Regional Transportation Safety Plan
Southeastern Region
Connecticut

U.S. Department of Transportation
Federal Highway Administration

SCCOG

CONNECTICUT DEPARTMENT OF TRANSPORTATION

Adopted by SCCOG: January 20, 2021
Amended June 15, 2022

The SCCOG adopts the "Regional Transportation Safety Plan, Southeastern Region Connecticut" prepared in 2020 by VN Engineers under contract with CTDOT, with the understanding that the SCCOG's commitment to provide oversight, annually report progress to CTDOT, and update the Plan every five years will require additional financial support from the State as was provided for the funding of this initial Plan.

Table of Contents

Table of Contents Cont'd

Source: VN Engineers

Report Terminology

TERM	DEFINITION
AADT	Annual Average Daily Traffic
AASHTO	American Association of State Highway Transportation Officials
ADT	Average Daily Traffic
Collector Roads	The Federal Highway Administration defines Collector Roads as the network that gathers traffic from local roads and directs them to the Arterial network.
FHWA	Federal Highway Administration
HSIP	Highway Safety Improvement Program
Injury A	Suspected Serious Injury
Injury B	Suspected Minor Injury
Injury C	Possible Injury
Injury K	Fatal Injury
Injury O	Property Damage Only
Local Roads	The FHWA describes Local Roads as having the largest percentage of all roadways in terms of mileage. They are intended for short distance travel, except at the origin or destination end of the trip, due to their provision of direct access to abutting land. They are often designed to discourage through traffic.
LRTP	Long-Range Transportation Plan
MUTCD	Manual on Uniform Traffic Control Devices
MVMT	Million Vehicle Miles Traveled
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
Per VMT	Describes a crash rate per million vehicle miles.
Per Capita	Describes a crash rate per population.
Performance Measure	Indicators that enable decision-makers and other stakeholders to monitor changes in system conditions and performance against established visions, goals, and objectives.
RTSP	Regional Transportation Safety Plan
Sharrows	Double-chevron road marking indicating a shared cycle/vehicle lane.
SHIP	State Highway Improvement Plan
SHSP	Strategic Highway Safety Plan
TIP	Transportation Improvement Program
VMT	Vehicle Miles Traveled

1. Introduction

In 2017, the Connecticut Department of Transportation (CTDOT) published the Connecticut Strategic Highway Safety Plan (CT SHSP) to guide the State in reducing fatalities and serious injuries along Connecticut roadways. This Regional Transportation Safety Plan (RTSP) is in congruence with the CT SHSP. It will serve as a road map and strategy to help the Southeastern Region member municipalities collaborate with the State in reducing fatal and injury crashes. It will also serve to increase safety awareness and allow the member towns, cities, and the region to focus on their unique transportation safety issues.

The approach used in this study applies similar methodology to the State plan, but it includes more local input, reflecting both the needs of each of its 22 individual communities and the region as a whole. In addition to the regional plan, there are 16 individual municipality reports and six reports that were consolidated into three, per municipal request. The combined reports include the City of Groton with the Town of Groton, the Borough of Jewett City with the Town of Griswold, and the Borough of Stonington with the Town of Stonington. The reports includes specific crash data, priority locations, and incorporates stakeholder feedback.

The plan is data-driven, multimodal, and multidisciplinary. It identifies the region's high-frequency crash locations and outlines effective countermeasures and strategies to reduce crashes. The purpose of listing countermeasures is to help the region prioritize its projects and better position the region for any available safety funds.

The plan was developed involving local stakeholders from the four E's of transportation safety: engineering, enforcement, education, and emergency response. The overall goal of the Southeastern Region's RTSP is to reduce traffic fatalities and injuries. SCCOG will coordinate with the other MPOs regarding an acceptable/attainable target.

This RTSP is a living document. Federal regulations require an update for the SHSP every five years, and this regional safety plan will follow this same update process. The regional plan will adhere to the same mandates as the SHSP, with the expectation that all updates will reflect the most current federal surface transportation legislation.

THE FOUR E'S OF TRANSPORTATION SAFETY

ENGINEERING: Highway design, traffic, maintenance, operations, and planning professionals.

ENFORCEMENT: State and local law enforcement agencies.

EDUCATION: Prevention specialists, communication professionals, educators, and citizen advocacy groups.

EMERGENCY RESPONSE: First responders, paramedics, fire, and rescue.

Sources Clockwise from Top: 1.The Day 2. NHTSA 3. SCCOG

2. Stakeholders

Stakeholders engaged in the process and development of the Southeastern Region's RTSP include representatives from the four E's. In order to ensure stakeholder input, the member municipalities were involved with the plan development from the onset of the study. The following is a list of some of the involved safety partners. Under each Municipal Report there are additional stakeholders that participated in the plan.

Town of Bozrah
Carl Zorn, First Selectman

Town of Colchester
Mary Bylone, First Selectman

Town of East Lyme
Mark Nickerson, First Selectman

Town of Franklin
Charles Grant, First Selectman

Town of Griswold
Todd Babbitt, First Selectman

City of Groton
Keith Hedrick, Mayor

Town of Groton
Patrice Granatosky, Mayor
John Burt, Town Manager

Borough of Jewett City
Tim Sharkey, Warden

Town of Lebanon
Kevin Cwikla, First Selectman

Town of Ledyard
Fred Allyn III, Mayor

Town of Lisbon
Thomas Sparkman, First Selectman

Town of Montville
Ron McDaniel, Mayor

City of New London
Michael Passero, Mayor

Town of North Stonington
Michael Urgo, First Selectman

City of Norwich
Peter Nystrom, Mayor
John Salomone, City Manager

Town of Preston
Sandra Allyn-Gauthier,
First Selectman

Town of Salem
Kevin Lyden, First Selectman

Town of Sprague
Cheryl Allen Blanchard,
First Selectman

Town of Stonington
Danielle Chesebrough, First Selectman

Borough of Stonington
Jeffrey Callahan, Warden

Town of Waterford
Rob Brule, First Selectman

Town of Windham
Victor Funderburk, Mayor
Jim Rivers, Town Manager

Affiliate Member Indian Tribes

Rodney Butler, Chairman
Mashantucket Pequot Tribal
Council

Robert Hayward, Manager
State Government Affairs
Mashantucket Pequot Tribal Council

James Gessner, Jr.,
Chairman
Mohegan Tribal Council

Chuck Bunnell, Chief of Staff
External Governmental Affairs
Mohegan Tribal Council
Military Liaisons

CTDOT
SCCOG
State and Local Traffic Enforcement Officials
Municipal Fire Department officials and/or First Responders
Municipal Officials
Municipal Public Works Director

3. Regional Overview

The Southeastern Region is composed of 22 municipalities, including 3 cities and 17 towns, as well as 2 boroughs that are included within the towns of Stonington and Griswold. Major assets of regional importance within the region include the Naval Submarine Base in Groton, the second and third largest casinos in the United States, and a landscape that includes dense forests, village centers, historic small cities, marinas, and sandy coastlines. The municipalities range from rural to exurban to suburban and urban communities, so each town and city has varying local traffic concerns and challenges.

In order to analyze and best understand the region's transportation network, each municipality in the Southeastern Region was invited to participate in this plan. The objective was to identify each municipality's concerns and then piece these together to present an overall regional safety plan. The insights and cooperation of each municipality and SCCOG staff were imperative to the success of this initiative.

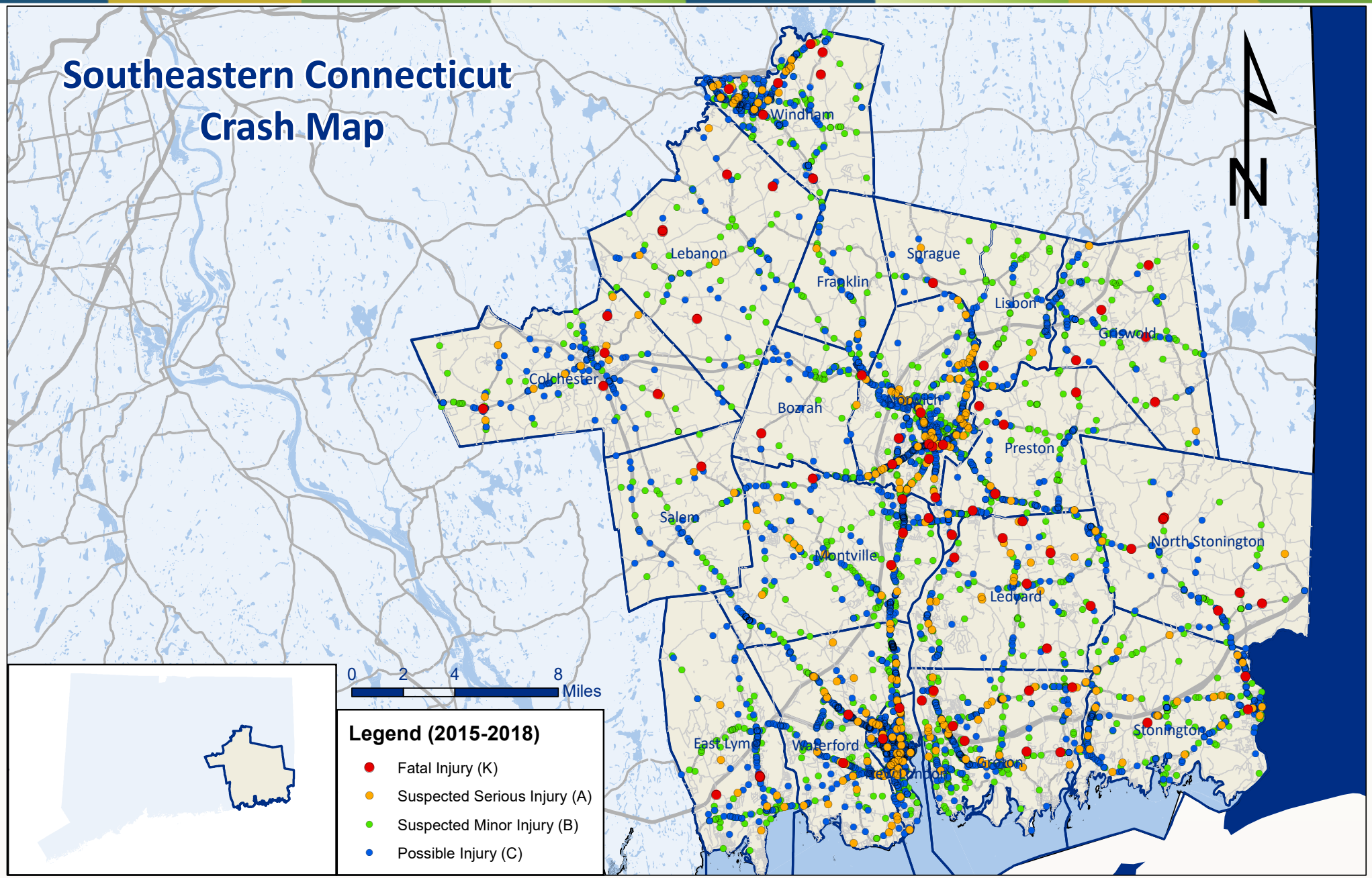
The data gathered and used for this study represents crashes that occurred on both local and state roads. In many cases, numerous crashes occurred on State roads, most likely due to higher traffic volumes. All roads except limited access highways were included in the study. According to the State, each municipality is responsible for improvements on local roads and local officials cannot make any physical changes or improvements to any State road without an encroachment permit from the State.

Source: VN Engineers

Source: VN Engineers

Source: VN Engineers

Southeastern Connecticut Crash Map



4. RTSP Planning Process

The Southeastern Connecticut Regional Transportation Safety Plan process had a regional study and 19 municipal studies, combining the City of Groton and Town of Groton in one municipal study, the Town of Griswold and Borough of Jewett City in another, and the Town of Stonington and Borough of Stonington as well. The regional overview was a data-driven analysis of the top crash locations, which included a listing of possible countermeasures, the selection of emphasis areas, and strategies to reduce fatal and injury crashes. The municipal studies included data-driven crash locations and stakeholder input to reduce fatal and injury crashes in each municipality. Combining the data-driven analysis with stakeholder input provided for a more comprehensive regional transportation safety plan.

The municipal reports are in the appendices, but since they were completed prior to the regional analysis, their methodology is included first in this plan. More information on the regional analysis and methodology is found in Section 5.

The methodology for the municipal reports began with the collection of fatal and injury crash data from the period of January 1, 2015 to December 31, 2018. The data was collected from the Connecticut Roadway Safety Management System website, specifically excluding limited-access highways. The crash data studied in this report consisted of only fatal and injury crashes, after the removal of property damage only (PDO) crashes. PDO crashes were not included in this study because they were not included in the CT SHSP.

The extracted crash data was put into the mapping program, ArcGIS, to create 19 individual fatal and injury crash maps, one for each Southeastern Region municipality. High-frequency crash locations were identified and if an intersection or segment of roadway had a cluster of crashes, it was highlighted on the map. Additional crash locations were identified by municipal representatives due to potential safety concerns or historic site-specific safety issues not reflected in the three years of data analyzed. These were not added to the maps, however the locations were included in the municipal reports in the Municipal (city or town) Input sections.

Crash locations and corresponding severities were presented at each of the municipal meetings with chief elected officials, EMS, law enforcement agents, public works directors, and other municipal stakeholders. These meetings provided an opportunity to receive municipal input into the crash locations and to get feedback on contributing factors. The input from municipal representatives influenced the development of countermeasure recommendations for the municipal reports.

The municipal reports include the meeting summary in the Municipal Input section. In addition, two field reviews were completed based on the priority locations selected by municipal representatives. A summary of the field review and images taken are included in the Field Site Inventory section of the municipal reports. Countermeasure tables are also included at the end of each municipal report to suggest safety improvements that could be considered in each Southeastern Region member town or city.

The top crash locations in the region were identified and the top 50 were further analyzed to identify contributing factors and possible countermeasures. For a more detailed description of this process, please see the Southeastern Region's Top Crash Locations section of this report found on page 11.

Property Damage Only Crashes were not included in this Report

Beginning in 2017, Federal regulation mandates that states set five performance targets each year:

1. Number of Fatalities
2. Rate of Fatalities per 100 Million Vehicle Miles Traveled (VMT)
3. Number of Serious Injuries
4. Rate of Serious Injuries per 100 Million VMT
5. Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries (combined total)

The crash statistics are evaluated on a five-year average. The Southeastern Region's RTSP will also look at these same performance metrics and establish the target objectives in congruence with the State's plan. This includes a 15% reduction in the number of fatalities and injuries on all public roads in the Southeastern Region by 2025. In order to obtain this goal, the RTSP includes estimated completion time (short, medium, and long) and possible costs, as well as funding sources for all proposed countermeasures. The cost estimates for each countermeasure were based on the FHWA's Pedestrian Safety Guide and Countermeasure Selection System.

In October 2021 the Connecticut Department of Transportation established a Vision Zero Interagency Policy. SCCOG affirms the Connecticut Department of Transportation's Vision Zero Interagency Policy.

2015-2018 Fatal and Injury Crashes by Municipality

Municipality	Fatal and Injury Crashes
Bozrah	59
Colchester	248
East Lyme	184
Franklin	80
Griswold	134
Groton	477
Lebanon	96
Ledyard	209
Lisbon	85
Montville	356
New London	680
North Stonington	99
Norwich	954
Preston	222
Salem	67
Sprague	20
Stonington	363
Waterford	537
Windham	485
Total	**5,355**

5. Top Regional Crash Locations

5.1 Methodology for Identifying Top Crash Locations in the Region

Overview

This report identifies the top crash intersections and corridors in the region using the Equivalent Property Damage Only (EPDO) methodology built into the Connecticut Roadway Safety Management System. This method is based on the EPDO crash costs that were developed using Federal Highway Administration's (FHWA) national guidance (https://safety.fhwa.dot.gov/hsip/docs/fhwasa17071.pdf). The EPDO method calculates a combined frequency and severity score for each site by assigning weighting factors to crashes by crash severity and cost. The weighting factors are based on the costs of property damage only crashes, and the calculated score accounts for the severity of crashes and the expected crash costs for each site. The weighting factors used in this study are estimated by the Federal Highway Administration (FHWA) and documented in the "Safety Analyst User Manual" based on the mean comprehensive monetary costs for each severity level.

After applying an adjustment factor for Connecticut, each crash was assigned the following monetary costs:

- K (fatal): $5,800,000
- A (suspected serious injury): $402,000
- B (suspected minor Injury): $80,000
- C (possible injury): $42,000
- O (no apparent injury): $4,000

The ratio of these combined direct and indirect crash-related costs provided the weights for each maximum severity associated with each crash:

- K: 1450
- A: 100
- B: 20
- C: 10
- PDO: 1

Once the top 50 motorized crash sites (which included crashes involving motorized vehicles versus pedestrians and bicyclists) with the highest EPDO scores were separated into corridors and intersections, each crash was then further analyzed using available crash data from the Connecticut Roadway Safety Management System. This data is based on the Connecticut Uniform Police Crash Report (PR-1) that the state and local police use in crash reporting. In addition to this data, each site underwent a desktop review to better understand the location's roadway geometry and conditions. After analyzing both the police reports from each crash and the site's conditions, countermeasures to address the most prevalent issues at each crash site were developed.

Similar to the methodology to select the top crash sites, EPDO ranking was used to rank those crashes solely involving vehicles and/or pedestrians and bicyclists. These were called non-motorized crash locations. The ranking of these crashes is based solely on the fatalities and injuries suffered by the non-motorists from these crashes, with more weight placed on injuries of greater severity. The non-motorized crashes exclude all single motorized vehicle or multi vehicle collisions. They are listed on page 19.

The EPDO methodology does not reflect the unequal impact crashes may have based upon the socio-economic status of involved parties; environmental justice is a consideration in project programming.

KABCO Severity Ranking

Severity	Crash Cost	EPDO Score
K-Fatal	$5,800,000	1450
A-Suspected Serious Injury	$402,000	100
B-Suspected Minor Injury	$80,000	20
C-Possible Injury	$42,000	10
O-Property Damage Only	$4,000	1

5.2 Top Motorized Crash Locations with Countermeasures

The following table lists the top crash corridors and intersections in the Southeastern Region. These corridors and intersections have the highest EPDO crash ratings. The sites are ordered from highest to lowest EPDO (Equivalent Property Damage Only) and include a description of the affiliated issues and potential countermeasures for each location.

Below is an explanation of each column.

What city or town?

How many crashes happened?

Why did the crash happen?

How much will it cost to fix the problem?

Rank	Municipality	Location	Crashes	EPDO	Issue	Countermeasure	Cost
Ranking is based on highest to lowest EDPO	City or Town	Street segment with start and end points	Number of injury and fatal crashes from 2015-2017 at specific site	Score is based on crash severities and frequencies	Contributing crash factors based on police report and desktop review of location	Infrastructure to improve location and reduce crash potential	Estimated financial cost of countermeasure

Prioritizing sites based on EPDO

At an intersection or along a corridor?

How crashes are scored.

Solutions!!!

Top Motorized Crash Locations and Countermeasures, 2015-2018

RANK	MUNICIPALITY	LOCATION	CRASHES	EPDO	ISSUES	COUNTERMEASURES	COST
1	Norwich	CT-2 (Chelsea Harbor Dr) from Market St to CT-2 (Water St)	22	4,217	Speeding	Install dynamic speed feedback signs	Low
					Front to rear crashes	Install traffic signal retroreflective backplates at all signals	Low-Medium
						Consider retiming schedules	Low
					Skidding on curve	Install high friction surface treatment	Low
2	Norwich	CT-2 (Main St) from Talman St to Viaduct Rd	5	3,635	Speeding	Install dynamic speed feedback signs	Low
					Gap clearance from Talman St	Install curb extensions at Talman St to reduce the size of the intersection	Low-Medium
					Front to rear crashes	Install warning beacon for westbound traffic to indicate stopped traffic ahead	Low
3	Groton	Crystal Lake Rd from CT-12 to Pleasant Valley Rd N	3	3,630	Speeding	Install speed hump mid-block	Low-Medium
4	Norwich	CT-32 (Washington St) from Julian St to Arnold Pl	18	3,115	Speeding	Install dynamic speed feedback signs	Low
					Front to rear crashes	Update signal equipment, including installing traffic signal retroreflective backplates at signals	Medium-High
5	Waterford	CT-85 (Hartford Tpke) from Dayton Rd to Mall Entrance shared with Petco across the street	12	2,465	Speeding	Install dynamic speed feedback signs	Low
					Front to rear crashes	Install traffic signal retroreflective backplates at signal	Low-Medium
6	Norwich	New London Tpke from Dudley St to Newton St	8	2,291	Speeding	Install dynamic speed feedback signs	Low
7	New London	US-1 (Colman St) from Broad St to Cedar Grove Ave	28	1,881	Speeding	Install dynamic speed feedback signs	Low
					Front to rear crashes	Install traffic signal retroreflective backplates at signal	Low-Medium
8	Stonington	US-1 (S Broad St) from Lathrop Ave to CT-234 (Pequot Trl)	11	1,836	Front to rear crashes	Install traffic signal retroreflective backplates at signal	Low-Medium
					Speeding	Install dynamic speed feedback signs	Low

Top Motorized Crash Locations and Countermeasures, 2015-2018

RANK	MUNICIPALITY	LOCATION	CRASHES	EPDO	ISSUES	COUNTERMEASURES	COST
9	Waterford	US-1 (Boston Post Rd) from Reynolds Ln to Brill Ave	7	1,776	Speeding	Install dynamic speed feedback signs	Low
10	Preston	CT-2 (Norwich-Westerly Rd) from Maynard Hill Rd to Maynard Hill Rd	8	1,575	Speeding	Install dynamic speed feedback signs	Low
11	Montville	CT-32 (Norwich-New London Turnpike) from 350 ft S of Sandy Desert Rd to Norwich Border	14	1,500	Speeding	Install dynamic speed feedback signs	Low
					Front to rear crashes	Update signal equipment, including installing retroreflective backplates at signals	Medium-High
12	Norwich	CT-32 (W Thames St) from Brown St to S Thames St	6	1,399	Speeding	Install dynamic speed feedback signs	Low
					Lane departure crashes	Install high friction surface treatment	Low
						Add rumble strip as appropriate	Low
13	Norwich	CT-82 (Salem Tpke) from Noble Hill Road to Surrey Ln	36	1,344	Speeding	Roundabout to be installed	High
					Front to rear crashes		
					Sideswipe crashes		
14	New London	Hempstead St from Thompson Ct to Home St	4	1,263	Speeding	Install dynamic speed feedback signs	Low
						Install speed humps or implement road diet to reduce road width	Low-Medium
15	Griswold	CT-138 (Main St) from Sheldon Rd to Lillibridge Ave	8	1,253	Speeding	Install dynamic speed feedback signs	Low
					Lane departure crashes	Install high friction surface treatment	Low
						Add rumble strip as appropriate	Low
16	East Lyme	CT-161 (Flanders Rd) from Society Rd to Oak Hill Dr	16	1,126	Speeding	Install dynamic speed feedback signs	Low
17	Montville	Raymond Hill Rd from Sarah Rd to CT-32 (Norwich-New London Tpke)	4	1,084	Speeding	Install dynamic speed feedback signs	Low
					Lane departure crashes	Install high friction surface treatment	Low
						Add rumble strip as appropriate	Low

Top Motorized Crash Locations and Countermeasures, 2015-2018

RANK	MUNICIPALITY	LOCATION	CRASHES	EPDO	ISSUES	COUNTERMEASURES	COST
18	Windham	Quarry St from Tower Rd to Mansfield Ave	3	1,068	Speeding	Install dynamic speed feedback signs	Low
						Install speed hump mid-block	Low-Medium
19	Ledyard	CT-214 (Iron St) from Stevens Ave to Highview Terr	7	727	Speeding	Install dynamic speed feedback signs	Low
					Lane departure crashes	Install high friction surface treatment	Low
						Add rumble strip as appropriate	Low
20	Norwich	CT-82 (W Main St) from New London Tpke to Norman Rd	55	709	Speeding	Install dynamic speed feedback signs	Low
					Front to rear crashes	Update signal equipment, including installing traffic signal retroreflective backplates at signals	Medium-High
21	New London	Vauxhall St from Parker St to Connecticut Ave	3	694	Speeding	Install dynamic speed feedback signs	Low
22	Norwich	CT-2 (Main St) from Railroad Pl to Railroad Pl	6	656	Speeding	Install dynamic speed feedback signs	Low
						Install curb extensions to lower travel speeds	Medium
23	North Stoning-ton	CT-2 (Norwich-Westerly Rd) from Main St to CT-184 (Providence-New London Tpke)	19	624	Speeding	Install dynamic speed feedback signs	Low
24	Preston	CT-165 (Shetucket Tpke) from Cedarcrest Dr to McClimon Rd	3	609	Speeding	Install dynamic speed feedback signs	Low
25	Windham	CT-66 (Boston Post Rd) from Scott Rd to Club Rd	11	600	Speeding	Install dynamic speed feedback signs	Low
					Lane departure crashes	Install high friction surface treatment	Low
						Add rumble strip as appropriate	Low
26	New London	Montauk Ave from Squire St to Orchard St	5	588	Speeding	Install dynamic speed feedback signs	Low
					Pedestrian Safety	Install high-visibility crosswalk with curb extensions at Squire St	Low-Medium
27	Preston	CT-2A (Poquetanuck Rd) from Harris Fuller Rd to Middle Rd	17	582	Speeding	Install dynamic speed feedback signs	Low
					Lane departure crashes	Install high friction surface treatment	Low
						Add rumble strip as appropriate	Low

Top Motorized Crash Locations and Countermeasures, 2015-2018

RANK	MUNICIPALITY	LOCATION	CRASHES	EPDO	ISSUES	COUNTERMEASURES	COST
28	Norwich	Boswell Ave from 10th St to 11th St	6	570	Speeding	Install dynamic speed feedback signs and install speeds humps	Low-Medium
29	Norwich	CT-2 (Main St) from Franklin St to City Landing	3	550	Speeding	Implement road diet with curb extensions and marked crosswalks to promote lower travel speeds	Medium
					Front to rear crashes	Update signal equipment, including installing traffic signal retroreflective backplates at signals	Medium-High
30	North Stoning-ton	CT-49 (Pendleton Hill Rd) from Babcock Rd to CT-184 (Providence-New London Tpke)	9	543	Speeding	Install dynamic speed feedback signs	Low
					Lane departure crashes	Install high friction surface treatment	Low
						Add rumble strip as appropriate	Low
31	Griswold	Norman Rd from I-395 (Connecticut Tpke) to Oakville Rd	5	543	Speeding	Install dynamic speed feedback signs	Low
					Lane departure crashes	Install high friction surface treatment	Low
						Add rumble strip as appropriate	Low
32	Norwich	CT-82 (Salem Tpke) from Maplewood Ct to Orchard Ct	30	525	Speeding	Install dynamic speed feedback signs	Low
33	Groton	CT-12 south of Toll Gate Rd to Pleasant Valley Rd S	33	518	Access management	Restrict access to right-in, right-out to driveways in segment, including centerline barriers on Route 12	Low
					Front to rear crashes	Update signal equipment, including installing traffic signal retroreflective backplates at signals	Medium-High
34	Griswold	CT-138 (Voluntown Rd) from Campbell Rd to Latham Dr	14	515	Speeding	Install dynamic speed feedback signs	Low
					Lane departure crashes	Install high friction surface treatment	Low
						Add rumble strip as appropriate	Low
35	New London	Montauk Ave from Willetts Ave to Alger St	5	507	Front to rear crashes	Update signal equipment, including installing retroreflective backplates	Medium-High
					Pedestrian crashes	Install curb extensions and high-visibility crosswalks	Low-Medium
					Speeding	Parking buffered bike lanes	Low
						Narrow travel lane widths	Low

Top Motorized Crash Locations and Countermeasures, 2015-2018

RANK	MUNICIPALITY	LOCATION	CRASHES	EPDO	ISSUES	COUNTERMEASURES	COST
36	Windham	Water St from Bates Pond Rd to Sprague/Lisbon border	3	497	Speeding	Install dynamic speed feedback signs	Low
						Install speed humps	Low-Medium
37	Lebanon	Club House Rd from Bascom Rd to Tobacco St	9	473	Speeding	Install dynamic speed feedback signs	Low
						Install speed humps	Low-Medium
38	New London	US-1 (Bank St) from Carroll Ct to Lee Ave	14	469	Intersection crashes	Dynamic signal control that can adjust to the peak and off peak swings in volume	Medium
					Speeding	Consider implementing a road diet to reduce road width to one lane in each direction, with curb extensions and marked crosswalks to promote lower travel speeds	Medium
39	Ledyard	Shewville Rd from Town Farm Rd to Whitford Rd	8	458	Speeding	Install dynamic speed feedback signs	Low
					Lane departure crashes	Add centerline rumble strips	Low
40	Groton	Military Hwy from Fulton Dr to Lestertown Rd	4	454	Lane departure crashes	Install high friction surface treatment	Low
						Add rumble strip as appropriate	Low
41	Windham	US-6 (Boston Post Rd) from Home Depot to CT-203 (N Windham Rd)	20	444	Speeding	Install dynamic speed feedback signs	Low
42	Norwich	CT-2 (Washington St/Water St) and CT-82 (W Main St)	87	437	Right turn crashes from W Main St	Prohibit right turn on red	Low
43	Norwich	CT-2 (Washington St) from CT-169 (Harland Rd) to Bliss Pl	21	425	Front to rear crashes	Install transverse rumble strips on CT-2	Low
44	Waterford	CT-32 (Mohegan Ave Pkwy) from Old Norwich Rd to Hempstead Dr	38	425	Speeding	Install dynamic speed feedback signs	Low
					Front to rear crashes	Update signal equipment, including installing retroreflective backplates	Medium-High
45	Lebanon	Kick Hill Rd from Gregory Rd to Windham Border	3	425	Speeding	Install dynamic speed feedback signs	Low

Top Motorized Crash Locations and Countermeasures, 2015-2018

RANK	MUNICIPALITY	LOCATION	CRASHES	EPDO	ISSUES	COUNTERMEASURES	COST
46	Norwich	CT-12 (Laurel Hill Rd) from Laurel Heights Rd to Southeast Area Transit District Office	9	423	Speeding	Install dynamic speed feedback signs	Low
					Lane departure crashes	Install high friction surface treatment	Low
						Add rumble strip as appropriate	Low
47	Norwich	Smith Ave from Roosevelt Ave to Pukallus Ave	4	421	Speeding	Install roundabout at Smith Ave and Roosevelt Ave	Medium-High
48	Groton	CT-12 from CT-184 (Gold Star Hwy) EB Off-Ramp to I-95 EB Off-Ramp	45	421	Front to rear crashes	Update signal equipment, including installing retroreflective backplates	Medium-High
						Advance intersection warning beacons and system	Low
49	Sprague	CT-97 (Main St/Baltic Rd) from River St to Lillibridge Rd	11	420	Speeding	Install dynamic speed feedback signs	Low
						Install curb extensions and marked crosswalks to promote lower travel speeds at Babe Blanchette Field	Medium
					Lane departure crashes	Install high friction surface treatment	Low
						Add rumble strip as appropriate	Low
50	Ledyard	Lambtown Rd from Colonel Ledyard Hwy to Pumpkin Hill Rd	3	417	Speeding	Install dynamic speed feedback signs	Low
					Lane departure crashes	Install high friction surface treatment	Low
						Add rumble strip as appropriate	Low
51	Norwich	CT-2 (E Main St) from Talman St to Fowler Ave	25	415	Speeding	Install dynamic speed feedback signs	Low
					Vehicles turn from Talman St	Install curb extensions at Talman St to reduce the size of the intersection	Low-High

5.3 Top Non-Motorized Crash Locations and Countermeasures, 2015-2018

Municipality	Street Names	Person Type	EPDO	Crash Details	Infrastructure Countermeasures	Non-Infrastructure Countermeasures
Groton	Crystal Lake Rd from Pleasant Valley Rd N to CT-12	1 Pedestrian (Fatal)	3039	Pedestrian hit crossing roadway (not visible), dark-lighted.	Narrow the curb to curb and provide a sidewalk or a side path would address both speeding (by reducing lane width) and provide accommodation for vulnerable users. Additionally, a side path would dovetail with the side path provided on the southerly side of Crystal Lake Rd to the west and connect dense housing with dense employment.	Watch for Me CT Campaign
New London	CT-32 (Mohegan Ave Pkwy) from Connecticut College entrance to Reservoir St	1 Pedestrian (Fatal)	2573	Substance-impaired pedestrian, hit crossing roadway at marked crosswalk, dark-lighted.	Traffic signal retroreflective backplates. Restripe crosswalks at Connecticut College entrance. Add curb extenions.	Watch for Me CT Campaign
Preston	CT-2 (Norwich-Westerly Rd) from Maynard Hill Rd (West) to Maynard Hill Rd (East)	1 Pedestrian (Fatal) 1 Bicyclist	1550	Pedestrian hit on roadway. Bicyclist hit cycling along roadway, daylight.	Traffic calming.	Watch for Me CT Campaign
Windham	CT-32 (WindhamRd) from Old Windham Rd to CC Lounsbury entrance	1 Pedestrian (Fatal)	1099	Pedestrian under the influence hit crossing roadway, dark-not lighted.	Traffic calming.	Watch for Me CT Campaign
North Stonington	CT-2 (Norwich Westerly Rd) from Main St to CT-184 (Providence-New London Tpke)	2 Pedestrians (1 Fatal)	599	Pedestrians (one not visible) hit walking on shoulder, daylight and dark-not lighted condition.	Dynamic speed feedback signs.	Watch for Me CT Campaign
New London	Montauk Ave from Squire St to Orchard St	1 Pedestrian 1 Bicyclist	500	Pedestrians hit crossing roadway not at intersection. Bicyclist hit crossing roadway. Daylight condition. Near church.	High-visibility crosswalks. Restripe pavement markings. Buffered bike lanes.	Watch for Me CT Campaign

Top Non-Motorized Crash Locations and Countermeasures, 2015-2018

Municipality	Street Names	Person Type	EPDO	Crash Details	Infrastructure Countermeasures	Non-Infrastructure Countermeasures
New London	Montauk Ave from Alger St to Willetts Ave[1]	2 Pedestrians 1 Bicyclist	429	Pedestrian hit on roadway (bike lane), dark-not lighted. Pedestrian hit crossing roadway in travel lane, dark-lighted. Bicyclist hit cycling along roadway, daylight.	High-visibility crosswalks. Restripe pavement markings. Traffic calming. Buffered bike lanes.	Watch for Me CT Campaign
Norwich	CT-2 (Water St) and Main St	2 Pedestrians (1 Fatal) 1 Bicyclist	373	Pedestrians (one physically impaired) and bicyclist hit crossing roadway at marked crosswalk. Daylight and dark-not lighted. Wide cross-section.	High-visibility crosswalks. Traffic signal retroreflective backplates. Add leading pedestrian interval at CT-2 (Water St). Investigate roundabout to improve safety for all users.	Watch for Me CT Campaign
Norwich	CT-12 (N Main St) at Viaduct Rd and CT-2 (Main St)	4 Pedestrians	372	Pedestrian under influence hit crossing roadway. Pedestrian hit on shoulder. Pedestrians hit crossing roadway at marked crosswalk. Under various conditions. Wide cross-section.	High-visibility crosswalk. Add leading pedestrian interval to intersection. Investigate bumping out the southwest corner to reduce crossing lengths.	Watch for Me CT Campaign
Preston	CT-2 (Norwich-Westerly Rd) and Halls Mill Rd	1 Pedestrian (Fatal)	363	Pedestrian hit at roadway. Speed posted at 50 MPH. Very limited information available.	Dynamic speed feedback signs.	Watch for Me CT Campaign
Preston	Wheeler Farm Rd and Roosevelt Ave Ext	1 Bicyclist (Fatal)	363	Bicyclist hit at roadway, daylight. Very limited information available.	MUTCD W16-1P sign (Share the Road). Dynamic speed feedback signs.	Watch for Me CT Campaign
Salem	CT-354 (Old Colchester Rd) and Rattlesnake Ledge Rd at Witter Rd	2 Pedestrians	363	Pedestrians hit in roadway, disabled vehicle-related, dark-not lighted.	Traffic calming. Flashing beacon is currently under construction/update as part of 0172-0471 at this intersection (120-203).	Watch for Me CT Campaign, Traffic Incident Management Education
Waterford	CT-85 (Hartford Tpke) and Dayton Pl	1 Pedestrian (Fatal)	363	Older pedestrian hit walking along roadway (shoulder), daylight. Sidewalks are present on north side of CT-85 (Hartford Tpke) east of Dayton Pl.	Traffic calming. Extend sidewalk on CT-85 (Hartford Tpke) to the sidewalk on Dayton Pl. Add crosswalk on Dayton Pl. Implement pedestrian safety measures (sidewalks, crossings, lighting and landscaping).[2]	Watch for Me CT Campaign

1 Montauk Ave/Willets Ave had one of higher volumes of pedestrian in the region with an average of 31 ped/hr (SCCOG Bike/Ped Plan, p.53)
2 Included in SCCOG Bike/Ped Plan (p.218)

Top Non-Motorized Crash Locations and Countermeasures, 2015-2018

Municipality	Street Names	Person Type	EPDO	Crash Details	Infrastructure Countermeasures	Non-Infrastructure Countermeasures
Groton	US-1 (W Main St) from CT-215 (Water St) to Cottrell St	2 Pedestrians	194	Pedestrian hit crossing roadway not at intersection, daylight. Pedestrian hit crossing roadway at marked crosswalk, clear-dusk condition.	Add edge lines along the corridor. High-visibility crosswalks. Eliminate some on-street parking spaces to provide better visibility to crosswalk.	Watch for Me CT Campaign
Norwich	CT-12 (N Main St) from Barnes St to Central Ave	2 Pedestrians	172	Pedestrian hit crossing roadway not at intersection. Pedestrian hit walking on sidewalk. Daylight condition.	Restripe pavement lines on CT-12 (N Main St) and Central Ave intersection. Vegetation management on sidewalk, eastern side of CT-12 (N Main St). Traffic calming.	Watch for Me CT Campaign
North Stonington	CT-201 (Cossaduck Hill Rd) from NW Corner Rd to CT-2 (Norwich-Westerly Rd)	1 Pedestrian (Fatal)	139	Pedestrian hit crossing walking along roadway at shoulder, daylight.	Traffic calming.	Watch for Me CT Campaign
Norwich	CT-82 (W Main St) from Pine St to Osgood St	2 Pedestrians	77	Pedestrian hit crossing roadway not at intersection, daylight.	High-visibility crosswalks on all intersections. Restripe pavement markings.	Watch for Me CT Campaign
New London	Bank St from Pearl St to Golden St	2 Pedestrians	75	Pedestrian hit on shoulder entering/exiting parked vehicle. Pedestrian under the influence hit on roadway. Dark-lighted and daylight condition.	Lane striping on this roadway was recently revised. 2 lanes were reduced to 1 with buffers to address sideswipe of parked vehicles.	Watch for Me CT Campaign Monitor future crash incidence
New London	Bank St from Golden St to State St	2 Pedestrian	75	Pedestrian under the influence hit crossing roadway at midblock. Pedestrian hit crossing roadway at marked crosswalk. Dark-lighted.	High-visibility crosswalks. Traffic calming.	Watch for Me CT Campaign
New London	CT-213 (Ocean Ave) and Willetts Ave	3 Pedestrians	33	Pedestrian (distracted) hit crossing roadway. Pedestrian under the influence hit crossing roadway. Pedestrian hit crossing roadway at marked crosswalk. Dark-not lighted condition.	Traffic signal retroreflective backplates. Restripe crosswalks and pavement lines at intersection. Add bump outs.	Watch For Me CT Campaign

Top Non-Motorized Crash Locations and Countermeasures, 2015-2018

Municipality	Street Names	Person Type		Crash Details	Infrastructure Countermeasures	Non-Infrastructure Countermeasures
New London	US-1 (Colman St) and CT-85 (Broad St)	1 Pedestrian 1 Bicyclist	30	Pedestrian hit crossing roadway at marked crosswalk. Bicyclist hit crossing roadway at marked crosswalk, Dark-lighted and daylight. Wide cross-section.	Traffic signal retroreflective backplates. Road diet on US-1 (Colman St).	Watch For Me CT Campaign
Waterford	US-1 (Boston Post Rd) and Willetts Ave	2 Pedestrians	30	Pedestrian hit crossing roadway at unmarked crosswalk, dark-lighted. Pedestrian under the influence hit on shoulder, daylight. Wide cross-section.	Traffic signal retroreflective backplates. High-visibility crosswalks.	Watch for Me CT Campaign
New London	US-1 (Bank St) and Spring St	1 Pedestrian 1 Bicyclist	28	Pedestrian (physically impaired) hit crossing roadway. Bicyclist hit cycling along roadway on shoulder. Daylight condition.	Traffic calming in US-1 (Bank St). Road diet.	Watch for Me CT Campaign
Groton	US-1 (Poquonnock Rd) and CT-649 (South Rd)	1 Pedestrian 1 Bicyclist	25	Pedestrian and bicyclist hit crossing roadway. Dark-lighted and daylight. Near church.	Sidewalk extensions in South Rd (WB corner) and add high-visibility crosswalk to provide continuous pedestrian pathway. Extend existing bike lanes along CT-649 (South Rd) to US-1 (Poquonnock Rd).[1]	Watch for Me CT Campaign
East Lyme	CT-161 (Chesterfield Rd) from East Lyme HS Access to Egret Rd	1 Pedestrian 1 Bicyclist	22	Pedestrian and bicyclist hit crossing roadway at marked crosswalk. Dark-lighted and daylight. Near school.	High-visibility crosswalks on East Lyme HS access. Traffic calming. Widen CT-161 (Chesterfield Rd), where needed, for bike-safe shoulders.[2]	Watch for Me CT Campaign
Windham	CT-66 (Main St) from Walnut St to North St	2 Pedestrians	18	Pedestrian under the influence hit on sidewalk. Pedestrian (distracted) hit crossing roadway not at intersection. Daylight condition.	High-visibility crosswalks. Provide curb extensions on CT-66 (Main St) crossings.[3]	Watch for Me CT Campaign
Windham	CT-66 (Columbia Ave) from CT-32 (W Main St) to Wilson St	1 Pedestrian 1 Bicyclist	16	Pedestrian hit crossing roadway not at interscection. Bicyclist hit cycling along sidewalk (driveway). Daylight condition.	Vegetation management in planting area adjacent to exit driveway for increase the pedestrian/bike visibility.	Watch for Me CT Campaign

Top Non-Motorized Crash Locations and Countermeasures, 2015-2018

Municipality	Street Names	Person Type	EPDO	Crash Details	Infrastructure Countermeasures	Non-Infrastructure Countermeasures
New London	US-1 (Bank St) and CT-643 (Lee Ave)	3 Pedestrians	15	Pedestrians (one under the influence and two physically impaired) hit crossing roadway at unmarked crosswalk. Dark lighted and not lighted condition. Near church.	Add high-visibility crosswalk. Add traffic calming to US-1 (Bank St). Investigate ADA access.	Watch for Me CT Campaign
New London	CT-641 (Bank St) and Montauk Ave	2 Pedestrians 3 Bicyclists	13	Pedestrians hit crossing roadway at marked crosswalk. Bicyclist (physically impaired) hit crossing roadway at unmarked crosswalk. Bicyclists hit cycling along roadway. Daylight and dark-lighted condition.	High-visibility crosswalks. Traffic signal retroreflective backplates. Investigate road diet on CT-641 (Bank St).	Watch for Me CT Campaign
New London	US-1 (Colman St) and US-1 (Jefferson Ave)	2 Pedestrians 2 Bicyclists	13	Pedestrians hit walking on sidewalk (driveway). Bicyclists hit crossing roadway at marked crosswalk. Daylight and dark-lighted condition.	Traffic signal retroreflective backplates. Investigate road diet on US-1 (Colman St) to determine if right turns onto US-1 (Jefferson Ave) warrant their own turn lane.	Watch for Me CT Campaign
Windham	CT-32 (Windham Rd) and Plains Rd	2 Pedestrians	8	Pedestrians hit crossing roadway at unmarked crosswalk, daylight.	Dynamic speed feedback signs. Traffic calming on CT-32 (Winham Rd).	Watch for Me CT Campaign
Stonington	US-I (W Broad St) and CT-2 (Liberty St)	2 Bicyclists	5	Bicyclist hit crossing roadway at marked crosswalk. Bicyclist hit cycling on shoulder. Daylight condition.	Curb extensions. Traffic calming.	Watch for Me CT Campaign
New London	CT-635 (Williams St) and CT-636 (Mohegan Ave Pkwy)	1 Pedestrian 1 Bicyclist	5	Pedestrian hit in a parking lot. Bicyclist hit cycling along roadway. Daylight condition.	Traffic signal retroreflective backplates. Add edgelines.	Watch for Me CT Campaign
Stonington	US-1 (W Broad St) and Courtland St	2 Bicyclists	3	Bicyclist hit cycling along roadway at shoulder. Bicyclist hit crossing roadway not at intersection. Daylight condition.	Consider road diet to add bike lane on US-1 (W Broad St). Stripe edge lines and shoulder.	Watch for Me CT Campaign

