



Lower Connecticut River Valley Council of Governments

Comprehensive Safety Action Plan

DRAFT November 4, 2025



RiverCOG thanks the following individuals who contributed their time and energy to the success of this Action Plan. Without your support, this plan would not be possible.

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The Comprehensive Safety Action Plan was prepared for RiverCOG by:



in collaboration with Tighe&Bond

Resolutions

A RESOLUTION OF THE MPO BOARD OF THE LOWER CONNECTICUT RIVER VALLEY COUNCIL OF GOVERNMENTS (RIVERCOG) ADOPTING A VISION ZERO POLICY

WHEREAS, the life and health of all persons living and traveling within the Lower Connecticut River Valley Region are our utmost priority, and no one should die or be seriously injured while traveling on our region’s roadways;

WHEREAS, Vision Zero is the concept that traffic deaths and serious injuries on our roadways are unacceptable;

WHEREAS, Vision Zero is a holistic strategy aimed at eliminating all traffic fatalities and severe injuries suffered by all road users while increasing safe, healthy, equitable mobility for all;

WHEREAS, roadways and transportation systems have traditionally been designed primarily to move cars efficiently, and Vision Zero supports a paradigm shift by designing streets and transportation systems to move all people safely, including but not limited to people of all ages and abilities, pedestrians, bicyclists, public transit users, scooter riders, and motorcyclists, as well as drivers and passengers of motor vehicles;

WHEREAS, Vision Zero recognizes that people will sometimes make mistakes, so the road system and related policies should be designed to ensure that those inevitable mistakes do not result in severe injuries or fatalities; therefore, transportation planners and engineers and policymakers are expected to improve the roadway environment, policies, and other related systems to lessen the severity of crashes;

WHEREAS, the region saw 48 fatal crashes and 225 serious injury crashes in the 2019-2023 period;

WHEREAS, transportation infrastructure in the region serves an increasing number of vulnerable road users such as pedestrians and bicyclists, and pedestrians and bicyclists are involved in over 14 percent of fatal and serious injury crashes in the region;

NOW, THEREFORE, BE IT RESOLVED, by the Lower Connecticut River Valley Council of Governments, State of Connecticut, as follows:

The Lower Connecticut River Valley Council of Governments (RiverCOG) will:

- Aim to eliminate fatalities and serious injuries on regional roadways by 2045.
- Encourage all municipalities and transportation agencies within the region to align their safety initiatives with Vision Zero.
- Position municipalities with identified projects for Safe Streets and Roads for All funding and other funding sources.
- Apply a Safe System Approach.
- Reassess crash data every five years.

In undertaking this effort RiverCOG will:

- 1. Identify and prioritize opportunities to improve safety and accessibility of the regional transportation system for all users
- 2. Convene regional partners, public stakeholders, local organizations and private interests to collaborate on solutions to promote transportation safety
- 3. Improve data monitoring and reporting to document progress and improve communications to municipalities and the public

The RiverCOG MPO Board Secretary shall certify the adoption of this Resolution, effective immediately, by the RiverCOG MPO Board.

PASSED AND ADOPTED by the RiverCOG MPO Board, State of Connecticut, on [Date], 20[___].

CERTIFICATION,

The undersigned duly qualified and acting Secretary of the Lower Connecticut River Valley Council of Governments certifies that the foregoing is a true and correct copy of a resolution adopted at a legally convened meeting of the Lower Connecticut Valley Council of Governments of [DATE].

Signature date
Name
Secretary

RESOLUTION REGARDING THE ADOPTION OF THE LOWER CONNECTICUT RIVER VALLEY REGION SAFE STREETS AND ROADS FOR ALL (SS4A) COMPREHENSIVE SAFETY ACTION PLAN

WHEREAS, the SS4A Action Plan is a comprehensive safety plan aimed at reducing and eliminating serious-injury and fatal crashes affecting all roadway users. Action Plans use data analysis to characterize roadway safety problems and strengthen a region’s approach through projects and strategies that address the most significant safety risks.

WHEREAS, the SS4A grant program is guided by the Safe System Approach, which involves a paradigm shift to improve safety culture, increase collaboration across all safety stakeholders, and refocus transportation system design and operation on anticipating human mistakes and lessening impact forces to reduce crash severity and save lives.

NOW, THEREFORE, BE IT RESOLVED BY THE LOWER CONNECTICUT RIVER VALLEY COUNCIL OF GOVERNMENTS

To adopt the 2025 SS4A Comprehensive Safety Action Plan. This endorsement by the Lower Connecticut River Valley Council of Governments constitutes the metropolitan planning organization adoption of the RiverCOG SS4A Comprehensive Safety Action Plan.

CERTIFICATION

The undersigned and duly qualified Secretary of the Lower Connecticut River Valley Council of Governments certifies that the foregoing is a true and correct copy of a resolution adopted at a legally convened meeting of the Lower Connecticut River Valley Council of Governments on January 19, 2026.

Robert McGarry
Secretary

Date

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Introduction



National Context on Road Safety and the Emergence of SS4A

For decades, roadway safety policy in the U.S. was largely reactive and compliance-based. Agencies focused on enforcing engineering guidelines and fixing high-crash locations, rather than preventing serious injury and fatal crashes through design or policy. Safety was often treated as a secondary concern to traffic flow, and planning rarely addressed systemic risk or the needs of people walking, biking, or using transit.

In recent years, rising traffic fatalities — especially among people walking and biking — have underscored the limitations of this approach. Despite fewer cars on the road during the COVID-19 pandemic, fatal crashes increased after years of steady decline. The crisis made clear that roadway

safety is not just a technical challenge, but a public health and policy issue, deeply tied to how our streets are planned, designed, and funded.

In response, The Infrastructure Investment and Jobs Act established the Safe Streets and Roads for All (SS4A) program in 2022. The program's purpose is to improve roadway safety by significantly reducing and eventually eliminating roadway fatalities and serious injuries. The U.S. Department of Transportation program facilitates the development and implementation of Safety Action Plans that address roadway safety for all users, and provides funding to develop tools that can enhance a community's approach to roadway safety.

What is a Safety Action Plan?

A Safety Action Plan is a comprehensive strategy developed by a community to prevent roadway deaths and serious injuries. It outlines a clear vision for transportation safety and identifies the most significant safety issues through data analysis, public input, and local knowledge. The plan prioritizes projects and policies that address those risks, with a focus on policy, speed management, and safer street design.

In 2022, the U.S. Department of Transportation awarded the Lower Connecticut Valley Council of Governments (RiverCOG) an SS4A Planning and Demonstration Grant to develop a comprehensive roadway safety action plan. This Action Plan is the primary deliverable for this federal assistance and reflects the program's priorities and requirements.

Figure 1. Components of the Safe System Approach



Source: FHWA

Safe System Approach

The Safe System Approach was adopted by the U.S. Department of Transportation to identify and address safety risks in each community. The approach focuses on evaluating human mistakes and vulnerability in addition to data driven crash analysis, in order to create a comprehensive plan to improve safety across the nation.

Principles of the Safe Systems Approach

- Death and Serious Injuries are Unacceptable.* All parties should focus on elimination of crashes that result in serious injury or death.
- Humans Make Mistakes.* This approach tries to anticipate the mistakes/choices that people make to limit the number of serious crashes.
- Humans Are Vulnerable.* Human bodies have a threshold of injury during a crash before it results in death. It is of paramount importance to create a transportation system that accounts for human vulnerabilities in its design.
- Responsibility is Shared.* All stakeholders are vital to mitigating crash fatalities and injuries.
- Safety is Proactive.* Proactive tools should be used to identify and address safety issues in the transportation system, rather than waiting for crashes to occur and reacting afterwards.
- Redundancy is Crucial.* Reducing risks requires that all aspects of transportation have an opportunity for improvement.

Why the Lower Connecticut River Valley Region Needs a Safety Action Plan

Three years after the RiverCOG Board adopted the Lower Connecticut River Valley Regional Transportation Safety Plan, a renewed focus is needed to identify priority locations for a safety focus. Moreover, the Lower Connecticut River Valley has maintained a long-standing focus on active transportation networks and connections to open space and recreation, and the Board and its member municipalities recognize that the regional road network has the potential to expand access to local resources.

The RiverCOG SS4A Comprehensive Safety Action Plan aims to enhance road safety and reduce traffic-related injuries and fatalities across the Lower Connecticut River Valley (LCRV) region. The Action Plan will identify safety issues through a comprehensive evaluation of current infrastructure,

crash data, and feedback from the community and stakeholders. Guided by this extensive data and community engagement effort, the plan will establish recommendations centering projects that will improve the design and functionality of streets to accommodate all users, implement best practices from similar regions, and foster safer, more accessible transportation networks. The plan will ultimately culminate with a framework and strategy to establish a safer and more connected transportation network for the residents and visitors of the Lower Connecticut River Valley.

Plan Organization

This Action Plan provides an analysis of 2019 to 2023 regional crashes, a review of the region's demographics (transportation need and access), and describe the public engagement process undertaken to support the development of the Action Plan. The region's priority roadway segments are identified, and appropriate countermeasures are selected for the top locations. The recommendations are then described, grouped into types of implementation measures:

- [practices and policies](#)
- [safe design](#)
- [education, resources, and enforcement](#)
- [data and monitoring](#)

Finally, profiles of each municipality in the region round out the document, including the results of site investigations and high level recommendations for ten corridors and planning-level concepts for three of these locations. These profiles are intended to help municipalities pursue grant funding to implement projects.

RiverCOG Regional Commitment and Goals

Vision



Aim to eliminate fatalities and serious injuries on regional roadways by **2045**



Encourage all municipalities and transportation agencies within the region to align their safety initiatives with Vision Zero



Position municipalities with identified projects for Safe Streets and Roads for All (SS4A) funding and other funding sources



Apply a Safe System Approach



Reassess crash data every five years

Goals

- Identify and prioritize opportunities to improve safety and accessibility of the regional transportation system for all users
- Convene regional partners, public stakeholders, local organizations and private interests to collaborate on solutions to promote transportation safety
- Improve data monitoring and reporting to document progress and improve communications to municipalities and the public



Lower Connecticut River Valley

Safety Assessment

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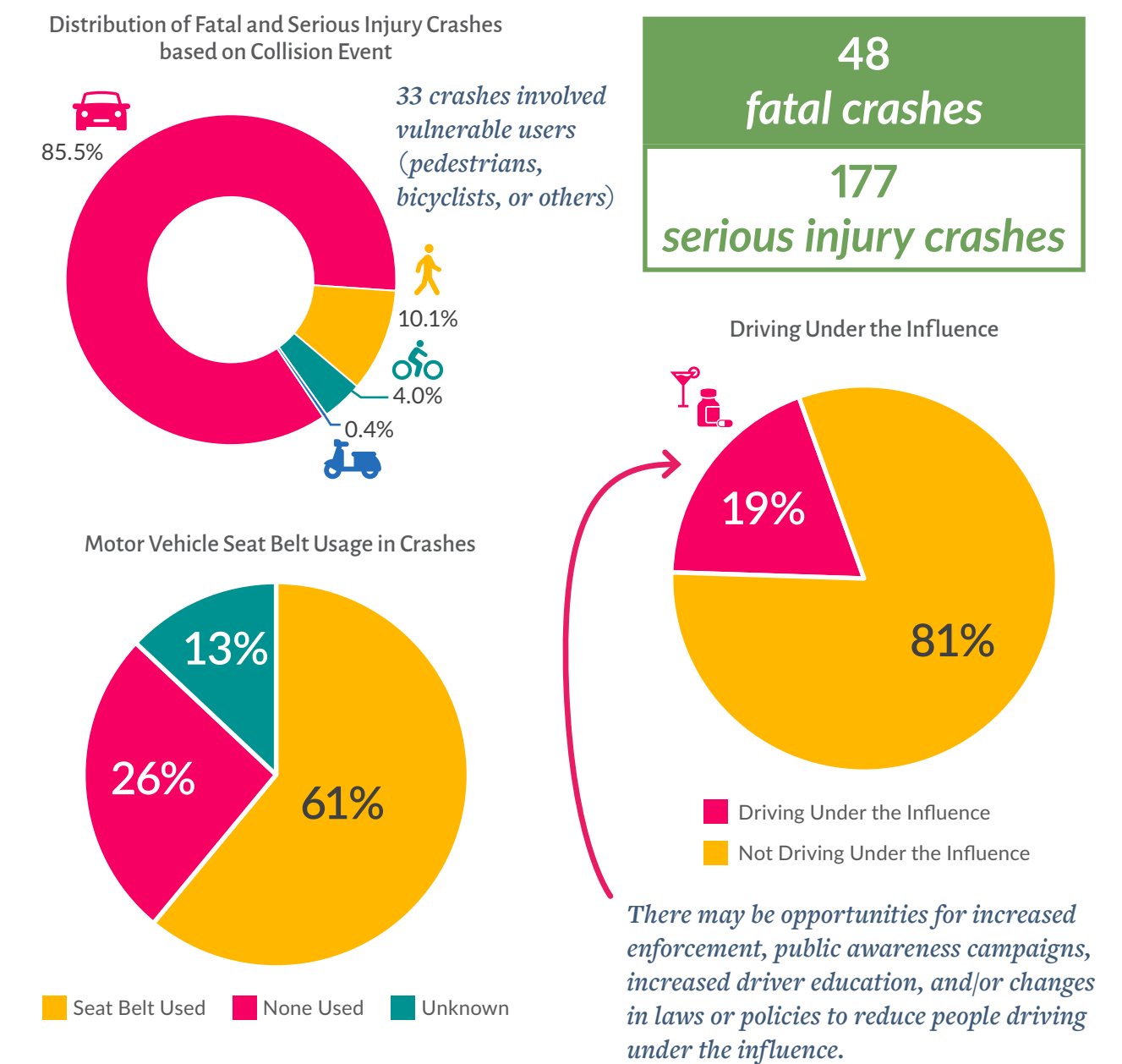


Crash Analysis Overview

The data collected for the Safety Analysis includes the collection of crash data from January 1, 2019, to December 31, 2023, from the Connecticut Crash Data Repository (CTCDR). The crash data was filtered to review crash data to include fatal (K) and serious injury (A) crashes only to align with the SS4A program goals of preventing serious injury and fatal crashes. **The data set includes all reported crashes on non-interstate and non-freeway CT Department of Transportation roadways as well as local roadways** throughout the RiverCOG region. Private property, private roadways, and limited access roadways including I-91, I-95, and Route 9 are excluded from the analysis. Crashes that occurred at freeway ramp junctions at state or local roadways were included in the analysis.

There were approximately 225 reported fatal and serious injury crashes on state and locally owned and maintained roadways across the region over the period analyzed.

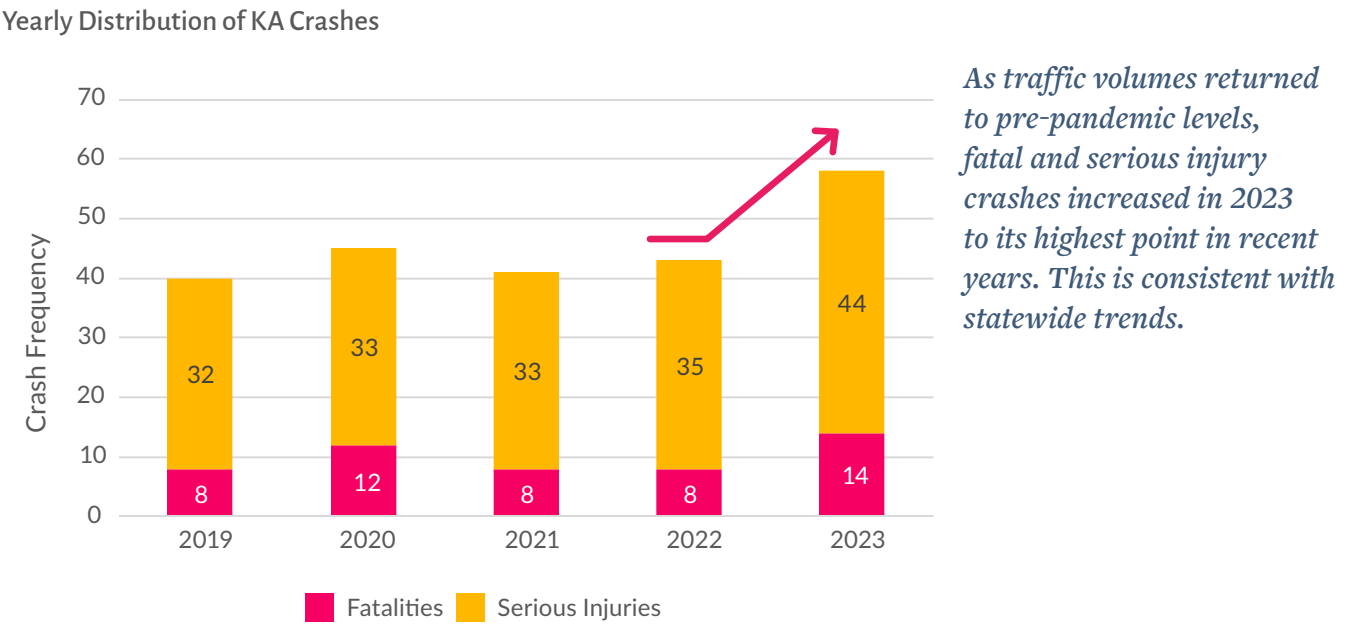
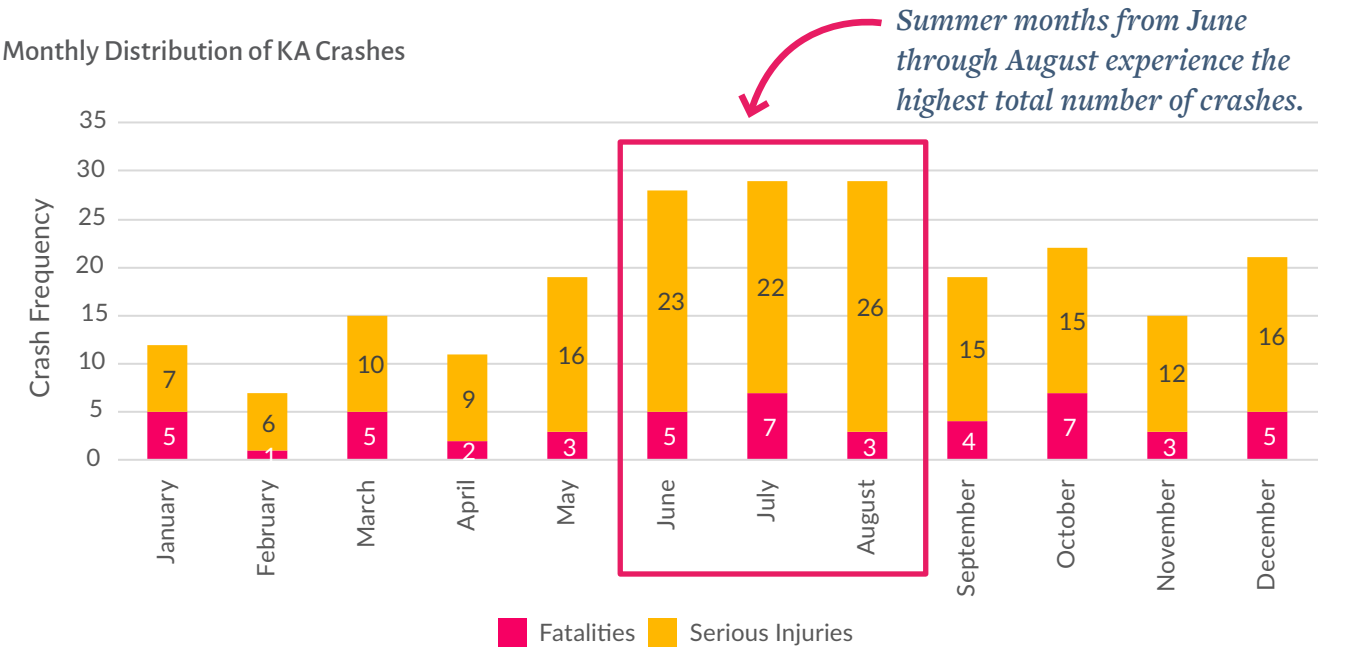
Serious Injury and Fatal Crashes in the LCRV



proportion of fatal and serious injury crashes occurring on

74% state

26% local roads



Crashes Involving Pedestrians and Bicyclists

Approximately 70% of fatal and serious injury crashes involving pedestrians occurred when crossing a roadway, indicating potential opportunity for new or improved crossings and/or improved or additional pedestrian facilities. Almost half (45%) of all drivers involved in crashes were cited with an infraction or given a verbal or written warning, indicating a potential need for increased driver education.

Location and Severity Based Analysis

In addition to trend analysis, two major location and severity focused indicators were developed to analyze the locations where fatal and serious injury crashes are concentrated: **a high injury network (HIN)** (Figure 3) and **critical crash rate (CCR)** locations (Figure 4).

The HIN identifies the top ten sites with the highest concentration of severe or fatal traffic crashes, used to focus safety interventions. While the HIN only analyzes fatal and serious injury crash data, the CCR uses data from all crashes and normalizes the crash rates based on traffic volumes.

