Regional Transportation Safety Plan 2020

Updated May 2025

Capitol Region Connecticut

CONNECTICUT DEPARTMENT OF TRANSPORTATION 125 1895 - 2020

U.S. Department of Transportation
Federal Highway Administration

CRCOG CAPITOL REGION COUNCIL OF GOVERNMENTS
Working together for a better region.

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Appendix A: Municipal Reports

Report Terminology

TERM	DEFINITION
AADT	Annual Average Daily Traffic
AASHTO	American Association of State Highway Transportation Officials
ADT	Average Daily Traffic
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.
MTP	Metropolitan 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

This regional transportation safety plan was prepared by CTDOT, in coordination with the municipalities in the region to serve as a road map to reduce fatal and injury crashes. This report is aligned with the Connecticut Strategic Highway Safety Plan (SHSP) which guides the State in obtaining the same objective. The regional plan differs from the SHSP because it specifically identifies high frequency crash locations and possible countermeasures that have the potential to reduce crashes and improve overall safety for all roadway users in the region.

In addition, this regional plan includes more local input, reflecting both the needs of each of its 38 individual communities and the Region as a whole. In addition to the regional plan, each municipality has its own mini report which includes specific crash data and incorporates stakeholder feedback.

The plan is data-driven, multimodal, and multidisciplinary. It identifies the region's high crash frequency 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 SHSP covering the five-year period from 2017 to 2021, is to reduce traffic fatalities and injuries by 15% by 2021.

This RTSP is a living document and federal regulations require an update for the SHSP every five years. The process for updating the SHSP has a wider statewide strategic scope, and currently identifies 6 broad statewide Emphasis Areas, such as “Driver Behavior” and “Young Drivers”. This Regional Safety Plan is different, ranking specific top intersection and corridor crash locations, and identifying specific countermeasures. Therefore, the process of updating this Regional Plan will be different from the State Strategic Plan. The update for the Capitol Region report will be in 2025.

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.

Source: VN Engineers

2. Stakeholders

Stakeholders engaged in the process and development of the Capitol Region's RTSP include representatives from the four E's. In order to ensure stakeholder input, the Capitol Region Council of Governments (CRCOG) 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.

CRCOG Policy Board Members

Andover – Jeff Maguire
Avon – Heather Maguire
Berlin – Mark Kaczynski
Bloomfield -Suzette DeBeautham-Brown
Bolton - Sandra Pierog
Canton – Robert Bessel
Columbia - Steven Everett
Coventry – Julie Blanchard
East Granby – James M. Hayden
East Hartford - Marcia A. LeClerc
East Windsor – Jason Bowza
Ellington - Lori Spielman
Enfield - Mike Ludwick
Farmington – C.J. Thomas
Glastonbury – Chip Beckett
Granby – B. Scott Kuhnly
Hartford - Luke Bronin
Hebron – Daniel Larson
Manchester - Jay Moran
Mansfield – Antonia Moran
Marlborough – Greg Lowry
New Britain - Erin E. Stewart
Newington – Beth Delbuono
Plainville – Katherine Pugliese
Rocky Hill – Raymond Carpentino
Simsbury – Eric Wellman
Somers - C.G. 'Bud' Knorr
South Windsor – Andrew Paterna
Southington – Christopher Palmieri
Stafford - Mary Mitta
Suffield - Melissa Mack
Tolland – William Eccles
Vernon - Daniel Champagne
West Hartford - Shari Cantor
Wethersfield – Michael Rell
Willington - Erika Wiecenski
Windsor – Donald Trinks
Windsor Locks - J. Christopher Kervick

CRCOG Transportation Committee Members & Alternatives

Andover - Eric Anderson
Avon – Lawrence Baril
Berlin – Christopher Edge
Bloomfield - Jonathan Colman & Jonathan Thiesse
Bolton - Patrice Carson & Joshua Kelly-Steele
Canton – Neil Pade
Columbia - Mark Walter
Coventry - Todd Penney
East Granby - Gary Haynes
East Hartford - Douglas Wilson
East Windsor - Leonard Norton
Ellington - Tim Webb
Enfield - Carl Sferrazza & Donald Nunes
Farmington - Russell Arnold
Glastonbury - Richard Johnson & Daniel Pennington
Granby – Kirk Severance
Hartford – Frank Dellaripa & Sandra Fry
Hebron - Kevin Kelly
Manchester – Jeff LaMalva
Mansfield – John Carrington & Derek Dilaj
Marlborough - Peter Hughes
New Britain - Mark Moriarty & Rob Trottier
Newington - Gary Fuerstenberg
Plainville – John Bossi
Rocky Hill – James Sollmi & Steve Sopelak
Simsbury - Thomas Roy & Maria Capriola
Somers - Todd Rolland
South Windsor - Jeffrey Doolittle & Michael Maniscalco
Southington – Annette Turnquist
Stafford – Devin Cowperthwaite
Suffield – Bill Hawkins & Gerry Turbet
Tolland - Andrea Drabicki & Scott Lappen
Vernon - David Smith
West Hartford - Duane Martin & Matthew Hart
Wethersfield - Derrick Gregor
Willington - Troy Sposato & Erika Wiecenski
Windsor - Robert Jarvis & Adam Kessler
Windsor Locks - Jennifer Rodriguez
Connecticut Coalition for Environmental & Economic Justice - Sharon Lewis
Greater Hartford Transit District – Jennifer Cassidy

3. Regional Overview

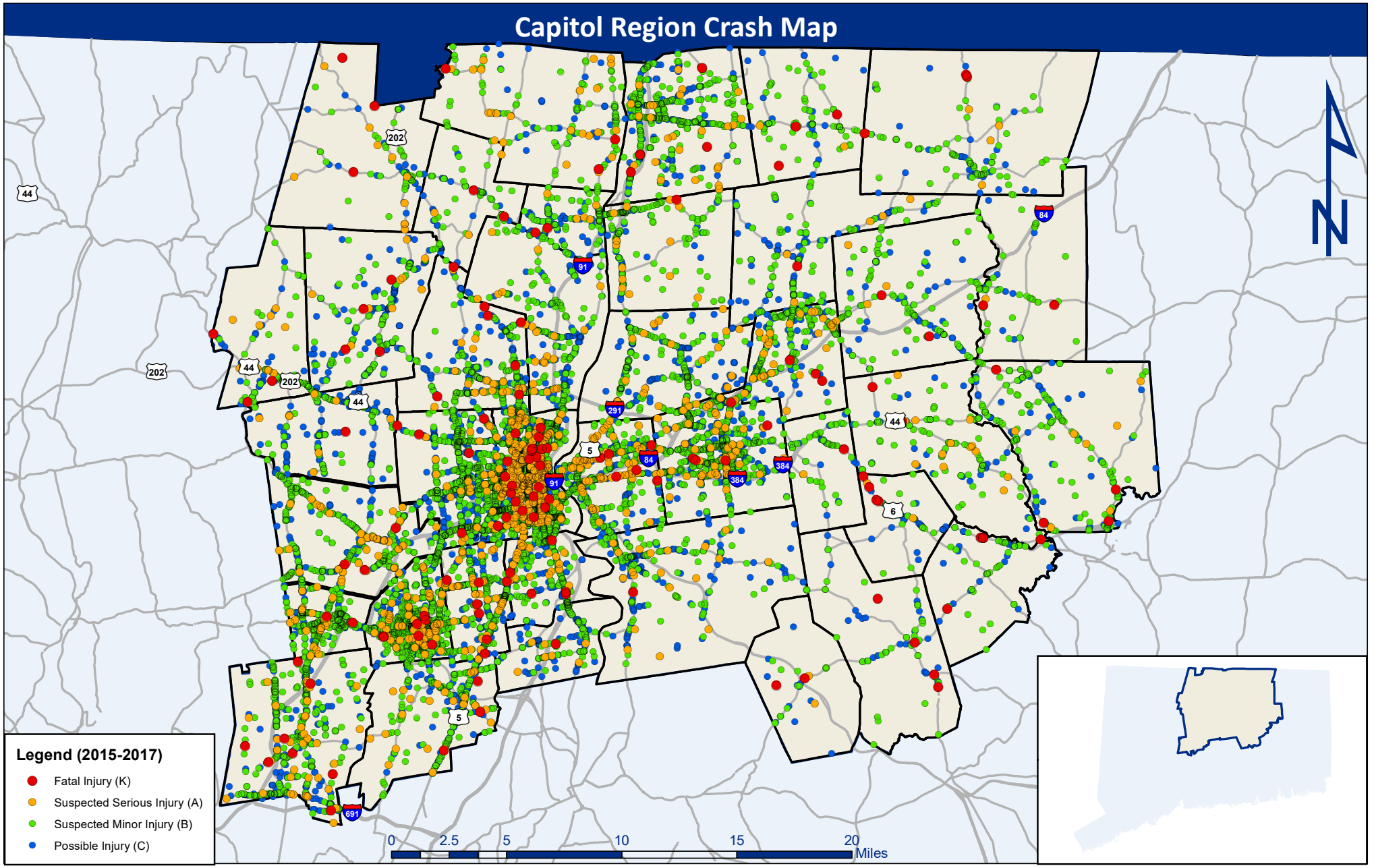
The Capitol Region is composed of 38 diverse municipalities situated in north central Connecticut. The region is home to almost one million residents, covering roughly 1,027 square miles extending from the Connecticut and Massachusetts border in the north, to the Town of Southington in the south, the Town of Canton in the west, and the Town of Mansfield in the east. Thirty-six of the 38 municipalities are designated towns and two are cities, New Britain and Hartford. Due to the disparate characteristics of each member municipality, the region must be adept at addressing the various demands on its transportation system.

In order to analyze and best understand the region's transportation network, each municipality in the Capitol Region was invited to participate in this plan to improve transportation within their individual town or city. 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 CRCOG were imperative to the success of this initiative.

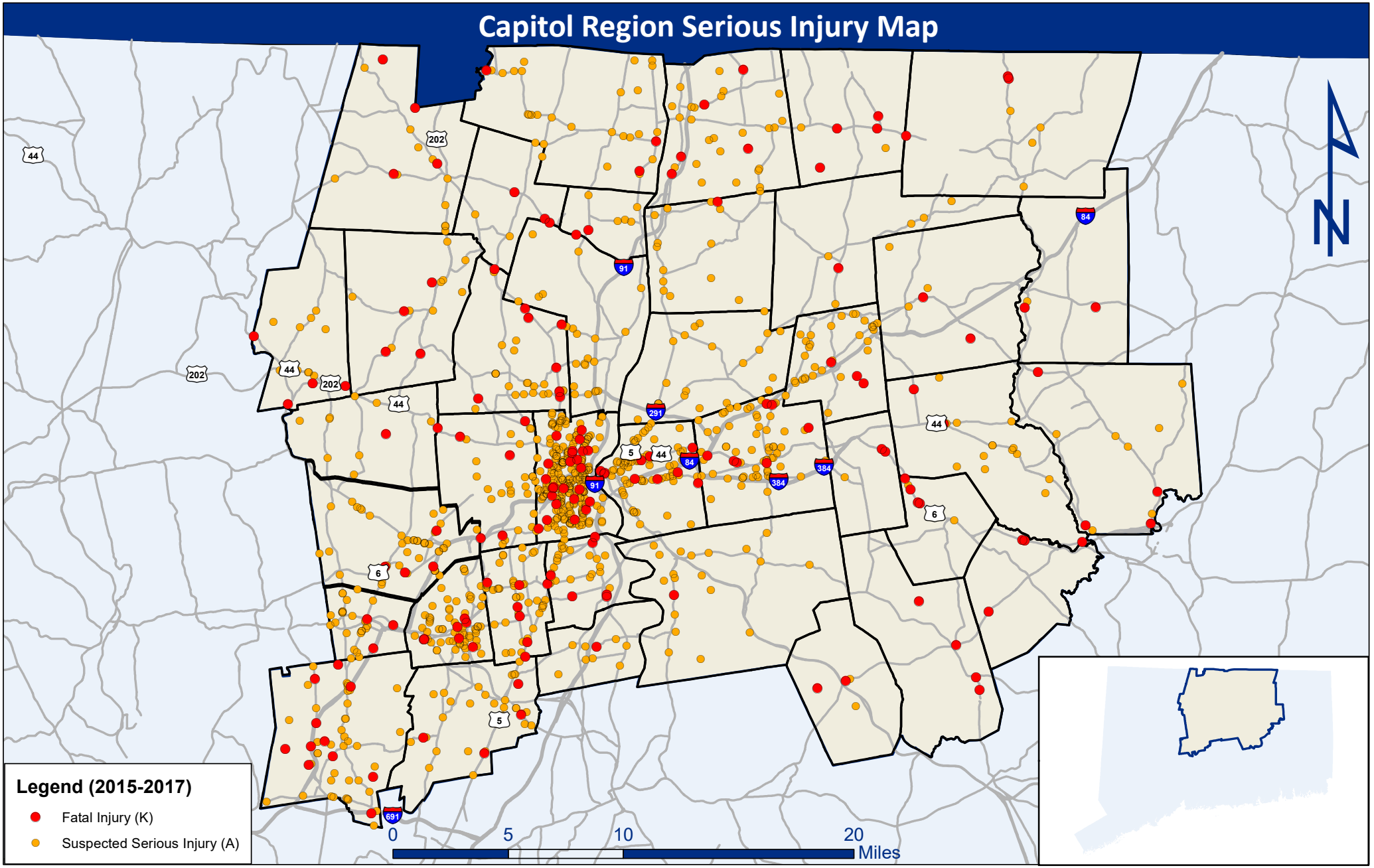
The data gathered and used for this study represents crashes that occurred on both local and State roads, which includes all roads except limited access highways. However, due to the scale of the map and proximity of many crashes to several limited access highways, some crashes appear to be on limited access highways, but are actually located on adjacent roadways. 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

Capitol Region Crash Map



Capitol Region Serious Injury Map



4. Capitol RTSP Planning Process

4.1 Planning Process

The Capitol Regional Transportation Safety Plan process had a regional study and 38 municipal studies in its planning process. The regional overview was a data-driven analysis of the top crash locations, which included a listing of possible countermeasures, and 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. Combining the data-driven analysis with stakeholder input provided for a more comprehensive regional transportation safety plan.