Top Non-Motorized Crash Locations and Countermeasures, 2015-2018

Municipality	Street Names	Person Type	EPDO	Crash Details	Infrastructure Countermeasures	Non-Infrastructure Countermeasures
New London	US-1 (Colman St) and Walden Ave	1 Pedestrian 2 Bicyclists	3	Pedestrian and bicyclist hit crossing roadway at marked crosswalk. Bicyclist hit cycling along roadway. Daylight condition.	Traffic signal retroreflective backplates. Stripe edge lines on US-1 (Colman St) for traffic calming.	Watch for Me CT Campaign
New London	US-1 and CT-641 (Bank St)	1 Pedestrian 1 Bicyclist	3	Pedestrian hit walking on sidewalk (driveway), dark-lighted. Bicyclist hit cycling on sidewalk (driveway), clear and daylight.	Improve measures to increase pedestrian and bikes visibility (WB) from CVS Pharmacy driveway at US-1 (Jefferson Ave)-DOT/CVS coordination. Consider right in right out access to CVS on both approaches. Tighten up the turning radii onto US-1 (Jefferson Ave) to reduce pavement width.	Watch for Me CT Campaign
Montville	CT-32 (Norwich-New London Tpke) and Occum Ln	2 Pedestrians	1	Pedestrian hit crossing roadway at marked crosswalk. Pedestrian hit in a parking lot. Daylight condition.	High-visibility crosswalks. Add bump outs Add sidewalks where missing for increased connectivity. Traffic signal retroreflective backplates.	Watch for Me CT Campaign Educational Program at Mohegan Sun

Source: VN Engineers

5.4 Public Education Resources to Support Behavior Change

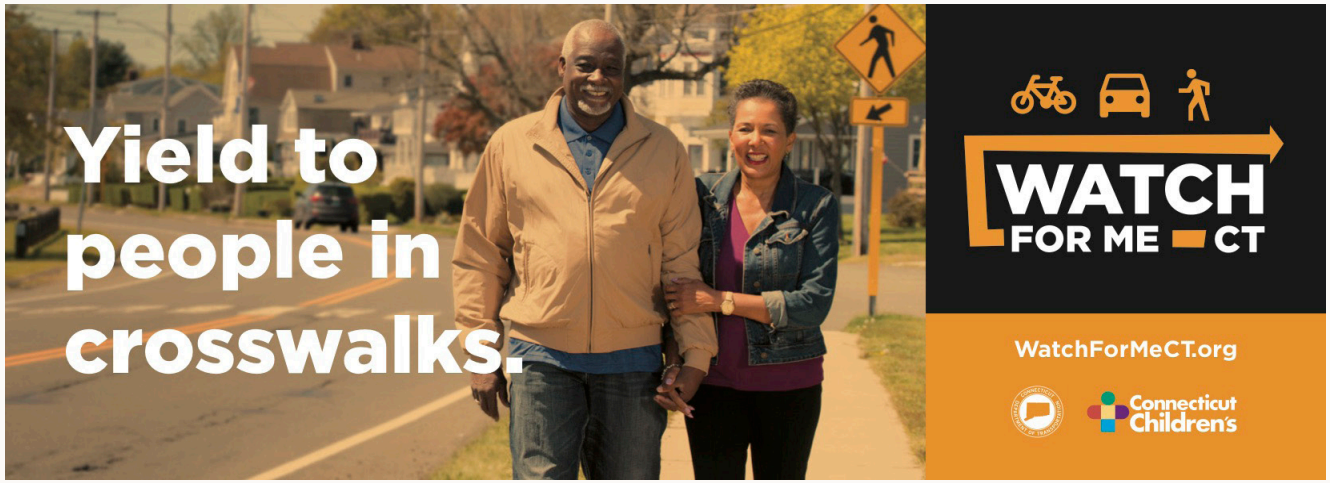
Drowsy Driving	Develop evidence-based awareness and educational message strategies that address why drowsy driving is risky, how motorists can prevent drowsy driving, signs and symptoms of drowsy driving, and strategies for dealing with drowsiness as a driver. Investigate drowsy driving legislation and potential for changing awareness and attitudes towards drowsy driving. Identify high-risk drivers for drowsy driving. The National Sleep Foundation has a Drowsy Driving Prevention Week in November to help reduce the number of drowsy driving-related crashes in the United States. Campaign materials are provided for this event through the National Highway Traffic Safety Administration (NHTSA). The United States Department of Transportation (USDOT) Traffic Safety Marketing (TSM) provides a fact sheet, sample news release, and an educational sheet that addresses drowsy driving prevention.					
Resources for Drowsy Driving	National Safety Council	NHTSA	Federal Motor Carrier Safety Administration	National Institute of Health National Heart Lung, and Blood Institute	Center for Disease Control and Prevention	
Speeding	"When Speeding Kills" marketing campaign materials are provided by CTDOT to encourage safe travel speeds in Connecticut. Alternative campaign materials that share the message "Stop Speeding Before it Stops You," are provided by the USDOT's Traffic Safety Marketing (TSM) website. Banner ads, media, logos, radio ads, television ads, and web videos for speed campaigns are provided by the USDOT Traffic Safety Marketing and NHTSA.					
Resources for Speeding	Traffic Safety Marketing	NHTSA	CTDOT	Governor's Highway Safety Association	Vision Zero	National Transportation Safety Board
Drunk Driving	The USDOT and NHTSA provide marketing campaign materials for year-round education such as "Buzzed Driving is Drunk Driving" or "Drive Sober or Get Pulled Over." The USDOT encourages the use of their "No Refusal Toolkit", which is an enforcement strategy that allows jurisdictions to obtain search warrants for blood samples from drivers suspected of drinking who refuse breath tests. The USDOT website explains that this program should be publicized to let the public know that the chance of being caught and facing the consequences of drunk driving is high. Banner ads, media, logos, radio ads, television ads, and web videos for drunk driving campaigns are provided by the USDOT Traffic Safety Marketing and NHTSA. NHTSA also provides a yearly a communications calendar that the organization uses to encourage communities to share campaign material by topic at specific times of the year as an increased awareness strategy.					
Resources for Drunk Driving	Traffic Safety Marketing	NHTSA	Mothers Against Drunk Driving	Center for Disease Control and Prevention	Foundation for Advancing Alcohol Responsibility	Advocates for Highway & Auto Safety
Drugged Driving	NHTSA and the USDOT are working on studies to understand how illegal drugs and prescription medications affect drivers and provide marketing campaign materials are to be used as tools to raise awareness. The USDOT TSM provides a Fact Sheet, Sample News Release, and an educational sheet that address drug-impaired driving prevention. Banner ads, media, logos, radio ads, television ads, and web videos for drug-impaired driving campaigns are provided by the USDOT TSM and NHTSA. NHTSA also provides a yearly communications calendar that the organization uses to encourage communities to share campaign material by topic at specific times of the year as an increased awareness strategy.					
Resources for Drugged Driving	NHTSA	Traffic Safety Marketing	National Institute on Drug Abuse	Stop Drugged Driving (Institute for Behavior and Health, Inc.)	Governor's Highway Safety Association	Mothers Against Drunk Driving

Public Education Resources to Support Behavior Change

Distracted Driving	NHTSA describes distracted driving as any activity that diverts the attention of the driver from driving, including using electronic devices, eating and drinking, talking to people in your vehicle, changing the station on the radio, entertainment/navigation systems, etc. NHTSA provides resources on its website to educate Americans on the dangers of distracted driving. NHTSA provides suggestions for how teens, parents, employers, and educators can get involved with preventing distracted driving and how to make your voice heard to educate your community. The USDOT provides TSM focused on combating distracted driving through television ads that are available to every community. Banner ads, media, logos, radio ads, television ads, and web videos for distracted driving campaigns are provided by the USDOT 's TSM and NHTSA. NHTSA also provides a yearly communications calendar that the organization uses to encourage communities to share campaign material by topic at specific times of the year, as an increased awareness strategy.					
Resources for Distracted Driving	Traffic Safety Marketing	NHTSA	National Safety Council	Governor's Highway Safety Association	Center for Disease Control and Prevention	Insurance Institute for Highway Safety
Pedestrian and Bike Safety	The Watch for Me CT campaign is run by CTDOT in partnership with the Connecticut Children's Medical Center Injury Prevention Center. They share a message of responsibility for everyone on Connecticut roads, including pedestrians and bicyclists. The Watch for Me CT website provides facts about pedestrian crashes, pedestrian laws, and safety tips. The Watch for Me CT website also includes tips for drivers and campaign materials. NHTSA's pedestrian safety web page provides pedestrian safety related research, tips, curriculum, and programs that can be shared in any community to discuss pedestrian safety. The USDOT's Traffic Safety Marketing website provides campaign materials such as banner ads, media, logos, radio ads, television ads, and web videos for pedestrian campaigns used throughout the country. NHTSA also provides a yearly communications calendar that the organization uses to encourage communities to share campaign material by topic at specific times of the year as an increased awareness strategy.					
Resources for Pedestrian and Bike Safety	Watch for Me CT	Federal Highway Safety Administration	National Complete Streets Coalition	NHTSA	America Walks	Vision Zero
Older Driver Safety	Older driver campaigns focus on providing resources for older drivers, their families, caregivers, medical providers and law enforcement to educate how medical conditions can affect driving, how to assess older driver safety issues, and other transportation options provided in case an older driver's mobility is threatened when they are no longer recommended to drive a motor vehicle. NHTSA provides information for what to do if an individual has concerns about an older driver's ability to drive and what the proper licensing procedures are for older drivers. The USDOT TSM web page provides marketing resources for the DriveWell campaign that focuses on older driver safety and mobility.					
Resources for Older Drivers	NHTSA	Department of Motor Vehicles (DMV)	AAA CT	National Institute on Aging	American Association of Retired Persons	Insurance Institute for Highway Safety

Public Education Resources to Support Behavior Change

Younger Driver Safety	Crashes are the leading cause of teen deaths, according to NHTSA. Public education campaigns that focus on younger driver safety highlight how to properly prepare younger drivers and their families for the responsibility of driving. NHTSA uses crash trends, safety messages, and various resources to discuss teen driver licensing requirements and key risk factors for younger drivers including illegal use of alcohol, seat belt use, and distracted driving. NHTSA also highlights the importance of influence that parents, educators, coaches, and other trusted adults have on younger drivers and their behaviors. The USDOT's TSM webpage provides posters that communities can share on social media that are specifically marketed towards younger driver safety.					
Resources for Younger Drivers	NHTSA	Traffic Safety Marketing	Department of Motor Vehicles	National Safety Council	National Institutes of Health	Center for Disease Control and Prevention
Motorcycle Safety	NHTSA's motorcycle safety message focuses on all road users sharing the road, motorcyclists making themselves visible, the use of DOT-compliant helmets, and riding sober. NHTSA provides information on the safest road behaviors. Banner ads, media, logos, radio ads, television ads, and web videos for motorcycle safety campaigns are provided by the USDOT TSM and NHTSA. NHTSA also provides a yearly communications calendar that the organization uses to encourage communities to share campaign material by topic at specific times of the year as an increased awareness strategy.					
Resources for Motorcycle Safety	NHTSA	Traffic Safety Marketing	CT.gov Connecticut Rider Education Program (CONREP) for Motorcycle Safety		RideCT	Ride4Ever



Source: Watch for Me CT

Local Transportation Capital Improvement Program (LOTCIP) Funds: Bicycles, Pedestrians, Passenger Vehicles, Transit, Bridges
Provides State monies to municipalities for transportation capital improvement projects. Regional Planning Organizations are responsible for soliciting and selecting projects and administering the program. Eligible projects include reconstruction, pavement rehabilitation, sidewalks, and multi-use trails. Except for off-road bike projects, all projects must be located on/along federally eligible roadways.
Transportation Alternatives (TA) Set-Aside Program Funds: Bicycles, Pedestrian
Provides federal funding, half administered through the State and half administered through Regional Planning Organizations for surface transportation projects in categories that are not typically eligible for funding under other federal sources. Bicycle and pedestrian projects have typically been targeted for these funds.
Congestion Mitigation and Air Quality (CMAQ) Funds: Bicycles, Pedestrians, Passenger Vehicles, Transit
The CMAQ program is managed by the CTDOT as a competitive grant program. A portion of funding is programmed for projects of regional significance. It provides funds for projects that will improve air quality, such as congestion reduction, traffic flow improvements, transit improvements, pedestrian facilities, and bicycle facilities.
Community Connectivity Program Funds: Bicycles, Pedestrians
This program offers Connecticut's Towns and cities assistance in conducting Road Safety Audits (RSA) at important bike and pedestrian corridors and intersections. An RSA is a process that identifies safety issues and countermeasures to help improve safety and reduce vehicle crashes. Note: As of 7/27/2018, the Department is pleased to announce that on Wednesday, July 25th, the State Bond Commission approved the DOT's request to fund the Community Connectivity Grant Program. All municipalities that submitted applications for grants were formally notified on 9/21/2018.
Local Road Accident Reduction Program (LRARP) Funds: Bicycles, Pedestrians, Passenger Vehicles
This program aims to fund projects that improve motor vehicle safety on local public roadways. The funding for the LRARP comes from the Federal Highway Safety Improvement Program (HSIP), which also funds projects on State highways and railroad/highway grade crossings.

Department of Energy and Environmental Protection (DEEP) Recreational Trails Funds: Bicycles, Pedestrians, Horseback, Recreational Vehicle
This program is administered through Connecticut DEEP. Funds can be used for projects, such as new trail construction, maintenance, and restoration of existing trails, acquisition of land or easements for a trail. Note: There is currently no funding available for this program.
Small Towns Economic Assistance Program (STEAP) Funds: Bicycles, Pedestrians, Passenger Vehicles
STEAP funds are issued by the State Bond Commission and can be used for capital projects, which are new construction, expansion, renovation, or replacement of existing facilities. The funding is directed towards small Towns.
Local Capital Improvement Program (LoCIP) Funds: Bicycles, Pedestrians, Passenger Vehicles
This program provides financial assistance to municipalities for eligible projects in the form of annual entitlement grants funded with State general obligation bonds. LoCIP grants can fund road construction, renovation and repair, sidewalk and pavement improvements, bridges, and bikeway and greenway establishment.
BUILD Discretionary Grants Funds: Bicycles, Pedestrians, Passenger Vehicles
The highly competitive federal grant program is for investments in surface transportation infrastructure and are to be awarded on a competitive basis for projects that will have a significant local or regional impact. BUILD funding can support roads, bridges, transit, rail, ports, or intermodal transportation. This program replaces the previous TIGER grant program.
Highway Safety Programs Funds: Driver and Passenger Behavior
The Connecticut Highway Safety program supports Federal Section 402 Highway Safety Grant funds that are made available to the State to carry out its annual Highway Safety Plan. Grants are issued to address programs pertaining to impaired driving, public information and education, work zone safety and highway safety related legislation, police traffic services, occupant protection, and child passenger safety.
Federal-Aid Essentials for Local Public Agencies
This website provides local public agency staffers a centralized hub for guidance, policies, procedures, and best practices for administering federal-aid projects. The website includes a library of videos covering key aspects of the project development and delivery process.

7. Emphasis Areas

The top emphasis areas in the Southeastern Region were selected based on the conclusion that these contributed to the majority of the fatal and injury crashes verified from the 2015-2018 data. The seven emphasis areas are:

1. **Critical Roadway Locations: Includes both intersection and roadway departure crashes.**
2. **Driver Behavior: Includes aggressive driving, unrestrained occupants, substance-impaired driving, and distracted driving.**
3. **Older Drivers: Includes drivers aged 65 years and older.**
4. **Young Drivers: Includes drivers aged 15-25 years old.**
5. **Non-Motorized Users: Includes pedestrians and bicyclists.**
6. **Motorcyclist Safety.**
7. **Traffic Incident Management.**

These emphasis areas were selected because they have the highest potential of achieving the State's 15% fatal and injury crash rate reduction goal by 2025. These identified emphasis areas, strategies, and countermeasures were developed in conjunction with stakeholders' input and according to the four E's of transportation safety. For a total of all injury and fatal crashes by emphasis area, see Appendix B.

Performance Measures: The Southeastern Region's RTSP follows the 2017 CT SHSP strategy of implementing countermeasures identified for each emphasis area. In all cases, implementation includes site-specific and systemic safety improvements. Connecticut has set annual safety performance measure targets, which the regions are encouraged to follow. The region can also establish their own performance measures, independent of the State's goals.

7.1 Critical Roadway Locations

The critical roadway locations emphasis areas include both roadway departure and intersection crashes. Intersection crashes are conflicts that occur due to complex travel patterns. Congestion, limited sight distance, driver behavior, and other variables exacerbate the inherent crash potential at each intersection. Intersections vary widely from geometry, classification (urban or rural), traffic control (signalized or unsignalized), traffic volumes, and design (conventional design or alternative designs like roundabouts). Additionally, at-grade rail crossings are considered intersections as trains and roadway users cross paths. Reducing the number of intersection fatalities and injuries is possible by applying a multidisciplinary approach, using strategies that focus on engineering, education, and enforcement.

Roadway departure crashes are described as conflicts that result when vehicles cross an edge line, a center line, or otherwise leave a travel lane. There are several factors that can contribute to a lane departure crash, including roadway characteristics like horizontal curvature and pavement condition. Other weather-related conditions like rain, snow, or ice can impede a driver's sight of the roadway and make controlling vehicles difficult. Time of day can also play a role in lane departure crashes due to decreased visibility, which can affect driving performance.

Behavioural issues like speeding, impaired driving, and distracted driving can affect the driver's safe vehicle operation and may cause them to depart from the roadway. To improve lane departure safety, countermeasures that address keeping vehicles in the travel lane, provide for a safe recovery, and reduce crash severity are imperative. The region can use both systemic and site-specific engineering strategies combined with education and enforcement.

7.1.1 Intersections

Performance Measures: From 2015-2018, there were 2,002 intersection crashes resulting in fatalities or injuries within the Southeastern Region. This averages to approximately 501 crashes per year. Of those 2,002 intersection fatal and injury crashes reported, 17 were fatal. The Southeastern Region's 2015-2018 intersection fatal and injury crashes make up 3% of the 58,061 intersection fatal and injury crashes in Connecticut.

Performance Objectives: Decrease intersection fatalities and injuries by 20% over the 5-year period of the SHSP. This will result in preventing 100 combined fatalities and injuries per year.

Strategies for Intersections

1. *Engineering*- Implement proven and low-cost spot improvements and systemic safety improvements to reduce intersection crashes. Examples include enhancing signs and pavement markings, modifying signals, signal retiming, adding turn lanes, and controlling access through medians.
2. *Enforcement*-Conduct high-visibility enforcement, media campaigns, and public outreach at locations with a significant number of intersection crashes.
3. *Education*-Advertise and promote the Safety Circuit Rider and other similar programs that provide training and outreach about intersection safety. [1]
4. *Engineering*-Incorporate safety elements and countermeasures into all regional roadway and intersection project designs and maintenance improvements.
5. *Engineering*-Consider No Turn on Red restrictions at identified crash locations.
6. *Engineering*-Check sight lines and consider tree trimming as needed.

1 UCONN, https://www.cti.uconn.edu/cti/Safety_Circuit_Rider1.asp#

7.1.2 Roadway Departures

Performance Measures: From 2015-2018, there were 1,242 roadway departure crashes resulting in injuries or fatalities within the Southeastern Region. This is an annual average of 311 fatal and injury crashes per year. Of those 1,242 reported roadway departure crashes, 33 were fatal. The Southeastern Region's roadway departure fatal and injury crashes account for 7% of the 18,355 total roadway departure fatal and injury crashes in Connecticut.

Source: VN Engineers

Performance Objectives: Decrease roadway departure fatalities and serious injuries by 20% over the 5-year period of the SHSP. This will result in preventing 62 combined fatalities and injuries per year.

Strategies for Roadway Departures

1. *Engineering*-Design the roadside to include protection systems (such as cable median, crash cushions, and guiderail end treatments). Manage roadside vegetation, trees, and other fixed objects to minimize the severity of crashes.
2. *Engineering*-Implement proven systemic safety countermeasures to lessen roadway departure crashes. Examples include high friction surface treatments, improved signage and pavement markings on curves, safety edges, and center line and edge line rumble strips.
3. *Enforcement*-Conduct high-visibility regional and local enforcement, media campaigns, and public outreach on identified corridors with a high number of severe roadway departure crashes.
4. *Education*-Utilize established regional and State programs, such as the Safety Circuit Rider, to provide education, training, and outreach.

7.2 Driver Behavior

The second emphasis area is driver behavior, which includes the subset areas of aggressive driving, unrestrained occupants, substance-impaired driving, and distracted driving. These subsections are related to driver behavior, not to traffic or roadway characteristics, although they can be interdependent.

7.2.1 Aggressive Driving

The aggressive driving emphasis area includes any driver behavior that involves speeding, recklessness, driving too close, running red lights, and making unsafe lane changes. Any behavior that "exceeds the norms of safe driving" and places other motorists in danger is considered aggressive driving. This does not include road rage, which is considered assault.

Performance Measures: Speeding-related fatal and injury crashes totaled 695 from 2015-2018. There were 29 fatal crashes with an annual average of 174 fatal and injury crashes per year from 2015-2018. The Southeastern Region's aggressive driving fatal and injury crashes make up 10% of the 6,678 total aggressive driving fatal and injury crashes in Connecticut.

Performance Objectives: Exceeding the State's goal of an 8% reduction of speed-related fatalities, the regional objective is to lower the average of 7 speed-related deaths per year to 6 per year by 2025.

Strategies for Aggressive Driving

1. *Enforcement*-Explore the possibility of creating safety corridors at segments of roadway that have higher-than-expected number of fatal and serious injury crashes due to driver behaviors. This can include additional signage followed by increased traffic enforcement and zero tolerance for violations.
2. *Enforcement*-Regional and municipal support for high-visibility enforcement campaigns that specifically target speed and aggressive driving. This could include enhanced patrols using road signs, electronic message boards, and command posts.
3. *Enforcement*-Regional collaboration and resource sharing of scientifically valid speed measurement technology for enforcement.
4. *Education*-Coordinate with local agencies, local police and fire departments, the auto insurance industry, and CT DMV to disseminate and educate the public on the hazards of aggressive driving.
5. *Engineering*-Integrate the speed management countermeasures into roadway departure, intersection, and pedestrian safety areas.

Source: NHTSA

7.2.2 Unrestrained Occupants

The unrestrained occupants' emphasis area involves either passengers or drivers who are not wearing a seat belt while traveling, including children not properly positioned in restraint systems. Connecticut enacted a new law in October 2017, requiring that children be in booster seats until they reach a minimum weight of 60 pounds and turn 8 years old, that toddlers ride in a forward-facing seat with a 5 point harness until they are 5 years old and weight at least 40 pounds, and that infants be in rear-facing seats until they are 2 years old and at least 30 pounds.

Performance Measures: There were 288 unrestrained occupant fatal and injury crashes (an annual average of 72 crashes per year) from 2015-2018. Out of these 288 reported crashes, 20 were fatal. Unrestrained occupant fatal and injury crashes in the Southeastern Region make up 6% of the total 4,494 unrestrained occupant fatal and injury crashes per year in Connecticut.

Performance Objectives: To reduce the number of unrestrained occupant fatal and injury crashes from the four-year average of 72 crashes per year by 10% to an average of 65 crashes per year by 2025. To increase the statewide observed seat belt use rate from 85.4% in 2015 to 88% or above in 2018. In August 2017, Connecticut surpassed its goal of 88% seat belt compliance rate to 90.3%.

Source: NHTSA

Strategies for Unrestrained Occupants

1. *Enforcement and Education*-Coordinate with NHTSA's calendar of high-visibility enforcement of safety belts and child safety enforcement and coordinate with AAA, CTDOT, and T2 Center to explore potential educational/outreach efforts promoting seat belt use. Continue regional and municipal enforcement using checkpoints, roving, and saturation patrols.
2. *Education*-Communicate the new child safety seat laws coordinating with multiple agencies like Safe Kids CT, local police and fire departments, the YMCA, and others to disseminate and educate the public.
3. *Enforcement and Education*-Coordinate with private sector stakeholders to host car seat clinics and publicize the safe fitting stations in the region using earned media outlets.
4. *Enforcement*-Continue the Click it or Ticket enforcement campaign.

7.2.3 Substance-Impaired Driving

Substance-impaired driving involves motorists who are under the influence of alcohol and/or drugs, both prescribed/non-prescribed, over-the counter, and/or illegal. A driver with a blood alcohol concentration (BAC) of .08 or higher is considered alcohol-impaired. Drug impairment is more challenging to detect and confirm because there is no standard breathalyzer test. In addition, it is hard to determine drug effects on driving behavior, which also makes it difficult to develop effective laws and strategies for enforcement. However, according to NHTSA, many of the alcohol-impaired driving countermeasures may deter drug-impaired driving.

Performance Measures: From 2015-2018, there were 410 reported substance-impaired driving crashes that resulted in a fatality or injury which is an annual average of 103 crashes per year. Of these 410 crashes, 25 were fatal. The Southeastern Region substance-impaired fatal and injury crashes made up 14% of the total 3,001 substance-impaired fatal and injury crashes in Connecticut from 2015-2018.

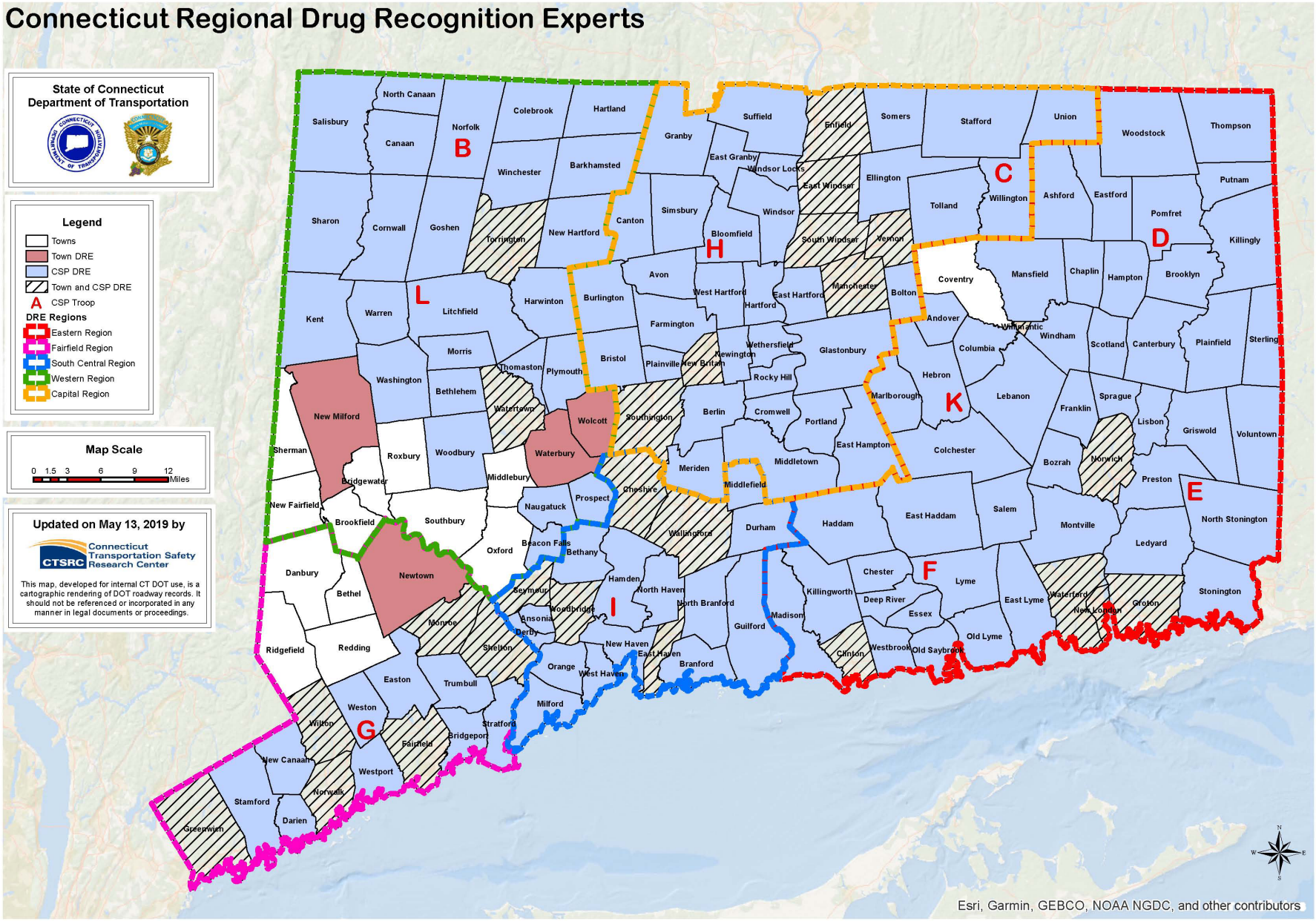
Performance Objective: To increase the number of Drug Recognition Expert (DRE) practitioners in the Southeastern Region by 2025. The State's goal was to increase the DREs in Connecticut from 31 in 2016 to 45 in 2018. By October, 2019, there were 52 DREs in the entire State and there were 14 additional persons enrolled in DRE training.

Strategies for Substance-Impaired Driving

1. *Enforcement & Education*-Augment regional and local support of officers to take the Advanced Roadside Impaired Driving Enforcement (ARIDE) program and to get certified as DRE offered by the Department of Transportation's Highway Safety Office. Cooperate with the SHSP goal to increase the number of certified standardized field sobriety test practitioners and instructors.
2. *Education*-Expand regional and town-specific outreach of impaired driving beyond the traditional mass media campaign by using innovative and unique delivery methods that reach specific populations of the targeted audience.
3. *Education*-Continue to support Mothers Against Drunk Driving (MADD) CT chapter's outreach and education efforts, including the Victim Impact Panels that occur at First Congregational Church in Windham, Norwich Alliance Church, and Waterford Public Library.
4. *Education*-Continue to support Mothers Against Drunk Driving (MADD) CT chapter's outreach and education efforts, including the Victim Impact Panels that occur at First Congregational Church in Windham, Norwich Alliance Church, and Waterford Public Library.
5. *Enforcement*-Municipalities should support policies and programs that increase the availability, convenience, affordability, and safety of transportation alternatives for drinkers who may drive (especially during night time and weekend hours).
6. *Enforcement*-Conduct regional high-visibility impaired driving enforcement program. Highlight the importance of sober driving during the month of December during the Office of National Drug Control Policy's National Drunk and Drugged Driving Prevention Month and NHTSA's "Drive Sober or Get Pulled Over" mobilization.
7. *Enforcement*-Collaborate with other municipal police departments that have had successes in reducing substance-impaired driving crashes.
8. *Enforcement*-Continue to enforce the interlock devices for all Connecticut DUI/DWI/OUI first-time offenders.

Source: NHTSA

Connecticut Regional Drug Recognition Experts



7.2.4 Distracted Driving

Distracted driving is another subset of the driver behavior emphasis area. It involves any motorist whose attention is diverted by a variety of activities besides navigation. Common sources of driver distraction are cell phone use, eating, drinking, or adjusting the radio. Due to the increase of text messaging, GPS navigation systems, and other technologies, distracted driving is on the increase.

Performance Measures: From 2015-2018, there were 522 reported fatal and injury crashes related to distracted driving, an average of 131 crashes annually. There were three fatalities. The Southeastern Region's distracted driving fatal and injury crashes make up 17% of the total 3,157 distracted driving fatal and injury crashes in Connecticut.

Performance Objective: In line with the CT SHSP, the lack of useful crash data in the area of distracted driving has made it difficult to select a goal measuring the impacts on distraction-related crashes. The performance objective is to decrease fatal and injury crashes caused by driver distraction, especially those caused by handheld mobile phone use. To that end, the quantifiable performance objective is focused on high-visibility enforcement (HVE) activities.

To maintain or increase the number of police agencies participating in HVE from 50 agencies in 2016 to 60 agencies by 2025.

Strategies for Distracted Driving

1. *Enforcement*-Conduct distracted driver observational surveys, similar to those done for seat belt use.
2. *Enforcement*-Upgrade to the electronic citation processing system e-Citation Version 2, which can reduce data input errors; improve police officer efficiency.
3. *Enforcement*-Update to the Model Minimum Uniform Crash Criteria (MMUCC) 5th Edition to include distraction for involved non-motorists.
4. *Enforcement*-Regionally conduct high-visibility distracted-related enforcement, focusing on municipalities with higher rates of distracted driving-related fatalities and injuries.
5. *Enforcement*-In addition to high-visibility enforcement, use unmarked patrol vehicles and spotter techniques in high traffic areas.
6. *Education*-Increase regional public outreach of distracted driving that reach specific populations of the targeted audience. Coordinate with NHTSA's calendar of outreach.
7. *Education*-Municipalities can use AAA's free distracted driving public service announcement to raise awareness by contacting the AAA Manager of Public and Government Affairs.
8. *Education and Enforcement*-Coordinate distracted driver messages with multiple agencies: DMV, DOT and DESSP.

Source: VN Engineers

7.3 Older Drivers

The fourth emphasis area is older drivers, which is categorized as drivers 65 years and older. Although age itself is not the principal determinant in driving performance, people's mental and physical abilities change as they age, which can affect their driving. The most common of these conditions is poor vision, but other cognitive skills may be affected, including memory and coordination. In addition, older drivers' crash survivability is another safety concern. Since the population in the Southeastern Region is aging, this fourth emphasis area is of particular importance.

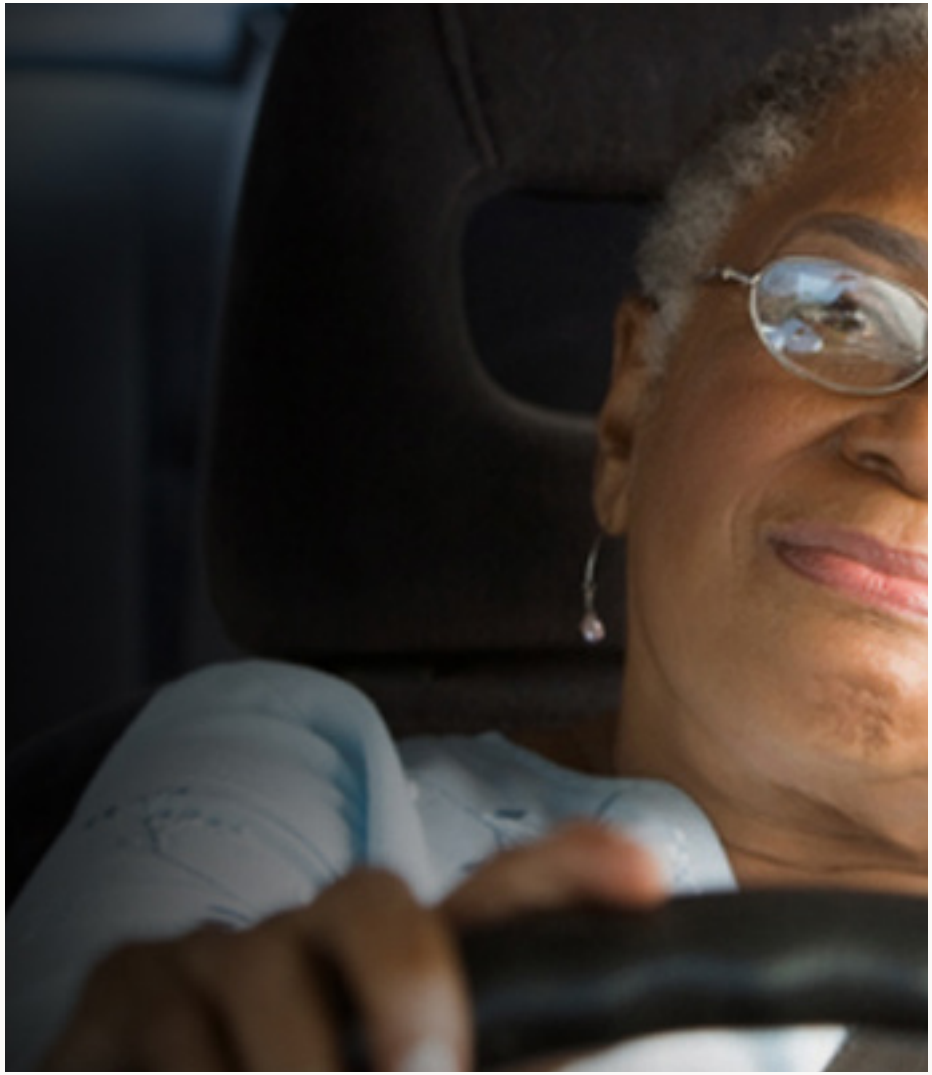
Performance Measures: From 2015-2018, there were 591 crashes in the Southeastern Region involving older drivers that ended in a fatality or injury, this is an average of 148 crashes annually. There were 19 older driver fatal crashes in SCCOG from 2015-2018.

The Southeastern Region older driver fatal and injury crashes make up 7% of the total 9,057 older driver fatal and injury crashes in Connecticut.

Performance Objective: To decrease the number of drivers aged 65 or older involved in fatal crashes from an average of almost 5 fatal crashes per year to an annual average of 4 fatal crashes per year by 2025.

Strategies for Older Drivers

1. *Education*-Consider supporting stricter CT DMV policy of license renewal for senior drivers and consider mandatory in-person tests with vision exam for drivers 65 years and older.
2. *Education*-Coordinate with multiple agencies such as the United Way of Greater-Central Agency on Aging, the various local chapters of the YMCA, and the Connecticut Association of Senior Center Personnel to address older driver challenges and general safety.
3. *Education*-Using earned media outlets to promote NHTSA's DriveWell Toolkit to aid older drivers.
4. *Education*-Continue to promote alternative ways for older people to get around and promote Know How to Go website.
5. *Education*-Encourage older drivers to use AARP Smart Driver Course, available online or in classrooms in the region.



Source: NHTSA

7.4 Young Drivers

Young drivers are motorists between the ages of 15-25. Due to their driving inexperience and "normal adolescent development that involves an increase in novelty seeking and risk-taking behaviors," (NHTSA Countermeasures that Work) this subset of drivers is at a greater risk of being involved in traffic crashes.

Connecticut has a graduated driver licensing (GDL) program, limiting passenger allowance in the first 12 months of licensing, imposing a driver curfew until their 18th birthday, requiring all passengers in vehicles to use seat belts, and prohibiting all use of cell phones and mobile electronic devices while driving. The State also requires pre-licensure driver education for drivers and parents.

Performance Measures: From 2015-2018, there were 1,119 crashes involving younger drivers that ended in an average of 280 fatal and injury crashes annually. Of these 1,119 crashes, 20 were fatal. The Southeastern Region young driver fatal and injury crashes make up 6% of the 17,799 young driver fatal and injury crashes in Connecticut.

Performance Objective: To decrease the three-year average of 5 young driver fatal crashes per year (2015-2018) to 1 young driver fatal crashes per year by the year 2025 in the Southeastern Region.

Source: NHTSA

Strategies for Young Drivers

1. *Engineering, Education, and Enforcement*-Continue regional support for state-wide GDL programs.
2. *Education and Enforcement*-Regional education and enforcement of young driver laws, including the State's .02 BAC laws for teens by organizing and conducting high-visibility enforcement campaigns.
3. *Enforcement*-Explore the possibility of a license plate decal to identify motorists in the GDL program, so that law enforcement can more readily distinguish them.
4. *Education*-Coordinate young driver messages with multiple agencies in Spanish and English at DMV offices, auto insurance agencies, AAA CT Chapters, State and local law enforcement agencies, Emergency Management Services, public and private schools, local chapters of the YMCA, and the State Board of Education.
5. *Education*-Continue to promote !MPACT programs to present their teen driving safety programs to high schools, hospitals, religious organizations, and other communities at no cost. This educational program empowers people to make meaningful behavioural changes in their own driving habits, as well as to promote safe driving in their community.

References:

!MPACT is a nonprofit organization whose members have either lost teenage family members or friends in motor vehicle crashes, or are survivors of crashes involving teen drivers. !MPACT's mission is to eliminate tragedies caused by inexperienced drivers through awareness, education and legislation. !MPACT has developed a teen driving safety program in which members share their personal experiences. Teens also learn about statistics, risk factors and how to protect themselves and others.

Zero Tolerance Law: In Connecticut, if a driver under the age of 21 has more than a trace of alcohol (.02 BAC or higher) in their system, they will be subjected to a three month license suspension.

7.5 Non-Motorized Users

The non-motorized users emphasis area crashes involving pedestrians and bicyclists. Pedestrians and bicyclists are more susceptible to serious injuries and fatalities when involved in a crash with a motor vehicle. Pedestrian-friendly environments are consistent with complete streets, desirable residential and employment sites, and sustainable/low cost transportation.

7.5.1 Pedestrians

Performance Measures: From 2015-2018, there were 211 fatal and injury pedestrian crashes in the Southeastern Region; 8 of these crashes were fatal. That is an average of 53 crashes per year. The Southeastern Region's pedestrian fatal and injury crashes make up 4% of the total 5,114 pedestrian fatal and injury crashes in Connecticut.

Performance Objective: The Southeastern RTSP is in congruence with the SHSP's goal of reducing pedestrian fatal and injury crashes by 15% by 2025. This will result in preventing 8 combined pedestrian injury and fatal crashes per year.

7.5.2 Bicyclists

Performance Measures: From 2015-2018, there were 107 bicycle crashes in the Southeastern Region and 1 was fatal. That is an average of 27 crashes per year. Southeastern Region bicyclist fatal and injury crashes make up 7% of the 1,597 fatal and injury bicycle crashes in Connecticut.

Performance Objective: The Southeastern RTSP is in congruence with the SHSP goal of decreasing bicyclist fatalities and injuries by 15% by 2025. This will result in preventing 4 combined bicyclist fatal and injury crashes per year.

Source: Watch for Me CT

Strategies for Non-Motorized Users

1. *Education* -Coordinate with regional and State advocacy groups and bike store owners, including Bike Walk CT, BikeWalk SE CT, the CTDOT Bike and Pedestrian Advisory Board, and other stakeholders, to strategize best practices for the region.
2. *Engineering*-Coordinate with CTDOT on the *Pedestrian Signing and Pavement Marking Project*, which improves crosswalk visibility on local roads.
3. *Education and Enforcement*-Promote the Watch for Me CT Program.
4. *Education*-Regionally promote the CT Bike Ped Plan interactive bike map.
5. *Engineering*-Encourage municipal and regional adoption of the CTDOT's Complete Streets Policy. This policy ensures that the needs of all users of all abilities and ages (specifically including pedestrians, bicyclists, transit users, and vehicle operators) are addressed in the planning, programming, design, construction, retrofit, and maintenance activities related to all roads and streets, as a means of providing a "safe, efficient transportation network which enhances quality of life and economic vitality."
6. *Engineering*-Follow the recommendations in the 2019 Southeastern Connecticut Regional Bike and Pedestrian Plan.
7. *Education and Enforcement*-Educate regional law enforcement personnel on the 2014 Vulnerable User Law and the 2015 Bike Bill.
8. *Education*-Promote the Connecticut Technology Transfer Center's educational outreach initiatives that promote bike and pedestrian safety.

Source: VN Engineers

7.6 Motorcyclist Safety

Motorcyclist safety is an area of traffic concern both regionally and nationally. According to the NHTSA 2015 Countermeasures that Work report, "per vehicle mile traveled, motorcyclists are about 26 times more likely than passenger car occupants to die in traffic crashes" (NHTSA Countermeasures that Work 2015). A motorcyclist travels at the same speeds and in the same lanes as other motorized vehicles, but without the same degree of protection.

