Comprehensive Safety Action Plan

Ouachita Council of Governments

SAFE STREETS & ROADS FOR ALL (SS4A)

GRANT PROGRAM

August 2024

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Comprehensive Safety Action Plan

Ouachita Council of Governments

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SAFETY ACTION PLAN

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Ouachita Parish Leadership Commitment

Ensuring safe, accessible, and desirable transportation in the region is central to North Delta Regional Planning and Development District/Ouachita Council of Government's (OCOG) mission. It is important to OCOG that residents and workers in Ouachita Parish can use a transportation system designed to accommodate all users safely, regardless of age and ability. Safety will be incorporated as part of the entire transportation network and ultimately achieve our long-term safety goal of zero fatalities and serious injuries by Year 2040.

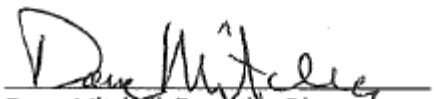
As members of OCOG, my colleagues and I are deeply concerned about transportation safety within Ouachita Parish. From 2017-2021 our region had 328 fatal or suspected serious injury crashes. Additionally, there were 79 fatal and suspected serious injury crashes involving pedestrians and 11 involving bicyclists. These incidents are tragedies for the victims, their families, and their friends, and they have profound, devastating impacts in our communities.

Fatal and serious injury traffic crashes are preventable and OCOG is committed to making transportation safer for residents and visitors within the Parish. The Safe Streets for All (SS4A) Safety Action Plan is an important first step toward ending these avoidable deaths and injuries. As a data-driven, comprehensive, and actionable approach, the Safety Action Plan is designed to improve safety throughout the entire transportation network and achieve our long-term safety goal of zero fatalities and serious injuries by Year 2040.

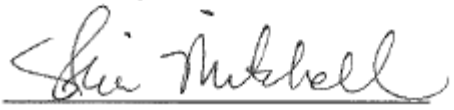
Safe travel is not exclusive to a specific set of the community. Everyone should arrive at their destination alive and unharmed, regardless of where they live, their age, or preferred mode of transportation. OCOG cannot achieve our goal without the support and engagement from local partner agencies and their communities. Residents of the area can improve the safety of our roadways every day.

OCOG prioritizes safety through various aspects of our work, including plans, studies, and funding. Despite these efforts, roadway crashes are increasingly depriving individuals of their lives. The trend, tragically, is moving in the wrong direction.

The Safety Action Plan will help our communities consider a broader approach to safety on the Ouachita Parish transportation network. Though our work doesn't end with this action plan, I am confident it will help us reduce the number of serious traffic incidents, and it will lay a solid foundation for achieving zero roadway fatalities and serious injuries.



Doug Mitchell, Executive Director



Mayor Staci Mitchell, Chairperson

Table of Contents

List of Tables

List of Figures

1.0 Introduction

Located in the northeastern part of Louisiana, Ouachita Parish is a vibrant and diverse region known for its rich history, natural beauty, and thriving communities. As of 2021[1], Ouachita Parish had 160,227 residents. Over the past five years, the population has experienced moderate growth, reflecting the parishes' attractiveness as a place to live and work.

1.1 Demographic Profile

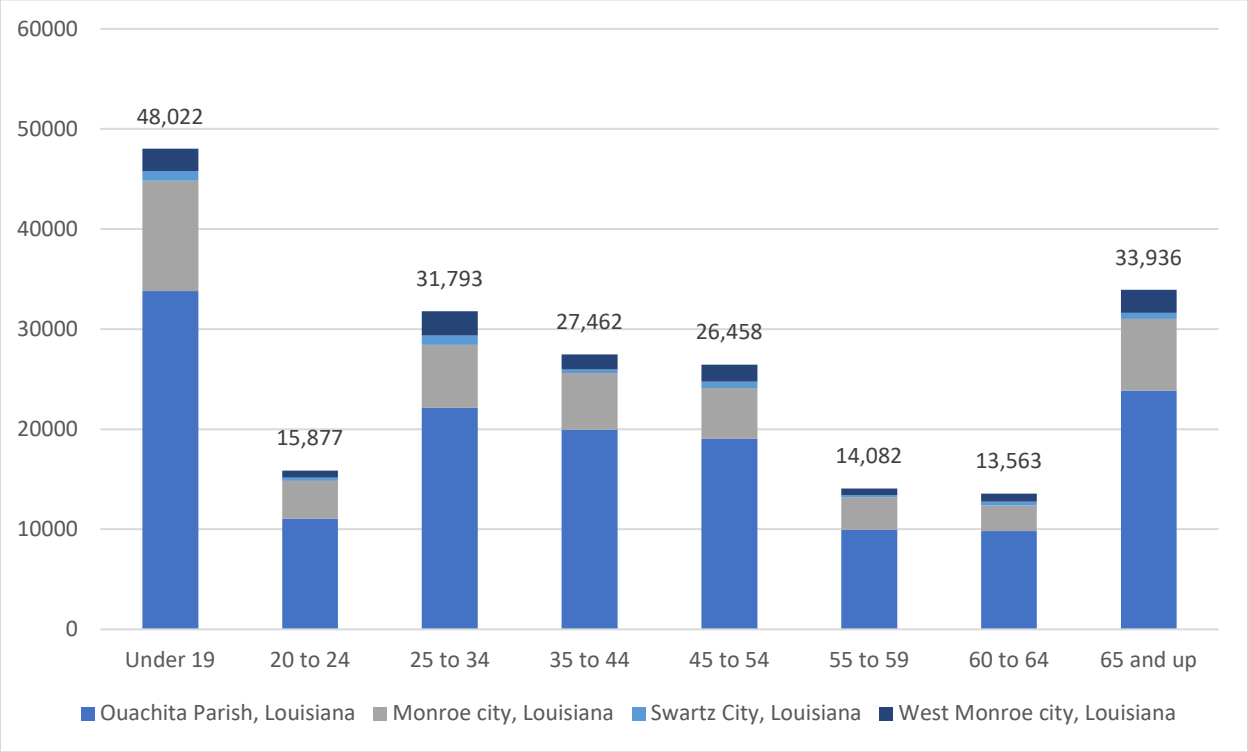
While the SS4A Safety Action Plan considers transportation safety needs throughout the entire Parish, it also focuses on the needs of areas identified as a Transportation Disadvantaged Community (TDC) or Area of Persistent Poverty (APP) as required by the Federal Highway Administration (FHWA). Environmental Justice (EJ) areas are incorporated through an analysis of the American Community Survey (ACS) 2021 5-year estimates to determine equity needs within the region. This section analyzes the existing demographic makeup of Ouachita Parish to aid these efforts.

Age/Race

Figure 1.1 displays the age breakdowns within the parish, while **Figure 1.2** displays the parish's mix of racial backgrounds.

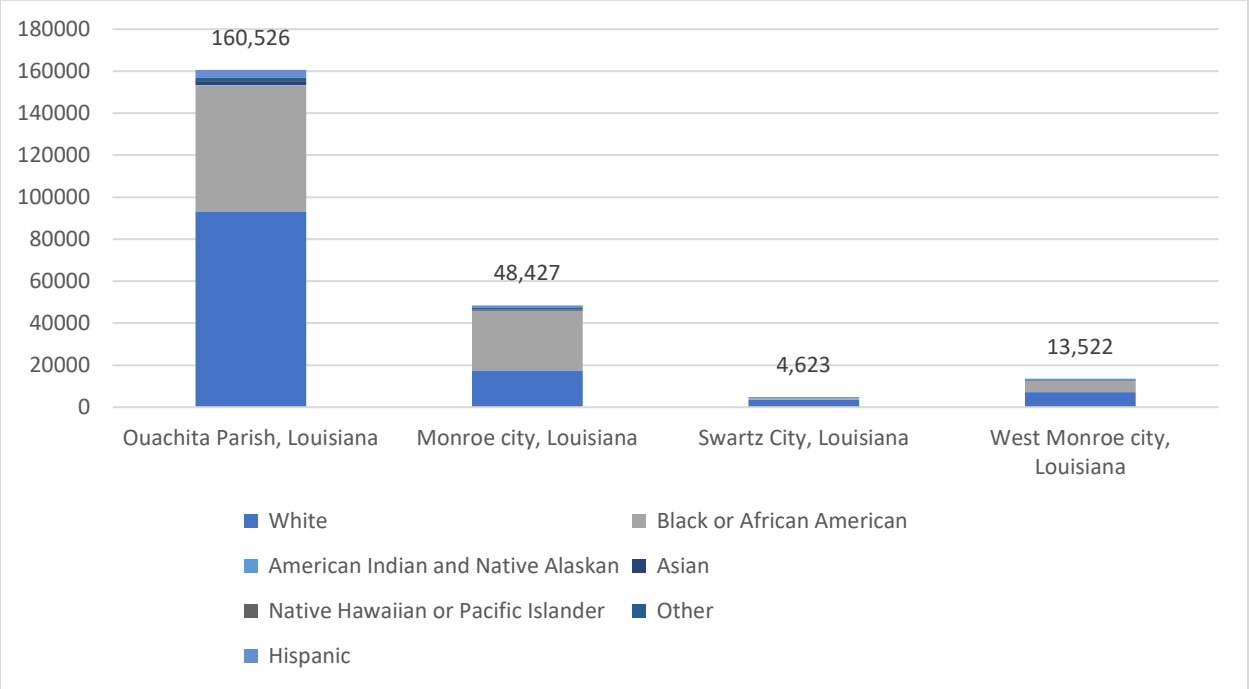
[1] American Community Survey, 2021 5-Year Estimates

Figure 1.1: Population by Age Category



Source: ACS 5-Year Estimates, 2021

Figure 1.2: Race Within Ouachita Parish



Source: ACS 5-Year Estimates, 2021

Existing Travel Patterns

While commuting patterns are only a portion of the total travel within the parish, they can provide insight into overall travel patterns. According to the 2021 ACS estimates the average commute time for employees within the parish is less than 30 minutes.

Most commuters in Ouachita Parish (83 percent) drove alone to work, as shown in **Table 1.1**. By contrast, nine (9) percent carpooled. Other modes, such as walking and public transportation, were used by a small percentage of commuters.

These commuting trends can also offer insights into possible equity and equality imbalances in access to transportation and job opportunities in the parish. Most residents within the parish choose to drive alone to work which could be challenging for residents with restrictions or without access to a vehicle such as low-income persons who depend more on public transit or shared transportation alternatives.

Recognizing the causes of differences in travel patterns can be vital for equity and equality analysis, since it can guide efforts to create a safer, inclusive, accessible transportation system for all users.

Table 1.1: Commuting Modes Within Ouachita Parish

Mode	City of Monroe	City of Swartz	City of West Monroe	Ouachita Parish	Total Persons
Drive Alone	78%	81%	85%	83%	75,602
Carpool	13%	15%	6%	9%	9,054
Public Transportation	3%	0%	1%	1%	1,215
Walk	2%	2%	4%	1%	1,514
Work at Home	3%	2%	3%	5%	3,877
Other	1%	0%	1%	1%	1,222

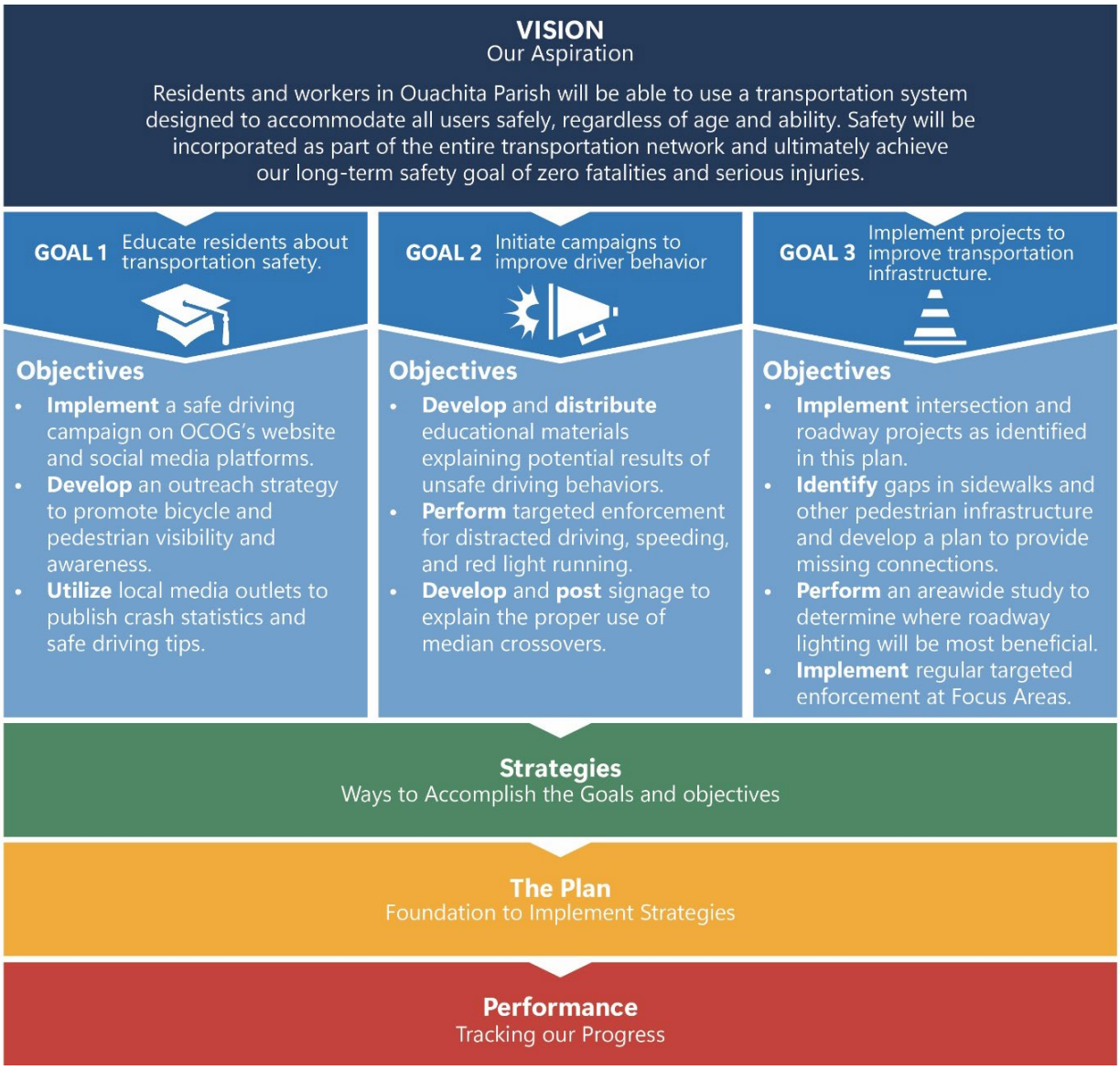
Source: ACS 2021 5-Year Estimates

2.0 Goals, Objectives, Regional Vision

2.1 Strategic Framework

Public and stakeholder input were used to develop a vision statement, goals, and objectives to guide the development of the Safety Action Plan (SAP). The vision statement describes the transportation safety status that the Parish strives to achieve. It is supported by three (3) goals, each with corresponding objectives that clarify and expand upon the goal statement. These activity-based objectives are used to identify specific projects and strategies that help the Parish achieve its stated goals. These elements form the strategic framework of the plan, shown in **Figure 2.1**.

Figure 2.1: Safety Action Plan Strategic Framework



2.2 Performance Measures

Performance measures are used to show progress towards meeting the SAP's Vision, Goals, and Objectives. This SAP uses four (4) performance measures which are displayed in **Table 2.1** along with the Goals and Objectives that they measure.

Table 2.1: Safety Action Plan Performance Measures

Performance Measure	Goal	Objective
Percent Reduction in the Number of Fatal Crashes	Goal 1	Implement a safe driving campaign on OCOG's website and social media platforms.
	Goal 1	Utilize local media outlets to publish crash statistics and safe driving tips.
	Goal 2	Develop and distribute educational materials explaining potential results of unsafe driving behaviors.
	Goal 2	Perform targeted enforcement for distracted driving, speeding, and red light running.
	Goal 2	Develop and post signage to explain the proper use of median crossovers.
	Goal 3	Implement intersection and roadway projects as identified in this plan.
	Goal 3	Perform a areawide study to determine where roadway lighting will be most beneficial.
	Goal 3	Implement regular targeted enforcement at Focus Areas.
Percent Reduction in the Number of Serious Injury Crashes	Goal 1	Implement a safe driving campaign on OCOG's website and social media platforms.
	Goal 1	Utilize local media outlets to publish crash statistics and safe driving tips.
	Goal 2	Develop and distribute educational materials explaining potential results of unsafe driving behaviors.
	Goal 2	Perform targeted enforcement for distracted driving, speeding, and red light running.
	Goal 2	Develop and post signage to explain the proper use of median crossovers.
	Goal 3	Implement intersection and roadway projects as identified in this plan.
	Goal 3	Perform a areawide study to determine where roadway lighting will be most beneficial.
	Goal 3	Implement regular targeted enforcement at Focus Areas.
Percent Reduction in the Number of Non-Motorized Fatal Crashes	Goal 1	Implement a safe driving campaign on OCOG's website and social media platforms.
	Goal 1	Develop an outreach strategy to promote bicycle and pedestrian visibility and awareness.
	Goal 2	Develop and distribute educational materials explaining potential results of unsafe driving behaviors.

Performance Measure	Goal	Objective
	Goal 2	Develop and post signage to explain the proper use of median crossovers.
	Goal 3	Implement intersection and roadway projects as identified in this plan.
	Goal 3	Identify gaps in sidewalks and other pedestrian infrastructure and develop a plan to provide missing connections.
	Goal 3	Perform a areawide study to determine where roadway lighting will be most beneficial.
	Goal 3	Implement regular targeted enforcement at Focus Areas.
Percent Reduction in the Number of Non-Motorized Serious Injury Crashes	Goal 1	Implement a safe driving campaign on OCOG's website and social media platforms.
	Goal 1	Develop an outreach strategy to promote bicycle and pedestrian visibility and awareness.
	Goal 2	Develop and distribute educational materials explaining potential results of unsafe driving behaviors.
	Goal 2	Develop and post signage to explain the proper use of median crossovers.
	Goal 3	Implement intersection and roadway projects as identified in this plan.
	Goal 3	Identify gaps in sidewalks and other pedestrian infrastructure and develop a plan to provide missing connections.
	Goal 3	Perform an areawide study to determine where roadway lighting will be most beneficial.
	Goal 3	Implement regular targeted enforcement at Focus Areas.

3.0 Existing Conditions Safety Data Review

3.1 Existing Plans, Policies, and Procedures

Existing Plans

OUACHITA PARISH LOCAL ROAD SAFETY PLAN (2019)

Plan Overview

The Ouachita Parish Local Road Safety Plan engages the four E's of safety which are Engineering, Education, Enforcement, and Emergency Services. It assesses existing conditions and identifies potential high-level crash sites to guide crash reduction efforts within emphasis areas. This plan also supports the Louisiana Strategic Highway Safety Plan.

Goals and Objectives

The primary goals of the plan are to reduce fatalities by 50 percent by the year 2030 and reduce serious injuries by 50 percent by the year 2030. In addition, the development of the plan involved the following steps:

- Establishing strong leadership and advocates.
- Analyzing safety data.
- Determining emphasis areas.
- Identifying strategies and countermeasures.
- Prioritizing and incorporating strategies.
- Evaluating and updating the Long-Range Safety Plan.

Key Findings

- Crashes from 2009 to 2017 indicate over 90 percent of fatal and serious injury crashes occur on dry roads. Therefore, weather-related conditions were not considered a major crash factor.
- The crash data reveals the two most prevalent crash types at intersections in the region are rear end and right-angle crashes. Potential mitigation strategies include reducing the frequency and severity of conflicts through traffic control and operational improvements, improving driver awareness, geometric improvements, improving driver gap judgement, improving sight clearance, and improving driver compliance with traffic control devices.

- Roadway departures make up nearly 70 percent of all fatal and serious crashes in Ouachita Parish. Potential mitigation strategies include:
    - advance curve warning signs and/or chevrons,
    - improved delineation,
    - center and edgeline rumble strips,
    - paved shoulders,
    - safety edge pavement treatments, and
    - targeted high friction surface treatments.

Recommendations for Transportation Safety

Align safety goals across agencies to accomplish them concurrently. These goals may include installing guardrail or cable barriers on roads with high incidences of roadway departures or installing roundabouts at intersections to minimize rear end and right-angle crashes.

LOUISIANA STRATEGIC HIGHWAY SAFETY PLAN (SHSP) (EXCEL FILES) (2023-2024)

(1) Northeast Region Action Plan for Distracted Driving (DD)

Plan Overview

This Excel spreadsheet lists coordination, education, enforcement, operation, and outreach for distracted driving initiatives and outreach.

Goals and Objectives

The goal of this plan is to reduce the potential and recurrence of serious injuries and fatalities involving distracted driving through the following means:

- Outreach – Share educational webinars, community events, and other traffic safety-related data to promote awareness using the Destination Zero Deaths social media platforms on the effects and statistics of distracted driving.
- Operation – Support the statewide effort to collect and improve the quality of non-crash data (citation data) related to distracted driving enforcement and/or other distracted driver campaigns.
- Education – Provide a dashboard-derived fact sheet to inform legislators and their staff across the state.
- Enforcement – Identify and encourage law enforcement agencies to commit to participating in a one-week B2S distracted driving school zones enforcement program.
- Coordination – Using the state-provided plan, educate stakeholders and local legislators on crash data and standardized talking points which show the benefit of legislation to prohibit driver handheld cell phone use.

Key Findings

- Program highlights were shared via social media. Outreach included student contests in the Northeast region, legislative involvement, law enforcement involvement, and the passing of the Driver Hands-Free Cell Phone Bill.
- Targets were not met for 1 percent minimum reduction of serious injuries involving distracted driving and 1 percent minimum reduction of fatalities involving distracted driving.

Recommendations for Transportation Safety

- Expand transportation safety initiatives to identify distracted driving stakeholders to meet targets.

(2) Northeast Region Action Plan for Impaired Driving (ID)

Plan Overview

This Excel spreadsheet lists coordination, education, enforcement, operation, and outreach for impaired driving initiatives and outreach.

Goals and Objectives

The goal of this plan is to reduce the potential and recurrence of serious injuries and fatalities involving impaired driving through the following means:

- Outreach – Share educational webinars, community events, and other traffic safety-related data to promote awareness using the Destination Zero Deaths social media platforms on the effects and statistics of impaired driving.
- Education – Provide SHSP Dashboard-derived fact sheets to inform legislators and their staff across the state.
- Enforcement – Assist with expanding the Statewide Warrants for Blood initiative into non-participating law enforcement agencies.
- Coordination – Recruit members of the 4 E's (Enforcement, Education, Engineering, EMS, safety advocates, Public Health, and Tribal Representatives) or emphasis area overlap participating in the SHSP Impaired Driving Area.

Key Findings

- There were no operation goals or output measures listed for impaired driving initiatives.
- Targets were not met for 1 percent minimum reduction of serious injuries involving impaired driving and 1 percent minimum reduction of fatalities involving impaired driving.

Recommendations for Transportation Safety

- Add operation goals and output measures for impaired driving initiatives or explain why operations are not applicable.
- Expand transportation safety initiatives to identify impaired driving stakeholders to meet targets.

(3) Northeast Region Action Plan for Infrastructure and Operations (IO)

Plan Overview

This Excel spreadsheet lists coordination, education, enforcement, operation, and outreach for infrastructure and operations driving initiatives and outreach.

Goals and Objectives

The goal of this plan is to reduce the potential and recurrence of serious injuries and fatalities involving infrastructure and operations through the following means:

- Outreach – Share educational webinars, community events, and other traffic safety-related data to promote awareness using the Destination Zero Deaths social media platforms on infrastructure and operations related developments and statistics.
- Education – Offer sessions for driving school instructors and traffic safety advocates and meet the criteria necessary to offer continuing education units.
- Operation – Provide assistance to local agencies to implement completed Local Road Safety Plans, district investment plans, and/or RWD plans or others.
- Coordination – Recruit members of the 4 E's (Enforcement, Education, Engineering, EMS, safety advocates, Public Health, and Tribal Representatives) or emphasis area overlap participating in the SHSP Impaired Driving Area.

Key Findings

- Targets were not met for 1 percent minimum reduction of serious injuries regarding roadway departures, 1 percent minimum reduction of fatalities involving roadway departures, 1 percent minimum reduction of serious injuries at intersections, 1 percent minimum reduction of fatalities at intersections, 1 percent minimum reduction of serious injuries involving non-motorized users, and 1 percent reduction of fatalities involving non-motorized users.
- Expand transportation safety initiatives to identify stakeholders to meet targets.
- There is no enforcement goal for infrastructure and operation initiatives.

Recommendations for Transportation Safety

- Add enforcement goals for infrastructure and operation initiatives or explain why enforcement is not applicable.
- Expand transportation safety initiatives to identify stakeholders to meet targets.

(4) Northeast Region Action Plan for Occupant Protection (OP)

Plan Overview

This Excel spreadsheet lists coordination, education, enforcement, operation, and outreach for occupant protection driving initiatives and outreach.

Goals and Objectives

The goal of this plan is to reduce the potential and recurrence of serious injuries and fatalities involving occupant protection through the following means:

- Education – Provide SHSP Dashboard-derived fact sheets to inform legislators and their staff across the state.
- Enforcement – Partner with LPSTF RC to provide child safety seats and services during Click It or Ticket stationary enforcement.
- Outreach – Share educational webinars, community events, and other traffic safety-related data to promote awareness using the Destination Zero Deaths social media platforms on the effects and statistics of no restraint.
- Coordination – Recruit members of the 4 E's (Enforcement, Education, Engineering, EMS, safety advocates, Public Health, and Tribal Representatives) or emphasis area overlap participating in the SHSP Occupant Protection Emphasis Area.

Key Findings

- There were no operation goals or output measures listed for occupant protection initiatives.
- Targets were not met for 1 percent minimum reduction of serious injuries resulting from non or improper restraint use, 1 percent minimum reduction of fatalities resulting from non or improper restraint use, 1 percent minimum increase in daytime seatbelt use, and 1 percent minimum increase in nighttime seatbelt use.

Recommendations for Transportation Safety

- Add operation goals for occupant protection or explain why operations are not applicable.
- Expand transportation safety initiatives to identify stakeholders to meet targets.

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT (LADOTD) DISTRICT 05 SAFETY INVESTMENT PLAN (2021)

Plan Overview

This plan was developed to prioritize efforts and focus resources on locations within District 05 with the highest potential for safety improvements for the next 3 to 10 years.

Goals and Objectives

The District 05 Safety Investment Plan aims to simplify and consolidate the network screening results and direct resources to high priority locations.

Key Findings (high level summary of key findings)

Projects were placed into four categories for prioritization:

- Category 1 includes projects that can be implemented by District 05 resources. These projects include restriping, signs, and signal timing.
- Category 2 includes projects that require some design to implement. These projects include rumble strips, pavement friction treatment, and adaptive signal control.
- Category 3 includes projects thar require further study or detailed design. These projects include road diets, raised medians, lighting, and geometry modifications.
- Category 4 includes projects that are not feasible or have no recommendations. These projects depend on available funding.

The report includes recommendations for crash countermeasures, along with cost estimates for pavement markings and rumble strips.

Recommendations for Transportation Safety

- Engage community stakeholders in the prioritization of projects through public outreach initiatives and safety goals.

2045 MONROE METROPOLITAN PLANNING ORGANIZATION (MPO) METROPOLITAN TRANSPORTATION PLAN (2020)

Plan Overview

The Monroe MPO Metropolitan Transportation Plan is a roadmap for addressing the region's transportation needs over the next 25 years.

Goals and Objectives

- Provide reliable transportation options.
- Improve safety and security.
- Maintain and maximize the transportation system.
- Support prosperity.
- Protect the environment and communities.

Key Findings

The following are key findings that are mentioned in the reviewed documents and are relevant to transportation safety.

Recommendations for Transportation Safety

Engage community stakeholders in the implementation of strategies that are listed in the document as responsibly improving the roadway system, improving and expanding public transportation, expanding walking and biking infrastructure, prioritize maintenance, establishing a safety management system, and monitoring emerging technology options.

Existing Policies and Procedures

Access Management:

Ouachita Parish (OCOG) does not currently have existing ordinances specifically pertaining to access management. The parish does have some ordinances in place regarding the placement and layout of driveways, including the need for driveway patterns to provide efficient traffic circulation. Although the existing ordinances mention maintaining adequate traffic circulation, there are no specific access management procedures in place. It is encouraged that the parish implement these policies and procedures to regulate and improve both safety and operational efficiencies for the parish's transportation system as whole.

Louisiana Department of Transportation and Development (LADOTD) adopted the *Access Connections Policy (2013)*, which lays out the states access management permit process as well as application requirements. The manual includes regulations and geometric requirements for design elements such as sight distance, at-grade intersection spacing, traffic signal spacing, median opening spacing, and access connection spacing. Temporary access connection permit requirements are also included for construction purposes as well as requirements for special types of access connections like utility company or governmental agency connection permits. The state department has laid a foundation for access management that Ouachita Parish will be able to utilize as guidance in the development of their own procedures and policies. Consistent policies and procedures between state and parish agencies will create a well-managed transportation system benefiting all users.

Complete Streets:

Louisiana Department of Transportation and Development (LADOTD) adopted a statewide Complete Streets Policy in 2009. The adoption of this policy will assist in creating a comprehensive, integrated, connected transportation system for Louisiana that balances access, mobility, health and safety needs of motorists, transit users, bicyclists, and pedestrians. LADOTD recognized the importance of coordination between state and local agencies to effectively develop, operate, and maintain bicycle and pedestrian networks and will work with all local Metropolitan Planning Organizations (MPOs), transit agencies, parishes, and municipalities to ensure that the implementation of the complete streets policy statewide results in the creation of a cohesive network that improves safety and efficiency.

Requirements for Sidewalks in Subdivision Regulations:

Ouachita Parish (OCOG) does not have existing regulations for the design of sidewalks as it pertains to the development of subdivisions. The parish does mention within its ordinances that sidewalks may be installed at the discretion of the developer and if installed the sidewalks must be a minimum of 3 feet wide, which is the minimum width for ADA compliancy. While some municipalities within OCOG have implemented their own set of ordinances for the design of sidewalks within subdivisions, it is encouraged to have an established set of regulations and design guidelines at the parish level. Implementation of design regulations at the parish level will encourage the development of well-connected pedestrian facilities within the parish.

Louisiana Department of Transportation and Development (LADOTD) does not have regulations pertaining to the design of sidewalks within subdivisions but do have minimum design guidelines for sidewalks listed in the *Roadway Design Manual* and standard plans/details for pedestrian facilities including curb ramps that are all ADA compliant.

Work Zone Management/Requirements of Traffic Management Plans

There is no specific mention of work zone management, traffic calming, or traffic management plans within Ouachita Parish's ordinances or policies. As work zones often contribute to highway congestion it is important to establish work zone management plans at the local level to ensure efficient operations continue while work is taking place.

Louisiana Department of Transportation and Development (LADOTD) has temporary traffic control standard plans to be utilized during roadway construction to alleviate congestion. There is no actual work zone management plan published by the state currently.

Emergency Response Time Goals vs. Actual

A crucial part of emergency response is the time that it takes for emergency responders to reach the call they are responding to. During the review of the Ouachita Parish's policies and procedures there was no information given about emergency response times as far as goal times they would like to meet or historical actual times of emergency responders to arrive on scene. It is likely that most time goals regarding emergency response are included in contracts with each individual department (i.e. fire, police, ambulance, etc.) and that the information of actual response times are not shared amongst the individual departments. It is encouraged that all emergency responders including the fire department, police department, and EMS, coordinate amongst their organizations to identify deficiencies in response time and develop strategies/policies to improve efficiency where necessary.

