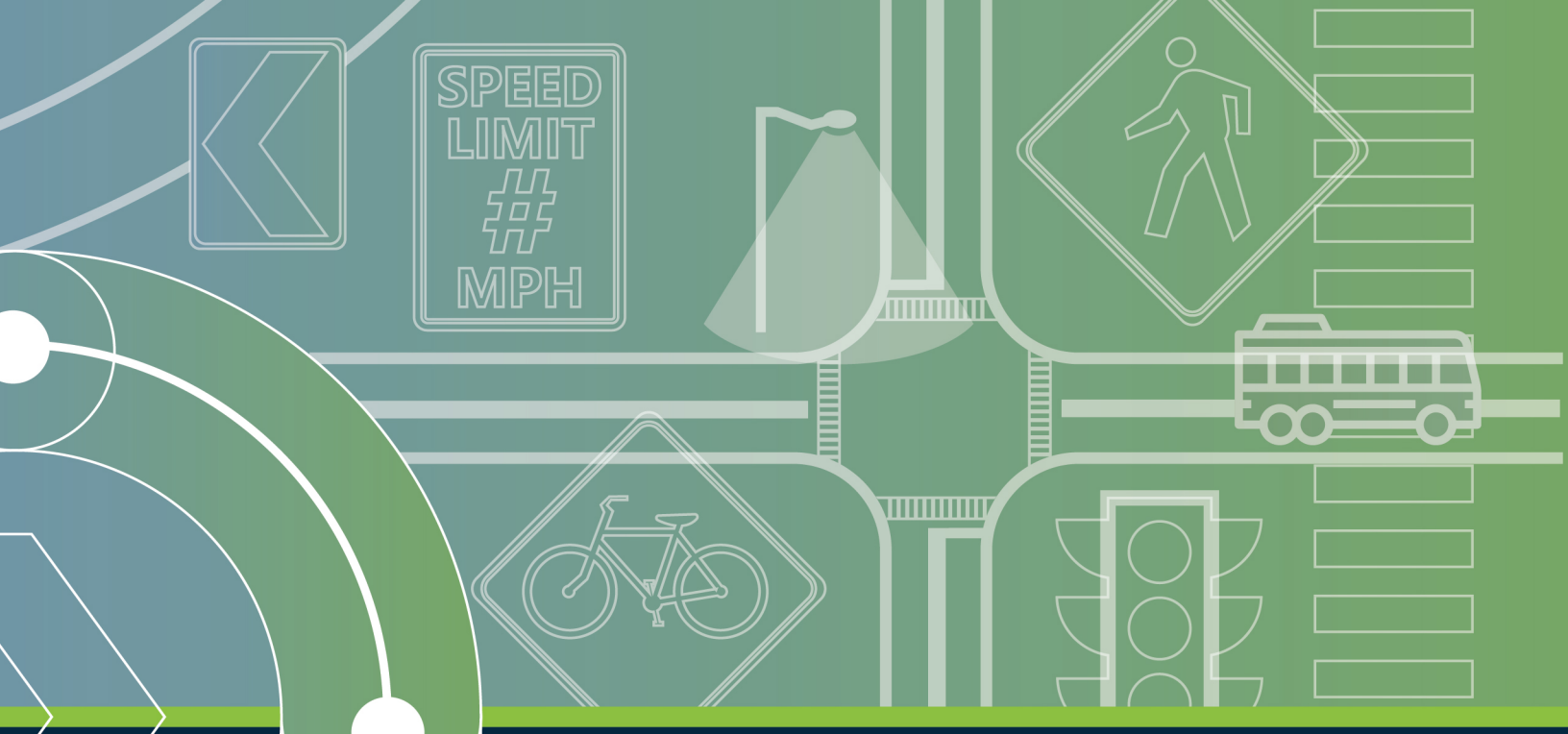


CAMPO
BLUEPRINT FOR SAFETY

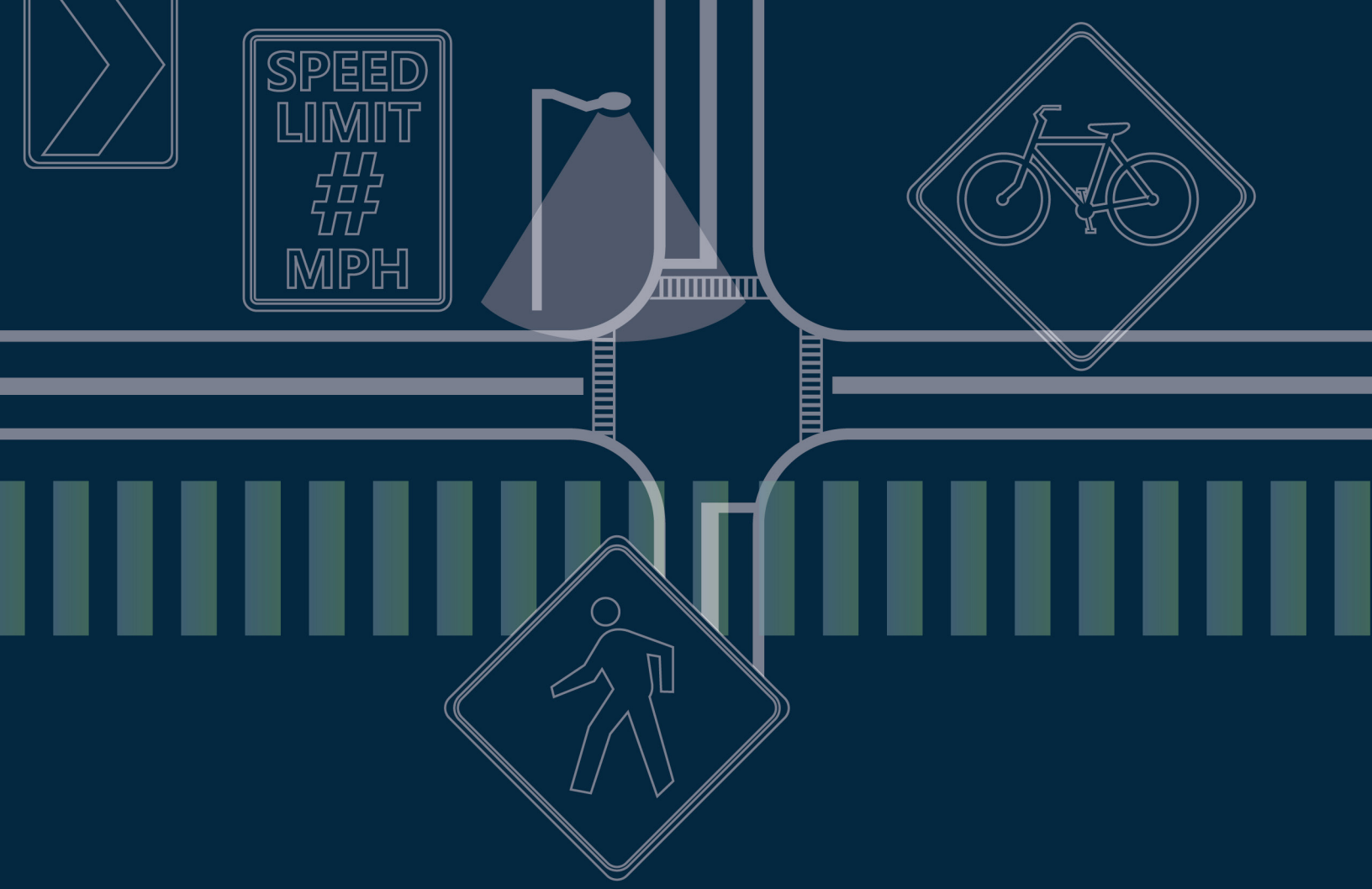
BLUEPRINT FOR SAFETY
CAMPO Regional Transportation Safety Action Plan

CAMPO
NC Capital Area Metropolitan Planning Organization

Contents

Acronyms

ADT	Average Daily Traffic
AADT	Annual Average Daily Traffic
CAMPO	Capital Area Metropolitan Planning Organization
CDC	Centers for Disease Control and Prevention
CPRC	Central Pines Regional Council
CFAP	Community Funding Area Program
CIP	Capital Improvement Program
CMF	Crash Modification Factor
CMP	Congestion Management Process
CTP	Comprehensive Transportation Plan
EB	Executive Board
EPDO	Equivalent Property Ddamage Only
FHWA	Federal Highway Administration
GHSP	Governor's Highway Safety Program
HARTS	Harnett Area Rural Transit System
HIN	High Injury Network
HRRR	High Risk Rural Roads
HSIP	Highway Safety Improvement Program
HSP	Highway Safety Plan
ITS	Intelligent Transportation Systems
LAPP	Locally Administered Projects Program
LEP	Limited English Proficiency
MMIS	Mobility Management Implementation Study
MTP	Metropolitan Transportation Plan
NCDOT	North Carolina Department of Transportation
NHTSA	National Highway Traffic Safety Administration
PH	Potentially Hazardous
RHCP	Railway-Highway Crossing Program
RSA	Road Safety Assessment
SHSP	Strategic Highway Safety Plan
SRTS	Safe Routes to School
SS4A	Safe Streets and Roads for All
STIP	State Transportation Improvement Program
SVI	Social Vulnerability Index
TAT	Technical Advisory Team
TCC	Technical Coordinating Committee
TDI	Transportation Disadvantage Index
TIP	Transportation Improvement Program
TSU	Traffic Safety Unit
TWTPO	Triangle West Transportation Planning Organization
UPWP	Unified Planning Work Program
USDOT	United States Department of Transportation
VMT	Vehicle Miles Traveled
VRU	Vulnerable Road User
V2X	Vehicle-to-Everything



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What is the Blueprint for Safety?

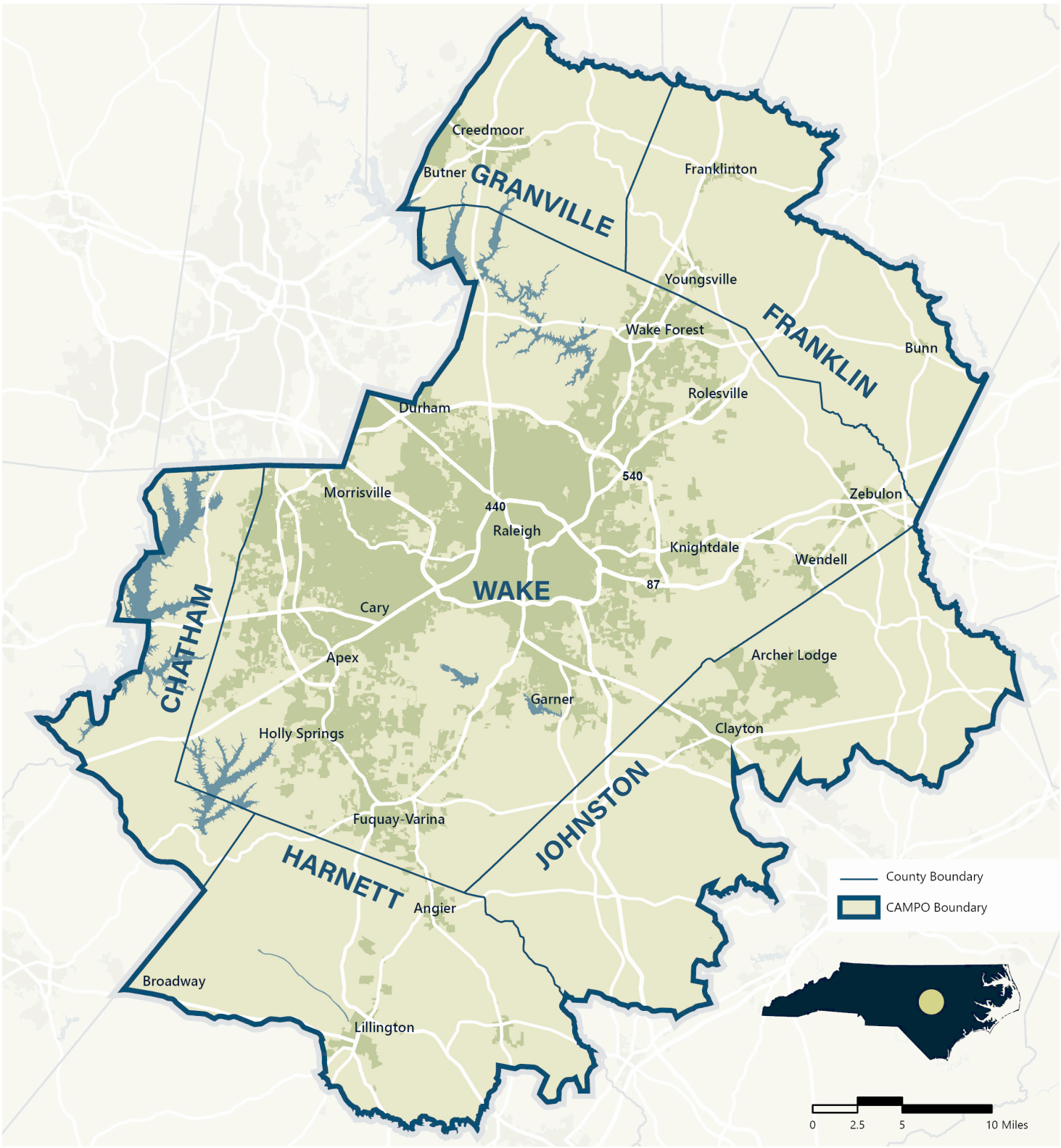
The Capital Area Metropolitan Planning Organization (CAMPO) region is growing rapidly and is expected to grow by almost 950,000 people over the next 30 years[1]. With the current and planned growth, there has been a dramatic increase in fatalities and serious injuries across the region. In the CAMPO region between 2016 and 2023, over 380,000 crashes occurred on roadways, with more than 6,000 of those crashes seriously injuring drivers, passengers, pedestrians, and bicyclists. An additional 1,600 people in the community lost their lives due to a roadway crash.

To address and combat these increasing trends, CAMPO partnered with the North Carolina Department of Transportation's (NCDOT's) Traffic Safety Unit (TSU) to develop a comprehensive Blueprint for Safety, referred to here as the Blueprint, which kicked off on December 14, 2023. The Blueprint provides the building blocks for achieving **a goal of a 50% reduction of fatal and serious injury crashes by 2055 and ultimately moving towards zero fatal and serious injury crashes.**

To ultimately reach zero, CAMPO and NCDOT established objectives for the Blueprint to correct today's safety challenges and plan for a safer tomorrow.

- Articulate a vision and establish a commitment for achieving a significant reduction in fatalities and serious injuries in the CAMPO region.
- Make data-driven, proactive decisions regarding the region's top safety issues, where they occur, who is most impacted, and how fatal and serious injury crashes can be prevented.
- Inform other regional efforts, such as the Metropolitan Transportation Plan (MTP), and statewide efforts, such as the Strategic Highway Safety Plan (SHSP).
- Ensure consistency with the Highway Safety Improvement Program (HSIP).
- Identify strategies and actions based on near-term and long-term needs, creating inputs for future grant applications for priority safety projects.
- Incorporate feedback from the local communities and members of the public regarding their safety concerns to build a culture of safety throughout the region.

1 https://www.campo-nc.us/planning-for-the-future



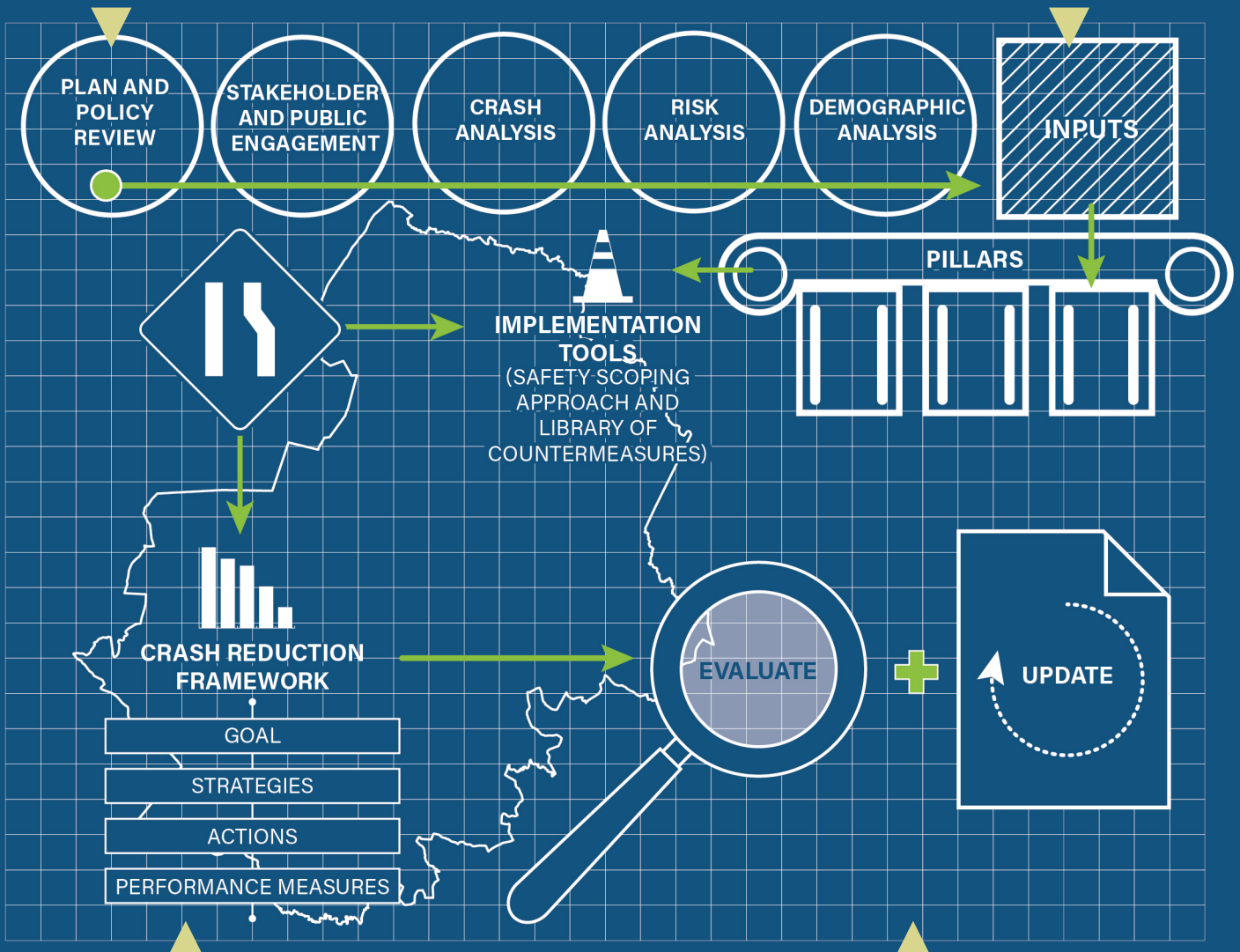
CAMPO Region Boundary

Navigating the Blueprint

The Blueprint includes key components that ultimately lay the groundwork for creating a safer CAMPO region. Review ***Sketching the Blueprint*** to learn more about the fundamentals that informed the Blueprint.