Performance Measures: From 2015-2018, there were 440 motorcycle crashes that ended in a fatality or injury to the persons involved. Of these crashes, 20 were fatal. The annual average for fatal and injury motorcycle crashes is 110 crashes per year. The Southeastern Region motorcycle fatal and injury crashes make up 12% of the 3,579 total motorcycle fatal and injury crashes in Connecticut.

Performance Objective: Decrease the number of motorcyclist fatalities from the four-year average of 5 crashes to 2 crashes per year by 2025.

Decrease the number of unhelmeted fatalities from the 2015-2018 average of seven fatalities per year to five fatalities per year by 2025 in the Southeastern Region. There were 22 unhelmeted fatalities from 2015-2018, which is an average of seven unhelmeted motorcycle fatal crashes per year. The goal is to increase media outreach and encourage motorcycle riders to wear protective clothing and gear.

Strategies For Motorcyclist Safety

1. *Education*-Continue to endorse CTDOT's Connecticut Rider Education Program (CONREP) for motorcycle safety at the current sites in Norwich, Groton and New London.
2. *Engineering, Education, and Enforcement*-Continue to support the insurance industry's rate discount for CONREP graduates.
3. *Engineering, Education, Enforcement, and Emergency Management*-Coordinate with local dealerships and public and private sector agencies to promote safety campaigns, encourage older riders to wear helmets, goggles, protective clothing and gear, and encourage motorists to share the road. These campaigns can be ramped up during May's Motorcycle Safety Awareness Month.
4. *Education, Enforcement, and Emergency Management*-Support the None for The Road campaign and www.ride4ever.org, encouraging riders to not drink and ride and to ride safely.
5. *Education*-Promote various motorcycle safety awareness resources, such as Helmetcheck.org, the Motorcycle Safety Foundation, Interactive Scenic Ride Map, and CT Travel Smart websites. Motorcycles are not a large source of vehicle-miles traveled, but are a large portion of fatalities are associated with motorcycles.

Source:VN Engineers

Source: NHTSA

7.7 Traffic Incident Management

A traffic incident is an event (such as a vehicle crash, work zone activity, or vehicle breakdown) that disrupts the normal operation of the transportation system. Traffic incidents are an important concern in Connecticut because they can potentially cause safety issues increasing the risk to uninvolved motorists, can cause congestion delays, and secondary incidents. The CTDOT recommends a statewide Traffic Incident Management (TIM) plan be implemented to coordinate the use of human, institutional, mechanical, and technology resources to reduce the duration and impact of incidents.

TIM consists of a "planned and coordinated multidisciplinary process to detect, respond to, and clear traffic incidents so that traffic flow may be restored as safely and quickly as possible." Effective TIM reduces the duration and impacts of traffic incidents, while improving safety for motorists, crash victims, and emergency responders.

Performance Objectives: In congruence with the CT SHSP's goals, promote the safety of motorists, crash victims, and incident responders by reducing secondary crashes and associated fatalities and serious injuries.

Increase the Southeastern Region's participation of first responders in incident management training by 50 percent by 2025.

Source:FHWA

Strategies for Traffic Incident Management

1. *Engineering, Education, and Enforcement*-Continue to implement the goals from the ITS Strategic Plan and evaluate the expansion of ITS infrastructure to additional regional corridors based on prioritized needs.
2. *Education*-Continue to support the CT Travel Smart website and to promote this resource regionally through media and public outreach campaigns.
3. *Education*-Continue to conduct public awareness programs for effective on-scene traffic incident management by road users.
4. *Engineering*-Support the State operated State Farm Safety Patrol Program.
5. *Education*-Continue collaborating with CTDOT to implement ITS to update the freeway traffic management system and improve incident management efforts.
6. *Education*-Support the CT SHSP objective to establish a statewide TIM program, with a lead agency to administer clearly defined responsibilities that meet the requirements of the National Incident Management System (NIMS).
7. *Education*-Continue the planning, implementation, and coordination of activities, such as the adoption of a Unified Response Manual, updating of diversion plans, TIM training, and participation in the FHWA annual TIM Self-Assessment. Also, work on the development and implementation of a public awareness campaign for motor vehicle laws relating to highway incidents such as the "Move It" and the "Move Over."
8. *Education*-Continue to research the benefits and impacts of providing a regional approach to operating and maintaining local traffic signal systems.
9. *Enforcement*-Conduct after-action reviews to improve response and scene management.
10. *Engineering*-Include Weather Responsive Traffic Management (WRTM) strategies, such as Road Weather Information Systems (RWIS).
11. *Engineering Education, and Enforcement*-Support the development and tracking of TIM performance metrics following national standards and definitions.

8. Technological Advances Affecting Traffic Safety

8.1 Connected and Automated Vehicles

Connected vehicle (CV) and automated vehicle (AV) technologies (described below) are in various stages of discovery, development and deployment nationwide. These technologies have the potential to play an integral role in improving the future of traffic safety. According to the National Highway Traffic Safety Administration (NHTSA), of all motor vehicle crashes on public roadways today, "94% are due to human error or choices." Each year in Connecticut these human errors or choices results in more than 100,000 crashes, more than 30,000 injuries and more than 250 deaths.

Automated Driver Assistance Systems

Today, most of the newer motor vehicles sold in the United States have at least some form of automated driver assistance system (ADAS) technologies included that increase safety. ADAS is the hardware and software within vehicles in that is collectively capable of supporting or providing alerts to the driver (e.g. blind spot detection, lane departure warning, front collision warning, etc.) or assisting the driver to automatically perform some of the real-time operational and tactical functions in on-road traffic (steering, accelerating, braking, etc.). The term ADAS includes the Society of Automotive Engineering International (SAE) driving automation levels 0, 1 and 2. Note, for vehicles equipped with ADAS, the driver is still responsible for performing most or all of the driving tasks, thus active driver performance, supervision and/or intervention is required.

Automated Driving Systems

The future of automated vehicles is focused on automated driving systems (ADS). These technologies are being studied, developed and pilot tested around the world today and have the potential to exponentially improve safety and save lives. ADS is the combination of hardware and software within vehicles that are collectively capable of performing all of the real-time operational and tactical functions required to operate a vehicle in on-road traffic on a sustained basis, regardless of whether the ADS is limited to a specific operational design domains under which it is able to function. The term ADS, includes SAE driving automation levels 3, 4 and 5.

The primary difference between these levels has to do with the conditions under which the ADS is able to perform and whether or not there are any expectations for a human driver to intervene. The performance of level 3 and level 4 driving automation is the primary focus for research, development and pilot testing around the world today.

Source: NHTSA

Connected Vehicles

In addition to the automated vehicle technologies described above, the development and implementation of connected vehicle (CV) technologies also have significant promise to improve safety on public roadways. According to NHTSA, 80% of unimpaired crashes could be prevented by the deployment of CV technologies. [1] CV are described as vehicles that use specific wireless communication protocols (e.g. DSRC, C-V2X, 5G) to communicate with their surroundings for the purpose of improving traffic flows and preventing collisions. These technologies are able to send and receive real time transportation safety, mobility and other travel data to and from other vehicles, roadside infrastructure (e.g. traffic signals), users of the transportation system (e.g. drivers, pedestrians) and even the cloud.

Several CV technologies have undergone many years of national research, testing and standards development and could soon begin to be deployed nationwide on a systematic scale. However, standing in the way of large nationwide deployments are key federal policy decisions by the Federal Communications Commission (FCC) to preserve the 5.9 GHz spectrum and the resulting competition between which communication protocols (e.g. DSRC, C-V2X, 5G) will dominate the market. Additionally, both state and local infrastructure owner operators (IOO) will ultimately play a significant role in the implementation of connected vehicle to infrastructure (V2I) technologies. In order to be future proof, IOOs will need more certainty from national direction, market adoption and standards before upgrading their infrastructure in support of V2I.

Connecticut Update

The CTDOT is currently undertaking two projects along a 10-mile segment of the Berlin Turnpike to replace and upgrade 28 signalized intersections near the CTDOT headquarters building. These projects will serve as early adopters for testing and deploying emerging technologies, including connected vehicle to infrastructure (V2I) applications that have the potential for improving safety and mobility, enhancing CTDOT traffic signal operations and reducing congestion. Both projects will require installation of modern traffic signal controllers, new backhaul communications (fiber) and include the implementation of adaptive signal control technology and automated traffic signal performance measures software.

1 NHTSA, https://www.its.dot.gov/factsheets/pdf/safetypilot_nhtsa_factsheet.pdf

As part of the replacement and upgrade, the CTDOT will install roadside units (RSU) at each intersection and equip various state-owned fleet vehicles with corresponding on-board units (OBU) to test and deploy different V2I applications (e.g. signal phasing and timing, signal priority, etc.). Both projects will investigate the application of dual mode RSUs capable of sending and receiving V2I data using dedicated short-range communications (DSRC) and current generation cellular networks for connected vehicles, typically referred to as C-V2X. Both projects will also involve the submission of licensing applications to the Federal Communications Commission (FCC) to utilize multiple channels within the 5.9 GHz spectrum for connected vehicle technology. Once operational, the CTDOT looks to apply lessons learned from these projects as a template for other traffic signal replacement projects moving forward (where applicable).

Source: Shutterstock

In addition to the Berlin Turnpike, the CTDOT also owns and operates an ideal facility for piloting and deploying AV transit technologies – the CTfastrak bus rapid transit (BRT) corridor. This facility is a nine-mile, bus-only, fixed guideway in central Connecticut that connects four municipalities including the state's capital city of Hartford, West Hartford, Newington and New Britain. Success with AV transit technologies here has the potential to advance the marketability of near-term AV transit technologies as well as improve service and efficiencies that could free up resources to be deployed in other locations that have transit needs. The Department will continue to target the CTfastrak as a priority area for testing and deploying AV transit technologies.

Over the next few years, the Department and its assembled team, including the Federal Transit Administration (FTA), Center for Transportation and the Environment (CTE), New Flyer Industries, Robotic Research, Inc., University of Connecticut (UConn), and the Capitol Region Council of Governments (CRCOG), will be working collaboratively to advance a state-of-the-art pilot project to test the performance and operation of full size, automated, and battery electric buses in revenue service on the CTfastrak BRT. This demonstration project is anticipated to deploy three 40' New Flyer Excelsior Charge battery electric buses equipped with increasing levels of driving automation, capable of up to high automation (SAE level 4). Automated driving capabilities demonstrated will include steering, precision docking at CTfastrak station platforms, and platooning.

Source: Hartfordbusiness.com

The automated buses deployed as part of this project will always have a safety attendant behind the wheel to drive and/or take control of operations as necessary. The buses will be operated and maintained by the Hartford division of CTtransit, which is the brand name for transit services operated by private transit providers under contract with the Department. Extensive testing will take place without passengers at an off-road test facility and on CTfastrak prior to the buses operating in service for passengers. Traffic signals along the CTfastrak fixed guideway will also be updated in order to broadcast connected vehicle to infrastructure signal phasing and timing (SPaT) data and MAP data. This broadcasted SPaT and MAP data will be integrated with the automated driving system on the buses to further enhance safety through intersections.

8.2 Concerns with Data Collection

Connecticut uses the Model Minimum Uniform Crash Criteria Guideline (MMUCC) developed by the National Highway Traffic Safety Administration (NHTSA) and the Governors Highway Safety Association (GHSA).

The purpose of this is to standardize data nationally, so that collected data can be compared and used for strategies to prevent crashes. There are some factors that affect traffic safety that are difficult to observe and measure:

- *Alcohol and drugs, low alcohol concentration, other drugs including prescription, illicit, and over-the- counter drugs*
- *Fatigue and distraction*
- *Communications technologies and advanced driver assistance systems*
- *Factors involving teen or novice driving*

MMUCC no longer defines how data elements should be collected (at scene/linked or derived). States are encouraged to link or derive data wherever feasible to minimize the impact on law enforcement. In January 2015, Connecticut initiated the transition to the updated electronic crash reporting system. The purpose is to help local police departments obtain public safety equipment. Improved tools, resources and technology would allow local police departments to better implement new E-Crash investigation and enforcement initiatives.[1]

1.CT Traffic Records Strategic Plan (CT-TRCC) July 1, 2020

9. Implementation, Evaluation & Update Requirements

9.1 Implementation

The Southeastern RTSP is a supplemental document to the 2019 Southeastern Connecticut Regional Bike and Pedestrian Plan and the Metropolitan Transportation Plan (2019-2045). Collectively, these plans can assist the region in prioritizing projects that will improve roadway safety. The member municipalities should be dedicated to the implementation of safety improvements and the reduction of fatal and injury crashes based on appropriate countermeasures, some of which are included in this report.

The SCCOG staff, member municipalities, and CTDOT have provided their local and regional knowledge, input, and strategies to this safety plan. Development of this plan was an iterative process with municipal and regional input included from the onset. Throughout the implementation of this plan, SCCOG staff and the member municipalities can provide guidance and be dedicated to bringing appropriate strategies to fruition.

The Executive Committee serves as the Transportation Committee for SCCOG. The Transportation Committee is responsible for the review, implementation, and monitoring of the RTSP. SCCOG could provide oversight of this safety effort and report progress to CTDOT and the member municipalities at least once a year. Each emphasis area could be reported at a SCCOG monthly meeting to ensure progress is being made and to provide member municipalities the opportunity to evaluate the implemented strategies. It is recommended that the implementation of each strategy be documented, and the performance measures monitored to provide transparency and ensure progress. Reporting could detail current strategy activities, accomplishments, safety performance measures, and any issues that may need additional support or guidance.

9.2 Evaluation

The SCCOG RTSP evaluation process will follow the CT SHSP required adherence to the 2016 FHWA Guidance on Strategic Highway Safety Plans and the Fixing America's Surface Transportation (FAST) Act. The COG should be responsible for communicating with the member municipalities and CTDOT, and in addition, routinely evaluate safety data to determine if the selected emphasis areas are still relevant. If any strategies prove ineffective or irrelevant, the region can make appropriate adjustments to their approach.

Reporting should include information on which strategies are being implemented, what goals have been accomplished, the progress of performance measures, best practices, and any lessons learned.

Areas for Evaluation and Implementation:

- Are strategies current and relevant to ongoing data trends?
- Are strategies being incorporated into local, regional, and State projects?
- Is the data showing that fatalities and injuries in the Southeastern Region are trending towards a 15% reduction by 2025?
- Does the annual reporting reflect the RTSP performance?

Recommended Steps to be taken by SCCOG:

- Annual reporting of RTSP strategies and performance measure progress.
- Coordination with CTDOT's SHSP committee and emphasis area sub-committees to collaborate on State and regional goals.
- Annual review of goals and development of new strategies when warranted.

9.3 Updating the RTSP

The RTSP is a living document congruent with the CT SHSP. Federal regulations require an update for the SHSP every five years and this regional safety plan could follow this same update process. Each COG is responsible for updating their regional transportation safety plan every five years. The regional plan will adhere to the same mandates, with updates reflecting the most current federal surface transportation legislation.

9.4 Implementation Periods Defined

For the purposes of the RTSP, short-term is understood to mean modifications that can be expected to be completed very quickly, perhaps within six months, and certainly in less than a year, if funding is available. These include relatively low-cost alternatives, such as striping and signing, and items that do not require additional study, design, or investigation (such as right-of-way acquisition). Mid-term recommendations may be costlier and require establishment of a funding source, or they may need some additional study or design before implementation. Nonetheless, they should not require significant lengths of time before they can be implemented and they should be completed within a window of eighteen months to two years. Long-term improvements are those that require substantial study and engineering and may require significant funding mechanisms and/or right-of-way acquisition. These projects generally fall into a horizon of two years or more after funding is secured.

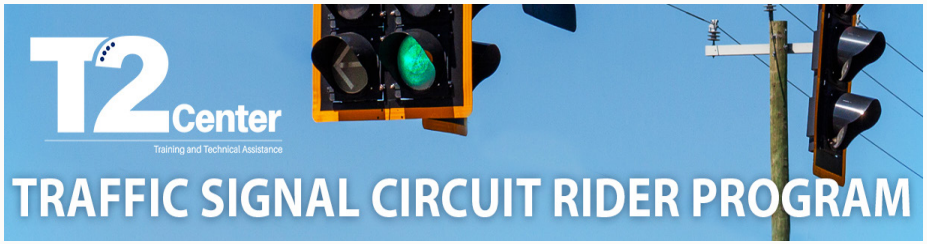
9.5 Other Resources

Connecticut Technology Transfer Center's Safety Circuit Rider and Traffic Signal Circuit Rider Programs

The Connecticut Technology Transfer Center's Safety Circuit Rider Program and the Traffic Signal Circuit Rider Program are statewide programs aimed at reducing the frequency and severity of fatal and injury crashes by assisting and supporting local road safety authorities. Both programs offer safety-related information, educational programs, technical assistance, and various training opportunities to all Connecticut municipalities at no cost.

The following assistance is available through the Safety Circuit Rider Program:

- Coordination of Road Safety Assessments (RSAs)
- Collection and analysis of traffic volume data
- Identification of low-cost safety improvements
- Assistance in the development of local road safety plans
- Development of a Connecticut Toolbox of Safety Resources
- Development of a series of roadway safety briefs
- Delivery of local road safety training



Source: T2 Center

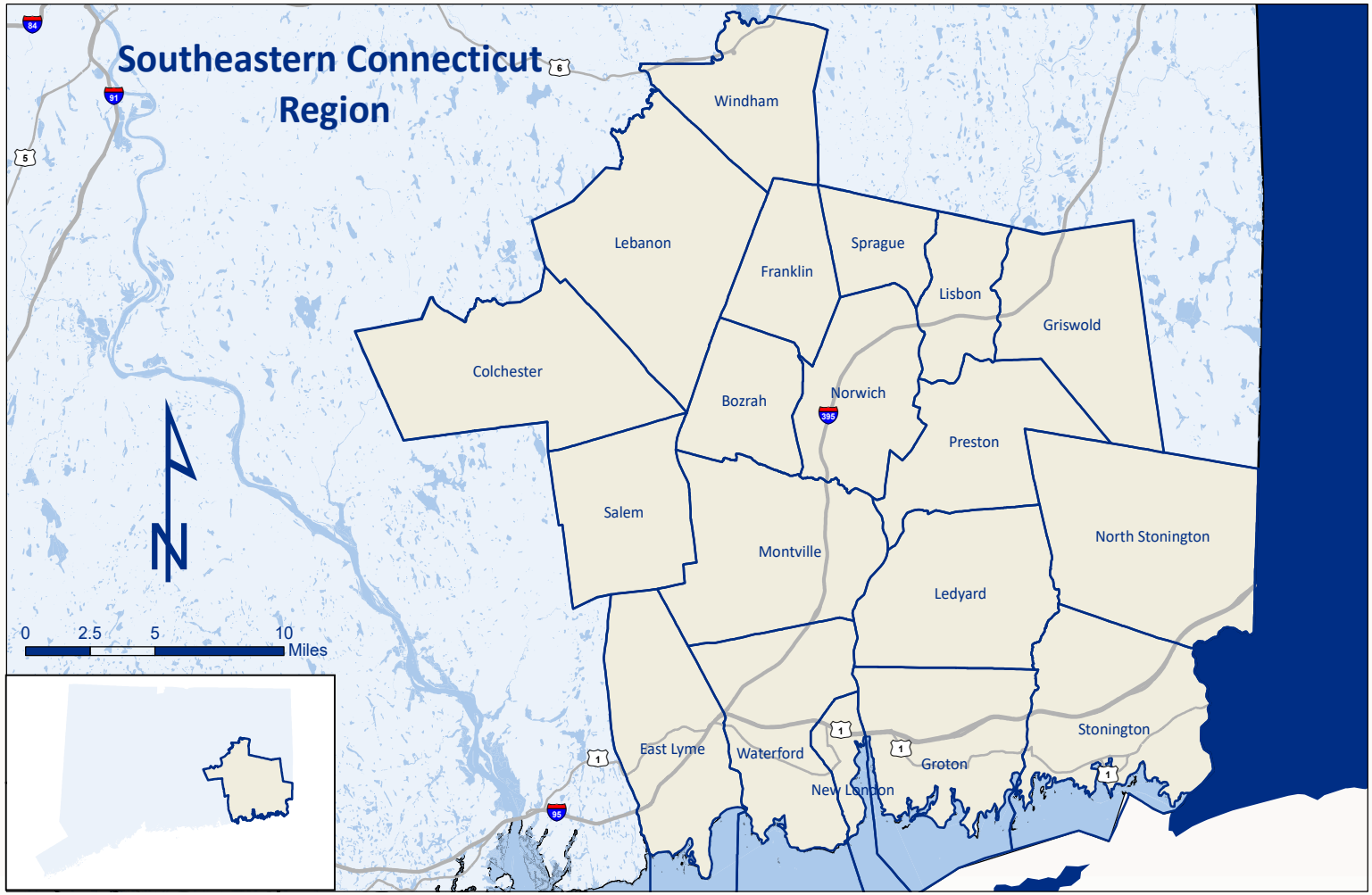
The following assistance is available through the Traffic Signal Circuit Rider Program:

- Support for the development of management plans with clear goals and objectives for the operation, maintenance, and design of traffic signal infrastructure
- Training on traffic signal topics relevant to local agencies through seminars, technical briefs, and site visits
- Assistance for the development of traffic signal timing at isolated intersections and coordinated systems, including evaluating relevant performance measures
- Promotion of opportunities for federal-aid funding for traffic signal operations and encourage the integration of traffic signal operations into Southeastern transportation plans and programs
- Equipment Loan Program

Appendix A: Municipal Reports

Introduction to the Individual Municipal Reports

The following municipal reports provide an analysis and overview of traffic safety in each of the member municipalities. Each report includes basic demographic information, data-identified high crash corridors, intersections, and bike and pedestrian locations. In addition to the data-identified sites, locations that exhibit safety concerns for the municipal representatives were documented. The recommendations for the municipal sections were based on observation and discussion with town/city representatives and not based on crash type analysis. The data-identified, prioritized locations improvements, and site-specific strategies were developed to minimize or prevent fatal and injury crashes in the future. These are listed in tabular format.



TOWN OF BOZRAH

2016 U.S. Census Population Estimate: 2,578
Area: 20 square miles
Population Density: 128 per square mile
2016 Vehicle Miles Traveled (VMT): 52,249,750
2016 VMT per Capita: 20,268
Setting: Rural
Date of Meeting with Town: July 25, 2019
Town and Regional Representatives: Glenn S. Pianka (First Selectman)
Bike and Pedestrian Crash Totals: 1
Total Number of Crashes Involving Injuries or Fatalities, 2015-2018: 59

Source: VN Engineers

Overview

Bozrah is a rural Town in New London County, bordered by Franklin and Lebanon to the north, Norwich to the east, Montville to the south, and Salem, Colchester, and Lebanon to the west. The Town of Bozrah contains three Villages: Fitchville, Leffingwell and Gilman. The Town's main thoroughfares are CT-2, CT-82, CT-163, and CT-608.

Town Input

Fatal Crashes from 2015-2018

The First Selectman did not recall the nature of the one fatality crash listed on the UCONN Crash Data Repository data on CT-163 (Bozrah Road). The Town's main concern for both State routes and local rural roadways throughout the Town are speeding and distracted driving.

Lake Road and South Road

This is the only signalized-flashing intersection in the Town. While there are frequent crashes, there have been no serious injuries.

Wawecus Hill Road at Old Salem Road and Noble Hill Road

The Town would like a 90-degree intersection where Wawecus Hill Road approaches. This intersection needs sight lines improvements.

Wawecus Hill Road and CT-82 (Salem Turnpike)

The speeding along the CT-82 (Salem Turnpike) corridor is a concern. The Town of Bozrah representatives said that this intersection needs sight line improvements, grading improvements, and vegetation management.

Stockhouse Road and CT-87 (Norwich-Lebanon Road)

Stockhouse Road is located in an industrial area of the Town of Bozrah. There is heavy tractor trailer and dump truck volume. CT-87 (Norwich-Lebanon Road) has a posted speed limit of 40 MPH. There is a horizontal curve on CT-87 that affects the sight distance for southbound traffic north of Stockhouse Road. There are several egresses in the vicinity of Stockhouse Road and CT-87 (Norwich-Lebanon Road).

Enforcement Abilities and Strategies

The Town of Bozrah does not have a Resident State Trooper, but when requested, Troop K will send enforcement.

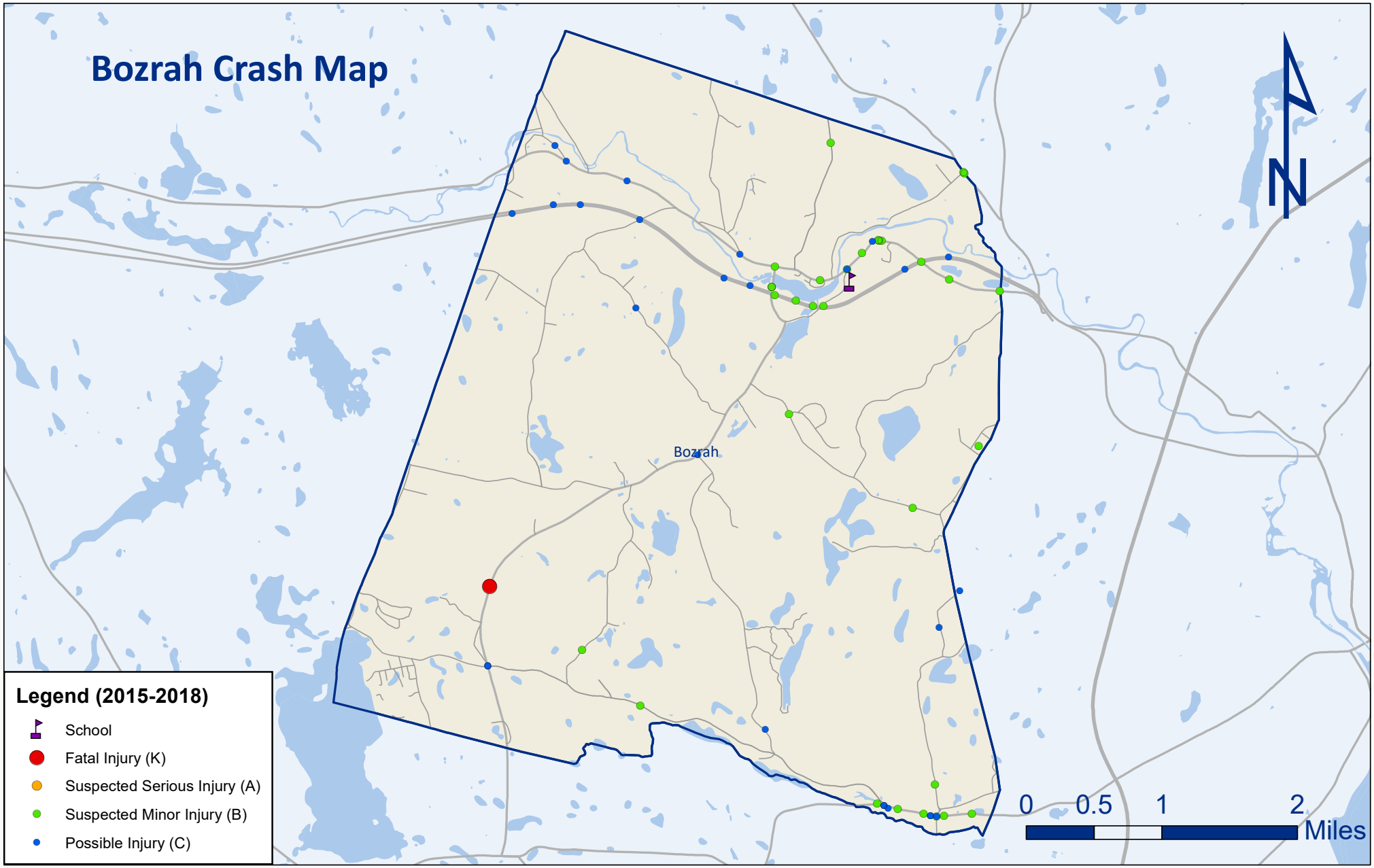
Bike and Pedestrian Issues

The Town had requested sidewalk funding from the State. It was to extend the sidewalk on CT-608 (Norwich-Colchester Turnpike/Fitchville Road) from Haughton Road east to the Post Office, located at 181 Fitchville Road. The sidewalk funding was not awarded, so the Town may submit the sidewalk project in two phases in the future. First Selectman Mr. Pianka indicated that this is the only area in the Town where pedestrian traffic is prevalent.

Source: VN Engineers

Bozrah Total Crashes by Severity

Crash Severity	2015	2016	2017	2018
Fatal Injury (K)	1	0	0	0
Suspected Serious Injury (A)	0	0	0	0
Suspected Minor Injury (B)	8	10	8	5
Possible Injury (C)	8	4	11	4
Total Injury Crashes	17	14	19	9


Bozrah Crash Map
Bozrah
N
0
0.5
1
2
Miles
Legend (2015-2018)
School
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)

Field Site Inventory

CT-87 (Norwich-Lebanon Road) and Stockhouse Road

The intersection of Stockhouse Road and CT-87 (Norwich-Lebanon Road) is an unsignalized three-legged intersection with Stockhouse Road under stop control. There are high volumes of heavy vehicles associated with the surrounding commercial land uses and high travel speeds along CT-87 (Norwich-Lebanon Road) through the intersection. In addition, a commercial driveway serving a major gravel operation is offset to the south by approximately 60 ft across from Stockhouse Road. Intersection sight distance for heavy vehicles and speeding along CT-87 (Norwich-Lebanon Road) can make it difficult for heavy vehicles to identify an appropriate gap to enter CT-87 (Norwich-Lebanon Road) from Stockhouse Road and the commercial driveway.

Recommendations:

- Consider center line rumbles along CT-87 (Norwich-Lebanon Road).
- Increase enforcement to address high travel speeds in CT-87 (Norwich-Lebanon Road).
- Consider additional or improved intersection ahead warning signs.

Wawecus Hill Road at Old Salem Road and Noble Hill Road

This is a three-legged intersection with all-way stop control. Wawecus Hill Road approaches from the northwest; Old Salem Road approaches from the northeast; and Noble Hill Road approaches from the south. Pavement markings were not present at the time of the site visit. Only the northern edge of the roadway between Wawecus Hill Road and Old Salem Road has a bituminous curb. The intersection has soft curves between adjacent legs. Traffic was light at this off-peak hour.

Recommendations:

- Extend curb lines into the roadway to better define turning movements and reduce speeds through the intersection.
- Consider regrading the southwest corner of the intersection to improve sight lines from the southbound Wawecus Hill Road to Old Salem Road looking to the right.
- Realign intersection to a more 90 degree turn if feasible.

CT-87 (Norwich-Lebanon Road) and Stockhouse Road

Old Salem Road and Wawecus Road

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-87 (Norwich-Lebanon Rd) and Stockhouse Rd	Speeding	Provide regular enforcement	Low
	Unsignalized intersection	Consider additional or improved intersection ahead warning signs	Low
	Undivided two lane roadway with 40 MPH speed limit	Consider center line rumble strips along CT-87 (Norwich-Lebanon Rd)	Low
Wawecus Hill Rd at Old Salem Rd and Noble Hill Rd	Sight distance	Realign intersection	Medium
Wawecus Hill Rd and CT-82 (Salem Tpke)	Sight distance	Realign and regrade intersection	Medium
	Vegetation	Manage vegetation-Coordinate with responsible agencies	Low
	Speeding on CT-82 (Salem Tpke)	Provide regular enforcement	Low
		Dynamic speed feedback signs	Low

TOWN OF COLCHESTER

2016 U.S. Census Population Estimate: 16,061
Area: 50 square miles
Population Density: 323 persons per square mile
2016 Vehicle Miles Traveled (VMT): 187,513,275
2016 VMT per Capita: 11,675
Setting: Rural
Date of Meeting with Town: August 6, 2019
Town and Regional Representatives: Art Shilosky (First Selectman), Sal Tassone (Town Engineer), Daphne Shaub (Asst. Town Planner), James Paggioli (DPW), Chris Cameron (Police Commission), Officer B. Kowalsky (PD)
Bike and Pedestrian Crash Totals: 6
Total Number of Crashes Involving Injuries or Fatalities, 2015-2018: 248

Source: VN Engineers

Overview

Colchester is a rural Town in New London County, bordered by Marlborough, Hebron, and Lebanon to the north, Lebanon to the east, East Haddam and Salem to the south, and East Hampton to the west. The Villages of Colchester Village Historic District, Westchester, and North Westchester are located within the Town limits. The Town's main thoroughfares are CT-2, CT-11, CT-16, CT-85, CT-149, CT-354, and CT-616.

Town Input

Fatal Crashes from 2015-2018

- CT-16 (Middletown Road) near Bulkeley Hill Road - The Town reported that there were two fatal crashes along CT-16 (Middletown Road) within 200 feet of each other, near the Bulkeley Hill Road intersection in June and July 2019. Both motorists were traveling at speeds nearly double the posted limit.
- CT-16 (Middletown Road) and CT-149 (Westchester Road) – Older driver involved in a fatal crash.
- CT-354 (Parum Road) – Older driver, as part of a roadway departure fatal crash.
- Windham Avenue – Motorcycle driver, as part of a substance-involved fatal crash.
- CT-616 (Norwich Avenue/Norwich-Cochester Turnpike) - Young driver, as part of a substance-involved fatal crash.
- CT-11 (Employees Memorial Highway) Off-Ramp and Lake Hayward Road - Angle fatal crash.

Speed

The Town representatives concurred that speeding is the major contributing factor to most crashes.

Traffic
The Town's ADT has increased due to construction developments and through traffic from both commuters and beach traffic in the summer. The speed differential between the local side road motorists and the state roadway users is a main issue.

CT-16 (Middletown Road/Linwood Avenue/Main Street/Lebanon Avenue)
This corridor has horizontal and vertical curvature. The physical constraints of minimal to no shoulders present in this corridor impede motorists' ability to pull over to the side of the roadway in cases of emergency. Motorists waiting to turn left at the intersections are exposed to potential front to rear crashes. The average estimated travel speed of motorists is 55-60 MPH, while the speed limit is posted at 45 MPH. The lack of street lights at intersections is another contributing factor in crashes.

The Town of Colchester noted that the Office of State Traffic Administration (OSTA) investigated sight distances along various side street intersections on CT-16 (Middletown Road/Linwood Avenue/Main Street/Lebanon Avenue), and it was determined that modifications were not required. Despite this, the State worked on improving the clear zone along the corridor through vegetation management to improve sight distance.

Deer crashes are also common along CT-16 (Middletown Road) and the Town would like deer fencing to be installed near the intersection with Miles Standish Road.

CT-85 (Amston Road/Broadway/Main Street/S Main Street/New London Road)
This roadway has centerline rumble strips.

CT-85 (New London Road) and West Road
The town discussed concerns with skew, minimal lighting, and vertical curvature present at this intersection. To address the sight distance challenges, turn-off pockets were installed at the intersection for exiting right-turns and entering left-turns.

Windham Avenue
This corridor has a narrow cross-section with no shoulders, high AM traffic, and a high number of driveway curb cuts. Motorists typically use this corridor as a cut-through route.

CT-149 (Westchester Road) and Cato Corner Road
At this skewed intersection, sight distance is an issue. In addition, CT-149 (Westchester Road) has some reverse curves.

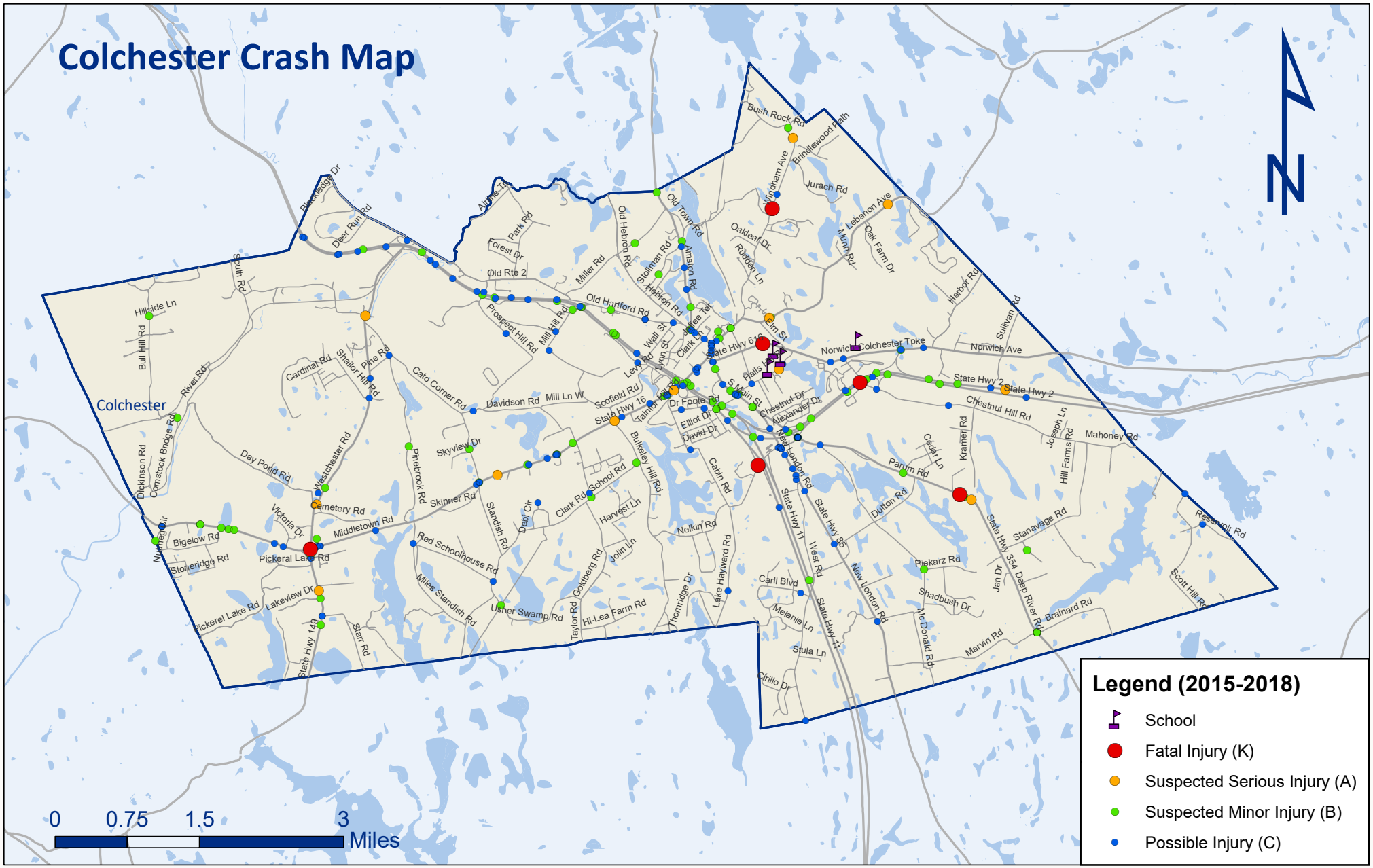
Bikes and Pedestrians
The center of the Town of Colchester is a pedestrianized area, and crosswalks are present. The State is updating all the traffic signals in the center to include exclusive pedestrian phasing. Colchester is actively providing accommodation and encouraging cyclist and pedestrians to get from the village center to Airline Trail, so pedestrian safety is a priority on those roadways. Most of the cyclists in town use the multimodal Airline Trail. The Town installed sharrow bike pavement markings on Halls Hill Road using a LOTCIP grant.

Enforcement
The state police use speed trailers to collect data for enforcement locations.

Upgrades in the center of Town
The State is replacing signals along CT-16 (Middletown Road/Linwood Avenue/Main Street/Lebanon Avenue) and CT-85 (Broadway/Main Street/S Main Street) with improvements to include video monitoring. The Town is working on adding ADA-compliant ramps and turn-lane modifications.

Colchester Total Crashes by Severity

Crash Severity	2015	2016	2017	2018
Fatal Injury (K)	0	1	2	3
Suspected Serious Injury (A)	5	4	2	1
Suspected Minor Injury (B)	26	15	23	27
Possible Injury (C)	35	37	39	28
Total Injury Crashes	66	57	66	59


Colchester Crash Map
Colchester
Legend (2015-2018)
School
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
0
0.75
1.5
3
Miles
N

Field Site Inventory

CT-16 (Middletown Road/Linwood Avenue/ Main Street/Lebanon Avenue)

This roadway consists of a two-lane road with one travel lane in each direction and very narrow shoulders. The posted speed limit is 45 MPH, but the travel speed is significantly higher along the corridor. This road has vertical and horizontal curvature, side street entrances, curb cuts for driveways, and no centerline rumple strips. Physical constraints (guiderails, ledges, drop-offs) and high speeds are present along the corridor. The road illumination is poor, with dark not-lighted conditions and traffic that includes trucks or oversized vehicles.

Recommendations:

- Install illumination at intersections.
- Continue high speed enforcement.
- Periodically post dynamic speed feedback signs at data-driven locations.
- Install center line rumbles strips.
- Where feasible, install left-turn lanes at intersections along CT-16 (Middletown Road/Linwood Avenue/Main Street/ Lebanon Avenue).

CT-16 (Middletown Road) and Waterhole Road

This is a stop-controlled T-intersection. Waterhole Road consists of a two-lane cross-section, with one travel lane in each direction, no shoulders, and has physical constraints (ledge and guide rail). This road intersects with CT-16 (Middletown Road) along a vertical and horizontal curve, with limited sight distance in both directions. The stop control is on the Waterhole Road approach to CT-16 (Middletown Road).

Recommendations:

- Install illumination at intersection.
- Continue high speed enforcement.
- Periodically post dynamic speed feedback signs along both approaches.
- Install center line rumbles strips.

CT-16 (Middletown Road)

Waterhole Road CT-16 (Middletown Road)

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-16 (Middletown Rd/Linwood Ave/ Main St/Lebanon Ave)	Speeding	Continue speeding enforcement	Low-Medium
		Periodically post dynamic speed feedback signs at data driven locations	Low
	High frequency of crashes	Install illumination at intersections	Low-Medium
		Install centerline rumble strips	Low
		Install left-turn lanes at intersections (where feasible)	Low-High
	Limited sight distance	Continue regulatory vegetation management	Low
CT-16 (Middletown Rd) and Waterhole Rd	Limited sight distance	Regular vegetation management	Low
	Speeding	Continue high speed enforcement	Low-Medium
		Periodically post dynamic speed feedback signs along both approaches	Low
	High frequency of crashes	Install illumination at intersection	Low-Medium
		Install centerline rumble strips	Low
CT-85 (New London Rd) and West Rd	Skewed alignment	Enhance delineation on West Rd	Low
		Advance intersection warning sign with flashing beacons	Low
	Limited sight distance	Investigate roadway illumination	Low-Medium
		Regular vegetation management	Low
Windham Ave	Narrow roadway	Corridor access management	Low-Medium
	High number of curb cuts		

TOWN OF EAST LYME

2016 U.S. Census Population Estimate: 18,886
Area: 42 square miles
Population Density: 450 persons per square mile
2016 Vehicle Miles Traveled (VMT): 209,750,170
2016 VMT per Capita: 11,106
Setting: Rural
Date of Meeting with Town: July 31, 2019
Town and Regional Representatives: Mark C. Nickerson (First Selectman)
Bike and Pedestrian Crash Totals: 8
Total Number of Crashes Involving Injuries or Fatalities, 2015-2018: 184

Source: VN Engineers

Overview

East Lyme is a rural town in New London County, bordered by Salem to the north, Montville and Waterford to the east, Long Island Sound to the south, and Lyme and Old Lyme to the west. The Villages of Niantic and Flanders are located in the Town of East Lyme. The Town's main thoroughfares are I-95, US-1, CT-156, and CT-161.

Town Input

Fatal Crashes from 2015-2018

The Town discussed the three fatalities recorded from the 2015 to 2018 collected data. The fatality on North Bride Brook Road involved a motorcycle crash due to excessive speed. There were two fatal crashes on CT-161 (Flanders Road), one involving a motorcyclist and a car that collided along a horizontal curve and the other involving a vehicle crossing into oncoming traffic. The curves on CT-161 (Flanders Road) will be included in the SCCOG corridor study. The corridor study will begin in mid-August and will include the corridor from Stop and Shop Supermarket (248 Flanders Road) to the intersection of CT-156 (Main Street). An additional fatal crash (passenger vehicle colliding with a motorcycle) occurred in 2019 on US-1 (Boston Post Road) north of the intersection of Spring Rock Road.

