MVRPC SAFE STREETS FOR ALL
COMPREHENSIVE SAFETY ACTION PLAN

Miami Valley Regional Planning Commission (MVRPC)

Safe Streets for All Safety Action Plan

A Miami Valley Toward Zero Action Plan

Adopted March 2026

MIAMI VALLEY
Regional Planning Commission

FOREWORD

A MESSAGE FROM BRIAN O. MARTIN, AICP

As the Executive Director of the Miami Valley Regional Planning Commission (MVRPC), I am pleased to present the Safe Streets for All (SS4A) Safety Action Plan for the Miami Valley Region. This plan reflects our Region's shared commitment to creating a transportation system where every person - regardless of age, ability, or mode of travel - can move around safely.

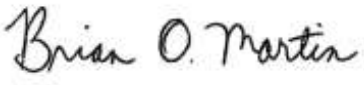
Across the Miami Valley, our roads connect people to opportunity, support the vitality of our communities, and shape our quality of life. However, too many of our community members are affected by fatal and severe injury crashes, including pedestrian and bicycle crashes with automobiles, that are preventable. With this plan, we support a simple but powerful value: safety is not negotiable.

Developed through a collaborative process, this Safety Action Plan builds on a foundation of data-driven analysis and community perspective. It identifies our Region's highest need corridors and intersections and outlines strategies that will save lives ranging from safer street design and speed management to education, enforcement practices, and emerging technologies.

Notably, this plan is not just a document: it is a call to action! Its success will rely on continued partnership and a shared commitment to implementing the strategies outlined in the plan. The steps we take today will shape the Miami Valley's transportation system for decades to come.

I am grateful to everyone who shared their time, insight, and voices throughout this process. Together, we are working toward a future where walking, biking, rolling, taking transit, and driving can be done with the assurance that each trip will end safely.

The Miami Valley has always been defined by its innovation, resilience, and sense of community. With this Safety Action Plan, we take another meaningful step forward toward safer streets, stronger communities, and a Region where all residents can thrive.



Brian O. Martin, AICP
Executive Director
MVRPC

Miami Valley Regional Planning Commission Safe Streets for All Safety Action Plan

This document is the product of a study financed by the U.S. Department of Transportation (U.S. DOT), the Ohio Department of Transportation (ODOT), and the Miami Valley Regional Planning Commission. The contents of this document reflect the views of the Miami Valley Regional Planning Commission, which is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the views of the U.S. DOT and ODOT. This document does not constitute a standard, specification, or regulation.

The SS4A program supports good-paying jobs and strong labor standards. Communities pursuing safety investments are encouraged to promote fair wages, safe working conditions, and opportunities for workers to grow and advance. Communities are also encouraged to work with community-based organizations, workforce partners, and labor groups to build local skills, expand access to training, and connect residents to quality jobs tied to safety planning, project delivery, and ongoing maintenance.

Miami Valley Regional Planning Commission
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www.mvrpc.org

Established in 1964, the Miami Valley Regional Planning Commission promotes collaboration among communities, stakeholders, and residents to advance regional priorities. MVRPC is a forum and resource where the Board of Directors identifies priorities and develops public policy and collaborative strategies to improve the quality of life throughout the Miami Valley Region.

MVRPC performs planning and research functions for our Region that ensure livable and equitable communities; clean air and water; robust roadway, transit, and active transportation options; and strategic community plans that chart the course for member communities and partners. MVRPC's geographic area includes Darke, Greene, Miami, Montgomery, Preble, Shelby, and northern Warren counties in Southwest Ohio. Learn more at mvrpc.org/our-region.

RESOLUTIONS

To show ongoing and high-level leadership to this plan and its goals, the MVRPC Board of Directors passed Resolution 25-24 on September 5, 2025.

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RESOLUTION NUMBER 25-24
ADOPTING A GOAL TO ELIMINATE DEATHS AND SERIOUS INJURIES ON MIAMI VALLEY ROADWAYS

WHEREAS, the Miami Valley Regional Planning Commission is designated as the Metropolitan Planning Organization (MPO) by the Governor acting through the Ohio Department of Transportation in cooperation with locally elected officials for Greene, Miami and Montgomery Counties and the jurisdictions of Carlisle, Franklin, Springboro and Franklin Township in Warren County; and

WHEREAS, the MVRPC's Board of Directors serves as the policy and decision making body through which local governments guide the MPO's transportation planning process for the Dayton Metropolitan Area; and

WHEREAS, the health, safety, and welfare of residents, visitors, and all who use our roadways are of utmost importance to MVRPC; and

WHEREAS, between 2021 and 2023 there were 262 deaths and 1,325 serious injuries on the Region's roadways; and

WHEREAS, MVRPC recognizes that roadway deaths and serious injuries are preventable, and no loss of life on our transportation system is acceptable; and

WHEREAS, MVRPC was awarded funding through the U.S. Department of Transportation's Safe Streets for All (SS4A) grant program to develop a regional safety action plan to eliminate deaths and serious injuries on the Region's roadways; and

WHEREAS, the SS4A grant requires the sponsoring agency's leadership to commit to an eventual goal of zero roadway deaths and serious injuries; and

WHEREAS, the commitment must include a goal and timeline for eliminating roadway fatalities and serious injuries; and

WHEREAS, adopting a goal to eliminate deaths and serious injuries aligns with national best practices and MVRPC's commitment to transportation safety for all including pedestrians, cyclists, motorists, transit riders, public safety personnel, and maintenance and construction personnel; and

WHEREAS, MVRPC has demonstrated leadership through its support for data-driven, collaborative, and community-informed planning that promotes a safe and accessible multimodal transportation system;

NOW, THEREFORE BE IT RESOLVED THAT,

1. MVRPC envisions a transportation system where no one dies or is seriously injured on the Region's roadways.

2. MVRPC is committed to creating a safe and efficient multimodal transportation system that eliminates roadway fatalities and serious injuries, targeting a 50% reduction in fatalities serious injuries by 2040.
3. This will be achieved by engaging with the public, developing fundable and planned projects with designs that incorporate proven safety countermeasures and education, and enhancing connectivity for all users across all modes – including walking, biking, and transit.

BY ACTION OF THE MPO members of the Miami Valley Regional Planning Commission's Board of Directors.

Brian O. Martin

Brian O. Martin, AICP
Executive Director

9/5/2025
Date

Sara Lommatzsch, Chairperson
Board of Directors of the
Miami Valley Regional Planning Commission

The MVRPC Board of Directors adopted the MVRPC Safe Streets for All Safety Action plan on March 5, 2026.

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RESOLUTION NUMBER 26-07
ADOPTING THE MIAMI VALLEY REGIONAL PLANNING COMMISSION SAFE STREETS FOR ALL SAFETY ACTION PLAN

WHEREAS, the Miami Valley Regional Planning Commission is designated as the Metropolitan Planning Organization (MPO) by the Governor acting through the Ohio Department of Transportation in cooperation with locally elected officials for Greene, Miami and Montgomery Counties and the jurisdictions of Carlisle, Franklin, Springboro and Franklin Township in Warren County; and

WHEREAS, the MVRPC's Board of Directors serves as the policy and decision-making body through which local governments guide the MPO's transportation planning process for the Dayton Metropolitan Area; and

WHEREAS, the health, safety, and welfare of residents, visitors, and all who use our roadways are of utmost importance to MVRPC; and

WHEREAS, between 2021 and 2023 there were 262 deaths and 1,325 serious injuries on the Region's roadways; and

WHEREAS, MVRPC recognizes that roadway deaths and serious injuries are preventable, and no loss of life on our transportation system is acceptable; and

WHEREAS, the MVRPC Board of Directors adopted Resolution 25-24 in September 2025, establishing a goal to work towards eliminating deaths and serious injuries on the Region's roadways; and

WHEREAS, the United States Department of Transportation (U.S. DOT) has established the Safe Streets and Roads for All (SS4A) program to support the development and implementation of comprehensive, data-driven Safety Action Plans that identify priority safety needs, strategies, and projects; and

WHEREAS, MVRPC was awarded funding through the U.S. DOT SS4A grant program in December 2023 to develop a regional safety action plan to eliminate deaths and serious injuries on the Region's roadways; and

WHEREAS, MVRPC has undertaken a planning process that included analysis of crash data, identification of high-risk locations and populations, and meaningful public and stakeholder engagement; and

WHEREAS, this planning process has resulted in the development of the Miami Valley Regional Planning Commission Safe Streets for All Safety Action Plan which establishes a vision, goals, and evidence-based strategies to eliminate traffic fatalities and serious injuries on our transportation system; and

WHEREAS, adoption of the Safety Action Plan demonstrates MVRPC's commitment to improving roadway safety for all users, including pedestrians, bicyclists, motorists, and transit riders; and

WHEREAS, adoption of the Safety Action Plan enables communities throughout the MVRPC Metropolitan Planning Area to pursue implementation funding opportunities through the SS4A program and other federal, state, and local sources;

NOW, THEREFORE BE IT RESOLVED, that the MPO members of the Board of Directors of the Miami Valley Regional Planning Commission adopt the MVRPC Safe Streets for All Safety Action Plan.

BY ACTION OF THE MPO members of the Miami Valley Regional Planning Commission's Board of Directors.

Brian O. Martin

Brian O. Martin, AICP
Executive Director
3/5/2026
Date

Robin I. Oda

Robin I. Oda Interim Chairperson
Board of Directors of the
Miami Valley Regional Planning Commission

ACKNOWLEDGEMENTS

MVRPC LEADERSHIP

The Miami Valley Regional Safe Streets and Roads for All (SS4A) Safety Action Plan was developed under the leadership of the Miami Valley Regional Planning Commission (MVRPC), with guidance, coordination, and support from regional partners, local jurisdictions, and community stakeholders.

Elizabeth Whitaker, AICP, Project Manager

Brian O. Martin, AICP, Executive Director

Martin Kim, AICP, GISP

Ana Ramirez, P.E.

STEERING COMMITTEE

The Safety Action Plan Steering Committee played a vital role in shaping the content, direction, and priorities of the plan. Committee members represented local public agencies across the region as well as the University of Dayton, providing essential expertise and insight throughout the planning process.

Representative	Organization
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CONSULTANT TEAM

The development of this plan was supported by a multidisciplinary consultant team whose technical expertise, analysis, facilitation, and project management contributed to the quality and completeness of the final product.

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GLOSSARY OF ACRONYMS

ACI – Area of Community Impact
ADA – Americans with Disabilities Act
AT – Active Transportation

BCA – Benefit–Cost Analysis

CIP – Capital Improvement Program
CMF – Crash Modification Factor
CMAQ – Congestion Mitigation and Air Quality Program
CS – Complete Streets

DUI – Driving Under the Influence
DOT / U.S. DOT – U.S. Department of Transportation

EMS – Emergency Medical Services
EVA – Evaluation (Countermeasure Category)

FHWA – Federal Highway Administration
FPA – Facility Profile Analysis
FSI – Fatal and Serious Injury (Crashes)

GDL – Graduated Driver Licensing
GIS – Geographic Information Systems

HAWK – High Intensity Activated Crosswalk (Pedestrian Hybrid Beacon)
HFST – High Friction Surface Treatment
HIN – High Injury Network
HRN – High Risk Network
HSIP – Highway Safety Improvement Program

ICE – Intersection Control Evaluation
ISA – Intelligent Speed Assist

LED – Light Emitting Diode
LOS – Level of Service
LRSA – Local Road Safety Audit
LRTP – Long Range Transportation Plan
LTS – Level of Traffic Stress

MC – Motorcycle
MEGA – National Infrastructure Project Assistance ("Mega" Program)
MPO – Metropolitan Planning Organization
MUT – Median U Turn

NHTSA – National Highway Traffic Safety Administration
NOFO – Notice of Funding Opportunity

ODOT – Ohio Department of Transportation
ODPS – Ohio Department of Public Safety

P&P – Policy & Process
PDO – Property Damage Only (Crashes)
PPE – Personal Protective Equipment

RCI / RCUT – Restricted Crossing U Turn Intersection (J Turn)
RPM – Raised Pavement Marker
RRFB – Rectangular Rapid Flashing Beacon

SAIPE – Small Area Income and Poverty Estimates
SAP – Safety Action Plan
SHSP – Strategic Highway Safety Plan
SMART – Strengthening Mobility and Revolutionizing Transportation Grants
SSA – Safe System Approach
SS4A – Safet Streets for All; Safe Streets and Roads for All
STBG / STP – Surface Transportation Block Grant / Surface Transportation Program

TAC – Technical Advisory Committee
TIP – Transportation Improvement Program
TSP – Transit Signal Priority

VRU – Vulnerable Road User

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EXECUTIVE SUMMARY

Traffic deaths and serious injuries are preventable, not inevitable. The Safe Streets for All (SS4A) Safety Action Plan, developed by the Miami Valley Regional Planning Commission (MVRPC), is a commitment to saving lives, reducing serious injuries, and transforming how we think about travel throughout the Miami Valley. The Plan adopts the Safe System Approach, focused on creating a transportation system that anticipates human error and reduces crash severity through multiple, layered protections.

This action plan sets a clear roadmap to identify high-risk areas, prioritize interventions, and create a safer environment for all road users - whether walking, biking, rolling, taking transit, or driving.

Figure ES-1: FHWA Safe Systems Approach

Source: Federal Highway Administration

This Safety Action Plan is built on a shared regional vision, strong leadership commitment, and collaboratively developed goals that guide how the Miami Valley will move toward zero roadway deaths. Together, these elements form a strong foundation that anchors all safety initiatives.

VISION & LEADERSHIP COMMITMENT

MVRPC envisions a transportation system where no one dies or is seriously injured on the region's roadways.

MVRPC is committed to creating a safe and efficient multimodal transportation system that eliminates roadway fatalities and serious injuries, targeting a 50% reduction in fatalities by 2040. This will be achieved by engaging with the public, developing fundable and planned projects with designs that incorporate proven safety countermeasures and education, and enhancing connectivity for all users across all modes - including walking, biking, and transit.

GOALS

Goal 1: Promote Safe Speeds and Behaviors on Roadways

Goal 2: Implement Education for Drivers, Vulnerable Road Users and Policymakers.

Goal 3: Remove Barriers to Safe Trips for All Modes

Goal 4: Program Projects That are Fundable and Well-Planned

REGIONAL SAFETY CHALLENGES

Despite decades of progress in transportation planning, the Miami Valley continues to face significant safety challenges.

Crash Trends: Between 2015 and 2024, the Region experienced ~43,800 injury crashes, including 670 fatal crashes and 3,859 serious injury crashes. Vulnerable road users–pedestrians and bicyclists–remain disproportionately impacted.

Systemic Issues: Speeding, roadway design limitations, and inconsistent policy adoption hinder progress. Gaps persist, with underserved communities facing disproportionate safety challenges, experiencing higher crash risks and limited access to safe infrastructure.

Concentration of Harm: A small portion of regional roadways accounts for more than half of all fatal and serious injury crashes; populations with higher vulnerability (youth, older adults, low-income, zero-car households, disabilities, limited English proficiency) often live near high-risk/high-injury network routes.

MAJOR RECOMMENDATIONS

The MVRPC Safe Streets for All (SS4A) Safety Action Plan recommends a comprehensive set of strategies spanning engineering, education, enforcement, EMS, and evaluation, providing a coordinated framework to advance the region toward its commitment to work towards zero deaths and serious injuries on the Region's roadways. These recommendations provide a roadmap for near-term action and long-term transformation across the region. Together, these actions position the Miami Valley region to significantly reduce fatal and serious injury crashes on the region's roadways.

Prioritize High-Injury and High-Risk Networks & Address High-Risk Behaviors

- Focus investments on High Injury Network (HIN) and High Risk Network (HRN) corridors and intersections; use a data-driven process to guide selection; ensure improvements reach communities with higher transportation vulnerability.
- Target education and enforcement where behavior-related crash risk is highest, including HIN corridors and other data-supported locations.

Implement Proven Safety Countermeasures

- Apply traffic calming and speed management strategies: use design and operational approaches to reduce speeding and create safer streets for all users.
- Improve conditions for vulnerable roadway users: enhance pedestrian, bicycle, and transit environments to support safe, accessible, and comfortable travel for everyone.
- Expand and upgrade multimodal infrastructure: close gaps in sidewalks and trails, improve bicycle facilities, and make intersections safer and more efficient for all modes of travel.
- Reduce roadway departure and intersection crashes: address high-risk network locations with targeted improvements to road geometry, signage, and surface conditions.
- Use phased implementation and integrate safety into routine maintenance: deliver quick-build projects, intermediate upgrades, and long-term capital improvements, while incorporating safety enhancements into ongoing operations.

Strengthen Education and Community Engagement

- Deliver campaigns focused on distracted, impaired, and aggressive driving; support Safe Routes to School and youth mobility programs; provide senior-focused safety resources and assessments.
- Establish community ambassador programs and integrate Safe System principles into regional/local planning, funding decisions, and Complete Streets/Active Transportation updates.

Track Progress and Strengthen Transparency

- Publish annual safety performance reports; maintain a public-facing dashboard and GIS webmap; regularly update crash data, HIN/HRN networks, and demographic layers; coordinate with jurisdictions to ensure consistent implementation and measurable outcomes.

HOW TO USE THIS PLAN

The SS4A Safety Action Plan provides a project development framework that pairs the region's highest-need transportation safety locations with solutions selected from a comprehensive toolbox of strategies and countermeasures. Together, these components help agencies translate data into effective safety projects and support consistent, evidence-based decision-making across the Miami Valley.

To illustrate this, the graphic below shows how the plan pairs network-ranked locations with the strategy and countermeasure toolbox to generate well-supported projects and solutions.

Figure ES-2: Project Development Framework

This visual serves as a bridge to the practical guidance that follows, demonstrating how users can move from identifying high-need locations to selecting appropriate treatments and developing fundable, implementable projects.

Using the Plan in Practice

The SS4A Safety Action Plan is designed as a practical resource for communities and stakeholders. While it fulfills the requirements of the federal Safe Streets for All (SS4A) program, it also functions as a comprehensive regional safety plan. This means its recommendations support not only SS4A applications but also a wide range of other funding pathways—including state safety programs, the Transportation Improvement Program (TIP), and various federal discretionary grants.

Although MVRPC served as the lead author, **local jurisdictions and partner agencies are encouraged to use this plan directly** when pursuing funding, prioritizing investments, and advancing safety improvements.

Funding Readiness - Which funding source will the project qualify for?

- The Plan provides a strong foundation for agencies seeking SS4A Implementation or Planning & Demonstration Grants by demonstrating readiness, data-driven prioritization, and alignment with federal requirements. Visit the link below to learn more about the SS4A program.

  Safe Streets and Roads for All (SS4A) Grant Program | US Department of Transportation

- While funding outcomes depend on many factors, projects developed by local agencies using the Plan's recommendations are well-positioned for SS4A and other funding opportunities.

Where to Apply - Where can I apply this plan?

- Focus on areas identified in the plan's High Injury Network and High Risk Network, places with high concentrations of fatal and serious injury crashes or elevated crash risk.
- Prioritize high-risk network corridors and intersections for safety improvements.
- Consider locations in underserved communities to ensure inclusive safety investments.
- Integrate safety countermeasures into scheduled paving or reconstruction projects to maximize impact and minimize costs.

What to Implement - What types of improvements are appropriate for my location?

- The plan includes over 100 recommended countermeasures across Engineering, Education, Enforcement, and Evaluation and guidance on how to determine what is appropriate.
- Improvements range from enhanced signage, intersection upgrades, and pedestrian infrastructure to low-cost solutions like curve chevrons and signal backplates.
- Quick-build projects, such as temporary road diets using pavement markings and delineators, can be piloted to assess effectiveness before permanent changes.
- Policy recommendations are also provided to help agencies strengthen their safety programs.

Partnerships & Policy - What types of partnerships and policy changes will be effective?

- Local agencies can use the plan to align safety goals across jurisdictions, advocate for legislative changes, and coordinate multi-agency projects that address systemic safety issues.
- The plan's recommendations can help update project evaluation systems (for example, reducing reliance on Level of Service metrics and prioritizing safety over congestion) and embed Vision Zero principles into long-range transportation plans.

Measuring Success - How will we know if the projects were effective?

- Establish benchmarks and dashboards to track implementation progress, and crash reduction outcomes over time. This supports continuous improvement and public transparency.
- The Safety Action Plan provides a framework for transparent progress tracking, using dashboards and public-facing tools to share results and keep stakeholders informed.

Closing Statement

By applying the strategies outlined in the MVRPC Safe Streets for All Safety Action Plan, communities can accelerate the delivery of life-saving improvements, advance projects well positioned for funding, and work collaboratively toward eliminating fatal and serious injury crashes by 2040. This plan offers the clear, coordinated framework needed to transform safety commitments into measurable results across the Miami Valley.

MVRPC SAFE STREETS FOR ALL
COMPREHENSIVE SAFETY ACTION PLAN

CHAPTER 1:
INTRODUCTION

CHAPTER 1: INTRODUCTION

ABOUT MVRPC AND THE SS4A PLANNING PROCESS

The Miami Valley Regional Planning Commission (MVRPC) has served as the cornerstone of regional transportation planning in Southwest Ohio since 1964. As the federally designated Metropolitan Planning Organization (MPO), MVRPC oversees transportation planning and investment programming for Greene, Miami, and Montgomery Counties, as well as a portion of northern Warren County. Grounded in the principles of regional collaboration, cooperation, and consensus building, MVRPC provides a forum where public and private partners work together to advance a shared vision for the Region. Together, public, and private partners develop and implement innovative and sustainable strategies that enhance the Region's quality of life and economic vitality.

The SS4A Safety Action Plan was funded through the federal Safe Streets and Roads for All (SS4A) program, with additional support from regional partners. Development of this plan was guided by a multi-jurisdictional Steering Committee, which included representatives from local governments, transportation agencies, law enforcement, and key community stakeholders. The planning process featured extensive stakeholder engagement, including public meetings, focus groups, and surveys to ensure broad input and community buy-in. The plan development process spanned from February to December of 2025, with key milestones including data analysis, stakeholder workshops, and draft plan review. Formal adoption is anticipated in March of 2026.

Figure 1: Project Timeline

REGIONAL SAFETY CONTEXT AND PURPOSE

Despite decades of progress, the Miami Valley continues to experience persistent roadway safety challenges. Crash data highlights a range of concerns, including high-risk network corridors, intersections with elevated crash frequencies, and disproportionate impacts on vulnerable road users such as pedestrians and bicyclists. Addressing these concerns requires a coordinated, data-driven, and community-focused approach. This Safety Action Plan leverages comprehensive crash analysis, stakeholder insights, and national best practices to identify systemic risks and propose targeted, effective interventions.

This Safety Action Plan not only meets the requirements of the Safe Streets for All (SS4A) funding program but also establishes a long-term, region-wide framework for improving roadway safety. It integrates detailed data analysis, policy evaluation, community impact considerations, and stakeholder collaboration into a holistic strategy that provides a strong foundation for pursuing a wide range of funding opportunities. As a result, the Safety Action Plan supports sustained safety improvements well beyond the scope of the SS4A program.

Reflecting the Region's commitment to eliminating fatalities and serious injuries, the Safety Actin Plan fulfills federal SS4A requirements while extending far beyond simple compliance. It offers a comprehensive, durable roadmap to guide safety investments over time, strengthen cross-jurisdictional coordination, and promote safer, more inclusive streets for all users. In addition, it includes a toolbox of strategies and policy recommendations to support effective, long-term implementation.

GEOGRAPHIC COVERAGE AND SCOPE

The Miami Valley Region served by MVRPC encompasses six counties, Darke, Greene, Miami, Montgomery, Preble, and Shelby, along with a small portion of northern Warren County. However, the Safety Action Plan is specific to MVRPC's Metropolitan Planning Organization (MPO) area, which includes Greene, Miami, Montgomery, and northern Warren Counties. The cities of Franklin and Dayton are not included in the scope of this Plan, as each has developed its own complementary safety action plan independent of this Safety Action Plan. Accordingly, the data collection and analysis conducted for this Plan focus on these MPO jurisdictions. Even so, the strategies, countermeasures, and implementation guidance developed through this process reflect best practices and a Safe System philosophy applicable to communities of all types across the Region. As a result, while the analytical focus is limited to the MPO area, the recommendations can be adapted and applied throughout the full six-county MVRPC Region to support safer, more connected transportation networks for all residents.

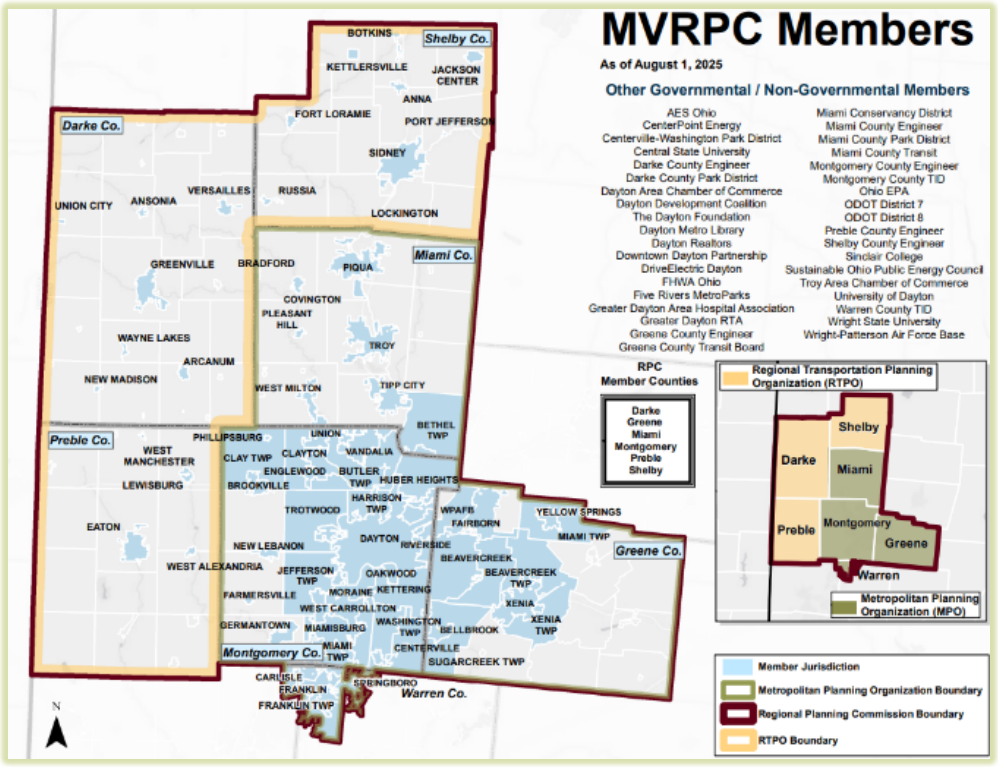


Figure 2: MVRPC Region Map

THE SAFE SYSTEM APPROACH

Improving roadway safety across the Miami Valley requires more than isolated fixes, it demands a fundamental shift in how the transportation system is planned, designed, and operated. The Safe System Approach (SSA) provides this foundation. Rooted in the understanding that human error is inevitable, the SSA is grounded in designing a transportation system that eliminates fatalities and serious injuries, even when crashes occur. SSA also reframes safety as a shared responsibility among roadway designers, policymakers, operators, and users. Rather than placing the burden solely on individual behavior, SSA emphasizes creating an environment where mistakes do not lead to catastrophic outcomes. By considering human vulnerability, strengthening the built environment, and layering protective strategies, the SSA supports proactive and long-lasting safety solutions across the Region. This philosophy aligns with Vision Zero principles and guides the structure, goals, and recommended practices within this Safety Action Plan.

The SSA's objectives include safer roads, safer speeds, safer vehicles, safer road users, and improved post-crash cares. Implementing this approach in the Miami Valley requires systemic thinking and layered protection. Roads must be designed for forgiveness, speeds calibrated to reduce crash forces, and vehicle technologies paired with infrastructure improvements.

Figure 3: FHWA Safe Systems Approach
Source: Federal Highway Administration

Integrating safety into policies, planning, and operations ensures that designing all parts of the transportation system for safety becomes a proactive, holistic priority rather than an isolated consideration. This approach also recognizes the community-level impacts of roadway safety, acknowledging that underserved communities often experience disproportionately high rates of traffic deaths and injuries. Targeted safety investments can help correct these disparities and promote inclusive access to safe travel for all.

PLAN STRUCTURE

The plan is organized into clear, actionable components ensuring transparency, accountability, and alignment with regional goals. The SS4A Safety Action Plan is structured around the following key components:

- **Leadership Commitment and Goal Setting -** Affirmation of Vision Zero principles and regional safety objectives.
- **Engagement and Collaboration -** Strategies for involving local governments, advocacy groups, and the public in shaping solutions.
- **Safety Analysis and Issue Identification -** Comprehensive crash data review, identification of high-injury networks, and systemic risk factors.
- **Policy and Process Assessment -** Evaluation of existing policies and processes to identify gaps and opportunities for improvement.

- **Countermeasures, Strategies, and Project Development -** Toolbox of interventions, prioritization criteria, and project selection framework.
- **Progress Tracking and Transparency -** Framework, tools, and metrics for monitoring progress, reporting outcomes, and ensuring accountability.

COMPLEMENTARY PLANS AND STUDIES

This Safety Action Plan builds upon and aligns with regional and statewide initiatives including the Ohio Strategic Highway Safety Plan, local transportation safety studies, and national Vision Zero frameworks. By harmonizing these efforts, MVRPC enhances its ability to coordinate resources, secure diverse funding sources, and advance a unified regional strategy for safer streets.

MVRPC SAFE STREETS FOR ALL
COMPREHENSIVE SAFETY ACTION PLAN

CHAPTER 2:
LEADERSHIP COMMITMENT & GOAL SETTING

CHAPTER 2: LEADERSHIP COMMITMENT AND GOAL SETTING

A shared vision and clearly defined goals provide the foundation for identifying, implementing, and evaluating safety improvements across the Miami Valley. Because the SS4A program focuses on preventing roadway fatalities and serious injuries, MVRPC, collaborating closely with the Steering Committee, developed a unified Vision Statement, Leadership Commitment Statement, and Goals that articulate how and when the Region will advance toward zero roadway deaths through a Safe System Approach.

Steering Committee members participated in a collaborative workshop to develop and organize the desired outcomes of the Safety Action Plan into key themes. Draft vision and leadership statements, along with goals, were then shared with a broader stakeholder group and refined based on their feedback. The results informed the Plan's analytical approach, shaped the development of recommended countermeasures, and will provide guidance that local jurisdictions can use to identify and evaluate their own safety strategies. Plan goals will also serve as performance measures for assessing the effectiveness of safety improvements implemented throughout the Region.

