

Forsyth County LOCAL ROAD SAFETY PLAN



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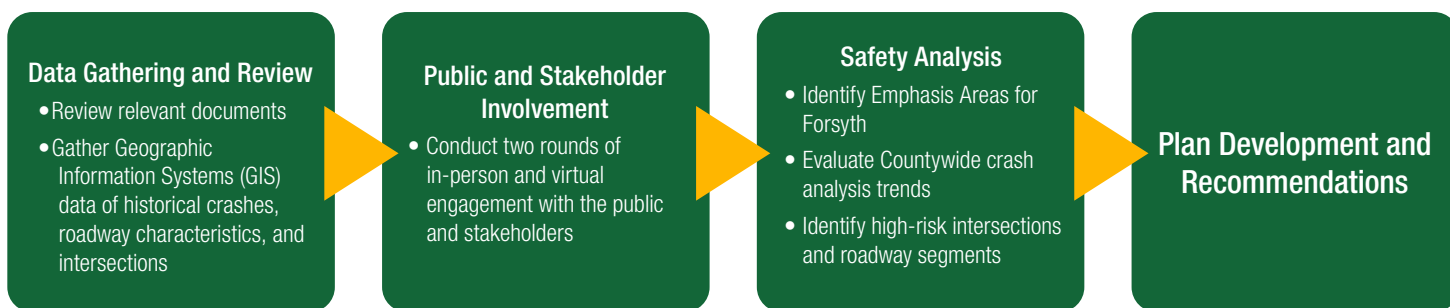
Acknowledgements

(In Progress)

1 | Introduction

Forsyth County is in the Atlanta Metropolitan area, is of suburban and exurban character, and has approximately 250,000 residents. Forsyth County developed this Local Road Safety Plan (LRSP) to meet the travel safety goal established in the parallel and complementary Forsyth Comprehensive Transportation Plan (CTP) 2024 Update: “Promote a safer system by reducing fatal and suspected serious injury crashes and enhancing the reliability of the transportation network for all users.”

The following graphic illustrates the general LRSP project process:



1.1 LEADERSHIP COMMITMENT AND GOAL SETTING

Forsyth County commits to the long-term safety goal of reducing traffic-related fatal and suspected serious injury crashes per 100 million vehicle miles traveled (VMT) to zero by 2054, in alignment with the Atlanta Regional Commission’s (ARC) Regional Safety Strategy goal. Furthermore, Forsyth is dedicated to measuring the progress of this goal over time and will document reported quantitative metric updates in future iterations of its Comprehensive Transportation Plan.

Forsyth County’s leadership commits to supporting the goals established in the Governor’s Office of Highway Safety (GOHS) 2022-2024 Georgia Strategic Highway Safety Plan (GA SHSP) and the overall vision of “Striving Towards Zero Deaths and Serious Injuries for all road users in Georgia.” The GA SHSP includes crash data analysis and environmental data to establish performance measures and goals to reduce fatal and suspected serious injury crashes. Implementing the projects and strategies identified in the Forsyth LRSP aligns with these goals and will require commitment and ongoing collaboration among Forsyth County stakeholders.

The Forsyth LRSP builds upon past and ongoing transportation safety initiatives of various nationwide, regional, and local scales:

- The Safe System Approach established by the Federal Highway Administration (FHWA) recognizes that humans are vulnerable, responsibility is shared, safety is proactive, and redundancy is crucial. Furthermore, the Safe System Approach promotes five elements in planning efforts and implementation: safe road users, safe vehicles, safe speeds, safe roads, and post-crash care.
- The 2022-2024 GA SHSP outlines a framework to enhance highway safety, emphasizes a Safe Systems Approach, and analyzes crash data and environmental data to establish performance measures and goals to reduce fatal and suspected serious injury crashes.
- The Atlanta Regional Commission’s (ARC) 2023 Regional Safety Strategy (RSS) provides a comprehensive framework and action plan to support the long-term safety vision and goal for the agencies in the Atlanta region. The ARC’s RSS establishes a long-term vision of zero deaths and serious injuries by adopting a 5% reduction goal per year (i.e., zero by 2052). The RSS identifies roadway departure crashes as a focus area for Forsyth County.
- The 2024 GDOT Vulnerable Roadway User (VRU) Safety Assessment defines VRUs as pedestrians, cyclists, or other vulnerable users. This assessment summarizes historical trends, develops data-driven analysis techniques, establishes strategic organizational partnerships, and outlines a series of projects to eliminate VRU fatalities.
- The GDOT District 1 Safety Program, which includes Forsyth County, identifies operational and design solutions through data-driven safety analyses.
- The ongoing parallel and complementary Forsyth CTP 2024 Update serves as a guide for future transportation investments throughout Forsyth County, including transportation needs, project implementation, and funding decisions.

1.2 PURPOSE OF THE LRSP

The Forsyth LRSP provides a framework for identifying and prioritizing safety improvements that can be implemented within the County. The LRSP recommendations focus on transportation improvements that can be used to reduce fatal and suspected serious injury crashes guided by the principles established in the GA SHSP and through a systemic data analysis conducted specifically for Forsyth County.

1.3 ALIGNMENT WITH SS4A

The federal Infrastructure Investment and Jobs Act (IIJA) became law in November 2021 and included \$5 billion in funding for the Safe Streets and Roads for All (SS4A) discretionary grant program which offers two types of funding: Planning & Demonstration Grants and Implementation Grants.

The Forsyth LRSP serves as an SS4A Action Plan, aligning with the components required to apply for SS4A Implementation Grant funding. As such, the LRSP involves a community-informed and data-driven approach to roadway safety, with commitment from County leadership to reducing roadway fatalities and suspected serious injuries .

1.4 PLANNING STRUCTURE

The Forsyth LRSP and the Comprehensive Transportation Plan (CTP) Update were developed concurrently. As such, the planning structure overseeing the development of the LRSP consisted of the Forsyth CTP/LRSP Project Management Team (PMT) and stakeholders. There were two rounds of engagement comprising public meetings, pop-up community events, online surveys, and stakeholder focus group interviews. Chapter 4 includes more information about public and stakeholder involvement. The following groups oversaw the development of the LRSP, and it is recommended a similar forum comprises a task force to oversee the LRSP implementation and monitoring of progress toward meeting the LRSP goals:

- **Forsyth CTP/LRSP PMT:** The core PMT met during biweekly meetings to establish the direction of the project, discuss project milestones, and review analysis results. The following groups comprised the core PMT:
 - Forsyth County Department of Transportation (DOT) staff
 - The Atlanta Regional Commission (ARC) staff – Atlanta’s metropolitan planning organization (MPO)
 - Georgia Department of Transportation (GDOT) staff
 - Consultant project team
- **Stakeholder Groups:** The following Forsyth stakeholder groups contributed to the development of the plan during key milestones of the CTP/LRSP process:
 - Other Forsyth County departments (e.g., Capital Projects and GIS)
 - Forsyth Sheriff’s Office and other local emergency service providers
 - Adjacent community agencies including the City of Cumming
 - Members of the community from various stakeholder groups (e.g., business, non-profit, and education)



Figure 1: Forsyth CTP/LRSP Stakeholder Meeting #1

1.5 DOCUMENT ORGANIZATION

The Forsyth LRSP is organized into the following Chapters:

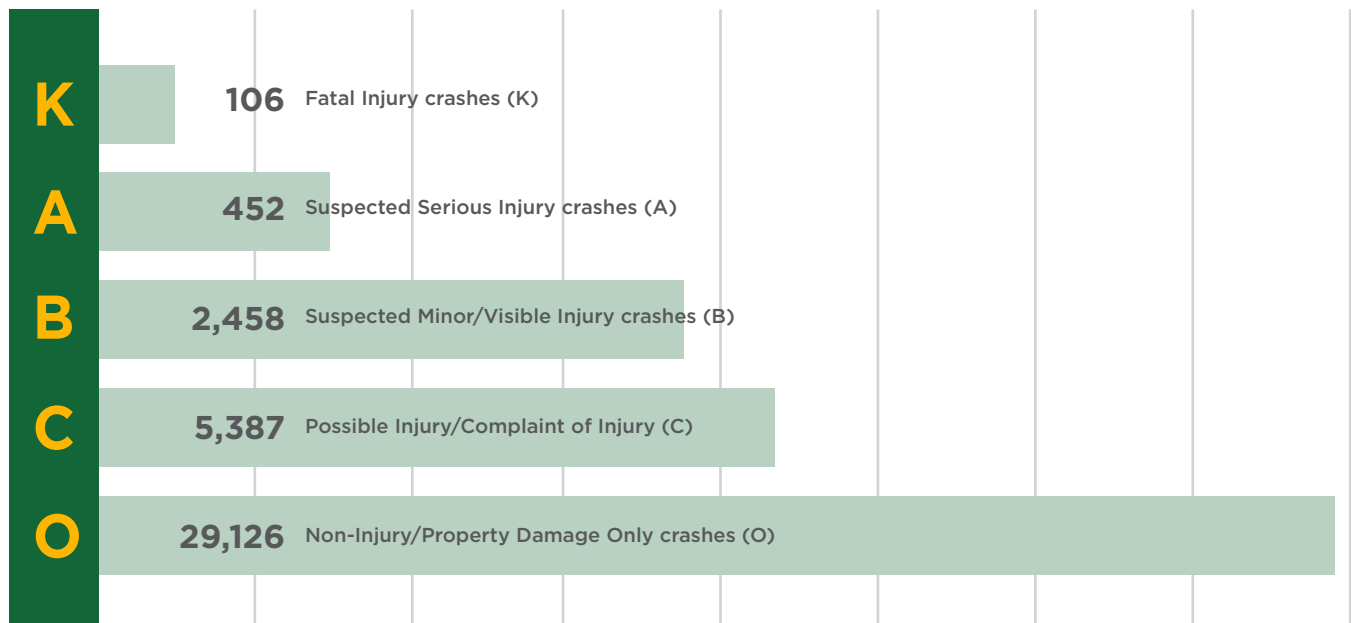
- **1 Introduction:** Presents the project background, goals, and purpose of the LRSP
- **2 Safety Analysis:** Provides an overview of countywide crash trends
- **3 Identifying Countermeasures:** Describes engineering and driver-related countermeasures
- **4 Identifying and Prioritizing Solutions:** Explores a systemic analysis to identify high-risk County-owned facilities and potential solutions through countermeasures
- **5 Public and Stakeholder Involvement:** Describes public and stakeholder involvement in the LRSP development process
- **6 Equity Considerations:** Explains how equity informed the LRSP
- **7 Key Findings and Next Steps:** Summarizes findings and lays out the next steps for its implementation

2 | Safety Analysis

The Forsyth LRSP safety analysis explored countywide historical trends to understand where crashes occurred, crash severities, and what factors contributed to them.

A review of crash emphasis areas and historical crash data trends was conducted before identifying projects and countermeasures. From January 2018 to October 2023, there were 37,591 crashes on all roads in Forsyth County, of which 558 resulted in fatalities or suspected serious injuries. The following sections summarize the data analysis conducted for the LRSP.

KABCO Crash Severity: Forsyth County and agencies nationwide use the KABCO vehicle accident reporting system, produced by the Federal Highway Administration (FHWA), to classify the injury or health impacts resulting from roadway crashes. 37,591 crashes between January 2018 and October 2023.



2.1 DATA GATHERING

Historical crash data was obtained from GDOT’s AASHTOWare Safety (formerly Numetric) and Georgia Electronic Accident Reporting System (GEARS) online crash databases. The data was combined and cleaned at a high level (including the removal of duplicate crashes) to provide a more complete record of crashes across the County. The analysis also included roadway ownership information from GDOT and additional roadway characteristic information (such as road surface type and signal locations) provided by the County.

2.2 EMPHASIS AREAS

The FHWA guides state DOTs in developing Strategic Highway Safety Plans which identify safety emphasis areas based on historical crash trends and severities. Crashes resulting in fatalities and suspected serious injuries were evaluated in the 2022-2024 GA SHSP to identify the top statewide safety emphasis areas. This analysis determined the safety emphasis areas with the greatest number of crashes in Georgia and indicated focused opportunities for safety improvements.

Table 1 shows a comparison of Forsyth County crashes resulting in fatalities and suspected serious injuries to statewide totals. Emphasis Area trends were obtained from AASHTOWare Safety’s Local Government Safety Dashboard from 2018 to 2022. The top-ranking emphasis areas for Forsyth County generally align with the statewide totals. Note, that the analysis for Forsyth County includes all fatal (K) and suspected serious injury (A) crashes within the County, not just on County roads.

Table 1: Forsyth County Fatal and Suspected Serious Injury Crashes by Safety Emphasis Areas (Source: AASHTOWare Safety 2018-2022)

Category	Safety Emphasis Area	Forsyth County			Georgia Statewide Totals		
		K & A Crashes	% of Total ⁽¹⁾	Rank	K & A Crashes	% of Total ⁽¹⁾	Rank
		1,460	100%	N/A	118,845	100%	N/A
Drivers	Older Drivers (55+)	177	12%	2	13,322	11%	2
	Distracted Driver (C+S)	136	9%	4	13,151	11%	3
	Aggressive/Speed Related	107	7%	7	6,616	6%	8
	Improper Occupant Protection	103	7%	8	11,628	10%	5
	Younger Drivers (15-19)	80	5%	9	4,581	4%	10
	Impaired Driving (Confirmed + Suspected)	59	4%	11	4,478	4%	11
Highway	Intersections	256	18%	1	21,055	18%	1
	Roadway Departure (Lane Departure)	143	10%	3	12,289	10%	4
	Roadside Collision	135	9%	5	11,001	9%	6
	Local Roads	117	8%	6	6,710	6%	7
	Work Zone	19	1%	14	1,504	1%	14
	Animal/Deer	1	0%	15	231	0%	16
Special Users	Pedestrian	28	2%	13	3,643	3%	12
	Bicycle	0	0%	16	529	0%	15
Vehicles	Motorcycle	63	4%	10	4,637	4%	9
	Large Truck (Heavy Truck)	36	2%	12	3,470	3%	13

Notes: ⁽¹⁾ Numbers in the columns may not add up to the totals because the injuries in one crash may be associated with multiple emphasis areas. For example, there could be a lane departure crash with serious injuries involving an impaired young driver on a local road.

2.3 CRASH DATA ANALYSIS

Table 2 summarizes crashes by severity and year occurring on all roadways in Forsyth. Of the 37,591 reported crashes during the study period (January 2018 to October 2023), 106 (or 0.3%) resulted in a fatality, and 452 (or 1.2%) resulted in suspected serious injuries. As shown in the crash density map, crashes in Forsyth County were more frequent in areas with more land use and traffic activity.

Table 2: Crashes by Severity and Year

Year	Fatal Injury (K)	Suspected Serious Injury (A)	Visible Injury (B)	Complaint of Injury (C)	Property Damage Only (O)	N/A	Total
2018	18	82	390	1,155	5,737	1	7,383
2019	13	86	415	950	5,109	11	6,584
2020	13	68	359	717	4,050	21	5,228
2021	20	69	453	918	4,626	16	6,102
2022	24	70	465	924	5,230	13	6,726
2023 ⁽¹⁾	18	77	376	723	4,374	0	5,568
Total	106	452	2,458	5,387	29,126	62	37,591
Percentage of All Crashes	0.3%	1.2%	6.5%	14.3%	77.5%	0.2%	100%

Note: ⁽¹⁾ Includes reported crashes through October 2023

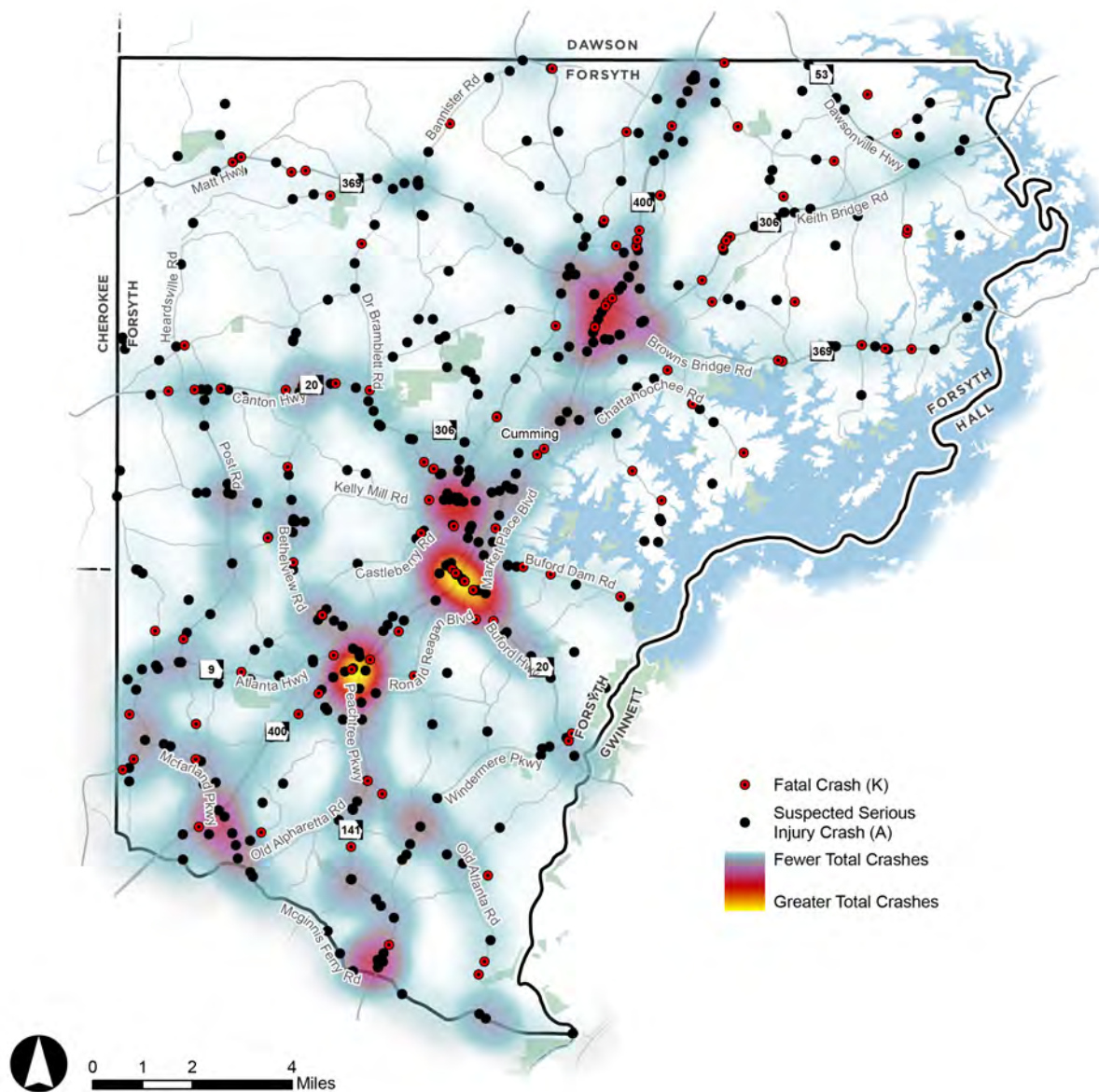


Figure 2: Countywide Crash Density and Fatal/Suspected Serious Injury Crashes (January 2018 to October 2023)

CRASH RATE COMPARISON

In recent years, there were approximately 2,300 crashes per year on County roadways in Forsyth. The absolute number of crashes each year does not tell the whole story. Normalizing the crashes in a year by 100 million vehicle miles traveled (HMVMT) allows for a comparison between trends in Forsyth with statewide trends. Historical crash rates were calculated using crash records from AASHTOWare Safety and vehicle miles traveled (VMT) information from GDOT’s Mileage by Route and Road System Report. Figure 3 shows a comparison of the Forsyth County crash rate on all roads in the County, the Forsyth County crash rate on County roads, and the overall Georgia crash rate on all roads. The Forsyth County crash rate was lower than the Georgia crash rate except for 2018. The Forsyth County crash rate on County roads was consistently lower than the crash rate on all roads in the County.