The Town cited the future Costco Wholesale as a traffic generator. A CTDOT I-95 (Connecticut Turnpike) Improvement Project with new on- and off-ramps and a new access road from I-95 (Connecticut Turnpike) directly to Costco would help the current traffic congestion near I-95 (Connecticut Turnpike). This construction project is anticipated to take approximately three years to complete.

CT-156 (Main Street)

This corridor from 211 Main Street to 409 Main Street is very congested, especially during summer months. The high volume of pedestrian traffic and jaywalking is an issue. The Town specifically identified the segment of CT-156 (Main Street) between the crosswalks at St. John's Church and Gumdrops & Lollipops as having heavy jaywalking due to the relatively long distance between these two crosswalks. The Town has added LED street and sidewalk lights; however, they still get complaints that the area is too dark at night. The Town of East Lyme inquired about possible rectangular rapid flashing beacons (RRFB) installation along this corridor.

CT-156 (West Main Street)
The majority of the driveways in this corridor from 157 West Main Street to Roxbury Road are associated with businesses. The speed limit is posted at 35 MPH, however motorists travel at higher speeds through this area. Sight line improvements and additional signage may be needed in this corridor. The sidewalks are sporadic through this corridor and do not provide full connection to the adjacent neighborhoods to the east and west sides. A left-turn lane into the gas station may reduce minor crashes. CT-156 (Main Street) has a high volume of bicyclists, but narrow shoulders hinder the bicyclists mobility and safety.

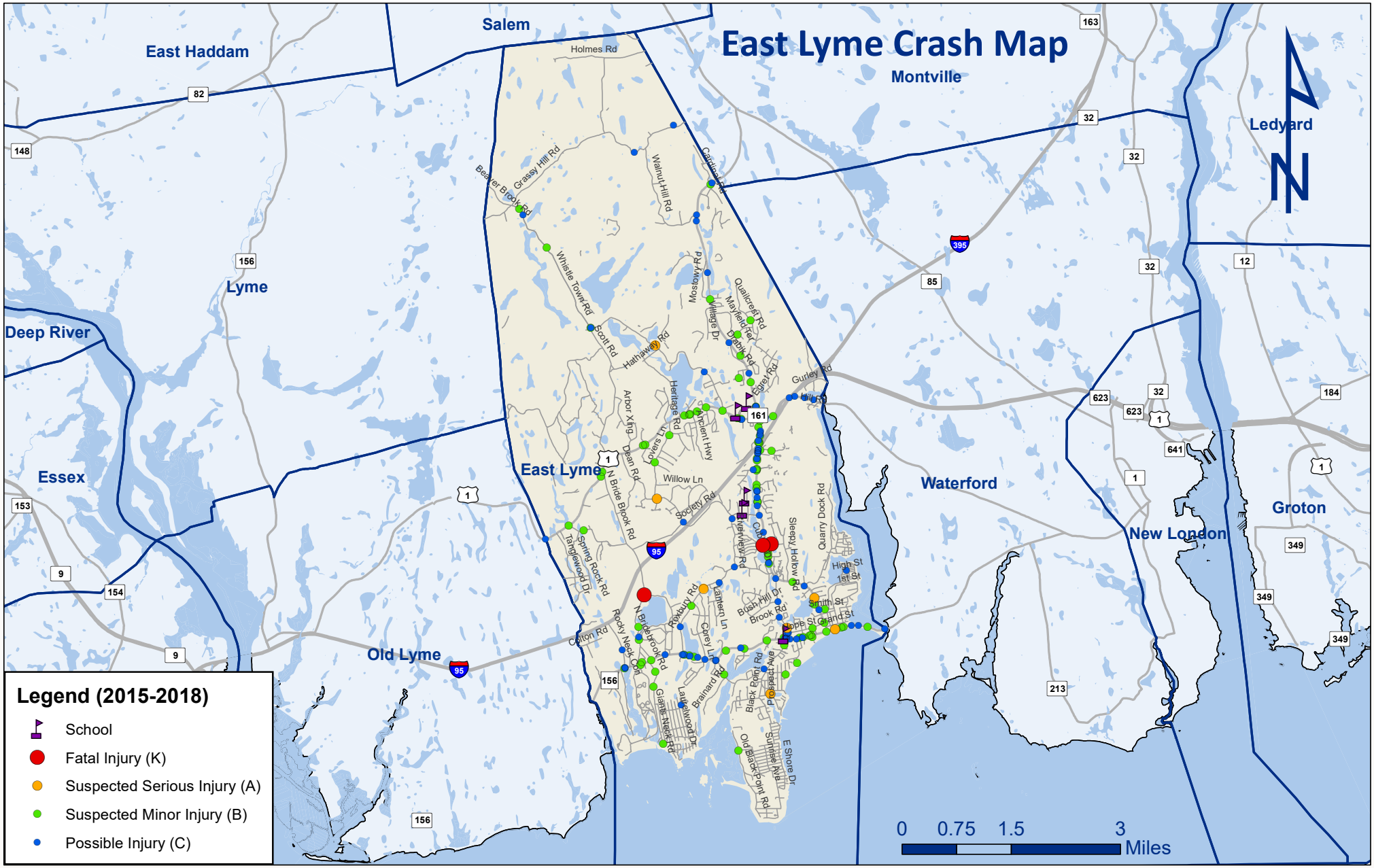
Enforcement Abilities and Strategies
The police department increases patrols during the peak beach season.

Bike and Pedestrian Issues
The Town commented that they had reached out to CTDOT requesting the crosswalks on CT-156 (Main Street) be repainted. As of July 31, 2019 the crosswalks in that location had not been repainted.

East Lyme Total Crashes by Severity

Crash Severity	2015	2016	2017	2018
Fatal Injury (K)	2	0	0	1
Suspected Serious Injury (A)	2	2	0	3
Suspected Minor Injury (B)	26	22	26	18
Possible Injury (C)	20	25	18	19
Total Injury Crashes	50	49	44	41

Source: VN Engineers


East Lyme Crash Map
East Haddam
Salem
Montville
Ledyard
Lyme
Deep River
Essex
East Lyme
Waterford
New London
Groton
Old Lyme
Holmes Rd
Grassy Hill Rd
Beaver Brook Rd
Walnut Hill Rd
Whistle Town Rd
Scott Rd
Hathaway Rd
Mosiman Rd
Village Dr
Qualicrest Rd
Mayfield Ter
Dabby Rd
Corey Rd
Gurley Rd
Arbor Xing
Heritage Rd
Ancient Hwy
Dean Rd
Lovers Ln
Willow Ln
N Bride Brook Rd
Society Rd
Tanglewood Dr
Spring Rock Rd
Rocky Neck Conn
N Bridebrook Rd
Rowbury Rd
Lantern Ln
Carey Ln
Brainard Rd
Giants Neck Rd
Lauralwood Dr
Clinton Rd
Riverview Rd
Old Post Rd
Sleepy Hollow Rd
Quarry Dock Rd
Bush Hill Dr
Brook Rd
Hope St
Grand St
Smith St
High St
1st St
Black Point Rd
Old Black Point Rd
Prospect Ave
Sunset Ave
E Shore Dr
Legend (2015-2018)
School
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
0 0.75 1.5 3
Miles

Field Site Inventory

CT-156 (Main Street) from CT-161 (Pennsylvania Avenue) to Lake Avenue

The CT-156 (Main St) corridor between CT-161 (Pennsylvania Ave) and Lake Ave generally consists of one travel lane in each direction, parallel parking on both sides of the street and adjacent commercial land uses. Sidewalks, street trees and pedestrian-style period lighting are on both sides of the street. The corridor experiences heavy pedestrian traffic with prevalent jaywalking, especially in the peak summer season. Sightlines are often blocked at the crosswalks when larger vehicles are parked before the crosswalks or vehicles are illegally parked too close to the crosswalk. Within this half-mile corridor, there are six painted crosswalks, two with standard crosswalk line striping with imprint pavement and four with traditional line striping.

Recommendations:

- Enforce no parking zones adjacent to crosswalks.
- Repaint crosswalks and utilize a uniform crosswalk striping pattern for all crosswalks.
- Consider installing curb extensions at each crosswalk location to improve sightlines.
- Consider installing rectangular rapid flash beacons (RRFBs) at higher pedestrian crossing locations.
- Consider a photometrics study to determine the effectiveness of the period lighting, particularly at the crosswalk locations.

CT-156 (West Main Street) from 157 West Main Street to intersection of Roxbury Road

This corridor is approximately 0.3 miles long and has two travel lanes and a posted speed limit of 35 MPH. Town staff has indicated that travel speeds through this corridor are excessive, while combined with numerous curb cuts creating many conflict points. The vertical curvature limits sight distance for vehicles.

While several residences exist within the corridor, there are more significant residential developments at the eastern and western limits of the study area. Segments of sidewalk exist along portions of the corridor, but they do not provide consistent connectivity for residents and/or business patrons. The relatively narrow shoulders do not provide safe walking space for pedestrians where sidewalks are missing. Improving sidewalk connectivity would enhance pedestrian safety.

Due to the numerous curb cuts, vehicles are often making left turns into and out of properties. The Henny Penny gas station and convenience store at 168 West Main Street generates many site trips. It was observed that when vehicles were stopped in the roadway awaiting a gap in opposing traffic, motorists bypassed the stopped vehicle by traveling slightly off road. There is no curb in this area, and the roadside gravel appears well worn.

Recommendations:

- Perform random speed enforcement to maintain travel speeds close to the posted speed limit.
- Install approximately 1,100 feet of sidewalk to fill in the "gaps" along the southern side of West Main Street.
- Install a turn lane or by-pass lane to accommodate left turning vehicles entering the Henny Penny gas station and convenience store at 168 West Main Street.

CT-156 (West Main Street)

CT-156 bypass at Penny Henny

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-156 (Main St) from CT-161 (Pennsylvania Ave) to Lake Ave	Limited sightlines at crosswalks	Repaint crosswalks and utilize a uniform crosswalk striping pattern for all crosswalks	Low
		Enforce no parking zones adjacent to crosswalks	Low-Medium
		Consider installing curb extensions at each crosswalk location to improve sightlines	Medium
	High pedestrian jaywalking traffic	Consider installing RRFBs at higher pedestrian crossing locations	Low-Medium
		Consider a photometrics study to determine the effectiveness of the period lighting, particularly at the crosswalk locations	Low-Medium
CT-156 (West Main St) from 157 West Main St to intersection of Roxbury Rd	Lack of sidewalks/Pedestrian safety	Install sidewalk to fill in the "gaps" along the southern side of West Main St	Medium
	Speeding	Provide regular speed enforcement	Low-Medium
	Left turns at the Henny Penny gas station	Install a turn lane or by-pass lane to accommodate left-turning vehicles entering the Henny Penny gas station and convenience store at 168 West Main St	Low-Medium

TOWN OF FRANKLIN

2016 U.S. Census Population Estimate: 1,955
Area: 19.6 square miles
Population Density: 100 persons per square mile
2016 Vehicle Miles Traveled (VMT): 47,559,135
2016 VMT per Capita: 24,327
Setting: Rural
Date of Meeting with Town: July 24, 2019
Town and Regional Representatives: Charles W. Grant III (First Selectman)
Bike and Pedestrian Crash Totals: 0
Total Number of Crashes Involving Injuries or Fatalities, 2015-2018: 80

Source: VN Engineers

Overview

Franklin is a rural Town in New London County, bordered by Windham to the north, Sprague to the east, Bozrah and Norwich to the south, and Lebanon to the west. The Town of Franklin includes the Village of North Franklin. The Town's main thoroughfares are CT-32, CT-87, CT-207, and CT-610.

Town Input

Fatal Crashes from 2015-2018
While no fatalities were listed on the UCONN Crash Data Repository data, it was noted by the First Selectman that in 2019, there was an older driver heavy vehicle fatal crash on CT-32 (Franklin Turnpike) approximately ½ mile north past Meeting House Road.

General Concerns
The Town identified speeding and especially distracted driving as their main concerns for both State routes and local rural roadways throughout the Town. The Town of Franklin stated that they had asked the State to reduce the speed limit on CT-32 (Franklin Turnpike/Windham Road) from 50 MPH to 40 MPH, but the request was denied. The Town does not currently have requirements for the installation of sidewalks as part of new or revised developments, but is open to this idea.

CT-32 (Franklin Turnpike)/Manning Road and CT-610 (Baltic Road)
This is an offset signalized intersection with potential signal timing issues. In addition, there is horizontal curvature along the southbound approach to the signal. There are various advance intersection warning signs along CT-32 (Franklin Turnpike). The posted speed limit is 50 MPH. A permit for a future golf course to the west of Manning Road was submitted. CTDOT received a mandate to install a left-turn lane to accommodate vehicles entering the golf course.

CT-32 (Franklin Turnpike)
During the afternoon rush hour, coming north into the Town on CT-32 (Franklin Turnpike) from just south of New Park Avenue to CT-87 (Norwich-Lebanon Road), there have been numerous front to rear crashes. The posted speed limit is 50 MPH and possible sight line issues are present for motorists exiting the gas station via wide curb cuts to proceed north on CT-32 (Franklin Turnpike).

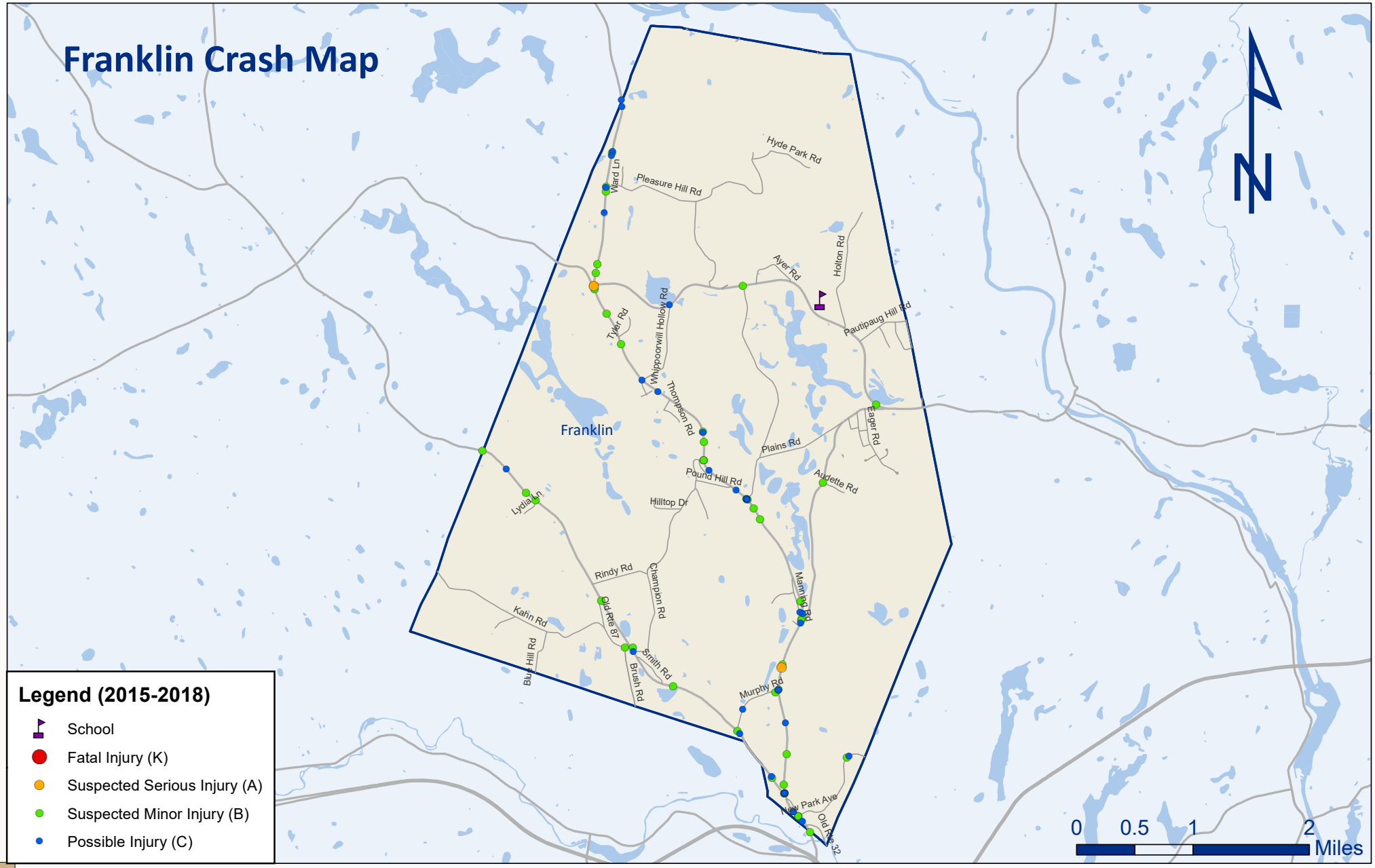
Enforcement Abilities and Strategies
The Town of Franklin does not have a Resident State Trooper. When requested, Troop K will send enforcement for seat belts, speed, and cell phone checks. This is a frequent occurrence along CT-32 (Franklin Turnpike) in the southern end.

Bike and Pedestrian Issues
There is heavy pedestrian traffic in the southern portion of town where residential rental properties are located. Pedestrians access a Southeast Area Transit (SEAT) bus stop in this area. In the future, the Town may seek funding for adding sidewalks and bike lanes. Mr. Grant indicated that due to the speeding along CT-32 (Franklin Turnpike/Windham Road), walking and biking along this corridor are too dangerous.

Franklin Total Crashes by Severity

Crash Severity	2015	2016	2017	2018
Fatal Injury (K)	0	0	0	0
Suspected Serious Injury (A)	0	2	0	0
Suspected Minor Injury (B)	14	12	11	7
Possible Injury (C)	10	12	3	9
Total Injury Crashes	24	26	14	16

Source: VN Engineers


Franklin Crash Map
Franklin
Hyde Park Rd
Pleasure Hill Rd
Ward Ln
Holton Rd
Ayer Rd
Pautipaug Hill Rd
Tyler Rd
Whippoorwill Hollow Rd
Thompson Rd
Eager Rd
Plains Rd
Audette Rd
Pound Hill Rd
Hilltop Dr
Lydia Ln
Rindy Rd
Champion Rd
Manning Rd
Kahn Rd
Old Rte 87
Smith Rd
Blue Hill Rd
Brush Rd
Murphy Rd
New Park Ave
Old Rte 32
N
0
0.5
1
2
Miles
Legend (2015-2018)
School
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)

Field Site Inventory

CT-32 (Franklin Turnpike) from New Park Avenue to CT-87 (Norwich-Lebanon Road)

This is a two-lane section of roadway with left-turn lanes at the signalized intersection. Parking is prohibited along both sides of the street. The posted speed limit is 50 MPH. Shoulders along this section range from one-foot to five-feet wide.

Several curb cuts exist in this corridor. Side streets and driveways are present along both sides of CT-32 (Franklin Turnpike).

The highway layout has a sweeping curve in this corridor. Northbound travel experiences inhibited sight lines approaching the CT-32 (Franklin Turnpike) and CT-87 (Norwich-Lebanon Road) intersection. Advance intersection warning signs are present.

Recommendations:

- Reduce the posted speed limit within this corridor, as it serves to be the entrance into Franklin Turnpike and has numerous, closely-spaced curb cuts for both property access/egress and unsignalized side street intersections.
- Provide regular speed enforcement.

CT-32 (Franklin Turnpike) at Manning Road and CT-610 (Baltic Road)

This is a signalized, four-way, offset intersection with CT-32 (Franklin Turnpike) running north/south, CT-610 (Baltic Road) to the east and Manning Road to the west. All approaches have one lane, with the exception of the northbound approach, which has a shared left/through lane and an exclusive right-turn lane. The posted speed limit along CT-32 (Franklin Turnpike) is 50 MPH.

No sidewalks or crosswalks exist at this intersection; however, pedestrian amenities are present. Pedestrian push buttons with sidewalk ramps exist at the northeast and southwest corners of the intersections. Due to the offset layout of the intersection, ramps and push buttons are located directly opposite one another.

The alignment of CT-32 (Franklin Turnpike) has horizontal curvature. Numerous, wide curb cuts exist along the western side of CT-32 (Franklin Turnpike) north of the intersection (along the inside of the curve). The Town representatives indicated travel speeds though this corridor are excessive, which when combined with numerous curb cuts, create many conflict points.

Recommendations:

- Provide regular speed enforcement to maintain travel speeds close to the posted speed limit.
- Enhance access management practices to reduce the size and frequency of curb cuts (driveways) along CT-32 (Franklin Turnpike).
- Install a crosswalk between the existing pedestrian push buttons and ramps.

CT-32 (Franklin Turnpike) near CT-87 (Norwich-Lebanon Road)


CT-32 (Franklin Turnpike) SB approaching Manning Road

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-32 (Franklin Turnpike) from New Park Ave to CT-87 (Norwich-Lebanon Rd)	Speeding	Reduce the posted speed limit within this corridor, as it serves to be the entrance into the Town of Franklin	Low
		Provide regular speed enforcement	Low-Medium
CT-32 (Franklin Turnpike) at Manning Rd and CT-610 (Baltic Rd)	Lack of pedestrian connectivity	Install a crosswalk between the existing pedestrian push buttons and ramps at intersection	Low
	Speeding	Provide regular speed enforcement	Low-Medium
	High number of curb cuts	Enhance access management practices to reduce the size and frequency of curb cuts (driveways) along CT-32 (Franklin Turnpike)	Low-Medium
CT-32 (Franklin Turnpike/Windham Rd)	Bike and pedestrian safety	Consider corridor access management to add bike and pedestrian amenities	Medium

TOWN OF GRISWOLD

2016 U.S. Census Population Estimate: 11,719
Area: 37.10 square miles
Population Density: 316 persons per square mile
2016 Vehicle Miles Traveled (VMT): 109,009,805
2016 VMT per Capita: 9,302
Setting: Rural
Date of Meeting with Town: September 16, 2019
Town and Regional Representatives: Todd Babbitt (First Selectman)
Bike and Pedestrian Crash Totals: 1
Total Number of Crashes Involving Injuries or Fatalities, 2015-2018: 134

Source: VN Engineers

Overview

Griswold is a rural town in New London County, bordered by Canterbury and Plainfield to the north, Voluntown to the east, North Stonington and Preston to the south, and Lisbon to the west. The Town of Griswold contains one Borough of Jewett City and the Villages of Doaneville, Rixtown, Glasgo, Hopeville, and Pachaug. The Town's main thoroughfares are I-395, CT-12, CT-138, CT-164, CT-165, and CT-201.

Town Input

Fatal Crashes from 2015-2018

- Norman Road - Unhelmeted scooter roadway departure fatal crash.
- Stone Hill Road – Speeding roadway departure fatal crash.
- CT-138 (Voluntown Road) - Front-to-front crash, substance-impaired and unrestrained occupant fatal crash.
- CT-164 (Preston Road) - Speeding motorcycle roadway departure fatal crash.
- CT-201 (Hopeville Road) - Older driver fatal crash.

CT-201 (Glasgo Road) and CT-165 (Shetucket Turnpike)
This is a four-way intersection with CT-165 (Shetucket Turnpike) under stop control. The CT-201 (Glasgo Road) southbound approach is on the uphill crest of a vertical curve making it difficult to anticipate the stop sign. The CT-201 (Glasgo Road) northbound approach is on the downhill crest of a vertical curve making it difficult to anticipate the stop sign. It is hard to judge gaps on CT-165 (Shetucket Turnpike) due to the high speed, and the adjacent vegetation. Based on the Town request, CTDOT Traffic Operations recently reviewed this intersection for a potential flashing beacon, but denied this request (TIR #057-1509-01), as CTDOT typically does not install new flashing beacons.

Edmond Road and Oakville Road
This is a severely skewed three-way intersection with the side street (Oakville Road) under stop condition. There is a significant vertical curve along the Edmond Road northbound approach. The combination of the severe skew and the vertical curve significantly impacts the sight distance for the motorists taking a left out of Oakville Road.

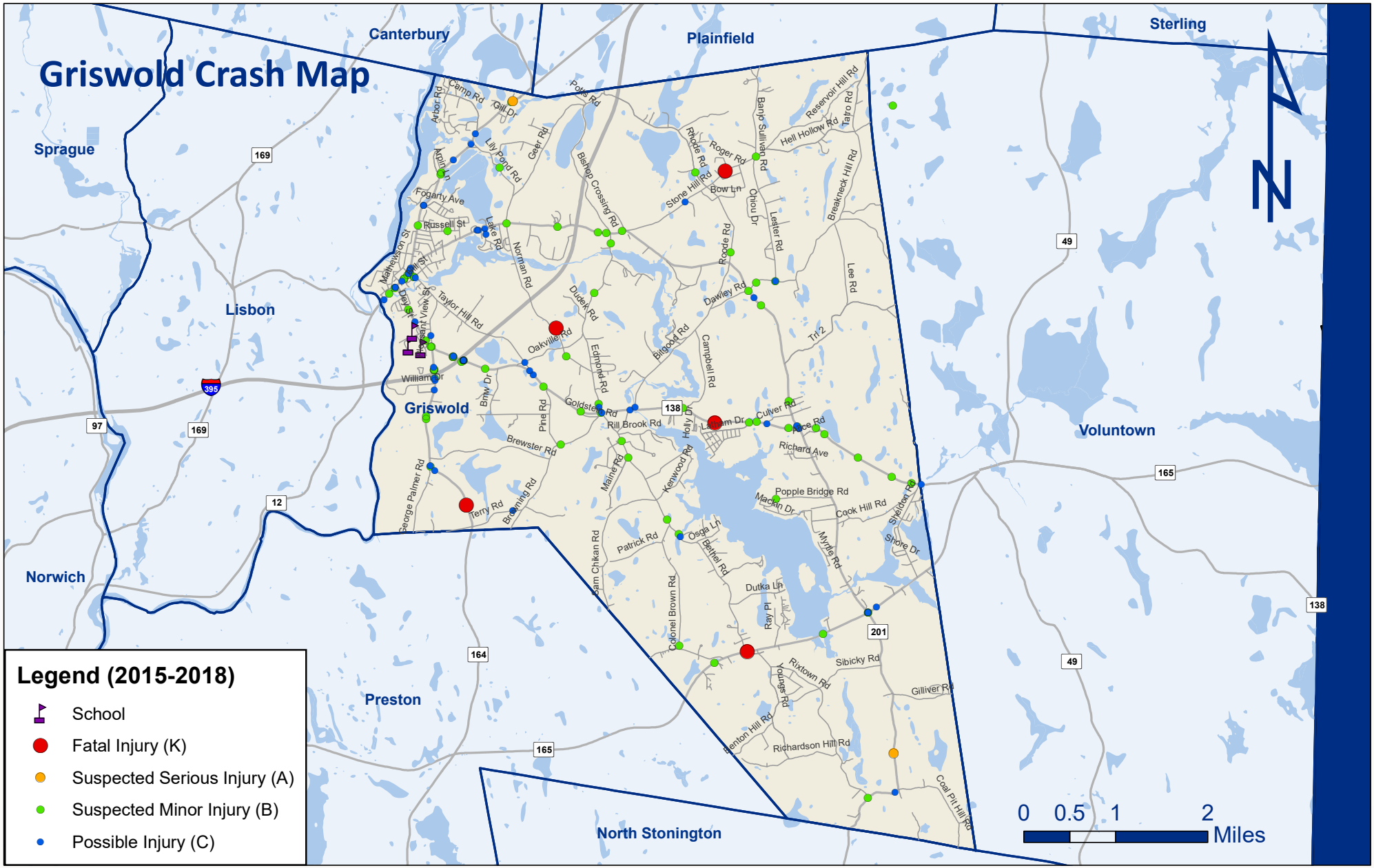
Rixtown Road and CT-201 (Glasgo Road)
This intersection has vegetation overgrowth, vertical and horizontal curves along CT-201 (Glasgo Road) through the intersection, and steep embankments along the eastbound approach of CT-201 (Glasgo Road) that cause poor sight lines from CT-201 (Glasgo Road) approaching Rixtown Road.

SCCOG Comments The Southeastern Connecticut Metropolitan Transportation Plan identifies the need for three alignment projects in the Town of Griswold. A continuous sidewalk from the Lisbon Landing area at I-395 (Connecticut Turnpike/Governor John Davis Lodge Turnpike) into Jewett City is desired. Parks and Recreation Director, Ryan Aubin, is working on a bike and pedestrian connectivity plan.

Source: VN Engineers

Griswold Total Crashes by Severity

Crash Severity	2015	2016	2017	2018
Fatal Injury (K)	0	1	2	2
Suspected Serious Injury (A)	1	0	1	0
Suspected Minor Injury (B)	20	19	17	20
Possible Injury (C)	15	16	12	8
Total Injury Crashes	36	36	32	30


Griswold Crash Map
Canterbury
Plainfield
Sterling
Sprague
Lisbon
Griswold
Voluntown
Norwich
Preston
North Stonington
Legend (2015-2018)
School
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
0 0.5 1 2
Miles
N

Field Site Inventory

CT-201 (Glasgo Road) and CT-165 (Shetucket Turnpike)

The intersection of CT-201 (Glasgo Road) and CT-165 (Shetucket Turnpike) is a rural unsignalized 4-leg intersection with the CT-165 (Shetucket Turnpike) approaches under stop control. CT-165 (Shetucket Turnpike) southbound approaches CT-201 (Glasgo Road) on an uphill grade with an advance stop ahead warning sign. CT-165 (Shetucket Turnpike) northbound approaches on a downhill grade with no advance stop ahead warning sign. Both stop signs on the CT-165 (Shetucket Turnpike) approaches are oversized, with the stop sign for the southbound approach set back from the intersection by approximately 45 feet to improve the visibility of the stop sign for the approaching motorists.

Recommendations:

- Consider clearing vegetation along the CT-201 (Glasgo Road) southbound approach to improve visibility of the upcoming intersection and relocate the stop sign to be adjacent to the stop bar.
- Consider installing an advance stop ahead warning sign for the CT-201 (Glasgo Road) northbound approach.
- Consider center line rumbles strips for CT-165 (Shetucket Turnpike).

Edmond Road and Oakville Road

The intersection of Oakville Road and Edmond Road is a rural unsignalized three-leg intersection with Oakville Road under stop control. Oakville Road intersects Edmond Road on a severe skew, compromising sight lines for motorists entering Edmond Road from the stop control on Oakville Road. In addition to the severe skew, there is a crest curve on the Edmond Road northbound approach that compromises sight lines for northbound motorists approaching the intersection on Edmond Road. The crest curve also further compromises sight lines for motorists entering Edmond Road from the stop control on Oakville Road.

Vegetation is overgrown at the intersection further impeding sight distance.

Recommendations:

- Consider realigning Oakville Road to intersect with Edmond Road closer to a 90-degree angle. This realignment will improve sight distances by addressing the intersection skew and vertical crest curve, by relocating the intersection towards the crest of the vertical curve.
- Trim and clear vegetation.

CT-201 (Glasgo Road) and CT-165 (Shetucket Turnpike)

Edmond Road at Oakville Road

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-201 (Glasgo Rd) and CT-165 (Shetucket Tpke)	Limited sight distance	Consider clearing vegetation along the CT-201 (Glasgo Rd) SB approach and relocate the stop sign to be adjacent to the stop bar	Low
	Speeding	Consider installing an advance stop ahead warning sign for the CT-165 (Shetucket Tpke) northbound approach.	Low
		Consider center line rumbles strips for the CT-165 (Shetucket Tpke) approaches to the intersection	Low
Edmond Rd and Oakville Rd	Skewed alignment	Consider realigning Oakville Rd to intersect with Edmond Rd closer to a 90-degree angle	Medium
	Vegetation overgrowth	Trim and clear vegetation	Low
Rixtown Rd and CT-201 (Glasgo Rd)	Limited sight distance	Regular vegetation management	Low
	Horizontal curve at intersection	Enhance curve warning signs	Low

TOWN AND CITY OF GROTON

2016 U.S. Census Population Estimate: 48,903
Area: 52.50 square miles
Population Density: 931 persons per square mile
2016 Vehicle Miles Traveled (VMT): 345,484,180
2016 VMT per Capita: 7,065
Setting: Urban
Date of Meeting with Town: August 5, 2019
Town and Regional Representatives: Patrice Granatosky (Mayor - Town of Groton), Keith Hedrick (Mayor - City of Groton), John Burt (Town Manager - Town of Groton), Steven Sinagra (Police Department)
Data-Identified High Frequency Crash Corridors: CT-12-Long Hill Road (From Gungywamp Road to Poquonnock Road)
Data-Identified High Crash Intersections: CT-12-Long Hill Road and Kings Highway
Bike and Pedestrian Crash Totals: 30
Total Number of Crashes Involving Injuries or Fatalities, 2015-2018: 476

Source: VN Engineers

Overview

Groton is an urban town and city in New London County, bordered by Ledyard to the north, Stonington to the east, Long Island Sound to the south, and Waterford and New London to the west. One of the principal communities in the Town is the City of Groton located along the Thames River, a dependent political subdivision of the Town of Groton. The Town's main thoroughfares are I-95, US-1, CT-12, CT-117, CT-184, CT-215, CT-349, CT-614, and CT-649.

Town and City Input

Fatal Crashes from 2015-2018

- Military Highway - Unrestrained occupant fatal crash.
- CT-184 (Gold Star Highway) - Angle fatal crash.
- Crystal Lake Road - Older pedestrian fatal crash.
- Flanders Road - Tree fell on vehicle fatal crash.
- CT-184 (Gold Star Highway) - Older driver intersection fatal crash.
- CT-184 (Gold Star Highway) - Substance-impaired fatal crash.
- US-1 (New London Road) - Roadway departure and speed-related fatal crash.

CT-12 and US-1 (Long Hill Road/Poquonnock Road/Fort Hill Road/New London Road/W Main Street)
These are two east-west corridors through Groton with the highest crashes and corresponding ADT. They are both commercial roadways with high curb cuts and multiple points of conflict.

CT-184 (Gold Star Highway)
This east-west corridor through the City and Town of Groton had three fatal crashes during the reported period.

CT-184 (Gold Star Highway) and CT-117 (North Road)
This is a high-volume signalized intersection. The traffic heading north and south on CT-117 (North Road) have no left-turn lanes or associated signal phases and angle crashes are common.

CT-12 (Long Hill Road)/US-1 (Long Hill Road)/I-95 (Jewish War Veterans Memorial Highway) Off-Ramp/Kings Highway
This is a five-legged signalized intersection with confusing geometry. The shifting lane designations make maneuvering a challenge when traveling from the I-95 (Jewish War Veterans Memorial Highway) off-ramp to CT-12 (Long Hill Road). The high speeds exiting the highway contribute to crashes and the challenges at this intersection. Right-turn on red (RTOR) is permitted from Kings Highway onto US-1 (Long Hill Road), however the skew is not conducive for RTOR. The Town stated a major concern is the speed differentials between the exiting highway traffic and the local traffic.

Parking Lot Crashes
The Town representatives stated that there are many motorized vehicle crashes in commercial parking lots, which do not get reported in the PR-1s.

Enforcement
The Town of Groton is using HVE DUI grants for enforcement. The City of Groton and the Town of Groton have separate police forces. The Town uses dynamic speed feedback signs, but they are only effective when present, and once removed motorists tend to return to speeding.

Pedestrian and Bike
The Town representatives stated that there are not a lot of bike crashes. Common cyclist routes are for commuters from New London, Mystic, and Noank to Groton. The City of Groton would like to increase bikeability and both the City and Town of Groton want bike lanes where feasible.

Joint Land Use Study
This study conducted by SCCOG is looking to create policy between local governments and the military.

Major Traffic Generators
The major traffic generators in the City and Town of Groton are Electric Boat, Pfizer, the Naval Submarine Base, and UConn's Avery Point. Electric Boat has staggered work times for employees to minimize congestion.

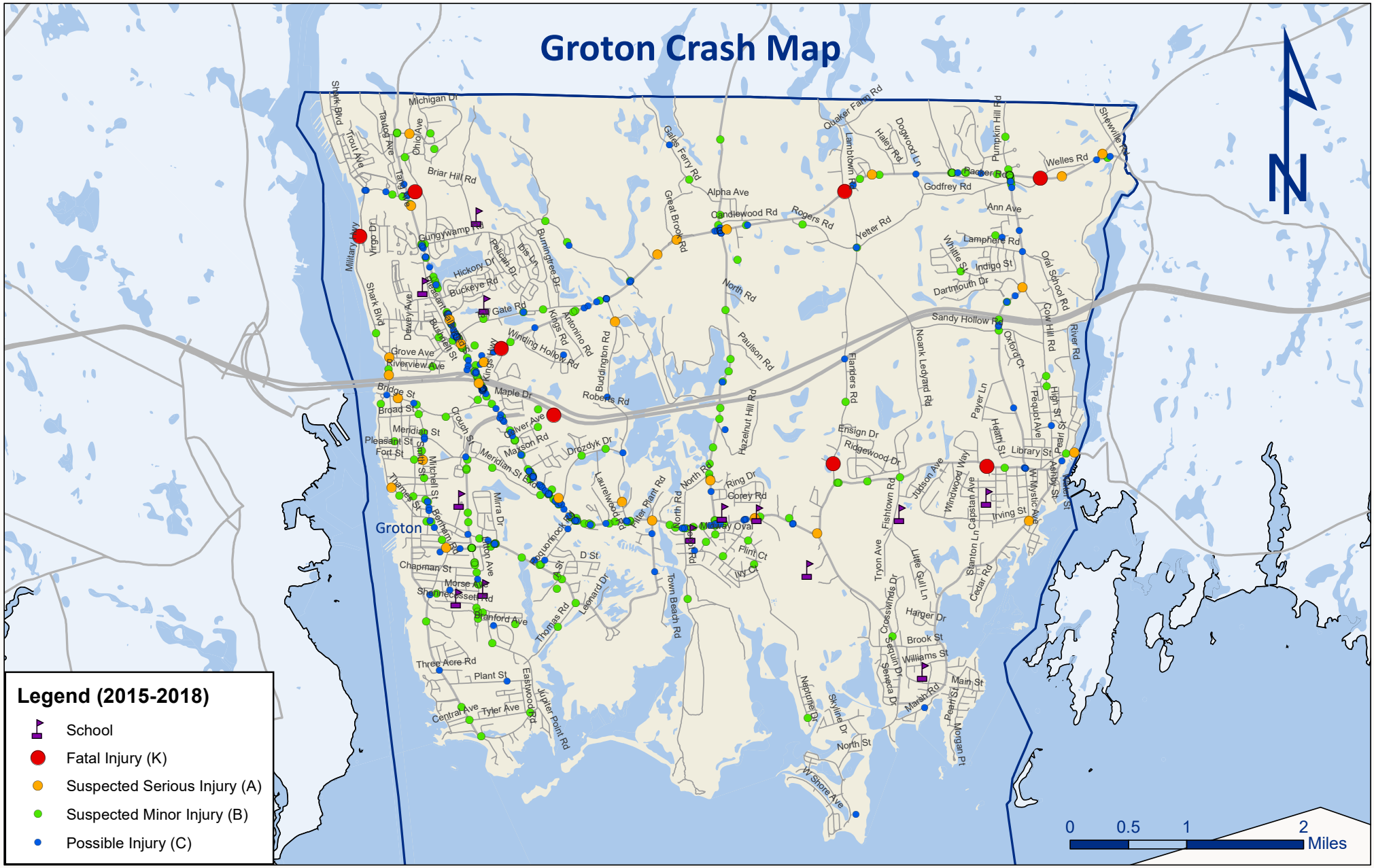
Mitchell Street and CT-349 (Clarence Sharp Highway)
There are two north-south corridors in the City of Groton. The high commuter traffic along both roads are generated from Electric Boat and Pfizer. The City looked at signal optimization along these two corridors, but it was not warranted according to the study.

Speed Control
The residents of Groton want speed humps to be installed, but the Groton Department of Public Works is concerned with the impact on maintenance and snow removal.

Rules of the Road
A police representative stated that many motorists do not seem to know or follow general roadway rules. In addition, the Navy Base has people from every state, so there seems to be some inconsistency in driving laws and customs.

Horizontal Curve Signs
CTDOT is planning to assess various locations in the near future as part of their on-going horizontal curve signing program.

Future Development
The Town is concerned how the following future developments will impact the traffic operations on the local and regional road system: 1400-unit housing development on Oral School Road and 300-unit development east of CT-12 (Long Hill Road) near Toll Gate Road. Some improvements could be necessary to ensure traffic mobility and safety. The City and DOT are currently in talks about a road diet on CT-349 between Chester Street and Benham Road.


Groton Crash Map
N
Legend (2015-2018)
School
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
0
0.5
1
2
Miles
Groton
Michigan Dr
Shark Blvd
Trout Ave
Tautog Ave
Ohio Ave
Briar Hill Rd
Military Hwy
Gungywamp Rd
Hickory Dr
Buckeye Rd
Pleasant Valley Rd
Gate Rd
Winding Hollow Rd
Kings Rd
Antonino Rd
Burningtree Dr
Pulcah Dr
Ibis Ln
Dewey Ave
Grove Ave
Riverview Ave
Bridge St
Broad St
Meridian St
Pleasant St
Fort St
Crouch St
Mitchell St
Thames St
Bethany Rd
Maple Dr
River Ave
Mayson Rd
Meridian St Ext
Mirra Dr
Chapman St
Morse Ave
Shennecossett Rd
Hanford Ave
Thomas Rd
Leonard Dr
D St
Three Acre Rd
Plant St
Central Ave
Tyler Ave
Eastwood Rd
Jupiter Point Rd
Buddington Rd
Roberts Rd
Drozdyk Dr
Laurelwood Dr
Miller Plant Rd
North Rd
Town Beach Rd
Gales Ferry Rd
Great Brook Rd
Alpha Ave
Candlewood Rd
Rogers Rd
Yetter Rd
Hazelnut Hill Rd
Paulson Rd
Ring Dr
Corey Rd
Midway Oval
Flint Ct
Ivy Ct
Quaker Farm Rd
Lambtown Rd
Haley Rd
Dogwood Ln
Pumpkin Hill Rd
Packer Rd
Godfrey Rd
Welles Rd
Sherwille Dr
Ann Ave
Lamphere Rd
Whittle St
Indigo St
Dartmouth Dr
Ora School Rd
Sandy Hollow Rd
Cow Hill Rd
River Rd
Flanders Rd
Noank Ledyard Rd
Oxford Ct
Payer Ln
Pequot Ave
High St
Hearl St
Hearl Ct
Hearl St
Ensign Dr
Ridgewood Dr
Library St
Judson Ave
Windwood Way
Capstan Ave
Stanton Ln
Irving St
W Mystic Ave
Ashby St
Water St
Fishtown Rd
Tryon Ave
Little Gull Ln
Cedar Rd
Hanger Dr
Brook St
Williams St
Main St
Crosswinds Dr
Seneca Dr
Mohegan Dr
Marsh Rd
Pearl St
Morgan Pt
Neptune Dr
Skyline Dr
North St
W Shore Ave

Field Site Inventory

CT-12, US-1 (Long Hill Road)and the I-95 (Jewish War Veterans Memorial Highway) Off-Ramp, Kings Highway

The intersection of CT-12, US-1 (Long Hill Road), Kings Highway and the I-95 off-ramp is a 5-leg signalized intersection that experiences high commuter traffic volumes during the morning and evening peak periods. The CT-12 northbound approach consists of two through lanes and an exclusive left lane. The southbound approach consists of a through lane and a through-right lane. The I-95 (Jewish War Veterans Memorial Highway) northbound off-ramp approach consists of a through lane and a through-right lane and the southbound off-ramp approach consists of a through-right lane and an exclusive left lane under yield control. The US-1 (Long Hill Road) approach is slightly skewed and consists of a single lane with right turn on red permitted. The slight skew and placement of the stop bar for the Kings Highway approach, coupled with high speeds entering the intersection from the northbound I-95 (Jewish War Veterans Memorial Highway) off-ramp impacts a motorist's ability to judge available gaps when executing a right turn on red from the US-1 (Long Hill Road) approach.

Recommendation:

- Consider prohibiting right turn on red for the US-1 (Kings Highway) approach.

