW	8
3	Flat Shoals Road SE	Old Salem Road SE to Avondale Boulevard SE	13
4	Honey Creek Road SE	GA 20 to Bourden Bell Drive SE	8
5	Sigman Road NW	I-20 to Rockbridge Road NW	5
6	Ebenezer Road SW	Honey Creek Road to Johnson Road SW	6
7	N Salem Road/Sigman Road NE	Dogwood Conn to Sarasota Business Parkway NE/E Park Drive NE	5
8	Fairview Road SE	SR 162 to County Line	6
9	McDaniel Mill Road SW	Smyrna Road to Iris Road SW	6
10	Flat Shoals Road SW	Johnson Road SW to Parker Road SE	5
11	Old Covington Road NE	N Salem Road/Sigman Road to County Line	3
12	Hi Roc Road NE	GA 20 to GA 138	4
13	Irwin Bridge Road NW	Sigman Road to Hightower Trail	7
14	Pleasant Hill Road NW	County Line to GA 20	9
15	Oglesby Bridge Road SE	GA 212 Highway to GA 20	5
16	E Fairview Road SW	SR 155 to GA 138	6
17	Avalon Boulevard SE	Fairview Road SE to Flat Shoals Road SE	4
18	Old Covington Highway SE	Old Covington Highway SE to Gees Mill Road NE	3
19	Union Church Road SW	Oglesby Bridge Road SE to Bowen Road SW	4
20	Sigman Road	Irwin Bridge Road NW to GA 20	6