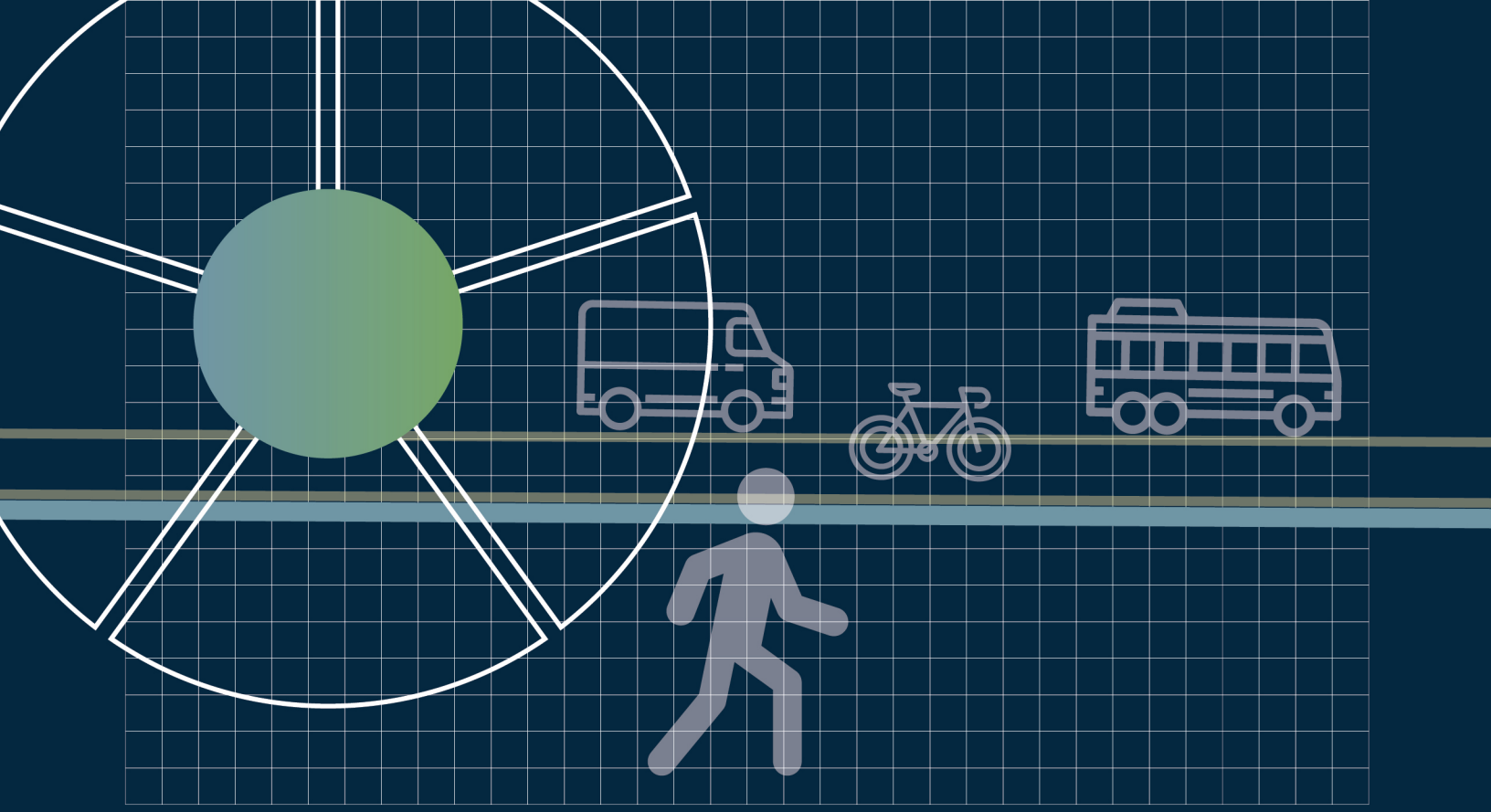
Consider ***Data Driven Safety Analysis*** to understand the key safety problems and crash risks of the region. This section includes an overview of regional safety trends, understanding what the safety problems are and where they occur, and provides insights into who in the CAMPO region is most affected, or overrepresented, in crashes.

Explore ***Stakeholder and Public Engagement*** to learn how feedback from local government leadership, multi-disciplinary stakeholder groups, and the public provided insights into transportation needs and concerns and shaped the strategies and actions in the Blueprint.



Examine the ***Crash Reduction Framework*** to understand the goal, the supporting pillars, and the strategies, actions, and tools CAMPO, NCDOT, and local governments will implement to reach zero fatalities and serious injuries. This section also identifies performance measures to track progress, details additional federal, state, and local funds and grant opportunities, and explains how to evaluate a project's safety performance.

Review ***Evaluating and Updating the Blueprint*** to learn more about CAMPO, NCDOT, and local governments' efforts over the next five years, and beyond, to implement the Blueprint, track and report its progress annually, coordinate with state, regional, and local leadership for support implementing the Blueprint, and incorporate technology advancements.



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Sketching the Blueprint

Process

CAMPO focused on four steps to develop the Blueprint. The first step **established partners and stakeholders who would participate in the process**. Blueprint partners included members of local government, roadway safety partners, community organizations, and residents. They provided input on trends and shared their safety concerns.

CAMPO then **analyzed safety data and stakeholder inputs**. The data identified the areas and populations most at risk of fatal and serious injury crashes and spatially located the areas most in need of preventative safety projects and strategies within the High Injury Network (HIN). The Blueprint also reviewed local and regional plans and policies to understand decision-making processes regarding roadway safety projects.

Once the existing safety conditions were analyzed, the Blueprint **determined safety problems and emphasis areas** and **identified strategies and projects**. The emphasis areas are a subset of crash types that are overrepresented in the CAMPO region. For example, 47% of fatalities and serious injuries in the CAMPO region between 2016-2023 were due to drivers departing their lane. The emphasis areas are listed in order, noting their share of fatal and serious injury crashes in the region. While they are listed in order, all are a critical focus for the region to prevent fatal and serious injury crashes. All of the Blueprint's Emphasis Areas complement the emphasis areas included in the 2024 North Carolina SHSP, and the percent share of the CAMPO region's fatal and serious injury (KA) crashes associated with the crash type are listed in parentheses in the following:

Lane Departure (47% KA crashes)

Seat Belts and Car Seats (24% KA crashes)

Intersections (24% KA crashes)

Impaired Driving (23% KA crashes)

Speed (16% KA crashes)

Older Drivers (15% KA crashes)

Motorcycles (12% KA crashes)

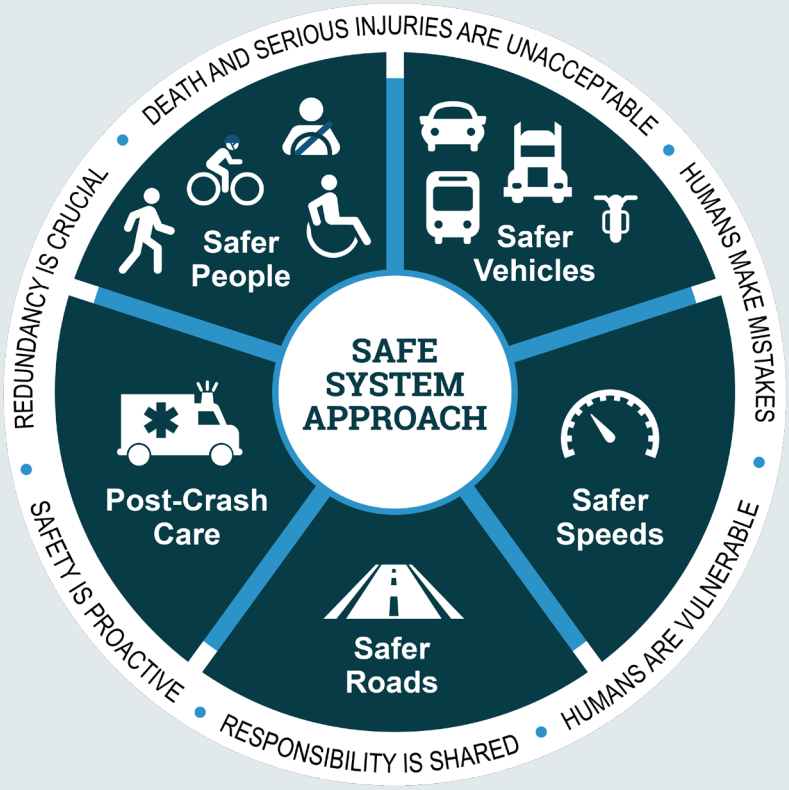
Pedestrians (11% KA crashes)

Bicyclists (2% KA crashes)

CAMPO and NCDOT, by creating this Plan, accomplished the fifth step in the process by **implementing the plan**. The Blueprint outlines a Crash Reduction Framework with strategies and actions, project examples, and potential policies to reduce fatalities and serious injuries across the region. The actions identified in the Blueprint are aligned for potential HSIP funding, federal grants, and other funding sources. Every 4 to 5 years, CAMPO and NCDOT will work together to **evaluate and update the Blueprint** with a focused review of adopted safety targets and performance measures.

The Safe System Approach

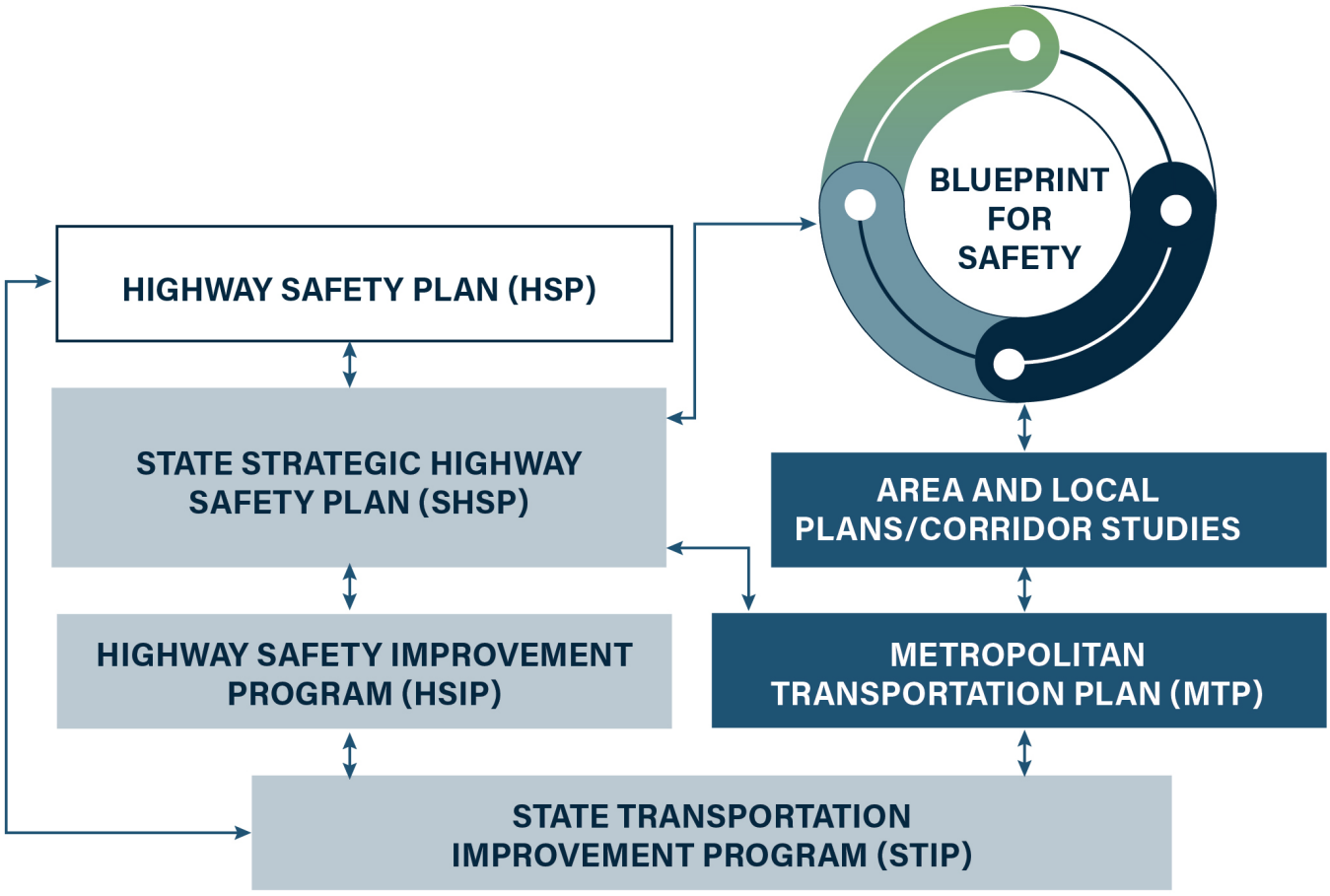
The Blueprint incorporated the Safe System Approach, which focuses on preventing fatalities and serious injury crashes. The Safe System Approach is a holistic, proven methodology adopted by the United States Department of Transportation as a guiding model to improve roadway safety. The Safe System Approach's six principles introduce a paradigm shift in roadway safety, transitioning from a reactive stance—implementing improvements after crashes occur—to a **proactive** approach that anticipates human error. When mistakes occur, those mistakes should never result in a fatality or serious injury. The Safe System Approach also acknowledges that responsibility is shared amongst stakeholders. It takes all five elements, Safer Roads, Post-Crash Care, Safer People, Safer Vehicles, and Safer Speeds to create a Safe System.



Previous Plans and Programs

Before drawing up the plans for the Blueprint, CAMPO reviewed statewide, regional, and local plans and policies to identify opportunities in existing statewide plans and programs to improve transportation safety. Statewide programs like the HSIP, Highway Safety Plan (HSP), and regional plans like the CAMPO Metropolitan Transportation Plan (MTP), identify potential funding sources for the safety projects and programs proposed in the Blueprint. There are also opportunities for the Blueprint to connect with other local and regional plans like Public Transportation Safety Plans, Bicycle/Pedestrian Plans, Comprehensive Plans, and the CAMPO Safe Routes to School Program.

Priority actions led by CAMPO align with its funding programs, which include organizing regional forums, developing model policies, integrating safety data tools into CAMPO-led studies and plans, prioritizing safety in locally-administered projects, promoting safety education messages and materials, and overall staff support for monitoring implementation of the Blueprint. These opportunities for implementing priority actions in CAMPO programs and activities are detailed further in the *CAMPO MTP and MPO Program Integration Memorandum.*



Highway Safety Improvement Program (HSIP)

The Highway Safety Improvement Program (HSIP) is a Federal-aid program[2] aimed at significantly reducing traffic fatalities and serious injuries on all public roads, including non-state-owned roads and roads on Tribal land. In North Carolina, NCDOT's TSU administers the HSIP to improve highway safety on all public roads, using a data-driven, strategic approach. There are three core programs to the HSIP, the SHSP, the state HSIP which includes lists of highway safety improvement projects, and the Railway-Highway Crossing Program (RHCP).

Strategic Highway Safety Plan (SHSP)

The SHSP is part of the HSIP, a core federal-aid program that aims to reduce fatalities and serious injuries on the nation's public roadways. NCDOT receives HSIP funding from the Federal Highway Administration (FHWA) to develop programs and projects to improve safety on its roadways and is required to submit an annual report summarizing the state DOT's implementation and effectiveness of its HSIP. NCDOT's HSIP emphasizes three programs: Roadway Departure, Intersections, and Pedestrian and Bicycle Safety. NCDOT updated the state SHSP in 2024 with active participation and contributions from stakeholders representing diverse safety needs, populations, and geographies across North Carolina. The SHSP is a linkage between local and federal planning as safety plans, such as the Blueprint. The Blueprint aligns its efforts with the goals, vision, safety priorities, and solutions outlined in the SHSP.

VISION: Through our partnerships, we foster safety awareness and provide safe access throughout North Carolina for all users and modes of travel such that everyone arrives safely at their destination.

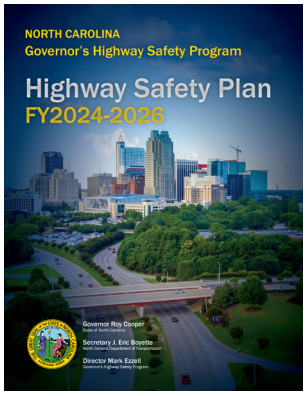
MISSION: Establish a collaborative, strategic approach to the identification and implementation of safety improvement programs and policies to achieve the statewide goals to reduce fatalities and serious injuries related to crashes on North Carolina's transportation system.

GOAL: Reduce fatalities and serious injuries by half by 2035, moving towards zero by 2050.

Highway Safety Plan (HSP)

The Governor's Highway Safety Program (GHSP) and National Highway Traffic Safety Administration (NHTSA) develop the HSP. The HSP evaluates performance measures, analyzes current traffic safety conditions, outlines public engagement efforts and countermeasures, and details projects that GHSP plans to fund for a 3-year period. Similar to the SHSP, the HSP identifies priority crash types/behaviors to address, which for 2024-2026 included:

- Alcohol-Impaired Driving
- Occupant Protection
- Speeding and Police Traffic Services
- Young Drivers
- Motorcyclists
- Pedestrians
- Older Drivers
- Traffic Records



2 The HSIP is legislated under Section 148 of title 23, and regulated under Part 924 of Title 23 Code of Federal Regulations: https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title23-section148&num=0&edition=prelim.

Local Plans and Programs

The Blueprint included a review of local and regional plans and programs. The Safe System Approach is integral to the Blueprint and needs to be considered when reviewing existing plans, studies, projects, policies, and programs. CAMPO developed scoring criteria to evaluate programs or policies through a Safe System lens by asking questions like:

How do the region's plans, projects, and programs account for safety of all people using roadways?

How do the region's plans, projects, and programs consider size and type of vehicles and vehicle fleets?

How do the region's plans, projects, and programs call for setting and enforcing safe speeds?

How do the region's plans, projects, and programs account for human mistakes in roadway design?

How do the region's plans, projects, and programs discuss emergency response and human trauma due to crashes?

CAMPO is actively updating several plans and studies. The following is a list of the plans, programs, and policies reviewed that were completed by CAMPO or other regional partner agencies:

- CAMPO Safe Routes to Schools (SRTS) program (2024).
- CAMPO Public Participation Plan (2023).
- CAMPO Unified Planning Work Program (UPWP) (2024).
- Locally Administered Projects Program (LAPP) (2024).
- Transportation Improvement Program (TIP) (FY 2024-2033).
- Congestion Management Process (CMP) (2024).
- Wake Transit program.
- Community Funding Area Program (CFAP).
- CAMPO Mobility Management Program.
- CAMPO Mobility Management Implementation Study (MMIS).
- Northeast Area Study (2020).
- Southeast Area Study Update (2024).
- Southwest Area Study Update (2019).
- Harnett County Comprehensive Transportation Plan (CTP, 2017).
- Johnston County CTP (2015).
- Granville County CTP (2021).
- Franklin County CTP (2014).
- Harnett Area Rural Transit System (HARTS) Public Transportation Agency Safety Plan (2024).
- Wake County Transit Prioritization Tool: Transit Access Analysis.
- Go Triangle Bus Stop Improvements Criteria.

The Safer Vehicles, Safer Speeds, and Post Crash Care elements were less effectively addressed in the plans and policies reviewed. None of the reviewed documents addressed speeding or the impact of vehicle speeds beyond a brief mention in context of discussion about congestion and mobility. Several of the plans (Southeast Area Study, Harnett County CTP, Franklin County CTP) addressed Safer Roads (the relationship between land use and roadway design); the Southeast Area Study's Land Use Implementation toolkit is a good example for supporting context-sensitive design. None of the plans described issues or needs for first responders, the efficacy of crash reporting protocols, or included measures for Post Crash Care.

Several of the plans (Northeast Area Study, Harnett County CTP, Johnston County CTP, Franklin County CTP) included crash severity in the analysis to identify crash hot spots. This aligns with the Safe System Approach's emphasis on preventing fatal and serious injury crashes rather than preventing all crashes. The CTPs discussed all modes of travel, which addressed the Safer People element; however, they did not provide an explicit mention of safety problems or related improvements. For more information about the findings of the plan, program and policy assessments, see the *Safe System Plan Policy and Program Assessment* and the *Regional Transit Safety* review summaries.

Local Safety Planning in CAMPO

While developing the Blueprint, CAMPO coordinated with several local governments in the region who had initiated or were in progress of developing a safety plan: the Town of Knightdale, City of Raleigh, Town of Morrisville, and the Town of Apex. CAMPO included these local governments in stakeholder engagement, shared safety data, and deferred to local governments priorities for strategy and project implementation. In addition to these local agencies, the Triangle West Transportation Planning Organization (TWTPO), developed a safety plan (adopted April 2025). TWTPO and CAMPO will coordinate on implementation along shared roads and including common strategies.