The municipal reports are in Appendix A 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 Five.

4.1.1 Data Collection and Methodology for Municipal Reports

The methodology for the municipal reports (Appendix A) began with the collection of fatal and injury crash data from the period of January 1, 2015 to December 31, 2017. The crashes included fatal, suspected serious injury, suspected minor and possible injury crashes. No apparent injury crashes (also known as property damage only) were included in this study.

The data was collected from the University of Connecticut's Crash Data Repository website, specifically excluding limited access highways. The crash data studied in the Municipal Reports consisted of only fatal and injury crashes after the removal of property damage only (PDO) crashes. PDO crashes were not included in the Municipal Reports because they were not included in the CT SHSP.

The extracted crash data was put into the mapping program ArcGIS to create 38 individual fatal and injury crash maps, one for each Capitol Region municipality. High crash frequency locations were identified and if an intersection or segment of roadway had a cluster of crashes it was highlighted on the maps. Additional crash locations were identified by municipal representatives due to potential safety concerns or due to 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 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 were 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 of the 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 Capitol Region member town or city.

The top crash locations in the region were also identified and the top 80 were further analyzed to identify contributing factors and possible countermeasures. For a more detailed description of this process please see the Capitol Region's Top Crash Locations section of this report found on page 12.

No Property Damage Only Crashes were included in this Report

4.2 Federal Guidelines

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 annual safety performance targets are set after CTDOT evaluates the 5-year rolling average of crash data. The Capitol Region's Regional Transportation Safety Plan will also look at these same performance metrics and establish the target objectives in congruence with the State's plan. In order to obtain this goal, the RTSP includes estimated completion time (short, medium, and long) and possible cost and 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.

2015-2017 Fatal and Injury Crashes by Municipality

Municipality	Total Fatal and Injury Crashes	Municipality	Total Fatal and InjuryCrashes
Andover	50	Mansfield	258
Avon	255	Marlborough	79
Berlin	522	New Britain	1,523
Bloomfield	561	Newington	732
Bolton	74	Plainfield	531
Canton	203	Rocky Hill	313
Columbia	74	Simsbury	278
Coventry	163	Somers	105
East Granby	89	South Windsor	414
East Hartford	993	Southington	123
East Windsor	207	Stafford	123
Ellington	194	Suffield	195
Enfield	722	Tolland	157
Farmington	569	Vernon	479
Glastonbury	502	West Hartford	1,437
Granby	107	Wethersfield	460
Hartford	4,626	Willington	53
Hebron	77	Windsor	389
Manchester	1,335	Windsor Locks	179
		Total	**19,151**

5. Top Regional Crash Locations

5.1 Methodology for Identifying Top Crash Locations in the Region

Overview

This report identifies 80 corridors and intersections with the highest severities and frequencies of motorized and non-motorized fatal and injury crashes in the Region. The fatal and injury crash sites were ranked and selected using the Equivalent Property Damage Only (EPDO) methodology which 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) as follows:

After applying an adjustment factor for Connecticut, each crash was assigned the following overall cost:

- **K** (fatal): $16,185,746
- **A** (suspected serious injury): $938,535
- **B** (suspected minor Injury): $284,430
- **C** (possible injury): $179,924
- **O** (no apparent injury): $17,061

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

- **K**: 949
- **A**: 55
- **B**: 17
- **C**: 11
- **PDO**: 1

KABCO Severity Ranking

Severity (KABCO)	Rank	Crash Cost	EPDO Score
K-Fatal	12	$16,185,746.00	949
A-Suspected Serious Injury	6	$938,535.00	55
B-Suspected Minor Injury	3	$284,430.00	17
C-Possible Injury	1	$179,924.00	11
O-Property Damage Only	0	$17,061.00	1

Once the top 80 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 UConn Crash Data Repository. 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 sites' 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 found in Appendix D.

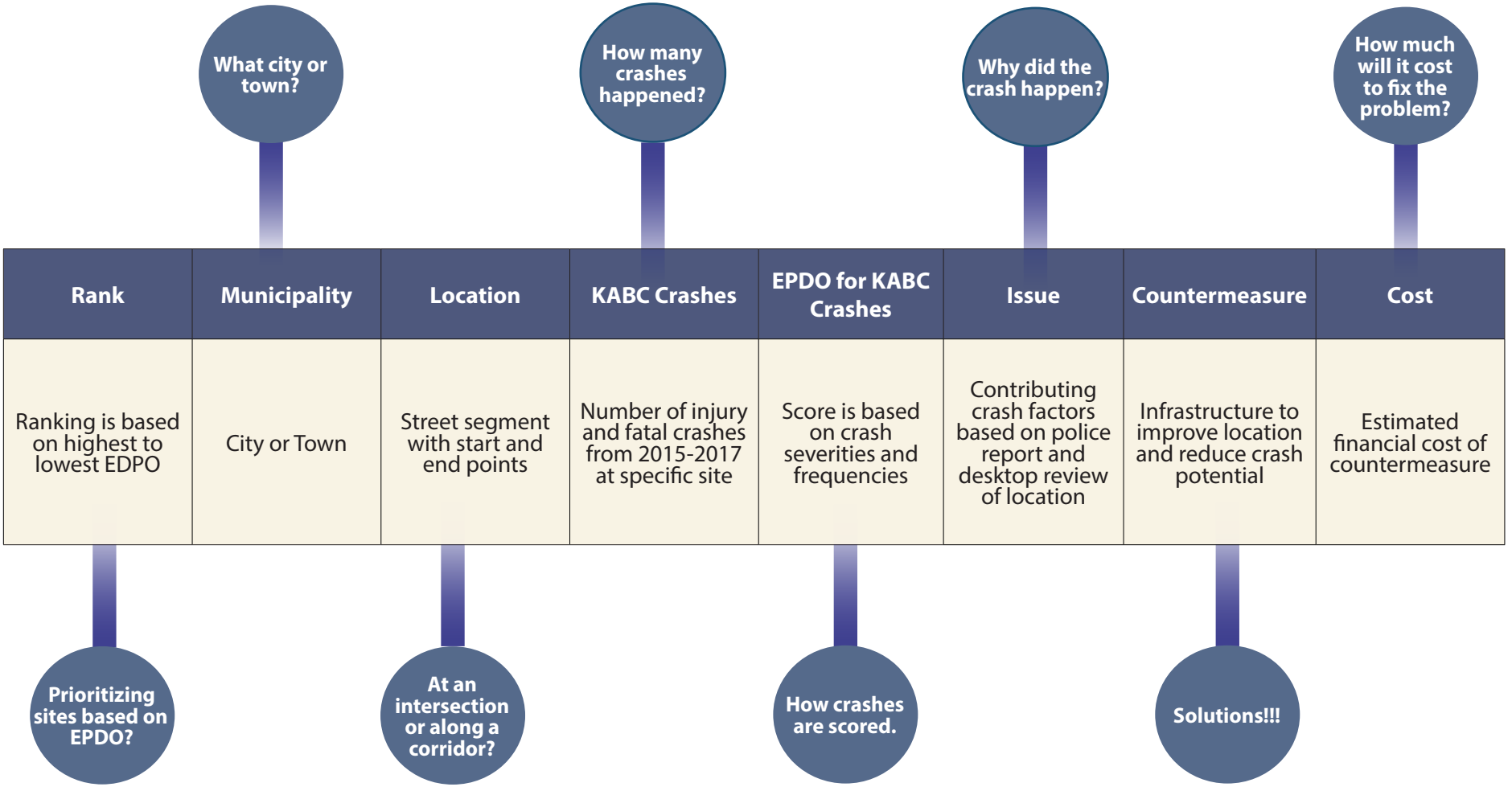
EPDO Equivalent Factor

FATAL=949
SUSPECTED SERIOUS INJURY=55
SUSPECTED MINOR INJURY=17
POSSIBLE INJURY=11
NO APPARENT INJURY=1

5.2 Top Crash Corridors and Intersections with Countermeasures

The following tables in 5.2.1 and 5.2.2 list the top crash corridors and intersections in the Capitol Region. These corridors and intersections have the highest EPDO crash ratings. The locations are ordered from highest to lowest EPDO and include a description of the affiliated issues and potential countermeasures for each location.

Below is an explanation of each column.



5.2.1 Top Crash Intersections and Countermeasures, 2015-2017

RANK	MUNICIPALITY	LOCATION	CRASHES	EPDO	ISSUES	COUNTERMEASURES	COST
1	Hartford	Sigourney St and Ashley St	17	1,377	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Pedestrian crossing	Install high-visibility crosswalks	Low
					Speeds approaching signal	Install dynamic speed feedback signs	Low
2	Newington	US-5 (Berlin Tpke) and Deming St/ Richard St (current Signal Upgrade Project 171-433)	20	1,269	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Front-to-rear crashes	Install No Right Turn on Red sign	Low
					Pedestrian call buttons but no crosswalks	Install marked crosswalks	Low
3	Southington	CT-229 (West St) and W Queen St	13	1,189	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
						Install advance warning signs with 12" flashers	Low-Medium
4	Hartford	Washington St and Retreat Ave	13	1,156	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Pedestrian crossing	Install high-visibility crosswalks at the end of channelized right to retreat trim vegetation	Low
					Angle crashes	Provide cat tracks to delineate turning paths- for dual left turns	Low
5	Hartford	Main St and Mahl Ave/ Pavilion St	13	1,144	Front-to-rear crashes and angle crashes	Install traffic signal retroreflective backplates	Low-Medium
					Angle crashes	Implement restricted left-turn phase	Low
					Pedestrian crossing	Install curb extensions	Medium
					Pedestrian crossing	Install marked crosswalks	Low
6	Hartford	US-44 (Albany Ave) and Center St	13	1,124	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Pedestrian crossing	Construct curb extensions to shorten the crossing distance for pedestrians; consider removing parking on north side of T-intersection and converting to a widened sidewalk on the north side of Albany Ave at Edwards St	Medium
					Speeding and multimodal users	Add centerline plastic bollards to force drivers to make left turns on a proper path between the Edwards St and East St intersections	Medium

5.2.1 Top Crash Intersections and Countermeasures, 2015-2017

RANK	MUNICIPALITY	LOCATION	CRASHES	EPDO	ISSUES	COUNTERMEASURES	COST
7	Newington	CT-175 (E Cedar St) and Russel Rd	15	1,115	Front-to-rear crashes	Install dynamic speed feedback signs	Low
					Speeding at the various ramps and driveways adjacent to intersection	Install dynamic speed feedback signs on CT-175(E Cedar St)	Low
8	Hartford	Asylum Ave and Woodside Cir/ Elizabeth St	10	1,100	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Angle crashes	Provide cat tracks to delineate turning paths for dual left turns	Low
					Speeds through intersection	Install dynamic speed feedback signs	Low
9	Newington	Robbins Ave and Willards Ave	10	1,074	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Angle crashes	No turn on red at Robbins Ave WB to Willard NB and Willard SB to Robbins WB	Low
						Provide cat track to delineate turning paths for drivers	Low
10	Berlin	Mill St, Savage Hill Rd, Berlin St, Beckley Rd	7	1,024	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Intersection crashes	Remove driveway from Village Plaza that is closes to intersection	Medium
					Angle crashes	Provide cat track to delineate turning paths for drivers	Low
11	Bloomfield	CT-185 (Simsbury Rd) and Mountain Rd	4	986	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Speed of vehicles from CT-185 (Simsbury Rd) to Mountain Rd	Curb radius reduction at EB CT-185 (Simsbury Rd) to Mountain Rd	Low
12	Granby	CT-20 (W Granby Rd) and Day St	3	976	Sight distance	Clear additional vegetation to improve visibility	Low
13	Canton	CT-179 (Bridge St) at Main St	3	976	Speed transition into Collinsville	Gateway treatment to calm traffic upon entering Collinsville	Medium-High
						Dynamic speed feedback signs before intersection	Low
					Pedestrian safety	Enhance existing crosswalk with flashers	Low-Medium