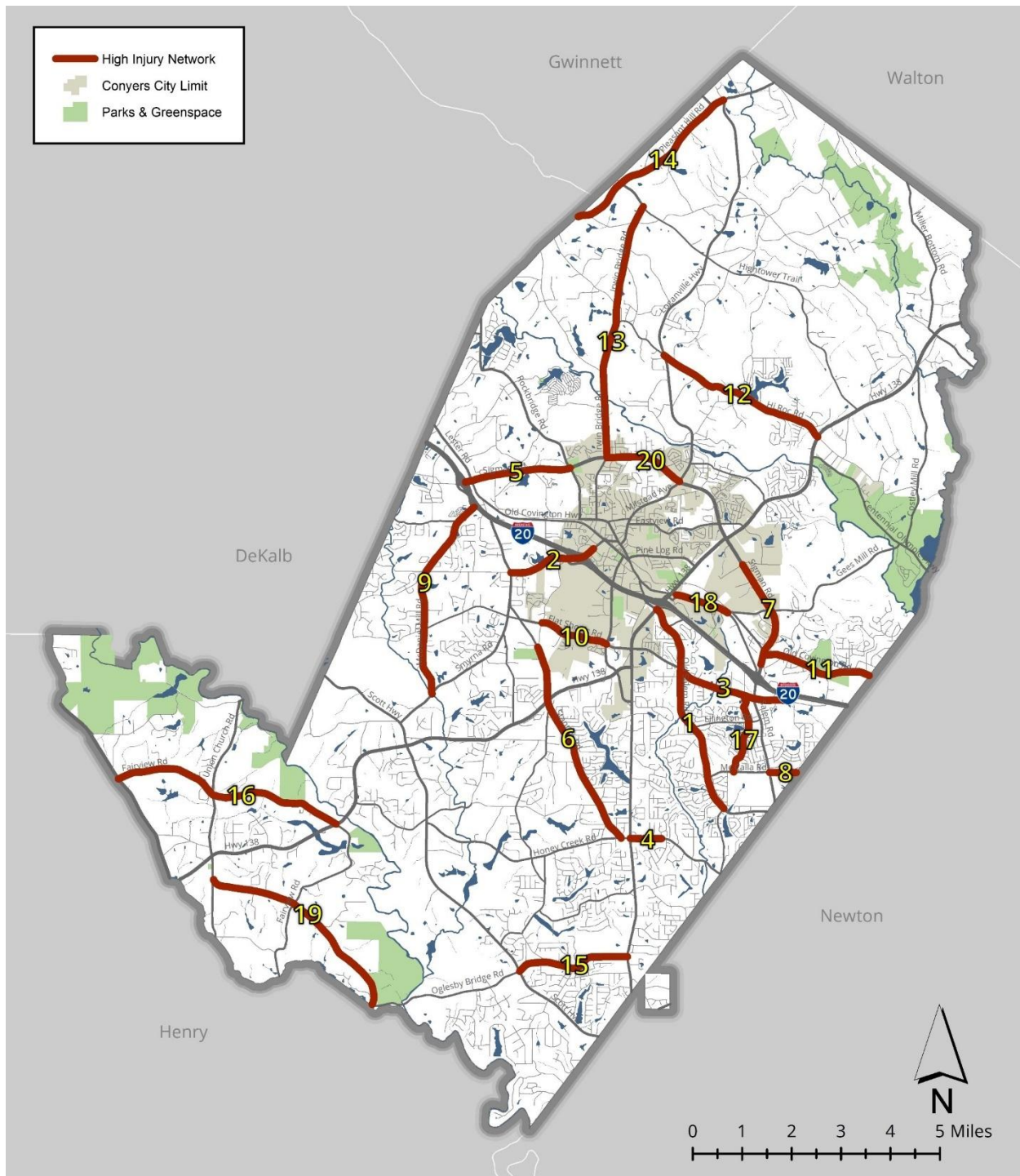


Figure 15: Local High Injury Network



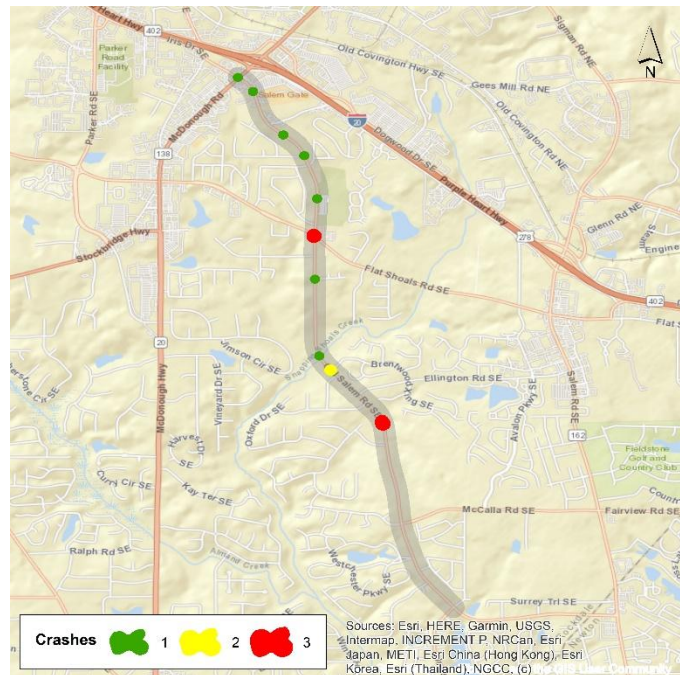
CRASH ANALYSIS TECHNICAL MEMORANDUM

1. Old Salem Road SE (Underwood Road SE to GA 20)

Jurisdiction	County
Road Type	Minor Arterial
Travel Lanes	2 - 4
Posted Speed (MPH)	40 - 45
Disadvantaged Area	Yes
Length (Miles)	3.69
Total Crashes	753
KSI Crashes	15
Fatal Crashes	2

General Observations:

KSI crashes are mainly concentrated in the northern half of the corridor, with the highest crash frequencies at the intersection of Flat Shoals Road and north of Royal Annsbrooke Drive, in a blind curve near Old Salem Circle.



Old Salem Rd SE southbound approaching Flat Shoals Rd SE



Old Salem Rd SE northbound approaching Old Salem Circle

2. Klondike Road SW / West Avenue SW (Smyrna Road SW to Dogwood Drive SW / Hardin Street SW)

Jurisdiction	County / City
Road Type	Minor Arterial
Travel Lanes	2
Posted Speed (MPH)	40
Disadvantaged Area	Yes
Length (Miles)	1.51
Total Crashes	399
KSI Crashes	8
Fatal Crashes	0

General Observations:

KSI crashes are mainly concentrated on the west side of the interstate in the business corridor by the overpass, with the highest crash frequencies near shopping plaza intersections and highway ramps.



Klondike Rd SW eastbound approaching GA 20



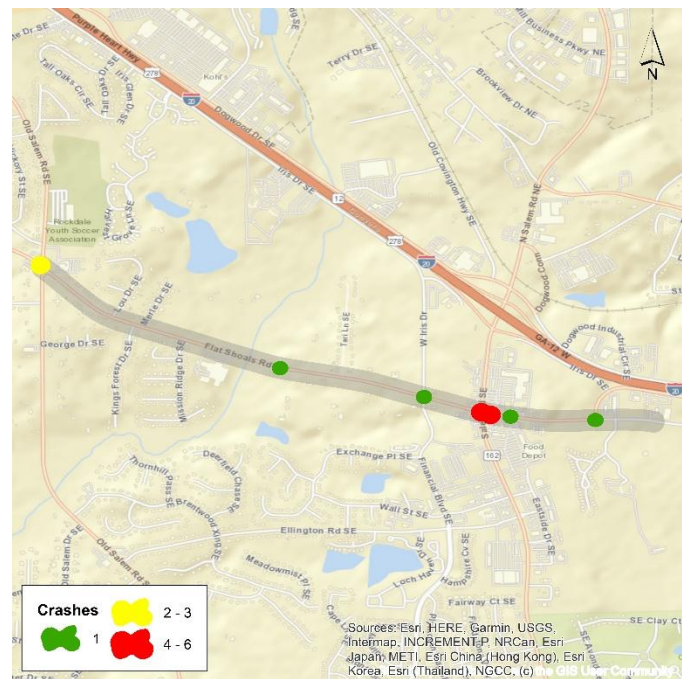
West Ave SW westbound approaching GA 20

3. Flat Shoals Road SE (Old Salem Road SE to Avondale Boulevard SE)

Jurisdiction	County
Road Type	Minor Arterial
Travel Lanes	2
Posted Speed (MPH)	45
Disadvantaged Area	Yes
Length (Miles)	1.85
Total Crashes	491
KSI Crashes	13
Fatal Crashes	1

General Observations:

KSI crashes are mainly concentrated in the eastern half of the corridor, with the highest crash frequencies at the intersection of Old Salem Road and the intersection of Salem Road.



Old Salem Rd SE northbound approaching Flat Shoals Rd SE



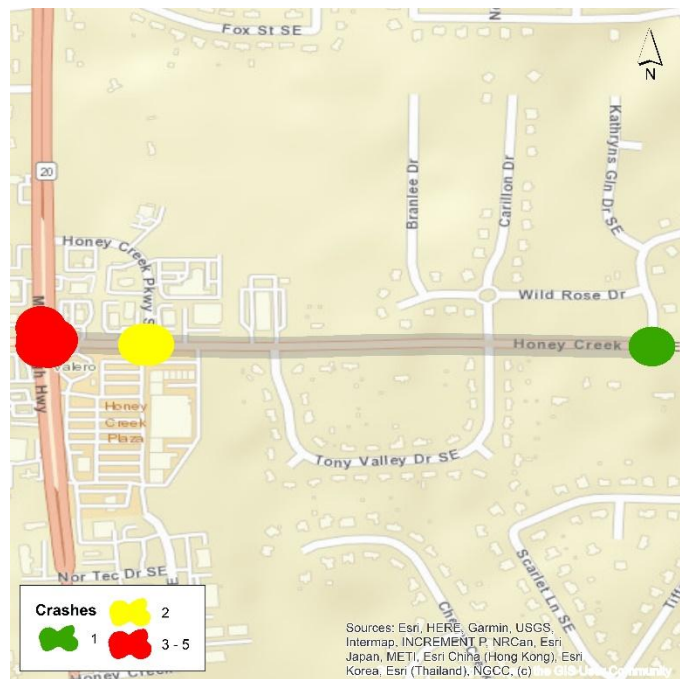
Salem Rd SE northbound approaching Flat Shoals Rd SE

4. Honey Creek Road SE (GA 20 to Bourden Bell Drive SE)

Jurisdiction	County
Road Type	Major Collector
Travel Lanes	2
Posted Speed (MPH)	45
Disadvantaged Area	No
Length (Miles)	0.53
Total Crashes	292
KSI Crashes	8
Fatal Crashes	1

General Observations:

KSI crashes are mainly concentrated in the western half of the corridor, with the highest crash frequencies at the intersection of GA 20 and the intersection of Honey Creek Parkway.