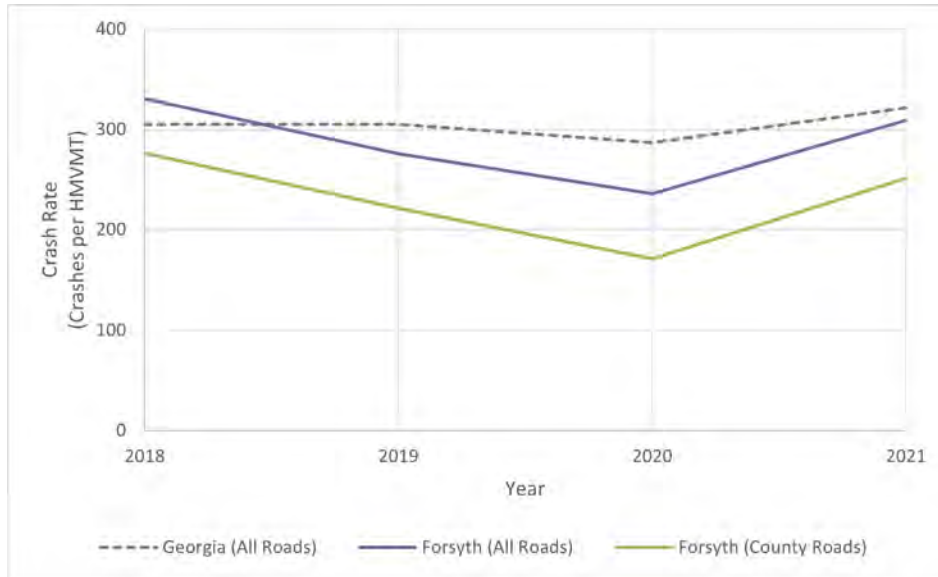


Figure 3: Historical Crash Rates (All Crash Severities)

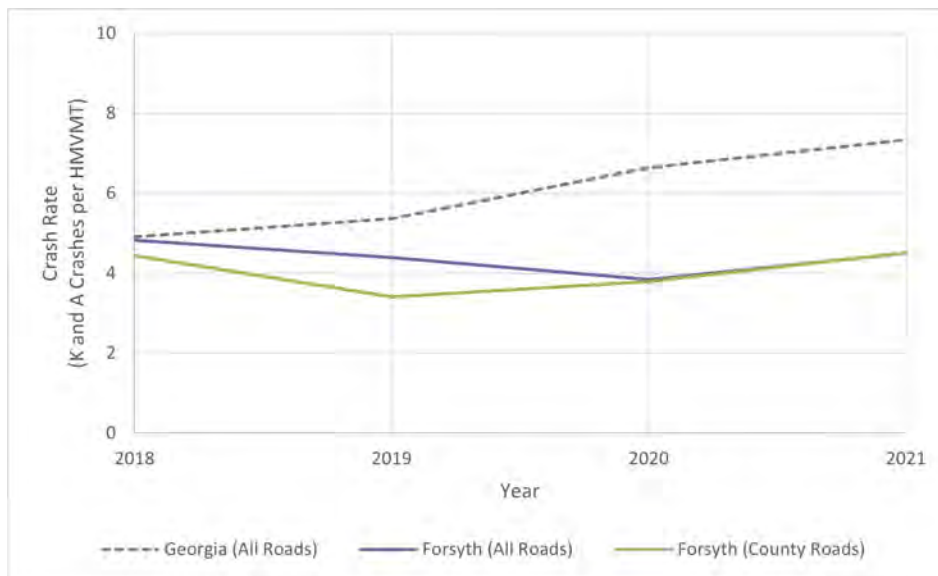


Figure 4: Historical Crash Rates (Fatal and Suspected Serious Injury Crashes)

From 2018 to 2021 there were approximately 167 fatal and suspected serious injury crashes on County roads in Forsyth. The preceding Figure 4 shows a comparison of the fatal and suspected serious injury crash rates on all roads in Forsyth, the County-owned roads in Forsyth, and all roads in Georgia. The statewide trend for fatal and suspected serious injury crash rates has gradually increased over the four years while the trend for Forsyth (all roads and county roads) has remained mostly stable with a slight increase in 2021.

HIGH-CRASH ROADWAYS

The absolute number of crashes does not tell the entire story as locations with more traffic activity are likely to have more total crashes. Crash rate calculations account for the traffic volume at locations and provide a more effective comparison of similar locations with safety issues. Tables 3 and 4 provide a summary of the 10 highest-crash County intersections and corridors, respectively, ranked by total crashes. Roadway lengths were measured using Geographic Information Systems (GIS) and the annual average daily traffic (AADT) was obtained from AASHTOWare Safety.

Table 3: Crashes and Rates – County Intersections (2018-2022)

Intersection	Crashes	Rank by Crashes	Intersection AADT	Crash Rate	Rank by Crash Rate
Shiloh Road at McFarland Parkway	229	1	27,624	4.5	1
Old Atlanta Road at Mathis Airport Parkway/Windermere Parkway	187	2	32,765	3.1	2
McFarland Parkway at Union Hill Road	130	3	24,310	2.9	3
Bluegrass Lakes Parkway at McFarland Parkway	91	4	26,943	1.9	5
Ronald Reagan Boulevard at McFarland Parkway	68	5	27,986	1.3	8
James Burgess Road/Brant Chesney Way at Old Atlanta Road	60	6	23,095	1.4	7
Drew Campground Road at Post Road	58	7	21,013	1.5	6
Sharon Road at Old Atlanta Road	55	8	15,323	2.0	4
Nichols Road at Old Atlanta Road	53	9	25,643	1.1	10
McFarland Parkway at Trotters Parkway	52	10	21,286	1.3	8

Table 4: Crashes and Rates – County Corridors (2018-2022)

Corridor	Length (miles)	Crashes	Rank by Crashes	Corridor AADT	Crash Rate	Rank by Crash Rate
McGinnis Ferry Road from Old Atlanta Road to Shakerag (EB)	0.422	53	1	18,550	371	7
Old Atlanta Road from James Burgess Road to Nichols Road	0.510	47	2	24,600	205	9
McFarland Parkway from Shiloh Road to Ronald Reagan Boulevard	0.458	42	3	12,950	387	6
McGinnis Ferry Road west of Johns Creek Parkway	0.510	42	3	6,400	706	4
Old Atlanta Road from Kemp Road to Read Road/Chattahoochee Point Road	1.092	41	4	15,700	113	10
Pilgrim Mill Road east of SR 400	0.073	41	4	8,610	3,574	2
Bald Ridge Marina Road east of SR 400	0.088	38	5	765	31,035	1
McGinnis Ferry Road from Windward Parkway to Douglas Road	0.358	37	6	12,800	442	5
McGinnis Ferry Road from Old Atlanta Road to Shakerag Trail (WB)	0.418	30	7	18,550	212	8
Nichols Road	0.534	25	8	2,086	1,230	3

CRASHES BY TYPE

Crash type is indicated on crash reports submitted by law enforcement agencies. Rear-end crashes were the most common type. They often happen in congested traffic or when drivers are distracted. These crashes tend to be less severe because they often occur at slower speeds. Not a collision with a motor vehicle (NCMV) crashes (i.e., single-vehicle crashes) were the second most common crash type and require further investigation as this type of crash can involve high speeds or roadway departure and can often result in higher severity.

Table 5: Crashes by Type

Type of crash	2018	2019	2020	2021	2022	2023 ⁽¹⁾	Total
Rear End	3,566	3,154	2,267	2,666	2,898	2,413	16,964
Not a Collision with Motor Vehicle	1,072	982	998	1,012	1,056	807	5,927
Angle	997	804	581	719	921	652	4,674
Left Turn	726	754	599	779	837	819	4,514
Sideswipe-Same Direction	545	531	483	565	641	520	3,285
Head On	146	118	97	100	119	99	679
Sideswipe-Opposite Direction	133	100	113	108	106	97	657
Right Turn	128	139	86	153	146	156	808
Other	70	2	4	0	2	5	83
Total	7,383	6,584	5,228	6,102	6,726	5,568	37,591

Note: ⁽¹⁾ Includes reported crashes through October 2023

CRASHES BY LIGHTING CONDITION

Street lighting can be a streetscaping asset if it fits the context of the community and built environment. Lighting is also a proven safety countermeasure as it can reduce nighttime injury crashes on rural and urban highways by up to 28 percent . Approximately 23 percent of crashes in Forsyth occurred during non-daylight conditions (i.e., Dark-non-lighted, dark-lighted, dusk, and dawn) which is less than the statewide average during the same period of 29 percent.

Table 6: Crashes by Roadway Lighting Condition

Lighting Condition	2018	2019	2020	2021	2022	2023 ⁽¹⁾	Total
Daylight	5,628	5,050	3,931	4,769	5,263	4,447	29,088
Dark-Not Lighted	1,005	901	762	841	867	605	4,981
Dark-Lighted	445	408	351	313	409	315	2,241
Dusk	161	99	91	110	99	106	666
Dawn	135	124	87	69	86	93	594
Not Available	9	2	6	0	2	2	21
Total	7,383	6,584	5,228	6,102	6,726	5,568	37,591

Note: ⁽¹⁾ Includes reported crashes through October 2023

CRASHES BY ROAD SURFACE CONDITION

Pavement friction affects how vehicles interact with the roadway and directly influences the frequency of crashes. Wet pavement conditions can further reduce traction and exacerbate the frequency and severity of vehicle crashes. Approximately 17 percent of crashes in Forsyth County occurred during non-dry road surface conditions, slightly less than the statewide average during the same period of 18 percent.

Table 7: Crashes by Roadway Surface Condition

Surface Condition	2018	2019	2020	2021	2022	2023 ⁽¹⁾	Total
Dry	5,918	5,522	4,145	5,070	5,864	4,738	31,257
Wet	1,392	1,030	1,016	977	823	792	6,030
Water (standing or moving)	18	22	19	33	21	27	140
Ice/Frost	29	0	11	7	5	1	53
Snow	9	0	24	2	2	0	37
Other	6	7	7	12	9	8	49
Not Available	11	3	6	1	2	2	25
Total	7,383	6,584	5,228	6,102	6,726	5,568	37,591

Note: ⁽¹⁾ Includes reported crashes through October 2023

CRASHES INVOLVING VULNERABLE USERS

Crashes involving vulnerable road users include pedestrians and bicyclists as these alternative modes users are more exposed and at risk during crashes with motorists. Figure 5 shows the location of crashes involving bicyclists and pedestrians as well as the location of schools in the County.

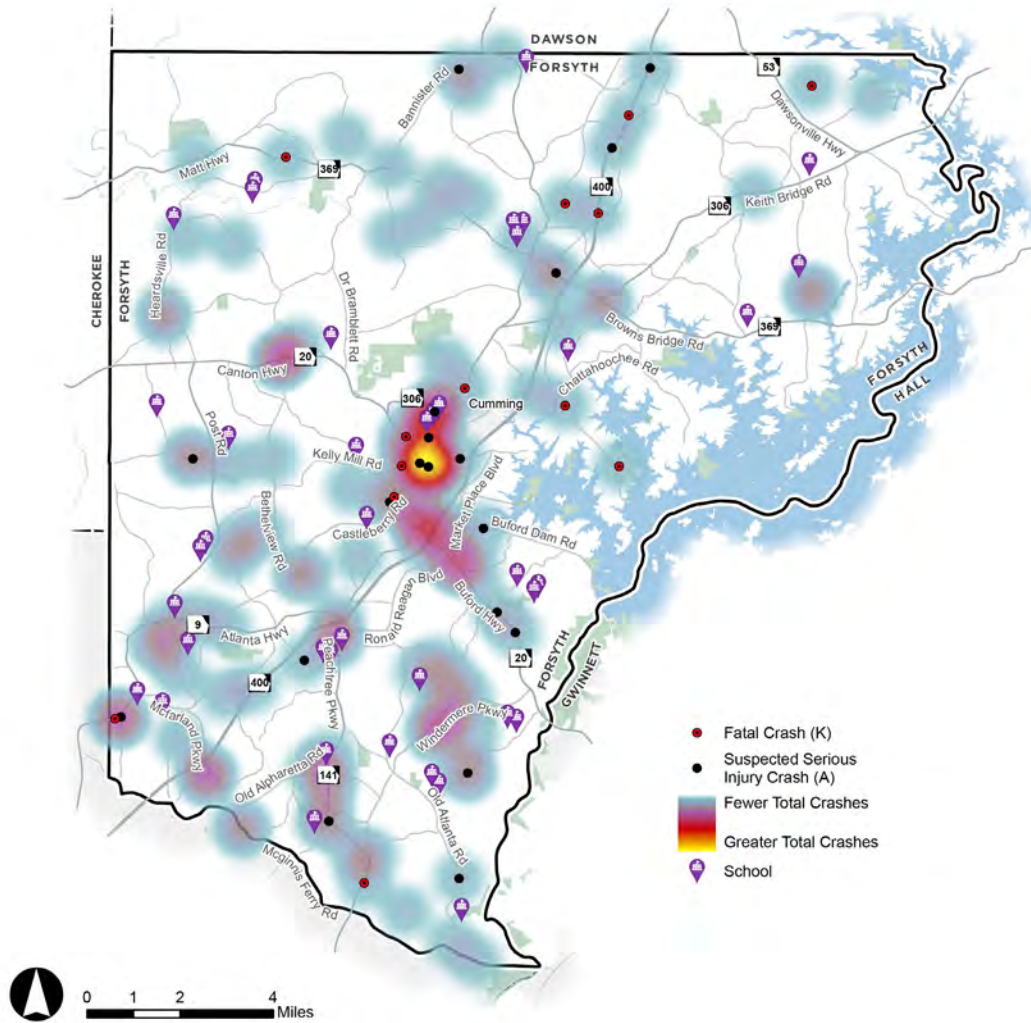


Figure 2: Countywide Crash Density and Fatal/Suspected Serious Injury Crashes (January 2018 to October 2023)

3 | IDENTIFYING COUNTERMEASURES

The LRSP identifies countermeasures and strategies addressing the Forsyth fatal/suspected serious injury emphasis areas mentioned in Section 2.2. The countermeasures are classified into two categories: (1) project recommendations (Engineering) at 20 high-risk locations (i.e., 10 County-maintained intersections and 10 County-maintained roadway segments) and (2) driver-related countermeasures (Education, Enforcement, and Emergency Medical Services).

3.1 ENGINEERING COUNTERMEASURES

CRASH MODIFICATION FACTORS

Because funding for infrastructure improvements is limited, Forsyth can benefit from a way to quantify and compare the potential benefit of safety countermeasures and treatments. Crash Modification Factors (CMF) can be used to assess the potential safety impact of improvements. A CMF is a numerical value that indicates the proportion of crashes that would be expected at a location after implementing a safety countermeasure. A CMF with a value of less than 1.0 indicates an expected decrease in crashes. Conversely, a CMF with a value greater than 1.0 indicates an expected increase in crashes. The FHWA maintains the CMF Clearinghouse, an online repository of CMFs documented in the Highway Safety Manual (HSM) and other industry resources. The following provides guidance to be considered when selecting and applying CMFs:

- Use a minimum of three years of crash data for urban and suburban sites and five years of crash data for rural sites.
- CMFs should be selected from Part D of the HSM or FHWA's CMF Clearinghouse website (<https://www.cmfclearinghouse.org/>).
- If possible, use CMFs with star ratings of four or five. The star rating indicates the quality or confidence in the results of the study producing the CMF.

CMFs are multiplicative. However, the application of multiple CMFs can overestimate the expected crash reduction. It is recommended to use no more than three independent CMFs at a particular site.

