



Comprehensive Safety Action Plans: Lessons Learned

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Agenda

- Elements of a Sustainable Safety Program
- Lessons Learned from Recent Safety Plans
 - Safe System Benchmarking
 - Leadership, Culture, Commitment
 - Intergovernmental Working Groups
 - Strategies and Actions
 - Data Visualization and Dashboards



Setting Up a Sustainable Safety Program

Thinking about Sustainability Now

Traffic fatalities are a public health crisis affecting all road users.

1.35M

Lives lost globally each year from traffic crashes

Source: World Resources Institute

40,990

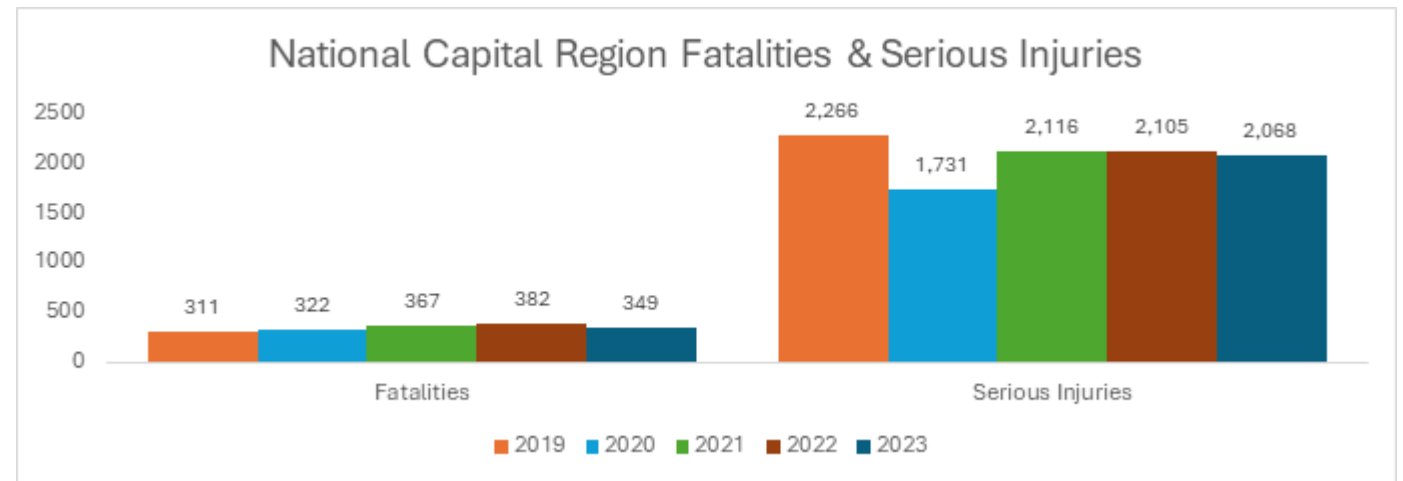
Lives lost on US roads in 2023

Source: NHTSA

7,318

Pedestrians killed in US traffic crashes in 2023

Source: NHTSA



Elements of a Sustainable Safety Program

Safe Streets and Roads for All (SS4A)

In year three of grant funding, so plenty more opportunities!

But these grants cannot fund every safety need, for every agency, for forever

● Funding and Creativity

● Achieving Multiple Goals in Tandem

● Operationalizing Safety

Be Creative with Resources

Rush Hour Towing

No Safety Co-Benefits



Moving Violations Over \$3,000 Towing

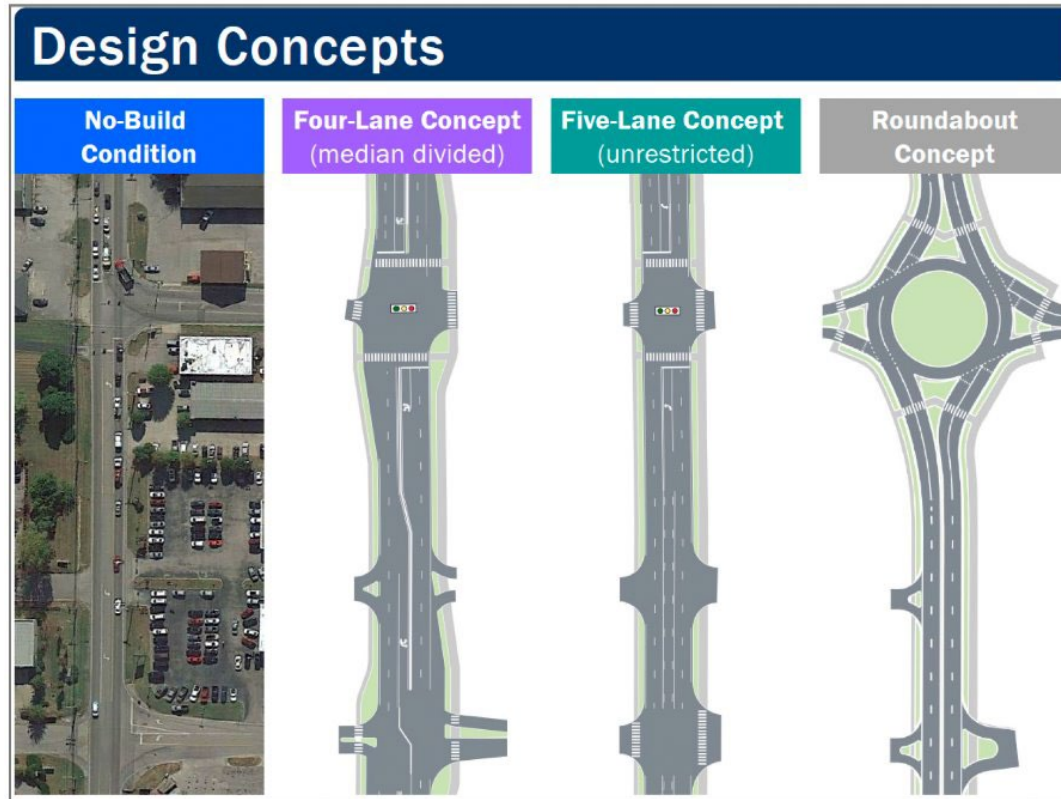
Safety Co-Benefits – Focus on Unsafe Drivers

No Changes to Allocated Annual Budget



[Source: District Department of Transportation]