GA 20 northbound approaching Honey Creek Rd SE



Honey Creek Rd SE eastbound approaching Honey Creek Parkway

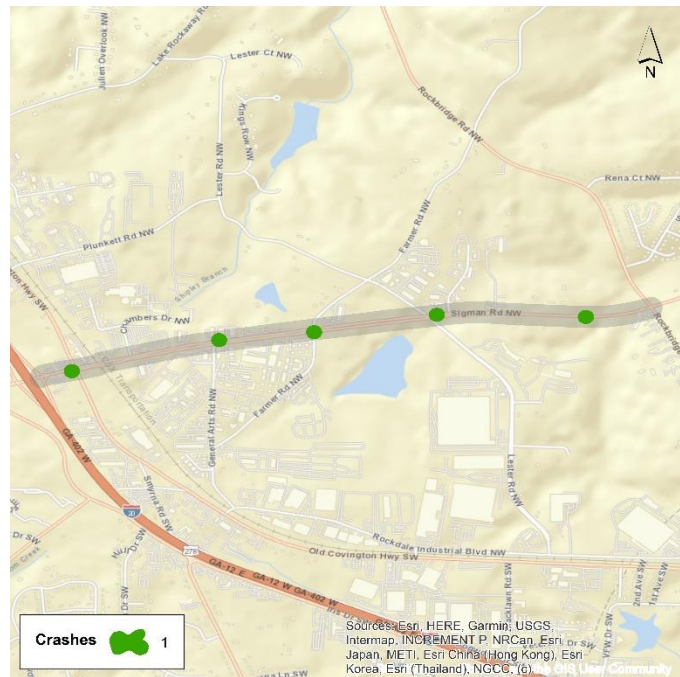


5. Sigman Road NW (I-20 to Rockbridge Road NW)

Jurisdiction	County
Road Type	Principal Arterial - Other
Travel Lanes	4
Posted Speed (MPH)	35 - 45
Disadvantaged Area	Yes
Length (Miles)	1.79
Total Crashes	267
KSI Crashes	5
Fatal Crashes	0

General Observations:

KSI crashes are evenly dispersed with even frequencies throughout the corridor.



Sigman Rd NW westbound approaching Old Covington Hwy SW



Sigman Rd NW eastbound approaching Lester Rd NW

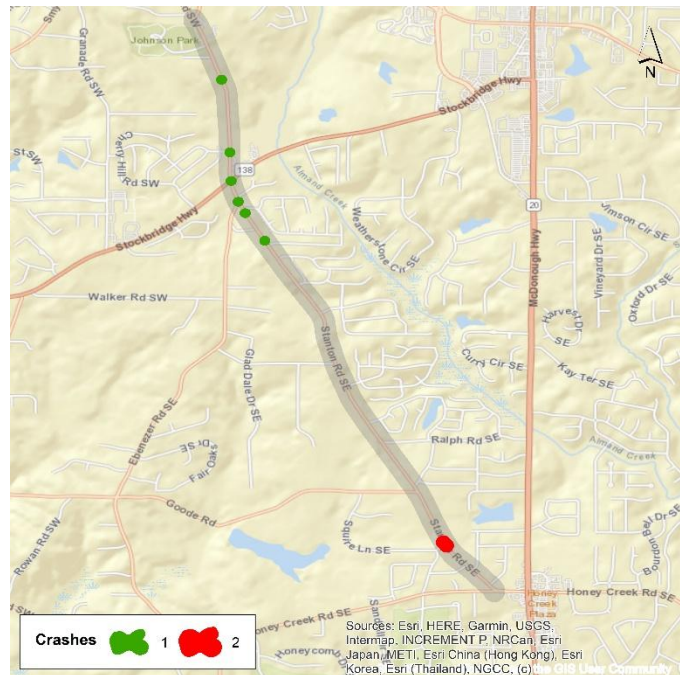


6. Ebenezer Road SW (Honey Creek Road to Johnson Road SW)

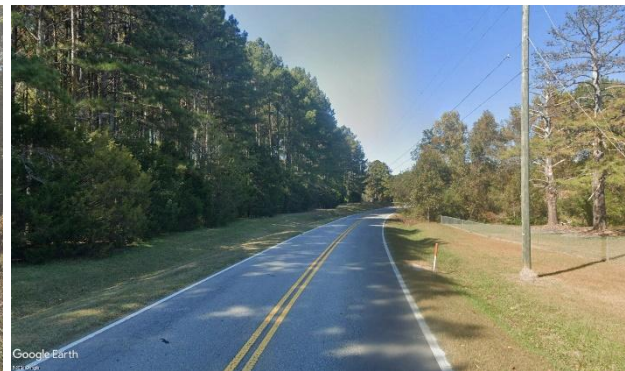
Jurisdiction	County
Road Type	Major Collector
Travel Lanes	2
Posted Speed (MPH)	45
Disadvantaged Area	No
Length (Miles)	3.58
Total Crashes	237
KSI Crashes	6
Fatal Crashes	3

General Observations:

KSI crashes are mainly concentrated in the northern half of the corridor, with the highest crash frequencies at the intersection of Parr Road.