Figure 2. Pedestrian and Bicycle Crashes

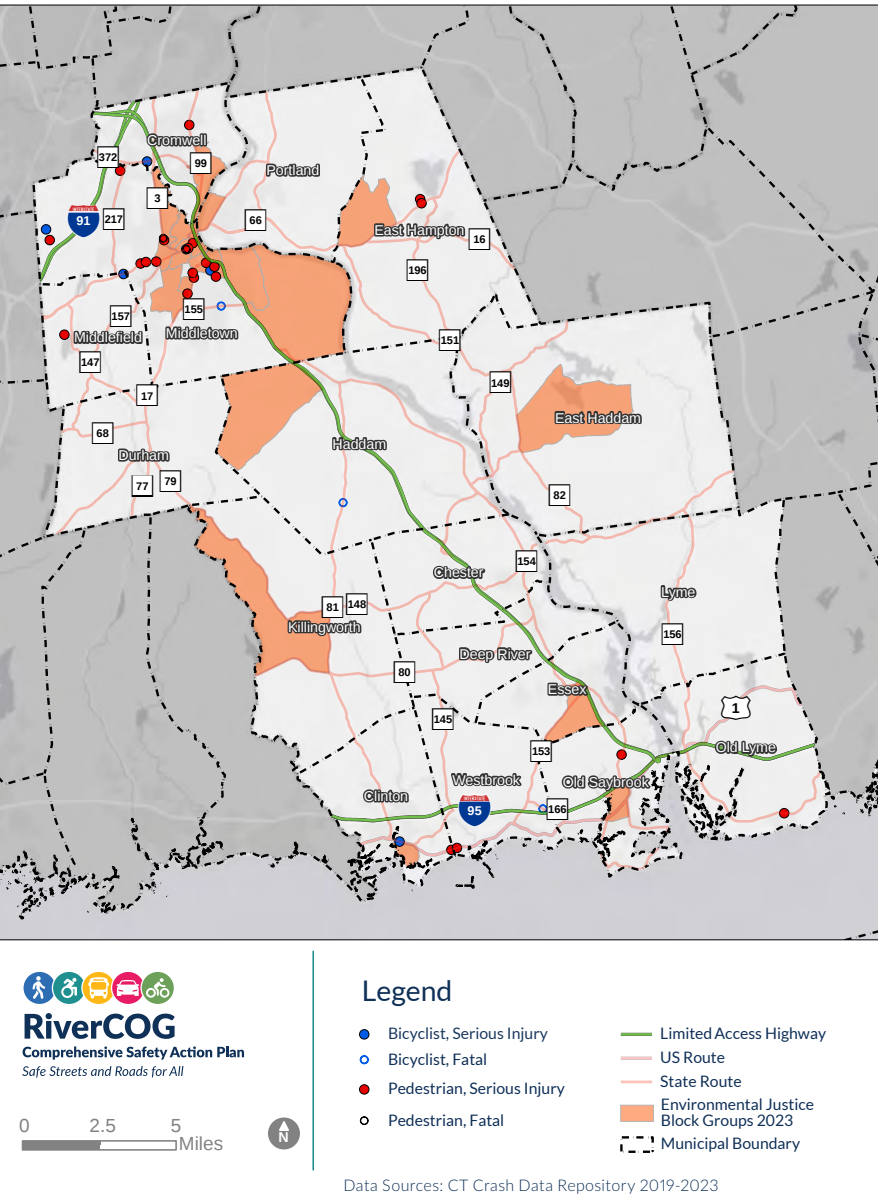


Figure 3. High Injury Network

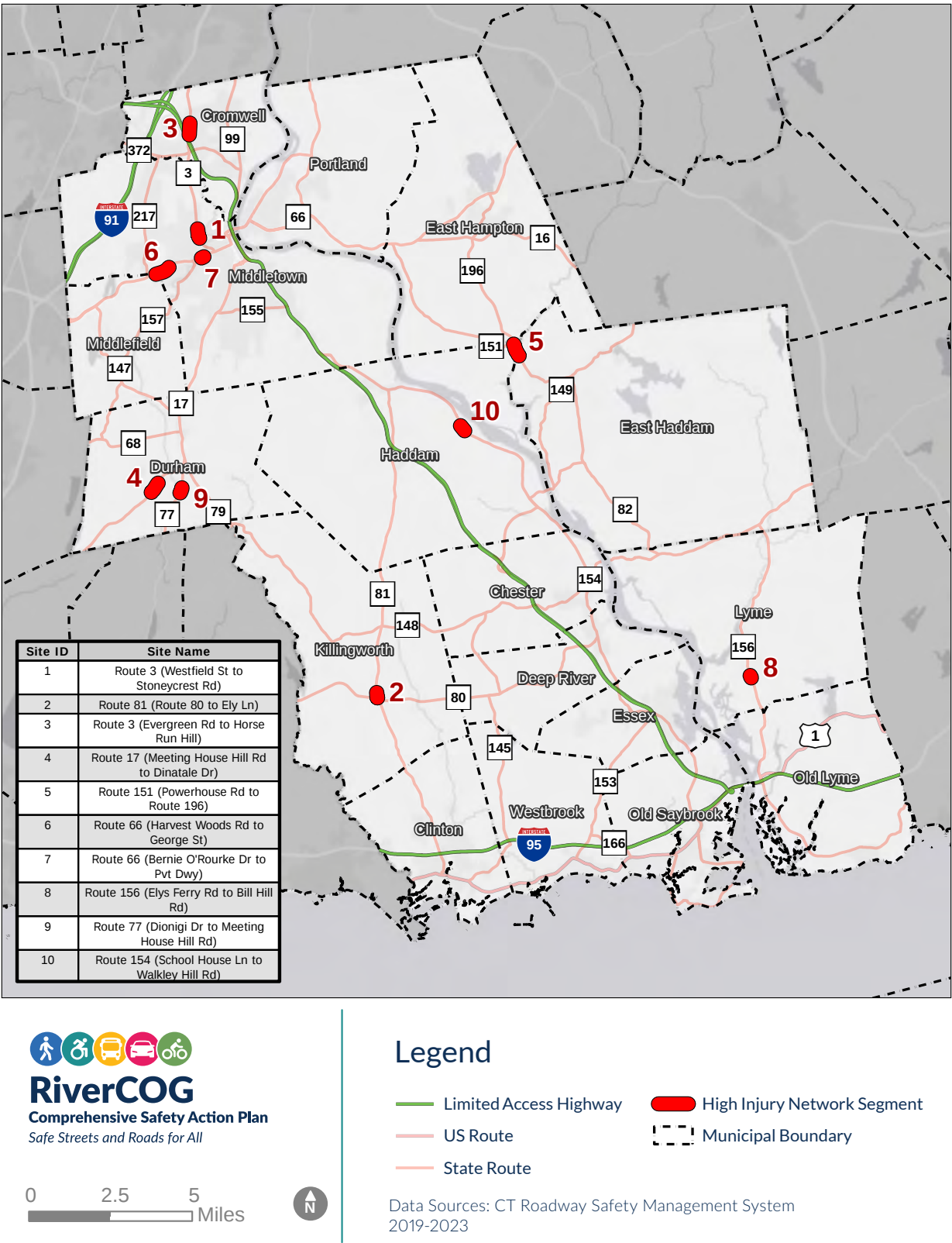
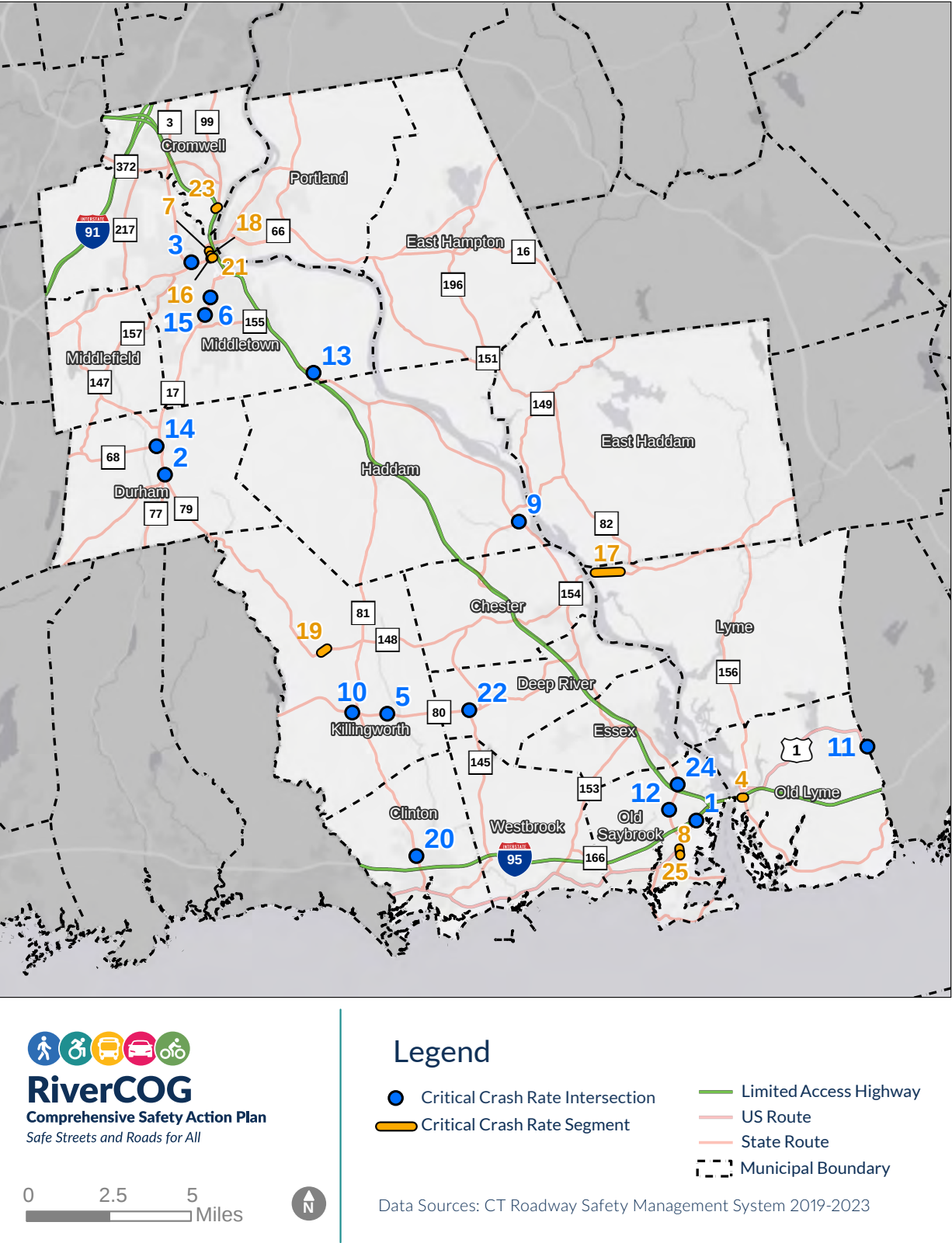


Figure 4. Critical Crash Rate Locations



Assessing Access and Transportation Need



Approach

The team identified populations that are more likely to use transit, bike, or walk and are thus more susceptible to roadway deaths or serious injuries. Nationwide, people with lower incomes, minorities, and older adults are overrepresented in pedestrian fatalities.¹

A multi-pronged approach was used to identify equity priority areas. This assessment overlaid scores calculated from Census Bureau American Community Survey 5-Year Estimates (2021), Justice40 criteria, and Connecticut Department of Energy and Environmental Protection (CTDEEP) Environmental Justice criteria to identify areas in the study area with the highest need.

As shown in Figure 5, the highest equity score locations are due to:

- (1) being placed at or above the 90th percentile of calculated equity scores in the region,
- (2) defined by either Justice40 or CTDEEP criteria, or
- (3) a combination of the former two criteria.²

Results

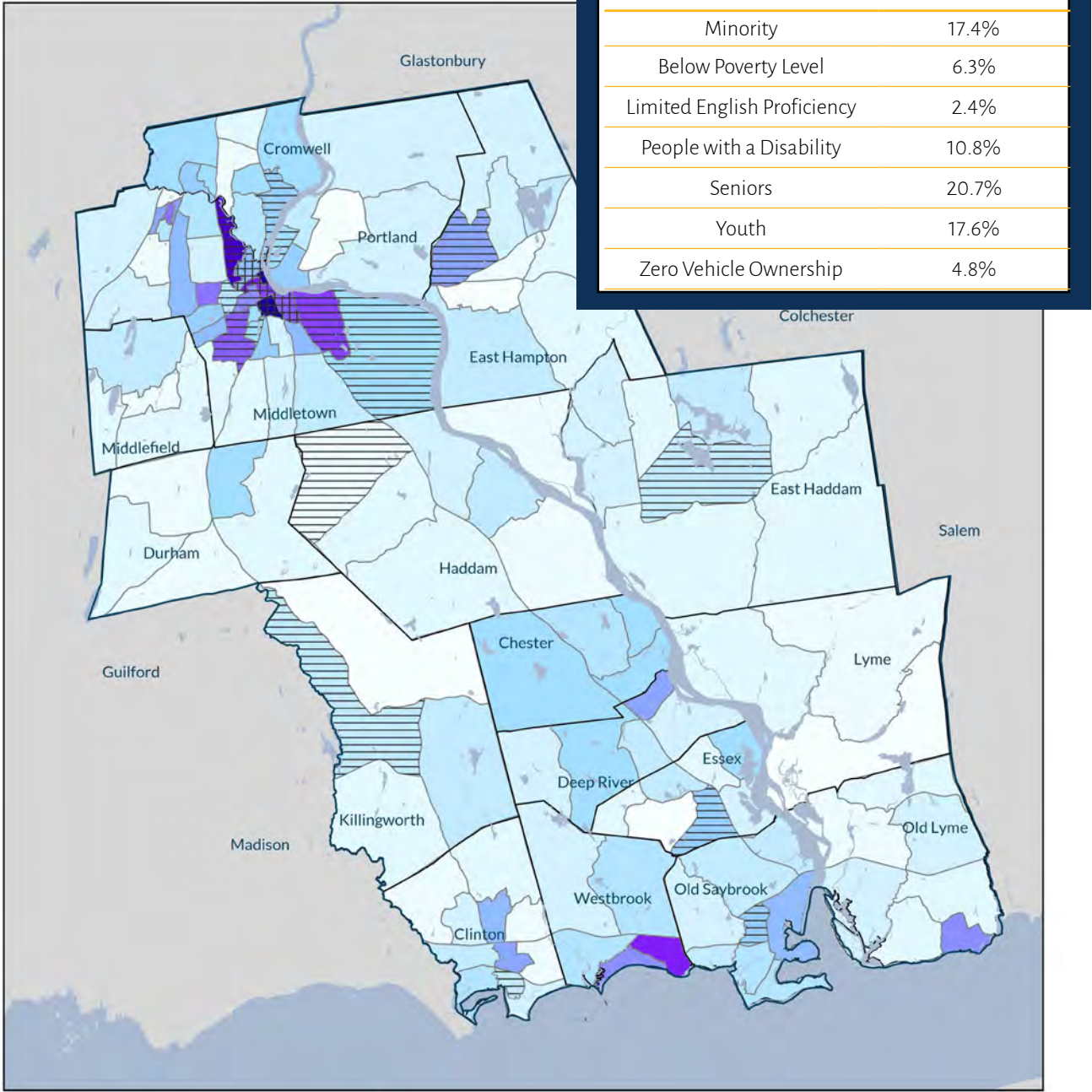
Middletown scored the highest due to high populations of people with disabilities, minorities, limited English proficiencies, poverty, and no car ownership. These locations were defined as environmental justice areas according to Justice40 and CTDEEP criteria. Westbrook also scored high due to its relatively high populations of people with disabilities, minorities, seniors, limited English proficiencies, and no car ownership. Additionally, Old Lyme had a high equity score

due to poverty, limited English proficiency, minorities, seniors, and youth. Parts of East Haddam, Haddam, Killingworth, Essex, Old Saybrook, and Clinton were deemed as environmental justice communities by CT DEEP and its indicators of income, poverty, population rate, employment, income, housing stock, and education.³

This assessment was updated to include 2025 changes to federal transportation funding guidelines.⁴ There are several municipalities in the region with above national average birth rates, marriage rates, or with opportunity zones including Middletown, Clinton, Essex (marriage rate only). Additionally, East Haddam, East Hampton, Killingworth, and Old Lyme (have above average birth rates).

Areas with high transportation need and access informed the prioritization of regionally significant corridors. Public engagement (pop-ups, public meetings, and targeted outreach) was sited and designed to elevate participation from historically underrepresented groups and populations disproportionately impacted by roadway fatalities.

Figure 5. Transportation Access and Need Assessment



Legend

Low Equity Need

High Equity Need

||||| J40 Disadvantaged Community

==== CT DEEP Environmental Justice Community

Data Sources: ACS 5-Year Estimates Detailed Tables (2021): B01001, B03002, B17021, B25044, C18108, B08301, C16002; CTDEEP Environmental Justice Block Groups (2023); U.S. EPA Environmental Justice Screening Tool (2024); NAD 1983 (2011) StatePlane Connecticut FIPS 0600 (US Feet)

¹ Smart Growth America. *Dangerous by Design* 2024. <https://smartgrowthamerica.org/dangerous-by-design/#custom-tab-0-3b878279a04dc47d60932cb294d96259>

² Further methodology details are available within Appendix A. *Base Mapping & Safety Analysis Memo*, December 2024.

³ Additional information on CT DEEP's methodology can be found on their website: <https://portal.ct.gov/deep/environmental-justice/05-learn-more-about-environmental-justice-communities>

⁴ U.S. Department of Transportation, Office of the Secretary. "Ensuring Reliance Upon Sound Economic Analysis in Department of Transportation Policies, Programs, and Activities" (DOT Order 2100.7, effective January 29, 2025), PDF document, last updated February 7, 2025, U.S. Department of Transportation. https://www.transportation.gov/.../Signed%20DOT%20Order%20re_Ensuring%20Reliance...pdf.

Public Engagement

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Role of Public Engagement

The project team sought input from the public and key regional stakeholders, including leadership from every town, the Middlesex County Chamber of Commerce, River Valley Transit, and the Connecticut Department of Transportation (CTDOT). A Stakeholder Advisory Committee (SAC) was convened including River Valley Transit, CTDOT, adn elected and town planning officials. First, participants shared feedback on roadways of concerned via the virtual mapping tool ("online map"), which helped the project team identify focus areas. Next, participants shared ideas for programs and policies that would improve roadway safety. Last, the project team shared profiles for every town, highlighting key areas of concern and in some cases sharing potential safety countermeasures that could address community concerns. The public and stakeholders shared their

input on these designs, which will help with future grant applications and implementation.

Figure 6 describes the phases of public input in greater detail.



On the online map, participants were able to pin locations of concern (or where they had suggestions for safety improvements) and provide detail on the issue.

What People Were Most Concerned About

Desire for better street lighting, safer crossings, and safer road speeds especially in high-traffic and high-speed areas.

In a rural context, local schools are important hubs for pedestrian activity. Finding ways to promote sidewalks and safe crossings is important here.

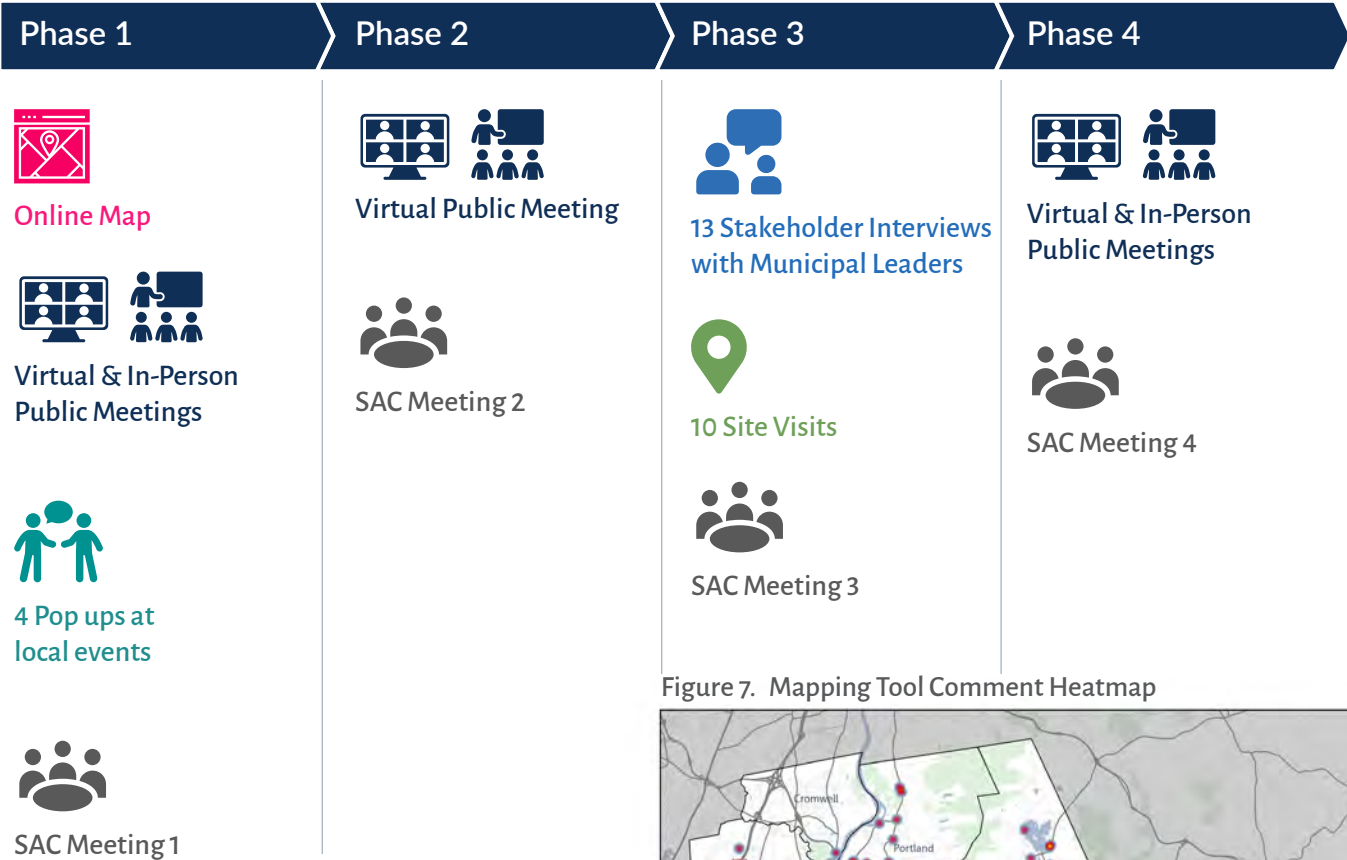
Municipalities and advocates seek better guidance and a smoother process for complete streets improvements on state routes.

Multimodal access - in particular pedestrian and bike connectivity - is especially desirable near parks, and connecting regional trails.

Focus on the impact shoreline traffic has on safety especially volumes and speeding.

Numerous speeding concerns on local, rural roads with little to no shoulder are amplified by the natural topography.

Figure 6. Engagement Efforts for the RiverCOG Comprehensive Safety Action Plan



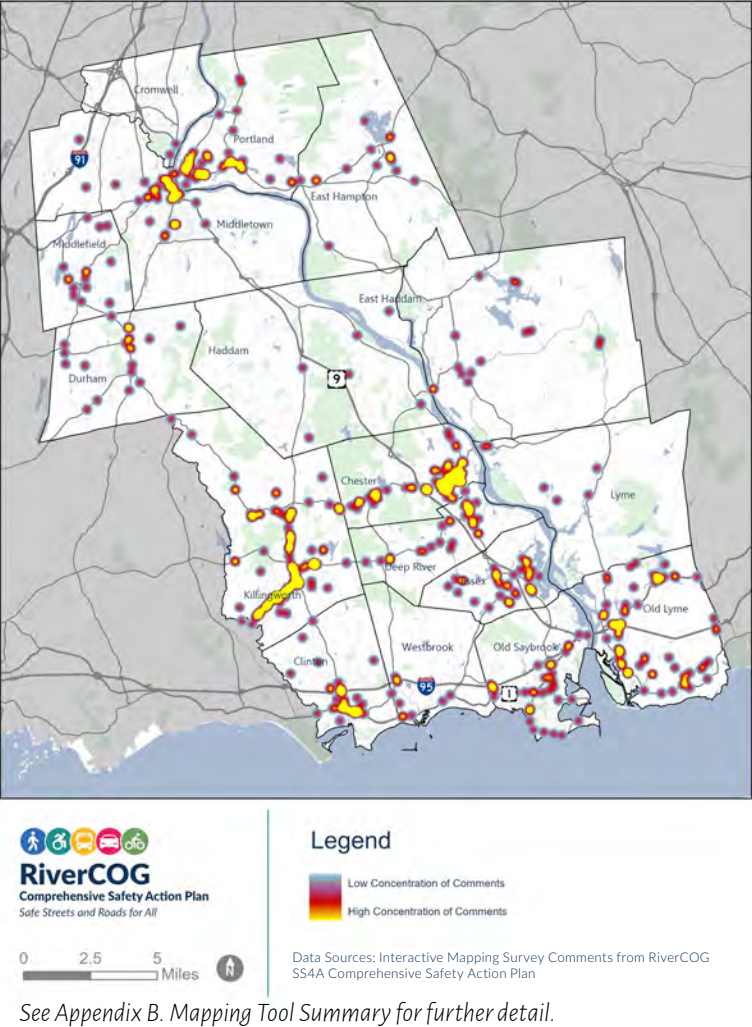
Connecting Data to Lived Experience

Data provided by residents, employees, and visitors the region provided a narrative and location-specific feedback mirroring trends from the safety analysis. The granularity of comments allowed the project team to refine improvements for focus corridors.

Table 2. Common Themes from Online Comment Map

Theme	Count	Percent of Total
Driver/Car Safety	396	63%
Pedestrian	240	38%
Intersection	197	31%
Visibility	186	29%
Bike	108	17%
Transit	62	10%
Schools	55	9%

Figure 7. Mapping Tool Comment Heatmap



See Appendix B. Mapping Tool Summary for further detail.

Regional Focus Corridors



How the Focus Corridors Were Selected

The SS4A approach focuses on identifying locations where safety interventions will have the most significant impact in reducing fatal and serious injury crashes. In this way, municipalities and regional leadership has a roadmap for focusing investment - whether through external competitive or formula funding in order to achieve Vision Zero.

The prioritization incorporated the following data sources:

- High Injury Network
- Vulnerable road user (VRU) fatal and serious injury crashes
- Critical Crash Rate (CCR) locations
- Transportation need and access (demographic and economic indicators)
- Public and stakeholder feedback

In accordance with typical corridor length for planning and engineering design and construction, the data was assembled into roadway corridors of approximately 0.5 miles in length. The final locations therefore incorporate HIN, CCR, and vulnerable road user fatal and serious injury crash data. Where needed, corridors were subdivided to reach the target length. With the locations selected, the final list was prioritized again with the same inputs. Further detail on the methodology can be found in Appendix D. Focus Corridor Selection Overview Memorandum.

The Corridors Overview

Figure 7 shows a map of the focus corridors, and Table 5 provides the ranked list of locations. The focus corridors span the region, with rural, suburban, and more urban environments represented. Nearly all the regional focus corridors are State roadways. Not all municipalities in the region have a regional focus corridor; however, there are safety needs in

every municipality. Corridors of concern for each municipality are documented in the Municipal Profiles which begin on page 40.

Identifying Countermeasures

Following the identification of these corridors, the team reviewed trends, issues, and opportunities. Among the top half of the list, ten municipalities were represented and this formed the basis of the site investigations. Members of the project team visited ten corridors (identified in Table 5) to observe conditions and users of the road, and brainstorm appropriate countermeasures. Based upon the results of the site investigations and with support of municipal staff and leaders, three of those were selected for planning-level concept drawings to illustrate potential improvements.

Angle and head on crashes make up 61% of the crashes on the focus corridors. There is an opportunity to improve lighting with 16% occurring during dark hours. Half of all pedestrian crashes on the corridors occurred at night and all bike crashes at night.

Table 3. Themes and Countermeasures from Focus Corridor Crashes

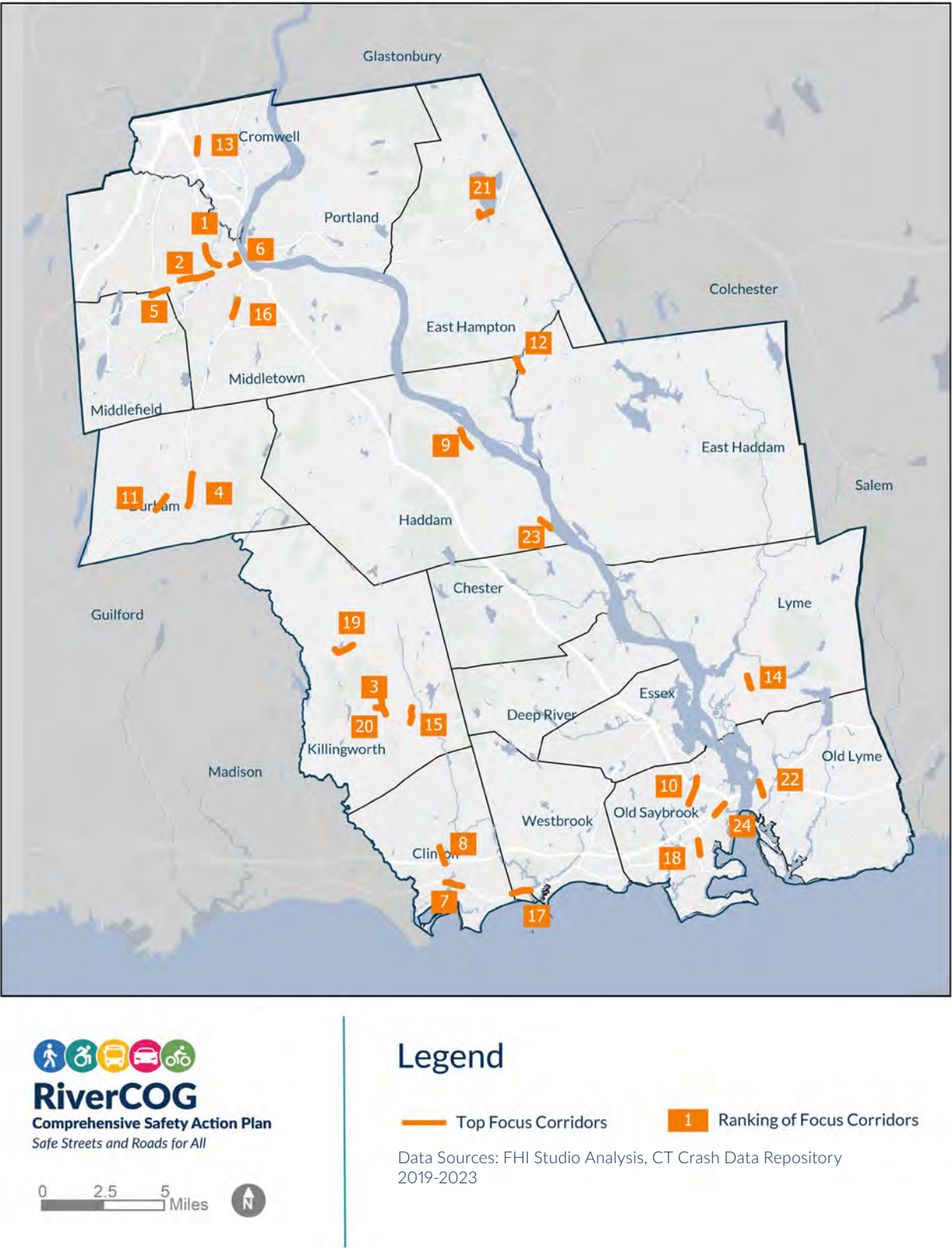
Theme	Countermeasure
Pedestrian Crashes	Sidewalks, High-Visibility Crosswalks, Signalized Crossings, Driver/ Pedestrian Education
Bicycle Crashes	Dedicated/ separated facilities, Driver/ bicyclist education, ad campaigns
Angle Crashes	Road diet, access management, clearance interval re-timing
Head-on Crashes	Centerline rumblestrips
Seat Belt Compliance	Driver education and ad campaigns
Driving under the Influence	Enforcement and education
Inadequate Lighting	Illumination at pedestrian crossings, intersections, horizontal curves
Speeding	Traffic calming measures

Table 4. Regional Focus Corridors

Rank	Route No./ Name	Cross Streets	Length (mi)	Municipality	Score (out of 100)	HIN	CCR Location	VRU KA Crash	Site Investigation
1	3	Liberty St/ Stoneycrest Dr	0.83	Middletown	91	X	X	X	
2	66	Camp St/ Butternut St	1.02	Middletown	71	X		X	
3	81	Hemlock Dr/ Chittenden Rd	0.54	Killingworth	60	X			X*
4	77	Higganum Rd/Dionigi Dr	1.06	Durham	56	X	X		X
5	66	Peters Lane/ Woodgate	0.53	Middlefield/ Middletown*	55	X		X	X
6	66	Rappallo Ave/ High St	0.49	Middletown	54		X	X	
7	1	Hull Street/ Liberty St	0.53	Clinton	45			X	X
8	81	Walnut Hill Rd/ N High St	0.54	Clinton	40		X		
9	154	Jail Hill Rd/ Island Dock Rd	0.65	Haddam	37	X			X
10	154	Bokum Rd/ Essex Rd	0.88	Old Saybrook	35		X	X	X*
11	17	Dinatale Dr/ Saw Mill Rd	0.53	Durham	35	X			
12	151	Powerhouse Rd/ Moodus Rd	0.46	Haddam/ East Haddam*	35	X			X
13	3	Evergreen Rd/ Sanford Ln	0.48	Cromwell	35	X			X*
14	156	Keeny Rd/ Bill Hill Rd	0.41	Lyme	35	X			X
15	Roast Meat Hill Rd	Iron Works Rd/ Reservoir Rd	0.49	Killingworth	35		X		
16	17	Highland Ave/ Farm Hill Rd	0.57	Middletown	32		X		
17	1	Indian Trail/ Pine Cone Dr	0.59	Westbrook/ Clinton*	31			X	X
18	154	Sheffield St/ Route 1	0.45	Old Saybrook	29		X		
19	148	Birch Mill Rd/ Birch Mill Rd	0.66	Killingworth	29		X		
20	80	Route 81/ Old Deep River Tpke	0.33	Killingworth	27		X		
21	66/N Main St	West Point Rd/ Hills Ave	0.55	East Hampton	27			X	
22	156	Huntley Rd/ Gould Ln	0.46	Old Lyme	20		X		
23	154	Route 82/ Dudley Clark Rd	0.42	Haddam	17		X		
24	1	Ferry Rd/ Mulcahny Rd	0.47	Old Saybrook	17		X		

*Indicates Concept Plan

Figure 8. Regional Focus Corridors



Action Plan



Implementing the Safety Action Plan

This Action Plan includes a set of strategies and actions to make progress towards eliminating fatal and serious injury crashes for people in vehicles, on motorcycles, walking, rolling, or cycling. Recommended strategies are informed by the crash analysis, assessment of transportation need and access, focus corridors, stakeholder interviews, public input, agency plans and policies (see Appendix C: Policy and Process Recommendations), and best practices from the region and throughout the U.S. They are tied to the Safe System Approach, which considers five elements of a Safe System—safe road users, safe vehicles, safe speeds, safe roads, and post-

crash care. They are categorized into four areas of focus:

- practices and policies
- safe design
- education, enforcement, and institutional
- data and monitoring

For each action item, a timeline, lead and supporting agencies, and the corresponding element of the Safe System is provided. Timelines are reflective of the effort entailed as well as the relative priority of each action item.