Vision Statement

MVRPC envisions a transportation system where no one dies or is seriously injured on the region's roadways.

Leadership Commitment Statement

MVRPC is committed to creating a safe and efficient multimodal transportation system that eliminates roadway fatalities and serious injuries, targeting a 50% reduction in fatalities by 2040. This will be achieved by engaging with the public, developing fundable and planned projects with designs that incorporate proven safety countermeasures and education, and enhancing connectivity for all users across all modes - including walking, biking, and transit.

Goals

Goal 1: Promote Safe Speeds and Behaviors on Roadways

- Integrate engineering design strategies such as roundabouts, pedestrian enhancements, traffic calming measures, and right-sizing roadways into both local and regional projects.
- Enforcement efforts may include the use of traffic safety technology, policy implementation that supports enforcement, and prioritizing specific corridors and high-risk network areas and work zones.
- Educational components may involve public safety campaigns, continuing education for drivers, and regionwide education and awareness initiatives.

Goal 2: Implement Education for Drivers, Vulnerable Road Users and Policymakers

- Enhance driver education to cover essential safety skills like following distance, hazard scanning, work zone safety, roundabout education for all users (especially the elderly), driving in adverse weather, and basic vehicle maintenance.
- Tailor education by age or experience groups. Consider safety education even before students reach driving age and encourage participation in driver refresher courses after initial driver education courses.

- Create resources for policy makers about infrastructure planning, effective safety strategies, and funding options.

Goal 3: Remove Barriers to Safe Trips for All Modes

- Enhance connectivity for all modes and between all modes.
- Create opportunities for multi-modal trips by supporting links between modes, such as buses that carry bicycles or bikeshares near transit stops.
- Identify locations to close gaps in infrastructure, such as sidewalks or bicycle lanes.
- Establish connections to destinations currently inaccessible by active transportation.

Goal 4: Program Projects That are Fundable and Well-Planned

- Prioritize projects strategically that are financially viable and aligned with other goals.

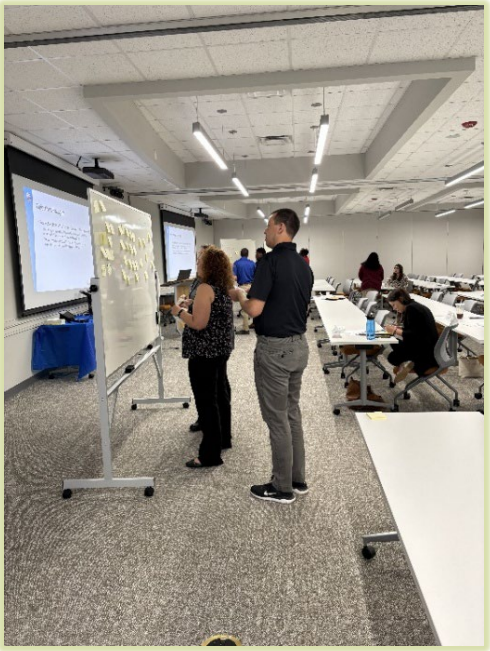


Figure 4: Goal Setting Workshop

- Work with engineers, planners, and leaders at all levels to fund priority projects.
- Implement low-cost strategies and countermeasures or demonstration projects to maximize impact from funding.
- Monitor awarded funding to verify it is used for the intended purpose and that the projects achieve the desired outcome.

These goals, along with the Vision and Leadership Commitment Statements, guided the data analysis, development of countermeasures, and identification of high-risk network characteristics. While this regional plan does not select or prioritize individual projects, it provides a clear framework and evaluation guidance that local jurisdictions can apply in their own project development. The goals will also serve as criteria for measuring the effectiveness of improvements implemented across the Region.

MVRPC SAFE STREETS FOR ALL
COMPREHENSIVE SAFETY ACTION PLAN

CHAPTER 3:
ENGAGEMENT AND COLLABORATION

CHAPTER 3: ENGAGEMENT AND COLLABORATION

The Safety Action Plan development process incorporated a comprehensive, multi-tiered engagement program designed to ensure that voices from across the Miami Valley Region were heard, documented, and meaningfully integrated into the plan. Engagement activities were structured to be inclusive, accessible, iterative, and representative of diverse travel needs and experiences across Greene, Miami, Montgomery, and northern Warren Counties.

An independent Public Engagement Summary including the project Public Engagement Plan and a detailed public engagement process summary was prepared for the MVRPC. This chapter draws from that document and summarizes:

- Steering Committee level engagement and guidance
- Broader stakeholder engagement, including the MVRPC Technical Advisory Committee (TAC)
- Public engagement, carried out across two phases, including in person and virtual open houses and a 24/7 online open house and survey.

Alignment with MVRPC Public Participation Policy

Engagement activities for the SS4A Action Plan adhered closely to MVRPC's Public Participation Policy by:

- **Ensuring Early and Continuous Engagement:** Public involvement began early in the planning process and was repeated across multiple phases and channels.
- **Creating Inclusive Engagement:** Outreach activities were structured to reach underserved communities, multimodal travelers, people with disabilities, veterans, and older adults. Materials were designed to be easy to understand and widely shared.
- **Maintaining Transparency:** All materials, presentations, and input summaries were made publicly available, and Phase 2 survey results remain accessible online.
- **Documenting and Responding to Input:** All comments were reviewed, categorized, and incorporated into decision making, ensuring that community priorities influence recommended countermeasures and project selection.

Through numerous Steering Committee and stakeholder meetings and two structured public engagement phases, MVRPC collected numerous data points and qualitative insights that directly shaped the SS4A Action Plan. Public input confirmed regional safety concerns, identified critical improvement locations, highlighted the need for multimodal investments, and provided clear direction on which strategies enjoy the strongest community support.

STEERING COMMITTEE ENGAGEMENT

The MVRPC SS4A Steering Committee served as an ongoing advisory body throughout the plan's development. As required under the SS4A grant, the committee includes representatives from local jurisdictions, county agencies, transit, parks, enforcement, higher education, and engineering disciplines.

To guide the planning process effectively, the Steering Committee contributed in several essential ways:

- Development of the plan vision and goals.
- Provided technical, community, and modal representation to guide plan development.

- Validated plan goals, countermeasure categories, and network prioritization methodologies.
- Reviewed public facing materials in advance of stakeholder meetings and public open houses.
- Assisted with amplifying outreach through local networks, public agencies, and community organizations.
- Assessed feedback trends and helped identify local context considerations for plan approach and recommendations.

The committee met at key milestones across 2025 and helped ensure the plan reflects community priorities, supports inclusive outcomes, and is aligned with regional transportation goals.

STAKEHOLDER ENGAGEMENT

Stakeholders identified in the Public Engagement Plan included, but were not limited to:

- Local and county engineers
- Planning staff
- Transit operators
- Advocacy groups (bicycle, pedestrian, environmental, disability)
- Local officials and elected leaders

Outreach to these groups followed MVRPC's Public Participation Policy by:

- Providing information in multiple formats (email notifications, flyers, websites, social media)
- Offering early and ongoing opportunities for meaningful engagement
- Ensuring materials were accessible and understandable to non-technical audiences

MVRPC Technical Advisory Committee (TAC)

Encompassing many of the identified stakeholders, TAC members and alternates were notified of all public engagement opportunities and encouraged to share information with their jurisdictions. TAC involvement supported the legitimacy and technical insight of the planning process.

MVRPC Board of Directors

As the governing body responsible for regional transportation planning decisions, the Board of Directors was included in outreach efforts to ensure alignment with policy objectives and regional priorities. Board members were informed of engagement activities, provided opportunities to review and comment on key deliverables, and encouraged to share feedback from their respective jurisdictions. Their participation reinforced transparency and accountability in the planning process.

PUBLIC ENGAGEMENT ACTIVITIES

Public engagement was delivered in two phases during 2025, each using a set of in-person and virtual engagement tools tailored to maximize reach, community-focus, and accessibility. Virtual engagement tools included two online surveys, an online engagement portal maintained throughout the Safety Action Plan

development, and an interactive webmap. Notification tactics included flyers, social media posts, stakeholder committee notifications, website announcements, and a news release for Phase 2.

Figure 5: Public Engagement Summary

Phase 1 Public Engagement (Summer 2025)

Phase 1 introduced the project to the community and collected broad input on existing conditions, perceived safety challenges, and early priorities.

In Person Open Houses (Phase I)

MVRPC hosted public open houses in:

- 4-6 pm on Tuesday, August 5, 2025 - City of Tipp City (Miami County)
- 4-6 pm on Wednesday, August 6, 2025 - City of Xenia (Greene County)
- 4-6 pm on Thursday, August 7, 2025 - City of Centerville (Montgomery County)

Each open house included:

- A brief presentation summarizing data findings and the Safe System principles guiding the plan
- Maps of the High Injury and High Risk Networks for each county
- Large county maps for participants to mark locations of concern
- Paper and tablet based access to the online survey
- Opportunities for direct discussion with project team members

Figure 6: Xenia Open House

Live Virtual Open House

A live Zoom based virtual open house (7-8 pm on Wednesday, August 13, 2025) offered the same presentation and engagement opportunities in a digital format. Participants asked questions via chat or Q&A, consistent with accessibility requirements.

Online Virtual Open House & Survey

A 24/7 online website-based open house and survey, hosted on the PublicInput.com platform, was launched on August 5 and remained open 30 days. The site mirrored in person materials and allowed respondents to:

- Review of existing safety findings
- Drop map pins to identify crash risks, barriers, and needs
- Provide location specific comments
- Respond to questions about travel modes, safety concerns, and priorities

Figure 8 illustrates the distribution of responses collected through the interactive web map where online respondents placed pins to identify safety risks, barriers, and needs and submitted location specific comments on community safety concerns.

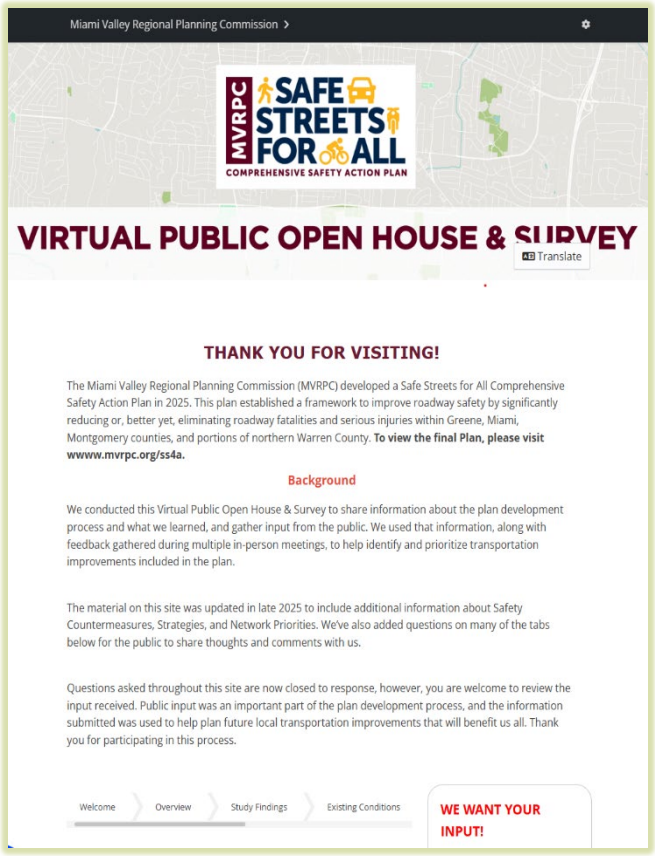


Figure 7: MVRPC SS4A Virtual Public Open House (*publicinput.com*)

Phase 1 Key Findings

Across both in person and virtual formats, the following themes emerged:

Top Safety Priorities

- Intersection improvements (turn lanes, signals, roundabouts)
- Road safety enhancements (lighting, signage, pavement markings)
- Improved crosswalks, sidewalks, and off street paths
- Increased protection for vulnerable road users

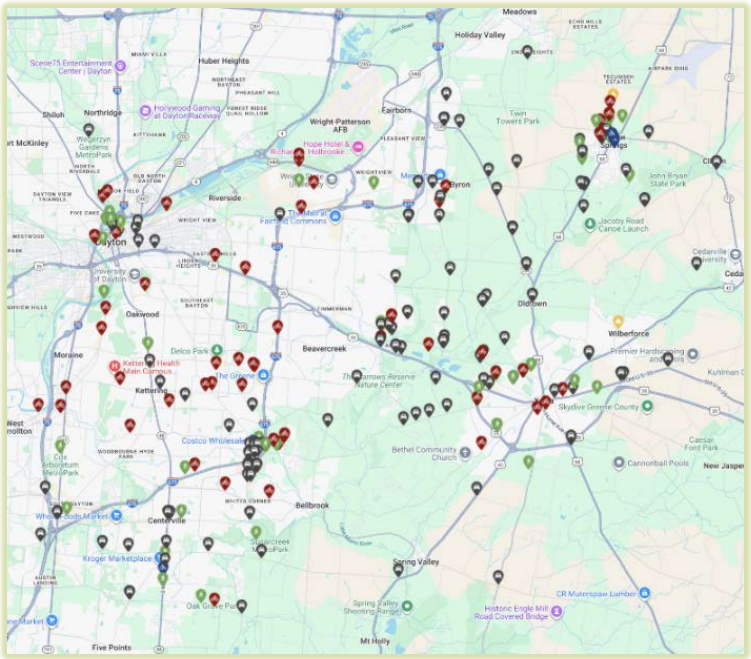


Figure 8: Drop Pin Map

Key Concerns

- Aggressive driving (94% high/medium concern)
- Distracted driving (88% high/medium concern)
- Limited pedestrian and bicycle infrastructure
- Gaps in sidewalk and trail networks
- Low driver yielding rates at crosswalks
- Speed management along corridors

As shown in Figure 9, participants suggested additional roundabouts, better lighting, clearer signage, enhanced transit access, and more trail and sidewalk connectivity.

Figure 9: Preferred Safety Improvements

Phase 2 Public Engagement (Fall 2025)

Phase 2 focused on sharing draft safety countermeasures, strategies, and priority locations. It invited the public to respond to proposed solutions and help refine the emerging Action Plan recommendations.

In Person Open Houses (Phase 2)

Open houses were held in:

- 12:30-1:30 pm on Tuesday, November 18, 2025 - City of Fairborn (Greene County)
- 4:30-5:30 pm on Tuesday, November 18, 2025 - City of Carlisle (Montgomery/Warren County)
- 11am-12:30pm on Wednesday, November 19, 2025 - City of Piqua (Miami County)

These meetings featured:

- A presentation on draft countermeasures and network priorities
- Display boards illustrating the Engineering, Education, Enforcement, and Emergency Response countermeasure categories
- Sticker based prioritization exercises
- Opportunities for written and verbal comments
- Opportunities for direct discussion with project team members

Figure 10: Fairborn Open House

Live Virtual Open House

A second virtual open house, held from 6-7pm on Thursday, November 20, 2025, mirrored the in person presentation and allowed real time Q&A.

Online Virtual Open House (Updated for Phase 2)

The PublicInput.com site was updated on November 17, 2025, in conjunction with the open houses to include:

- Detailed descriptions of all proposed countermeasures
- Draft regional and county level priority locations
- A “Next Steps” tab describing how input would shape project selection
- Additional survey questions to assess public interest and support

When the survey closed on December 19, 2025, the site remained publicly available as an archive of all input, consistent with MVRPC’s transparency commitments.

Phase 2 Key Findings

Community preferences were evident through sticker exercises and online responses:

Strongest Support (Engineering & Active Modes)

- Signal timing and coordination improvements
- New and improved bicycle lanes
- Closing active transportation gaps
- Pedestrian crossing enhancements
- Complete Streets design

Mixed or Uncertain Support

- Roundabouts
- Variable speed limits
- Access management changes
- Lane guidance treatments
- Micromobility policies

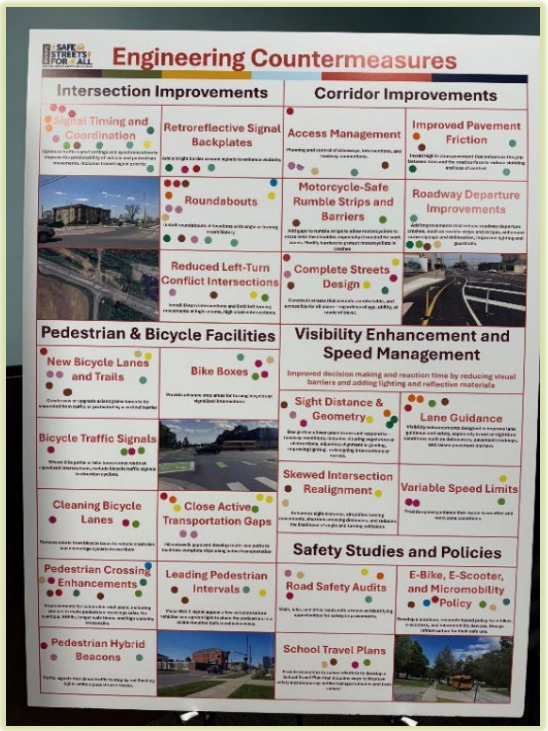


Figure 11: Countermeasure Feedback

It’s notable that while roundabouts received positive support at both phases of in-person meetings and during engagement with the Steering Committee and stakeholder groups, online feedback during Phase 2 reflected more mixed opinions. This suggests that, while many recognize roundabouts as effective for reducing severe crashes, continued education and outreach are needed to build broader public understanding of their safety benefits.

Education & Awareness

Respondents supported education on distracted driving, aggressive driving, youth helmets, and new driver training. Uncertainty was higher for community ambassador programs and public campaigns.

Enforcement

Automated enforcement technologies (red light and speed cameras) generated the strongest negative responses, though some in person attendees expressed support for increased enforcement on high injury corridors.

Emergency Response

Online participants overwhelmingly supported improvements to response times, responder safety, and scene management.

Phase 3 Public Engagement (Winter 2026)

Prior to Board approval of the Safety Action Plan, the public was invited to review the draft plan and provide feedback.

- Public notices were issued on Monday, January 5, 2026, with comments due by Tuesday, February 3, 2026.
- MVRPC hosted a virtual public meeting from 5-6 pm on Tuesday, January 20, 2026, via Zoom to present and discuss the draft plan.

Figure 12: MVRPC Virtual Public Meeting

MVRPC SAFE STREETS FOR ALL
COMPREHENSIVE SAFETY ACTION PLAN

CHAPTER 4:
SAFETY ANALYSIS AND ISSUE IDENTIFICATION

CHAPTER 4: SAFETY ANALYSIS AND ISSUE IDENTIFICATION

The MVRPC Region spans multiple counties and features a diverse roadway network, from small local streets to multilane, limited-access freeways, across rural, suburban, and urban contexts. To make the most effective use of limited safety funds, it is essential that safety needs and potential countermeasures be guided by data. This requires understanding roadway user characteristics, the surrounding land use and population context, and the functional and geometric attributes of each roadway facility.

This section summarizes the data analysis conducted to identify where crashes occur, where crash risk is elevated, and the characteristics of the communities surrounding those locations. While the broader MVRPC Region includes six counties and a small portion of northern Warren County, the analytical study area for the SS4A Safety Action Plan focuses on the MPO jurisdictions of Greene, Miami, Montgomery, and northern Warren Counties. These areas served as the basis for all crash assessment and network-level analysis; however, the resulting insights and recommended strategies can be applied throughout the entire Region to support safer, more connected transportation systems in all community contexts.

DATA SOURCES AND SCREENING CRITERIA

To ensure the analysis reflects the most meaningful safety concerns in the Region, the crash dataset was refined to focus on injury-related events and locations relevant to the MPO study area. Crash records were obtained from state-maintained databases and included all reported crashes within Greene, Miami, Montgomery, and northern Warren Counties. To maintain analytical consistency and to prioritize locations with the greatest potential for safety improvement, the following screening criteria were applied:

- **Property-damage-only (PDO) crashes were removed** to focus the analysis on crashes resulting in fatal or non-fatal injuries.
- Crashes with missing, inaccurate, or unusable location information were excluded to ensure spatial analysis accuracy.
- Crashes occurring within the Cities of Dayton and Franklin were removed, as each has developed its own SS4A grant funded Safety Action Plan.
- **Crashes on fully limited-access facilities**, including interstates and ramps, were excluded due to their distinct geometric and operational characteristics and separate funding programs; this removed 7,875 records from the dataset.

Facilities with partial limited access, such as U.S. 35, which consists primarily of grade-separated interchanges but includes some at-grade intersections, ***were*** included in the study area.

By applying these filters, the analysis centers on locations where system-level interventions, such as roadway design changes, multimodal improvements, educational strategies, and speed management, can have the greatest impact. The refined dataset provides a clearer understanding of regional safety patterns and supports the identification of trends that inform the Plan's recommended countermeasures and strategies.

CRASH DATA, SUPPLEMENTAL SOURCES, AND REPORTING

Crash dataset (2015–2024). Crash data were obtained from ODOT and derived from OH-1 police crash reports completed when a crash is reported. Accurate reporting depends on an officer's ability to reconstruct events via witness accounts, site conditions, vehicle damage, and observed injuries at the scene.

Underreporting. The actual number of crashes may be higher due to barriers such as fear, language limitations, financial concerns, and lack of insurance. Motor vehicle crashes are more likely to be reported for insurance purposes, while single party pedestrian or bicyclist crashes (e.g., a bicyclist striking a fixed object) are less likely to be captured.

Supplemental ODOT datasets. To strengthen the analysis and ensure accurate risk identification, supplemental datasets were obtained from ODOT to provide necessary analysis context.

- **Adjusted Urban Area** delineations. Areas outside these are treated as rural.
- **Roadway network attributes** such as number of lanes, posted speed, and functional class.

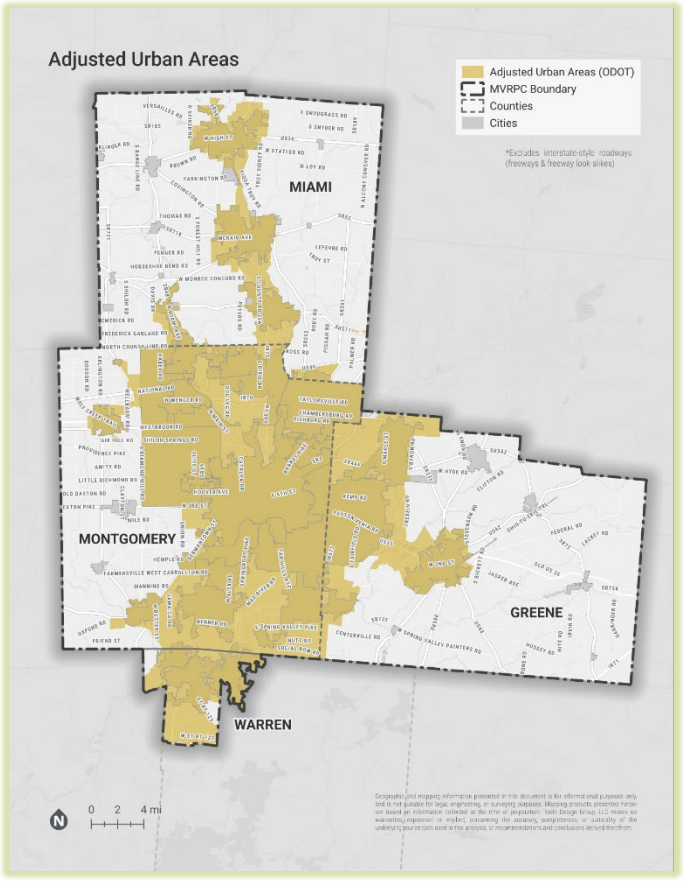


Figure 13: Adjusted Urban Area Map

DESCRIPTIVE SAFETY ANALYSIS

Crash data was analyzed to provide an overview of region-wide crash characteristics, with an emphasis on fatal and serious injury (FSI) outcomes. Although total injury crashes are referred to where informative, emphasis is placed on FSI crashes since they represent the greatest opportunity for life-saving interventions. The trends highlighted here inform both near-term safety priorities and long-term strategies within the SS4A Safety Action Plan.

The following sections summarize the results of the Descriptive Safety Analysis. A full summary is included in **Appendix A – Descriptive Safety Analysis Summary**.

General Crash Trends (2015–2024)

Overall Crash Activity

- Over the ten-year period, the Region experienced 43,799 injury crashes, including 670 fatal crashes, 3,859 serious injury crashes, and 4,529 FSI crashes.
- FSI crashes peaked in 2016 and reached their lowest point in 2019.

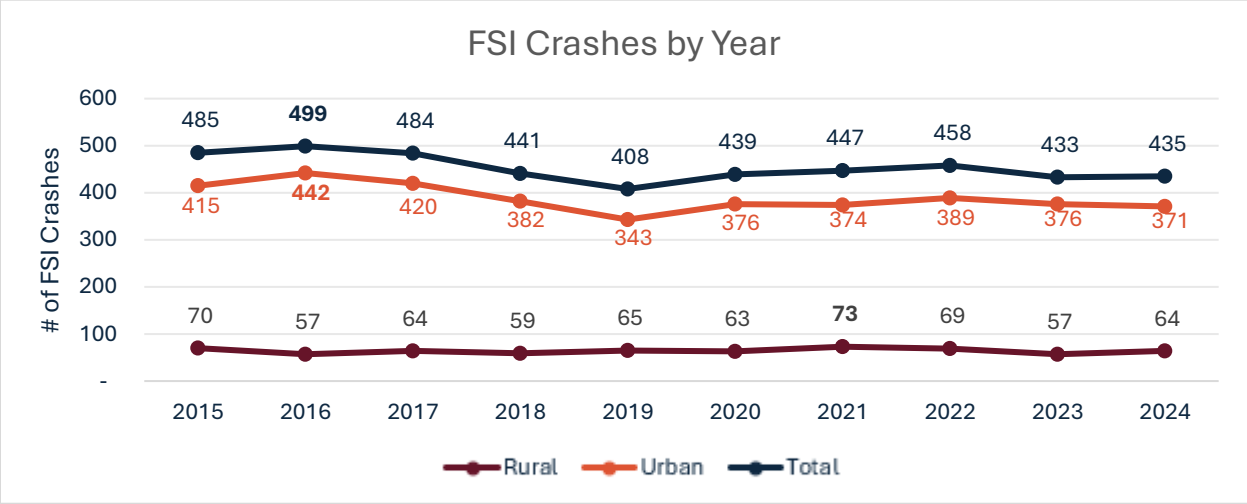


Figure 14: MVRPC Historical FSI Crashes by Year

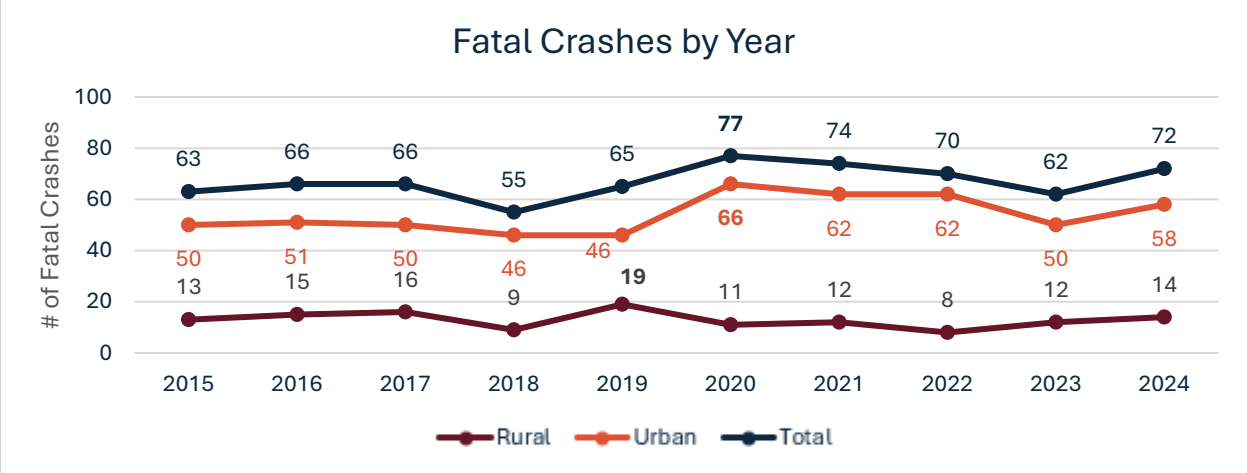


Figure 15: MVRPC Historical Fatal (K) Crashes by Year

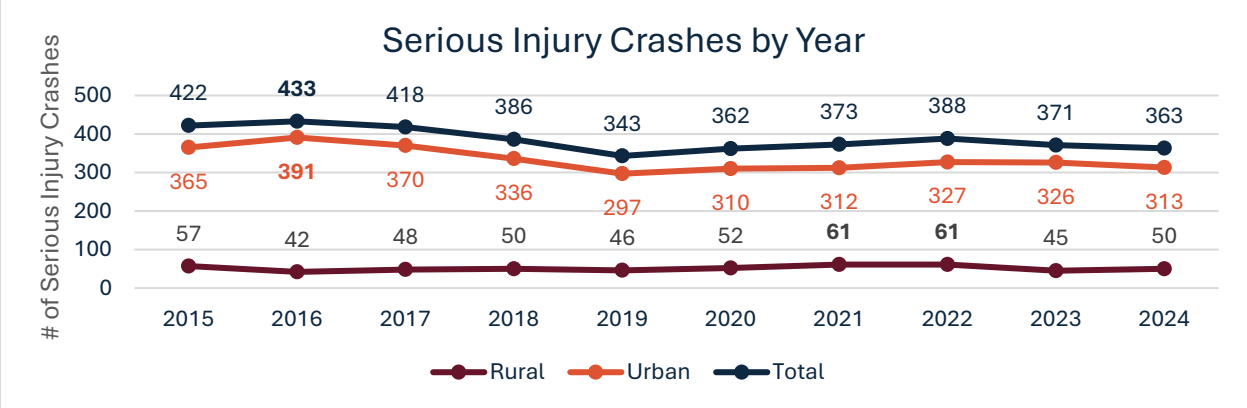


Figure 16: MVRPC Historical Serious (AB) Crashes by Year

Urban and Rural Differences

- Urban areas consistently record more FSI crashes than rural areas, reflecting higher traffic volumes and more multimodal activity.