Stanton Rd SE southbound approaching Ebenezer Rd SE



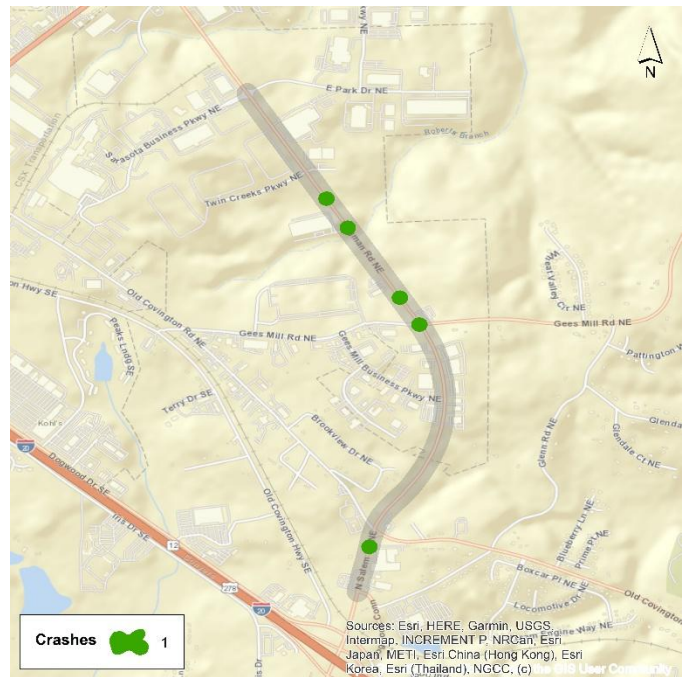
Stanton Rd SE northbound approaching Parr Rd SE

7. N Salem Road / Sigman Road NE (Dogwood Conn to Sarasota Business Parkway NE / E Park Drive NE)

Jurisdiction	County / City
Road Type	Principal Arterial - Other
Travel Lanes	2
Posted Speed (MPH)	45
Disadvantaged Area	Yes
Length (Miles)	1.89
Total Crashes	238
KSI Crashes	5
Fatal Crashes	2

General Observations:

KSI crashes are mainly concentrated in the northern half of the corridor, with even frequencies.



Sigman Rd NE southbound approaching Gees Mill Rd NE



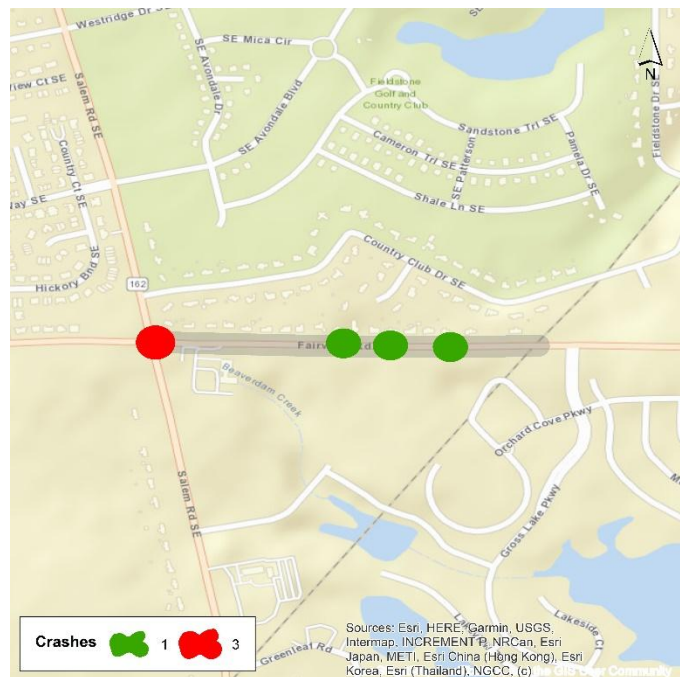
Sigman Rd NE northbound approaching Gees Mill Rd NE

8. Fairview Road SE (SR 162 to County Line)

Jurisdiction	County
Road Type	Major Collector
Travel Lanes	2
Posted Speed (MPH)	35
Disadvantaged Area	No
Length (Miles)	0.45
Total Crashes	144
KSI Crashes	6
Fatal Crashes	0

General Observations:

KSI crashes are mainly concentrated in the eastern half of the corridor, with the highest crash frequencies at the intersection of Salem Road.



Fairview Rd SE eastbound approaching Salem Rd SE



Fairview Rd SE westbound approaching Salem Rd SE

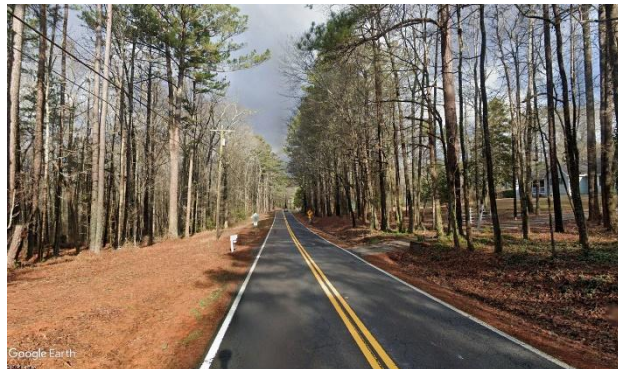
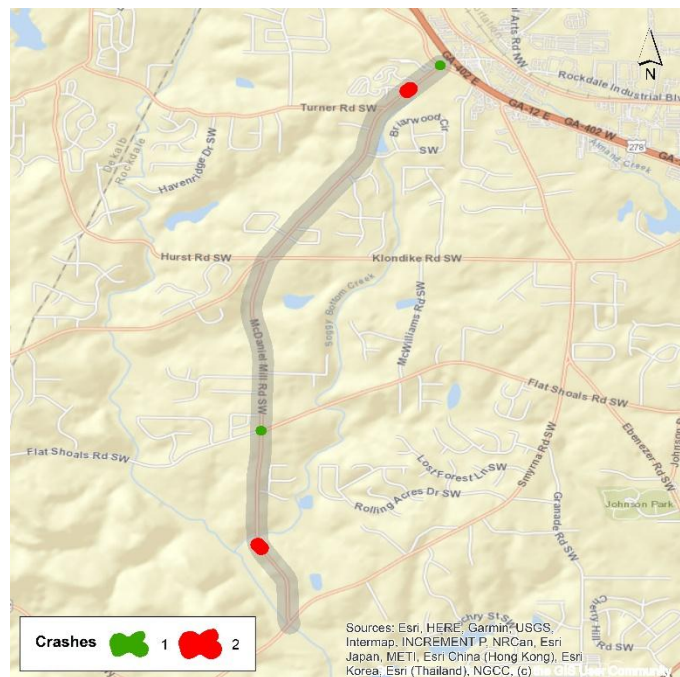


9. McDaniel Mill Road SW (Smyrna Road to Iris Road SW)

Jurisdiction	County
Road Type	Major Collector
Travel Lanes	2
Posted Speed (MPH)	45
Disadvantaged Area	No
Length (Miles)	3.48
Total Crashes	109
KSI Crashes	6
Fatal Crashes	0

General Observations:

KSI crashes are mainly concentrated in the northern and southern ends of the corridor, with the highest crash frequencies near the intersection of Soggy Bottom Creek and the intersection of St Clair Drive.