ENGINEERING COUNTERMEASURES TOOLKIT

A toolkit of engineering countermeasures was compiled based on general applicability in the study area, their level of evidence in crash reduction, and stakeholders and public feedback obtained during the second round of engagement (see Section 5.2). Table 8 provides a summary of these countermeasures, their crash modification factor (where available), and an opinion of probable construction cost per unit.

Table 8: Engineering Countermeasures Toolkit

Category	Engineering Countermeasure	CMF	Unit	Estimated Unit Cost
Pedestrian	Detectable Warning Surface for Sidewalk Ramps	Not Defined	Each	\$100
Pedestrian	High Emphasis Crosswalk	Not Defined	LF	\$6
Pedestrian	Rectangular Rapid Flashing Beacon (RRFB)	0.53	Each	\$50,000
Lighting	Lighting (Only Applies to Crashes During Non-Daylight Conditions)	0.63 - 0.66	Intersection	\$50,000
Lighting	Lighting (Only Applies to Crashes During Non-Daylight Conditions) - No Existing Power	0.63 - 0.66	Intersection	\$100,000
Signal	Backplates with Retroreflective Borders	0.85	Intersection	\$5,000
Signal	Signage and Pavement Marking Improvements Including Lane Markings, RPMs, and One-Way/Wrong-Way Signage	0.87	Intersection	\$125,000

Category	Engineering Countermeasure	CMF	Unit	Estimated Unit Cost
Signal	Signal Improvements (Can Include a Combination of - Installing FYAs, Backplates with Retroreflective Borders, and Ped Infrastructure)	0.89 - 0.95	Intersection	\$125,000
Intersection	Offset Left-Turn Lanes or Type-A to -B Median Conversion	0.64 - 0.66	Intersection	\$175,000
Intersection	Realign Intersection Approaches to Reduce or Eliminate Intersection Skew	Not Defined	Intersection	\$200,000
Intersection	Convert a Stop-Controlled Intersection Into a Single Lane Roundabout	0.18 - 0.42	Intersection	\$4,000,000
Intersection	Package of Low-Cost Intersection Improvements (Can Include Signing, Marking, Transverse Rumble Strips)	0.90 - 0.92	Intersection	\$25,000
Intersection	Provide a Left-Turn Lane on Both Major-Road Approaches for a 4-Leg Intersection	0.42 - 0.52	Intersection	\$1,250,000
Intersection	Provide a Left-Turn Lane on One Major-Road Approach for a 3-Leg Intersection	0.45 - 0.56	Intersection	\$775,000
Intersection	Provide a Left-Turn Lane on One Major-Road Approach for a 4-Leg Intersection	0.65 - 0.72	Intersection	\$975,000
Intersection	Provide a Right-Turn Lane on One Major-Road Approach	0.77 - 0.86	Intersection	\$350,000
Intersection	Reduce Right-Turn Skew Angle	0.40	Approach	\$45,000
Intersection	Restricted Crossing U-Turn (RCUT)	0.48 - 0.69	Intersection	\$85,000
Curve	Optical Speed Bars w/ Retroreflective Pavement Markings and RPMs	0.65	Curve	\$3,500
Curve	Review Curve and Provide/Upgrade Signage to Meet MUTCD and GDOT Standards, if Necessary	0.59 - 0.96	Curve	\$5,500
Segment	Raised Pavement Markers (Both Sides of Road)	0.87 - 0.91	Mile	\$1,500
Segment	4-inch Retroreflective Centerline	0.76	Mile	\$1,000
Segment	4-inch Retroreflective Edgeline (Both Sides of Road)	0.76	Mile	\$1,200
Segment	Clear and Grub (15 ft Both Sides of Road)	0.78	Mile	\$10,000
Segment	Pave 2' Shoulder and Install Combination of Centerline and Edgeline Rumble Strips - Only Applies to Roadway Departure Crashes	0.77 - 0.80	Mile	\$390,000
Segment	Guardrail with Shoulder Construction - Only Applies to Roadway Departure Crashes	0.84 - 0.93	Mile	\$300,000
Segment	Pave 2' Shoulder with Sloped Pavement Edge (Both Sides of Road - Includes Earthwork)	0.75 - 0.99	Mile	\$350,000
Traffic Calming	Review for Traffic Calming Improvements	0.82 - 0.97	Each	\$10,000
Traffic Calming	Speed Feedback Sign	0.93	Each	\$10,000

3.2 DRIVER-RELATED COUNTERMEASURES

The Forsyth LRSP identified driver-related countermeasures and improvements to mitigate crashes in the County in a manner that incorporates the remaining three Es of traffic safety: Education, Enforcement, and Emergency Medical Services. While engineering countermeasures can make roadways safer, they alone cannot prevent all motor vehicle crashes. The National Highway Traffic Safety Administration (NHTSA) states that driver-related factors contribute to over 90% of all crashes.

The LRSP identified driver-related countermeasures that have the potential to reduce fatal and suspected serious injury crashes related to the top-ranking Forsyth safety emphasis areas (shown in Section 2.2, Table 1). The National Cooperative Highway Research Program Report 500 series published by the Transportation Research Board (TRB) identifies several countermeasures applicable to Forsyth County.

OLDER DRIVERS (55 +)



Aging can lead to limitations in physical, perceptual, and cognitive skills, which can inhibit one’s ability to drive and increase vulnerability to injury once in a crash. Crashes involving older drivers accounted for 12% of fatal and suspected serious injury crashes in Forsyth (2018-2022). Currently, Georgia requires all drivers over 64 to take a vision screening at each license renewal period.

Table 9: Driver-Related Countermeasures, Older Drivers

Countermeasure	Strategy
Promote Safe Mobility Choices	Promote Access Forsyth (Dial-a-Ride) service materials at community facilities and social services locations.
Encourage Driving Safety Courses for Older Drivers	Conduct a CarFit event facilitated by the GA Department of Public Health’s 55+ Driver Safety Program. Covered topics include the effect of aging on sensory, cognitive, or physical skills and other transportation options for drivers.
Educate Law Enforcement and Medical Personnel on the Licensing Revocation Process	Partner with the GA 55+ Driver Safety Task Team, the DDS Medical Review Unit, and certified driver rehabilitation specialists to track the number of medically at-risk older drivers in Forsyth with a suspected need for reevaluation who entered the process. Continue to educate law enforcement, physicians, family, friends, and caretakers on the medical review process.
Conduct Social Media Campaigns	Conduct education and awareness campaigns.



DISTRACTED DRIVER (CONFIRMED + SUSPECTED)

Drivers can lose focus on the road from something in or outside the vehicle, drowsiness/fatigue, or multitasking. Crashes involving distracted drivers accounted for 9% of fatal and suspected serious injury crashes in Forsyth (2018-2022). Georgia law prohibits drivers from using a phone, and the ticket fine is \$50 with an additional \$50 for every charge thereafter. The use of hands-free devices is allowed, and drivers can talk on their phones or reference the screen for navigational purposes.

Table 10: Driver-Related Countermeasures, Distracted Drivers

Countermeasure	Strategy
Conduct High-Visibility Enforcement	Continue to collaborate with Forsyth Sheriff’s Office on high-visibility enforcement of existing statutes to deter distracted driving behavior.
Supply Hands-Free Equipment	Supply hands-free equipment throughout the County at local Department of Driver Services (DDS) locations.
Conduct Social Media Campaigns	Conduct education and awareness campaigns about distracted driving.



AGGRESSIVE/SPEED RELATED

Driver behavior and driver response to the environment are two aspects that contribute to aggressive driving and inappropriate speeds. Behavior is categorized as when the driver chooses to accelerate to a speed above the limit, whereas response is when the driver unintentionally goes above the speed limit or fails to adjust their speed. Aggressive/speed-related crashes accounted for 7% of fatal and suspected serious injury crashes in the County (2018-2022).

Table 11: Driver-Related Countermeasures, Aggressive/Speed Related

Countermeasure	Strategy
Conduct Targeted Speed Enforcement	Continue to collaborate with Forsyth’s Sheriff’s Office through the Georgia Governor’s Office of Highway Safety (GOHS) Highway Enforcement of Aggressive Traffic (HEAT) Unit, a multijurisdictional task force, to conduct enforcement at targeted areas with known speed-related crashes.
Implement School Zone Equipment Upgrades	Install school zone traffic equipment (i.e., flashing school beacons) at schools on Forsyth local roads that lack equipment. Evaluate the implementation of automated speed enforcement in school zones, the only areas in Georgia where automated speeding enforcement is currently allowed.
Conduct Social Media Campaigns	Conduct educational campaigns that increase awareness of the risks of unsafe speeds.

IMPROPER OCCUPANT PROTECTION



Occupant protection involves seat belts, car seats, and booster seats. In Georgia, the law requires all persons riding in the front to wear a seat belt, children under eight to ride in recommended safety or booster seat, and children between eight and fifteen to wear a seat belt in the front or back seat. Improper occupant protection accounted for 7% of all fatal and suspected serious injury crashes in Forsyth (2018-2022). The 2022-2024 GA SHSP proposes several countermeasures for occupant protection including car seat inspection stations to help parents assess their equipment, high-visibility enforcement programs, and training for law enforcement personnel to train them to be Child Passenger Safety Certified Technicians.

Table 12: Driver-Related Countermeasures, Improper Occupant Protection

Countermeasure	Strategy
Conduct High-Visibility Enforcement	Continue to collaborate with Forsyth’s Sheriff’s Office through the GOHS HEAT Unit to conduct high-visibility enforcement at targeted areas for occupant protection compliance.
Promote Proper Child Restraint Use	Promote Child Passenger Safety (CPS) certification for Forsyth County EMS personnel. Provide car set inspection stations for parents/caregivers in Forsyth.
Conduct Social Media Campaigns	Conduct educational campaigns that increase awareness about proper occupant protection.

YOUNGER DRIVERS (15-19)



Younger drivers (15 to 19) have limited experience and may not know how to handle complex situations. Furthermore, varying behavioral or developmental changes can cause a young driver to engage in risky behaviors. Crashes involving younger drivers accounted for 5% of fatal and suspected serious injury crashes in Forsyth (2018-2022). The Teenage and Adult Driver Responsibility Act (TADRA) is a graduated driver’s license program for younger drivers in Georgia that involves a three-step educational process to gain more experience behind the wheel during higher-risk situations.

Table 13: Driver-Related Countermeasures, Younger Drivers

Countermeasure	Strategy
Pre- and Post-Licensure Driver Education	Coordinate with the GOHS Young Adult Driver Task Team to implement driver education programs for young students before licensure at Forsyth high schools. These programs include Teens in the Driver’s Seat initiative, Students’ Against Destructive Decisions, Cinema Drive, and Driver’s Education Programs.
Parent Roles in Young Drivers’ Safety	Promote the AutoCoach app, developed by the Shepherd Center in partnership with the GOHS, to parents to introduce and use with their teens. The app provides a driver tracker and lesson planner that can teach drivers the rules of the road.
Conduct Social Media Campaigns	Conduct educational campaigns that increase awareness of safety for younger drivers.

IMPAIRED DRIVING (CONFIRMED + SUSPECTED)



Impaired driving occurs when drivers operate a vehicle after consuming alcohol or drugs. The 2022-2024 GA SHSP states that passenger vehicle drivers who consumed alcohol were more likely to be unrestrained. Confirmed or suspected impaired driving accounted for 4% of fatal and suspected serious injury crashes in the County (2018-2022). The FHWA identifies several strategies to help address alcohol-impaired driving including strengthening impaired driving laws and enforcement efforts, education and awareness campaigns, high-visibility enforcement, and alcohol server training programs.

Table 14: Driver-Related Countermeasures, Impaired Driving

Countermeasure	Strategy
Conduct Targeted Enforcement of Drug-Impaired Driving	Continue to collaborate with Forsyth’s Sheriff’s Office through the GOHS HEAT Unit to conduct high-visibility enforcement and sobriety checkpoints in locations with a history of impaired driving crashes.
Alcohol Vendor Compliance Checks	Collaborate with the GOHS Impaired Driving Task Team (IDTT) to facilitate training on underage consumption for alcohol vendors. Continue to collaborate with Forsyth’s Sheriff’s Office to conduct compliance checks among alcohol vendors to reduce the likelihood of alcohol sales to underage persons.
Conduct Social Media Campaigns	Conduct educational campaigns that increase awareness of the consequences of impaired driving.

4 IDENTIFYING AND PRIORITIZING SOLUTIONS

The Forsyth LRSP presents a data-driven countywide analysis to identify high-risk locations and potential safety improvements for County-owned roadways and intersections. A systematic approach accounts for risk across the larger roadway system, not just applying improvements to locations where individual crashes occurred. The countermeasures identified for the LRSP align with the Forsyth County safety emphasis areas mentioned in Section 2.2.

High-risk road segments and intersections were identified through a data-driven analysis considering risk factors representative of the roadway characteristics and crash trends. Road segments and intersections in the County were scored and top-priority project locations were chosen based on a combination of total score, stakeholder input, and input from County staff.

RISK FACTORS

The following are potential risk factors identified by the FHWA that can aid in developing systemic safety improvements and their locations. Note that not all risk factors outlined below were used for the LRSP analysis due to data availability limitations.

Roadway and Intersection Features

- Number of lanes
- Lane width
- Roadway shoulder presence, width, and material
- Horizontal curves
- Pavement condition
- Driveway presence and density
- Intersection skew angle

Traffic Volume

- Average daily traffic volumes (ADT)
- Average daily entering vehicles (DEV)
- Proportion of commercial vehicles in traffic

Other Features

- Posted speed limit or operating speed
- Presence of nearby at-grade railroad crossing
- Presence of automated enforcement
- Adjacent land uses
- Presence of bus stops

4.1 METHODOLOGY



The first step of the safety analysis was compiling a comprehensive GIS dataset. Data layers were obtained through collaboration with GDOT, Forsyth County, and data developed as part of the concurrent Forsyth CTP Update efforts. GIS data for roadway centerlines and roadway intersections was obtained from the County and GDOT. Historical crash data for this analysis was obtained from GDOT's GEARS and AASHTOWare Safety platforms for crashes reported in Forsyth between 2018 to October 2023.

Risk factors along road segments and at intersections were assessed to determine locations that may be more susceptible to fatal and suspected serious injury crashes. Top-ranking County-owned locations were identified in coordination with the County to focus on areas that do not already have anticipated funded improvements.

Individual draft project sheets were developed to summarize the high-risk locations and information used in the analysis. The draft project sheets included location, roadway characteristics, systematic ranking data, crash data, and opinion of the probable construction cost for recommended safety improvements. The recommended countermeasures were reviewed and refined in coordination with Forsyth County staff.

PROJECT RECOMMENDATIONS DISCLAIMER

The improvements recommended in these fact sheets were based on a GIS database risk assessment. Kimley-Horn has no control over the accuracy of the GIS databases nor the suitability of the specific improvements for a given location and provides recommended improvements for consideration by the County Engineer. The County Engineer may use these project fact sheets and their included recommendation to aid in the selection and development of projects, but these fact sheets should not be used as the sole basis for the County Engineer’s decision-making process. The team sought to research issues and constraints to the extent practical given the scope, budget, and schedule agreed to with the Client. The assessment is based largely on information provided by others (GDOT, County staff, etc.) and therefore is only as accurate and complete as the information provided. The project fact sheets included in **Appendix A** are based on the best available information as of January 2024.

4.2 RISK FACTOR RANKING

ROADWAY SEGMENTS

The methodology described in Section 4.1 was followed for a countywide analysis of road segments based on the determined risk factors. The road segment limits were determined based on relevant roadway attribute changes along a roadway including the street name, number of lanes, pavement width, and shoulder presence. Each County paved road segment was assigned risk factor points based on the following eight roadway attributes determined by data availability.

The development of recommendations focused on roadway segments longer than 0.2 miles in length due to applicability and to provide project recommendations that could justify mobilization of construction/maintenance activities. Table 15 provides a summary of the safety risk factors and points assignment criteria. The maximum number of available points for roadway segment risk was 20 points.

Table 15: County Road Segments - Summary of Risk Factors

Risk Factor	Description
Traffic Volume	The volumes, described as average daily traffic (ADT), along roadway segments, were compared within the County to assign higher risk factor points to segments with higher ADTs.
Pavement Width	The width of the pavement was used to assign risk factors to each segment. Segments with narrower pavement sections were assigned more risk factor points as narrower roadway sections in rural areas may pose more risk for single-vehicle crashes.
Road Shoulder	Roadway segments with no or narrow shoulders (i.e., less than 10 ft) were assigned more risk factor points.
Access Density	Greater access density, or concentration of driveways and intersections, increases the potential for conflicts between vehicles traveling along the roadway with those entering or exiting it. Risk factor points were assessed based on the number of intersections per mile.
Raised Pavement Markers	Raised pavement markers improve visibility for drivers during non-daylight conditions and can improve driver attentiveness and promote safer driving behavior. More risk factor points were assigned to roadway segments with no raised pavement markers (RPM).
Pavement Quality	Well-maintained and high-quality pavements reduce the risk of skidding or loss of control of a vehicle, particularly when braking or turning. Pavement quality is measured by the recorded roughness along a particular segment. More risk factor points were assigned to roadways with poor quality conditions.
Lane Departure Crashes	More risk factor points were assigned to roadways with a history of lane departure crashes per 100 million vehicle miles of travel (VMT) (i.e., adjusting for ADT).
K and A Crashes	More risk factor points were assigned to roadways with a history of fatal and suspected serious injury crashes.