5.2.1 Top Crash Intersections and Countermeasures, 2015-2017

RANK	MUNICIPALITY	LOCATION	CRASHES	EPDO	ISSUES	COUNTERMEASURES	COST
14	Bloomfield	CT-305 (Old Windsor Rd) and East Newberry Rd	2	965	Skewed unsignalized intersection with crashes	Investigate the intersection	High
15	Berlin	US-5 (Berlin Tpke) and Overhill Rd	2	965	Crashes at U-Turn	Close the intersection and divert drivers to u-turns at subsequent Intersections	Medium-High
16	Granby	US-202 (Salmon Brook St) and Rickwood Ln	2	965	Front-to-front crashes	Install centerline rumble strips approaching intersection	Low
17	East Hartford	US-44 (Burnside Ave) and Ann St/ Oakwood St	2	959	Speed along horizontal curve prior to Intersection	Install dynamic speed feedback signs and curve warning signs to encourage drivers to lower their speed when traversing the curve in advance of the intersection	Low
18	East Granby	Rainbow Rd and E Granby Rd	2	959	Front-to-rear crashes	Construct deceleration right turn slip lane on to Granby Rd	Medium-High
19	Coventry	CT-31 (Bread & Milk St) and Zeya Dr	2	959	No advanced warning sign for the Zeya Drive intersection	Advance vehicle/pedestrian warning sign in advance of intersection	Low
20	Hartford	Asylum Ave and Cogswell St/Broad St	48	672	Angle crashes	Consider a mini-couplet between Broad St and Asylum Pl/Flower St. Asylum Ave would become WB only and Farmington Ave would become EB only	Medium-High
21	Hartford	Morgan St EB and Market St	43	659	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Angle crashes	Prohibit right turn on red from NB Market to eastbound Morgan St as well as EB Morgan St to southbound Market St	Low
						Provide cat tracks to delineate paths for drivers on Market St	Low
22	Hartford	Morgan St WB and Market St	43	659	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Angle crashes	Provide cat tracks to delineate paths through the intersection; also need to account for the block the box markings	Low
						Prohibit right turn on red	Low

5.2.1 Top Crash Intersections and Countermeasures, 2015-2017

RANK	MUNICIPALITY	LOCATION	CRASHES	EPDO	ISSUES	COUNTERMEASURES	COST
23	West Hartford	New Park Ave and Flatbush Ave	35	512	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Driveway access	Place centerline bollards to restrict access from SB lanes to gas station (on NE corner) and vice versa. Or limit south entrance to NB only similar to set up at the gas station on SW corner	Low
24	West Hartford	New Britain Ave and S Main St	37	488	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Pedestrian crossing	Repaint and maintain the crosswalks	Low
25	Manchester	Buckland St at Tolland Tpke	35	481	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
						Install advance warning signs with 12" flashers	Low-Medium
26	Berlin	US-5 (Berlin Tpke) and CT-160 (Deming Rd)	26	455	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Angle crashes	Prohibit right turns on red from Deming Rd	Low
						Provide cat tracks to delineate turning paths for drivers	Low
27	Vernon	Hartford Tpke and CT-31	28	427	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Angle crashes	Provide cat tracks to delineate turning paths for drivers	Low
28	New Britain	CT-555 (West Main St) and CT-372 (Corbin Ave)	32	423	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Driveway access	Close or modify driveways to gas stations to reduce conflicts	Medium-High
					Angle crashes	Provide cat tracks to delineate turning paths for drivers	Low
29	Hartford	Homestead Ave and Woodland St	20	361	Angle crashes	Provide cat tracks to delineate turning paths for drivers	Low
					Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium

5.2.1 Top Crash Intersections and Countermeasures, 2015-2017

RANK	MUNICIPALITY	LOCATION	CRASHES	EPDO	ISSUES	COUNTERMEASURES	COST
30	Hartford	Maple Ave/ Wyllys St/Main St intersection	23	354	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Angle crashes	Provide cat tracks to delineate movements through intersection	Low
						Install No Right Turn on Red signs	Low
31	Hartford	CT- 529 (New Britain Ave) and Grant St/Newfield Ave	27	352	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Driveway access	Reconfigure driveways on both sides of CT-529 (New Britain Ave) to limit conflicts	Medium-High
32	Newington	CT-175 (Cedar St) and Fenn Rd	28	350	Front-to-rear crashes	Install traffic signal retroreflective backplates.	Low-Medium
						Install advance warning signs with 12" flashers on CT-175 (Cedar St)	Low-Medium
33	Newington	CT-175 (Cedar St) and CT-173 (Willard Ave)	24	347	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Angle crashes	Provide cat tracks to delineate turning	Low
34	Manchester	Hartford Rd and McKee St/Keeney St	20	330	Pedestrian crashes	Install curb extensions at south leg of intersection; narrow the width to provide shorter crossing distances for pedestrians on Keeney St	Medium
						Maintain high visibility of crosswalks	Low
					Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
35	West Hartford	Prospect Ave and Warrenton Ave	20	306	Angle crashes	Repaint stop bar	Low
					Angle crashes	Provide cat tracks to delineate turning path for drivers	Low
					Pedestrian crashes	Prohibit right turns on red	Low
36	Hartford	Capitol Ave and Broad St	19	300	Angle crashes	Provide cat tracks to delineate turning paths for drivers	Low
					Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium

5.2.2 Top Crash Corridors and Countermeasures, 2015-2017

RANK	MUNICIPALITY	LOCATION	CRASHES	EPDO	ISSUES	COUNTERMEASURES	COST
1	Hartford	Park St from New Park Ave to Main St	194	5,829	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Potential pedestrian crashes	Fully mark and sign crosswalks throughout the corridor. Provide leading pedestrian intervals at all signals	Low
					Potential pedestrian crashes	Install additional curb extensions at intersections missing such a feature	Medium
2	Hartford	Garden St from Collins St to Pavilion St	98	4,263	Front-to-rear crashes/ lack of pedestrian amenities	Implement traffic calming such as bulb outs and new pedestrian crossings	Low-High
					Long pedestrian crossings at Garden St and Homestead Ave	Reduce curb radii at Garden St and Homestead Ave intersection	Low
					Angle crashes at Garden and Homestead Ave	Provide cat tracks to delineate turns at this intersection	Low
3	Andover	US-6 from Wales Rd to South St	14	4,001	Speeding	Install dynamic speed feedback signs	Low
					Angle Crashes	Provide acceleration lanes for vehicles turning out of South St	Medium-High
4	Bloomfield	CT-187 (Blue Hills Ave) from Tower Ave to Pine Grove Rd	152	3,913	Speeds and closely spaced intersections	Implement a road diet with bicycle lane, parking lane, and bulb outs to lower speeds through the closely spaced intersections in this corridor	Low-Medium
					Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Various crashes	Install dynamic speed feedback signs at closely spaced intersections at the north and south ends of the corridor	Low
5	Hartford	Wethersfield Ave from Bolton St to Wyllys St	151	3,416	Intersection Crashes	Install dynamic speed feedback signs	Low
					Long crossing lengths	Install curb extensions	Medium
					Pedestrian crashes	Install high-visibility crosswalks	Medium

5.2.2 Top Crash Corridors and Countermeasures, 2015-2017

RANK	MUNICIPALITY	LOCATION	CRASHES	EPDO	ISSUES	COUNTERMEASURES	COST
6	Hartford	Barbour St from Capen St to Tower Ave	63	2,820	Bicycle crashes	Provide marked bicycle lanes that also serves as part of a road diet	Medium-High
					Pedestrian crashes	Install curb extensions with high visibility crosswalks to lower vehicle speeds	Medium
					Pedestrian crashes	Increase visibility of existing crosswalks and provide additional crossings At signalized crossings, provide leading pedestrian interval	Medium
					Speeding in school zone	Install dynamic speed feedback signs	Low
7	Hartford	Franklin Ave from Victoria Rd to Maple Ave	139	2,181	Pedestrian crashes	Install curb extensions	Medium
						Install high-visibility crosswalks	Low
					Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Bicycle crashes	Add bike lanes north of Wayland St	Medium-High
8	Hartford	CT-187 (Blue Hills Ave) from US-44 (Albany Ave) to Tower Ave	75	2,098	Angle and front-to-rear crashes from Branford St to Tower Ave	Install bulb outs	Low-High
					Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Severity of crashes	Install dynamic speed feedback signs	Low
9	East Hartford	CT-502 (Silver Ln) from CT-518 (Roberts St) to Holland Ln	59	2,071	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Angle crashes	Provide cat tracks to delineate turning paths	Low
					High access points and turning movements/ speeding	Install dynamic speed feedback signs	Low
10	Hartford	Hillside Ave from Yale St to Wilson St	73	2,033	Angle and front-to-rear crashes	Install bulb outs and speed tables	Low-High
					Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					All pedestrian-related crashes are north of New Britain Ave	Install high-visibility crosswalks north of New Britain Ave	Low-Medium

5.2.2 Top Crash Corridors and Countermeasures, 2015-2017

RANK	MUNICIPALITY	LOCATION	CRASHES	EPDO	ISSUES	COUNTERMEASURES	COST
11	Hartford	Farmington Ave from Prospect Ave to Asylum Ave	129	1,923	Visibility of signal heads	Install traffic signal retroreflective backplates	Low-Medium
					Speed and long crossings	Install curb extensions	Medium
					Speeding	Install dynamic speed feedback signs	Low
12	Stafford	CT-32 (Monson Rd) from Old Monson Rd to State Line Rd	3	1,914	Speeding	Install dynamic speed feedback signs	Low
13	Hartford	Hamilton St from New Park Ave to Zion St	53	1,753	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Front-to-rear crashes at intersections with New Park Ave and Francis Ave	Install dynamic speed feedback signs	Low
14	Manchester	CT-83 (Main St) from Myrtle St to Delmont St	44	1,650	Increase the visibility of the signal heads	Install traffic signal retroreflective backplates	Low-Medium
					Pedestrian crashes	Install curb extensions	Medium
15	New Britain	MLK Dr between E Main St and North St	48	1,617	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Angle crashes	Install cat tracks to guide drivers with through and/or turning movements at these large skewed intersections and address angle crashes	Low
					Pedestrian crashes and faded crosswalks	Install high visibility crosswalks	Low-Medium
16	Wethersfield	US-5 (Berlin Tpke) from Arrow Rd to Nott St	43	1,609	Speeding	Install dynamic speed feedback sign	Low
					Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium

5.2.2 Top Crash Corridors and Countermeasures, 2015-2017

RANK	MUNICIPALITY	LOCATION	CRASHES	EPDO	ISSUES	COUNTERMEASURES	COST
17	New Britain	Main St from E Main St to Beaver St	35	1,482	Angle and sideswipe crashes	Install cat tracks through intersection of Main St and North St	Low
					Various crash types	Implement traffic calming through entire corridor including bulb outs-in particular at Lafayette St intersection	Low-High
					Large radii at Main St and Myrtle St	Reduce curb radii at intersections	Low
					Front-to-rear crashes and speeding	Install dynamic speed feedback signs	Low
18	New Britain	S Main St from Elmfield St to CT-71 (New Britain Ave)	34	1,402	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Pedestrian crashes	Install curb extensions	Medium
19	Hartford	Main St from Park St to Chapel St S	95	1,393	Pedestrian crashes	Install curb extensions	Medium
						Install high-visibility crosswalks	Low
					Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
20	Hartford	Hudson St from Park St to Buckingham St	22	1,278	Visibility of the signal heads	Install traffic signal retroreflective backplates	Low-Medium
					Pedestrian crashes	Install high visibility crosswalks and curb extensions	Medium
					Pedestrian and bike crashes	Implement a road diet	Low-Medium
21	Canton	US-44 (Albany Tpke) from Secret Lake Rd and Brass Lantern Rd	24	1,253	Front-to-rear crashes	Install advance warning signs with 12" flashers toward of congestion from beyond the curve toward the west	Low-Medium
					Congestion related front-to-rear crashes and turning sight line related angle crashes	Consider a left turn lane to facilitate turns on to Colonial Rd and Old Albany Tpke and Brass Lantern Rd	Medium-High
					Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Front-to-rear crashes	Install advance warning signs with 12" flashers	