Co-Benefits



		No-Build Condition (2041 volumes)	Four-Lane Concept (median divided)	Five-Lane Concept (unrestricted)	Roundabout Corridor Concept
Physical Impact	Between Intersections	~70' ditch-to-ditch	95' total width	91' total width	83' total width
	At Intersections	BASELINE footprint	AVERAGE footprint	AVERAGE footprint	INCREASED footprint
Safety Impacts	Between Intersections	BASELINE (+49% from 2016)	-25% fewer collisions	+41% more collisions	-25% fewer collisions
	At Intersections	BASELINE (+43% from 2016)	+2% more collisions	+2% more collisions	-29% fewer collisions
Operational Impacts	Through Traffic Delay	190 sec/veh	185 sec/veh	155 sec/veh	145 sec/veh
	Side Street Delay	750 sec/veh	255 sec/veh	375 sec/veh	70 sec/veh
	Average Travel Time	5m40s	5m30s	4m50s	4m35s

Operationalizing

III. Information to Carry Out This Secretary's Executive Order

To support the objectives of this policy, WSDOT divisions responsible for highway and road user safety planning, programming, scoping, design, operations, and maintenance, and those offices supporting these processes, are expected to work collaboratively and in consultation with the Highway Safety Executive Committee (HSEC) to achieve the goals of *Target Zero* and *Getting to Zero*. These divisions and offices will consult with HSEC and abide by its direction on all highway safety program policies.

This executive order assigns the following responsibilities:

A. Secretary of Transportation

- Represent WSDOT on the Washington Traffic Safety Commission and foster support for the Safe System Approach.
- Communicate WSDOT's commitment to eliminating fatalities and serious injuries.

B. WSDOT Executives and Senior Managers

- Communicate WSDOT's commitment to eliminating fatalities and serious injuries.
- Facilitate alignment of this policy with other related policies and initiatives conducted by WSDOT and partner organizations.
- Provide the resources necessary to implement this executive order and support the implementation of the Safe System Approach.
- Direct policies and activities to prioritize safety across the agency.

C. Headquarters Division Directors

Develop supporting policies, guidance, programs, and training in support of the Safe System Approach within respective areas of responsibility.

D. Regional Administrators

Develop plans, projects, and practices as appropriate to support implementation of this policy.

E. All Supervisors and Managers

- Promote knowledge of the Safe System Approach through discussion and training.
- Consider ways in which their program responsibilities contribute to and support the Safe System Approach.
- Support employees in incorporating the Safe System Approach into WSDOT practices.

F. All Employees, Divisions, and Programs

- Promote the implementation of the Safe System Approach within their professional responsibilities.
- Prioritize road safety while considering race, age, ability, income, and mode-based equity in transportation outcomes to establish and maintain a system that works for everyone.
- Adopt road safety initiatives and practices within their divisions and disciplines.

G. Director, Transportation Safety and Systems Analysis

- Develop policies and procedures related to the implementation of the Safe System Approach in consultation and collaboration with affected disciplines, divisions, and programs.
- Report to the Secretary of Transportation the current State of Road Safety in Washington, outlining current crash statistics, trends, and proposed priorities and strategies for reducing fatal and serious injury crashes on Washington's roads across WSDOT programs.
- Develop the *Target Zero* Strategic Highway Safety Plan and the *Getting to Zero* Implementation Plan and set federally required safety performance targets.
- Carry out performance measurement and evaluation of Washington's road system to achieve incremental improvement towards implementation of the Safe System Approach.
- Work with affected modal plan owners to align plans and action with the Safe System Approach.



Recent Safety Plan Lessons Learned

- Benchmarking
- Leadership and Commitment
- Equity
- Coordination
- Strategies and Actions
- Visualization

Safety Benchmarking



UNDESTANDING

Be aware of the basic activities to implement Vision Zero and a Safe System Approach



BASELINE

Assess where the jurisdiction is in addressing safety needs



IDENTIFY

Inventory successes and gaps in the jurisdiction's safety programs, and develop strategies to further address safety

General Strategy	Strategy Details
Leadership and Commitment	
Public, High-Level, and Ongoing Commitment	Key elected officials and leaders within public agencies, including transportation, public health, and police, commit to a goal of eliminating traffic fatalities and serious injuries within a specific timeframe. Leadership across these agencies consistently engages in prioritizing safety via a collaborative working group and other resource sharing efforts.
Authentic Engagement	Meaningful and accessible community engagement toward Vision Zero strategy and implementation is employed, with a focus on equity.
Strategic Planning	A Vision Zero Action Plan is developed, approved, and used to guide work. The Plan includes explicit goals and measurable strategies with clear timelines, and it identifies responsible stakeholders.
Project Delivery	Decision-makers and system designers advance projects and policies for safe, equitable multimodal travel by securing funding and implementing projects, prioritizing roadways with the most pressing safety issues.
Safe Roads and Safe Speeds	
Complete Streets for All	Complete Streets concepts are integrated into communitywide plans and implemented through projects to encourage a safe, well-connected transportation network for people using all modes of transportation. This prioritizes safe travel of people over expeditious travel of motor vehicles.
Context-Appropriate Speeds	Travel speeds are set and managed to achieve safe conditions for the specific roadway context and to protect all roadway users, particularly those most at risk in crashes. Proven speed management policies and practices are prioritized to reach this goal.
Data-Driven Approach, Transparency, and Accountability	
Equity-Focused Analysis and Program	Commitment is made to an equitable approach and outcomes, including prioritizing engagement and investments in traditionally under-served communities and adopting equitable traffic enforcement practices.
Proactive, Systemic Planning	A proactive, systems-based approach to safety is used to identify and address top risk factors and mitigate potential crashes and crash severity.
Responsive, Hot Spot Planning	A map of the community's fatal and serious injury crash locations is developed, regularly updated, and used to guide priority actions and funding.
Comprehensive Evaluation and Adjustments	Routine evaluation of the performance of all safety interventions is made public and shared with decision makers to inform priorities, budgets, and updates to the Vision Zero Action Plan.