Table 16: County Road Segments - Risk Factor Ranking

Risk Factor	Measurement	Points	Max Points
Traffic Volume	Average Daily Traffic (ADT)	5: ADT is > 20,000	5
		4: ADT is 10,000 - 20,000	
		3: ADT is 5,000 - 10,000	
		2: ADT is 1,500 - 5,000	
		1: ADT is 1,400 - 1,500	
		0: ADT is < 1,400	
Pavement Width Percentage of All Crashes	Pavement width in feet	2: Less than 22 feet	2
		1: 22 feet	
		0: Greater than 22 feet	
Road Shoulder	Shoulder width in feet	2: No Shoulder	2
		1: Less than 10 feet	
		0: Greater than 10 feet	
Access Density	Number of intersections and driveways per mile	3: Greater than 11	3
		2: 8 to 11	
		1: 5 to 8	
		0: Less than 5	
Raised Pavement Markers	Presence or absence of RPMs	2: No RPMs	2
		0: RPMs present	
Pavement Quality	Pavement condition index	2: Less than 70 (Fair or worse)	2
		1: 71 to 85 (Satisfactory)	
		0: Greater than 85 (Good or better)	
Lane Departure Crashes	Crashes per 100 million VMT	2: Greater than 140	2
		1: 7 to 140	
		0: No crashes	
K and A Crashes	Presence of K or A crash	2: Yes	2
		0: No	
Total Available Points			20

INTERSECTIONS

The methodology described in Section 4.1 was followed for a countywide analysis of roadway intersections based on the determined risk factors. Signalized and unsignalized intersections in the County were analyzed for risk according to the following seven attributes.

The development of recommendations focused on County-maintained intersections. Table 17 provides a summary of the safety risk factors and points assignment criteria. The maximum number of available points for intersections was 15 points.

Table 17: County Intersections - Summary of Risk Factors

Risk Factor	Description
Traffic Volume	The average number of vehicles entering an intersection per day was compared for intersections within the County to assign higher risk factor points to intersections with higher volumes. More vehicles entering an intersection increases exposure and therefore, increases the risk of a crash.
Minor Street Volume	Intersections with a higher minor street volume may see an increase in crash exposure, specifically with angle crashes. More risk factor points were assigned to intersections where minor street volumes were higher.
Intersection Configuration	Intersections with four or more approaches were assigned a risk factor point.
Presence of nearby Intersection	Intersections or access points that are closely spaced along a road may pose more conflict points for drivers.
Intersection Alignment	Skewed intersections cause reduced sight lines, larger crossing distances for pedestrians, increased turning speeds, and increased complexity and likelihood of misjudgment by drivers.
Speeding Related Crashes	Roadway characteristics such as long straightaways and driver behavior can contribute to crashes involving speeding.
K and A Crashes	Dangerous intersection characteristics, human error, and driver distraction can each contribute to fatal and suspected serious injury crashes. These are the primary types of crashes to eliminate and were weighed heavily in the analysis.

Table 18: County Intersections - Risk Factor Ranking

Risk Factor	Measurement	Points	Max Points
Traffic Volume	Daily Entering Volume (DEV)	2: DEV percentile is 75%-100%	2
		1: DEV percentile is 8%-75%	
		0: DEV percentile is 0%-8%	
Minor Street Volume	Average Daily Traffic (ADT)	2: More than 2,000	2
		1: 1,000 to 2,000	
		0: Less than 1,000	
Intersection Configuration	Number of approaches	1: Four or more approaches	1
		0: Fewer than four approaches	
Presence of Nearby Intersection	Number of additional intersections within 250 feet	2: More than Two	2
		1: One or Two	
		0: None	
Intersection Alignment	Skew angle of most skewed approach	3: Less than 85 degrees	3
		0: 85 to 90 degrees	
Speeding Related Crash	Presence of speeding-related crash	1: One or more	1
		0: None	
K or A Crashes	Presence of fatal or suspected serious injury crash	4: One or more	4
		0: None	
Total Available Points			15

4.2 RECOMMENDED PROJECTS

Following the initial assessment, a list of high-scoring County-maintained roadway segments and intersections was reviewed with County staff. Locations with known programmed capital improvements were removed from the list and replaced with subsequent high-ranking locations. County staff provided feedback on the highest-scoring segments and intersections to identify 10 road segments and 10 intersection locations that would be candidates for engineering improvements. The 20 recommended locations are shown in Figure 6 and listed on the following page.

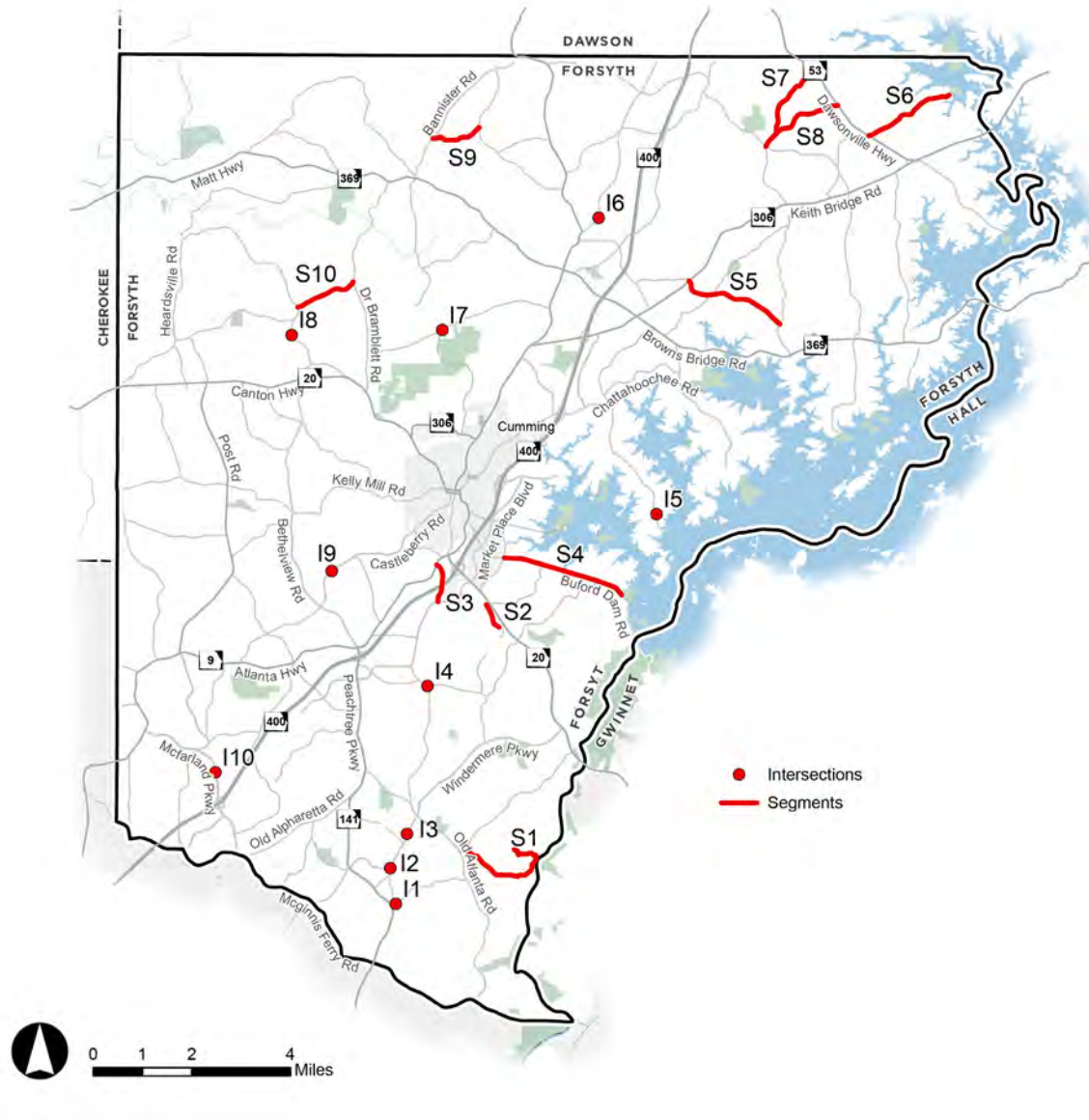


Figure 6. High-Risk Segments and Intersections

RECOMMENDED PROJECT FACT SHEETS

Following the selection of the top 20 high-risk locations, site visits were conducted to document existing conditions, verify the GIS input data, and gain a better understanding of each location. Photos and videos of existing conditions provided a granular and up-to-date record of conditions not available through online aerial imagery.

Following the site visits, safety improvement recommendations were developed for each location using the Engineering Countermeasures Toolkit presented in Section 3.1. A planning-level opinion of probable construction costs was calculated for each location applying the unit costs and a 30% contingency.

Project fact sheets were developed for each of the 20 locations and are included in Appendix A. The fact sheets summarize the systematic high-risk analysis results, pertinent characteristics, and selected engineering countermeasures. The draft project sheets were reviewed by County staff for input related to engineering judgment and site-specific knowledge. The fact sheets provide a concise summary of each high-risk location for ease of reference in future funding and project programming opportunities.

Recommended Projects at County Road Segments

- S1: Southers Circle from James Burgess Road to Hope Drive/Settlers Road
- S2: Haw Creek Circle from Haw Creek Parkway to Haw Creek Circle East
- S3: Deputy Bill Cantrell Memorial Road from SR 9 (Atlanta Highway) to Ronald Reagan Boulevard
- S4: Buford Dam Road from Sanders Road to Sawnee Campground Entrance
- S5: Parks Road from SR 306 (Keith Bridge Road) to Little Mill Road
- S6: Crystal Grove Trail from Dawsonville Highway to Lakeside Place
- S7: Anderson Lake Road from SR 53 (Dawsonville Highway) to Pea Ridge Road
- S8: Pea Ridge Road from SR 53 (Dawsonville Highway) to Jot Em Down Road
- S9: Namon Wallace Drive from Bannister Road to Riley Road
- S10: Pleasant Grove Road from Dr Bramblett Road to Hurt Bridge Road

Recommended Projects at County Intersections

- I1: Mathis Airport Road at Laurel Springs Parkway
- I2: Mathis Airport Road at Mathis Airport Parkway
- I3: Mathis Airport Parkway at Laurel Oak Drive/Andelle Avenue
- I4: Old Atlanta Road at Daves Creek Drive
- I5: Fowler Trail at Pilgrim Mill Road
- I6: Church Road at Hopewell Road
- I7: Bettis Tribble Gap Road/McCoy Circle at Spot Road
- I8: Aaron Sosebee Road at Hurt Bridge Road
- I9: Castleberry Road at Mark John Way
- I10: Trotters Parkway at McFarland Parkway

5 PUBLIC AND STAKEHOLDER INVOLVEMENT

Public and stakeholder involvement provided critical local input and context to complement the data-driven safety analysis. The Forsyth LRSP and Comprehensive Transportation Plan (CTP) Update held two rounds of engagement to maximize geographic and demographic coverage in the County. Stakeholder engagement activities consisted of meetings with five stakeholder focus groups and two stakeholder committee meetings. Engagement with the public consisted of in-person pop-ups, public meetings, and online surveys. The LRSP/CTP Update project team used multiple communication methods and tools to engage the community including a project website, social media content, email campaigns, and physical handouts.

5.1 ROUND ONE ENGAGEMENT

The first round of public and stakeholder engagement occurred from April 2023 to July 2023 and consisted of two pop-ups, one public open house, an online survey, and five stakeholder interviews. The LRSP/CTP Update activities were promoted in coordination with the Forsyth County Department of Communications.

STAKEHOLDER COMMITTEE MEETING #1

The project team facilitated a Stakeholder Committee meeting on March 20, 2023, to review analysis results and obtain feedback from attendees on content the team would present to the public in later weeks. The Stakeholder Committee comprised a diverse cross-section of Forsyth County departments and leadership including Engineering, Fire, Capital Projects, Parks and Recreation, County Districts 1 and 5 Citizen Representatives, South Forsyth Community Improvements District (CID), Communications, Planning, and Community Development. Following a brief presentation, attendees participated in a series of activities related to visioning/goals, priority setting, and transportation topics by mode of travel. Participants indicated travel safety as the top priority for the CTP Update.

POP-UPS

The pop-ups were the first touchpoints with the public and served to both promote the project website, open house, and survey and to collect public input on transportation-related needs, priorities, and opportunities in Forsyth County allowing community input to help inform and guide the project.

Residents visited project pop-ups at the Vickery Village Farmers Market and the Halcyon Cornhole Tournament to participate in two activities to indicate their top transportation priorities for Forsyth. The top three priorities included travel safety (top overall), transportation choices, and traffic flow.



Figure 7. Round One, Pop-Up at Vickery Village Farmers Market

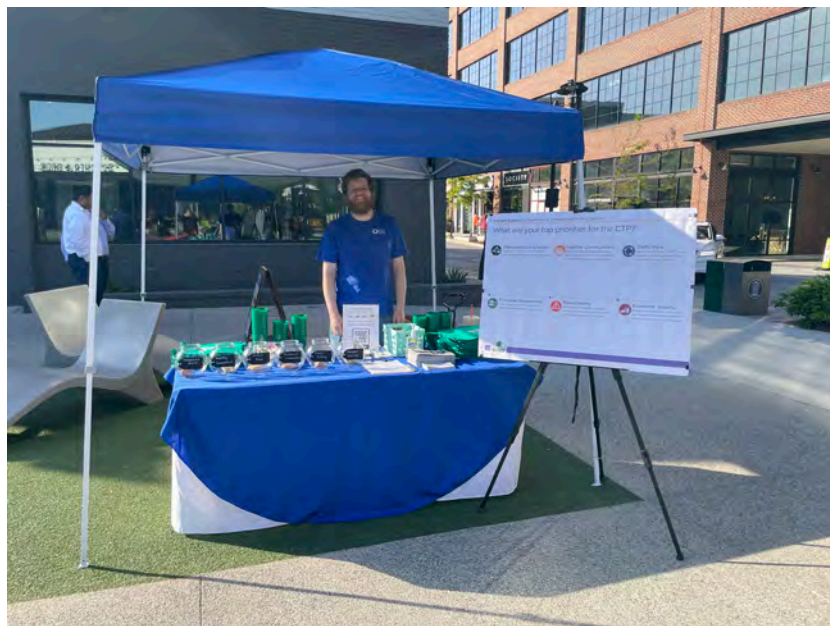


Figure 8. Round One, Pop-Up at the Halcyon Cornhole Tournament

PUBLIC MEETING

The first public meeting was an open house held on April 26, 2023, at the Central Park Recreation Center in Cumming, GA. Attendees participated in a series of interactive activities to provide their feedback about transportation challenges in the County and learn more about the LRSP/CTP Update. Participants indicated travel safety as the second most important priority for Forsyth, following traffic flow.



Figure 9. Round One, Open House Public Meeting

STAKEHOLDER INTERVIEWS

The LRSP/CTP Update team facilitated five stakeholder interviews to inform existing conditions and identify the transportation needs of the community. Stakeholders from the Latino community and public safety/first-responder representatives provided additional feedback.

- Employers and Business Community
 - Attendees indicated the large population and employment growth that Forsyth has seen in recent years is contributing to more traffic congestion, extending commute times, and negatively impacting housing affordability.
- Safety and First Responders
 - The crash hot-spot maps reflected what attendees saw on the ground.
 - Pedestrian-related crashes and safety concerns were noted around Cumming Square due to road design, high pedestrian activity, and the presence of heavy trucks associated with the Tyson plant.
- Nonprofit
 - Attendees indicated a challenge for Forsyth residents is the lack of public transportation mobility options, especially on weekends and to medical appointments.
- Education and Latino/English-Learning Community
 - Top transportation challenges for the Latino community in Forsyth include access to transportation alternatives, traffic/congestion, and school bus pick-up/drop-off safety for students.
 - Many roads lack sidewalks for students to safely access designated school bus pick-up/drop-off areas. Attendees recommend the school system evaluate the designated school bus pick-up/drop-off sites, particularly at stops along busy or curvy roads.
- Bicycling Community
 - A targeted online survey questionnaire was prepared for the bicycling community to learn about their priorities and share the LRSP/CTP Update recommendations. Respondents indicated vehicles driving too fast and the lack of designated bike facilities as the two top mobility/safety challenges facing bicyclists in Forsyth. Survey participants also indicated popular bicycling routes and locations that would benefit from additional infrastructure improvements.

ONLINE SURVEY

An online survey was open from April 11 to June 31, 2023, and included a short questionnaire along with the opportunity for participants to drop pins on a map to indicate the specific locations at which they wanted to see improvements and leave a comment regarding that location.

- Of 537 respondents, 347 listed travel safety as a transportation priority, ranking it the second highest among six options.
- As part of the survey, respondents added geo-located feedback to an interactive map, providing over 438 safety-related comments. Improvement ideas on the map focused on intersection improvements, electronic traffic enforcement, new sidewalks, lowering speed limits, and street lighting improvements.