CAMPO Communities with Safety Action Plans

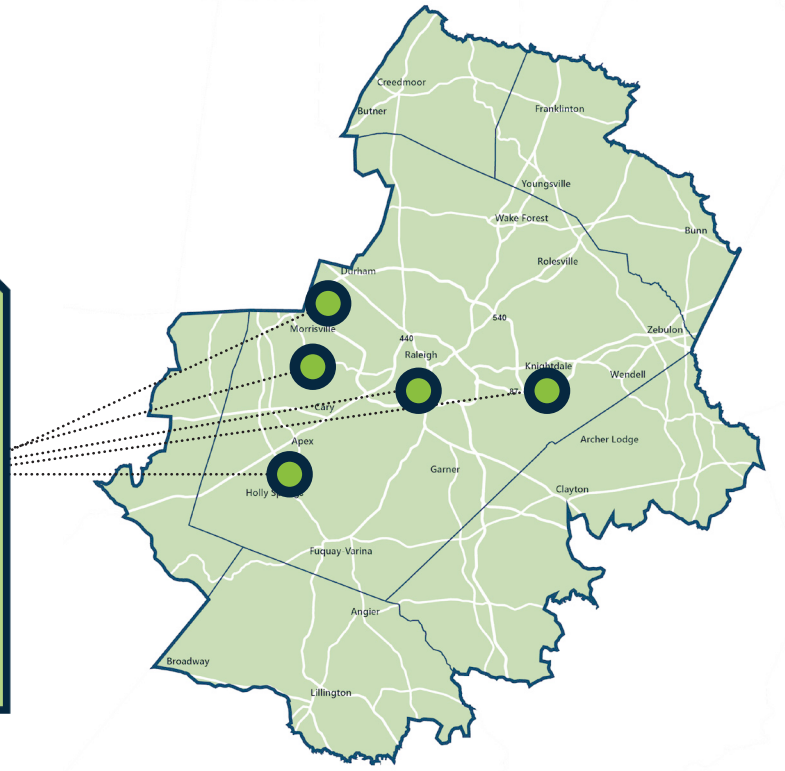
Apex

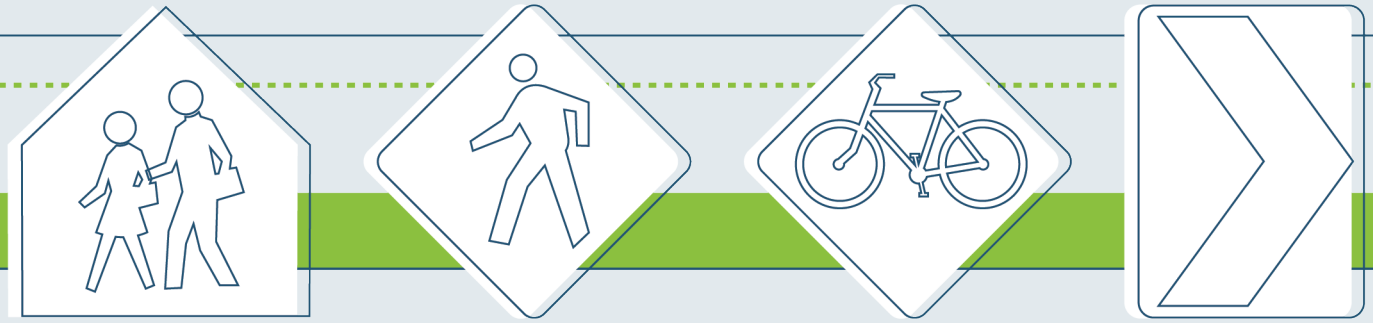
Knightdale

Morrisville (via CPRC)

Raleigh

TWTPO



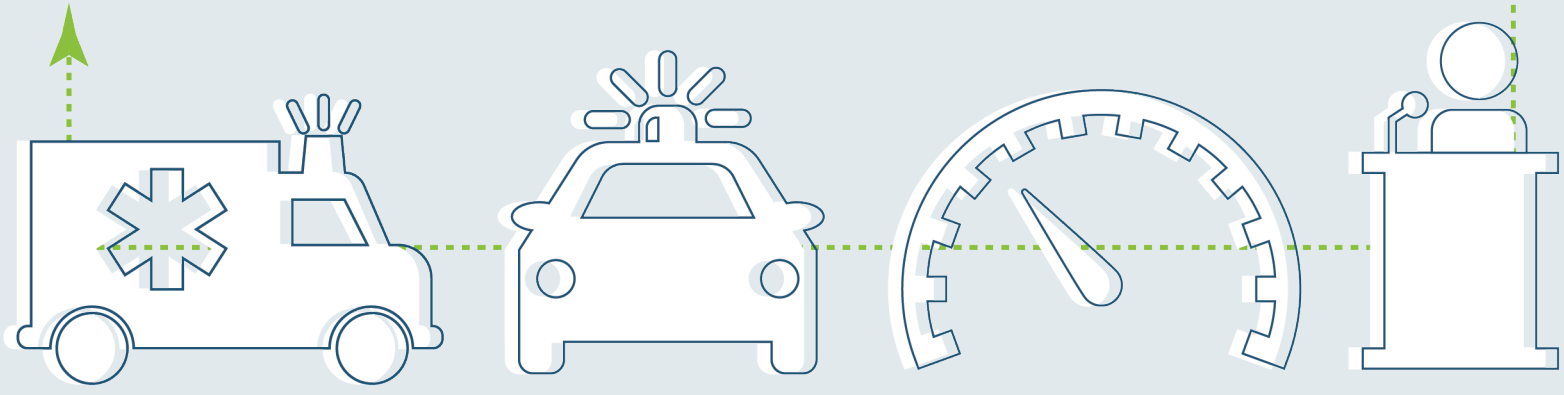


Building a Culture of Safety

Building a culture of safety starts with a commitment from everyone in the region to prioritize safety in their values, actions, and behaviors. There are two types of safety culture in the transportation community: organizational safety culture and public safety culture. To reach the Blueprint's goal, local government and stakeholder agencies need to elevate roadway safety as a priority within their agencies. Local government officials must advocate for improving transportation safety through innovative approaches within their engineering, planning, and enforcement departments. These leaders must also communicate to their citizens the importance of driving, walking, biking, or rolling safely. This includes sharing important safety messaging and educating the CAMPO region residents about how they can contribute to the goal of reaching zero. Ultimately, it is everyone's responsibility to build and foster this culture. It requires a routine review of what works, including relationships between new and experienced partners, continuously informing decision makers about progress, and emphasizing the community value of preventing fatal and serious injury crashes.

The Blueprint connected stakeholders across the Safe System elements, and created opportunities for collaboration and feedback on regional safety concerns, which is detailed further in the *Stakeholder and Public Engagement* section. In the development of the Blueprint, local agencies and groups involved shared their unique perspectives and roles in improving the culture of safety. CAMPO leaders and partners for improving safety include the following entities and roles:

- **Local Elected Officials:** Adopt policies and fund projects that align with the Blueprint and the Safe System Approach. Officials can also prioritize safety in conversations with their constituents and other key stakeholders in the CAMPO community.
- **Planners, Designers, and Engineers:** Develop plans that emphasize roadway safety, create standards to reduce risk, and design streets and public spaces with safety at the forefront.
- **NCDOT and CAMPO:** Adopt policies that increase safety and access and prioritize projects that show the greatest safety benefit for all users.
- **Law Enforcement:** Share experiences, lead conversations on safety behavior, and document crashes thoughtfully to support reporting and analysis.
- **Emergency Response Services:** Identify opportunities to improve post-crash care, share stories and experiences, and speak to the importance of safer streets and roads.
- **Universities and Major Institutions:** Emphasize roadway safety, design campuses for all ages and abilities, and educate new students and faculty on safety practices.



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Data-Driven Safety Analysis

The Blueprint uses a data-driven approach to plan for transportation safety improvements across the CAMPO region and helps answer the following questions:

» What are the top crash types across the CAMPO region?

» Where are the fatal and serious injury crashes occurring?

» What are the risk factors for fatal and serious injury crashes in CAMPO? Where could more fatal and serious injury crashes occur?

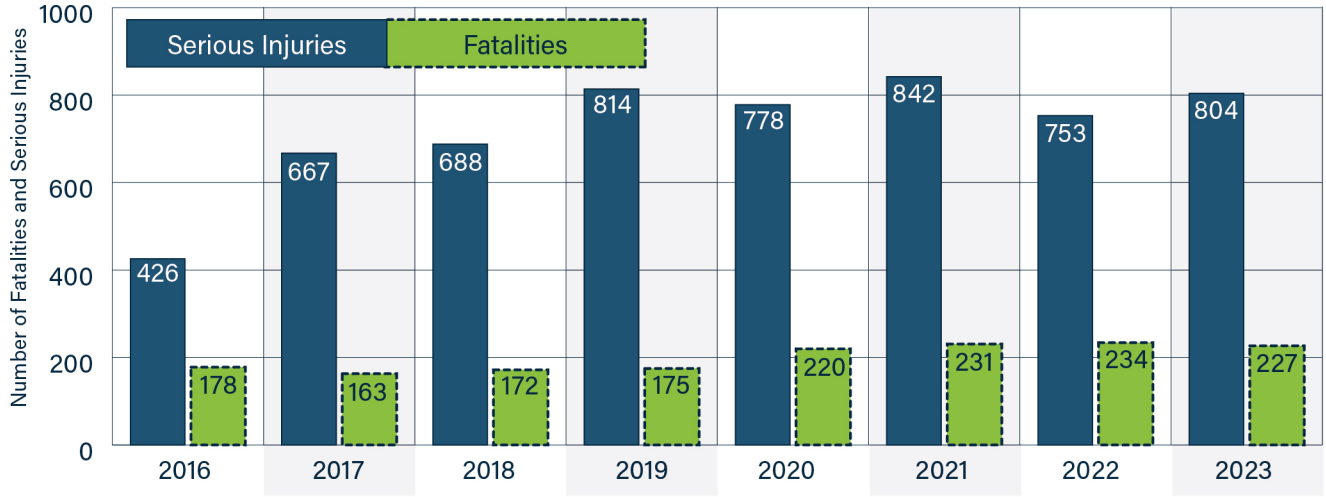
» Who is overrepresented in fatal and serious injury crashes?

The Blueprint answers these questions to reveal locations and areas along the transportation network with historic safety problems and future risk for roadway-related fatalities and serious injuries. The data highlight the prevalence of different crash types and contributors, the times of day, the days of the week, injury severity by crash type, and the most vulnerable road user groups (e.g., pedestrians, cyclists, motorcyclists), to develop targeted interventions to prioritize safety strategies and actions within geographic or demographic areas that could lead to the largest safety improvements.

An example of a data-driven intervention could be the installation of new traffic signals or crosswalks at an intersection identified to have an increased incidence of pedestrian and bicyclist fatalities and serious injuries. Data collected within this effort can be used in ongoing transportation safety initiatives to measure the projects performance over time and how many fatalities and serious injuries are prevented. It is critical to monitor the effectiveness of safety implementation, especially as the region continues to grow.

Regional Safety Trends

Between 2016 and 2023, total fatal and serious injury crashes increased across the counties included in the CAMPO region. Fatalities were highest in 2022.

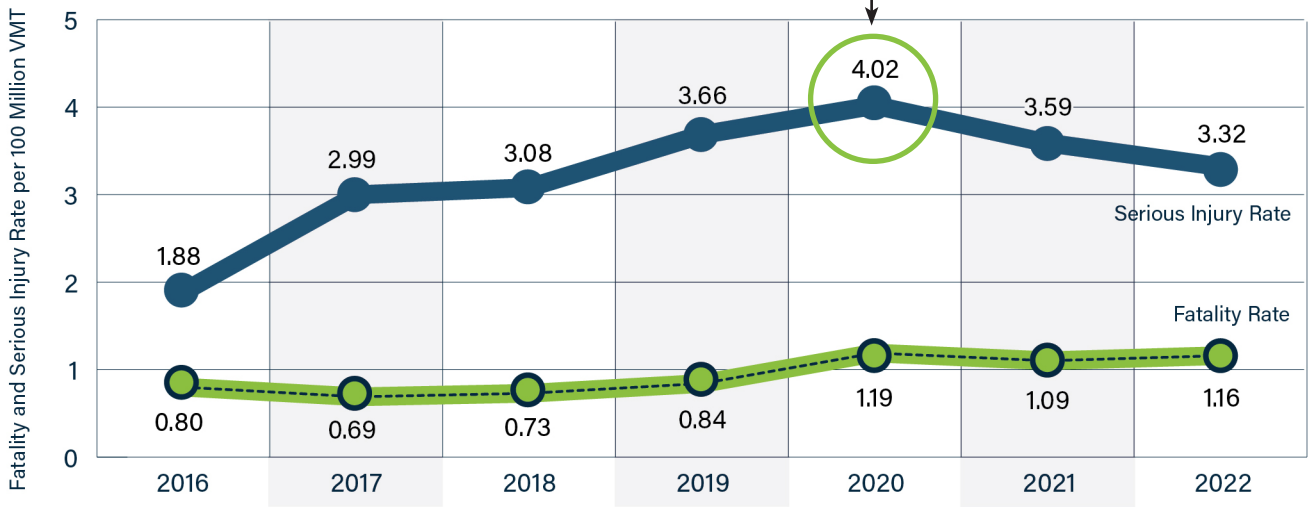


Fatal and serious injury crashes in CAMPO from 2016-2023

The CAMPO region is growing. From 2013 to 2022, vehicle miles traveled (VMT) increased by nearly 21% across the region. While the number and rate of fatalities have steadily increased, serious injury crash rates have **declined** after a peak in 2020.

SAFETY DATA SPOTLIGHT

Serious injury crash rates are declining after a peak in 2020.



Fatal and serious injury rate for the CAMPO region from 2016-2022.
Rate is determined based on the number of fatalities and serious injuries per 100 million VMT.

What are the Safety Problems?

The 2024 North Carolina SHSP highlights 14 Emphasis Areas that contribute to the greatest number of and most severe crashes across the state's transportation network. The Blueprint identifies Emphasis Areas that are unique to the CAMPO region based on fatal and serious injury crashes from 2016-2023 compared to total crashes in the region and statewide fatal and serious injury crashes. From this review, the Blueprint focuses on the following Emphasis Areas, which represent major contributing factors to fatal and serious injury crashes in the region. These nine Emphasis Areas, listed in the order that they contribute to fatalities and serious injuries (KA crashes), are the big rocks for the region. While they are listed in order of magnitude, reducing all of these crash types can lead to larger impacts across the region and help move the needle towards the Blueprint's goal of zero. See the *Focus Crash and Facility Types for Risk Analysis Memo* for more information about the results of the crash type analysis for the CAMPO region.

Lane Departure (47% KA crashes)

Seat Belts and Car Seats (24% KA crashes)

Intersections (24% KA crashes)

Impaired Driving (23% KA crashes)

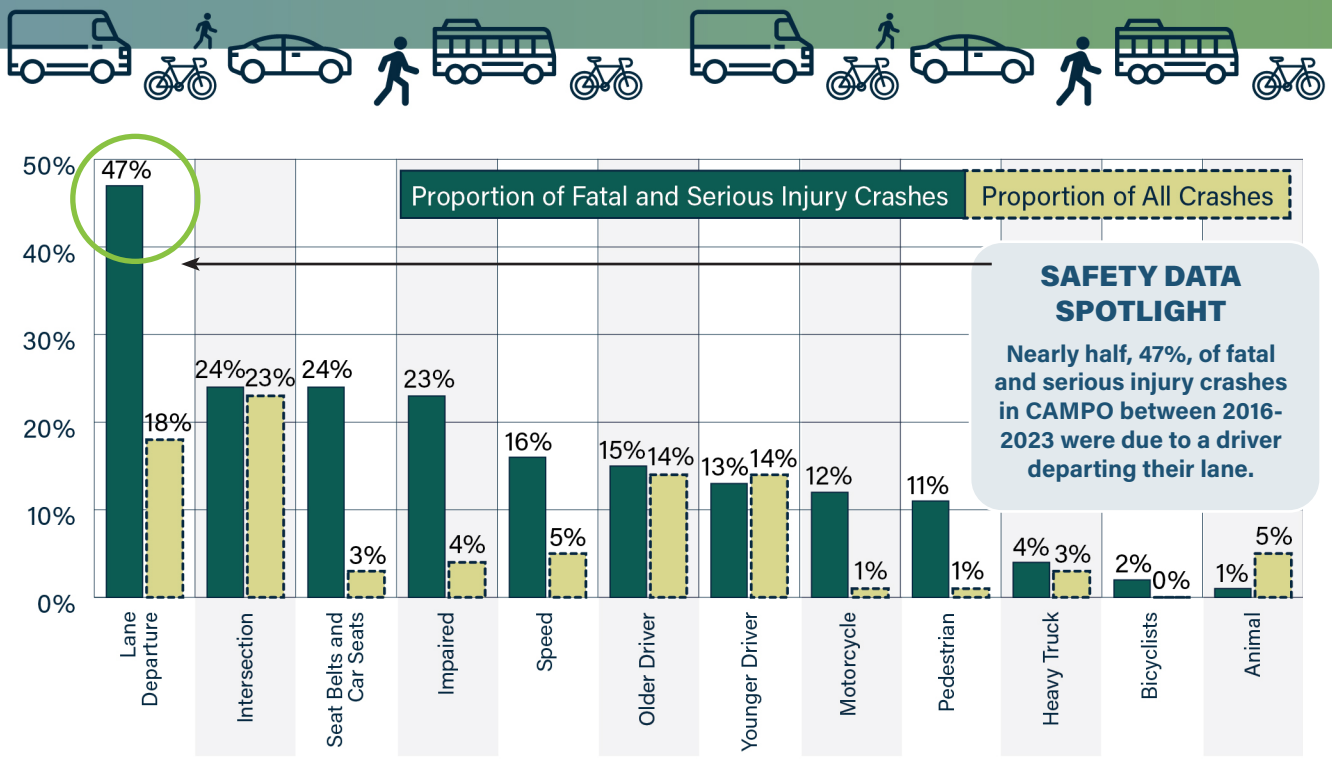
Speed (16% KA crashes)

Older Drivers (15% KA crashes)

Motorcycles (12% KA crashes)

Pedestrians (11% KA crashes)

Bicyclists (2% KA crashes)



Proportion of fatal and serious injury crashes by emphasis area compared to proportion of all crashes.
Note: Crashes add up to more than 100% because one crash can be associated with multiple Emphasis Areas.

The following chart illustrates how each county's proportion of fatal and serious injury crashes by Emphasis Area compares to the statewide proportion. While Motorcyclists are not particularly overrepresented in any part of the CAMPO region, the crash type tends be more severe, which is why they are considered an Emphasis Area for the region.

Proportion of Fatal and Serious Injury Crashes, by County and Emphasis Area, Compared to the Statewide Proportion
Note: Crashes add up to more than 100% because one crash can be associated with multiple Emphasis Areas.

Emphasis Area(s)	Chatham	Franklin	Ganville	Harnett	Johnston	Wake	Statewide
Lane Departure	59%	62%	68%	58%	52%	38%	53%
Intersection	25%	26%	15%	22%	26%	25%	22%
Impaired Driving	16%	25%	27%	21%	26%	23%	23%
Occupant Protection	27%	29%	34%	32%	27%	19%	27%
Speed	20%	13%	23%	20%	14%	16%	18%
Motorcycle	12%	9%	8%	12%	13%	13%	14%
Pedestrian	7%	4%	5%	9%	6%	14%	10%
Bicyclists	1%	0%	1%	1%	1%	2%	2%
Animal	1%	1%	1%	1%	1%	0%	1%
Heavy Truck	4%	2%	6%	4%	7%	3%	5%
Older Driver	21%	16%	12%	15%	18%	13%	17%
Younger Driver	13%	12%	11%	13%	15%	13%	11%

Orange = Over-representation of fatal and serious injury crashes for the emphasis area. → **As colors transition to blue, yellow, light green, and dark green, there is less overrepresentation.**

Where are the Safety Problems?

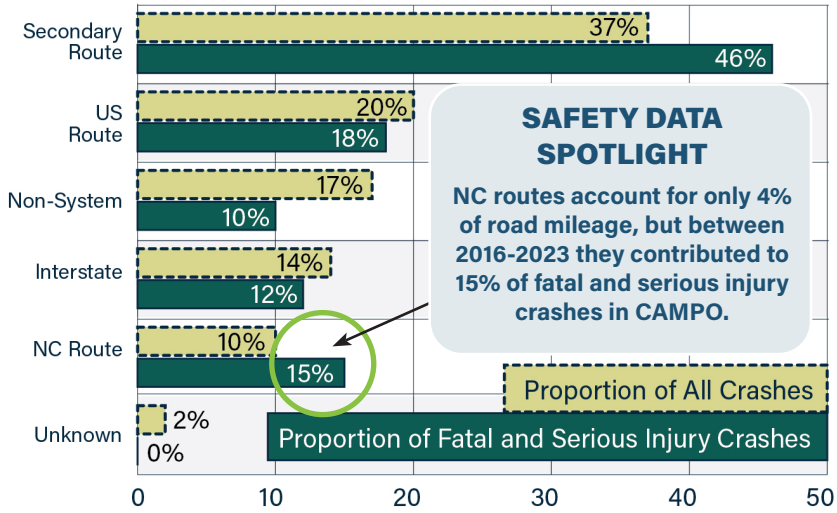
In addition to identifying the safety problems for the region, it's important to understand where safety issues are occurring. The process to identify those safety concerns includes identifying focus facility types for the crash types and associated risk factors.