Benchmarking Tool

Core Element	Category	Benchmark	Assessed Level of Commitment/Implementation			State of Current Practice in Hagerstown	
			Not a Current Practice	Occasional/ Partial Practice	Institutionalized Practice		
		Clearly define equity in the safety plan and include equity considerations throughout the emphasis areas and strategies.		X		The VRU safety assessment takes into consideration equity location attributes using data from ACS and clearly defined thresholds.	Yellow
		Incorporate equity considerations in implementation and assessment plans, such as goals related to safety improvements for populations that are traditionally underserved.		X		L RTP identified vulnerable populations. Conducted intercept surveys. Spanish translation of outreach materials and online surveys.	Yellow
		Meaningfully engage populations that are traditionally underserved in shared decision-making for safety efforts.	X			Host most public meetings in public libraries in downtowns. The consultation memo for the VRU safety assessment	Red
Safe Users	Education	Perform outreach through educational programs, with a focus on the behaviors and target audiences most linked to death and serious injuries. Utilize partnerships with community-based organizations and advocacy groups.		X		Washington County SHSP identifies education outreach initiatives linked to pedestrian and bicycle safety, aggressive driving, occupant protection, and impaired driving. Most educational outreach is conducted at state level.	Yellow
		Use demonstration projects to raise awareness of new designs, encourage support among stakeholders for safety projects requiring capacity trade-offs, and solicit feedback from the public. Demonstration projects also provide opportunity to measure safety effects and encourage innovation and design flexibility.		X		Toured Fairfax Blvd in Ranson. No demonstration projects. Bike boxes in Hagerstown.	Yellow
	Enforcement	Investigate and document the impacts of traffic safety enforcement and traffic safety surveillance on minority communities. Take steps to mitigate disproportionate impact of enforcement on disadvantaged populations.	X			The George Street Pedestrian Study suggests employing police surveillance as a deterrent for jaywalking in the corridor. The Residential Traffic Calming Program lists police	Red
		Reallocate enforcement activities to target those behaviors and locations most linked to death and serious injury.		X		Hagerstown conducted bike safety enforcement in Sept 2021. Washington County's sheriff's office passed out reflective vests along dual highway. 100 days of safety for targeted enforcement along I-81.	Green
	Research	Develop and implement strategies for robust demographic data collection in crash reporting.	X			Red	

Benchmarking Outcomes

1. Lack of advanced data methods to detect safety issues

- Leverage technology to better understand core crash factors, including conducting near-miss analysis at high-frequency crash locations.
- Consider incorporating data analysis in decision making and prioritization of projects, budgets, and other elements.

2. Safety considerations tend to be reactive rather than proactive

- Conduct city-wide safety assessment to identify at risk variables and locations.
- Develop a project lifecycle process and incorporate safety considerations.
- Host staff trainings as part of Safety Action Plan rollout.

3. Surveillance strategies raise concerns for potential disproportionate impacts

- Examine enforcement impacts on minority and disadvantaged communities (e.g. citation data overlaid on the Transportation Disadvantaged Communities).

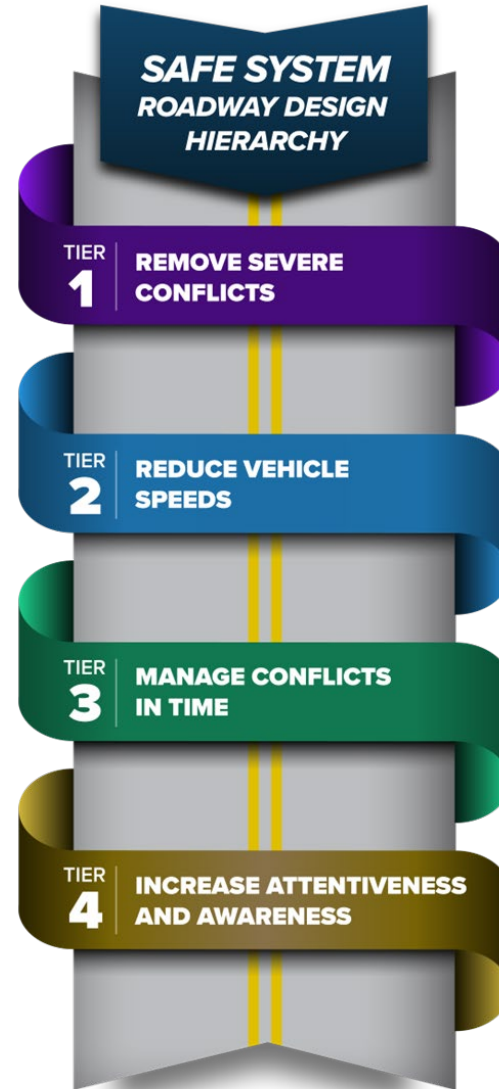
4. Gap in Standardizing Intersection Design Evaluations for Reduced Kinetic Energy Transfer

- Draft intersection design evaluation guidelines that focus on reducing kinetic energy transfer, based on FHWA recommendations and best practices in traffic safety.
- Establish a review process to periodically assess the effectiveness of the intersection designs and adjust based on emerging research and technology in traffic safety.

5. Absence of smarter roadways and Intelligent Transportation Systems infrastructure

- Long Term: Integrate smarter roadways and Intelligent Transportation Systems (ITS) infrastructure as part of a future Comprehensive Plan.
- Short Term: Identify strategic locations for electric vehicle (EV) charging stations to satisfy the existing and growing demand.