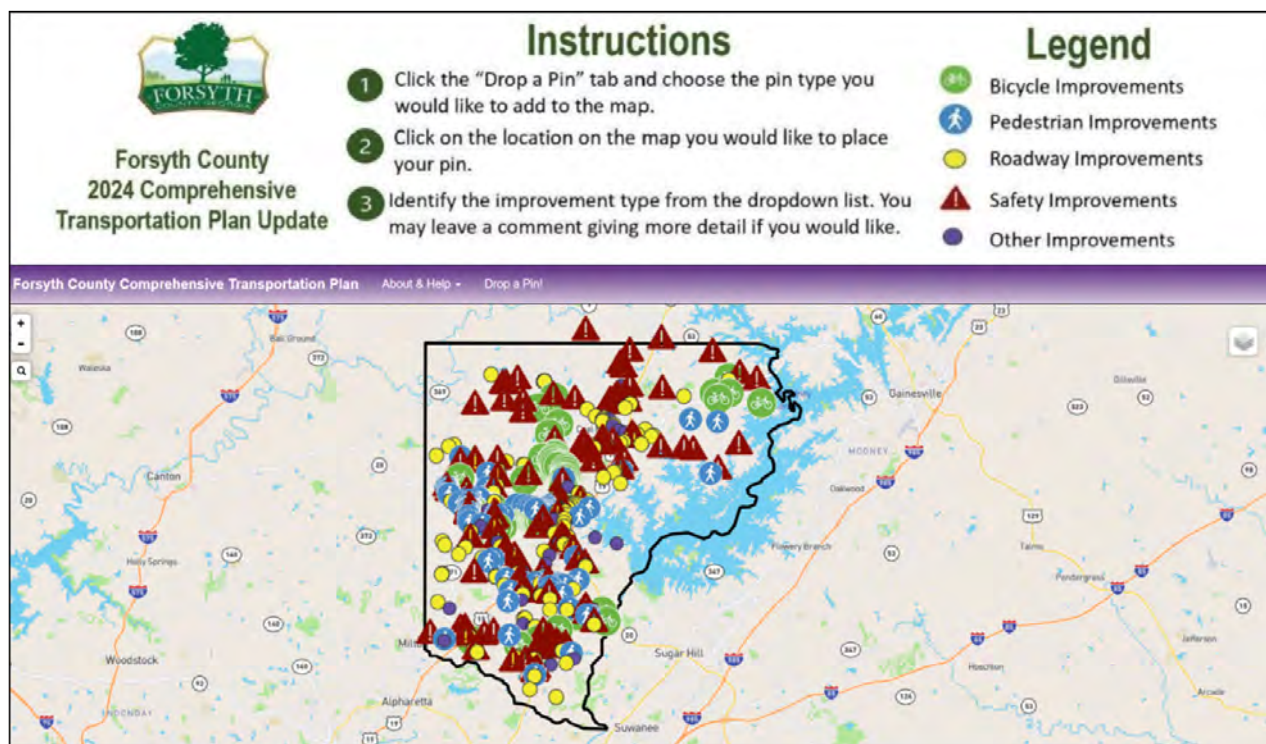


Figure 10. Round One Online Survey, Mapping Exercise

5.2 ROUND TWO ENGAGEMENT

The second round of public and stakeholder engagement occurred from September to November 2023 and consisted of a second stakeholder meeting, open-house public meetings in six locations, an online interactive survey, and ongoing communications.

STAKEHOLDER COMMITTEE MEETING #2

A second Stakeholder Committee meeting was conducted on October 18, 2023, to obtain feedback before the broader public engagement activities. The groups in attendance were similar to the first Stakeholder Committee meeting with the addition of representatives from the Forsyth Sheriff's Office. The transportation safety discussion topics included a review of draft high-risk locations and ideas about engineering/driver-related countermeasures. Stakeholders also shared general information regarding safety considerations to inform the plan's continued development. Forsyth Sheriff's Office representatives emphasized the need for more driver education and targeted enforcement. The group also discussed the availability of approximately 50 Flock Safety (i.e., automated license plate recognition devices) units, and the implementation of an integrated CCTV system for emergency response in Forsyth. Participants also mentioned the need for more edge-line treatments to mitigate roadway departure crashes in the County.

OPEN-HOUSE PUBLIC MEETINGS

Six open-house public meetings were held throughout the County and saw over 270 visitors: three on November 9, 2023, and three on November 14, 2023. The meetings were held in each of the five Forsyth County Commission Districts and at the Forsyth County Administrative Building. Visitors reviewed and commented on LRSP-specific boards summarizing a draft list of high-risk locations and potential countermeasures. Participants indicated their top three preferred countermeasures as more intersection improvements, more improvement for road segments, and more frequent/targeted enforcement activities. Participants indicated Deputy Bill Cantrell Memorial Road (S3) and Buford Dam Road (S4) as the roadway segments with the highest perceived risk among the drafted high-priority locations. Similarly, Kelly Mill Road at Post Road (I9) and Old Atlanta Road at Daves Creek Drive (I4) were identified as the intersections with the highest perceived risk. An online survey was provided for attendees, adapted from some of the activities presented at the open-house public meetings to allow participants to provide input at their leisure.

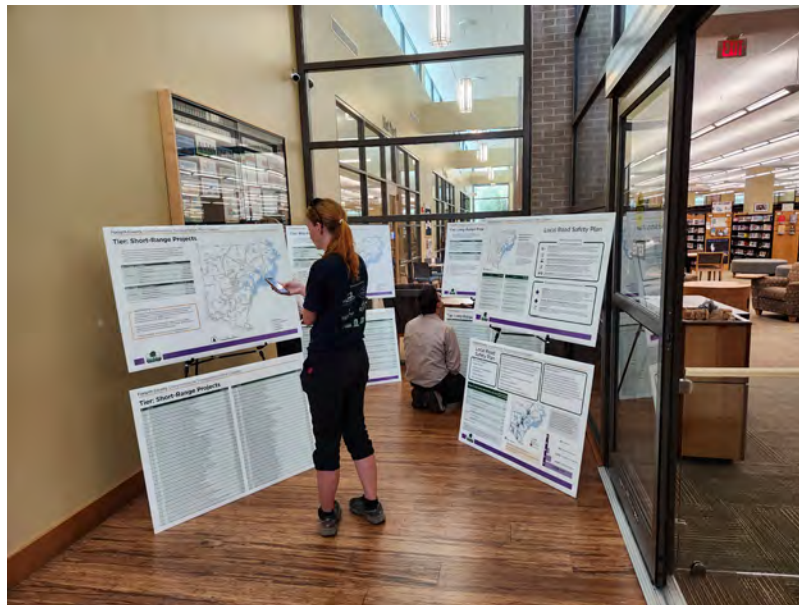


Figure 11. Round Two, Open-House Public Meeting

ADDITIONAL ENGAGEMENT ACTIVITIES

The LRSP/CTP Update project team engaged with the following groups to share recommended projects and strategies.

- GDOT in December 2023
- City of Cumming in December 2023
- Forsyth County Commissioners in January and February 2024
- Adjacent communities in March 2024 (i.e., cities and counties surrounding Forsyth)

6 TRANSPORTATION EQUITY CONSIDERATIONS

Equity considerations are integral to addressing the needs of disadvantaged communities or vulnerable populations. Three measures of equity were utilized in the LRSP process: the Historically Disadvantaged Community designation, Area of Persistent Poverty designation, and the Centers for Disease Control (CDC) Social Vulnerability Index. Justice40 Interim Guidance defines these measures as follows:

- Historically Disadvantaged Communities have been “marginalized by underinvestment and overburdened by pollution or include any Federally Recognized Tribe or Tribal entity, whether or not they have land”. Note, the most recent downloadable geodatabase available (dated May 3, 2023) from the USDOT’s Justice40 Initiative website included a list of census tracts considered by USDOT as Historically Disadvantaged Communities and Areas of Persistent Poverty in Forsyth County.
- Areas of Persistent Poverty meet at least one of the following conditions:
 - The county in which the project is located consistently had greater than or equal to 20 percent of the population living in poverty in all three of the following datasets: (a) the 1990 decennial census; (b) the 2000 decennial census; and (c) the most recent (2021) Small Area Income Poverty Estimates; OR
 - The Census Tract in which the project is located has a poverty rate of at least 20 percent as measured by the 2014-2018 5-year data series available from the American Community Survey of the Bureau of the Census; OR
 - The project is located in any territory or possession of the United States.
- The CDC’s Social Vulnerability Index uses a combination of socioeconomic factors, household characteristics, racial and ethnic minority status, and housing and transportation issues to rank the social vulnerability of each census tract across the country. Those falling in or above the Medium-High or High Vulnerability groups were considered tracts of concern in the Forsyth LRSP.

The Forsyth LRSP considered these three measures in developing project implementation phasing as these geographic areas are representative of equity concerns. Figures 12 and 13 show areas of equity consideration. Disadvantaged communities and vulnerable populations in Forsyth generally follow SR 400 or are in the northeast portion of the County.

The public and stakeholder involvement activities part of the Forsyth LRSP and CTP Update were done in person (geographically distributed) and virtually to be inclusive and representative of a broad cross-section of Forsyth’s residents. Doing so was important to obtain input from roadway users in the County who represent the demographics of the top-ranking safety emphasis areas documented in Section 2.2 (i.e., older drivers, younger drivers, etc.). To ensure accessibility for older adults, the Round 2 open-house public meetings were offered at six community facilities, including libraries, the City of Cumming administrative building, and a County recreation center.

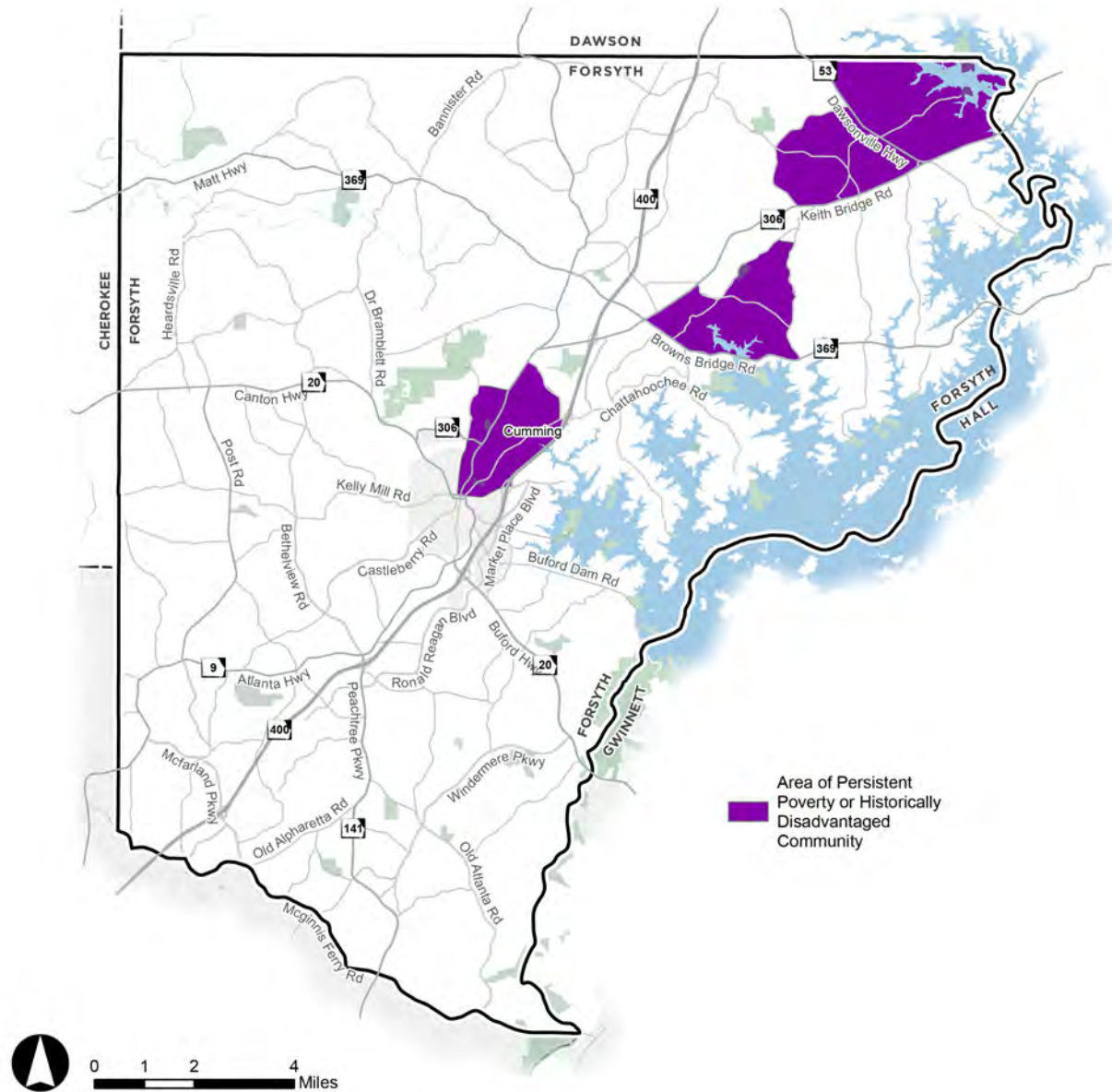


Figure 12. Historically Disadvantaged Communities and Areas of Persistent Poverty

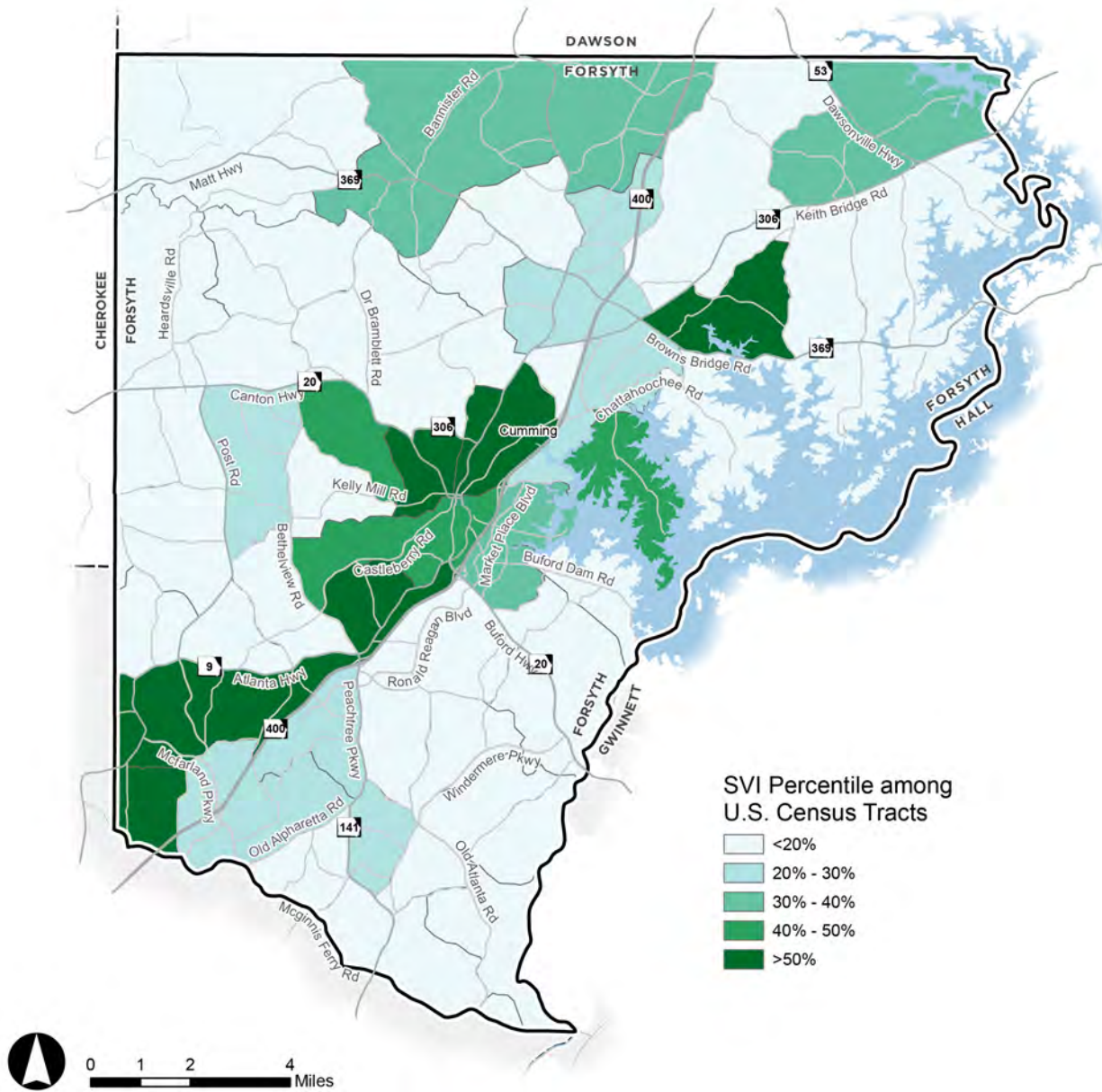


Figure 13. CDC Social Vulnerability Index (SVI) Percentile by Tract

7 | Key Findings and Next Steps

7.1 PROJECT PRIORITIZATION AND IMPLEMENTATION

The Forsyth LRSP identified comprehensive strategies informed by data review, safety analysis, stakeholder input, and public engagement that can be implemented over time and work toward the long-term goal of reducing fatal and suspected serious injury crashes and enhancing the reliability of the transportation network for all users. This section provides a summary of Forsyth's approach to LRSP implementation through three broad strategies:

- **Engineering Countermeasures:** Focuses on surface transportation improvements at high-risk locations in two implementation phases consisting of Priority 1 (within 5 years) and Priority 2 (longer term)
- **Driver-Related Countermeasures:** Focuses on Forsyth-endorsed strategies that center around education, enforcement, and emergency medical services
- **Progress and Transparency:** Focuses on actions by the Forsyth LRSP Task Force to measure progress over time

ENGINEERING COUNTERMEASURES

The LRSP identified engineering safety countermeasures for 10 high-risk County segments and 10 high-risk County intersections as documented in the project fact sheets in Appendix A.

It is recommended that Forsyth prioritize the implementation of quick-build engineering countermeasures that can be deployed as part of routine maintenance activities by the County. Examples include pedestrian amenities, minor signal improvements, signage and pavement marking improvements, centerline and shoulder rumble strips, and traffic calming activities. A detailed list of the engineering countermeasures toolkit, classified by priority, is included in Appendix B.