Incident Management/Traveler Information System

Incident Management pertains to protocols and procedures put in place to restore roadway capacity as quickly and efficiently as possible after traffic incidents have occurred. A well-established plan benefits not only emergency responders during traffic incidents, but also vehicle operators as the plans assist in reducing delays and improving safety. There is no specific mention of incident management within the Ouachita Parish Ordinances. Implementation of an Incident Management Plan could greatly improve operations and safety for roadway users in the city.

Louisiana Department of Transportation and Development (LADOTD) has an informational page published on their website regarding Intelligent Transportation Systems (ITS). ITS is a national initiative with the goal of using state-of-the-art technology to increase the safety and efficiency of the Louisiana highway system. Specific ITS activities listed by LADOTD include leading steering committees comprised of federal, state, MPOs, public, and private sector stakeholders for the implementation of ITS systems. LADOTD has implemented a statewide Louisiana Information System (LaTIS) for the purpose of connecting regional traffic management centers (TMC) in Lafayette, Shreveport, and New Orleans with a statewide ATM/EOC in Baton Rouge for regional and statewide traffic/emergency operations to work jointly in detecting incidents, communicate information to motorists in a timely manner, and improve the quality of traffic flow. The ITS through LADOTD also includes the use of traffic cameras and Remote Traffic Microwave Sensors (RTMS) or Radar Vehicle Detectors (RVD). The parish is encouraged to implement an incident management plan in conjunction with the efforts laid out by LADOTD.

Safety Countermeasures

Ouachita Parish does not have any policies in place referencing the below safety countermeasures. These should be considered for adoption by local governments within the study area to improve transportation safety.

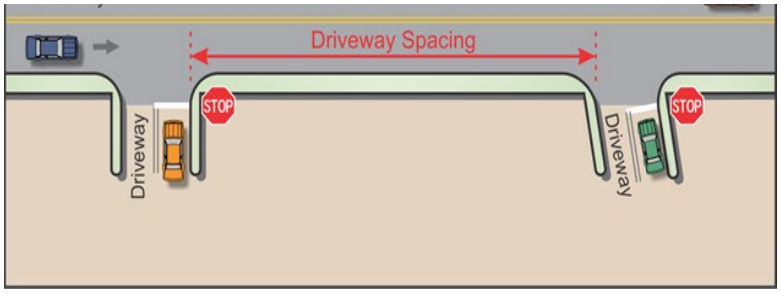
Access Management strategies are proactive safety improvements to various access points at existing or future developments on roadways. These access points promote efficient use of the roadway network, while decreasing the number of collisions. There are various techniques that the local governments can use to help control access to any type of roadway, while strongly enhancing safety along the roadway.

- *Driveway and Access Spacing* – Increase the distance from one driveway to another and limit the number of driveways on a given state route or local roadway. While every development may be entitled to access, the local agency can control where that access point is located and the distance between.

Safe Driveway Spacing

Operating Speed on Roadway (Mph)	Safe Sight Distance Looking Left from Driveway (feet)	Safe Sight Distance Looking Right from Driveway (feet)
20	225	195
30	335	290
40	445	385
50	555	480
60	665	575

Source: American Association of State Highway and Transportation Officials (AASHTO), *A Policy on Geometric Design of Highways and Streets 2011* (AASHTO: Washington, DC, 2011).



Source: FHWA | Adequate spacing of driveways ensures less conflict points and reduced collisions.

- *Signal Inventory* – There may be signalized intersections that can be evaluated for potential to reduce delay.
- *Median Dividers* – By adding a median divider on a highway or local route, fewer conflict points arise that decrease the risk of a collision.

- *Roadway Enhancements* – While additional right-of-way may be required, roundabouts or traffic circles are one of the safest roadway improvements that can be implemented to reduce the severity of a crash should one occur. Additionally, dedicated left and right turn lanes are safety improvements that keep traffic flowing and reduce the likelihood of rear-end collisions.

While many states have a set of roadway design guidelines, it is recommended that the local communities update their own standards to encourage better access management practices and requirements that focus on safety by reducing serious crashes. Many states DOT's will enforce the more stringent access policies (state or local) on a given state highway to ensure local policies are being implemented. A strong relationship between local engineering staff and the state's traffic engineering office will ensure a strong partnership in its enforcement. The local government's standards should include in-depth development, discussion, and

research of all roadway types and receiving "by-in" from all elected boards and officials is strongly suggested. By educating and including local officials, this ensures that future developers recognize the strong commitment to safety.

Corridor Management Agreements are a tool that can be used to improve safety along a given corridor within the local communities. Corridor Management Agreements (CMA's) are a policy result of the National Governor's Association, Center for Best Practices Policy Academy on Shaping a New Approach to Transportation Safety and Lane Use Planning. CMA's have been utilized in many states across the country to help maintain the integrity of a given roadway, while ensuring all parties with asset involvement are working together to promote the same concepts for access management, safety, land-use, engineering, and planning.

Involvement from multiple municipalities, adjoining parishes state DOT officials, local school representatives, etc. can ensure that constant communication and the sharing of plans and knowledge will increase the free flow of traffic and enhance safety for all roadway users. While a CMA is often organized between neighboring jurisdictions that share a roadway, this approach can also work for a roadway within the local jurisdiction's own limits. Having periodical meetings with applicable government staff to discuss plans and roadway safety improvements can create a commitment to the long-term integrity of the corridor and places safety at forefront.

Traffic Calming combines a variety of techniques that can be utilized by local governments to adjust driver behavior and make roads safer for both motorists and non-motorists. The idea of traffic calming came about due to the overwhelming need to slow vehicular speeds when moving through both neighborhood and commercial areas. The slower the speed, the more compatible an area is to more vulnerable users of the road. While there are many methods that can be implemented to calm traffic, a few examples are listed below:

Source: National Association of City Transportation Officials
Example of traffic calming measures

- Adding speed humps, raised crosswalks, or other raised pavement areas to decrease speed.
- Narrowing of travel lanes (discussed in more detail below) that creates a sense of "closeness" to the other vehicle which results in slower movement.
- Adding texture such as brick or concrete pavers to the roadway to increase vibration in the vehicle.
- On-street parking which requires vehicles to be vigilant.
- Roundabout or traffic circle
- Street trees act as a visual barrier between drivers and pedestrians and have been shown to reduce stress in driver behavior.

Complete Streets are a set of varying policies to accommodate vehicles, pedestrians, bicyclists, and transit users (if applicable) while increasing the safety and flow of traffic. While the term has been around for many years, the importance of these techniques is still vital to the safety of all users of the roadway.

It is important to note that a complete street may not look the same on every road. Rural, suburban, and urban roadways have varying needs, and needs will always be based on a given need within a local community. Balancing safety and convenience for all users is the main objective while giving all modes a choice in their behavior.

Treatments may include sidewalks, bike lanes, transit-only lanes, mid-block crossings, curb extensions, and/or many other elements. Some urban roadways may need many or all these enhancements to become a true Complete Street, while a suburban neighborhood street may need no treatments at all, due to low traffic and pedestrian volume.

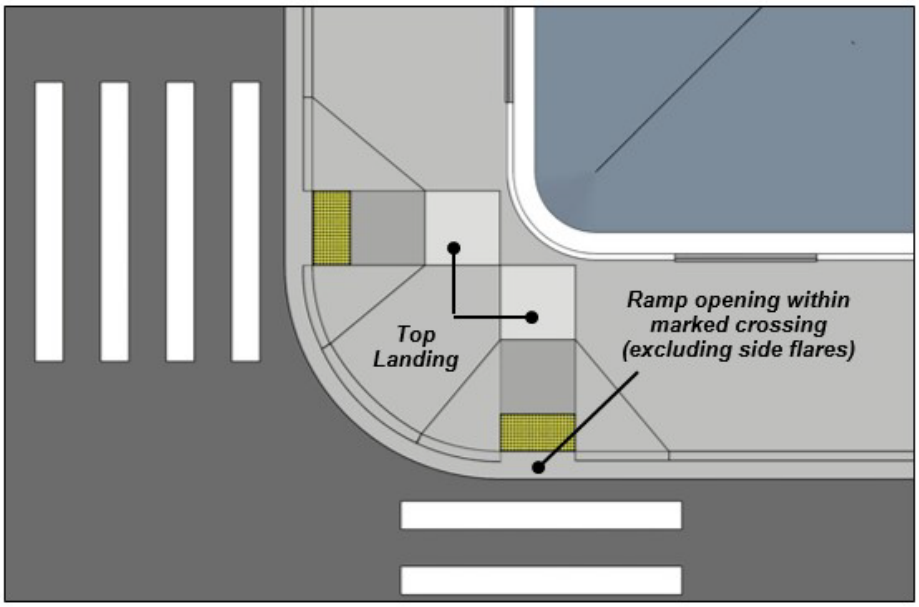
Source: FHWA Complete Streets example on an urban roadway

Complete Streets Toolbox

- Roundabouts

Source: FHWA illustration

- ADA Ramps



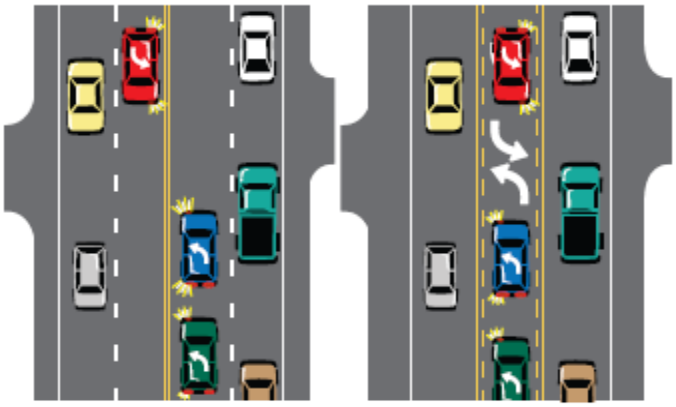
Source: Example of curb ramps at an intersection that meet ADA and MUTCD standards

- Bike/Ped/Transit Facilities

Source: FHWA | Example of a bike/ped multiuse path

Road Diets, or Road Reconfigurations, can be a low-cost safety strategy to reduce travel speeds, while allowing more room for non-motorized users. Traditionally, the most common form of a road diet removes a lane in either direction (on a four-lane undivided roadway) and creates a two-way left turn lane. By doing so reduces the number of rear-end collisions and creates enhanced traffic flow. Other types of reconfigurations include reducing travel lanes to incorporate bike lanes, medians, sidewalks, landscaping, and/or bus-only lanes. While road diets are not appropriate for roadways with high average daily traffic (ADT), there are many local and state routes could use this configuration which would greatly benefit the safety of communities.

FHWA recommends the following thresholds as a guideline to road diets on four-lane roadways regarding ADT.



Source: FHWA

- Less than 10,000 ADT: Good candidate for a road diet in most cases. Capacity most likely not impacted.
- 10,000-15,000 ADT: Good candidate for a road diet in many cases. Further intersection analysis should be considered.
- 15,000-20,000 ADT: Good candidate for a road diet in some instances. However, capacity may be impacted. Further corridor analysis should be considered.
- Greater than 20,000 ADT: A feasibility study should be completed to determine if a good candidate.

When an appropriate location is identified as a candidate for a road diet, the restriping of lanes that coincides with a planned resurfacing can lead to a low-cost safety improvement for the local community and its residents.

Subdivision Regulations are typically rules that regulate the process for developing property that include public assets such as streets, storm drains, street signs, and street lighting. In many states, this locally created document is mandated by state law and only includes those elements required by law. However, many cities across the country have included regulations for the safety of bicyclist and pedestrians into the main document or created a companion set of regulations, often referred to as "street design guidelines."

The local communities should explore updating their subdivision regulations or a stand-alone document that includes some of the following elements:

- Bicycle Facilities – The location of appropriate bike lane or reference to a Bike/Ped Master Plan for further detail.
- Bike Lanes – Define the width, location, approval process, and required striping and markings.
- Bicycle Shared Street – Often called "sharrows," as arrows mark the roadway for vehicles and bicycles to share a travel lane. Detail should be given to the lane width required for such movement and where appropriate.
- Pedestrian Safety – Include detail describing the requirements for new and/or existing intersections with sidewalks (existing or planned) or pedestrian activity to be designed to accommodate pedestrians.

While a local community may not have an existing Bicycle/Pedestrian Master Plan, the subdivision regulations or a stand-alone policy, could be utilized to create an enforceable safer environment for all residents.

Traffic Impact Policy requires developers to create a Traffic Impact Study when a new or redevelopment occurs. Typically, the study is an assessment which helps to determine expected traffic and the safety implications of the development, thus resulting in needed improvements such as an additional turn lane, signalized intersection, etc. However, many local and state requirements do not consider the number of pedestrian and bicycle trips within the area which can lead to unsafe conditions for non-motorized users. Below is a group of strategies, both large and small, that could lead to better safety outcomes within these studies.

- Consider improving bike/ped access and/or bike/ped circulation as part of roadway, intersection, and/or site plan improvements.
- Encourage officials to visit the site for first-hand knowledge of active bicyclists and pedestrians, focusing on nearby destinations such as job centers, recreation, entertainment, etc.
- Depending on the location, require a speed study to be completed and not rely solely on the posted speed limit.
- Contact the local bike/ped advocacy groups to receive feedback on development plans.

3.2 Crash Analysis

The crash analysis uses five (5) years of crash data provided by the Louisiana Department of Transportation and Development's (LADOTD) Center for Analytics and Research in Transportation Safety (CARTS) tool.

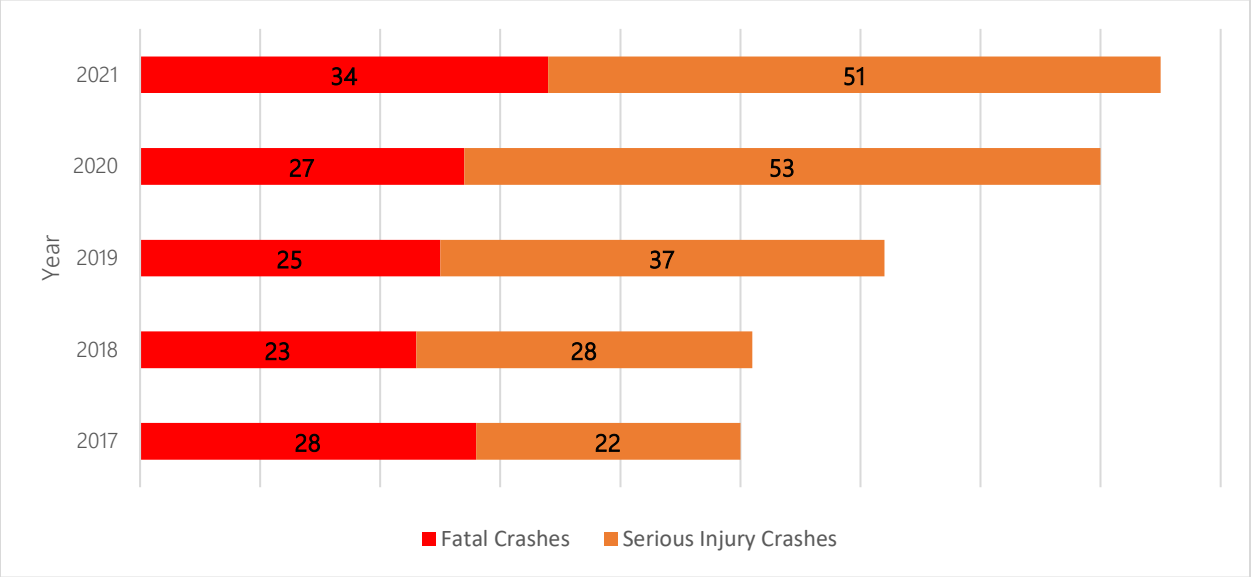
The analysis reviewed data from January 1, 2017, through December 31, 2021, to evaluate patterns and trends based on:

- crash type
- location
- contributing circumstances
- time

From 2017 through 2021, 27,943 crashes were reported within Ouachita Parish. This section focuses on the 322 crashes within the parish that resulted in fatalities and/or serious injuries. The statistics for all crashes within Ouachita Parish are displayed in **Appendix A**.

Shown in **Figure 3.1**, there were 137 fatal crashes, and 191 serious injury crashes reported in the parish from 2017 through 2021.

Figure 3.1: Fatal and Serious Injury Crashes by Year



Source: CARTS, 2023

Crash Types and Summaries

During the five-year analysis period, the most common crash types among the fatal and serious injury crashes were single vehicle (51 percent), right angle (16 percent), and rear end (14 percent) crashes, contributing to over four-fifths of fatalities and serious injuries. **Table 3.1** presents the fatal and serious injury crashes reported from 2018 through 2022 by crash type and year.

Table 3.1: Fatal and Serious Injury Crashes by Crash Type and Year

Crash Type	Year					Total
	2017	2018	2019	2020	2021	
Single Vehicle	19	33	38	41	35	166
Right Angle	11	7	7	10	17	52
Rear End	6	6	7	14	12	45
Head On	5	1	3	8	8	25
Angle - Left Opposite Direction	4	2	2	4	3	15
Sideswipe - Same Direction	2	1	2	0	5	10
Angle - Left into Flow	2	0	1	2	0	5
Sideswipe - Opposite Direction	0	1	1	0	1	3
Angle - Left Overtake	1	0	0	0	1	2
Angle - Right into Flow	0	0	0	1	1	2
Other	0	0	1	0	1	2
Angle - Right across Flow	0	0	0	0	1	1
Total	***50***	***51***	***62***	***80***	***85***	***328***

Source: CARTS, 2023

Environmental Circumstances

Understanding the environmental circumstances, such as lighting, weather, and surface conditions, that contribute to crashes can be helpful in determining potential areas of improvement. **Table 3.2** displays the environmental circumstances at the time of the fatal and serious crashes reported in Ouachita Parish from 2017 through 2021.

> Approximately 24 percent of fatal and serious injury crashes were identified as 'dark-not lighted' indicating that there was no street or intersection lighting present at the time of the crash.

Additionally, approximately 14 percent of fatal and serious injury crashes reported in the region occurred with wet surface conditions. **Table 3.2** displays the environmental circumstances at the time of the fatal and serious crashes reported in Ouachita Parish during the analysis period.

Table 3.2: Fatal and Serious Injury Crashes by Contributing Circumstances

Light Condition	Year					Total
	2017	2018	2019	2020	2021	
Daylight	28	22	28	30	42	150
Dark - not lighted	8	16	20	20	15	79
Dark - continuous streetlights	7	9	7	23	17	63
Dark - street lights at intersection only	4	2	5	2	8	21
Dawn/dusk	3	1	2	4	1	11
Other	0	1	0	1	1	3
Unknown	0	0	0	0	1	1
Total	***50***	***51***	***62***	***80***	***85***	***328***
Surface Condition	**Year**					**Total**
	2017	**2018**	**2019**	**2020**	**2021**	
Dry	46	42	52	65	76	281
Wet	4	9	10	15	8	46
Unknown	0	0	0	0	1	1
Total	***50***	***51***	***62***	***80***	***85***	***328***

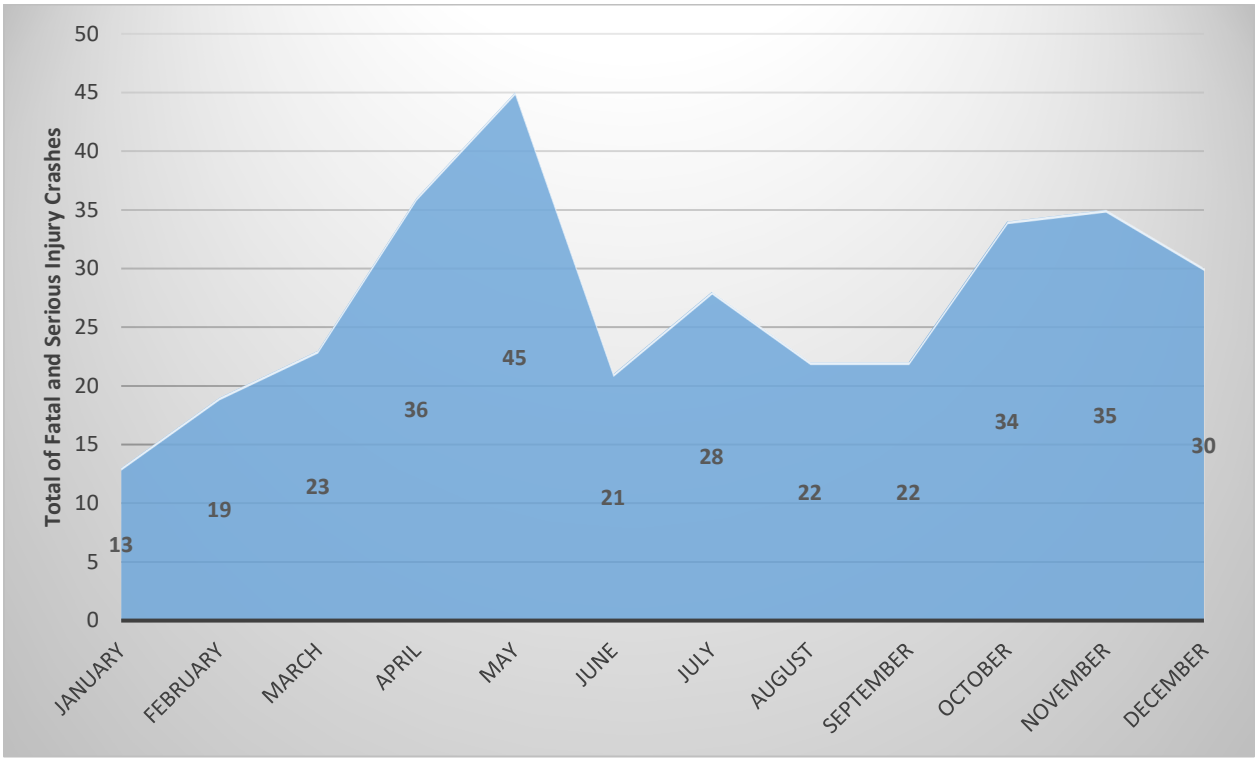
Source: CARTS, 2023

Temporal patterns

The analysis also considers temporal patterns by analyzing the months, day of the week, and hours that fatal and serious injury crashes occurred. The data shows that:

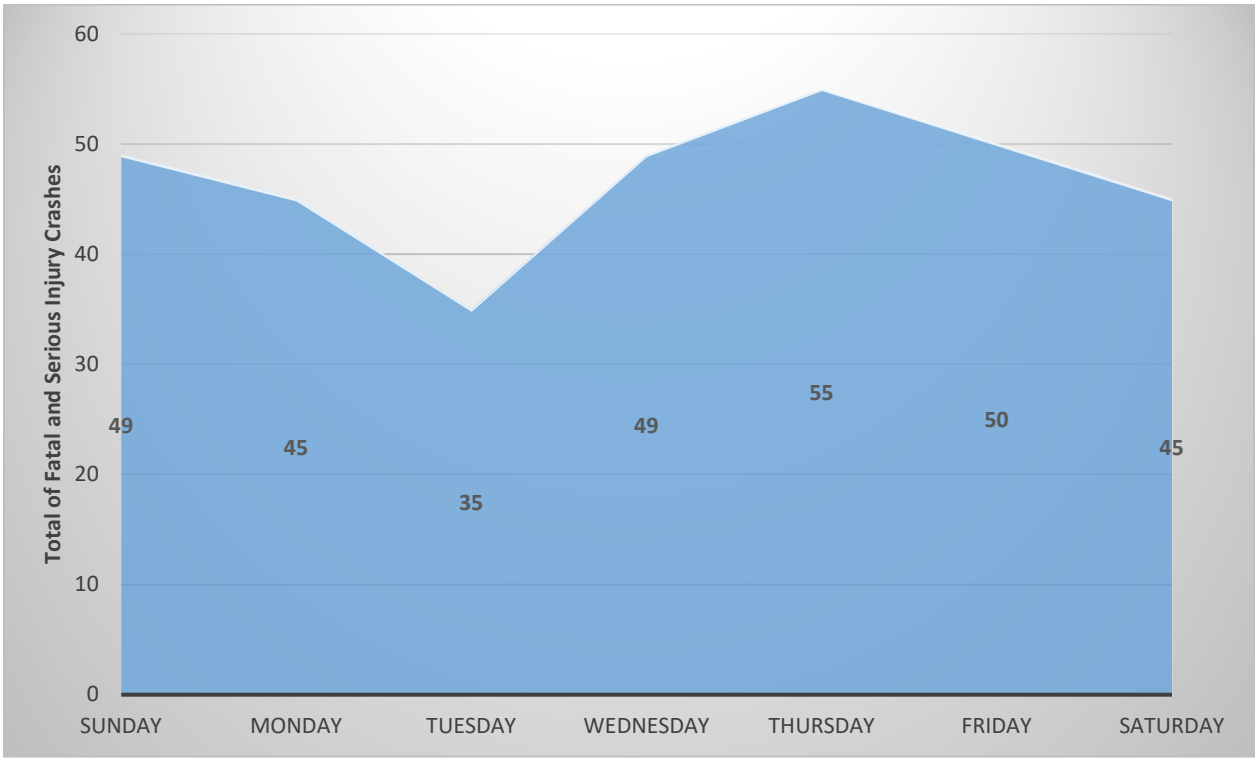
- Fatal and serious injury crashes were more likely to occur in the spring and autumn months, particularly May. – **Figure 3.2**
- Thursday experienced the most fatal and serious injury crashes, while Tuesday experienced the fewest. – **Figure 3.3**
- 5 PM to 8 PM, which corresponds with the evening peak hour period, experienced the most fatal and serious injury crashes. – **Figure 3.4**

Figure 3.2: Fatal and Serious Injury Crashes by Month, 2017 – 2021



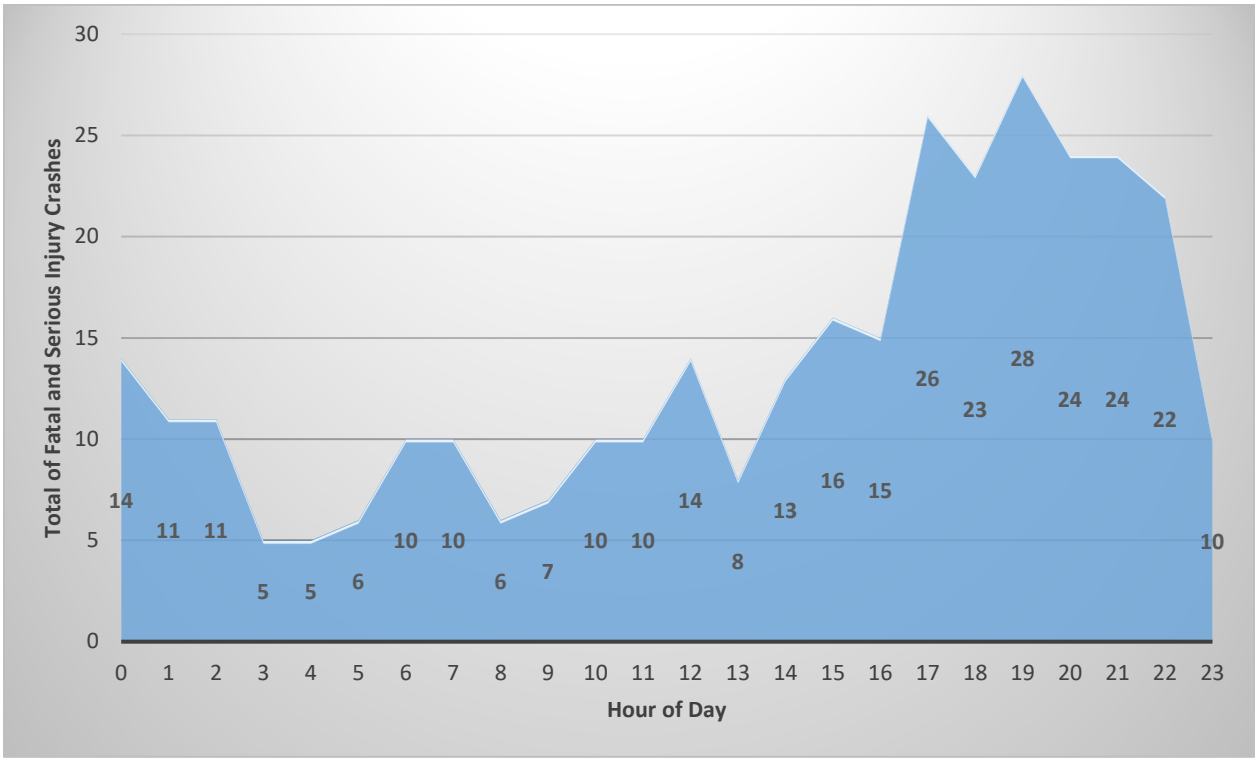
Source: CARTS, 2023

Figure 3.3: Fatal and Serious Injury Crashes by Day of Week, 2017 – 2021



Source: CARTS, 2023

Figure 3.4: Fatal and Serious Injury Crashes by Time of Day, 2017 – 2021



Source: CARTS, 2023

Driver Age and Driving Under the Influence (DUI)

The analysis also considered driver age, particularly those involving older drivers (age 65 or older) or younger drivers (age under 25). The analysis also considers whether alcohol was involved in fatal and serious injury crashes. The results of this analysis are displayed in **Table 3.3**. Note that the crashes quantified in **Table 3.3** are not mutually exclusive; two or more of the demographic categories included in the table could be involved in any one crash.

> Approximately 20 percent (20%) of fatal and suspected serious injury crashes reported in Ouachita Parish during the five-year analysis period involved alcohol use by one or more individuals.

Older and younger drivers were involved in approximately 16 percent and 29 percent, respectively, of the fatal and serious injuries crashes reported during the five-year analysis period.

Table 3.3: Driver Age and DUI in Fatal and Serious Injury Crashes

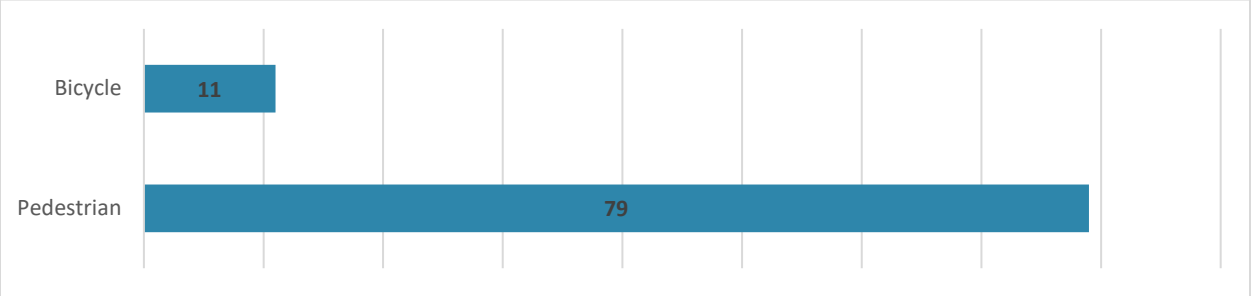
Demographic Information	Year					Total
	2017	2018	2019	2020	2021	
Older Driver	8	8	11	13	13	53
Younger Driver	14	10	21	23	27	95
Alcohol Involvement	11	11	8	13	22	65

Source: CARTS, 2023

Pedestrian and Bicycle Crash Summary

Of the fatal and serious injury crashes from 2018 through 2022, there were 79 pedestrian crashes and 11 bicycle crashes in Ouachita Parish, shown in **Figure 3.5**. Forty-eight (48) of the pedestrian-involved crashes were fatal and thirty-one (31) resulted in serious injuries. The bicycle-involved crashes resulted in five (5) fatal crashes and six (6) serious injury crashes. Alcohol was involved in fifteen (15) pedestrian crashes and four (4) bicycle crashes.