CT-184 (Gold Star Highway) at CT-117 (North Road)

This is a high-volume four-leg signalized intersection. Traffic heading north and south on CT-117 (North Road) have no left-turn lanes or associated signal phases. CT-117 (North Road) northbound has one lane and southbound has a right-turn lane and a through/left-turn lane.

There are pedestrian crosswalks with actuated pedestrian signals along all corners of the intersection.

Recommendations:

- Investigate adding left-turn lane for CT-117 (North Road) northbound.
- Investigate making the CT-117 (North Road) southbound right-turn lane into a through/right-turn lane and converting the current through lane to an exclusive left-turn lane.
- Revise signal to include exclusive left-turn phase.

CT-12, US-1 (Long Hill Road) the I-95 (Jewish War Veterans Memorial Highway) Off-Ramp, and Kings Highway

CT-184 (Gold Star Highway) at CT-117 (North Road)

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-12, US-1 (Long Hill Rd)/Kings Hwy/I-95 (Jewish War Veterans Memorial Hwy) Off-Ramp	Limited gaps from US-1 (Long HIll Road) approach	Consider prohibiting right on red for the US-1 approach	Low-High
CT-184 (Gold Star Hwy) at CT-117 (North Rd)	Angle crashes	Investigate adding left turn for CT-117 (North Rd) NB	Medium
		Investigate making right-turn lane SB for CT-117 (North Rd) into right and through lane and converting current through lane to exclusive left-turn lane	Medium-High
		Revise signal to include exclusive left-turn phase	Medium
Brandegee Ave north of Branford Ave	High frequency of crashes	Provide regular speed enforcement	Low-Medium
		Add edge lines to narrow travel lanes (where feasible)	Low-Medium

Groton Total Crashes by Severity

Crash Severity	2015	2016	2017	2018
Fatal Injury (K)	2	2	2	1
Suspected Serious Injury (A)	7	10	6	6
Suspected Minor Injury (B)	67	56	64	63
Possible Injury (C)	45	45	58	42
Total Injury Crashes	121	113	130	112

TOWN OF LEBANON

2016 U.S. Census Population Estimate: 7,197
Area: 55.20 square miles
Population Density: 130 persons per square mile
2016 Vehicle Miles Traveled (VMT): 66,019,740
2016 VMT per Capita: 9,173
Setting: Rural
Date of Meeting with Town: July 29, 2019
Town and Regional Representatives: Betsy Petrie (First Selectman), Jay Tuttle (Town Highway Department), Philip Chester (Town Planner)
Bike and Pedestrian Crash Totals: 1
Total Number of Crashes Involving Injuries or Fatalities, 2015-2018: 95

Source: VN Engineers

Overview

Lebanon is a rural town in New London County, bordered by Columbia and Windham to the north, Windham and Franklin to the east, Colchester and Bozrah to the south, and Hebron and Colchester to the west. The Town of Lebanon's main thoroughfares are CT-2, CT-16, CT-87, CT-207, CT-289, and CT-616.

Town Input

Fatal Crashes from 2015-2018

- Clubhouse Road-Young substance-impaired driver fatal crash (2015).
- Clubhouse Road-Young substance-impaired driver fatal crash (2018).
- McCall Road-Distracted driving fatal crash.
- Kick Hill Road -Speed-related double fatal crash.
- CT-289-Roadway departure fatal crash.

General Comments

The Town does have a Resident State Trooper available for enforcement 40 hours per week.

The Town of Lebanon has approximately 100 miles of road, 15 miles of which are unpaved. The local school district will be installing school zone signs with flashing yellow lights along Exeter Road in the vicinity of the middle school and the high school to promote driver safety through this corridor.

The Town staff has requested that the CTDOT review posted speed limits along certain roadways to potentially reduce the posted limits due to roadway geometry. The Town is in the process of marking all collector roads with double yellow centerlines by the year 2020. These roadways often contain single yellow centerline markings.

Clubhouse Road and Olenick Road

The intersection of Clubhouse Road and Olenick Road is currently a two-way stop-controlled (TWSC) intersection, but the Town would like to make this intersection an all-way stop-controlled (AWSC), which would mean erecting stop signs on Clubhouse Road, with the goal of slowing traffic through the corridor and mitigating poor sight lines. Clubhouse Road is narrow and curvy.

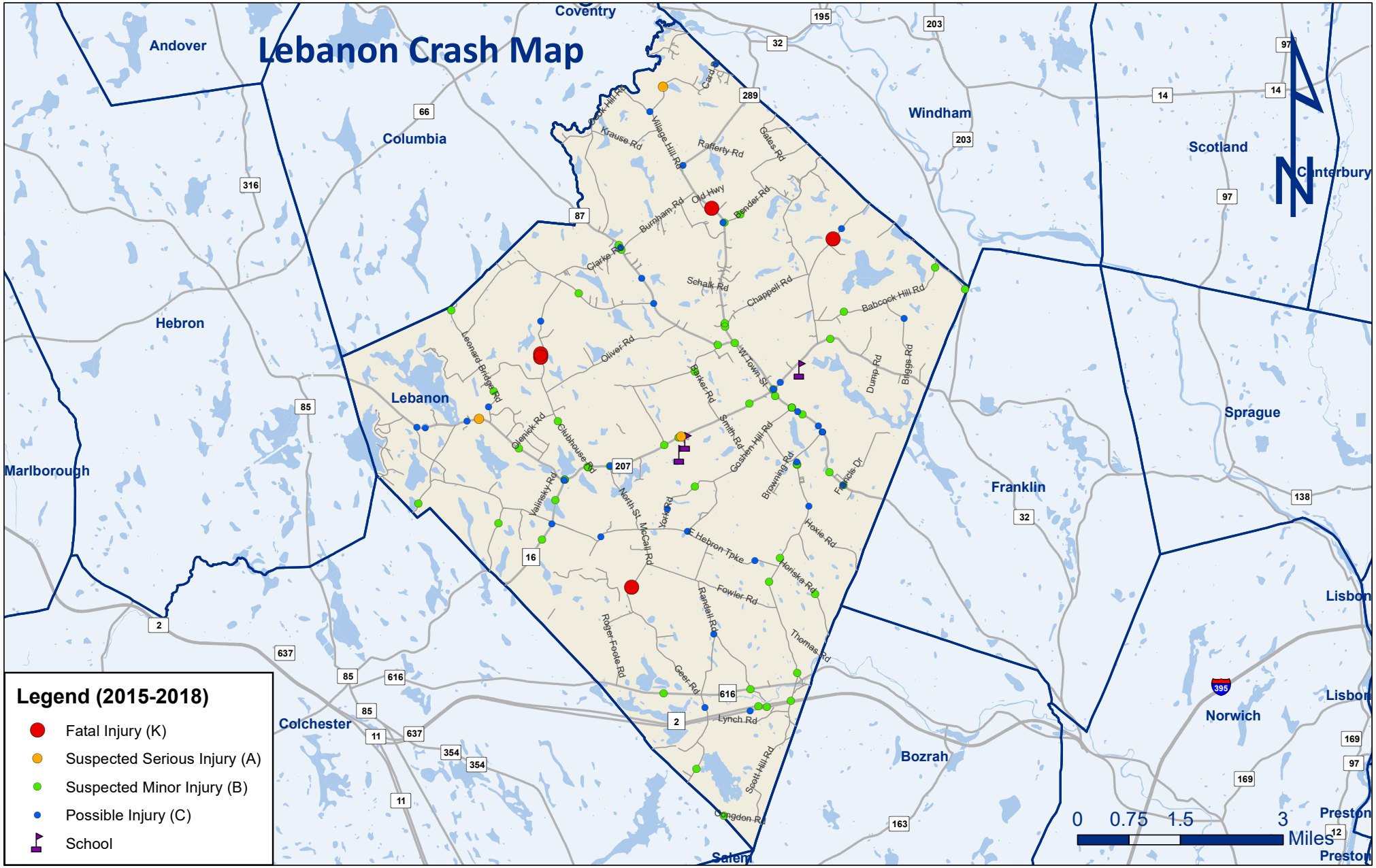
McCall Road/Geer Road
This section of roadway from Church Road to Brookview Drive has many horizontal and vertical curves and excessive travel speeds. One fatality has occurred along this corridor.

Bicyclists and Pedestrians
There are currently six at-grade multi-use trail crossings over roadways in the Town of Lebanon. The crossings, markings, and signs are slated for installation in August 2019. Pedestrian activity is not common throughout the Town and typically only occurs in the vicinity of the Town Hall and the library, though pedestrians do commonly walk the path that loops around the Town Green.


Source: VN Engineers

Lebanon Total Crashes by Severity

Crash Severity	2015	2016	2017	2018
Fatal Injury (K)	1	1	2	2
Suspected Serious Injury (A)	0	1	2	0
Suspected Minor Injury (B)	12	12	11	16
Possible Injury (C)	8	7	11	9
Total Injury Crashes	21	21	26	27


Lebanon Crash Map
Coventry
Andover
Columbia
Windham
Scotland
Canterbury
Hebron
Lebanon
Marlborough
Sprague
Franklin
Lisbon
Norwich
Bozrah
Colchester
Salem
Preston
Krause Rd
Village Hill Rd
Rafferty Rd
Gates Rd
Burnham Rd
Old Hwy
Bender Rd
Clarke Rd
Schalk Rd
Chappell Rd
Babcock Hill Rd
Oliver Rd
Leonard Bridge Rd
Baker Rd
Mt Town St
Dump Rd
Biggs Rd
Olenick Rd
Clubhouse Rd
Smith Rd
Goshen Hill Rd
Browning Rd
Francis Dr
Valinsky Rd
North St
McCall Rd
York Rd
E Hebron Tpke
Hoxie Rd
Horiska Rd
Fowler Rd
Randell Rd
Roger Foote Rd
Thomas Rd
Geer Rd
Lynch Rd
Scott Hill Rd
Congdon Rd
0 0.75 1.5 3 Miles
Legend (2015-2018)
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
School

Field Site Inventory

Clubhouse Road north of Olenick Road

Clubhouse Road is a rural residential road with one travel lane in each direction, a worn centerline and a 22-foot cross-section. The section of Clubhouse Road north of Olenick Road has a series of horizontal and vertical curves, experiences high travel speeds, and has minimal warning signs.

Recommendations:

- Restripe centerline and edge lines.
- Consider centerline rumble strips at key locations.
- Assess installation of advance curve warning and chevron signs.

McCall Road/Geer Road from Church Road to Brookview Road

This is a rural, 18 to 20-foot wide roadway. During the field visit, the roadway was in the process of being resurfaced with chip seal pavement gravel. The vertical and horizontal curves along the road, paired with the still-loose gravel, made for driving conditions which required driving below the posted speed limit. There were several chevrons posted along McCall Road at curve locations; however, these signs lacked retroreflectivity.

The alignment of the McCall Road/Geer Road intersection with Taylor Bridge Road includes a relatively sharp curve along the major roadway, and the approach of Taylor Bridge Road has a grade of approximately four percent. Should a southbound motorist misjudge the curve, they would likely end up in the side street and struggle to return to the main road. This would result either in a vehicle-to-vehicle collision or a roadway departure.

Recommendations:

- Provide regular speed enforcement to maintain travel speeds close to the posted speed limit.
- Install dynamic feedback speed limit signs in locations where the Resident State Trooper and Town staff deem appropriate.
- Install retroreflective curve warning signs (chevrons) alongside roadway at sharp curve areas.
- Install guiderail at curves where side slopes warrant such measures.
- Install high friction surface treatments through curves.

Clubhouse Road north of Olenick Road

McCall Road/Geer Road SB at Taylor Bridge Road

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
Clubhouse Rd north of Olenick Rd	Lack of warning signs	Assess installation of advance curve warning and chevron signs	Low
	Speeding at curves	Restripe centerline and edge lines	Low
		Consider centerline rumble strips at key locations	Low
McCall Rd/Geer Rd from Church Rd to Brookview Dr	Speeding	Provide regular speed enforcement	Low-Medium
		Install dynamic speed feedback signs	Low
	Vertical and horizontal curvatures	Install retroreflective curves warning signs (chevrons) alongside roadway at sharp curve areas	Low
		Install guiderail at curves where side slopes warrant such measures	Low
		Install high friction surface treatment through curves	Low

TOWN OF LEDYARD

2016 U.S. Census Population Estimate: 14,911
Area: 40.00 square miles
Population Density: 373 persons per square mile
2016 Vehicle Miles Traveled (VMT): 85,183,700
2016 VMT per Capita: 5,713
Setting: Rural
Date of Meeting with Town: August 1, 2019
Town and Regional Representatives: Fred Allyn, III (Mayor), John Rich (Chief, Town Police Department)
Data-Identified High Crash Intersections: Foxwoods Boulevard and Fox Tower Drive
Bike and Pedestrian Crash Totals: 9
Total Number of Crashes Involving Injuries or Fatalities, 2015-2018: 209

Source: VN Engineers

Overview

Ledyard is a rural town in New London County, bordered by Preston to the north, North Stonington and Stonington to the east, Groton to the south, and Waterford and Montville to the west. The principal communities of Ledyard are Ledyard Center and the Gales Ferry section. The Town's main thoroughfares are CT-2, CT-12, CT-117, and CT-214.

Town Input

Fatal Crashes from 2015-2018
The Town discussed the seven fatalities on non-limited access highways from the 2015 to 2018 collected data. Many of the fatal crashes were noted to be related to distracted or substance-impaired driving or speeding. A 2019 fatal motorcycle crash was also noted on Avery Hill Road.

General Comments
The Town of Ledyard has requirements for the installation of sidewalks as part of new and revised developments in certain areas mandated by the Town. The Town has improved sight lines at the intersection of CT-214 (Iron Street) and Shewville Road. This was accomplished by removing the tall shrubs on one corner and replacing them with grass. The Shewville Road curve mitigation improvements have been approved..

CT-214 (Iron Street)
The speed limit in this corridor from Highview Terrace to Spicer Hill Road is posted at 30 MPH, but then abruptly reduces to 20 MPH directly before a horizontal curve. This portion of CT-214 (Iron Street) has very narrow to no shoulder width. The upper portion of Spicer Hill Road is offset from the lower portion of Spicer Hill Road. The sight lines are limited for motorists turning left from the upper portion of Spicer Hill Road onto CT-214 (Iron Street) west.

CT-117 (Colonel Ledyard Highway)
This corridor from Ledyard Congregational Church to CT-214 (Iron Street/ Stoddards Wharf Road) has heavy pedestrian traffic, especially in summer months with the popular farmers market. The speed limit is posted at 30 MPH. Parallel on-street parking is available and may impede vehicles from seeing pedestrians in this crosswalk. Mayor Fred Allyn III would like additional signage at this crosswalk or a rapid rectangular flashing beacon (RRFB) at this location.

CT-2 (Norwich-Westerly Road/Foxwoods Boulevard) bypass past Foxwoods Casino

The speed limit is posted at 50 MPH, however speeding is common through this area. There are two traffic signals on Foxwoods Boulevard, where many front to rear crashes occur. The directional travel is separated by a double yellow center line, and no barriers are present. This highway has experienced a recent front to front crash.

Enforcement Abilities and Strategies

The police chief noted that the Foxwoods Casino has a huge impact on the volume of traffic in the eastern portions of Ledyard. While there were seven fatalities during the last four years, historically the crash data has been decreasing. The police are visible in Town and are out enforcing the speed limits. The police department targets areas of known concern related to speeding and unsafe driving; particularly CT-214 (Iron Street) and Shewville Road. The police share resources with Groton and Stonington.

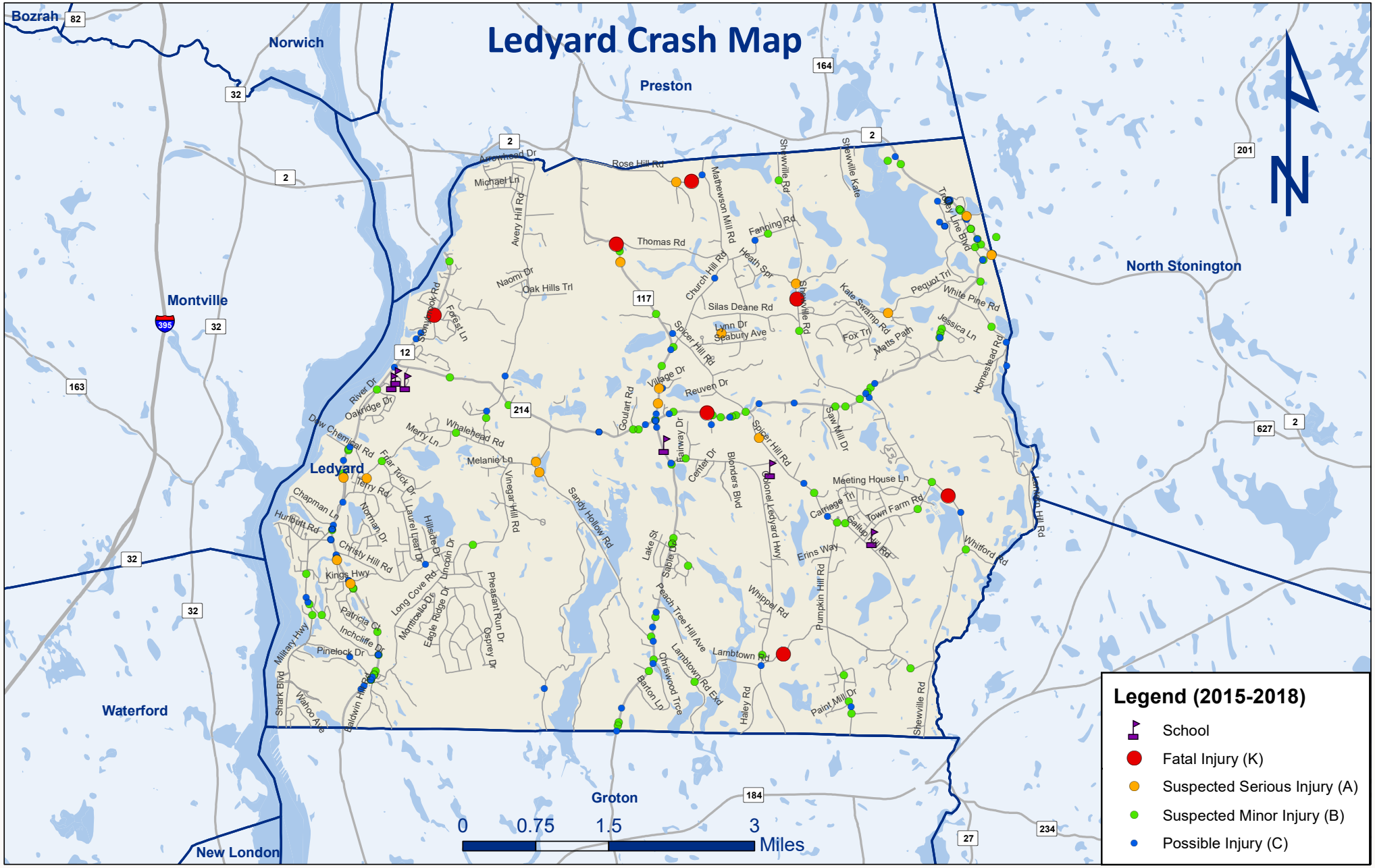
Ledyard Total Crashes by Severity

Crash Severity	2015	2016	2017	2018
Fatal Injury (K)	2	3	2	0
Suspected Serious Injury (A)	3	6	2	6
Suspected Minor Injury (B)	32	20	26	22
Possible Injury (C)	27	19	25	14
Total Injury Crashes	64	48	55	42

Bike and Pedestrian Issues

The Town is concerned about the pedestrian crossing near the Town Hall (741 Colonel Ledyard Highway) and the Town Green. During the summer months, when the farmers market is held, the volume of pedestrians increases tremendously. The Town would like either new signage or perhaps a RRFB at this location. While the school building across the street from the Town Hall is closed, the buyer of the property is proposing 60 one-and two-bedroom units, with an additional 12 units for an adult, over 55 residence. As such, the Town of Ledyard will have an influx of additional pedestrians in this area.

Source: VN Engineers


Ledyard Crash Map
Bozrah
Norwich
Preston
Montville
North Stonington
Ledyard
Waterford
Groton
New London
Legend (2015-2018)
School
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
0
0.75
1.5
3
Miles
N

Field Site Inventory

CT-214 (Iron Street) and Spicer Hill Road

The intersection of CT-214 (Iron Street) and Spicer Hill Road is an offset intersection with Spicer Hill Road under stop control. Through the intersection, CT-214 (Iron Street) generally consists of a 22-foot cross-section, a travel lane in each direction, no shoulder, and a reduced speed limit of 20 MPH, due to a sharp horizontal reverse curve just east of the intersection. The speed limit prior to the posted warning speed limit is 30 MPH. The sight lines are obstructed at the Spicer Hill Road southbound approach by vegetation along CT-214 (Iron Street).

Recommendations:

- Consider center line rumbles strips through the horizontal curve.
- Assess installation of additional curve waning and advisory speed signs.
- Speed enforcement.

CT-117 (Colonel Ledyard Highway) from Ledyard Congregational Church to CT-214 (Iron Street/Stoddards Wharf Road)

This corridor is considered Ledyard Center. CT-117 (Colonel Ledyard Highway) is a two-lane roadway with on-street parking available within sections nearest the Town Hall and the police department. The posted speed limit is 30 MPH. Sidewalks are present along much of this corridor; however, there are missing segments of sidewalk, or they exist only along one side of CT-117 (Colonel Ledyard Highway). There is a crosswalk at the northern limit of this corridor at CT-214 (Iron Street/Stoddards Wharf Road). Several mid-block crosswalks also exist throughout the corridor: at the Town Hall, at the grocery store driveway, and at the Congregational Church driveway. The crosswalks are all marked and signed to alert motorists of potential pedestrian activity.

Town staff indicated concern about parallel parked vehicles blocking the view of pedestrians attempting to cross the road. Enhanced signage could improve pedestrian visibility.

Recommendations:

- Construct sidewalks to provide continuity for pedestrian amenities throughout the corridor.
- Install RRFBs at mid-block crosswalks to enhance pedestrian visibility.
- Police should continue to monitor speeding and frequent crash locations.

CT-214 (Iron Street) and Spicer Hill Road

CT-117 (Colonel Ledyard Highway) missing sidewalks

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-214 (Iron St) and Spicer Hill Rd	Limited sight distance	Regulatory vegetation management at CT-214 (Iron St)	Low
	Speeding	Consider center line rumbles strips through the horizontal curve	Low
		Assess the installation of additional curve warning and advisory speed signs	Low
		Provide regular speed enforcement	Low-Medium
CT-117 (Colonel Ledyard Hwy) from Ledyard Congregational Church to CT-214 (Iron St/Stoddards Wharf Rd)	Speeding	Provide regular speed enforcement	Low-Medium
	Pedestrian safety	Construct sidewalks in areas that are currently lacking to help the continuity of pedestrian amenities throughout the corridor	Medium
		Install RRFBs at mid-block crosswalks to enhance pedestrian visibility	Low-Medium
CT-2 (Norwich-Westerly Rd/Foxwoods Boulevard) bypass past Foxwoods Casino	Speeding	Provide regular speed enforcement	Low-Medium
		Dynamic speed feedback signs	Low
	Front to rear crashes	Traffic signal retroreflective backplates	Low-Medium

TOWN OF LISBON

2016 U.S. Census Population Estimate: 4,281
Area: 16.60 square miles
Population Density: 258 persons per square mile
2016 Vehicle Miles Traveled (VMT): 77,144,940
2016 VMT per Capita: 18,020
Setting: Rural
Date of Meeting with Town: July 23, 2019
Town and Regional Representatives: Thomas Sparkman (First Selectman), Greg Bouchard (DPW), Trooper Rob Adams (Resident State Trooper)
Bike and Pedestrian Crash Totals: 4
Total Number of Crashes Involving Injuries or Fatalities, 2015-2018: 85

Source: VN Engineers

Overview

Lisbon is a rural town in New London County, bordered by Canterbury to the north, Griswold to the east, Preston to the south, and Sprague and Norwich to the west. The town center is also known as the Village of Newent. The Town's main thoroughfares are I-395, CT-12, CT-138, CT-169, and CT-600.

Town Input

Fatal Crashes from 2015-2018
The Town discussed the fatal crash identified on the map, as well as two additional fatal crashes that were identified as suspected serious injury crashes on the map. Though the data does not account for these additional two crashes as fatal, it is important to include this as input from the town. Involved motorists were not pronounced dead at the scene, but were instead taken by ambulance and passed away at the hospital. Both these instances were identified as suspected substance-impaired crashes.

CT-169 (South Burnham Highway) and Blissville Road
This curve is part of the CTDOT's ongoing horizontal curvature project to assess existing and excessive highway curves throughout the State of Connecticut. This location does not typically have injury crashes, but a substance-impaired and speeding motorcyclist fatality did occur. Speed enforcement is difficult in this area due to the few locations for trooper to position their vehicles and in addition, it is difficult to see posted speed limit signs.

CT-12 (River Road) and CT-138 (Newent Road)
The eastbound approach along CT-138 (Newent Road) was recently reconstructed by CTDOT to narrow the travel lanes. In addition, a segment of sidewalk with a buffer was installed. The approach narrowing eliminated the ability for bypass and right turn on red (RTOR) maneuvers. Frequently, if a queue exists at the intersection approach during the afternoon peak period, the motorists turning right onto CT-12 (River Road) often use the breakfast restaurant parking lot as a cut-through.

The eastern side of the intersection has a restaurant. The restaurant site has an excessive curb cut along most of its site frontage and sight lines from the driveway onto CT-12 (River Road) are poor.

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The eastern side of the intersection has a restaurant. The restaurant site has an excessive curb cut along most of its site frontage and sight lines from the driveway onto CT-12 (River Road) are poor.

One portion of the curb cut is separated by a raised island with a sign. This section is under signal control. There is only one signal head provided for this approach, which is meant for pedestrians and not vehicles exiting the restaurant driveway.

CT-12 (River Road)

The traffic entering/exiting along this corridor from McDonalds (97 River Road to Walmart Plaza) can be aggressive. The motorists make multi-lane shifts when turning right from Walmart Plaza onto CT-12 (River Road). Also, the motorists cut off others to jockey for position. The lane configuration and roadway layout seems confusing for drivers, especially those unfamiliar with the area.

The sidewalks are sporadic, though the Gulf gas station is constructing new sidewalks along their frontage as part of a reconstruction project. The curb cuts are closely spaced in this corridor, particularly north of I-395 (Connecticut Turnpike). A parcel at the southwest corner of the I-395 (Connecticut Turnpike)/CT-12 (River Road) interchange has been reviewed by the CTDOT and has been permitted to only allow right-in/right-out driveway configurations due to its proximity to the interchange.

Enforcement

The Town of Lisbon does have a Resident State Trooper. The Town shares a speed monitoring awareness radar trailer with neighboring Towns.

Lisbon Total Crashes by Severity

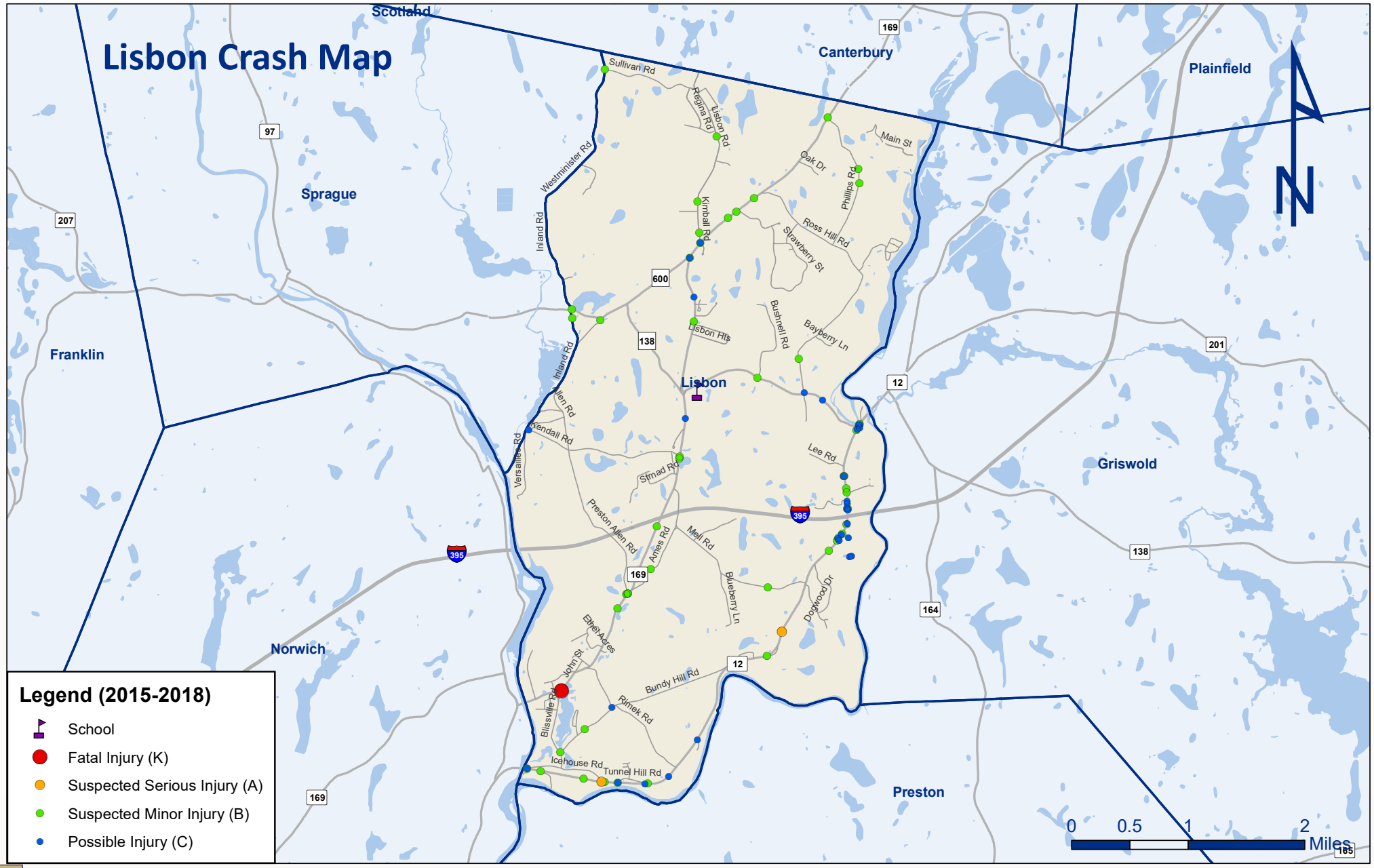
Crash Severity	2015	2016	2017	2018
Fatal Injury (K)	0	0	0	1
Suspected Serious Injury (A)	1	0	1	0
Suspected Minor Injury (B)	10	16	11	13
Possible Injury (C)	7	8	11	6
Total Injury Crashes	18	24	23	20

Bike and Pedestrian Items

The only high volume pedestrian corridor in Town is along CT-12 (River Road) between Walmart Plaza (south of I-395-Connecticut Turnpike) and CT-138 (Newent Road). The Town sought funds to install a sidewalk along this corridor but it was cost-prohibitive and CTDOT opposed sidewalks along CT-12 (River Road) beneath I-395 (Connecticut Turnpike) due to the roadway width. The Planning & Zoning Office typically requires new developments and redevelopments to install sidewalks along site frontage. The Town recently installed approximately 3,600 feet of sidewalk in the Strawberry Fields neighborhood, but they still have 4,300 feet of sidewalk to complete for the overall neighborhood project.

The Town of Lisbon's safety concerns that have been brought to the attention of SCCOG include the need for sidewalks from Lisbon Landing north to Jewett City (Town of Griswold).

Source: VN Engineers


Lisbon Crash Map
Scotland
Canterbury
Plainfield
Sprague
Franklin
Lisbon
Griswold
Norwich
Preston
Sullivan Rd
Regina Rd
Lisbon Rd
Main St
Oak Dr
Phillips Rd
Westminster Rd
Inland Rd
Kimball Rd
Ross Hill Rd
Strawberry St
Bushnell Rd
Bayberry Ln
Lisbon Hts
Kendall Rd
Versailles Rd
Lee Rd
Sfmad Rd
Preston Allen Rd
Ames Rd
Mell Rd
Blueberry Ln
Dogwood Dr
Ethel Ames
John St
Blissville Rd
Bundy Hill Rd
Rimek Rd
Icehouse Rd
Tunnel Hill Rd
Legend (2015-2018)
School
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
0
0.5
1
2
Miles
N

Field Site Inventory

CT-12 (River Road)/I-395 (Connecticut Turnpike) Ramp System/Adjacent Commercial Land Use

The CT-12 (River Road) corridor in the vicinity of the I-395 (Connecticut Turnpike) ramp system provides access to two very large commercial trip generators to the south of I-395 (Connecticut Turnpike) and smaller commercial trip generators to the north. The high traffic volumes contribute to significant traffic congestion during peak periods along this section of CT-12 (River Road). The corridor's large cross-section with multi-lane geometry to the south of I-395 (Connecticut Turnpike) requires merging and weaving between CT-12 (River Road) northbound motorists and the motorists leaving the commercial driveways to access the I-395 (Connecticut Turnpike) ramps. Just to the north of I-395 (Connecticut Turnpike), there are numerous commercial curb-cuts creating significant conflict points by vehicles entering and exiting CT-12 (River Road).

Recommendations:

- Consider adding additional wayfinding signs for motorists exiting the driveways, when entering CT-12 (River Road).
- Consider various access management techniques, such as curb-cut consolidation, for the section of CT-12 (River Road) north of I-395 (Connecticut Turnpike).

CT-12 (River Road) at CT-138 (Newent Road)

CT-12 (River Road) and CT-138 (Newent Road) are two-lane roadways under signal-control. Shoulders in this area range from two-feet to six-feet wide. The posted speed limit is 35 MPH. The only sidewalks in the area exist along the CT-12 (River Road) frontage of the restaurant located at the southwest corner. Additionally, a crosswalk with pedestrian push buttons is present at the southern leg of the intersection. There was some bicycle activity along CT-12 (River Road).

Field observations were completed during off-peak hours; however, queuing along CT-138 (Newent Road) extended beyond four vehicles during most cycles of the traffic signal. No right-turn cut-through activity was observed during the field visit, though the geometry of the intersection and parking lot lends itself to such activity.

The restaurant along the eastern side of CT-12 (River Road) has wide curb cuts. Nearly the entire site frontage is open to CT-12 (River Road), with the exception of two raised islands. One raised island at the northern portion of the property creates a travel lane, which is controlled by the intersection's traffic signal.

Recommendations:

- Improve access management along both sides of CT-12 (River Road) by reducing curb cuts and restricting flow to discourage cut-through activity.
- Construct sidewalks in areas that are currently lacking to help the continuity of pedestrian amenities throughout the corridor.
- Police should continue to monitor speeding and frequent crash locations.

CT-12 and I-395 Ramp System


Restaurant driveway approach to CT-12

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-12 (River Rd)/I-395 (Connecticut Tpke) Ramp System/Adjacent Commercial Land Use	Vehicular conflicts	Consider adding additional wayfinding signs for motorists exiting the driveways, serving the large commercial trip generators to assist in identifying the appropriate lane when entering CT-12 (River Rd)	Low
		Consider various access management techniques, such as curb-cut consolidation, for the section of CT-12 (River Rd) north of I-395 (Connecticut Tpke)	Low-Medium
CT-12 (River Rd) at CT-138 (Newent Rd)	Speeding	Provide regular speed enforcement	Low
	High number of curb cuts	Improve access management along both sides of CT-12 (River Rd) by reducing curb cuts and restricting flow to discourage cut-through activity	Low-Medium
	Lack of adequate pedestrian amenities	Construct sidewalks in areas that are currently lacking to help the continuity of pedestrian amenities throughout the corridor	Medium-High
CT-169 (S Burnham Hwy) and Blissville Rd	Speeding	Enhance curve warning signs	Low
		Dynamic speed feedback signs at CT-169 (S Burnham Hwy)	Low

TOWN OF MONTVILLE

2016 U.S. Census Population Estimate: 19,231
Area: 44.20 square miles
Population Density: 435 persons per square mile
2016 Vehicle Miles Traveled (VMT): 229,747,790
2016 VMT per Capita: 11,947
Setting: Rural
Date of Meeting with Town: August 19, 2019
Town and Regional Representatives: Ronald McDaniel (Mayor), Colleen Bezanson (Town Planner)
Data-Identified High Frequency Crash Corridors: CT-32 (Norwich-New London Turnpike) from Trading Cove Road to Woodland Drive
Data-Identified High Crash Intersections: CT-32 (Norwich-New London Turnpike) and CT-32 (W Thames Street) and Trading Cove Road
Bike and Pedestrian Crash Totals: 11
Total Number of Crashes Involving Injuries or Fatalities, 2015-2018: 356

Source: VN Engineers

Overview

Montville is a rural town in New London County, bordered by Bozrah and Norwich to the north, Preston and Ledyard to the east, Thames River and Waterford to the south, and East Lyme and Salem to the west. The Villages of Chesterfield, Mohegan, Oakdale, and Uncasville are located within the Town of Montville. The Town's main thoroughfares are I-395, CT-32, CT-82, CT-85, and CT-163.

Town Input

Fatal Crashes from 2015-2018

- Caroline Road – Go-Kart fatal crash.
- CT-32 (Norwich-New London Turnpike) south of Trading Cove Road – Motorcycle speed-related fatal crash.
- CT-2A (Officer Joseph N. Sachatello III Memorial Highway) - Wrong way driving fatal crash.
- CT-32 (Norwich-New London Turnpike) and Cook Drive – Motorcycle substance-impaired fatal crash.
- Raymond Hill Road - Substance-impaired fatal crash.

Old Colchester Road

This corridor has a high concentration of crashes due to speed, roadway departures, and distracted driving. The speed limit is posted at 30 MPH and dynamic speed feedback signs have been used in town. A road project for the realignment of Black Ash Road and repaving of Old Colchester in the same vicinity was completed, but the slopes are still very challenging in this area.

CT-32 (Norwich-New London Turnpike)

This corridor has high crash frequency and pedestrian-related crashes. The casino employees are the primary pedestrians and many of them are possibly unfamiliar with the rules of the road.

This concern was cited in the Road Safety Audit as part of the State's CT Community Connectivity Program (http://ctconnectivity.com/wp-content/uploads/2017/02/2017-02-17-Montville-RSA-Report.pdf). Also, the corridor has some pedestrian amenities, including sidewalks on the east side and crosswalks.

The intersection of CT-32 (Norwich-New London Turnpike) and CT-163/ Depot Road is being funded for improvements, including a left-turn lane. The section of CT-32 (Norwich-New London Turnpike) near Cook Road has vertical curvature and drainage issues, which make the roadway slippery in the winter. The bridge over CT-32 (Norwich-New London Turnpike) has drainage issues because the catch basins are rarely cleaned, which creates significant ponding and ice issues.

The workers from Mohegan Sun utilize the CT-32 (Norwich-New London Turnpike) and the CT-2A (Officer Joseph N. Sachatello III Memorial Highway) bridge which has no pedestrian accommodations and has long been the subject of the COG's proposal for increased capacity and modal accommodation. Further, the Regional Bike and Pedestrian Plan indicates a desire to provide a safe environment on Sunny Hill Drive/CT-433 (Massapeag Side Road/Fort Shantok Road) to provide access to the CT-2A (Officer Joseph N. Sachatello III Memorial Highway) bridge and reduce bicycle traffic on CT-32 (Norwich-New London Turnpike).

CT-32 (Norwich-New London Turnpike/W Thames Street)/Holly Hill Drive/New London Turnpike/Fitch Hill Road/Trading Cove Road

This is a confusing five-way offset intersection with a mix of stop and signal control. There is no stop control on New London Turnpike at Holly Hill Drive for the motorists traveling westbound. Sight distance for CT-32 (W Thames Street) southbound for motorists turning west onto New London Turnpike is limited. The high volume of traffic is generated by the Mohegan Sun Casino, Norwich Golf Course, and Three Rivers Community College. This intersection was also addressed in road safety audit as part of the State's CT Community Connectivity Program (http://ctconnectivity.com/wp-content/uploads/2017/02/2017-02-17-Montville-RSA-Report.pdf).

CT-32 (Norwich-New London Turnpike) and Occum Lane

This is a signalized intersection. The pedestrian signal on CT-32 (Norwich-New London Turnpike) may cause confusion because it looks like a traffic signal for the motorists. It is not a MUTCD compliant pedestrian countdown signal. The District has been notified of this and the Town is coordinating with the State.

CT-85 (Hartford-New London Turnpike) and Chesterfield Road/Grassy Hill Road

This is a four-way signalized intersection. It has queuing on CT-85 (Hartford-New London Turnpike) southbound due to its narrow cross-section and lack of a left turn lane or left-turn signal. CT-85 (Hartford-New London Turnpike) southbound needs a left-turn lane or left-turn clearance timing needs to be added to the signal. The fire department is located on the west side of CT-85 (Hartford-New London Turnpike) at the intersection and the lack of clearance can delay their response time.

CT-85 (Hartford-New London Turnpike)

This corridor between Grassy Hill Road/Chesterfield Road and Turner Road is a regional priority for accommodating bicyclists with a full five foot shoulder minimum facility. The signage and an edge or shoulder line rumble strip may reinforce the cyclist space. While congestion is one consideration, providing a safe space for all users should be prioritized.

There is a project currently under design for the subject area that involves potentially relocating CT-161 (Flanders Road) further south to the Deer Run intersection, which would improve the signalized intersections as well as reduce the number of intersections. There are environmental and historical impacts to this project. In addition, the ongoing safety projects on CT-85 (Hartford Road) in Salem have dramatically improved drainage, which is a significant hazard during freezing temperatures (freezing fog and snow).

CT-163 (Oakdale Road/Raymond Hill Road/Bozrah Road)

This corridor has a high concentration of crashes, a narrow cross-section, and drainage issues.

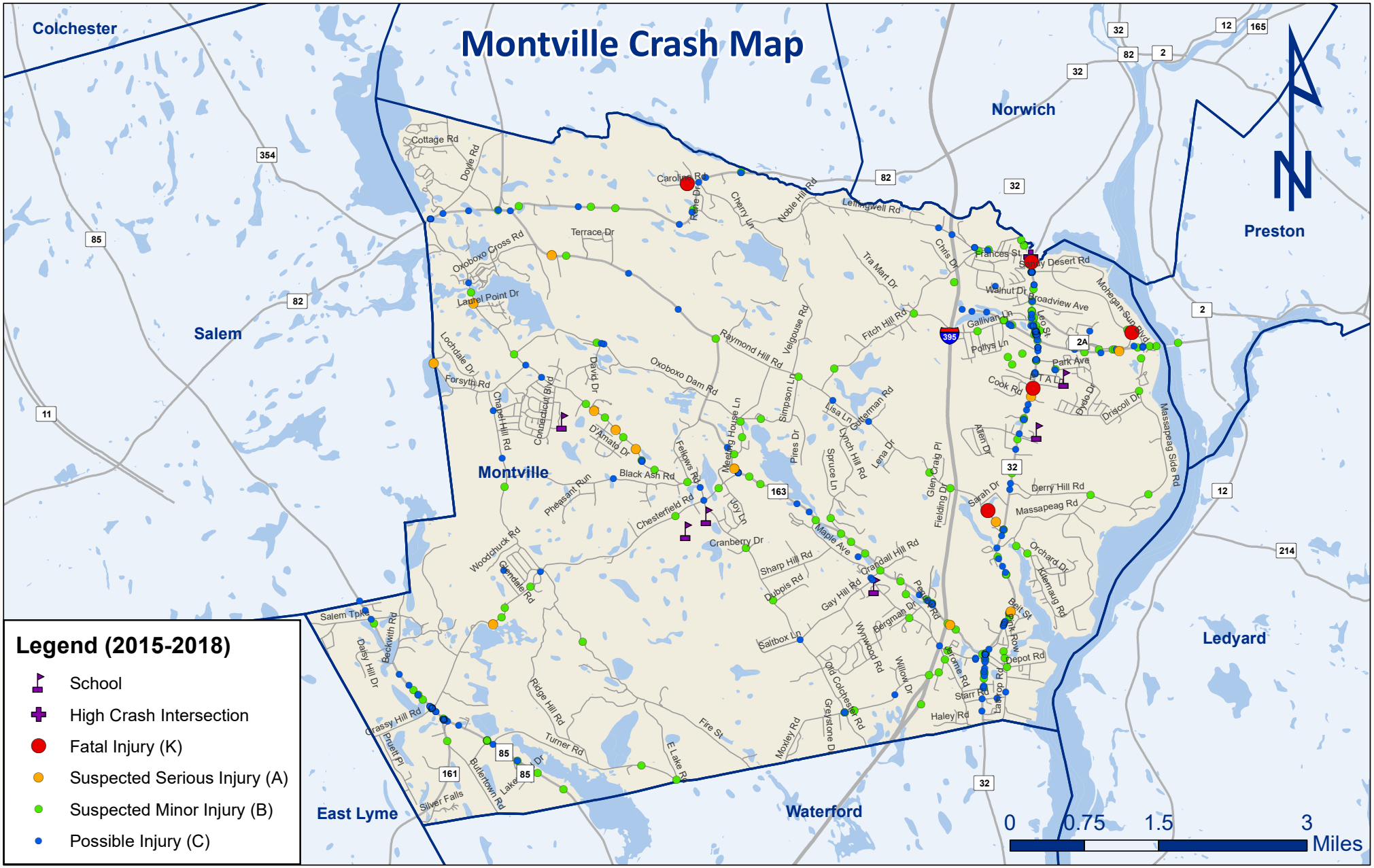
Enforcement
The Town of Montville has a resident trooper program, and it is the last of the larger towns to have this system of enforcement.