Support for Safe System Alignment

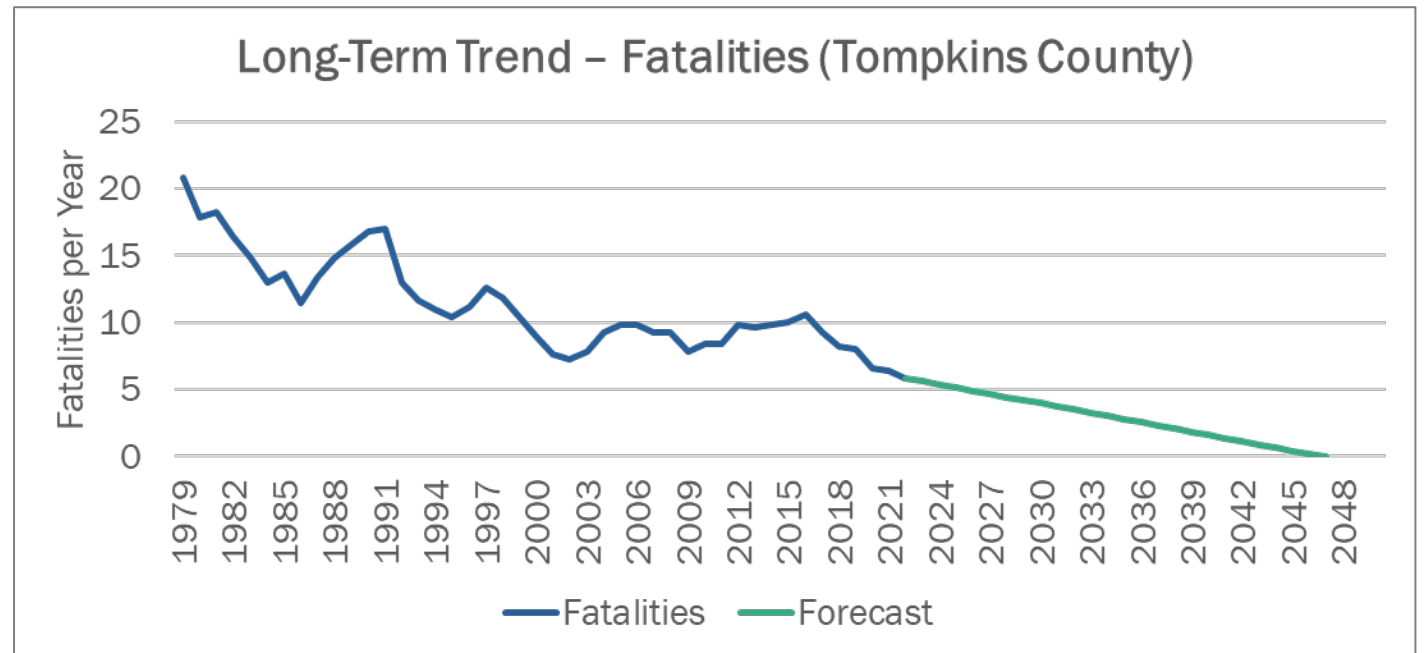


Source: FHWA.

Leadership Buy-In

Best Practices:

- Reviewing long term trends and progress towards zero
- Including touchpoints with leadership throughout the plan development process
- Conducting robust outreach to all communities
- Providing good examples of Vision Zero Communities and resolutions



Commitment to Safety Culture

SCENARIO APPLICATION Capital Project

Process



Resources

- Major & Collector Street Plan (MCSP)
- WalkNBike Strategic Plan
- Vision Zero High Injury Network
- Metro Public Works Long Range Paving Plan
- nMotion Transit Plan

Key Considerations

- Apply Metro standards along Metro facilities, and collaborate with TDOT to identify best fit along TDOT facilities
- Update Complete Streets Implementation Guide and other workflows with required documents as needed
- Initiate staff training.
- Ensure all required documents, plans, and standards are referenced.



SCENARIO APPLICATION Repaving

Process



Resources

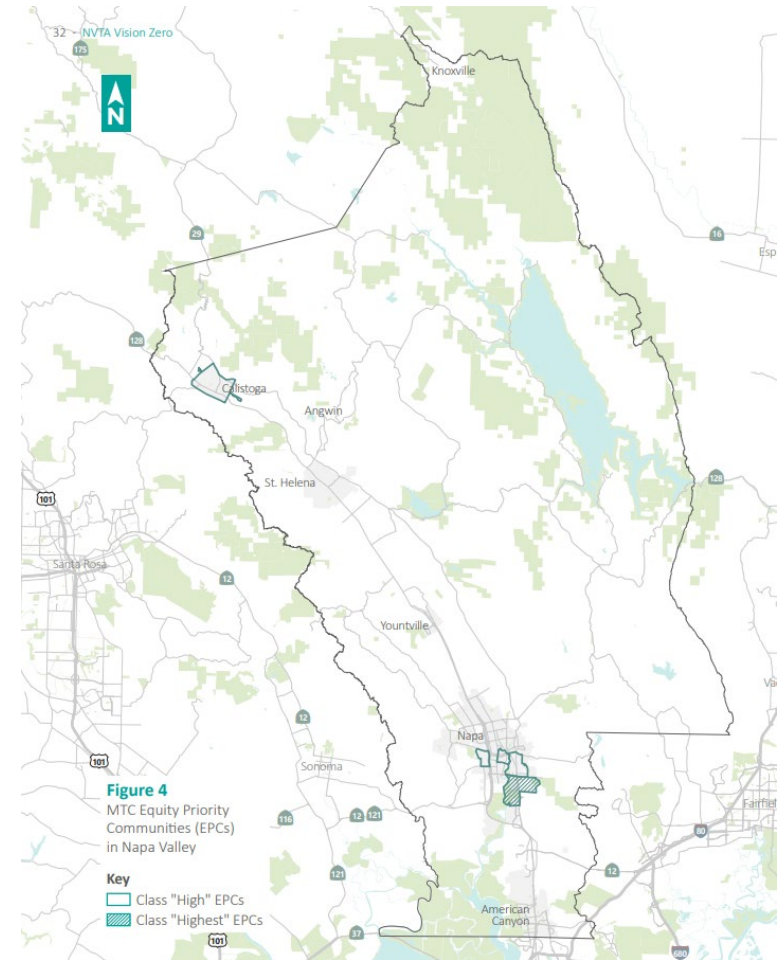
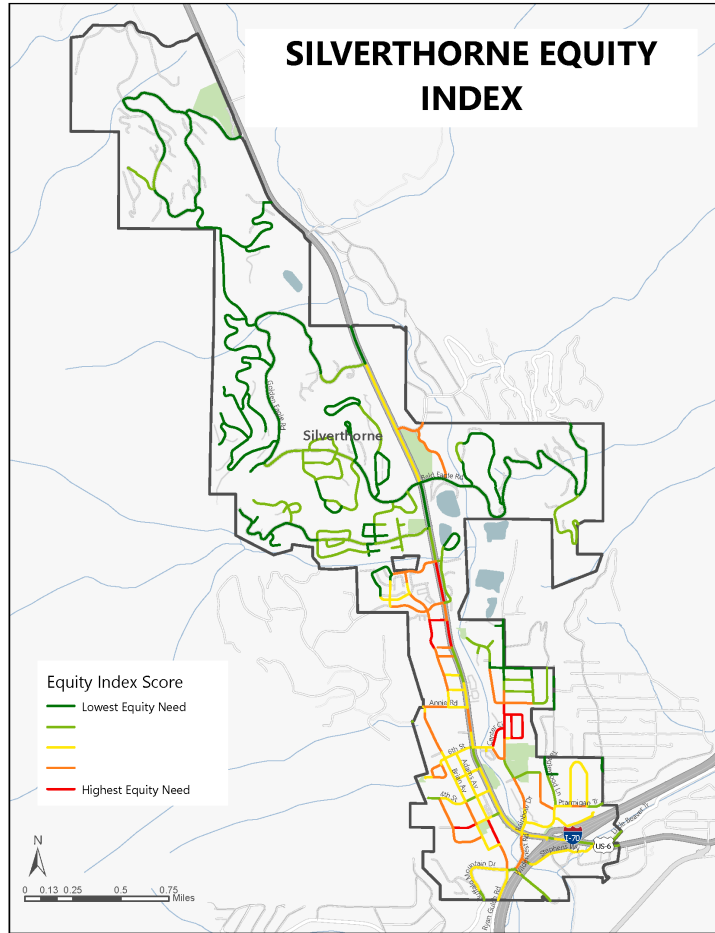
- Metro Public Works Long Range Paving Plan
- Major & Collector Street Plan (MCSP)
- WalkNBike Strategic Plan
- Vision Zero High Injury Network
- WeGo Stop Improvements
- Traffic Projects
- Metro Water Projects

Key Considerations

- Streamline departmental coordination
- Anticipate short time frame for developing plans
- Utilize decision making flowchart when faced with limited clarity and to balance competing priorities.