Crash Trends by Mode

- While vehicle-vehicle crashes account for 89% of all injury crashes, they represent only 71% of FSI crashes.
- Vulnerable road users (VRUs) bear a disproportionate burden of severe outcomes (shown in Figure 17):
  - Pedestrians: 10% of all FSI crashes, only 4% of total crashes
  - Bicyclists: 3% of all FSI crashes, only 2% of total crashes
  - Motorcyclists: 16% of all FSI crashes, only 5% of total crashes

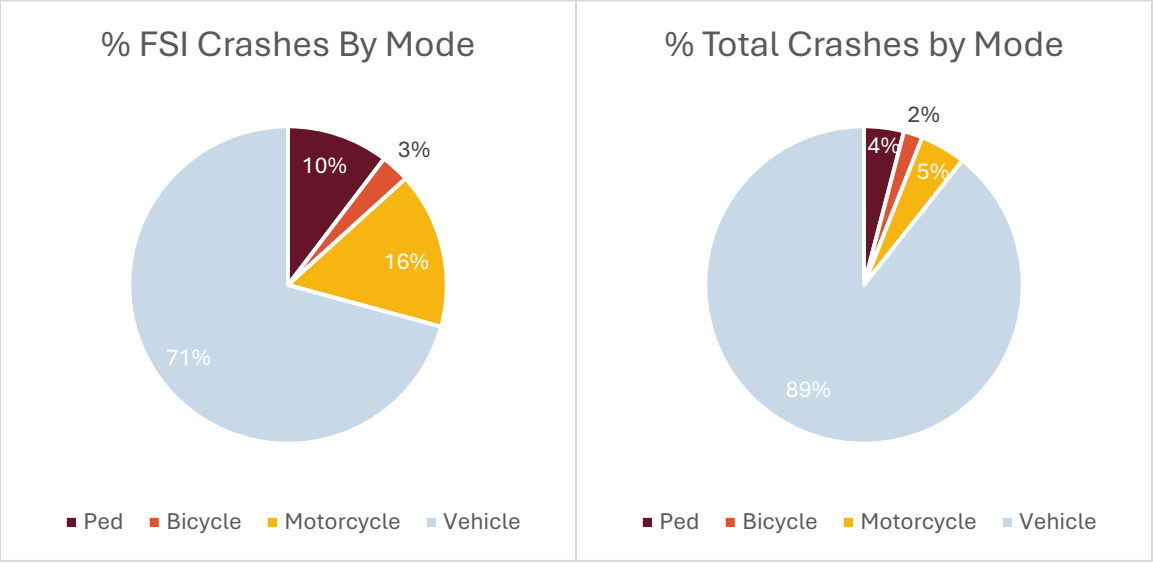


Figure 17: Crash Trends by Mode

FHWA's KABCO Crash Severity Scale

KABCO is a standardized system used by law enforcement and transportation agencies to classify the severity of injuries resulting from a traffic crash.

K – Fatal Injury: At least one person dies because of the crash.

A – Suspected Serious Injury: Severe, non-fatal injuries that require immediate medical attention.

B – Suspected Minor Injury: Visible or reported injuries that are not life-threatening.

C – Possible Injury: Complaints of pain or minor discomfort with no visible injury.

O – Property Damage Only: No injuries; only vehicles or property are damaged.

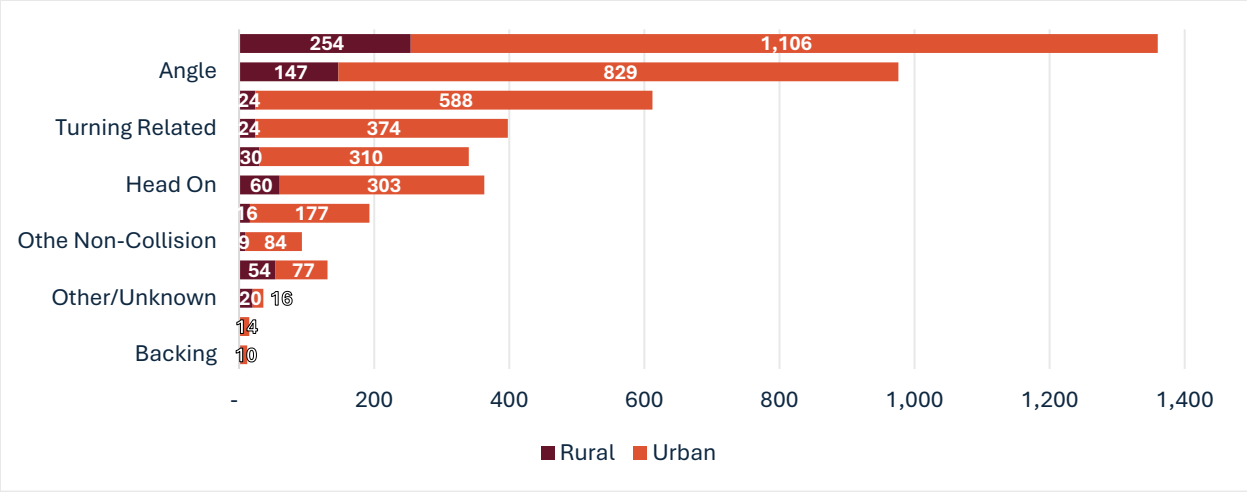


Figure 18: FSI Crash Contributing Factors

Crash Behaviors

Behavioral factors remain a dominant influence on crash severity.

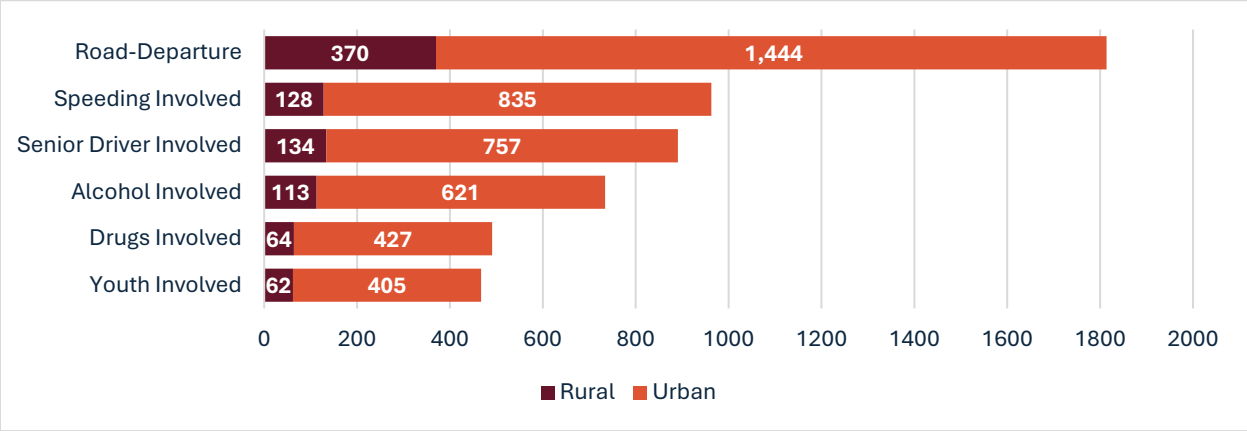


Figure 19: FSI Crash Contributing Factors

Roadway Characteristics

- FSI crashes cluster most frequently at intersections and along principal arterials.
- When normalized by mileage, principal arterials exhibit the highest FSI density in both rural and urban environments.

Jurisdictional Patterns

- In rural areas, state-owned roads show the highest FSI density.
- In urban areas, county-owned roads have the greatest share of severe crashes.

Speed Environment

- In urban areas, the highest share of FSI crashes occurs along 30-35 mph corridors, which often include multimodal activity and higher conflict potential.

- In rural areas, 50-55 mph roadways dominate FSI crash involvement due to higher operating speeds and limited access control.

Environmental Conditions

- Most FSI crashes occur under clear weather, daylight, and dry pavement conditions.
- Although adverse weather elevates certain risks, the data indicates that normal travel conditions account for most severe crashes. Exposure to normal travel conditions is more frequent than other weather and roadway conditions.

Seasonal and Temporal Patterns

- Severe crashes peak during spring and summer, with lower occurrence recorded in winter months.
- FSI crashes occur most frequently during afternoon and early evening, with urban areas also showing late-night weekend peaks.

NETWORK LEVEL ANALYSIS

The descriptive findings above inform the High-Injury Network (HIN) and High-Risk Network (HRN) analyses that follow. Network-level methods translate crash patterns, functional context, and community impact considerations into spatially explicit rankings that jurisdictions can use, alongside this Plan's guidance, to identify candidate locations and select appropriate countermeasures consistent with the Safe System Approach.

Together form a comprehensive approach addressing both crash experience and risk across all parts of a roadway network.

High Injury Network (HIN) Analysis

The High Injury Network (HIN) identifies the roadway segments within the Region where fatal and serious injury (FSI) crashes occurred most frequently, with more severe crashes receiving higher weight in the scoring process. This network provides a data-driven foundation for prioritizing corridors and locations that present the greatest opportunity for safety improvement.

A sliding-window analysis was used to evaluate roadway segments based on crash density and severity. The method incorporates both the conditions of a given segment and those of adjacent segments to provide context for how crashes cluster along a corridor. The analysis relied on five years of crash data for all vehicles (2020–2024) and ten years of data for vulnerable road users (VRUs) (2015–2024), ensuring sufficient sample size for less frequent crash types.

To support consistent analysis across varied roadway contexts:

- **Urban areas** were segmented into **0.25-mile** sections.
- **Rural areas** used **0.50-mile** segment lengths.

Each segment was assigned a severity-weighted crash score based on all crashes occurring within its boundaries. To account for nearby conditions, a sliding "window" of five segments, the focal segment plus the two nearest segments on either side, was used to calculate a composite score. Adjacent segments were weighted less than the center segment, and outer segments were weighted less than the inner adjacencies, reflecting the diminishing influence of crashes farther from the segment's center.

Table 1 presents the weighting framework applied to severity levels.

Table 1: Crash Severity Scores

Severity Level	Description	Score
K	Fatal	3
A	Incapacitating Injury	3
B	Minor Injury	2
C	Possible Injury	1
O	Property Damage Only	0 (excluded from analysis)

Severity weighting ensures that corridors experiencing disproportionately severe crashes receive greater emphasis in the final HIN.

Defining the High Injury Networks

After all segment and window scores were calculated, thresholds were set so that the resulting network captured 50% of all FSI crashes within the study area. Some limited manual adjustments were made to ensure that the resulting HIN segments formed logical and continuous corridors, such as by filling small gaps between adjacent high-scoring segments.

Separate HINs were developed for the following crash datasets to ensure that safety needs are evaluated across all road users:

- All modes
- Motor vehicles
- Motorcycles
- Pedestrians
- Bicyclists

Table 2 summarizes key statistics for each HIN, including the percentage of roadway miles included, the share of higher and lower functional class roads represented, and the percentage of FSI crashes captured. For this analysis, higher-functional-class roadways include arterials and major collectors, while lower-functional-class roadways include minor collectors and local streets.

Table 2: Roadway Mileage and FSI Distribution Summary by HIN

HIN Type	% Total Miles	% Miles (High)	% Miles (Low)	% FSI (High)	% FSI (Low)	Threshold Score
All Modes (Urban)	11.3%	32.8%	2.2%	88.7%	11.3%	3.4
All Modes (Rural)	3.4%	28.6%	2.3%	41.1%	58.9%	1.7
Motor Vehicles (Urban)	11.0%	32.3%	2.0%	89.6%	10.4%	3.0
Motor Vehicles (Rural)	2.6%	24.2%	1.7%	44.4%	55.6%	1.7
Motorcycles (Urban)	2.4%	5.3%	1.1%	74.4%	25.7%	1.0
Motorcycles (Rural)	0.6%	2.7%	0.5%	21.2%	78.9%	1.1
Bicyclist (Urban & Rural)	0.7%	2.3%	0.3%	68.8%	31.2%	0.8
Pedestrians (Urban & Rural)	1.6%	6.3%	0.7%	79.6%	20.4%	0.8

Maps of the HINs are shown in Figure 20 through Figure 25.

A similar analysis was conducted for intersections. Unlike the HIN for corridors, the intersection analysis did not account for crashes at neighboring intersections. The top 5% of intersections by score are included in the intersection HIN.

Inclusion on one or more of the HINs shows that FSI crashes happened more frequently on and near that segment. Knowing which corridors have a history of FSI crashes provides useful insight into prioritizing corridors for future improvements.

A detailed summary of the methodology and results of the High Injury Network analysis is provided in **Appendix B – High Injury Network Analysis Summary**.

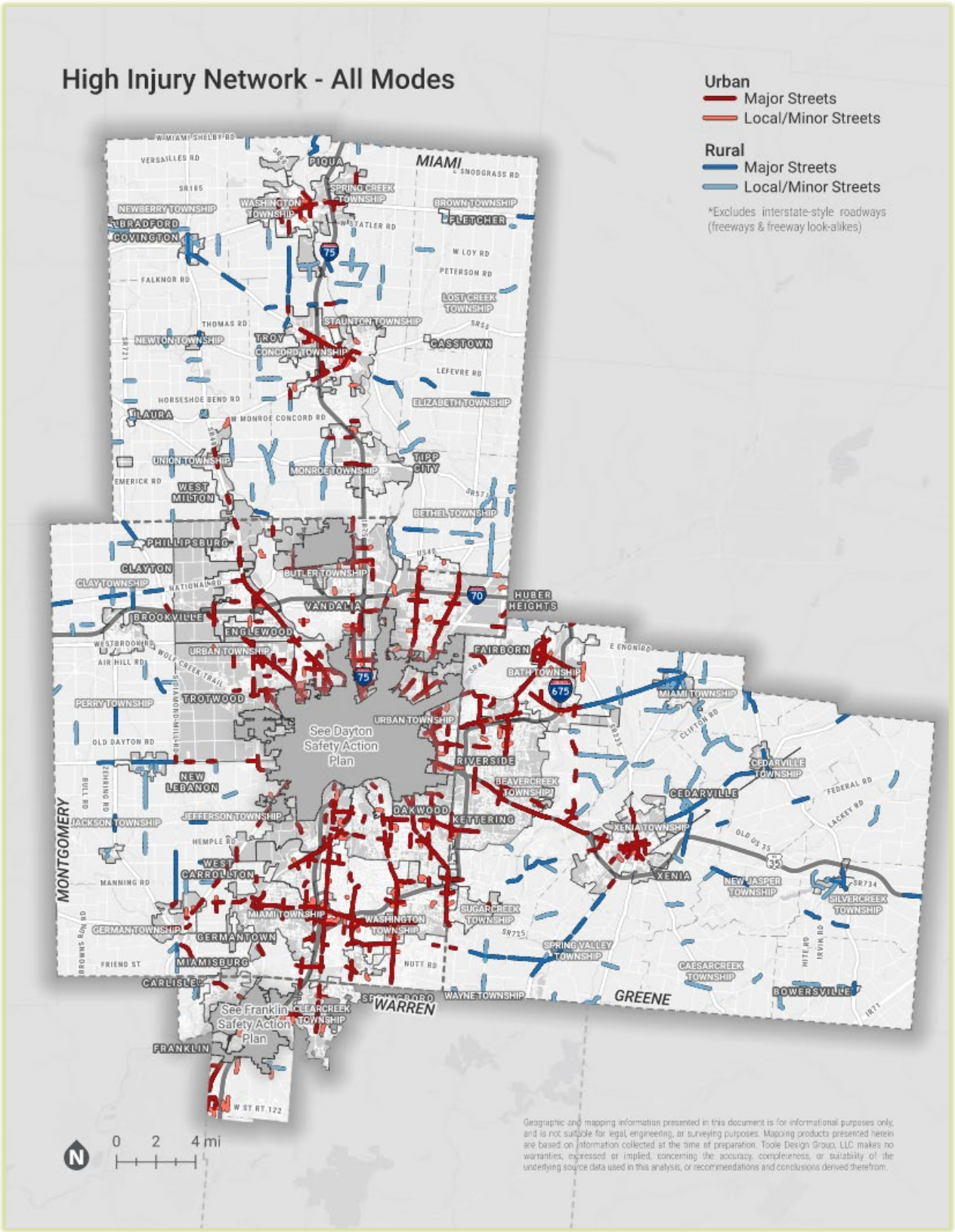


Figure 20: All Modes High Injury Network (MVRPC MPO Region)

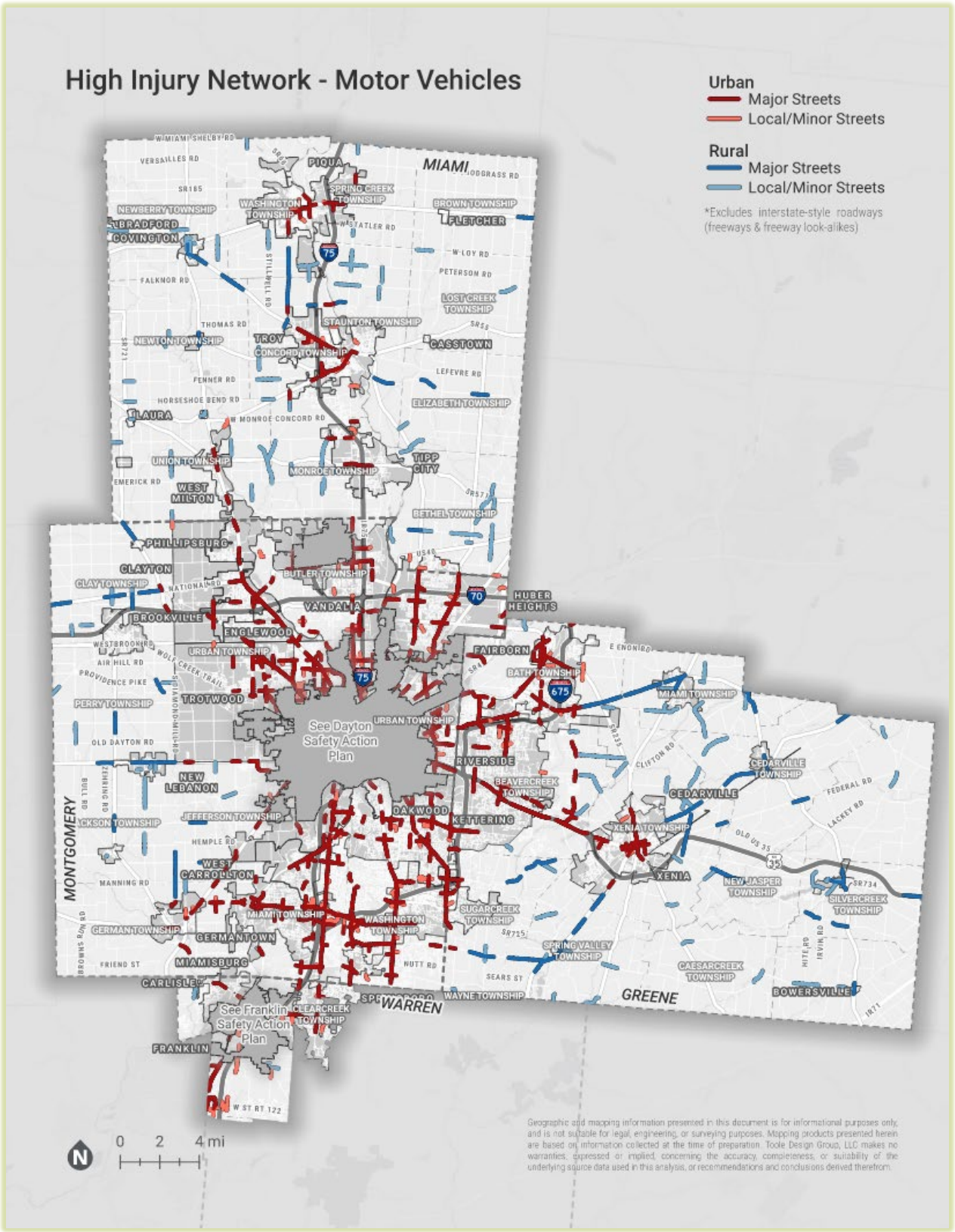


Figure 21: Motor Vehicle High Injury Network (MVRPC MPO Region)

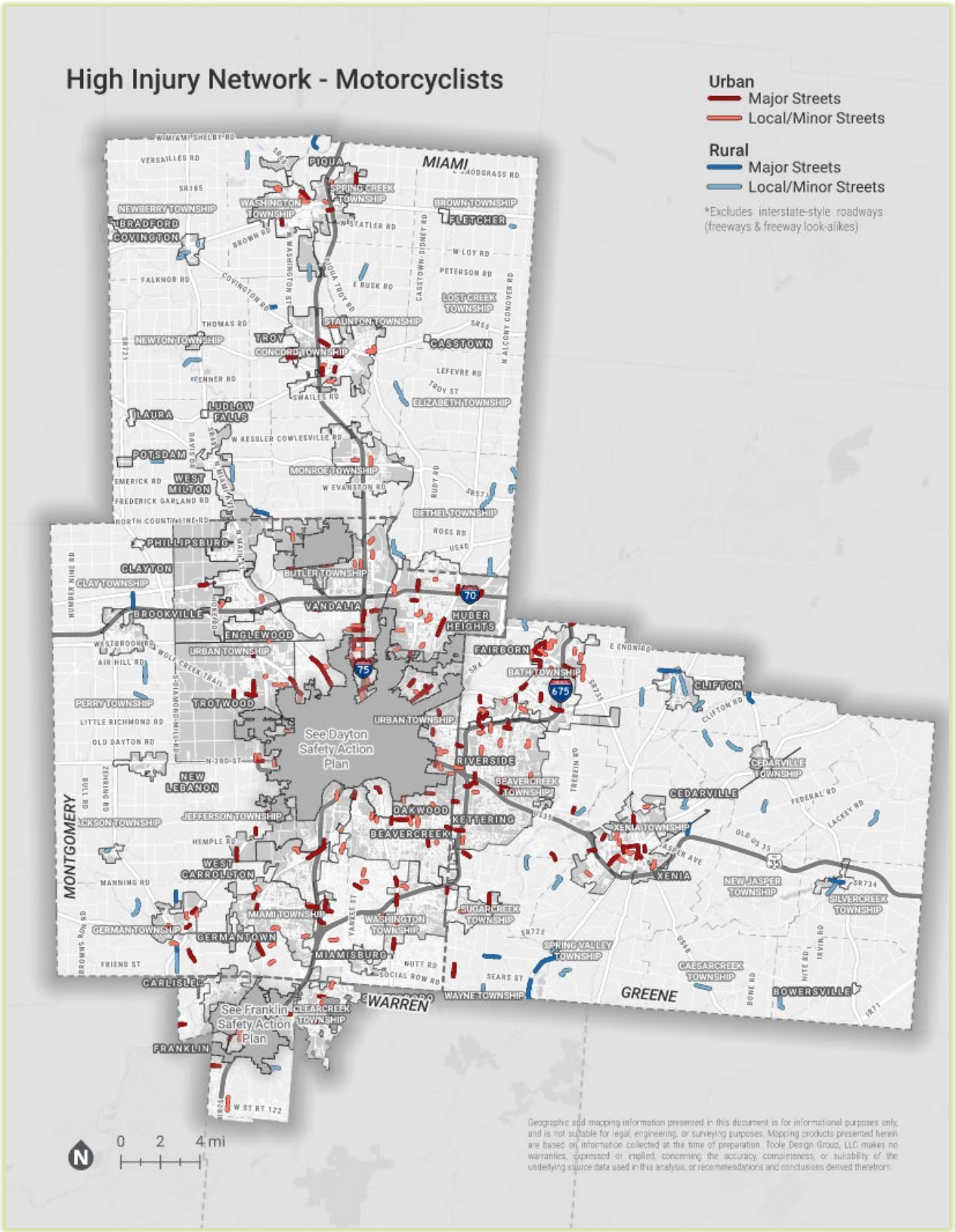


Figure 22: Motorcycle High Injury Network (MVRPC MPO Region)

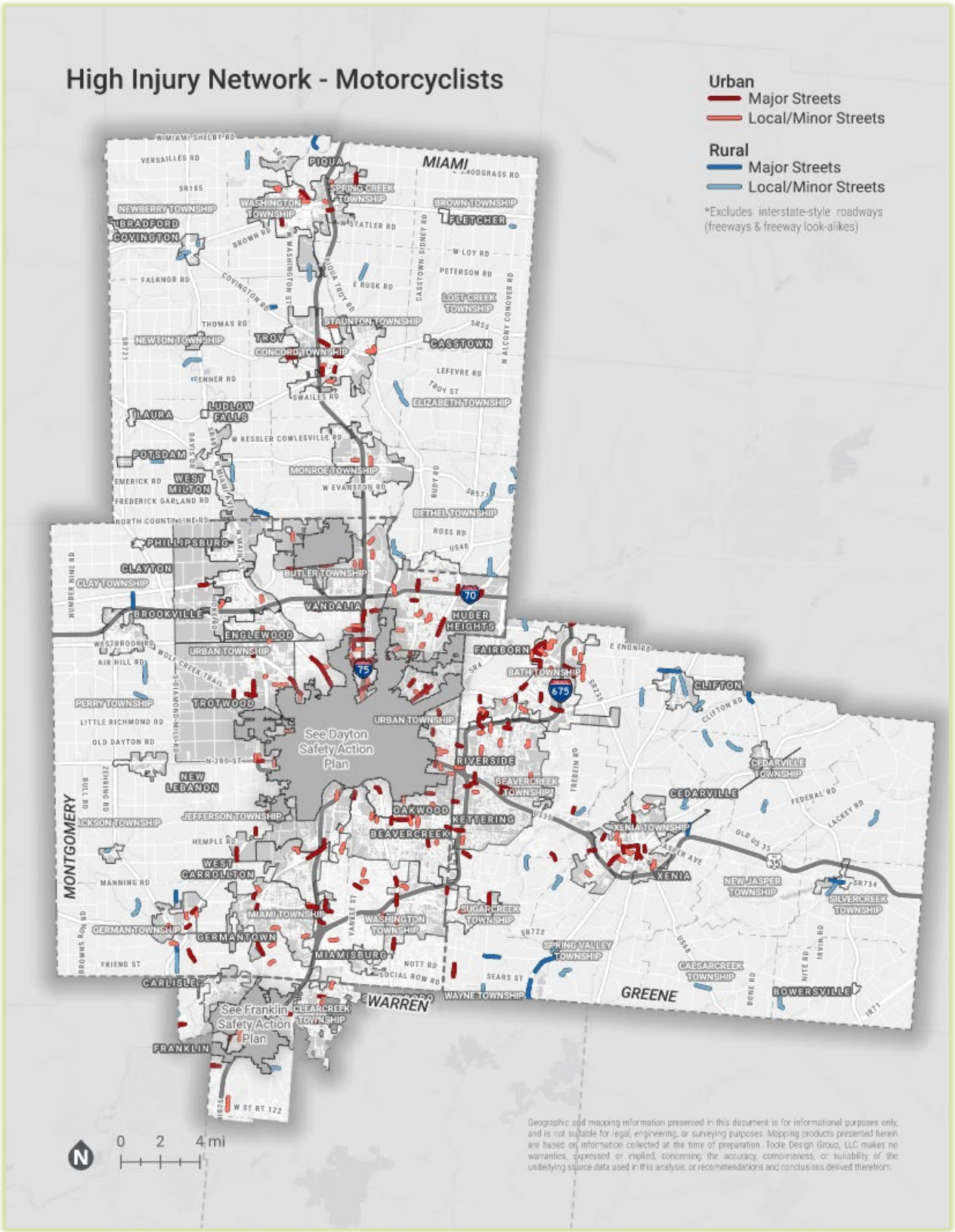


Figure 23: Bicycle High Injury Network (MVRPC MPO Region)

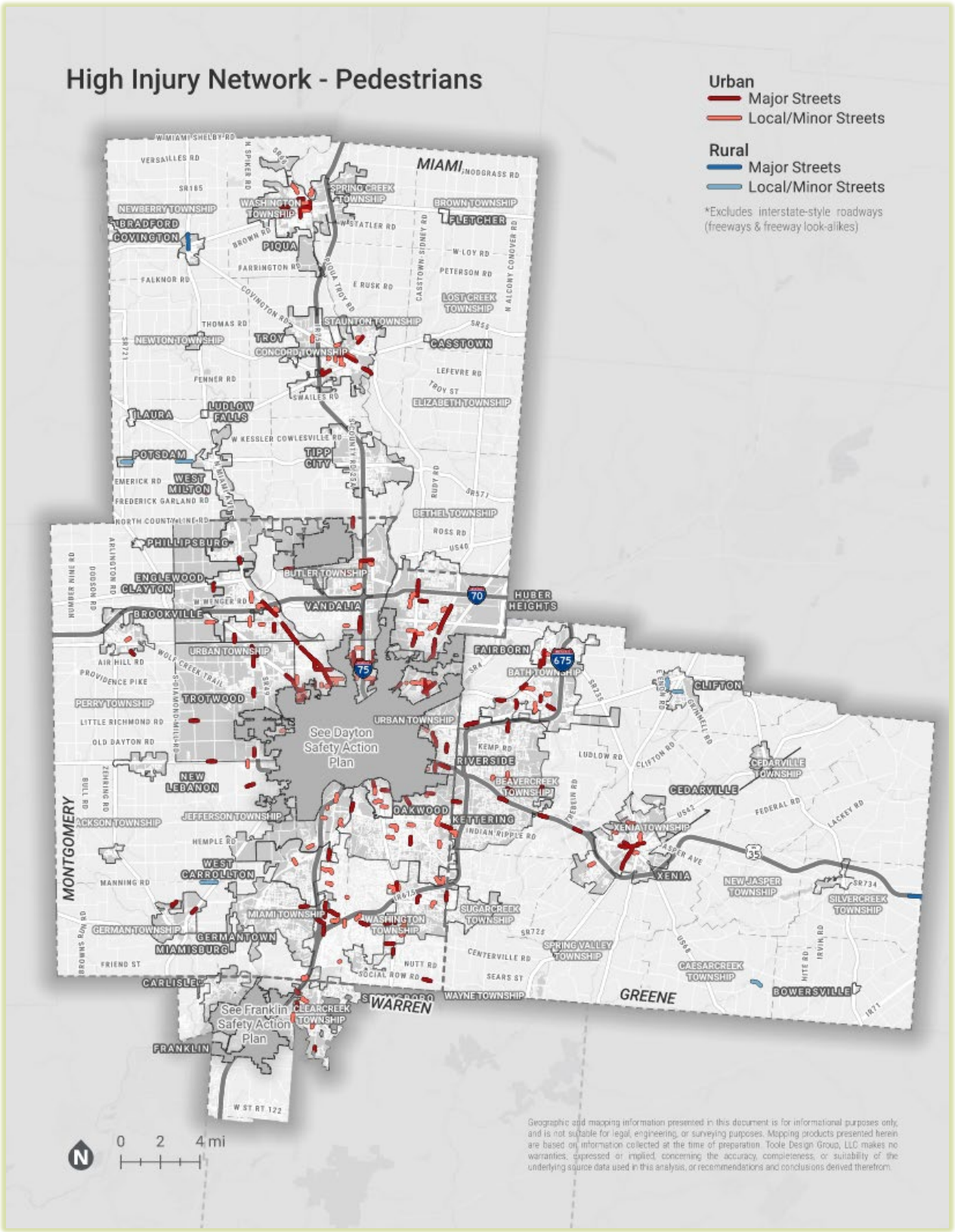


Figure 24: Pedestrian High Injury Network (MVRPC MPO Region)