McDaniel Mill Rd SW northbound approaching Soggy Bottom Creek



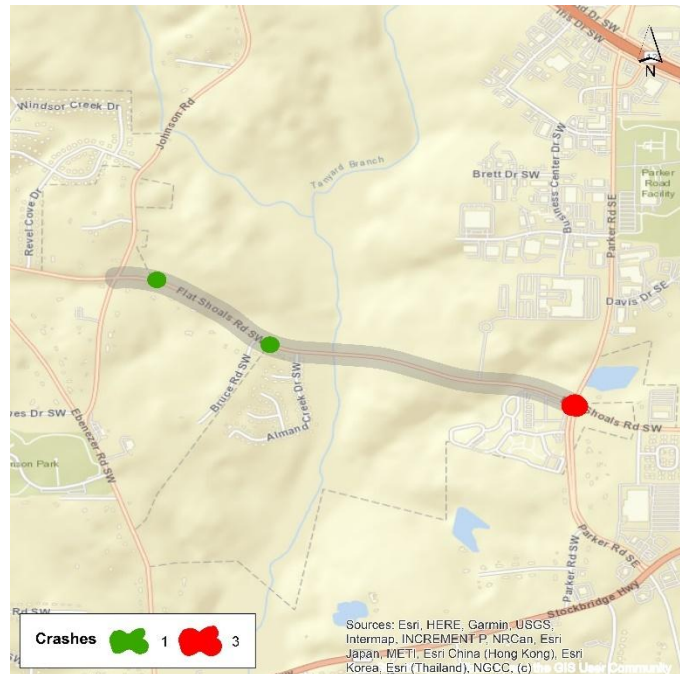
McDaniel Mill Rd SW northbound approaching St Clair Dr

10. Flat Shoals Road SW (Johnson Road SW to Parker Road SE)

Jurisdiction	County / City
Road Type	Minor Arterial
Travel Lanes	2 - 4
Posted Speed (MPH)	45
Disadvantaged Area	Yes
Length (Miles)	1.17
Total Crashes	164
KSI Crashes	5
Fatal Crashes	0

General Observations:

KSI crashes are mainly concentrated at or near the intersection of Parker Road with additional KSI crashes occurring near the intersection of Bruce Road and Johnson Road.



REPLACE PHOTO AND CAPTION



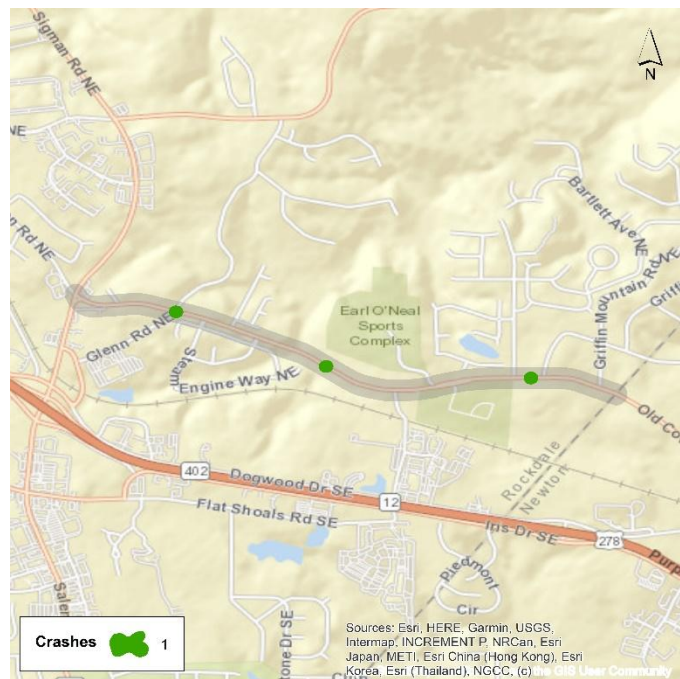
REPLACE PHOTO AND CAPTION

11. Old Covington Road NE (N Salem Road / Sigman Road to County Line)

Jurisdiction	County
Road Type	Major Collector
Travel Lanes	2
Posted Speed (MPH)	35 - 45
Disadvantaged Area	No
Length (Miles)	1.89
Total Crashes	110
KSI Crashes	3
Fatal Crashes	0

General Observations:

KSI crashes are evenly dispersed with even frequencies throughout the corridor.



Old Covington Rd NE eastbound approaching Glenn Rd NE



Old Covington Rd NE westbound approaching Horseshoe Springs Dr NE

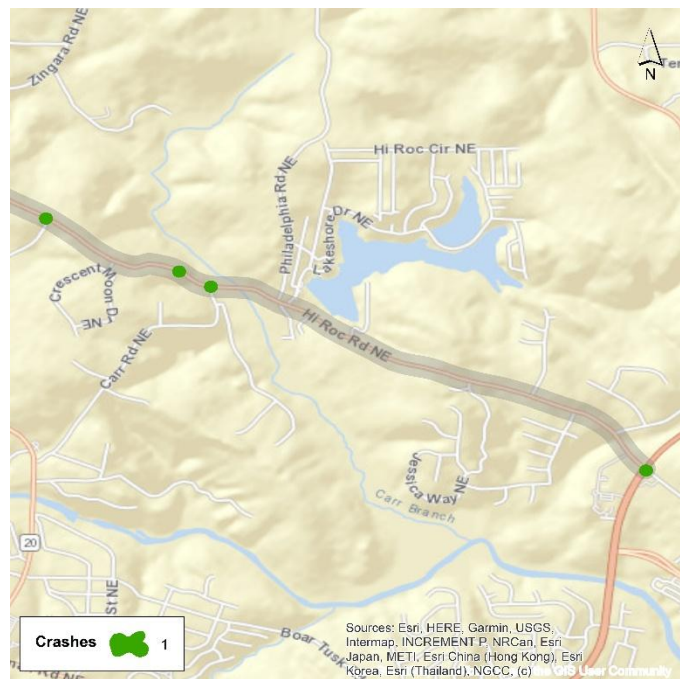


12. Hi Roc Road NE (GA 20 to GA 138)

Jurisdiction	County
Road Type	Minor Collector
Travel Lanes	2
Posted Speed (MPH)	25 - 40
Disadvantaged Area	Yes
Length (Miles)	3.00
Total Crashes	90
KSI Crashes	4
Fatal Crashes	1

General Observations:

KSI crashes are mainly concentrated in the western half of the corridor, with even frequencies.