OFFICE OF SAFETY

Proven Safety Countermeasures

SPEED MANAGEMENT

Speed Safety Cameras

Variable Speed Limits

Appropriate Speed Limits for All Road Users

ROADWAY DEPARTURE

Wider Edge Lines

Enhanced Delineation for Horizontal Curves

Longitudinal Rumble Strips and Stripes on Two-Lane Roads

SafetyEdge

Roadside Design Improvements at Curves

Median Barriers

INTERSECTIONS

Backplates with Retroreflective Borders

Corridor Access Management

Dedicated Left- and Right-Turn Lanes at Intersections

Reduced Left-Turn Conflict Intersections

Roundabouts

Systemic Application of Multiple Low-Cost Countermeasures at Stop-Controlled Intersections

Yellow Change Intervals

PEDESTRIANS/BICYCLES

Crosswalk Visibility Enhancements

Bicycle Lanes

Rectangular Rapid Flashing Beacons (RRFB)

Leading Pedestrian Interval

Medians and Pedestrian Refuge Islands in Urban and Suburban Areas

Pedestrian Hybrid Beacons

Road Diets (Roadway Reconfiguration)

Walkways

CROSSCUTTING

Pavement Friction Management

Lighting

Local Road Safety Plans

Road Safety Audit

FHWA-SA-21-082

FHWA Proven Safety Countermeasures

KA Crash details and additional roadway characteristics common to the Lower Connecticut River Valley were reviewed to aid in the development of recommendations. A multitude of resources exist to aid designers and leaders in the identification of appropriate safety countermeasures for roadway concerns. In addition to FHWA Guidance, the CTDOT Strategic Highway Safety Plan is a local resource identifying key strategies to address each emphasis area.

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Safe Design Recommendations

A holistic approach is necessary to compile resources and design and implement safety improvements to the region's roadways. The recommendations included in this list signify the region's approach to proactively improving safety. Since the majority of focus corridors are on state roads, it is important that municipalities and RiverCOG continue collaboration with CTDOT, using resources like the CTDOT Strategic Highway Safety Plan to advocate for design changes on state roads.

Projects Identified through Site Investigations

This plan focuses on safety interventions for the focus corridors, where most serious injury and fatal crashes have occurred during the analysis period. Municipalities should work with RiverCOG to advance these recommendations, including assembling funding and managing design, starting with the projects identified through the ten site investigations. These projects include:

- Intersection and vulnerable road user improvements at Route 3 in Cromwell
- Sight distance improvements, modify roundabout, and provide access at Route 81 in Killingworth
- Alignment and acecss improvements on Route 156 in Old Saybrook
- Speed mitigation measures and warning signage on Route 156 in Lyme
- Multimodal improvements and speed mitigation on Route 1 in Westbrook/Clinton
- Spot improvements along Route 1 in Clinton
- Sidewalk extension and crossing improvements at Route 154 in Haddam
- Spot improvements and signage along Route 151 in Haddam at the border with East Haddam
- Intersection improvements and speed mitigation measures at Route 77 in Durham
- Traffic calming for speed reduction and sidewalk installation on Route 66 in Middlefield

Table 5. Safe Design Recommendations

Number	Theme	Name	Timeframe	Lead	Support	Safe Systems Approach Element
1.1	Design Standards	Incorporate complete streets and vision zero strategies into design standards, ensuring that roads are designed to accommodate all users.	Ongoing	Municipalities	RiverCOG	Safer Roads, Safer Speeds
1.2	Speed Management	Adopt policies formalizing the use of target speed as the design approach for municipal projects	1 year	Municipalities	RiverCOG	Safer Speeds, Safer Roads
1.3	Speed Management	Pursue speed limit reductions in locations with high pedestrian and bicycle volumes and on locations on the High Injury Network.	1 year	CTDOT	RiverCOG, Municipalities	Safer Speeds
1.4	Infrastructure Improvements	Compile regionally-significant locations with skewed intersection geometry, and identify a funding strategy for design and implementation of improvements for these locations (such as packaging spot improvements)	1 Year	RiverCOG	Municipalities, CTDOT	Safer Roads
1.5	Speed Management	Conduct speed studies along Focus Corridors to evaluate the need for additional enforcement and/or design interventions	1-3 years	RiverCOG	Municipalities	Safer Roads, Safer Speeds
1.6	Complete Streets	Regularly assess street safety through audits and evaluations to identify potential hazards and address safety gaps for all road users. Apply for CTDOT Road Safety Audits for Focus Corridor locations where no planning-level concept exists.	1-3 years	Municipalities	CTDOT, RiverCOG	Safer Roads
1.7	Infrastructure Improvements	Compile regionally-significant locations with access managment issues impacting safety. Create and share materials best practice guidance in access management such that municipalities have tools to use in site plan review, as these sites are updated over time.	1-3 Years	RiverCOG	Municipalities	Safer Roads
1.8	Design Standards	Pursue funding to support updating municipal street design standards with sensitivity to land use and community context, in collaboration with communities	1-3 years	RiverCOG	Municipalities	Safer Roads, Safer Speeds
1.9	Vulnerable Users and Transportation Need	Prioritize protected infrastructure on critical gaps in the bicycle and pedestrian networks.	1-5 years	RiverCOG , CTDOT	Municipalities	Safer Roads
1.10	Infrastructure Improvements	Develop a funding strategy and implement for the Focus Corridors, prioritizing the ten Site Investigation Locations and three Concept Plan locations	1-5 years	Municipalities	RiverCOG	Safer Roads
1.11	Infrastructure Improvements	Implement short-term improvements within two years of Road Safety Audits	3-5 years	Municipalities	CTDOT, RiverCOG	Safer Roads
1.12	Vulnerable Users	Identify funding and implement long-term improvements to address deficiencies in pedestrian infrastructure near River Valley Transit stops	5-10 Years	Municipalities	CTDOT, RiverCOG	Safer Roads

Policies and Practices Recommendations

Transportation safety policy aims to promote safety among all road users; set standards of roadway design to promote vulnerable road users; and achieve zero fatalities and zero serious injuries for all roadway users. State, regional, and municipal policies were reviewed to guide the recommendations. A particular focus of the recommendations is to ensure that local policy and design guidance supports Vision Zero for all project types - not just landmark capital projects with substantial outside funding. Furthermore, public engagement and data both echoed the need for improved multimodal networks; promotion of

Complete Streets policy and design guidance at the local level should be pursued to help achieve those networks on local roads where volumes and speeds are lower. Further detail on the derivation of these recommendations can be found in the Appendix C. Policies and Practices Memorandum.

Data and monitoring actions are also detaled here as they involve new practices for transportation studies and projects. The monitoring framework establishes a mechanism to maintain transparency, which can enhance public trust, encourage meaningful participation in Vision Zero efforts, and guide future investment in infrastructure improvements.

Table 6. Practices and Policies Recommendations

Number	Theme	Name	Timeframe	Lead	Support	Safe Systems Approach Element
2.1	Project Development	In collaboration with CTDOT, integrate complete streets planning and countermeasures into the routine preservation cycle, intersection upgrades, Vendor in Place projects, and Reconstruction projects	Ongoing	Municipalities	CTDOT, RiverCOG	Safer Speeds, Safer Roads
2.2	Project Development	Adopt the Safe Transportation for Every Pedestrian approach, which provides a structured approach to making streets safer for pedestrians, and in turn supports broader goals related to safety, sustainability, and community development.	1-3 years	Municipalities	RiverCOG	Safer Roads
2.3	Project Development	Create and share educational materials for quick-build demonstrations (such as CRCOG’s Tactical Urbanism Guide) to local member municipalities, in advance of 2026 SS4A Notice of Funding Opportunity for Planning and Demonstration grants	Less than 1 year	RiverCOG	Municipalities	Safer Roads
2.4	Project Development	Prioritize safety-based projects within transportation planning programs and documents and comprehensive planning documents	1-5 years	RiverCOG	CTDOT	Safer Roads
2.5	Vision Zero	Develop and adopt Vision Zero Policies to build awareness, build coordination across departments, and make municipalities more competitive for grants.	1 year	Municipalities	RiverCOG	Safer Roads
2.6	Vision Zero	Prioritize infrastructure improvements at locations that see the highest number of severe and fatal crashes.	3-5 years	Municipalities	RiverCOG	Safer Roads
2.7	Complete Streets	Develop complete streets policies that reflect community needs, prioritize the safety of vulnerable road users and are actionable through strong partnerships with stakeholders.	1-3 years	RiverCOG	Municipalities	Safer Speeds, Safer Roads
2.8	Infrastructure Improvements	Implement strategies associated with the seven emphasis areas identified in the 2022 LCRV Regional Transportation Safety Plan	5-10 Years	RiverCOG, Municipalities	CTDOT	Safer People, Safer Speeds,
2.9	Data	Regularly review updated detailed crash analysis to identify trends, hotspots, and areas with serious injuries and fatalities incidents.	Ongoing	CTDOT	Municipalities, RiverCOG	Safer Roads
2.10	Data	Adopt a proactive, ongoing data monitoring approach to identify and address high-risk locations and behaviors across the entire transportation system.	1 year	RiverCOG	Municipalities	Safer Roads
2.11	Data	Collect data before and following safety interventions and targeted enforcement campaigns to assess efficacy of countermeasures.	Ongoing	CTDOT	RiverCOG, municipalities	Safer Roads
2.12	Data	Produce an annual report reviewing the latest available crash data and documenting progress towards implementing the Action Plan	Ongoing	RiverCOG	Municipalities, CTDOT	Safer Roads

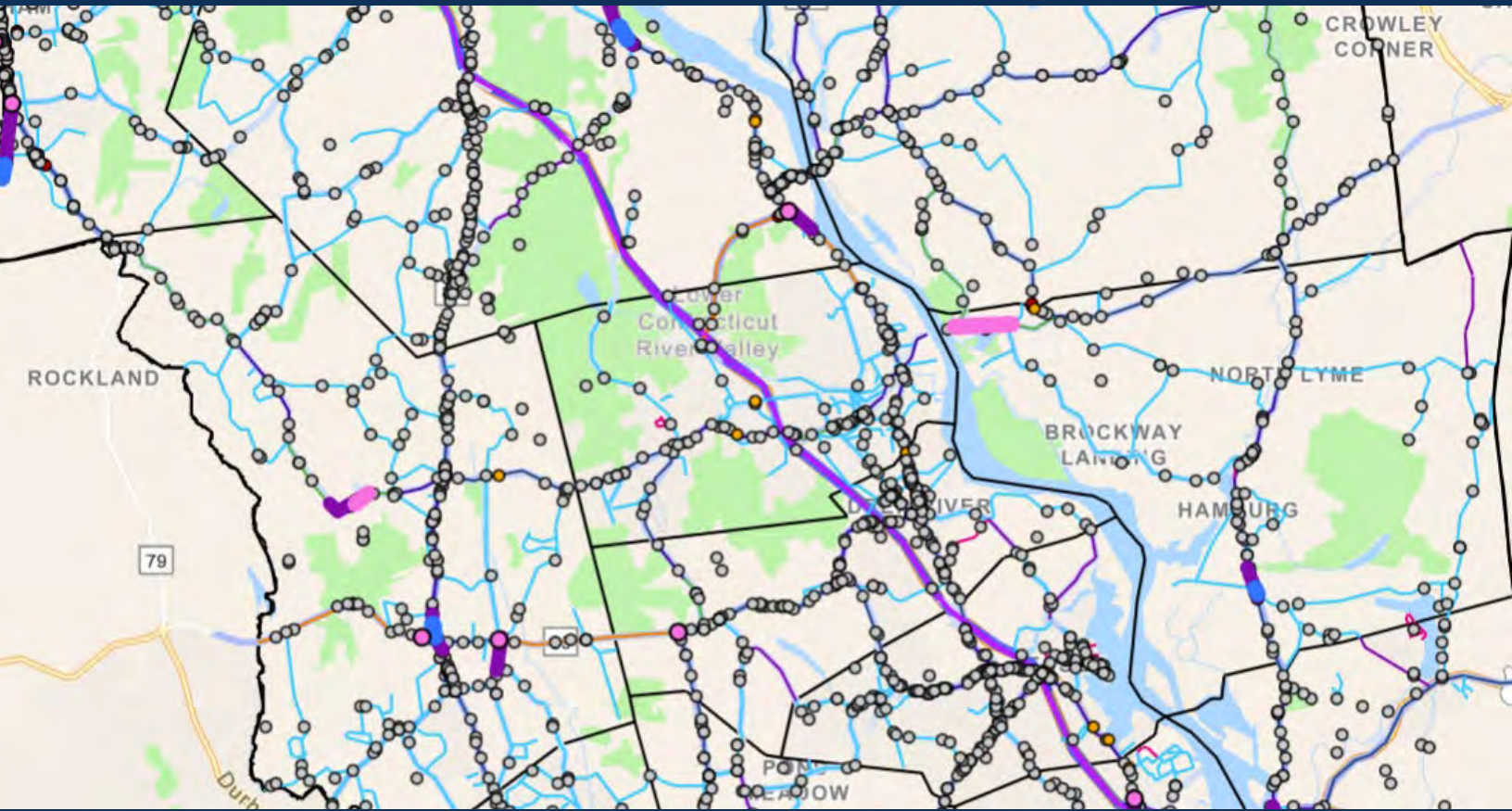
Education, Resources, and Enforcement Recommendations

In a diverse region like the Lower Connecticut River Valley with municipalities of varying size, RiverCOG plays an important role in convening and assisting municipal leaders and staff with roles to play in making the region's roadway network safer. RiverCOG should continue its role advocating for resources from state partners, and assist municipalities to compile educational materials and in their pursuit of CTDOT programmatic support.

Table 7. Education, Resources, and Enforcement Recommendations

Number	Theme	Name	Timeframe	Lead	Support	Safe Systems Approach Element
3.1	Post Crash Care	Coordinate with CTDOT and municipalities to promote emergency vehicle preemption on all regional roadways	5-10 years	CTDOT, Municipalities	RiverCOG	Post-Crash Care
3.2	Post Crash Care	Coordinate with EMS Providers / post-crash emergency notifications which notify EMS that a crash has occurred and provide first responders with crash details prior to their arrival at the scene.	5-10 years	RiverCOG	CTDOT,	Post-Crash Care
3.3	Enforcement	Expand traffic enforcement at the top crash corridors on the Focus Corridors	1-2 Years	CTDOT with Municipalities		Safe Speeds
3.4	Education	Increase education campaigns (i.e. social media posts) to promote safe road behavior and help the public understand risks and consequences of dangerous road behavior.	3-5 years	CTDOT, RiverCOG	RiverCOG, municipalities	Safer People
3.5	Education	Create and sustain a public website that provides information, resources, training, and educational opportunities.	1 year	RiverCOG	Municipalities	Safer People
3.6	Education	Collaborate with the State's Vision Zero Council and the Connecticut Department of Motor Vehicles (DMV) on incorporating Vision Zero concepts into their new driver manual and license renewal mailings	3-5 years	RiverCOG	CTDOT	Safer People
3.7	Safe Routes to Schools	Contact CTDOT for access to free bike and pedestrian incentives and education curriculum to enhance safety access for children.	1 year	Municipalities, School Districts, and or Schools	CTDOT	Safer People
3.8	Safe Routes to Schools	Contact CTDOT to pursue walk audits at local schools (corridors 1 mile or less on state highways)	1 year	Municipalities, School Districts, and/or schools	CTDOT	Safer People
3.9	Safe Routes to Schools	Pursue active transportation micro-grants in partnership with schools, local transportation agencies, and community stakeholders.	1 year	Municipalities, school districts, and or schools	CTDOT	Safer People
3.10	Speed Management	Establish speed violation monitoring systems to ensure compliance with road safety laws and data collection for identification of road safety improvements.	1-3 years	Municipalities	CTDOT, RiverCOG	Safer Speeds
3.11	Speed Management/ Enforcement	Install speed monitoring displays in neighborhoods with high pedestrian traffic or in school zones, to correct driver behavior in real-time.	1-3 years	CTDOT, municipalities	RiverCOG	Safer Speeds
3.12	Speed Management/ Enforcement	Enforce lower motor vehicle speeds, especially in school zones.	1-3 years	Municipalities	RiverCOG	Safer Speeds
3.13	Speed Management/ Enforcement	Collaborate with the State to advocate for work zone speed safety cameras at priority locations within the RiverCOG region	Ongoing/ 1-3 years	RiverCOG	Municipalities, CTDOT	Safer Roads
3.14	Speed Management/ Enforcement	Work with municipalities to evaluate the potential for automated traffic enforcement along Focus Corridors and provide support for municipalities that decide to pursue approval through CTDOT.	1-3 years	RiverCOG	Municipalities	Safe Speeds
3.15	Institutional Resources	Transition the Advisory Committee to a permanent Vision Zero Council, and hold quarterly progress meetings to monitor progress. Provide input on ongoing initiatives, such as ensuring local and regional policies are consistent with transportation plans.	Ongoing	RiverCOG	Municipalities	Safe Roads

Progress and Transparency



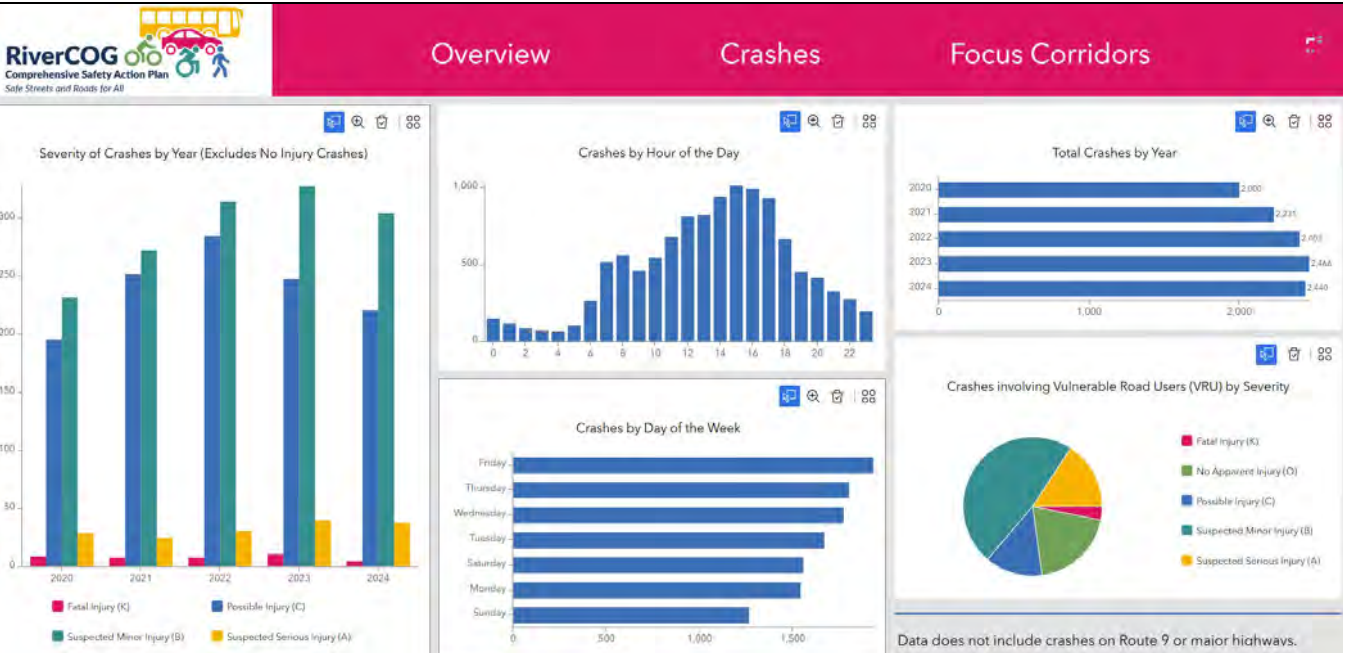
Monitoring the Safety Action Plan

Ongoing data monitoring is essential for the region to evaluate and improve road safety and measure the impact of projects. By analyzing crash history, traffic volumes, vehicle speeds, and roadway conditions, monitoring can pinpoint high-risk locations, times, and circumstances for crashes. These trends also guide policy decisions and support the selection of effective safety countermeasures. RiverCOG will adopt a proactive approach to monitor data, resulting in an annual report summarizing the latest crash trends and documenting progress towards achieving the Actions laid out in this plan. This continuous data-driven process is integral to adapting strategies over time for safe, equitable streets for all users.

A critical part of the implementation of the plan is the development of a data dashboard to compile and publicize RiverCOG crash data. This critical element will provide a means of sharing information, as well as efficacy of progress toward the Vision Zero goal. The data dashboard will be updated at least annually and will be available through the RiverCOG website.



Presentation to Cromwell Planning & Zoning Commission



Crash analysis available within the RiverCOG SS4A Data Dashboard. The dashboard will be updated at least annually to reflect the most recent data available through the Connecticut Crash Data Repository.

Municipal Profiles



The municipal profiles summarize the necessary information that municipalities will need to pursue grant funding, including SS4A Implementation, Supplemental Study, and Demonstration Grants.

Locations were derived primarily from safety analysis but also incorporated feedback from the public as well as access and transportation need.

The following elements are included:

1. A brief Overview of each Municipality in the region, including 2024 population estimates from the American Community Survey and presence of major transportation infrastructure.

2. Crash Summary: statistics and themes identified through the Safety Analysis and Basemapping. The Safety Analysis used 2019 - 2023 data from the Connecticut Crash Data Repository (CTCDR). It focused on Fatal and Serious Injury (KA) Crashes only, consistent with the intent of the SS4A approach.

3. Total Average Annual Fatality Rate (per 100,000 population) for the Jurisdiction: The fatality rate calculated using the 5-year annual average from the total count of fatalities based on FARS data from 2018-2022, divided by the population of the applicant's jurisdiction based on 2020 U.S. Census population data. This meets a required component

of the Safe Streets and Roads for All Implementation grant program.

4. Regional Focus Corridors: prioritized locations from the High Injury Network, Critical Crash Rate locations, and Fatal and Serious Injury Crashes involving Vulnerable Road Users with additional factors including community input and transportation access and need.

5. Locally Identified Corridors of Concern: highlighting additional corridors where residents, stakeholders, and local leadership have identified safety concerns.

6. Site Investigations: at Focus Corridor locations identified through consultation with local leaders, consultant staff conducted field observations to identify issues and identify appropriate countermeasures.

7. Concept Plans: planning-level concepts with accompanying level-of-magnitude cost estimates, for the purpose of funding engineering and construction phases.

The recommendations described herein should be considered planning level. Further iterations of design will continue to refine these ideas with input from stakeholders including CTDOT and local organizations.



Haddam Bridge. Source: Mapio.Net

Chester

Approximately 3,700 people (less than two percent of the region's population) live in Chester. The riverside community is bisected by State Highway Route 9, and access is also provided via several state routes. The town is pursuing means of increasing pedestrian, bicycle, and transit connectivity throughout the region. Leaders are in the process of planning for the installation and repair of several sidewalks in town and pursuing the Central Connecticut Loop Trail.

Fatal and Serious (KA) Crash Profile (2019 - 2023)

Table 8. Summary Statistics

3	Number of Fatal and Serious Injury Crashes
12/17	Regional Rank of Fatal and Serious Injury Crashes Weighted by Population
4.74	Average Annual Fatality Rate (per 100,000 people)*

Mode of KA Crashes



Table 9. Road Classification of Chester KA Crashes

Road Ownership	Fatal Injury	Suspected Serious Injury
U.S. Route	1	5
State	2	3
Local	0	4
Other	0	1

Key Findings

- Roadway departure was the identified cause for 2 of the 3 fatal and serious injury crashes in Chester.

Corridors of Concern

Community members, stakeholders, and staff identified the following corridors as locations where safety-focused interventions are needed within Chester.