Figure 3.5: Bicycle/Pedestrian Fatal and Serious Injury Crashes, 2017 – 2021



Source: CARTS, 2023

The greatest number of pedestrian-involved crashes resulting in fatalities or serious injuries occurred along:

- US 165 between Richwood Rd 2 and I-20
- US 80 between LA 840-6 (North 18th St) and Washington St/Lamy Ln

Nearly 80 percent of pedestrian crashes and 55 percent of bicycle crashes occurred during dark conditions which indicates a need for increased lighting along roadways with bicycle and pedestrian facilities. **Table 3.4** summarizes the lighting and surface conditions for fatal and serious injury pedestrian and bicycle crashes.

Table 3.4: Bicycle/Pedestrian Fatal and Serious Injury Crashes, 2017 – 2021 Lighting and Surface Conditions

	Dry	Wet	Total
Pedestrian	**70**	**9**	**79**
Daylight	11	2	13
Dawn/dusk	3	0	3
Dark - continuous streetlights	21	3	24
Dark - street lights at intersection only	7	1	8
Dark - not lighted	27	3	30
Other	1	0	1
Unknown	0	0	0
	Dry	**Wet**	**Total**
Bicycle	**10**	**1**	**11**
Daylight	3	1	4
Dawn/dusk	0	0	0
Dark - continuous streetlights	2	0	2
Dark - street lights at intersection only	2	0	2
Dark - not lighted	2	0	2
Other	1	0	1
Unknown	0	0	0

Source: CARTS, 2023

3.3 High Injury Network

The High-Injury Network (HIN) analysis identifies locations with historical safety concerns to guide local investments in infrastructure and safety programming. Two (2) separate HINs were developed: one focused on all roadway users and the other on vulnerable road users (bicyclists and pedestrians).

Each HIN consists of roadway segments and intersections that experience the crash frequency of fatal and serious injury crashes and are shown in **Figure 3.6** and **Figure 3.7**.

Segment Analysis

The segment analysis identified the top 25 segments in Ouachita Parish with the highest frequency of fatal and serious injury crashes. The following process was used to determine those segments:

1. Segments with at least one fatal and/or serious injury crash were sorted based on the number of fatal and/or serious injury crashes.
2. While maintaining the order of fatal and serious injury crash frequencies, segments were then sorted based on the number of total injury crashes (this included all injury classifications).
3. Segments were then sorted based on the total number of crashes, while maintaining the order established in the prior steps.

Intersection Analysis

The intersections analysis identified the top 25 intersections in Ouachita Parish that has the highest frequency of fatal and serious injury crashes, using the same process discussed for segment crashes.

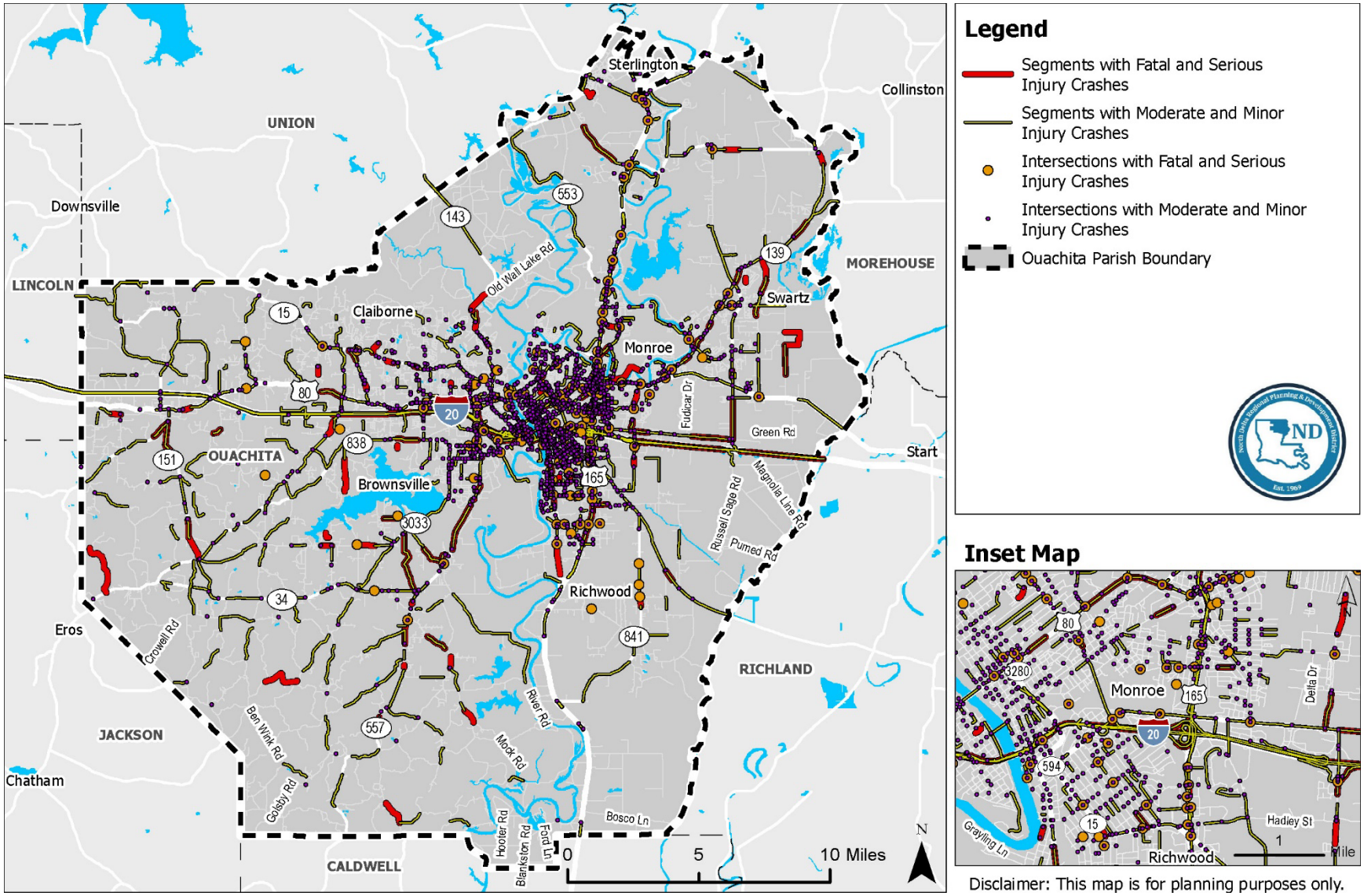
Table 3.6 and **Table 3.7** display the top 25 focus areas for segments and intersections, respectively.

Vulnerable Road Users HIN

The vulnerable road users HIN consists of segments and intersections that experienced bicycle and pedestrian fatal and serious injury crashes within Ouachita Parish from 2018 through 2022. Only segments and intersections that experienced at least one (1) fatal or serious injury vulnerable road user crash were considered.

Table 3.8 displays the top 10 segment focus areas for the vulnerable users HIN, while **Table 3.9** displays the top 10 intersection focus areas for the vulnerable users HIN.

Figure 3.6: High Injury Network – All Users



Disclaimer: This map is for planning purposes only.

Figure 3.7: High Injury Network – Vulnerable Users

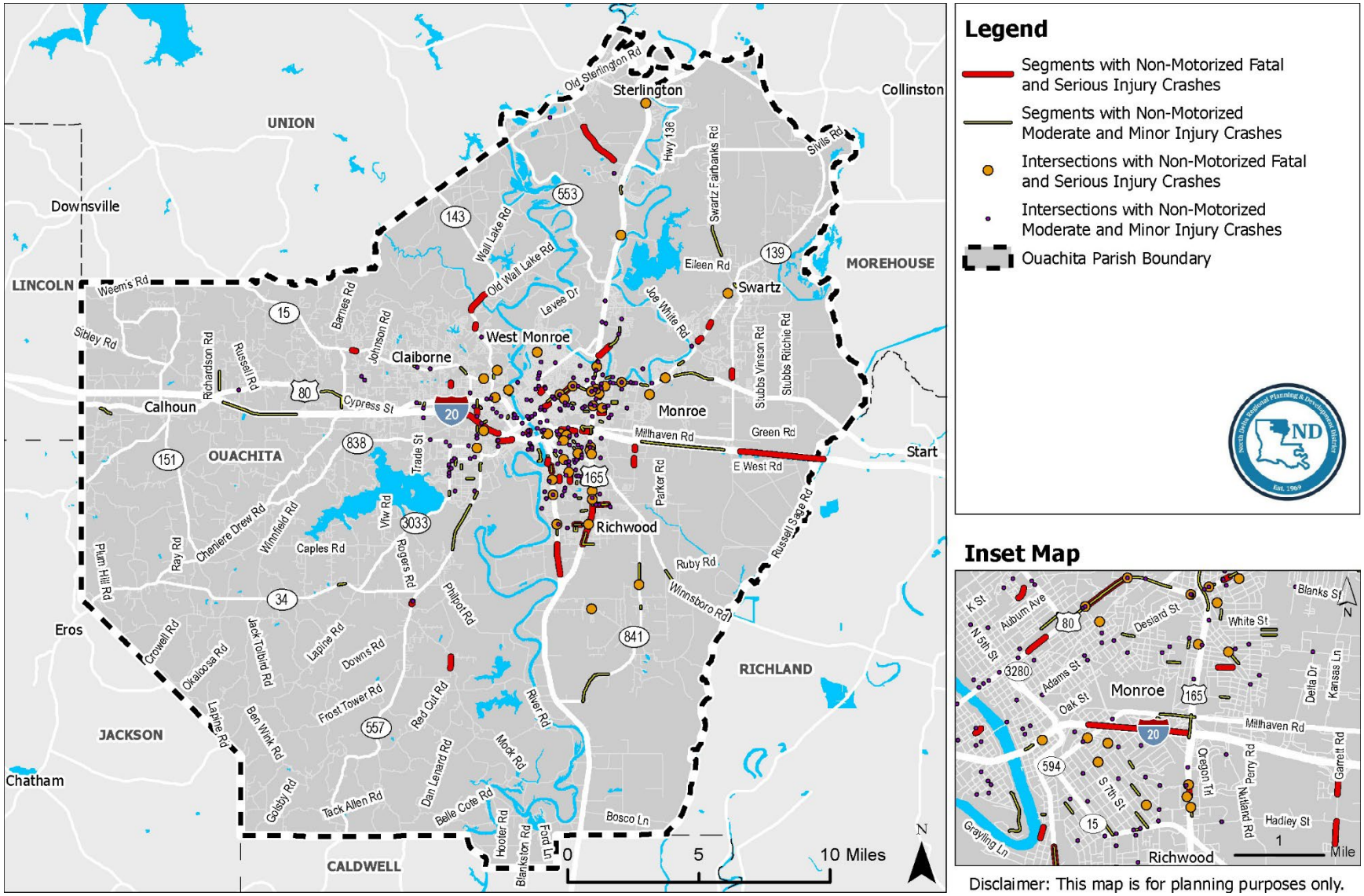


Table 3.5: Top Fatal and Serious Injury Crash Segments, 2017-2021

Roadway	From	To	Length (mi)	Fatal Crashes	Serious Injury Crashes
US 80 (Louisville Ave)	Oliver Rd	Newcombe St	0.2	3	2
I-20 WB	I-20 WB Off-Ramp at S 5th St	I-20 WB On-Ramp at S Grand St	0.4	1	3
US 80 (Louisville Ave)	Newcombe St	Washington St	0.3	2	2
LA 617 (Thomas Rd)	Glenwood Dr	McMillan Rd	0.2	0	2
I-20 EB	I-20 EB Off-Ramp at LA 617 (Thomas Rd)	I-20 EB Off-Ramp at LA 34 (Stella St)	1.4	1	1
I-20 WB	I-20 WB On-Ramp at LA 594 (Texas Ave)	I-20 WB Off-Ramp at LA 594 (Texas Ave)	0.5	1	1
LA 594 (Swartz School Rd)	LA 594 (Millhaven Rd)	Huenefeld Rd	1.6	1	1
I-20 EB	I-20 EB Off-Ramp at S 5th St	I-20 EB On-Ramp at S 5th St	0.4	1	1
I-20 EB	Jackson St	I-20 EB On-Ramp at Layton Ave	0.4	0	2
I-20 EB	Russell Sage Rd	Ouachita Parish Line	3.2	2	0
Elkins Rd	Lenard Ln	Bill Golson Rd	1.2	1	1
LA 584 (Millhaven Rd)	Wagon Wheel Rd	LA 594 (Swartz School Rd)	1.5	1	1
Stubbs Vinson Rd	White Oak Dr	Stubbs Ritchie Rd	0.4	1	1
LA 139	0.6 miles south of LA 134	LA 134	0.6	2	0
US 80 (Louisville Ave)	Washington St	Plaza Blvd	0.2	0	1
LA 20 EB	LA 546	LA 3246 (Well Rd)	2.8	1	0
I-20 WB	I-20 WB On-Ramp at S 5th St	I-20 WB Off-Ramp at S 5th St	0.3	0	1
I-20 EB	I-20 EB On-Ramp at LA 34 (Stella St)	I-20 EB Off-Ramp at S 5th St	0.3	0	1
I-20 EB	Garrett Rd	Russell Sage Rd	3.1	1	0
I-20 EB	I-20 EB Off-Ramp at LA 34 (Stella St)	I-20 EB On-Ramp at LA 34 (Stella St)	0.6	0	1
I-20 EB	Texas Ave	US 165 (MLK Jr Dr)	0.5	1	0
US 80 (Cypress St)	Wallace Dean Rd	Vernon Ln	0.1	0	1
US 165 NB (Sterlington Rd)	US 165 NB Off-Ramp at US 80	US 165 NB On-Ramp at US 80	0.5	0	1

Roadway	From	To	Length (mi)	Fatal Crashes	Serious Injury Crashes
LA 34 (Jonesboro Rd)	Kings Lake Rd	Winks Ln	1.9	1	0
US 80 (Louisville Ave)	Superior Lane	Bread St	0.2	0	1
US 80 (Louisville Ave)	Oliver Rd	Newcombe St	0.2	3	2
I-20 WB	I-20 WB Off-Ramp at S 5th St	I-20 WB On-Ramp at S Grand St	0.4	1	3
US 80 (Louisville Ave)	Newcombe St	Washington St	0.3	2	2
LA 617 (Thomas Rd)	Glenwood Dr	McMillan Rd	0.2	0	2
Washington Avenue	N 18th Street	Armand Connector	1.2	0	4
Glenwood Drive	Parkwood Drive	McMillan Road	0.8	1	0

Source: CARTS, 2023

Table 3.6: Top 25 Fatal and Serious Injury Crash Intersections, 2017-2021

Roadway	At	Fatal Crashes	Serious Injury Crashes
US 80 (Louisville Ave)	@ Lamy Ln	1	2
US 165	@ LA 15 (Winnsboro Rd)	0	2
US 80 (Louisville Ave)	@ Oliver Rd	1	1
US 165	@ Sunset Dr	0	2
LA 617 (Thomas Rd)	@ Basic Dr	0	2
US 80 (Cypress St)	@ LA 617 (Thomas Rd)	0	2
US 165	@ LA 2	2	0
US 80 (Cypress St)	@ Vernon Ln	1	1
US 165	@ MLK Dr	2	0
MLK Dr	@ Renwick St	0	2
US 165 Bus. (Jackson St)	@ Standifer Ave	0	2
US 165 (Sterlington Rd)	@ Webster St	0	2
US 165 (Sterlington Rd)	@ Magnolia Cv	1	1
LA 139	@ Music Rd	2	0
Temple Dr	@ S 10th St	1	1
US 165	@ Monterey Cir	1	1
Texas Ave	@ S 18th St	0	1
US 165	@ Renwick St	0	1
US 165	@ Century Blvd	0	1
US 165 (Sterlington Rd)	@ W Elmwood Dr	0	1
MLK Dr	@ Louberta St	0	1
US 80 (Louisville Ave)	@ Bread St	0	1
US 80 (Desiard St)	@ S College Ave	0	1
US 80 (Louisville Ave)	@ N 19th St	0	1
LA 143 (N 7th St)	@ US 80 (Cypress St)	0	1
US 80 (Louisville Ave)	@ Lamy Ln	1	2

Source: CARTS, 2023

Table 3.7: Top 10 Fatal and Serious Injury Vulnerable User Crash Segments, 2017-2021

Roadway	From	To	Length (mi)	Fatal Crashes	Serious Injury Crashes
US 80 (Louisville Ave)	Oliver Rd	Newcombe St	0.2	3	2
US 80 (Louisville Ave)	Newcombe St	Washington St	0.3	2	2
Richwood Rd 1	Preston Loop	Reddix Ln	0.2	0	1
US 165	Richwood Rd 2	Baylor Dr	0.4	1	0
US 165 SB	Dellwood Dr	Monterey Cir	0.2	1	0
Dellwood Dr	Stonegate Dr	Blackwood Dr	0.3	0	1
US 165 Bus. (Jackson St)	Hippolyte Ave	Forrest Ave	0.2	0	1
LA 617 (Thomas Rd)	Glenwood Dr	McMillan Rd	0.2	0	2
I-20 EB	I-20 EB Off-Ramp at LA 617 (Thomas Rd)	I-20 EB Off-Ramp at LA 34 (Stella St)	1.4	1	1
I-20 WB	I-20 WB On-Ramp at LA 594 (Texas Ave)	I-20 WB Off-Ramp at LA 594 (Texas Ave)	0.5	1	1

Table 3.8: Top 10 Fatal and Serious Injury Vulnerable User Crash Intersections, 2017-2021

Roadway	At	Fatal Crashes	Serious Injury Crashes
MLK Dr	@ Renwick St	0	2
US 165	@ Monterey Cir	1	1
US 80 (Louisville Ave)	@ Oliver Rd	1	1
US 165 Bus. (Jackson St)	@ Standifer Ave	0	2
US 80 (Desiard St)	@ Francis Dr	0	1
US 80 (Louisville Ave)	@ Lamy Ln	1	2
US 165 Bus. (Louisville Ave)	@ Desiard St	0	1
US 165 Bus. (Louisville Ave)	@ Smith Ave	0	1
US 165	@ Sunset Dr	0	2
US 165	@ LA 2	2	0

Source: CARTS, 2023

4.0 Equity Considerations

Equity is a central guiding principle in the process of identifying the HIN, engaging stakeholders, and determining project priorities within the SS4A program. The program strongly emphasizes inclusive public outreach and input gathering. Data sets provided by the FHWA and Census Bureau are used to identify and locate equity populations so that fairness and equity can be considered in safety solutions. The equity analysis employed in this effort incorporates the communities required by the FHWA through TDCs and APPs. Additionally, the plan incorporates an EJ element to identify areas which are a Community of Concern (CoC) and specific and equitable safety strategies tailored to their needs. This EJ analysis uses the same ACS year that was used to determine the TDCs.

This section displays the methodology used to identify the TDCs, APPs, and CoCs within the parish with an emphasis on an inclusive and equitable process.

4.1 Transportation Disadvantaged Communities

Determining TDCs

Transportation is a vital aspect of society, enabling individuals to access essential services, education, employment, and social opportunities. Despite this need, some communities face significant challenges in accessing reliable and affordable transportation options, leading to isolation, limited economic opportunities, and decreased quality of life. These communities are known as Transportation Disadvantaged Communities and are defined by the FHWA[2] as:

> "A **"Historically Disadvantaged Community"** is defined by the Justice40 Interim Guidance Addendum, issued by the White House Office of Management and Budget (OMB), White House Council on Environmental Quality (CEQ), and Climate Policy Office (CPO):
>
> 1.) any **Census Tract** identified as disadvantaged in the Climate & Economic Justice Screening Tool (geoplatform.gov) (CEJST), created by CEQ, which identifies such communities that have been marginalized by underinvestment and overburdened by pollution; or
> 2.) any **Federally Recognized Tribe or Tribal entity**, whether or not they have land."

2 https://www.transportation.gov/grants/dot-navigator/equity-and-justice40-analysis-tools

The TDCs defined by FHWA are displayed in the Climate and Economic Justice Screening Tool (CEJST).

TDCs are typically characterized by limited access to affordable transportation options, including:

- public transit services,
- sidewalks,
- bike lanes, and
- safe pedestrian infrastructure.

These communities are often comprised of:

- low-income individuals
- older adults, aged 65+
- minority populations
- persons with disabilities
- persons living in geographically isolated or underserved areas

The lack of accessible transportation options in these communities adds to the existing social and economic disparities.

Issues Faced by TDCs

- **Limited Access to Essential Services:** Lack of transportation options hinders access to healthcare facilities, grocery stores, educational institutions, and employment opportunities, leading to reduced quality of life and potential economic hardships.
- **Social Isolation:** Inadequate transportation prevents community members from participating in social and recreational activities, leading to feelings of isolation and exclusion.
- **Health Disparities:** Limited transportation options contribute to poor health outcomes as individuals struggle to reach medical appointments, engage in physical activities, or access healthy food options.
- **Environmental Impact:** Inadequate public transportation infrastructure may lead to increased reliance on private vehicles, resulting in traffic congestion, air pollution, and negative environmental consequences.

Location of TDCs

Within the Ouachita Parish, there are many areas that comprise the majority of its TDCs.

The area northeast of Monroe is characterized by low-income households and limited access to public transportation. Residents in this area may face difficulties in reaching

grocery stores, medical facilities, and employment centers due to inadequate public transit routes or long travel distances.

The southern part of Ouachita Parish faces transportation challenges due to its distance from major roads and limited access to public transit. Residents could struggle to access employment opportunities and essential services outside their neighborhood, making it difficult to improve their socio-economic conditions.

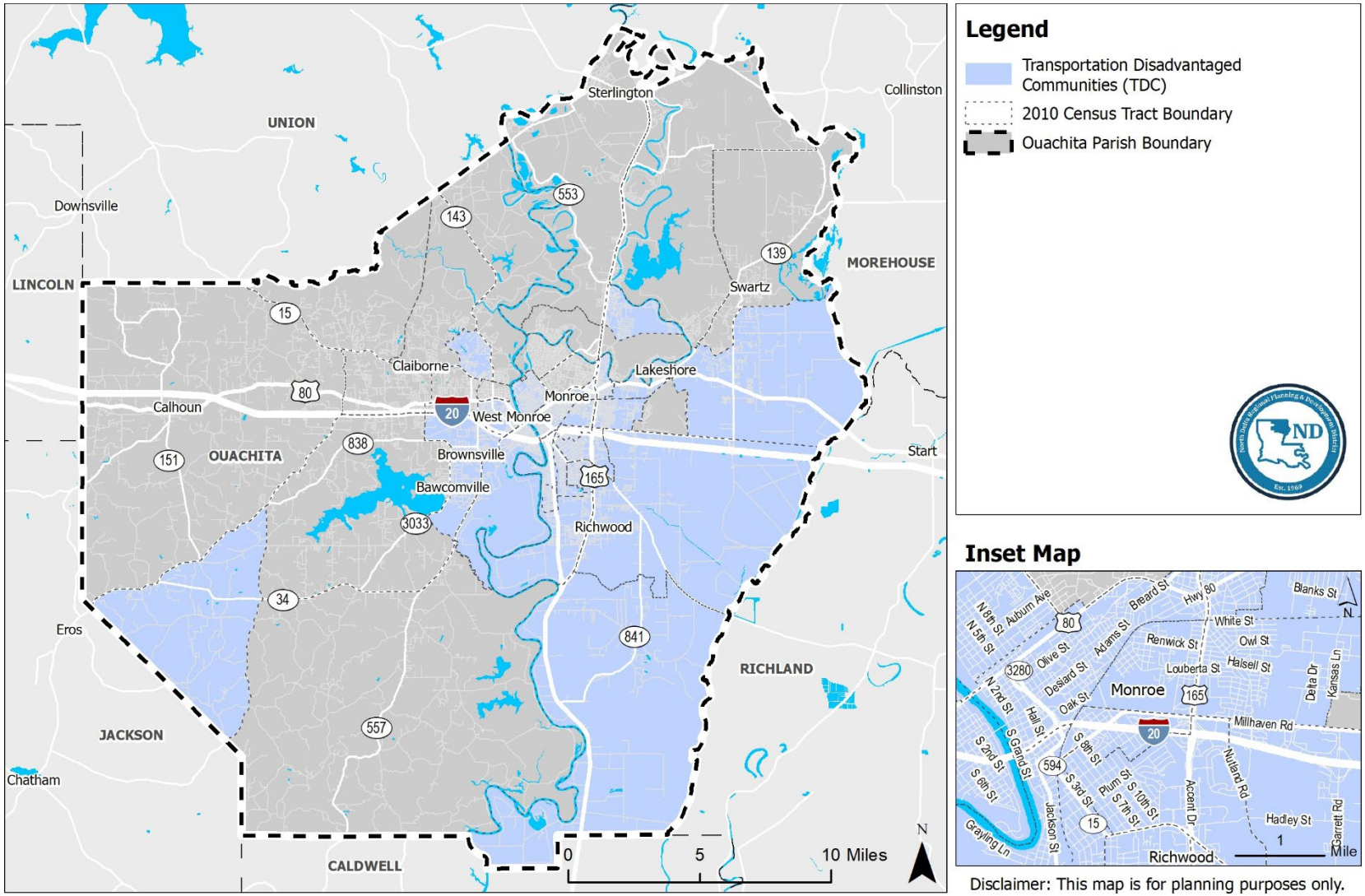
Several mobile home parks situated in the western part of Ouachita Parish experience transportation disadvantages because communities are often located away from major transportation routes and lack adequate public transportation options. As a result, residents may face difficulties in commuting to work, accessing healthcare services, and participating in community activities.

Many rural communities in the northern region of Ouachita Parish are also transportation disadvantaged. These areas typically have limited public transportation services, and residents rely heavily on private vehicles. However, for individuals without access to a car or those with limited mobility, these rural communities can present significant challenges in accessing essential services and employment opportunities.

While the Monroe Historic District is a vibrant and culturally rich neighborhood, it faces transportation disadvantages. The lack of comprehensive public transportation options and limited parking availability can make it challenging for residents and visitors to access the district's amenities, including local businesses, historic sites, and recreational areas.

Figure 4.1 displays the TDCs in the study area.

Figure 4.1: Transportation Disadvantaged Communities



Source: FHWA

Addressing Challenges for TDCs

To address the challenges faced by TDCs, a comprehensive and multi-faceted approach is necessary. Potential strategies include:

- **Enhancing Public Transportation:** Expanding and improving public transit services, including increased frequency, extended operating hours, and improved accessibility for individuals with disabilities.
- **Rideshare Programs:** Developing subsidized or on-demand transportation services tailored to the specific needs of transportation disadvantaged communities.
- **Infrastructure Improvements:** Investing in safe and accessible sidewalks, bike lanes, and pedestrian-friendly infrastructure to promote active transportation options.
- **Community Partnerships:** Collaborating with community organizations, social service agencies, and educational institutions to identify transportation needs and develop solutions.

4.2 Areas of Persistent Poverty

Determining APPs

APPs within the study area were defined and identified by the FHWA through the Bipartisan Infrastructure Law (BIL). These communities also need targeted strategies to foster equitable and sustainable development while providing access to jobs and social opportunities.

According to the U.S. Department of Transportation[3], a project falls within an APP if it meets one (1) of the following criteria:

- The county in which the project is situated has consistently had a poverty rate of 20 percent or higher in all three of the following datasets: (a) the 1990 decennial census; (b) the 2000 decennial census; and (c) the most recent Small Area Income Poverty Estimates available as of 2021.
- The project is located in a Census Tract where the poverty rate is at least 20 percent, as determined by the 2014-2018 5-year data series from the American Community Survey conducted by the Bureau of the Census.
- The project is situated in any territory or possession of the United States.

The identification process for APPs involves a comprehensive analysis of various socio-economic indicators, including income levels, educational attainment, employment rates, and access to essential services. Valuable insights are gathered from data sources such as

[3] Areas of Persistent Poverty & Historically Disadvantaged Communities | US Department of Transportation

the U.S. Census Bureau, the American Community Survey, and local government reports, offering a clear understanding of the spatial distribution of poverty and its persistence over time. FHWA displays APPs in the RAISE Grant Project Location Verification Tool.

Issues Faced by APPs

The enduring poverty within APPs can be attributed to a combination of factors, including:

- **Limited Economic Opportunities:** A shortage of diverse industries, initiatives for job creation, and access to quality employment opportunities hampers economic mobility and the residents' capacity to enhance their socio-economic conditions.
- **Education Disparities:** Inequalities in accessing quality education, spanning from early childhood to vocational training, can limit residents' acquisition of skills and qualifications necessary for improved employment prospects.
- **Inadequate Infrastructure:** Insufficient infrastructure, including transportation networks and community facilities, can impede economic growth and limit access to essential services, contributing to the perpetuation of poverty.
- **Social and Racial Inequities:** Persistent poverty often intersects with social and racial inequities, with marginalized communities facing discrimination, limited social capital, and reduced access to resources and opportunities.

Location of APPs

The southern part of Monroe, the largest city in Ouachita Parish, is characterized by persistent poverty. This area encompasses neighborhoods with a high concentration of low-income households, limited job opportunities, and inadequate access to quality education and healthcare services. Residents often face barriers to improving their economic situations and breaking the cycle of poverty.

The East End of Monroe is another area identified as an Area of Persistent Poverty. It is home to predominantly low-income neighborhoods where residents face challenges related to unemployment, limited affordable housing options, and inadequate access to essential services. These factors contribute to the persistence of poverty in the East End community.

While West Monroe generally has a more affluent reputation, certain pockets within the city experience persistent poverty. These areas often have a higher concentration of low-income households, limited access to economic opportunities, and a lack of vital community resources. Efforts are underway to address the specific needs of these communities and uplift residents out of poverty.

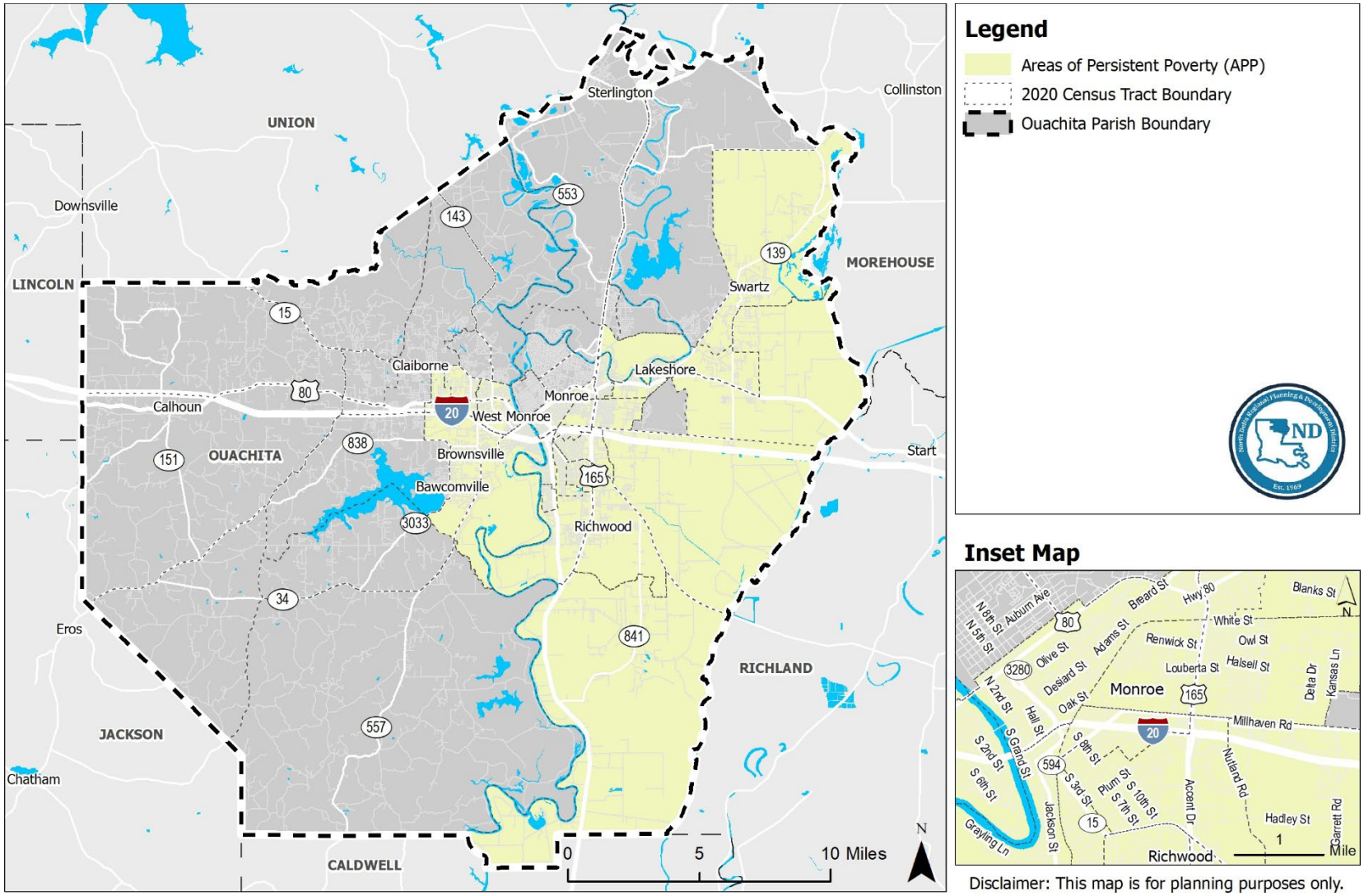
Several rural communities in Ouachita Parish also face persistent poverty. These areas are characterized by limited economic diversification, low-wage employment opportunities, and

insufficient access to basic amenities. Residents in these rural communities often struggle with limited transportation options, healthcare disparities, and the absence of essential infrastructure for economic development.