Focus Facility Types

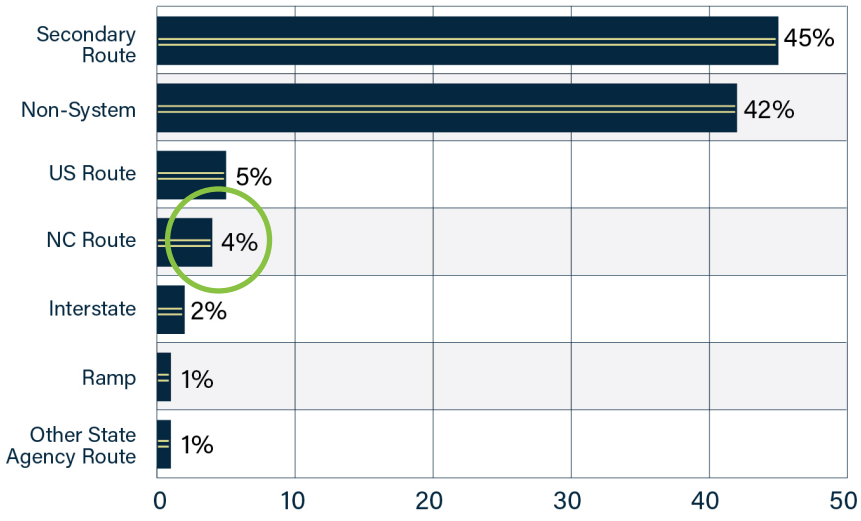
North Carolina Route Class

Using NCDOT's route and functional class information, CAMPO compared the proportion of the crashes occurring from 2016-2023 on a given facility type (e.g., a route classification or a functional classification) against the proportion of mileage for that facility.

Analyzing the facility types highlights an overrepresentation of fatal and serious injury crashes on **NC routes** and **US routes**. NC routes only make up 4% of the total road mileage; however, they account for 15% of fatal and serious injury crashes. US routes represent 5% of road mileage, but they account for 18% of fatal and serious injury crashes. NC and US routes carry a relatively high percentage of overall traffic volume statewide, 11% and 20% of VMT, which may also contribute to the disproportionate share of fatal and serious injury crashes in the CAMPO region. It is important to note that while **secondary routes** account for the majority of road mileage (45%), they are involved in a disproportionate number of fatal and serious injury crashes (46%) relative to total crashes (37%).



Proportion of Fatal and Serious Injury Crashes vs. All Crashes by Facility Type



Mileage Proportion by Route Class

Key Terminology

Route class *refers to the signage of the route (e.g., US 70 or NC 55) and correlates with road maintenance.*

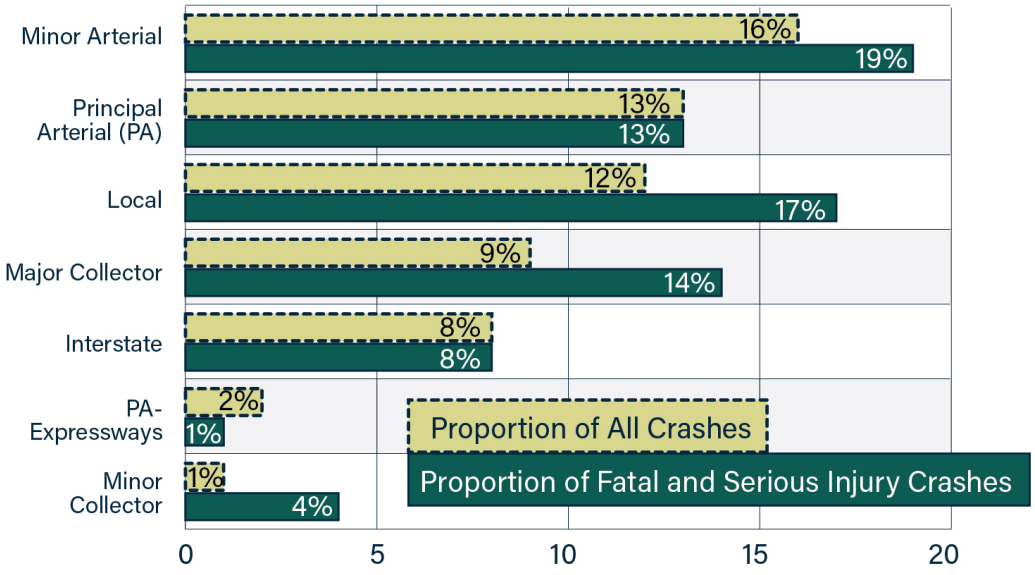
Interstates, US Routes, NC Routes, *and* ***Secondary Routes*** *are NCDOT maintained.*

Non-System roads *are* ***not*** *maintained by NCDOT.*

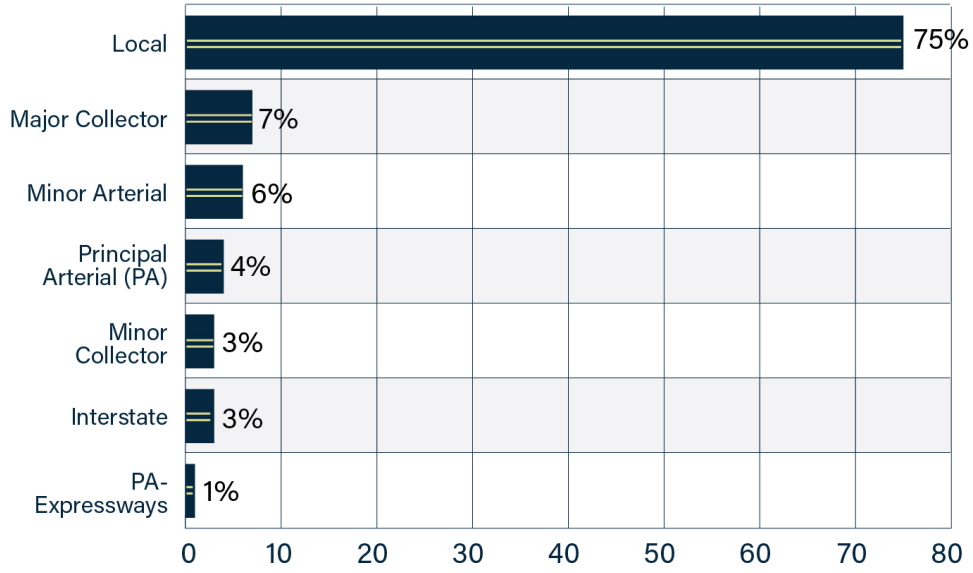
Federal Function Class

Functional class is a federally-mandated classification for public roads. Functional class includes expectations about roadway design, including its speed, capacity, and relationship to existing and future land use development. This is highly correlated with route class (i.e., a US Route will tend to be a freeway or arterial in the functional class framework), but they are not exactly the same. One concern to note with this type of analysis is that crashes on lower functional classes (e.g., local) can be more difficult to locate spatially. There can be a slight skew in favor of higher functional class and roads not maintained by NCDOT for safety concerns.

Minor Arterials, Principal Arterials – Other, and **Major Collectors** are overrepresented when considering the number of fatalities and serious injuries occurring on these roadway types, while only representing a small percentage of the mileage.



Proportion of Crashes by Functional Class



Mileage Proportion by Functional Class

High Injury Network (HIN)

The Blueprint developed a HIN for all crashes, a High Injury Intersection (HII) for all crashes, a HIN for bicycle and pedestrian crashes, and an HII for bicycle and pedestrian crashes. The HIN uses crash data from the NCDOT enterprise crash database from 2016-2023, and bicycle-and pedestrian-specific crash data through NCDOT's Open Data Portal from 2013-2022 to identify locations that have a high frequency of recent fatal and serious injury crashes that could be reviewed in detail for potential countermeasures, projects, and policy interventions.

A total of four layers were developed that are collectively part of the HIN:

» **High Injury Intersections (HII) for all crashes**
These represent 1% of all intersections and capture 38% of all fatal and serious injury crashes at intersections in the region.

» **HIN or segments for all crashes**
This represents 3% of all roadway miles and accounts for 39% of all fatal and serious injury crashes between intersections.

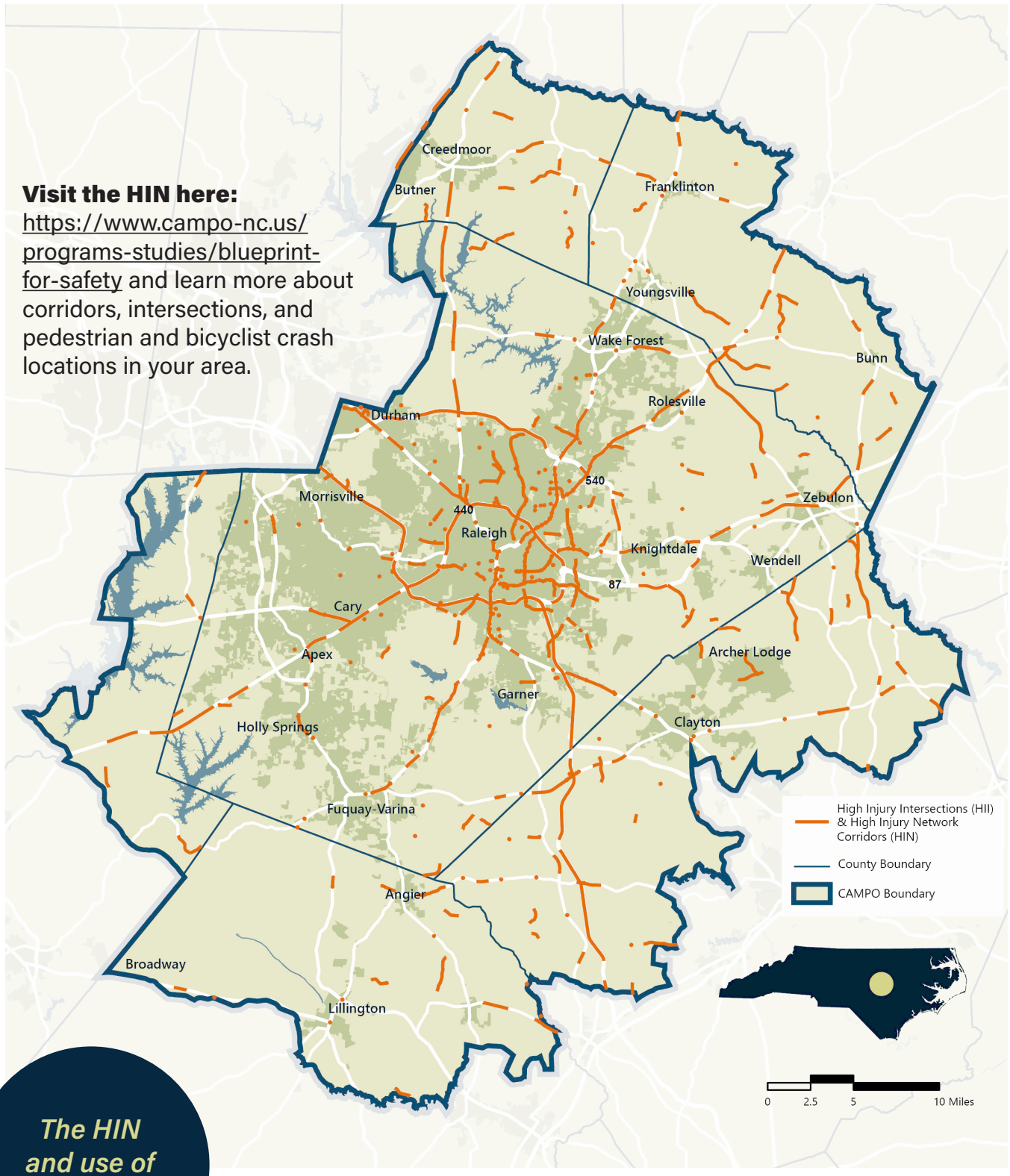
» **HIN for bicycle and pedestrian crashes only**
This represents 3% of non-interstate mileage in the region captures 59% of all bicycle-pedestrian fatal and serious injury crashes between intersections.

» **HII for bicycle and pedestrian crashes**
These represent 1% of all intersections and account for 50% of bicycle-pedestrian fatal and serious injury crashes between intersections.

To determine severity weighting for crashes, an equivalent property damage only (EPDO) score was calculated for each crash, a methodology consistent with the Safe System Approach, emphasizing fatal and serious injury crashes over other severities. Locations with a higher EPDO score tend to have more fatal and serious injury crashes than those with a lower score.

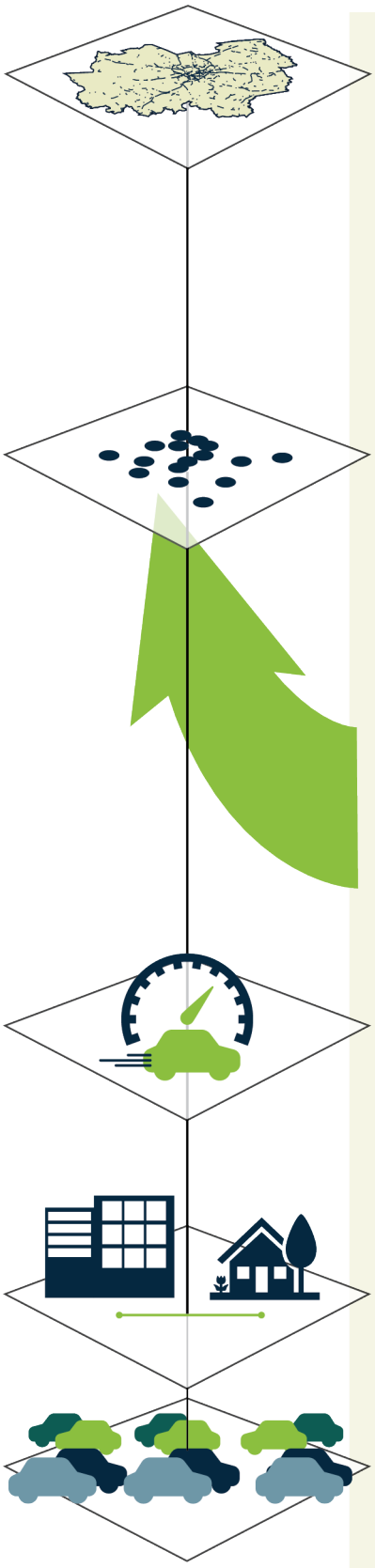
For More Information
Visit the *Technical Memorandum on the HIN and Modal HIN* for more information on the HIN methodology.

Visit the HIN here:
https://www.campo-nc.us/programs-studies/blueprint-for-safety and learn more about corridors, intersections, and pedestrian and bicyclist crash locations in your area.



CAMPO's HIN

The HIN and use of Spatial Data



High Risk Areas

Likelihood, severity, and context and exposure are three components analyzed to determine the risk of serious or fatal crashes on the region's roadways and intersections. The risk analysis can inform effective transportation policies and infrastructure improvements, guiding the allocation of resources to mitigate these types of crashes. The individual models and maps are used to identify segments or intersections with very low to very high probability for a serious injury or fatal crash involving or related to one of the following crash types:

Likelihood, or crash risk considers which crash types are most likely to occur on the roadway and what countermeasures can reduce the frequency of severe crashes. A risk analysis, based on NCDOT crash data from 2016-2023, was conducted on seven of the focus crash types: lane departure, intersections, bike/pedestrians at intersections, bike, speed, pedestrian, and motorcycle. Each crash type was analyzed using a separate model based on unique risk – identifying segments and intersections with the highest probability (likelihood) for fatal and serious injury crashes across the region's network. Each crash type was mapped per the modeled probability or likelihood of a fatal or serious injury crash.

Severity considers where increased kinetic injury, which is the force related to speed, can result in more severe crash outcomes and where speed can be more effectively managed based on the development context. The data uses actual speeds – presented by the 85th percentile of speeds recorded during workdays over a 24-hour period.[5] The severity map identifies roadways and intersections in the CAMPO region where targeted interventions to manage speed could reduce the potential for fatal and serious injury crashes.

Context and Exposure considers where traffic volumes impact crash frequency, using annual average daily traffic (AADT), and the different roadway users in traffic-related conflicts. The context map identifies roadways and intersections in the CAMPO region where the surrounding land use or traffic management may contribute to fatal and serious injury crashes.

For More Information: Review the *Crash Risk Factors Memorandum* for more information on crash risk factors, results of the risk analysis, or how to apply this safety data.

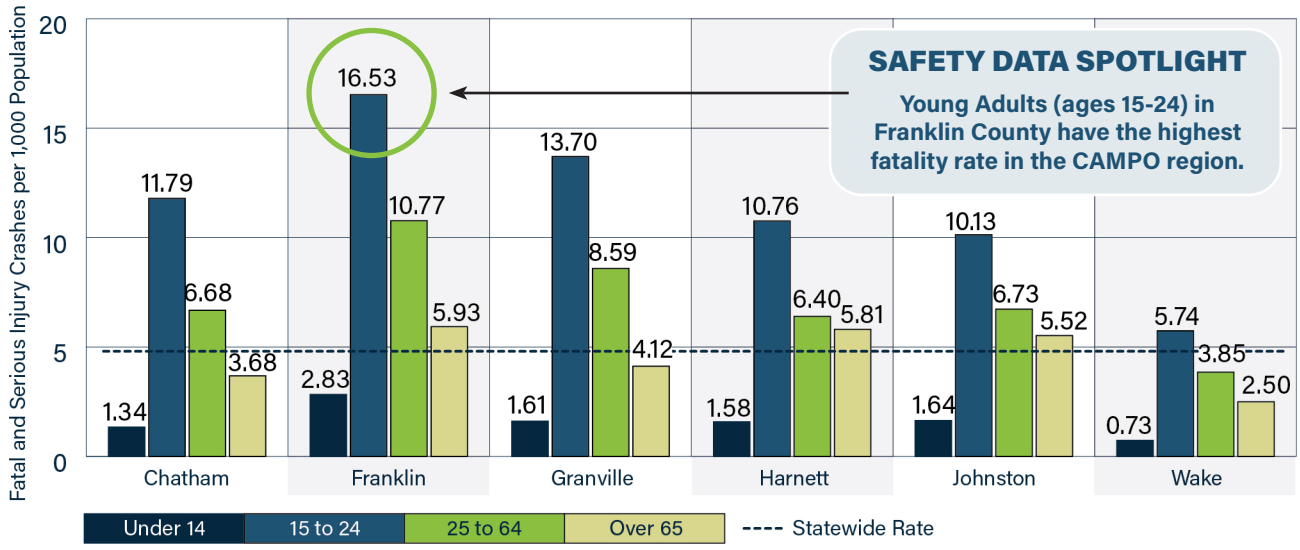
3 Speed data is based upon probe data that report actual traveling speeds.

Who is Most Impacted?

The Blueprint's population segment emphasis areas are based on analyzing existing conditions to understand the age, sex, race, and income of those most impacted by transportation safety planning decisions. The Blueprint compares regional population percentages with crash type percentages and statewide rates.

Age

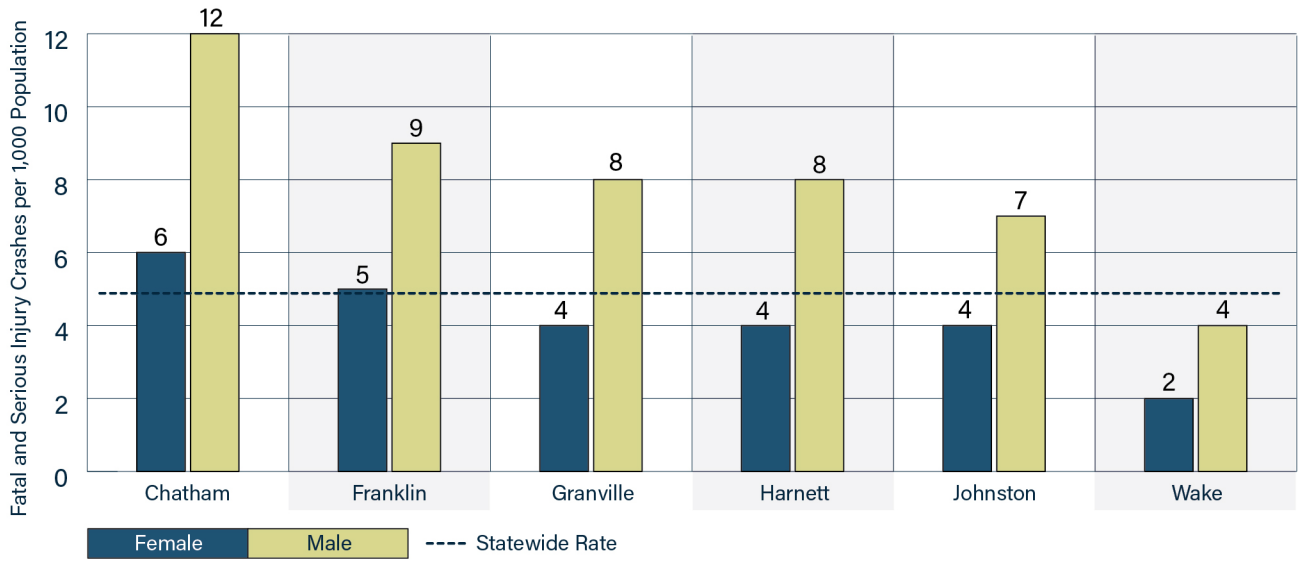
Individuals aged 25-64 years-old have the highest rate of fatality and serious injury crashes per 1,000 people compared to other age groups, and overrepresent the statewide crash rate in all the counties included in the CAMPO region, except for Wake County.