Equity



Coordination

- Participation of agencies that cover all elements of the Safe System wheel
- Relate to commitment statement(s), resolution(s), executive order(s)
- Ongoing engagement of groups beyond the creation of the plan



Safe System Elements and Principles (USDOT)

Intergovernmental Working Groups

- Type of groups
 - Official boards and commissions
 - Action plan working groups
 - Topical groups or committees
- Public participation
- Cadence of meetings
- Meeting access (physical/virtual)
- Transparency of reporting
- Websites and social media



Keene, New Hampshire Roadway Safety Action Plan website (City of Keene)

Strategies and Actions

- Emphasis Areas
 - Relationship to State SHSP and/or other plans
- Safe System Elements
- Contextual Strategies
 - Location
 - Roadway Type
- Relationship of actions across multiple strategies

Downtown			
Strategy	Safe System Element	Priority Location	Emphasis Area
Improve Visibility at Crossings		N Main	
		S Main	
Community Education about Safety Culture		N Main	
Safe Access to Transit		N Main	
		S Main Griffith	
Modal Separation		N Main St	
		S Main St	
Improved Safety Data		West Davidson	
Reduce Conflicts at Intersections		N Main	

Contextual Strategies and Relationships (Davidson, North Carolina)

Supporting Action	Strategy							
	Improved Visibility at Crossings	Community Education about Safety Culture	Speed Management	Reduced Crashes at Curves	Reduce Conflicts at Intersections	Safe Access to Transit	Improved Safety Data	Modal Separation
Enhanced Pavement Markings			✓	✓	✓			
Outreach to Older Adults		✓				✓	✓	
Expand Police Department Teen Driver Education		✓					✓	
Bike/Ped Education		✓				✓	✓	✓
"Geofence" Safety Culture Messages		✓						
Near Miss Data Collection							✓	
Detour Route Coordination		✓					✓	
Speed Feedback Signs			✓	✓			✓	
Traffic Calming Policy			✓					
Shared Streets/ Woonerf Design Guidelines			✓					
Distracted Driving Education Marketing Program		✓						
Bicycle Detection					✓			✓
Advance Warning Signs	✓		✓					
Flashing Yellow Arrows					✓			
Signal Head Backplates					✓			
Data Integration with Public Health Officials		✓					✓	
Monitor Emergency Response Times		✓	✓				✓	
Coordinate Regional Transit with Emergency Response		✓				✓		
Improve Sight Distance	✓							

Packaging and Prioritization

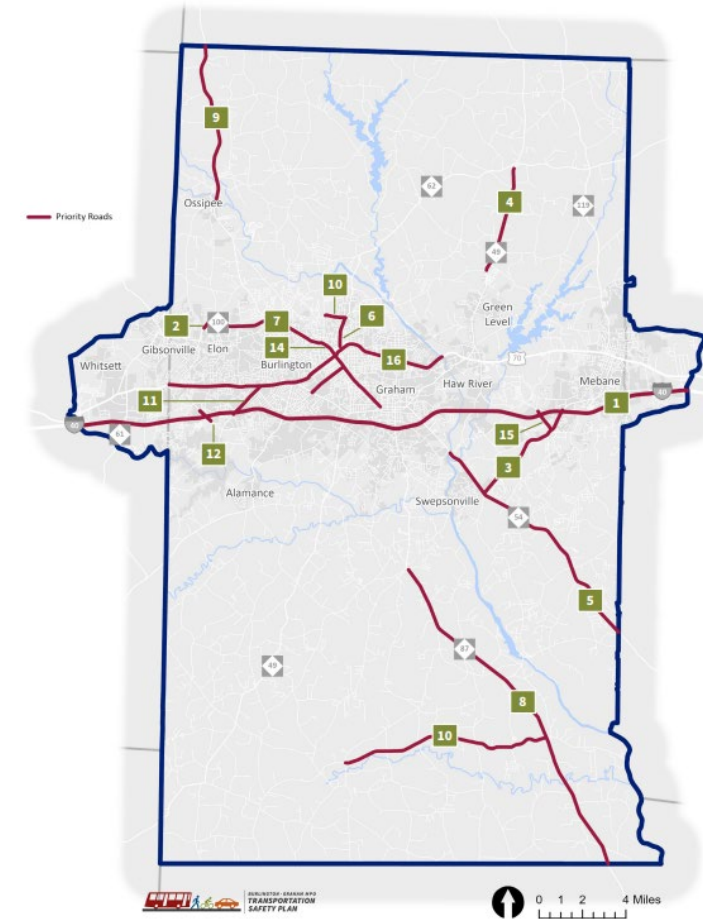
- Tiering of Projects
- Roadway Ownership
- Data-influenced prioritization
- Funding influenced prioritization

LEGEND: Safe Road Users, Safe Vehicles, Safe Speeds, Safe Roads, Post-Crash Care

Location corresponding to Figure 9.2 on page 9-12.