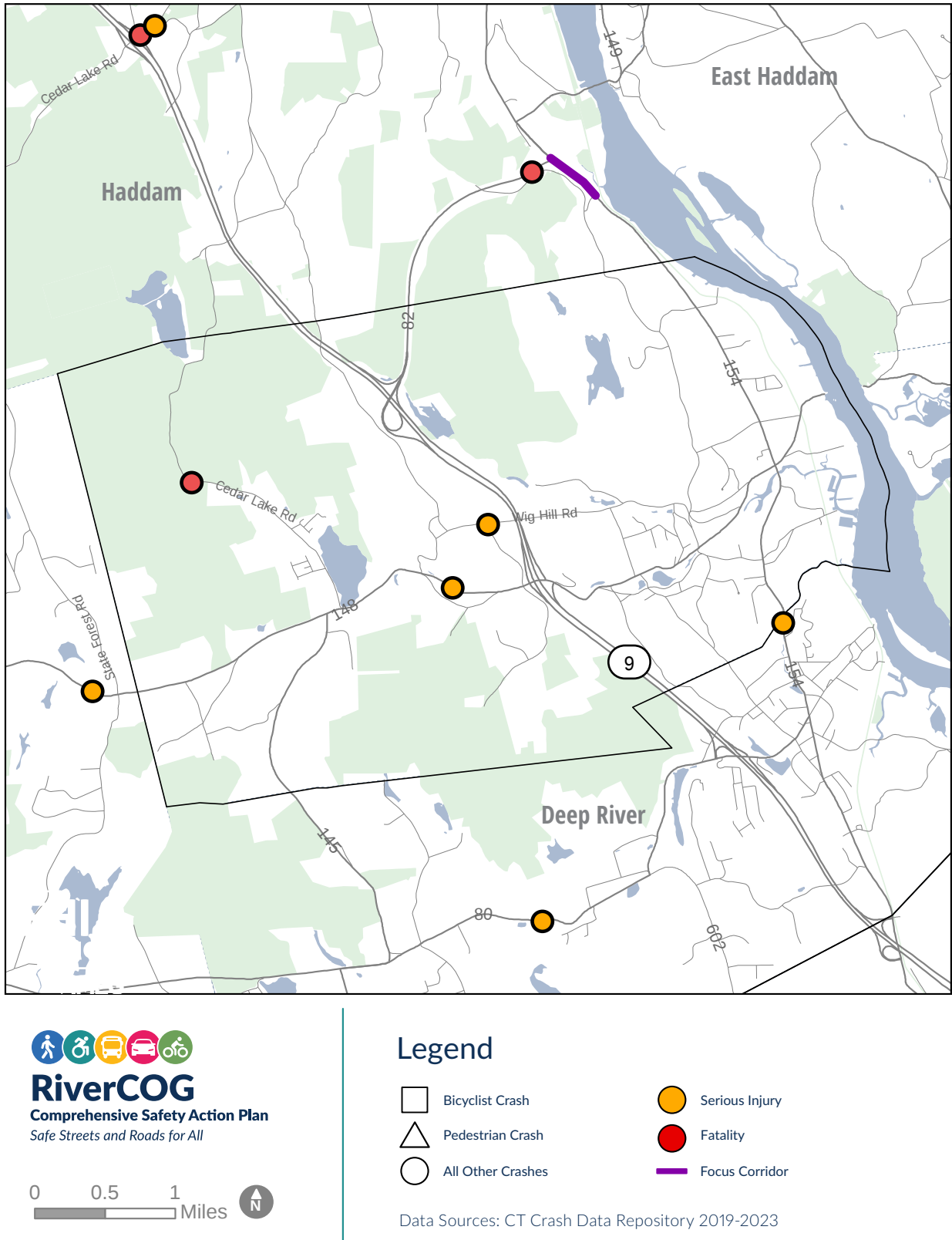
- Route 148
- Route 154, especially at Ferry Road
- Main Street
- Straits Road
- North Main Street

* based on 2020 census block group population data

Transportation Access and Need

- Areas of Chester have high concentrations of seniors and people with disabilities.

Figure 2. Chester Crashes and Focus Corridors



Clinton

Clinton has approximately 13,000 residents (about seven and a half percent of the region's population). As a shoreline community, Clinton has a denser shorefront road network, boardwalks, and Shore Line East rail stations. However, it is bisected by I-95 and its interchange with Route 81. Clinton includes multiple coastal amenities including marinas, outdoor restaurants and recreation, as well as Clinton Crossing outlet mall.

Fatal and Serious (KA) Crash Profile (2019 - 2023)

Table 10. Summary Statistics

16	Number of KA Crashes
6/17	Regional Rank of KA Crashes Weighted by Population
4.64	Average Annual Fatality Rate (per 100,000 people)*

Mode of KA Crashes



Table 11. Road Classification of Clinton KA Crashes

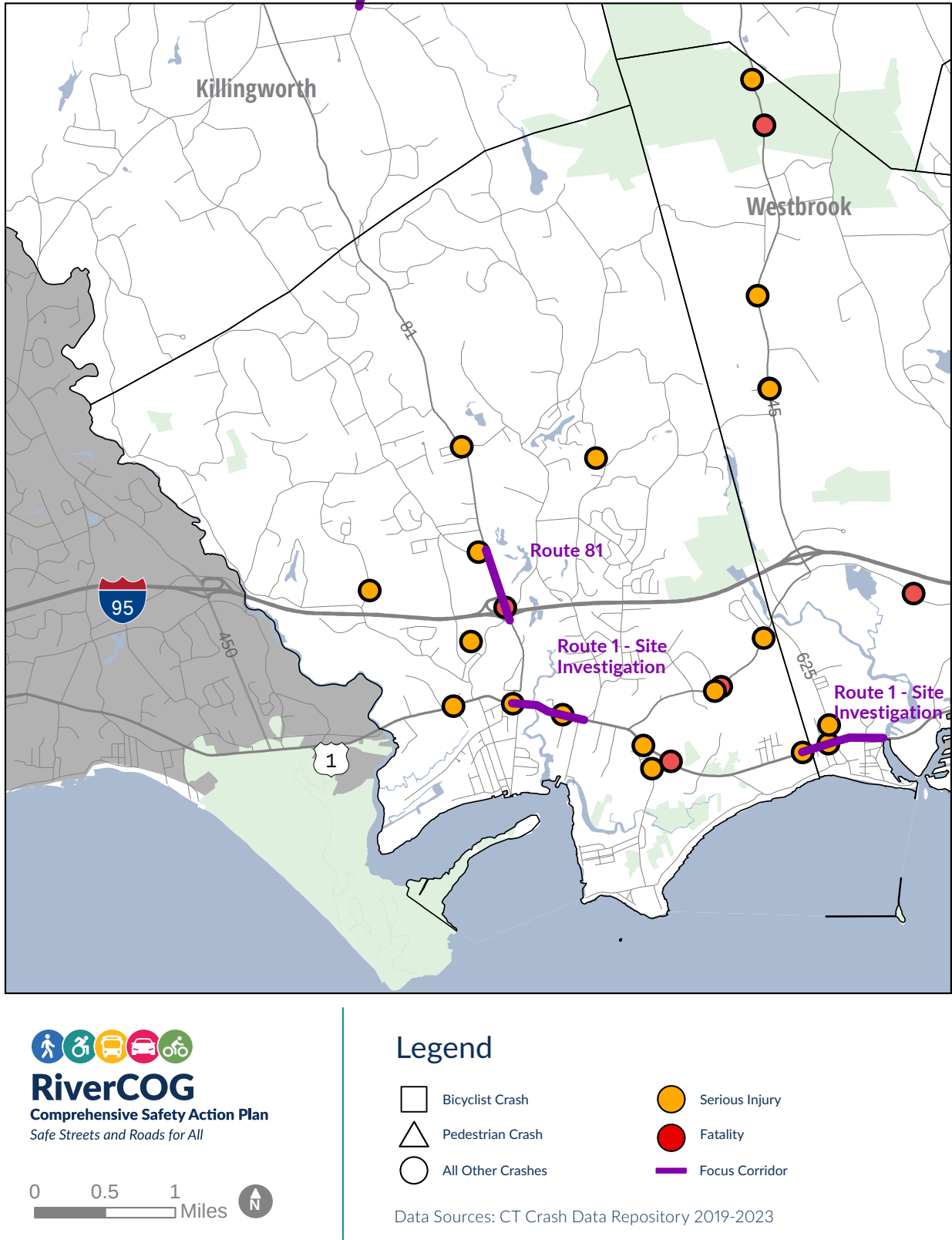
Road Ownership	Fatal Injury	Suspected Serious Injury
U.S. Route	1	5
State	2	3
Local	0	4
Other	0	1

Key Findings

- Route 1's regional importance is reaffirmed in the crash history within Clinton. 6 of Clinton's KA crashes occurred on the corridor, with two angle crashes, 2 rear-end crashes, and 2 bike and pedestrian-involved crashes.
- Several KA crashes within Clinton occurred during overnight hours, indicating the potential for educational safety campaigns, lighting, and speeding

* based on 2020 census block group population data

Figure 9. Clinton Crashes and Focus Corridors



Clinton

Table 12. Clinton Regional Focus Corridors

Route No./ Name	Cross Streets	Length (mi)	Score (out of 100)	HIN	CCR Location	VRU KA Crash	Public Input	Transportation Access and Need
1	Hull Street/ Liberty St	0.53	45			●	●	●
81	Walnut Hill Rd/ N High St	0.54	40		▲		●	●

Corridors of Concern

Community members, stakeholders, and staff identified the following corridors as locations where safety-focused interventions are needed within Clinton.

- Route 1
- Route 81 ▲
- Walnut Hill Road

Transportation Need and Access

- Areas of Clinton have higher than average populations of seniors and people with Limited English Proficiency.

Legend

★	High Injury Network (HIN): the set of road segments exhibiting the highest concentration of fatal and serious injury crashes		
▲	Critical Crash Rate (CCR) Locations: locations with crashes occurring at a rate significantly above expected levels based on traffic volumes, considering all crash severities		
●	Vulnerable Road User (VRU) Fatal and Serious Injury (KA) Crash Locations	Transportation Access and Need based on the number of categories met	
●	Public Input: Presence of Online Map Pins	● 4+ Categories	● 2-3 Categories ○ 1 Category



Clinton

Site Investigation: U.S. Route 1

Hull Street to Liberty Street

Table 13. Summary

AADT (2023)	8,000
Speed Limit	25 mph
Shoulders?	Yes
Sidewalks?	Yes
Bike Lane?	No
Crosswalks?	Yes
ADA Ramps?	Yes
Other Features?	Traffic Calming, Signage



This corridor on the western approach to Clinton's commercial center includes one travel lane in each direction, with shoulders, sidewalks, and crosswalks. Roadway, sidewalk, and crosswalk conditions are in fairly good condition where they exist, but some intersections do not include crosswalks on all legs, and there are mid-block crossings. Two serious injury crashes have occurred on either end of this corridor, with one serious injury crash involving a bicyclist.

Like many areas along Route 1, congestion can be significant during periods where I-95 is backed up. In addition to the unprotected mid-block crossing within the corridor as eastbound drivers leave the center of the district, there is another approximately 250 feet to the west. Public comments suggest challenges with the intersection of Hull Street / Van Dece Jr Way (Library Lane) and Route 1, noting challenges seeing vehicles coming out of Van Dece Jr Way due to the curvature of that roadway south of the intersection. They also note difficulty turning left onto driveways and side streets without dedicated turn pockets, due to a lack of breaks in the traffic. Additionally, anecdotal review indicates that average speeds are higher than the posted speed limit of 25 mph.

In this walkable environment just one block from Clinton's Metro-North Station where bus stops are also present, safety improvements at intersections should be prioritized. Designers should also consider safety improvements along and crossing Hull Street approaching the station, where a concentration of more minor crashes exists.

Figure 10. Potential Safety Improvements for Further Review



Recommendations

A speed study should be conducted to confirm anecdotal evidence of speeding. Recommendations could include speed cushions, raised crossings, curb extensions, and medians.

Overly wide shoulder widths could be reallocated to space for a multi-use path, and/or bicycle facilities since sidewalks are present.

Where crosswalks are present, daylighting should be considered to improve visibility. The potential for Rectangular Rapid Flashing Beacons (RRFBs) should be evaluated at mid-block crossings.

This corridor could be a candidate for quick-build or demonstration projects due to the more dense commercial environment.

Cromwell

Nearly 14,000 residents, Cromwell encompasses about eight percent of the regional population. Bordering the Connecticut River and Mattabesset River, as well as the regional population center in Middletown and the northernmost town within the Lower Connecticut River Valley, the town includes the significant interchange of I-91 and Route 9. Cromwell's Main Street Historic District, on Route 99 near the riverfront, is surrounded by small commercial businesses, while largescale commercial areas are located on Route 3 and other areas.

Table 14. Summary Statistics

9	Number of KA Crashes
15/17	Regional Rank of KA Crashes Weighted by Population
4.33	Average Annual Fatality Rate (per 100,000 people)*

Mode of KA Crashes



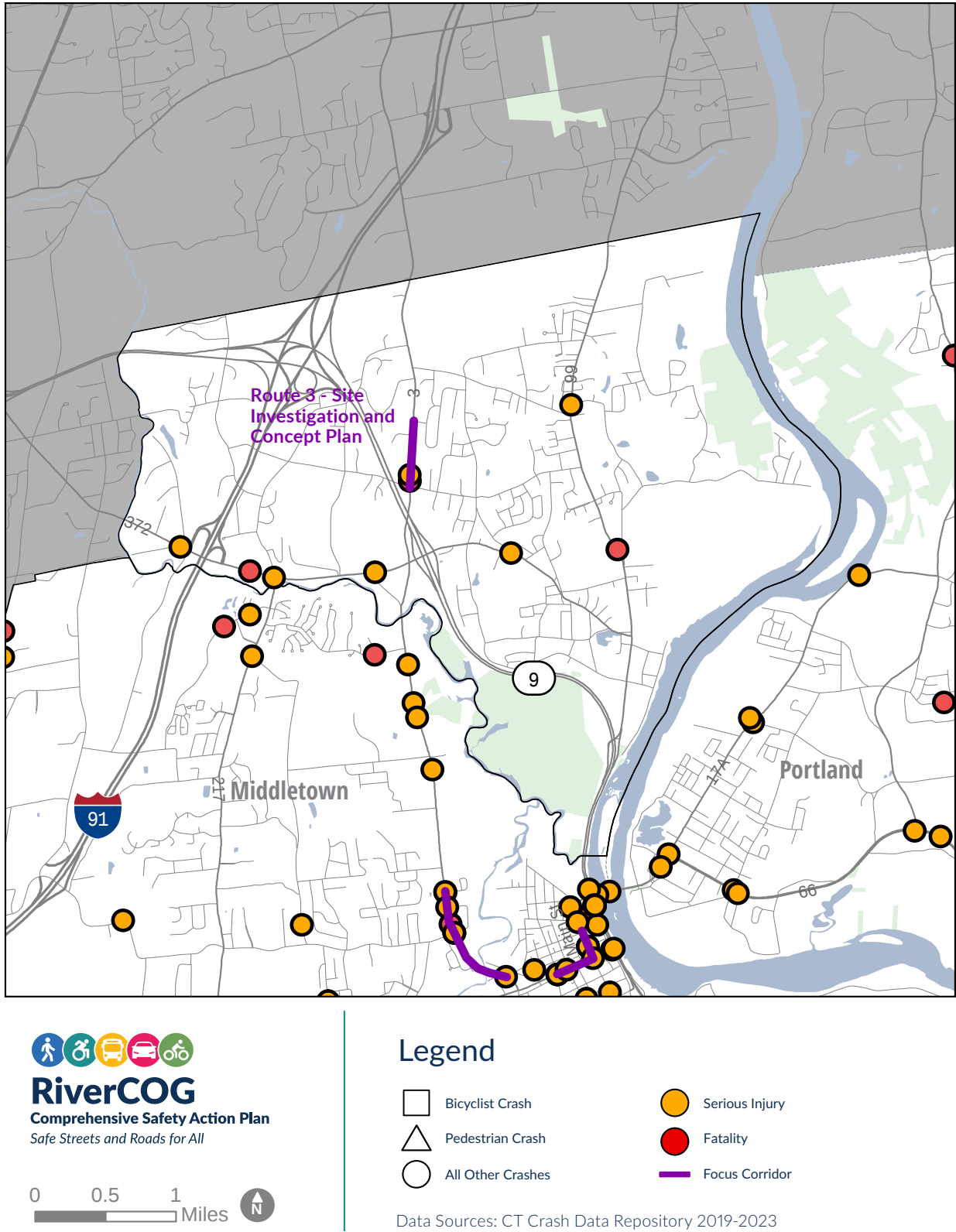
Table 15. Road Classification of Cromwell KA Crashes

Road Ownership	Fatal Injury	Suspected Serious Injury
U.S. Route	0	0
State	3	6
Local	0	0

Key Findings

- In Cromwell, there is relatively high average population and employment density compared to the region.
- Several block groups in Cromwell include significantly concentrations of minorities, and other block groups include relatively high populations of youth and disabilities.

Figure 11. Cromwell Crashes and Focus Corridors



Cromwell

Table 16. Cromwell Regional Focus Corridors

Route No./ Name	Cross Streets	Length (mi)	Score (out of 100)	HIN	CCR Location	VRU KA Crash	Public Input	Transportation Access and Need
3	Evergreen Rd/ Sanford Ln	0.48	35	★				

Corridors of Concern

Community members, stakeholders, and staff identified the following corridors as locations where safety-focused interventions are needed.

- Route 3 ★
- Route 99
- Route 372

The traffic control signal at the intersection of Route 3 at Evergreen Road will be replaced under Project No. 0171-0459 which has an estimated construction completion date of May 25, 2026. The replacement will include upgrade to the vehicular signal heads and pedestrian facilities as called for within the site investigation and concept plan recommendations.

Transportation Access and Need

- In Cromwell, there is relatively high average population and employment density compared to the region bullets.
- Several block groups in Cromwell include significantly concentrations of minorities, and other block groups include relatively high populations of youth and disabilities.



LEGEND:

★ High Injury Network (HIN)

▲ Critical Crash Rate (CCR) Locations

● Vulnerable Road User (VRU) Fatal and Serious Injury (KA) Crash Locations

● Public Input: Presence of Map Comments.

Transportation Access and Need based on the number of categories met

● 4+ Categories ● 2-3 Categories ○ 1 Category

Cromwell

Site Investigation: Route 3

Sanford Lane to Evergreen Road

Table 17. Summary

AADT	8,100
Speed Limit	45 mph
Shoulders?	Yes
Sidewalks?	No
Bike Lane?	No
Crosswalks?	No
ADA Ramps?	No
Other Features?	



Route 3 in Cromwell consists of one lane in each direction along a corridor in a residential area. There is a posted speed limit of 45 miles per hour, wide shoulders, and a lack of sidewalks. The shoulders may be multifunctional today, with drivers using them to bypass turning vehicles and trucks decelerating in the lane.

The intersection of Evergreen Road and Route 3 (Shunpike Road) is identified within CTDOT's locations where there is a disproportionate number of drivers running red lights.

Crashes concentrated along the southern half of the corridor, mostly between Woodland Drive and Evergreen Road, including a fatality and a suspected serious injury crash, contributing to the corridor's placement on the High Injury Network. The fatality occurred between Woodland Condominiums and Evergreen Road - front to front collision. The suspected serious injury angle crash at the intersection with Woodland Drive (involving three vehicles).

With an Amazon warehouse just north of the corridor, several businesses south on Evergreen Road, and numerous condominium associations in the vicinity, there are many considerations for safety improvements.

Recommendations

The signal at Evergreen Road should be upgraded to 12" heads and retroreflective backplates to improve visibility. Additionally, sight distance improvements, and sidewalks connecting south to the commercial area should be considered.

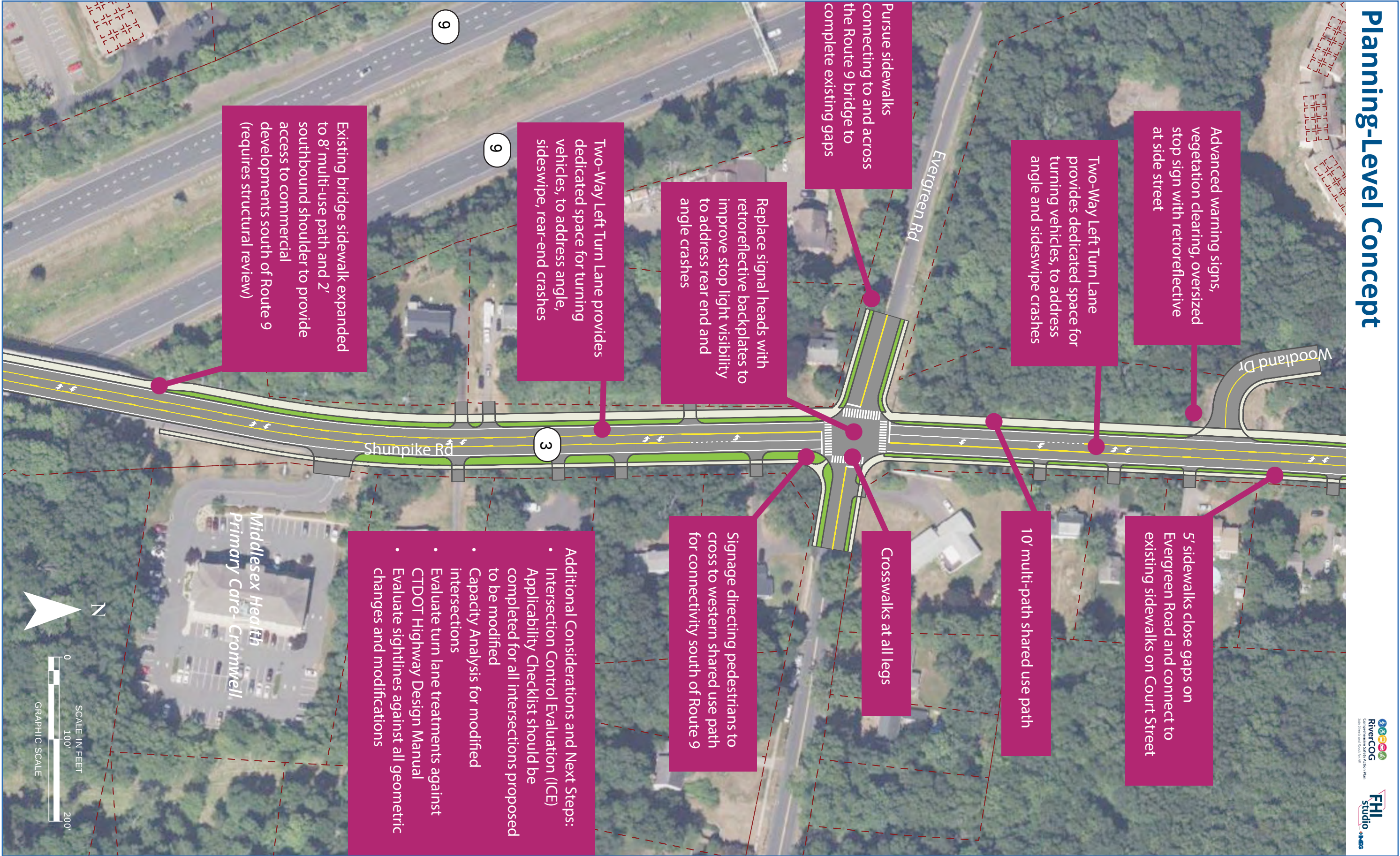
Figure 12. Potential Safety Improvements for Further Review



Along the corridor, pedestrian infrastructure including sidewalks and crosswalks, and pedestrian scale lighting could be installed, and accompanied by upgrading traffic signals for pedestrian phasing and pedestrian signal heads. These updates should also bring the corridor into ADA compliance including curb ramps.

Regular maintenance at intersection and driveway sight triangles should be managed.





Deep River

Deep River, with less than 5,000 residents, comprises about three percent of the region's population. The Essex Steam Train and Riverboat stop located at Deep River Landing are cultural destinations in the area. Bordering the Connecticut River, the community includes older residential neighborhoods connected by sidewalks.

Fatal and Serious (KA) Crash Profile (2019 - 2023)

Table 18. Summary Statistics

2	Number of KA Crashes
16/17	Regional Rank of KA Crashes Weighted by Population
0	Average Annual Fatality Rate (per 100,000 people)

**based on 2020 census block group population data*

Mode of KA Crashes



Key Findings

- With low crash incidence in Deep River, there are no regional focus corridors within the municipality.
- Fatal and serious injury crashes in Deep River were concentrated at non-intersection locations.
- Lane departure crashes were common, indicating potential for countermeasures such as enhanced delineation for horizontal curves, rumble strips and stripes, wider edge lines, and roadside design improvements at curves.

Corridors of Concern

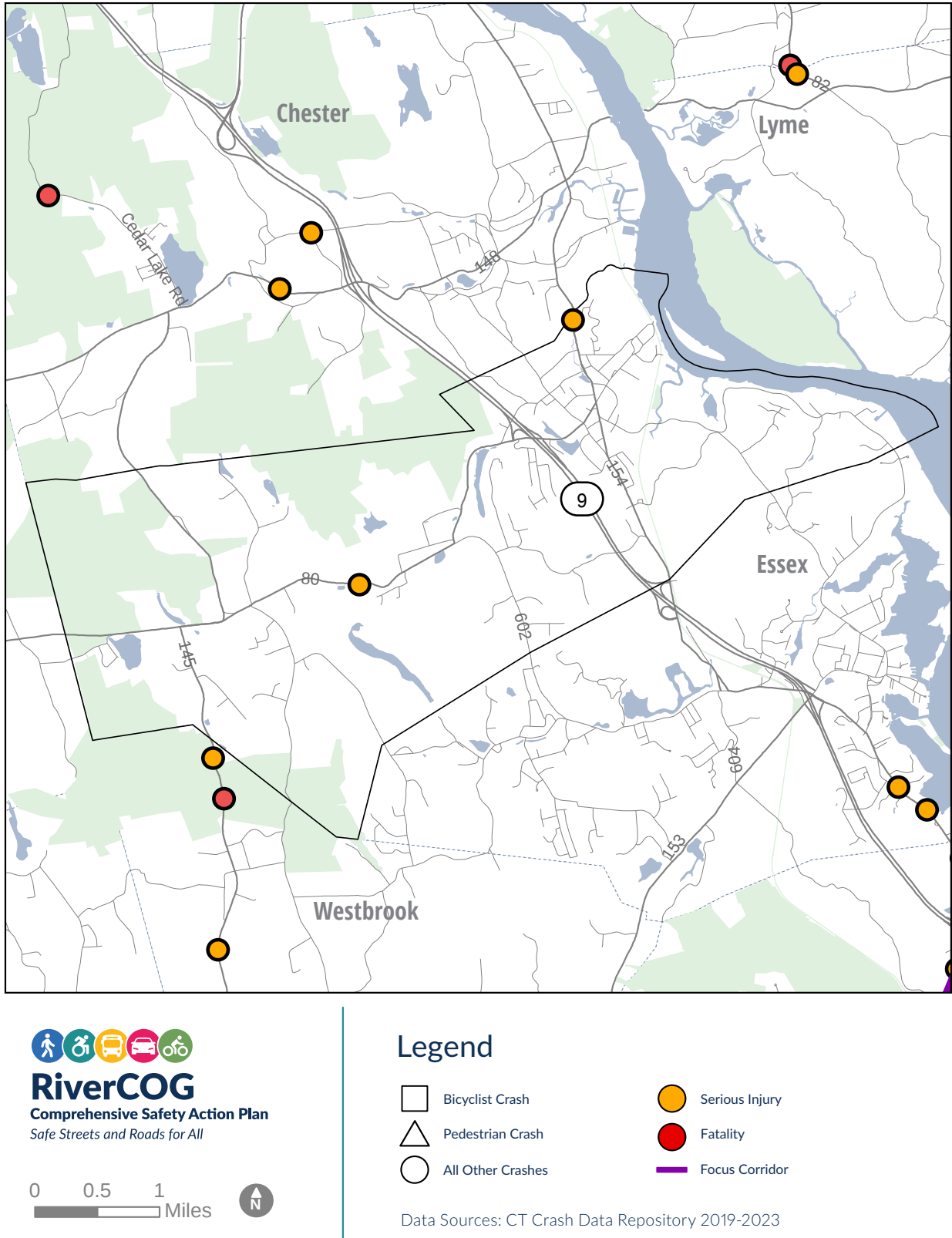
Community members, stakeholders, and staff identified the following corridors as locations where safety-focused interventions are needed.

- Route 80
- Route 145
- Route 154

Transportation Access and Need

- Within the census block groups comprising Deep River include areas with fairly high concentration of seniors and zero vehicle households.

Figure 13. Deep River Crashes and Focus Corridors



Durham

Durham has approximately 7,200 residents (or about four percent of the region's population). The rural, agricultural community along the western border of the region attracts thousands of visitors annually for its fair. The New England Scenc Trail is a federally-designated trail that runs through Durham. Durham has adopted a Complete Streets resolution in 2018 and since then has installed bicycle facilities including on Main Street.