The urban core of Ouachita Parish, including parts of Monroe and surrounding areas, experiences persistent poverty. These neighborhoods face multiple challenges, including high unemployment rates, inadequate access to quality education and healthcare, and limited resources for community development. Poverty reduction initiatives focused on the urban core aim to address the complex issues faced by residents in these areas.

Figure 4.2 displays the APPs in the study area.

Figure 4.2: Areas of Persistent Poverty



Source: FHWA

Addressing Challenges for APPs

Strategies that can address the needs of TDCs will often be able to address the needs of APPs as well.

- **Enhancing Public Transportation:** Expanding and improving public transit services, including increased frequency, extended operating hours, and improved accessibility for individuals with disabilities. This strategy offers a lower cost transportation method that persons in poverty can use to commute.
- **Rideshare Programs:** Developing subsidized or on-demand transportation services tailored to the specific needs of those in poverty.
- **Infrastructure Improvements:** Investing in safe and accessible sidewalks, bike lanes, and pedestrian-friendly infrastructure to promote active transportation options and connectivity that allows persons in poverty to reach employment.
- **Community Partnerships:** Collaborating with community organizations, social service agencies, and educational institutions to identify transportation needs and develop solutions.

4.3 Environmental Justice and Communities of Concern

While not required by the FHWA as part of the SS4A process, EJ is a critical aspect of any safety planning process. It focuses on providing equitable outcomes for all communities, particularly those that have historically faced disparities in environmental decision-making. These disparities have led to disproportionate environmental impacts on disadvantaged communities from transportation and infrastructure projects. The inclusion of the EJ analysis aligns with the broader goals of the SS4A plan and the Justice40 Initiative which emphasizes inclusivity and equitable solutions.

Determining EJ Areas and Communities of Concern

To obtain data for this analysis that is consistent with the FHWA's APP data, the American Community Survey (ACS) 2021 5-Year Estimates were used. The EJ analysis considered six (6) populations to create a CoC indicator.

The populations analyzed during the EJ analysis included:

- **Minority Population:** Persons who are part of one or more racial or ethnic minorities.
- **Households Without a Vehicle:** Households that are heavily reliant on public transportation.
- **Poverty or Low-Income:** Persons facing persistent or increasing poverty rates.
- **Older Adults:** Persons aged 65 and older.

- **Limited English Proficiency (LEP):** Persons who face language barriers and do not speak English well or at all.
- **Persons with Disabilities:** Persons diagnosed as having a disability.
- **Persons with Disabilities:** Populations who identify with having a disability.

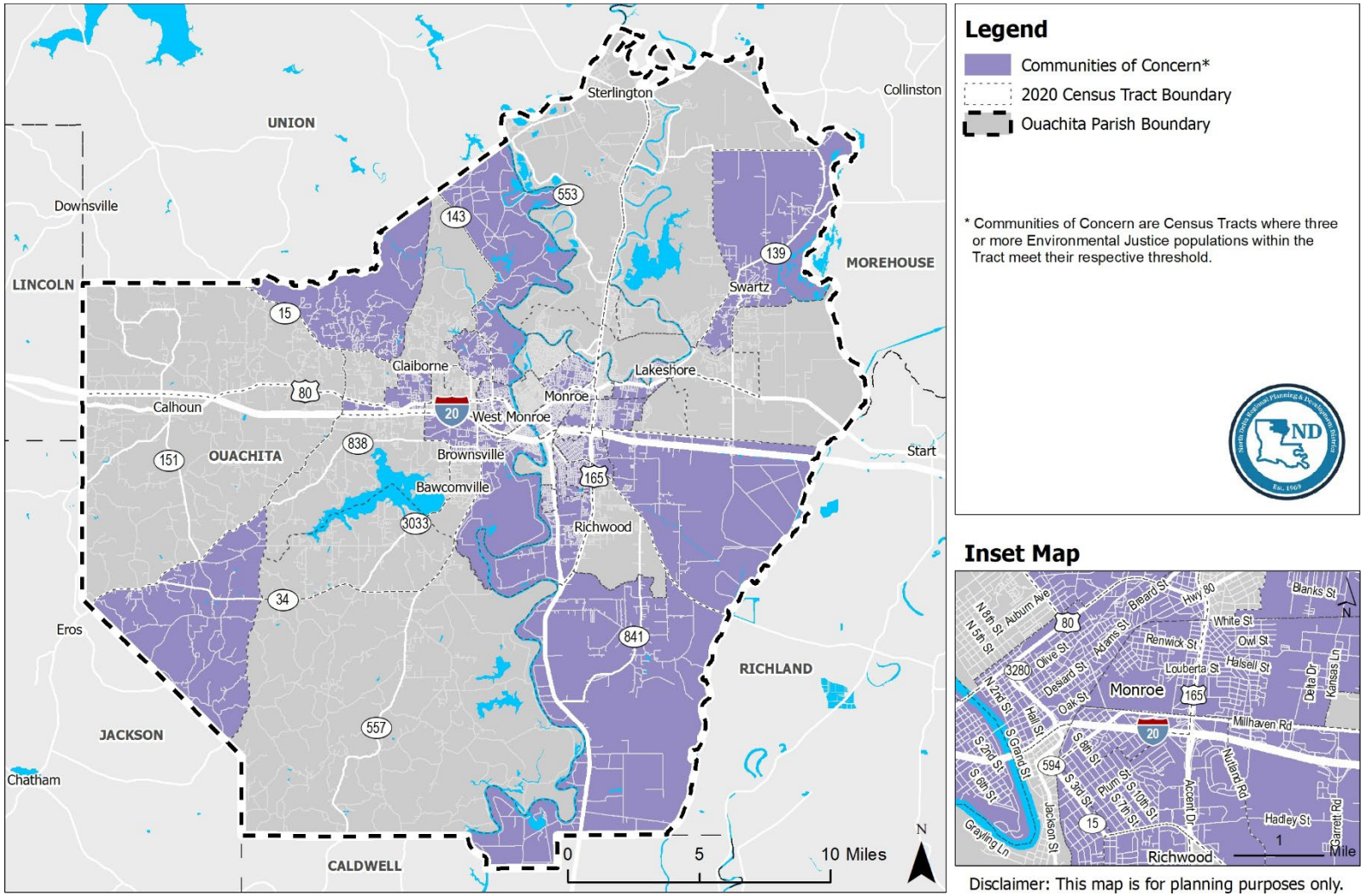
Potential EJ Census Tracts are identified where the percentage of the analyzed population that reside in the tract is higher than the county average. Tracts that contain three (3) or more populations that qualify as potential EJ locations are considered CoCs. Ouachita Parish's CoCs, as displayed in **Figure 4.3,** are specific neighborhoods or populations that would be disproportionately impacted by environmental hazards or lack access to environmental benefits. These communities are often characterized by a high concentration of minority and low-income residents who experience increased exposure to pollution, compromised health outcomes, and limited access to green spaces and other environmental resources.

Location of Communities of Concern

Within Ouachita Parish, there are several areas that comprise the Communities of Concern:

- Located in Monroe, the Martin Luther King Jr. Drive area is one of the communities where environmental justice focus groups are active. This neighborhood has a large population of LEP, low-income, and minorities, and faces environmental challenges such as limited access to green spaces, inadequate waste management infrastructure, and potential exposure to pollutants.
- In the southern part of Ouachita Parish, is another area of focus for environmental justice groups. This community may face issues related to contaminated soil, air pollution, and a lack of green infrastructure.
- Northern parts of Ouachita Parish have many rural parts that contain minority and low-income populations. Ouachita Parish has an industrial corridor that includes areas near manufacturing facilities and industrial sites.

Figure 4.3: Communities of Concern



Source: ACS 2021 5-Year Estimates

Addressing Challenges for Communities of Concern

To address the challenges faced by CoCs, a comprehensive and multi-faceted approach is necessary. Some potential strategies include:

- **Community Engagement and Empowerment**: Foster partnerships between community organizations, advocacy groups, and government agencies to actively involve residents in decision-making processes, provide platforms for community input, and amplify the voices of marginalized communities. This strategy also includes outreach to faith-based organizations and places where these communities gather or access services.
- **Equitable Policy Development**: Implement policies and regulations that prioritize environmental justice and promote fair treatment for all communities. Policies may include stricter pollution control measures, equitable distribution of green spaces, and targeted infrastructure investments in underserved areas.
- **Accessible Transportation:** Improve public transportation infrastructure and services in underserved communitiesto provide affordable, reliable, and accessible transportation options that connect residents to essential services, employment opportunities, and recreational areas.
- **Education and Awareness:** Develop educational programs and initiatives focused on environmental justice andawareness of environmental issues, health impacts, and sustainable practices. These programs can empower communities to advocate for their rights and actively participate in the improvement process.

Equity Focus Groups

While Communities of Concern indicate which areas within the parish need the greatest focus, the needs of these communities will vary depending upon their unique challenges. **Figure 4.4** through **Figure 4.9** display the locations of the various EJ communities used to determine the CoCs.

Figure 4.4 shows households without vehicles. This population group faces challenges related to transportation and mobility. Lack of personal vehicles restricts their ability to access essential services, such as healthcare, education, employment, and grocery stores. These households often rely on public transportation, shared mobility services, or walking and cycling.

The older adult population, shown in **Figure 4.5**, often faces challenges related to accessing essential services, such as healthcare, social support, and transportation. Providing equitable access to these services is crucial for their quality of life. Many of the older population coexist with households without a vehicle.

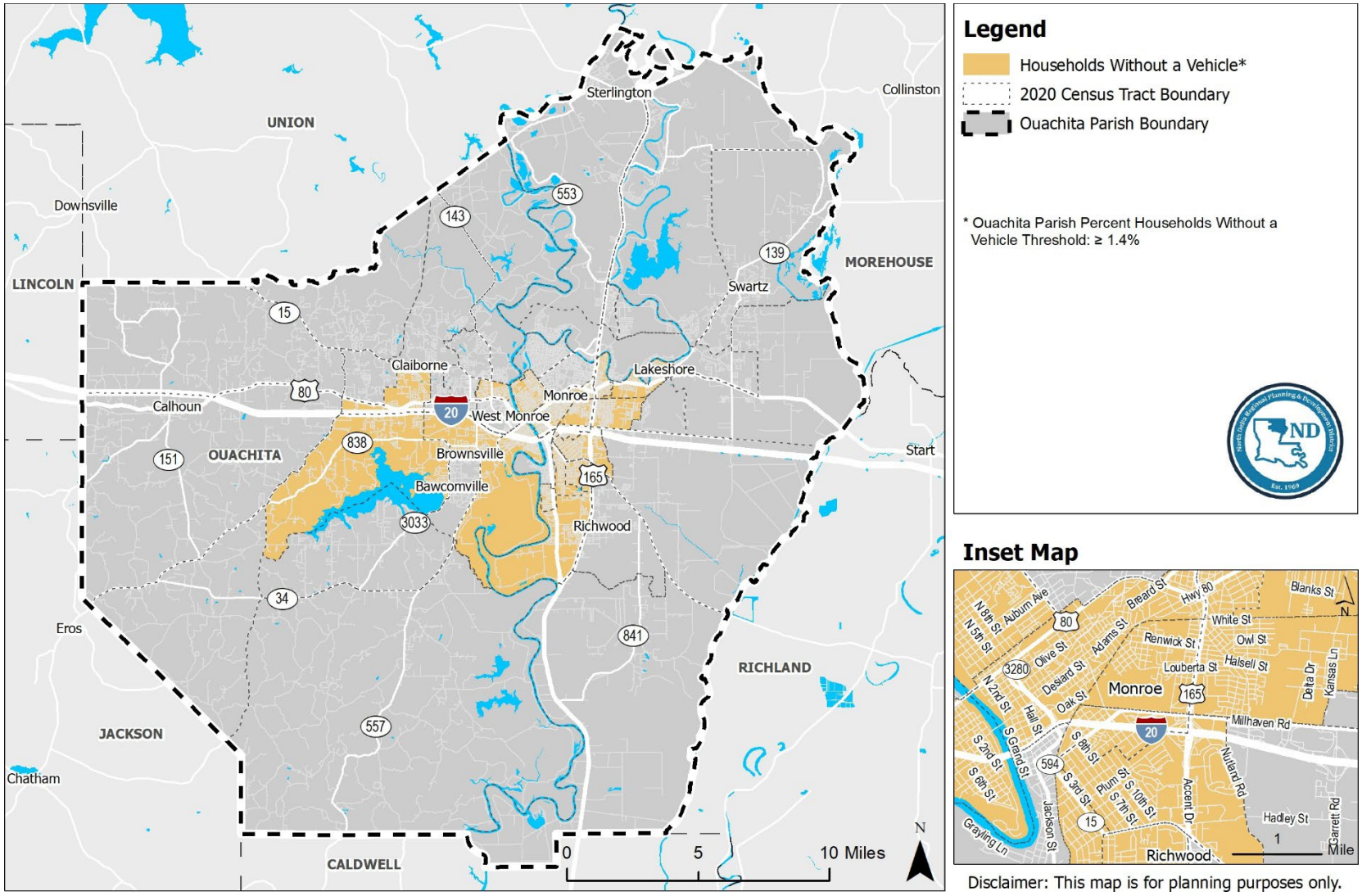
Ouachita Parish's LEP population, shown in **Figure 4.6**, should have equal opportunities to enjoy and benefit from the parish's offerings. Many of the LEP populations overlap with the minority and low-income groups.

Minority populations in Ouachita Parish, displayed in **Figure 4.7**, face a disproportionate burden of environmental hazards in addition to racial discrimination. They may reside in areas with higher pollution levels, proximity to industrial sites, or inadequate access to clean air, water, and green spaces.

Transportation costs can be a significant burden for low-income households, particularly if they rely on private vehicles. Most employees within the parish commute alone in a vehicle, while transit and non-motorized transportation use are limited. This trend affects the development of the transportation system and how low-income persons, shown in **Figure 4.8**, can access it.

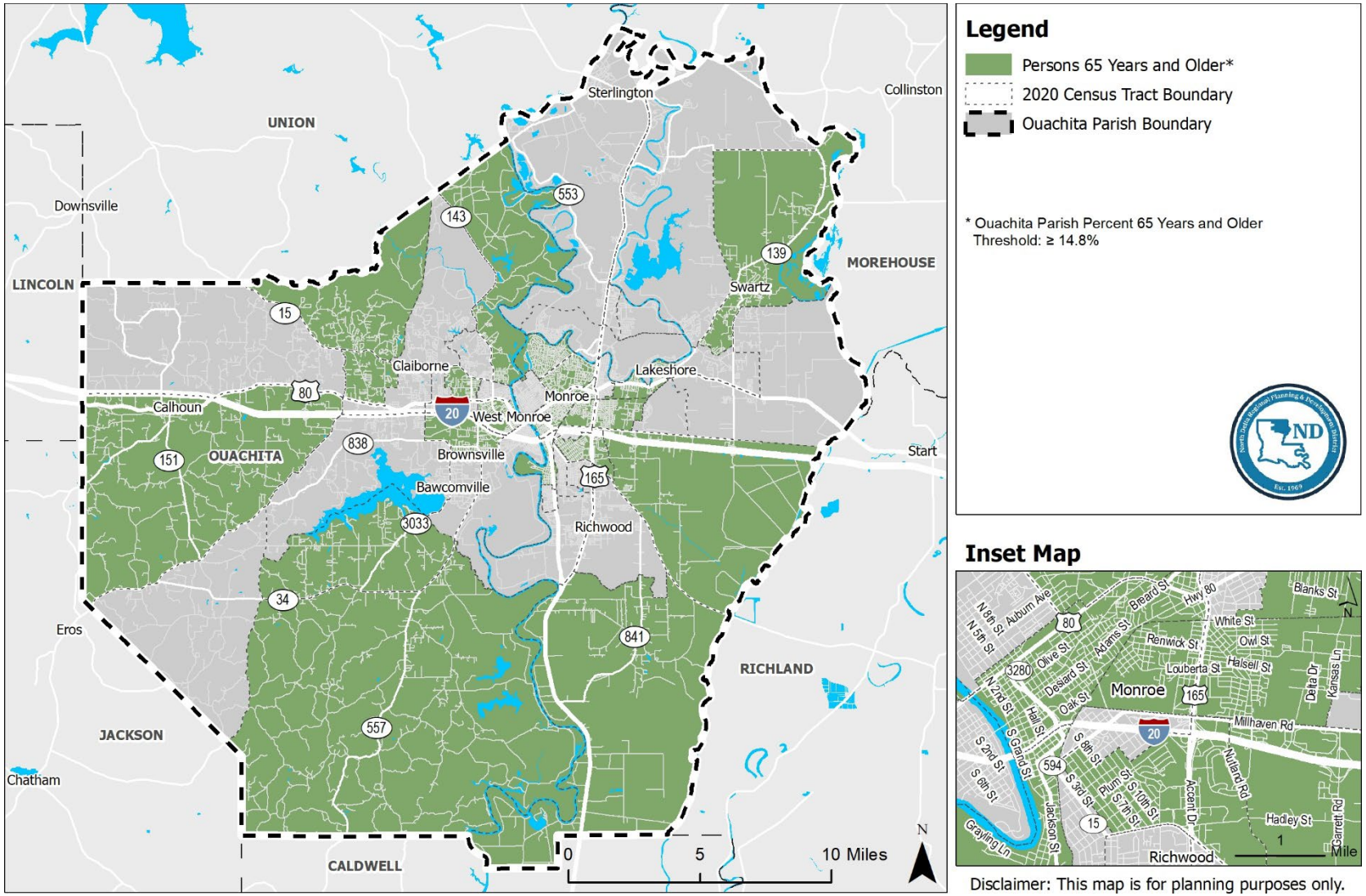
Accessible transportation options are vital for persons with disabilities, shown in **Figure 4.9**. The ability to use the transportation system provides access to education, employment, healthcare, and essential services.

Figure 4.4: Households Without a Vehicle



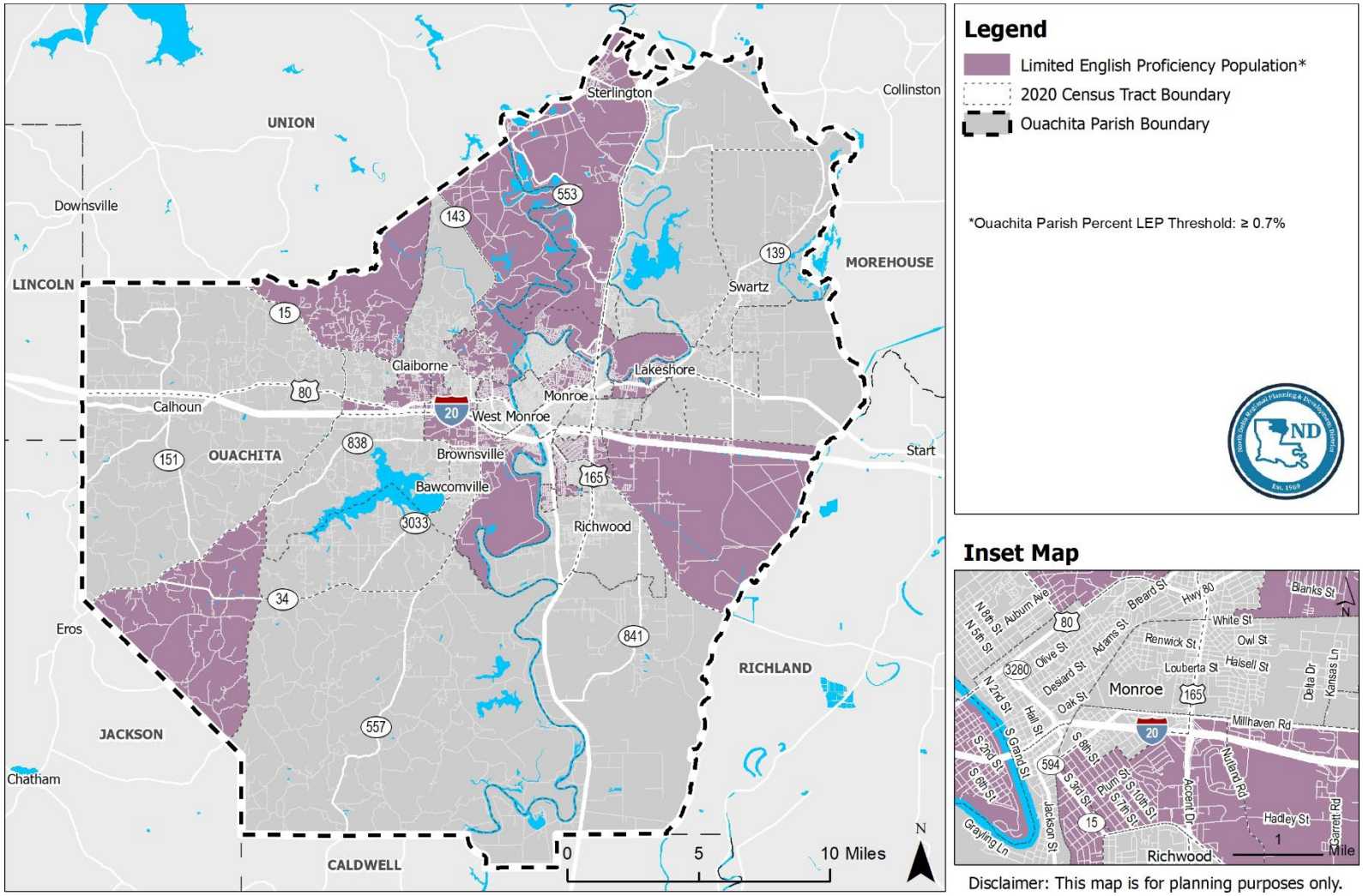
Source: ACS 2021 5-Year Estimates

Figure 4.5: Population of 65 Years and Older



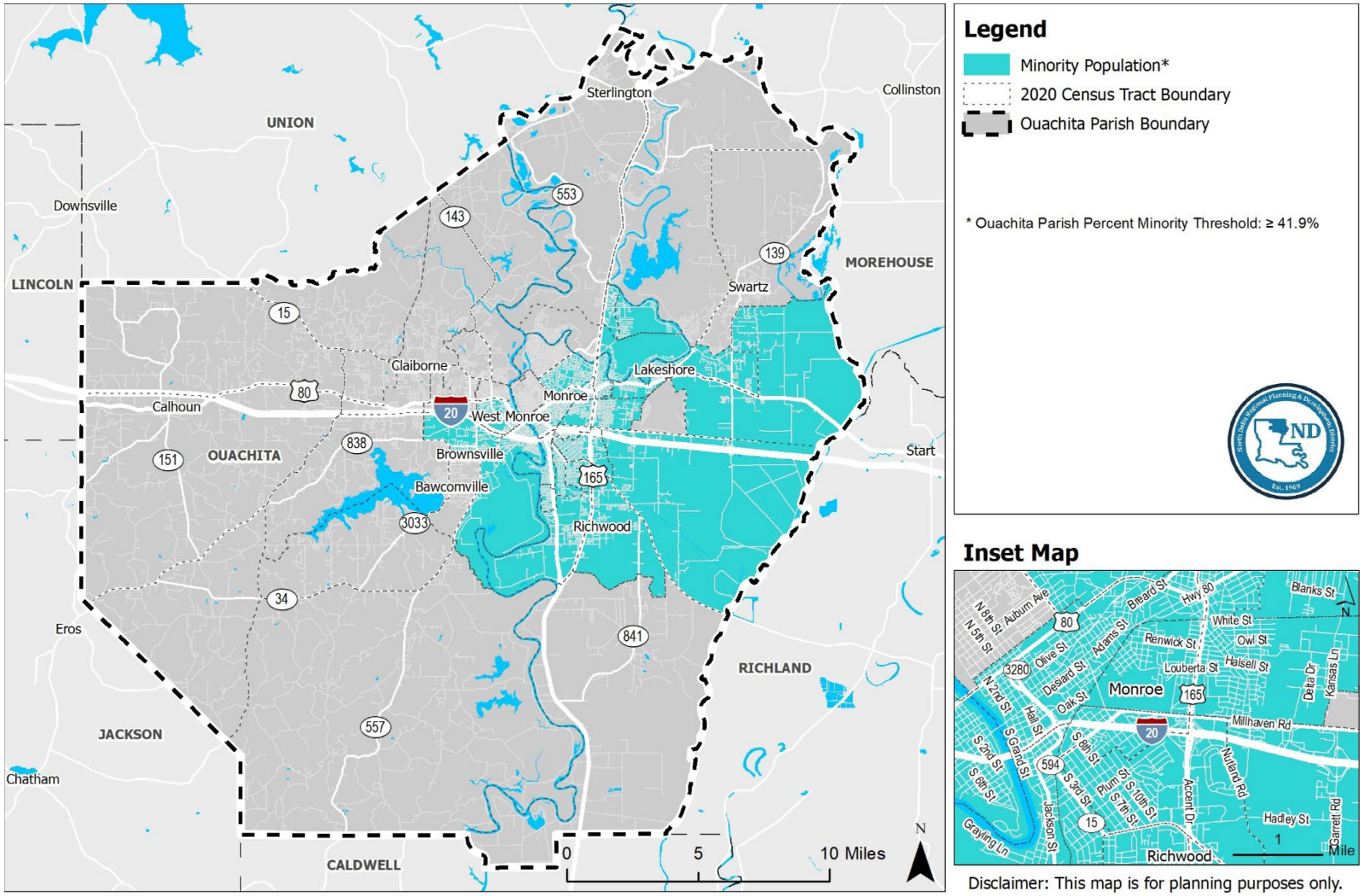
Source: ACS 2021 5-Year Estimates

Figure 4.6: Limited English Proficiency Population



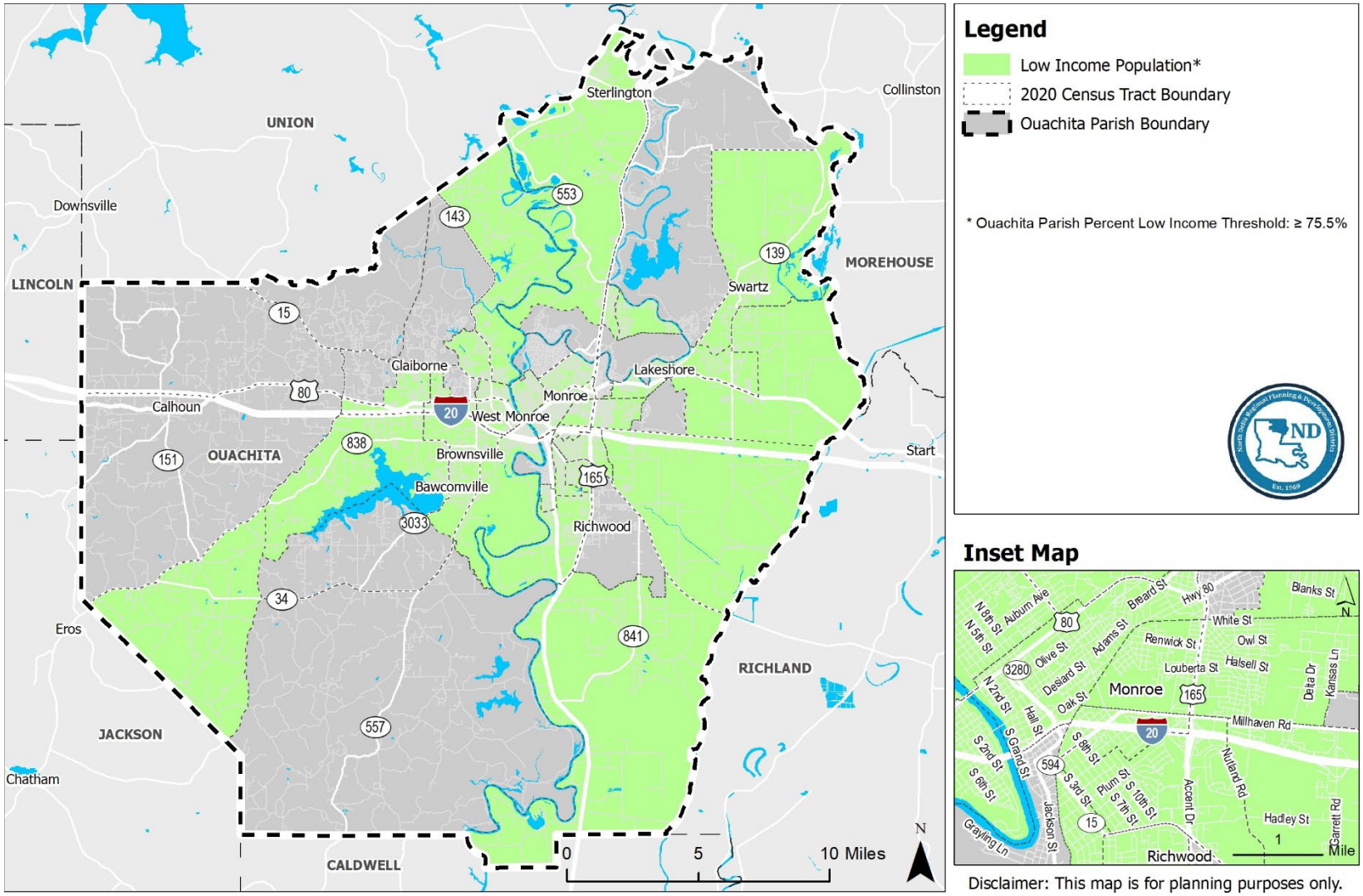
Source: ACS 2021 5-Year Estimates

Figure 4.7: Minority Population Areas



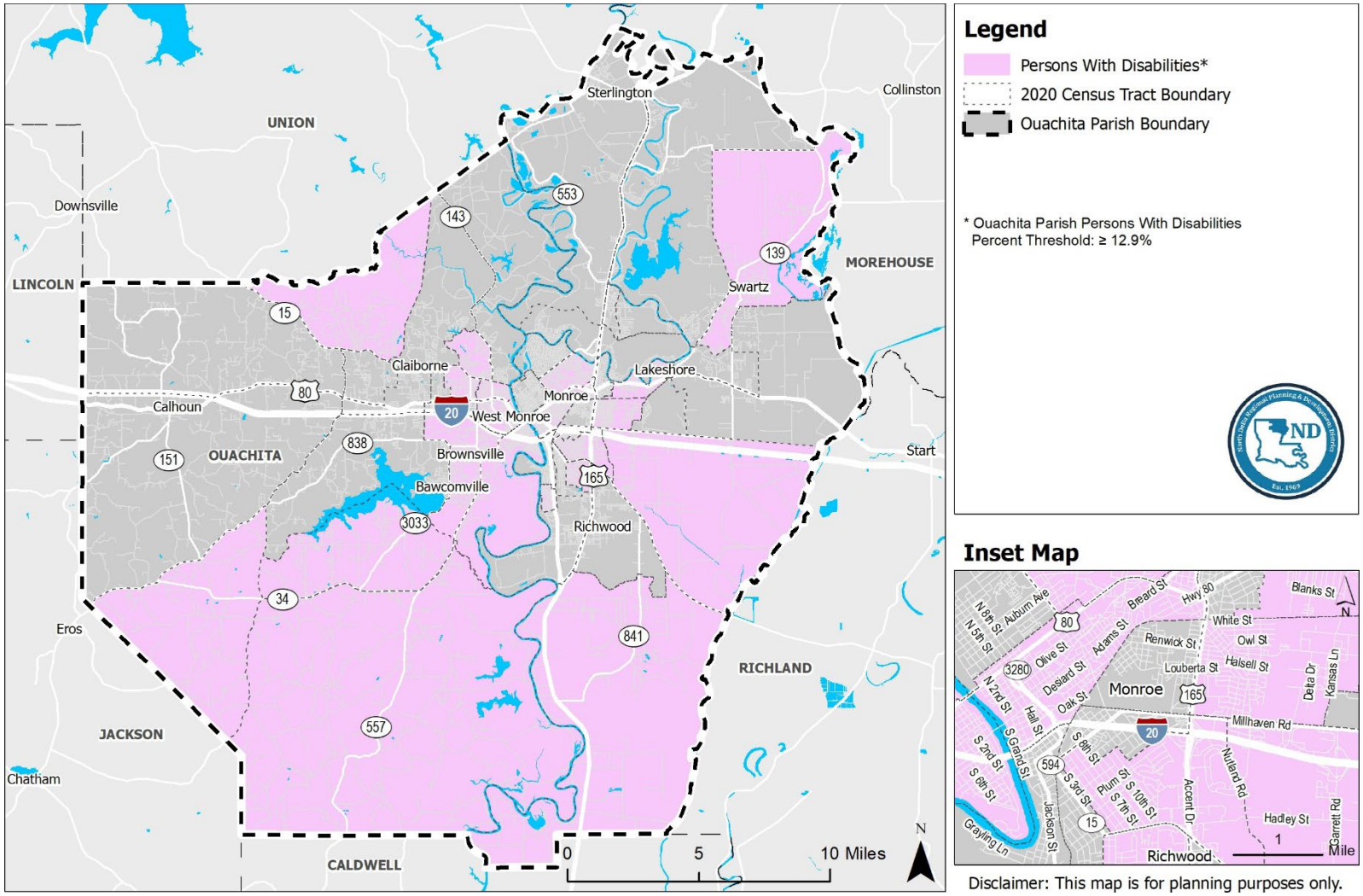
Source: ACS 2021 5-Year Estimates

Figure 4.8: Low-Income Populations



Source: ACS 2021 5-Year Estimates

Figure 4.9: Persons with Disabilities



Source: ACS 2021 5-Year Estimates

4.4 Equity Analysis

As discussed in the previous sections, Equity Areas for the plan included TDCs, APPs, and CoCs. This data was used to develop an assessment of equity concerns in the study area. These Equity Areas were also used during the project prioritization process which is discussed later in this report. An analysis was conducted for each Equity Area in the study area to determine which areas experience a disproportionate number of specific crash types and/or severities when compared to the overall network. The results of the Equity Area analysis are displayed in **Figure 4.10**.