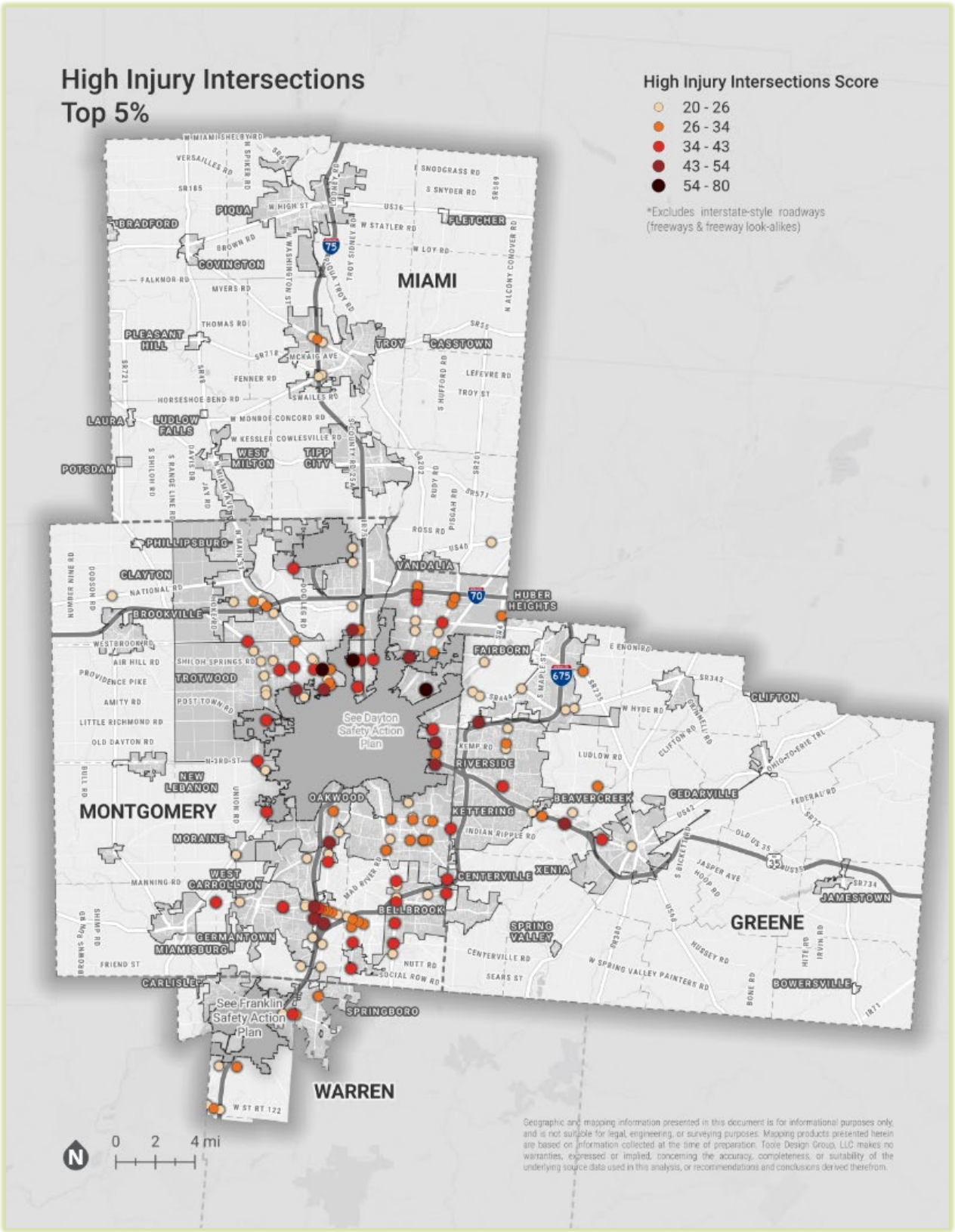


Figure 25: Intersection High Injury Network (MVRPC MPO Region)

High Risk Network (HRN) Analysis

A comprehensive safety plan must look not only at where crashes have occurred, but also at where the risk of future crashes is elevated, even in locations with few or no recorded crashes. Relying solely on crash history can leave gaps, because the absence of crashes does not necessarily mean a location is without risk. Many locations have roadway, traffic, or land-use characteristics that create inherent risk, but crashes may not yet have occurred due to chance, low exposure, recent development, or other temporary conditions. Understanding where these risks exist allows agencies to act proactively rather than waiting for severe crashes to happen.

Risk may exist without a crash history for several reasons:

- **Low traffic volumes** may limit crash opportunities, even if roadway conditions are hazardous. A sharp curve with narrow shoulders or poor sight distance might see only a few vehicles per day but still presents a high risk of severe outcomes.
- **New development or recent land-use shifts** can introduce risks not yet reflected in crash patterns, for example, new commercial driveways generating turning traffic or new housing developments increasing pedestrian activity.
- **Underreporting certain crash types**, especially pedestrian, bicycle, and minor-injury crashes, can give the false impression that a location is safer than it is.
- **Rare events** (like FSI crashes) require years of data to surface statistically. A location may have high-risk characteristics but simply has not yet accumulated enough exposure for a severe crash to occur.
- **Predictable conflict patterns** may exist even without documented crashes, for example, complex intersections, uncontrolled pedestrian crossings, or multilane roads with high speeds and frequent turning movements. Users may even avoid these locations due to perceived safety risk, increasing crash risk elsewhere.

Examples of locations where crash risk may be high despite few recorded crashes include:

- A **high-speed rural two-lane road** with narrow shoulders and limited passing sight distance that has few crashes only because relatively few drivers use it.
- A **suburban arterial** undergoing rapid growth, where increased turning movements create conflict points not yet reflected in crash data.
- A **multilane urban corridor** lacking pedestrian crossings, where people routinely cross midblock but many near-misses go unreported.
- A **bicycle route or shared-use path crossing** a busy roadway where pedestrian and bicycle crashes are historically underreported.

To capture these systemic risks, the High Risk Network (HRN) uses a proactive analytical approach. The HRN was developed using the Facility Profile Analysis (FPA) method, which identifies combinations of roadway and contextual indicators that are statistically associated with elevated serious crash risk. This systemic methodology helps identify locations where future severe crashes are more likely, even if past crash history is limited or absent.

Two HRN networks were developed, one reflecting roadway characteristics and one reflecting roadway context. A detailed description of the methodology and factors included in the HRN analysis for each network is provided in **Appendix C – High Risk Network Analysis Summary.**

In addition to roadway and context models for urban and rural areas, a separate analysis was also conducted for VRUs, as the factors that elevate pedestrian and bicycle crashes may be different from those that elevate motor vehicle crashes. In summary, the following HRN models were developed:

- Urban roadway
- Urban context
- Rural roadway
- Rural context
- VRU roadway
- VRU context

Unlike the urban and rural models, which occupy separate spaces since a segment or intersection cannot be in both, the VRU model overlaps the urban and rural models so a segment may be in both the urban and VRU or the rural and VRU models. Another distinction is that the 'all modes' models focused on 5 years of crash history (2020-2024) while the VRU models focused on 10 years (2015-2024).

The FPA methodology identifies unique combinations of roadway design and contextual indicators associated with elevated crash risk. All roadway segments are scored in terms of average crash density among similar facilities and given a crash risk tier rating of critical, high, medium, low, or minimal based on these scores.

Factors that were found to be associated with Critical or High crash risk are summarized in Table 3. Maps of roadways on the HRN in the Region are shown in Figure 26 through Figure 28.

Table 3: Profiles of Critical and High Crash Risk Roadways

HRN Model	Critical and High-Risk Indicators
All Modes Urban Roadway	• Roads with traffic volumes of 10,000 or more • Multi-lane roads with no median and speed limit above 30 mph • Roads with speed limits of 30 mph or less, that are dense with intersections
All Modes Rural Roadway	• Higher functional class roads • Roads without recoverable shoulders • Speed limits of 30 mph or below • Wide lanes with speed limits above 30 mph
VRU Urban & Rural Roadway	• Multi-lane roads with no median and traffic volumes of 10,000 or more • Roads with medians that are intersection dense
All Modes Urban Context	• Roads near transit, not near a park, with high AT demand • Roads not near transit with high AT demand in commercial land use • Roads near transit, near a park, with elevated poverty percentage, and low older adult population • Roads near transit, not near a park, with low AT demand
All Modes Rural Context	• Roads near a park with at least 5% of older adult population • Roads not near a park with low poverty population
VRU Urban & Rural Context	• Roads near transit, with high poverty percentage, low vehicle ownership rate, in residential land use • Roads not near transit with high AT demand, and high poverty percentage

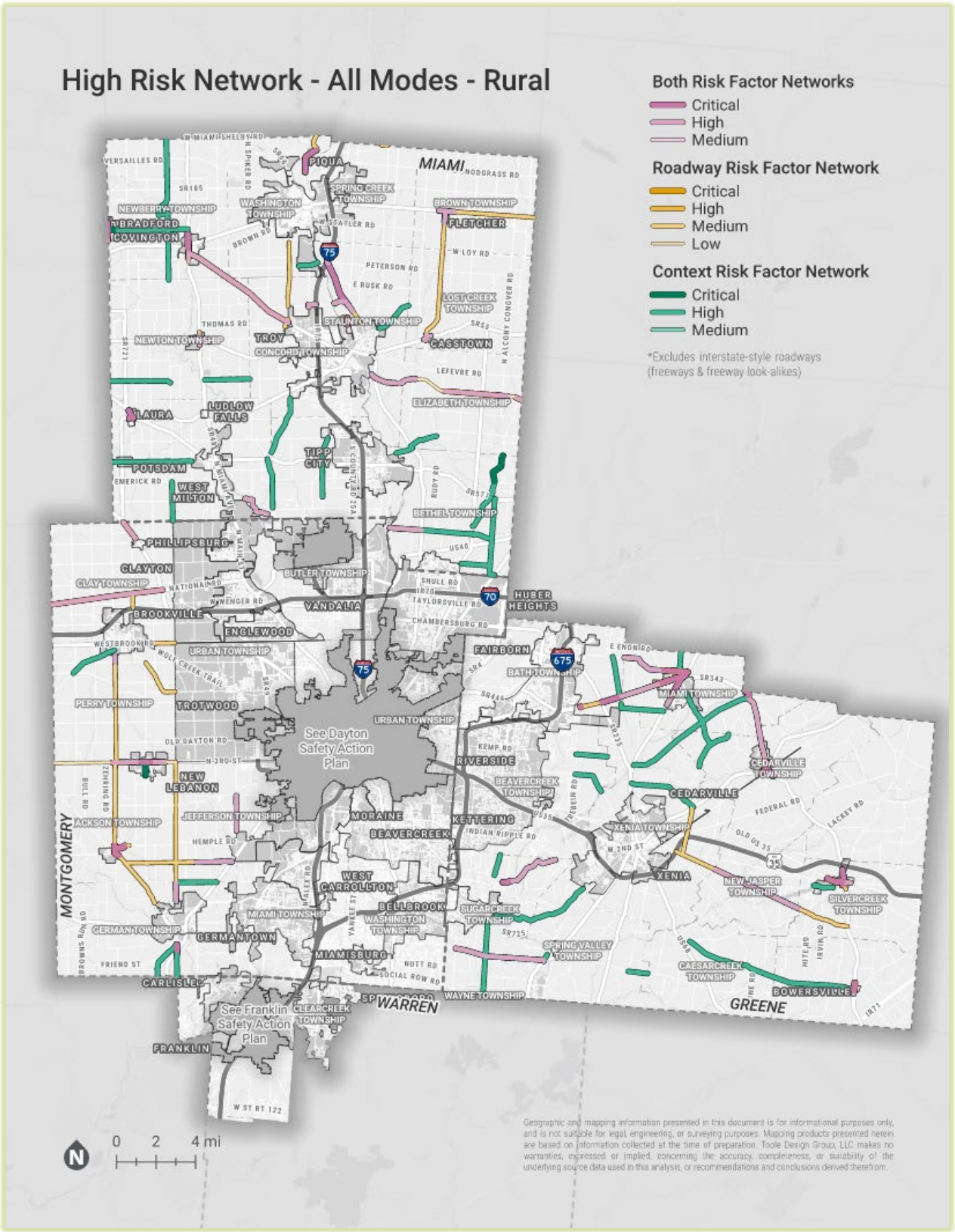


Figure 26: All Modes in Rural Areas High Risk Network (MVRPC Region)

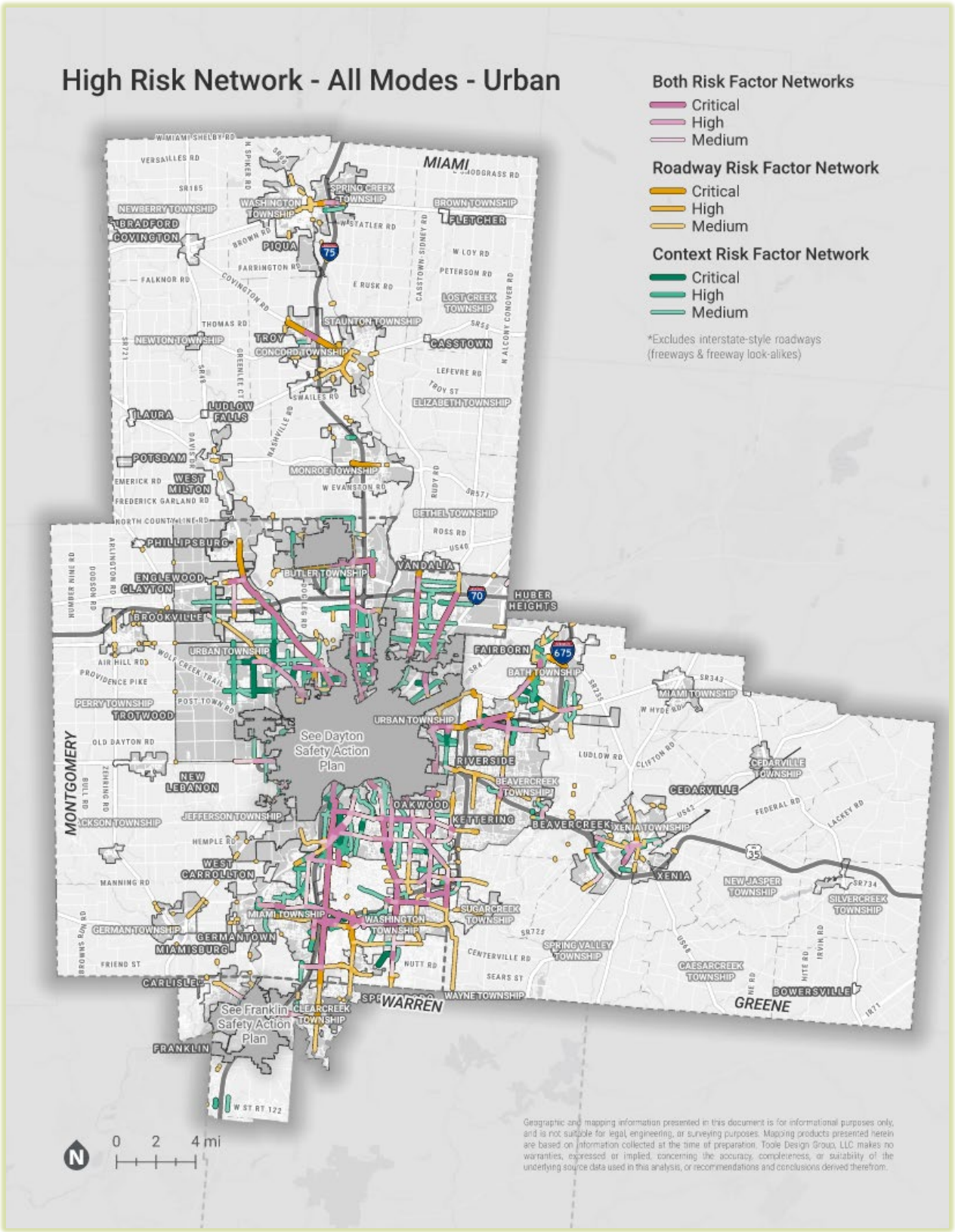


Figure 27: All Modes in Urban Areas High Risk Network (MVRPC Region)

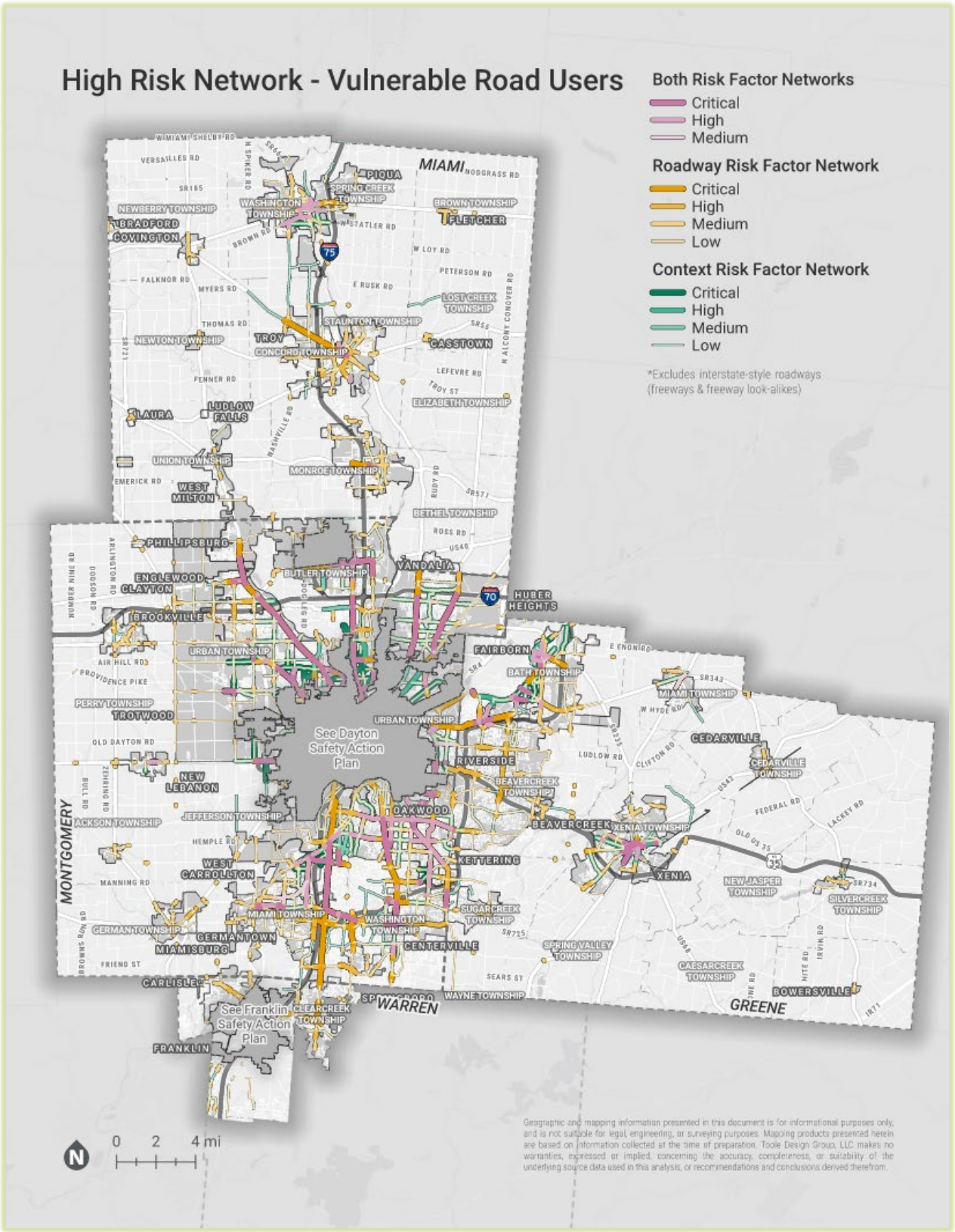


Figure 28: VRU High Risk Network (MVRPC Region)

A similar analysis was conducted for intersections in the Region to create roadway and context models. Separate intersection models were not developed for urban, rural, or VRUs.

Factors that were found to be associated with Critical or High crash risk are summarized in Table 4. A map of intersections on the HRN in the Region is shown in Figure 29.

Table 4: Profiles of Critical and High Crash Risk Intersections

HRN Model	Critical and High Risk Factors
Roadway – All Modes	• Intersections with traffic volumes over 10,000, speed limits of 35-45 mph, and involving multi-lane roads • Intersections with traffic volumes over 10,000, speed limits at or under 30 mph, and involving multi-lane roads • Intersections with traffic volumes over 10,000, speed limits at or above 50 mph, and involving multi-lane roads
Context – All Modes	• Intersections near transit and trail access • Intersections near transit, not near trail access, with low youth populations, and not near a park • Intersections near transit, not near trail access, with high youth populations

Combined Network Mapping for Safety Prioritization

Overlaying the High Injury Network (HIN) and High Risk Network (HRN) provides a powerful visual tool for identifying priority areas for safety interventions. The HIN highlights locations with a history of severe crashes, while the HRN identifies segments with elevated risk based on roadway characteristics and exposure. When mapped together, these layers reveal where historic crash patterns and systemic risk conditions overlap, helping to pinpoint corridors and intersections most in need of targeted countermeasures. Overlay mapping should clearly show these convergence zones, guiding decision-makers to focus resources where they will have the greatest impact on reducing fatal and severe injury crashes.

Composite mapping of the High Injury and High Risk Networks for all modes by county are shown in Figure 30 through Figure 33.

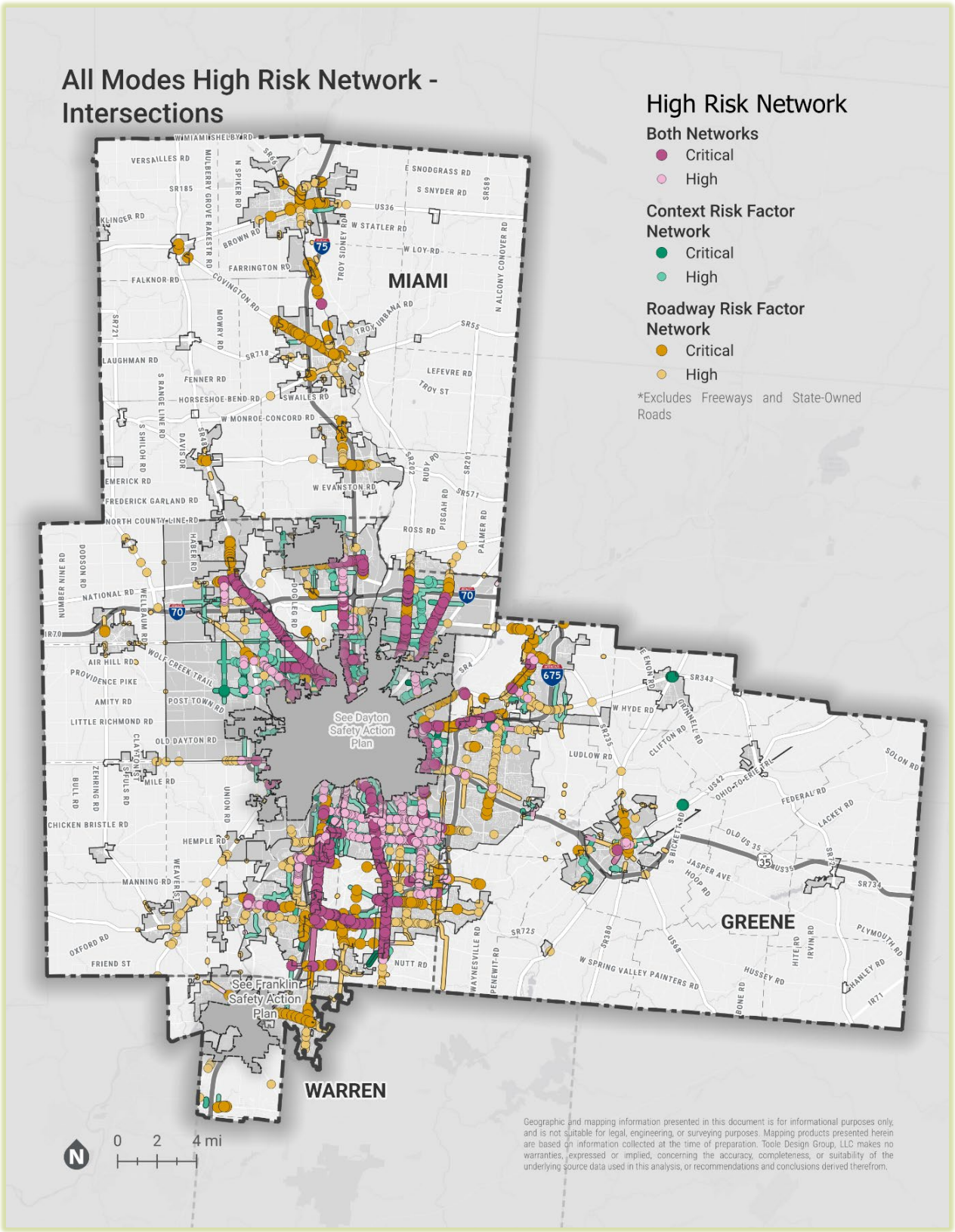


Figure 29 High Risk Intersections (MVRPC MPO Region)