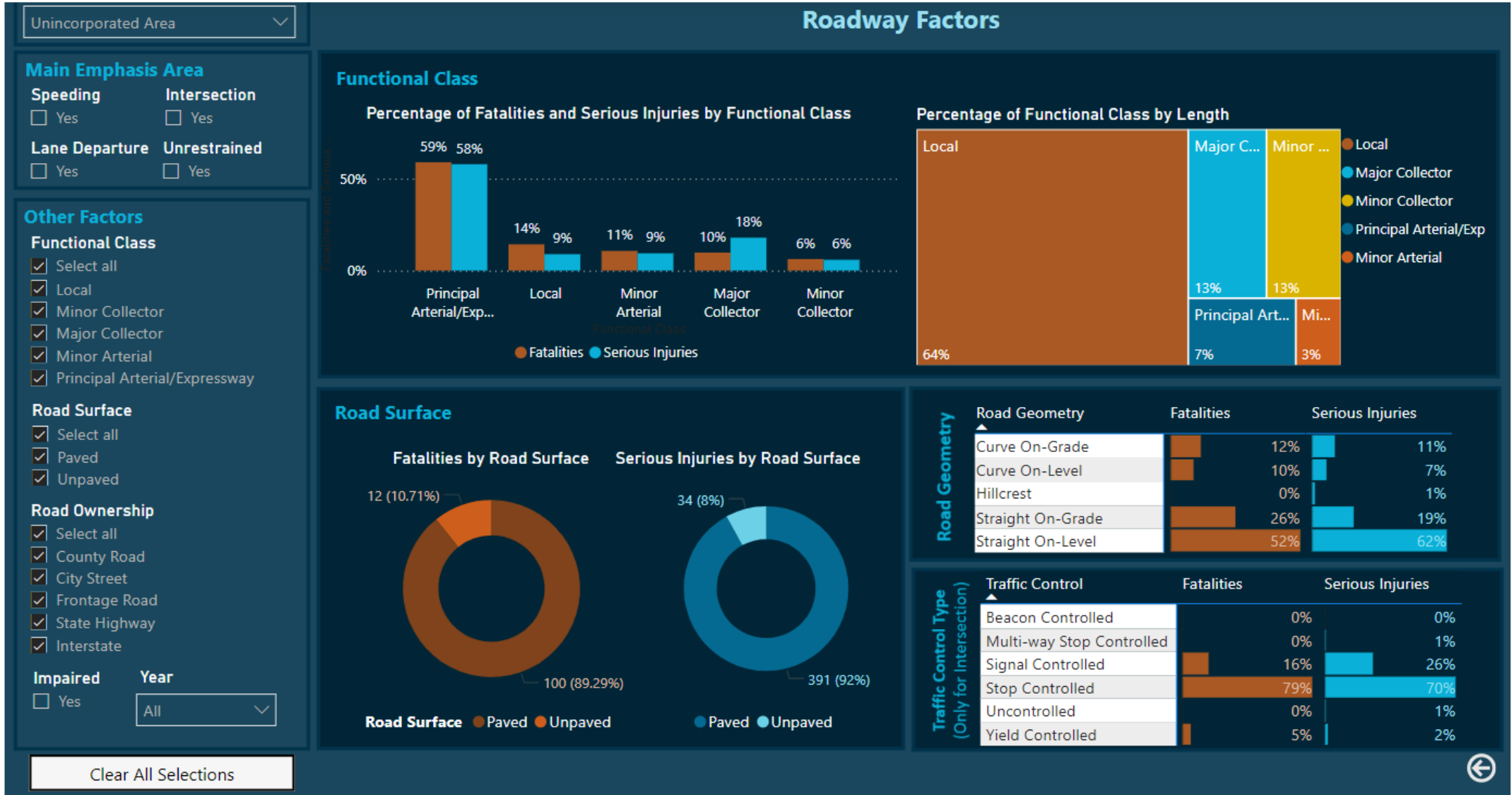
Table 9.2. Local Priority Routes

Priority Route, Route Class, Primary Agency, Equity, and Planning Stage of Corridor	Emphasis Area	Safe System Element
1 Bland Blvd from N. Ashland Dr to US 70 <i>Route Class:</i> Local Road <i>Primary Agency:</i> City of Burlington <i>Equity (USDOT / NCDOT):</i> Yes/No	✓ Unbelted Occupant Potential Treatment(s): Seat Belt Use Awareness Outreach	
2 Bonnar Bridge Pkwy from Loch Ridge Dr to University Dr <i>Route Class:</i> Local Road <i>Primary Agency:</i> City of Burlington <i>Equity (USDOT / NCDOT):</i> No/No	✓ Drowsy Driver Potential Treatment(s): Speed Humps	
3 Boone Station Dr from University Dr to Forestdale Dr <i>Route Class:</i> Local Road <i>Primary Agency:</i> City of Burlington <i>Equity (USDOT / NCDOT):</i> No/No	✓ Drugged Driver ✓ Teen Driver ✓ Speed Related ✓ Unbelted Occupant ✓ Distracted Driver ✓ Lane Departure ✓ Intersection ✓ Older Driver Potential Treatment(s): Speed Feedback Signs	

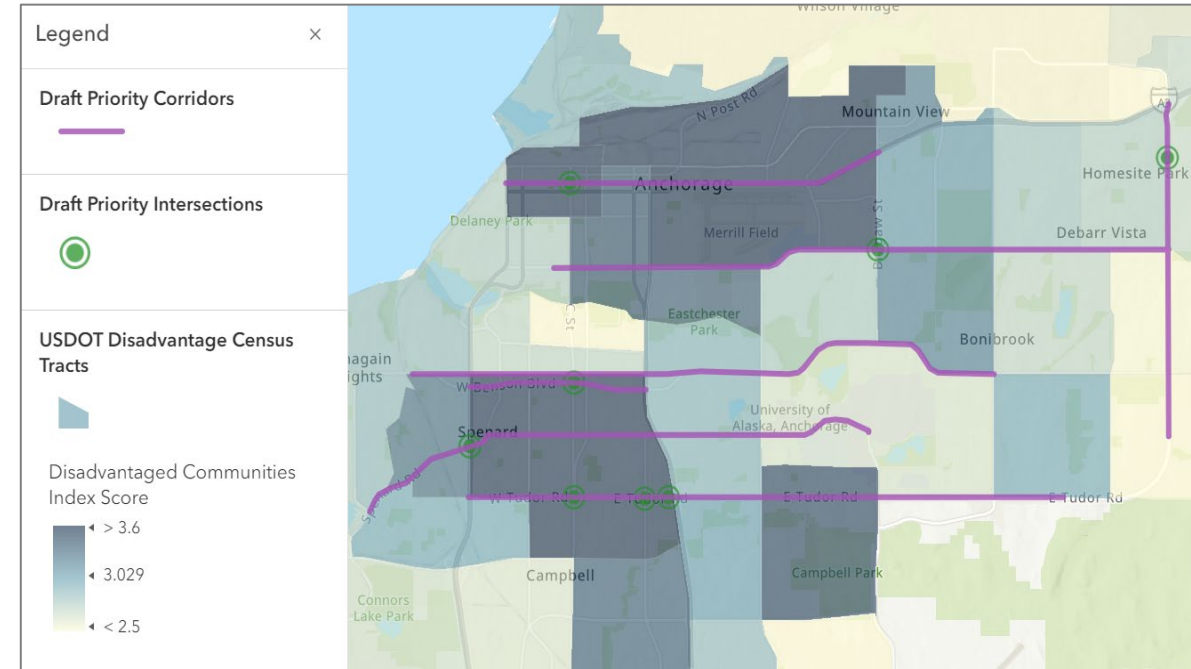
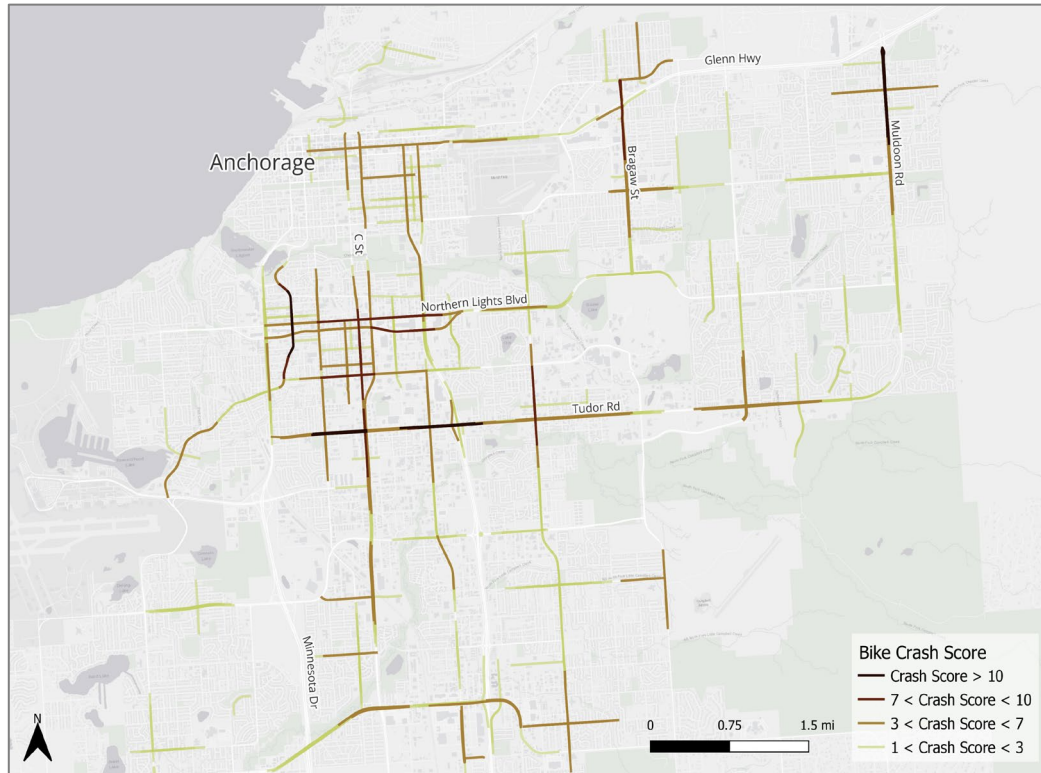