Hi Roc Rd NE westbound approaching Carr Rd NE



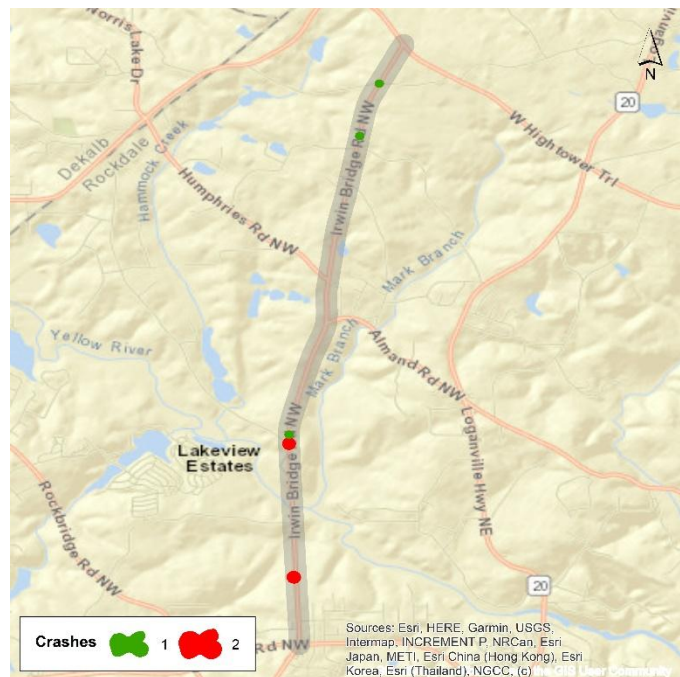
Hi Roc Rd NE eastbound approaching GA 138

13. Irwin Bridge Road NW (Sigman Road to Hightower Trail)

Jurisdiction	County
Road Type	Major Collector
Travel Lanes	2
Posted Speed (MPH)	35 - 45
Disadvantaged Area	No
Length (Miles)	4.31
Total Crashes	181
KSI Crashes	7
Fatal Crashes	1

General Observations:

KSI crashes are mainly concentrated in the southern half of the corridor, with the highest crash frequencies south of Farmer Road and near the intersection of Bonds Lake Road.



Irwin Bridge Rd NW southbound approaching Farmer Rd NW



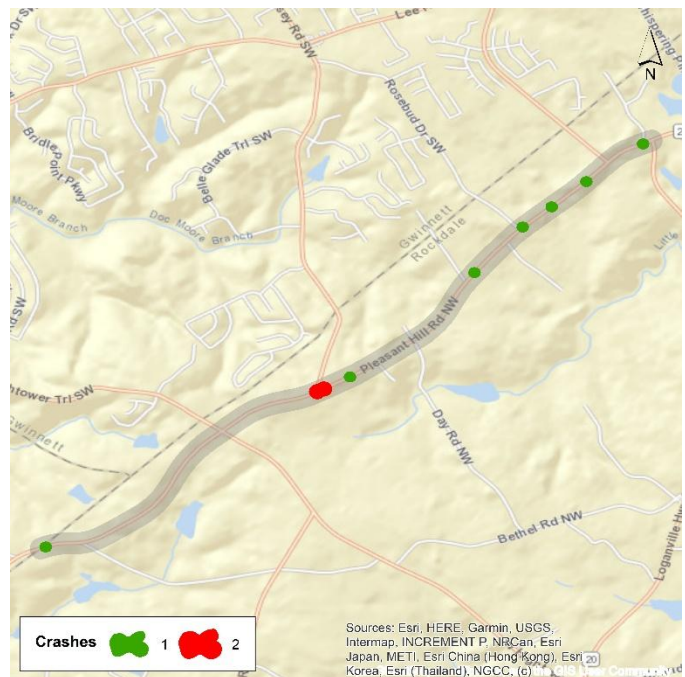
Irwin Bridge Rd NW northbound approaching Bonds Lake Rd NW

14. Pleasant Hill Road NW (County Line to GA 20)

Jurisdiction	County
Road Type	Minor Arterial
Travel Lanes	2
Posted Speed (MPH)	45
Disadvantaged Area	Yes
Length (Miles)	3.22
Total Crashes	198
KSI Crashes	9
Fatal Crashes	3

General Observations:

KSI crashes are mainly concentrated in the eastern half of the corridor, with the highest crash frequencies at the intersection of Mink Livsey Road.



Pleasant Hill Rd NW eastbound approaching Mink Livsey Rd SW



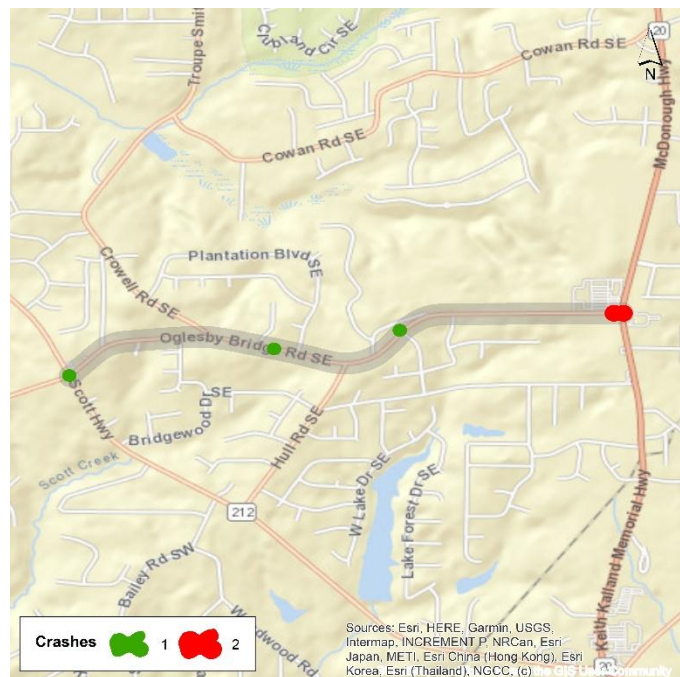
Pleasant Hill Rd NW westbound approaching Rosebud Dr SW