Pedestrian and Bikes
The Town of Montville needs safe pedestrian path walks and a language-targeted safety education program to benefit the community. The Regional Bike and Pedestrian Plan has looked into pedestrian accommodation from the CT-2A (Officer Joseph N. Sachatello III Memorial Highway) interchange to 3 Rivers Community College, including the surrounding streets.


Source: VN Engineers

Montville Total Crashes by Severity

Crash Severity	2015	2016	2017	2018
Fatal Injury (K)	3	1	0	1
Suspected Serious Injury (A)	5	4	3	1
Suspected Minor Injury (B)	31	49	31	50
Possible Injury (C)	57	44	40	36
Total Injury Crashes	96	98	74	88


Montville Crash Map
Colchester
Norwich
Preston
Salem
Montville
Ledyard
East Lyme
Waterford
Legend (2015-2018)
School
High Crash Intersection
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
0
0.75
1.5
3
Miles
N

Field Site Inventory

CT-32 (Norwich-New London Turnpike) at Stop and Shop

This is a four-way signalized intersection. CT-32 (Norwich-New London Turnpike) is a four lane, 35 MPH road with two lanes in either direction and two-foot shoulders. CT-32 (Norwich-New London Turnpike) is a main artery through Town with many businesses and commercial centers. Montville Commons Road is a two-lane access road with no posted speed limit that leads to a large parking lot and commercial center. Golden Road is a two-lane road with no posted speed limit that leads to a more residential area and terminates at Mohegan School.

The main concern here, according to the Town, is with the pedestrian signal. There is only one pedestrian signal for pedestrians crossing CT-32 (Norwich-New London Turnpike) east toward Golden Road, and the way it is oriented can be confusing for motorists at the Montville Commons approach. When the pedestrian signal turns green, drivers at the Montville Commons approach, who have a red light, can sometimes mistake the pedestrian green for their own green.

Recommendation:

- Remove the existing outdated signal and replace it with a MUTCD-compliant push button countdown pedestrian signal. In the meantime, louvers should be added to the existing signal.

CT-32 (Norwich-New London Turnpike)/Holly Hill Drive/New London Turnpike/Fitch Hill Road/Trading Cove Road

This is a five-way offset intersection with a mix of stop and signal control. Holly Hill Drive and Fitch Hill Drive form a stop controlled T-intersection. Holly Hill Drive is under stop control at New London Turnpike. New London Turnpike is under stop control for eastbound travel and under free flow for westbound. New London Turnpike intersects with CT-32 (Norwich-New London Turnpike) less than 100 feet east of the Holly Hill Drive intersection. This intersection is signalized.

Traffic is steady on both New London Turnpike and CT-32 (Norwich-New London Turnpike) making it difficult for motorists to find an adequate gap to exit Holly Hill Drive, especially due to the free flow on New London Turnpike from CT-32 (Norwich-New London Turnpike). The high volume of traffic is generated by the Mohegan Sun Casino, Norwich Golf Course, and Three Rivers Community College. The sight distance for CT-32 (Norwich-New London Turnpike) southbound turning west onto New London Turnpike is limited.

Recommendations:

- Consider prohibiting left turns onto Holly Hill Drive from New London Turnpike.
- Redirect motorists to access Holly Hill Drive from New London Turnpike via Old Fitch Hill Road.

CT-32 (Norwich-New London Turnpike) and Stop and Shop intersection with outdated pedestrian signal on left

Holly Hill Drive at New London Turnpike

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-32 (Norwich-New London Tpke) at Stop and Shop	Pedestrian signal is not MUTCD-compliant	Replace current signal with an MUTCD compliant pedestrian countdown signal	Medium
CT-32 (Norwich-New London Tpke)/ Holly Hill Dr/New London Tpke/Fitch Hill Rd/Trading Cove Rd	Intersection crashes	Consider prohibiting left turns onto Holly Hill Dr from New London Tpke	Low
		Redirect motorists to access Holly Hill Dr from New London Tpke via Old Fitch Hill Rd	Low
CT-163 (Oakdale Rd/Raymond Hill Rd/ Bozrah Rd)	High crash numbers	Consider access management	Low-Medium
		Potentially relocate CT-161 (Flanders Rd) further south to the Deer Run intersection	Medium-High
	Icy conditions	Investigate drainage and regularly clean catch basins	Low-Medium
CT-85 (Hartford-New London Tpke) and Chesterfield Rd/Grassy Hill Rd	Queuing at signal and blocking Fire Department access on CT-85 (Hartford-New London Tpke)	Add left-turn signal or left-turn clearance time for southbound motorists (Project 0085-0146, with FDP on November 2, 2022, may help address).	Medium
CT-32 (Norwich-New London Turnpike)	Pedestrian crashes	Speed enforcement	Low-Medium
		Extend sidewalks where pedestrian activity is highest	Medium-High
Bike and pedestrian safety	Bike and pedestrian safety	Sharrows and bike and pedestrian warning signs on Massapeag Side Rd/ Fort Shantok Rd and other identified high pedestrian and bike use roads	Low
		Dynamic speed feedback signs	Low
		Add a five-foot shoulder to CT-85 (Hartford-New London Tpke) from Grassy Hill Rd/Chesterfield Rd to Turner Rd	Low-Medium
		Strategies from Regional Bike and Pedestrian Plan	Low-High

CITY OF NEW LONDON

2016 U.S. Census Population Estimate: 26,984
Area: 10.76 square miles
Population Density: 2,508 persons per square mile
2016 Vehicle Miles Traveled (VMT): 152,079,805
2016 VMT per Capita: 5,636
Setting: Urban
Date of Meeting with Town: July 30, 2019
Town and Regional Representatives: Michael Passero (Mayor), Thomas Curcio (Chief-Fire Department), Sybil Tetteh (City Planner), Felix Reyes (City Director of Development & Planning), Steven Fields (City Chief Administrative Officer), Capt. Brian M. Wright (Police Department)
Data-Identified High Frequency Crash Corridors: CT-32-Mohegan Avenue Parkway (From City Line to Deshon Street); Colman Street (From Vauxhall Street to Jefferson Avenue); Bank Street (From Shaw Street to City Line)
Data-Identified High Crash Intersections: Colman Street and Jefferson Avenue; Bank Street and Shaw Street; Montauk Avenue and Fair Harbour Place Bike and Pedestrian Crash Totals: 111
Total Number of Crashes Involving Injuries or Fatalities, 2015-2018: 679

Source: VN Engineers

Overview

New London is a seaport city in New London County and a port of entry on the northeast coast of the United States. It is bordered by Waterford to the north and to the west, Groton to the east, and Long Island Sound to the south. The City's main thoroughfares are I-95, CT-32, and CT-213.

City Input

Fatal Crashes from 2015-2018

- CT-32 (Mohegan Avenue Parkway)-Substance-impaired pedestrian fatal crash.
- US-1 (Colman Street) - motorcycle roadway departure fatal crash.

General Concerns

The City of New London identified speeding as their main concern throughout the City. Another concern is their outdated traffic signals. The fire department noted that they would like Opticom detectors for the fire operations to avoid the congestion at intersections during emergencies, though this would not be permitted at State-owned signals. It was noted that signal timing and coordination issues need to be addressed at many intersections in the city. At CT-641 (Huntington Avenue) and Broad Street, the pedestrian signal malfunctions and stops traffic regardless of pedestrian presence.

The City has already secured funding for a roundabout at the Jefferson Avenue and Chester Street intersection and the project is moving forward. This project will be completed in 2020.

Montauk Avenue in vicinity of Mitchell College
While the speed limit is posted at 25 MPH, there is a long stretch where cars speed. There are frequent crashes, but they have not involved serious injuries to date. The City is concerned for the potential of serious crashes in this corridor. Mitchell College is currently relocating their guard shack closer to Montauk Avenue, which significantly reduces the available off-road queuing capacity. The City believes this will cause queuing of cars and possible crashes and/or delays.

US-1 (Colman Street)
The corridor from Jefferson Avenue to US-1 (Bank Street) consists of two one-way lanes. There is a high concentration of pedestrian traffic with prevalent jaywalking. This corridor is not bicycle friendly. On-street parking is available, but not heavily used due to the presence of driveways and sidewalks. Additional crosswalk improvements are needed. The City would like to investigate changing the one-way portion of Colman Street and Jefferson Avenue down to one lane, with dedicated bike lane or perhaps add sharrows.

US-1/CT-641 (Bank Street)
The corridor from CVS to Truman Street is very congested and has high pedestrian traffic. Patrons of the soup kitchen on Montauk Avenue create pedestrian-related congestion at this intersection. Some traffic calming may be necessary along Truman Street due to its wide cross-sections and signal timing issues.

New London Total Crashes by Severity

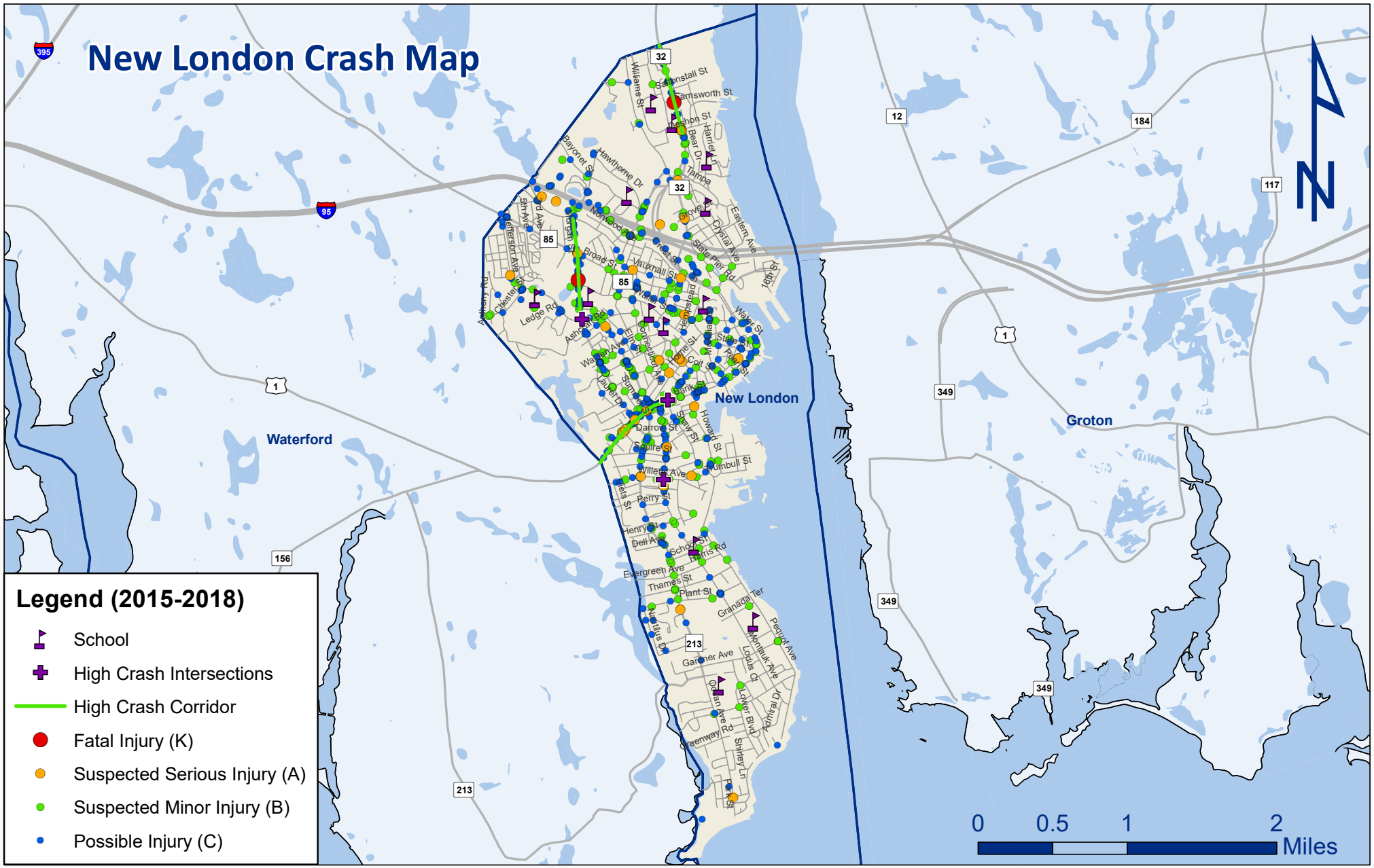
Crash Severity	2015	2016	2017	2018
Fatal Injury (K)	2	0	0	0
Suspected Serious Injury (A)	12	10	9	4
Suspected Minor Injury (B)	63	86	84	43
Possible Injury (C)	91	104	103	68
Total Injury Crashes	168	200	196	115

State Street and CT-641 (Huntington Street) (Courthouse Square)
This intersection has a high concentration of pedestrian traffic. The pedestrian phase occurs during every cycle, and it is not ADA compliant.

Enforcement Abilities and Strategies
The police department noted that most of the roadways in the city were posted at 25 MPH. However, in some areas, many vehicles travel at excessive speeds. The police department does utilize speed trailers.

Bike and Pedestrian Issues
Since the pedestrian fatal crash on CT-32 (Mohegan Avenue Parkway), the City sought Surface Transportation Funding-Urban (STPU) funding through SCCOG and it is planning on turning this roadway into a boulevard. In addition, speed trailers are set up for enforcement.

Source: VN Engineers


New London Crash Map
Legend (2015-2018)
School
High Crash Intersections
High Crash Corridor
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
New London
Waterford
Groton
0
0.5
1
2
Miles
N

Field Site Inventory

US-1 (Colman Street) from Jefferson Avenue to Bank Street

US-1(Colman Street), between Jefferson Avenue and Bank Street, is a one-way southbound street within a dense residential neighborhood. This section of US-1 (Colman Street) is approximately 4,000 feet long and consists of two southbound travel lanes, parallel parking on the western side of the street, and sidewalks with minimal snow shelves on both sides of the street. The corridor experiences heavy pedestrian traffic with prevalent jaywalking and the sidewalks are generally in poor condition. The corridor is not bicycle friendly due to the constrained cross-section associated with the two travel lanes and on-street parking. Jefferson Ave acts as the one-way northbound couple just to the east of US-1 (Colman Street).

Recommendations:

- Consider replacing the sidewalks and curbing along this section of US-1 (Colman Street).
- Consider assessing traffic volumes and characteristics and on-street parking characteristics associated with the one-way couple of Jefferson Avenue and US-1 (Colman Street). The assessment will assist in determining the feasibility of a road diet for these two corridors to potentially better accommodate bicycles.

US-1/CT-641 (Bank Street) from Spring Street to Truman Street

This corridor is approximately 800 feet in length and has four traffic signals. Bank Street has one through lane in the westbound direction, two through lanes in the eastbound direction, and a series of exclusive turn lanes at the intersection approaches. The posted speed limit is 25 MPH. Sidewalks exist along both sides of Bank Street and all side streets in this corridor. Crosswalks are present at all intersections; however, crosswalks do not exist at all legs of the intersections. Pedestrian push buttons and signal heads are available for pedestrian use. Crosswalk lengths range from approximately 50-feet long to 100-feet long.

Observations revealed that the traffic progression through this corridor often causes queuing that could lead to gridlock. This was mostly avoided by drivers maintaining open intersections on good faith. No signage was present directing drivers to not block intersections.

Recommendations:

- Incorporate traffic calming and streetscape measures to improve pedestrian movement. Bump-outs and/or pedestrian refuges can shorten crossing distances and length of time for pedestrian signal phases. This in turn could improve vehicular operations.
- Realign Truman Street such that its approach to Bank Street is closer to 90-degrees. This will reduce right-turn speeds and shorten the crosswalk length.
- Examine traffic signal phasing and retiming. Shorter queues can reduce the chance for gridlock situations and potential aggressive driving.
- Install signage to direct drivers to maintain clear intersections to reduce the chance for gridlock situations.

US-1 (Colman Street)

US-1 (Bank Street) and Spring Street

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
US-1 (Colman St) from Jefferson Ave to Bank St	Lack of pedestrian and bike amenities	Consider replacing the sidewalks and curbing along this section of US-1 (Colman St)	Medium-High
		Road diet for these two corridors to potentially better accommodate bicycles	Medium-High
US-1/CT-641 (Bank St) from Spring St to Truman St	Pedestrian safety	Incorporate traffic calming and streetscape measures to improve pedestrian movement. Bump-outs and/or pedestrian refuges can shorten crossing distances and length of time for pedestrian signal phases. This could improve vehicular operations	Low-Medium
		Realign the Truman St such that its approach to Bank St is closer to 90-degrees. This will reduce right-turn speeds and shorten the crosswalk length	Medium
	Congestion	Examine traffic signal phasing and retiming	Low-Medium
		Install signage to direct drivers to maintain clear intersections to reduce the chance for gridlock situations	Low
Montauk Ave in vicinity of Mitchell College	High crashes	Traffic signal retroreflective backplates	Low-Medium
	Speeding	Install dynamic speed feedback signs	Low
		Provide regular speed enforcement	Low-Medium

TOWN OF NORTH STONINGTON

2016 U.S. Census Population Estimate: 5,271
Area: 55.00 square miles
Population Density: 96 persons per square mile
2016 Vehicle Miles Traveled (VMT): 122,602,770
2016 VMT per Capita: 23,260
Setting: Rural
Date of Meeting with Town: August 7, 2019
Town and Regional Representatives: Michael Urgo (First Selectman), Juliet Hodge (Planning, Development & Zoning Official), Don Hill (Highway Foreman)
Bike and Pedestrian Crash Totals: 4
Total Number of Crashes Involving Injuries or Fatalities, 2015-2018: 98

Source: VN Engineers

Overview

North Stonington is a rural town in New London County bordered by Voluntown, Griswold, and Preston to the north, Rhode Island to the east, Stonington and Rhode Island to the south, and Ledyard and Preston to the west. The Town of North Stonington includes the settlements of Clarks Falls, Laurel Glen, Pendleton Hill, Ashwillet and the Village of North Stonington. The Town's main thoroughfares are I-95, CT-2, CT-49, CT-184, CT-201, and CT-216.

Town Input

Fatal Crashes from 2015-2018

- CT-201 (Cossaduck Hill Road) – Pedestrian fatal crash.
- CT-201 (Cossaduck Hill Road) - Front to front fatal crash.
- CT-2 (Norwich-Westerly Road) - Front to front fatal crash.
- CT-2 (Norwich-Westerly Road) and west of CT-184 (Providence-New London Turnpike) - Pedestrian fatal crash.
- CT-184 (Providence-New London Turnpike) - Substance-impaired, roadway departure fatal crash.
- CT-49 (Pendleton Hill Road) and Babcock Road – Motorcycle speed related fatal crash.

CT-49 (Pendleton Hill Road)
This corridor has numerous vertical and horizontal curves, high volumes of traffic, a high concentration of motorcycle use, and limited cross-section with no shoulder.

CT-201 (Cossaduck Hill Road)
This corridor also has numerous vertical and horizontal curves, high volumes of traffic, a high concentration of motorcycle use, and limited cross-section with no shoulder.

CT-2 (Norwich-Westerly Road/Foxwoods Boulevard)
This corridor has the highest volume of traffic. The Foxwoods Resort Casino is a major traffic generator for CT-2 (Norwich-Westerly Road/Foxwoods Boulevard). Substance-impaired driving rates are high along this corridor.

CT-184 (Providence-New London Turnpike)
This corridor has high traffic volumes from the Foxwoods Resort Casino.

Enforcement
The Town of North Stonington confirms that revenue from enforcement has been on the rise. In addition, the Town uses three mobile dynamic speed feedback signs which they move from location to location when necessary.

Pedestrian and Bike
The Town of North Stonington has active recreational biking throughout the Town with approximately three formal biking events each year.

Joint Land Use Study
The study conducted by SCCOG will create policy between local governments and military.

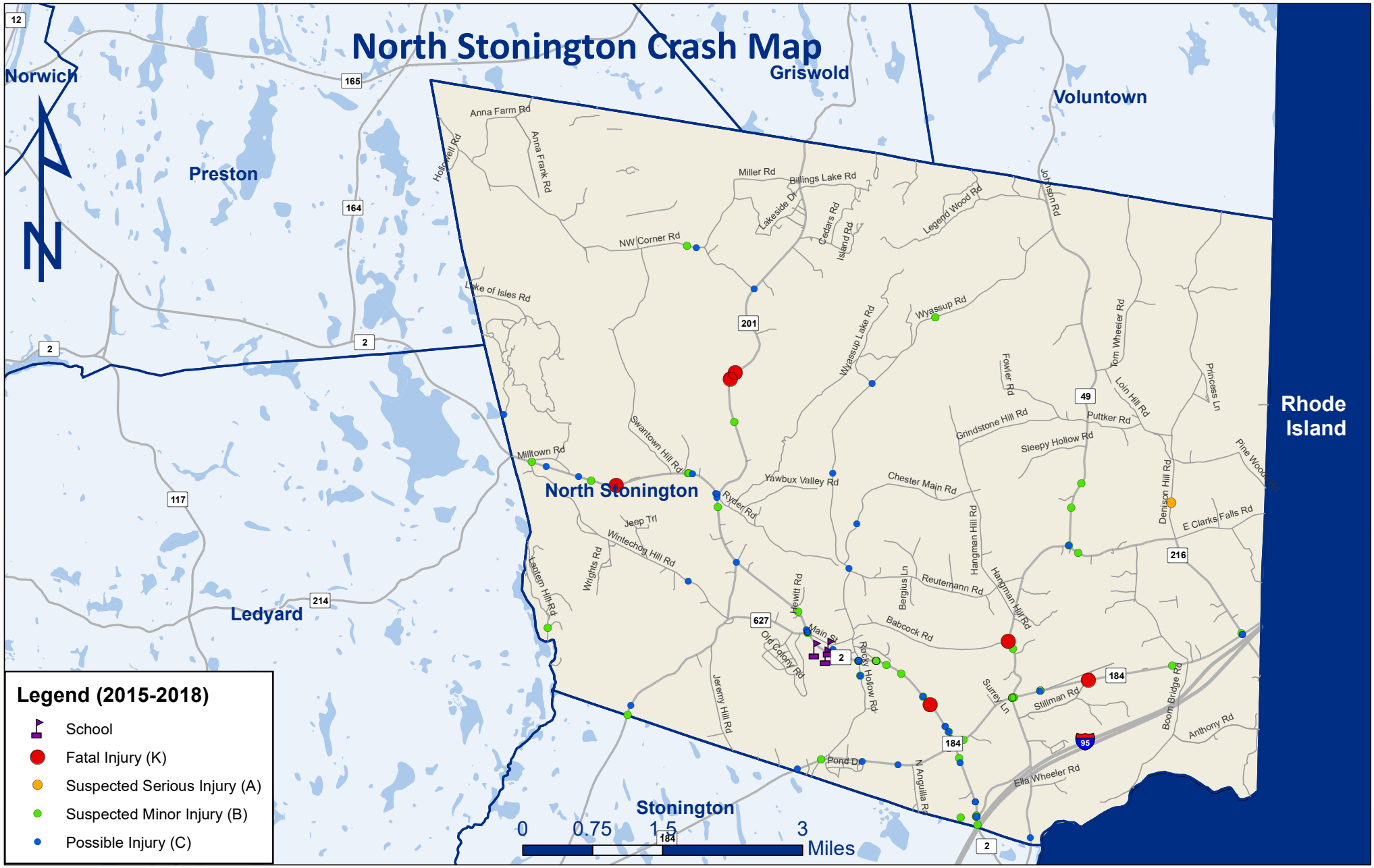
Major Traffic Generators
The major traffic generators in the Town of North Stonington are the Foxwoods Resort Casino and the Westerly, Rhode Island beaches in the summer.

Pedestrians
The Town is actively pursuing improvements to pedestrian mobility. The Village district underwent a walking audit to identify potential sidewalk locations to provide connection with the historic district. The CT-2 (Norwich-Westerly Road) sidewalks would support connectivity to the Town's school complex adjacent to CT-2 (Norwich-Westerly Road). CTDOT District has denied possible encroachment permit for sidewalks along CT-2 (Norwich-Westerly Road) due to maintenance and safety concerns.

North Stonington Total Crashes by Severity

Crash Severity	2015	2016	2017	2018
Fatal Injury (K)	1	0	1	4
Suspected Serious Injury (A)	0	1	0	0
Suspected Minor Injury (B)	16	12	15	5
Possible Injury (C)	16	8	13	6
Total Injury Crashes	33	21	29	15

Source: VN Engineers


North Stonington Crash Map
Norwich
Griswold
Voluntown
Preston
Rhode Island
Ledyard
Stonington
North Stonington
Legend (2015-2018)
School
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
0 0.75 1.5 3 Miles
Anna Farm Rd
Anna Frank Rd
Hollowell Rd
Miller Rd
Billings Lake Rd
Lakeside Dr
Cedars Rd
Island Rd
Legend Wood Rd
Johnson Rd
NW Corner Rd
Lake of Isles Rd
Wyassup Rd
Wyassup Lake Rd
Tom Wheeler Rd
Fowler Rd
Loin Hill Rd
Princess Ln
Puttker Rd
Grindstone Hill Rd
Sleepy Hollow Rd
Pine Wood Dr
Swantown Hill Rd
Milltown Rd
Yawbux Valley Rd
Chester Main Rd
Ryder Rd
Jeep Trl
Wintechog Hill Rd
Denison Hill Rd
E Clarks Falls Rd
Wrights Rd
Lantern Hill Rd
Hangman Hill Rd
Reutemann Rd
Bergius Ln
Hewitt Rd
Main St
Babcock Rd
Old Colony Rd
Rocky Hollow Rd
Jeremy Hill Rd
Surrey Ln
Stillman Rd
Boom Bridge Rd
Anthony Rd
Pond Dr
N Anguilla Rd
Ella Wheeler Rd
12
165
164
2
201
49
117
214
627
216
184
95

Field Site Inventory

CT-49 (Pendleton Hill Road) and Babcock Road

This is a three-way intersection with stop control at the Babcock Road approach. CT-49 (Pendleton Hill Road is a two-lane, 40 MPH road with one lane in each direction and no shoulders. The road is a scenic road with many horizontal and vertical curves and is frequently used by motorcyclists. Babcock Road is a two-lane road with one lane in each direction, with no shoulders and no posted speed limit.

The approach to CT-49 (Pendleton Hill Road) is at a very steep grade. The concern with this intersection seems be due to the speed at which drivers and motorcyclists drive on CT-49 (Pendleton Hill Road). The speed, coupled with limited sight-distance for people turning onto Babcock Road, is concerning. The limited sight distance makes it especially difficult to see drivers coming from the opposite direction when turning onto Babcock Road.

Recommendations:

- Advance intersection ahead signs with flashing beacons.
- Dynamic speed feedback signs.
- Regular vegetation management.
- Enhance curve warning signage (chevron signs).
- Consider a three way stop due to limited sight distance.
- Realign intersection.
- Provide edgelines where they currently do not exist

Pedestrian Mobility Improvements and Connectivity

The Town has recently embarked on developing a pedestrian plan to connect the historic Village District, the newly developed CT-2 (Norwich-Westerly Road) commercial district, Wheeler Middle School, and North Stonington Elementary School. There are currently no sidewalks within the Village, nor along Main Street, Rocky Hollow Road, CT-2 (Norwich-Westerly Road), or Wyassup Road. However, there is a latent demand for pedestrian connectivity given the surrounding residential, civic, and commercial land uses within very close proximity to each other.

Recommendation:

- Consider developing phased sidewalk plan to pursue various funding resources and strategically implement to connect key pedestrian generators as described above.

CT-49 (Pendelton Hill Road) at Babcock Road

North Stonington Village Center

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-49 (Pendleton Hill Rd) and Babcock Rd	Limited sight distance	Regular vegetation management	Low
		Advance intersection ahead signs with flashing beacon	Low
		Investigate three-way stop	Low
		Realign intersection	Medium-High
	Speeding	Dynamic speed feedback signs	Low
		Provide edgelines where they currently do not exist	Low
	Horizontal curvature	Enhance curve warning signage (advance warning and chevron signs)	Low
Village District	Lack of pedestrian amenities	Consider developing phased sidewalk plan to provide pedestrian connectivity	Low-High
CT-49 (Pendleton Hill Road) and CT-201 (Cossaduck Hill Road)	Horizontal and vertical curvature	Ensure the horizontal and vertical curves are signed with chevrons, downgrade signs, and advance warning signs where applicable	Low
		High friction surface treatments where applicable	Low-Medium

CITY OF NORWICH

2016 U.S. Census Population Estimate: 39,556
Area: 29.50 square miles
Population Density: 1,341 persons per square mile
2016 Vehicle Miles Traveled (VMT): 341,779,065
2016 VMT per Capita: 8,640
Setting: Urban
Date of Meeting with Town: July 22, 2019
Town and Regional Representatives: John Salomone (City Manager), Dan Daniska (City Planning Department), Deanna Rhodes (City Planning and Neighborhood Services), Brian Long (City Engineering Department), Tracy Montoya (Fire Department), Corey Poore (Police Department), Patrick Daley (Police Department)
Data-Identified High Crash Corridors: CT-2(Washington Street) from Town Street to Sachem Street); CT-2 (East Main Street) from Washington Street to Carter Avenue; CT-82 (West Main Street) from North Thames Street to I-395
Data-Identified High Crash Intersections: CT-2 (Washington Street) and Harland Road; CT-82 (West Main Street) and North Thames Street; CT-82(West Main Street) and Main Street
Bike and Pedestrian Crash Totals: 55
Total Number of Crashes Involving Injuries or Fatalities, 2015-2018: 954

Source: VN Engineers

Overview

Norwich is a city in New London County. It is bordered by Bozrah to the west, Lisbon and Preston to the east, and Sprague to the north. The City's main thoroughfares are I-395, CT-2, CT-12, CT-32, CT-82, and CT-169.

City Input

Fatal Crashes from 2015-2018
The city discussed the nine fatalities on non-limited access highways from the 2015 to 2018 collected data. The one pedestrian fatality was ruled as a suicide and a few were deemed substance-impaired driving.

CT-82 (West Main Street)
CT-82 from I-395 (Connecticut Turnpike) and CT-32 (North Thames Street) had high crash frequency and traffic congestion. The State is currently designing six roundabouts within the corridor and the plans are at 30%. The City leaders and businesses are concerned with access and egress to and from adjacent businesses given proximity to the roundabouts. The fire station is concerned over egress from their building given the proximity to the proposed roundabout.

CT-2 (Washington Street)
This corridor between Lafayette Street and Sachem Street had two fatalities near Norwich Free Academy. Currently there are no rapid rectangular flashing beacons (RRFBs) in the City, and the high school location would be a good candidate for one. The City of Norwich recommends moving the main entrance for Backus Hospital to Lafayette Street, which has a new coordinated signal with CT-2 (Washington Street). This could eliminate the left-hand turn lane and provide a longer through lane for motorist traveling toward the downtown area. In addition, the City wants to add an appropriate left-turn pocket at CT-2 (Washington Street) westbound/ Lafayette Street for motorists accessing the hospital. They want to extend the storage length along CT-2 (Washington Street) to accommodate queues and provide adequate signage for upcoming lane assignments.

This location is listed as a congestion management process (CMP) corridor of concern (see 2017 CMP, Table 1, Page-11 for a full list of the CMP corridors).

CT-2 (Main Street/East Main Street)
Signal timings and phasing improvements are needed in this corridor between Ferry Street and the Bishop Early Learning Center. The traffic backs up over the bridge and the corridor is in need of a longer exclusive right-turn lane.

The intersection of Main Street and Franklin Street is the subject of a proposed roundabout that would serve to clarify the intersection and to provide some placemaking. Franklin Street is currently one-way. The pedestrian crossing signal is not functional and there may be an opportunity to provide bidirectional access on Franklin Street if a roundabout were pursued.

CT-82 (W Main Street/West Side Boulevard) at CT-32 (N Thames Street) and N High Street
This is a five-legged intersection with numerous crashes including a pedestrian fatality. The crosswalk lengths are wide, particularly along the eastern leg of the intersection. The City is looking to close off CT-2 (Chelsea Harbor Drive) and convert CT-2 (Water Street) from one-way to two-way. In tandem with these desired improvements, the City would like to convert the existing westbound one-way section of West Side Boulevard into a two-way operation. The segment of CT-82 (Washington Street) between West Main Street and West Side Boulevard would also be reduced in capacity by eliminating a northbound left-turn lane.

CT-642 (West Town Street)
This corridor from I-395 (Connecticut Turnpike) past Samuel L. Huntington Elementary School to McDonalds (Town Street) has had front to rear and roadway departure crashes. There are two horizontal curves located between Town Street and Wightman Avenue. The City has difficulty enforcing speed limits due to the limited roadside space for police vehicles to monitor traffic speeds. This corridor could benefit from radar speed signs. This location is listed in the 2017 CMP.

CT-82 (West Main Street)
The existing crosswalks along this corridor in the vicinity of Falls Avenue will potentially be relocated due to a road safety audit completed in 2016. The posted speed limit is 25 MPH; however, most traffic tends to travel at speeds of up to 45 MPH and traffic calming is needed.

New London Turnpike and Asylum Street
There are numerous angle crashes involving vehicles entering from side streets and the City has submitted an application to SCCOG for the next round of CTDOT Transportation Alternative Program (TAP) funding.

The scope includes a continuous bike lane and partial sidewalk gap closure from Town Street to Three Rivers Community College.

Chelsea Harbor Drive
The City discussed potentially eliminating this street to expand the park. There is a draft design.

Bike and Pedestrian Issues

The City has a high concentration of pedestrian traffic on CT-32 (N Thames Street/Thames Street/W Thames Street). There are no streetlights along the corridor and there is pedestrian traffic under dark conditions due to the bus patronage. Most of the traffic signals in the city do not have pedestrian countdown signals, and the City would like to install them at all signalized intersections.

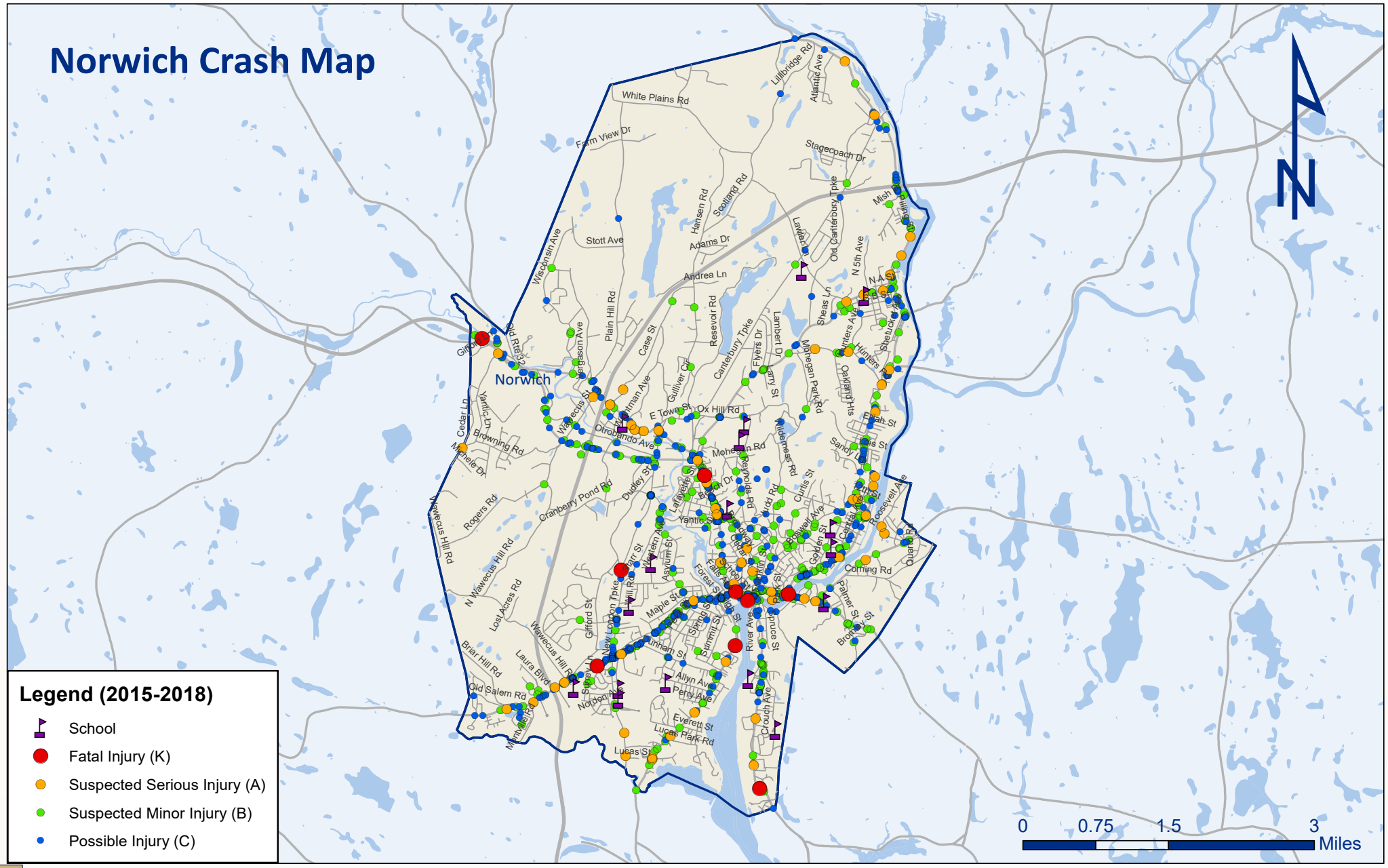
The Regional Bike and Pedestrian Plan included a tactical engagement demonstration on Central Avenue with a two-day cycle track demo. Results varied. Some commercial owners were concerned for potential lost parking spaces, but residents expressed interest about improved bicycle or pedestrian facilities. Central Avenue, which parallels CT-12 (North Main Street), suffers from speed and a poorly defined travel way. The City has expressed an interest in focusing their pedestrian effort in this neighborhood, among others.

Norwich Total Crashes by Severity

Crash Severity	2015	2016	2017	2018
Fatal Injury (K)	3	4	2	0
Suspected Serious Injury (A)	10	18	19	16
Suspected Minor Injury (B)	90	115	122	118
Possible Injury (C)	112	117	106	102
Total Injury Crashes	215	254	249	236

Source: VN Engineers

Norwich Crash Map



Field Site Inventory

CT-642 (West Town Street) from Wightman Avenue to Town Street

CT-642 (West Town Street) between Wightman Avenue and Town Street generally consists of a two-lane cross-section, minimal shoulders, a posted speed limit of 25 MPH, and predominantly adjacent residential land uses. There are two sharp horizontal curves marked by inconsistent chevron warning and curve ahead signs. This section of CT-642 (West Town Street) also experiences higher than posted travel speeds and high traffic volumes during commuter peak periods.

Recommendations:

- Consider removing vegetation impeding sight distance through horizontal curves.
- Evaluate placement of chevron and advance curve warning signs for appropriate placement and to ensure the reflectivity is effective for night-time driving. This is currently being done by CTDOT Traffic Safety.

Washington Square (CT-82) Washington Street)/West Side Boulevard/Main Street/ CT-82 (West Main Street)/CT-2 (Water Street)/ CT-2 (Chelsea Harbor Drive)/Church Street)

This is a signalized, six-legged intersection with four approaches and three departures. Crosswalks, ramps, and pedestrian push buttons are present at all legs and corners of the intersection. Marked shoulders are present along CT-82 (West Main Street), CT-82 (Washington Street), CT-2 (Water Street), and CT-2 (Chelsea Harbor Drive). Other than these shoulders, no bicycle amenities exist within this corridor.

During the field inventory, both pedestrians and cyclists were observed using the corridor. On-street parking was present along CT-2 (Water Street), Main Street, and Church Street, where parking is permitted. The crosswalks on CT-82 (Washington Street) and CT-2 (Water Street) are relatively long and require lengthy pedestrian phases to accommodate walkers.

The northwest corner and the corner between Main Street and Church Street appeared to have a newly installed signal foundation for either a mast arm or span pole. City staff was not able to confirm any ongoing construction projects at this location.

The City's concept of closing CT-2 (Chelsea Harbor Drive) would reduce the longest crosswalk from its existing 90-foot length; however, the crosswalk at CT-82 (Washington Street) would likely continue to be 70-feet long due to the five-lane cross-section. A study should be performed to determine the potential for lane reductions.

Recommendations:

- Close CT-2 (Chelsea Harbor Drive) to vehicular traffic to enhance pedestrian flow and shorten the crosswalk at CT-2 (Water Street).
- Perform analyses and reduce the number of lanes on CT-82 (Washington Street), if determined feasible to reduce pedestrian crossing distances.

CT-642 (W Town Street)

Washington Square

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-642 (West Town St) from Wightman Ave to Town St	Limited sight distance	Consider removing vegetation impeding sight distance through horizontal curves	Low
	Horizontal curvature	Evaluate placement of chevron and advance curve warning signs (retroreflective)	Low
Washington Square CT-82 (Washington St)/West Side Blvd/Main St/CT-82 (West Main St)/ CT-2 (Water St)/CT-2 (Chelsea Harbor Dr)/Church St)	Pedestrian safety	Close CT-2 (Chelsea Harbor Dr) to vehicular traffic to enhance pedestrian flow and shorten the crosswalk at Water St	Low-Medium
		Perform analyses and reduce the number of lanes on CT-82 (Washington St), if determined feasible to reduce pedestrian crossing distances	Low-Medium
CT-2 (Main St/East Main St) from Ferry St to Bishop Early Learning Center	Congestion	Investigate signal timings and phasing improvements	Medium
CT-2 (Washington Street)	Pedestrian fatal crashes	RRFB near Norwich Free Academy	Low-Medium
	Turning movement conflicts	Investigate moving the main entrance for Backus Hospital to Lafayette St. In addition, the City wants to add an appropriate left-turn pocket at CT-2 (Washington St) westbound/Lafayette St for motorists accessing the hospital and extend storage length along CT-2 (Washington St) to accommodate queues and early notice regarding upcoming lane assignments	Medium

TOWN OF PRESTON

2016 U.S. Census Population Estimate: 4,685
Area: 31.80 square miles
Population Density: 147 persons per square mile
2016 Vehicle Miles Traveled (VMT): 82,925,810
2016 VMT per Capita: 17,700
Setting: Rural
Date of Meeting with Town: August 22, 2019
Town and Regional Representatives: Kathy Warzecha (Town Planner), Kalen Brown (Resident Trooper)
Data-Identified High Crash Intersections: CT-2-Norwich-Westerly Road and Watson Road
Bike and Pedestrian Crash Totals: 7
Total Number of Crashes Involving Injuries or Fatalities, 2015-2018: 221

Source: VN Engineers

Overview

Preston is a rural town in New London County, bordered by Lisbon and Griswold to the north, Norwich and Montville (separated by the Thames River) to the west, Griswold and North Stonington to the east, and Ledyard to the south. The Town includes the Villages of Long Society, Preston City and Poquetanuck. The Town's main thoroughfares are CT-2, CT-12, CT-164, and CT-165.