Figure 4.10: OCOG Equity Area Analysis

	Total Crashes	Percent of Crashes	Centerline Miles	Percent of Miles	Are Crashes Disproportionate?
Study Area	27,943	100.00%	1,915	100.00%	
TDC Areas	20,535	73.49%	889	46.44%	Yes
APP Areas	21,054	75.35%	869	45.36%	Yes
CoC Areas	20,685	74.03%	938	48.95%	Yes

	Fatal Crashes	Percent of Crashes	Centerline Miles	Percent of Miles	Are Crashes Disproportionate?
Study Area	137	100.00%	1,915	100.00%	
TDC Areas	84	61.31%	889	46.44%	Yes
APP Areas	92	67.15%	869	45.36%	Yes
CoC Areas	89	64.96%	938	48.95%	Yes

	Serious Injury Crashes	Percent of Crashes	Centerline Miles	Percent of Miles	Are Crashes Disproportionate?
Study Area	191	100.00%	1,915	100.00%	
TDC Areas	141	73.82%	889	46.44%	Yes
APP Areas	149	78.01%	869	45.36%	Yes
CoC Areas	132	69.11%	938	48.95%	Yes

	Motorized Crashes	Percent of Crashes	Centerline Miles	Percent of Miles	Are Crashes Disproportionate?
Study Area	27,502	100.00%	1,915	100.00%	
TDC Areas	20,155	73.29%	889	46.44%	Yes
APP Areas	20,669	75.15%	869	45.36%	Yes
CoC Areas	20,350	73.99%	938	48.95%	Yes

	Non-Motorized Crashes	Percent of Crashes	Centerline Miles	Percent of Miles	Are Crashes Disproportionate?
Study Area	441	100.00%	1,915	100.00%	
TDC Areas	380	86.17%	889	46.44%	Yes
APP Areas	385	87.30%	869	45.36%	Yes
CoC Areas	335	75.96%	938	48.95%	Yes

Note: Crashes are disproportionate if the percentage of total crashes that occur in an Equity Area exceeds the percent of roadway miles within the Equity Area compared to the total roadway network.

Source: CARTS, 2023; Replica, 2023

Total Crashes

Figure 4.10 illustrates that all the equity areas TDCs, APPs, and CoCs within the OCOG study area experience a disproportionate number of crashes when compared to the overall roadway network. The disproportionate number of total crashes in the equity areas can be attributed to a variety of factors, such as:

- Inadequate infrastructure, such as poorly maintained roads or insufficient traffic signage.
- Higher concentrations of vulnerable road users, such as pedestrians and cyclists, who are more susceptible to crashes due to limited access to safe transportation options.
- Socioeconomic factors, including limited access to quality transportation and higher levels of traffic congestion, can contribute to a higher incidents of crashes in these communities.

Addressing these disparities requires a comprehensive approach that considers infrastructure improvements, access to safe transportation options, and community-specific safety initiatives.

Fatal Crashes

As shown in **Figure 4.10**, all the equity areas experienced a disproportionate number of fatal crashes within the OCOG area. The disproportionate number of fatal crashes in these equity areas can be attributed to the same factors that are shown in *Total Crashes* above in addition to:

- Lack of safety features, such as clear signage or pedestrian crosswalks, which could contribute to a higher risk of crashes with serious injuries.
- A higher presence of pedestrians and cyclists who may experience increased risk of serious injury in a crash since they lack the protection provided by a vehicle.
- Economic factors that may limit residents' access to newer vehicles with updated safety technology that could decrease the risk of more serious outcomes in the event of a crash.

Serious Injury Crashes

As shown in **Figure 4.10**, all the equity areas experience a disproportionate number of serious injury crashes. The disproportionate number of serious injury crashes in these equity areas can be attributed to the same factors that are shown in *Fatal Crashes* above.

To reduce serious injury crashes, a focused strategy that includes infrastructure upgrades, increased road maintenance, and the introduction of safety measures tailored to the needs of these communities would be beneficial. Educating residents on road safety and

promoting the use of safety features in vehicles could further help in reducing the rate of serious injury crashes.

Motorized Crashes

Figure 4.10 presents an overview of motorized crashes within the OCOG that involve automobiles, buses, and trucks (heavy vehicles). The data reveals a disproportionate concentration of motorized crashes within all equity areas. Factors that may contribute to the disproportionate number of motorized crashes affecting these equity areas include:

- Inadequate road infrastructure, including poorly maintained roads and insufficient traffic control measures.
- Socioeconomic factors, including limited access to quality transportation and higher levels of traffic congestion, can contribute to a higher incidents of crashes in these communities.
- Lack of safety features, such as clear signage, which could contribute to a higher risk of crashes with serious injuries.

Addressing these crashes requires a multifaceted approach that encompasses infrastructure enhancements, improved access to safe transportation options, and the implementation of community-specific safety initiatives.

Non-Motorized Crashes

Shown in **Figure 4.10**, all the Equity Areas experienced a disproportionate amount of non-motorized (bicycle and pedestrian) crashes within the region.

Bicyclists and pedestrians are vulnerable users and many residents within the equity areas use the biking and walking modes of transportation. Factors that may contribute to non-motorize crashes include:

- Higher concentrations of vulnerable road users, such as pedestrians and cyclists, who are more susceptible to crashes due to limited access to safe transportation options.
- Inadequate or poorly maintained pedestrian and bicycle infrastructure, such as sidewalks, crosswalks, bicycle lanes, or trails.
- Socioeconomic factors that restrict access to quality transportation and heightened levels of non-motorized traffic that increase the likelihood of non-motorized crashes occurring.

Addressing these disparities requires a comprehensive approach that encompasses infrastructure enhancements, improved access to safe transportation options for non-motorized roadway users, and the implementation of community-specific safety initiatives tailored to the needs of pedestrians and cyclists.

Strategies and Needs

Strategies

- **Targeted Infrastructure Enhancements:** Identify and prioritize projects that improve transportation safety conditions in disproportionately affected Equity Areas. Additional emphasis should be placed on roadways that experience higher crash rates. Example improvements include the addition of safe bicycle and pedestrian infrastructure, wider roadway lanes, improved signage, and traffic calming measures.
- **Community Engagement and Education:** Implement community outreach programs to educate residents about safe driving practices and raise awareness about the risks associated with high crash rates. Engaging the community in the improvement process fosters a sense of ownership and responsibility.
- **Collaboration with Local Authorities:** Collaborate with local law enforcement agencies to enhance traffic enforcement and implement measures to deter reckless driving behaviors. Increased presence and enforcement can contribute to a safer driving environment.
- **Environmental Justice Impact Assessment:** Conduct in-depth environmental justice impact assessments in Communities of Concern to identify specific environmental vulnerabilities and integrate the findings into safety improvement strategies or prioritization during transportation planning efforts.

Needs for Improvement

- **Data Collection and Monitoring:** Establish a comprehensive data collection and monitoring system to continually assess crash rates, identify emerging patterns, and adapt improvement strategies.
- **Multi-Agency Collaboration:** Facilitate collaboration between transportation authorities, environmental agencies, and social services to address the multifaceted challenges posed by the elevated crash rates.
- **Public Transportation Options:** Invest in and promote public transportation options as an alternative to personal vehicle usage, reducing overall traffic volumes and crash risks.
- **Equitable Resource Allocation:** Allocate funding and resources for safety improvements in an equitable manner and prioritize areas with the highest needs, particularly areas characterized by environmental justice concerns, persistent poverty, and transportation disadvantaged communities.

5.0 Public Engagement

5.1 Public Engagement

The use of public outreach and stakeholder input provided the opportunity for an increased understanding of the transportation safety conditions and concerns of the residents of Ouachita Parish. This feedback was used along with the technical analysis discussed in Chapter 3 to develop potential safety projects and strategies for the Safety Action Plan.

5.2 SS4A Steering Committee

To guide the development of the plan a Steering Committee was formed of representatives from Ouachita Parish and included:

- City of Monroe
- City of West Monroe
- Ouachita Parish Police Jury
- Monroe Transit System
- LADOTD
- Northeast Louisiana Highway Safety Partnership

The Steering Committee met to discuss plan development, approve outreach materials, review plan findings, and provide input on local priorities and project selection. The Steering Committee is also responsible for plan implementation and monitoring.

5.3 Public and Stakeholder Involvement Phase 1

Phase 1 of the community engagement focused on introducing the Safety Action plan and listening and learning to seek input on the community's goals, needs, concerns, and priorities for the plan.

Input collected during this Phase was used to develop the Vision, Goals and Objectives discussed in Chapter 6.

During Phase 1, input was sought from:

- Local officials
- Planners, engineers and other professionals
- Transportation service providers
- Community leaders
- Non-profit advocacy organizations
- Business community
- General Public

The primary goal of this Phase of engagement was:

•Inform everyone in Ouachita Parish about the development of the Safety Action Plan.

•Educate the public about the plan and how it will affect the community and roadway safety.

•Notify and provide opportunities for the public to actively engage in the development process.

•Encourage and collect meaningful feedback from stakeholders and the public to help identify safety needs and prioritize improvement projects and strategies.

The online survey for Phase 1 was launched to gather input on residents' priorities and concerns, ideas for improving safety within the parish transportation systems, and specific areas where improvements were needed. The survey was promoted using business cards with a QR code, the MPO's web page, promotion through social media, emails to the stakeholder database and directly to the public through outreach events listed below. The survey was open for input from November 16, 2023, through January 1, 2024.

Two (2) days of community outreach activities for Phase 1 of the Safety Action Plan were conducted November 27-28, 2023, in Ouachita Parish. These outreach events were held at venues where the public gathers and diverse communities could be engaged. At each stop the outreach team displayed four (4) posters that explained the purpose of the study and asked participants to place three dots on the posters to indicate areas of greatest safety

concern or importance to them. Respondents were also provided with an opportunity to provide comments.

The outreach events were held at:

Monday, November 27, 2023

12:00 p.m. – 4:00 p.m.

Ouachita Parish Main Library

1800 Stubbs Avenue

Monroe, LA 71201

Tuesday, November 28, 2023

10:00 a.m. – 12:00 p.m.

Ouachita Valley Branch Library

601 McMillin Road

West Monroe, LA 71291

5:00 p.m. – 6:00 p.m.

West Monroe City Hall – Tree Lighting Event

2305 N 7th Street

West Monroe, LA 71291

The outreach team engaged with 133 participants at three events held in Monroe and West Monroe. Additionally, business card-size handouts with the survey link and QR code were distributed, and some were left behind at the public libraries to encourage participants to complete and share the online survey.

The survey, display boards, photos and outreach materials are displayed in **Appendix B**.

Phase 1 Survey Questions:

Behavioral Risk Factor Ranking

In the survey, participants were asked to identify their top three (3) roadway user behavior concerns from among:

- speeding
- distracted driving
- walking/biking on the wrong side of the roadway
- improper roadway crossings
- red light running
- impaired driving

Figure 5.1 through **Figure 5.3** displays the ranking results of the exercise based on age group, minority status, and poverty status.

Infrastructure Risk Factor Ranking

Participants were asked to identify their top five (5) roadway user behavior concerns from among:

- emergency response time
- system connectivity
- inadequate law enforcement presence
- poor roadway design
- lack of roadway lighting
- lack of public transportation
- lack of bicycle infrastructure
- lack of pedestrian infrastructure
- unsafe intersections

Figure 5.4 through **Figure 5.6** displays the ranking results of the exercise based on age group, minority status, and poverty status.

Identifying Transportation Challenges

Respondents were asked to display (online survey) or choose (at one of the many outreach events) where they experience transportation safety challenges during their daily commute or activities and what type of challenges they are. Respondents were also asked what improvements they suggested.

Figure 5.7 displays the results of the input by displaying respondents' concerns and proposed solutions.

Figure 5.1: Behavior Risk Factor Rankings by Age Group

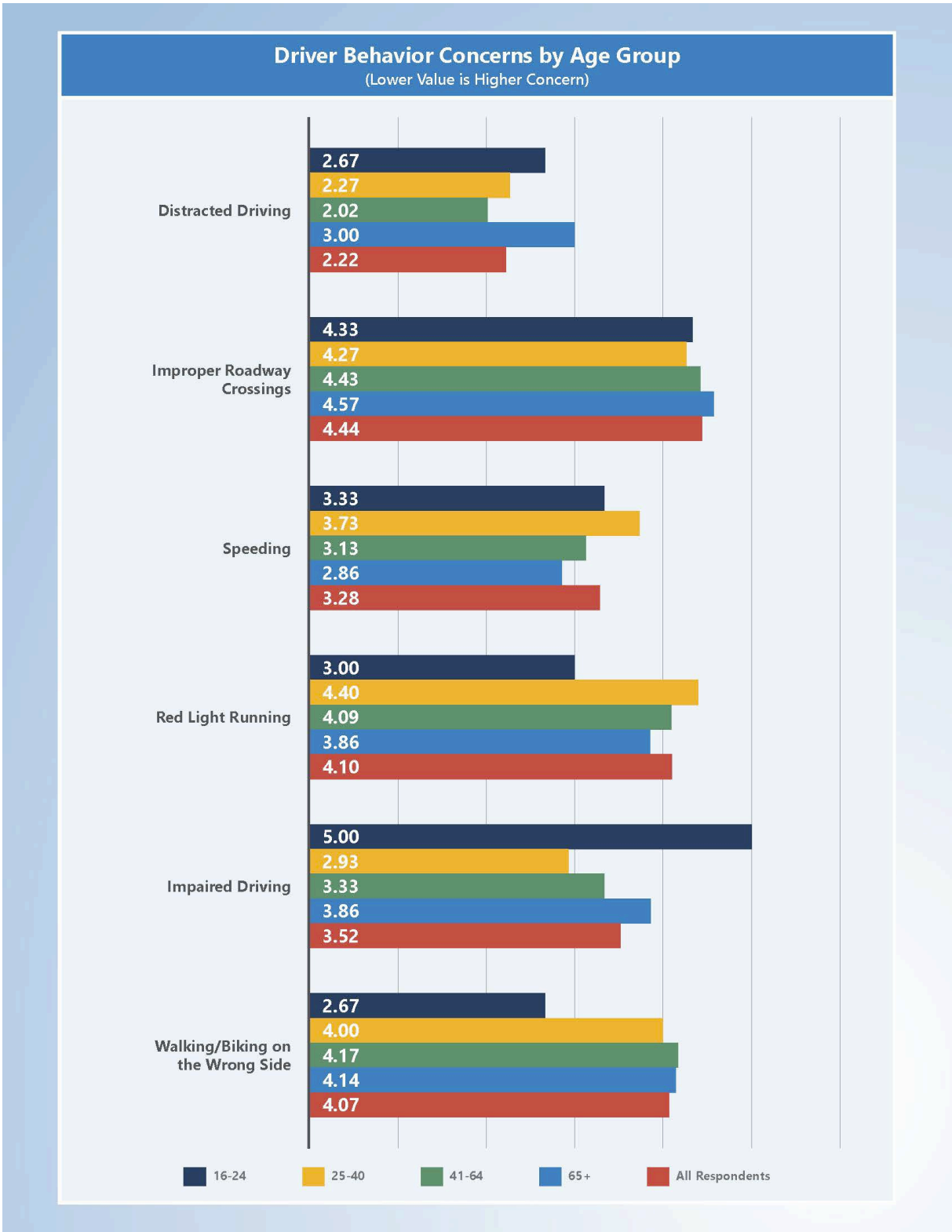


Figure 5.2: Behavior Risk Factor Rankings by Minority Status

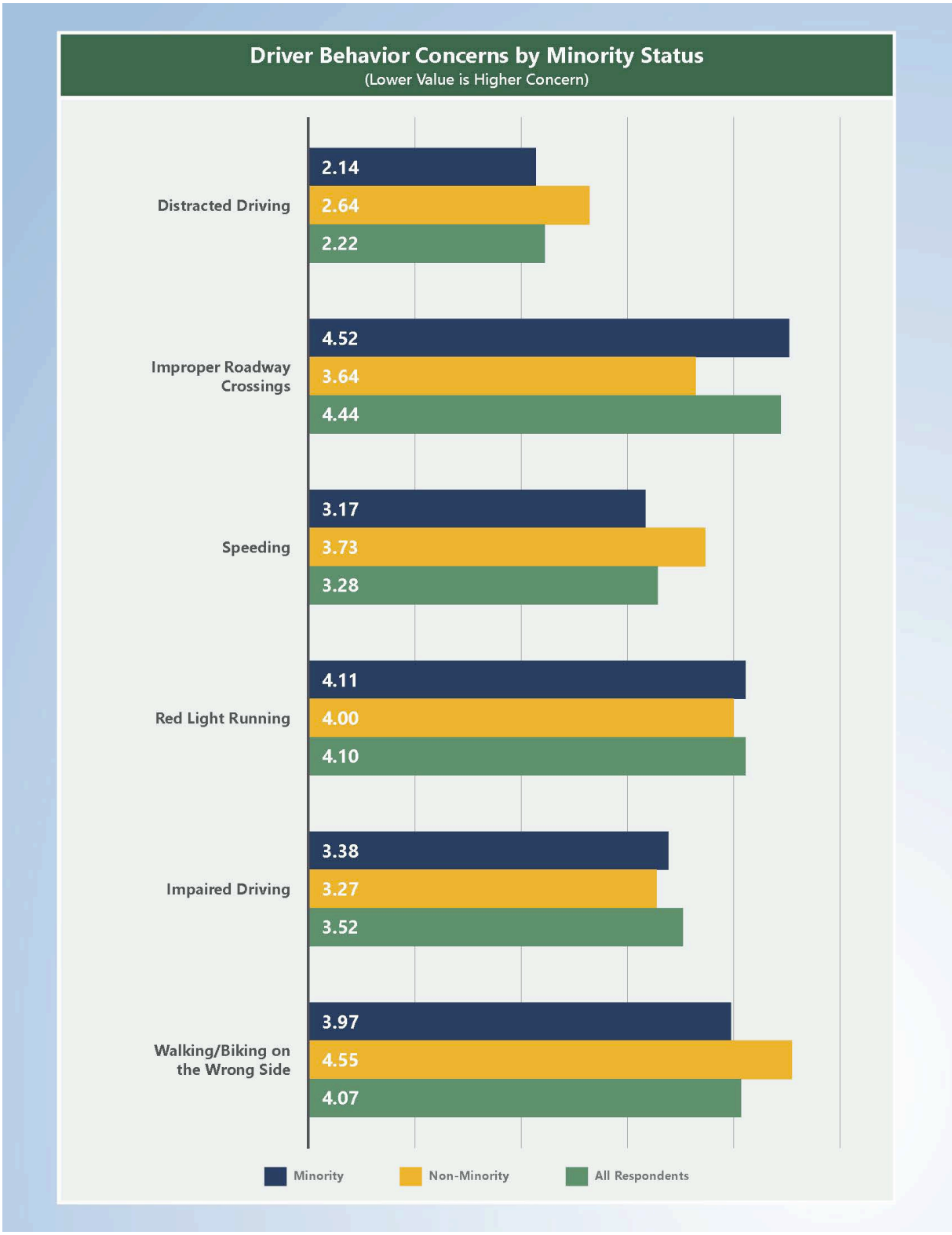


Figure 5.3: Behavior Risk Factor Rankings by Poverty Status

Figure 5.4: Infrastructure Risk Factor Rankings by Age Group

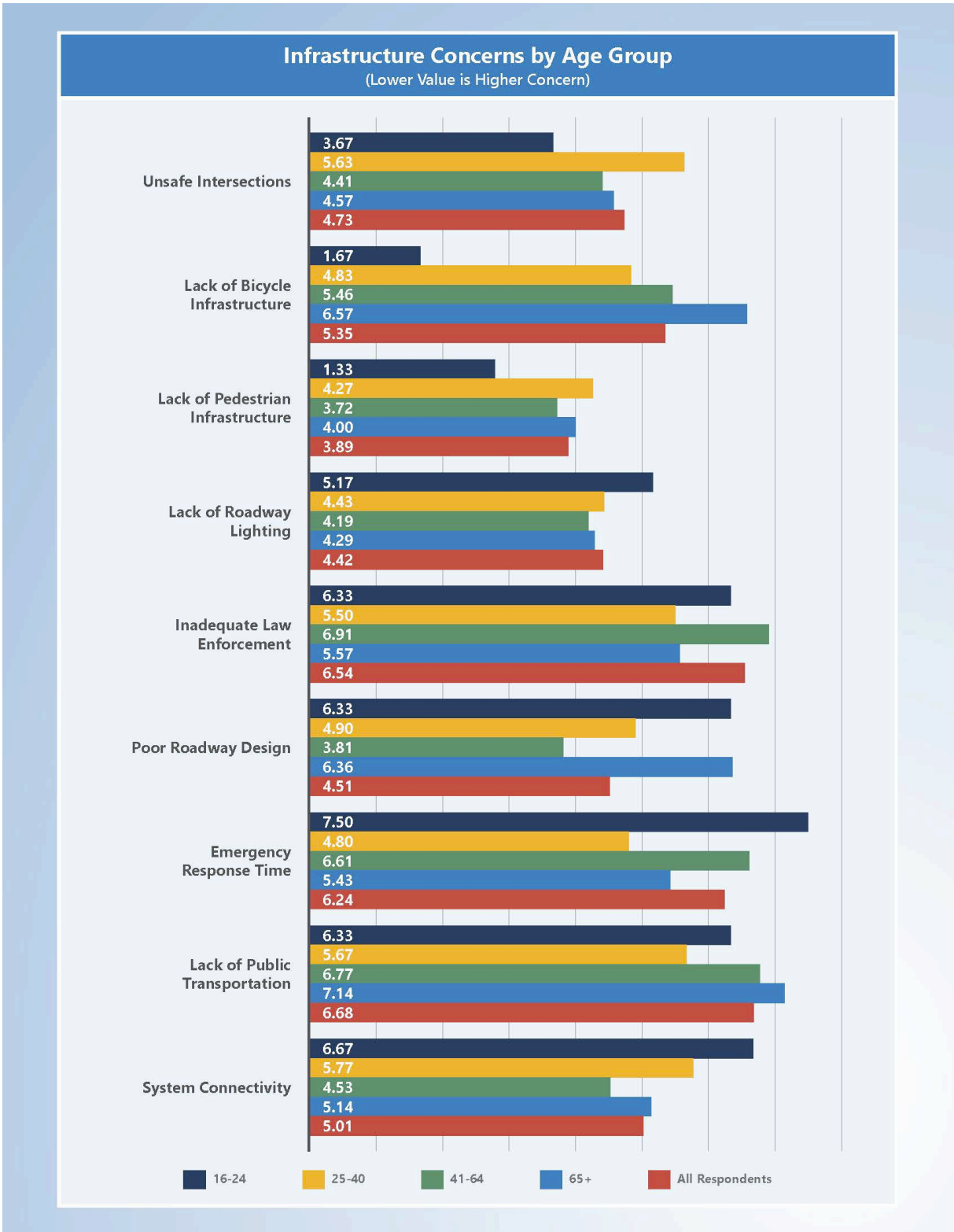


Figure 5.5: Infrastructure Risk Factor Rankings by Minority Status

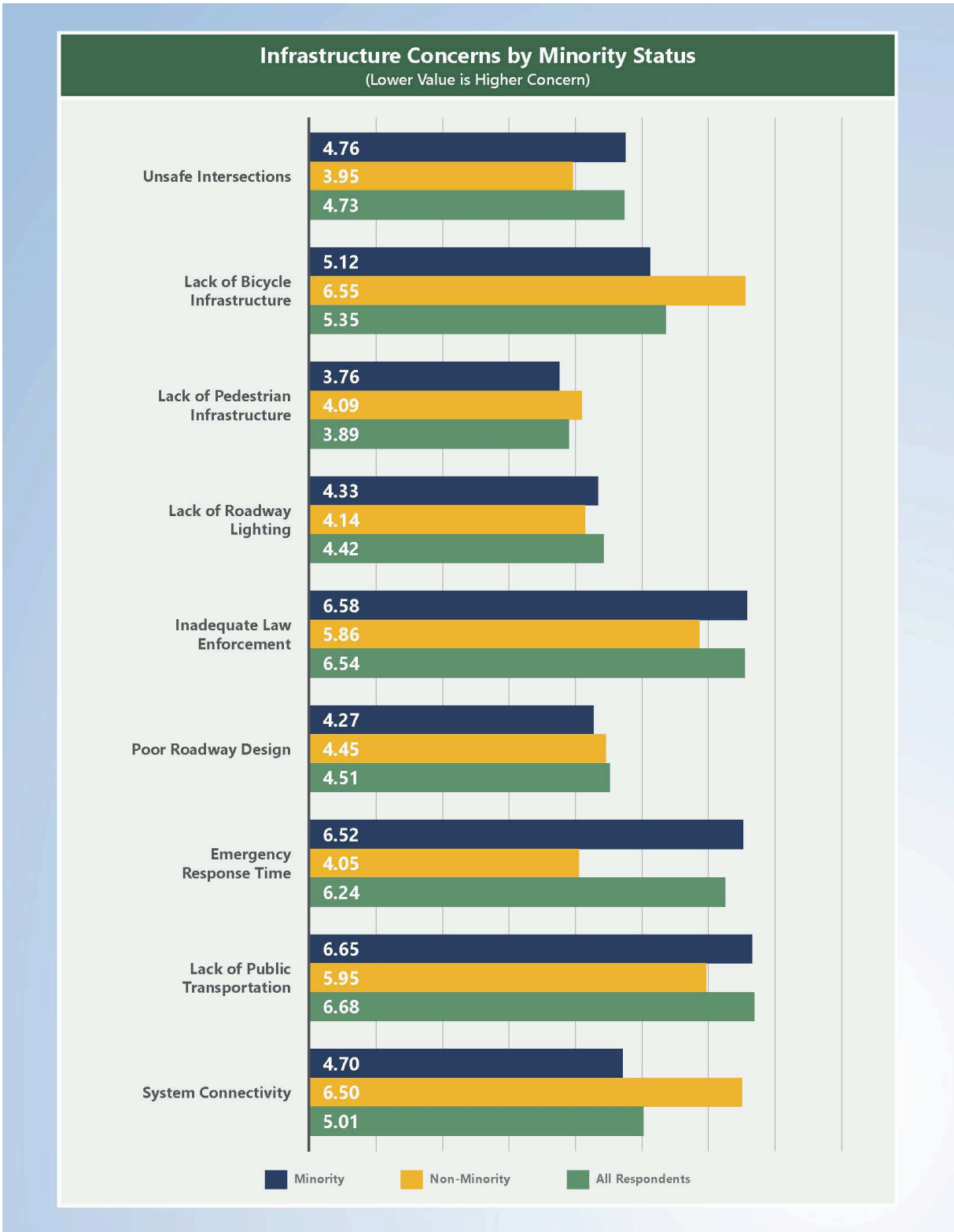


Figure 5.6: Infrastructure Risk Factor Rankings by Poverty Status

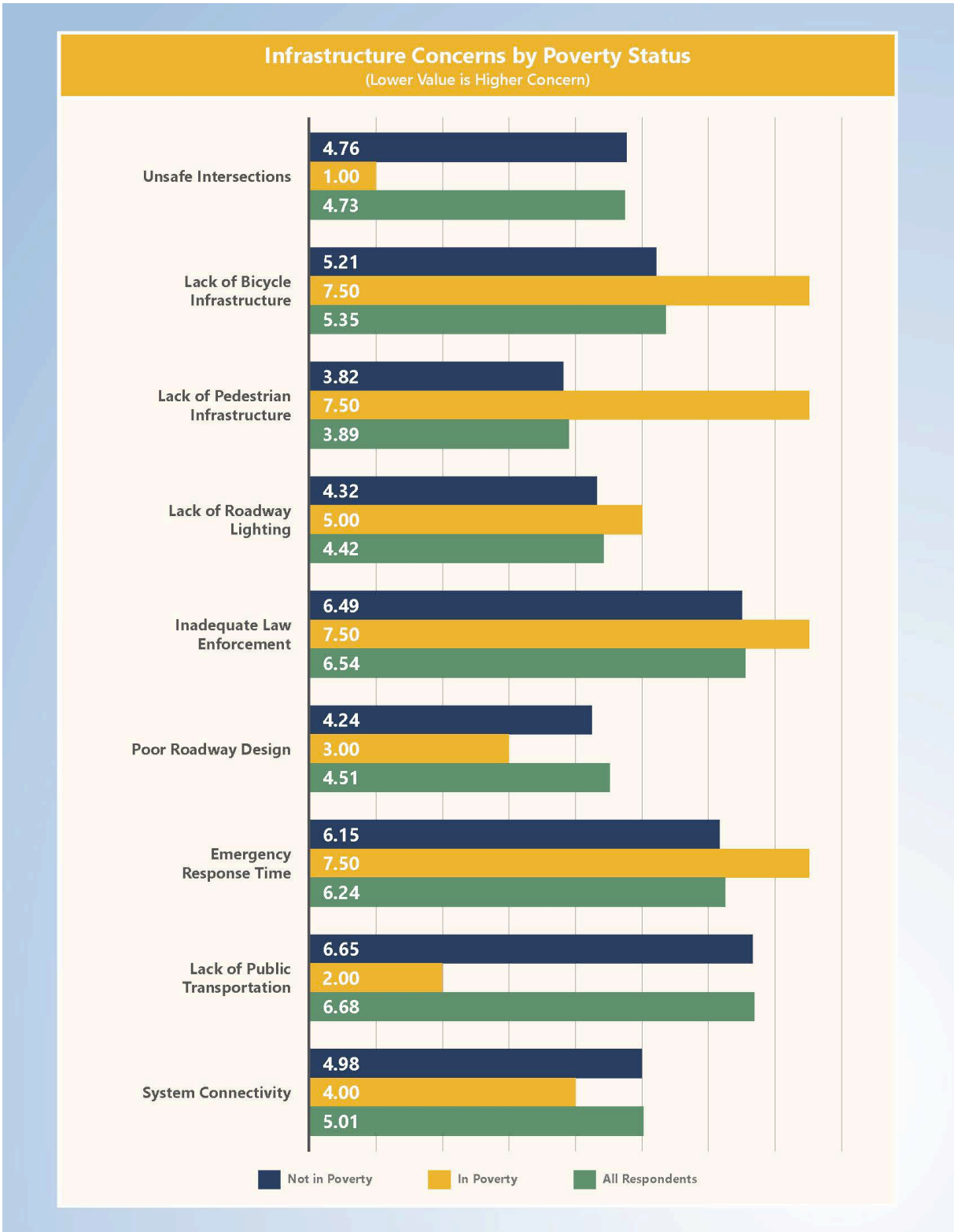


Figure 5.7: Identified Transportation Safety Challenges

5.3 Public and Stakeholder Involvement Phase 2

Phase 2 of community engagement focused on presenting systemwide strategies and establishing the public and stakeholder priorities for roadway segments and intersection improvements.