The engineering countermeasures for each high-risk location were classified into Priority 1 or Priority 2, as shown on the project fact sheets in Appendix A and as summarized in Tables 19 and 20 below. The project attribute information provided in Tables 19 and 20 can serve to guide the implementation of the engineering countermeasures beyond the short term as funding becomes available through future programs (e.g., Forsyth CTP updates and Special Purpose Local Option Sales Tax [SPLOST] programs):

- **Risk Factor Score:** Indicates the risk score as discussed in Chapter 4 of this plan
- **Public Input:** Indicates the presence of publicly identified safety concerns within 500 feet of the project location using the location-based feedback from the Round 1 Engagement
- **Equity Concern:** Indicates if the project is within one mile of a census tract with equity concern, defined as an Area of Persistent Poverty, Historically Disadvantaged Community, or Medium-High/High Social Vulnerability Index score
- **Priority 1 Estimated Project Cost:** Indicates the planning-level opinion of probable construction cost for Priority 1 items
- **Priority 2 Estimated Project Cost:** Indicates the planning-level opinion of probable construction cost for Priority 2 items

Table 19: Recommended Roadway Segment Projects

Location ID	Recommended Projects at Road Segments	Risk Factor Score	Public Input	Equity Concern	Priority 1 Estimated Project Cost	Priority 2 Estimated Project Cost
S1	Southers Circle from James Burgess Road to Hope Drive/ Settlers Road	14	Yes	No	\$1,241,000	-
S2	Haw Creek Circle from Haw Creek Parkway to Haw Creek Circle East	15	Yes	Yes	\$100,000	\$176,000
S3	Deputy Bill Cantrell Memorial Road from SR 9 (Atlanta Highway) to Ronald Reagan Boulevard	15	No	Yes	\$411,000	-
S4	Buford Dam Road from Sanders Road to Sawnee Campground Entrance	13	No	Yes	\$1,497,000	\$195,000
S5	Parks Road from SR 306 (Keith Bridge Road) to Little Mill Road	13	No	Yes	\$1,305,000	\$59,000
S6	Crystal Grove Trail from Dawsonville Highway to Lakeside Place	12	No	Yes	\$132,000	-
S7	Anderson Lake Road from SR 53 (Dawsonville Highway) to Pea Ridge Road	15	No	Yes	\$109,000	-
S8	Pea Ridge Road from SR 53 (Dawsonville Highway) to Jot Em Down Road	13	Yes	Yes	\$68,000	\$195,000
S9	Namon Wallace Drive from Bannister Road to Riley Road	14	No	No	\$115,000	-
S10	Pleasant Grove Road from Dr Bramblett Road to Hurt Bridge Road	15	No	No	\$96,000	-
Total (10 Roadway Segments)					\$5,074,000	\$625,000

Table 20: Recommended Intersection Projects

Location ID	Recommended Projects at Road Intersections	Risk Factor Score	Public Input	Equity Concern	Priority 1 Estimated Project Cost	Priority 2 Estimated Project Cost
11	Mathis Airport Road at Laurel Springs Parkway	9	Yes	No	-	\$390,000
12	Mathis Airport Road at Mathis Airport Parkway	7	No	No	\$1,349,000	-
13	Mathis Airport Parkway at Laurel Oak Drive/Andelle Avenue	13	No	No	\$68,000	\$176,000
14	Old Atlanta Road at Daves Creek Drive	7	Yes	No	\$44,000	\$65,000
15	Fowler Trail at Pilgrim Mill Road	12	No	No	\$33,000	\$65,000
16	Church Road at Hopewell Road	10	Yes	No	\$243,000	\$1,008,000
17	Bettis Tribble Gap Road/McCoy Circle at Spot Road	12	Yes	No	\$163,000	\$182,000
18	Aaron Sosebee Road at Hurt Bridge Road	11	No	No	\$33,000	\$1,081,000
19	Castleberry Road at Mark John Way	7	No	No	\$260,000	-
110	Trotters Parkway at McFarland Parkway	13	No	Yes	\$169,000	\$65,000
Total (10 Intersections)					\$1,013,000	\$4,381,000

DRIVER-RELATED COUNTERMEASURES

The safety emphasis areas analysis performed in Chapter 2 indicates that up to 45% of the fatal and suspected serious injury crashes (2018-2022) in Forsyth are attributable to driving behavior by way of crashes involving older drivers, distracted drivers, aggressive driving or speeding, improper occupant protection, younger drivers, and impaired driving.

The Forsyth Sheriff’s Office has multiple units devoted to traffic enforcement, emergency response services, and educational activities in the County. It is recommended that these multidisciplinary activities be continued and supplemented with additional strategies in partnership with the Forsyth LRSP implementation group. Table 21 provides a high-level summary of the recommended driver-related strategies that align with the safety emphasis areas of the County. Section 3.2 of the LRSP provides more detail about each strategy.

Table 21: Recommended Driver-Related Strategies

Recommended Driver-Related Strategy	Older Drivers	Distracted Drivers	Aggressive/Speed Related	Improper Occupant Protection	Younger Drivers	Impaired Drivers
Promote Safe Mobility Choices	X					
Encourage Driving Safety Courses for Older Drivers	X					
Educate Law Enforcement and Medical Personnel on the Licensing Revocation Process	X					
Conduct Targeted High-Visibility Enforcement		X	X	X		X
Supply Hands-Free Equipment		X				
Implement School Zone Equipment Upgrades			X			
Promote Proper Child Restraint Use				X		
Implement Pre- and Post-Licensure Driver Education Programs					X	
Advocate for Parent Roles in Young Drivers’ Safety					X	
Conduct Alcohol Vendor Compliance Checks						X
Conduct Social Media Campaigns About Transportation Safety	X	X	X	X	X	X

PROGRESS AND TRANSPARENCY

The Forsyth LRSP recommends a set of actions that will support the successful implementation and monitoring of the recommended strategies.

Task Force Implementation and Monitoring

Forsyth County developed the LRSP in coordination with the concurrent CTP Update. It is recommended that a subset of the Project Management Team (PMT) and Stakeholder Committee convene in the future as an LRSP Task Force to direct the LRSP implementation, monitoring, and future progress. The LRSP Task Force can consist of Forsyth County Department of Transportation (DOT) staff, other Forsyth County departments, Forsyth Sheriff’s Office, other local emergency service providers, key Atlanta Regional Commission (ARC) staff, key GDOT staff, adjacent communities (e.g., City of Cumming), and other stakeholders as needed. It is recommended that this group convene annually after the completion of the LRSP to review the latest available crash data trends (e.g., annual crash severity trends and crash rates). The LRSP Task Force will discuss opportunities to build upon the plan to address any changing crash trends alongside community needs, new technologies, and additional resources available to assist in implementation.

Public Posting of the LRSP Plan

Upon completion and adoption, this plan will be made public on a dedicated project website and the County’s website. It is recommended the project website be maintained to update the public with new crash data trends and the implementation status of the recommended LRSP strategies.

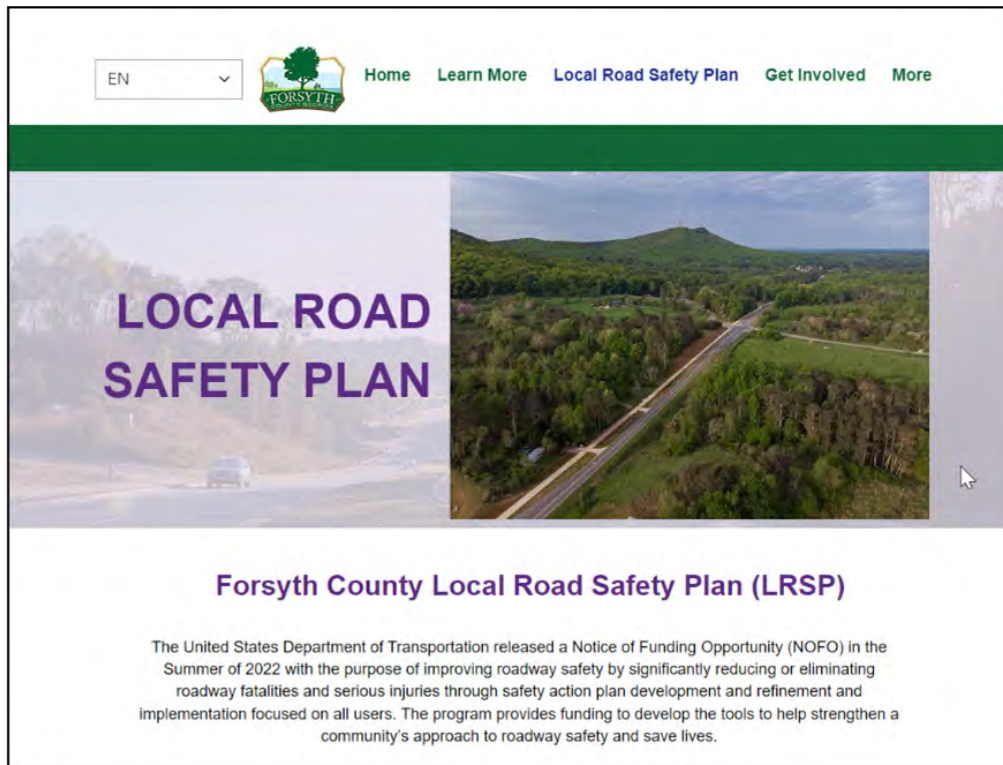


Figure 14. Forsyth LRSP Website

7.2 POLICY AND PROCESS CHANGES

The population of metro Atlanta is expected to reach 7.9 million by 2050, with a considerable amount of this growth happening in Forsyth County. A holistic approach is required to ensure the County’s transportation system supports safety for all road users. Part of these efforts includes aligning current and future Forsyth County policies and plans with measures that prioritize safety.

An assessment of the current policies and plans in Forsyth County was conducted to identify opportunities to improve processes and develop strategies that reflect the County’s transportation safety needs. The following is a summary of how these plans informed transportation safety and how their processes/policies could improve to prioritize safety.

FORSYTH COUNTY CTP UPDATE

As previously mentioned, the LRSP was developed in close coordination with the concurrent Forsyth CTP Update. The technical analyses, public and stakeholder involvement, and development of recommendations for the CTP Update informed the direction of the LRSP. Furthermore, the CTP Update directly evaluated the existing conditions and future needs of the transportation system in the context of safety. The CTP Update recommended surface transportation projects in the short-, mid-, and long-term as well as policies. It is recommended that future iterations of the Forsyth CTP include an update of the safety trends and an evaluation of the strategies presented in the LRSP.

FORSYTH COUNTY SPLOST

The SPLOST program in Forsyth consists of a one percent voter-approved sales tax in the County with part of that revenue being designated for predetermined surface transportation projects. Forsyth County is currently developing the recommended transportation projects for inclusion in the next iteration of the SPLOST program to present to voters in fall 2024. It is recommended that the technical analysis and strategies presented in this study help inform the development and prioritization of the SPLOST projects.

PUBLIC TRANSPORTATION IN FORSYTH

A public transportation master plan (Link Forsyth) was completed and adopted by the County Board of Commissioners in 2021 to assess the current services and network. The plan recommended both short- and mid-range recommendations as well as a long-term implementation plan. The County-operated public transportation services offered in Forsyth consist of a Dial-A-Ride demand response service, a Senior Services demand response service, and a Common Courtesy ride-sharing service. Commuter express bus service is available to Forsyth residents and is operated by the Atlanta-Region Transit Link (ATL) Authority. It is recommended that the County leverage current and future public transportation services to implement the LRSP driver-related strategies such as promoting safe mobility choices for older drivers (e.g, promoting Dial-A-Ride services at community facilities and social services locations).

Appendices

- A) PROJECT FACT SHEETS
- B) ENGINEERING COUNTERMEASURES

Appendix A:
Project Fact Sheets

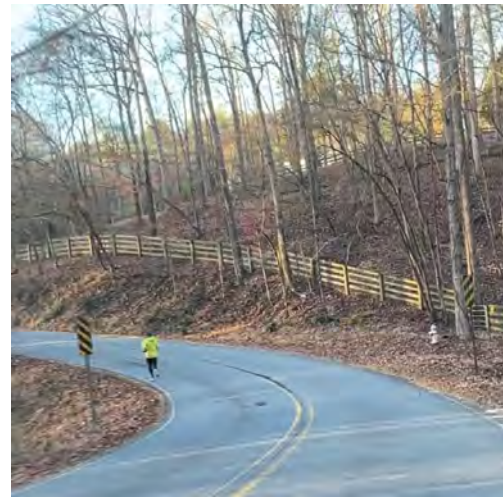
Forsyth Local Road Safety Plan
Project Description for Segment Improvements
Location Description

Project ID: S1

Roadway Name: Southers Circle from James Burgess Road to Hope Drive/Settlers Road

Length (mi): 2.45

Project Location Images



Road Segment Information and Systemic Ranking Summary					
Systemic Ranking Summary		Value	Points	Additional Characteristics	
Average Daily Traffic		1,450	1	Forsyth Functional Class	Local
Number of Lanes		2	2	Received Public Input?	Yes
Raised Pavement Markers		No	2	Top Challenges	
Pavement Quality (PCI)		70	2	Lane departure crashes, horizontal curves, residential street, limited visibility	
Access Density (Intersections/Mile)		7.0	1		
Lane Departure Crashes ^(a)		12	2		
K or A Crashes		1	2		
Presence of Shoulder		No	2		
Total Risk Factor Points (20 Max)			14		

Priority 1 Project Recommendations				
Item Description	Quantity	Unit	Unit Price	Item Cost
Optical Speed Bars w/ Retroreflective Pavement Markings	3	Curve	\$ 3,500	\$ 10,500
4-inch Retroreflective Edgeline (Both Sides of Road)	2.45	Mile	\$ 1,200	\$ 2,940
Raised Pavement Markers (Both Sides of Road)	2.45	Mile	\$ 1,500	\$ 3,675
Review for Traffic Calming Improvements	1.00	Each	\$ 10,000	\$ 10,000
Electronic Speed Feedback Signs	2.00	Each	\$ 10,000	\$ 20,000
Package of Low-Cost Intersection Improvements (Can Include Signing, Marking, Transverse Rumble Strips)	2	Intersection	\$ 25,000	\$ 50,000
Pave 2' Shoulder with Sloped Pavement Edge (Both Sides of Road - Includes Earthwork)	2.45	Mile	\$ 350,000	\$ 857,500

Subtotal: \$ 954,615

Contingency 30%: \$ 286,385

Estimated Project Cost: \$ 1,241,000

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Notes:

(a) The score for lane departure crashes is based on a crash rate expressed as crashes per 100 million vehicle-miles of travel over 2018-2023 study period

Forsyth Local Road Safety Plan
Project Description for Segment Improvements
Location Description

Project ID: S2

Roadway Name: Haw Creek Circle from Haw Creek Parkway to Haw Creek Circle East

Length (mi): 0.54

Project Location Images



Road Segment Information and Systemic Ranking Summary

Systemic Ranking Summary			Value		Points		Additional Characteristics	
Average Daily Traffic	1,450	1					Forsyth Functional Class	Local
Number of Lanes	2	2					Received Public Input?	Yes
Raised Pavement Markers	No	2					Top Challenges	
Pavement Quality (PCI)	70	2					Intersection geometry, limited sight distance due to on-street parking, fatal or serious injury crashes	
Access Density (Intersections/Mile)	12.9	3						
Lane Departure Crashes ^(a)	1	1						
K or A Crashes	1	2						
Presence of Shoulder	No	2						
Total Risk Factor Points (20 Max)		15						

Priority 1 Project Recommendations

Item Description	Quantity	Unit	Unit Price	Item Cost
4-inch Retroreflective Edgeline (Both Sides of Road)	0.54	Mile	\$ 1,200	\$ 648
Raised Pavement Markers (Both Sides of Road)	0.54	Mile	\$ 1,500	\$ 810
Package of Low-Cost Intersection Improvements (Can Include Signing, Marking, Transverse Rumble Strips)	3	Intersection	\$ 25,000	\$ 75,000
			Subtotal:	\$ 76,458
			Contingency 30%:	\$ 22,937
			Estimated Project Cost:	\$ 100,000

Priority 2 Project Recommendations

Item Description	Quantity	Unit	Unit Price	Item Cost
Reduce Right-Turn Skew Angle	3	Approach	\$ 45,000	\$ 135,000
			Subtotal:	\$ 135,000
			Contingency 30%:	\$ 40,500
			Estimated Project Cost:	\$ 176,000

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Notes: (a) The score for lane departure crashes is based on a crash rate expressed as crashes per 100 million vehicle-miles of travel over 2018-2023 study period

Forsyth Local Road Safety Plan
Project Description for Segment Improvements
Location Description

Project ID: S3

Roadway Name: Deputy Bill Cantrell Memorial Road from SR 9 (Atlanta Highway) to Ronald Reagan Boulevard

Length (mi): 0.81

Project Location Images



Road Segment Information and Systemic Ranking Summary

Systemic Ranking Summary			Additional Characteristics	
	Value	Points		
Average Daily Traffic	9,181	3	Forsyth Functional Class	Local
Number of Lanes	2	2	Received Public Input?	No
Raised Pavement Markers	Yes	0	Top Challenges	
Pavement Quality (PCI)	70	2	Intersection geometry, lane departure crashes, head-on crashes	
Access Density (Intersections/Mile)	11.1	3		
Lane Departure Crashes ^(a)	7	1		
K or A Crashes	1	2		
Presence of Shoulder	No	2		
Total Risk Factor Points (20 Max)		15		

Priority 1 Project Recommendations

Item Description	Quantity	Unit	Unit Price	Item Cost
Pave 2' Shoulder and Install Combination of Centerline and Edgeline Rumble Strips - Only Applies to Roadway Departure Crashes	0.81	Mile	\$ 390,000	\$ 315,900

Subtotal: \$ 315,900
 Contingency 30%: \$ 94,770
Estimated Project Cost: \$ 411,000

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Notes: (a) The score for lane departure crashes is based on a crash rate expressed as crashes per 100 million vehicle-miles of travel over 2018-2023 study period

Forsyth Local Road Safety Plan
Project Description for Segment Improvements
Location Description