5.2.2 Top Crash Corridors and Countermeasures, 2015-2017

RANK	MUNICIPALITY	LOCATION	CRASHES	EPDO	ISSUES	COUNTERMEASURES	COST
22	Vernon	CT-30 (Hartford Tpke) from Cold Spring Rd to CT-527 (West St)	21	1,229	Skewed intersection and sight distance issue at CT-30 (Hartford Tpke) and CT-533 (Tunnel Rd)	Square up the intersection closer to a right angle to reduce the skew and to help with driver sightlines. Clear vegetation to provide additional sightlines	Medium-High
					Skewed intersection at CT-30 (Hartford Tpke) and CT-527 (West St)	Square up the intersection closer to a right angle to reduce the skew and to help with driver sightlines	Medium-High
					Potential front-to-rear crashes at CT-30 (Hartford Tpke) and Center Rd	Install traffic signal retroreflective backplates	Low-Medium
23	Farmington	US-6 (Colt Hwy) from CT-10 (Main St) to CT-552 (Scott Swamp Rd)	16	1,220	Angle crashes	Provide cat tracks to delineate turns at this intersection with CT-552 (Scott Swamp Rd)	Low
					Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Driveway access	Consider restricting access from westbound US-6 and the gas station and funnel traffic to the gas station via CT-552 (Scott Swamp Rd)	Low-High
24	East Hartford	US-44 (Burnside Ave) from Zebulon St to Moore Ave	21	1,211	Speeding	Install dynamic speed feedback signs	Low
25	West Hartford	Asylum Ave from Fox Meadow Ln to Ballard Dr	19	1,202	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Angle crashes	Provide cat tracks to delineate turning path	Low
26	Coventry	US-44 (Boston Tpke) from Stage Rd to Grant Hill Rd	13	1,169	Angle crashes (related to the driveways on the south side of US-44 (Boston Tpke))	Provide a turn lane to separate left-turn from through traffic and help separate the two movements	Medium-High
						Install No Right Turn on Red signs	Low
					High number of turning movements	Install No Right Turn on Red signs	Low

5.2.2 Top Crash Corridors and Countermeasures, 2015-2017

RANK	MUNICIPALITY	LOCATION	CRASHES	EPDO	ISSUES	COUNTERMEASURE	COST
27	Plainville	CT-10 (East St) from Town Line Rd to Hanson Pl	13	1,156	No marked crosswalks at CT-10 (East St) and Town Line Rd	Install high-visibility crosswalks	Low-Medium
					Angle crashes at intersection of Cianci Ave/Hanson Pl and CT-10 (East St)	Reconfigure driveway access	Medium-High
					Front-to-rear crashes at CT-10 (East St) and Town Line Rd	Install traffic signal retroreflective backplates	Low-Medium
28	East Granby	CT-20 (Rainbow Rd) from Bradley Park Rd to Larch Dr	14	1,149	Speeding and high number of turning movements contribute to high angle and front-to-rear crashes	Lower the speed through infrastructure and speed limit changes to help vehicles enter and exit the gas station on the south side of CT-20 (Rainbow Rd) east of the intersection	Low
					Angle crashes	Close or reconfigure driveways to reduce conflicts	Low-High
29	Rocky Hill	CT-3 (Cromwell Ave) from County Line Drive to Inwood Rd	8	1,118	Angle crashes	Install center two-way left turn lanes	Medium-High
					Front-to-front crashes	Prohibit passing in corridor	Low
					Speeding	Install dynamic speed feedback signs	Low
30	New Britain	Stanley St from Stanley Ct to Schultz St	12	1,101	Skewed intersection/ angle crashes	Install pavement markings such as cat tracks through the intersection help to delineate the centerline of Stanley St through the intersection and address angle crashes	Low
					Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
31	Hartford	CT-529 (New Britain Ave) from Newfield Ave to Chandler St	82	1,099	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Angle crashes	Provide cat tracks to delineate turning paths	Low
					Speeding	Install dynamic speed feedback signs	Low

5.2.2 Top Crash Corridors and Countermeasures, 2015-2017

RANK	MUNICIPALITY	LOCATION	CRASHES	EPDO	ISSUES	COUNTERMEASURE	COST
32	Manchester	CT-83 (Oakland St) from Gleason St to CT-30 (Deming St)	10	1,074	Front-to-rear crashes	Install advance warning signs with 12" flashers	Low-Medium
					Speeding	Install dynamic speed feedback signs	Low
33	New Britain	Arch St from Pearl St to Walnut St	8	1,056	Visibility of the signal heads	Install traffic signal retroreflective backplates at Main St intersection	Low-Medium
					Pedestrian crossing distance and speeding	Install curb extensions	Medium
34	Hebron	Main St from Hebron Center Rd to Pendleton Dr	8	1,035	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Angle Crashes	Provide cat tracks to delineate turning paths for dual left turns	Low
					Speeding	Install dynamic speed feedback signs	Low
35	Hartford	New Park Ave from Kibbe St to Park St	41	639	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Angle crashes	Provide cat tracks to delineate turning paths for drivers	Low
36	Windsor	CT-218 (Putnam Hwy) from Mantianuck Ave to Briarwood Dr	26	513	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
37	Hartford	Vine St from US-44 (Albany Ave) to Greenfield St	27	499	Front-to-rear crashes	Install traffic signal retroreflective backplates at US-44 (Albany Ave) intersection	Low-Medium
					Angle crashes	Provide cat tracks to delineate turning paths at US-44 (Albany Ave) intersection	Low
					Skewed intersection	Connect Vine St with US-44 (Albany Ave) at a 90 degree angle	Medium-High
					Pedestrian crashes	Install high-visibility crosswalks with curb extensions	Medium
38	Plainville	CT-177 (Unionville Ave) from Northwest Dr to Farmhill Dr	11	236	Angle crashes	Provide cat tracks to delineate turning paths for drivers	Low
39	West Hartford	CT-4 (Farmington Ave) west of Highland St and Prospect Ave	11	236	Front-to-rear crashes	Install traffic signal retroreflective backplates	Low-Medium
					Various crashes and speed	Install dynamic speed feedback signs	Low

5.3 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 the 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, logos, radio ads, television ads, and web videos for speed campaigns are provided by the USDOT's 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 the 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, logos, radio ads, television ads, and web videos for drunk 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 Drunk Driving	Traffic Safety Marketing	NHTSA	Mothers Against Drunk Driving	Center for Disease Control and Prevention	Foundation for Advancing Alcohol Responsibility	CTDOT	
Drugged Driving	NHTSA and the USDOT are working on studies to understand how illegal drugs and prescription medications affect drivers. Provide marketing campaign materials are to be used as tools to raise awareness. The USDOT's TSM provides a fact sheet, sample news release, and an educational sheet that address drug-impaired driving prevention. Banner ads, 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	CTDOT	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, 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	CTDOT
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 TSM website provides campaign materials such as banner ads, 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 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's 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	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, logos, radio ads, television ads, and web videos for motorcycle safety 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 Motorcycle Safety	NHTSA	Traffic Safety Marketing	CT.gov Connecticut Rider Education Program (CONREP) for Motorcycle Safety	RideCT	Ride4Ever	
This resource list is limited and there are various other resources not cited here.						

Source: CTDOT

Funding

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 Congestion Mitigation and Air Quality 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 and traffic flow improvements, transit improvements, and pedestrian 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 July 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 September 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.

Funding

Department of Energy and Environmental Protection (DEEP) Recreational Trails Funds: Bicycles, Pedestrians, Horseback, Recreational Vehicle
This program is administered through the 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 Capitol Region were selected based on the conclusion that these contributed to most of the fatal and injury crashes verified from the 2015-2017 data and the feedback from the individual town representatives. The seven emphasis areas, including the 2015-2017 total fatal and injury crash values from Appendix B, are listed below:

1. Critical Roadway Locations: Includes both roadway departure (2,792) and intersection crashes (9,343).
2. Driver Behavior: Includes substance-impaired (1,021), aggressive driving (2,730- speeding only), distracted driving (1,845), asleep or fatigued driving (349), and having unrestrained occupants.
3. Older Drivers: Includes drivers aged 65 years and older (1,960).
4. Young Drivers: Includes drivers aged 15-25 years old (4,230).
5. Non-Motorized Users: Includes pedestrians and bicyclists (1,464).
6. Motorcyclist Safety (863).
7. Traffic Incident Management.

These emphasis areas were selected based on crash types that have the highest potential of reducing fatal and injury crashes. From these identified emphasis areas, strategies and countermeasures were developed in conjunction with stakeholders' input. Each emphasis area's countermeasures were developed according to the four E's of transportation safety. For a total of all fatal and injury crashes by emphasis area, see Appendix B.

Performance measures and strategies for these emphasis areas are described below. Performance objectives are discussed in Section 9.

Source: VN Engineers

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.

Behavioral issues like speeding, impaired driving, and distracted driving, can affect the drivers' 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 2015-2017, there were 9,343 intersection crashes resulting in fatalities or injuries within the Capitol Region. This averages to approximately 3,114 crashes per year. Of those 9,343 intersection fatal and injury crashes reported, 50 were fatal. The Capitol Region's 2015-2017 intersection fatal and injury crashes make up 22% of the 41,963 intersection fatal and injury crashes in Connecticut.

Strategies for Intersections

1. *Engineering*
   Promote project funding and selection of regional improvement projects that convert existing signalized intersections into single lane roundabouts, where feasible, based on existing conditions of traffic volumes, right of way availability, and overall traffic operations. "The use of roundabouts is a proven safety strategy for improving intersection safety by eliminating or altering conflict types, reducing crash severity, and causing drivers to reduce speeds as they proceed into and through intersections (NCHRP 672)."
2. *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 and signal timing, adding turn lanes and controlling access through medians.
3. *Enforcement*
   Conduct high-visibility enforcement, media campaigns, and public outreach at locations with a significant number of intersection crashes.
4. *Education*
   Advertise and promote the Safety Circuit Rider and other similar programs that provide training and outreach about intersection safety.
5. *Engineering*
   Incorporate safety elements and countermeasures into all regional roadway and intersection project designs and maintenance improvements.
6. *Engineering*
   Consider No Turn on Red restrictions at identified crash locations.

7.1.2 Roadway Departures

Performance Measures: From 2015-2017, there were 2,802 roadway departure crashes resulting in injuries or fatalities within the Capitol Region. This is an annual average of 934 fatal and injury crashes per year. Of those 2,802 reported roadway departure crashes, 63 were fatal. The Capitol Region's roadway departure fatal and injury crashes account for 20% of the 13,704 total roadway departure fatal and injury crashes in Connecticut.

Strategies for Roadway Departures

1. *Engineering*
   Design the roadside to include roadside barrier systems (guiderail, impact attenuators, and end treatments) or manage roadside vegetation, trees, and other fixed objects, to maintain a clear zone, in order 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.

Source: VN Engineers

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 2,073 from 2015-2017. There were 65 fatal crashes with an annual average of 691 fatal and injury crashes per year from 2015-2017. The Capitol Region's aggressive driving fatal and injury crashes make up 44% of the 4,664 total aggressive driving fatal and injury crashes in Connecticut.