Input was requested from the same groups as Phase 1. Efforts for this phase include a survey and three (3) in-person events held at the Ouachita Parish Main Library in Monroe, the Ouachita Valley Branch Library in West Monroe and the West Monroe City Council Meeting at City Hall on March 5, 2024.

The primary goal of this Phase of engagement was:

- Identify which safety strategies have public and stakeholder support.
- Identify roadways and intersections that the public and stakeholders determine to be high safety priorities for improvements.

The public survey launched on February 27, 2024, and closed on March 14, 2024. It was promoted using business cards with a QR code, the MPO's web page, promotion through social media and emails to the stakeholder database, a press release, social media posts and at community outreach events outlined below.

The survey and outreach materials are displayed in **Appendix B.**

On March 5, 2024, the outreach team conducted three (3) community outreach activities for Phase 2 of the Safety Action Plan in Ouachita Parish. The Ouachita Council of Governments (OCOG) promoted opportunities to provide input at two (2) public library locations and the West Monroe City Council meeting on social media, by email and press release. At each stop, the outreach team displayed a poster with a QR code that linked to the Phase 2 survey, and distributed flyers and/or business cards with the online survey link. A map of Ouachita Parish was also displayed with roads and intersections indicating where crashes had occurred.

The outreach team invited participants to study the map, consider the streets, roads and intersections identified through crash data and public input from Phase 1 as having safety

issues, and provide additional details, comments, and suggestions to improve safety for all users of the parish transportation system.

The outreach events were held in the following locations:

Tuesday, March 5, 2024

9:00 a.m. – 11:30 a.m.

Ouachita Parish Public Library – Main Branch

1800 Stubbs Avenue

Monroe, LA 71201

2:00 p.m. – 4:00 p.m.

Ouachita Parish Public Library – Ouachita Valley Branch

601 McMillin Road

West Monroe, LA 71291

5:00 p.m. – 7:00 p.m.

West Monroe City Council Chambers

2305 N. 7th Street

West Monroe, LA 71291

This engagement reached 41 participants one-on-one at the three (3) events held in Monroe and West Monroe. In addition, KNOE-TV sent a reporter who interviewed Celine Flores-Robinson and Shelby Rybicki with the North Delta Regional Planning and Development District about the safety plan process and how residents can provide input. At the West Monroe City Council meeting, Ms. Flores-Robinson addressed the council about the plan and Mayor Staci Mitchell encouraged those in attendance to participate. Mayor Mitchell, West Monroe Fire Chief Charlie Simmons, and some Council members provided input to the outreach team and promised to send the survey link out to constituents. Ms. Flores-Robinson also attended a Monroe City Council meeting earlier to promote the Phase 2 survey.

Systemwide Safety Strategies

Participants were asked to identify their preference, from low (1 star) to high (5 stars), for strategies that address:

- distracted driving,
- speeding, and
- unsafe intersections,
- poor roadway design.

Table 5.1 through Table 5.4 display the ranking results of the exercise based on age group, minority status, and poverty status. Higher values reflect higher rankings.

Table 5.1: Ranking of Strategies to Reduce Distracted Driving

		Continue and Strengthen Graduated Driver Licensing (GDL) Program	High Visibility Cell Phone Enforcement	Communications and Outreach on Distracted Driving	Employer Programs
Age	**16-24**	5.00	1.00	4.00	4.00
	25-40	4.00	4.00	3.00	3.71
	41-64	4.13	4.61	3.66	3.97
	65+	4.25	4.50	3.50	3.75
Minority	**No**	4.06	4.42	3.47	3.79
	Yes	4.40	3.60	2.80	4.40
Poverty	**No**	4.14	4.36	3.49	3.92
	Yes	3.00	5.00	2.00	2.00
Average Ranking (All Respondents)		**4.18**	**4.38**	**3.53**	**3.93**

Table 5.2: Ranking of Strategies to Reduce Speeding

		Modify Speed Limits	Traffic Law Enforcement	Automated (Camera) Enforcement	Higher Penalties
Age	**16-24**	2.00	1.00	3.00	3.00
	25-40	3.06	3.63	3.00	3.35
	41-64	4.00	4.37	3.53	4.00
	65+	3.75	3.75	3.00	3.75
Minority	**No**	3.72	4.02	3.43	3.79
	Yes	2.80	4.20	1.60	3.20
Poverty	**No**	3.71	4.12	3.31	3.76
	Yes	2.00	1.00	5.00	5.00
Average Ranking (All Respondents)		**3.72**	**4.10**	**3.41**	**3.78**

Table 5.3: Ranking of Strategies to Improve Safety at Intersections

		Corridor Access Management	Dedicated Left and Right Turn Lanes at Intersections	Roundabouts	Low-cost Countermeasures at Stop-Controlled Intersections	Lighting
Age	**16-24**	4.00	5.00	3.00	4.00	4.00
	25-40	4.65	4.41	4.06	3.94	4.41
	41-64	4.55	4.68	4.34	4.21	4.47
	65+	4.25	4.50	3.00	3.25	3.50
Minority	**No**	4.53	4.60	4.28	4.00	4.38
	Yes	4.60	4.40	2.40	4.40	4.20
Poverty	**No**	4.54	4.59	4.14	4.05	4.37
	Yes	5.00	5.00	5.00	5.00	5.00
Average Ranking (All Respondents)		**4.56**	**4.61**	**4.18**	**4.10**	**4.40**

Table 5.4: Ranking of Strategies to Improve Safety of Roadways

		Roadway Striping and Signage	Roadway Maintenance	Road Diet	Add Lighting	Add Multimodal Accommodations
Age	**16-24**	5.00	5.00	4.00	5.00	4.00
	25-40	4.71	4.65	4.35	4.71	4.41
	41-64	4.82	4.89	4.16	4.53	4.29
	65+	4.00	4.25	3.50	4.50	4.50
Minority	**No**	4.74	4.75	4.17	4.57	4.36
	Yes	4.60	5.00	3.80	4.60	3.80
Poverty	**No**	4.73	4.78	4.15	4.58	4.32
	Yes	5.00	5.00	5.00	5.00	5.00
Average Ranking (All Respondents)		**4.74**	**4.79**	**4.18**	**4.60**	**4.35**

Prioritizing Areas with Safety Concern

Respondents were presented roadway segments and intersections that were identified through a technical analysis and public input from Phase 1. They were asked to provide their input on the priority level (low, medium, or high) that the location should receive for safety improvements. These results were used to determine local priority during Project Prioritization which is discussed in Section 6.3.

Multimodal Safety Strategies

Participants were asked to identify their preferences regarding the following bicycle, pedestrian, and transit safety strategies:

- add bicycle lanes
- crosswalk visibility enhancements
- add more walkways
- road diets (reducing lanes but adding medians, bike lanes, etc.)
- medians and pedestrian refuge islands
- pedestrian hybrid and rectangular rapid flashing beacons
- public transportation improvements

Table 5.5 displays the ranking results of the exercise based on age group, minority status, and poverty status.

5.4 Public and Stakeholder Involvement Phase 3

Phase 3 of the public and stakeholder involvement included posting of the draft SAP for review April 12-21, 2024, at www.northdelta.org. The public was encouraged to submit feedback electronically at info@northdelta.org or by calling 318-387-2572. Additionally, paper copies of the survey were available at the Ouachita Parish Public Library, Main Branch at 1800 Stubbs Avenue, Monroe, LA 71201

Table 5.5: Ranking of Strategies to Improve Bicycle, Pedestrian, and Transit Safety

		Add Bicycle Lanes	Crosswalk Visibility Enhancements	Add More Walkways (Shared Use Path, Sidewalk, Shoulder)	Road Diets (Reduce Lanes)	Medians and Pedestrian Refuge Islands	Pedestrian Hybrid and Rectangular Rapid Flashing Beacons	Public Transportation Improvements
Age	**16-24**	4.00	4.00	5.00	4.00	5.00	5.00	4.00
	25-40	4.00	4.29	4.59	3.88	4.24	4.18	3.82
	41-64	3.87	4.24	4.54	4.05	4.16	4.08	3.97
	65+	3.00	4.00	4.50	3.75	4.00	4.50	3.50
Minority	**No**	3.85	4.19	4.58	4.02	4.21	4.19	3.87
	Yes	3.40	4.40	4.20	3.20	3.60	3.40	3.80
Poverty	**No**	3.83	4.22	4.55	3.97	4.17	4.14	3.88
	Yes	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Average Ranking (All Respondents)		**3.85**	**4.25**	**4.57**	**4.00**	**4.20**	**4.17**	**3.92**

6.0 Project Prioritization and Recommendations

6.1 Safe System Approach

The FHWA[4] states that:

> "Reaching zero deaths requires the implementation of a Safe System approach, which was founded on the principles that humans make mistakes and that human bodies have limited ability to tolerate crash impacts. In a Safe System, those mistakes should never lead to death. Applying the Safe System approach involves anticipating human mistakes by designing and managing road infrastructure to keep the risk of a mistake low; and when a mistake leads to a crash, the impact on the human body doesn't result in a fatality or serious injury. Road design and management should encourage safe speeds and manipulate appropriate crash angles to reduce injury severity.
>
> There are six principles that form the basis of the Safe System approach:
>
> - deaths and serious injuries are unacceptable,
> - humans make mistakes,
> - humans are vulnerable,
> - responsibility is shared,
> - safety is proactive, and
> - redundancy is crucial."

Source: FHWA

[4] Zero Deaths and Safe System | FHWA (dot.gov)

Safe System Elements

The FHWA defines five (5) elements that comprise a Safe System Approach. These are:

- Safe Roads
- Safe People
- Safe Speeds
- Safe Vehicles
- Post-Crash Care

Figure 6.1 displays the FHWA definition[5] of each element and how the Safe System approach differs from traditional roadway safety practices.

Figure 6.1: Safe System Approach Elements

Source: FHWA

[5] THE SAFE SYSTEM (dot.gov)

6.2 Proposed Local Infrastructure Projects

Project Location Development

A preliminary list of safety project locations was developed for several modes of transportation. The list included:

- Projects requested through public oureach comments.
- Projects requested by Ouachita Parish, the City of Monroe, the City of West Monroe, or the City of Swartz.
- Projects identified based on the results of the technical crash analysis.
- Projects identified in existing plans.

The proposed project locations are displayed with the results of the project prioritization process (Section 6.3) in **Table 6.3**.

Estimating Project Costs

Order of magnitude cost estimates for potential safety projects, in 2023 dollars, were estimated using average unit cost from various projects bid from 2022-2023. It should be noted that:

- Quantities are based on typical conditions for each improvement type.
- Costs associated with the purchasing of right-of-way, utility relocations, and engineering fees were estimated based on a percentage of the total construction cost.
- An additional contingency amount, 20 percent, was added to the overall improvement cost to account for unexpected costs that arise with projects.

The typical cost estimates for various types of improvements are shown in **Table 6.1**.

6.3 Project Prioritization

Safety projects were prioritized by a variety of factors. **Table 6.2** shows the criteria and weights that were utilized to prioritize the identified projects. This methodology is intended to support the previously stated goals and objectives and was developed using input received during Phase 1 of the public outreach. The full scores of the project prioritization process are displayed in **Appendix C.**

Table 6.1: Typical Project Costs

Improvement Type	Unit	Unit Cost
Single Lane RAB*	Each	$2,900,000
Left Turn Lane*	Each	$665,000
Right Turn Lane*	Each	$225,000
Rumble Strip (Centerline)	Mile	$2,100
Rumble Strip (Shoulder)	Mile	$1,125
Cable Barrier	Ln-Ft	$450
Cable Barrier	Mile	$2,376,000
Advance Warning Signs	Sq. Ft	$40
Advance Warning Signs	Each	$350
5' Sidewalk (Concrete)	Mile	$450,000
5' Sidewalk (Asphalt)	Mile	$250,000
10' Multiuse Path (Concrete)	Mile	$900,000
10' Multiuse Path (Asphalt)	Mile	$500,000
Bike Lane (Striping Only)	Mile	$80,000
Bike Lane (New Pavement - Concrete)*	Mile	$1,000,000
Bike Lane (New Pavement - Asphalt)*	Mile	$950,000
12' Lane (Concrete)*	Mile	$4,600,000
12' Lane (Asphalt)*	Mile	$3,100,000
Pavement Patching	Sq. Yd	$185
Pavement Markings	Ln-Ft	$8
8' Shoulder (Asphalt)*	Mile	$2,100,000
8' Shoulder (Concrete)*	Mile	$3,100,000
Crosswalk (Striping)	Each	$1,500
Raised Median	Sq. Yd	$215
Traffic Signal (Re-Timing)	Intersection	$5,000
Traffic Signal Installation	Intersection	$200,000
Intersection Lighting	Each	$25,000
ADA Curb Ramp	Each	$5,000
2" Asphalt Milling/Overlay - 2 Lane Road	Mile	$590,000
* includes engineering, ROW, and Utility Relocation		

Table 6.2: Project Prioritization Criteria

Criterion	Rationale	Measure	Scoring Scale (Points Possible)				
			0	5	10	15	20
Crash Severity	Prioritize projects that will address fatalities and serious injuries.	Total number of fatal and serious injuries over a 5-year period.	No fatal or serious injury crashes	1 serious injury crash	1 fatal crash OR 2 fatal and serious injury crashes	2 fatal crashes OR 3 or 4 fatal and serious injury crashes	3 or more fatal crashes OR 5 or more fatal and serious injury crashes
Multimodal	Prioritize projects that address safety concerns involving more than one mode of travel.	Total number of non-motorized fatal and serious injuries over a 5-year period.	No fatal or serious injury non-motorized crashes	1 serious injury non-motorized crash	1 fatal non-motorized crash OR 2 fatal and/or serious injury non-motorized crashes	2 fatal non-motorized crashes OR 3 fatal and/or serious injury non-motorized crashes	3 fatal non-motorized crashes OR 4 fatal and/or serious injury non-motorized crashes
Focus Areas	Prioritize projects that will address high crash frequency locations.	Annual crash frequency.	Fewer than 5 annual crashes	5>= annual crashes <15	15>= annual crashes <30	30 or greater annual crashes	
Equity	Prioritize projects that benefit disadvantaged communities.	Project is in an Equity Area type, defined TDC, APP, or CoC*	Project is not in any Equity Area type	Project is in a single Equity Area type	Project is in two Equity Area types	Project is in all three Equity Area types	
			*An additional 5 points, not to exceed the maximum, are awarded if the project is located in an Equity Area type that experiences disproportionate crashes compared to the respective network length				
Infrastructure	Prioritize projects that affect concerns regarding infrastructure.	Project has potential to address the ranked infrastructure concerns expressed during public outreach.	Project does not address higher tier infrastructure concerns.	Project improves intersections OR adds connectivity OR adds bicycle infrastructure	Project adds pedestrian facilities OR adds lighting OR improves roadway design		
Existing Plans	Prioritize projects that support existing plans or policies.	Project is in an existing plan or policy document.	Project is not in an existing plan or policy document	Project is in an existing plan or policy document	Project is in two or more existing plans or policy documents		
Public Concerns	Prioritize projects that the general public has proposed.	Project was derived from, or seconded by, public input.	Project not derived from public input.	Project derived from public input.	Project came from general public AND is on a Top 10 Focus Area.		

Table 6.3: Project Locations and Prioritization Results

ID	Type	Source	Roadway Name	From/At	To	Improvement	Length (mi)	Cost	Local Priority	Time Frame	Total Prioritization Score
S-O-01	Segment - Overall	Technical and Public	US 80 (Louisville Ave)	Oliver Rd	Newcombe St	Add sidewalks Access management study, including driveway consolidation and changing TWLTL to median with turn lanes	0.2	$140,000	High	Short	80
S-BP-01	Segment-Bike/Ped	Technical and Public	US 80 (Louisville Ave)	Oliver Rd	Newcombe St	Add sidewalks Access management study, including driveway consolidation and changing TWLTL to median with turn lanes	0.2	$140,000	High	Short	80
I-BP-06	Intersection - Bike/Ped	Technical and Public	US 80 (Louisville Ave)	@ Lamy Ln		Add "Prepare to Stop when Flashing" signs and beacons along US 80 Add crosswalks and sidewalks at intersection, along with pedestrian signals	0	$71,000	High	Short	75
S-O-03	Segment - Overall	Technical and Public	US 80 (Louisville Ave)	Newcombe St	Washington St	Add sidewalks Access management study, including driveway consolidation and changing TWLTL to median with turn lanes	0.3	$185,000	High	Short	70
S-BP-02	Segment-Bike/Ped	Technical and Public	US 80 (Louisville Ave)	Newcombe St	Washington St	Add sidewalks Access management study, including driveway consolidation and changing TWLTL to median with turn lanes	0.3	$185,000	High	Short	70
S-O-04	Segment - Overall	Technical and Public	LA 617 (Thomas Rd)	Glenwood Dr	McMillan Rd	Add lighting Access management study, including changing TWLTL to median with turn lanes and restricting lefts out of driveways	0.2	$100,000	High	Short	65
S-BP-08	Segment-Bike/Ped	Technical and Public	LA 617 (Thomas Rd)	Glenwood Dr	McMillan Rd	Add lighting Access management study, including changing TWLTL to median with turn lanes and restricting lefts out of driveways	0.2	$100,000	High	Short	65
I-O-01	Intersection - Overall	Technical Analysis	US 80 (Louisville Ave)	@ Lamy Ln		Add "Prepare to Stop when Flashing" signs and beacons along US 80 Add crosswalks and sidewalks at intersection, along with pedestrian signals	0	$71,000	High	Short	60
I-O-09	Intersection - Overall	Technical and Public	US 165	@ MLK Dr		Add reflective backplates to signals Change northbound and southbound left turns from protected-permitted to protected only	0	$3,500	High	Short	60
S-O-28	Segment - Overall	Public Outreach	US 165 NB (MLK Jr Dr)	LA 20	US 80	Safety Study	1.9		High	Short	60
I-BP-03	Intersection - Bike/Ped	Technical and Public	US 80 (Louisville Ave)	@ Oliver Rd		Enforcement	0	TBD	High	Long	60
S-BP-05	Segment-Bike/Ped	Technical and Public	US 165 SB	Dellwood Dr	Monterey Cir	Enforcement	0.2	TBD	High	Long	55
I-BP-09	Intersection - Bike/Ped	Technical and Public	US 165	@ Sunset Dr		Enforcement	0	TBD	High	Long	55
S-O-06	Segment - Overall	Technical Analysis	I-20 WB	I-20 WB On-Ramp at LA 594 (Texas Ave)	I-20 WB Off-Ramp at LA 594 (Texas Ave)	Extend westbound on-ramp acceleration lane from LA 594 (Texas Ave)	0.5	$500,000	High	Short	50
S-BP-10	Segment-Bike/Ped	Technical Analysis	I-20 WB	I-20 WB On-Ramp at LA 594 (Texas Ave)	I-20 WB Off-Ramp at LA 594 (Texas Ave)	Add "Pedestrian and Bicyclists Prohibited" signage at ramps and along Service Road	0.5	$5,000	High	Short	50
S-O-05	Segment - Overall	Technical Analysis	I-20 EB	I-20 EB Off-Ramp at LA 617 (Thomas Rd)	I-20 EB Off-Ramp at LA 34 (Stella St)	Enforcement	1.4	TBD	High	Long	50
S-BP-09	Segment-Bike/Ped	Technical Analysis	I-20 EB	I-20 EB Off-Ramp at LA 617 (Thomas Rd)	I-20 EB Off-Ramp at LA 34 (Stella St)	Add "Pedestrian and Bicyclists Prohibited" signage at ramps and along Service Road	1.4	$5,000	High	Short	50
I-O-26	Intersection - Overall	Public Outreach	LA 616 (Arkansas Rd)	@ LA 143 (N 7th St)		Safety Study	0		High	Short	45
I-O-14	Intersection - Overall	Technical Analysis	LA 139	@ Music Rd		Safety Study	0		High	Short	45
I-O-03	Intersection - Overall	Technical Analysis	US 80 (Louisville Ave)	@ Oliver Rd		Remove driveway along eastbound US 80 just east of intersection	0	$3,000	High	Short	45
I-O-04	Intersection - Overall	Technical Analysis	US 165	@ Sunset Dr		Extend deceleration length for northbound and southbound left turn and right turn lanes	0	$890,000	High	Short	40
I-O-05	Intersection - Overall	Technical Analysis	LA 617 (Thomas Rd)	@ Basic Dr		Enforcement	0	TBD	High	Long	40

ID	Type	Source	Roadway Name	From/At	To	Improvement	Length (mi)	Cost	Local Priority	Time Frame	Total Prioritization Score
I-O-06	Intersection - Overall	Technical Analysis	US 80 (Cypress St)	@ LA 617 (Thomas Rd)		Add "Signal Ahead" signage on US 80	0	$700	High	Short	40
I-BP-08	Intersection - Bike/Ped	Technical Analysis	US 165 Bus. (Louisville Ave)	@ Smith Ave		Add intersection lighting	0	$25,000	High	Short	40
S-O-15	Segment - Overall	Technical and Public	US 80 (Louisville Ave)	Washington St	Plaza Blvd	Safety Study	0.2		High	Short	40
S-O-23	Segment - Overall	Technical and Public	US 165 NB (Sterlington Rd)	US 165 NB Off-Ramp at US 80	US 165 NB On-Ramp at US 80	Safety Study	0.5		High	Short	40
I-O-18	Intersection - Overall	Technical and Public	US 165	@ Renwick St		Safety Study	0		High	Short	40
I-O-08	Intersection - Overall	Technical Analysis	US 80 (Cypress St)	@ Vernon Ln		Enforcement	0	TBD	High	Long	35
S-BP-03	Segment-Bike/Ped	Technical Analysis	Richwood Rd 1	Preston Loop	Reddix Ln	Add sidewalk Add lighting	0.2	$115,000	High	Short	35
S-O-17	Segment - Overall	Technical Analysis	I-20 WB	I-20 WB On-Ramp at S 5th St	I-20 WB Off-Ramp at S 5th St	Safety Study	0.3		High	Short	35
S-O-22	Segment - Overall	Technical Analysis	US 80 (Cypress St)	Wallace Dean Rd	Vernon Ln	Safety Study	0.1		High	Short	35
I-O-19	Intersection - Overall	Technical Analysis	US 165	@ Century Blvd		Safety Study	0		High	Short	35
I-O-21	Intersection - Overall	Technical Analysis	MLK Dr	@ Louberta St		Safety Study	0		High	Short	35
I-O-25	Intersection - Overall	Technical Analysis	LA 143 (N 7th St)	@ US 80 (Cypress St)		Safety Study	0		High	Short	35
S-O-26	Segment - Overall	Public Outreach	US 80 (Louisville Ave)	US 80 (Cypress St)	N 10th St	Safety Study	1.0		High	Short	35
I-O-12	Intersection - Overall	Technical Analysis	US 165 (Sterlington Rd)	@ Webster St		Safety Study	0		High	Short	30
I-O-24	Intersection - Overall	Technical Analysis	US 80 (Louisville Ave)	@ N 19th St		Safety Study	0		High	Short	30
S-O-27	Segment - Overall	Public Outreach	Arkansas Rd	Kiroli Rd	LA 143	Safety Study	0.9		High	Short	30
S-O-29	Segment - Overall	Public Outreach	Standifer Ave	US 165 Bus	US 165	Safety Study	1.5		High	Short	30
S-O-11	Segment - Overall	Technical Analysis	Elkins Rd	Lenard Ln	Bill Golson Rd	Safety Study	1.2		High	Short	25
S-O-20	Segment - Overall	Technical Analysis	I-20 EB	I-20 EB Off-Ramp at LA 34 (Stella St)	I-20 EB On-Ramp at LA 34 (Stella St)	Safety Study	0.6		Medium	Short	35
I-O-23	Intersection - Overall	Technical Analysis	US 80 (Desiard St)	@ S College Ave		Safety Study	0		Medium	Short	35
I-BP-01	Intersection - Bike/Ped	Technical and Public	MLK Dr	@ Renwick St		Construct sidewalk along NW corner of intersection Add pedestrian beacons for crosswalk north of intersection Restrict northbound and southbound left turns	0	$47,130	Low	Short	60
S-O-10	Segment - Overall	Technical Analysis	I-20 EB	Russell Sage Rd	Ouachita Parish Line	Enforcement	3.2	TBD	Low	Long	55
I-BP-10	Intersection - Bike/Ped	Technical and Public	US 165	@ LA 2		Enforcement	0	TBD	Low	Long	55
S-BP-04	Segment-Bike/Ped	Technical and Public	US 165	Richwood Rd 2	Baylor Dr	Add pedestrian bridge over US 165 near library	0.4	$1,000,000	Low	Short	55
I-O-10	Intersection - Overall	Technical and Public	MLK Dr	@ Renwick St		Construct sidewalk along NW corner of intersection Add pedestrian beacons for crosswalk north of intersection Restrict northbound and southbound left turns	0	$47,130	Low	Short	55

ID	Type	Source	Roadway Name	From/At	To	Improvement	Length (mi)	Cost	Local Priority	Time Frame	Total Prioritization Score
I-BP-02	Intersection - Bike/Ped	Technical and Public	US 165	@ Monterey Cir		Enforcement	0	TBD	Low	Long	55
S-O-02	Segment - Overall	Technical Analysis	I-20 WB	I-20 WB Off-Ramp at S 5th St	I-20 WB On-Ramp at S Grand St	Add curve advisory signs and chevrons	0.4	$7,400	Low	Short	50
I-O-15	Intersection - Overall	Technical Analysis	Temple Dr	@ S 10th St		Safety Study	0		Low	Short	45
I-BP-05	Intersection - Bike/Ped	Technical and Public	US 80 (Desiard St)	@ Francis Dr		Enforcement	0	TBD	Low	Long	45
S-O-14	Segment - Overall	Technical Analysis	LA 139	0.6 miles south of LA 134	LA 134	Safety Study	0.6		Low	Short	40
I-O-07	Intersection - Overall	Technical Analysis	US 165	@ LA 2		Add reflective backplates to signals Prohibit southbound U-turns at intersection	0	$1,550	Low	Short	40
I-O-16	Intersection - Overall	Technical Analysis	US 165	@ Monterey Cir		Safety Study	0		Low	Short	40
I-BP-04	Intersection - Bike/Ped	Technical Analysis	US 165 Bus. (Jackson St)	@ Standifer Ave		Add pedestrian warning signage and beacon, along with crosswalk, near bus stop	0	$2,400	Low	Short	40
S-O-07	Segment - Overall	Technical Analysis	LA 594 (Swartz School Rd)	LA 594 (Millhaven Rd)	Huenefeld Rd	Enforcement	1.6	TBD	Low	Short	40
S-O-08	Segment - Overall	Technical Analysis	I-20 EB	I-20 EB Off-Ramp at S 5th St	I-20 EB On-Ramp at S 5th St	Add curve advisory signs and chevrons	0.4	$7,400	Low	Short	40
S-O-09	Segment - Overall	Technical Analysis	I-20 EB	Jackson St	I-20 EB On-Ramp at Layton Ave	Add curve advisory signs and chevrons	0.4	$5,000	Low	Short	40
S-O-19	Segment - Overall	Technical Analysis	I-20 EB	Garrett Rd	Russell Sage Rd	Safety Study	3.1		Low	Short	40
S-O-21	Segment - Overall	Technical Analysis	I-20 EB	Texas Ave	US 165 (MLK Jr Dr)	Safety Study	0.5		Low	Short	40
S-O-24	Segment - Overall	Technical Analysis	LA 34 (Jonesboro Rd)	Kings Lake Rd	Winks Ln	Safety Study	1.9		Low	Short	40
I-O-02	Intersection - Overall	Technical Analysis	US 165	@ LA 15 (Winnsboro Rd)		Extend deceleration length for northbound and southbound left turn lanes Add reflective backplates for signals	0	$667,100	Low	Short	40
S-O-16	Segment - Overall	Technical Analysis	LA 20 EB	LA 546	LA 3246 (Well Rd)	Safety Study	2.8		Low	Short	40
I-BP-07	Intersection - Bike/Ped	Technical Analysis	US 165 Bus. (Louisville Ave)	@ Desiard St		Add reflective backplates for signals and intersection lighting	0	$26,050	Low	Short	40
I-O-17	Intersection - Overall	Technical Analysis	Texas Ave	@ S 18th St		Safety Study	0		Low	Short	40
I-O-11	Intersection - Overall	Technical Analysis	US 165 Bus. (Jackson St)	@ Standifer Ave		Safety Study	0		Low	Short	35
S-O-12	Segment - Overall	Technical Analysis	LA 584 (Millhaven Rd)	Wagon Wheel Rd	LA 594 (Swartz School Rd)	Safety Study	1.5		Low	Short	35
S-O-13	Segment - Overall	Technical Analysis	Stubbs Vinson Rd	White Oak Dr	Stubbs Ritchie Rd	Safety Study	0.4		Low	Short	35
S-BP-06	Segment- Bike/Ped	Technical Analysis	Dellwood Dr	Stonegate Dr	Blackwood Dr	Add lighting	0.3	$25,000	Low	Short	35
S-BP-07	Segment- Bike/Ped	Technical Analysis	US 165 Bus. (Jackson St)	Hippolyte Ave	Forrest Ave	Add lighting	0.2	$25,000	Low	Short	35
S-O-18	Segment - Overall	Technical Analysis	I-20 EB	I-20 EB On-Ramp at LA 34 (Stella St)	I-20 EB Off-Ramp at S 5th St	Safety Study	0.3		Low	Short	35
S-O-25	Segment - Overall	Technical Analysis	US 80 (Louisville Ave)	Superior Lane	Bread St	Safety Study	0.2		Low	Short	30
S-O-30	Segment - Overall	Public Outreach	Washington St	N 18th St	Armand Connector	Add sidewalks and pedestrian crossings	1.2	$2,000,000	High	Short	50

ID	Type	Source	Roadway Name	From/At	To	Improvement	Length (mi)	Cost	Local Priority	Time Frame	Total Prioritization Score
S-O-31	Segment-Overall	Public Outreach	Glenwood Drive	Parkwood Drive	McMillan Rd	Add sidewalk and raised islands Restriping at intersections ADA improvements at crossings	0.8	$1,600,000	High	Short	40
S-BP-11	Segment-Bike/Ped	Public Outreach	Parkwood Drive	Glenwood Drive	0.2 miles east of Glenwood Drive	Add sidewalk on south side of road	0.2	$250,000	High	Short	25
I-O-20	Intersection - Overall	Technical Analysis	US 165 (Sterlington Rd)	@ W Elmwood Dr		Safety Study	0		Low		30
I-O-22	Intersection - Overall	Technical Analysis	US 80 (Louisville Ave)	@ Bread St		Safety Study	0		Low		30
I-O-13	Intersection - Overall	Technical Analysis	US 165 (Sterlington Rd)	@ Magnolia Cove		Safety Study	0		Low		25
	***Improvements shown in this table are recommended countermeasures based on planning level technical analysis. This plan recommends final selection of countermeasures during implementation phase.**										

6.4 Countermeasure Toolbox

Table 6.4 displays a toolbox of countermeasures that can be used to improve safety within Ouachita Parish. A safety study should be conducted at a location to determine which countermeasures are appropriate for the type and severity of crashes experienced at that location. Some countermeasures may be inappropriate at one site yet be the best choice for another site. At times, multiple countermeasures may be necessary. Countermeasures displayed in ***bold, italicized text*** in **Table 6.4** benefit vulnerable users and equity populations. A more detailed countermeasures toolbox can be found in **Appendix D**.