Fatal and Serious (KA) Crash Profile (2019 - 2023)

Table 20. Summary Statistics

6	Number of KA Crashes
10/17	Regional Rank of KA Crashes Weighted by Population
11.12	Average Annual Fatality Rate (per 100,000 people)*

Mode of KA Crashes



Table 21. Road Classification of Durham KA Crashes

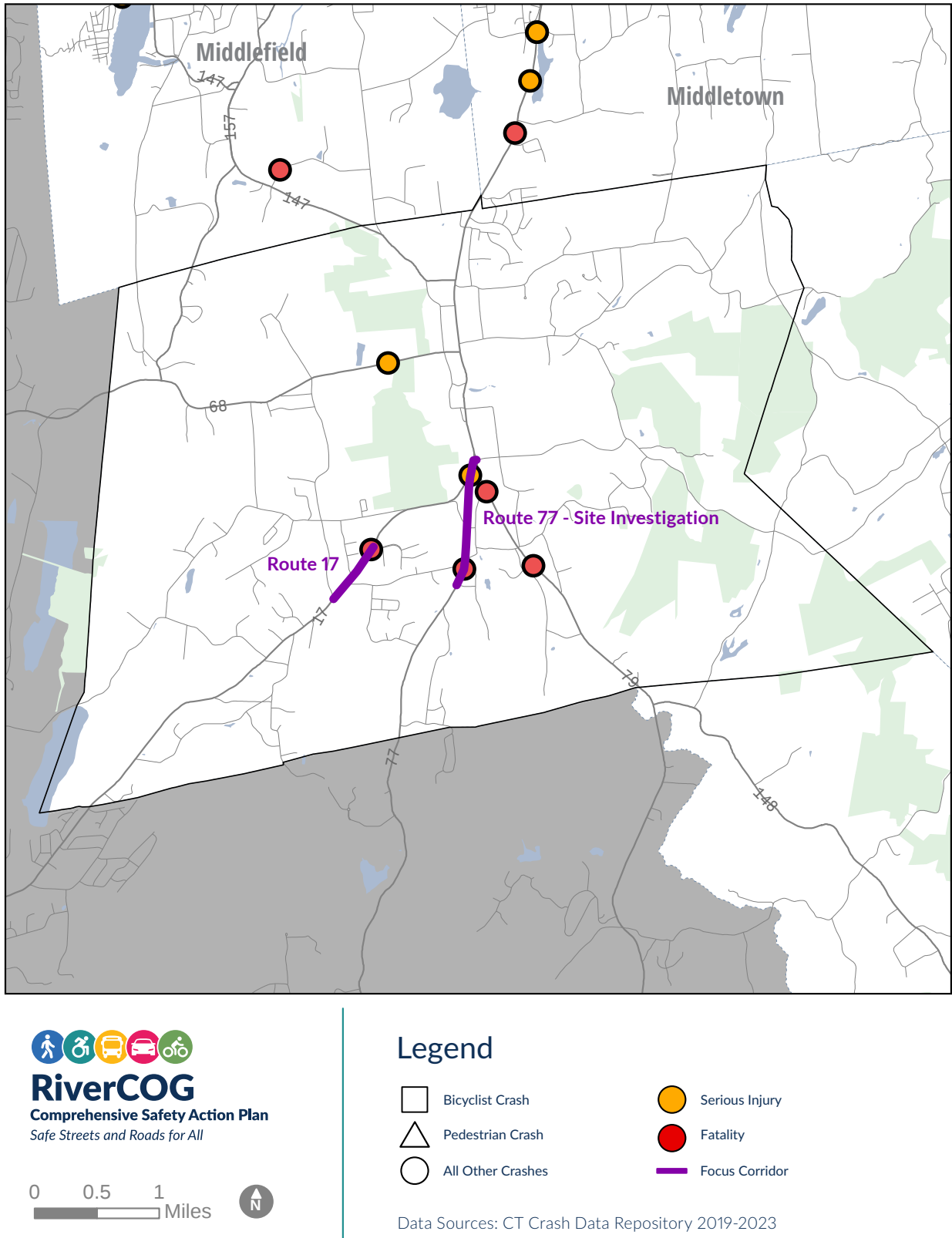
Road Ownership	Fatal Injury	Suspected Serious Injury
U.S. Route	0	0
State	4	2
Local	0	0

Key Findings

- Non-intersection locations were dominant among KA crashes in the town.
- 4 of 6 KA crashes in the municipality were fatal.

* based on 2020 census block group population data

Figure 14. Durham Crashes and Focus Corridors



Durham

Table 22. Durham Regional Focus Corridors

Route No./ Name	Cross Streets	Length (mi)	Score (out of 100)	HIN	CCR Location	VRU KA Crash	Public Input	Transportation Access and Need
77	Higganum Rd/Dionigi Dr	1.06	56	★	▲		●	
17	Saw Mill Rd/ Dinatale Dr	0.53	35	★				

Corridors of Concern

Community members, stakeholders, and staff identified the following corridors as locations where safety-focused interventions are needed.

- Route 77 ★ ▲
- Route 17 ★
- Route 79
- Route 68
- Maple Avenue

Transportation Access and Need

- One of Durham's census block groups has a relatively high share of households below the poverty line.



Route 77 in Durham

LEGEND:

★ High Injury Network (HIN)

▲ Critical Crash Rate (CCR) Locations

● Vulnerable Road User (VRU) Fatal and Serious Injury (KA) Crash Locations

● Public Input: Presence of Map Comments.

Transportation Access and Need based on the number of categories met

● 4+ Categories ● 2-3 Categories ○ 1 Category

Durham

Site Investigation: Route 77

Higganum Road to Dionigi Drive

Table 23. Summary

AA DT	8,600
Speed Limit	45 mph
Shoulders?	Yes
Sidewalks?	No
Bike Lane?	No
Crosswalks?	No
ADA Ramps?	No
Other Features?	

This state roadway includes one travel lane in each direction, with shoulders and a double yellow striped center line. Crashes concentrate on the two intersections at either end of the corridor, especially the northern end at the intersection with Madison Road and New Haven Road. This location, with two proximate intersections, has a significant skew, and includes wide driveways for multiple businesses. As such, there is a wide pavement expanse. Toward the southern end of the corridor, there are driveways and intersections which lack appropriate sight distance and only include stop control on the side streets.

One fatality occurred south of Meeting House Hill Road when a driver struck a tree, which resulted in this location being identified within the region's High Injury Network. The intersection of Higganum Road, Madison Road, New Haven Road, and Route 77 is a critical crash location within the region.

Public comments reiterated the safety concerns at the northern end of the corridor, noting that congestion, including from summer traffic destined for the beach occurs between the two proximate intersections. Speeding was noted south towards Meeting House Hill Road and Dionigi Road.



Recommendations

An intersection redesign is appropriate for the intersection of Route 79/ Route 77 (New Haven Road) and Higganum Road. This could incorporate a dedicated left turn lane on the southbound approach or other alternatives based on operational review. At the southern end of the corridor, trim vegetation and consider advanced warning signage at intersections with no stop control (Birch Mill Road, Meeting House Hill Road, Dionigi Road). The center of the corridor may benefit from rumble strips and regular vegetation trimming. Speeding was also observed, so speed feedback signage or other speed control measures are suggested.



Figure 15. Potential Safety Improvements for Further Review



East Haddam

A town of approximately 9,000 residents comprises about five percent of the region's population. As a Connecticut River town and regional tourist destination with the presence of the Goodspeed Opera House, it also hosts many open space and cultural assets. The Chester-Hadlyme Ferry connects Route 148 in Hadlyme to Route 148 in Chester. In addition to the East Haddam Swing Bridge, this is a primary means of travel across the river. There is also a low intensity, privately owned airport.

Fatal and Serious (KA) Crash Profile (2019 - 2023)

Table 24. Summary Statistics

6	Number of KA Crashes
10/17	Regional Rank of KA Crashes Weighted by Population
2.22	Average Annual Fatality Rate (per 100,000 people)*

Mode of KA Crashes



Table 25. Road Classification of East Haddam KA Crashes

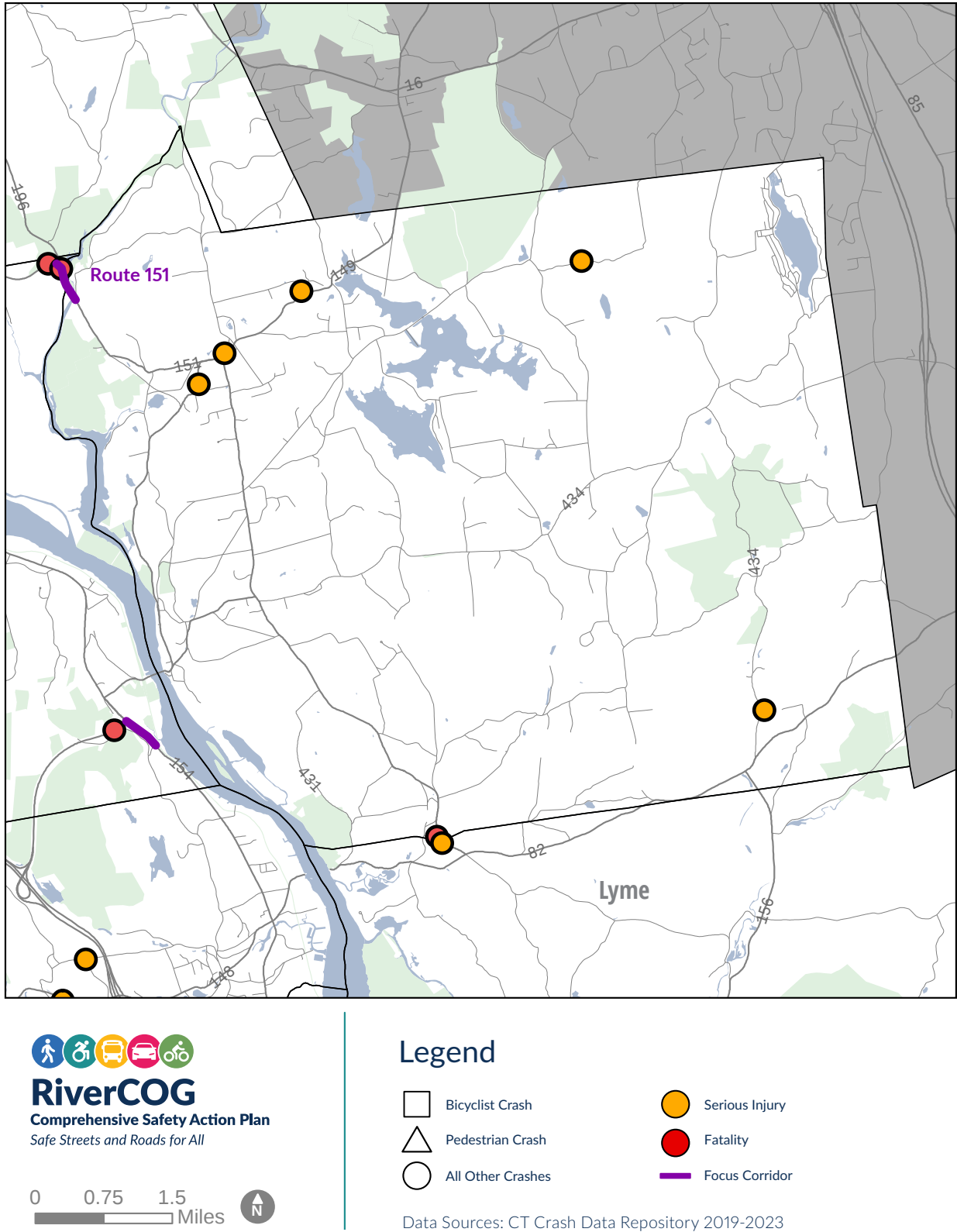
Road Ownership	Fatal Injury	Suspected Serious Injury
U.S. Route	0	0
State	1	3
Local	0	2

Key Findings

- A majority of KA crashes occurred at non-intersection locations, with half occurring on Route 149.
- 2 of 6 KA crashes in the municipality hit fixed objects at night

* based on 2020 census block group population data

Figure 16. East Haddam Crashes and Focus Corridors



East Haddam

Table 26. East Haddam Regional Focus Corridors

Route No./ Name	Cross Streets	Length (mi)	Score (out of 100)	HIN	CCR Location	VRU KA Crash	Public Input	Transportation Access and Need
151	Powerhouse Rd/ Moodus Rd	0.46	35	★				

Corridors of Concern

Community members, stakeholders, and staff identified the following corridors as locations where safety-focused interventions are needed.

- Route 151 ★
- Route 434
- Route 82

Transportation Access and Need

- One of East Haddam's census block groups has relatively high concentrations of seniors.



LEGEND:

★ High Injury Network (HIN)

▲ Critical Crash Rate (CCR) Locations

● Vulnerable Road User (VRU) Fatal and Serious Injury (KA) Crash Locations

● Public Input: Presence of Map Comments.

Transportation Access and Need based on the number of categories met

● 4+ Categories ● 2-3 Categories ○ 1 Category

East Hampton

East of the Connecticut River, East Hampton does not have any direct connectivity to the population center West of the river. There are approximately 13,000 residents of East Hampton, nearly seven and a half percent of the region's population. Natural resource assets in town include the Alr Line State Park Trail as well as state parks and forests. There are sidewalks through the center of the village, though limited by a number of curb cuts and few crossing opportunities.

Fatal and Serious (KA) Crash Profile (2019 - 2023)

Table 27. Summary Statistics

28	Number of KA Crashes
1/17	Regional Rank of KA Crashes Weighted by Population
1.56	Average Annual Fatality Rate (per 100,000 people)*

Mode of KA Crashes



Table 28. Road Classification of East Hampton KA Crashes

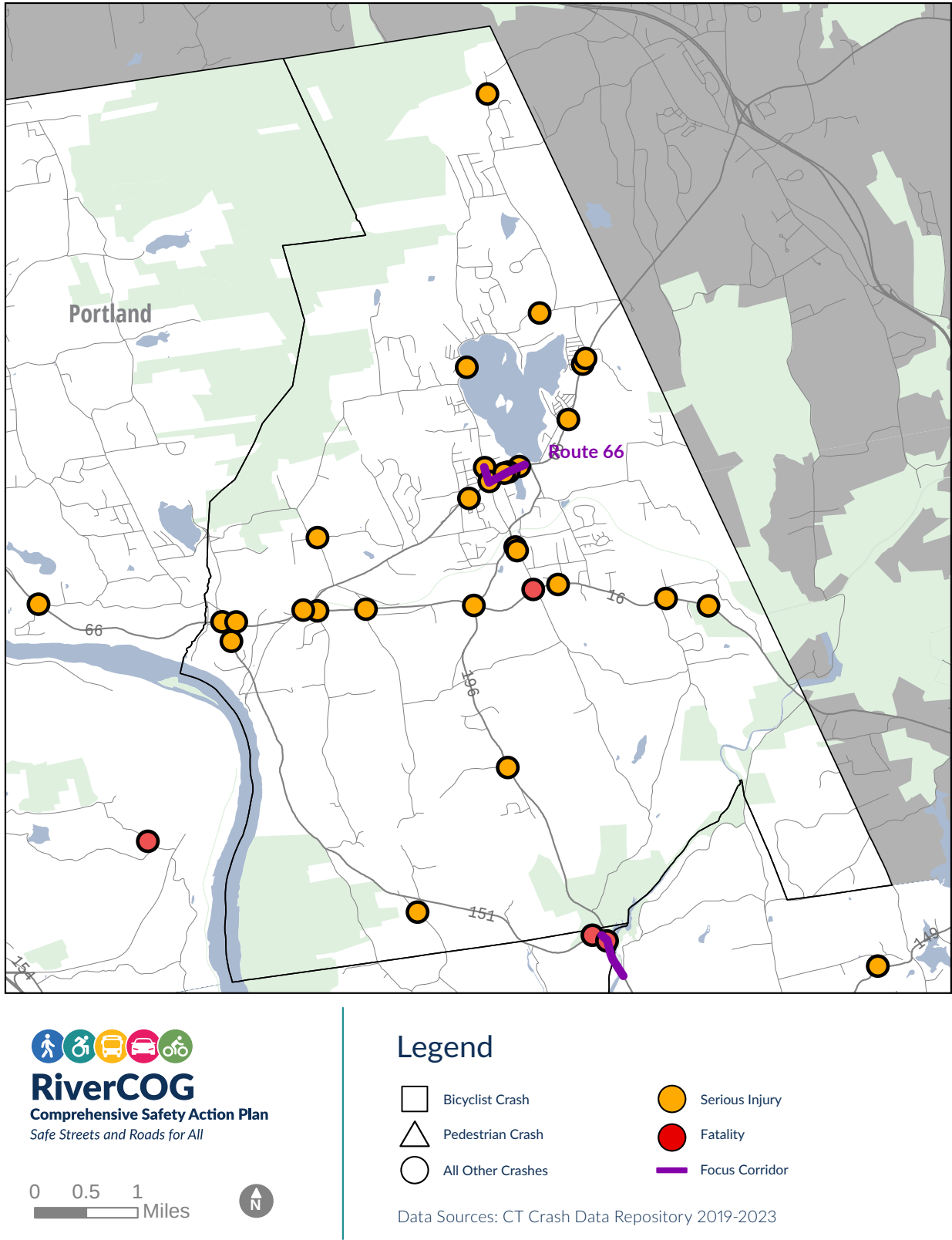
Road Ownership	Fatal Injury	Suspected Serious Injury
U.S. Route	0	0
State	1	19
Local	0	8

Key Findings

- There is a concentration of fixed object KA crashes in East Hampton (12).
- 18 KA crashes occurred between Route 16 and Route 66.

* based on 2020 census block group population data

Figure 17. East Hampton Crashes and Focus Corridors



East Hampton

Table 29. East Hampton Regional Focus Corridors

Route No./ Name	Cross Streets	Length (mi)	Score (out of 100)	HIN	CCR Location	VRU KA Crash	Public Input	Transportation Access and Need
66/N Main St	Markham Ln/ Hills Ave	0.55	27			●	●	○

Corridors of Concern

Community members, stakeholders, and staff identified the following corridors as locations where safety-focused interventions are needed.

- Route 66/ North Main Street
- Main Street
- Hills Avenue

Transportation Access and Need

- East Hampton's census block groups have low population and employment density relative to the region.
- One of East Hampton's block groups has a high concentration of seniors and a significant concentration of households below the poverty line.



Airline Trail East Hampton. Source: Brian Gay

LEGEND:

★ High Injury Network (HIN)

▲ Critical Crash Rate (CCR) Locations

● Vulnerable Road User (VRU) Fatal and Serious Injury (KA) Crash Locations

● Public Input: Presence of Map Comments.

Transportation Access and Need based on the number of categories met

● 4+ Categories ● 2-3 Categories ○ 1 Category

Essex

With a population of approximately 6,600 (under four percent of the region's population), Essex has significant maritime resources including marinas, Connecticut River Museum, and the Essex Steam Train. Arterials including State Highway Route 9 and State Routes 156 and 154 provide access to points North and West. Recently, the town has installed sidewalks in several locations to close gaps and increase connectivity.

Fatal and Serious (KA) Crash Profile (2019 - 2023)

Table 30. Summary Statistics

2	Number of KA Crashes
17/17	Regional Rank of KA Crashes Weighted by Population
0.00	Average Annual Fatality Rate (per 100,000 people)*

Table 31. Road Classification of Essex KA Crashes

Road Ownership	Fatal Injury	Suspected Serious Injury
U.S. Route	0	0
State	2	2
Local	0	0

Mode of KA Crashes



* based on 2020 census population data

Key Findings

- Due to low crash incidence in Essex, there are no focus corridors within the municipality.
- Significant and fatal crashes occur on Route 154.
- Most KA crashes occurred at non-intersection locations.

Corridors of Concern

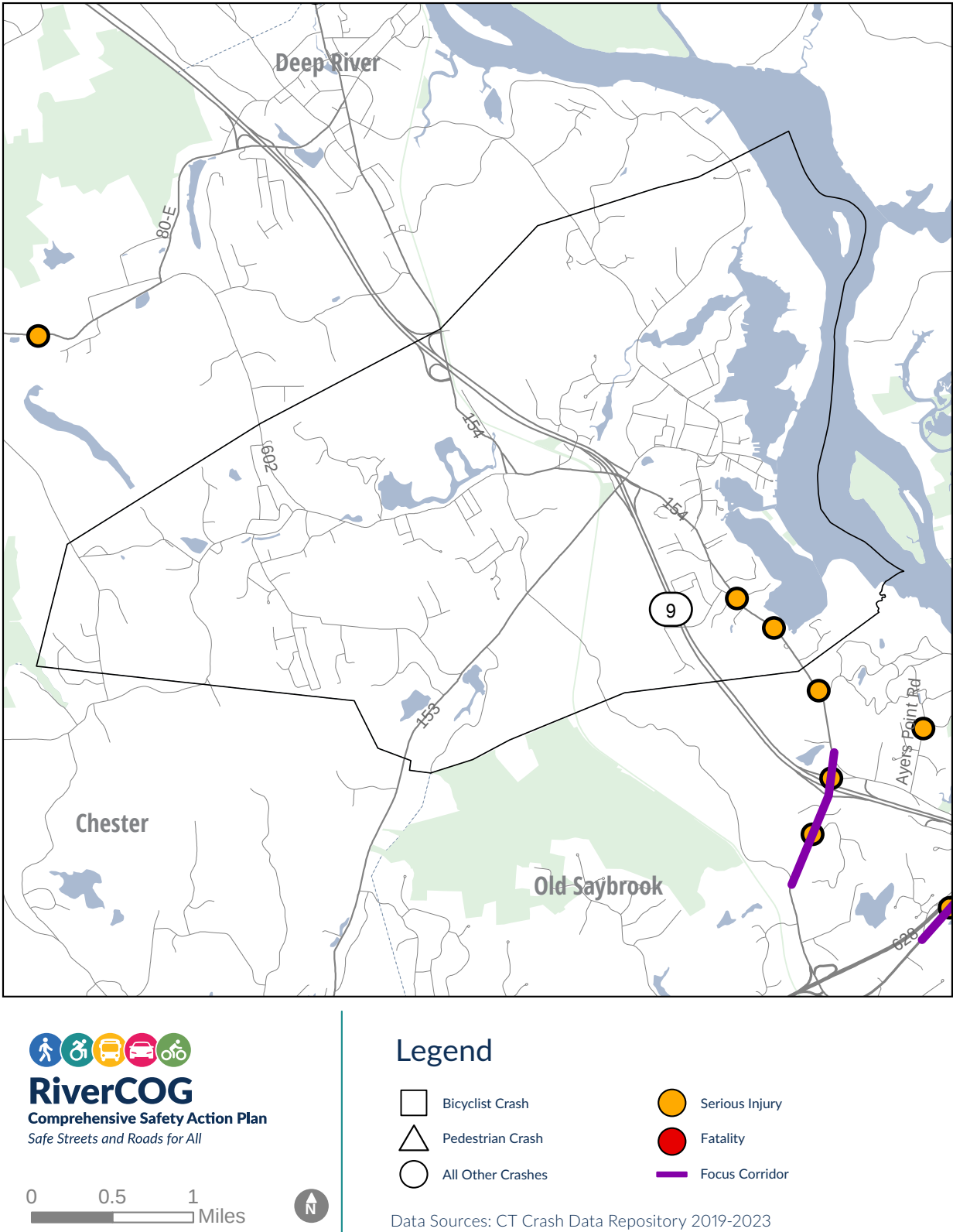
Community members, stakeholders, and staff identified the following corridors as locations where safety-focused interventions are needed.

- Route 154
- Route 153

Transportation Access and Need

- Relative to the region, many areas of Essex have concentrations of seniors.

Figure 18. Essex Crashes and Focus Corridors



Haddam

Haddam is a riverfront town with approximately 8,200 residents (under five percent of the regional population). Haddam is the only town along the Connecticut River that has populations living on both its sides. Although planned, there are currently no pedestrian crossing facilities over Route 82 (Bridge Road), and there is documentation of pedestrians using it, including to access popular events in East Haddam as well as grocery stores.

Fatal and Serious (KA) Crash Profile (2019 - 2023)

Table 32. Summary Statistics

10	Number of KA Crashes
9/17	Regional Rank of KA Crashes Weighted by Population
17.03	Average Annual Fatality Rate (per 100,000 people)*

Mode of KA Crashes



Table 33. Road Classification of Haddam KA Crashes

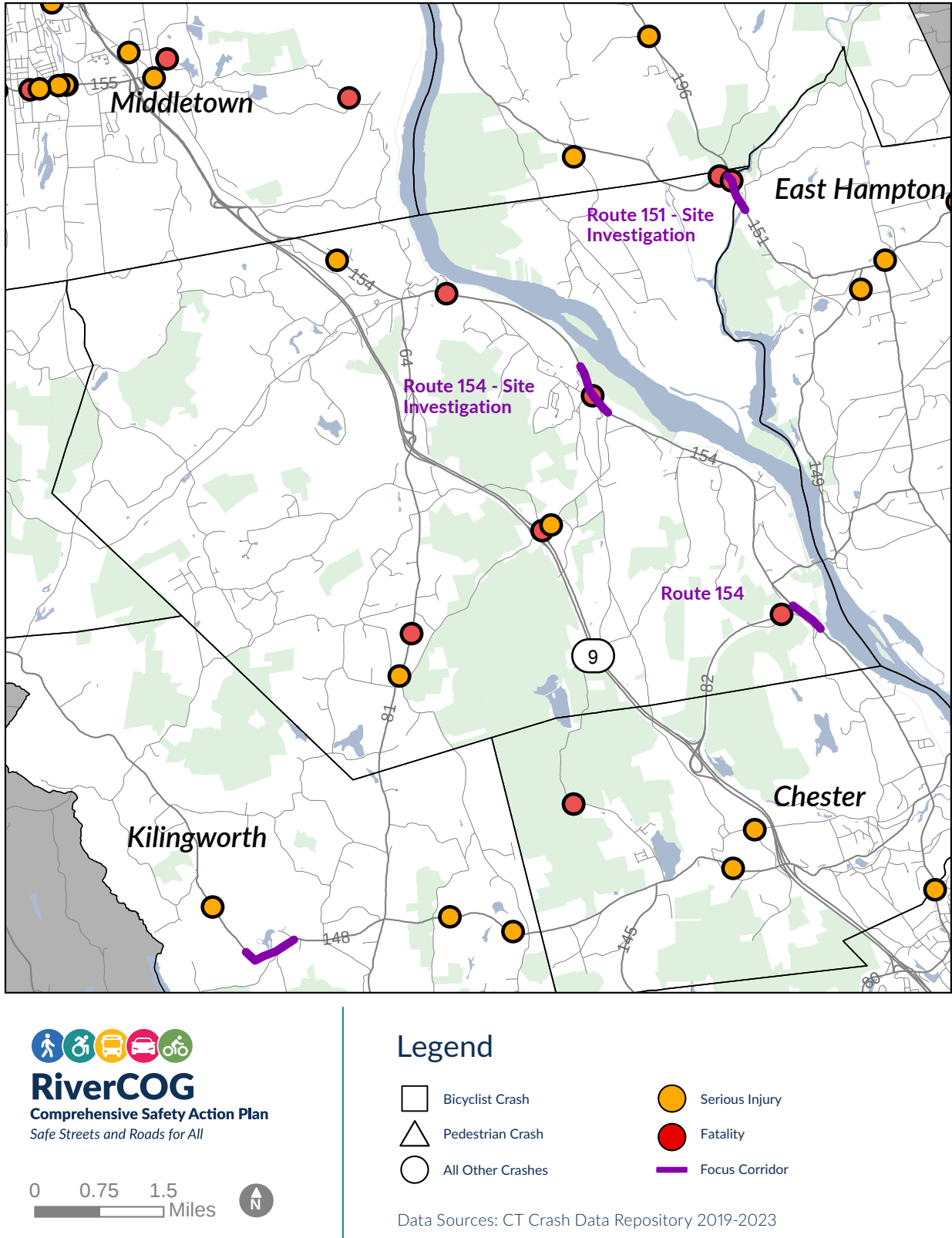
Road Ownership	Fatal Injury	Suspected Serious Injury
U.S. Route	0	0
State	7	2
Local	0	1

Key Findings

- 7 fatalities occurred in Haddam during the five-year crash analysis period.
- A disproportionate number of KA crashes occurred at non-intersection locations.
- A number of KA crashes occurred in dark conditions (5).