Local roadway prioritization (Burlington-Graham Metropolitan Planning Organization)

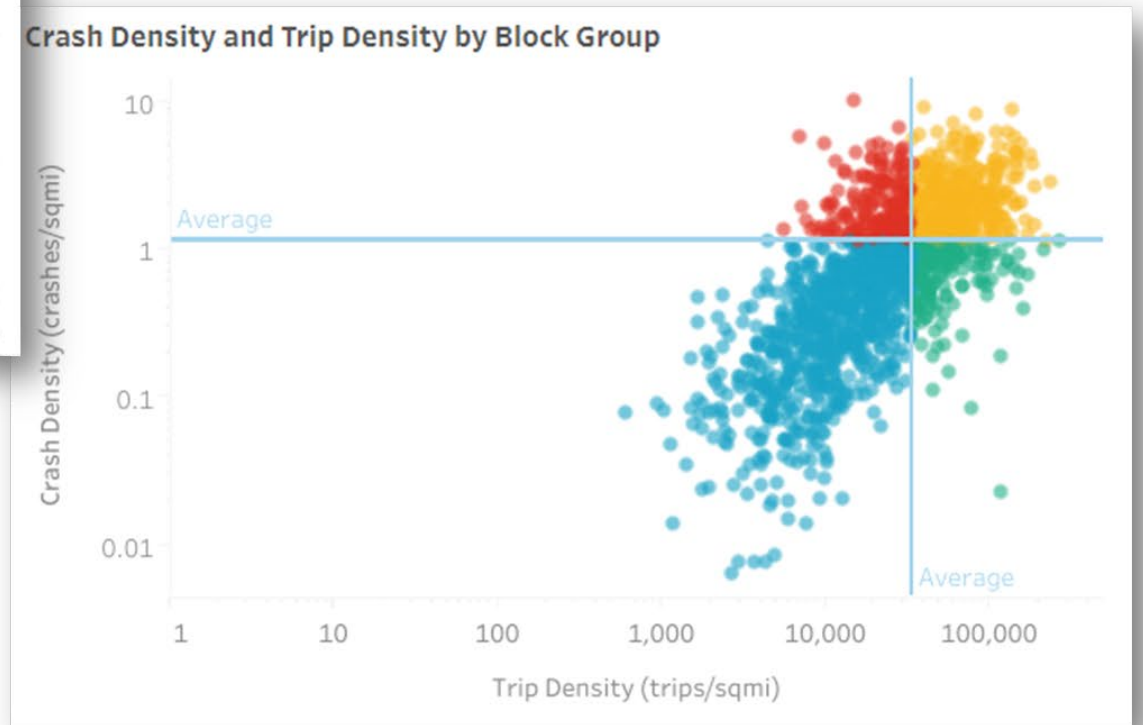
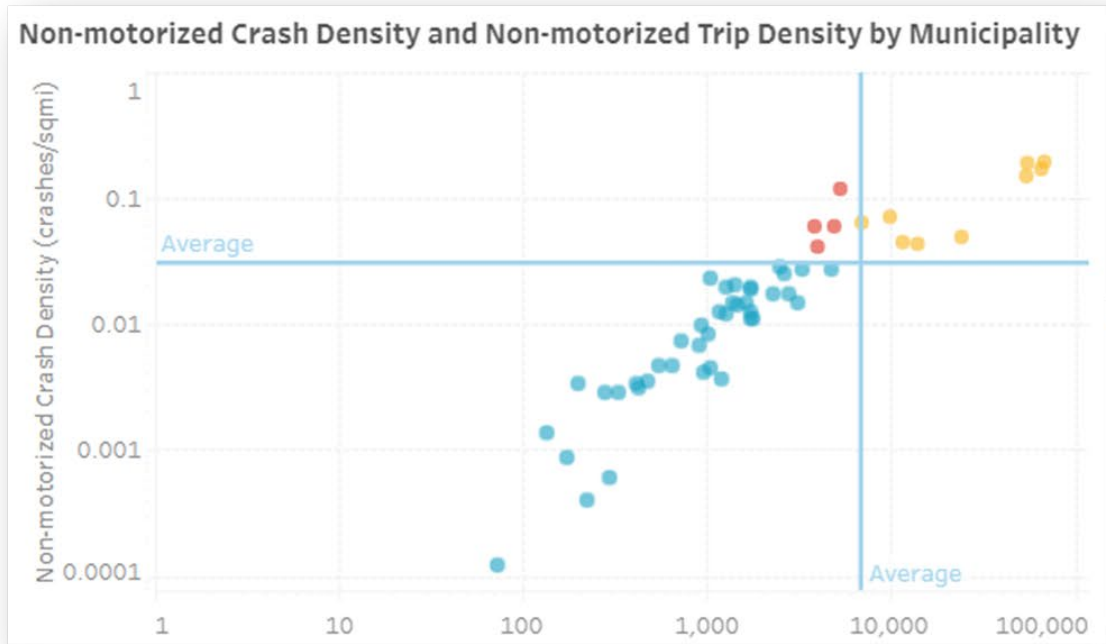
Safety Data Exploration