Strategies for Aggressive Driving

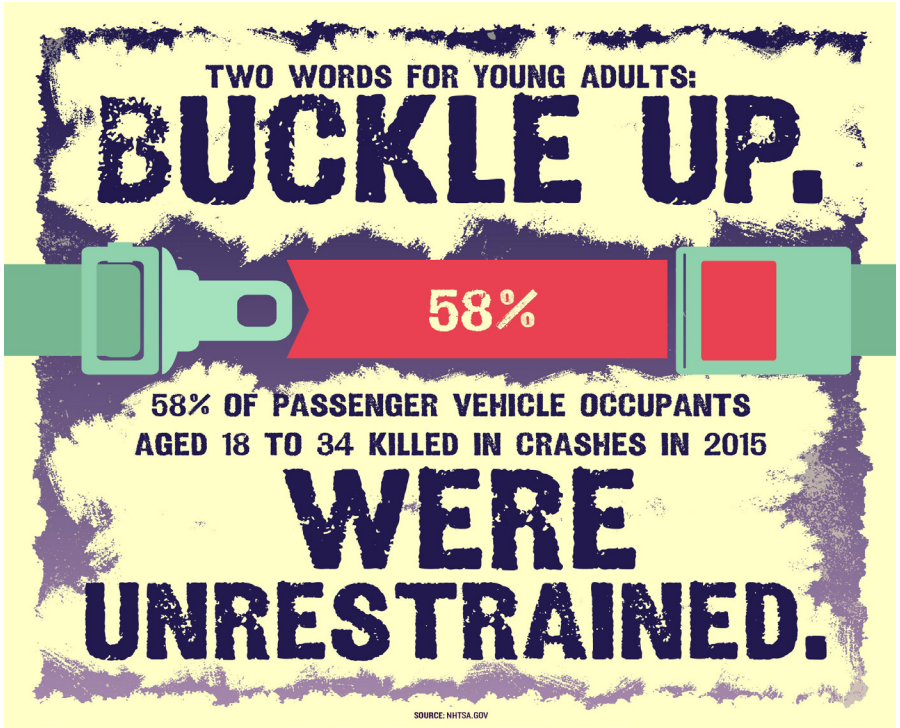
1. *Engineering*
   Explore the possibility of creating safety corridors at segments of roadway that have higher-than-expected number of fatal and serious injury crashes due to driver behaviors. Further strategies include additional signage, increased traffic enforcement, and zero tolerance for violations.
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 CTDMV 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 belted, 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 weigh 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 1,041 unrestrained occupant fatal and injury crashes (an annual average of 347 crashes per year) from 2015-2017. Out of these 1,041 reported crashes, 38 were fatal. Unrestrained occupant fatal and injury crashes in the Capitol Region make up 33% of the total 3,172 unrestrained occupant fatal and injury crashes per year in Connecticut.



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 to host car seat clinics and publicize the safe fitting stations in the region using earned media outlets.
4. *Enforcement and Education*
   Support CTDOT's legislative proposals (such as 2020 Bill 151), requiring rear seat passengers to wear seat belts.
5. *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 2015-2017, there were 1,026 reported substance-involved driving crashes that resulted in a fatality or injury, which is an annual average of 342 crashes per year. Of these 1,026 crashes, 56 were fatal. The Capitol Region substance-impaired fatal and injury crashes make up 49% of the total 2,107 substance-impaired fatal and injury crashes in Connecticut from 2015-2017.

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 Drug Recognition Experts (DRE) offered by the Department of Emergency Services and Public Ptotection. 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 segments of the targeted audience. Highlight the importance of sober driving during the month of December during Office of National Drug Control Policy's National Drunk and Drugged Driving Prevention month and NHTSA's "Drive Sober or Get Pulled Over" mobilization.
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 University of Hartford Konover Campus Center in West Hartford.
4. *Enforcement*
   Conduct regional high-visibility impaired driving enforcement program. Highlight the importance of sober driving during the month of December during Office of National Drug Control Policy's National Drunk and Drugged Driving Prevention Month and NHTSA's "Drive Sober or Get Pulled Over" mobilization.
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.
7. *Enforcement*
   Collaborate with other municipal police departments that have had successes in reducing substance-impaired driving crashes, such as Stafford.
8. *Enforcement*
   Continue to enforce the interlock devices for all Connecticut DUI/DWI/OUI first time offenders.
9. *Enforcement*
   Support CTDOT's legislative proposals (such as 2020 Bill 151), prohibiting open alcohol containers in motor vehicles.

Source: NHTSA

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 2015-2017, there were 1,841 reported fatal and injury crashes related to distracted driving, an average of 614 crashes annually. There were six fatalities. The Capitol Region's distracted driving fatal and injury crashes make up 83% of the total 2,226 distracted driving fatal and injury crashes in Connecticut.

Source: VN Engineers

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 towns 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 segments 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, CTDOT, and DESSP.

7.3 Older Drivers

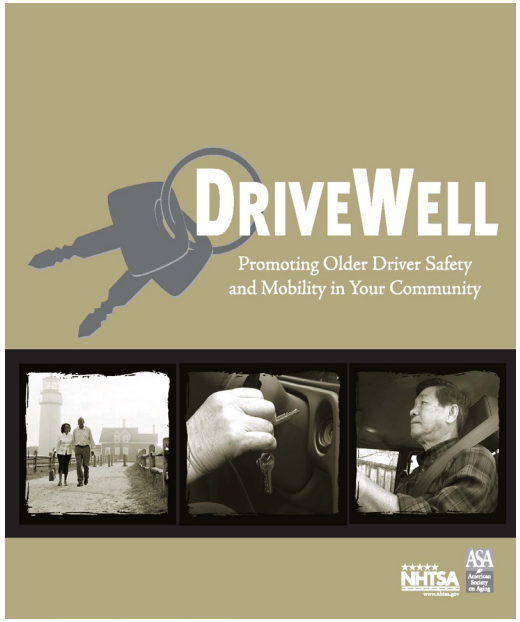
The third emphasis area is older drivers, which are categorized as drivers 65 years and older. Although age itself is not the principal determinant in driving performance, people's mental and physical abilities change as they age, which can affect their driving. The most common of these conditions is 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 Capitol Region is aging, this third emphasis area is of particular importance.

Performance Measures: From 2015-2017, there were 1,960 crashes in the Capitol Region involving older drivers that ended in a fatality or injury, an average of 653 crashes annually. There were 20 older driver fatal crashes in CRCOG from 2015-2017.

The Capitol Region older driver fatal and injury crashes make up 33% of the total 6,022 older driver fatal and injury crashes in Connecticut.

Strategies for Older Drivers

1. *Education*
   Consider formal CRCOG support of stricter CTDMV 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 including 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 & Engineering*
   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


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 2015-2017, there were 4,230 crashes involving younger drivers that ended in an average of 1,410 fatal and injury crashes annually. Of these 4,230 crashes, 33 were fatal. The Capitol Region young driver fatal and injury crashes make up 34% of the 12,576 young driver fatal and injury crashes in Connecticut.

Evaluation Strategies for Young Drivers

1. *Engineering, Education, and Enforcement*
   Continue regional support for statewide 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.

Source: CDC

7.5 Non-Motorized Users

The non-motorized emphasis area includes 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.

CRCOG has taken several steps to support non-motorized users. They have adopted and updated a Pedestrian and Bike Plan and are currently developing a complete streets network in the Greater Hartford region. In FY 2019, CRCOG reviewed proposals received for dockless bike share services and selected a vendor for the region. CRCOG staff will continue to work with towns on this initiative.

7.5.1 Pedestrians

Performance Measures: From 2015-2017, there were 1,464 fatal and injury pedestrian crashes in the Capitol Region; 37 of these crashes were fatal. That is an average of 488 crashes per year. Capitol Region pedestrian fatal and injury crashes make up 46% of the total 3,199 pedestrian fatal and injury crashes in Connecticut.

Source: VN Engineers

7.5.2 Bicyclists

Performance Measures: From 2015-2017, there were 386 bicycle crashes in the Capitol Region, where one was fatal. That is an average of 129 crashes per year. Capitol Region bicyclist fatal and injury crashes make up 31% of the 1,244 fatal and injury bicycle crashes in Connecticut.

Strategies for Non-Motorized Users

1. *Education*
   Coordinate with regional and State advocacy groups and bike store owners, including Bike Walk CT, the CTDOT Bike and Pedestrian Advisory Board, biCi Co., Bloomfield Bicycle and Repair Shop, Pedal Power, and Trek Bicycle Newington 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, which 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*
   Continue to update the Regional Pedestrian and Bike Plan and to follow the feasible action plan steps in the upcoming Complete Streets plan.
7. *Education and Enforcement*
   Educate regional law enforcement personnel on the 2014 Vulnerable User Law and the 2015 Bike Bill.

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 travelled, motorcyclists are about 26 times more likely than passenger car occupants to die in traffic crashes". (NHTSA Countermeasures that Work, 2015, 8th edition).

Performance Measures: From 2015-2017, there were 863 motorcycle crashes that ended in a fatality or injury to the persons involved. Of these crashes, 29 were fatal. The annual average for fatal and injury motorcycle crashes is 288 crashes per year. The Capitol Region motorcycle fatal and injury crashes make up 30% of the 2,876 total motorcycle fatal and injury crashes in Connecticut.

There were 22 unhelmeted fatalities from 2015-2017, which is an average of 7 unhelmeted motorcycle fatal crashes per year.

Source: VN Engineers

Strategies For Motorcyclist Safety

1. *Education*
   Continue to endorse CTDOT's Connecticut Rider Education Program (CONREP) for motorcycle safety at sites in the Capitol Region. Currently there are training sites in Farmington and Manchester.
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 amped up during May's Motorcycle Safety Awareness Month.
4. *Education, Enforcement, and Emergency Management*
   Support the None for The Road campaign and www.rider4ever.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, however a large portion of fatalities are associated with motorcycles. Per the CRCOG MTP 2019 study, continue to support the CTSHSP goals to decrease overall motorcycle fatalities, unhelmeted fatalities, and fatalities with BACs ≥0.01 by 5%.

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 and improves the safety of motorists, crash victims, and emergency responders.

CRCOG established the Greater Hartford Traffic Incident Management Coalition in 2018, comprised of various stakeholders including law enforcement, fire and emergency medical services, transportation and environmental agencies, towing and recovery, drivers, the media, the insurance industry, and others to improve incident response time, reduce clearance time and manage traffic more effectively following a crash. This information is included in the CRCOG Metropolitan Transportation Plan 2019-2045.

Source: VN Engineers

Strategies for Traffic Incident Management

1. *Engineering, Education, and Enforcement*
   Continue to implement the goals from the ITS Strategic Plan for the Capitol Region and the goals in the LRTP.
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 TIM 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).

7.8 Post-Crash Care

In January 2022, following the adoption of CRCOG's initial Regional Transportation Safety Plan in 2020, the U.S. Department of Transportation published the National Roadway Safety Strategy (NRSS), which outlines a comprehensive approach to significantly reduce serious injuries and deaths on our Nation's roadways. The NRSS adopts the Safe Systems Approach principles to guide our safety actions, which identifies five core objectives: Safer People, Safer Roads, Safer Vehicles, Safer Speeds, and Post-Crash Care.

Post-Crash Care enhances the survivability of crashes through expedient access to emergency medical care, while creating a safe working environment for vital first responders and preventing secondary crashes through robust traffic incident management practices. The ability to save lives does not end when a crash occurs. Appropriate medical care for people injured in a crash is critical to prevent their injuries from becoming fatal.

The National Highway Traffic Safety Administration (NHTSA) estimates that approximately 40% of roadway fatalities reflect people who survive the initial crash and then succumb to injuries post-crash (per the 2025 Progress Report on the National Roadway Safety Strategy). Fatality Analysis Reporting System (FARS) data reports that 42,939 people died in traffic crashes in 2021, and 40% of those individuals were alive when first responders arrived.

Source: U.S. Department of Transportation

Strategies for Post-Crash Care

1. *Emergency Management*
   Emergency medical dispatch.
2. *Emergency Management*
   Timely on-scene care.
3. *Emergency Management*
   Transportation to a trauma center.
4. *Emergency Management*
   Performance measurement for continuous quality improvement.
5. *Emergency Management*
   Support Emergency Medical Service regional directors, physicians and providers in the CRCOG region to initiate and expand blood transfusions. Severe bleeding is the leading cause of preventable death in trauma, and early transfusion saves lives.

Dr. John Holcomb (left) is on a mission to make blood available to patients while they are en route to a hospital. Source: Pre Hospital Blood Transfusion Coalition

8. Technological Advances Affecting Traffic Safety

8.1 Connected and Autonomous Vehicles

Connected and Automated Vehicle (CAV) technologies need to be considered as they are rapidly advancing and will continue to play an integral role in traffic safety and crash reductions. According to NHTSA, of all serious motor vehicle crashes, "94% are due to human error or choices. Fully automated vehicles that can see more and act faster than human drivers could greatly reduce errors, the resulting crashes, and their toll." Connecticut's Fully Autonomous Vehicle Testing Pilot Program (FAVTPP), an initiative created by legislation that former Governor Dannel Malloy signed into law in April 2018, will help bring Connecticut to the forefront of the innovative and burgeoning autonomous vehicle industry. Under the terms of the program, towns and cities that are interested in participating and allowing the testing of fully autonomous vehicles on their roadways have submitted their applications to the State.

Currently, many motor vehicles have automated technology that increases their safety, such as forward collision warning, automatic emergency braking, lane departure warning and lane keeping assist, safe distance maintenance, backing up, and parking assist. These and other safety technologies can warn the driver to potentially avoid a crash.