Fatal and Serious Injury Rate by Age Group and County

Sex

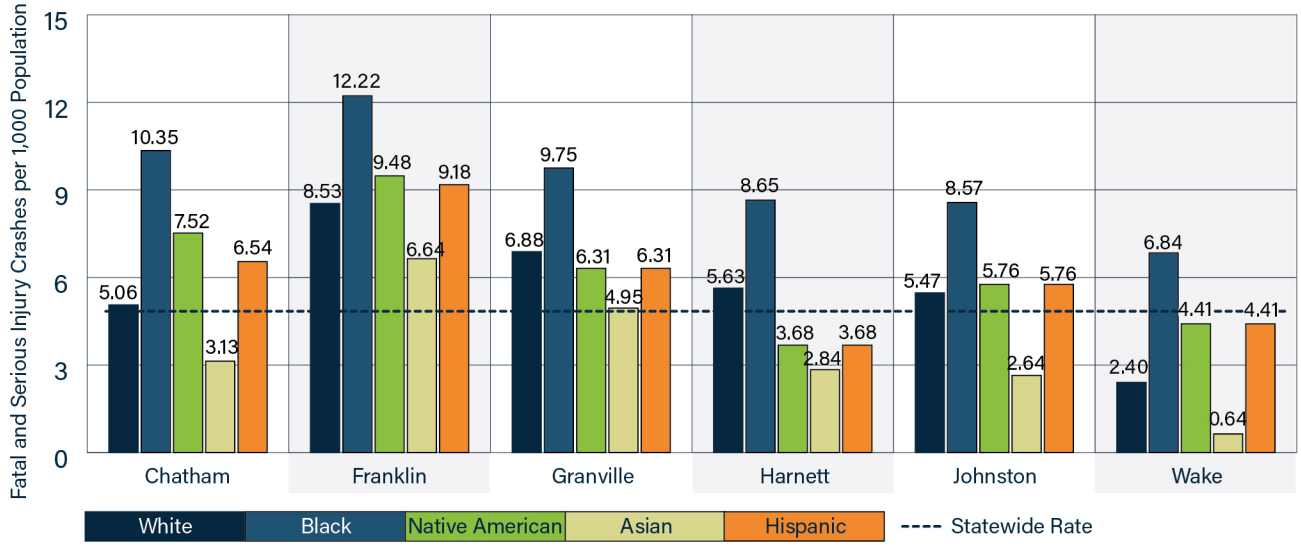
Men are overrepresented in fatal and serious injury crashes, compared with statewide crash rates, in all CAMPO counties except Wake County. Women are overrepresented in comparison with statewide crash rates only in Chatham County.



Fatal and Serious Injury Rate by Sex and County

Race and Ethnicity

Black individuals are overrepresented in fatal and serious injury crash rates within the CAMPO region compared to the statewide rates and have the highest fatality and serious injury crash rate per 1,000 people compared to White, Native American, Asian, and Hispanic racial or ethnic groups.



Fatal and Serious Injury Rate by Race and Ethnicity and County

Overrepresentation in Specific Crash Types

Eight of the nine Emphasis Areas were analyzed based on the age and race/ethnicity of persons involved in a fatal and serious injury crash. The following tables show overrepresentation, indicated by the **bolded text**, where a higher percentage of the population group was impacted by a crash type compared to the percentage of that population in the region.

Proportion of Fatal and Serious Injury Crashes by Age

People aged 15-24 and 25-64 in CAMPO are overrepresented in fatalities and serious injuries across all of the Emphasis Areas.

Crash Type	Under 14	15-24	25-64	65+
Bicyclist	8.08%	**16.16%**	**65.66%**	10.10%
Impaired	2.97%	**21.00%**	**71.93%**	4.10%
Intersection	4.99%	**20.46%**	**59.43%**	15.06%
Lane Departure	4.27%	**26.80%**	**61.45%**	7.48%
Motorcycle	0.38%	**17.62%**	**15.54%**	6.46%
Pedestrian	5.31%	**16.81%**	**65.49%**	12.39%
Seat Belts and Car Seats	4.32%	**29.26%**	**60.04%**	6.38%
Speed	3.85%	**33.63%**	**56.50%**	6.02%
Share of Regional Population	19.00%	13.00%	53.00%	16.00%

Proportion of Fatal and Serious Injury Crashes by Race and Ethnicity

Black and Native American populations are overrepresented in fatalities and serious injuries across all of the Emphasis Areas.

Crash Type	Native American	Asian	Black	Hispanic	Unknown	White
Bicyclist			**24.2%**	**12.1%**	1.0%	61.6%
Impaired	**0.2%**	0.6%	**34.5%**	**16.4%**	0.2%	46.4%
Intersection	**0.3%**	1.3%	**28.5%**	**11.6%**	0.1%	55.5%
Lane Departure	**0.2%**	0.6%	**32.7%**	**12.9%**	0.1%	51.3%
Motorcycle	**0.3%**	0.8%	**26.9%**	5.7%		**64.9%**
Pedestrian	**0.3%**	1.5%	**43.7%**	**12.5%**	0.3%	39.4%
Seat Belts and Car Seats	**0.2%**	0.4%	**38.4%**	**12.1%**	0.2%	46.5%
Speed	**0.2%**	0.6%	**36.6%**	**12.4%**	0.1%	47.4%
Share of Regional Population	0.0%	2.0%	20.0%	11.0%	5.0%	62.0%

Considering the share of the region's total population, the Black population and the Native American population are overrepresented in all crash types. The Hispanic population is overrepresented in crashes involving bicyclists, impairment, lane departure, pedestrians, seat belts, and speed. The region's White population is overrepresented in motorcycle crashes.

Impacted Communities

NCDOT created the Transportation Disadvantage Index (TDI) to measure the concentration of populations facing barriers to transportation access. TDI uses data from the 2020 American Community Survey 5-year estimates to identify heavily impacted communities within a block group using the concentration of the following indicators:

Race (Black, Indigenous, and Persons of Color)

People with low income

Personal vehicle access (zero-vehicle households)

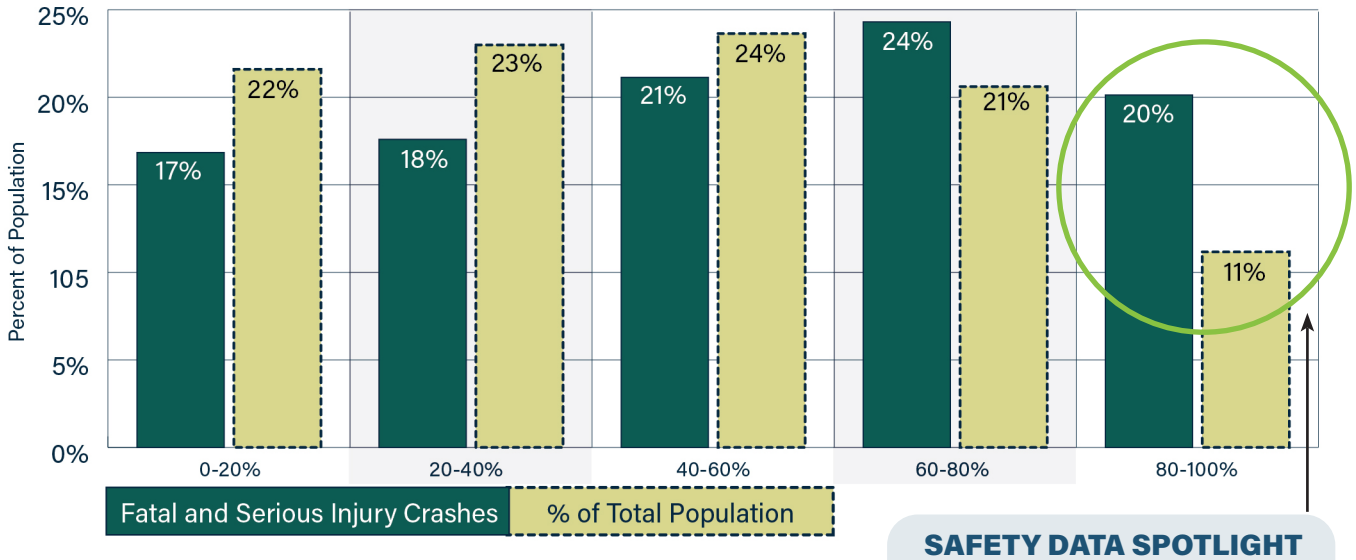
People with mobility impairments

Older people (seniors 65+)

Youth (aged 15 and under, unable to drive)

Populations with Limited English Proficiency (LEP)

TDI uses scored intervals for the relationship between fatal and serious injury crashes and the total population: 0-20%, 20-40%, 40-60%, 60-80%, and 80-100%. A low TDI score (0-20%, 20-40%) indicates that these populations have better access to transportation options. A high TDI score (60-80%, 80-100%) indicates that people in these areas have limited access to reliable transportation options.



TDI for the CAMPO Region

SAFETY DATA SPOTLIGHT

11% of population with a high TDI score are overrepresented in 20% of fatal and serious injury crashes.

The Social Vulnerability Index (SVI) is a tool developed by the Centers for Disease Control and Prevention (CDC) to help identify communities needing support before, during, and after human-made and natural disasters. The SVI tool's comprehensive assessment helps identify communities with the greatest safety needs, using a range of socioeconomic and infrastructure factors to understand community exposure:

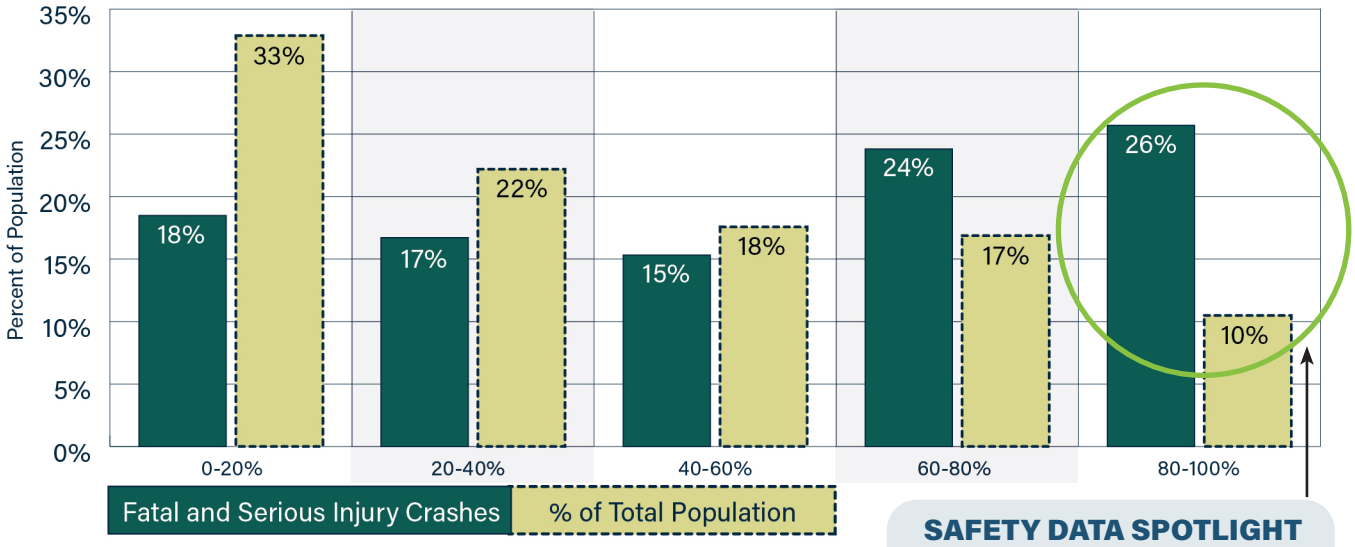
» Socioeconomic status

» Household composition

» Minority status and language

» Housing and transportation

Population vulnerability is assessed using a 0% to 100% index to represent the least vulnerable group (0-20% index) and most vulnerable groups (60-80% and 80-100% index).



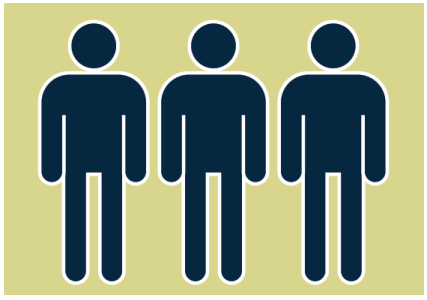
SVI for CAMPO Region

SAFETY DATA SPOTLIGHT

10% of the population who experience great social vulnerability are overrepresented by 26% in fatal and serious injury crashes.

Key Findings and Considerations

Identifying demographic groups and geographic areas disproportionately affected by different crash types enables the Blueprint to provide targeted and effective interventions. Some key considerations include:



Race and Ethnicity: Fatal and serious injury crash rates are particularly high among the Black population across all counties in the CAMPO region. Disparities are most pronounced in Franklin and Granville counties when considering the share of total population. Similarly, Hispanic populations in Johnston, Granville, Franklin, and Chatham counties are overrepresented in crash rates, with the most significant safety disparities in Chatham, Harnett, and Johnston counties.

Age: Individuals aged 25-64 in all counties, except Wake, are overrepresented in fatal and serious injury crashes. This age group shows the most significant disparities in Granville, Harnett, and Johnston counties. Additionally, older adults in Johnston, Harnett, and Franklin counties face higher rates of fatal and serious injury crashes compared to state averages, with Franklin County older adults being notably affected.

Sex: Males are overrepresented in fatal and serious injury crashes in all counties except for Wake, relative to their share of the population, indicating widespread safety disparities across the region.

There is a clear correlation between high social vulnerability and transportation disadvantage, and higher fatal and serious injury crash rates. Areas with high overlaps of TDI indicators and severe crash rates, such as East, Northeast, and Southeast of Downtown Raleigh in Wake County, exemplify this pattern. These areas frequently encompass communities facing limited access to transportation resources, elevated poverty rates, and other social challenges, exacerbating their risk of fatal and serious injury traffic crashes.

4

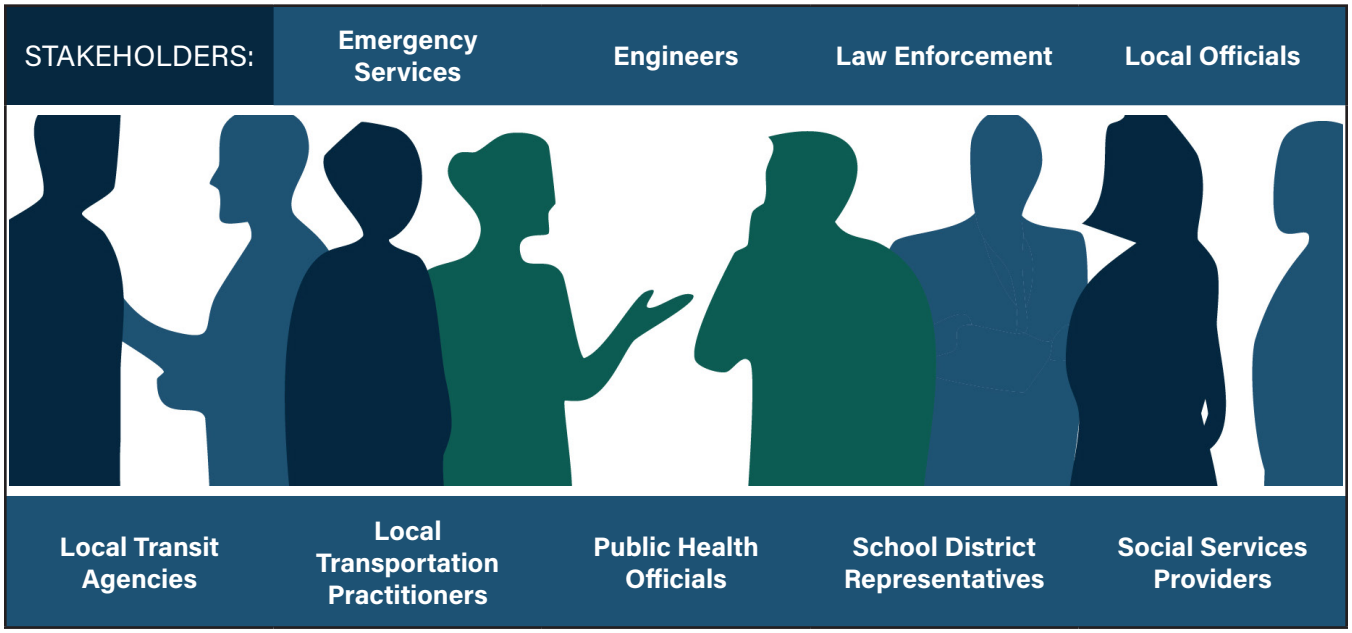
Stakeholder and Public Engagement

Every day, CAMPO residents use the region's roadways, bike lanes, and sidewalks to travel from one location to another. The travel experiences shared by residents in the CAMPO region can support the Blueprint's data-driven analysis and inform the strategies and actions created in the plan. The Blueprint process engaged local leaders, stakeholders, and the public through various outlets to learn from everyday roadway users across the region.

Engagement Activities

Stakeholder Engagement

Every resident in the CAMPO region contributes to building a culture of traffic safety. For the basis of this Plan, CAMPO defined stakeholders as safety practitioners from a diverse set of specialties including:



The project team outlined two phases to stakeholder engagement. Each phase was an opportunity to actively listen to people that use the streets and roads in the CAMPO region daily for a variety of trip purposes. The two phases were:

Phase 1: *Discover* Inform stakeholders and the public of findings from safety data analysis and seek input and collaboration to develop goals and identify places where investment is needed most.

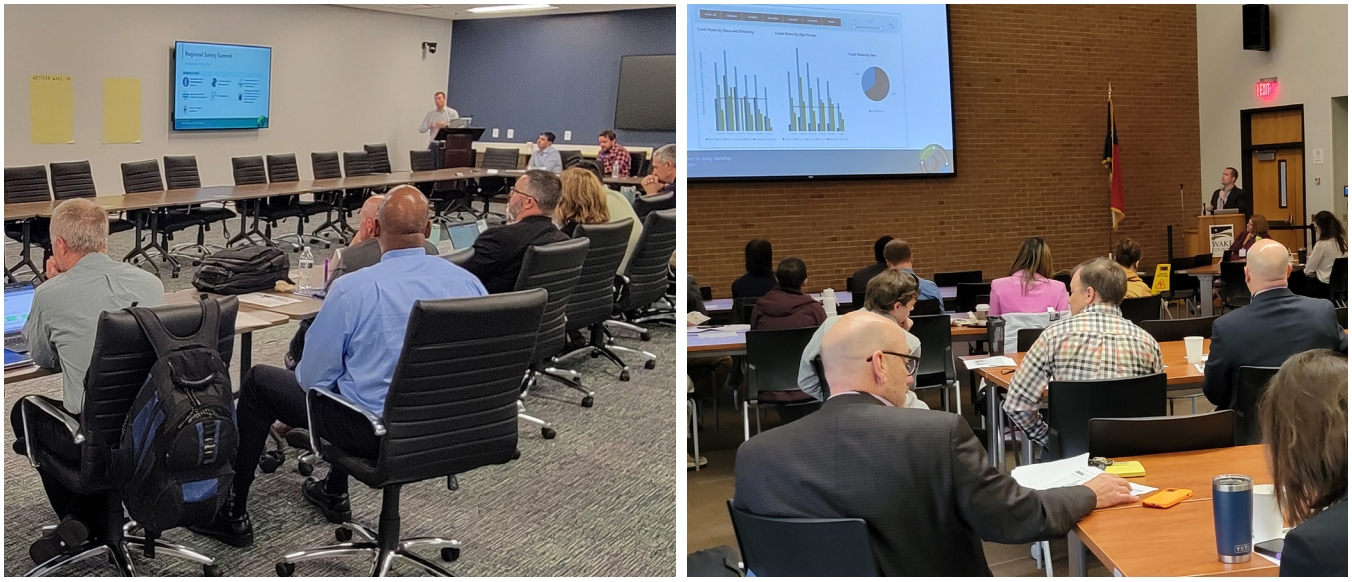
Phase 2: *Collaborate* Review findings and input from Phase 1 to allow for meaningful feedback on draft action plan recommendations—projects, policies, and programs.