Project ID: S4

Roadway Name: Buford Dam Road from Sanders Road to Sawnee Campground Entrance

Length (mi): 2.57

Project Location Images



Road Segment Information and Systemic Ranking Summary

Systemic Ranking Summary			Value	Points	Additional Characteristics	
Average Daily Traffic	12,200	4			Forsyth Functional Class	Local
Number of Lanes	2	2			Received Public Input?	No
Raised Pavement Markers	Yes	0			Top Challenges	
Pavement Quality (PCI)	85	1			Lane departure crashes, K/A crashes, DUI crashes, horizontal curves	
Access Density (Intersections/Mile)	7.1	1				
Lane Departure Crashes ^(a)	44	1				
K or A Crashes	7	2				
Presence of Shoulder	No	2				
Total Risk Factor Points (20 Max)				13		

Priority 1 Project Recommendations

Item Description	Quantity	Unit	Unit Price	Item Cost
Backplates with Retroreflective Borders	3	Intersection	\$ 5,000	\$ 15,000
Review Curve and Provide/Upgrade Signage to Meet MUTCD and GDOT Standards, if Necessary	1	Curve	\$ 5,500	\$ 5,500
Optical Speed Bars w/ Retroreflective Pavement Markings	1	Curve	\$ 3,500	\$ 3,500
Pave 2' Shoulder and Install Combination of Centerline and Edgeline Rumble Strips - Only Applies to Roadway Departure	2.57	Mile	\$ 390,000	\$ 1,002,300
Package of Low-Cost Intersection Improvements (Can Include Signing, Marking, Transverse Rumble Strips)	5	Intersection	\$ 25,000	\$ 125,000

Subtotal: \$ 1,151,300
 Contingency 30%: \$ 345,390
 Estimated Project Cost: \$ 1,497,000

Priority 2 Project Recommendations

Item Description	Quantity	Unit	Unit Price	Item Cost
Lighting (Only Applies to Crashes During Non-Daylight Conditions)	3	Intersection	\$ 50,000	\$ 150,000

Subtotal: \$ 150,000
 Contingency 30%: \$ 45,000
 Estimated Project Cost: \$ 195,000

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Notes: (a) The score for lane departure crashes is based on a crash rate expressed as crashes per 100 million vehicle-miles of travel over 2018-2023 study period

Forsyth Local Road Safety Plan
Project Description for Segment Improvements
Location Description

Project ID: S5

Roadway Name: Parks Road from SR 306 (Keith Bridge Road) to Little Mill Road

Length (mi): 2.21

Project Location Images



Road Segment Information and Systemic Ranking Summary

Systemic Ranking Summary			Value	Points	Additional Characteristics	
Average Daily Traffic	6,204	3			Forsyth Functional Class	Collector
Number of Lanes	2	1			Received Public Input?	No
Raised Pavement Markers	Yes	0			Top Challenges	
Pavement Quality (PCI)	70	2			Lane departure crashes, K/A crashes, skewed intersections	
Access Density (Intersections/Mile)	10.4	2				
Lane Departure Crashes ^(a)	14	1				
K or A Crashes	3	2				
Presence of Shoulder	No	2				
Total Risk Factor Points (20 Max)				13		

Priority 1 Project Recommendations

Item Description	Quantity	Unit	Unit Price	Item Cost
Pave 2' Shoulder and Combination of Centerline and Edgeline Rumble Strips - Only Applies to Roadway Departure Crashes	2.21	Mile	\$ 390,000	\$ 861,900
Review Curve and Provide/Upgrade Signage to Meet MUTCD and GDOT Standards, if Necessary	3	Curve	\$ 5,500	\$ 16,500
Package of Low-Cost Intersection Improvements (Can Include Signing, Marking, Transverse Rumble Strips)	5	Intersection	\$ 25,000	\$ 125,000

Subtotal: \$ 1,003,400
 Contingency 30%: \$ 301,020
Estimated Project Cost: \$ 1,305,000

Priority 2 Project Recommendations

Item Description	Quantity	Unit	Unit Price	Item Cost
Guardrail with Shoulder Construction - Only Applies to Roadway Departure Crashes	0.15	Mile	\$ 300,000	\$ 45,000

Subtotal: \$ 45,000
 Contingency 30%: \$ 13,500
Estimated Project Cost: \$ 59,000

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Notes: (a) The score for lane departure crashes is based on a crash rate expressed as crashes per 100 million vehicle-miles of travel over 2018-2023 study period

Forsyth Local Road Safety Plan
Project Description for Segment Improvements
Location Description

Project ID: S6

Roadway Name: Crystal Grove Trail from Dawsonville Highway to Lakeside Place

Length (mi): 1.90

Project Location Images



Road Segment Information and Systemic Ranking Summary

Systemic Ranking Summary			Value		Points		Additional Characteristics	
Average Daily Traffic	1,315	1					Forsyth Functional Class	Collector
Number of Lanes	2	1					Received Public Input?	No
Raised Pavement Markers	No	2					Top Challenges	
Pavement Quality (PCI)	93	0					Skewed intersections, horizontal curves, residential street	
Access Density (Intersections/Mile)	11.0	3						
Lane Departure Crashes ^(a)	6	1						
K or A Crashes	1	2						
Presence of Shoulder	No	2						
Total Risk Factor Points (20 Max)					12			

Priority 1 Project Recommendations

Item Description	Quantity	Unit	Unit Price	Item Cost
Review Curve and Provide/Upgrade Signage to Meet MUTCD and GDOT Standards, if Necessary	2	Curve	\$ 5,500	\$ 11,000
4-inch Retroreflective Edgeline (Both Sides of Road)	1.90	Mile	\$ 1,200	\$ 2,280
Raised Pavement Markers (Both Sides of Road)	1.90	Mile	\$ 1,500	\$ 2,850
Review for Traffic Calming Improvements	1	Each	\$ 10,000	\$ 10,000
Package of Low-Cost Intersection Improvements (Can Include Signing, Marking, Transverse Rumble Strips)	3	Intersection	\$ 25,000	\$ 75,000

Subtotal: \$ 101,130
 Contingency 30%: \$ 30,339
Estimated Project Cost: \$ 132,000

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Notes: (a) The score for lane departure crashes is based on a crash rate expressed as crashes per 100 million vehicle-miles of travel over 2018-2023 study period

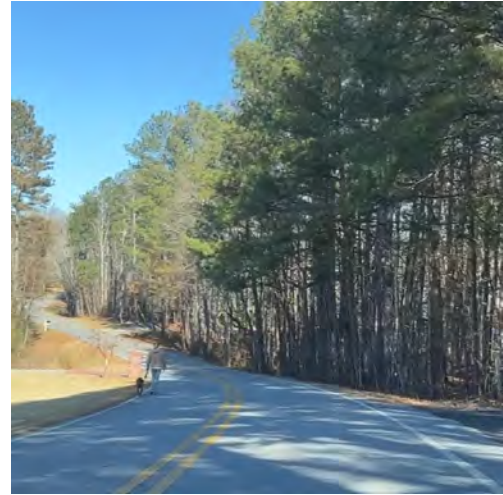
Forsyth Local Road Safety Plan
Project Description for Segment Improvements
Location Description

Project ID: S7

Roadway Name: Anderson Lake Road from SR 53 (Dawsonville Highway) to Pea Ridge Road

Length (mi): 1.65

Project Location Images



Road Segment Information and Systemic Ranking Summary

Systemic Ranking Summary			Additional Characteristics	
Average Daily Traffic	9,343	3	Forsyth Functional Class	Local
Number of Lanes	2	2	Received Public Input?	No
Raised Pavement Markers	No	2	Top Challenges	
Pavement Quality (PCI)	74	1	Lane departure crashes, aggressive/speed related crashes, residential street	
Access Density (Intersections/Mile)	8.5	2		
Lane Departure Crashes ^(a)	5	1		
K or A Crashes	1	2		
Presence of Shoulder	No	2		
Total Risk Factor Points (20 Max)		15		

Priority 1 Project Recommendations

Item Description	Quantity	Unit	Unit Price	Item Cost
Guardrail with Shoulder Construction - Only Applies to Roadway Departure Crashes	0.05	Mile	\$ 350,000	\$ 17,500
4-inch Retroreflective Edgeline (Both Sides of Road)	1.65	Mile	\$ 1,200	\$ 1,980
Raised Pavement Markers (Both Sides of Road)	2.65	Mile	\$ 1,500	\$ 3,975
Review for Traffic Calming Improvements	1	Each	\$ 10,000	\$ 10,000
Package of Low-Cost Intersection Improvements (Can Include Signing, Marking, Transverse Rumble Strips)	2	Intersection	\$ 25,000	\$ 50,000

Subtotal: \$ 83,455
 Contingency 30%: \$ 25,037
Estimated Project Cost: \$ 109,000

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Notes: (a) The score for lane departure crashes is based on a crash rate expressed as crashes per 100 million vehicle-miles of travel over 2018-2023 study period

Forsyth Local Road Safety Plan
Project Description for Segment Improvements
Location Description

Project ID: S8

Roadway Name: Pea Ridge Road from SR 53 (Dawsonville Highway) to Jot Em Down Road

Length (mi): 1.81

Project Location Images



Road Segment Information and Systemic Ranking Summary

Systemic Ranking Summary			Value	Points	Additional Characteristics	
Average Daily Traffic	2,804	2			Forsyth Functional Class	Collector
Number of Lanes	2	1			Received Public Input?	Yes
Raised Pavement Markers	No	2			Top Challenges	
Pavement Quality (PCI)	75	1			Lane departure crashes, aggressive/speed related crashes, residential street	
Access Density (Intersections/Mile)	5.5	1				
Lane Departure Crashes ^(a)	17	2				
K or A Crashes	3	2				
Presence of Shoulder	No	2				
Total Risk Factor Points (20 Max)				13		

Priority 1 Project Recommendations

Item Description	Quantity	Unit	Unit Price	Item Cost
Optical Speed Bars w/ Retroreflective Pavement Markings	2	Curve	\$ 3,500	\$ 7,000
4-inch Retroreflective Edgeline (Both Sides of Road)	1.81	Mile	\$ 1,200	\$ 2,172
Raised Pavement Markers (Both Sides of Road)	1.81	Mile	\$ 1,500	\$ 2,715
Backplates with Retroreflective Borders	1	Intersection	\$ 5,000	\$ 5,000
Review for Traffic Calming Improvements	1	Each	\$ 10,000	\$ 10,000
Package of Low-Cost Intersection Improvements (Can Include Signing, Marking, Transverse Rumble Strips)	1	Intersection	\$ 25,000	\$ 25,000

Subtotal: \$ 51,887
 Contingency 30%: \$ 15,566
Estimated Project Cost: \$ 68,000

Priority 2 Project Recommendations

Item Description	Quantity	Unit	Unit Price	Item Cost
Reduce Right-Turn Skew Angle	2	Approach	\$ 50,000	\$ 100,000
Lighting (Only Applies to Crashes During Non-Daylight Conditions) (Pedestrian)	1	Intersection	\$ 50,000	\$ 50,000

Subtotal: \$ 150,000
 Contingency 30%: \$ 45,000
Estimated Project Cost: \$ 195,000

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Notes: (a) The score for lane departure crashes is based on a crash rate expressed as crashes per 100 million vehicle-miles of travel over 2018-2023 study period

Forsyth Local Road Safety Plan
Project Description for Segment Improvements
Location Description

Project ID: S9

Roadway Name: Namon Wallace Drive from Bannister Road to Riley Road

Length (mi): 1.05

Project Location Images



Road Segment Information and Systemic Ranking Summary

Systemic Ranking Summary			Value		Points	Additional Characteristics	
Average Daily Traffic	3,890	2				Forsyth Functional Class	Local
Number of Lanes	2	2				Received Public Input?	No
Raised Pavement Markers	No	2				Top Challenges	
Pavement Quality (PCI)	70	2				Skewed intersections, horizontal curves, residential street	
Access Density (Intersections/Mile)	12.4	3					
Lane Departure Crashes ^(a)	1	1					
K or A Crashes	0	0					
Presence of Shoulder	No	2					
Total Risk Factor Points (20 Max)					14		

Priority 1 Project Recommendations

Item Description	Quantity	Unit	Unit Price	Item Cost
4-inch Retroreflective Edgeline (Both Sides of Road)	1.05	Mile	\$ 1,200	\$ 1,260
Raised Pavement Markers (Both Sides of Road)	1.05	Mile	\$ 1,500	\$ 1,575
Review for Traffic Calming Improvements	1	Each	\$ 10,000	\$ 10,000
Package of Low-Cost Intersection Improvements (Can Include Signing, Marking, Transverse Rumble Strips)	3	Intersection	\$ 25,000	\$ 75,000
Subtotal:				\$ 87,835
Contingency 30%:				\$ 26,351
Estimated Project Cost:				\$ 115,000

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Notes: (a) The score for lane departure crashes is based on a crash rate expressed as crashes per 100 million vehicle-miles of travel over 2018-2023 study period

Forsyth Local Road Safety Plan
Project Description for Segment Improvements
Location Description

Project ID: S10

Roadway Name: Pleasant Grove Road from Dr Bramblett Road to Hurt Bridge Road

Length (mi): 1.28

Project Location Images



Road Segment Information and Systemic Ranking Summary

Systemic Ranking Summary			Value		Points	Additional Characteristics	
Average Daily Traffic	2,839	2				Forsyth Functional Class	Collector
Number of Lanes	2	1				Received Public Input?	No
Raised Pavement Markers	No	2				Top Challenges	
Pavement Quality (PCI)	70	2				Skewed intersections, lane departure crashes, high posted speed limit (45 mph)	
Access Density (Intersections/Mile)	9.4	2					
Lane Departure Crashes ^(a)	11	2					
K or A Crashes	2	2					
Presence of Shoulder	No	2					
Total Risk Factor Points (20 Max)					15		

Priority 1 Project Recommendations

Item Description	Quantity	Unit	Unit Price	Item Cost
4-inch Retroreflective Edgeline (Both Sides of Road)	1.28	Mile	\$ 1,200	\$ 1,536
Raised Pavement Markers (Both Sides of Road)	1.28	Mile	\$ 1,500	\$ 1,920
Conduct a Speed Limit Study	1	Each	\$ 10,000	\$ 10,000
Review for Traffic Calming Improvements	1	Each	\$ 10,000	\$ 10,000
Package of Low-Cost Intersection Improvements (Can Include Signing, Marking, Transverse Rumble Strips)	2	Intersection	\$ 25,000	\$ 50,000

Subtotal: \$ 73,456
 Contingency 30%: \$ 22,037
Estimated Project Cost: \$ 96,000

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Notes: (a) The score for lane departure crashes is based on a crash rate expressed as crashes per 100 million vehicle-miles of travel over 2018-2023 study period

Forsyth Local Road Safety Plan
Project Description for Intersection Improvements
Location Description

Project ID: I1

Intersection Name: Mathis Airport Road at Laurel Springs Parkway

Project Location Images



Road Intersection Information and Systemic Ranking Summary

Systemic Ranking Summary			Value	Points	Additional Characteristics	
Number of Approaches	4	1			Traffic Control	Two-Way Stop
Daily Entering Volume	16,461	2			Received Public Input?	Yes
Minor Street Volume	3,912	2			Top Challenges	
Within 250 Feet of Another Intersection	Yes	1			Limited sight distance, staged crossing, skewed intersection	
Fatal or Serious Injury Crashes	0	0				
Speed Related Crashes	0	0				
Skew	Minor	3				
Total Risk Factor Points (15 Max)				9		

Priority 2 Project Recommendations

Item Description	Quantity	Unit	Unit Price	Item Cost
New Signal at Intersection	1	Each	\$ 250,000	\$ 250,000
Lighting (Only Applies to Crashes During Non-Daylight Conditions)	1	Intersection	\$ 50,000	\$ 50,000

Subtotal: \$ 300,000
 Contingency 30%: \$ 90,000
 Estimated Project Cost: \$ 390,000

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Notes:

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Notes: Study Period 2018-2023

Forsyth Local Road Safety Plan
Project Description for Intersection Improvements
Location Description

Project ID: I2

Intersection Name: Mathis Airport Road at Mathis Airport Parkway

Project Location Images



Road Intersection Information and Systemic Ranking Summary					
Systemic Ranking Summary		Value	Points	Additional Characteristics	
Number of Approaches	3	0		Traffic Control	Two-Way Stop
Daily Entering Volume	22,650	2		Received Public Input?	No
Minor Street Volume	3,912	2		Top Challenges	
Within 250 Feet of Another Intersection	No	0		Staged crossing, skewed intersection, distracted driver crashes	
Fatal or Serious Injury Crashes	0	0			
Speed Related Crashes	0	0			
Skew	Minor	3			
Total Risk Factor Points (15 Max)			7		

Priority 1 Project Recommendations				
Item Description	Quantity	Unit	Unit Price	Item Cost
Forsyth CTP Short-Term Project RI_027: Signal Installation and Extend Right Turn Lane on Mathis Airport Road	1	Each	\$1,348,843	\$ 1,348,843

Subtotal: \$ 1,348,843
 Contingency 30%: n/a
 Estimated Project Cost: \$ 1,349,000

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Notes: Study Period 2018-2023

Forsyth Local Road Safety Plan
Project Description for Intersection Improvements
Location Description

Project ID: I3

Intersection Name: Mathis Airport Parkway at Laurel Oak Drive/Andelle Avenue

Project Location Images



Road Intersection Information and Systemic Ranking Summary					
Systemic Ranking Summary		Value	Points	Additional Characteristics	
Number of Approaches	4	1	Traffic Control		Two-Way Stop
Daily Entering Volume	25,925	2	Received Public Input?		No
Minor Street Volume	11,021	2	Top Challenges		
Within 250 Feet of Another Intersection	No	0	High volume/speed roadway, K/A crashes, speed related crashes		
Fatal or Serious Injury Crashes	1	4			
Speed Related Crashes	2	1			
Skew	Minor	3			
Total Risk Factor Points (15 Max)		13			