Connected vehicles can communicate with other connected vehicles using wireless technology. This technology can alert drivers to dangerous conditions related to other vehicles. Automated vehicles are vehicles that rely on various onboard automated systems, many times in combination, to operate a motor vehicle. Vehicle automation is presently being advanced by many companies and by many methods. NHTSA has categorized 5 levels of automation, with the highest level being driverless operation, and has developed guidelines for vehicle automation, including best practices for State agencies.

Source: Shutterstock

Strategies for Connected and Autonomous Vehicles

1. *Engineering*
   Regionally support the development of CAV technology and best practices.
2. *Engineering*
   Regionally encourage municipal participation in the State's newly launched FAVTPP. Applications can be found on the Office of Policy and Management website.
3. *Engineering*
   Improve and standardize Geographic Information System (GIS) mapping and spatial capabilities in all 38 municipalities. Establish a statewide platform for GIS data.

8.2 Concerns with Data Collection

Connecticut uses the MMUCC developed by the 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 possible to minimize the impact on law enforcement.

9. Implementation, Evaluation & Update Requirements

9.1 Implementation

The Capitol RTSP is a supplemental document to the Metropolitan Transportation Plan, the Transportation Improvement Plan (TIP), and the Unified Planning Work Program (UPWP). 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.

CRCOG, the CRCOG Transportation Committee, 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, CRCOG staff and the Transportation Committee can provide guidance and be dedicated to bringing appropriate strategies to fruition.

CRCOG 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 CRCOG Transportation Committee 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 COG should be responsible for communicating with the member municipalities and CTDOT, and in addition, routinely evaluate safety data to determine the selected emphasis areas are still relevant. If any strategies prove ineffective or irrelevant, the region can make appropriate adjustments to their approach.

Statewide Evaluation: Beginning in 2018, Federal regulation mandates that states set 5 safety performance targets each year. The performance targets shown in the following table were set by the Connecticut Department of Transportation and have been endorsed by CRCOG. Federal requirements call for Metropolitan Planning Organizations to set annual targets no later than 180 days after the State establishes their annual targets. MPOs can endorse the State's targets or set their own targets. Each year CRCOG will review the Connecticut statewide targets and prepare a resolution regarding endorsement, or set a different target value.

CT Statewide Targets (note target is less than the number shown)			
Target Type	2018 Target	2019 Target	2020 Target
Number of Fatalities	257	274	277
Fatality Rate (Per 100 million VMT)	0.823	0.873	0.883
Number of Serious Injuries	1,571	1,574	1,547
Serious Injury Rate (Per 100 million VMT)	5.03	5.02	4.93
Number of Non-Motorized Fatalities and Serious Injuries	280	290	307
Years of Moving Average	2011-2015	2012-2016	2013-2017

Regional Evaluation and Implementation

- Are emphasis areas, performance measures, and strategies (as defined in Section 7) current and relevant to ongoing data trends? Are strategies current and relevant to ongoing data trends?
- Are strategies being incorporated into LOTCIP projects that are selected by CRCOG?
- Are strategies being incorporated into planning, design, and construction of local projects funded by municipalities?
- Are strategies being incorporated into the planning, design, and construction of CTDOT projects in the STIP that are in the CRCOG region?
- Perform an annual review of the 3-year rolling average of fatal and injury crashes, by municipality, similar to the "2015-2107 Fatal and Injury Crashes by Municipality" Table in Section 4. Discuss trends with the CRCOG Transportation Committee and consider setting individual performance targets for each municipality.

Annual Action to be taken by CRCOG

- Perform an annual review of emphasis areas and strategies. Collaborate with municipalities to identify best practices that were implemented in the past year in the region, note lessons learned, and develop new strategies to be implemented.
- Perform and annual review of the 3-year rolling average of fatal and injury crashes, by municipality, similar to the "2015-2107 Fatal and Injury Crashes by Municipality" Table in Section 4.
- Coordination with CTDOT's SHSP committee and emphasis area sub committees to collaborate on State and regional goals.

9.3 Updating the RTSP

Current Federal regulations require an update for the SHSP every five years. The SHSP issued May 17, 2017 covered the period from 2017 to 2021. An update to the SHSP is being prepared in 2020 for the next five-year period. The preparation of this Regional Transportation Safety Plan begins a new process, that will require each Council of Government in CT to be responsible for updating their regional transportation safety plan every five years. The regional plan will reflect 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. Typically, 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 University of 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 at no cost to all Connecticut municipalities.

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.

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 metropolitan transportation plans and programs.
- Equipment Loan Program.

10. Introduction to the Individual Municipal Reports

The following municipal reports provide a more in-depth 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 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.

The methodology for the municipal reports (Appendix A) began with the collection of fatal and injury crash data from the period of January 1, 2015 to December 31, 2017. The crashes included fatal, suspected serious injury, suspected minor and possible injury crashes. No apparent injury crashes (also known as property damage only) were included in this study. The extracted crash data was put into the mapping program ArcGIS to create 38 individual fatal and injury crash maps, one for each Capitol Region municipality. If a segment of roadway within a mile, had a cluster of crashes it was highlighted on the maps and identified as a Data-Identified High Frequency Crash Corridors If an intersection had a cluster of crashes it was identified as a Data-Identified High Frequency Crash intersection. Whereas the top regional crash locations (both corridors and intersections) factored in severity and frequency to determine the top crash sites, these individual municipal sites were based primarily on frequency. The primary purpose of identifying them was to highlight some potential locations to conduct the two site visits and to discuss them with the individual municipalities.

Source: VN Engineers

TOWN OF ANDOVER

2016 U.S. Census Population Estimate: 3,252
Area: 15.50 square miles
Population Density: 210 per square mile
2016 Vehicle Miles Traveled (VMT): 41,372,385
2016 VMT per Capita: 12,722
Setting: Rural
Date of Meeting with Town: May 2, 2019
Town and Regional Representatives: Darrell Tetreault (Town Resident Trooper), Terri Thompson (CRCOG)
Data-Identified High Frequency Crash Corridors: US-6 (from Wales Road to Bailey Road)
Bike and Pedestrian Fatal and Injury Crash Totals, 2015-2017: 3
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 50

Source: VN Engineers

Overview

Andover is a rural town in Tolland County, and it is bordered by Coventry and Bolton to the north, Coventry and Columbia to the east, Hebron to the south, and Bolton and Hebron to the west.

Town Input

The fatal crashes in Andover occurred at the following locations:

- Roadway departure crash on US-6 east of Burnap Brook Road
- Front-to-front crash on US-6 west of Burnap Brook Road
- Front-to-rear and then front-to-front crash on US-6 at a driveway near Hendee Road

CT-316

According to Officer Tetreault, CT-316 has the second highest traffic volume in Andover. It has edge lines with minimal shoulders and narrow cross section, and there is horizontal and vertical curvature throughout the corridor. The speed is posted at 35 MPH, but Officer Tetreault stated motorists travel at 45-50 MPH. Officer Tetreault stated CT-316 was slated to be repaved but has been delayed.

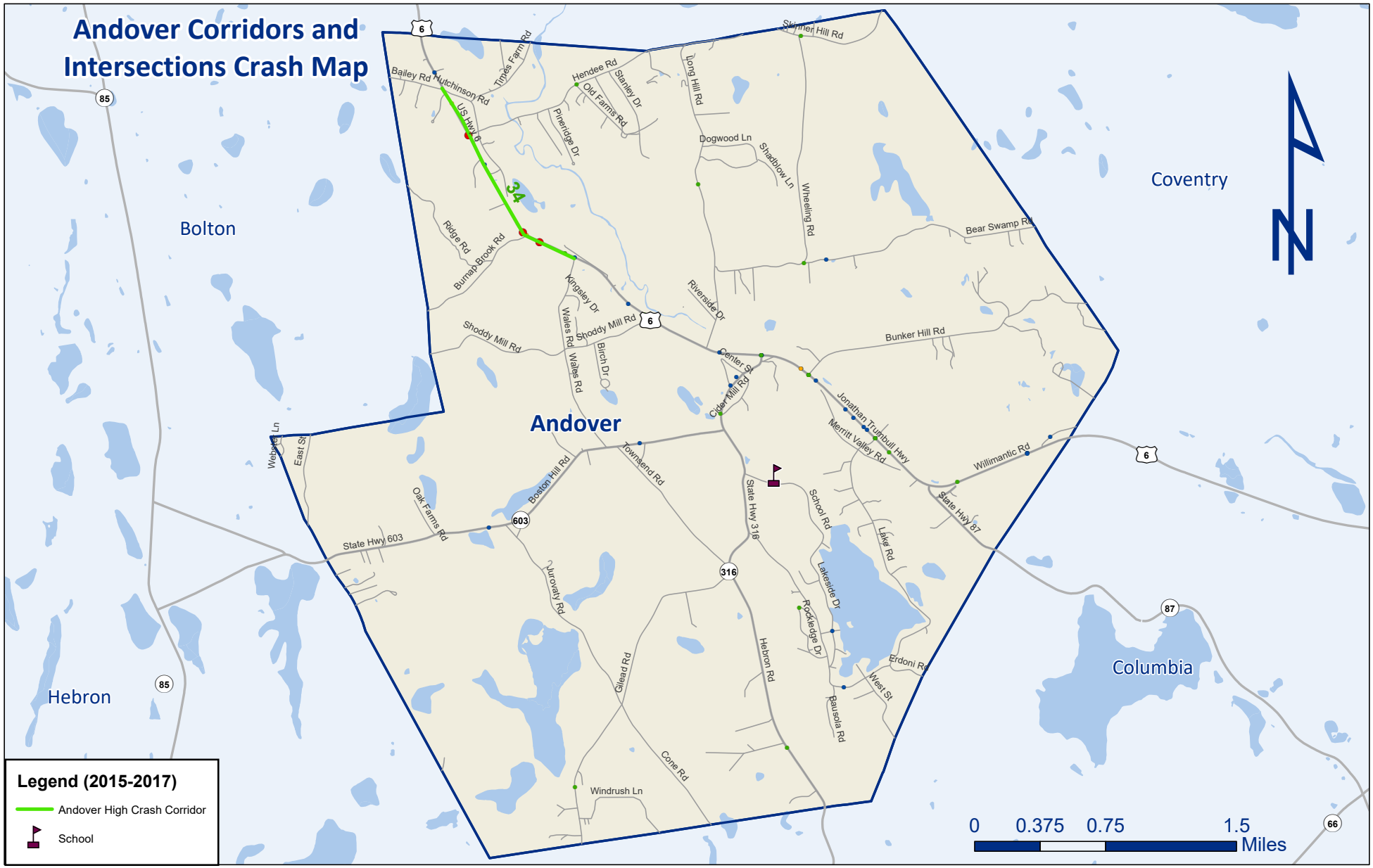
US-6: This is a high crash frequency corridor, primarily from Bailey Road to Wales Rd. There were three fatal crashes along US-6 during the study period. Motorcycles and speeding are prevalent. The Town would like centerline rumble strips installed along the whole corridor.

US-6 and CT-87

This is a high frequency crash signalized T-intersection along a horizontal curve. Officer Tetreault noted the majority of crashes occur in the morning involving eastbound traffic along US-6. There are no chevron curve signs and speeding is an issue. The speed limit is posted at 50 MPH.

Bikes and Pedestrians

The Hop River State Park Trail is a multi-use trail. Residents use recreational trail to bike and walk. Officer Tetreault stated the Town would like to connect the Town Complex and adjacent school to the trail. The conceptual sidewalks would extend along School Road to CT-316 to the trail.


Andover Corridors and Intersections Crash Map
Bolton
Coventry
Andover
Hebron
Columbia
34
Bailey Rd
Hutchinson Rd
U.S. Hwy 6
Times Farm Rd
Hendee Rd
Old Farms Rd
Stanley Dr
Pineridge Dr
Long Hill Rd
Skinner Hill Rd
Dogwood Ln
Shadblow Ln
Wheeling Rd
Bear Swamp Rd
Ridge Rd
Burnap Brook Rd
Kingsley Dr
Riverside Dr
Shoddy Mill Rd
Wales Rd
Birch Dr
Center St
Cider Mill Rd
Bunker Hill Rd
Jonathan Trumbull Hwy
Merritt Valley Rd
Willimantic Rd
State Hwy 87
Webster Ln
East St
Boston Hill Rd
Townsend Rd
Oak Farms Rd
State Hwy 603
Jurovaty Rd
State Hwy 316
School Rd
Lake Rd
Lakeside Dr
Rockledge Dr
Erdoni Rd
West St
Hebron Rd
Gilead Rd
Bausola Rd
Cone Rd
Windrush Ln
Legend (2015-2017)
Andover High Crash Corridor
School
0 0.375 0.75 1.5
Miles

Field Site Inventory

CT-316

CT-316 is a state route that serves as a primary north south connector in Andover. It is a narrow two-lane roadway with an approximately 30-foot cross section and one-two feet shoulders. Vertical and horizontal curvature is prevalent throughout the corridor, limiting sight distance. Advanced curve signs are installed. Speed is posted at 35 MPH. Adjacent land use is residential.