Town Input

Fatal Crashes from 2015-2018

- CT-2A (Poquetanuck Road) - Sideswipe fatal crash along a horizontal curve.
- CT-12 (Laurel Hill Road) and Kendall Road - Angle fatal crash at a T-intersection.
- CT 2 (Norwich-Westerly Road) east of CT-2A (Poquetanuck Road) – Pedestrian fatal crash.
- Wheeler Farm Road – Bicyclist fatal crash.
- CT-164 (Jewett City Road) – Front-to-front fatal crash along a horizontal curve.
- CT-165 (Shetucket Turnpike) - Substance-impaired roadway departure fatal crash.

General Issues

The majority of crashes are on CT-12 (Laurel Hill Road), CT-164 (Jewett City Road/Preston Plains Road), CT-165 (Shetucket Turnpike), and CT-2 (Norwich-Westerly Road). The Town experiences high cut-through traffic related to the casinos. CT-164 (Jewett City Road/Preston Plains Road) and CT-165 (Shetucket Turnpike) have vertical and horizontal curvature. Cyclist and pedestrian volumes are low. The Town would like to install dynamic speed feedback signs, but they need grant information to pursue funding for them.

CT-2 (Norwich-Westerly Road)
This corridor has high traffic volumes as a result of the nearby Foxwoods Resort Casino. Speeding is also an issue. Substance-impaired driving has decreased with the casino's efforts. CT-2 (Norwich-Westerly Road) east of the Norwich Town line experiences a lane reduction from two lanes to one westbound lane, which could contribute to crashes. The western section of CT-2 (Norwich-Westerly Road) has some vertical curvature. The Town Hall entrance has a left-turn lane for westbound travel. Speed and limited sight distance are issues at this entrance and along other sections of CT-2 (Norwich-Westerly Road).

CT-2 (Norwich-Westerly Road) and Watson Road
This intersection has limited sight distance with a high concentration of crashes. Dunkin Donuts and the hotel at the intersection add to the traffic conflicts.

CT-164 (Jewett City Road/Preston Plans Road)
The northern section (Jewett City Road) is farmland. The State bought rights to develop on seven parcels of land. Speeding is an issue in the northern section. There is limited sight distance at CT-164 (Jewett City Road) and Burdick Road.

CT-164 (Jewett City Road) and CT-165 (Shetucket Turnpike)
This is a signalized intersection with a high concentration of crashes.

Preston Total Crashes by Severity

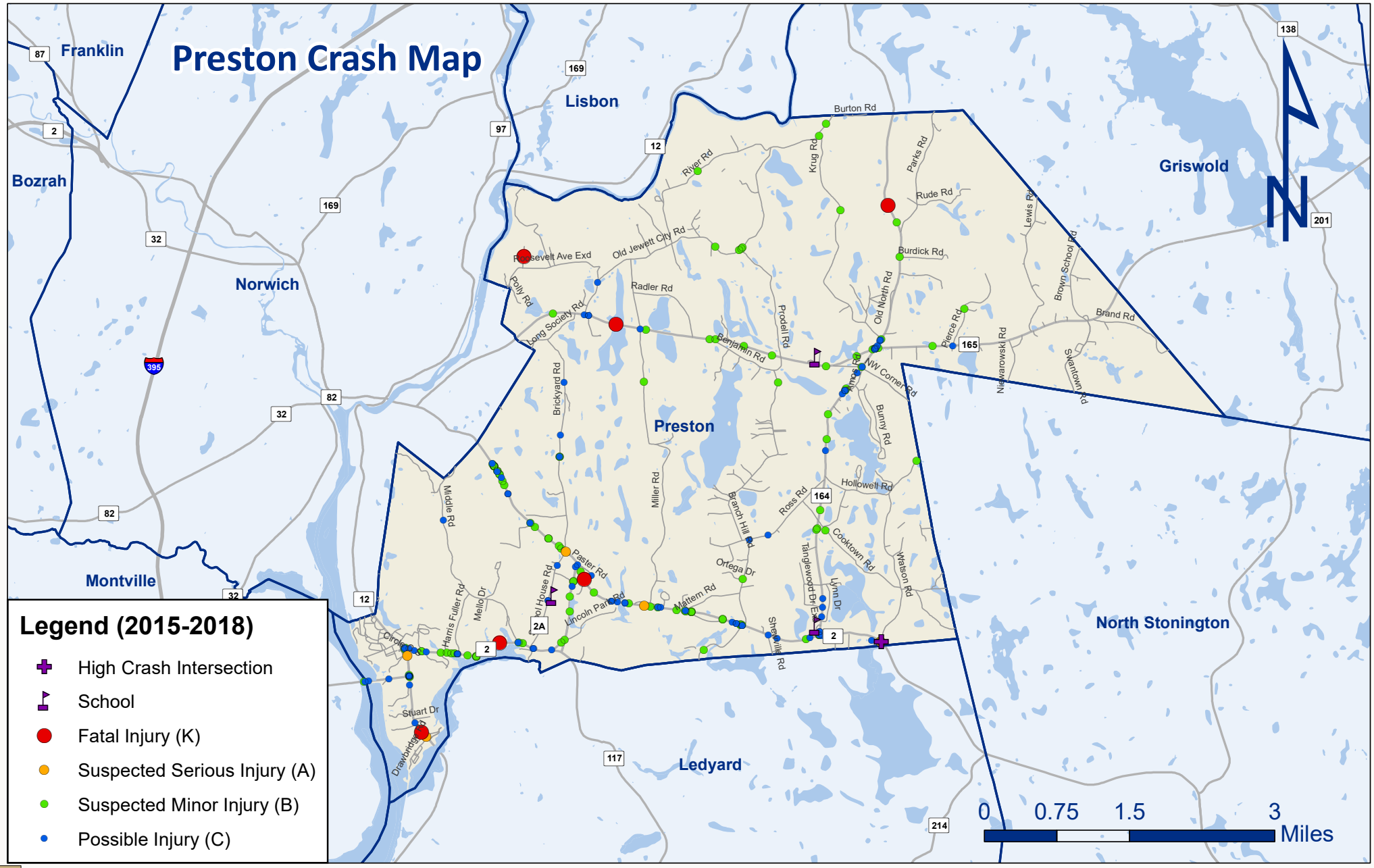
Crash Severity	2015	2016	2017	2018
Fatal Injury (K)	1	4	1	0
Suspected Serious Injury (A)	3	1	0	1
Suspected Minor Injury (B)	35	20	31	32
Possible Injury (C)	34	23	14	21
Total Injury Crashes	73	48	46	54

CT-2A (Hallville-Poquetanuck Road/Poquetanuck Road/Laurel Hill Road/Officer Joseph N. Sachatello III Memorial Highway)".
This high frequency crash corridor has a narrow cross-section, congestion, and a high volume of driveways. In addition, the bridge over the Thames River is at capacity. Future development on CT-2A (Hallville-Poquetanuck Road) across from the Mohegan Sun Casino will be a major traffic generator. The Town wants the developers to address the congestion issues on CT-2A (Hallville-Poquetanuck Road) and thus far, a preliminary traffic assessment has been conducted in the vicinity of the future development site. There is limited sight distance and vegetation overgrowth at CT-2A (Poquetanuck Road) and School House Road.

CT-2A (Officer Joseph N. Sachatello III Memorial Highway/Laurel Hill Road) at CT-12 (Laurel Hill Road)
CT-2A (Officer Joseph N. Sachatello III Memorial Highway) and CT-12 (Laurel Hill Road) is a signalized T-intersection. Eastbound motorists often continue straight through the intersection, not realizing the roadway ends. The State installed a guardrail to prevent roadway departures at this terminus.

Enforcement
Preston has a resident trooper program. The Trooper would like to use dynamic speed feedback signs for speed mitigation.

Source: VN Engineers


Preston Crash Map
Franklin
Lisbon
Bozrah
Norwich
Griswold
Preston
Montville
North Stonington
Ledyard
Legend (2015-2018)
High Crash Intersection
School
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
0
0.75
1.5
3
Miles
N
Burton Rd
River Rd
Krug Rd
Parks Rd
Rude Rd
Lewis Rd
Brown School Rd
Brand Rd
Swantown Rd
Niewarowski Rd
Pierce Rd
Burdick Rd
Old North Rd
Roosevelt Ave Exd
Old Jewett City Rd
Radler Rd
Polly Rd
Long Society Rd
Benjamin Rd
Prodell Rd
NW Corner Rd
Brickyard Rd
Bunny Rd
Hollowell Rd
Miller Rd
Middle Rd
Branch Hill Rd
Ross Rd
Cooktown Rd
Watson Rd
Ortega Dr
Tanglewood Dr Ext
Lynn Dr
Pastor Rd
Lincoln Park Rd
Mattern Rd
Harris Fuller Rd
Mello Dr
Shewville Rd
Stuart Dr
Drawbridge Rd
87
2
169
97
12
138
201
32
395
82
165
164
2A
117
214

Field Site Inventory

CT-2 (Norwich-Westerly Road) and Watson Road

This is a three-way intersection with stop control at the Watson Road approach. CT-2 (Norwich-Westerly Road) consists of four lanes, two travel lanes in each direction, with an additional eastbound exclusive left-turn lane at the intersection. The shoulder widths in both directions are approximately 4 feet wide. CT-2 (Norwich-Westerly Road) is a major route for Foxwoods Resort Casino with high volume of traffic.

Watson Road intersects CT-2 (Norwich-Westerly Road) in the middle of a horizontal curve. For eastbound motorists there is an advance intersection warning sign that is not MUTCD compliant. There is no advance intersection warning sign for westbound motorists.

Speed is posted at 50 MPH.

Recommendations:

- Increased enforcement.
- Install dynamic speed feedback signs on CT-2 (Norwich-Westerly Road).
- Provide regulatory vegetation management at the intersection.
- Install advance intersection warning signs with yellow flashers along both approaches on CT-2 (Norwich-Westerly Road).

CT-2A (Officer Joseph N. Sachatello III Memorial Highway/Laurel Hill Road/ Poquetanuck Road/Hallville-Poquetanuck Road) corridor

This corridor has high volumes of traffic, including heavy trucks, connecting CT-2 (Norwich-Westerly Road) and CT-117 (Colonel Ledyard Highway) to the Mohegan Sun Casino. It consists of two-lanes and three foot shoulders in each direction. Much of the corridor is residential or rural. Sections of the corridor pass through a designated historic area.

At the CT-2A (Officer Joseph N. Sachatello III Memorial Highway) and CT-12 (Laurel Hill Road) signalized T-intersection, the eastbound traffic diverts north or south, and there is no through traffic. There is a two-directional large arrow sign to warn motorists the roadway ends. However, eastbound motorists often continue straight and crash into the guardrail at the roadway terminus.

Recommendations:

- Complete a corridor study.
- Corridor access management.
- Install traffic signal retroreflective backplates on CT-2A (Officer Joseph N. Sachatello III Memorial Highway) and CT-12 (Laurel Hill Road) intersection.
- Install yellow flashers on two-directional large arrow signs.
- Investigate roadway illumination.
- Install dynamic speed feedback signs on CT-2A (Officer Joseph N. Sachatello III Memorial Highway/Lauren Hill Road/ Poquetanuck Road/Hallville-Poquetanuck Road).

CT-2 (Norwich-Westerly Road) and Watson Road

CT-2A (Officer Joseph N. Sachatello III Memorial Highway/Laurel Hill Road/Poquetanuck Road/ Hallville-Poquetanuck Road)

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-2 (Norwich-Westerly Rd) and Watson Rd	High frequency of crashes	Install intersection ahead signs with yellow flashers along both approaches on CT-2 (Norwich-Westerley Rd)	Low
		High-visibility enforcement	Medium
	Speeding	Dynamic speed feedback signs	Low
	Limited sight distance	Regulatory vegetation management	Low
CT-2A (Officer Joseph N. Sachatello III Memorial Hwy/Laurel Hill Rd/ Poquetanuck Rd/Hallville-Poquetanuck Rd) corridor	Speeding	Dynamic speed feedback signs	Low
	High frequency of crashes	Consider corridor access management	Medium
		Investigate roadway illumination	Low-Medium
		Traffic signal retroreflective backplates	Low-Medium
CT-2A (Officer Joseph N. Sachatello III Memorial Hwy) and CT-12 (Laurel Hill Rd)	Roadway departures	Investigate illumination at intersection	Low
		Install yellow flashers on two-directional large arrow sign Flashing beacons on arrow signs	Low
CT-164 (Jewett City Rd) and CT-165 (Shetucket Tpke)	High frequency of crashes	Traffic signal retroreflective backplates	Low-Medium

TOWN OF SALEM

2016 U.S. Census Population Estimate: 4,167
Area: 29.80 square miles
Population Density: 140 persons per square mile
2016 Vehicle Miles Traveled (VMT): 55,040,905
2016 VMT per Capita: 13,209
Setting: Rural
Date of Meeting with Town: July 31, 2019
Town and Regional Representatives: Justin LaFountain (SCCOG/Town Planner), Chris Pariseau (Resident State Trooper)
Data-Identified High Crash Corridors and Intersections: N/A
Bike and Pedestrian Crash Totals: 2
Total Number of Crashes Involving Injuries or Fatalities, 2015-2018: 67

Source: VN Engineers

Overview

Salem is a rural town in New London County, bordered by Colchester to the north, Bozrah and Montville to the east, East Lyme and Lyme to the south, and East Haddam to the west. The Town's main thoroughfares are CT-11, CT-82, CT-85, and CT-354.

Town Input

Fatal Crashes from 2015-2018
The Town discussed the fatal crashes identified on the map:

- CT-354 (Old Colchester Road) and Witter Road -Traffic Incident Management fatal crash.

Fatal Crash in 2019

- CT-85 (New London Road) - Front to front fatal crash.

Roundabout at CT-85 (New London Road/Hartford Road) and CT-82 (Norwich Road/East Haddam Road)
This intersection has high pedestrian traffic volumes. Drivers are often oblivious to pedestrian crossings and to other drivers entering the roundabout from different approaches. The northbound and eastbound approaches are multi-lane, while the other approaches are single lane, and this can lead to driver confusion.

CT-85 (New London Road)
Speeding is an issue along the CT-85 corridor from Forsyth Road to Woodland Drive especially along the northbound lanes due to vertical curvature. There are many front to rear crashes related to left-turning vehicles waiting for adequate gaps from opposing traffic.

Bike and Pedestrians

Pedestrian and bicycle activity throughout the Town is relatively low. The area with the highest pedestrian crossings occurs at the Salem Four Corners roundabout at the intersection of CT-85 (New London Road/Hartford Road) and CT-82 (Norwich Road/East Haddam Road). This is primarily due to people walking between commercial properties on opposite sides of CT-85 (New London Road), south of the roundabout. The roundabout has marked crosswalks, though motorists do not always grant pedestrians the right-of-way.

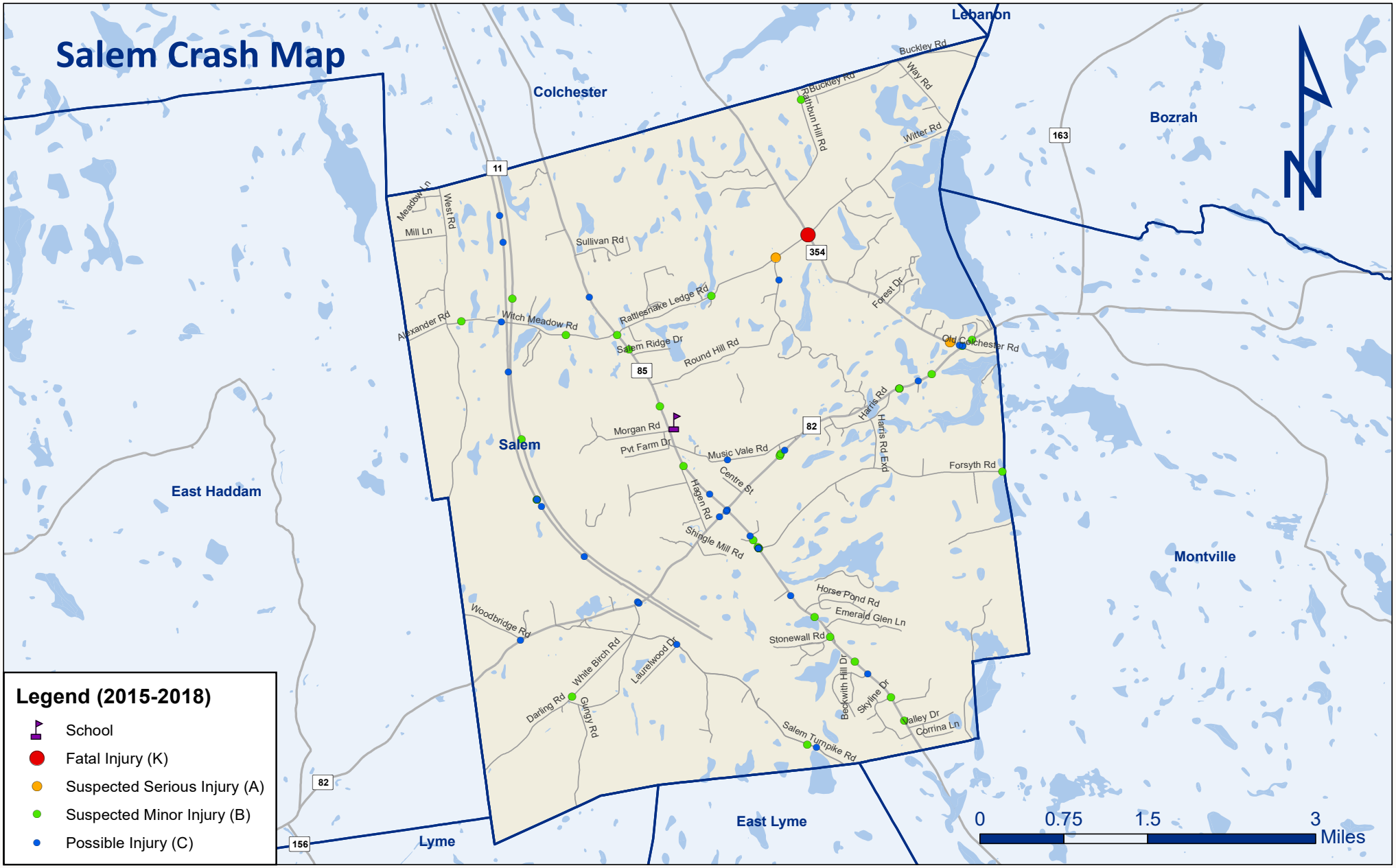
Enforcement

Police enforcement at the roundabout is difficult due to the roundabout geometry. The DPW places speed trailers in areas where residents indicate a concern about travel speeds. The trailer is typically placed on a Monday morning and removed on a Friday evening, for a one-week period of time. CT-85 (New London Road/Hartford Road) experiences high travel speeds, but there are limited places for police cars to park for enforcement.

Salem Total Crashes by Severity

Crash Severity	2015	2016	2017	2018
Fatal Injury (K)	0	0	1	0
Suspected Serious Injury (A)	1	0	2	0
Suspected Minor Injury (B)	9	11	7	7
Possible Injury (C)	13	7	3	6
Total Injury Crashes	23	18	13	13

Source: VN Engineers


Salem Crash Map
Lebanon
Colchester
Bozrah
East Haddam
Salem
Montville
East Lyme
Lyme
Buckley Rd
Way Rd
Witter Rd
Rathbun Hill Rd
Meadow Ln
West Rd
Mill Ln
Sullivan Rd
Alexander Rd
Witch Meadow Rd
Rattlesnake Ledge Rd
Salem Ridge Dr
Round Hill Rd
Forest Dr
Old Colchester Rd
Harris Rd
Harris Rd Ext
Morgan Rd
Pvt Farm Dr
Music Vale Rd
Centre St
Hagen Rd
Shingle Mill Rd
Forsyth Rd
Horse Pond Rd
Emerald Glen Ln
Stonewall Rd
Beckwith Hill Dr
Skyline Dr
Valley Dr
Corrina Ln
Salem Turnpike Rd
Woodbridge Rd
White Birch Rd
Laurelwood Dr
Darling Rd
Gungy Rd
11
354
85
82
163
156
Legend (2015-2018)
School
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
0
0.75
1.5
3
Miles

Field Site Inventory

CT-85 (New London Road) from Woodland Drive to Forsyth Road

The CT-85 (New London Road) corridor between Woodland Drive and Forsyth Road generally consists of a two-lane cross-section with one travel lane in each direction, minimal shoulders, and centerline rumble strips. The adjacent land use is rural residential. The posted speed limit is 40 MPH, with much higher speeds observed. Both Woodland Drive and Forsyth Road individually form three-leg intersections with CT-85 (New London Road) with the side streets under stop control. Vegetation overgrowth in close proximity to these intersections obstructs sightlines for vehicles entering the CT-85 (New London Road) corridor from the side streets. At the intersection of CT-85 (New London Road) and Woodland Drive a very short informal southbound bypass has been formed, permitting vehicles to bypass left turning vehicles onto Woodland Drive.

Recommendations:

- Consider removing vegetation obstructing sightlines from the side streets.
- Remove or formalize the inadequate by-pass lane.

Roundabout at CT-85 (Hartford Road) and CT-82 (Norwich Road)

This is a modern roundabout-style intersection with four approaches and a raised island in the center. The general alignments of the roadways consist of CT-85 (Hartford Road) in the north/south direction and CT- 82 (Norwich Road) in the east/west direction. Crosswalks, ramps, and marked shoulders are present at all legs of the intersection. Other than these shoulders, no bicycle amenities exist within this corridor. Sidewalks are located at the northeast, southeast, and southwest corners of the intersection, which primarily provide access to adjacent retail properties. Sidewalks were not present beyond the immediate vicinity of the intersection.

During the field inventory, pedestrians were observed crossing between the southeast and southwest corners of the intersection. Motorists typically granted right-of-way to pedestrians in crosswalks, though it did not always occur with the first approaching vehicle.

Recommendations:

- Install illuminated signs at crosswalks to alert motorists to the presence of pedestrians. The use of a rectangular rapid flashing beacon (RRFB) would offer additional notice and safety for pedestrian crossings.
- Install dynamic feedback speed signs in advance of the intersection. Slowing vehicle speeds will allow for drivers to better assess the conditions and maneuver more safely through the roundabout.
- Offer education about driving through roundabouts. Local drivers education school can be identified and instructed to teach new drivers how to properly traverse a modern roundabout.

CT-85 (New London Road) and Woodland Drive

CT-85 (Hartford Road) and CT-82 (Norwich Road) Roundabout

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-85 (New London Road) from Woodland Drive to Forsyth Road	Sight distance	Consider removing vegetation obstructing sightlines from the side streets	Low
	Sideswipe crashes	Remove or formalize the inadequate bypass lane	Medium
CT-85 (New London Road) from Woodland Drive to Forsyth Road	Pedestrian safety	Install enhanced signs at crosswalks to alert motorists to the presence of pedestrians. The use of a RRFB would offer additional notice and safety for pedestrian crossings.	Low-Medium
	Speeds through roundabout	Install dynamic feedback speed signs in advance of the intersection.	Low
		Offer education about driving through roundabouts.	Medium
CT-85 (New London Rd) from Woodland Drive to Forsyth Rd	Limited sightlines	Consider removing vegetation obstructing sightlines from the side streets	Low
	Sideswipe crashes	Remove or formalize the inadequate bypass lane	Low-Medium

TOWN OF SPRAGUE

2016 U.S. Census Population Estimate: 2,921
Area: 13.80 square miles
Population Density: 212 persons per square mile
2016 Vehicle Miles Traveled (VMT): 12,503,440
2016 VMT per Capita: 4,281
Setting: Rural
Date of Meeting with Town: January 8, 2020
Town and Regional Representatives: Cheryl Blanchard (First Selectman), Mark Benson (Public Works), Brian Summer (Resident State Trooper)
Data-Identified High Crash Corridors and Intersections: N/A
Bike and Pedestrian Crash Totals: 0
Total Number of Crashes Involving Injuries or Fatalities, 2015-2018: 20

Source: VN Engineers

Overview

Sprague is a rural town in New London County, bordered by Scotland and Canterbury to the north, Lisbon to the east, Norwich to the south and Franklin to the west. The Town of Sprague includes three villages: Baltic, Hanover, and Versailles. The Town's main thoroughfares are CT-97, CT-138 and CT-207.

Town Input

Fatal Crashes from 2015-2018

- CT-97 (Main Street) - Motorcycle speeding and substance-impaired roadway departure fatal crash.
- In 2019 there were two fatal crashes:
- CT-97 (Scotland Road) and Salt Rock Road - Motorcycle angle fatal crash.
- CT-138 (Bushnell Hollow Road) – Fatigued-motorist roadway departure fatal crash at a Y-intersection.

CT-97 (Scotland Road) and Salt Rock Road
This stop-controlled intersection has sight distance issue for motorists from Salt Rock Road. In addition, speeding, vertical curvature, and horizontal curvature on CT-97 (Scotland Road) make it difficult for motorists turning from Salt Rock Road onto CT-97. A fatal crash occurred at this intersection in 2019.

CT-97 (Scotland Road) and Fortin Drive
This T-intersection has stop-control on Fortin Drive and there is limited sight distance from Fortin Drive. Speeding is an issue on CT-97 (Scotland Road).

CT-138 (Bushnell Hollow Road)
The Town representatives said that speeding is an issue along this corridor. The at-grade railroad crossing causes significant roadway elevation disparity and Town would like this fixed.

CT-97 (Scotland Road) and Sayles School
CT-97 (Scotland Road) southbound has a steady downgrade along the approach to the Sayles School entrance. Speed transitions from 45 MPH to 25 MPH, but motorists tend to speed in this segment despite the lower speed limit and the school zone.

CT-138 (Bushnell Hollow Road) and Grandview Drive
This is a T-intersection with stop-control on Grandview Drive. There are sight distance issues due to the vertical curvature on CT-138 (Bushnell Hollow Road).

Curve Warning Signs and Pedestrian Signs
Horizontal curve warning signs and pedestrian signs were installed by the State and they have been effective in enhancing safety.

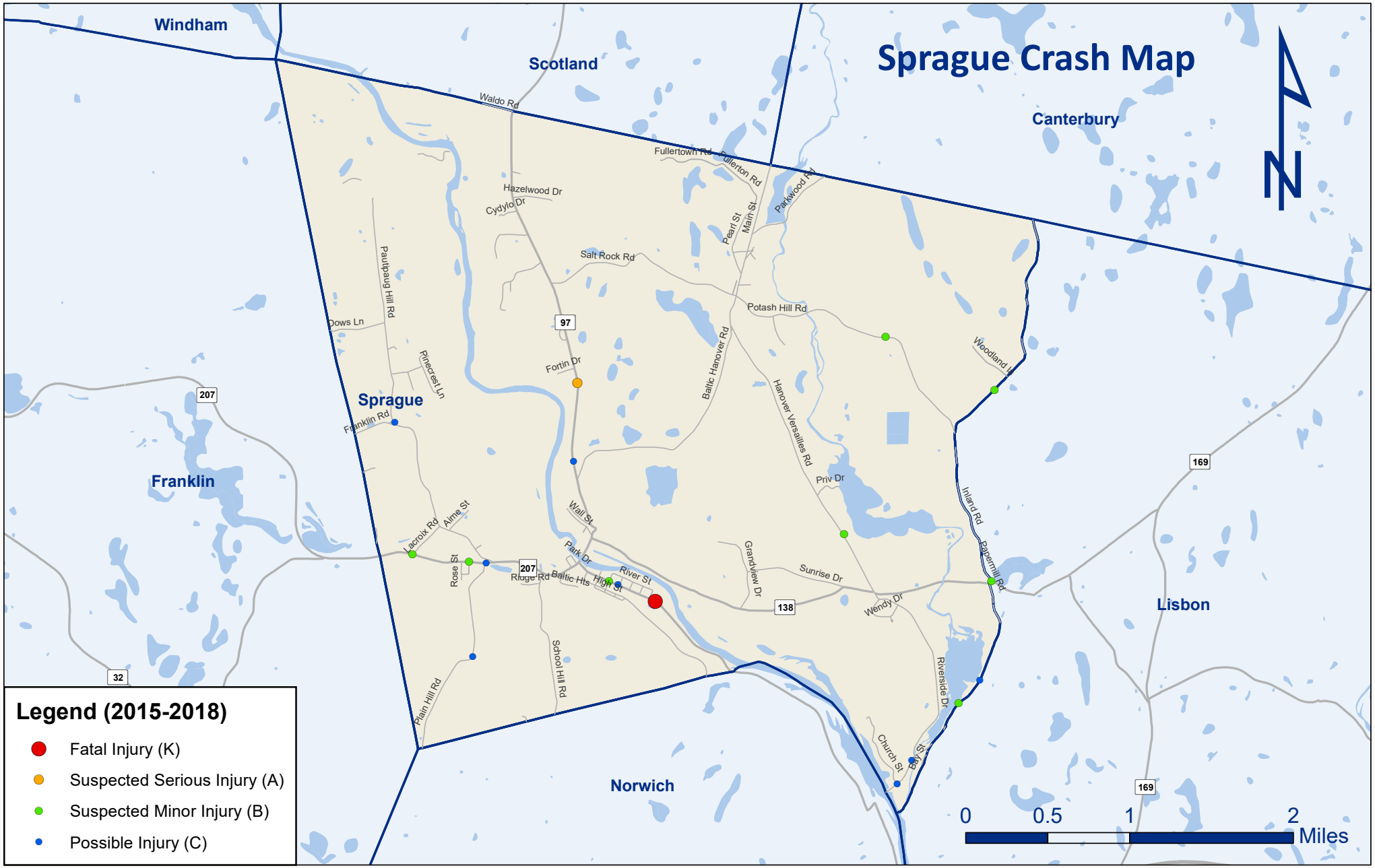
Enforcement
The Town of Sprague and the Resident State Trooper are concerned that the DUI enforcement grants were not funded this year. They stated these grants are essential for substance-impaired driving mitigation.

Bikes and Pedestrians
There are no real concerns with bikes and pedestrians in the Town of Sprague.

Source: VN Engineers

Sprague Total Crashes by Severity

Crash Severity	2015	2016	2017	2018
Fatal Injury (K)	0	0	1	0
Suspected Serious Injury (A)	0	1	0	0
Suspected Minor Injury (B)	2	3	2	1
Possible Injury (C)	5	2	2	1
Total Injury Crashes	7	6	5	2


Sprague Crash Map
Windham
Scotland
Canterbury
Sprague
Franklin
Norwich
Lisbon
Waldo Rd
Fullertown Rd
Fullerton Rd
Parkwood Rd
Hazelwood Dr
Cydylo Dr
Pearl St
Main St
Salt Rock Rd
Pautipaug Hill Rd
Dows Ln
Potash Hill Rd
Pinecrest Ln
Fortin Dr
Baltic Hanover Rd
Hanover Versailles Rd
Woodland Dr
Franklin Rd
Priv Dr
Inland Rd
Papermill Rd
Lacroix Rd
Aime St
Wall St
Rose St
Park Dr
River St
Ruge Rd
Baltic Hts
High St
Grandview Dr
Sunrise Dr
Wendy Dr
School Hill Rd
Plain Hill Rd
Riverside Dr
Church St
Bay St
97
207
138
169
32
Legend (2015-2018)
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
0
0.5
1
2
Miles

Field Site Inventory

CT-97 (Scotland Road) and Salt Rock Road

This T-intersection has stop control on Salt Rock Road and intersects the uphill vertical crest on CT-97 (Scotland Road). The vertical curvatures on both approaches limit the sight distance at the intersection. Looking northbound from Salt Rock Road, there is a ledge on the eastern side of the road, and looking southbound there is horizontal and vertical curvature. The speed limit on CT-97 is posted at 40-45 MPH. Advance intersection warning signs are present on CT-97 (Scotland Road). Heavy vehicle traffic (trucks) was noted.

Recommendations:

- Install a dynamic speed feedback sign on CT-97 (Scotland Road) along both approaches.
- Lower ledge and remove all vegetation to improve sight distance looking northbound from Salt Rock Road.
- Provide regular speed enforcement.

CT-97 (Scotland Road) and Fortin Drive

This is a T-intersection with stop-control on Fortin Drive. The sight distance from Fortin Drive looking to the north is limited by the ledge and vegetation. The speed limit is posted at 25 MPH on CT-97 (Scotland Road), however the motorists travel at higher speeds through this area.

Recommendations:

- Cut ledge down and remove the vegetation.
- Provide regular speed enforcement.

CT-97 (Scotland Dr) and Salt Rock Rd

CT-97 (Scotland Dr) and Fortin Dr

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-97 (Scotland Rd) and Salt Rock Rd	Speeding	Install a dynamic speed feedback sign on CT-97 (Scotland Rd) along both approaches	Low
	Limited sight distance	Lower ledge and remove all vegetation to improve sight distance looking northbound from Salt Rock Rd	Low
	Speeding	Provide regular speed enforcement	Low-Medium
CT-97 (Scotland Rd) and Fortin Dr	Speeding	Provide regular speed enforcement	Low-Medium
	Limited sight distance	Cut ledge down and remove the vegetation	Low
CT-138 (Bushnell Hollow Rd) and Grandview Dr	Limited sight distance	Consider removing vegetation obstructing sightlines from the side streets	Low
		Consider yellow flashers for intersection ahead signs at CT-138 (Bushnell Hollow Rd)	Low

TOWN OF STONINGTON

2016 U.S. Census Population Estimate: 19,547
Area: 50.70 square miles
Population Density: 386 persons per square mile
2016 Vehicle Miles Traveled (VMT): 227,429,310
2016 VMT per Capita: 11,635
Setting: Rural
Date of Meeting with Town: July 24, 2019
Town and Regional Representatives: Thomas Curioso (Town of Stonington), Scot Deledda (Town of Stonington), Todd Olson (Town of Stonington), Chief Darren Stewart (Police Department), Robert O'Shaughnessy (Police Department, Local Traffic Authority)
Data-Identified High Crash Corridors and Intersections: N/A
Bike and Pedestrian Crash Totals: 12
Total Number of Crashes Involving Injuries or Fatalities, 2015-2018: 362

Source: VN Engineers

Overview

Stonington is a rural town in New London County, in the State's southeastern corner, bordered by North Stonington to the north, Westerly, Rhode Island to the east, Ledyard and Groton to the west, and Long Island Sound to the south. It includes the Borough of Stonington, the Villages of Pawcatuck, Lords Point, and Wequetequock, and the eastern halves of Villages of Mystic and Old Mystic. The Town's main thoroughfares are I-95, US-1, US-1A, CT-2, CT-27, CT-78, CT-184, CT-201, and CT-234.

Town Input

Fatal Crashes from 2015-2018

- CT-2 (Liberty Street) and CT-78 (Veterans Way) - Possible suicide fatal crash.
- US-1 (South Broad Street) in Pawcatuck - Older driver/scooter fatal crash.
- US-1 (West Broad Street) at Saint Michael's Church - Older pedetsrian fatal crash.

The Town noted a more recent crash involving a motorist colliding with a school bus along CT-234 (Pequot Trail), due to icy conditions. The Town noted a recent crash involving a motorist traveling along CT-27 (Greenmanville Avenue) and striking two pedestrians crossing in the vicinity of Rossie Pentway. This incident is still under investigation, so police department representatives could not provide detailed feedback.

General Comments

The Town typically receives funds from developers for infrastructure maintenance and improvements. The Town of Stonington staff noted that future development is in the planning process along the CT-27 (Denison Avenue) corridor in the Mystic area:

- A twelve (12) room boutique hotel will be opening.
- The Mystic Seaport will revamp their offerings with hopes to extend their tourist season into the winter months.
- The potential developments could introduce more curb cuts and access conditions.

CT-27 (Greenmanville Avenue) and Coogan Boulevard

This is a high volume intersection during the summertime. There are numerous emergency calls to elderly housing complexes to the east using Coogan Boulevard.

CT-27 (Greenmanville Avenue)

CT-27 from Rossie Street to Holmes Street has many pedestrian crossings due to the Mystic Seaport visitor parking along the east side of CT-27 (Greenmanville Avenue) and the Seaport located along west side. A Road Safety Audit was conducted in 2016 and a report was prepared which identifies design shortfalls throughout the corridor and offers potential mitigation. Much of the summertime traffic consist of tourists.

CT-184 (New London Turnpike)/Jeremy Hill Road/Taugwonk Road

This is a four-way intersection with stop control on the side streets. A vertical curvature creates dips along CT-184 (New London Turnpike), which impede sight lines.

US-1 (West Broad Street) and CT-2 (Liberty Street)

US-1 and CT-2 operates as an offset two-way stop controlled intersection. The Amtrak overpass traverses the intersection and its abutment is located within the center of the intersection. Much of the summertime traffic consists of tourists, unfamiliar with the roadway geometry. The drivers making left turns from the side streets often pull into the intersection blocking traffic along US-1 (West Broad Street) until a gap is available to turn left.

CT-234 (Pequot Trail)

There is vertical curvature along this corridor, with excessive speeding. Icy surfaces contribute to unsafe operations along CT-234 (Pequot Trail). The roadway shoulders are narrow or do not exist in some segments.

CT-27 (Old Mystic Center Rd) and Main Street

This is a wide all-way stop control intersection with 90-degree on-street parking within the intersection. The crosswalk is located behind the stop bar at the southwest-bound approach and the sight lines are poor due to the buildings near the intersection.

Bike and Pedestrian Items

The segments of CT-27 (Greenmanville Avenue/Denison Avenue) and US-1 (Williams Avenue) in the vicinity of Mystic Seaport and Downtown Mystic, carry high volumes of pedestrians, as well as motor vehicles. These volumes are typically highest during the summer tourist season. The sidewalks currently exist along these corridors, but there is little room for bicycle accommodations. The use of sharrows was requested along CT-27 (Greenmanville Avenue) between Coogan Boulevard and Downtown Mystic; however, they were not approved. This section of CT-27 (Greenmanville Avenue) was deemed "bike unfriendly" by the Board of Police Commissioners. A future bicycle path is being considered to parallel CT-27 (Greenmanville Avenue) from Coogan Boulevard to downtown Mystic, which would use undeveloped land. Identifying the land to be used for this path would be a joint effort between the Town and SCCOG staff.

The Town staff provided documentation outlining existing and needed sidewalk corridors along US-1 (South Broad Street) in Pawcatuck. The document primarily identifies segments that require sidewalk to complete the connectivity for pedestrians traveling between Swan Street and Mayflower Avenue. Additional sidewalk infill was identified along US-1 (East Main Street) to the east of Downtown Mystic. The Town staff identified their annual budget for sidewalk repair of approximately $70,000.

SCCOG Comments:

- SCCOG received a request for assistance in securing a pedestrian crossing just south of Rossie Pentway to access the canoe launch site at the westerly terminus of Isham Street.

- There is a perennial call for a multi-use path on CT-27 (Whitehall Avenue) that would accommodate cyclists and pedestrians from the golden triangle (Exit 90 on I-95 (Jewish War Veterans Memorial Highway)) to US-1 (Williams Avenue). The cross-section is highly constricted. A portion of the route might utilize an accessible route on Denison Pequotsepos Nature Center property, as described here: https://dpnc.org/wp-content/uploads/2018/03/2018-DPNC-Trail-Map-web2.pdf, which leaves the unaccommodated portion south.

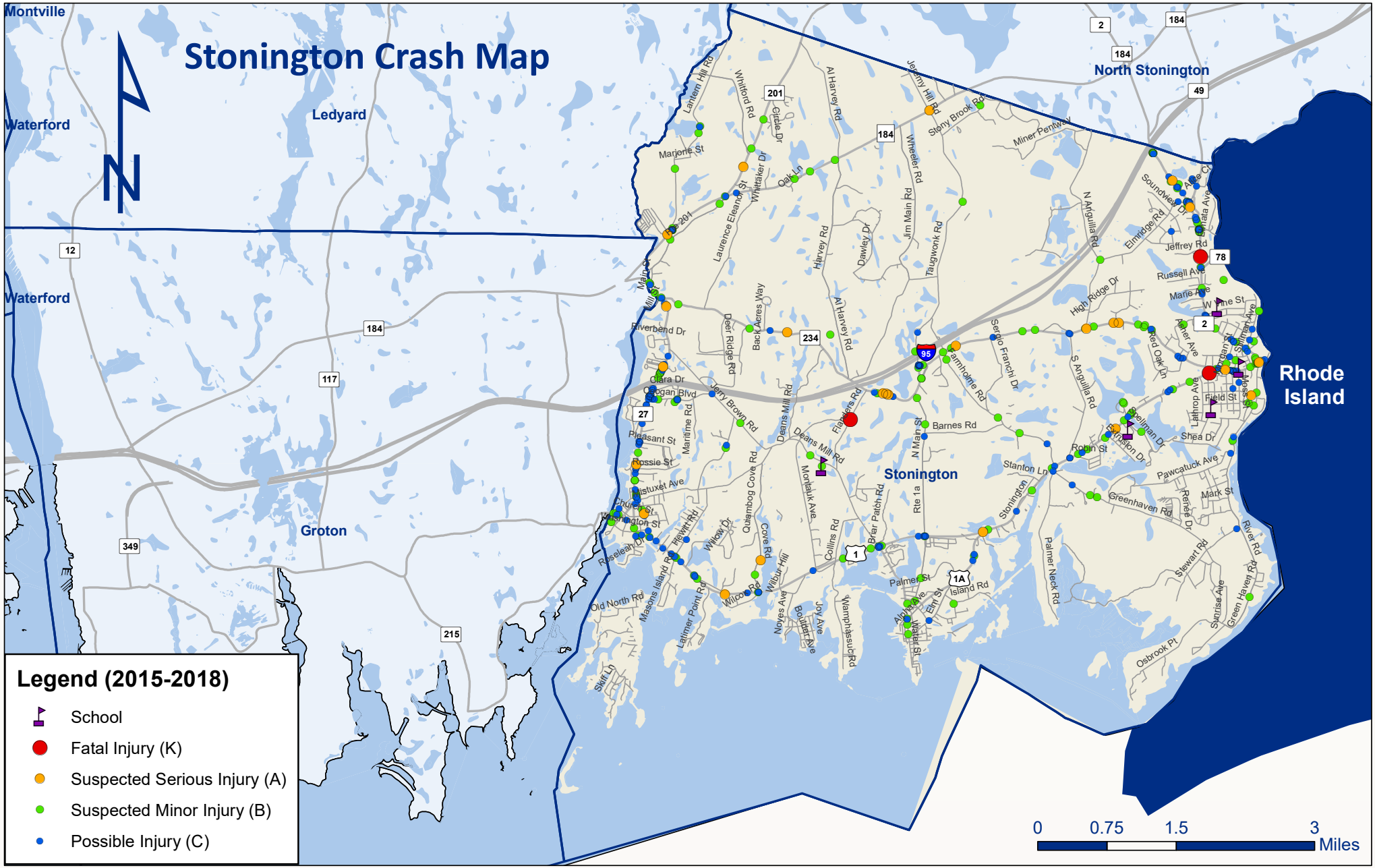
- The incomplete sidewalk on US-1 (South Broad Street) from Pawcatuck to the Stonington High School is a perennial issue with significant political will. The entirety of US-1 (South Broad Street) is a bicycle route favored by cyclists and any improvements should accommodate them with appropriate facilities, such as buffered bike lanes. The area indicated for sidewalk improvements should consider the Stonington High School and the medium to high density housing areas.

Stonington Total Crashes by Severity

Crash Severity	2015	2016	2017	2018
Fatal Injury (K)	0	1	2	0
Suspected Serious Injury (A)	8	8	5	4
Suspected Minor Injury (B)	34	46	48	41
Possible Injury (C)	29	53	40	43
Total Injury Crashes	71	108	95	88

- The intersection of US-1 (West Broad Street) and CT-2 (Liberty Street) is an area identified in SCCOG's congestion management process (CMP), available here: http://seccog.org/transportation-documents. This intersection also boasts an Amtrak Rail overpass which obstructs sightlines.