Stakeholder engagement began with a Safety Kickoff Meeting in March 2024 to share the Blueprint's initial data analysis findings and to outline the projected monthly progress. Soon after, in May through June 2024, CAMPO held the first round of technical advisory team (TAT) meetings with stakeholders to learn more about the transportation safety concerns in their local contexts and to inform stakeholders of the safety planning process. CAMPO reconvened the second round of TAT meetings in late January to mid-February 2025 to provide feedback on the plan's progress and share strategies and actions for implementing safety in their areas.

The following list identifies the locations and dates of the TAT meetings and the subregion of stakeholders it included.

Location	1st TAT meeting	2nd TAT meeting
Youngsville (Franklin TAT)	May 13th, 2024	February 12th, 2025
Butner (Granville TAT)	June 7th, 2024	January 28th, 2025
Lillington (Harnett TAT)	June 7th, 2024	January 30th, 2025
Smithfield (Johnston TAT)	May 23rd, 2024	February 11th, 2025
Garner (Central Wake TAT)	May 13th, 2024	February 6th, 2025
Wake Forest (Northeast Wake TAT)	May 31st, 2024	February 3rd, 2025
Cary (Western Wake TAT)	May 15th, 2024	January 23rd, 2025 (virtual)

CAMPO also interviewed the NCDOT Rail Division to identify opportunities to collaborate and address rail crossing safety concerns across the region and discuss the Crossing Hazard Elimination Program. The NCDOT Rail Division identifies, prioritizes, develops, and justifies rail crossing safety projects in the CAMPO region. Actions in the Near-Term Action Implementation Plan provide opportunities to address safety at at-grade rail crossings in the CAMPO region through traffic separation studies and rail safety education programs.



Stakeholders at TAT meetings

Local Government Leadership

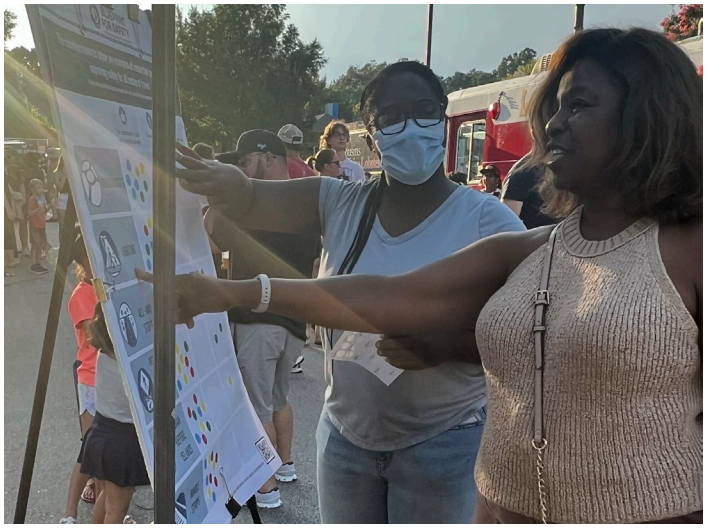
Over the course of the plan's development, CAMPO incorporated feedback from local leaders and officials after Technical Coordinating Committee (TCC) and Executive Board Meetings. At these meetings, local government leaders met and provided feedback on the goals, targets, and strategies included in the Blueprint. In another effort to engage with local leadership, CAMPO met with Town and City Councils and the County Commission to present on the Plan's progress from September through October 2024.

Community Outreach

In March 2024, CAMPO publicly launched the Blueprint for Safety Project Website to help local leaders, stakeholders, and the public learn about the regional multimodal Blueprint, the progress of the plan, and how the public can get involved.

CAMPO planned 19 engagement events to connect the public with local transportation safety initiatives and learn from the community's local experiences with transportation safety issues. Engagement event coordination lasted from June 2024 through September 2024, focusing on planning events in demographically and geographically different locations to hear from the diverse groups that live throughout the region. At each engagement event, CAMPO created infographic boards to initiate conversations about safety in the region and learn more about residents desired safety improvements.

CAMPO also conducted an online survey to collect feedback from the public. The survey, which was available through the website, opened in May 2024 and closed in September 2024. Participants were asked about their roadway safety observations, potential roadway safety strategies for consideration, their personal experiences with roadway safety, and were asked to provide some demographic information.



CAMPO Community Outreach

Engagement Outcomes

Seven-hundred and twenty-six (726) CAMPO residents responded to the survey.
Region respondents most frequently included:

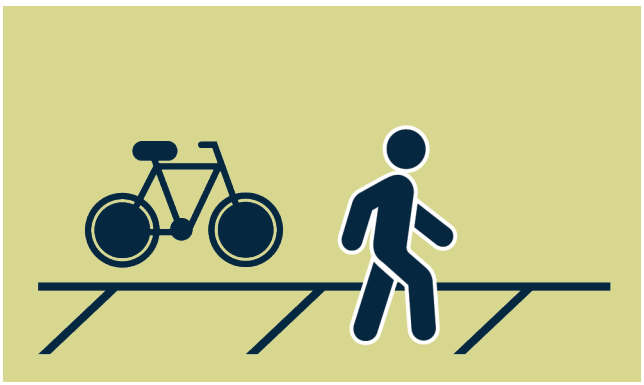
Women (55%)

People in the 25-64 age group (76%)

People who identify as white (95%)

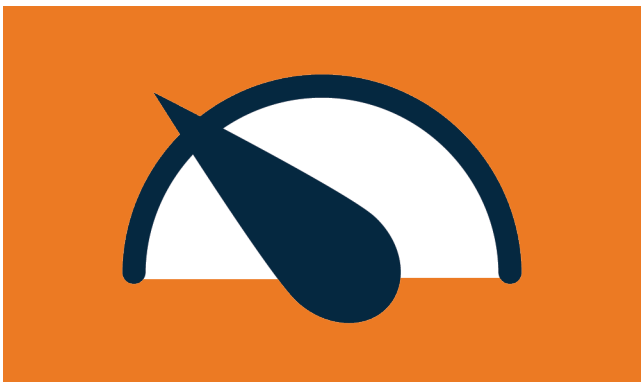
The survey respondents shared their unique experiences with transportation safety through prompted questions or open comment opportunities in the survey and engagement events. Although every transportation experience is unique to the user, the following themes emerged:

Interest in intersection improvements.



Pedestrian and bicyclist facilities are limited.

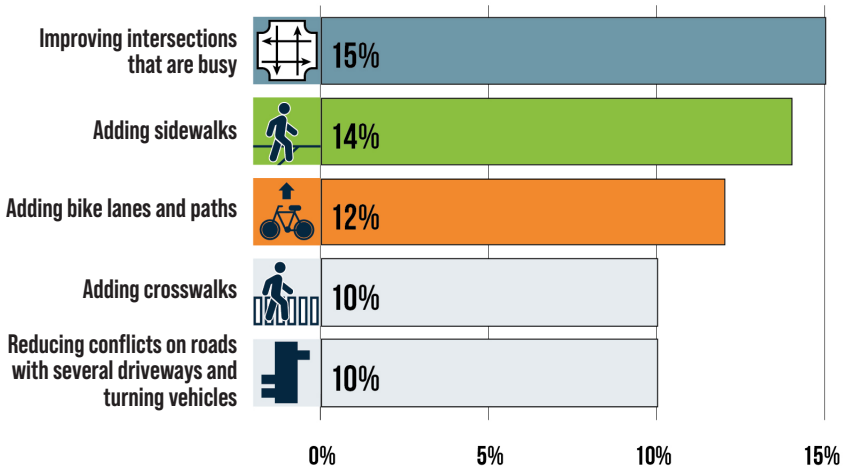
Regional population growth may exceed the current transportation network capacity.



Speeding and aggressive behaviors on roadways are a major concern from residents.

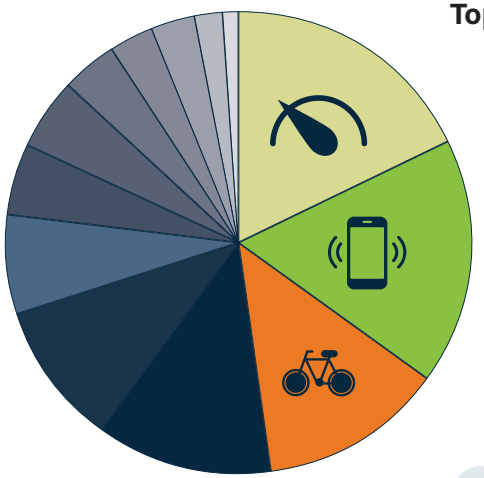
For More Information
Review the *Engagement Summary Framework Memorandum* for additional details on the engagement process.

Top Safety Improvements: Survey Responses:



Survey respondents ranked 18 safety improvement types for those they most want to see implemented in the region. The graph 'Top Safety Improvements: Survey Responses' shows safety improvements ranked per how frequently (percent of responses) it was selected as a top priority.

Top Safety Concerns: Survey Responses:



- 18% Speeding
- 17% Distracted drivers, pedestrians, or bicyclists (smart phone use, earbuds, etc.)
- 13% Not enough safe places for people to walk, bike, or cross the road
- 12% People driving do not stop or yield when they should
- 10% Red light/stop sign running by drivers
- 7% Complex and busy intersections
- 5% Turning conflicts along busy roads
- 5% Other
- 4% Lack of roadway lighting at night
- 3% Impaired driving, walking, or bicycling (alcohol, marijuana, etc.)
- 3% Roads with poor visibility or sharp curves
- 2% People crossing outside of the crosswalk
- 1% Red light/stop sign running by people biking, scooting, skateboarding, etc.

Survey respondents ranked safety concerns they have observed or experienced in the region. The graph 'Top Safety Concerns: Survey Responses' shows safety concerns ranked per how frequently (percent of responses) it was selected as a top priority.

"Our roadways have been overdesigned to forgive the mistakes of drivers, allowing them to drive faster with minimal consequences."

"People in the city see cyclists as a problem instead of part of the congestion solution."

"We need a hands-free law. By far, distracted driving is what makes the roads unsafe."

"The fewer cars on the road, the safer it is."

5

Crash Reduction Framework

CAMPO's Goal for Safety

CAMPO Safety Goal:
A 50% reduction of fatal and serious injury crashes by 2055 and ultimately moving towards zero fatal and serious injury crashes.

CAMPO Executive Board endorsed the goal on April 16, 2025.

A key principle of the Safe System Approach is death and serious injuries are unacceptable. These crash types can be prevented by proactively addressing safety. Historically, CAMPO adopted annual safety targets based on the NCDOT goal, as described in the SHSP: to reduce fatalities and serious injuries by half by 2035, ultimately moving towards zero by 2050. After researching different approaches to goal and target setting and considering these recent trends, CAMPO decided to set a goal of reducing fatal and serious injury crashes by half by 2055, aligning with the 2055 MTP. This will help move towards the goal of zero fatalities and serious injuries with the implementation in the 2055 MTP and creation/implementation of the 2060 MTP. While the goal is to move towards zero, the CAMPO Executive Board, on April 16th, 2025, established a process for calculating and reporting annual safety targets for each of the FHWA performance measures, beginning in 2026.

For More Information
Visit the CAMPO *Goal and Target Setting Recommendation Memorandum* for additional details about the goal and target setting process.

Performance Measures

States and MPOs are required to coordinate and set targets annually for five safety performance measures as part of the FHWA's Safety Performance Management (Safety PM) implementation [23 CFR Part 490.207]. The FHWA-required safety performance measures include:

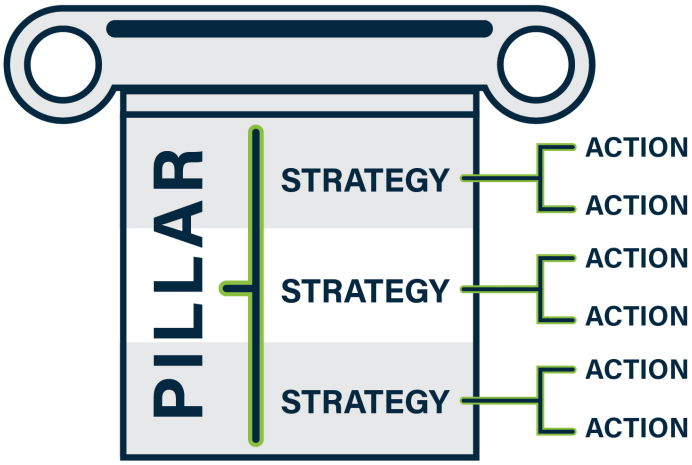
1. Number of fatalities
2. Fatality rate (per 100 million VMT)
3. Number of serious injuries
4. Serious injury rate (per 100 million VMT)
5. Number of non-motorized fatalities and serious injuries

CAMPO identified additional performance measures to monitor how the region tracks and evaluates progress. Performance measures include measures of outputs (i.e., levels of activity) and measures of outcomes (i.e., levels of effectiveness). Performance measures are further detailed for each near-term action included in the Blueprint Crash Reduction Framework.

Organization of the Blueprint Crash Reduction Framework

The Pillars support the Crash Framework structure, and identify Strategies and Actions to reach the Blueprint's goal.

- **Pillars:** Represent a category of work to improve Policy, Safety Culture, and Projects to intentionally address safety needs.
- **Strategies:** Describes a vision for how they support each of the pillars.
- **Actions:** Outlines the work that CAMPO, its local governments, NCDOT, and other partners will do to implement the Blueprint. Actions are stratified into horizons of work: near-term and long-term.



Timelines for Implementation

The actions outlined in the Crash Reduction Framework are selected to reach the goal of a 50% reduction in fatal and serious injury crashes by 2055. The Actions are categorized into near-term and long-term actions.

2025 – **2030**

Near-term: In the first five years (2025-2030) of implementing the Blueprint, partners will increase installation of low-cost countermeasures, launch education programs addressing key crash types, and continue to develop safety projects through the NCDOT HSIP. The focus will include systemic improvements for lane departure, intersection, pedestrian, and bicyclist related crashes. These improvements will be implemented along the HIN at locations with identified crash risks and safety needs.

2031 – **2055**

Long-term: Between 2031 and 2055, NCDOT, CAMPO, and its member agencies will continue implementing systemic improvements, larger-scale improvements like State Transportation improvement Program (STIP) projects, and newly developed safety projects identified for the 2060 CAMPO MTP update and as part of corridor studies, sub-area plans, local plans, and new SPOT projects. All plans and projects will use Blueprint crash risk data and field reviews to proactively identify appropriate typical road sections, design speeds, and crash countermeasures. Safety projects will continue to be developed and implemented by NCDOT 's HSIP, and local agencies will continue targeted and sustained enforcement to address issues such as impaired driving and speeding, and unbelted occupants or children not placed in car seat restraints. Decisions will be guided based on CAMPO policies that member agencies and NCDOT follow for developing Complete Streets and setting appropriate design speeds or posted limits along local and state system roads. Implementation is expected to be widespread across all projects implemented in CAMPO, resulting in a faster reduction in crashes.

The strategy tables list all of the actions that CAMPO, NCDOT, and local governments will implement. These strategies and actions were developed on several factors: stakeholder priorities, ease of implementation in the first 5 years following the adoption of the Blueprint, and effectiveness to reduce fatal and serious injury crashes within the plan's emphasis areas. The *Near-Term Action Implementation Plans* detail the recommended next steps, performance measures, and lead implementer agency. As near-term actions are implemented, CAMPO, NCDOT, and local agencies will implement the long-term actions.

Implementation Leads

The Blueprint identified one or more types of agencies or partners who may lead a specific Action identified in the Crash Reduction Framework.

- **CAMPO** will lead actions that involve regional coordination, include regional transportation planning activities, or affect discretionary funding programs that CAMPO administers.
- **Local agencies** including towns and counties in the region, will lead actions within their jurisdiction to oversee such as including safety in local Capital Improvement Programs (CIPs), maintenance projects, local plans and studies; pursuing competitive grants for increased capacity to deliver safety projects and enforce violations to traffic laws.
- **NCDOT** will lead actions that require coordination with the TSU, such as performing Road Safety Assessments (RSAs) on state-system roads, pairing funds with the HSIP for project implementation, and setting annual safety targets.
- **Other partners**
  - The Business Community may provide insights into employee policies for vehicle operations.
  - Not-for-Profit Organizations may be strategically aligned to advocate for new countermeasures.
  - Community Organizations may be important partners when developing safety education programs.

Pillar 1: Safety Policy

Strategy 1: Adopt policies to promote the Safe System Approach.	
Term	**Action**
Near-Term	Action 1: Create model approaches for updating transportation analysis methods to identify and incorporate multimodal safety strategies.
Near-Term	Action 2: Develop zoning and land development standards that proactively include transportation networks and countermeasures for all roadway users.
Near-Term	Action 3: Improve accuracy and timeliness of crash and safety data through training and sharing best practices for crash reporting with local police departments and local agency transportation practitioners.
Long-Term	Action 4: Update transit plans and develop guidance for integrating safety data into locating and improving safe access to transit and school bus stops.
Long-Term	Action 5: Create intersection alternative selection guidance to improve consistency in the design of intersections and reduce risks for severe crashes at intersections.
Long-Term	Action 6: Incorporate or improve countermeasure selection and design guidance into local roadway design standards and project development procedures.
Long-Term	Action 7: Develop local traffic calming programs and guidance for quick build projects on local streets.
Long-Term	Action 8: Develop a model Complete Streets project and policy development guide.
Long-Term	Action 9: Develop Safe Driver workplace incentives, recognition for good practices, and fleet management policies for local agencies to improve corporate or organization-wide traffic safety culture.

Pillar 2: Safety Culture

Strategy 1: Promote the benefits of a safer transportation system to CAMPO residents.	
Term	**Action**
Near-Term	Action 1: Evaluate the performance of safety projects and experimental treatments to increase understanding of effectiveness of countermeasures.
Near-Term	Action 2: Collaborate with agencies in healthcare, education, and housing to describe the benefits of improving transportation safety and the costs to society for lives lost or incapacitating injuries resulting from crashes.
Near-Term	Action 3: Develop a culturally-sensitive regional education campaign, including a social media calendar and outreach events, to highlight traffic safety issues and encourage safer travel.
Long-Term	Action 4: Hold "open streets" events or create pop-up "traffic gardens" across the CAMPO region to engage with bicyclists and pedestrians of all ages and abilities, teach basic road safety skills, and share information relevant to regional safety initiatives.
Long-Term	Action 5: Include questions in the MTP survey about public awareness of safety problems and understanding of proven countermeasures.

Strategy 2: Cultivate a local safety culture.	
Term	**Action**
Near-Term	Action 1: Establish a Regional Safety Committee of local governments in the CAMPO region to meet quarterly, discuss and share safety project resources, needs, successes, and ideas.
Near-Term	Action 2: Review and report on implementation progress and performance measures included in the Blueprint for Safety Plan annually.
Long-Term	Action 3: Update the Blueprint for Safety Plan every 5 years, assessing recent trends and implementation progress.
Long-Term	Action 4: Coordinate with Conference of District Attorneys to identify additional courses that can be developed and offered to encourage safer driving.

Pillar 3: Safety Projects

Strategy 1: Implement a "Safety in All Projects" approach.	
Term	**Action**
Near-Term	Action 1: Develop and distribute guidance to consider context, crash risk, crash history, and crash severity when developing or reviewing STIP projects, LAPP projects, and other local transportation projects.
Near-Term	Action 2: Coordinate between local and regional safety plans to prioritize transportation safety needs.
Long-Term	Action 3: Create a regional technical assistance program to provide ongoing support to local agencies for implementing safety strategies.
Long-Term	Action 4: Collaborate with the NCDOT Rail Division to conduct Traffic Separation Studies (TSS) at highway-rail crossings in the CAMPO region.

Strategy 2: Enact a Safe Speed Management Program.	
Term	**Action**
Near-Term	Action 1: Support statewide efforts to develop guidance for setting and managing speeds in projects based on context, roadway user types, and crash risk.
Near-Term	Action 2: Perform speed studies along roads with identified speed problems to identify potential safety improvements.
Long-Term	Action 3: Conduct targeted enforcement and public engagement in areas with patterns of excessive speeding.

Strategy 3: Develop highly effective safety projects.	
Term	**Action**
Near-Term	Action 1: Advocate for additional and leverage state and federal funding to implement safety projects and low-cost countermeasures.
Near-Term	Action 2: Set local budget targets for and increase local capital spending on safety projects.
Long-Term	Action 3: Create "bundled" or grouped projects of systemic improvements for implementation through LAPP or discretionary grants.
Long-Term	Action 4: Create inventories of roadway features to develop systemic (multi-site or widespread) safety projects for focus crash types.
Long-Term	Action 5: Apply safety data and improved screening methods in the Roadway Prioritization Tool to all proposed 2060 MTP projects to refine the safety needs in project proposals.