The pavement is in fair to poor condition. Pavement markings are faded.

Recommendations:

- Mill and resurface roadway.
- Widen roadway or narrow travel lanes to 11' where feasible to grant wider shoulders.
- Centerline rumble strips.

US-6 at CT-87

The intersection of US-6 and CT-87 is a three-legged signalized intersection with surrounding rural residential land uses. The US-6 eastbound approach consists of a slight vertical curve approximately 500 feet from the intersection and transitions into a horizontal curve through the intersection. The US-6 eastbound lane geometry transitions from a 12-foot trave lane and 10-foot shoulder to a 9.5-foot travel lane and 9-foot shoulder and finally to a through lane, exclusive right-turn lane and minimal shoulder at the intersection. The US-6 westbound approach to the intersection consists of a through lane, exclusive left turn lane and 8-foot shoulder. The CT-87 approach to the intersection consists of an undesignated exclusive left and right turn lanes. The posted speed limit for US-6 is 50 MPH and the posted speed limit for CT-87 is 45 MPH.

Recommendations:

- Restripe to create 11 ft lanes which is consistent with new pavement marking criteria by CTDOT for the US-6 eastbound approach to the intersection.
- Add traffic signal backplates and retroreflective boarders to improve the visibility of the traffic signals.
- Advanced Signal Ahead Warning sign (W3-3) alone or with Be Prepared to Stop When Flashing signs (W16-13P) on both US-6 (Jonathan Trumbull Highway/Willimantic Road) approaches.

Horizontal curvature along CT-316

US-6 and CT-87

Andover Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	2	1	0
Suspected Serious Injury (A)	0	2	1
Suspected Minor Injury (B)	6	7	5
Possible Injury (C)	13	5	8
Total Injury Crashes	21	15	14

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
US-6 (Jonathan Trumbull Highway/ Willimantic Road)	Motorcycles	Motorcycle safety education	Low
	Speeding	High-visibility enforcement	Low-Medium
	Intermittent centerline rumble strips	Coordinate with CTDOT to install centerline rumble strips	Low
CT-316 (Hebron Road)	Horizontal and vertical curvature	Centerline rumble strips	Low
	Narrow shoulder	Request CTDOT narrow roadway to 11'/expand shoulders next Vendor in Place	Low
	Poor pavement condition	Repave	Medium
US-6 (Jonathan Trumbull Highway/ Willimantic Road) and CT-87 (Jonathan Trumbull Highway)	Horizontal curvature at intersection	Traffic signal retroreflective backplates	Low-Medium
		Advanced Signal Ahead Warning sign (W3-3) alone or with Be Prepared to Stop When Flashing signs (W16-13P) on both US-6 (Jonathan Trumbull Highway/Willimantic Road) approaches	Low
	Intersection crashes	Restripe to create 11 ft lanes which is consistent with new pavement marking criteria by CTDOT for the US-6 eastbound approach to the intersection.	Low
School Road, CT-316 (Hebron Road), and The Hop River State Park Trail	Lack of sidewalk connectivity	Install sidewalks to connect the Town Complex to the Hop River State Park Trail	Medium

TOWN OF AVON

2016 U.S. Census Population Estimate: 18,364
Area: 23.10 square miles
Population Density: 795 per square mile
2016 Vehicle Miles Traveled (VMT): 127,128,040
2016 VMT per Capita: 6,923
Setting: Suburban
Date of Meeting with Town: December 4, 2018
Town and Regional Representatives: Kelly Walsh (Police Department), Mark Rinaldo (Traffic Authority), Larry Baril (Town Engineer), Hiram Peck (Town Planner), John Schmalberger (Avon Police Department), Devon Lechtenberg (CRCOG)
Data-Identified High Frequency Crash Corridors: US-44 (from Simsbury town line to CT-10)
Bike and Pedestrian Fatal and Injury Crash Totals, 2015-2017: 7
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 255

Source: VN Engineers

Overview

Avon is a town in the Farmington Valley Region of Hartford County. Burlington is to the west, Canton and Simsbury to the north, Bloomfield and West Hartford are located to the east, and Farmington is directly south.

Town Input

Country Club Road

There was one recorded fatal crash on Country Club Road where a tree fell on a school bus with no passengers on board, killing the driver in the crash. The Town of Avon discussed the possibility of a town wide tree inventory to assess the condition of trees near roadways.

Deercliff Road

This is a narrow rural road with no pavement markings in a residential neighborhood. There were fatal crashes reported prior to 2015. One of the vertical curves was improved by the Town and chevron curve signs were installed for the horizontal curvature. The Town stated this has not made as significant an impact as anticipated. Most crashes along this corridor were roadway departures. The Town stated that the residents do not want rumble strips along this roadway.

CT-167 and Woodmont Road
There has been a cluster of crashes at this intersection. There is no left turn lane or left turn signal. In addition, the daycare center on the corner is a minor traffic generator.

CT-10 and Thompson Road
The Town is concerned with this intersection due to a cluster of crashes. The state is upgrading the signal.

New Road from Canton Town Line to Huckleberry Hill Road
This segment of roadway has had many roadway departure crashes. This is a residential neighborhood which motorists use as a cut through from Canton to CT-4. The cross section is narrow.

CT-177 and Lovely Street
This signalized intersection had one fatal crash.

Scoville Road and Old Farms Road
Both roadways have high crash frequency, but they were property damage only crashes.

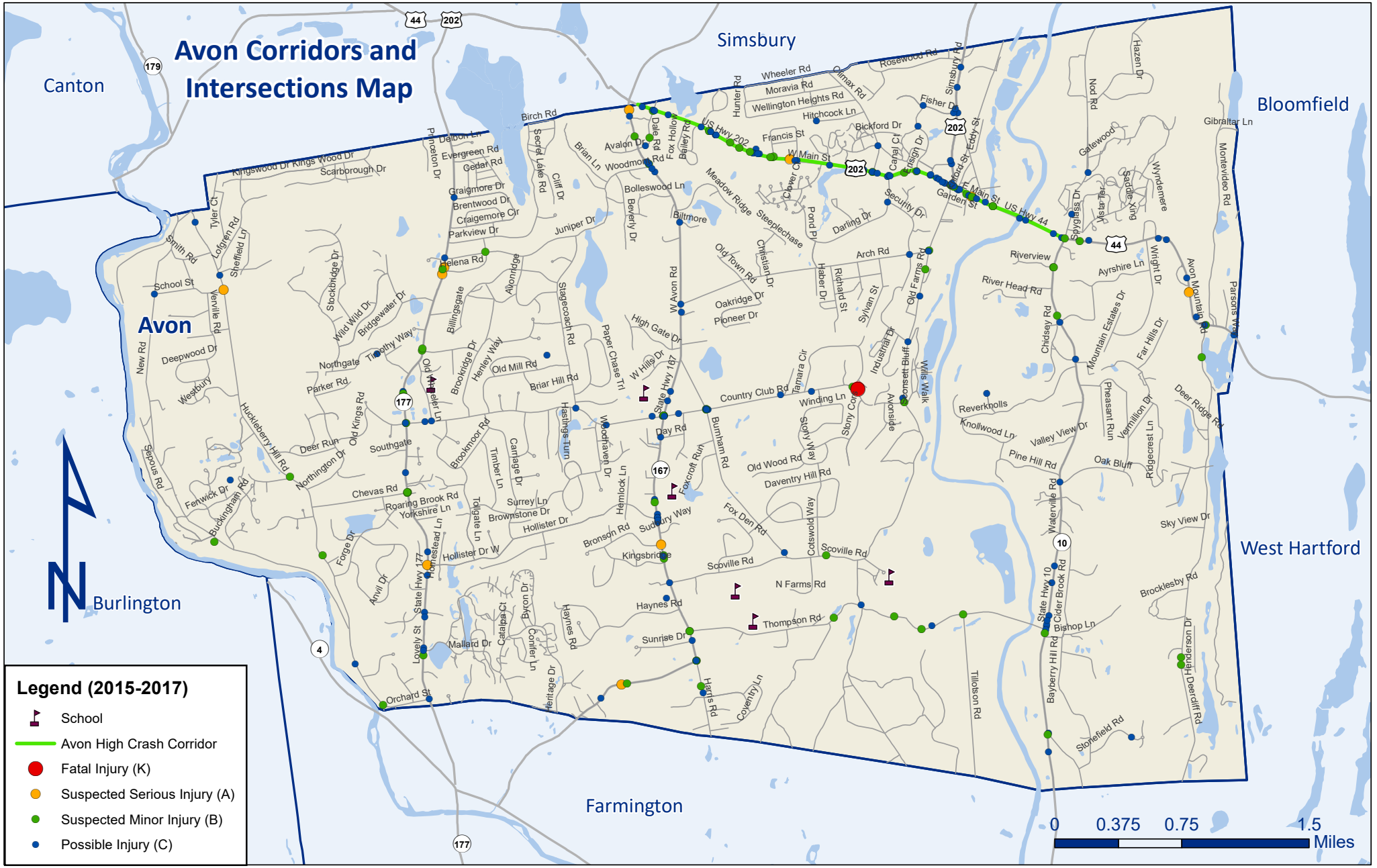
US-44
This is the town's commercial corridor. There are minor injury and possible injury crashes. The intersections of US-44 and CT-10 and US-44 and CT-202 are highly congested. The Town is interested in cameras for traffic surveillance and Traffic Incident Management.

Bike and Pedestrian Issues
Sharrows are not an option on various roads because the cross section is not wide enough for MUTCD compliance. A section of the East Coast Greenway passes through Town. The Town relocated a segment of multiuse trail from the Police Department parking lot to an area with less conflict behind the Town Hall, which has been successful.

Village Center
There are plans for Avon Village Center revitalization. Pedestrian amenities include crosswalks with illumination in the pavement.


Source: VN Engineers


Source: VN Engineers


Avon Corridors and Intersections Map
Canton
Simsbury
Bloomfield
Avon
Burlington
Farmington
West Hartford
Legend (2015-2017)
School
Avon High Crash Corridor
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
0 0.375 0.75 1.5
Miles

Field Site Inventory

Deercliff Road

This is a two-lane rural road with adjacent residential land use. Cross-section measures about 20 feet with various physical constraints, including a pond and road drop off. Guiderail protection is intermittent, composed of either wood posts or steel posts with cables. Some of the posts are damaged or missing. There are no edge lines, just center line pavement markings. The roadway has horizontal curvature. Speed limit is posted at 25 MPH.

Recommendations:

- High friction surface treatments and curve warning signs along horizontal curvature.
- Replace missing or rotting wooden posts, especially around the pond.
- Stripe edge lines along whole corridor or at a minimum through high crash locations.

New Road

This is a narrow road running parallel to the Farmington River in a residential neighborhood. The cross section is narrow: the southern section measures 21 feet and the northern segment widens to 28 feet. Horizontal and vertical curvature are present. Some guiderail protection systems are wooden posts and others are the metal beam rail.

There are some horizontal curve chevron signs. Pavement is in fair conditions. Pavement markings include double center lines. No edge lines are present.

Recommendations:

- Stripe edge lines.
- Investigate speed tables.
- Dynamic speed feedback signs.
- Curve warning signs.
- High friction surface treatment spot treatment through horizontal curves or crash locations.

Deercliff Road

New Road

Avon Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	0	0	1
Suspected Serious Injury (A)	3	4	4
Suspected Minor Injury (B)	19	27	25
Possible Injury (C)	60	50	62
Total Injury Crashes	82	81	92

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
Deercliff Road	Horizontal curvature	High friction surface treatments	Low
	Road guiderail condition	Replace missing or rotting wooden posts especially around the pond	Low-Medium
	Pavement markings condition	Stripe edge lines along whole corridor or at a minimum through high crash locations	Low-Medium
New Road Corridor	Horizontal and vertical curvature	Curve warning signs (retroreflective)	Low
		High friction surface treatments	Low
	Pavement markings condition	Stripe edge lines along whole corridor	Low-Medium
	High crashes	Dynamic speed feedback signs	Low
CT-10 and Thompson Road	High crashes	Traffic signal retroreflective backplates	Low-Medium
		Signal optimization	Low-Medium
	Limited sight distance	Vegetation management	Low

TOWN OF BERLIN

2016 U.S. Census Population Estimate: 20,499
Area: 26.4 square miles
Population Density: 776 per square mile
2016 Vehicle Miles Traveled (VMT): 251,833,940
2016 VMT per Capita: 12,285
Setting: Suburban
Date of Meeting with Town: November 9, 2018
Town Representatives: Jack Healy (Berlin Town Manager) and Matthew C. Odishoo (Fire Marshal)
Data-Identified High Crash Corridors: US-5-Berlin Turnpike (From North Colony Road to Spruce Brook Road and from Worthington Ridge to CT-9), CT-372-Farmington Avenue (From Mill Street to Porters Pass/Burnham Street)
Data-Identified High Crash Intersections: US-5/CT-15 and CT-72 Ramps, US-5/CT-15 and Deming Road and CT-160
Bike and Ped Fatal and Injury Crashes: 4
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 522

Source: VN Engineers

Overview

Berlin is a town in Hartford County. It is bordered by Southington to the west, New Britain and Newington to the north, Rocky Hill and Cromwell to the east and Middletown and Meriden to the south.