Table 6.4: Crash Countermeasure Toolbox

Safety Concern	Countermeasure	Pros	Cons
Speeding	***Select appropriate speed limits***	• ***Low cost*** • ***Crash severity reduction*** • ***Safer for all roadway users*** • ***Traffic calming***	• ***Opposition from regular roadway users*** • ***Excess violations issued if not implemented properly***
	Install speed cameras	• Significant reduction in crashes and severities • Increased driver attentiveness	• Opposition from regular roadway users • Additional monitoring and enforcement required • Improved behavior only where enforcement exists
	Implement variable speed limits	• Significant reduction in all crashes and severities • Allows drivers to react to ongoing situations • Assists in maintaining speed and flow during congestion periods, incidents, work zones, and inclement weather	• Driver confusion caused by inconsistent speeds • Additional monitoring, equipment, and maintenance required
	Add bicycle lanes	• ***Reduced bicycle related crashes***	• ***Additional right-of-way required***
	Implement crosswalk visibility enhancements	• ***Increased pedestrian safety*** • ***Pedestrians cross at designated locations***	• ***Not ideal on high-speed roadways (greater than 45 MPH)*** • ***Costly lighting options***

Safety Concern	Countermeasure	Pros	Cons
Improve vulnerable roadway user (bicyclist and pedestrian) safety	***Retime signals to provide a leading pedestrian interval***	• ***Low cost*** • ***Increased likelihood of motorists yielding to pedestrians*** • ***Enhanced safety for pedestrians with disabilities***	• ***Additional delays for vehicles***
	Add medians and pedestrian refuge islands	• ***Safer pedestrian crossings***	• ***Increased median width (must be at least four feet wide)*** • ***Hard to implement at intersections***
	Install pedestrian hybrid beacons	• ***Safer pedestrian crossing option on high-volume, high-speed roadways***	• ***Costly*** • ***Additional delays/stops for vehicles***
	Install Rectangular Rapid Flashing Beacons (RRFB)	• ***Safer pedestrian crossing*** • ***Motorists yield to pedestrians*** • ***Cheaper than traffic signals***	• ***Not recommended for higher speed roadways (>45 MPH)***
	Road Diets	• ***Low cost*** • ***Reduction in lanes allows for additional bicycle and pedestrian features through Complete Streets*** • ***Traffic calming***	• ***Not effective on high volume roadways (ADT <20,000)*** • ***Roadway capacity reduction*** • ***Additional right-of-way required***
	Add walkways	• ***Pedestrians separated from the roadway***	• ***Comparatively high cost***

Safety Concern	Countermeasure	Pros	Cons
Roadway departure	Enhanced delineation for horizontal curves	• Low cost • Reduction of night-time crashes • Reduction of head-on, run-off-road, and sideswipe crashes • Reduction of fatal and injury crashes	• None
	Longitudinal rumble strips or stripes	• Centerline rumble strips reduce head-on crashes • Shoulder rumble strips reduce run-off-road crashes • Relatively low cost	• Noise concerns
	Median barriers	• Reduction of head-on and cross-median crashes	• Cost-effectiveness analysis required
	Roadside design improvements at curves	• Adequate clear zone reduces fixed object crashes • Flattened side slopes reduce single-vehicle crashes	• Not all options are cost effective
	Safety edge	• Low Cost • Reduction in run-off-road and head-on crashes • Reduction in crash severity	• Typically constructed only during overlay projects
	Wider edge lines	• Increased visibility of curves • Low Cost • Reduction in roadway departure crashes	• None

Safety Concern	Countermeasure	Pros	Cons
Intersections	Signal backplates with retroreflective borders	• Increased visibility of traffic signals • Low cost	• Structural limitations due to wind loads • Additional cost to retrofit existing signals without the backplates
	Corridor Access Management	• ***Enhanced safety for all modes of transportation*** • ***Reduced congestion along the corridor*** • ***Reduction in overall crashes for all users due to fewer access points***	• ***Opposition from businesses (driveway consolidation)***
	Dedicated turn lanes at intersections	• Reduced left turn and rear end crashes • Deceleration lane provided • Increased visibility for opposing left turns with positive offset	• Additional ROW required • Left turns with zero or negative offset result in turning vehicles blocking line of sight
	Reduced left-turn conflict intersections	• Reduced conflict points • Increased traffic flow on the mainline	• Longer travel distances for minor movements
	Install roundabout	• Reduction of total conflict points • Lowered vehicle speeds resulting in a high reduction in injury/fatal crashes	• High cost

Safety Concern	Countermeasure	Pros	Cons
	Low-Cost countermeasures - signing, pavement markings, remove sight obstructions	• Low cost • Reduction in injury/fatal crashes	• None
	Yellow change intervals	• ***Improved intersection safety*** • ***Reduced red light running violations*** • ***Reduced fatal crashes*** • ***Additional time for pedestrians to cross intersections***	• ***None***
Crosscutting (other safety focus areas)	***Add/Improve lighting***	• ***Reduced night-time crashes*** • ***Reduced pedestrian crashes***	• ***Installation and increased maintenance costs***
	Local Road Safety Plans	• ***Increased safety for all users*** • ***Collaboration with local stakeholders***	• ***None***
	Pavement friction management	• Reduced roadway departure crashes at horizontal curves • Reduced crashes at intersection approaches and interchange ramps	• None
	Road Safety Audit	• ***Early identification and mitigation of safety issues***	• ***None***

Safety Concern	Countermeasure	Pros	Cons
Distracted driving	Graduated Driver Licensing	• Reduced teenage driver crashes and injuries • Low cost	• Implementation time (requires several months) • After implementation, 1-2 years before all provisionally licensed drivers are subject to new restrictions
	High visibility cell phone enforcement (HVE)	• Reduction in cell phone usage while driving	• Effect of HVE campaigns on crashes is not certain • HVE campaigns are expensive • Enforcement of cell phone use is challenging
Impaired driving	License revocation and suspension	• Recent study suggests that policy reduces fatal crash involvement by 5 percent or 800 lives • Drivers are less likely to repeat offense	• Required funds to design, implement, and operate
	Publicized sobriety checkpoints	• Analysis shows that checkpoints reduce alcohol related crashes by 17 percent and all crashes by 10-15 percent • Public support	• Can be costly if paid media is used
	High visibility saturation patrols	• More research is needed, but saturation patrols can be effective in reducing alcohol related fatal crashes	• Can be costly if paid media is used

7.0 Progress and Transparency

The Safety Action Plan serves as a living document that provides a variety of crash countermeasure projects and system strategies that can be implemented to reduce fatal and serious injury crashes within Ouachita Parish. The plan can be used in coordination with partner agencies and long-range planning efforts, such as those conducted by the cities within the parish, the OCOG, and LADOTD. This chapter describes the future actions needed to keep this living document current and relevant to the parish's needs.

7.1 Advocacy

The Steering Committee should continue to meet on an as-needed, semi-regular basis to discuss SAP recommendations, projects, and strategies. These meetings should incorporate:

- public concerns and comments,
- additional safety projects that have recently been identified,
- grant application opportunities, and
- ongoing strategy implementation.

7.2 Data Maintenance

The parish should work with LADOTD to update the crash and equity data associated with the Safety Action Plan on an annual basis. This task should include the development of a dashboard placed on the parish's website that should display:

- progress towards the performance measures discussed in Section 2.2,
- the number of fatal and serious injury crash data over the last five years, and
- plan progress and information about upcoming meetings.

7.3 Plan Implementation

Activities that the parish can take to implement the plan include:

- Coordination with partner agencies for data collection, public outreach, and analysis.
- Discuss funding opportunities with partner agencies and pursue grant funds when available.
- Use a data-driven process to select projects and strategies in coordination with public outreach.

7.4 Transparency & Reporting

Regular documentation and reporting on the plan's implementation progress is necessary for its success. Documentation should be prepared and reported for funding opportunities, Steering Committee meetings, public outreach, and other appropriate activities.

The Safety Action Plan should be posted on the Ouachita Parish website, along with the dashboard displaying progress towards the plan's goals.

Appendices

Appendix A: All-Crash Statistics

Figure A.1: Fatal and Suspected Serious Injury Crashes by Year

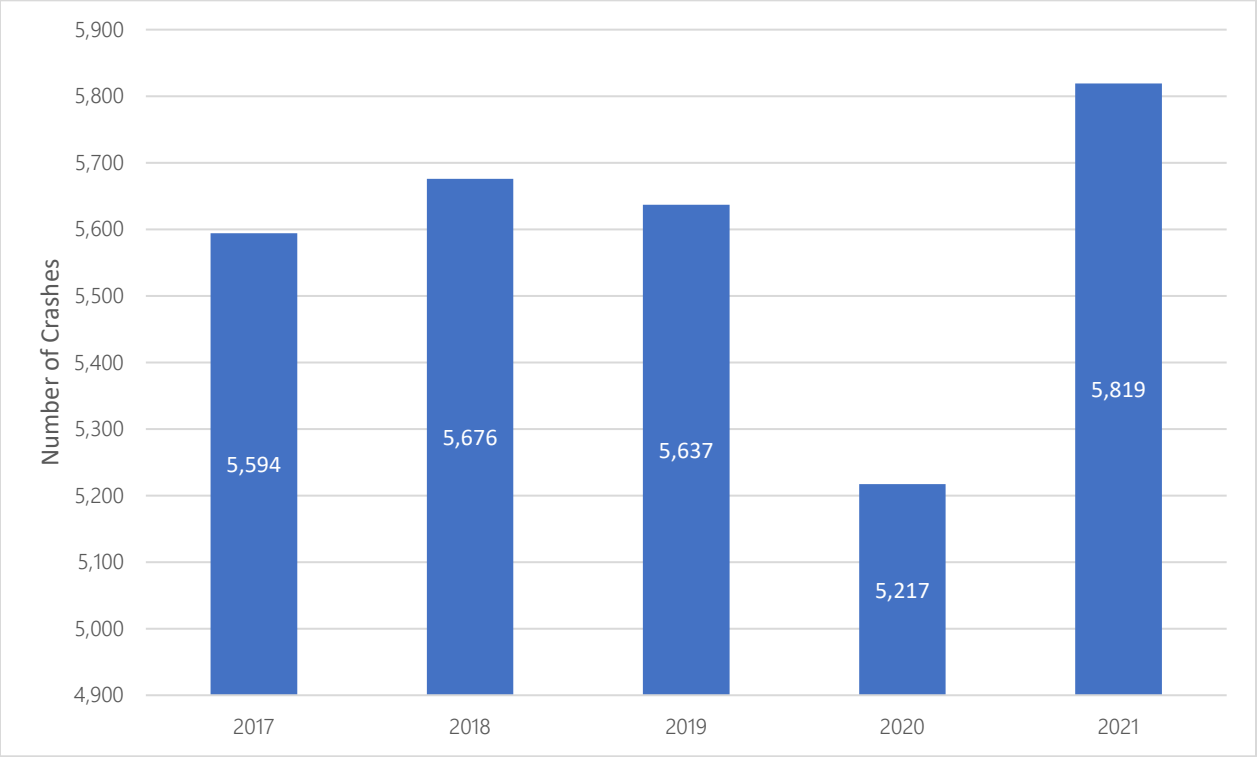


Table A.1: Fatal and Suspected Serious Injury Crashes by Crash Type and Year

Crash Type	Year					Total
	2017	2018	2019	2020	2021	
Rear End	2,049	2,004	1,950	1,628	1,818	9,449
Right Angle	902	900	880	844	951	4,477
Single Vehicle	732	845	881	996	950	4,404
Sideswipe - Same Direction	629	604	657	562	725	3,177
Other	442	467	416	366	440	2,131
Angle - Left Opposite Direction	264	274	249	252	277	1,316
Angle - Left into Flow	143	124	132	133	167	699
Angle - Left Overtake	141	138	123	114	123	639
Sideswipe - Opposite Direction	104	107	138	101	113	563
Angle - Right into Flow	73	96	87	96	111	463
Head On	89	83	89	91	103	455
Angle - Right across Flow	26	34	35	34	41	170
Total	***5,594***	***5,676***	***5,637***	***5,217***	***5,819***	***27,943***

Table A.2: Fatal and Suspected Serious Injury Crashes by Contributing Circumstances

Light Condition	Year					Total
	2017	2018	2019	2020	2021	
Daylight	4,306	4,335	4,267	3,829	4,251	20,988
Dark - continuous streetlights	565	576	562	581	659	2,943
Dark - not lighted	439	500	511	500	554	2,504
Dark - street lights at intersection only	146	147	188	196	239	916
Dawn/dusk	122	105	91	92	102	512
Unknown	11	7	14	13	9	54
Other	5	6	4	6	5	26
Total	***5,594***	***5,676***	***5,637***	***5,217***	***5,819***	***27,943***
Surface Condition	**Year**					**Total**
	2017	**2018**	**2019**	**2020**	**2021**	
DRY	4,755	4,615	4,596	4,204	4,936	23,106
WET	796	1,012	1,023	994	798	4,623
ICE/FROST	15	20	5	9	33	82
SLUSH	15	12	1	2	40	70
UNKNOWN	9	10	6	6	10	41
MUD, DIRT, GRAVEL	4	6	6	2	1	19
OTHER	0	1	0	0	1	2
Total	***5,594***	***5,676***	***5,637***	***5,217***	***5,819***	***27,943***

Figure A.2: Fatal and Suspected Serious Injury Crashes by Month, 2017 – 2021

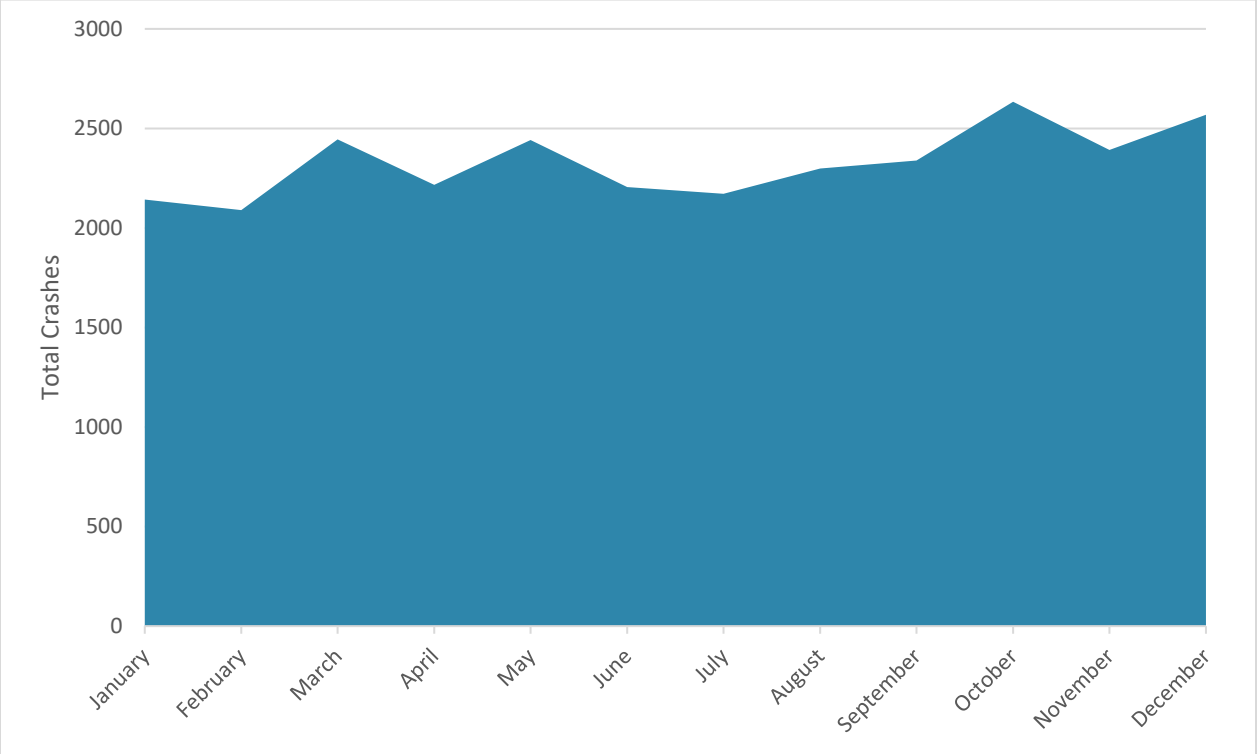


Figure A.3: Fatal and Suspected Serious Injury Crashes by Day of Week, 2017 – 2021

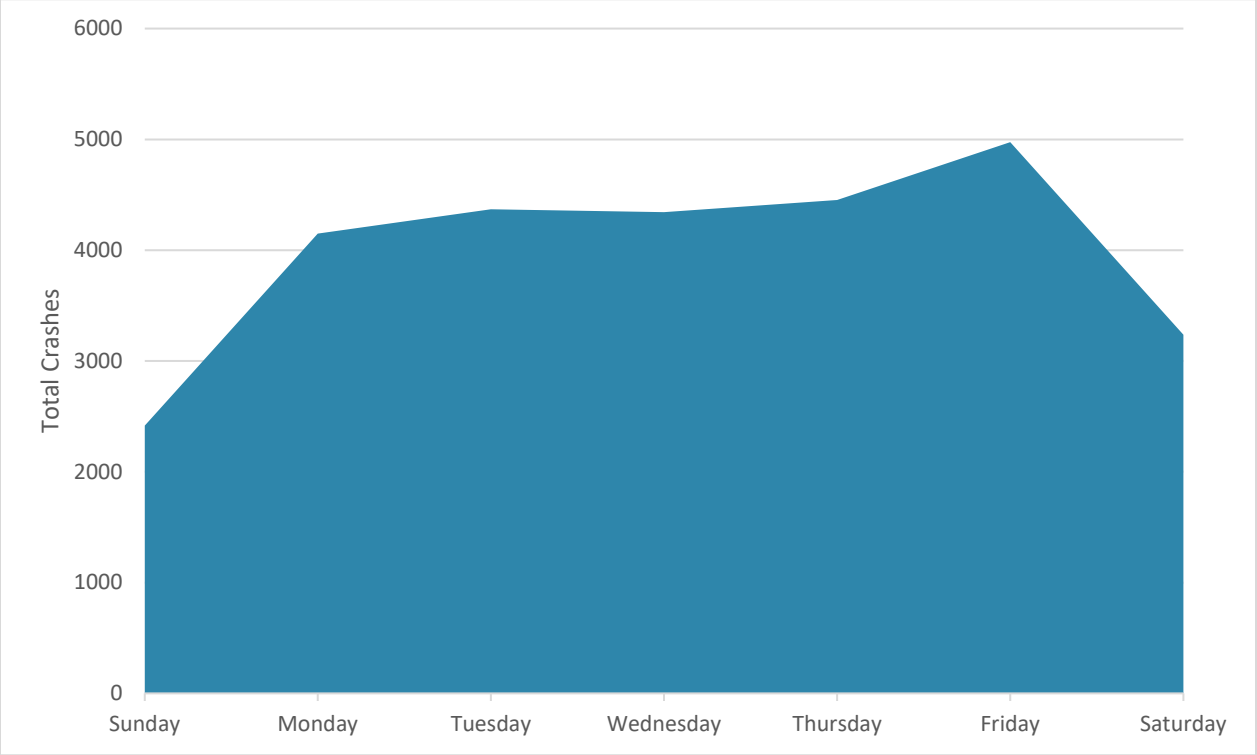


Figure A.4: Fatal and Suspected Serious Injury Crashes by Time of Day, 2017 – 2021

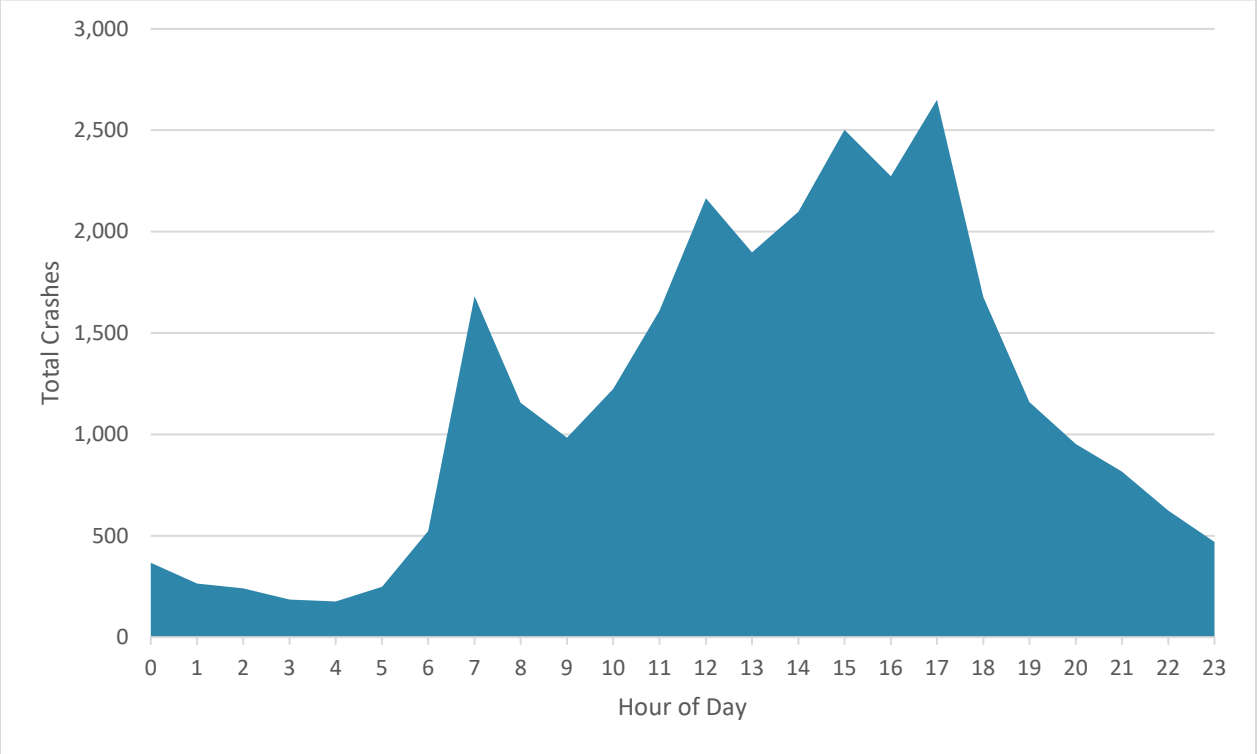


Table A.3: Demographic Characteristics in Fatal and Suspected Serious Injury Crashes

Demographic Information	Year					Total
	2017	2018	2019	2020	2021	
Older Driver	1,037	991	1,069	884	1,036	5,017
Younger Driver	2,170	2,172	2,074	1,958	2,217	10,591
Alcohol Involvement	217	244	234	272	317	1,284

Figure A.5: Bicycle/Pedestrian Fatal and Suspected Serious Injury Crashes, 2017 – 2021

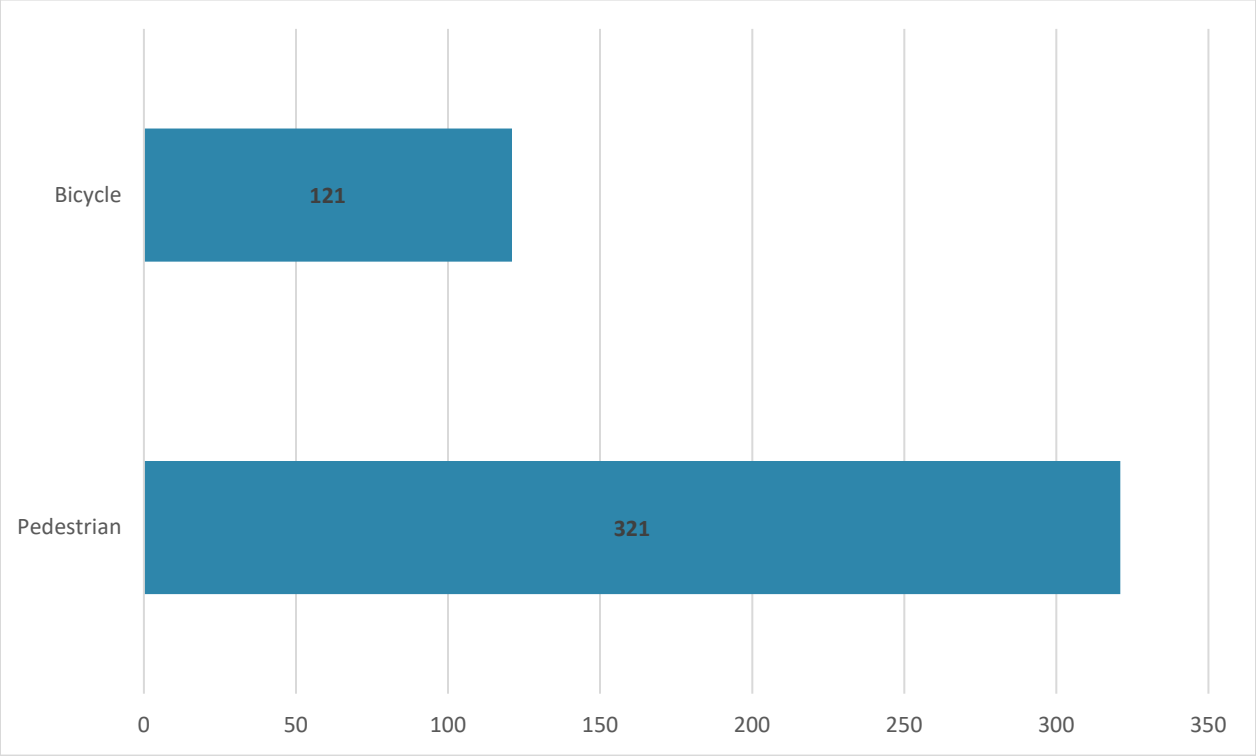


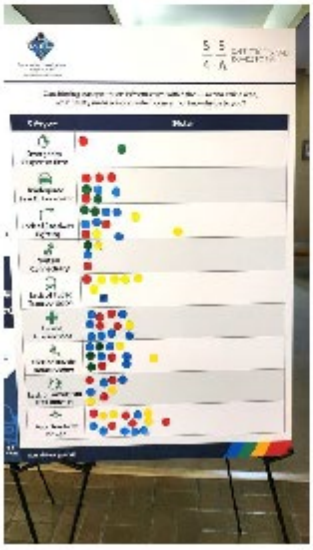
Table A.4: Bicycle/Pedestrian Fatal and Suspected Serious Injury Crashes, 2017 – 2021
Lighting and Surface Conditions

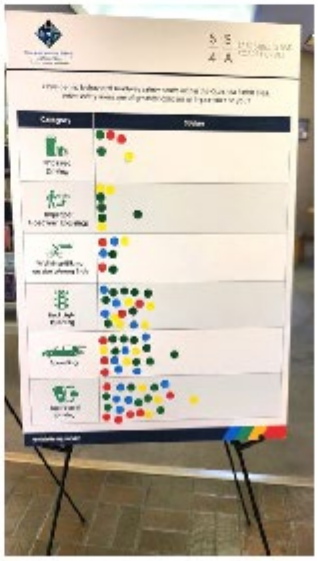
	Dry	Wet	Ice/Frost	Unknown	Total
Pedestrian	**279**	**40**	**1**	**1**	**321**
Daylight	121	12	1	0	134
Dawn/dusk	7	1	0	0	8
Dark - continuous streetlights	65	12	0	0	77
Dark - street lights at intersection only	26	4	0	0	30
Dark - not lighted	59	11	0	0	70
Other	1	0	0	0	1
Unknown	0	0	0	1	1
	Dry	**Wet**	**Ice/Frost**	**Unknown**	**Total**
Bicycle	**111**	**10**	**0**	**0**	**121**
Daylight	81	5	0	0	86
Dawn/dusk	0	1	0	0	1
Dark - continuous streetlights	11	4	0	0	15
Dark - street lights at intersection only	6	0	0	0	6
Dark - not lighted	12	0	0	0	12
Other	1	0	0	0	1
Unknown	0	0	0	0	0