Near-Term Action Implementation Plans

Near-term actions are intended for implementation within the first 5 years following the adoption of the Blueprint. The near-term actions are described in further detail in the implementation plans including recommended next steps, performance measures, and a lead implementer agency.

Pillar 1: Safety Policy

What laws, regulations, or guidelines can help promote the safer movement of all road users? At the regional and local levels, safety policy is critical to addressing the unique safety challenges posed by regional and local diversity in geography, traffic patterns, and communities. Safety policies can include, but are not limited to, setting standards for private developments, creating a prioritization process for infrastructure improvements, and adopting workplace incentives. The Blueprint identifies several actions available to local agencies to implement safety policy within their jurisdictions with sample documentation that can be modified according to local attributes.

Strategy 1: Adopt policies to promote the Safe System approach.

CAMPO and its member agencies recognize the importance of developing and adhering to policies and guidance to promote consistent street design based on context, roadway users, appropriate speeds, and minimized risk for fatal and serious injury crash outcomes.

The following are priority actions for improving the built environment as part of agency policy for safer road design and safer speeds.

Action 1: Create model approaches for updating traffic impact analysis methods to identify and incorporate multimodal safety strategies.

As the CAMPO region continues to develop and grow rapidly, more development and traffic is added to the roadway network. Increased traffic increases potential exposure to crashes, and more activity in high-risk areas may increase the risk for crash types, such as pedestrian or intersection-related fatal and serious injury crashes.

Next Steps:

- CAMPO will research best practices for including multimodal safety into the traffic impact analysis process. Examples may include countermeasures to address anticipated safety problems as a result of increased traffic exposure.
- CAMPO will identify at least one local government to champion the development of a model policy to include best practices for multimodal safety in traffic impact analysis.
- Local governments will evaluate and share findings with other agencies in the region from using the model policy language in local traffic reviews.

Performance Measure(s): # of agencies with traffic impact analysis methods including safety

Lead Implementer(s): Local governments

Action 2: Develop zoning and land development standards that proactively include transportation networks and countermeasures for all roadway users.

Proactively designing streets and roads as part of development projects will minimize the future need for reactive safety improvements.

Next Steps:	» CAMPO will identify best practices or case studies within the region for including safety in local zoning, subdivision ordinances, unified development ordinances and street design standards. » CAMPO will identify at least one local government to champion the development of a fact sheet or case study about applying proven safety countermeasures in private development. » Local governments will evaluate and share findings with other agencies in the region from application of the standards to development projects.
Performance Measure(s):	# of agencies with development standards referencing countermeasures and roadway designs including speed management
Lead Implementer(s):	Local governments

Action 3: Improve accuracy and timeliness of crash and safety data through training and sharing best practices for crash reporting with local police departments and local agency transportation practitioners.

Local and state law enforcement agencies are encouraged to submit crash reports electronically and following statewide reporting structures. Regional outreach to law enforcement to understand progress and barriers in submitting crash reports will increase awareness and quality of crash report data.

Next Steps:	» CAMPO will work with NCDOT to summarize best practices and current performance with crash reporting. » Local governments (towns, cities, and counties) will host meetings or forums including law enforcement and EMS staff to discuss progressing the submittal of crash and safety data. » CAMPO will ask local governments to summarize discussions about crash reporting and submitting other safety data.
Performance Measure(s):	# of trainings completed
Lead Implementer(s):	CAMPO and local governments

Pillar 2: Safety Culture

How can regional and local agencies create communities with collective attitudes, behaviors, and values regarding safety in transportation systems? An institutionalized safety culture encompasses how safety is prioritized, perceived, and practiced in a region and locality, and it requires involvement from all stakeholders to collaborate on common safety goals. If residents within the CAMPO region engage in a robust safety culture, this results in proactive risk management concerning behavior-related transportation safety challenges and a collective commitment to building more resilient transportation networks. The Blueprint highlights opportunities to promote the benefits of safer transportation systems and templates to commit to tracking safety goals.

Strategy 1: Promote the benefits of a safer transportation system to CAMPO residents.

CAMPO and its member agencies make decisions about the transportation network, resulting in various benefits and impacts to individuals and entire populations; these outcomes are measured and are shared with partners and the community.

The following are priority actions for promoting the community benefits and projects developed primary for safety across the region.

Action 1: Evaluate the performance of safety projects and experimental treatments to increase understanding of the effectiveness of countermeasures.

As the CAMPO region implements more safety projects and programs, evaluating the effectiveness will help CAMPO track the Blueprint's progress towards its goal. Sharing effectiveness of countermeasures can lead to more local governments installing safety countermeasures.

Next Steps:	» CAMPO will partner with NCDOT to learn about guidance for selecting standards for implementing, and current NCDOT practices for evaluating countermeasures for small and large scale projects. » CAMPO will partner with at least one local government who will champion and pilot test an experimental countermeasure. » The local government will collect before and after data to calculate the effectiveness of the countermeasure. » The local government will partner with CAMPO to develop a case study/fact sheet highlighting the benefits of the experimental countermeasure. CAMPO will include this experimental evaluation with broader information from NCDOT about the effectiveness of proven safety countermeasures as part of training for CAMPO elected leadership.
Performance Measure(s):	# of case studies developed to highlight safety evaluations
Lead Implementer(s):	CAMPO and local governments

Action 2: Collaborate with agencies in healthcare, education, and housing to describe the benefits of improving transportation safety and the costs to society for lives lost or incapacitating injuries resulting from crashes.

In addition to preventing fatalities and serious injuries, a more connected and safer transportation network leads to additional health and societal benefits. Sharing these benefits with the regional partners and residents can help foster public safety culture and buy-in to shared values and behaviors.

Next Steps:

- CAMPO will partner with local public health officials to gather and share the public health benefits of safer transportation networks. CAMPO will gather information on the cost to society for lives lost or serious injuries in crashes and reach out to the Independent Insurance Agents of NC to communicate financial benefits of improved roadway safety to the public.
- CAMPO will develop a fact sheet or social media post(s) highlighting the costs to society for traffic fatalities and serious injuries, as well as the benefits of safer travel habits and choices.
- CAMPO will identify at least one local government who will champion sharing this information either on their social media pages or at outreach events.

Performance Measure(s): # of social media impressions

Lead Implementer(s): NCDOT, CAMPO, and local governments

Action 3: Develop a culturally-sensitive regional education campaign, including a social media calendar and outreach events, to highlight traffic safety issues and encourage safer travel.

As more people move to the CAMPO region, regional safety education campaigns can help reach new residents and remind existing road users about the part they play in safer travel. Including representatives from communities of concern and making outreach materials available in non-English languages can help to reach the region's most vulnerable populations.

Next Steps:

- CAMPO will work with the North Carolina Vision Zero program, who develops social media campaigns, to highlight different safety messages throughout the year.
- CAMPO will partner with transit agencies and pedestrian advisory groups to share driver information on interacting with other roadway users.
- CAMPO will feature an education campaign focused on car seat donations and installations.
- CAMPO will develop and distribute non-English language translations for transportation safety educational materials and community outreach programs to local governments.
- CAMPO will partner with schools in the CAMPO region to highlight safer younger driver practices in a campaign focused on the dangers associated with speeding, distraction, and driver inexperience.
- CAMPO will create and share rail safety education and outreach programs using the NCDOT BeRailSafe and Operation Lifesaver programs as resources.

Performance Measure(s): # of education materials produced and distributed

Lead Implementer(s): CAMPO

Strategy 2: Cultivate a local safety culture.

CAMPO and its member agencies publicly commit to pursuing "towards zero fatalities and serious injuries" by adopting a Safe System Approach and recognizing that safety is a shared responsibility.

The following are priority actions for improving local safety culture through regional collaboration and committed oversight.

Action 1: Establish a Regional Safety Committee of local governments in the CAMPO region to meet quarterly and discuss and share safety project resources, needs, successes, and ideas.

Regular communication is needed to foster the Blueprint implementation, and to continue safety conversations with local governments, law enforcement, and advocacy organizations.

Next Steps:

- CAMPO will leverage members of the TCC and Executive Board, as well as the TAT participants from the Blueprint, to develop a workgroup focused on sharing safety related data, collaborate with non-traditional safety partners (i.e., EMS and health care), report out on successes, and brainstorm innovative solutions.
- CAMPO will convene the workgroup on a regular (i.e., quarterly) basis and share resources with members.
- Members of the workgroup will identify stakeholders or residents impacted by or involved in traffic crashes who can share personal stories or messages.
- CAMPO will describe the workgroup's activity in the Blueprint annual report.

Performance Measure(s): # of workgroup meetings

Lead Implementer(s): CAMPO

Action 2: Review and report on implementation progress and performance measures included in the Blueprint for Safety Plan annually.

Annually reporting on the Blueprint allows CAMPO to track progress towards achieving a 50% reduction in fatal and serious injury crashes by 2055.

Next Steps:

- CAMPO will encourage local agencies to identify and track CAMPO Blueprint for Safety goals in their local projects, plans, and policies.
- CAMPO will coordinate with NCDOT to develop annual safety performance measures and targets consistent with the MPO safety plan goal for reducing serious injury and fatal crashes.
- CAMPO will work with NCDOT to monitor progress and track it in the Blueprint's annual report.

Performance Measure(s): # of annual reports completed

Lead Implementer(s): CAMPO

CAMPO will develop an Annual Report, building on a template created as part of the Blueprint.

Pillar 3: Safety Projects

How can CAMPO and local agencies within the region implement safety considerations in projects from inception to execution? A proactive approach to addressing safety in regional and local transportation networks begins with project selection and design processes and utilizes funding streams designated for safety projects. The Blueprint provides tools and templates to identify high-injury and high-risk locations, coordinate successful applications for safety funding, and guide project development with measures of safety for all roadway users.

Strategy 1: Implement a "Safety in All Projects" Approach

CAMPO and its member agencies commit to incorporating safety into all plans and projects by considering the needs of all roadway users and adopting a proactive approach to addressing safety when developing transportation projects.

The following are priority actions for an approach that incorporates safety into all projects.

Action 1: Develop and distribute guidance to consider context, crash risk, crash history, and crash severity when developing or reviewing large scale NCDOT and local transportation projects.

As part of the scoping process for projects identified for the State Transportation Improvement Program (STIP), selected by CAMPO's Locally Administered Projects Program (LAPP), or as local capital improvements, CAMPO will use tools developed for the Blueprint to identify safety needs and develop potential safety improvements.

Next Steps:

- CAMPO will apply the Safety Scoping Process to all STIP and LAPP projects. CAMPO will also encourage local governments to apply the process to local capital projects.
- NCDOT will provide technical assistance or training to CAMPO and local governments considering performing Road Safety Assessments (RSAs).
- CAMPO will partner with NCDOT to perform a formal RSA or other safety review for STIP or LAPP projects.
- NCDOT will provide CAMPO example scopes of work or guidance for performing RSAs or integrating safety in corridor studies and area plans.

Performance Measure(s): # of projects reviewed using Safety Scoping Process and/or RSAs

Lead Implementer(s): NCDOT and CAMPO

Action 2: Coordinate between local and regional safety plans to prioritize transportation safety needs.

As local governments develop their own safety action plans, coordinating across plans provides opportunities to identify overlaps and clarify local priorities for safety projects and programs.

Next Steps:

- Local governments in the CAMPO region with a completed local safety plan will communicate data and methods used to identify safety problems for proposed safety projects submitted to CAMPO for near-term or long-term implementation.
- CAMPO will continue to work with local governments who are developing or updating a local safety plan to share data and identify potential overlap/inputs from the Blueprint.
- Local governments will develop locally-specific safety plans or implementation plans, considering the Blueprint framework and safety data.

Performance Measure(s): # of local agencies with local safety plans

Lead Implementer(s): CAMPO and local governments

Strategy 2: Enact a Safe Speed Management Program

CAMPO and its member agencies make decisions about the transportation network and safety and can influence proposed design speeds for transportation projects, enforce the speed limits, and raise awareness to the community about the dangers of speeding.

The following are priority actions to implement or reinforce safer speeds across the region.

Action 1: Support statewide efforts to develop guidance for setting and managing speeds in projects based on context, roadway user types, and crash risk.

NCDOT is developing speed setting guidance and will be a resource to CAMPO and local governments considering changes to speeds on locally-owned roads.

Next Steps:

- CAMPO, or representative member agencies, will partner with NCDOT to inform guidance for setting and managing speeds.
- NCDOT will disseminate information about best practices for setting and managing speeds based on context, road user type, and crash risk.
- Local agencies will work with NCDOT to integrate speed management and speed setting guidance into project scoping procedures.
- NCDOT and local governments will create case studies describing approaches and results from projects designed to manage speeds.

Performance Measure(s): # of project case studies highlighting speed management approaches

Lead Implementer(s): NCDOT and local governments

Action 2: Perform speed studies along roads with identified speed problems to identify potential safety improvements.

The Blueprint's severity analysis and risk analysis for speed-related crashes can be a starting point for local governments to identify areas with potential speeding concerns.

Next Steps:

- NCDOT and at least one local government will conduct a comprehensive speed study on a major arterial or complex road with speed concerns.
- The local government(s) will coordinate with local law enforcement or use other remote data to describe speeding issues along the road(s) being studied.
- Local governments will report on best practices for collecting and analyzing speed data for speed studies.

Performance Measure(s): # of speed studies completed

Lead Implementer(s): NCDOT and local governments

Strategy 3: Develop highly effective safety projects.

CAMPO and its member agencies make decisions about the transportation network and safety and can influence proposed design speeds for transportation projects, enforce the speed limits, and raise awareness to the community about the dangers of speeding.

The following are priority actions to develop highly effective safety projects in the region.

Action 1: Advocate for additional and leverage state and federal funding to implement safety projects and low-cost countermeasures.

Funding through state and federal programs for safety projects is limited. CAMPO and NCDOT can work together to increase the capacity to deliver safety projects by leveraging existing and additional federal funding opportunities such as STIP projects and competitive grants.

Next Steps:

- CAMPO will coordinate with the SPOT workgroup to increase scoring potential for projects including a primary focus on reducing fatal and serious injury crashes.
- CAMPO and NCDOT will develop a process to coordinate NCDOT safety funding, CAMPO discretionary funding, and/or local funding to increase capacity to deliver more safety improvements in the region.
- CAMPO will work with local governments to identify and pursue competitive grant funding for implementation of safety strategies.

Performance Measure(s): # of safety projects delivered in the region

Lead Implementer(s): CAMPO and local governments

Action 2: Set budget targets for and increase capital spending on safety projects.

Increased spending of local, regional, and statewide program funds on projects developed to address specific safety problems or carry out actions of the Blueprint is necessary to accomplish the region's goal for safety. Local governments, CAMPO, and NCDOT will monitor spending in line with a 10% (or greater) reduction in fatal and serious injury crashes by 2034 (see Blueprint safety goal).

Next Steps:

- Local governments will set and report targets consistent with the Blueprint for spending transportation-related CIP or other funds controlled by the agency on safety projects.
- Local governments and CAMPO will record recent and track future spending on safety programs as described in the Blueprint actions, project types included within the CAMPO Countermeasure Library, or other local safety plans.
- Local governments, CAMPO, and NCDOT will annually review progress made toward achieving spending targets and the types of projects and programs funded for improving safety.

Performance Measure(s): % of local transportation budget, % of CIP programmed, or % spent on safety projects and programmed

Lead Implementer(s): Local governments

Implementation Tools

Safety Scoping Process

The Safety Scoping process should enhance all proposed transportation projects, including STIP, SPOT, LAPP, and local projects. The Safety Scoping process follows four steps. Each step is listed below and described in more detail as part of the *Locations for Review* and *Defined Safety Problems*.

Locations for Review

Locations for safety reviews can be identified as part of another planning process (i.e., MTP) or roadway maintenance programs (i.e., HMIP), or by using indicators of a potential safety problem (i.e., crash pattern). NCDOT uses more detailed screening methods and warrants to identify candidates for safety projects in all contexts, but a large focus is in rural areas and on the NCDOT system. Locations along the locally maintained roadway system, within developed areas, and/or exclusive of access/controlled interstates and freeways should be priorities for review.

The Blueprint identified an initial list of priority locations for review. The list used the HIN, further limited the list to locations (segments or intersections) that are not on access-controlled highways or interstates, and selected locations within the incorporated limits of a town or city. The Blueprint defers to local safety plans to establish priorities for safety improvement; therefore, locations in the towns that have or are developing safety plans are excluded from the list.

As part of the Blueprint, a subset of the HIN was identified as priorities for review. Priority areas are located in municipal boundaries and are not located on access-controlled highways.

Defined Safety Problems

Data developed for the Blueprint are used to record information about locations screened for safety needs. It is important to document information such as if the location is located on the HIN or if it has been previously flagged by the NCDOT HSIP for review. To describe a specific safety problem or crash risk, review the selected location (intersection, segment or corridor) using data produced by the regional safety plan. Potential for certain crash types can be described by reviewing the "crash type risk" mapping tools developed for the region. A potential problem with speeding can be assessed by comparing the "crash severity" metric to the surrounding context. Document site characteristics, including facilities for pedestrians and bicyclists, and whether the location is managed for access, can inform countermeasure selection.

Example of Information Recorded in the Safety Scoping Process - Proportion of Fatal and Serious Injury Crashes by Age

Location Characteristics	Existing Conditions
High Injury Network	Type of HIN (See HIN maps)
Lane or Intersection Configuration	Number of Lanes at Segment or by Approach to Intersection (Review aerial imagery or visit site)
Traffic Volumes	Annual Average Daily Traffic (AADT) (See Exposure maps)
Speeds (Observed or Posted)	Posted or observed speeds as Miles Per Hour (See Severity maps for observed 85th weekday speeds)
Pedestrian Facilities	Sidewalk present?
Bicycle Facilities	Designated bike lanes or separated path present?
Transit Facilities	Bus stops or shelters present?
Land Use Context	Urban Core, Urban, Suburban, Rural Town or Rural (See Block Group Classifications – Context maps)
Access Management	Center median or restricted turning movements?
High Crash Risk Types	» Intersection » Intersection: Bike-Ped » Bicycle » Pedestrian » Lane Departure » Motorcycle » Speed-Related

For More Information
Visit the *Safety Data Packets for CAMPO and Local Agencies* for additional information on safety data and crash risks in the CAMPO region.

Implementation Strategies

Data reviewed and recorded earlier in the Safety Scoping Process are used to identify the potential safety problems and the extent of complexities at the location. This will help identify a potential implementation strategy. All implementation strategies include field review. Field review is critical for describing specific safety problems and identifying the feasibility of implementing specific countermeasures. Additional analysis may be necessary to evaluate the impacts of potential countermeasures on traffic operations, pedestrian / bicycle mobility, constructability, and implementation costs.

Implementation Strategies vary based on the location's complexity, volume of traffic, and type of crash risk identified earlier in the Safety Scoping process. Implementation Strategies applicable to a specific location under review include the following:

Corridor Analysis

This type of review typically applies to a series of intersections with notable crash patterns, when traffic analysis is required for determining feasibility of countermeasures, or if the safety improvements are likely to change the cross section of the roadway. A Corridor Analysis should be performed when a longer-term or proposed project is being scoped or evaluated for feasibility, such as a SPOT project proposal.

Intersection Improvement

This type of review is considered for specific intersections with skewed alignments or poor sight distance, where the traffic volumes or crash patterns at an intersection require traffic analysis to assess countermeasure alternatives, or where the safety improvements are likely to require additional right-of-way to implement. Intersection Review should be conducted for near-term capital projects, such as a STIP project.

Modernization

This type of project is typically considered for rural sections, where risk or history of lane departure crashes is high, or where there is an opportunity to coordinate low-cost safety improvements with a roadway maintenance project. Costly Modernization projects may require supplemental capital funding or be considered as SPOT project proposals.

Road Safety Assessment (RSA)

An RSA or other form of robust field review can quickly be implemented along specific sections or series of intersections where crash risk is moderate, where anticipated countermeasures do not require additional right-of-way, or where changes to the typical section are not expected to construct new curbing. The lower-cost treatments or countermeasures identified are considered for implementation as dedicated safety improvements or as part of near-term capital projects, such as a STIP project.

Corridor Analysis	Intersection Improvement	Modernization Study	Road Safety Assessment
Long-Term Linear Projects	Long-Term Intersection Projects	Modernization Projects	Maintenance Activities; Near-Term Projects
High Volume-High Risk for Bicycle or Pedestrian Crashes	High Volume-High Risk Intersections	High Risk for Lane Departure Crashes	Low Volume-High Risk (All Crash Types)
Systemic Application	Near-Term, Multi-Site Projects	High Risk All Crash Types	

Selecting an Implementation Approach: When to do What

When reviewing multiple locations or studying a large area, consider additional Implementation Strategies. Systemic Application, Speed Management, and Traffic Calming are examples of approaches suitable for several locations, screening the locations based on safety data, conducting simple field review, and conducting public engagement.