Priority Network Review

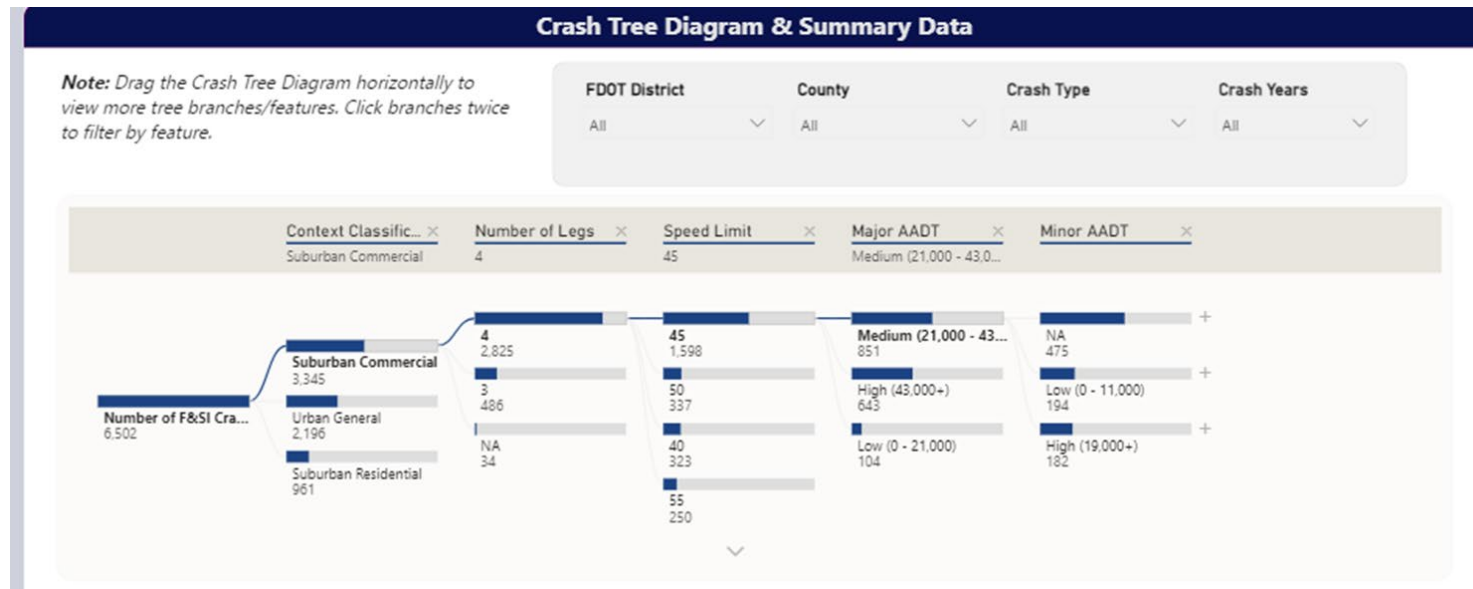


Comparative Analyses



Systemic Safety and Crash Trees

- Proactively address risk characteristics to eliminate future severe injury crashes
- Avoid need for existing severe crash history at a site for treatment or SPF development
- Make use of proven low-cost countermeasures
- Address focus crash types that are overrepresented for focus facilities
- Provides solutions for rural and low volume contexts, as well as urban



Systemic Safety and Crash Trees

Crash Summary of Signalized Intersections for Selected Features

Roadway ID	Milepoint	Context Classification	FDOT District	County	F&SI Crashes?	# of F&SI Angle Crashes	# of F&SI Pedestrian Crashes	# of F&SI Rear End Crashes	# of F&SI Crashes ^a
01010000	20.73	SUBURBAN COMMERCIAL	1	Charlotte	No	0	0	0	0
01040000	3.44	SUBURBAN COMMERCIAL	1	Charlotte	Yes	0	0	0	0
01050000	3.99	SUBURBAN COMMERCIAL	1	Charlotte	No	0	0	0	0
01050000	5.32	SUBURBAN COMMERCIAL	1	Charlotte	No	0	0	0	0
01060000	9.36	SUBURBAN COMMERCIAL	1	Charlotte	No	0	0	0	0
03010000	14.94	SUBURBAN COMMERCIAL	1	Collier	No				
03010000	3.29	SUBURBAN COMMERCIAL	1	Collier	No				
03010000	3.79	SUBURBAN COMMERCIAL	1	Collier	No				
03010000	8.81	SUBURBAN COMMERCIAL	1	Collier	No				
09030000	3.75	SUBURBAN COMMERCIAL	1	Highlands	No				
09030000	6.25	SUBURBAN COMMERCIAL	1	Highlands	No				
10020000	10.17	SUBURBAN COMMERCIAL	7	Hillsborough	No				
10020000	6.01	SUBURBAN COMMERCIAL	7	Hillsborough	No				
Total									3

^a # of F&SI Crashes includes crashes of all crash types and not just the three focus crash types.

Suggested Countermeasures

Countermeasures below apply based on crash type selections. To know more details about each countermeasure, click on the corresponding box.

Extend Yellow Change Interval	Flashing Yellow Arrow	High Emphasis Crosswalk	Intersection Lighting	Leading Pedestrian Interval	Pedestrian Refuge Island	Centerline Hardening	Retroreflective Signal Backplates
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High Emphasis Crosswalk

High Emphasis Crosswalk

CMF*: 0.6
Annual Crash Reduction*: 40%
Unit Cost Estimate: \$12,079 - \$24,090

* CMF and Annual Crash Reduction percentage apply to: All Crash Types

A photograph of a city street during the day. On the left, several cars are parked in a designated area marked with white lines and bollards. A person is riding a bicycle down the center of the street. On the right, there is a sidewalk with trees, some of which have autumn-colored leaves. Buildings line the street in the background.

Thank you!

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