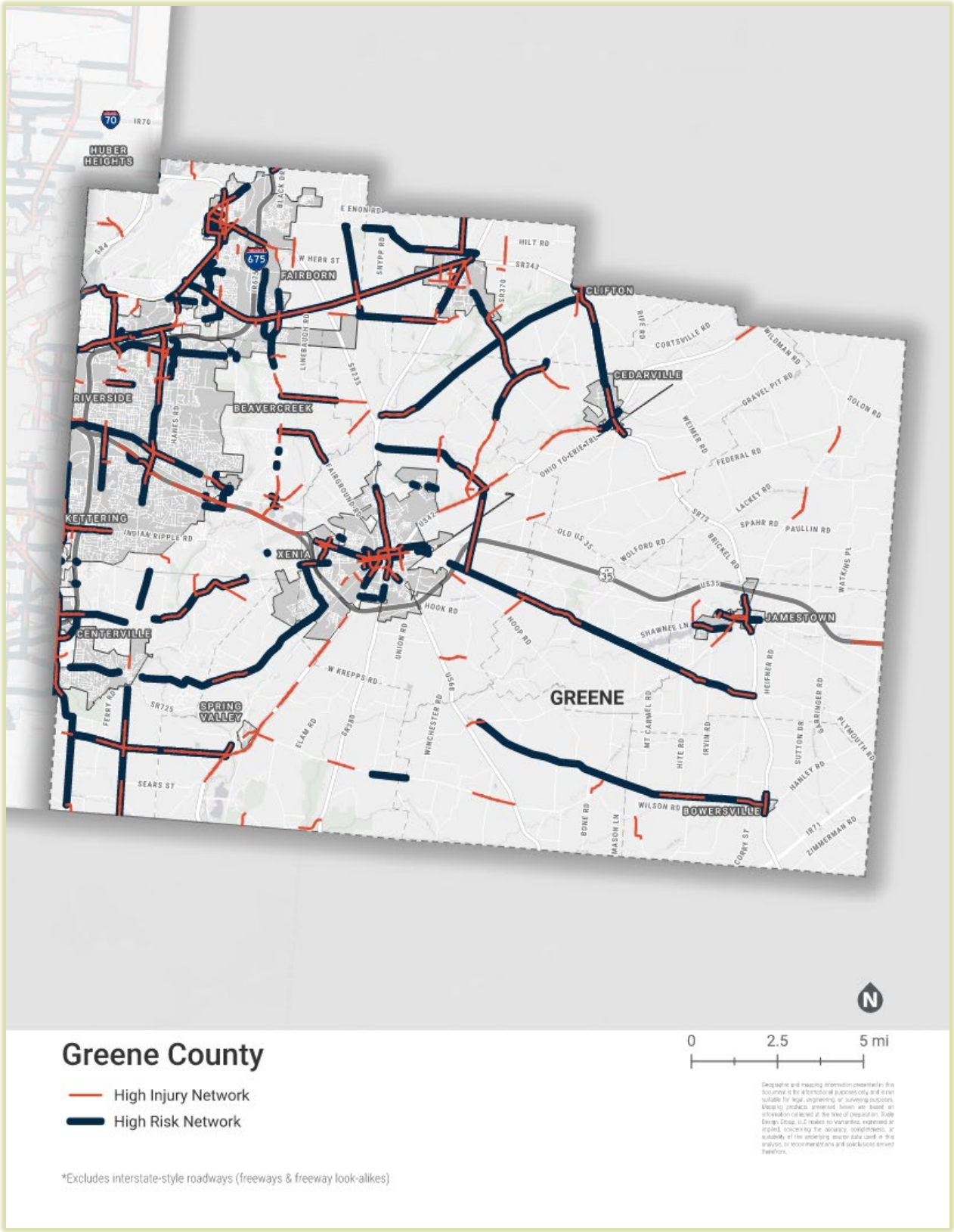


Figure 30: HIN and HRN Overlap in Greene County

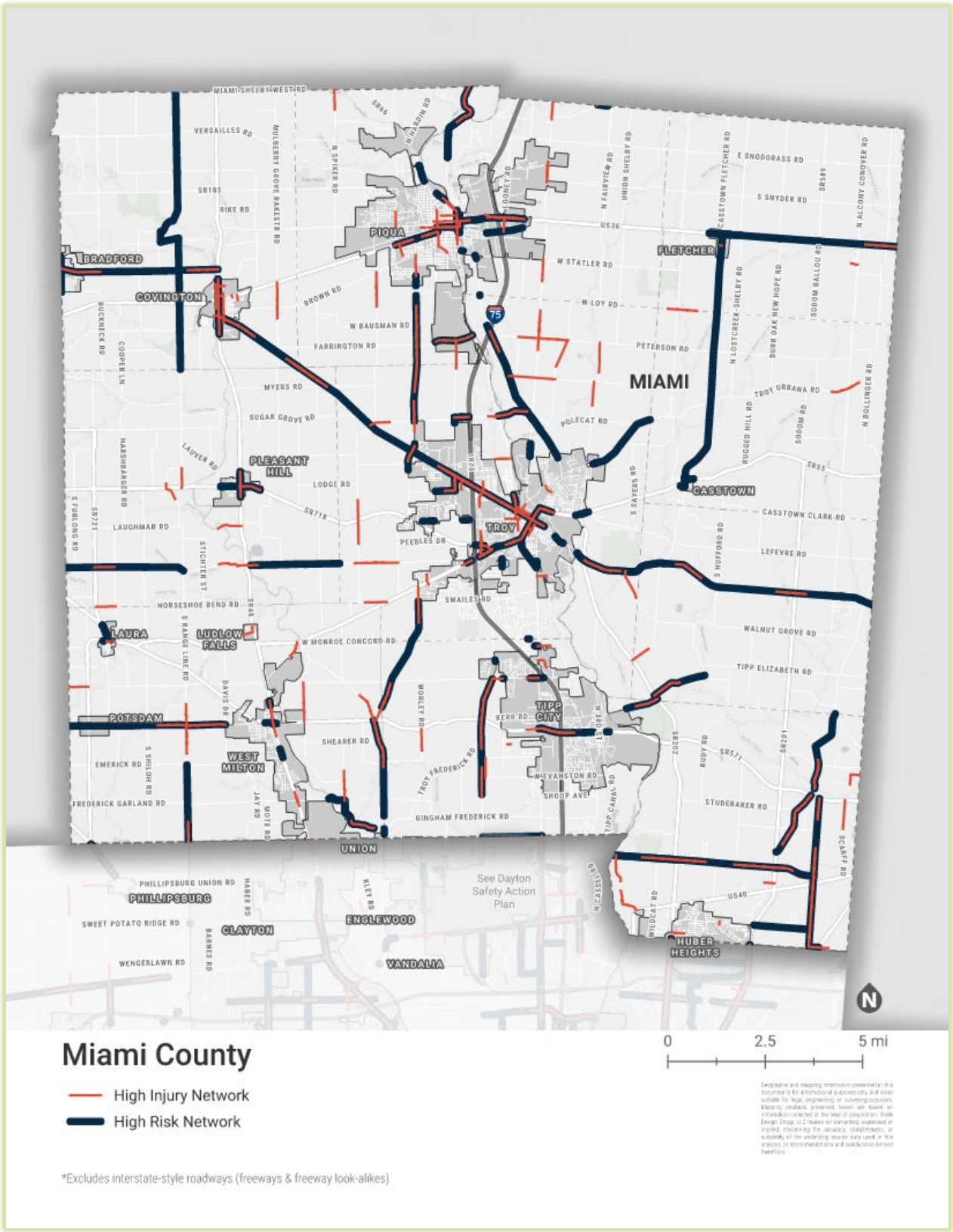


Figure 31: HIN and HRN Overlap in Miami County

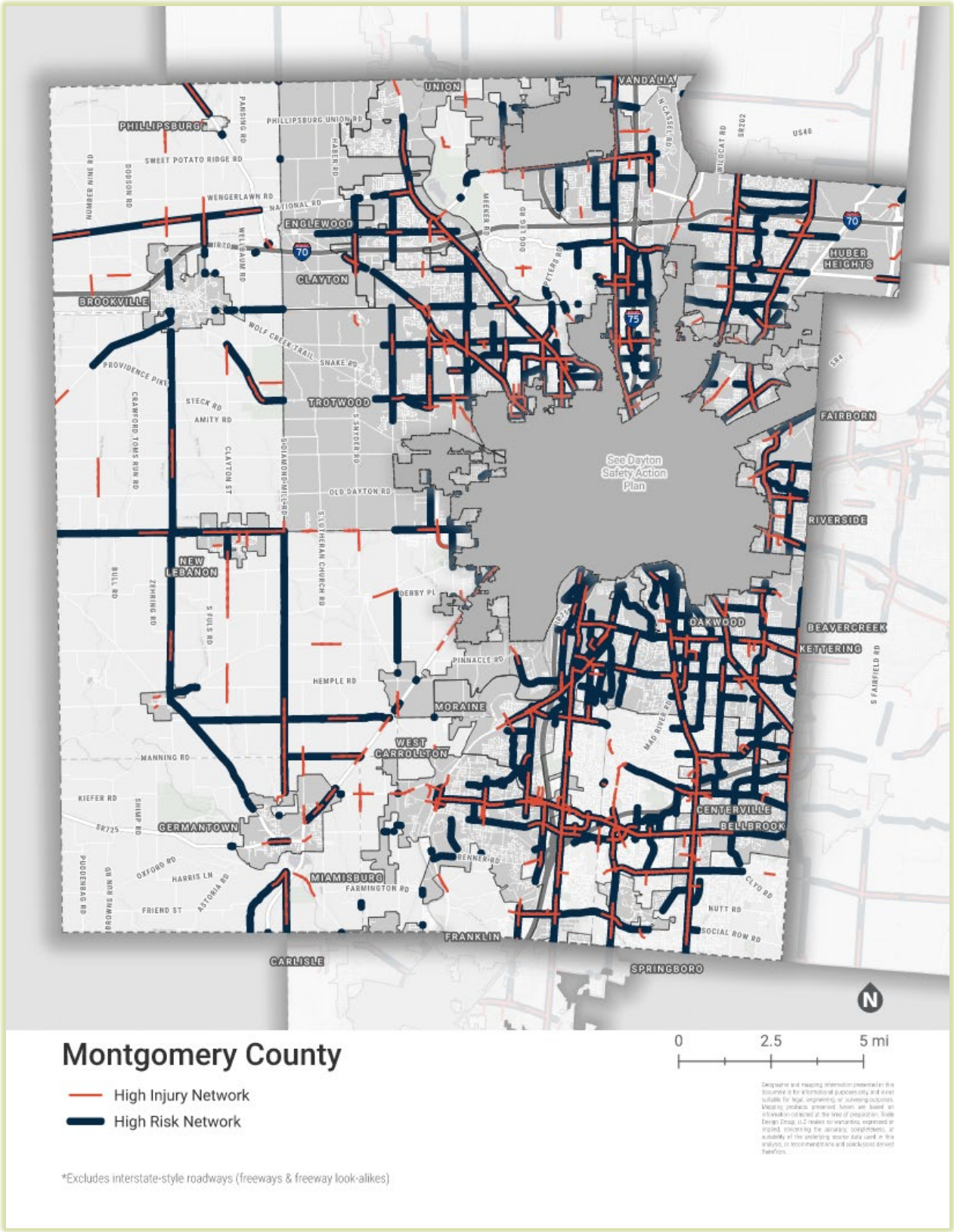


Figure 32: HIN and HRN Overlap in Montgomery County

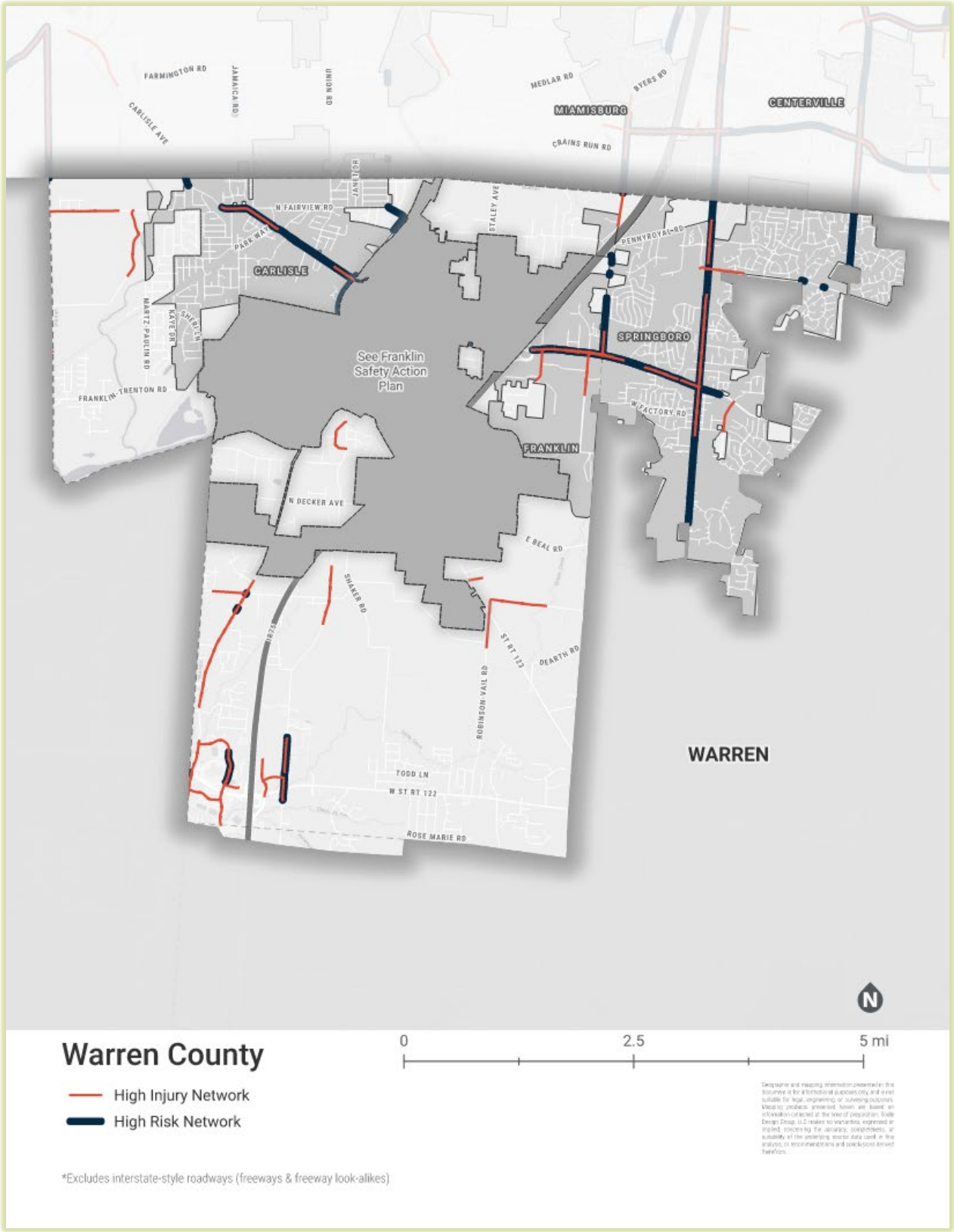


Figure 33: HIN and HRN Overlap in Warren County

MVRPC SAFE STREETS FOR ALL
COMPREHENSIVE SAFETY ACTION PLAN

CHAPTER 5:
COMMUNITY IMPACT ASSESSMENT

CHAPTER 5: COMMUNITY IMPACT ASSESSMENT

The population of the MVRPC Region represents a diverse range of economic, age, ability, racial, and ethnic identities. Understanding the needs and lived experiences of communities across the Region is essential for examining how different populations are affected by transportation outcomes, identifying disparities, and framing both past and future investment decisions. This awareness also provides an important foundation for monitoring how well safety strategies and infrastructure improvements advance a fair and inclusive distribution of transportation resources over time.

This section summarizes the results of the demographic and community-needs analysis used to inform the Safety Action Plan. The full set of detailed maps and underlying data for these key populations is provided in **Appendix D – Community Impact Assessment Summary**.

KEY POPULATIONS AND KEY POPULATION MAPPING

To identify areas of greatest need, the Plan evaluates a set of demographic groups, referred to as key populations, whose transportation experiences and outcomes warrant focused attention. These groups often face greater transportation insecurity, have heightened safety needs, and are more likely to rely on walking and bicycling as primary modes of travel. Incorporating key populations into the analysis ensures that data-based prioritization reflects the needs of communities that have historically been marginalized or underserved by the transportation system. The key populations included in this Safety Action Plan, chosen based on both relevance and the availability of reliable data, are listed in Table 5.

Table 5: Description of data for populations mapped

CATEGORY	VARIABLE	CENSUS/ACS DESCRIPTION
Age	Youth	Percentage of population aged 18 and younger
	Older Adults	Percentage of population aged 65 and older
Race	Race and Ethnicity	Percentage of population that is Black
		Percentage of population that is Hispanic (any race)
Ability	Disability	Percentage of households where one or more persons have a disability (hearing, vision, cognitive, and ambulatory disabilities and self-care and independent living difficulties)
Language	Language Barrier	Percentage of population over the age of five years with a language barrier (those who do not speak English or do not speak English “very well”)
Income	Poverty Level	Percentage of population with income below 200% of the federal poverty level
Income	Unemployment	Percentage of population over the age of 16 who is job seeking
Transportation	Zero Car Households	Percentage of households that do not own a personal vehicle
Housing	House Tenure	Percentage of houses that are renter occupied

Table 6 provides a snapshot of key demographic characteristics for the three counties that fall entirely within the MPO Region. Data for Warren County are not included because only the northern portion of the county lies within the MVRPC Region, making it an incomplete and non-comparable representation. However, that portion is reflected in the demographic mapping an evaluation. Although Dayton and Franklin are excluded

from the Safety Action Plan study area, and therefore from the regional crash and roadway analysis, the demographic summary includes their residents because they work, travel, and interact with the broader Miami Valley transportation network. Including these populations provides important context for understanding how demographics influence regional travel patterns and safety needs.

Table 6: Demographic Summary of MVRPC Region counties

County	Population	Under 18	65 +	Under 65 with disability	White	Black	Asian	Hispanic	Avg. Commute (Minutes)
Greene	168,531	21%	19%	9.2%	82%	5.8%	2.8%	1.4%	22
Miami	109,549	23%	20 %	8.4%	91%	2%	1.7%	1%	21
Montgomery	535,528	22%	19%	11%	68%	20.4%	2.2%	1.7%	22

(2023: American Community Survey 5-Year)

In addition to U.S. Census data, the analysis also incorporates USDOT's definition of Areas of Persistent Poverty. These areas include:

- Any county where 20% or more of the population has lived in poverty for the past 30 years, as measured by the 1990 Census, the 2000 Census, and the most recent Small Area Income and Poverty Estimates (SAIPE).
- Any Census tract with a poverty rate of at least 20%, based on the 2014–2018 American Community Survey 5-year estimates.
- Any territory or possession of the United States.

Considering Areas of Persistent Poverty helps identify communities that have experienced long-term economic hardship and may face heightened transportation challenges, ensuring these factors are incorporated into the Safety Action Plan's community-focused analysis.

A composite map was developed to highlight the block groups where the key populations discussed in this section overlap the most, as shown in Figure 34.

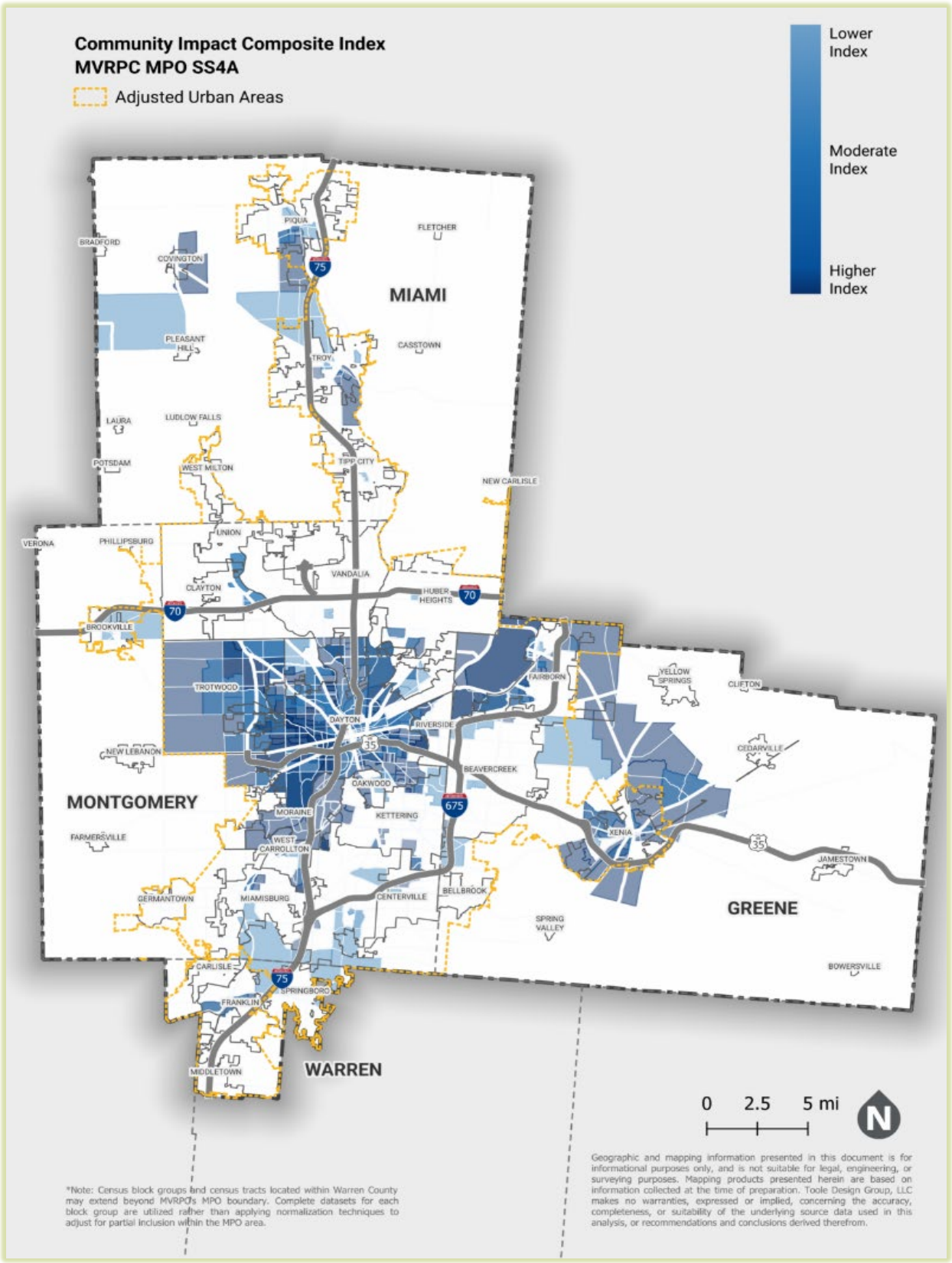


Figure 34: Community Impact Composite Index Map

MVRPC SAFE STREETS FOR ALL
COMPREHENSIVE SAFETY ACTION PLAN

CHAPTER 6:
POLICY AND PROCESS

CHAPTER 6: POLICY AND PROCESS

The SS4A program requires that safety action plans include an assessment of current policies, plans, guidelines, and/or standards to identify opportunities to improve how processes prioritize transportation safety. This chapter provides an overview of existing MVRPC organizational and member policies, summarizes policy enhancements adopted by peer agencies, and presents recommended actions for MVRPC to consider. *These recommendations are not mandates, but they represent meaningful opportunities to strengthen the Region's ability to achieve the regional safety target established by the MVRPC Board of Directors*.

POLICY AND PROCESS REVIEW

As part of the development of the MVRPC Safe Streets for All (SS4A) Safety Action Plan, a comprehensive Policy & Process Assessment was conducted to understand how existing regional and local policies support progress toward safety goals. The assessment focused on three major activities:

1. Reviewing MVRPC's core policies and plans
2. Benchmarking peer MPO and national agency practices
3. Evaluating representative policies from MVRPC member jurisdictions

The sections below summarize the findings of each component.

MVRPC Policies

The assessment began with an inventory and review of MVRPC's policies, plans, and procedures that guide regional transportation planning, funding, and public engagement. This provided a baseline understanding of how safety, multimodal access, and community needs are currently integrated into the organization's processes. As the region's MPO, MVRPC plays a central role in shaping transportation investments. Several core documents already advance safety and multimodal goals.

Table 7: MVRPC Policies Reviewed

Policy / Plan	Purpose & Safety Alignment	Review Elements
Long Range Transportation Plan (LRTP)	A 20+ year multimodal plan, updated every 5 years, guiding investment in roadway, transit, bikeway, pedestrian, and alternative transportation projects; influences long-term systemwide safety outcomes.	Reviewed to assess how long-range investment decisions incorporate multimodal safety, emerging mobility needs, land-use changes, safety performance, vulnerable road user needs, and systemic risk factors.
Transportation Improvement Program (TIP)	A 4-year capital improvement program implementing LRTP priorities through funding for highway, transit, bikeway, and pedestrian projects.	Reviewed to determine how safety criteria, crash data, multimodal accommodation, and community needs influence near-term project programming, scoring, and fiscal decision-making.

Policy / Plan	Purpose & Safety Alignment	Review Elements
Regional Complete Streets Policy (2011)	Requires all regionally funded projects to accommodate all users of all ages and abilities, promoting safer and more accessible street design.	Reviewed to evaluate application of inclusive design principles, alignment with Safe System practices, and opportunities to strengthen safety-focused design requirements.
Regional Active Transportation Plan (2022)	Establishes long-range strategies for walking, bicycling, and non-motorized modes, supporting development of a safe, connected regional network.	Reviewed to assess identification of high-injury locations, prioritization of corridor and network improvements, use of data-driven and equitable methodologies, and alignment with LRTP and SS4A objectives.
Suballocated Funding Policy & Project Evaluation System	Guides prioritization and award of STP, CMAQ, TA, and Carbon Reduction funds; shapes which projects advance to implementation.	Reviewed to evaluate how safety, community needs, multimodal design, and systemic risk reduction are weighted in funding decisions, including clarity and transparency of scoring.
Safe Routes for Non-Drivers Program	Supports safe walking and bicycling for children, seniors, and non-drivers, improving access to key destinations.	Reviewed to understand how vulnerable populations are identified and prioritized, how crash data informs decisions, and how the program supports SS4A-aligned interventions and quick-build improvements.
Public Participation Policy (2024)	Ensures proactive, meaningful, accessible engagement in planning and project selection; sets standards for transparency and inclusiveness.	Reviewed to assess alignment with SS4A expectations for continuous and equitable engagement, including multilingual access, ADA/LEP compliance, engagement tools, and feedback-loop enhancements.

Peer Agency Policies Benchmarking

To identify opportunities for strengthening regional safety policies, MVRPC conducted a benchmarking review of peer agencies in Ohio and across the country that have recently completed Safety Action Plans. This analysis provided insight into how agencies with similar responsibilities are advancing Vision Zero principles, modernizing their project selection processes, and implementing Safe System-based strategies. The review focused on policy structures, safety targets, implementation tools, and practices that have demonstrated early success.

The benchmarking results highlight a nationwide shift toward policies that embed safety directly into funding frameworks, accelerate implementation through quick-build programs, improve accountability through dashboards and annual reporting, and align land-use policies with safety objectives. Key examples are summarized below in Tables 8 and 9.

Table 8: Ohio Agency Policies Reviewed

Agency	Vision Zero / Safety Goal	Notable Policy Ideas
Akron Metropolitan Area Transportation Study (AMATS)	Zero deaths by 2050	• Safety scoring for projects • Annual progress reports • Targeted funding for high-risk network corridors
Eastgate Regional Council of Governments (Youngstown)	Zero deaths by 2040	• Annual sidewalk funding • Quick-build safety projects • Progress tracking by miles improved
CORPO (Central Ohio Rural Planning Organization)	2% annual reduction	• Quick-build pilots • Annual reporting • Local countermeasure guidebooks
OVRDC (Ohio Valley Regional Planning Commission)	50% reduction in 5 years	• Safety coordinator role • Model land-use ordinances • Annual safety summits • Dedicated VRU funding
City of Franklin	Eliminate or significantly minimize severe crashes	• Slip-lane removal • Public-art-enhanced crosswalks
City of Riverside	Zero deaths by 2040	• Centralized safety dashboards • Regular public updates
Northwest Ohio (Lucas, Sandusky, Ottawa, Wood Counties)	Zero deaths by 2045	• Safe turning-speed policies • Fleet safety technology • Land-use reviews • Safety task force

Table 9: National Peer Agency Policies Reviewed

Agency	Vision Zero / Safety Goal	Notable Policy Ideas
Broward MPO (FL)	Zero deaths by 2050	• Lighting assessments for all projects • Speed-limiter technology for fleet vehicles • Annual safety reporting
Chicago Metropolitan Agency for Planning (IL)	Zero deaths by 2050	• Model Complete Streets policies • High-visibility crosswalk standards • Grant-writing assistance • Committee-based oversight
Palo Alto (CA)	Zero deaths by 2035/2040	• Rapid response teams for crash locations • E-bike ordinances • Removing “Level of Service” from design reviews

MVRPC Member Organization Policies

MVRPC's member jurisdictions, including cities, counties, townships, transit agencies, park districts, schools, and advocacy groups, play a central role in advancing regional safety and active transportation goals. Because many safety-critical decisions occur at the local level (e.g., land-use approvals, roadway design, school travel planning, maintenance operations), their policies directly influence regional outcomes.

As part of this assessment, a sample of local planning and policy documents shared by member organizations or publicly available were reviewed. This review helped identify areas of alignment, local best practices, and opportunities for stronger regional coordination. Document types included:

The types of member policies reviewed include:

- **Comprehensive Plans** – Local long-range planning documents that often include transportation, safety, land use, and development frameworks.
- **Active Transportation Plans** – Plans outlining local strategies for walking, bicycling, and non-motorized travel, including safety and network connectivity elements.
- **ADA Transition Plans** – Documents addressing accessibility barriers, curb ramp conditions, sidewalk networks, and compliance with the Americans with Disabilities Act (ADA).
- **School Travel Plans** – Plans developed by school districts or municipalities to address walking/biking safety for students, often in coordination with Safe Routes to School programs.
- **Complete Streets Policies** – Local policies requiring roadways to accommodate users of all ages and abilities, reinforcing similar regional commitments.
- **Local SS4A Safety Action Plans** – Several jurisdictions have begun preparing or adopting their own Safety Action Plans, which provide locally specific data, safety priorities, and implementation measures.

Collectively, these documents demonstrate strong local momentum toward safer, more accessible transportation systems. While many jurisdictions are already advancing safety-supportive policies, enhanced regional consistency and cross-jurisdictional coordination could further strengthen the Region's ability to reduce severe crashes.

SUMMARY OF REVIEW FINDINGS

The policy review and benchmarking demonstrate that agencies across Ohio and the nation are increasingly adopting data-driven, community-centered, and systemwide approaches to roadway safety. Common practices include strengthening safety-weighted project scoring, using quick-build tactics to accelerate improvements, expanding accountability through public dashboards and annual reports, and advancing policies that align land use with safety outcomes. These findings highlight where MVRPC's existing framework already reflects best-practice trends and where targeted enhancements, particularly in transparency, project scoring, implementation tools, and regional coordination, could significantly reinforce the region's progress toward its adopted safety goal.

Together, the benchmarking results and the review of local member policies provide a clear understanding of both regional strengths and areas for improvement. These insights set the stage for a set of practical, high-impact recommendations that can help MVRPC, and its member jurisdictions accelerate progress toward a safer, more inclusive transportation system. The following section outlines these recommended policies and process enhancements.

POLICY AND PROCESS RECOMMENDATIONS FOR MVRPC

The Policy & Process Assessment identified opportunities for MVRPC and its member jurisdictions to strengthen alignment with the Safe System Approach and advance regional safety goals. Recommendations focus on two main categories: Programming & Funding Policies and Policy & Design Processes, with additional guidance for local member agencies.

Programming & Funding Policy Recommendations

Long Range Transportation Plan (LRTP)

- Embed Safe System principles and Safety Action Plan strategies throughout the LRTP.
- Use HIN/HRN networks to prioritize projects with the greatest safety impact.
- Incorporate countermeasures tied to crash types and user needs; track installations and evaluate results.
- Prioritize improvements for communities of concern.
- Update LRTP safety references to reflect the SS4A Action Plan's evaluation methodology.

Transportation Improvement Program (TIP)

- Clearly define safety as a central programming priority aligned with SS4A goals.
- Elevate projects on HIN/HRN corridors through scoring bonuses or dedicated set-asides.
- Incorporate FHWA Proven Safety Countermeasures into project documentation.
- Create an expedited pathway for quick-build, low-cost safety improvements.
- Highlight and prioritize projects serving priority populations and vulnerable road users using demographic and accessibility data.

Suballocated Funding Policy & Project Evaluation

- Add safety as a weighted funding criterion.
- Allow set-asides for SS4A-related projects.
- Prioritize projects serving underserved communities, VRUs, and quick-build strategies.
- Provide guidance for submitting SS4A-aligned applications.
- Consider including a crash-reduction benefit-per-dollar metric to strengthen safety scoring.

Policy & Design Process Recommendations

Regional Complete Streets Policy

- Reference relevant Safety Action Plan countermeasures.
- Establish a regular update cycle with an oversight committee.
- Strengthen connections between land-use planning and roadway design.
- Develop criteria for evaluating lane-use changes on higher-speed, lower-volume corridors.

Regional Active Transportation Plan

- Establish a predictable update schedule.

- Integrate Safety Action Plan countermeasures.
- Use Level of Traffic Stress (LTS) to guide bikeway selection.

Safe Routes for Non-Drivers Program

- Resume regional safety summits.
- Incorporate Safety Action Plan countermeasures into program guidance.

Public Participation

- Maintain public visibility of Safety Action Plan progress through dashboards.
- Engage communities of concern identified in the Safety Action Plan.

Recommendations for MVRPC Member Jurisdictions

General Recommendations

- Use the Safe System Approach as the foundation for transportation policies.
- Apply data-driven prioritization based on crash patterns and systemic risk.
- Track and report on safety performance annually.
- Prioritize improvements for communities of concern.
- Use MVRPC's model plans (Active Transportation, School Travel, Complete Streets) to support consistent practices.

Comprehensive Plans

- Integrate Safe System strategies into land-use and transportation planning.
- Include HIN/HRN priority overlays.
- Align growth strategies with safer street design and speed management principles.
- Consider adopting land-use ordinances that support safer pedestrian and bicyclist environments.

Active Transportation Plans

- Identify contexts where protected facilities and safe crossings are appropriate.
- Conduct safety audits for VRUs.
- Align recommended facilities with the Safety Action Plan countermeasure toolbox.

ADA Transition Plans

- Strengthen ADA considerations in roadway and transit projects.
- Make accessible signals, curb ramps, and tactile warnings standard design elements.

School Travel Plans

- Use VRU HIN data in Safe Routes to School project selection.
- Update School Travel Plans using ODOT templates.
- Conduct school zone safety audits.
- Apply speed management around schools and transit stops.

- Improve walking and bicycling connections to transit facilities.
- Pair infrastructure projects with safety education and enforcement.

Complete Streets Policies

- Reference Safe System principles directly.
- Encourage design flexibility for all modes.
- Include performance indicators such as VRU crash reduction.
- Tailor policies to fit each community's roadway network.