* based on 2020 census block group population data

Figure 19. Haddam Crashes and Focus Corridors



Haddam

Table 34. Haddam Regional Focus Corridors

Route No./ Name	Cross Streets	Length (mi)	Score (out of 100)	HIN	CCR Location	VRU KA Crash	Public Input	Transportation Access and Need
154	Jail Hill Rd/ Island Dock Rd	0.65	37	★			●	
151	Powerhouse Rd/ Moodus Rd	0.46	35	★				
154	Route 82/ Dudley Clark Rd	0.42	17		▲		●	

Corridors of Concern

- Route 154 ★
- Route 151 ★
- Route 81

Transportation Access and Need

- Relative to the region, much of Haddam has a larger concentration of youth.



Route 154 in Haddam

LEGEND:

★ High Injury Network (HIN)

▲ Critical Crash Rate (CCR) Locations

● Vulnerable Road User (VRU) Fatal and Serious Injury (KA) Crash Locations

● Public Input: Presence of Map Comments.

Transportation Access and Need based on the number of categories met

● 4+ Categories ● 2-3 Categories ○ 1 Category

Haddam

Site Investigation: Route 154

Jail Hill Road to Island Dock Road

Table 35. Summary

AADT	4,200
Speed Limit	45 mph
Shoulders?	Yes
Sidewalks?	Intermittent
Bike Lane?	No
Crosswalks?	Yes
ADA Ramps?	Yes
Other Features?	RRFB



Along this state route, there is one travel lane in each direction accompanied by shoulders, and sidewalks are present on one side south of Walkley Hill Road. With a concentration of public amenities including a senior center and library, a sidewalk (protected by three cable rail) and a crosswalk with a Rectangular Rapid Flashing Beacon (RRFB) have been recently installed. Bicyclists and buses were also observed along the corridor. These conditions especially approaching the town center seem to be incongruous with the 45 mile per hour speed limit on the corridor, as indicated by public comment highlighting that even when drivers travel the speed limit, it can feel dangerous.

Recommendations

Interventions should focus on building upon the local pedestrian enhancements to improve network connectivity, such as repairing and extending sidewalks, providing shelters or benches at bus stops, and providing crosswalks at Meeting House Green.

A speed limit reduction in the town center should be considered, which could be accompanied by share the road signage for bicyclists, to improve driver awareness. This can be accomplished through identifying a Pedestrian Safety Zone through the town center.

Figure 20. Potential Safety Improvements for Further Review



Haddam - East Haddam

Site Investigation: Route 151

Powerhouse Road to Moodus Road

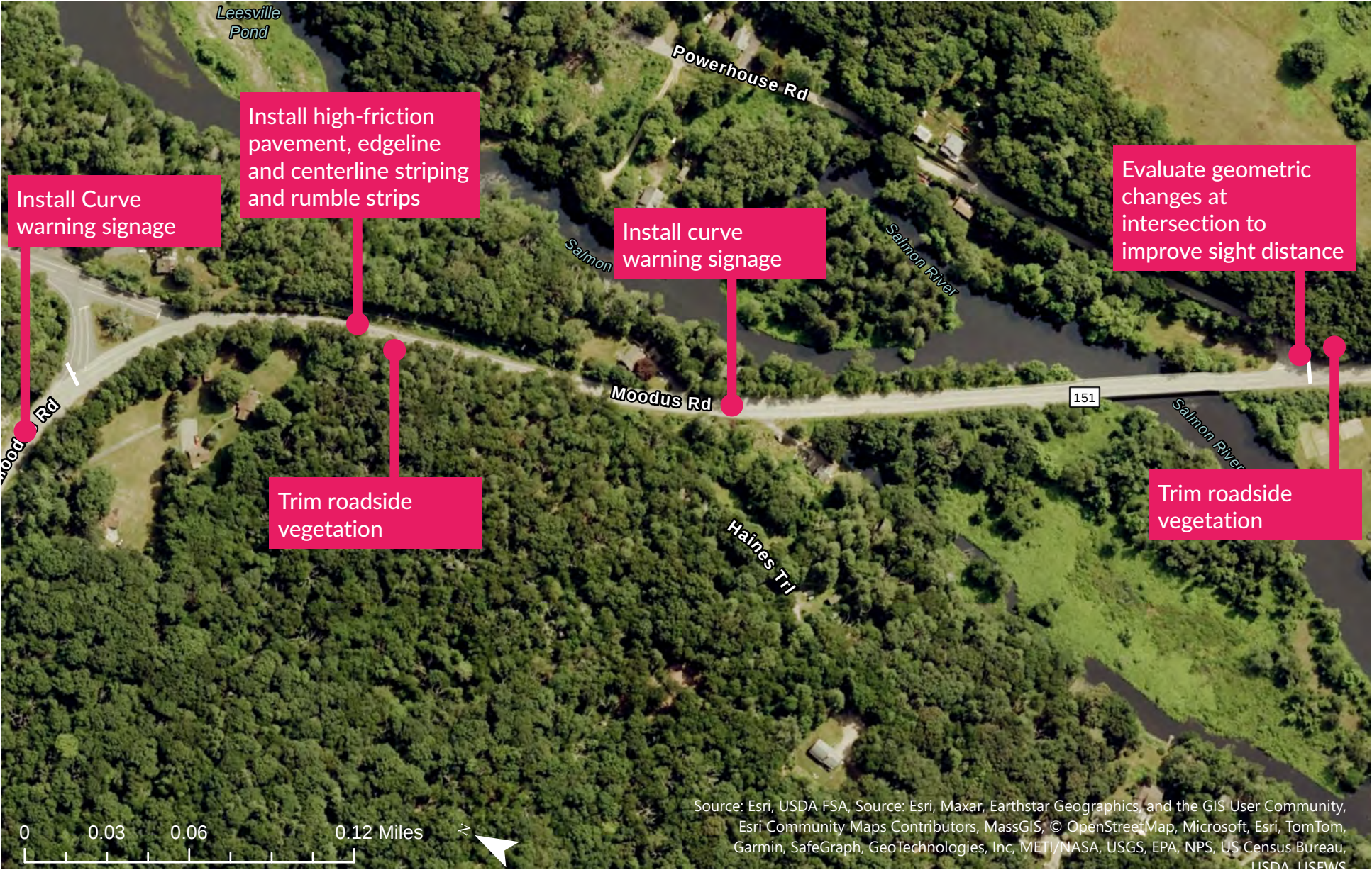
Table 36. Summary

AADT	3,400	Along this rural state route, the free flow condition and lack of intersections as well as lateral shifts in the roadway present visibility challenges especially in the northern portion of the corridor. There is one lane in each direction, wide shoulders, and poor roadway condition. A guardrail is present on the east side of the roadway. Although there was a pedestrian sign, no pedestrians were observed.
Speed Limit	35 mph	
Shoulders?	Yes	
Sidewalks?	No	
Bike Lane?	No	
Crosswalks?	No	There was a fatality in 2020 approaching the intersection of Moodus Road and Young Street, in addition to several minor, possible, or no apparent injury crashes. Crashes were all concentrated north of Haines Trail.
ADA Ramps?	No	
Other Features?	Guardrail	



Curve along Route 151

Figure 21. Potential Safety Improvements for Further Review



Recommendations

Pavement rehabilitation should consider high-friction surface treatment due to the roadway geometry, as well as center and edge line rumble strips. Curve warning signage should also be installed. Additional maintenance should include centerline and edgeline striping refreshment, and regular vegetation clearing.

Coordination with the municipality should consider whether sidewalks or other infrastructure is warranted, especially considering the low-visibility curve.

Killingworth

About 6,400 people reside in Killingworth (less than four percent of the region's population). A large, rural community, it is primarily characterized by two-lane roads, including State Route 81 which runs North/South from Hartford to the Long Island Sound. There are numerous open space resources including Killingworth Land Conservation Trust properties.

Fatal and Serious (KA) Crash Profile (2019 - 2023)

Table 37. Summary Statistics

5	Number of KA Crashes
11/17	Regional Rank of KA Crashes Weighted by Population
3.13	Average Annual Fatality Rate (per 100,000 people)*

Mode of KA Crashes



Table 38. Road Classification of Killingworth KA Crashes

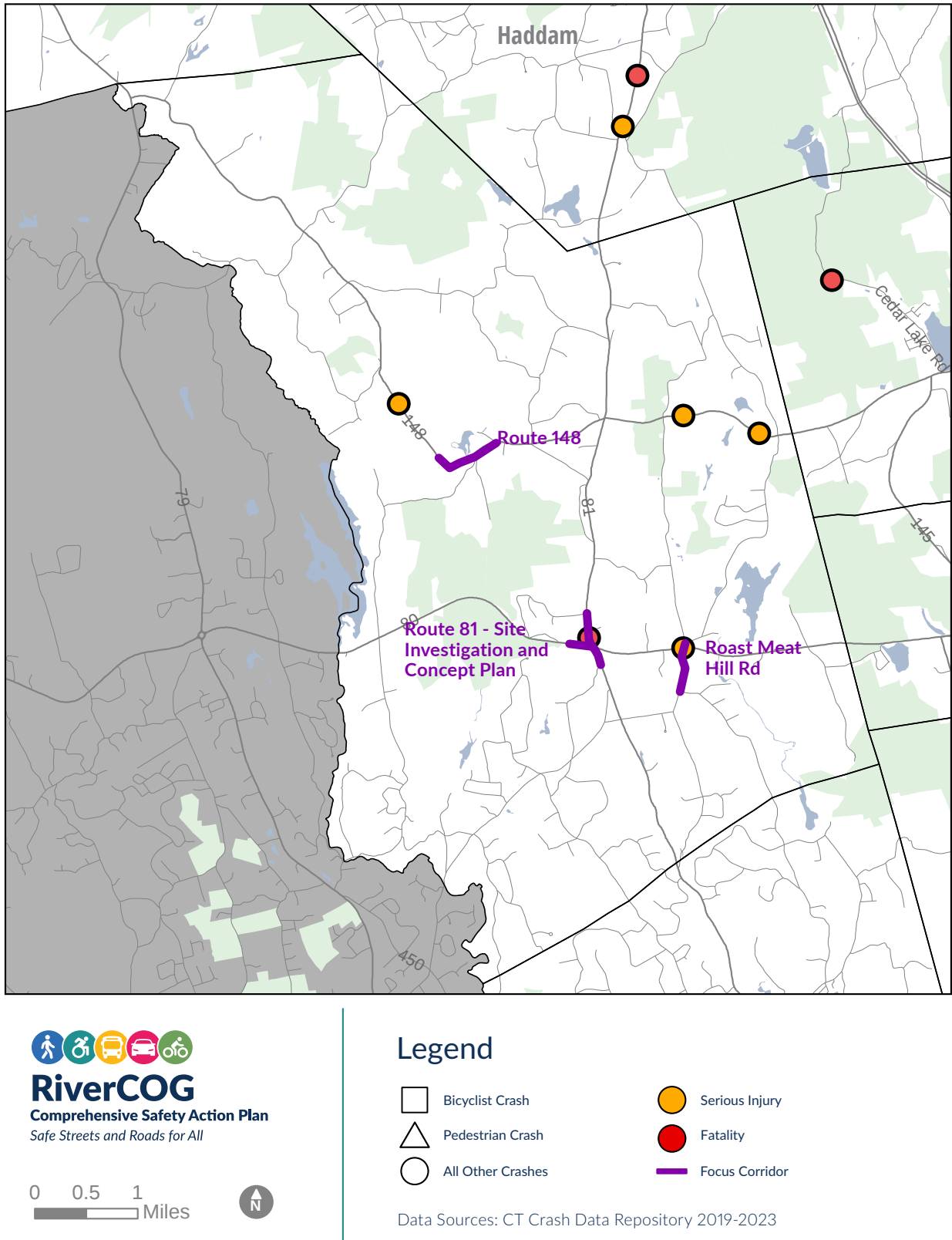
Road Ownership	Fatal Injury	Suspected Serious Injury
U.S. Route	0	0
State	1	4
Local	0	0

Key Findings

- Many KA crashes have concentrated on Route 148
- In this rural community, sight line concerns are prevalent at several intersections in light of high typical operating speeds.

* based on 2020 census block group population data

Figure 22. Killingworth Crashes and Focus Corridors



Killingworth

Table 39. Killingworth Regional Focus Corridors

Route No./ Name	Cross Streets	Length (mi)	Score (out of 100)	HIN	CCR Location	VRU KA Crash	Public Input	Transportation Access and Need
81	Hemlock Dr/ Chittenden Rd	0.54	60	★			●	●
Roast Meat Hill Rd	Iron Works Rd/ Reservoir Rd	0.49	35		▲		●	○
148	Birch Mill Rd/ Birch Mill Rd	0.66	29		▲		●	●
80	Route 81/ Old Deep River Turnpike	0.22	27		▲		●	●

Corridors of Concern

Community members, stakeholders, and staff identified the following corridors as locations where safety-focused interventions are needed.

- Route 81★
- Roast Meat Hill Road ▲
- Route 148 ▲
- Route 80 ▲
- Green Hill Road
- Cow Hill Road
- Chittendon and Cow Hill Road

Transportation Access and Need

- One of Killingworth's census block groups includes significant concentrations of children under 18. Others have somewhat high concentrations of seniors.
- Speeding on state roads in Killingworth is especially concerning, given the presence of local schools on Route 81. Sidewalks and crosswalks should be considered along this stretch of corridor, in addition to signage alerting to drivers to the potential for vulnerable road users.



Killingworth Roundabout

LEGEND:

★ High Injury Network (HIN)

▲ Critical Crash Rate (CCR) Locations

● Vulnerable Road User (VRU) Fatal and Serious Injury (KA) Crash Locations

● Public Input: Presence of Map Comments.

Transportation Access and Need based on the number of categories met

● 4+ Categories ● 2-3 Categories ○ 1 Category

Killingworth

Site Investigation: Route 81

Hemlock Drive to Chittenden Road

Table 40. Summary

AADT	4,800-4,500 (East/West)
	9,200- 6,800 North/South
Speed Limit	35 mph
Shoulders?	Yes
Sidewalks?	No
Bike Lane?	No
Crosswalks?	No
ADA Ramps?	No
Other Features?	Roundabout, Guardrail
#	

The roundabout connecting Route 81 and Route 80, as well as three of its four approaches, is a key corridor where driveways and intersecting streets have poor intersection sight distance. There are narrow shoulders and a guardrail on Route 80 north of the roundabout. Farther north, there is a concentration of pedestrian-friendly land uses including school and library. West of the roundabout, a crest in the roadway contributing to poor sight lines near Overbrook Farms Road. There are also offset intersecting roadways in the vicinity.

Public comments note that Route 81 is a cut-through route between Middletown and the shoreline, and drivers pick up speed quickly as they depart the roundabout (especially heading south). It also connects numerous parks and some bicycle signage exists along the Route (outside of these corridor bounds). Residents feel vulnerable leaving side streets further south due to visibility challenges and the speed of traffic. Commenters also noted frequent non-compliance with restricted passing zones on both Route 80 and Route 81.



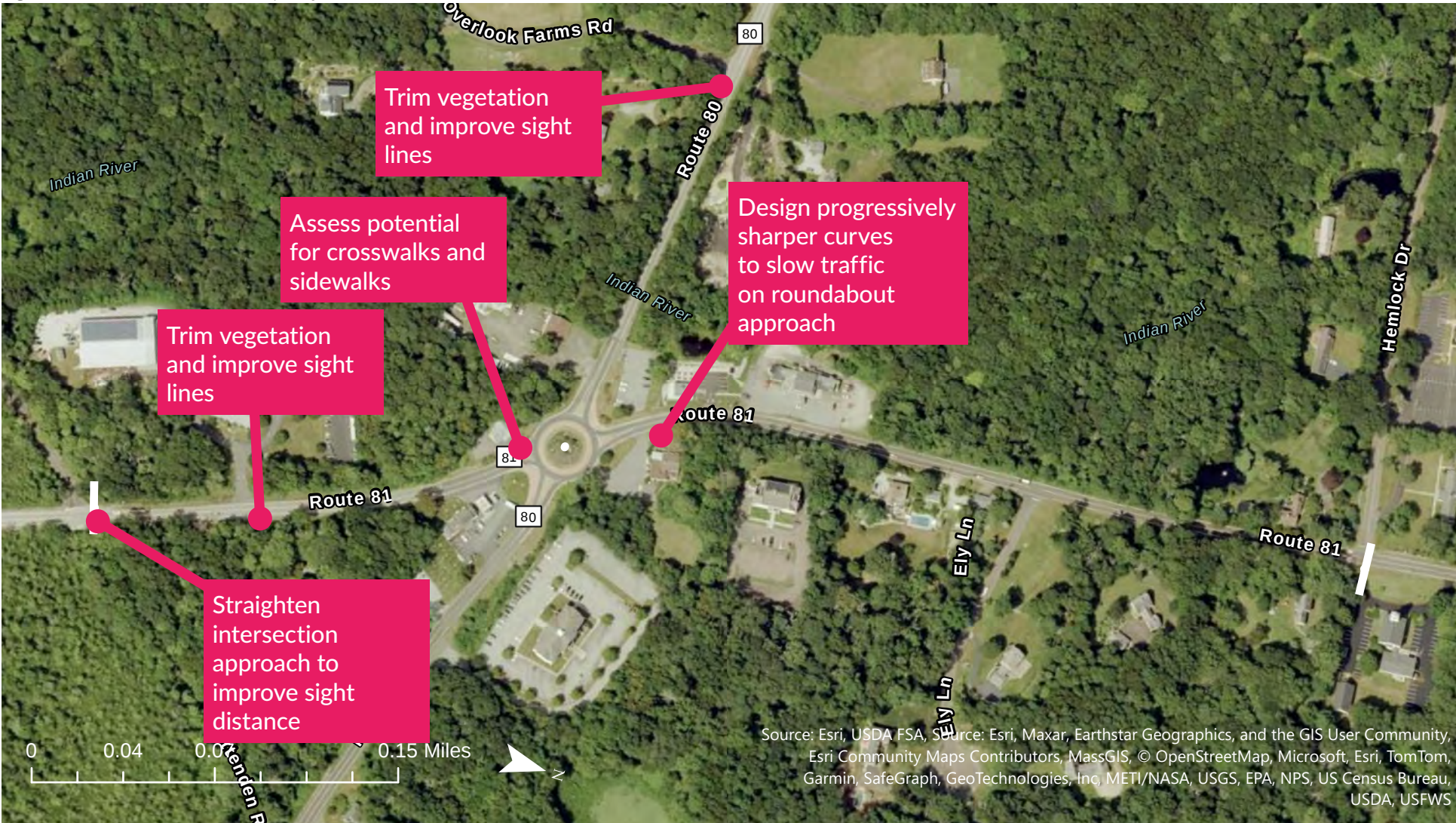
Recommendations

Improvements should focus on speed management north of the Route 81/ Route 80 roundabout. These could include progressively sharper curves to slow traffic on the roundabout approach and transverse rumble strips on the approaches. Oversized signage should be installed on the stop controlled intersection approaches, along with advanced warning signage Along Route 81 and Route 80. All intersecting street and driveway approaches should be evaluated for geometric improvements to improve sight distance.

This should be accompanied by oversized signage on the side streets and advanced warning signage along the main corridors. Center line rumble strips should be considered, particularly on Route 80, to discourage illegal passing.

Additionally, regular maintenance should include trimming overgrown vegetation and improvements to sight lines at cross-streets and driveways across the municipality.

Figure 23. Potential Safety Improvements for Further Review



Planning-Level Concept



Lyme

Lyme is a small town of about 2,400 residents (less than two percent of the region's population), bounded by the Connecticut River to the West. Route 156 crosses the center of the town, running North/South. The town is primarily residential with limited businesses connected to the Connecticut River and Hamburg Cove. Its municipal center, on Route 156, houses the Lyme Consolidated School, Public Library, and Town Hall. There are numerous farms and open space resources. Annually the Tour de Lyme, a charity cycling event, is organized by the Lyme Land Trust.

Fatal and Serious (KA) Crash Profile (2019 - 2023)

Table 41. Summary Statistics

3	Number of KA Crashes
5/17	Regional Rank of KA Crashes Weighted by Population
8.25	Average Annual Fatality Rate (per 100,000 people)*

Mode of KA Crashes



Table 42. Road Classification of Lyme KA Crashes

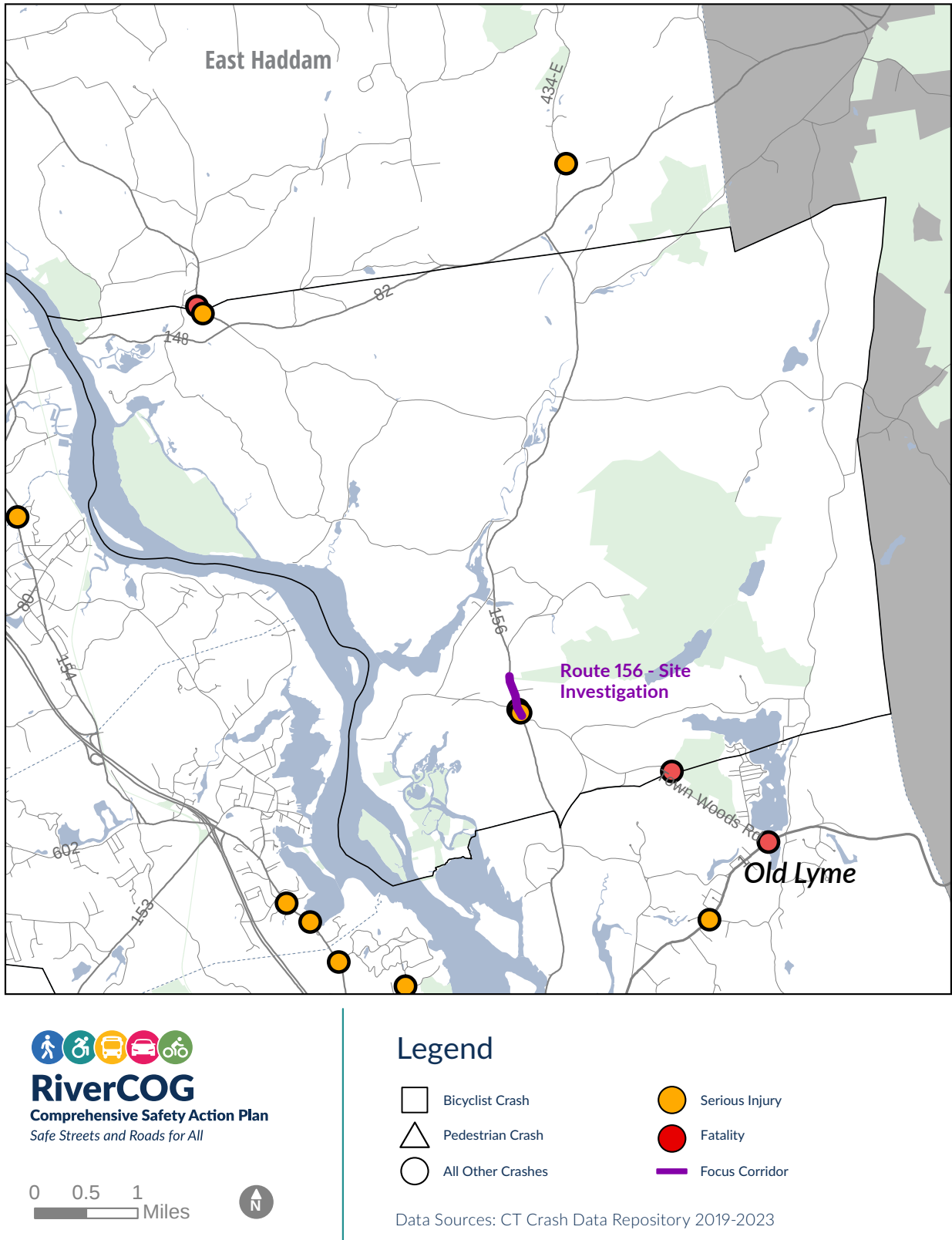
Road Ownership	Fatal Injury	Suspected Serious Injury
U.S. Route	0	0
State	1	2
Local	0	0

Key Findings

- KA Crashes primarily occurred at non-intersection locations in Lyme.
- 2 of 3 KA crashes were on Route 156.

* based on 2020 census block group population data

Figure 24. Lyme Crashes and Focus Corridors



Lyme

Table 43. Lyme Regional Focus Corridors

Route No./ Name	Cross Streets	Length (mi)	Score (out of 100)	HIN	CCR Location	VRU KA Crash	Public Input	Transportation Access and Need
156	Keeny Rd/ Bill Hill Rd	0.41	35	★				



House Boat in Lyme, CT



Route 156

Corridors of Concern

Community members, stakeholders, and staff identified the following corridors as locations where safety-focused interventions are needed.

- Route 156 ★
- Route 148

Transportation Access and Need

- Lyme has a significantly lower population and employment density relative to the region.

LEGEND:

★ High Injury Network (HIN)

▲ Critical Crash Rate (CCR) Locations

● Vulnerable Road User (VRU) Fatal and Serious Injury (KA) Crash Locations

● Public Input: Presence of Map Comments.

Transportation Access and Need based on the number of categories met

● 4+ Categories ● 2-3 Categories ○ 1 Category

Lyme

Site Investigation: Route 156

Keeny Road to Bill Hill Road

Table 44. Summary

AADT	4,300
Speed Limit	40 mph
Shoulders?	Yes
Sidewalks?	No
Bike Lane?	No
Crosswalks?	No
ADA Ramps?	No
Other Features?	