Source: VN Engineers


Stonington Crash Map
Montville
Waterford
Ledyard
Waterford
Groton
North Stonington
Stonington
Rhode Island
Legend (2015-2018)
School
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
0
0.75
1.5
3
Miles

Field Site Inventory

CT-27 (Greenmanville Avenue) from Pleasant Street to Holmes Street

The CT-27 (Greenmanville Avenue) corridor between Pleasant Street and Holmes Street is in the center of the Mystic Seaport Village and generally consists of a two-lane cross-section with one travel lane in each direction, minimal shoulders, sidewalks, and a posted speed limit of 30 MPH. During the summer months, there is a significant increase in tourist traffic volume and associated congestion along the corridor. During this time period, over 1,000 pedestrians cross CT-27 (Greenmanville Avenue) from/to large surface parking lots on the eastern side of CT-27 (Greenmanville Avenue) to/from Mystic Seaport on the western side of CT-27 (Greenmanville Avenue). Pedestrian crosswalks are located throughout the corridor at both signalized and unsignalized intersections.

Recommendation:

- In 2016, a Road Safety Audit was performed by CTDOT and the Town that includes a series of recommendations for this section of CT-27 (Greenmanville Avenue). Continue to implement the short-term, medium-term, and long-term recommendations.

US-1 (West Broad Street) at CT-2 (Liberty Street) and Mechanic Street

This is a stop sign controlled, four-way, offset intersection. An Amtrak rail bridge traverses the intersection, with support abutments located within the center of the intersection. US-1 (West Broad Street) approaches from the east and west, each with an exclusive left-turn lane and a shared through/right-turn lane. These lanes operate under free-flow conditions. CT-2 (Liberty Street) approaches from the north, which is west of the train bridge abutment. This approach operates under stop control and has one left-turn and one right-turn lane. Mechanic Street has a single stop-sign controlled lane, which approaches from the south and is located east of the abutment. Crosswalks and pedestrian ramps are present at all legs/corners of the intersection. Marked shoulders are present along US-1 (West Broad Street) and CT-2 (Liberty Street). Other than these shoulders, no bicycle amenities exist within this intersection.

During the field inventory, both pedestrians and cyclists were observed using the corridor. On-street parking was present along US-1 (West Broad Street) and CT-2 (Liberty Street), where parking is permitted. The crossing distances within the intersection range from approximately 65 feet to 90 feet, the greatest being at Mechanic Street, due to its skewed approach.

The vehicular traffic during the site visit was light to moderate. Long queues at the eastbound approach were created by the lack of gaps in opposing traffic for left-turning vehicles. When westbound gaps opened, both the eastbound left-turning vehicles and the southbound left-turning vehicles competed for the available maneuvering space. Often vehicles making these movements would either cause brief lockups to operations or creep past one another at an extremely slow pace. Drivers often lacked the ability to alternate right-of-way or grant right-of-way to the legally appropriate vehicle. Drivers either appeared confused or overly assertive.

Recommendations:

- Reconstruct the railroad bridge supports to eliminate the abutment located within the center of the intersection. Additionally, Mechanic Street could be realigned opposite CT-2 (Liberty Street) to shorten the crosswalk.
- Consider completing a traffic signal warrant for the installation of a traffic signal. This would more clearly assign right-of-way to motorists at the different approaches and allow for appropriate gaps for left-turning vehicles.

CT-27 (Greenmanville Avenue) Crosswalk Linking to Mystic Seaport

US-1 (West Broad Street) Railroad Abutment

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-27 (Greenmanville Avenue) from Pleasant Street to Holmes Street	Corridor mobility	Continue to implement the short-term/ long-term recommendations included in the 2016 plan to improve pedestrian, bicycle, motor vehicle, and transit mobility though the corridor	Low-Medium
US-1 (West Broad Street) at CT-2 (Liberty Street) and Mechanic Street	Intersection crashes	Reconstruct the railroad bridge supports to eliminate the abutment located within the center of the intersection	High
		Consider completing a traffic signal warrant for the installation of a traffic signal. This would more clearly assign right-of-way to motorists at the different approaches and allow for appropriate gaps for left-turning vehicles	Medium
		Realign Mechanic Street opposite CT-2 (Liberty Street) and shorten the crosswalk	Medium
CT-184 (New London Turnpike)/Jeremy Hill Road/Taugwonk Road	Sight distance	Level out the vertical curves. Reference project 0172-0471 to upgrade the existing flashing beacon and improve sightlines from Taugwonk Road	Medium-High
CT-234 (Pequot Trail)	Icy conditions	Investigate drainage	Low-Medium
		High friction surface treatment	Low
Town-wide	Bike and pedestrian safety	Follow SCCOG's Regional Bike and Pedestrian Plan	Low-High

TOWN OF WATERFORD

2016 U.S. Census Population Estimate: 19,101
Area: 44.60 square miles
Population Density: 428 persons per square mile
2016 Vehicle Miles Traveled (VMT): 285,649,000
2016 VMT per Capita: 14,955
Setting: Suburban
Date of Meeting with Town: July 30, 2019
Town and Regional Representatives: Dan Steward (First Selectman), Abby Piersall, AICP (Town Planning Director), Chief Brett Mahoney (Police Department), Ryan Spearrin (Police Department), Bruce Miller (Director of Fire Services)
Data-Identified High Frequency Crash Corridors: CT-32-Mohegan Avenue Parkway (From Old Norwich Road to Rosemary Lane); CT-85-Hartford Turnpike (From Dayton Road to Jefferson Avenue); US-1-Boston Post Road (From Rope Ferry Road to Town Line)
Data-Identified High Crash Intersections: CT-85 (Hartford Turnpike) and Cross Road; CT-85 (Hartford Turnpike) and Harvey Avenue
Bike and Pedestrian Crash Totals: 26
Total Number of Crashes Involving Injuries or Fatalities, 2015-2018: 537

Source: VN Engineers

Overview

Waterford is a suburban town in New London County, bordered by Montville to the north, New London, Ledyard, and Groton to the east, East Lyme and Niantic River to the west, and Long Island Sound to the south. The Town's main thoroughfares are I-95, I-395, US-1, CT-32, CT-85, CT-156, and CT-213.

Town Input

Fatal Crashes from 2015-2018
The Town discussed the fatal crashes identified on the map. The crash along CT-85 (Hartford Turnpike) involved a pedestrian being struck by a motor vehicle during early morning hours. The pedestrian was walking along the edge of the roadway, where no sidewalks exist. The crash on US-1 (Boston Post Road) involved a head-on collision within the reverse curve turn of a bridge work zone and the driver at fault was under the influence of alcohol.

The Town staff had requested that the CTDOT complete a corridor study along CT-85 (Hartford Turnpike/Broad Street), but it was denied.

Rope Ferry Road near Fire House
This section of Rope Ferry Road has been reviewed by means of a Community Connectivity Grant and Safety Audit. Vehicular speeds traveling downhill in the eastbound direction are excessive. The section of Rope Ferry Road west of this area (near Millstone entrance) has recently undergone a road diet, which reduced the cross-section from four lanes to three. The western extent of this section at Mago Point also has newly installed street lights to improve nighttime visibility.

CT-85 (Hartford Turnpike)

This corridor, from I-95 (Jewish War Veterans Memorial Highway) to the Target Plaza (900 Hartford Turnpike), has several pull-offs for police enforcement on the northbound side, but no locations for enforcement to be staged along the southbound side. The signals at the I-95 (Jewish War Veterans Memorial Highway) interchange are poorly timed and create excessive queues. Significant development is expected in the area, which will increase traffic volumes. Crosswalks exist at plaza/mall driveways, but the sidewalks do not extend north beyond Dayton Place.

This corridor from Cross Road to the Montville Town line has a wide cross-section which seems to encourage speeding.

US-1 (Boston Post Road)

This corridor from New London Town line to Clark Lane is in the vicinity of both Waterford High School and Clark Lane Middle School. This is the heaviest traveled pedestrian corridor in the Town of Waterford. Many of the pedestrian and bicycle crashes along this corridor involve poor and homeless people. Increased development is expected in this area, which will increase vehicular, pedestrian, and bicycle traffic. The sidewalk conditions will be improved following a Community Connectivity Project.

Waterford Total Crashes by Severity

Crash Severity	2015	2016	2017	2018
Fatal Injury (K)	0	1	1	0
Suspected Serious Injury (A)	7	12	7	6
Suspected Minor Injury (B)	55	42	55	57
Possible Injury (C)	71	84	80	59
Total Injury Crashes	133	139	143	122

CT-32 (Mohegan Avenue Parkway) and the I-395 (Connecticut Turnpike) Entrance Ramp

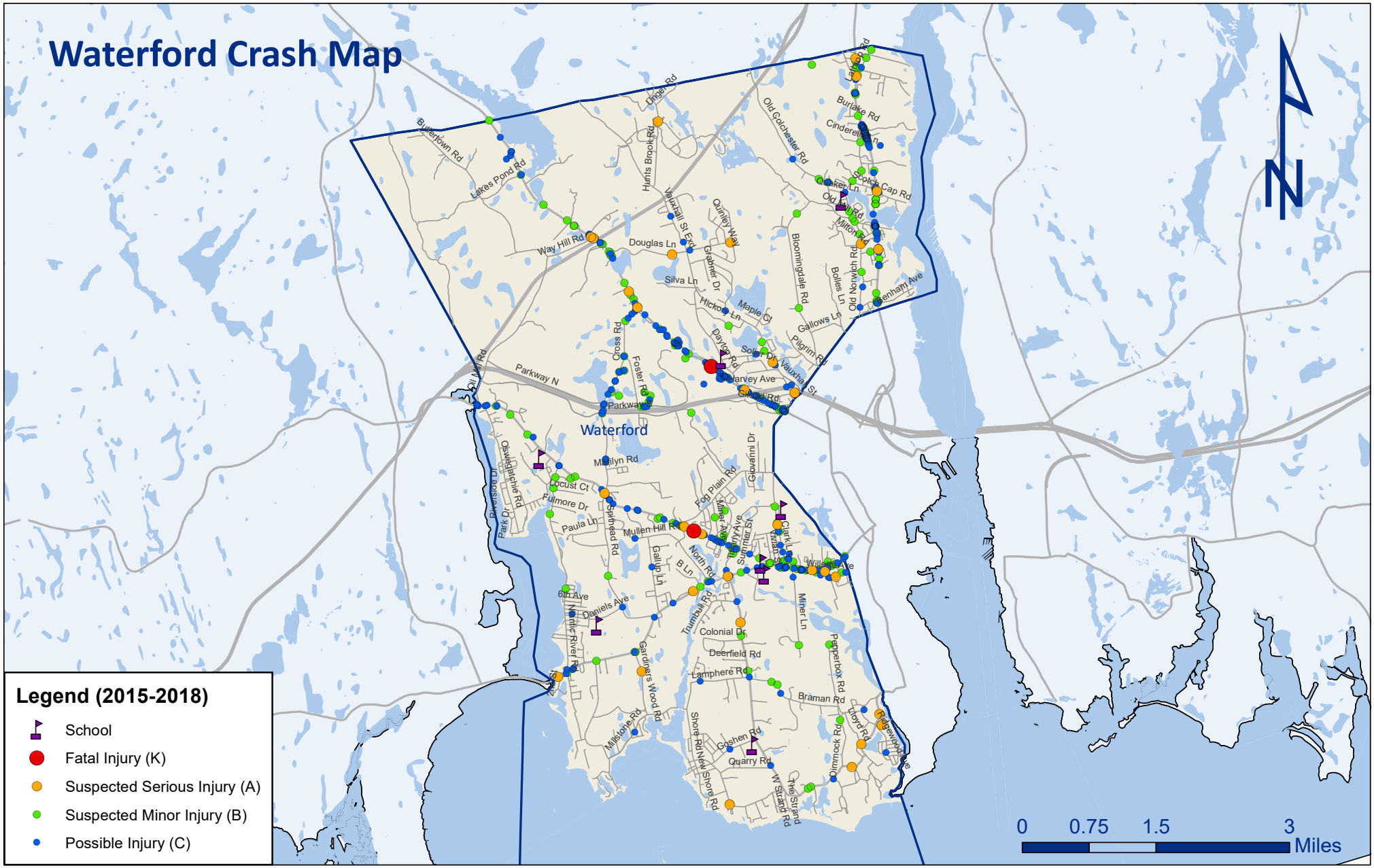
There are long queues along CT-32 (Mohegan Avenue Parkway) northbound when approaching the ramp. Most significant queues occur during the weekday afternoon peak period (from 3:00 PM to 5:00 PM). The southbound travel speeds along CT-32 (Mohegan Avenue Parkway) are excessive, often greater than 60 MPH. The intersection of CT-32 (Mohegan Avenue Parkway) and Old Norwich Road needs improvement.

Bike and Pedestrian Items

Pedestrians are prevalent in the town. Where there are no sidewalks, pedestrians walk along the roadway edges or within the grass alongside the roadway. A Community Connectivity Project has been completed along US-1 (Boston Post Road). The result is the improvement of sidewalks along US-1 (Boston Post Road) between the New London Town Line and Clark Lane.

Source: VN Engineers

Waterford Crash Map



Field Site Inventory

US-1 (Boston Post Road) from Clark Lane to New London Town Line

The US-1 (Boston Post Road) corridor between Clark Lane and the New London Town line has a high volume of pedestrian and bicycle activity given the surrounding commercial, residential and civic land uses. This section of US-1 (Boston Post Road) has a deteriorated sidewalk on the northern side of the roadway with minimal or no snow shelf, providing little separation for pedestrians from vehicles in the adjacent travel lane. In addition, in many areas along the sidewalk there is minimal curb reveal permitting vehicles to easily mount the curb. There are no edge lines or defined shoulders between Willets Ave and the Town Line.

Recommendations:

- Consider replacing the sidewalk and curbing along the northern side of US-1 (Boston Post Road) from Clark Lane to the New London Town Line.
- Consider adding edge line striping from Willets Avenue to the Town Line to better define travel lanes and provide a shoulder.

CT-85 (Hartford Turnpike) from I-95 (Jewish War Veterans Memorial Highway) to Target Plaza (900 Hartford Turnpike)

This corridor is approximately one mile in length. The highway generally has two northbound and two southbound lanes, separated by a raised median with barrier. The posted speed limit is 40 mph between the I-95 (Jewish War Veterans Memorial Highway) interchange and Dayton Place. North of Dayton Place, the posted speed limit is 45 MPH.

There are six signalized intersections within this corridor. These intersections contain additional exclusive turn lanes and pedestrian push buttons. All intersections have sidewalks and pedestrian ramps, except for Dayton Place and Crystal Mall Driveway (north).

The sidewalk extends along the eastern side of CT-85 (Hartford Turnpike) from I-95 (Jewish War Veterans Memorial Highway) to Dayton Place; however, there is a missing link between Dayton Street (the former Toys R Us driveway) and the property at 819 Hartford Turnpike Road. The length of this missing segment is approximately 500 feet. The western side of CT-85 (Hartford Turnpike) also has a sidewalk, which extends from the I-95 (Jewish War Veterans Memorial Highway) southbound ramps to Crystal Mall Driveway (south).

Land use is generally commercial with many "big box" retailers, plus the Crystal Mall. Pedestrians utilize this corridor to access the many retail and employment opportunities. In areas where no sidewalks exist, the grass alongside CT-85 (Hartford Turnpike) has worn paths from frequent use.

Recommendation:

- Extend the sidewalk throughout the corridor to improve pedestrian mobility.
- Include updated push buttons, pedestals, and crosswalks at locations where these do not currently exist.

US-1 (Boston Post Road)

Sidewalks along CT- 85 (Hartford Turnpike)

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
US-1 (Boston Post Rd) from Clark Ln to New London Town Line	Lack of bike and pedestrian amenities	Consider replacing the sidewalk and curbing along the northern side of US-1 (Boston Post Rd) from Clark Ln to the New London Town Line	Medium-High
		Consider adding edge line striping from Willets Avenue to the Town Line to better define travel lanes and provide a shoulder	Low-Medium
CT-85 (Hartford Tpke) from I-95 (Jewish War Veterans Memorial Hwy) to Target Plaza (900 Hartford Tpke)	Pedestrian mobility	Extend sidewalks where missing	Medium
		Include updated push buttons, pedestals, and crosswalks at locations where these do not currently exist	Low-Medium
CT-85 (Hartford Tpke) from Cross Rd to the Montville Town Line	High crashes	Traffic signal retroreflective backplates	Low-Medium
	Speeding	Narrow travel lanes and add shoulders	Low-High
		Provide regular speed enforcement	Low-Medium

TOWN OF WINDHAM

2016 U.S. Census Population Estimate: 24,727
Area: 27.90 square miles
Population Density: 886 persons per square mile
2016 Vehicle Miles Traveled (VMT): 113,472,295
2016 VMT per Capita: 4,589
Setting: Urban
Date of Meeting with Town: September 17, 2019
Town and Regional Representatives: Scott Clairmont (DPW), Joe Gardner (Town Engineer)
Data-Identified High Frequency Crash Corridors: Boston Post Road (From Baker Road to Club Road)
Data-Identified High Crash Intersections: Main Street and Jackson Street
Bike and Pedestrian Crash Totals: 52
Total Number of Crashes Involving Injuries or Fatalities, 2015-2018: 485

Source: VN Engineers

Overview

Windham is an urban town in Windham County, bordered by Mansfield and Chaplin to the north, Scotland to the east, Coventry and Columbia to the west, and Lebanon and Franklin to the south. It contains the City of Willimantic, and the Boroughs of Windham Center, North Windham and South Windham. The Town's main thoroughfares are US-6, CT-14, CT-32, CT-66, and CT-203.

Town Input

Fatal Crashes from 2015-2018

- CT-203 (North Windham Road) – Motorcycle speed fatal crash.
- Beacon Road – Roadway departure fatal crash due to icy conditions.
- US-6 (Boston Post Road) - Substance-impaired roadway departure fatal crash.
- CT-66 (Boston Post Road) – Roadway departure fatal crash.
- Quarry Street – Roadway departure fatal crash.
- CT-32 (Windham Road) – T-intersection fatal crash (no diagram).
- CT-32 (Windham Road) - Substance-impaired pedestrian fatal crash.

US-6 (Boston Post Road)
This corridor has high volumes of traffic, high turning movements and high frequency of crashes. CTDOT was installing new traffic signals on US-6 (Boston Post Road) from Northridge Drive to the Walmart entrance. The Town's 2017 Plan of Conservation and Development (POCD) proposed a tree-lined median which the Town still believes could alleviate the high angle crashes and have a positive effect on the traffic in this area. The Town would like a traffic signal at the entrance to Home Depot.

Main Street and Jackson Street
This is a high crash frequency signalized intersection with an upgraded exclusive pedestrian countdown phase. The traffic volume is high, especially during peak am/pm hours, and there are speeding issues. The Town representatives said that CTDOT recently upgraded the traffic signal with a controlled left turn and permitted right turn on red, which is necessary for traffic flow.

Eastern CT State University
There are minor traffic issues related to the university. It is located on the western side of town. The only concern is the lack of parking.

Pedestrians
The Town had a walkability study which included a report that stated the majority of crashes were front to rear crashes at traffic signals. The Town of Windham has exclusive pedestrian phase signalization, but jaywalking is still prevalent. CTDOT just finished a town-wide pedestrian crossing signage installation, but the Town stated that there are too many signs and it is planning on removing the excessive ones. Pedestrian safety is a concern along US-6 due to the numerous bus stops and intermittent sidewalks.

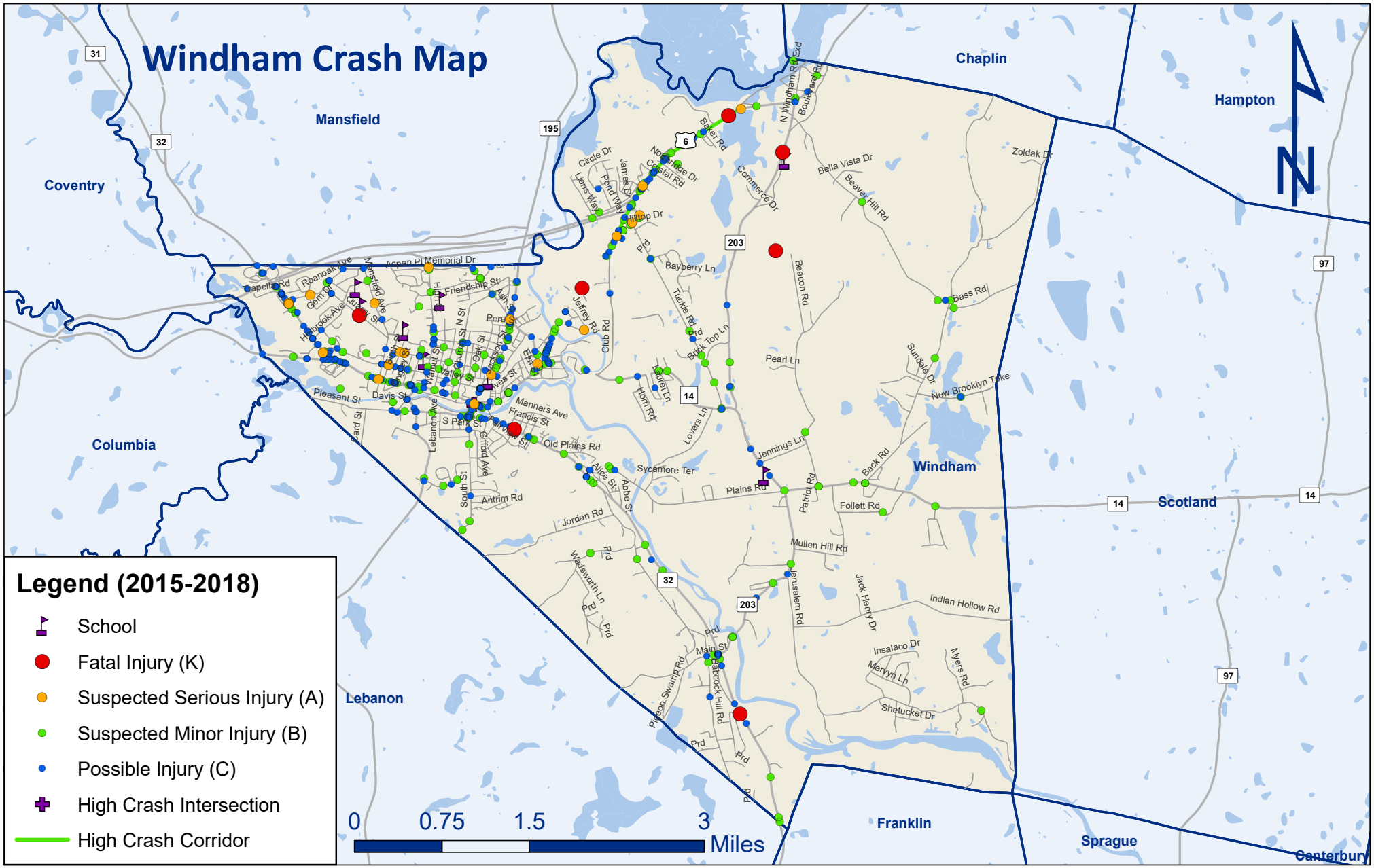
Centerline Rumble Strips
Centerline rumble strips were installed on Plains Road. Some residents have complained about the noise created by the high volume of heavy vehicles (trucks).

Planning and Zoning
Moving forward the Town Planning and Zoning Committee will enforce stricter access management, in particular on US-6 (Boston Post Road).

SCCOG Comments
In addition to any safety-related MTP projects and CMP projects in Windham, the long-standing issue of Jackson Street and CT-66 (Main Street) being a critical link in the East Coast Greenway is a concern. The existing trail comes southwest to Jackson Street at the Union Street intersection. The trail picks up at the end of Railroad Avenue. The route is envisioned to cross CT-66 (Main Street) and utilize Riverside Drive to close the gap to Railroad Avenue; this is the subject of a current local development permit which would close entry for vehicles at Riverside Drive but maintain access for bikes and pedestrians. The challenge which any RTSP project must account for is the diagonal movement from Union Street/Jackson Street to CT-66 (Main Street)/Riverside Drive. From SCCOG's perspective, the movement needs to have an actuated phase. It would be more consistent with the goals of the East Coast Greenway to provide a bi-directional facility such as a path or cycle track.

Windham Total Crashes by Severity

Crash Severity	2015	2016	2017	2018
Fatal Injury (K)	1	3	2	1
Suspected Serious Injury (A)	6	5	4	5
Suspected Minor Injury (B)	46	42	61	58
Possible Injury (C)	73	60	54	64
Total Injury Crashes	126	110	121	128


Windham Crash Map
Mansfield
Coventry
Chaplin
Hampton
Columbia
Lebanon
Windham
Scotland
Franklin
Sprague
Canterbury
Legend (2015-2018)
School
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
High Crash Intersection
High Crash Corridor
0
0.75
1.5
3
Miles
N

Field Site Inventory

Jackson Street / South Street and CT-66 (Main Street)

This is a wide multi-lane signalized intersection with high traffic volume, high concentration of crashes, and high speed issues. All four approaches have designated left-turn lanes. CT-66 (Main Street) eastbound has an exclusive right-turn lane, in addition to the left and through lanes. CT-66 (Main Street) westbound has a right/through lane, in addition to the exclusive left and through lanes. Jackson Street has an exclusive left-turn, through, and right-turn lane. South Street has a through/right turn lane and an exclusive left. All approaches permit RTOR.

There are no edgelines on Jackson Street or CT-66 (Main Street), except a short section of CT-66 (Main Street) eastbound. Pavement markings are faded. There are pedestrian countdown signals and crosswalks along all four legs of the intersection. The airline trail is adjacent to this intersection, with a connection gap that needs to be included in any intersection improvements.

This is also the site of the historic Frog Bridge.

Recommendations:

- Traffic signal retroreflective backplates.
- Restripe pavement lanes to 11' and add bike lanes or shoulders where feasible.
- If pedestrian phase becomes concurrent, add a leading pedestrian interval.
- Regular speed enforcement.

US-6 (Boston Post Road) Corridor from Airport Road to Baker Road

The US-6 (Boston Post Road) corridor, between the US-6 (Boston Post Road) expressway ramp system and Baker Road, is a major east-west corridor with adjacent commercial land uses and numerous curb-cuts. The posted speed limit is 45 MPH. The roadway generally consists of a five-lane cross-section with two travel lanes in each direction, as well as left-turn lanes at signalized intersections and various alternating left-turn lanes to gain access to various commercial driveways. There are numerous left-turn restrictions due to high traffic volumes and travel speeds. The corridor experiences high travel speeds, heavy peak period traffic volumes, and development continues to occur creating further roadway congestion. A sidewalk exists on the southern side for a portion of the roadway corridor and there are no sidewalks on the northern side.

Recommendations:

- Optimize signal timings/phases and consider traffic signal retroreflective backplates and retroreflective borders to improve the visibility of the traffic signals within the corridor.
- Consider access management techniques such as, consolidating commercial driveways and installing a landscaped median to minimize left turns.
- To improve pedestrian mobility, consider establishing a sidewalk along the entire northside of the roadway corridor.

South Street approaching CT-66 (Main Street)

US-6 (Boston Post Road)

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
Jackson St/South St and CT-66 (Main St)	Speeding	Provide regular speed enforcement	Low-Medium
	High crashes	Traffic signal retroreflective backplates	Low
		Restripe pavement lanes to 11' and add bike lanes or shoulders where feasible	Low
	Pedestrian safety	If pedestrian phase becomes concurrent add a leading pedestrian interval.	Low-Medium
US-6 (Boston Post Rd) corridor from Airport Rd to Baker Rd	Congestion	Traffic signal retroreflective backplates, while coordinating with ongoing Projects 0172-0450 and 0172-0443	Low-Medium
		Optimize signal timings/phases, while coordinating with ongoing Projects 0172-0450 and 0172-0443	Low-Medium
	Numerous left-turn restrictions	Consider access management techniques, such as consolidating commercial driveways and installing a landscaped median to minimize left turns	Low-Medium
	Pedestrian mobility	Consider establishing a sidewalk along the entire north side of the roadway corridor	Medium-High
Eastern CT State University Area	Illegally parked vehicles	Consider evaluating alternatives to provide adequate parking areas, including enforcement. Coordinate with University administrators	Low-High

Appendix B: Emphasis Areas

INTERSECTION FATAL AND INJURY CRASHES

Municipality	2015	2016	2017	2018
Bozrah	4	3	5	0
Colchester	16	19	10	21
East Lyme	10	13	16	15
Franklin	6	5	3	6
Griswold	12	9	7	8
Groton	40	46	50	44
Lebanon	3	3	5	8
Ledyard	18	15	26	15
Lisbon	6	8	6	6
Montville	35	30	25	30
New London	84	100	100	55
North Stonington	8	5	16	3
Norwich	96	100	83	95
Preston	22	12	13	21
Salem	7	2	3	5
Sprague	0	1	1	1
Stonington	21	31	31	29
Waterford	64	64	62	56
Windham	46	45	52	60
Total	**498**	**511**	**514**	**478**

ROADWAY DEPARTURES FATAL AND INJURY CRASHES

Municipality	2015	2016	2017	2018
Bozrah	7	8	6	7
Colchester	26	23	31	21
East Lyme	13	17	6	12
Franklin	7	5	5	6
Griswold	11	14	11	10
Groton	22	21	16	20
Lebanon	13	16	16	17
Ledyard	25	18	18	20
Lisbon	7	8	8	13
Montville	30	29	17	30
New London	12	24	15	13
North Stonington	5	8	9	7
Norwich	36	47	48	45
Preston	11	15	16	23
Salem	8	8	8	6
Sprague	4	2	5	1
Stonington	21	32	25	22
Waterford	20	14	18	21
Windham	19	22	21	21
Total	**297**	**331**	**299**	**315**

OLDER DRIVER FATAL AND INJURY CRASHES

Municipality	2015	2016	2017	2018
Bozrah	1	1	3	1
Colchester	11	9	6	6
East Lyme	7	6	9	6
Franklin	2	1	3	2
Griswold	3	5	3	4
Groton	9	15	12	21
Lebanon	0	5	3	3
Ledyard	6	4	13	5
Lisbon	1	2	5	7
Montville	6	8	11	16
New London	8	22	18	11
North Stonington	10	1	4	1
Norwich	14	25	20	15
Preston	11	8	8	3
Salem	2	1	1	2
Sprague	1	0	0	0
Stonington	8	13	17	8
Waterford	13	18	17	21
Windham	11	14	11	12
Total	**124**	**158**	**164**	**144**

YOUNG DRIVER FATAL AND INJURY CRASHES

Municipality	2015	2016	2017	2018
Bozrah	6	5	4	0
Colchester	17	19	17	19
East Lyme	13	13	6	8
Franklin	8	11	3	8
Griswold	14	5	8	9
Groton	26	21	28	23
Lebanon	5	7	3	13
Ledyard	15	12	13	8
Lisbon	2	2	1	4
Montville	19	28	14	18
New London	23	38	26	17
North Stonington	3	6	3	4
Norwich	34	63	41	54
Preston	14	9	6	9
Salem	5	6	3	2
Sprague	0	2	2	1
Stonington	15	16	24	14
Waterford	32	31	24	23
Windham	34	30	24	26
Total	**285**	**324**	**250**	**260**

ASLEEP OR FATIGUED FATAL AND INJURY CRASHES

Municipality	2015	2016	2017	2018
Bozrah	0	0	0	1
Colchester	5	2	3	1
East Lyme	1	6	1	0
Franklin	1	1	2	0
Griswold	0	1	3	2
Groton	3	0	0	0
Lebanon	1	1	3	3
Ledyard	1	5	2	2
Lisbon	1	3	1	0
Montville	5	5	0	4
New London	3	2	2	0
North Stonington	1	0	1	2
Norwich	7	7	3	8
Preston	3	1	2	3
Salem	2	1	2	1
Sprague	0	0	1	0
Stonington	1	1	1	1
Waterford	0	3	1	0
Windham	2	2	4	4
Total	**37**	**41**	**32**	**32**

SPEEDING FATAL AND INJURY CRASHES

Municipality	2015	2016	2017	2018
Bozrah	3	4	3	4
Colchester	11	7	19	16
East Lyme	10	12	10	5
Franklin	3	2	0	1
Griswold	6	4	5	5
Groton	14	13	18	10
Lebanon	4	4	2	6
Ledyard	23	16	17	10
Lisbon	4	3	4	3
Montville	21	10	8	8
New London	8	10	12	2
North Stonington	9	4	3	3
Norwich	22	42	37	32
Preston	10	7	6	7
Salem	4	5	2	4
Sprague	1	2	1	1
Stonington	14	10	11	7
Waterford	8	5	4	4
Windham	18	23	12	17
Total	**193**	**183**	**174**	**145**

SUBSTANCE-IMPAIRED FATAL AND INJURY CRASHES

Municipality	2015	2016	2017	2018
Bozrah	1	0	0	2
Colchester	11	7	6	7
East Lyme	3	4	3	0
Franklin	1	1	2	0
Griswold	3	4	4	3
Groton	11	5	10	6
Lebanon	4	1	4	2
Ledyard	7	5	2	7
Lisbon	1	3	2	3
Montville	5	5	5	9
New London	11	17	13	1
North Stonington	0	1	3	3
Norwich	11	17	21	16
Preston	5	3	3	3
Salem	4	0	1	1
Sprague	2	2	1	0
Stonington	8	16	6	9
Waterford	11	8	13	8
Windham	5	8	9	11
Total	**104**	**107**	**108**	**91**

NON-MOTORIZED USER FATAL AND INJURY CRASHES

Municipality	2015	2016	2017	2018
Bozrah	0	1	0	0
Colchester	3	1	2	0
East Lyme	5	1	0	2
Franklin	0	0	0	0
Griswold	0	0	1	0
Groton	5	15	9	1
Lebanon	1	0	0	0
Ledyard	3	2	3	1
Lisbon	2	1	1	0
Montville	0	5	2	4
New London	27	33	35	16
North Stonington	0	1	2	1
Norwich	18	13	12	12
Preston	3	3	1	0
Salem	0	0	2	0
Sprague	0	0	0	0
Stonington	2	4	3	3
Waterford	6	6	7	7
Windham	9	6	10	5
Total	**84**	**92**	**90**	**52**

MOTORCYCLE FATAL AND INJURY CRASHES

Municipality	2015	2016	2017	2018
Bozrah	2	4	4	1
Colchester	2	3	4	4
East Lyme	11	4	5	4
Franklin	2	3	1	0
Griswold	3	7	1	3
Groton	4	15	13	11
Lebanon	4	2	3	2
Ledyard	5	3	2	2
Lisbon	4	4	3	2
Montville	10	12	9	3
New London	18	22	19	6
North Stonington	4	2	4	1
Norwich	16	20	19	18
Preston	1	0	1	4
Salem	1	3	1	1
Sprague	1	0	1	0
Stonington	8	11	6	5
Waterford	13	9	7	11
Windham	5	6	5	10
Total	**114**	**130**	**108**	**88**

Source: VN Engineers

Appendix C: Infrastructure Countermeasure Table

The countermeasures included in this report were determined based on an analysis of historical data for crashes involving injuries or fatalities, discussions with Region and Town officials, the Connecticut Strategic Highway Safety Plan, FHWA's List of Proven Countermeasures and NHTSA's Countermeasures that Work, 8th edition.

	Measure	Description	Application
Signage	**Speed Feedback Signs**[1,2] Cost: Low	A changeable message sign that displays the speed of approaching vehicles.	To be used where motorized vehicle speed is a concern.
Signage	**Retroreflective Signal Backplates** Cost: Low-Medium	Improved visibility of a signal head with a backplate is made even more conspicuous by framing it with a retroreflective border.	Signal heads that have backplates equipped with retroreflective borders are more visible and conspicuous in both daytime and nighttime conditions. Cost may depend on the need to replace span wire with mast arms.
Signage	**Change Left-Turn Phase to Protected Phasing** Cost: Low	Modify existing phasing to a protected phase.	"Protected-only" phasing consists of providing a separate phase for left-turning traffic and allowing left turns to be made only on a green left arrow signal indication, with no pedestrian movement or vehicular traffic conflicting with the left turn. As a result, left-turn movements with "protected-only" phasing have a higher capacity than those with "permissive-only" phasing due to fewer conflicts.[3]
Signage	**Flashing Advance Warning Beacons** Cost: Low to Medium	A beacon that provides a warning to motorists about an intersection ahead.	To be used in advance of an intersection.
Signage	**No Right Turn on Red** Cost: Low	A sign that prohibits right turns during the red phase due to exclusive pedestrian phases, high traffic or pedestrian volumes, or inadequate visibility.	Together with a leading pedestrian interval, the restriction can benefit pedestrians with minimal impact on traffic. Part-time prohibitions during the busiest times of the day may be adequate to address the problem.
Signage	**Additional Chevron Signs** Cost: Low	Additional signs help to increase the noticeability of signage in situations where standard signage is insufficient.	While agencies apply signing devices uniformly, adding additional signs may be necessary depending on an assessment of speed, unexpected geometric features, traffic volume, and crash data.

1 Federal Highway Administration. (2009). Engineering Countermeasures for Reducing Speeds: A Desktop Reference of Potential Effectiveness. Washington, D.C.: Federal Highway Administration.
2 Overuse of signs and pavement markings may reduce their effectiveness. These devices should be used in locations where the needs are greatest.
3 Federal Highway Administration. (2004). Signalized Intersections: Informational Guide. https://www.fhwa.dot.gov/publications/research/safety/04091/04.cfm

	Measure	Description	Application
Pavement Markings	**Regulatory Pavement Markings**[1] Cost: Low	Pavement markings, such as "25 MPH", that emphasize regulatory signage (MUTCD Section 3B.20).	To be used as a supplement to regulatory signs.
Pavement Markings	**Crosswalks** Cost: Varies, Low -markings only Medium -markings and simple ADA landings; High-significant pedestrian safety features required	Pavement markings delineating a portion of the roadway that is designated for pedestrian or bicycle crossing. There are several types including: continental, zebra, and standard (MUTCD Section 3B.18).	To be used at intersections or midblock crossings. Crosswalks may be used in areas with lower traffic volumes, lower speeds, and a limited number of travel lanes. See Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations for additional guidance regarding when to install a marked crosswalk.
Pavement Markings	**Road Reconfigurations** Cost: Low to High	Roadway retrofit techniques designed to produce a wide variety of benefits including reduced traffic speeds, reduced crashes, improved access management, improved accessibility for pedestrians or bicyclists, improved parking utilization, as well as improved economic vitality for businesses along those streets. Can include a variety of measures such as road diets and lane narrowing to include bike lanes.	For use in areas where speed and pedestrian and bicycle accessibility are a concern.
Physical Environment	**Buffered Shoulders** Cost: Low for restriping existing paved shoulder, high for constructing new paved shoulder	A paved shoulder that is separated by a pavement marking to create a buffer from the vehicle travel lanes. The buffer space may be marked with diagonal pavement markings and ranges from 1 to 4 feet wide.	To be used in areas where pedestrian, bicycle, and/or horse-drawn vehicle volumes and motor vehicle volumes and speeds combine to create the need for separated and buffered space along the roadway.
Physical Environment	**Bike Lanes**[2] Cost: *Varies	A lane in the roadway designated for bicycle use with striping, signing, and pavement markings (MUTCD Chapter 9B and 9C).	To be used in areas with high volumes and speeds of motor vehicles and bicycles (RV).
Physical Environment	**Roadway Surface Improvements** Cost: Varies greatly based on conditions present	Roadway surface improvements include maintenance and paving activities to provide a smooth and slip-resistant traveling surface for pedestrians and cyclists.	Facilities used by pedestrians and cyclists should be smoother than those deemed acceptable for motorized traffic to maintain stability. Therefore, it is important that debris be cleared from facilities used by pedestrians and cyclists. If rumble strips are present, sufficient gaps should be provided for cyclists to move from the shoulder to the travel lane. Additionally, there should be sufficient width for cyclists to ride between the edge of the rumble strip and the edge of the shoulder.

1 Federal Highway Administration. (2009). Manual on Uniform Traffic Control Devices. Washington, D.C.: Federal Highway Administration.
2 American Association of State Highway Safety Officials. (1999). Guide for the Development of Bicycle Facilities. Washington, D.C.: American Association of State Highway Safety Officials.

	Measure	Description	Application
Physical Environment	**Median Crossing Islands** Cost: Medium	A raised island in the center of the roadway with a refuge area that is accessible for pedestrians of all abilities. Can also provide a refuge area for cyclists, especially at locations where a shared use path crosses a roadway. The island allows pedestrians and cyclists to cross one direction of traffic at a time.	To be used when pedestrians and cyclists have to cross high-volume, multilane roadways (MUTCD Chapter 3I), (RV).
Physical Environment	**Rectangular Rapid Flash LED Beacons**[1] Cost: Medium	A beacon that provides a warning to motorists about the presence of a crosswalk. Beacon is yellow, rectangular, and has a rapid "wig-wag" flash like police lights. Beacon should operate only when a pedestrian is present; utilize either push button or passive detection.	For use at midblock crossings and intersections that do not warrant a signal.
Physical Environment	**Roadway Illumination**[2] Cost: Medium	Lighting directed to illuminate the roadway.	To be used in sections of roadway with high volumes of nighttime non-motorized activity.
Physical Environment	**Road Diets** Cost: Low to Medium	A redistribution of space in the roadway leading to a reduction in the number of travel lanes for motor vehicles on a roadway. The road diet is one of FHWA's Proven Safety Countermeasures and may provide space for bike lanes, sidewalk, or medians, and can help to reduce motor vehicle speed.	For use in areas with pedestrian crossings, multiple lanes of traffic, and high vehicle speeds.
Physical Environment	**Gateways** Cost: Low to High	Visual or physical markers to serve as an indicator to motorists that they are entering an urbanized area and to slow down.	For use at the entrance of a residential or commercial area.
Physical Environment	**Shared Use Paths** Cost: Medium to High	A facility separated from motorized vehicular traffic by a landscaped space or barrier. Shared use paths may be used by cyclists, pedestrians, skaters, wheelchair users, joggers, and other non-motorized users. Such facilities are often referred to as "trails."	To be used in areas with a high volume of pedestrians and bicyclists and high motor vehicle speeds or volumes.

1 Federal Highway Administration. (2008). Guidance Memorandum on Consideration and Implementation of Proven Safety Countermeasures. Retrieved August 29, 2011 from Federal Highway Administration: http://safety.fhwa.dot.gov/policy/memo071008.
2 Hall, J. W., Brogan, J. D., & Kondreddi, M. (2004). Pedestrian Safety on Rural Highways. FHWA-SA-04-008. Washington, D.C.: Federal Highway Administration.

	Measure	Description	Application
Signage	**Pedestrian Hybrid Beacons** Cost: High	The pedestrian hybrid beacons (PHB) is a traffic control device designed to help pedestrians safely cross busy or higher-speed roadways at midblock crossings and uncontrolled intersections.	The PHB is an intermediate option between a flashing beacon and a full pedestrian signal because it assigns right of way and provides positive stop control. It also allows motorists to proceed once the pedestrian has cleared their side of the travel lane, reducing vehicle delay.
Pavement Markings	**Roadway (or Transverse) Rumble Strips** Cost: Low	Raised bars or grooves placed across the travel lane that can be either black or white.	To be used to alert drivers of the need to reduce speed in locations where other measures cannot be applied or have been tested and have not succeeded in addressing speeding issues. Bicyclist (and motorcyclist) concerns should be addressed by a break in the strips and installing a warning sign reading "RUMBLE STRIPS AHEAD." May have limited use because of citizens concerns over noise from vehicles driving over.
Pavement Markings	**Shoulder Rumble Strips** Cost: Low	Raised bars or grooves placed at the edge of the travel lane.	Longitudinal rumble strips are milled or raised elements on the pavement intended to alert drivers through vibration and sound that their vehicles have left the travel lane. They can be installed on the shoulder, edge line of the travel lane, or at or near center line of an undivided roadway
Pavement Markings	**Centerline Rumble Strips** Cost: Low	Raised bars or grooves placed at or near the centerline travel lane.	Longitudinal rumble strips are milled or raised elements on the pavement intended to alert drivers through vibration and sound that their vehicles have left the travel lane. They can be installed on the shoulder, edge line of the travel lane, or at or near center line of an undivided roadway.
Pavement Markings	**Lane Narrowing** Cost: Low to High	The narrowing of travel lanes-either visually (by using pavement markings) or physically narrowing (with measures such as curb extensions). One example of visually narrowing lanes is a painted island that is an island defined by pavement markings and created with the function of reducing lane widths for traffic calming purposes.[1]	For use in areas with wide travel lanes and where speed is a concern (MUTCD Chapter 3I).

1 Federal Highway Administration. (2009). Manual on Uniform Traffic Control Devices. Washington, D.C.: Federal Highway Administration

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Source: VN Engineers