Local SS4A Safety Action Plans

- Develop or update local plans following USDOT guidance.
- Incorporate priority networks, countermeasures, and analysis of communities of concern.
- Commit to ongoing reporting and integration with MVRPC LRTP/TIP planning.
- Collaborate with MVRPC on SS4A implementation grant applications.

Additional Regional Recommendations

Table 10 summarizes several additional regional strategies that reinforce the Safe System Approach and advance the intent of the Safety Action Plan. These strategies related to the policy and process recommendations address systemwide coordination, data maintenance, design practices, land-use considerations, and operational improvements across the MVRPC Region.

Table 10: Policy and Process Countermeasures and Strategies

Index	Countermeasure/Strategy Name & Description
P&P-01	**Regular Network Updates:** Establish a routine cycle to refresh HIN/HRN, community impact maps, priority network layers, and the Safety Action Plan. Keeping datasets current ensures decisions target the highest-risk locations and reflect emerging trends. Publish an annual refresh schedule and version datasets to maintain transparency and continuity.
P&P-02	**Regional Safety Leadership:** Designate a Safety Coordinator or a standing Safety Committee to lead Vision Zero efforts. Clear roles and cadence foster accountability and sustained progress. Provide updates to TAC and the Board of Directors to align actions and resources.
P&P-03	**Speed Zone Process Enhancements:** Collaborate with ODOT to refine the Speed Zone Study process in line with Safe System principles. Prioritize HIN/HRN segments and apply context-sensitive speed policies. A joint working group can streamline reviews and improve consistency across jurisdictions.
P&P-04	**Local Countermeasure Guides:** Develop county or subregional guidebooks that identify "what works where" for local crash types and contexts. Include quick-build menus, audit templates, and essential design and maintenance notes. These guides help local agencies deploy proven treatments efficiently and consistently.

Index	Countermeasure/Strategy Name & Description
P&P-05	**Remove Policy/Market Barriers to Compact Livable/Walkable Communities:** Analyze regional policy and market barriers that limit walkable, safer land-use patterns. Conduct market analysis to identify constraints and opportunities. Produce an options memo to inform local adoption of supportive policies.
P&P-06	**Safety in Development Review:** Integrate safety checks into site plan review to ensure safe access, crossings, and driveway design. Add a checklist, provide staff training, and apply access management standards. This embeds safety performance into everyday development decisions.
P&P-07	**Bus Stop Safety Audits:** Audit bus stops along pedestrian/bicycle HIN corridors to address high-risk conditions. Review lighting, visibility, and crossing opportunities, then prioritize upgrades. Targeted improvements enhance safe access to transit where risk is most concentrated.
P&P-08	**Fleet Speed Management Policy:** Create a model policy for Intelligent Speed Assist or speed limiters in public fleets. Reducing speeding risk in agency vehicles demonstrates leadership and improves safety outcomes. Provide templates and procurement language for easy adoption.
P&P-09	**Transit Stop Lighting:** Require lighting upgrades at transit stops to improve nighttime safety and connectivity to crosswalks. Establish standards and prioritize HIN/HRN locations for capital coordination. Better lighting reduces conflicts and enhances user comfort.
P&P-10	**Targeted Safety Ordinances:** Encourage stronger local safety laws or guidelines in high-risk network areas. Use HIN/HRN overlays to focus on speed, turning movements, and pedestrian priority. Draft ordinance updates and conduct legal reviews to support consistent application.
P&P-11	**Grant Support Services:** Provide grant writing assistance, templates, and coordinated support letters for safety projects. Track NOFOs, share example narratives, and offer BCA support to improve funding success. This accelerates implementation of Safety Action Plan priorities.

MVRPC SAFE STREETS FOR ALL
COMPREHENSIVE SAFETY ACTION PLAN

CHAPTER 7:
COUNTERMEASURES, STRATEGIES, AND PROJECT DEVELOPMENT

CHAPTER 7: COUNTERMEASURES, STRATEGIES, AND PROJECT DEVELOPMENT

PROJECT DEVELOPMENT FRAMEWORK

The MVRPC SS4A Project Development Framework is a central component of the Safety Action Plan, providing practitioners with a comprehensive, structured set of tools, treatments, strategies, and guidance to support data-driven safety improvements across the Miami Valley Region. Built around the Safe System Approach and informed by extensive analysis, engagement, and regional priorities, the Framework equips jurisdictions with resources to identify, design, evaluate, and advance safety projects that reduce fatal and serious-injury crashes.

The Framework functions as both a decision-making guide and an implementation resource, helping agencies move from planning to action by offering practical tools for project selection, proven countermeasures, and systemic approaches to reducing serious crashes. It ensures that safety investments are data-informed, aligned with regional and state priorities, and appropriately matched to local needs.

The Project Development Framework integrates several key elements:

- Countermeasures and Strategies
- Project Identification and Prioritization
- Project Development and Implementation
- Planning-Level Cost Estimates
- Transitioning Plan Recommendations into Action

COUNTERMEASURES AND STRATEGIES TOOLBOX

The countermeasures and strategies identified in this Plan offer a wide range of safety solutions for Plan stakeholders with clear definitions, evidence-based benefits, and practical implementation guidance.

Countermeasures

Countermeasures are specific, tangible actions or physical treatments implemented at a location to reduce crash risk or severity. They are typically infrastructure-based and often have an associated Crash Modification Factor (CMF) that quantifies the anticipated safety benefit.

Examples include installing rumble strips, adding pedestrian signals, and improving roadway or intersection lighting.

Strategies

Strategies are broader, programmatic, or policy-oriented approaches that support safer behaviors, improved culture, and long-term systems change. While they may not have CMFs, they complement engineering solutions and help achieve systemic, sustainable safety outcomes.

Examples include regional policy updates, public education or awareness campaigns, targeted action plans for vulnerable road users.

Identifying Countermeasures and Strategies

This plan provides Region-appropriate countermeasures and strategies identified using nationally recognized sources such as:

- FHWA's Proven Safety Countermeasures
- NHTSA's Countermeasures That Work
- U.S. DOT's recommended safety resources and research

These sources ensure that recommended countermeasures and strategies reflect established effectiveness, emerging practices, and proven approaches suitable for local conditions.

The countermeasures and strategies have been grouped into five categories that align with the Safe System Approach and national roadway safety best practices that together help agencies quickly determine which solutions are appropriate for specific crash patterns, roadway contexts, and community needs:

Engineering

Engineering countermeasures involve physical, design-based treatments that modify the roadway environment to reduce crash likelihood or severity. This includes geometric improvements, traffic control enhancements, visibility upgrades, and pedestrian and bicycle facilities. Engineering solutions often have quantifiable, measurable safety benefits.

Examples: intersection redesigns, lighting upgrades, traffic calming, pedestrian crossings, protected bicycle lanes, rumble strips.

Education

Education strategies aim to inform and influence road user behavior, increasing awareness of safety risks and encouraging safe travel habits among youth, senior drivers, pedestrians, cyclists, and other groups.

Examples: public awareness campaigns, school-based safety programs, new-driver education, helmet distribution, outreach on new infrastructure types.

Enforcement

Enforcement strategies focus on encouraging compliance with traffic laws and discouraging unsafe behaviors.

Examples: high-visibility police patrols, school-zone enforcement, automated red-light or speed cameras, yield-to-pedestrian enforcement.

EMS / Post-Crash Care

EMS and post-crash care strategies aim to improve emergency response, incident management, and survivability after a crash. These strategies strengthen the chain of care, from rapid detection to medical response to safe scene management.

Examples: reducing emergency response times, improving responder safety, enhancing dispatch coordination, developing bystander training upgrading incident management procedures.

Evaluation

Evaluation strategies support monitoring, assessment, and continuous improvement of safety efforts. They establish the analytical foundation needed to measure performance and refine future investments.

Examples: before-and-after studies, performance dashboards, ongoing data analysis, safety audits, program effectiveness reviews.

Recommended Countermeasures and Strategies

Tables 11 through 15 provide a summary of the countermeasures and strategies identified for use within the MVRPC Region included in the toolbox. (*note: Policy and Process strategy recommendations from the Policy and Process review are summarized in Chapter 6*).

A more comprehensive table is provided in **Appendix E – Countermeasure and Strategy Toolbox**, offering detailed information for selecting appropriate treatments for specific safety needs.

Specifically, the following have been provided for each countermeasure and strategy:

- Description & Implementation Notes: When, where, and under what conditions a solution is most effective
- Anticipated Crash Reduction: Evidence-based estimates, where available, with acknowledgement of known data gaps
- Cost Category: Ranging from *Low (< $25K)* to *Very High (> $5M)*

Implementation Timeframe: Short-, medium-, or long-term, depending on design complexity, funding needs, and coordination requirements

Table 11: Engineering Countermeasures and Strategies

Index	Countermeasure/Strategy Name & Description
ENG-1	**Complete Streets Corridor Design:** Design and implement corridors using Complete Streets principles—integrating sidewalks, bicycle facilities, safe crossings, transit features, and traffic-calming—to create continuous, predictable, multimodal routes. Apply consistent standards for lane widths, sidewalks, and bicycle lanes along entire corridors to eliminate gaps and support safer, context-appropriate speeds.
ENG-2	**Local Road Safety Audit (LRSA) Program:** Establish a Local Road Safety Audit program to evaluate high-risk network sites and community-identified trouble spots through multidisciplinary field reviews. Teams assess roadway conditions, human-factors issues, and multimodal needs, generating prioritized recommendations that guide near- and long-term safety improvements.
ENG-3	**Traffic Calming and Speed Management:** Implement traffic-calming and speed-management strategies—such as lane narrowing, curb extensions, speed humps, raised crossings, chicanes, and gateway treatments—to lower operating speeds, reduce crash severity, and create safer, more predictable conditions for all roadway users.

Index	Countermeasure/Strategy Name & Description
ENG-4	**Speed Humps:** Vertical deflection devices (typically 3–4 inches high and 12–14 feet long) to slow vehicle speeds on local residential streets and around schools, parks, and other pedestrian-focused areas.
ENG-5	**Speed Tables:** Elongated, flat-topped vertical speed-control devices designed to reduce vehicle speeds along residential streets, school zones, and pedestrian-oriented corridors.
ENG-6	**Raised Pedestrian Crossings:** A raised pedestrian crossing elevating the crosswalk to the level of the sidewalk designed to slow vehicle speeds, increase pedestrian visibility, and reinforce pedestrian priority.
ENG-7	**Chicanes:** A horizontal traffic-calming treatment that introduces alternating curb extensions, edge-line shifts, or physical barriers to create a serpentine travel path, requiring drivers to steer laterally rather than travel in a straight line slowing vehicle speeds.
ENG-8	**Curb Extensions, pedestrian refuge islands, and crossing distance reductions:** Geometric and streetscape treatments that shorten pedestrian crossing distances, improve visibility, and reduce exposure to moving traffic. Curb extensions (bulb-outs) narrow the roadway at intersections or midblock crossings. Pedestrian refuge islands provide a protected median space that allows pedestrians to cross in two stages. Crossing distance reductions use lane narrowing, median treatments, or reallocated street space to minimize the time pedestrians spend in the roadway.
ENG-9	**Road Diet:** Conversion of a four-lane or five lane undivided roadway into three lanes (one lane in each direction with a center turn lane) and reallocates excess vehicle lanes to create space for bicycle lanes, wider shoulders, pedestrian refuges, on-street parking, or buffer space. Other variations include two lanes to one lane + bicycle lanes.
ENG-10	**Curve Signing and Delineation:** Installing or upgrading curve warning signs, chevron alignment signs, delineators, retroreflective post panels, and enhanced pavement markings at horizontal curves.
ENG-11	**Clear Zone Management:** Removing fixed objects, relocating utilities, shielding, or eliminating obstacles, clearing vegetation, managing clear zone width. Increase clear zone width and distance to hazard.
ENG-12	**Side slope Flattening:** Flatten steep roadside slopes (e.g., 1:4 to 1:6) to reduce rollover risk and provide a more forgiving recovery area for errant vehicles. This treatment increases the likelihood that drivers can safely regain control after leaving the travel lane, lowering the severity of roadway-departure crashes.

Index	Countermeasure/Strategy Name & Description
ENG-13	**Widened Shoulders (Add/Increase Paved Shoulder Width):** Add or widen paved shoulders to provide recovery space for errant vehicles, improve maneuverability, enhance bicycle accommodation, and reduce run-off-road and opposite-direction crashes. Wider shoulders also improve bicycle safety, recovery space, and driver comfort in curves and high-speed environments.
ENG-14	**Longitudinal Rumble Strips:** Install edge line, shoulder, and/or centerline rumble strips at those locations, especially when able to combine with resurfacing projects.
ENG-15	**SafetyEdge℠:** Shaping of the pavement edge to a 30-degree tapered angle during resurfacing or construction, eliminating vertical pavement drop-offs and allowing drivers who leave the travel lane to safely recover.
ENG-16	**Superelevation Correction:** Correct superelevation on curves to match design speed and roadway conditions, improving vehicle stability, reducing skidding risk, and lowering the likelihood of roadway-departure crashes—especially in wet weather or on higher-speed rural segments.
ENG-17	**Install Median/Roadside Barriers (Cable, Guardrail, or Concrete Barriers):** Install or upgrade roadside or median barriers to prevent vehicles from leaving the roadway or crossing into opposing lanes. Barrier types include high-tension cable, W-beam guardrail, and concrete median barrier, selected based on speed, median width, traffic volumes, and hazard types. These systems reduce the severity of roadway departure crashes by redirecting errant vehicles and eliminating the possibility of severe cross-median collisions.
ENG-18	**Improved Pavement Friction:** Increase pavement skid resistance through high-friction surface treatments (HFST), diamond grinding, open-graded friction courses, or resurfacing strategies that restore or enhance pavement friction. Intended to reduce wet-weather crashes, run-off-road crashes on curves, and loss-of-control events.
ENG-19	**Access management:** Plan and control the location, number, and design of driveways, intersections, and median openings to promote the safe and efficient use of the transportation network and support land use goals.
ENG-20	**Adaptive Signal Control:** Install adaptive signal operations to reduce queuing conflicts, improve progression, shorten incident response times, manage speed variability, and discourage aggressive driving on high-crash corridors or intersections.
ENG-21	**Install Turn Lanes at High-Crash Intersections:** Add or lengthen exclusive left-turn or right-turn lanes to separate turning vehicles from through traffic, reduce conflict points, improve sight distance, and decrease queueing and rear-end risk. Turn lanes are effective at intersections with heavy turning volumes, operational delays, or patterns of left turn, rear-end, or angle crashes, and can be applied at both signalized and unsignalized locations.

Index	Countermeasure/Strategy Name & Description
ENG-22	**Protected Left-Turn Phasing:** Install or upgrade to protected left-turn signal phasing (e.g., "green arrow only") to separate left-turn movements from opposing traffic, reduce conflict points, and improve driver decision-making at signalized intersections.
ENG-23	**Retroreflective Signal Backplates:** Add retroreflective borders to traffic signal backplates to enhance signal visibility, increase contrast in both day and nighttime conditions, and improve recognition during power outages or low-visibility situations.
ENG-24	**Speed Feedback Signs:** Install radar-based speed feedback signs that display a driver's current speed alongside the posted limit to encourage voluntary speed reduction. These signs increase driver awareness, reduce excessive speeding, and support safer operating speeds on corridors, school zones, village centers, and other areas with speed-related crash patterns.
ENG-25	**Sight Distance Improvements:** Improve stopping and intersection sight distance by clearing vegetation, removing, or relocating visual obstructions, adjusting grading, realigning curves or intersections, and enhancing visibility of traffic control devices. These treatments help drivers detect hazards earlier, make safer gap-acceptance decisions, and maintain appropriate speeds, especially at curves, intersections, and driveways with limited visibility.
ENG-26	**Skewed Intersection Realignment:** Realign skewed rural intersections to improve sight distance, simplify turning movements, shorten crossing distances, and reduce angle and turning crash risk.
ENG-27	**Enhanced Wet Reflective Pavement Markings:** Install wet reflective pavement markings to increase visibility at sites with high night-time and wet weather crash risk. Enhanced wet reflective pavement markings use high-performance beads and durable materials that maintain retroreflectivity during rain and wet-road conditions, significantly improving lane visibility and driver guidance.
ENG-28	**Barrier Delineators, Reflectors, and Illumination:** Install reflective markers, delineators, and targeted lighting on or near roadside and median barriers to improve nighttime and low-visibility detection of barrier edges, curves, and deflection points provide low-visibility guidance along curves, ramps, medians, and roadside barriers.
ENG-29	**Variable Speed Limits:** Changeable signs to adjust speed limits in real time based on traffic, weather, visibility, and roadway conditions.
ENG-30	**Sign Asset Management:** Develop and maintain an inventory of all traffic signs, including location, condition, retroreflectivity, and MUTCD compliance. Use the asset database to schedule replacements, prioritize upgrades on high-risk network corridors, and identify missing, damaged, or non-standard signs.

Index	Countermeasure/Strategy Name & Description
ENG-31	**Install Raised Pavement Markers:** Install raised pavement markers (RPMs) to enhance nighttime and wet-weather delineation along lane lines, centerlines, and curve approaches. RPMs provide retroreflective, tactile, and audible feedback that improves driver lane-keeping, especially in low-visibility conditions or on dark, rural roadways.
ENG-32	**Improved Information Load Design, Reduced Information Overload:** Improve roadway signs, markings, and decision points by simplifying and sequencing information so drivers receive only what they need when they need it. This reduces visual clutter and cognitive overload, making it easier for users to understand lane assignments, navigation cues, and upcoming maneuvers—especially at complex intersections and corridor segments.
ENG-33	**Roundabout:** Replace existing stop-controlled or signalized intersections with a traditional single or multi-lane roundabout to reduce conflict points, lower operating speeds, eliminate severe right-angle and left-turn crashes. In low-speed urban contexts where footprint is constrained, replace existing all-way or problematic two-way stop intersections with a mini-roundabout to reduce conflict points, lower operating speeds, eliminate severe right-angle and left-turn crashes, and improve safety for all users.
ENG-34	**Reduced Left-Turn Conflict Intersection:** Restricted Crossing U-Turn Intersections (RCUTs/RCIs/J-Turns), Median U-Turn Intersections (MUTs/M-Turns), and Directional Median Openings/Partial Conflict Eliminations are innovative intersection designs that remove or restrict direct left-turn and through movements from side streets, instead rerouting those movements to safer U-turn or median turnaround locations. RCUTs prohibit side-street through and left turns at the main intersection; MUTs eliminate left turns by requiring all vehicles to turn right and make a downstream U-turn; and Directional Median Openings allow selected left-turn movements while prohibiting others to reduce conflict points.
ENG-35	**Grade Separated Interchange:** Replace an at-grade intersection with a grade-separated interchange—using an overpass/underpass and associated ramps—to eliminate crossing conflicts, separate high-speed traffic streams, and remove the possibility of severe right-angle or left-turn crashes.
ENG-36	**Improved Pavement Maintenance:** Remove debris, fix potholes, maintain friction.
ENG-37	**Motorcycle-Friendly Barriers:** Design barrier and barrier retrofits to reduce rider injury severity.
ENG-38	**Rumble Strips with Motorcycle Gaps:** Include motorcycle gaps in center and edge line rumble strips.

Index	Countermeasure/Strategy Name & Description
ENG-39	**Transit Signal Priority and Bypass Lanes:** Short dedicated lanes at signalized intersections that allow buses to move around queued traffic and reduce delay at bottlenecks. Transit Signal Priority (TSP) equips signals on key transit routes to provide early green, extended green, or reduced red time for approaching buses to improve schedule reliability and reduce conflicts with general traffic.
ENG-40	**Bus Stop Location and Improvements:** Relocate bus stops to safe locations, for example, away from high-speed arterials, that still provide access to destinations. Provide improvements at bus stops to improve safety and convenience of transit riders, such as bicycle racks, bicycle shelters, and lighting.
ENG-41	**Safe Routes to Transit:** Conduct corridor walk audits to improve pedestrian access to bus stops and transit stations. Add methods for transit-riders to easily leave feedback on first/last mile challenges.
ENG-42	**Marked (Striped) Bike Lanes:** Install or upgrade marked on-street bicycle lanes using pavement striping to provide dedicated operating space for bicyclists, improve driver expectancy, and reduce conflicts between cyclists and motor vehicles. Striped bicycle lanes create a more predictable roadway environment and enhance bicyclist positioning, visibility, and comfort on urban and suburban roadways.
ENG-43	**Protected Bike Lanes:** Create new or upgrade existing bicycle lanes to be separated from traffic or protected by a vertical barrier.
ENG-44	**Sharrow Markings:** Install sharrow markings on the road along with 'Bicyclists May Use Full Lane' signs at regular frequency
ENG-45	**Separated Two-Way Cycle tracks:** Construct separated two-way bicycle routes to protect cyclists.
ENG-46	**Bike Boxes:** Provide advance stop areas for turning bicycles at signalized intersections.
ENG-47	**Bicycle Traffic Signals:** Incorporate signals that show timing and phases for cyclists.
ENG-48	**Bicycle Sight Distance:** Design roadways and path visibility to ensure bicyclists can see and react to conditions, obstacles, or conflicts in time to stop or maneuver safely.
ENG-49	**Improved Bicycle Storm Grates:** Replace grates with parallel-bar or flush designs to prevent tire trapping and falls.
ENG-50	**Bicycle Wayfinding Signs:** Place route signage to guide cyclists.
ENG-51	**Bicycle Facility Maintenance:** Remove debris from bicycle lanes to reduce crash risk and encourage cyclists to use them.

Index	Countermeasure/Strategy Name & Description
ENG-52	**LED Lighting:** Install or upgrade to LED roadway lighting to improve nighttime visibility for drivers, pedestrians, and bicyclists. LED systems provide higher-quality, more uniform illumination, better color rendering, and improved target visibility compared to legacy lighting. Enhanced lighting reduces the likelihood of nighttime crashes by helping drivers detect hazards earlier and improving pedestrian conspicuity at crossings and conflict points.
ENG-53	**Close Active Transportation Gaps:** Fill sidewalk gaps and develop multi-use paths to facilitate complete trips using active transportation.
ENG-54	**School Travel Plan Development:** Provide resources to school districts to develop a School Travel Plan that includes ways to improve safety and encourage active transportation to and from school
ENG-55	**E-Bike, E-Scooter, and Micromobility Zone Policy:** Develop a practical, research-based policy for e-bikes, e-scooters, and micromobility devices. Design infrastructure for their safe use.
ENG-56	**Pedestrian Zones (Pedestrian-Only Areas, Traffic-Calmed Streets, Shared Streets with Priority to Pedestrians):** Designate and implement pedestrian-priority or pedestrian-only zones in downtowns, commercial districts, campuses, or activity centers to eliminate or significantly reduce vehicle–pedestrian conflict points. Treatments may include pedestrian streets, plazas, shared streets with low vehicle speeds, traffic-calmed segments, raised intersections, and restrictions on through-traffic or turning movements. These zones enhance walkability, improve safety, and support economic vitality in high-foot-traffic areas.
ENG-57	**Speed Limit Reduction:** Reduce posted speed limits to align with surrounding land use, pedestrian activity, multimodal needs, and crash risk. Lower limits help decrease impact severity, improve stopping distance, and support safer conditions for vulnerable road users, especially when combined with roadway design features that reinforce lower operating speeds. This strategy is most effective when used in coordination with traffic calming, geometric changes, and targeted enforcement.
ENG-58	**Extended Pedestrian Clearance Times:** Increase walk/flash times for at intersections with high pedestrian volumes, vulnerable users, or longer crossing distances.
ENG-59	**Leading Pedestrian Intervals (LPIs):** Make WALK signal appear a few seconds before vehicles see a green light to place the pedestrian in a visible location before vehicles move.
ENG-60	**Enhanced Signalized Pedestrian Crossings:** Add pedestrian signals with countdown timers, ADA ramps, and marked crossings at signalized intersections.

Index	Countermeasure/Strategy Name & Description
ENG-61	**Pedestrian Hybrid Beacons (HAWK):** Construct traffic signals that direct traffic to stop by red flashing lights while a pedestrian crosses along with high visibility crosswalk markings.
ENG-62	**Rectangular Rapid Flashing Beacons (RRFB):** Construct high-flash beacons to alert drivers to crossing pedestrians along with high visibility crosswalk markings and associated signage
ENG-63	**Medians & Refuge Islands:** Provide islands to facilitate two-stage crossings and protection.

Table 12: Education Countermeasures and Strategies

Index	Countermeasure/Strategy Name & Description
EDU-1	**School Safety Patrol Program:** A peer-led student program that trains youth to model safe crossing, loading, and travel behaviors to improve pedestrian safety around schools.
EDU-2	**Community Safety Ambassadors Program:** A resident-led program that trains community members to promote safe speeds, support local safety activities, and act as trusted neighborhood messengers.
EDU-3	**Safety Corridor Branding & Campaigns:** Corridor-specific branding and messaging campaigns designed to promote safe speeds and multimodal awareness.
EDU-4	**School Safety Patrol Program (Peer-to-Peer):** Peer-training programs where older students model safe crossing, bus loading, and carline behavior for younger students.
EDU-5	**Traffic Safety Coalitions:** Community-led coalitions that conduct walk/bicycle audits and promote safe speeds, yielding, and micromobility etiquette.
EDU-6	**Vulnerable Road User Safety Campaign:** Media campaigns that increase driver awareness of pedestrians, cyclists, and transit users.
EDU-7	**Seatbelt Campaign:** Media outreach encouraging consistent seatbelt use through reminders, ads, and awareness messaging.
EDU-8	**Senior Driver Self-Assessment:** Provides older drivers with voluntary tools to assess vision, cognition, and driving skills.
EDU-9	CarFit Program: Helps seniors adjust their vehicle for safer driving through in-person or virtual CarFit assessments.
EDU-10	**Youth Transportation Education:** Educates teen drivers on GDL rules, distraction, impairment, and safe driving practices.

Index	Countermeasure/Strategy Name & Description
EDU-11	**Child/Booster Seat Education:** Programs that distribute, install, and check child safety seats to improve correct use.
EDU-12	**GDL Education for Parents:** Trains parents to monitor teen driving using agreements, digital tools, and clear GDL rules.
EDU-13	**Parental Involvement Campaigns** Provides parents with tools and strategies to coach teens on safe driving and GDL compliance.
EDU-14	**Employer Fleet Monitoring:** Corporate programs that monitor fatigue, distraction, aggressive driving, and speeding within fleet operations.
EDU-15	**DUI Safety Campaign:** Media campaigns to increase awareness of impaired driving risks and promote sober driving.
EDU-16	**Distracted Driving Campaign:** Media campaigns addressing dangers of texting, eating, talking on the phone, and other distractions.
EDU-17	**Aggressive Driving Safety Campaign:** Campaigns highlighting dangers of speeding, tailgating, unsafe passing, and road rage.
EDU-18	**Motorcyclist Conspicuity Campaign:** Campaigns encouraging use of high-visibility gear by motorcyclists.
EDU-19	**Motorcycle Awareness Safety Campaign:** Campaigns encouraging drivers to look twice and share the road with motorcyclists.
EDU-20	**Vulnerable Road User Conspicuity Campaign:** Campaigns promoting night-time visibility tools for walkers and cyclists.
EDU-21	**Walking/Biking School Buses:** Adult-supervised walking groups promoting safe, active school travel.
EDU-22	**Senior Pedestrian Safety:** Targeted pedestrian improvements and education for senior populations.
EDU-23	**Transit Rider Education Program:** Education for transit users and motorists about safe boarding, alighting, and bus stop awareness.
EDU-24	**Transit Operator Training:** Provide defensive driving, ped/bike awareness, and conflict avoidance training for bus operators.
EDU-25	**Cyclist Safety Education:** Train cyclists and motorists on safe riding and driving practices around bicycles.
EDU-26	**Free Helmet Program:** Distribute free or discounted helmets with training on correct fit and usage.

Table 13: Enforcement Countermeasures and Strategies

Index	Countermeasure/Strategy Name & Description
ENF-1	**Targeted High-Injury Network Corridor Patrols:** Provide and focus patrols on high-injury network corridors using updated crash data.
ENF-2	**Police Officer Community Involvement:** Engage police with the community through presence at schools and gathering places to build trust and safety awareness.
ENF-3	**Enforce Distracted Driving Laws:** Increase patrols and citations for handheld device use and other forms of distracted driving. Consider using automated technologies to enhance enforcement.
ENF-4	**Enforce Impaired Driving Laws:** Conduct sobriety checkpoints and saturation patrols during high-risk periods to deter impaired driving.
ENF-5	**Collaborative Rural Enforcement:** Create shared enforcement zones between small towns/counties to address speeding and impaired driving.
ENF-6	**Automated Red-Light Enforcement:** Install red-light cameras at high-violation intersections to reduce right-angle crashes.
ENF-7	**Automated Speed Cameras:** Deploy fixed, mobile, or point-to-point speed cameras on high-injury corridors.
ENF-8	**Enforce Bicycle Passing Laws:** Enforce 3-foot passing laws in high-bicycle areas to reduce motorist–bicycle conflicts.
ENF-9	**Increased School Zone & Stop-for-Bus Enforcement:** Increase enforcement presence in school zones and around bus stops.
ENF-10	**Yield to Pedestrian Enforcement:** Conduct targeted crosswalk enforcement at high-visibility crossings with enhanced treatments (RRFBs, markings).

Table 14: Emergency Response Countermeasures and Strategies

Index	Countermeasure/Strategy Name & Description
EMS-1	**Coordinate Emergency Response Across County Lines:** Improve cross-jurisdictional communication, dispatch, and resource sharing to speed response and ensure the closest appropriate unit responds to a crash.
EMS-2	**Rural Response Times:** Reduce EMS response and transport times in rural or underserved areas by improving access, deployment, and resource availability.
EMS-3	**Multi-Agency EMS Coordination:** Strengthen coordination among EMS, fire, law enforcement, towing/recovery, and dispatch to improve scene management and reduce clearance time.