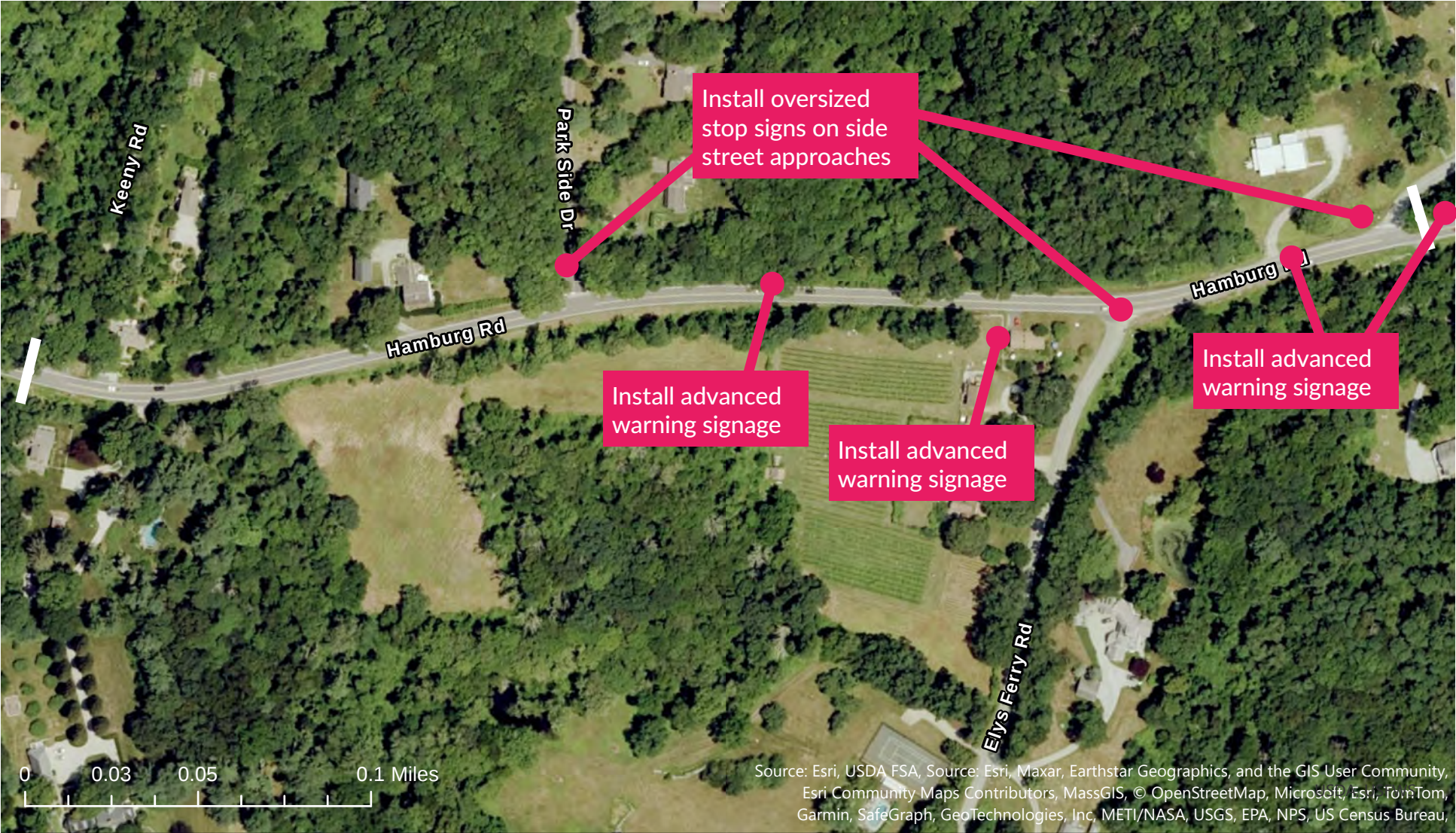


Route 156 is a rural road consisting of one lane in each direction with narrow shoulders on each side. A fatality resulted from a head on collision near Ely's Ferry Road, and there was a serious injury crash. Along this high speed roadway with no stop control on the state route. In addition to the high posted speed limit, typical speeds observed were likely above 40 mph. The southern side of the corridor includes notable two offset intersections, but additional driveways are present along the entire corridor. Center line rumble strips have been installed.

Recommendations

Dynamic speed feedback signs should be considered along the corridor. Additionally, wider or reflective edge lines and delineation should be pursued. Additionally, municipal maintenance should include regular vegetation trimming to ensure appropriate visibility at cross-streets and driveways. Moreover, chevrons and warning signs should be considered for curves that do not currently meet stoppng sight distance at operating speeds.

Figure 25. Potential Safety Improvements for Further Review



Middlefield

Less than 5,000 residents (approximately 3.5 percent of the region's population) call Middlefield home. The community is relatively low density, with winding, two-lane roads. The small, rural community has higher bicycle compared to pedestrian activity, in part due to a lack of sidewalks within the municipality. There are currently no sidewalks in Middlefield. Pedestrian crossins have been updated by CTDOT with signage and pavement markings, and these have been installed at parks and schools.

Fatal and Serious (KA) Crash Profile (2019 - 2023)

Table 45. Summary Statistics

5	Number of KA Crashes
7/17	Regional Rank of KA Crashes Weighted by Population
4.57	Average Annual Fatality Rate (per 100,000 people)*

Mode of KA Crashes



Table 46. Road Classification of Middlefield KA Crashes

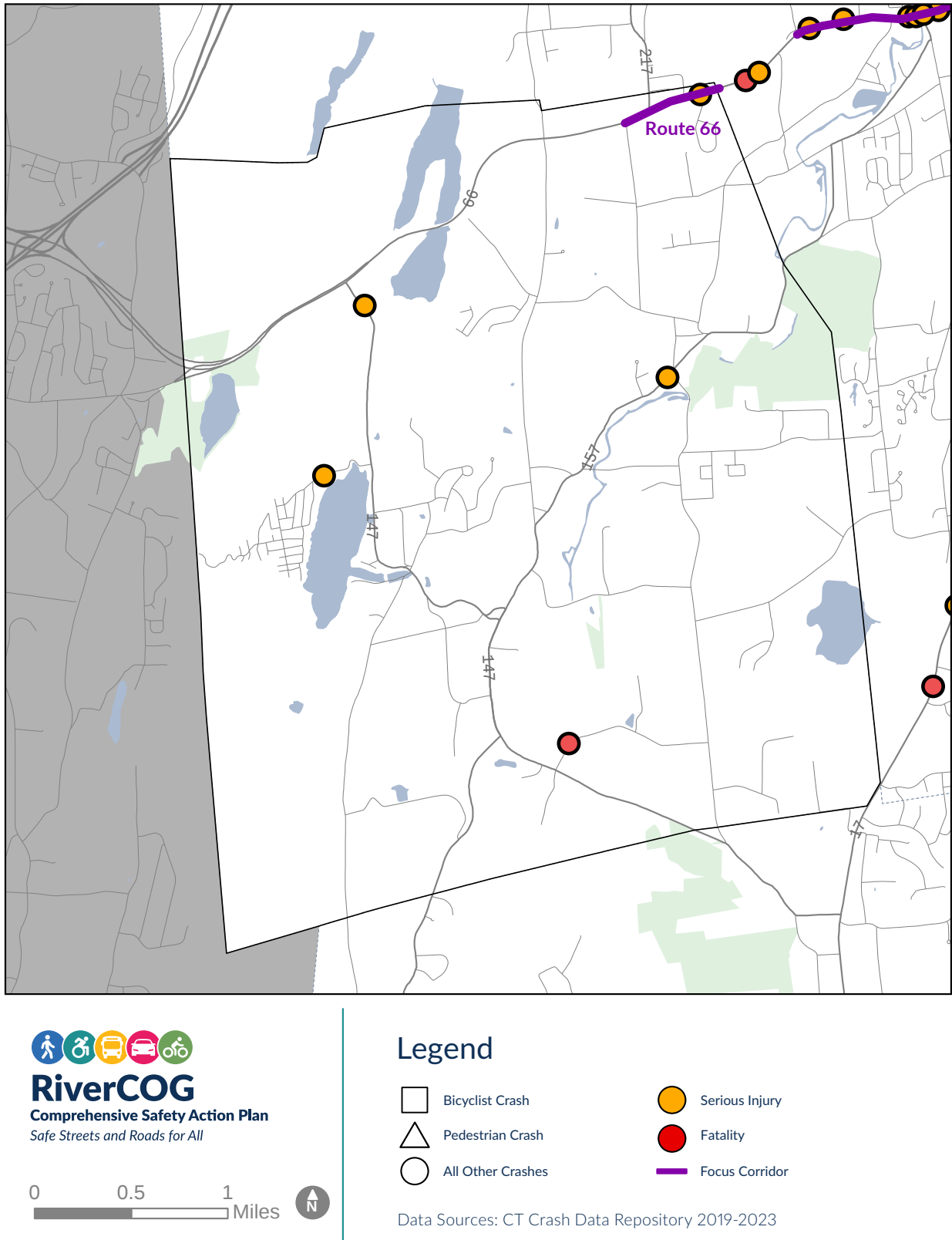
Road Ownership	Fatal Injury	Suspected Serious Injury
U.S. Route	0	0
State	0	3
Local	1	1

Key Findings

- A majority of KA crashes involved fixed objects.

* based on 2020 census block group population data

Figure 26. Middlefield Crashes and Focus Corridors



Middlefield

Table 47. Middlefield Regional Focus Corridors

Route No./ Name	Cross Streets	Length (mi)	Score (out of 100)	HIN	CCR Location	VRU KA Crash	Public Input	Transportation Access and Need
66	Peters Lane/ Woodgate	0.53	55	★		●		

Corridors of Concern

Community members, stakeholders, and staff identified the following corridors as locations where safety-focused interventions are needed.

- Route 66 ★
- Lake Road
- Harvest Wood Road

Transportation Access and Need

- Relative to the region, areas of Middlefield have relatively high concentrations of seniors and households below the poverty line.



Route 66 in Middlefield

LEGEND:

★ High Injury Network (HIN)

▲ Critical Crash Rate (CCR) Locations

● Vulnerable Road User (VRU) Fatal and Serious Injury (KA) Crash Locations

● Public Input: Presence of Map Comments.

Transportation Access and Need based on the number of categories met

● 4+ Categories ● 2-3 Categories ○ 1 Category

Middlefield

Site Investigation: Route 66

Peters Lane to Woodgate Road

Table 48. Summary

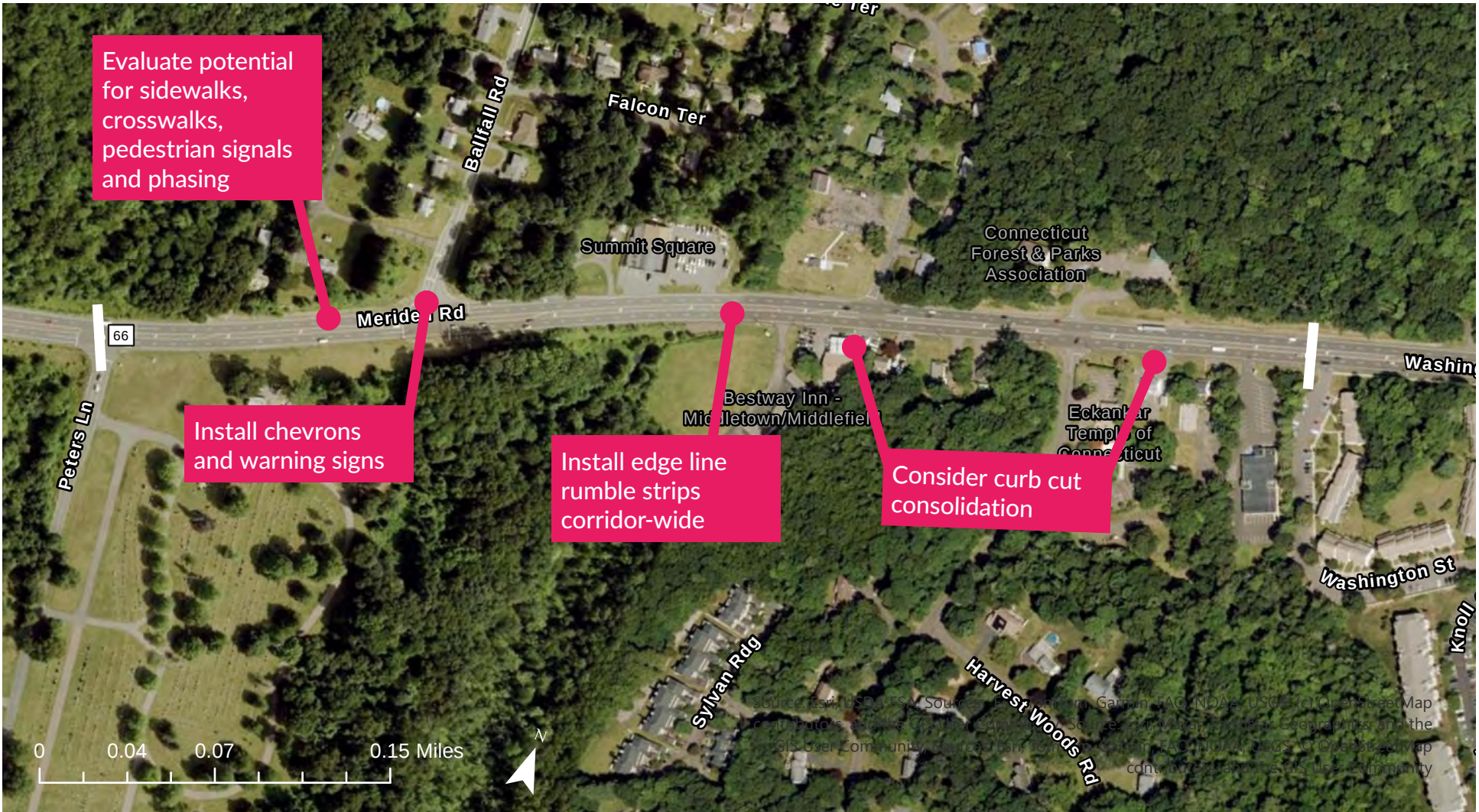
AADT	21,800
Speed Limit	40 mph
Shoulders?	Yes
Sidewalks?	No
Bike Lane?	No
Crosswalks?	No
ADA Ramps?	No
Other Features?	



This significant multi-lane arterial with no passing zones includes left-turn lanes throughout much of the corridor. Route 66 features high speeds, significant setbacks, and lack of multimodal destinations. There are a number of curb cuts including driveways in addition to intersection, and signals and grading on either side of the roadway toward the western end of the corridor at Peters Lane and Balfall Road.

Middletown is currently beginning a SS4A study to develop concepts for four corridors including Route 66.

Figure 27. Potential Safety Improvements for Further Review



Recommendations

Improvements should focus on traffic calming to better manage and reduce speeds, and access management strategies to better manage turning conflicts. These could include edge line rumble strips.

The potential for infrastructure for vulnerable road users should also be considered. The wide roadway and shoulder widths, as well as notable setbacks, suggest that sidewalks could be installed, in addition to crosswalks. Crosswalks along this corridor should

be signal protected, with pedestrian signals and phasing added to traffic signals.

RiverCOG and local officials should coordinate so that the design concepts in Middletown could be extended over the town line, since the nature of the corridor does not change within the extent of these limits.

Middletown

As the largest population center within the region (27 percent of the region's population), the city houses almost 50,000 people as of 2024. CT Route 9 at Middletown's eastern border disconnects the City from the Connecticut River, but studies are underway to redevelop the riverfront and provide a stronger connection to the river. The city houses Wesleyan University as well as Middlesex Hospital, the primary hospital for the region. The West Lake Area Bikeway and Mattabessett Trolley Trail are two of the city's paved multi-use pathways for recreation and regular commuting.

Fatal and Serious (KA) Crash Profile (2019 - 2023)

Table 49. Summary Statistics

88	Number of KA Crashes
3/17	Regional Rank of KA Crashes Weighted by Population
6.03	Average Annual Fatality Rate (per 100,000 people)*

Mode of KA Crashes



Table 50. Road Classification of Middletown KA Crashes

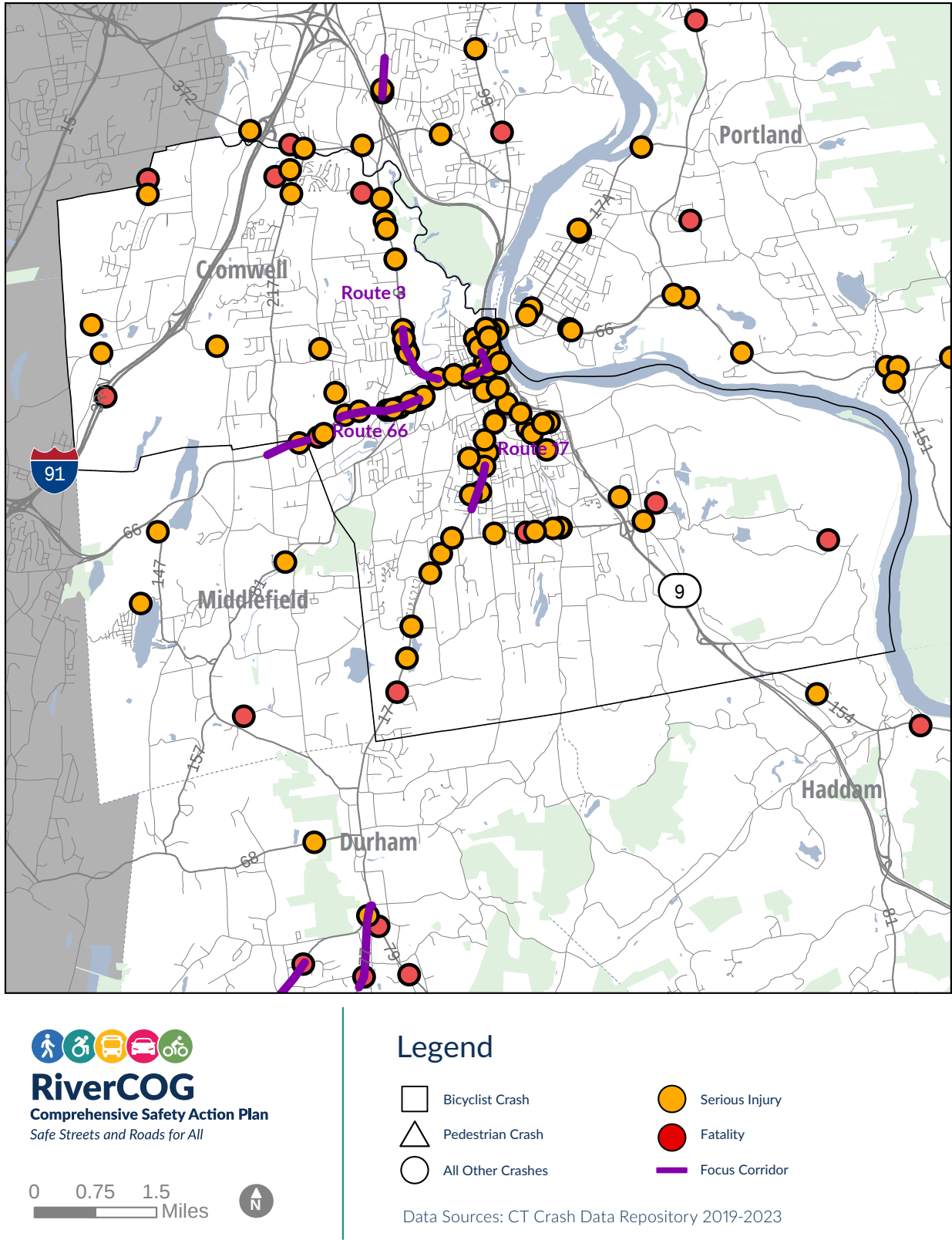
Road Ownership	Fatal Injury	Suspected Serious Injury
Interstate	1	0
State	8	49
Local	5	23
Other	0	4

Key Findings

- There is a concentration of KA crashes involving vulnerable road users in Middletown (bicyclists and pedestrians - 19).
- Over half of the KA crashes (48) occurred at intersections.
- There is an abundance of KA angle crashes.
- 13 fatalities occurred in the city.

* based on 2020 census block group population data

Figure 28. Middletown Crashes and Focus Corridors



Middletown

Table 51. Middletown Regional Focus Corridors

Route No./ Name	Cross Streets	Length (mi)	Score (out of 100)	HIN	CCR Location	VRU KA Crash	Public Input	Transportation Access and Need
3	Liberty St/ Stoneycrest Dr	0.83	91	★	▲	●	●	●
66	Camp St/ Butternut St	1.02	71	★		●	●	●
66	Rappallo Ave/ High St	0.49	54		▲	●	●	●
17	Highland Ave/ Farm Hill Rd	0.57	32		▲		●	●



Main Street in Middletown, CT. Source: RiverCOG

Corridors of Concern

Community members, stakeholders, and staff identified the following corridors as locations where safety-focused interventions are needed.

- Route 3 ★▲
 - Route 66 ★▲
 - Route 17 ▲
 - Saybrook Road
 - Silver Street
 - East Main Street
 - Maple Street
 - Oak Street
- Warwick Street
 - Route 155
 - Highland Avenue
 - Westlake Drive
 - Route 154
 - Country Club Road
 - Old Farms West

Transportation Access and Need

- Middletown has the highest population and employment density in the region.
- There are high populations of people with disabilities, minorities, Limited English Proficiency, poverty, and in zero vehicle households.
- There are two preschools adjacent to Route 66.

Middletown is undertaking an SS4A study to develop design concepts for Newfield Street (Route 3), Washington Street (Route 66), South Main Street (Route 17), and Saybrook Road.

CTDOT has identified non-freeway arterial segments and intersections in Middletown where at least 3 fatal and serious crashes have occurred, which will be addressed by the end of fiscal year 2026. Several overlap with focus corridors: CT-3 (segment) and SR-545 at Route 9 (intersection).

LEGEND:

- ★ High Injury Network (HIN)
 - ▲ Critical Crash Rate (CCR) Locations
 - Vulnerable Road User (VRU) Fatal and Serious Injury (KA) Crash Locations

- Public Input: Presence of Map Comments.

Transportation Access and Need based on the number of categories met

- 4+ Categories
 - 2-3 Categories
 - 1 Category

Old Lyme

With approximately 7,400 residents , Old Lyme houses less than 5% of the region's population. East of the Connecticut River and along the shoreline, it is bifurcated by I-95. It is significantly more rural than its western neighbors. The sole connection west is via the I-95 bridge.

Fatal and Serious (KA) Crash Profile (2019 - 2023)

Table 52. Road Classification of Old Lyme KA Crashes

9	Number of KA Crashes
8/17	Regional Rank of KA Crashes Weighted by Population
10.85	Average Annual Fatality Rate (per 100,000 people)

KA Crashes by Mode



Table 53. Road Classification of Old Lyme KA Crashes

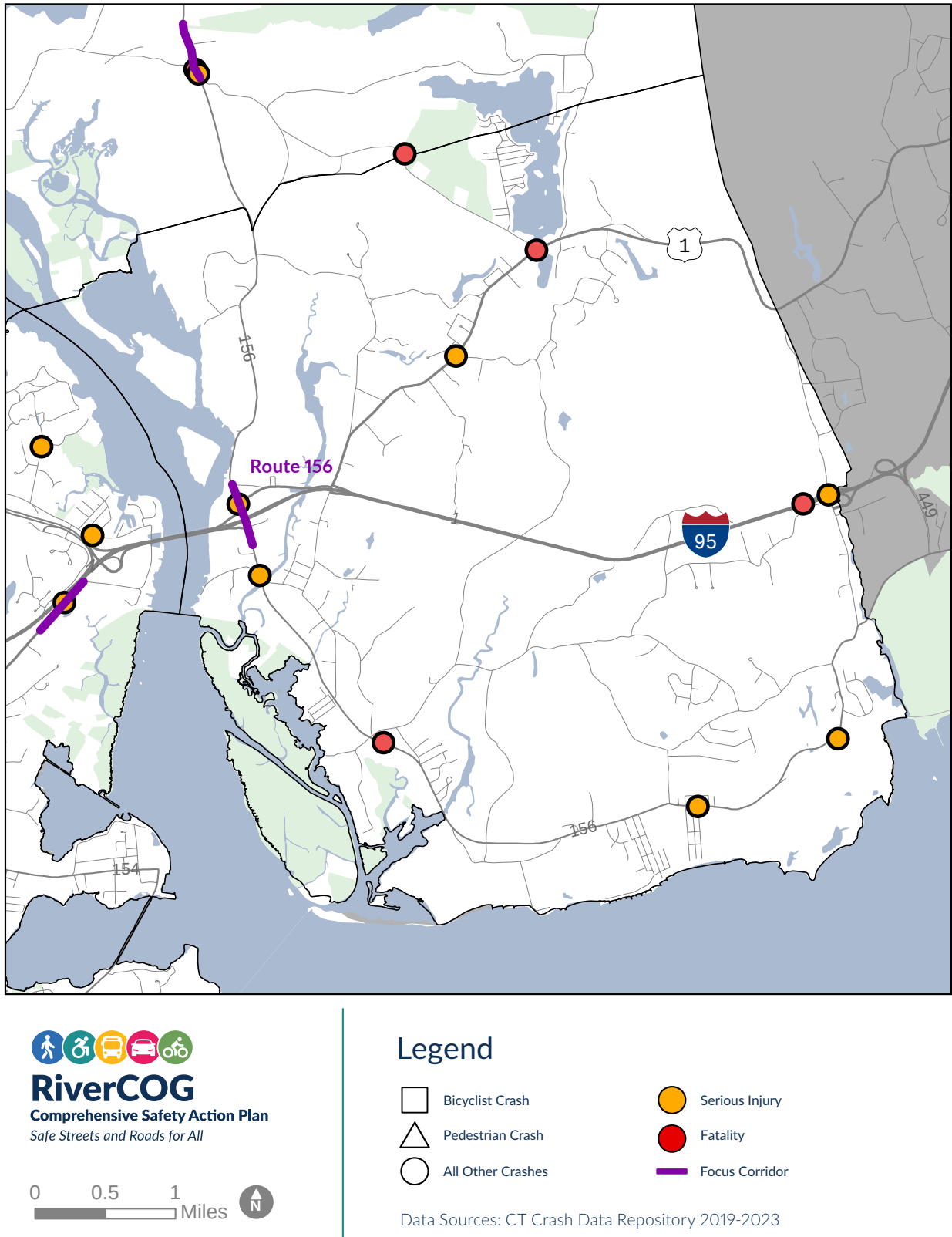
Road Ownership	Fatal Injury	Suspected Serious Injury
U.S. Route	1	0
State	1	1
Local	1	4
Other	1	1

Key Findings

- Nearly half of all KA crashes (7) occurred during the summer months seasonal traffic indicating potential for education targeted towards summer traffic.
- Five KA crashes occurred on Route 156.
- A majority of KA crashes (6) in Old Lyme occurred outside of intersections.

* based on 2020 census block group population data

Figure 29. Old Lyme Crashes and Focus Corridors



Old Lyme

Table 54. Old Lyme Regional Focus Corridors

Route No./ Name	Cross Streets	Length (mi)	Score (out of 100)	HIN	CCR Location	VRU KA Crash	Public Input	Transportation Access and Need
156	Huntley Rd/ Gould Ln	0.46	20		▲		●	○

Corridors of Concern

Community members, stakeholders, and staff identified the following corridors as locations where safety-focused interventions are needed.

- Route 156 ▲
- Route 1
- Four Mile River Road

Transportation Access and Need

- There are high concentrations of poverty, limited English proficiency, minorities, seniors, and youth in Old Lyme.



Halls Road Bridge, Source: JC

LEGEND:

- ★ High Injury Network (HIN)
- ▲ Critical Crash Rate (CCR) Locations
- Vulnerable Road User (VRU) Fatal and Serious Injury (KA) Crash Locations

- Public Input: Presence of Map Comments.
- Transportation Access and Need based on the number of categories met
 - 4+ Categories
 - 2-3 Categories
 - 1 Category

Old Saybrook

The town has a population of approximately 10,000 (over five percent of the region's residents). A shoreline community bordered by the mouth of the Connecticut River, it is characterized by denser neighborhoods south of Route 1 near Old Saybrook Metro-North Station. The major interchange of I-95 with Route 9, as well as the Route 1/I-95 interchange funnel regional and seasonal traffic through the community.