Appendix B: Outreach Documentation

Phase 1

Sample Photos from Outreach Activities





7

Social Media

Phase 1 – Outreach Poster

Phase 2

Social Media Posts and Flyers

Photos

Outreach Poster

Appendix C: Project Prioritization Scores

ID	Roadway Name	From/At	To	Improvement	Length (mi)	Cost	Timeframe	Local Priority	Total Prioritization Score	Crash Severity Score	Multimodal Score	Focus Areas Score	Equity Score	Infrastructure Score	Existing Plans Score	Public Concerns Score
S-O-01	US 80 (Louisville Ave)	Oliver Rd	Newcombe St	Add sidewalks Access management study, including driveway consolidation and changing TWLTL to median with turn lanes	0.2	$140,000	Medium-Term	High	80	20	20	5	15	10	0	10
S-BP-01	US 80 (Louisville Ave)	Oliver Rd	Newcombe St	Add sidewalks Access management study, including driveway consolidation and changing TWLTL to median with turn lanes	0.2	$140,000	Medium-Term	High	80	20	20	5	15	10	0	10
I-BP-06	US 80 (Louisville Ave)	@ Lamy Ln		Add "Prepare to Stop when Flashing" signs and beacons along US 80 Add crosswalks and sidewalks at intersection, along with pedestrian signals	--	$71,000	Short-Term	High	75	15	10	15	15	10	0	10
S-O-03	US 80 (Louisville Ave)	Newcombe St	Washington St	Add sidewalks Access management study, including driveway consolidation and changing TWLTL to median with turn lanes	0.3	$185,000	Medium-Term	High	70	15	15	5	15	10	0	10
S-BP-02	US 80 (Louisville Ave)	Newcombe St	Washington St	Add sidewalks Access management study, including driveway consolidation and changing TWLTL to median with turn lanes	0.3	$185,000	Medium-Term	High	70	15	15	5	15	10	0	10
S-O-04	LA 617 (Thomas Rd)	Glenwood Dr	McMillan Rd	Add lighting Access management study, including changing TWLTL to median with turn lanes and restricting lefts out of driveways	0.2	$100,000	Short-Term	High	65	10	5	15	15	10	0	10
S-BP-08	LA 617 (Thomas Rd)	Glenwood Dr	McMillan Rd	Add lighting Access management study, including changing TWLTL to median with turn lanes and restricting lefts out of driveways	0.2	$100,000	Short-Term	High	65	10	5	15	15	10	0	10
I-O-01	US 80 (Louisville Ave)	@ Lamy Ln		Add "Prepare to Stop when Flashing" signs and beacons along US 80 Add crosswalks and sidewalks at intersection, along with pedestrian signals	--	$71,000	Short-Term	High	60	15	10	15	15	5	0	0
I-O-09	US 165	@ MLK Dr		Add reflective backplates to signals Change northbound and southbound left turns from protected-permitted to protected only	--	$3,500	Short-Term	High	60	15	10	5	15	5	0	10
S-O-28	US 165 NB (MLK Jr Dr)	LA 20	US 80	Safety Study	1.9		Short-Term	High	60	15	0	15	15	10	0	5
I-BP-03	US 80 (Louisville Ave)	@ Oliver Rd		Enforcement	--	TBD	Long-Term	High	60	10	10	5	15	10	0	10
S-BP-05	US 165 SB	Dellwood Dr	Monterey Cir	Enforcement	0.2	TBD	Long-Term	High	55	10	10	0	15	10	0	10
I-BP-09	US 165	@ Sunset Dr		Enforcement	--	TBD	Long-Term	High	55	10	5	5	15	10	0	10
S-O-06	I-20 WB	I-20 WB On-Ramp at LA 594 (Texas Ave)	I-20 WB Off-Ramp at LA 594 (Texas Ave)	Extend westbound on-ramp acceleration lane from LA 594 (Texas Ave)	0.5	$500,000	Long-Term	High	50	10	10	5	15	10	0	0
S-BP-10	I-20 WB	I-20 WB On-Ramp at LA 594 (Texas Ave)	I-20 WB Off-Ramp at LA 594 (Texas Ave)	Add "Pedestrian and Bicyclists Prohibited" signage at ramps and along Service Road	0.5	$5,000	Short-Term	High	50	10	10	5	15	10	0	0
S-O-05	I-20 EB	I-20 EB Off-Ramp at LA 617 (Thomas Rd)	I-20 EB Off-Ramp at LA 34 (Stella St)	Enforcement	1.4	TBD	Long-Term	High	50	10	5	10	15	10	0	0
S-BP-09	I-20 EB	I-20 EB Off-Ramp at LA 617 (Thomas Rd)	I-20 EB Off-Ramp at LA 34 (Stella St)	Add "Pedestrian and Bicyclists Prohibited" signage at ramps and along Service Road	1.4	$5,000	Short-Term	High	50	10	5	10	15	10	0	0
I-O-26	LA 616 (Arkansas Rd)	@ LA 143 (N 7th St)		Safety Study	--		Short-Term	High	45	20	0	0	15	5	0	5
I-O-14	LA 139	@ Music Rd		Safety Study	--		Short-Term	High	45	15	10	0	15	5	0	0
I-O-03	US 80 (Louisville Ave)	@ Oliver Rd		Remove driveway along eastbound US 80 just east of intersection	--	$3,000	Short-Term	High	45	10	10	5	15	5	0	0

ID	Roadway Name	From/At	To	Improvement	Length (mi)	Cost	Timeframe	Local Priority	Total Prioritization Score	Crash Severity Score	Multimodal Score	Focus Areas Score	Equity Score	Infrastructure Score	Existing Plans Score	Public Concerns Score
I-O-04	US 165	@ Sunset Dr		Extend deceleration length for northbound and southbound left turn and right turn lanes	--	$890,000	Medium-Term	High	40	10	5	5	15	5	0	0
I-O-05	LA 617 (Thomas Rd)	@ Basic Dr		Enforcement	--	TBD	Long-Term	High	40	10	0	10	15	5	0	0
I-O-06	US 80 (Cypress St)	@ LA 617 (Thomas Rd)		Add "Signal Ahead" signage on US 80	--	$700	Short-Term	High	40	10	0	10	15	5	0	0
I-BP-08	US 165 Bus. (Louisville Ave)	@ Smith Ave		Add intersection lighting	--	$25,000	Short-Term	High	40	5	5	5	15	10	0	0
S-O-15	US 80 (Louisville Ave)	Washington St	Plaza Blvd	Safety Study	0.2		Short-Term	High	40	5	0	5	15	10	0	5
S-O-23	US 165 NB (Sterlington Rd)	US 165 NB Off-Ramp at US 80	US 165 NB On-Ramp at US 80	Safety Study	0.5		Short-Term	High	40	5	0	5	15	10	0	5
I-O-18	US 165	@ Renwick St		Safety Study	--		Short-Term	High	40	5	0	10	15	5	0	5
I-O-08	US 80 (Cypress St)	@ Vernon Ln		Enforcement	--	TBD	Long-Term	High	35	10	0	5	15	5	0	0
S-BP-03	Richwood Rd 1	Preston Loop	Reddix Ln	Add sidewalk Add lighting	0.2	$115,000	Short-Term	High	35	5	5	0	15	10	0	0
S-O-17	I-20 WB	I-20 WB On-Ramp at S 5th St	I-20 WB Off-Ramp at S 5th St	Safety Study	0.3		Short-Term	High	35	5	0	5	15	10	0	0
S-O-22	US 80 (Cypress St)	Wallace Dean Rd	Vernon Ln	Safety Study	0.1		Short-Term	High	35	5	0	5	15	10	0	0
I-O-19	US 165	@ Century Blvd		Safety Study	--		Short-Term	High	35	5	0	10	15	5	0	0
I-O-21	MLK Dr	@ Louberta St		Safety Study	--		Short-Term	High	35	5	0	10	15	5	0	0
I-O-25	LA 143 (N 7th St)	@ US 80 (Cypress St)		Safety Study	--		Short-Term	High	35	5	0	10	15	5	0	0
S-O-26	US 80 (Louisville Ave)	US 80 (Cypress St)	N 10th St	Safety Study	1.0		Short-Term	High	35	0	0	5	15	10	0	5
I-O-12	US 165 (Sterlington Rd)	@ Webster St		Safety Study	--		Short-Term	High	30	10	0	0	15	5	0	0
I-O-24	US 80 (Louisville Ave)	@ N 19th St		Safety Study	--		Short-Term	High	30	5	0	5	15	5	0	0
S-O-27	Arkansas Rd	Kiroli Rd	LA 143	Safety Study	0.9		Short-Term	High	30	0	0	0	15	10	0	5
S-O-29	Standifer Ave	US 165 Bus	US 165	Safety Study	1.5		Short-Term	High	30	0	0	0	15	10	0	5
S-O-11	Elkins Rd	Lenard Ln	Bill Golson Rd	Safety Study	1.2		Short-Term	High	25	10	0	0	5	10	0	0
S-O-20	I-20 EB	I-20 EB Off-Ramp at LA 34 (Stella St)	I-20 EB On-Ramp at LA 34 (Stella St)	Safety Study	0.6		Short-Term	Medium	35	5	0	5	15	10	0	0
I-O-23	US 80 (Desiard St)	@ S College Ave		Safety Study	--		Short-Term	Medium	35	5	0	10	15	5	0	0
I-BP-01	MLK Dr	@ Renwick St		Construct sidewalk along NW corner of intersection Add pedestrian beacons for crosswalk north of intersection Restrict northbound and southbound left turns	--	$47,130	Short-Term	Low	60	10	10	5	15	10	0	10
S-O-10	I-20 EB	Russell Sage Rd	Ouachita Parish Line	Enforcement	3.2	TBD	Long-Term	Low	55	15	10	5	15	10	0	0
I-BP-10	US 165	@ LA 2		Enforcement	--	TBD	Long-Term	Low	55	15	10	5	5	10	0	10
S-BP-04	US 165	Richwood Rd 2	Baylor Dr	Add pedestrian bridge over US 165 near library	0.4	$1,000,000	Medium-Term	Low	55	10	10	0	15	10	0	10
I-O-10	MLK Dr	@ Renwick St		Construct sidewalk along NW corner of intersection Add pedestrian beacons for crosswalk north of intersection Restrict northbound and southbound left turns	--	$47,130	Short-Term	Low	55	10	10	5	15	5	0	10
I-BP-02	US 165	@ Monterey Cir		Enforcement	--	TBD	Long-Term	Low	55	10	10	0	15	10	0	10
S-O-02	I-20 WB	I-20 WB Off-Ramp at S 5th St	I-20 WB On-Ramp at S Grand St	Add curve advisory signs and chevrons	0.4	$7,400	Short-Term	Low	50	15	0	10	15	10	0	0
I-O-15	Temple Dr	@ S 10th St		Safety Study	--		Short-Term	Low	45	10	10	0	15	10	0	0
I-BP-05	US 80 (Desiard St)	@ Francis Dr		Enforcement	--	TBD	Long-Term	Low	45	5	5	0	15	10	0	10
S-O-14	LA 139	0.6 miles south of LA 134	LA 134	Safety Study	0.6		Short-Term	Low	40	15	0	0	15	10	0	0

ID	Roadway Name	From/At	To	Improvement	Length (mi)	Cost	Timeframe	Local Priority	Total Prioritization Score	Crash Severity Score	Multimodal Score	Focus Areas Score	Equity Score	Infrastructure Score	Existing Plans Score	Public Concerns Score
I-O-07	US 165	@ LA 2		Add reflective backplates to signals Prohibit southbound u-turns at intersection	--	$1,550	Short-Term	Low	40	15	10	5	5	5	0	0
I-O-16	US 165	@ Monterey Cir		Safety Study	--		Short-Term	Low	40	10	10	0	15	5	0	0
I-BP-04	US 165 Bus. (Jackson St)	@ Standifer Ave		Add pedestrian warning signage and beacon, along with crosswalk, near bus stop	--	$2,400	Short-Term	Low	40	10	5	0	15	10	0	0
S-O-07	LA 594 (Swartz School Rd)	LA 594 (Millhaven Rd)	Huenefeld Rd	Enforcement	1.6	TBD	Long-Term	Low	40	10	0	5	15	10	0	0
S-O-08	I-20 EB	I-20 EB Off-Ramp at S 5th St	I-20 EB On-Ramp at S 5th St	Add curve advisory signs and chevrons	0.4	$7,400	Short-Term	Low	40	10	0	5	15	10	0	0
S-O-09	I-20 EB	Jackson St	I-20 EB On-Ramp at Layton Ave	Add curve advisory signs and chevrons	0.4	$5,000	Short-Term	Low	40	10	0	5	15	10	0	0
S-O-19	I-20 EB	Garrett Rd	Russell Sage Rd	Safety Study	3.1		Short-Term	Low	40	10	0	5	15	10	0	0
S-O-21	I-20 EB	Texas Ave	US 165 (MLK Jr Dr)	Safety Study	0.5		Short-Term	Low	40	10	0	5	15	10	0	0
S-O-24	LA 34 (Jonesboro Rd)	Kings Lake Rd	Winks Ln	Safety Study	1.9		Short-Term	Low	40	10	0	5	15	10	0	0
I-O-02	US 165	@ LA 15 (Winnsboro Rd)		Extend deceleration length for northbound and southbound left turn lanes Add reflective backplates for signals	--	$667,100	Medium-Term	Low	40	10	0	10	15	5	0	0
S-O-16	LA 20 EB	LA 546	LA 3246 (Well Rd)	Safety Study	2.8		Short-Term	Low	40	10	0	10	10	10	0	0
I-BP-07	US 165 Bus. (Louisville Ave)	@ Desiard St		Add reflective backplates for signals and intersection lighting	--	$26,050	Short-Term	Low	40	5	5	5	15	10	0	0
I-O-17	Texas Ave	@ S 18th St		Safety Study	--		Short-Term	Low	40	5	0	15	15	5	0	0
I-O-11	US 165 Bus. (Jackson St)	@ Standifer Ave		Safety Study	--		Short-Term	Low	35	10	5	0	15	5	0	0
S-O-12	LA 584 (Millhaven Rd)	Wagon Wheel Rd	LA 594 (Swartz School Rd)	Safety Study	1.5		Short-Term	Low	35	10	0	0	15	10	0	0
S-O-13	Stubbs Vinson Rd	White Oak Dr	Stubbs Ritchie Rd	Safety Study	0.4		Short-Term	Low	35	10	0	0	15	10	0	0
S-BP-06	Dellwood Dr	Stonegate Dr	Blackwood Dr	Add lighting	0.3	$25,000	Short-Term	Low	35	5	5	0	15	10	0	0
S-BP-07	US 165 Bus. (Jackson St)	Hippolyte Ave	Forrest Ave	Add lighting	0.2	$25,000	Short-Term	Low	35	5	5	0	15	10	0	0
S-O-18	I-20 EB	I-20 EB On-Ramp at LA 34 (Stella St)	I-20 EB Off-Ramp at S 5th St	Safety Study	0.3		Short-Term	Low	35	5	0	5	15	10	0	0
S-O-25	US 80 (Louisville Ave)	Superior Lane	Bread St	Safety Study	0.2		Short-Term	Low	30	5	0	0	15	10	0	0
I-O-20	US 165 (Sterlington Rd)	@ W Elmwood Dr		Safety Study	--		Short-Term	Low	30	5	0	5	15	5	0	0
I-O-22	US 80 (Louisville Ave)	@ Bread St		Safety Study	--		Short-Term	Low	30	5	0	5	15	5	0	0
I-O-13	US 165 (Sterlington Rd)	@ Magnolia Cove		Safety Study	--		Short-Term	Low	25	10	0	0	10	5	0	0

***Improvements shown in this table are recommended countermeasures based on planning level technical analysis. This plan recommends final selection of countermeasures and reasonable limits during implementation phase.**
Short-Term projects are those that can be implemented and completed within a 5-year timeframe.
Medium-Term projects are those that can be implemented and completed within a 5-year timeframe but may include elements that may require more time to implement, monitor, or enforce.
Long-Term projects are those that take greater than 5 years to implement or require a long timeframe of monitoring or enforcement.

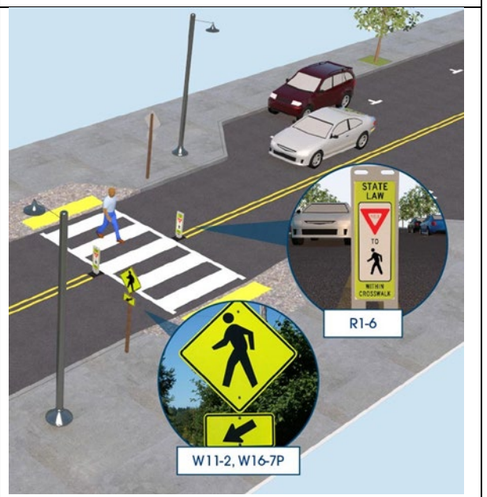
Appendix D: Countermeasures Toolbox

Speed Management				
Countermeasure	**Description**	**Problem(s) Address**	**Safety Benefits**	**Example**
Appropriate Speed Limits for All Road Users	There is broad consensus among global roadway safety experts that speed control is one of the most important methods for reducing fatalities and serious injuries. Speed is an especially important factor on non-limited access roadways where vehicles and vulnerable road users mix.	Appropriate speed limits can reduce the significant risks drivers impose on others – especially vulnerable road users – and on themselves.	**Examples** Seattle, WA Up to 26 percent reduction in fatalities after implementing comprehensive, city-wide speed management strategies and countermeasures[6] Rural Roads Setting a speed limit no more than 5 MPH below the 85th percentile speed may result in fewer total and fatal plus injuries, and lead to drivers complying closely with the posted speed limit[6]	 SOURCE: FHWA
Speed Safety Cameras	Speed safety cameras use speed measurement devices to detect speeding and capture photographic or video evidence of vehicles that are violating a set speed threshold.	Enforces safe speeds	**Fixed Units on Urban Principal Arterials** Up to 54 percent reduction for all crashes[7] Up to 48 percent reduction for injury crashes[7] **Point-to-Point Units on Urban Expressways, Freeways, and Principal Arterials** Up to 37 percent reduction for fatal and injury crashes[7] **Mobile Units on Urban Principal Arterials** Up to 20 percent reduction for fatal and injury crashes[7]	 SOURCE: Planetizen; davepaku
Variable Speed Limits	Selecting appropriate speed limits on roadways is important in maintaining a safe and efficient transportation network. Speed limits are established with an engineering study based on inputs like traffic volumes, operating speeds, roadway characteristics, and crash history. However, conditions on the roadway are susceptible to change in a short amount of time (e.g., congestion, crashes, weather). Drivers typically determine their operating speeds under normal weather conditions on a straight roadway section with good pavement quality and adequate sight distances.	Providing variable speed limits capable of adapting to changing circumstances	**Total Crashes on Freeways** Up to 34 percent reduction[8] **Rear-End Crashes on Freeways** Up to 65 percent reduction[8] **Fatal and Injury Crashes on Freeways** Up to 51 percent reduction[8]	 SOURCE: WSDOT

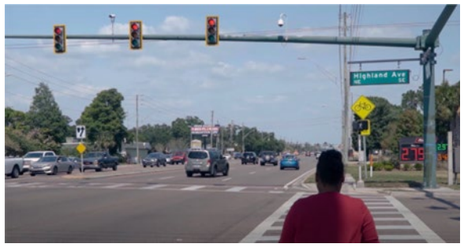
[6] https://highways.dot.gov/safety/proven-safety-countermeasures/appropriate-speed-limits-all-road-users#psc-footnote
[7] https://highways.dot.gov/sites/fhwa.dot.gov/files/Speed%20Safety%20Cameras_508.pdf
[8] https://highways.dot.gov/safety/proven-safety-countermeasures/variable-speed-limits

Speed Management				
Countermeasure	**Description**	**Problem(s) Address**	**Safety Benefits**	**Example**
Traffic Calming	Traffic calming is the combination of measures that reduce the negative effects of motor vehicle use, alter driver behavior, and improve conditions for non-motorized street users. Traffic calming consists of physical design and other measures put in place on existing roads to reduce vehicle speeds and improve safety for pedestrians and cyclists. Examples of traffic calming devices can include vertical deflections (speed humps, speed tables, and raised intersections), horizontal shifts, and roadway narrowing.	• Decreasing vehicle travel lanes for pedestrians to cross, • Providing room for a pedestrian crossing median, • Improving safety for bicyclists when bicycle lanes are added, • Providing an opportunity for on-street parking (which also serves as a buffer between pedestrians and vehicles), • Reducing rear-end and side-swipe crashes, • Improving speed limit compliance, and • Decreasing crash severity when crashes do occur.	Up to 5 percent reduction in Property Damage Only (PDO) crashes[9] Up to 18 percent reduction in injury crashes[10]	 Example of Speed Table SOURCE: FHWA; www.pedbikeimages.org  Example of Diagonal Diverter in a Residential Area SOURCE: FHWA

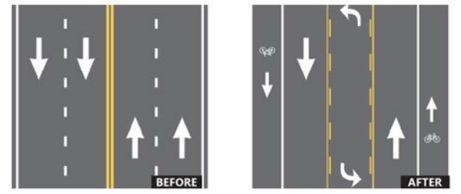
[9] https://www.cmfclearinghouse.org/detail.php?facid=589
[10] https://www.cmfclearinghouse.org/detail.php?facid=587

Pedestrian/Bicyclist				
Countermeasure	**Description**	**Problem(s) Address**	**Safety Benefits**	**Example**
Bicycle Lanes	Most fatal and serious injury bicyclist crashes occur at non-intersection locations. Nearly one-third of these crashes occur when motorists are overtaking bicyclists because the speed and size differential between vehicles and bicycles can lead to severe injury.	Mitigate or prevent interactions, conflicts, and crashes between bicyclists and motor vehicles, and create a network of safer roadways for bicycling.	**Converting traditional or flush buffered bicycle lanes to a separated bicycle lane with flexible delineator posts** Up to 53 percent reduction in bicycle/vehicle crashes[11] **Bicycle Line Additions** Up to 49 percent reduction in total crashes on urban 4-lane undivided collectors and local roads[11] Up to 30 percent reduction in total crashes on urban 2-lane undivided collectors and local roads[11]	 SOURCE: City of Hoboken, NJ; planetizen
Crosswalk Visibility Enhancements	Three main crosswalk visibility enhancements help make crosswalks and the pedestrians, bicyclists, wheelchair and other mobility device users, and transit users using them more visible to drivers. These include high-visibility crosswalks, lighting, and signing and pavement markings.	Can assist pedestrians in where to cross.	**High Visibility Crosswalks** Up to 40 percent reduction in pedestrian injury crashes[12] **Intersection Lighting** Up to 42 percent reduction in pedestrian crashes[12] **Advance Yield or Stop Markings and Signs** Up to 25 percent reduction in pedestrian crashes[12]	 SOURCE: FHWA

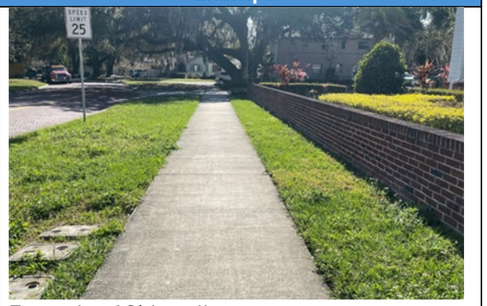
[11] https://highways.dot.gov/sites/fhwa.dot.gov/files/Bicycle%20Lanes_508.pdf
[12] https://highways.dot.gov/safety/proven-safety-countermeasures/crosswalk-visibility-enhancements

Pedestrian/Bicyclist				
Countermeasure	**Description**	**Problem(s) Address**	**Safety Benefits**	**Example**
Leading Pedestrian Interval	A leading pedestrian interval (LPI) gives pedestrians the opportunity to enter the crosswalk at an intersection 3-7 seconds before vehicles are given a green indication. Pedestrians can better establish their presence in the crosswalk before vehicles have priority to turn right or left.	• Increased visibility of crossing pedestrians • Reduced conflicts between pedestrians and vehicles • Increased likelihood of motorists yielding to pedestrians • Enhanced safety for pedestrians who may be slower to start into the intersection	Up to 13 percent reduction in pedestrian-vehicle crashes at intersections[13]	 SOURCE: FDOT
Medians and Pedestrian Refuge Islands in Urban and Suburban Areas	A refuge island is a median with a refuge area that is intended to help protect pedestrians who are crossing a road.	Improves safety by allowing pedestrians to cross one direction of traffic at a time.	**<u>Median with Marked Crosswalk</u>** Up to 46 percent reduction in pedestrian crashes[14] **<u>Pedestrian Refuge Island</u>** Up to 56 percent reduction in pedestrian crashes[14]	 SOURCE: FHWA; www.pedbikeimages.org
Protected Intersections for Pedestrians and Bicyclists	These intersections, also referred to as Dutch-style junction, keep bicyclists and pedestrians separated from vehicles all the way through the intersection. Protected intersections can include bicycle setbacks that increase visibility and reaction time to turning vehicles; corner islands that separate bicyclists from vehicles and make turning tighter and harder for drivers; bike queues areas that give bicyclists a head start; and pedestrian islands that reduce crossing distances and exposure to turning vehicles.	Improve visibility, encourage more predictable movements, and foster comfort and safety for pedestrians and bicyclists.	N/A	 SOURCE: Alta Planning; Institute for Transportation & Development Policy (ITDP)

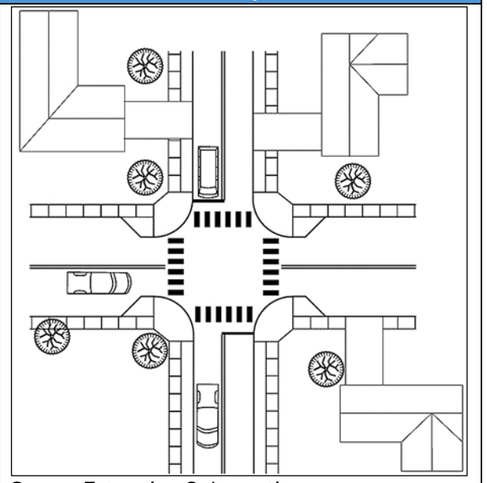
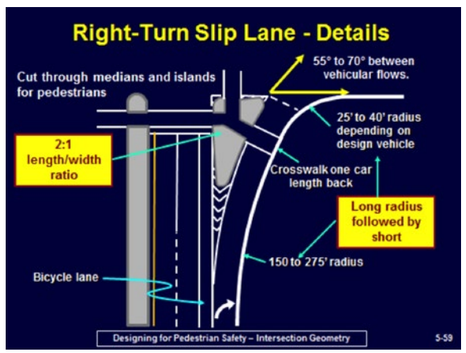
[13] https://highways.dot.gov/safety/proven-safety-countermeasures/leading-pedestrian-interval
[14] https://highways.dot.gov/sites/fhwa.dot.gov/files/Medians%20and%20Pedestrian%20Refuge%20Islands_508.pdf

Pedestrian/Bicyclist				
Countermeasure	**Description**	**Problem(s) Address**	**Safety Benefits**	**Example**
Pedestrian Hybrid Beacons	The pedestrian hybrid beacon (PHB) is a traffic control device designed to help pedestrians safely cross higher-speed roadways at midblock crossings and uncontrolled intersections. The beacon head consists of two red lenses above a single yellow lens. The lenses remain "dark" until a pedestrian desiring to cross the street pushes the call button to activate the beacon, which then initiates a yellow to red lighting sequence consisting of flashing and steady lights that direct motorists to slow and come to a stop and provides the right-of-way to the pedestrian to safely cross the roadway before going dark again.	Provides pedestrian safety by assigning right of way and providing positive stop control.	**Pedestrian Crashes** Up to 55 percent reduction[15] **Total Crashes** Up to 29 percent reduction[15] **Fatal and Serious Injury Crashes** Up to 15 percent reduction[15]	 SOURCE: FHWA
Rectangular Rapid Flashing Beacons (RRFB)	Rectangular Rapid Flashing Beacons (RRFBs) consist of two, rectangular- shaped yellow indications, each with a light-emitting diode (LED)-array-based light source. RRFBs flash with an alternating high frequency when activated to enhance conspicuity of pedestrians at the crossing to drivers.	Enhance pedestrian conspicuity and increase driver awareness at uncontrolled, marked crosswalks	Up to 47 percent reduction in pedestrian crashes[16]	 SOURCE: FHWA
Road Diets	A Road Diet, or roadway reconfiguration, can improve safety, calm traffic, provide better mobility and access for all road users, and enhance overall quality of life. A Road Diet typically involves converting an existing four-lane undivided roadway to a three-lane roadway consisting of two through lanes and a center two-way left-turn lane (TWLTL)	• Reduction in rear-end, left-turn, and right-angle crashes • Fewer lanes for pedestrians to cross • Opportunity to install pedestrian refuge islands, bicycle lanes, on-street parking, and/or transit stops • Traffic calming and more consistent speeds	Between 19 percent and 47 percent reduction in total crashes[17].	 SOURCE: FHWA

[15] https://highways.dot.gov/safety/proven-safety-countermeasures/pedestrian-hybrid-beacons
[16] https://highways.dot.gov/safety/proven-safety-countermeasures/rectangular-rapid-flashing-beacons-rrfb
[17] https://highways.dot.gov/sites/fhwa.dot.gov/files/Road%20Diets_508.pdf

Pedestrian/Bicyclist				
Countermeasure	**Description**	**Problem(s) Address**	**Safety Benefits**	**Example**
Walkways	A walkway is any type of defined space or pathway for use by a person traveling by foot or using a wheelchair. These may be pedestrian walkways, shared use paths, sidewalks, or roadway shoulders.	Well-designed pedestrian walkways, shared use paths, and sidewalks improve the safety and mobility of pedestrians.	**<u>Sidewalks</u>** Between 65 percent and 89 percent reduction in crashes involving pedestrians walking along roadways[18] **<u>Paved Shoulders</u>** Up to 71 percent reduction in crashes involving pedestrians walking along roadways[18]	 Example of Sidewalk SOURCE: City of Orlando, FL  Example of Paved Shoulder used as a Walkway SOURCEL FHWA; pedbikeimages.com
Raised Crossings	These crossings give physical priority for pedestrians and bicyclists to safely cross the street by forcing drivers to yield and slow down. A raised crossing is level with the sidewalk and bicycle lanes on either side and extends the sidewalk and bicycle lanes across the street. This makes pedestrians and bicyclists more visible and improves comfort and accessibility. Additionally, raised crossings can function as a speed table, forcing drivers to slow down to clear or turn over them.	Reducing vehicle speeds and enhance the pedestrian crossing environment.	Can reduce pedestrian crashes by 45 percent[19].	 SOURCE: www.pedbikeimages.org

[18] https://highways.dot.gov/safety/proven-safety-countermeasures/walkways
[19] https://safety.fhwa.dot.gov/ped_bike/step/docs/TechSheet_RaisedCW_508compliant.pdf

Pedestrian/Bicyclist				
Countermeasure	**Description**	**Problem(s) Address**	**Safety Benefits**	**Example**
Compact Corners/Corner Extension/Bulb-out	A curb extension is a horizontal extension of the sidewalk into the street resulting in a narrower roadway section.	• Shortens intersection crossing distance for a pedestrian; shorter distance reduces the potential for pedestrian-vehicle conflict and likely improves pedestrian safety • Provides additional queuing space for pedestrians at corner	N/A	 Corner Extension Schematic SOURCE: FHWA; DelDOT
Improved Right-Turn Slip-Lane Design	Well-designed right-turn slip lanes include several key features: • The island (sometimes referred to as the "pork chop") that forms the channelized right-turn lane is raised and large enough to accommodate waiting pedestrians and accessibility features, such as curb ramps or cut-throughs). • As they enter the right-turn lane, drivers can easily see pedestrians crossing or about to cross the right-turn lane and have enough space to stop completely once a pedestrian is spotted. • The right-turn lane is as narrow as possible while still enabling the design vehicle to make the turn. Edge lines and cross-hatching can be used to narrow the perceived width of the lane while still accommodating larger vehicles. • The crosswalk is oriented at a 90-degree angle to the right-turn lane to optimize sight lines and is positioned one car length back from the intersecting roadway to allow drivers to move forward and wait for a gap in oncoming traffic after clearing the crosswalk. • The visibility of the crosswalk to drivers is further enhanced using high-visibility crosswalk striping, flashing beacons, and/or signage. Raised crosswalks may also be used to force motorists to slow down. • The angle at which the right-turn lane intersects the cross street is relatively low (e.g., closer to 110 percent, rather than 140 percent). This feature lowers motor vehicle speeds and makes it easier for drivers to see oncoming traffic. • Good design can be recognized by the long "tail" on the island (i.e. long tail means slower turning speed; short tail means faster turning speed – see illustrations below.	Slow turning vehicles, allow drivers and pedestrians to easily see each other, reduce pedestrian exposure in the roadway, reduce the complexity of an intersection by breaking it into manageable parts, and allow drivers to see oncoming traffic as they merge into the receiving roadway	**<u>Improving Angle of Channelized Right Turn Lane</u>** Up to 44 percent reduction in all crashes[20]	 Recommended Design for Right-Turn Slip Lane SOURCE: PEDSAFE

[20] https://www.cmfclearinghouse.org/detail.php?facid=8428

Pedestrian/Bicyclist				
Countermeasure	**Description**	**Problem(s) Address**	**Safety Benefits**	**Example**
	• Acceleration lanes are not provided where the right-turn lane intersects the cross street. Acceleration lanes enable drivers to navigate the channelized right-turn lane at higher speeds than would be possible if drivers had to yield to cross street traffic. • The needs of visually impaired pedestrians are considered as part of the design. For example, rumble strips placed in the right-turn lane can help visually impaired pedestrians judge whether drivers are yielding as they approach the crosswalk. • Active warning beacons may be desirable in locations where there are high traffic volumes and vehicle speeds.			