15. Oglesby Bridge Road SE (GA 212 Hwy to GA 20)

Jurisdiction	County
Road Type	Major Collector
Travel Lanes	2
Posted Speed (MPH)	35 - 45
Disadvantaged Area	Yes
Length (Miles)	1.95
Total Crashes	106
KSI Crashes	5
Fatal Crashes	0

General Observations:

KSI crashes are mainly concentrated in the eastern half of the corridor, with the highest crash frequencies near the intersection of GA 20 and a nearby business plaza.



Oglesby Bridge Rd SE westbound approaching GA 212



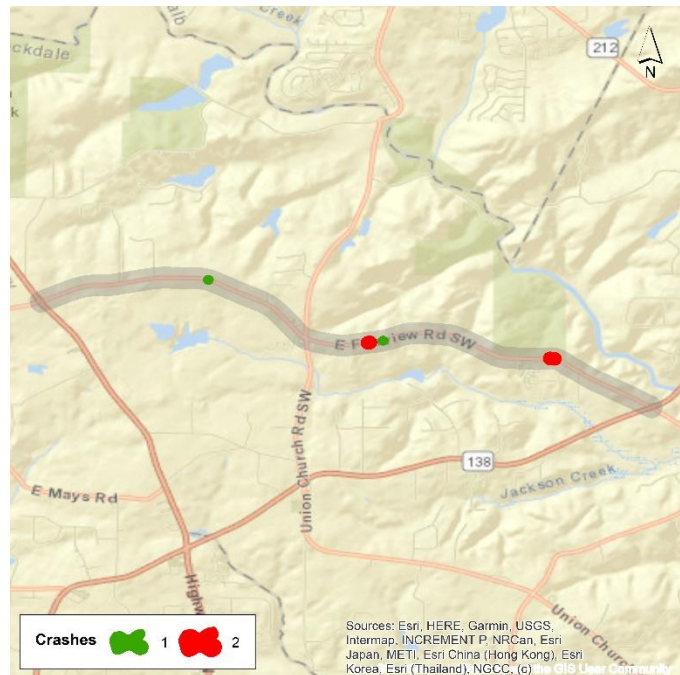
Oglesby Bridge Rd SE eastbound approaching plaza and GA 20

16. E Fairview Road SW (SR 155 to GA 138)

Jurisdiction	County
Road Type	Major Collector
Travel Lanes	2
Posted Speed (MPH)	35 - 45
Disadvantaged Area	Yes
Length (Miles)	4.01
Total Crashes	124
KSI Crashes	6
Fatal Crashes	1

General Observations:

KSI crashes are mainly concentrated in the eastern half of the corridor, with the highest crash frequencies near the intersection of Union Church Road and near the intersection of Woodside Drive.



E Fairview Rd SW westbound approaching Union Church Rd SW



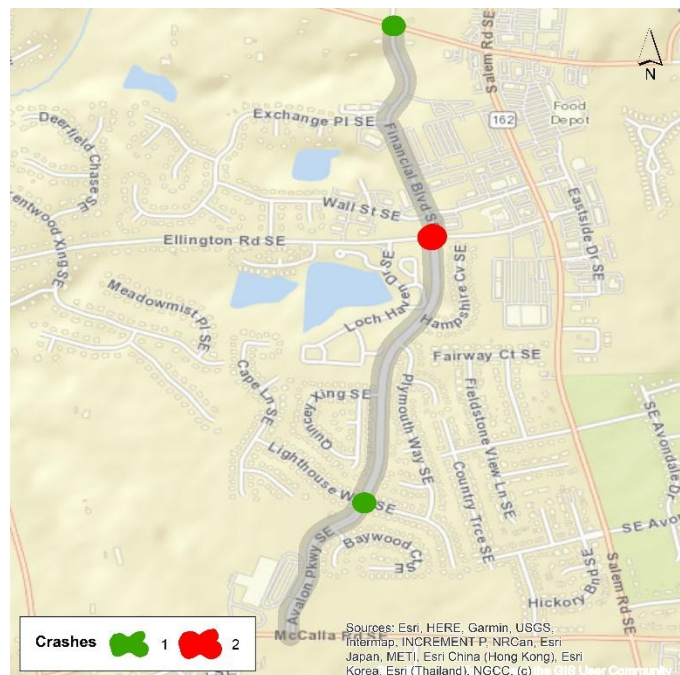
E Fairview Rd SW eastbound approaching Woodside Dr

17. Avalon Boulevard SE (Fairview Road SE to Flat Shoals Road SE)

Jurisdiction	County
Road Type	Local
Travel Lanes	2 - 4
Posted Speed (MPH)	20 - 25
Disadvantaged Area	Yes
Length (Miles)	1.39
Total Crashes	109
KSI Crashes	4
Fatal Crashes	0

General Observations:

KSI crashes are mainly concentrated in the northern half of the corridor, with the highest crash frequencies at the intersection of Ellington Road.