Fatal and Serious (KA) Crash Profile (2019 - 2023)

Table 55. Road Classification of Old Saybrook KA Crashes

8	Number of KA Crashes
13/17	Regional Rank of KA Crashes Weighted by Population
0	Average Annual Fatality Rate (per 100,000 people)

Mode of KA Crashes



Table 56. Road Classification of Clinton KA Crashes

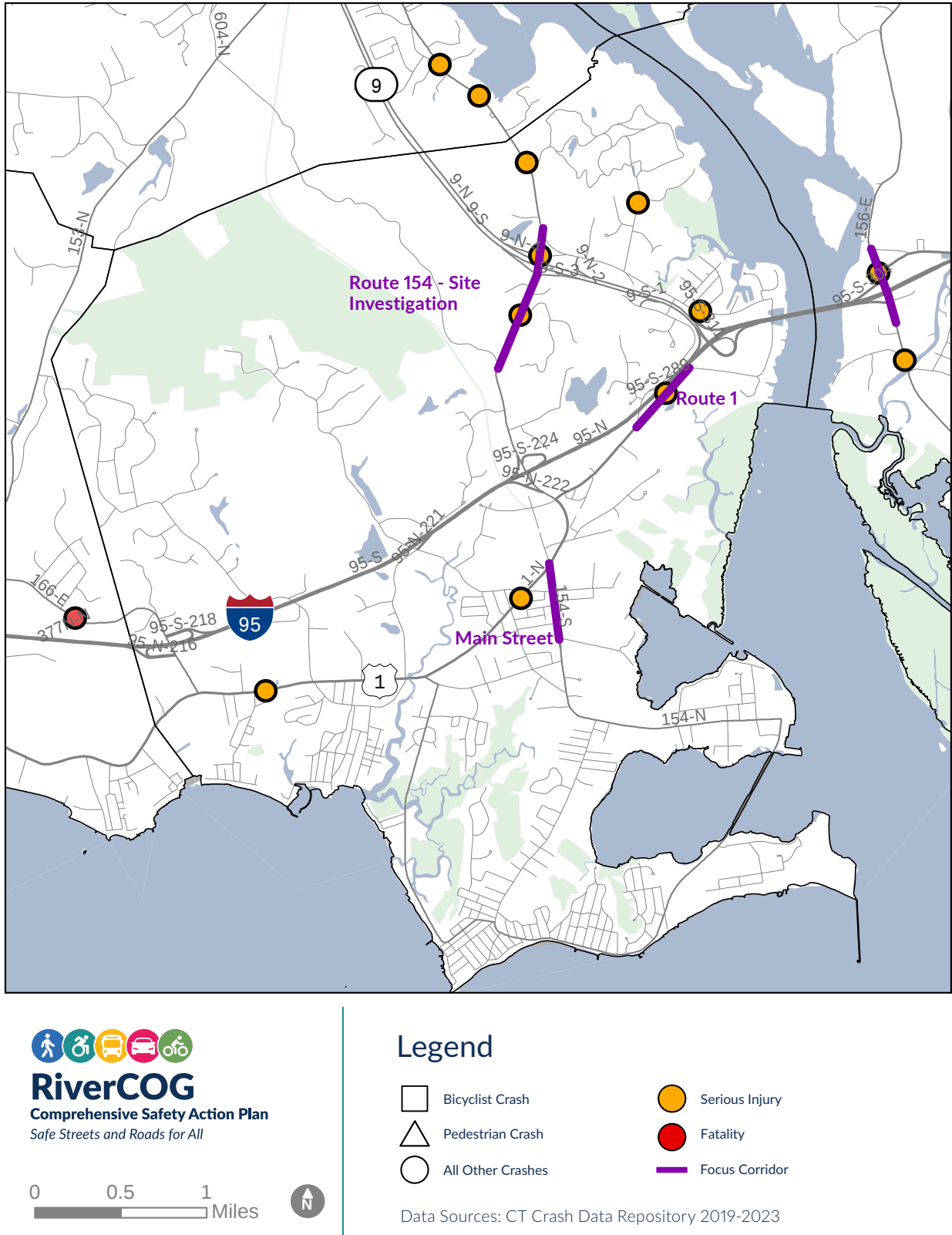
Road Ownership	Fatal Injury	Suspected Serious Injury
U.S. Route	0	3
State	0	3
Local	0	2

Key Findings

- 7 of 8 KA crashes took place during the summer months. As a shoreline community, special attention should be paid to opportunities to engage seasonal traffic/ tourists in safety campaigns.

* based on 2020 census block group population data

Figure 30. Old Saybrook Crashes and Focus Corridors



Old Saybrook

Table 57. Old Saybrook Regional Focus Corridors

Route No./ Name	Cross Streets	Length (mi)	Score (out of 100)	HIN	CCR Location	VRU KA Crash	Public Input	Transportation Access and Need
154	Bokum Rd/ Essex Rd	0.88	35		▲	●		
154	Sheffield St/ Route 1	0.45	29		▲		●	●
1	Ferry Rd/ Mulcahny Rd	0.47	17		▲		●	

Corridors of Concern

Community members, stakeholders, and staff identified the following corridors as locations where safety-focused interventions are needed.

- Route 154 ▲
- Route 1 ▲
- Bokum Road

Route 154 through downtown Old Saybrook is a locally significant location bordering the second Focus Corridor in town, with anecdotal evidence of near-misses and two crashes in 2024. This complex segment which includes a portion of Route 1 should be prioritized for design review to reduce crashes and provide multimodal access.

Transportation Access and Need

- The population and employment density of Old Saybrook is greater than much of the region.
- There are two schools on Sheffield Street, close to Route 154.
- The city has identified the Essex Road - Ferry Road - Boston Post Road loop as a potential bicycle - pedestrian connection. The loop connects several neighborhoods and business districts ripe for redevelopment.



LEGEND:

★ High Injury Network (HIN)

▲ Critical Crash Rate (CCR) Locations

● Vulnerable Road User (VRU) Fatal and Serious Injury (KA) Crash Locations

● Public Input: Presence of Map Comments.

Transportation Access and Need based on the number of categories met

● 4+ Categories ● 2-3 Categories ○ 1 Category

Old Saybrook

Site Investigation: Route 154

Bokum Road to Essex Road

Table 58. Summary

AADT	10,400 (East) 3,500 (West)
Speed Limit	40 mph
Shoulders?	Yes
Sidewalks?	Yes
Bike Lane?	No
Crosswalks?	No
ADA Ramps?	No
Other Features?	

Along this 0.41 segment of Route 156 in Old Saybrook, there is one travel lane in each direction along with wide shoulders on each side. Traffic operations are free flow in the rural residential area, and drivers frequently exceed the posted speed limit.

The northern intersection with Essex Road is a critical crash location, with numerous crashes over the five year period. The wide expanse of pavement at the skewed intersection creates a merge condition for northbound traffic from both Route 154 and Essex Road. The lack of traffic control and high speeds combine to create a hazardous condition for drivers attempting to turn south/left onto Route 154. There is another critical crash location at the intersection with Bokum Road in the south. The Bokum Road intersection is a skewed, three way intersection, also with no traffic control.

Additionally, a suspected serious injury crash involving a pedestrian occurred near the intersection with Obed Heights, under dark (not lit) conditions).

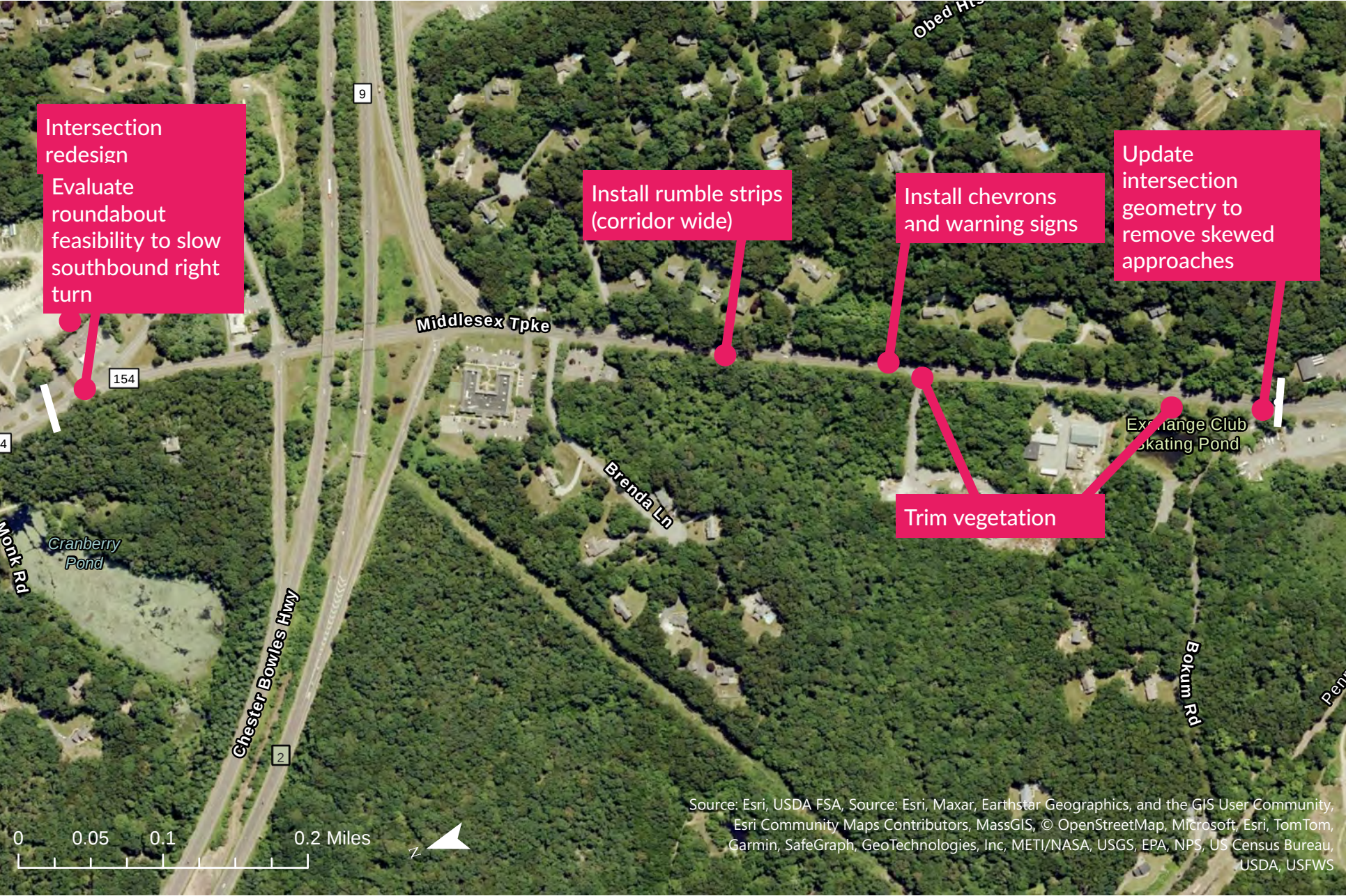


Recommendations

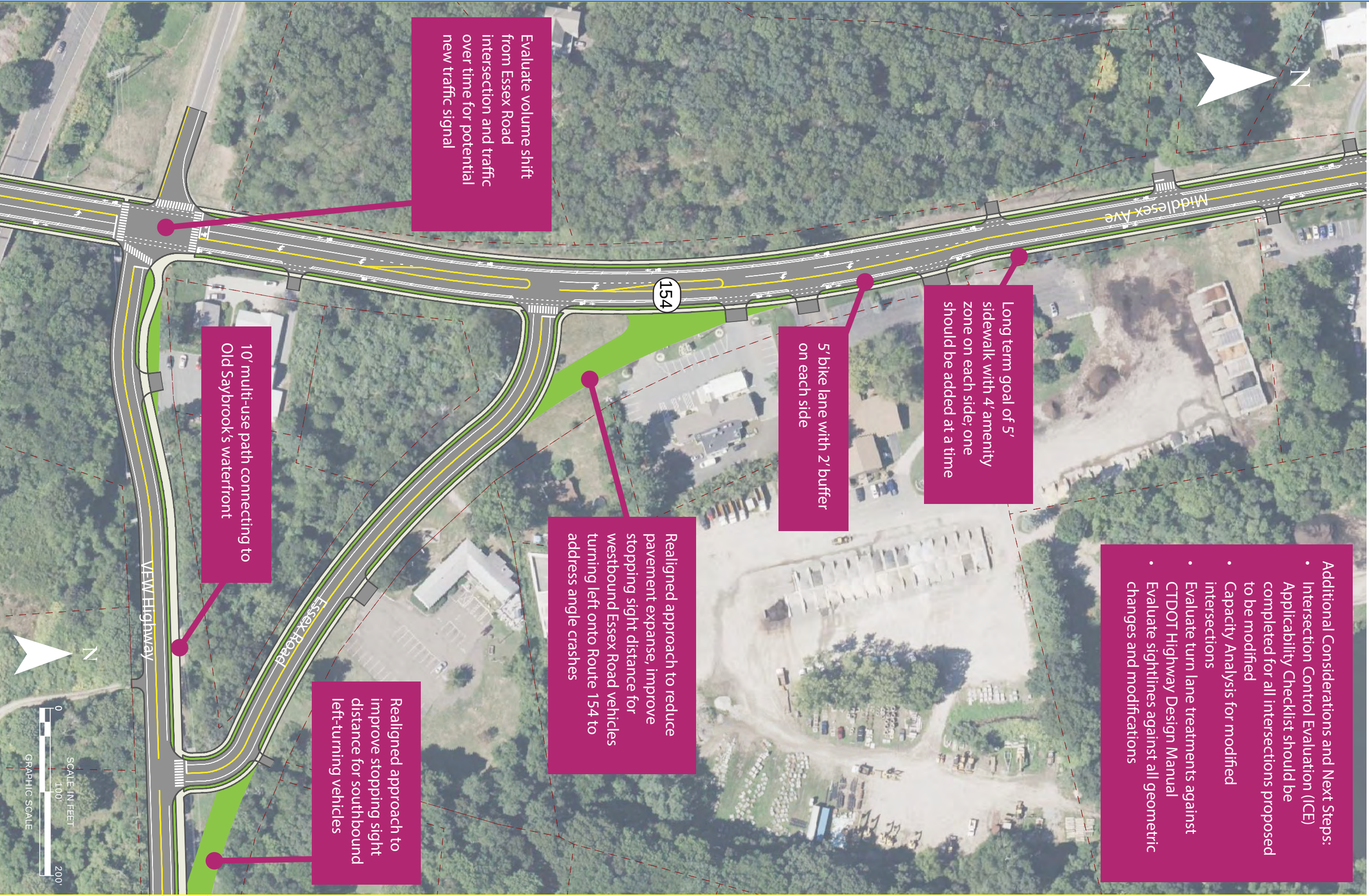
At the intersection of Bokum Road with Route 154, geometric changes should be considered including roundabouts, with a focus on speed management for the southbound right turn. Dynamic speed feedback signs, wider and/or reflective edge lines and delineation, and rumble strips should all be installed along the

corridor as means of speed management. For curves that don't meet stopping sight distance at operating speeds, additional chevrons and warning signs should be considered. The municipality should coordinate with CTDOT for regular maintenance including vegetation trimming.

Figure 31. Potential Safety Improvements for Further Review



Planning-Level Concept



Planning-Level Concept





Portland

East of Middletown and across the Connecticut River, Portland is characterized by a walkable Main Street, but east of the Village Center becomes increasingly rural in nature. The area is home to approximately 9,000 residents, accounting for over five percent of the region's population. The Air Line State Park Trail crosses the town, connecting to communities East of Portland with the closure of gaps.

Fatal and Serious (KA) Crash Profile (2019 - 2023)

Table 59. Road Classification of Westbrook KA Crashes

12	Number of KA Crashes
4/17	Regional Rank of KA Crashes Weighted by Population
4.30	Average Annual Fatality Rate (per 100,000 people)*

Table 60. Road Classification of Portland KA Crashes

Road Ownership	Fatal Injury	Suspected Serious Injury
U.S. Route	0	0
State	1	10
Local	1	0

Mode of KA Crashes



* based on 2020 census block group population data

Key Findings

- Most serious and fatal injury crashes in Portland occurred on Route 17 and Route 66, with 10 crashes in the last five years of data.
- Over half of the KA crashes within the community (7) were intersection-related.
- There are no focus corridors in Portland.

Corridors of Concern

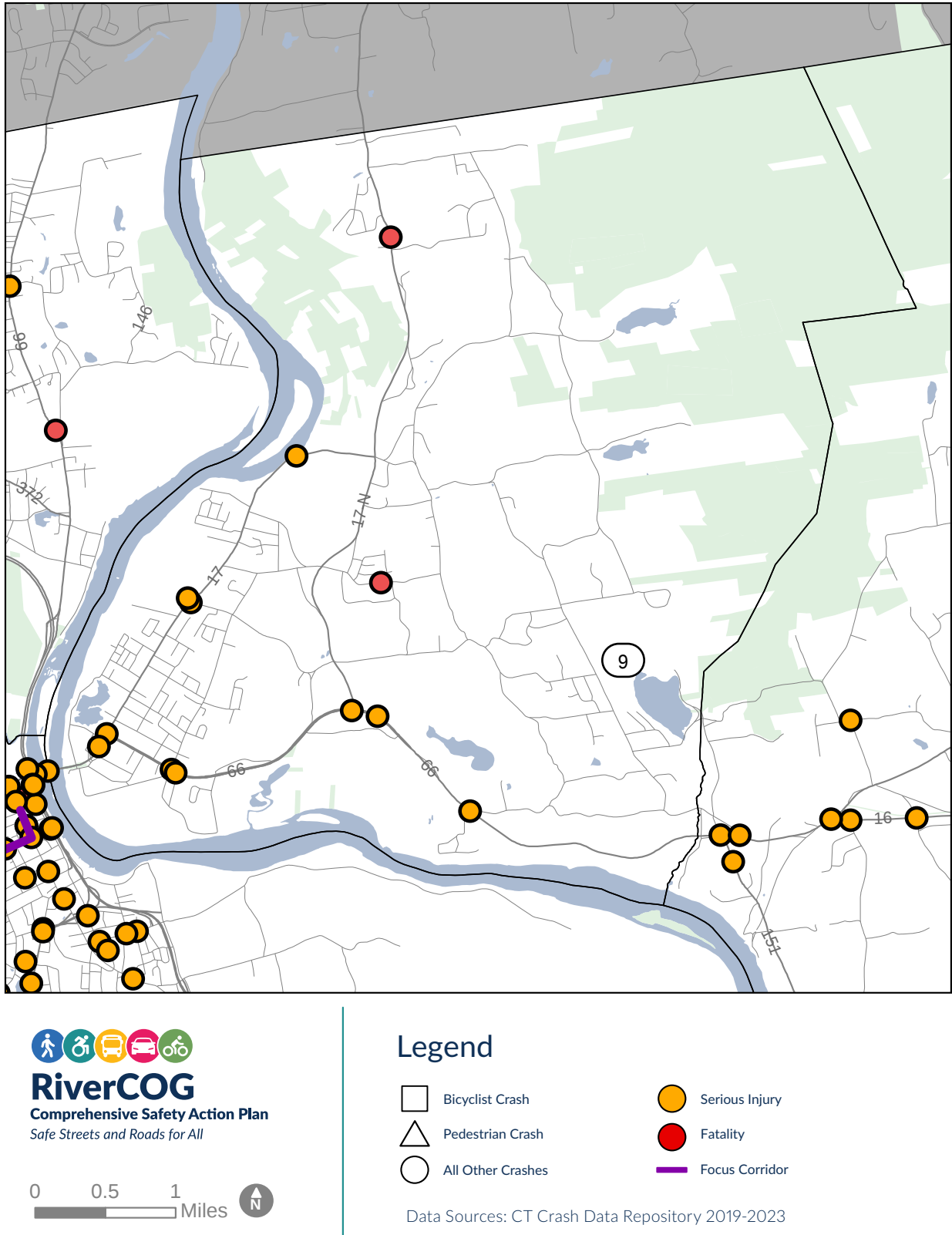
Community members, stakeholders, and staff identified the following corridors as locations where safety-focused interventions are needed.

- Route 17A
- Route 66

Transportation Access and Need

- Areas of Portland have somewhat high concentrations of people with disabilities and youth.

Figure 32. Portland Crashes and Focus Corridors



Westbrook

The population of Westbrook is near 7,000, comprising approximately four percent of the region. As a shoreline community, transportation infrastructure in the town is dominated by Route 1 and I-95. South of I-95, neighborhoods are more dense and more friendly towards nonmotorists.

Fatal and Serious (KA) Crash Profile (2019 - 2023)

Table 62. Road Classification of Westbrook KA Crashes

13	Number of KA Crashes
10/17	Regional Rank of KA Crashes Weighted by Population
20.33	Average Annual Fatality Rate (per 100,000 people)

KA Crashes by Mode



Table 61. Road Classification of Westbrook KA Crashes

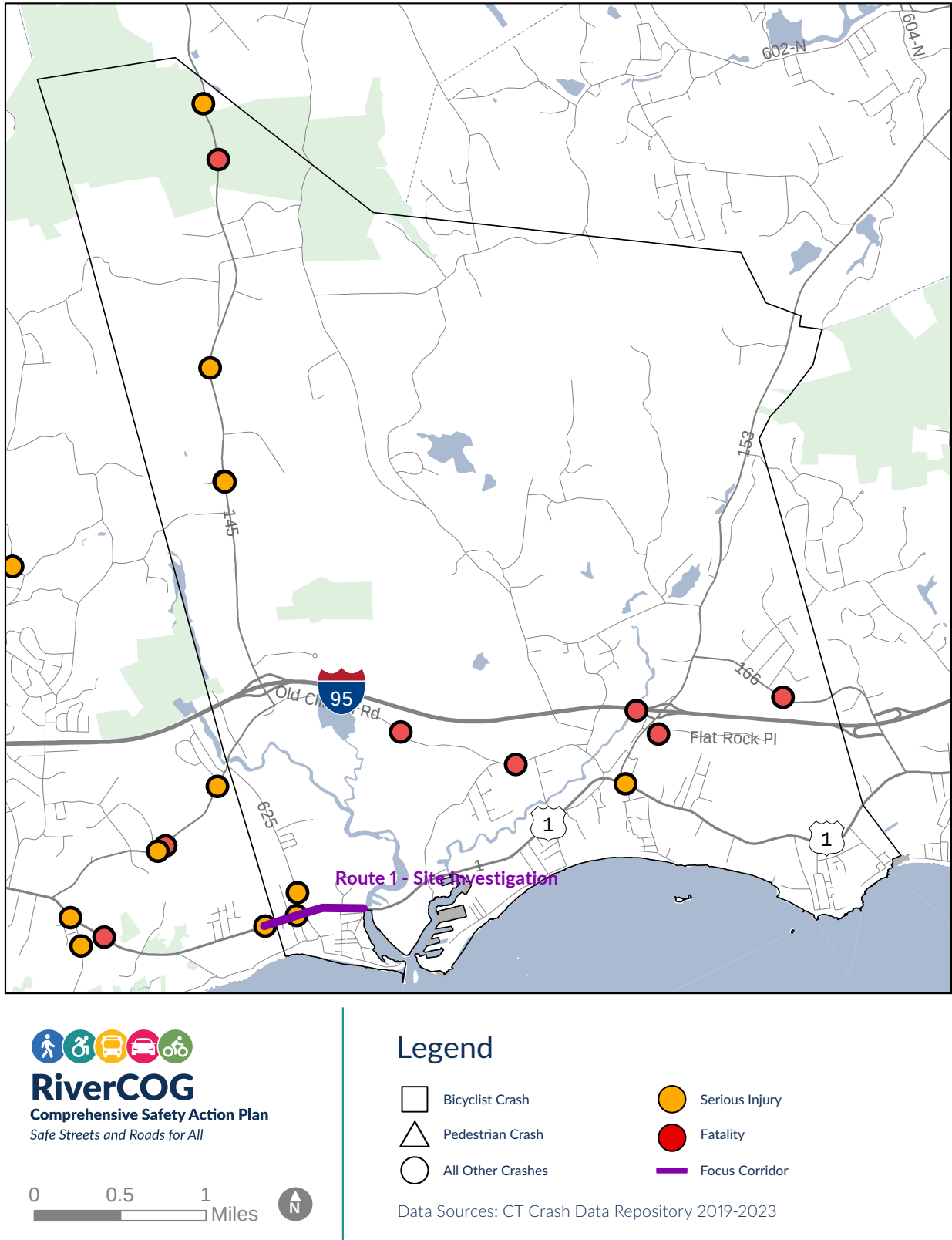
Road Ownership	Fatal Injury	Suspected Serious Injury
Interstate	1	0
U.S. Route	0	2
State	3	4
Local	3	0

Key Findings

- Many KA crashes in Westbrook were categorized as lane departure crashes, indicating consideration for enhanced delineation, longitudinal rumble strips, median barriers, and wider edge lines.
- Most KA crashes in the municipality (9) were not at an intersection.
- A number of KA crashes (5) in Westbrook hit fixed objects.
- Two of six KA crashes in the municipality hit fixed objects at night.

* based on 2020 census block group population data

Figure 33. Westbrook Crashes and Focus Corridors



Westbrook

Table 63. Westbrook Regional Focus Corridors

Route No./ Name	Cross Streets	Length (mi)	Score (out of 100)	HIN	CCR Location	VRU KA Crash	Public Input	Transportation Access and Need
1	Indian Trail/ Pine Cone Dr	0.59	31			●	●	○

Corridors of Concern

Community members, stakeholders, and staff identified the following corridors as locations where safety-focused interventions are needed.

- Route 1
- Route 166
- Linden Ave South

Transportation Access and Need

In Westbrook, there are high populations of people with disabilities, minorities, seniors, limited English proficiency, and in zero vehicle households.



LEGEND:

★ High Injury Network (HIN)

▲ Critical Crash Rate (CCR) Locations

● Vulnerable Road User (VRU) Fatal and Serious Injury (KA) Crash Locations

● Public Input: Presence of Map Comments.

Transportation Access and Need based on the number of categories met

● 4+ Categories ● 2-3 Categories ○ 1 Category

Westbrook - Clinton

Site Investigation: Route 1

Indian Trail to Pinecone Drive

Table 64. Summary

AADT	8,800
Speed Limit	45 mph
Shoulders?	Yes
Sidewalks?	Yes
Bike Lane?	No
Crosswalks?	Some
ADA Ramps?	Some
Other Features?	Mid-block crossing



Along this portion of Route 1 in Westbrook, there is one lane in each direction with shoulders. There are several intersections with local streets, and between Riverview Avenue and Grove Beach Road, Route 1 curves and a lack of intersections, and there are mid-block crossings. With numerous lengthy curb cuts, access management is a concern. There was a concentration of non-serious injury crashes at the intersection of Grove Beach Road, as well as a fatality just north of the corridor. In some areas, a goat trail indicates a desire line for sidewalks and was reflected in the comments received on this corridor as well. There is also a reflected concern from public input regarding safety issues during periods of congestion on Route 1.

Recommendations

Sidewalk gaps should be completed, as well as missing crosswalk legs at each intersection, especially signalized intersection of Grove Beach Rd and Rt 1. Throughout the corridor, curb ramps should be updated for ADA compliance. The midblock crossing is a prime candidate for a Rectangular Rapid Flashing Beacon (RRFB).

The abundance of curb cuts likely contributes to safety concerns as reflected in crashes, especially given the high posted speed limit. The town should coordinate with local businesses to evaluate consolidation of access management.

The high speed limit is incongruous with the pedestrian-friendly environment and should be evaluated for a reduction in a pedestrian friendly commercial zone.

Figure 34. Potential Safety Improvements for Further Review



Appendices

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