Priority 1 Project Recommendations				
Item Description	Quantity	Unit	Unit Price	Item Cost
Clear and Grub (15 ft Both Sides of Road)	0.1	Mile	\$ 10,000	\$ 1,000
Package of Low-Cost Intersection Improvements (Can Include Signing, Marking, Transverse Rumble Strips)	2	Intersection	\$ 25,000	\$ 50,000
Install Detectable Warning Surface for Sidewalk Ramps	6	Each	\$ 100	\$ 600
			Subtotal:	\$ 51,600
			Contingency 30%:	\$ 15,480
			Estimated Project Cost:	\$ 68,000

Priority 2 Project Recommendations				
Item Description	Quantity	Unit	Unit Price	Item Cost
Restricted Crossing U-Turn (RCUT)	1	Intersection	\$ 85,000	\$ 85,000
Lighting (Only Applies to Crashes During Non-Daylight Conditions)	1	Intersection	\$ 50,000	\$ 50,000
			Subtotal:	\$ 135,000
			Contingency 30%:	\$ 40,500
			Estimated Project Cost:	\$ 176,000

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Forsyth Local Road Safety Plan
Project Description for Intersection Improvements
Location Description

Project ID: 14

Intersection Name: Old Atlanta Road at Daves Creek Drive

Project Location Images



Road Intersection Information and Systemic Ranking Summary					
Systemic Ranking Summary		Value	Points	Additional Characteristics	
Number of Approaches		3	0	Traffic Control	Two-Way Stop
Daily Entering Volume		21,661	2	Received Public Input?	Yes
Minor Street Volume		4,204	1	Top Challenges	
Within 250 Feet of Another Intersection		No	0	Left-turn crashes and non-daylight crashes	
Fatal or Serious Injury Crashes		0	0		
Speed Related Crashes		1	1		
Skew		Minor	3		
Total Risk Factor Points (15 Max)			7		

Priority 1 Project Recommendations				
Item Description	Quantity	Unit	Unit Price	Item Cost
4-inch Retroreflective Edgeline (Both Sides of Road)	3	Mile	\$ 1,200	\$ 3,600
Raised Pavement Markers (Both Sides of Road)	3	Mile	\$ 1,500	\$ 4,500
Package of Low-Cost Intersection Improvements (Can Include Signing, Marking, Transverse Rumble Strips)	1	Intersection	\$ 25,000	\$ 25,000
			Subtotal:	\$ 33,100
			Contingency 30%:	\$ 9,930
			Estimated Project Cost:	\$ 44,000

Priority 2 Project Recommendations				
Item Description	Quantity	Unit	Unit Price	Item Cost
Lighting (Only Applies to Crashes During Non-Daylight Conditions)	1	Intersection	\$ 50,000	\$ 50,000
			Subtotal:	\$ 50,000
			Contingency 30%:	\$ 15,000
			Estimated Project Cost:	\$ 65,000

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Forsyth Local Road Safety Plan
Project Description for Intersection Improvements
Location Description

Project ID: 15

Intersection Name: Fowler Trail at Pilgrim Mill Road

Project Location Images



Road Intersection Information and Systemic Ranking Summary					
Systemic Ranking Summary		Value	Points	Additional Characteristics	
Number of Approaches	3	0		Traffic Control	Two-Way Stop
Daily Entering Volume	7,345	2		Received Public Input?	No
Minor Street Volume	725	1		Top Challenges	
Within 250 Feet of Another Intersection	Yes	1		Intersection geometry, vertical grade, K/A crash	
Fatal or Serious Injury Crashes	1	4			
Speed Related Crashes	1	1			
Skew	Major	3			
Total Risk Factor Points (15 Max)			12		

Priority 1 Project Recommendations				
Item Description	Quantity	Unit	Unit Price	Item Cost
Package of Low-Cost Intersection Improvements (Can Include Signing, Marking, Transverse Rumble Strips)	1	Intersection	\$ 25,000	\$ 25,000
			Subtotal:	\$ 25,000
			Contingency 30%:	\$ 7,500
			Estimated Project Cost:	\$ 33,000

Priority 2 Project Recommendations				
Item Description	Quantity	Unit	Unit Price	Item Cost
Lighting (Only Applies to Crashes During Non-Daylight Conditions)	1	Intersection	\$ 50,000	\$ 50,000
			Subtotal:	\$ 50,000
			Contingency 30%:	\$ 15,000
			Estimated Project Cost:	\$ 65,000

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Forsyth Local Road Safety Plan
Project Description for Intersection Improvements
Location Description

Project ID: I6

Intersection Name: Church Road at Hopewell Road

Project Location Images



Road Intersection Information and Systemic Ranking Summary					
Systemic Ranking Summary		Value	Points	Additional Characteristics	
Number of Approaches	3		0	Traffic Control	Two-Way Stop
Daily Entering Volume	5,535		2	Received Public Input?	Yes
Minor Street Volume	1,366		1	Top Challenges	
Within 250 Feet of Another Intersection	No		0	Angle/left-turn crashes, single-vehicle crashes, horizontal curves	
Fatal or Serious Injury Crashes	1		4		
Speed Related Crashes	0		0		
Skew	Minor		3		
Total Risk Factor Points (15 Max)			10		

Priority 1 Project Recommendations				
Item Description	Quantity	Unit	Unit Price	Item Cost
Package of Low-Cost Intersection Improvements (Can Include Signing, Marking, Transverse Rumble Strips)	1	Intersection	\$ 25,000	\$ 25,000
Review Curve and Provide/Upgrade Signage to Meet MUTCD and GDOT Standards, if Necessary	1	Curve	\$ 5,500	\$ 5,500
Pave 2' Shoulder and Combination of Centerline and Edgeline Rumble Strips - Only Applies to Roadway Departure Crashes	0.40	Mile	\$ 390,000	\$ 156,000
			Subtotal:	\$ 186,500
			Contingency 30%:	\$ 55,950
			Estimated Project Cost:	\$ 243,000

Priority 2 Project Recommendations				
Item Description	Quantity	Unit	Unit Price	Item Cost
Provide a Left-Turn Lane on One Major-Road Approach for a 3-Leg Intersection; Improve Right-Turn Radius on Church Road	1	Intersection	\$ 775,000	\$ 775,000
			Subtotal:	\$ 775,000
			Contingency 30%:	\$ 232,500
			Estimated Project Cost:	\$ 1,008,000

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Forsyth Local Road Safety Plan
Project Description for Intersection Improvements
Location Description

Project ID: 17

Intersection Name: Bettis Tribble Gap Road/McCoy Circle at Spot Road

Project Location Images



Road Intersection Information and Systemic Ranking Summary					
Systemic Ranking Summary		Value	Points	Additional Characteristics	
Number of Approaches	4	1		Traffic Control	Signalized
Daily Entering Volume	8,018	2		Received Public Input?	Yes
Minor Street Volume	1,206	1		Top Challenges	
Within 250 Feet of Another Intersection	No	0		Approach geometry, angle/left-turn crashes, K/A crash, interaction with adjacent trail	
Fatal or Serious Injury Crashes	1	4			
Speed Related Crashes	1	1			
Skew	Minor	3			
Total Risk Factor Points (15 Max)			12		

Priority 1 Project Recommendations				
Item Description	Quantity	Unit	Unit Price	Item Cost
Signal Improvements (Can Include a Combination of - Installing FYAs, Backplates with Retroreflective Borders, and Ped Infrastructure)	1	Intersection	\$ 125,000	\$ 125,000
			Subtotal:	\$ 125,000
			Contingency 30%:	\$ 37,500
			Estimated Project Cost:	\$ 163,000

Priority 2 Project Recommendations				
Item Description	Quantity	Unit	Unit Price	Item Cost
Reduce Right-Turn Skew Angle	2	Approach	\$ 45,000	\$ 90,000
Lighting (Only Applies to Crashes During Non-Daylight Conditions)	1	Intersection	\$ 50,000	\$ 50,000
			Subtotal:	\$ 140,000
			Contingency 30%:	\$ 42,000
			Estimated Project Cost:	\$ 182,000

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Notes: Study Period 2018-2023

Forsyth Local Road Safety Plan
Project Description for Intersection Improvements
Location Description

Project ID: 18

Intersection Name: Aaron Sosebee Road at Hurt Bridge Road

Project Location Images



Road Intersection Information and Systemic Ranking Summary					
Systemic Ranking Summary		Value	Points	Additional Characteristics	
Number of Approaches	3	0		Traffic Control	Two-Way Stop
Daily Entering Volume	7,559	2		Received Public Input?	No
Minor Street Volume	789	1		Top Challenges	
Within 250 Feet of Another Intersection	No	0		Rear end crashes, intersection skew, ditch on the southwest corner	
Fatal or Serious Injury Crashes	1	4			
Speed Related Crashes	1	1			
Skew	Major	3			
Total Risk Factor Points (15 Max)			11		

Priority 1 Project Recommendations				
Item Description	Quantity	Unit	Unit Price	Item Cost
Package of Low-Cost Intersection Improvements (Can Include Signing, Marking, Transverse Rumble Strips)	1	Intersection	\$ 25,000	\$ 25,000
			Subtotal:	\$ 25,000
			Contingency 30%:	\$ 7,500
			Estimated Project Cost:	\$ 33,000

Priority 2 Project Recommendations				
Item Description	Quantity	Unit	Unit Price	Item Cost
Guardrail with Shoulder Construction - Only Applies to Roadway Departure Crashes	0.02	Mile	\$ 300,000	\$ 6,000
Provide a Left-Turn Lane on One Major-Road Approach for a 3-Leg Intersection	1	Intersection	\$ 775,000	\$ 775,000
Lighting (Only Applies to Crashes During Non-Daylight Conditions)	1	Intersection	\$ 50,000	\$ 50,000
			Subtotal:	\$ 831,000
			Contingency 30%:	\$ 249,300
			Estimated Project Cost:	\$ 1,081,000

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Notes: Study Period 2018-2023

Forsyth Local Road Safety Plan
Project Description for Intersection Improvements
Location Description

Project ID: I9

Intersection Name: Castleberry Road at Mark John Way

Project Location Images



Road Intersection Information and Systemic Ranking Summary

Systemic Ranking Summary			Value	Points	Additional Characteristics	
Number of Approaches	4	1			Traffic Control	Two-Way Stop
Daily Entering Volume	22,050	2			Received Public Input?	No
Minor Street Volume	1,450	1			Top Challenges	
Within 250 Feet of Another Intersection	No	0			School traffic, bicycle and pedestrian access, and minor skew	
Fatal or Serious Injury Crashes	0	0				
Speed Related Crashes	0	0				
Skew	Minor	3				
Total Risk Factor Points (15 Max)		7				

Priority 1 Project Recommendations

Item Description	Quantity	Unit	Unit Price	Item Cost
Forsyth CTP Short-Term Project RI_138: Castleberry Road at Mark John Way Multi-Use Crossing	1	Each	\$ 260,000	\$ 260,000

Subtotal: \$ 260,000
 Contingency 30%: n/a
 Estimated Project Cost: \$ 260,000

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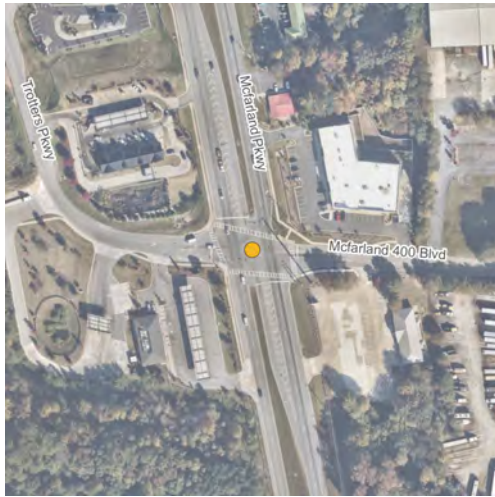
Notes: Study Period 2018-2023

Forsyth Local Road Safety Plan
Project Description for Intersection Improvements
Location Description

Project ID: I10

Intersection Name: Trotters Parkway at McFarland Parkway

Project Location Images



Road Intersection Information and Systemic Ranking Summary					
Systemic Ranking Summary		Value	Points	Additional Characteristics	
Number of Approaches	4	1		Traffic Control	Signalized
Daily Entering Volume	32,295	2		Received Public Input?	No
Minor Street Volume	15,110	1		Top Challenges	
Within 250 Feet of Another Intersection	Yes	1		Adjacent access points, speed related crashes, truck related crashes	
Fatal or Serious Injury Crashes	1	4			
Speed Related Crashes	4	1			
Skew	Minor	3			
Total Risk Factor Points (15 Max)			13		

Priority 1 Project Recommendations				
Item Description	Quantity	Unit	Unit Price	Item Cost
Backplates with Retroreflective Borders	1	Intersection	\$ 5,000	\$ 5,000
Signage and Pavement Marking Improvements Including Lane Markings, RPMs, and One-Way/Wrong-Way Signage	1	Each	\$ 125,000	\$ 125,000
			Subtotal:	\$ 130,000
			Contingency 30%:	\$ 39,000
			Estimated Project Cost:	\$ 169,000

Priority 2 Project Recommendations				
Item Description	Quantity	Unit	Unit Price	Item Cost
Lighting (Only Applies to Crashes During Non-Daylight Conditions)	1	Intersection	\$ 50,000	\$ 50,000
			Subtotal:	\$ 50,000
			Contingency 30%:	\$ 15,000
			Estimated Project Cost:	\$ 65,000

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Notes: Study Period 2018-2023

Appendix B:

Engineering Countermeasures

Implementation Phase	Category	Engineering Countermeasure	CMF	Unit	Estimated Unit Cost
Priority 1	Pedestrian	Detectable Warning Surface for Sidewalk Ramps	Not Defined	Each	\$100
Priority 1	Pedestrian	High Emphasis Crosswalk	Not Defined	LF	\$6
Priority 1	Pedestrian	Rectangular Rapid Flashing Beacon (RRFB)	0.53	Each	\$50,000
Priority 1	Signal	Backplates with Retroreflective Borders	0.85	Intersection	\$5,000
Priority 1	Signal	Signage and Pavement Marking Improvements Including Lane Markings, RPMs, and One-Way/Wrong-Way Signage	0.87	Intersection	\$125,000
Priority 1	Signal	Signal Improvements (Can Include a Combination of - Installing FYAs, Backplates with Retroreflective Borders, and Ped Infrastructure)	0.89 - 0.95	Intersection	\$125,000
Priority 1	Intersection	Package of Low-Cost Intersection Improvements (Can Include Signing, Marking, Transverse Rumble Strips	0.90 - 0.92	Intersection	\$25,000
Priority 1	Curve	Optical Speed Bars w/ Retroreflective Pavement Markings and RPMs	0.65	Curve	\$3,500
Priority 1	Curve	Review Curve and Provide/Upgrade Signage to Meet MUTCD and GDOT Standards, if Necessary	0.59 - 0.96	Curve	\$5,500
Priority 1	Segment	Raised Pavement Markers (Both Sides of Road)	0.87 - 0.91	Mile	\$1,500
Priority 1	Segment	4-inch Retroreflective Centerline	0.76	Mile	\$1,000
Priority 1	Segment	4-inch Retroreflective Edgeline (Both Sides of Road)	0.76	Mile	\$1,200
Priority 1	Segment	Clear and Grub (15 ft Both Sides of Road)	0.78	Mile	\$10,000
Priority 1	Segment	Pave 2' Shoulder and Install Combination of Centerline and Edgeline Rumble Strips - Only Applies to Roadway Departure Crashes	0.77 - 0.80	Mile	\$390,000
Priority 1	Segment	Pave 2' Shoulder with Sloped Pavement Edge (Both Sides of Road - Includes Earthwork)	0.75 - 0.99	Mile	\$350,000
Priority 1	Intersection	Restricted Crossing U-Turn (RCUT)	0.48 - 0.69	Intersection	\$85,000
Priority 1	Traffic Calming	Review for Traffic Calming Improvements	0.82 - 0.97	Each	\$10,000
Priority 1	Traffic Calming	Speed Feedback Sign	0.93	Each	\$10,000
Priority 2	Lighting	Lighting (Only Applies to Crashes During Non-Daylight Conditions)	0.63 - 0.66	Intersection	\$50,000
Priority 2	Lighting	Lighting (Only Applies to Crashes During Non-Daylight Conditions) - No Existing Power	0.63 - 0.66	Intersection	\$100,000
Priority 2	Intersection	Offset Left-Turn Lanes or Type-A to -B Median Conversion	0.64 - 0.66	Intersection	\$175,000
Priority 2	Intersection	Realign Intersection Approaches to Reduce or Eliminate Intersection Skew	Not Defined	Intersection	\$200,000
Priority 2	Intersection	Convert a Stop-Controlled Intersection Into a Single Lane Roundabout	0.18 - 0.42	Intersection	\$4,000,000
Priority 2	Intersection	Provide a Left-Turn Lane on Both Major-Road Approaches for a 4-Leg Intersection	0.42 - 0.52	Intersection	\$1,250,000
Priority 2	Intersection	Provide a Left-Turn Lane on One Major-Road Approach for a 3-Leg Intersection	0.45 - 0.56	Intersection	\$775,000
Priority 2	Intersection	Provide a Left-Turn Lane on One Major-Road Approach for a 4-Leg Intersection	0.65 - 0.72	Intersection	\$975,000
Priority 2	Intersection	Provide a Right-Turn Lane on One Major-Road Approach	0.77 - 0.86	Intersection	\$350,000
Priority 2	Intersection	Reduce Right-Turn Skew Angle	0.4	Approach	\$45,000
Priority 2	Segment	Guardrail with Shoulder Construction - Only Applies to Roadway Departure Crashes	0.84 - 0.93	Mile	\$300,000