Avalon Blvd SE northbound approaching Lighthouse Way SE



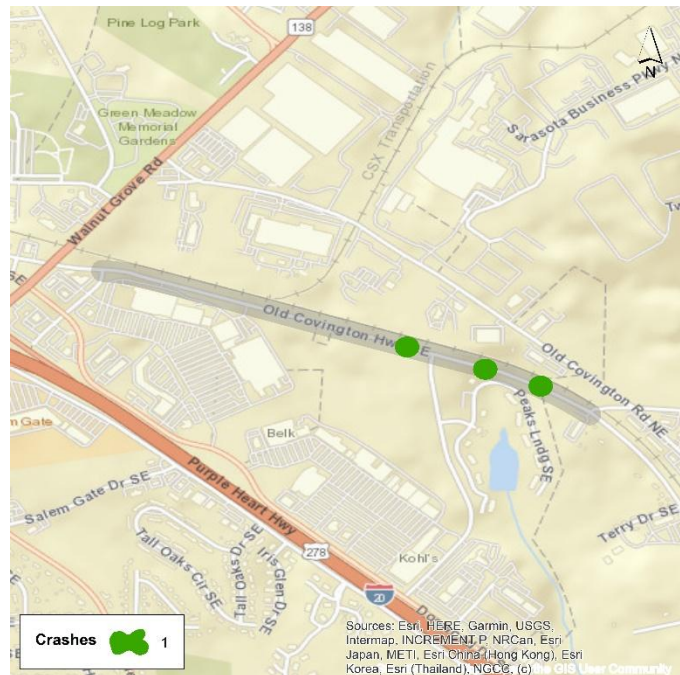
Avalon Blvd SE southbound approaching Ellington Rd SE

18. Old Covington Highway SE (Old Covington Highway SE to Gees Mill Road NE)

Jurisdiction	City
Road Type	Major Collector
Travel Lanes	2
Posted Speed (MPH)	45
Disadvantaged Area	Yes
Length (Miles)	0.92
Total Crashes	43
KSI Crashes	3
Fatal Crashes	2

General Observations:

KSI crashes are mainly concentrated in the eastern half of the corridor, with the highest crash frequencies near the intersection of Courtesy Parkway.



Old Covington Hwy SE eastbound approaching Courtesy Pkwy SE



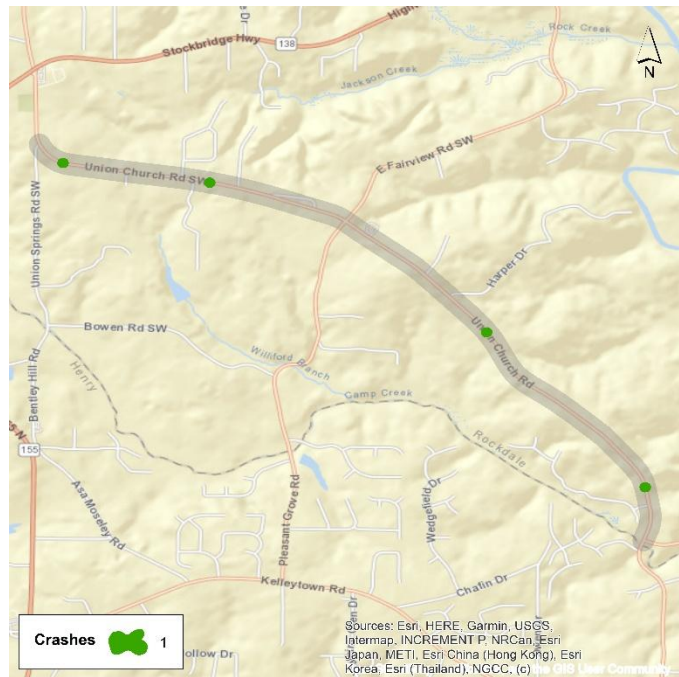
Old Covington Hwy SE westbound approaching Courtesy Pkwy SE

19. Union Church Road SW (Oglesby Bridge Road SE to Bowen Road SW)

Jurisdiction	County
Road Type	Local
Travel Lanes	2
Posted Speed (MPH)	35 - 45
Disadvantaged Area	No
Length (Miles)	3.69
Total Crashes	66
KSI Crashes	4
Fatal Crashes	0

General Observations:

KSI crashes are evenly dispersed with even frequencies throughout the corridor.



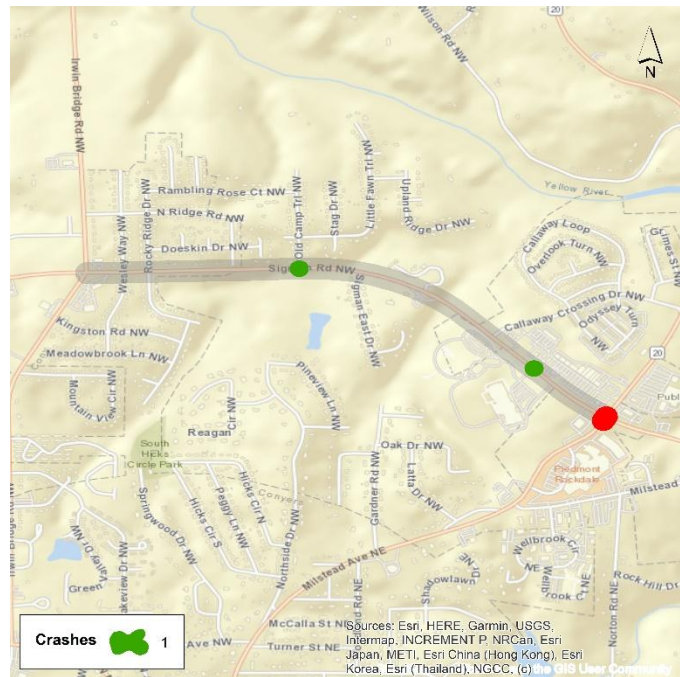
Union Church Rd SW eastbound approaching Boulder Dr SW Union Church Rd SW westbound approaching Harper Dr

20. Sigman Road (Irwin Bridge Road NW to GA 20)

Jurisdiction	County / City
Road Type	Principal Arterial - Other
Travel Lanes	2 - 5
Posted Speed (MPH)	35 - 45
Disadvantaged Area	Yes
Length (Miles)	1.36
Total Crashes	253
KSI Crashes	6
Fatal Crashes	0

General Observations:

KSI crashes are mainly concentrated in the eastern half of the corridor, with the highest crash frequencies at the intersection of GA 20.



Sigman Rd NW eastbound approaching Old Camp Trail NW



Sigman Rd NW eastbound approaching GA 20