Index	Countermeasure/Strategy Name & Description
EMS-4	**Air-Medical (Helicopter) Coordination Protocols:** Formalize helicopter EMS staging, dispatch, and landing-zone procedures to ensure rapid air-medical response for severe crashes and rural areas.
EMS-5	**Optimized Trauma Transportation:** Ensure crash victims are routed to the correct trauma center quickly through standardized triage and transport procedures.
EMS-6	**Responder Fatigue Management:** Implement systems that manage fatigue, stress, and workload to protect responder judgment, safety, and performance.
EMS-7	**First Responder Visibility:** Improve responder visibility at crash scenes through high-visibility PPE, vehicle lighting, and scene illumination to prevent struck-by crashes.
EMS-8	**Emergency Response Drills:** Conduct recurring multi-agency training exercises to strengthen coordination, reduce scene time, and improve responder safety.
EMS-9	**Roadside Safety Patrols:** Deploy highway safety patrols to quickly remove hazards, assist motorists, and keep travel lanes open for emergency responders.
EMS-10	**Citizen Crash Response:** Train community volunteers to provide safe, basic assistance during crashes until EMS arrives, improving scene awareness and reducing risk.
EMS-11	**Modernize EMS Equipment:** Upgrade EMS medical devices, extrication tools, and vehicle telematics to improve assessment, rescue operations, and communication.

Table 15: Evaluation Countermeasures and Strategies

Index	Countermeasure/Strategy Name & Description
EVA-1	**Comprehensive Safety Dashboard:** Consolidates crash, roadway, demographic, and project data into an interactive platform for monitoring safety performance, hotspot detection, community impact, and progress tracking.
EVA-2	**Biennial Safety Policy Review Task Force:** Establishes a cross-agency team that regularly reviews and aligns safety policies, standards, and practices with Vision Zero/SS4A principles and current crash trends.
EVA-3	**Kinetic Energy Crash Evaluation:** Analyzes crashes using kinetic energy, survivability thresholds, and conflict severity to support design decisions and countermeasure selection.
EVA-4	**AI-Based Conflict Analytics:** Uses AI-enabled video analytics to detect, classify, and analyze near-miss conflicts and multimodal behavior to guide design refinement and safety investments.

Index	Countermeasure/Strategy Name & Description
EVA-5	**Context-Based Intersection Evaluation and Design Optimization:** Redesigns intersections by matching geometry, control, crossing treatments, and speed environment with land use and multimodal context using tools like ICE and CAP-X.
EVA-6	**Community Assessment Project Prioritization:** Applies focused weighting factors so safety projects in high-poverty or disadvantaged census tracts advance more consistently.
EVA-7	**Safety-Weighted Project Scoring:** Revises funding prioritization to emphasize crash history, risk exposure, VRU needs, community values, and Safe System alignment in capital programming.

NEEDS ASSESSMENT & PROJECT IDENTIFICATION

Effective safety planning begins with identifying locations with the greatest needs and then selecting countermeasures and strategies that will produce the highest impact at those locations. The Project Development Framework offers a structured method for aligning countermeasures and strategies with specific sites by applying clear thresholds, consistent performance metrics, and practical implementation considerations that support timely and successful delivery. Key factors influencing project identification include:

- **Alignment with Regional Needs:** Crash data, High-Injury Network (HIN) and High-Risk Network (HRN) maps, and Community Impact Assessment findings help target high-risk network corridors, neighborhoods with greater safety needs, and locations used by pedestrians, bicyclists, motorcyclists, and transit riders.
- **Public Input and Stakeholder Priorities:** Community feedback ensures that projects reflect local concerns, address documented community needs, and align with the Plan's goals.
- **Consistency with ODOT and State Initiatives:** Project recommendations complement statewide safety programs, performance targets, and strategic priorities, including those that benefit vulnerable road users.
- **Multimodal and Inclusive Design:** Projects consider the needs of all transportation modes, motor vehicles, transit, bicycling, and walking, to ensure systemwide accessibility and improved safety, particularly for users at higher risk of severe injury.
- **Safe System Approach:** Emphasizes reducing systemic risk by managing speeds, improving roadway design, and creating layers of protection, recognizing that while human error will occur, severe outcomes can be mitigated.

Identifying Areas of Need and Advancing Safety Projects

Project identification within the Safe System context is grounded on the data analysis discussed previously in this document. Roadway segments and intersections are considered a higher priority if they are on the High Risk Network, High Injury Network, or in an area with a higher Community Impact Composite Index score. Roadway segments and intersections on more than one are considered an even higher priority. Additional consideration is given to segments on the HIN or HRN for specific modes, such as bicycles, pedestrians, or motorcycles. The weight of each network that a corridor could be listed in is shown in Figures 35 and 36.

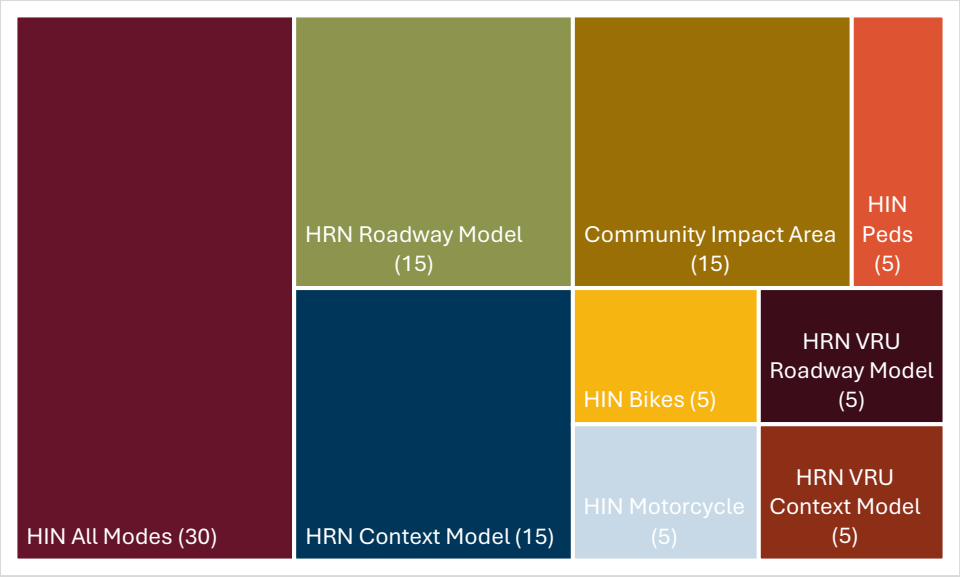


Figure 35: Scoring Weight out of 100 Points for Urban and Rural Roadway Segments

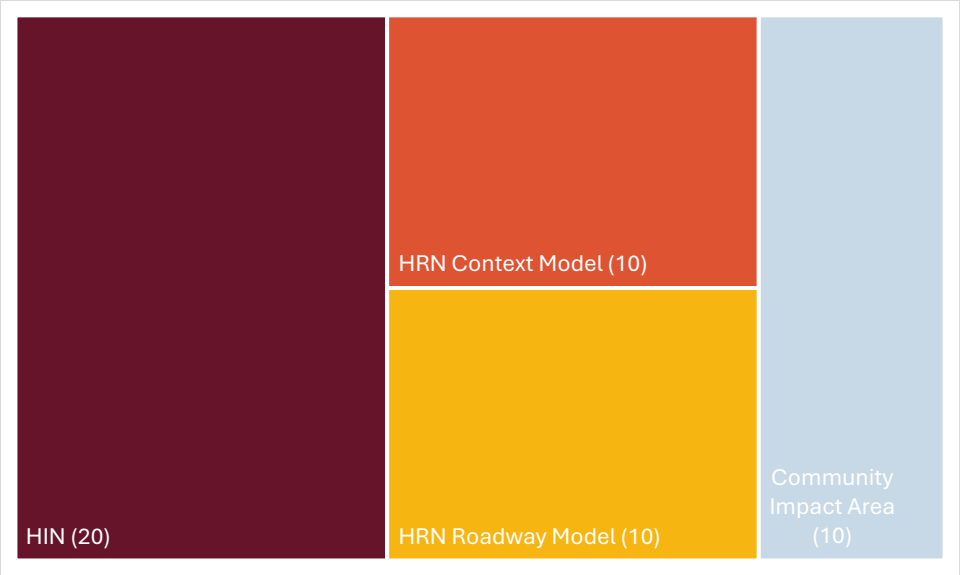


Figure 36: Scoring Weight out of 50 Points for Urban and Rural Intersections

Lists of intersections and roadway segments showing scoring for the Region are provided, separated by urban and rural context. Separate lists are provided for the Region as a whole and by county as well. The following lists are provided in **Appendix F - Network Rankings and Scoring Lists**:

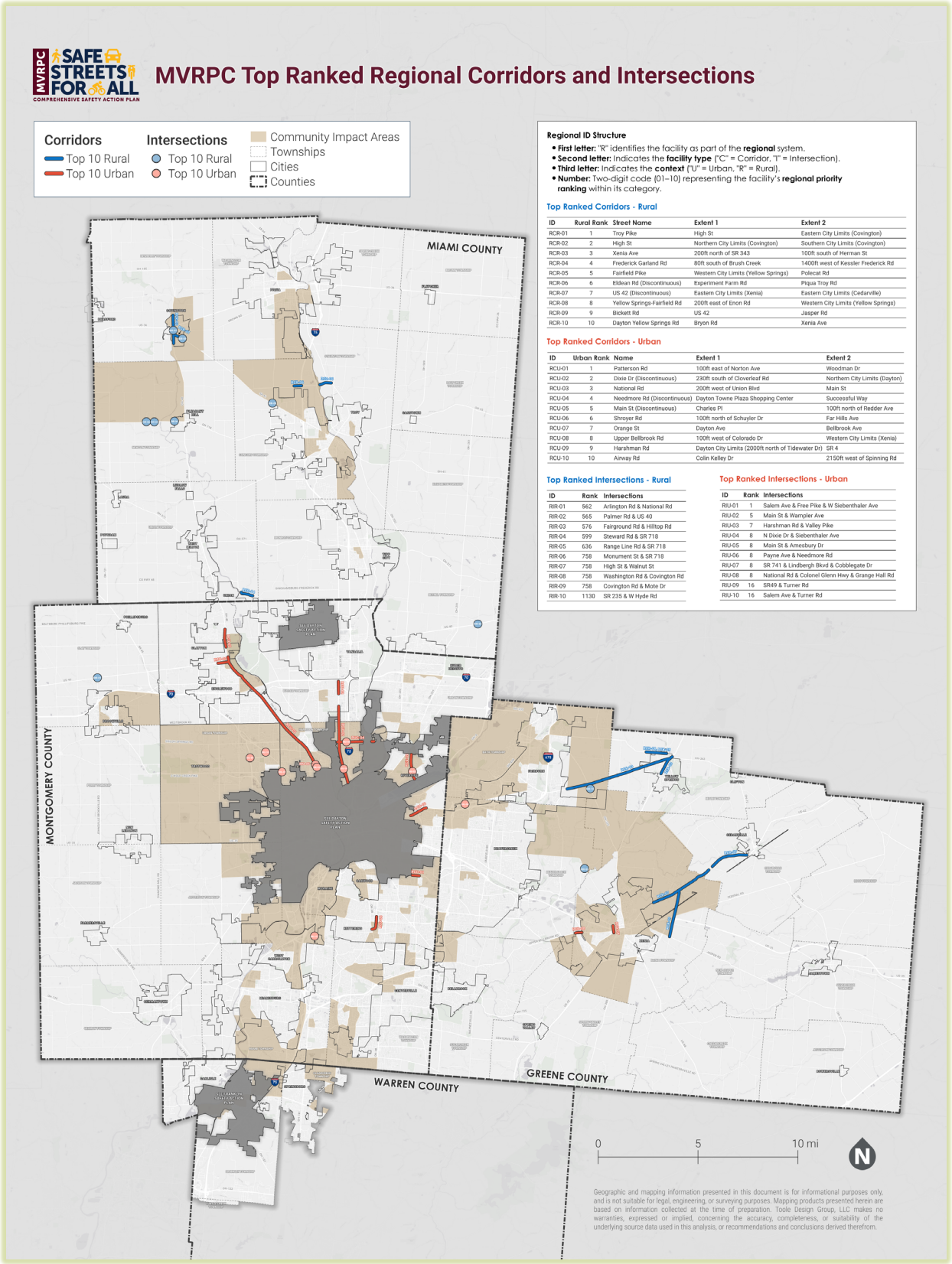
- 100 High-Scoring Urban Corridors in the Region
- 100 High-Scoring Rural Corridors in the Region
- 50 High-Scoring Urban Corridors in Greene County
- 100 High-Scoring Urban Intersections in the Region
- 100 High-Scoring Rural Intersections in the Region
- 50 High-Scoring Urban Intersections in Greene County

- 50 High-Scoring Rural Corridors in Greene County
- 50 High-Scoring Urban Corridors in Miami County
- 50 High-Scoring Rural Corridors in Miami County
- 50 High-Scoring Urban Corridors in Greene County
- 50 High-Scoring Rural Corridors in Greene County
- 25 High-Scoring Urban Corridors in Northern Warren County
- 25 High-Scoring Rural Corridors in Northern Warren County
- 50 High-Scoring Rural Intersections in Greene County
- 50 High-Scoring Urban Intersections in Miami County
- 50 High-Scoring Rural Intersections in Miami County
- 50 High-Scoring Urban Intersections in Greene County
- 50 High-Scoring Rural Intersections in Greene County
- 50 High-Scoring Urban Intersections in Northern Warren County
- 50 High-Scoring Rural Intersections in Northern Warren County

Figures 37 through 39 illustrate the top scoring regional and county corridors and intersections identified through this method.

Important Note on Interpretation

While the lists presented in this section identify where risk and need are most concentrated, they are not used as a stand-alone basis for selecting or advancing projects. Prioritization and implementation within the Project Development Framework rely on the broader set of factors described earlier in this section, including feasibility, community context, community impact considerations, and alignment with Safe System principles. This ensures that project decisions reflect a comprehensive understanding of safety needs rather than location-based rankings alone.



Regional ID Structure

- **First letter:** "R" identifies the facility as part of the **regional** system.
- **Second letter:** Indicates the **facility type** ("C" = Corridor, "I" = Intersection).
- **Third letter:** Indicates the **context** ("U" = Urban, "R" = Rural).
- **Number:** Two-digit code (01–10) representing the facility's **regional priority ranking** within its category.

Top Ranked Corridors - Rural

ID	Rural Rank	Street Name	Extent 1	Extent 2
RCR-01	1	Troy Pike	High St	Eastern City Limits (Covington)
RCR-02	2	High St	Northern City Limits (Covington)	Southern City Limits (Covington)
RCR-03	3	Xenia Ave	200ft north of SR 343	100ft south of Herman St
RCR-04	4	Frederick Garland Rd	80ft south of Brush Creek	1400ft west of Kessler Frederick Rd
RCR-05	5	Fairfield Pike	Western City Limits (Yellow Springs)	Polecat Rd
RCR-06	6	Eldean Rd (Discontinuous)	Experiment Farm Rd	Piqua Troy Rd
RCR-07	7	US 42 (Discontinuous)	Eastern City Limits (Xenia)	Eastern City Limits (Cedarville)
RCR-08	8	Yellow Springs-Fairfield Rd	200ft east of Enon Rd	Western City Limits (Yellow Springs)
RCR-09	9	Bickett Rd	US 42	Jasper Rd
RCR-10	10	Dayton Yellow Springs Rd	Bryon Rd	Xenia Ave

Top Ranked Corridors - Urban

ID	Urban Rank	Name	Extent 1	Extent 2
RCU-01	1	Patterson Rd	100ft east of Norton Ave	Woodman Dr
RCU-02	2	Dixie Dr (Discontinuous)	230ft south of Cloverleaf Rd	Northern City Limits (Dayton)
RCU-03	3	National Rd	200ft west of Union Blvd	Main St
RCU-04	4	Needmore Rd (Discontinuous)	Dayton Towne Plaza Shopping Center	Successful Way
RCU-05	5	Main St (Discontinuous)	Charles Pl	100ft north of Redder Ave
RCU-06	6	Shroyer Rd	100ft north of Schuyler Dr	Far Hills Ave
RCU-07	7	Orange St	Dayton Ave	Bellbrook Ave
RCU-08	8	Upper Bellbrook Rd	100ft west of Colorado Dr	Western City Limits (Xenia)
RCU-09	9	Harshman Rd	Dayton City Limits (2000ft north of Tidewater Dr)	SR 4
RCU-10	10	Airway Rd	Colin Kelley Dr	2150ft west of Spinning Rd

Top Ranked Intersections - Rural

ID	Rank	Intersections
RIR-01	562	Arlington Rd & National Rd
RIR-02	565	Palmer Rd & US 40
RIR-03	576	Fairground Rd & Hilltop Rd
RIR-04	599	Steward Rd & SR 718
RIR-05	636	Range Line Rd & SR 718
RIR-06	758	Monument St & SR 718
RIR-07	758	High St & Walnut St
RIR-08	758	Washington Rd & Covington Rd
RIR-09	758	Covington Rd & Mote Dr
RIR-10	1130	SR 235 & W Hyde Rd

Top Ranked Intersections - Urban

ID	Rank	Intersections
RIU-01	1	Salem Ave & Free Pike & W Siebenthaler Ave
RIU-02	5	Main St & Wampler Ave
RIU-03	7	Harshman Rd & Valley Pike
RIU-04	8	N Dixie Dr & Siebenthaler Ave
RIU-05	8	Main St & Amesbury Dr
RIU-06	8	Payne Ave & Needmore Rd
RIU-07	8	SR 741 & Lindbergh Blvd & Cobblegate Dr
RIU-08	8	National Rd & Colonel Glenn Hwy & Grange Hall Rd
RIU-09	16	SR49 & Turner Rd
RIU-10	16	Salem Ave & Turner Rd

Figure 37: Top Scoring Regional Urban and Rural Corridors and Intersections

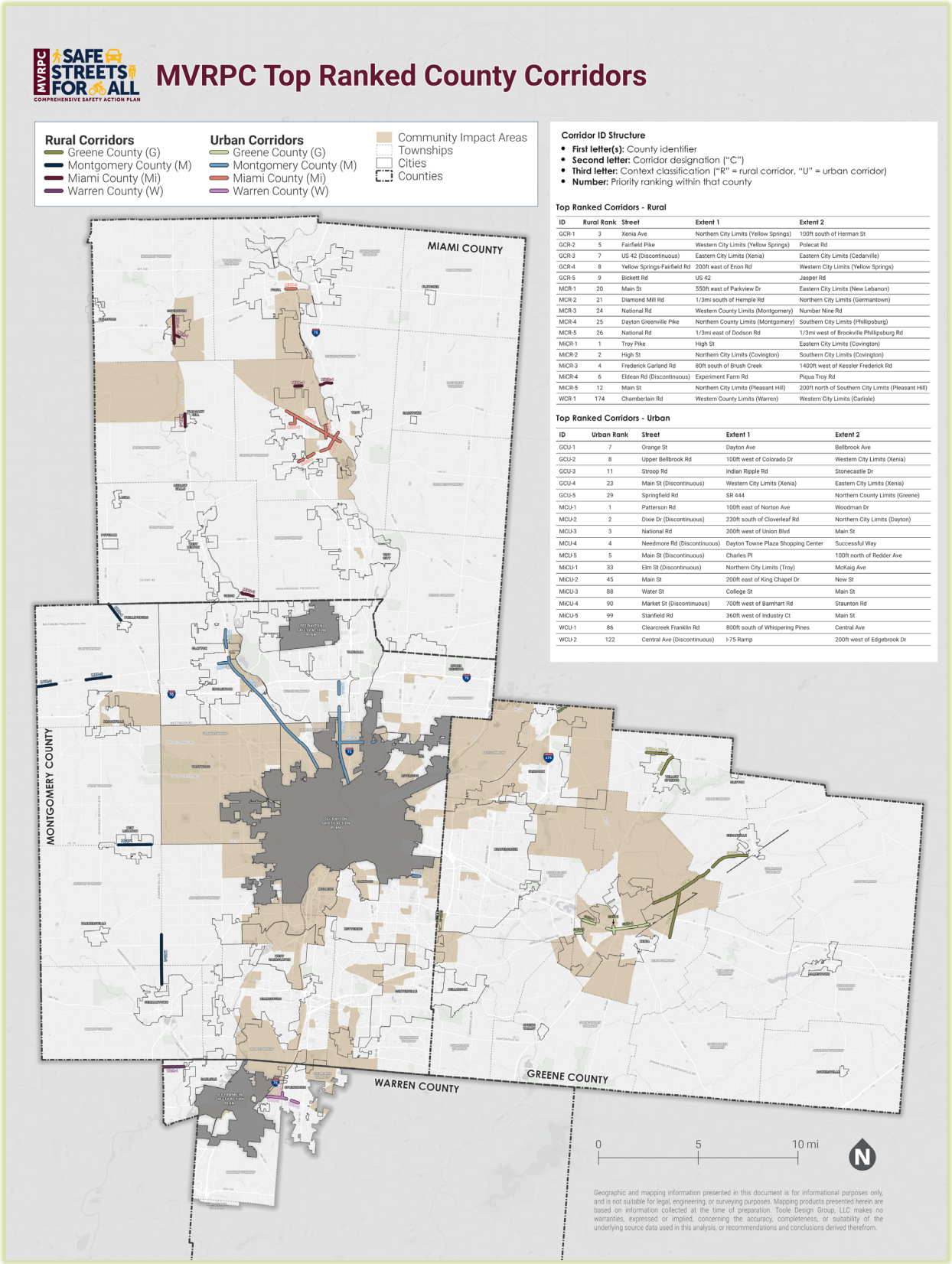


Figure 38: Top Scoring Urban and Rural Corridors in Each County

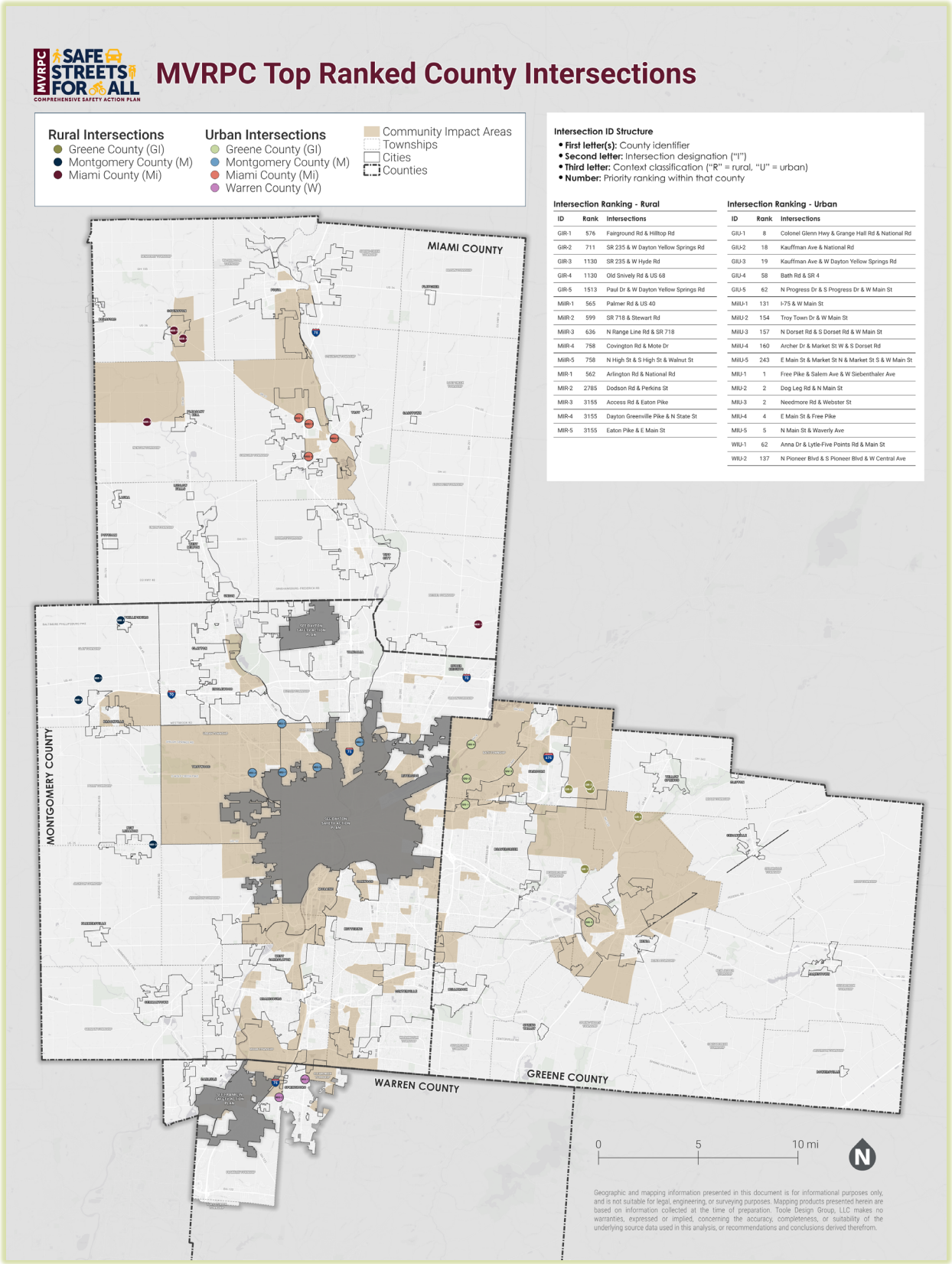


Figure 39: Top Scoring Urban and Rural Intersections in Each County

While beginning with the composite network rankings aligns most directly with Safe System principles, the High-Injury Network (HIN) and High-Risk Networks (HRN) are also valid and important ways for identifying potential project locations. Each reveals different aspects of safety need, either by historic crash patterns or risk conditions and both also serve as appropriate entry points for project development. Locations identified through any of these networks represent areas of need within the region and should be considered as potential candidates for project development under this Plan.

A location could be advanced to the project development stage if any of the following apply:

- It appears in the top composite network rankings
- It falls along the High-Injury Network or within a severe-crash cluster
- It shows elevated risk in one or more modal High-Risk Networks
- It lies within an area identified as having greater safety needs, as shown on the Community Impact Composite Index Map
- It is identified as a priority through public engagement or local agency feedback

Locations where more than one of these are applicable may prove more successful in funding and grant applications.

Countermeasure and Strategy Selection for Effective Project Development

Once areas of need have been identified, either through the composite network rankings, HIN, HRN, or community feedback, the next step is to determine which countermeasures and strategies best address the safety issues at each location.

Countermeasure and strategy identification can follow these steps:

1. **Review crash and context data and identify appropriate countermeasures and strategies from the toolbox.**

   In addition to crash data and roadway characteristics at the specific location, the HIN, HRN, and areas of community impact should be considered. This broader review clarifies the safety patterns and contextual factors contributing to high-scoring locations and helps ensure that selected countermeasures directly address the underlying issues.

2. **Match Countermeasures and Strategies to Need**

   Once a priority location is identified, use the Toolbox to match solutions to the specific safety issues present:

   Engineering countermeasures should reflect:

- Crash patterns and contributing factors
- Roadway characteristics and context
- Severity trends

  Complementary non-infrastructure strategies may include:

- Education programs

- Enforcement coordination
- EMS enhancements
- Evaluation and monitoring tools
- Policy or process updates

Combining infrastructure and non-infrastructure approaches strengthens both short-term and long-term safety outcomes.

However, not all crash patterns require an engineering component. Some initiatives may be strategy only, especially when addressing regional issues, behavioral factors, operational needs, or systemic risks. In these cases, the most effective response may consist solely of non-infrastructure strategies such as coordinated enforcement, safety education campaigns, EMS improvements, policy changes, or targeted evaluation and monitoring efforts.

*The results of applying Steps 1 and 2 to the highest-ranked regional corridors and intersections are summarized in **Tables 16 and 17** at the end of this section.*

For the corridor locations in Table 16, the tables include key details such as jurisdiction/county, corridor length, total injury and FSI crashes, and the percentage of segments identified on the High-Injury Network (HIN), High-Risk Network (HRN), and within an Area of Community Impact. This information, combined with supplemental crash data and a desktop aerial imagery review, informed the development of a list of potentially applicable strategies for corridor-level implementation.

For the intersections in Table 17, the tables provide similar information, with adjustments for intersection-specific attributes. Instead of percentages, the tables indicate whether each intersection falls within HIN and HRN subcategories and whether it is in an Area of Community Impact.

3. Integrate Local Knowledge and On-the-Ground Conditions

While the Toolbox provides technical guidance, effective solution selection requires an understanding of actual conditions. The following can be used to refine and narrow potential strategies:

- Public and stakeholder feedback
- Documented concerns, maintenance issues, or near-miss reports
- Planned development or capital improvement projects
- Observed roadway or infrastructure issues (e.g., skid marks, debris indicating past crashes, visual-trap conditions)

Incorporating local context and site-specific observations ensures that projects reflect real-world conditions and address community priorities.

4. Coordinate with MVRPC to Determine Readiness and Next Steps

After narrowing the solution set, agencies should coordinate with MVRPC to confirm project readiness and identify next steps.

MVRPC can help determine whether a location should:

- Move directly to a funding application, or
- Undergo additional analysis to document issues or refine solutions

MVRPC support may include guidance on:

- Supplemental analyses (Road Safety Audits, speed studies, pedestrian/bicycle assessments, concept development)
- Appropriate state, regional, or federal funding sources
- Funding cycle timing and constraints
- Opportunities to bundle locations or apply systemic treatments

This coordination ensures agencies pursue the right level of analysis at the right time, improving both project quality and competitiveness for funding.

Turning Data into Safer Roads

Safety studies provide insight into corridor crash history, diagnose critical issues, and identify countermeasures to reduce future risk. During Plan preparation, dozens of studies were reviewed, many by ODOT Districts 7 and 8, completed in coordination with local agencies. Routes studied included I-75, SR 725, SR 741, SR 235, US 42, US 68, and US 35. Recommendations ranged from signal timing and traffic control changes to active transportation upgrades, access management, and pavement friction improvements. Some improvements are complete, while others await funding or are in project development.

US 35 in western Greene County illustrates this process. Grade-separated interchanges were proposed in the mid-2000s, but funding constraints led local and state leadership to select a Superstreet between Factory Road and Orchard Lane as the practical and affordable solution at the time. The Superstreet was completed in 2021, followed by an interchange at Trebein Road in 2025. While portions of US 35 and Factory Road are on the HIN or HRN, additional time is needed to gather post-construction data and evaluate the effectiveness of these treatments. Future changes incorporating recommendations from the prior study, or from the post-construction re-evaluation may follow based on the Superstreet performance.