Systemic Application

Systemic safety treatments can be applied across the system, at all or most high-risk locations, where conditions meet warrants or demonstrate a need for the improvement. These treatments are typically low-cost improvements that do not require additional right-of-way or alter the configuration of the roadway. Implementation can be part of other project strategies or delivered as a "bundled" (multi-site) safety program. For example, installing WALK phases (and countdown pedestrian signals) to all signalized intersections in developed areas is an example of a systemic improvement addressing a safety problem in all high-risk areas where implementation is feasible.

Speed Management and Traffic Calming

Speed management is an overall approach to slow vehicle speeds to align with target speeds, selected based on local development context and the mix of roadway users. Identifying improvements for managing speeds can be done as part of other safety project implementation strategies, such as an RSA, or developed through a separate process including speed studies and public engagement. Consider strategies such as signal coordination for slower progression, roundabouts, and roadside streetscape elements for higher-speed roads carrying higher volumes of traffic.

Traffic calming treatments or devices are typically applied to local or lower-volume streets with target speeds less than 35 mph. Traffic calming devices typically change the horizontal or vertical alignment of the roadway-using geometric features like raised islands, curb extensions, and speed humps. Enhanced posted speed limit signage, pavement markings that narrow the width of the travel lane, or speed feedback signs can also be considered for roads of all design speeds.

Highway Safety Improvement Program (HSIP) Coordination

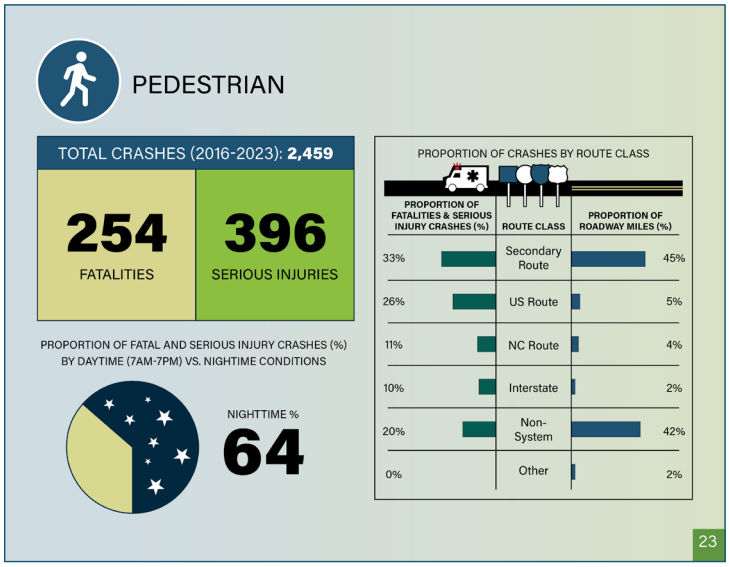
All public roads are eligible for review and improvement within the NCDOT HSIP. As part of the HSIP, the NCDOT TSU Regional Traffic Engineers (RTEs) coordinate with local governments to discuss safety concerns, perform safety reviews and discuss potential improvements.

All locations identified by the Blueprint should be discussed with the RTE prior to considering potential countermeasures.

TSU may have valuable information or insights—such as detailed crash analyses or findings from recent HSIP review—to share during coordination discussions with local agencies. TSU is also a technical and potential financial resource for performing safety reviews (such as RSAs).

Countermeasures

While reviewing the location in the field through an Implementation Strategy and considering the safety problems identified earlier in the process, potential countermeasures may be identified. Countermeasures are roadway or transportation features that address a specific safety problems. Proven Safety Countermeasures are among those that have been rigorously researched for expected reductions in crashes when implemented. The *Blueprint for Safety Countermeasure Library* is a resource to help agencies in the region match the identified safety needs (such as crash types) with potential engineering improvements. Countermeasures are grouped by countermeasure type—bicycle, intersection, lane departure, motorcycle, pedestrian, speed, and various—and were selected based on their overall effectiveness to address the types and severity of the safety problems at a specific location. The Countermeasure Library includes a "How to Use this Document" page explaining the countermeasures selected, where they can be implemented (i.e., urban or rural settings), expected crash reductions and types of crashes that could be reduced, the cost to implement, and it includes additional resource links for more information. It also highlights key fatal and serious injury crash statistics like percent occurring in daytime vs. nighttime or proportion of route class for each of the countermeasure types.



PEDESTRIAN

TOTAL CRASHES (2016-2023): **2,459**

254 FATALITIES

396 SERIOUS INJURIES

PROPORTION OF FATAL AND SERIOUS INJURY CRASHES (%) BY DAYTIME (7AM-7PM) VS. NIGHTTIME CONDITIONS

NIGHTTIME %

64

PROPORTION OF CRASHES BY ROUTE CLASS

PROPORTION OF FATALITIES & SERIOUS INJURY CRASHES (%)	ROUTE CLASS	PROPORTION OF ROADWAY MILES (%)
33%	Secondary Route	45%
26%	US Route	5%
11%	NC Route	4%
10%	Interstate	2%
20%	Non-System	42%
0%	Other	2%

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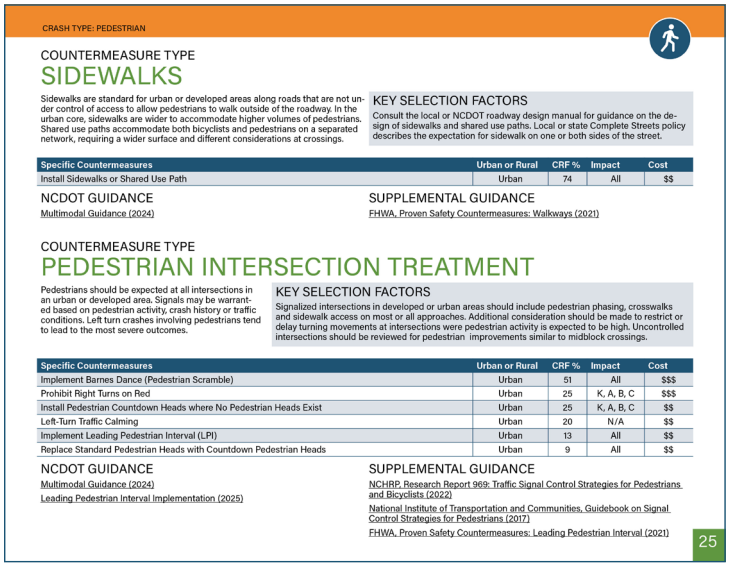

CRASH TYPE: PEDESTRIAN

COUNTERMEASURE TYPE

SIDEWALKS

Sidewalks are standard for urban or developed areas along roads that are not under control of access to allow pedestrians to walk outside of the roadway. In the urban core, sidewalks are wider to accommodate higher volumes of pedestrians. Shared use paths accommodate both bicyclists and pedestrians on a separated network, requiring a wider surface and different considerations at crossings.

KEY SELECTION FACTORS

Consult the local or NCDOT roadway design manual for guidance on the design of sidewalks and shared use paths. Local or state Complete Streets policy describes the expectation for sidewalk on one or both sides of the street.

Specific Countermeasures	Urban or Rural	CRF %	Impact	Cost
Install Sidewalks or Shared Use Path	Urban	74	All	$$

NCDOT GUIDANCE

Multimodal Guidance (2024)

SUPPLEMENTAL GUIDANCE

FHWA, Proven Safety Countermeasures: Walkways (2021)

COUNTERMEASURE TYPE

PEDESTRIAN INTERSECTION TREATMENT

Pedestrians should be expected at all intersections in an urban or developed area. Signals may be warranted based on pedestrian activity, crash history or traffic conditions. Left turn crashes involving pedestrians tend to lead to the most severe outcomes.

KEY SELECTION FACTORS

Signalized intersections in developed or urban areas should include pedestrian phasing, crosswalks and sidewalk access on most or all approaches. Additional consideration should be made to restrict or delay turning movements at intersections were pedestrian activity is expected to be high. Uncontrolled intersections should be reviewed for pedestrian improvements similar to midblock crossings.

Specific Countermeasures	Urban or Rural	CRF %	Impact	Cost
Implement Barnes Dance (Pedestrian Scramble)	Urban	51	All	$$$
Prohibit Right Turns on Red	Urban	25	K, A, B, C	$$$
Install Pedestrian Countdown Heads where No Pedestrian Heads Exist	Urban	25	K, A, B, C	$$
Left-Turn Traffic Calming	Urban	20	N/A	$$
Implement Leading Pedestrian Interval (LPI)	Urban	13	All	$$
Replace Standard Pedestrian Heads with Countdown Pedestrian Heads	Urban	9	All	$$

NCDOT GUIDANCE

Multimodal Guidance (2024)

Leading Pedestrian Interval Implementation (2025)

SUPPLEMENTAL GUIDANCE

NCHRP, Research Report 969: Traffic Signal Control Strategies for Pedestrians and Bicyclists (2022)

National Institute of Transportation and Communities, Guidebook on Signal Control Strategies for Pedestrians (2017)

FHWA, Proven Safety Countermeasures: Leading Pedestrian Interval (2021)

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CAMPO's Countermeasure Library

Project Funding

Federal Programs

The United States Department of Transportation (USDOT) and NCDOT manage several funding programs for implementation of local and regional transportation safety projects. FHWA provides core federal aid funding to NCDOT for projects specifically for safety and for other transportation improvements. Most core federal funds are selected and programmed through the NCDOT Strategic Transportation Investments (STIs) process (i.e., SPOT). Safety is a criteria in the SPOT ranking system, but other scoring criteria are also considered.

FHWA also offers direct, discretionary funds to the larger MPOs, and CAMPO programs most of this discretionary funding through its LAPP program. The USDOT also offers the Safe Streets and Roads for All (SS4A) grant program to support local, regional, and, Tribal transportation agencies to develop and construct infrastructure safety projects. All of these federal funding programs should be considered as resources to implement projects developed through the Blueprint.

NCDOT HSIP

The HSIP is a core federal aid program that is devoted to implementing safety projects following a data-driven process. NCDOT implements the HSIP to identify and address specific traffic safety concerns statewide. The HSIP aims to reduce traffic crashes, injuries, and fatalities by focusing on potentially hazardous (PH) locations. The 2024 NCDOT HSIP is a comprehensive, data-driven methodology to identify and address traffic safety issues across North Carolina, ensuring a systematic approach to improving road safety through targeted interventions.

The NCDOT HSIP is not programmed using the SPOT criteria or process, but HSIP projects are financially accounted for in the STIP and STI funding allocations. Annually, NCDOT identifies hundreds of locations for review and potential development into safety projects. RTEs lead the review process and submit projects for funding quarterly. Selected projects are funded by the HSIP or the Spot Safety (state funding) programs. The 2024 HSIP identifies PH locations across five categories: intersections, sections, bicycle/pedestrian intersections, bicycle/pedestrian mid-block crossings, and bridges. The aim is not to list the most crash-prone locations but to use a data-driven approach to flag locations with identifiable crash patterns for potential safety interventions.

NC Governor's Highway Safety Program (GHSP)

The NC GHSP administers a call for and selects grant applications for financial support for law enforcement and public awareness campaigns. GHSP grants prioritize programs that aim to accomplish, but are not limited to, the following: increase driver and passenger restraints, reduce impaired driving, improve motorcyclist safety, address bicycle and pedestrian safety, and improve data systems. Eligible programs and activities are subject to change annually based on state and federal guidance and funding. GHSP grants are primarily funded through NHTSA apportionments to NCDOT, but also include a state or local match, and are based on a reimbursement program. Grant amounts in Federal Fiscal Year 2025 ranged from $5,000 to $2.6 million, with an approximate average award amount of $218,000.

Grant recipient agencies include law enforcement, state agencies, universities, non-profit organizations, medical organizations, and local governments. The application period typically opens in January of a calendar year, with applications selected by summer of the same year. Grantees may begin work in October of the same calendar year, and reporting is required on at least a quarterly basis over the course of the year-long grant.

Local Funding

Local agencies can use funds for maintenance projects, capital projects, and departmental operations to implement the priority actions in the Blueprint. Local agencies should consider conducting an RSA or similar safety study prior to developing the final scope for routine roadway resurfacing projects and other maintenance activities, to consider including low-cost safety improvements such as revised pavement markings, rumble strips, warning signage and temporary median islands. When developing capital improvement projects, local governments and officials should coordinate with NCDOT to discuss potential safety improvements and funding options. In annual budgets, local agencies should consider appropriating funds to match state and federal grants for sustained law enforcement campaigns, safety education programs, and larger scale capital projects.

Project Evaluation

The objective of project evaluation is to determine how a particular project (or group of projects) has affected safety performance. This informs future funding and policy decisions as agencies can use evaluation results to allocate funds and change policies. If certain programs or countermeasures are consistently effective, agencies may choose to continue those programs and implement similar countermeasures at additional locations. If an agency identifies a project that is not meeting safety performance expectations, then there is an opportunity to address the situation. Local governments should track and collect basic information to support countermeasure- and program-level evaluations. Project-level evaluations become the foundation for values used to create crash modification factors (CMFs).

As each project is completed, local agencies should document the specific countermeasure(s) implemented, specific locations treated, implementation period (start and end dates), and final project costs. The specific location(s) is particularly important for systemic projects where similar treatments may be implemented at multiple locations as part of the same project or contract. Documented project costs should include preliminary engineering, right-of-way, and construction based on the final cost to complete the project (not the initial estimate used in the funding application).

Project-level evaluations focus on individual projects and measure safety effectiveness based on changes in the frequency and severity of crashes before and after implementation. Local agencies are encouraged to coordinate with the NCDOT TSU when developing a process for evaluating safety projects. It is useful to collect information and evaluate changes to severity of crashes and types of target crashes, particularly if a project targets specific crash types or crash contributing factors. Agencies should use a minimum of three full years of before data and three full years of after data to evaluate projects. A simple before-after analysis is appropriate for evaluating projects at the local level as agencies are evaluating whether the project appears to have addressed the crashes and/or risk factors that were the impetus of the project. Not all projects improve safety performance, but this does not mean the countermeasure or project was not effective. Project evaluations help to understand the change in safety performance at a specific site or group of project locations and inform future countermeasure selection criteria.

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Evaluating and Updating the Blueprint

To make significant progress toward zero fatalities and serious injuries on roadways, the CAMPO region will need to coordinate with federal, state, and local partners to implement the Blueprint. At the conclusion of the safety planning process, CAMPO adopted the plan and encouraged member agencies to demonstrate commitment through letters of support or formal resolutions. Local commitments referenced specific strategies in the Blueprint and included additional approaches designed to help the region achieve the overarching safety goal.

Annual Reporting

The partners involved in the Blueprint will create specific action plans for strategies outlined in the plan. CAMPO and member agencies will advance the Blueprint by meeting regularly to discuss and track implementation. CAMPO will be responsible for reporting progress annually. The annual reports will reflect the goals, strategies, and performance measures outlined in the Crash Reduction Framework for the CAMPO region and highlight accomplishments from the prior year.

Statewide Coordination

NCDOT and its divisions are partners in developing and implementing the Blueprint. They administer the Federal HSIP funds and various state grants. NCDOT supports the prioritization and implementation of the strategies and actions outlined in the plan. The CAMPO Roadway Prioritization Tool aids CAMPO in selecting projects from the MTP that may help meet the goals for improved safety, mobility and community investment.

In addition to supporting funding and prioritization, CAMPO and its member agencies can communicate their interests to state lawmakers to increase access to safety countermeasures and strategies. This can help establish regional safety guidelines and policies for safer transportation laws, increase enforcement and visibility, and create resource libraries across the state.

The Blueprint includes complementary strategies to the NCDOT SHSP and is not intended to compete with or replace the work that the NCDOT TSU performs across the state. The NCDOT TSU is a resource of expertise including safety data analysts, engineers who specialize in evaluating the effectiveness of safety projects, and regional field staff who review locations for potential safety improvements. CAMPO and its member agencies will continue to coordinate closely with the RTE and central office staff to develop future safety projects and identify opportunities for funding and implementation. NCDOT provides additional information about the HSIP and the procedures followed by TSU to identify traffic safety issues and select potential projects.

Local and Regional Leadership

As a part of the Blueprint, CAMPO plans to invest in its partnerships with safety stakeholders in local government, law enforcement, and advocacy organizations. The strategies and actions identify forums and multidisciplinary committees as a high priority for CAMPO to implement as a part of the Blueprint. The CAMPO Regional Safety Committee, formed as a result of the Blueprint, will become a place for local practitioners to share successes, data, and resources to prioritize and implement safety in the region. It will include representatives from county agencies and municipalities within CAMPO's jurisdiction including representatives from and within Chatham, Franklin, Granville, Harnett, Johnston, and Wake.

CAMPO will work with the NCDOT, TWTPO, and CRPC to coordinate implementation of safety improvements, programs, and other strategies as identified by regional partners.

The CAMPO TCC and Executive Board will be involved in the implementation and support of the Blueprint. Throughout the development of the plan, CAMPO's leadership met to review and discuss the plan's progress; and these leaders will continue to advise and champion the strategies and actions.

Technology and Future Considerations for Safety in the Region

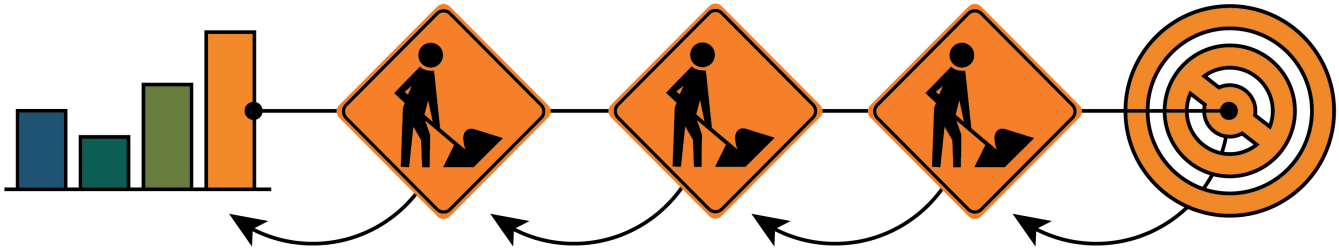
Safety projects and improvements need to be diverse to pair different funding mechanisms toward their implementation. Continuous improvements to safety projects and programs can leverage new technologies and community engagement to ensure dynamic and adaptive to changing conditions.

A key element of the Safe System Approach is Safer Vehicles. Automated and connected vehicles use advanced sensors, communication systems, and algorithms to navigate and operate with little human interaction. A principle to the Safe System Approach is that humans make mistakes; connected and automated vehicles can reduce the likelihood of these mistakes. Connected and automated vehicles, along with technology improvements, play a critical role in reaching CAMPO's goal of moving towards zero fatalities and serious injuries. The USDOT's Saving Lives with Connectivity: A Plan to Accelerate V2X Deployment, highlights how vehicle-to-everything (V2X) can reduce fatalities through enabling wireless communications among vehicles, roadside infrastructure, and mobile devices. V2X systems are an evolution of Intelligent Transportation Systems (ITS) and can allow traffic managers to quickly identify problem areas on the network.

USDOT also created the V2X Deployer Resource, which is a resource for CAMPO and its member agencies to use to create V2X deployment plans that fit the region's needs. As part of the Blueprint, CAMPO plans to track local agency investments in V2X technology, which could include making upgrades at intersections to signals and communication systems and improving infrastructure connectivity.

Emerging data sources are also changing how to monitor and analyze safety on the transportation network. Using datasets like connected vehicle data, mobile and GPS data, and crowdsourced data can provide real-time insights into traffic dynamics and potential safety concerns. Automated systems (e.g., red-light cameras and speed safety cameras) play a critical role in helping to monitor compliance and impartially identifying unsafe behaviors.

Working Backwards from the Future



The CAMPO region envisions a future where at least half of the fatal and serious injury crashes have been eliminated on roadways by 2055. The reduction is achieved by a gradual decline in crashes in the the first few years after the Blueprint was adopted in 2025, followed by an increasingly steeper decline as the region implements strategies and actions from the Blueprint. To reach this vision, agencies in the region will apply the tools developed as part of the Blueprint, report progress, and use the strategies to plan transportation projects. Policy changes will be the foundation for how CAMPO agencies develop, prioritize, and implement transportation improvements. Ongoing learning and coordination with NCDOT will increase the pipeline of safety projects. Community-based education, enforcement, and outreach will increase awareness of human vulnerability and the value of lives saved from death on the region's roadways. Working together and using the Blueprint as a guide, the CAMPO region will reach the goal.

CAMPO

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https://www.campo-nc.us/programs-studies/blueprint-for-safety

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