5. Determine Best Implementation Strategy

Often multiple countermeasures can address the identified safety need. Selecting the right implementation approach helps agencies move projects forward efficiently and achieve meaningful, near-term reductions in fatal and serious-injury crashes. The following steps can guide this process:

- Check the prioritization criteria
  - Impact-Based Metrics: Where will this project deliver the greatest safety benefit?
  - Implementation Factors: Which projects can be delivered quickly and successfully?
- Align projects with available funding

  - Use programs such as SS4A, HSIP, STBG, CMAQ, transit grants, or local CIP funding to build a successful funding strategy.
  - Match each project type with its applicable eligibility requirements.
- Integrate projects into the Capital Improvement Program
  - Add low-cost or systemic countermeasures to projects already in the CIP.
  - Advance high-need, standalone safety projects for near-term implementation.
- Coordinate with partners
  - Work with other cities, counties, transit agencies, MPO staff, and local stakeholders to streamline delivery and avoid duplication.
- Advance projects that meet key criteria
  - High safety impact
  - High deliverability
  - Areas of community need

PROJECT DEVELOPMENT & IMPLEMENTATION

Project Development Considerations

To ensure safety investments deliver the greatest possible benefit, sponsoring agencies should approach project development through two complementary viewpoints. The first focuses on impact-based metrics, identifying where countermeasures will most effectively reduce fatal and serious injury crashes. The second lens considers implementation success factors, recognizing that even highly impactful solutions must be feasible, supported, and efficiently delivered to achieve timely results.

Impact-Based Metrics

These criteria emphasize where countermeasures will generate the largest safety benefit, using data-driven thresholds and performance indicators:

- High-crash and high-risk network locations
- Community impact and benefit
- Cost-effectiveness and feasibility
- Crash reduction potential

These metrics help ensure resources are directed to locations with the greatest need and the highest potential for measurable safety improvement.

Implementation Success Factors

These considerations address how quickly and effectively a project can move from concept to implementation, critical for achieving timely, meaningful results:

- Stakeholder support and coordination
- Multimodal strategy coverage

- Funding alignment and eligibility
- Multi-benefit opportunities that strengthen competitiveness

These factors help overcome barriers, streamline processes, and accelerate project delivery so that solutions can take effect sooner.

Bringing the Two Together

Using both viewpoints ensures that projects are not only targeted to high-need locations but are also positioned for successful, timely implementation. This balanced approach accelerates the movement of solutions from planning to action, allowing communities to realize safety improvements faster and advancing the overall success of the plan. The sooner impactful strategies are executed, the sooner the region will experience reductions in fatal and serious injury crashes, delivering tangible benefits across the community.

Project Implementation and Phasing

In many locations, several countermeasures may be appropriate, and safety improvements may be implemented in phases to balance urgency, cost, and feasibility. A phased approach allows agencies to address immediate safety concerns while planning for more comprehensive solutions over time.

Phase 1: Early Action / Low-Cost Treatments

Lower-cost or less intensive strategies are often implemented first to address urgent needs, especially when they:

- Improve eligibility for funding programs
- Can be deployed rapidly with minimal design or construction
- Deliver immediate safety benefits to the community

Examples include pavement markings, signage upgrades, signal timing adjustments, and temporary traffic calming measures. These treatments often serve as quick wins, improving conditions while larger projects are developed.

Phase 2: Intermediate Enhancements

Once initial measures are in place, agencies may introduce moderate-cost improvements that build on early successes. These could include:

- Enhanced pedestrian crossings with refuge islands
- Upgraded lighting or visibility improvements
- Intersection geometry adjustments

Intermediate steps often require more design and coordination but remain relatively quick to implement compared to full reconstruction.

Phase 3: Capital-Intensive Solutions

Higher-level or capital-intensive solutions—such as roadway reconfiguration, grade separation, or major

Phased Implementation

Safety improvements are frequently phased. Early, lower cost countermeasures can provide quick benefits while positioning a project for future funding. As conditions change, each site should be reviewed for effectiveness and restudied if the situation no longer reflects the original assessment, ensuring that any next level solutions are appropriately targeted.

signal upgrades—are reserved for later implementation. These projects typically occur when:

- Early treatments do not fully address safety issues
- Conditions continue to deteriorate or crash patterns persist
- Funding and right-of-way acquisition become available

Continuous Evaluation

Because of this staged approach, before-and-after evaluations are essential. These analyses determine whether initial countermeasures are performing as intended and whether additional or more robust treatments are warranted. At locations where early strategies have been deployed, the site should be re-evaluated using updated crash and operational data to confirm whether previously identified countermeasures remain appropriate or whether alternative solutions may be more effective.

Table 16: Example Applications of Countermeasures to High-Scoring Corridors

ID	Jurisdiction, County	Street Name	From	To	Length (mi)	All Injury Crashes	FSI Crashes	HIN	HRN	ACI	Potential Countermeasures & Strategies
UC-1	Kettering, Montgomery	Patterson Rd	100' east of Norton Ave	Woodman Dr	0.70	8	1	All Ped MC	All Roadway All Context VRU RW VRU Context	100%	• Enhanced Signalized Pedestrian Crossings (High visibility crosswalk markings at Norton Ave) • RRFB (Flescher Ave and bus stops) • LED Lighting (especially at bus stops)
UC-2	Vandalia, Montgomery	Dixie Dr	230' south of Cloverleaf Rd	Northern Dayton City Limits	13.59	265	22	**All** Ped Bike MC	Roadway Context VRU RW VRU Context	74%	• Enhanced Signalized Pedestrian Crossings • Leading Pedestrian Intervals • RRFBs • Pedestrian Hybrid Beacons • Medians and Refuge islands • Complete Streets Corridor Design
UC-3	Englewood, Montgomery	National Rd	200' west of Union Blvd	Main St	1.05	21	0	**All**	Roadway Context VRU RW VRU Context	75%	• Road Diet (in the 5-lane section with potential bicycle lanes) • Separated Bike Lanes • Curb extensions (where on-street parking is permitted)
UC-4	Montgomery	Needmore Rd	Dayton Town Plaza Shopping Center/N. Dixie Dr	Successful Way	1.90	203	20	All Ped MC	Roadway Context VRU RW VRU Context	100%	• Close Active Transportation Gaps (upgrade and connect sidewalks) • Enhanced Signal Crossings (high visibility crosswalk markings) • Traffic Calming and Speed Management • Adaptive Signal Control • Leading Pedestrian Interval

ID	Jurisdiction, County	Street Name	From	To	Length (mi)	All Injury Crashes	FSI Crashes	HIN	HRN	ACI	Potential Countermeasures & Strategies
UC-5	Various (Harrison Twp through Clayton), Montgomery	Main St	Charles Pl	100' north of Redder Ave	21.24	504	55	All Ped Bike MC	Roadway Context VRU RW VRU Context	77%	• Road Diet (for 4-lane sections) • Close Active Transportation Gaps (upgrade or add new sidewalks) • Traffic Calming and Speed Management • Adaptive Signal Control • Enhanced Signalized Pedestrian Crossings • Leading Pedestrian Intervals • Pedestrian Hybrid Beacons (at high pedestrian activity areas such as schools, parks, senior living, etc.) • RRFBs (at high pedestrian activity areas such as schools, parks, senior living etc.)
UC-6	Kettering, Montgomery	Shroyer Rd	100' north of Schuyler Dr	Far Hills Ave	2.02	25	0	All Bike	Roadway Context VRU RW VRU Context	100%	• Enhanced Signalized Pedestrian Crossings (high visibility crosswalk markings at Stroop Rd and Schuyler signals) • Leading Pedestrian Interval (at Stroop) • RRFB (at the existing mid-block crossing, south of Stroop)
UC-7	Xenia, Greene	Orange St	Dayton Ave	Bellbrook Ave	0.53	20	1	**All Bike**	Roadway Context VRU RW VRU Context	100%	• Access Management (Main St to Bellbrook) • Close Active Transportation Gaps (upgrade sidewalks for ADA compliance, add sidewalk from Vine St to Dayton) • Enhanced Signalized Crossings (high visibility crosswalk markings)

ID	Jurisdiction, County	Street Name	From	To	Length (mi)	All Injury Crashes	FSI Crashes	HIN	HRN	ACI	Potential Countermeasures & Strategies
UC-8	Greene	Upper Bellbrook Rd	100' west of Colorado Dr	Western Xenia City Limits	0.30	5	2	**All MC**	Roadway Context VRU RW VRU Context	100%	• LED Lighting • Install Raised Pavement Markers (along the curve from Colorado Drive through Xenia limits) • Curve Signing and Delineation
UC-9	Riverside, Montgomery	Harshman Rd	Dayton City Limits	SR 4	3.61	88	9	**All** Ped Bike MC	Roadway Context VRU RW VRU Context	93%	• Close Active Transportation Gaps (provide sidewalk on both sides of roadway) • Pedestrian Hybrid Beacon (evaluate location options) • Median and Refuge Islands • Improved Pavement Friction • Enhanced Signalized Crossings
UC-10	Riverside, Montgomery	Airway Rd	Colin Kelley Dr	2150' west of Spinning Rd	2.50	48	3	**All** Bike	Roadway Context VRU RW VRU Context	100%	• Traffic Calming and Speed Management • Median and Refuge Islands
RC-1	Covington, Miami	Troy Pike	High St	Eastern Covington City Limits	0.84	6	1	**All**	Roadway Context VRU RW VRU Context	100%	• Close Active Transportation Gaps (add path/sidewalk especially from High St to Wenrick) • Speed Feedback Sign (for WB traffic on the east end where speed transitions at village limits)
RC-2	Covington, Miami	High St	Northern Covington City Limits	Southern Covington City Limits	2.82	9	3	**All** Ped	Roadway Context VRU RW VRU Context:	100%	• RRFBs • Enhanced Signalized Crossings (high visibility crosswalk markings) • Traffic Calming and Speed Management (curb Extensions between Bridge and Wright St with on-street parking)

ID	Jurisdiction, County	Street Name	From	To	Length (mi)	All Injury Crashes	FSI Crashes	HIN	HRN	ACI	Potential Countermeasures & Strategies
RC-3	Yellow Springs, Greene	Xenia Ave	200' north of SR 343	100' south of Herman St	1.00	18	1	**All** Bike	Roadway Context VRU RW VRU Context	0%	• Safety Corridor Branding & Campaigns • Leading Pedestrian Intervals • Traffic Calming and Speed Management • RRFBs (near Herman and at trail crossing near Corry)
RC-4	Miami	Frederick Garland Rd	80' south of Brush Creek	1400' west of Kessler Frederick Rd	0.63	1	0	**All: Bike MC**	Roadway Context VRU RW VRU Context	0%	• Traffic Calming and Speed Management (especially curb extensions where on-street parking is permitted) • Enhanced Signalized Crossings • Leading Pedestrian Interval (in downtown area)
RC-5	Yellow Springs, Greene	Fairfield Pike	Western Yellow Springs Village Limits	Polecat Rd	0.37	3	1	**All MC**	Roadway Context VRU RW VRU Context	0%	• Speed Feedback Sign • Traffic Calming and Speed Management • Close Active Transportation Gaps (sidewalk/path to connect to Little Miami River Scenic Trail)
RC-6	Miami	Eldean Rd	Experiment Farm Rd N County Rd 25A	Lytle Rd Piqua Troy Rd	1.33	3	0	**All**	Roadway Context VRU RW VRU Context:	67%	• Curve Signing and Delineation • Longitudinal Rumble Strips • Widened Shoulders

ID	Jurisdiction, County	Street Name	From	To	Length (mi)	All Injury Crashes	FSI Crashes	HIN	HRN	ACI	Potential Countermeasures & Strategies
RC-7	Cedarville, Greene	US 42	Eastern Xenia City Limits 600' east of Murdock Rd	600' west of Murdock Rd Eastern Cedarville City Limits	10.83	29	3	All Bike	Roadway Context: VRU RW VRU Context	67%	• Longitudinal Rumble Strips • Widened Shoulders • Curve Signing and Delineation • Clear Zone Management • Close Active Transportation Gaps (sidewalk/path between Bickett Rd and Campus Dr to connect Wilberforce University to Wilberforce Switch Trail and Ohio to Erie Trail)
RC-8	Greene	Yellow Springs-Fairfield Rd	200' east of Enon Rd	Western Yellow Springs Village Limits	0.73	0	0	All MC	Roadway Context: VRU RW VRU Context	0%	• Traffic Calming and Speed Management • Longitudinal Rumble Strips
RC-9	Xenia, Greene	Bickett Rd	US 42	Jasper Rd	2.37	14	3	All	Roadway Context VRU RW VRU Context:	100%	• Speed Feedback Sign (near Central State) • Longitudinal Rumble Strips • Widened Shoulders • Youth Transportation Education
RC-10	Yellow Springs, Greene	Dayton Yellow Springs Rd	Bryon Rd	Xenia Ave	10.91	30	2	All	Roadway Context VRU RW VRU Context	65%	• Longitudinal Rumble Strips • Widened Shoulders • Traffic Calming and Speed Management (build on existing efforts in Yellow Springs portion) • RRFBs • Speed Feedback Sign (just east of Enon Rd)

Table 17: Example Applications of Countermeasures to High-Scoring Intersections

ID	County, Jurisdiction	Intersection	All Injury Crashes	FSI Crashes	HIN	HRN	ACI	Potential Countermeasures & Strategies
UI-1	Harrison, Montgomery	Free Pike & Salem Ave & W Siebenthaler Ave	19	2	All models	All models	Yes	• Reflective Signal Backplates • Leading Pedestrian Interval • Close Sidewalk Gaps (new walk along Falmouth Ave or east approach) • Protected Left Turn Phasing • LED Lighting
UI-2	Harrison, Montgomery	N Main St & Wampler Ave / Waverly Ave	10	3	All vehicles Motor vehicles Pedestrians	All models	Yes	• Realign Skewed Intersection • LED Lighting • Access Management (reduce drives in intersection) • Leading Pedestrian Interval
UI-3	Riverside, Montgomery	Harshman Rd & Valley Pike	22	2	All models	All models	Yes	• Youth Transportation Education • Reduced Conflict Left Turn Intersection • Leading Pedestrian Interval
UI-4	Harrison, Montgomery	N Dixie Dr & E Siebenthaler Ave & N Dixie Drive Frontage Rd	22	2	All vehicles Motor vehicles Pedestrians	All models	Yes	• Reflective Signal Backplates • Access Management (physically prohibit northbound left turns into access road) • Protected Left Turn Phasing (convert protected-permitted northbound left to protected) • Roundabout (oval-shape including Fieldstone Dr)
UI-5	Harrison, Montgomery	Main St & Amesbury Dr	8	2	All vehicles Motor vehicles Motorcycles Pedestrians	All models	Yes	• Access Management • Road Diet • Turn Lanes • Traffic Calming and Speed Management • LED Lighting • RRFB

ID	County, Jurisdiction	Intersection	All Injury Crashes	FSI Crashes	HIN	HRN	ACI	Potential Countermeasures & Strategies
UI-6	Harrison, Montgomery	Needmore Rd & Payne Ave	20	2	All vehicles Motor vehicles Motorcycles Pedestrians	All models	Yes	• Reflective Signal Backplates • Youth Transportation Education • LED Lighting
UI-7	Moraine, Montgomery	SR 741 & Lindbergh Blvd & Cobblegate Dr	14	2	All vehicles Motor vehicles Pedestrians	All models	Yes	• Reflective Signal Backplates • Protected Left Turns • Realign Skewed Intersection • Medians and Refuge Islands
UI-8	Beavercreek, Greene	Colonel Glenn Hwy & Grange Hall Rd & National Rd	24	1	All vehicles Motor vehicles Motorcycles Bicycles	All models	Yes	• Leading Pedestrian Interval • Medians and Refuge Islands
UI-9	Montgomery	SR 49 & Turner Rd	10	2	All vehicles Motor vehicles	All models	Yes	• Reflective Signal Backplates • Improved Pavement Friction • Install Median/Roadside Barriers • Clear Zone Management
UI-10	Trotwood, Montgomery	Salem Ave & Turner Rd	19	2	All vehicles Motor vehicles	All models	Yes	• Reflective Signal Backplates • Leading Pedestrian Interval • LED Lighting • Sight Distance Improvements (Signal Ahead warning signs/flashers)
RI-1	Clay, Montgomery	Arlington Rd & National Rd	8	2	All vehicles Motor vehicles Motorcycles	Roadway model	No	• Sight Distance Improvements • Curve Signing and Delineation (including intersection warning signs) • Roundabout
RI-2	Miami	Palmer Rd & US 40	12	2	All vehicles Motor vehicles	Roadway model	No	• Sight Distance Improvements • Roundabout

ID	County, Jurisdiction	Intersection	All Injury Crashes	FSI Crashes	HIN	HRN	ACI	Potential Countermeasures & Strategies
RI-3	Beavercreek, Greene	Fairground Rd & Hilltop Rd	12	1	All vehicles Motor vehicles Pedestrians	Roadway model	No	• Sight Distance Improvements • Realign Skewed Intersection • Roundabout
RI-4	Miami	SR 718 & Stewart Rd	2	1	All vehicles Motor vehicles	Roadway model	Yes	• Sight Distance Improvements • Curve Signing and Delineation • Clear Zone Management • Widened Shoulders
RI-5	Miami	N Range Line Rd & SR 718	1	1	All vehicles Motor vehicles	Roadway model	Yes	• Longitudinal Rumble Strips • Curve Signing and Delineation (including intersection warning signs) • Widened Shoulders
RI-6	Miami	Monument St & SR 718	0	0	-	Roadway model	Yes	• Sight Distance Improvements • Widened Shoulders
RI-7	Covington, Miami	N High St & S High St & Walnut St	0	0	-	Roadway model	Yes	• Sight Distance Improvements • RRFB • Traffic Calming and Speed Management
RI-8	Concord, Miami	Covington Rd & Washington Rd	3	0	All vehicles Motor vehicles	Roadway model	Yes	• Reflective Signal Backplates • Protected Left Turns
RI-9	Newberry, Miami	Covington Rd & Mote Dr	1	0	All vehicles Motor vehicles	Roadway model	Yes	• Left Turn Lane • Access Management • Curve Signing and Delineation (including intersection warning signs)
RI-10	Greene	SR 235 & W Hyde Rd	0	0	All vehicles Motor vehicles	Roadway model	Yes	• Sight Distance Improvements • Realign Skewed Intersection • Left Turn Lane

PLANNING-LEVEL COST ESTIMATES

To support Local Public Agencies (LPAs) in determining the appropriateness and readiness of projects for implementation, planning-level cost estimates provide an early indication of anticipated investment. These estimates help agencies:

- Evaluate Cost-Effectiveness – Compare expected safety benefits against estimated costs to prioritize high-impact, feasible solutions.
- Assess Readiness – Identify whether available funding and resources align with project scope and timing.
- Inform Phasing Decisions – Determine whether a project should proceed as a standalone improvement or be integrated into a larger, future initiative.

While these estimates are not intended to replace detailed engineering-level calculations, they offer a practical tool for screening alternatives and advancing projects that deliver meaningful safety improvements within available budgets.

Table 18: Planning Level Cost Estimates

Type of Improvement	Unit	Unit Cost
Adaptive Signal Control	per intersection, including traffic controller	$50,000-65,000
Barrier Delineators, Reflectors, and Illumination	per mile depending on spacing	$1,000-$5,000
Bicycle Traffic Signals	per approach for new signal heads	$1,000-$5,000
Bicycle Wayfinding Signs	per sign	$500
Bike Boxes	per approach	$7,500-$10,000
Chicanes	per landscaped chicane	$2,500-$16,000
Clear Zone Management	per day for labor and equipment	$2,000-$3,000
Close Active Transportation Gaps	per 1000 linear feet for new concrete sidewalk (5')	$190k-$230k
Curb Extensions, pedestrian refuge islands, and crossing distance reductions	per corner	$78,000-$88,000
Curve Signing and Delineation	Each	$6,000-$10,000
Enhanced Signalized Pedestrian Crossings	Each	$6,000-$7,000
Enhanced Wet Reflective Pavement Markings	per mile	$5,000-$8,000
Extended Pedestrian Clearance Times	per intersection	$3,000-$5,000
Improved Bicycle Storm Grates	per grate	$250-$500
Improved Pavement Friction	per sq yd for High Friction Surface Treatment	$25-$50
Install Median/Roadside Barriers (Cable, Guardrail, or Concrete Barriers)	per mile Cable Barrier	$150k
Install Raised Pavement Markers	per mile depending on spacing	$2,000-$10,000

Type of Improvement	Unit	Unit Cost
Install Turn Lanes at High-Crash Intersections	each	$15,000
LED Lighting	per intersection to install new lighting	$50,000
Leading Pedestrian Intervals (LPIs)	per intersection	$3,000-$5,000
Longitudinal Rumble Strips	per mile	$500 - $6,000
Marked (Striped) Bike Lanes	per 1000 linear feet	$20,000-$23,000
Medians & Refuge Islands	each	$57,000-$64,000
Pedestrian Hybrid Beacons (HAWK)	each	$196k-$230k
Protected Bike Lanes	per 1000 linear feet for flex post separation	$90,000-$100,000
Protected left-turn Phasing	per approach for new signal heads	$1,000-$5,000
Raised Pedestrian Crossings	each	$7,000-$30,000
Rectangular Rapid Flashing Beacons (RRFB)	each	$34,000-$38,000
Reduced Left-Turn Conflict Intersection	per intersection	$1M-$5M
Retroreflective Signal Backplates	per signal head	$100-$150
Road Diet	per 1000 linear feet for pavement marking and signing changes only	$30,000
Roundabout	per intersection	$1M-$2M
Separated Two-Way Cycle tracks	per 1000 linear feet	$160k-$300k
Side slope Flattening	per cubic yard for cut/fill operations	$2-$15
Speed Feedback Signs	per sign	$5,000-$8,000
Speed Humps	each	$2,000-$15,000
Speed Tables	each	$2,000-$20,000
Superelevation Correction	per mile to reconstruct a rural 2-lane roadway	$1M-$3M
Transit Signal Priority and Bypass Lanes	per intersection for Transit Signal Priority	$8,000-$35,000
Variable Speed Limits	each	$25,000-$50,000
Widened Shoulders (Add/Increase Paved Shoulder Width)	per mile to widen 5 feet of shoulder	$250k

TRANSITIONING PLAN RECOMMENDATIONS INTO ACTION

The SS4A Safety Action Plan is designed as a practical, implementation-focused resource for local governments, transportation agencies, and regional partners. While the Plan fulfills federal SS4A requirements, it is intentionally structured to support a broad range of state, federal, and regional funding programs, as well as local capital planning processes. Communities can use the analyses, Toolbox resources, and implementation guidance in this Plan to accelerate safety improvements, strengthen grant applications, and align local initiatives with regional and national safety goals.

The following guidance illustrates how to apply the Plan's components, particularly the Toolbox, the High Injury and High Risk Networks, and the Implementation Framework, to advance meaningful, data-driven safety improvements.

1. Use the Plan to Strengthen Grant Applications and Funding Alignment

The Plan includes all required elements for SS4A Implementation and Planning & Demonstration Grants, including:

- A data-driven network prioritization framework
- Documented stakeholder and public engagement
- A comprehensive Toolbox of countermeasures and strategies
- Safety analysis identifying critical crash patterns and vulnerable users

Agencies may cite the Plan directly in grant applications to demonstrate readiness, compliance with federal requirements, and alignment with Safe System principles. Because the methodologies and tools are nationally recognized, the Plan also supports applications for programs such as HSIP, TRAC, RAISE, MEGA, SMART, and other state, or federal programs.

2. Leverage the High Injury Network (HIN) and High Risk Network (HRN)

The HIN and HRN identify locations with the highest concentrations of severe crashes and systemic risk. Communities can use these networks to:

Identify Priority Areas:

- Pinpoint corridors and intersections most in need of investment
- Direct engagement and coordination to high-need locations

Target Interventions:

- Select Toolbox treatments aligned with observed crash types (e.g., intersection lighting, pedestrian crossings, access management, speed management)
- Justify investments using documented regional safety priorities

Using the HIN and HRN ensures that local projects align with the region's Vision Zero commitments.

3. Integrate Safety into Local Capital Improvement Programs (CIPs)

The Plan helps communities infuse safety into capital planning by:

- Flagging high-risk corridors and intersections for inclusion in resurfacing, maintenance, or reconstruction programs
- Applying low-cost countermeasures, such as enhanced markings, backplates, curb radii improvements, or curve delineation, during routine projects
- Ensuring consistency between CIPs and regional safety priorities

This proactive integration reduces missed opportunities and supports cost-effective safety gains.

4. Pilot Innovative and Quick-Build Projects

The Toolbox highlights several strategies suitable for temporary or demonstration projects, allowing agencies to evaluate concepts before pursuing full capital investment. Examples include:

- Temporary road diets
- Pop-up pedestrian crossings
- Curb extensions using delineators
- Interim protected bicycle lanes

These pilots can help validate operational improvements, assess community acceptance, and refine design prior to permanent installation.

5. Create Regional Collaboration and Multi-Jurisdictional Safety Efforts

The Plan's shared methodologies, Toolbox, and prioritization framework provide a common platform for agencies across the region to work together. Many countermeasures and strategies, such as speed management programs, corridor access management, coordinated enforcement, and systemwide signing or marking upgrades, have cross-jurisdiction applicability. Successful collaboration not only strengthens the effectiveness of these treatments but also increases their regional benefit.

Using the Plan collectively helps agencies:

- Coordinate improvements along corridors that cross jurisdictional boundaries
- Develop multi-agency grant applications
- Advocate for policy changes or funding reforms
- Align local priorities with regional Vision Zero goals

This shared approach enhances consistency, efficiency, and overall regional safety outcomes.

6. Guide Community Engagement and Advance Community-Focused Priorities

By integrating safety data with demographic and location-based analyses, the Plan helps communities:

- Prioritize outreach in areas experiencing disproportionate crash burdens
- Engage vulnerable road users and residents of community priority areas
- Use dashboard frameworks and reporting tools to provide transparent progress updates
- Ensure a fair and thoughtful distribution of safety investments

This approach strengthens trust, elevates local voices, and supports decision-making that reflects the needs of neighborhoods experiencing the greatest safety challenges.

7. Implement Policy and Process Improvements

The Plan identifies opportunities for agencies to modernize local decision-making frameworks by:

- Shifting project evaluation away from vehicle-focused performance metrics, such as Level of Service, and toward safety, multimodal mobility, and access

- Updating design standards to reflect Safe System principles and context-sensitive solutions
- Embedding safety considerations into long-range plans, comprehensive plans, and corridor studies

These reforms help institutionalize safety as a core transportation priority and ensure that planning and engineering practices consistently support safer outcomes for all roadway users.

8. Monitor Performance and Ensure Accountability

The Plan establishes a structure for ongoing monitoring and continuous improvement. Agencies can use the provided framework to:

- Track implementation of countermeasures and strategies
- Measure reductions in fatal and serious injuries over time
- Evaluate outcomes in community priority areas and locations experiencing the greatest safety challenges
- Publish dashboards and annual reports to maintain transparency and share progress

Performance monitoring strengthens accountability and allows agencies to adapt strategies based on real-world results, ensuring resources remain focused where they are most effective.

MVRPC SAFE STREETS FOR ALL
COMPREHENSIVE SAFETY ACTION PLAN

CHAPTER 8:
PROGRESS TRACKING AND TRANSPARENCY

CHAPTER 8: PROGRESS TRACKING AND TRANSPARENCY

Tracking progress is a vital component of a Safety Action Plan, ensuring that strategies advance from planning to measurable outcomes. A structured tracking system provides transparency, accountability, and data-driven insights into how effectively safety initiatives are reducing fatalities and serious injuries across the Region's transportation network. By monitoring key performance indicators, project milestones, and outcomes for communities with the greatest safety needs, MVRPC and member agencies can recognize achievements, address emerging challenges, and adjust strategies in real time. This approach not only keeps stakeholders informed but also strengthens a culture of continuous improvement, supporting the Plan's mission and the long-term goal of Vision Zero and other safety objectives.

IMPLEMENTATION OVERSIGHT AND ACCOUNTABILITY

During development, governance was provided by a multi-jurisdictional Steering Committee that guided the planning process and coordinated regional input. Moving forward, MVRPC will monitor progress, evaluate outcomes, and support coordination across jurisdictions to ensure continued transparency and accountability. Many recommended countermeasures also align with the responsibilities of the Active Transportation Committee, which may be engaged to help implement and program multi-modal improvements as appropriate.

CURRENT AND ONGOING CRASH DATA ANALYSIS & REGIONAL SAFETY MONITORING

MVRPC maintains a consistent, long-standing process for evaluating roadway safety across the Region. This includes:

- Reviewing ODOT and ODPS crash data in rolling three-year cycles
- Ranking high-crash intersections and roadway segments to identify emerging safety priorities
- Publishing regular analyses, including the *SFY 2025 Regional Roadway Safety Update*
- Providing maps and lists of top-priority crash locations to support local decision-making

This continuous assessment process helps local jurisdictions understand where conditions are worsening, where interventions may be needed, and how trends evolve over time.

In addition to regional crash analysis, MVRPC advances transportation safety through:

- Public-facing education efforts and behavior-change campaigns
- Multimodal safety programming, including cycling, pedestrian, and rideshare safety initiatives
- Safety components integrated into long-range transportation plans
- Tools, data, GIS resources, and technical assistance for local agencies

These ongoing activities create a foundation of safety knowledge and support that complement the SS4A Action Plan.

SS4A ACTION PLAN PROGRESS AND TRANSPARENCY MEASURES

To reinforce regional accountability and maintain clear communication with the public, MVRPC will implement a comprehensive progress-tracking and transparency framework. This system will include:

- A regional dashboard that summarizes key safety metrics and implementation progress
- A web-based GIS map that visualizes safety investments, priority locations
- An annual progress report documenting achievements, trends, and areas for continued focus
- An updated summary of available and potential funding sources to support implementation as new programs and opportunities are identified

The intent is to provide a unified, accessible way to track progress while still allowing individual communities flexibility to reflect local needs and priorities.

Dashboard

A web-based dashboard will serve as a centralized, easy-to-understand visualization tool summarizing:

- Key crash statistics and trends
- Progress on implementation of countermeasures and strategies
- Identified projects, action items, and completed tasks

By keeping this dashboard updated, MVRPC will provide a transparent, public-facing snapshot of how safety improvements are advancing throughout the region.

Webmap

A companion GIS webmap will illustrate:

- Planned safety projects
- Community Impact Assessment zones, highlighting neighborhoods with greater safety needs
- High-Injury Network (HIN) segments
- High-Risk Network (HRN) segments
- Top-ranked regional and county locations identified through HIN and HRN network scoring

This multi-layered approach allows agencies, stakeholders, and the public to visualize where safety resources are being directed and how projects align with priority networks and how community-based needs are being addressed.

Annual Progress Report

Each year, MVRPC will publish an Annual Progress Report summarizing the region's roadway safety efforts under the SS4A framework. This report will:

- Highlight strategies, planned projects, and funding allocations
- Track performance trends using quantitative data
- Supporting narratives as appropriate

These annual reports will ensure that regional and local agencies—and the public—remain informed and engaged in the Region's safety progress.