Town Input

In general, US-5/CT-15 (the Berlin Turnpike) has improved since the State updated signalization to increase yellow clearance intervals. Speed and running red lights contribute to a majority of crashes. The fatal crash on Chamberlain Highway was an anomaly and not related to infrastructure, according to the municipal representatives.

CT-372 (Mill Street) and CT-9 Ramps, US-5/CT-15 and Middletown Road along Corridor 7, CT-372 (Mill Street) and Middletown Road/Berlin Street, CT-71 and High Road and Farmington Avenue, CT-71 and Percival Avenue, US-5/CT-15 and CT-72, and Rowley Street at US-5/CT-15 are all concerns for the Town.

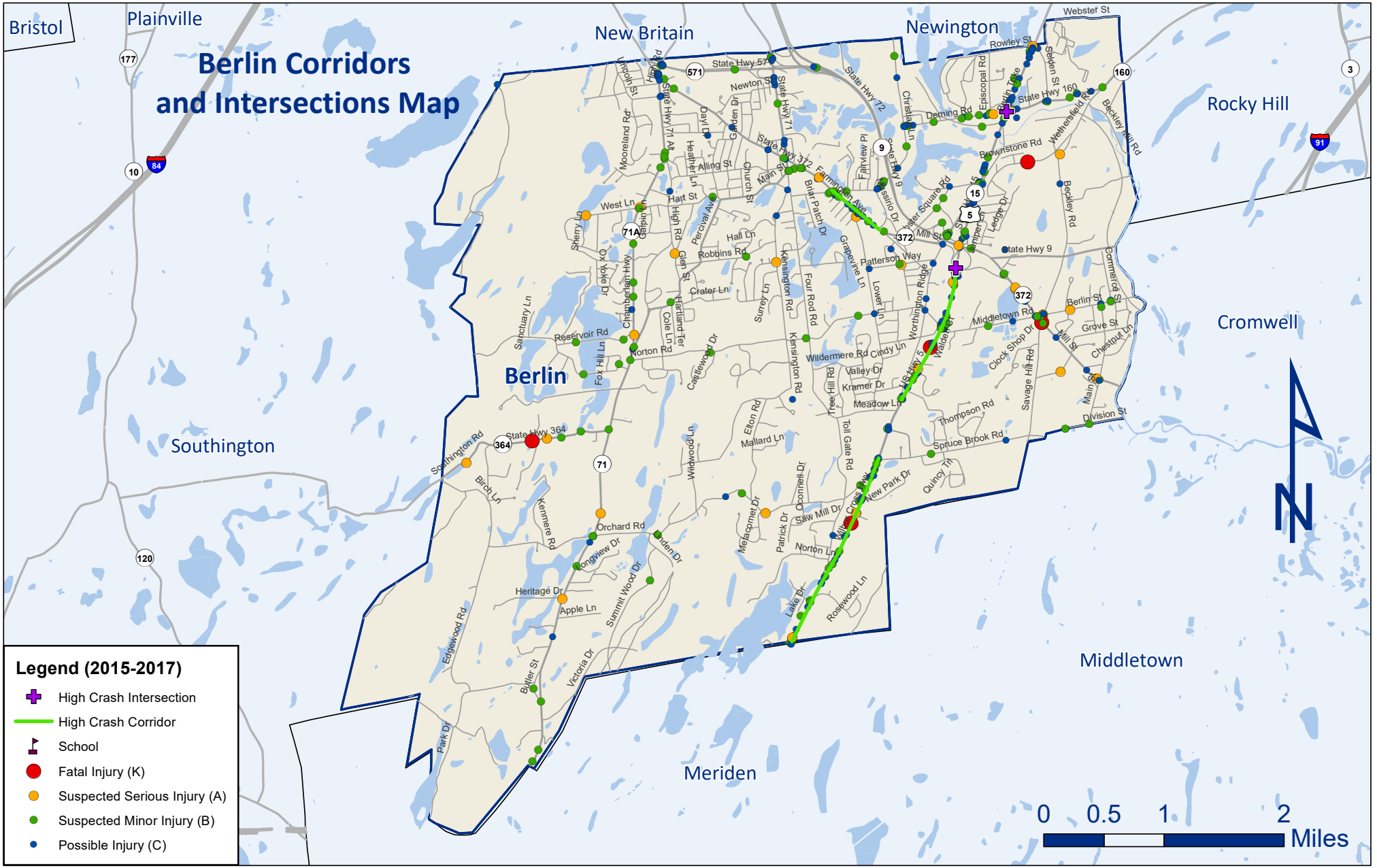
CT-372 (Farmington Avenue) from Mill Street to Burnham Street
The high turning movements on Farmington Avenue and crashes are due to frequency of curb cuts.

CT-160 and Deming Road and US-5/CT-15
This is a large intersection with high crash numbers.

Sections of US-5/CT-15
U-turns (due to median divider) and high speeds along this corridor contribute to crashes.

CT-71 and Reservoir Road
Sight distance and vegetation management are concerns at this intersection. Guiderails along Reservoir Road are often replaced due to damage from roadway departure crashes.

Berlin Corridors and Intersections Map



Field Site Inventory

Middletown Road and CT-372 (Mill Street)

This is a four-way signalized intersection. CT-372 (Mill Street) has exclusive left turn lanes and signals with loop detection for north and south bound lanes. Middletown Road is a local road with lower vehicle volume and CT-372 (Mill Street) is a state road with higher traffic volume. CT-372 (Mill Street) southbound tapers down from two lanes to one and increases to two northbound, between Middletown Road and CT-9 ramps.

In addition, there is another signalized intersection 300 feet to the south on CT-372 (Mill Street) and Savage Hill Road which operates on the same control as Middletown Rd.

Speed limit is posted at 35 MPH for Middletown Road. The speed limit is 45 MPH north of this intersection on CT-372 (Mill St) and 40 MPH on CT-372 (Mill St) less than a quarter mile to the south of the intersection.

Recommendations:

- Restripe turning lanes and add tracks through intersection for improved demarcation. Left-turn lanes should be striped head to head.
- Traffic signal retroreflective backplates.
- Investigate a possible roundabout to eliminate the issue of the two closely spaced traffic signals.
- Dynamic speed feedback signs.

Aerial View of Middletown Road and CT-372 (Mill Street) Source: Google Maps


Middletown Road and CT-372 (Mill Street) Intersection

Reservoir Road and CT-71 (Chamberlain Highway)

This is a four-way intersection with stop control on the Reservoir Road approaches and free flowing traffic on CT-71 (Chamberlain Highway). The intersection has a flashing yellow signal on CT-71 (Chamberlain Highway) and flashes red on the Reservoir Road approaches. Reservoir Road is a local, low volume road and CT-71 (Chamberlain Highway) is a State road with high traffic volume, and both roads have one travel lane in each direction.

The problem with this intersection seems to be the sight distance looking from Reservoir Road onto CT-71 (Chamberlain Highway), particularly Reservoir Road on the west side of CT-71 (Chamberlain Highway). It is difficult to see both northbound and southbound traffic on CT-71 (Chamberlain Highway) due to trees obstructing sight distance.

This sight-distance issue is exacerbated due to the speed and downward slope of northbound traveling cars.

Recommendations:

- Vegetation management on CT-71 (Chamberlain Highway) and Reservoir Road to improve sight distance.
- Dynamic speed feedback signs.

CT-71(Chamberlain Highway) looking south from Reservoir Road

Berlin Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	2	1	2
Suspected Serious Injury (A)	11	10	12
Suspected Minor Injury (B)	70	83	63
Possible Injury (C)	77	92	99
Total Injury Crashes	160	186	176

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
Middletown Road at CT-372 (Mill Street	Angle crashes	Review left turn clearance	Low
		Traffic signal retroreflective backplates	Low-Medium
		Investigate roundabout	High
		Restripe turning lanes and add cat tracks	Low
	Speeding	Dynamic speed feedback signs	Low
US-5 (Berlin Turnpike/N Broad Street)/ CT-15 (Berlin Turnpike/N Broad Street/ Wilbur Cross Parkway)	Angle crashes	Investigate signal optimization	Low
	Speed differential from U-turns	Dynamic speed feedback signs	Low
Reservoir Road and CT-71	Sight distance	Vegetation management on CT-71 (Chamberlain Highway) and Reservoir Road to improve sight distance	Low
	Speeding	Dynamic speed feedback signs	Low
CT-372 (Farmington Avenue)	High turning movements	Corridor access management	Medium

TOWN OF BLOOMFIELD

2016 U.S. Census Population Estimate: 20,642
Area: 26 square miles
Population Density: 794 per square mile
2016 Vehicle Miles Traveled (VMT): 179,189,450
2016 VMT per Capita: 8,680
Setting: Suburban
Date of Meeting with Town: January 29, 2019
Town and Regional Representatives: James Salvatore (Police Department), Jon Colman (Town and CRCOG), Devon Lechtenberg (CRCOG), Jose Giner (Bloomfield Planning), Terri Thompson (CRCOG)
Data Identified High Frequency Crash Corridors and Intersections: CT-187- Blue Hills Avenue (From Gilbert Avenue to Wintonbury Avenue); CT-218 (Cottage Grove Road)/Blue Hills Avenue, Cottage Grove/Packard Street, CT-218 (Cottage Grove Road)/School Street and CT-218 (Cottage Grove Road)/Bloomfield Avenue
Bike and Pedestrian Crash Totals: 13
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 561

Source: VN Engineers

Overview

Bloomfield is a medium-sized town in CRCOG. It is bordered by West Hartford and Hartford to the south, Windsor to the east, East Granby to the north, and Simsbury and Avon to the west.

Town Input

Town representatives concurred that the high crash frequency corridors and intersections highlighted are on par with their observations. Areas of concern are as follows:

CT-187 (Blue Hills Avenue) from Gilbert Avenue to Wintonbury Avenue
This roadway has high speeds, roadway departure crashes and a pedestrian fatal crash (within the study period) on this road.

The section of CT-187 (Blue Hills Avenue) from the Hartford city line to Britton Drive has been approved for a grant to implement a road diet. Four lanes will be reduced to three with a center left turn lane. The road diet will be extended as additional funding becomes available.

CT-187 (Blue Hills Avenue) and CT-218 (Cottage Grove Road)
This is the Town's highest priority and was identified as a high crash frequency intersection with congestion and limited ROW. In addition, it has been noted as one of the highest crash locations in CRCOG. CTDOT recently did some preliminary investigations into this intersection, extending north on CT-187 (Blue Hills Avenue) to CT-178 (Park Avenue). A roundabout is a consideration at the intersection of CT-187 (Blue Hills Avenue) and CT-178 (Park Avenue). The Town is uncertain of status or specific outcomes of this investigation.

CT-218 (Cottage Grove Road) from Northwestern Drive to Granby Street
The Town's second highest priority is Cottage Grove Road from Northwestern Drive to Granby Street. It is a major cross-town connector. Grade separation, which is very costly, is a consideration at Cottage Grove Road. There have been a cluster of crashes as result of motorists bypassing the intersection of Blue Hills Ave and Cottage Grove Road. Along this segment of Cottage Grove Road, the signalized intersections have push button for green light signs and actuation. There are no pedestrian signal heads or dedicated pedestrian phases. Vehicular signal heads can be difficult to see from pedestrian landing, and pedestrians generally cannot determine when left-turn signals are engaged. Therefore, it can be difficult for pedestrians to determine when it is safe to begin crossing, and this may result in insufficient crossing time. In addition, there are no push buttons in the raised medians to activate the green light.

CT-187 (Blue Hills Ave) and Old Windsor Road
This intersection is the Town's third highest priority and is in a high crash area. Although it has lower ADT than the intersection of Blue Hills Avenue and Cottage Grove Road, it has similar crash rates. There is heavy truck traffic with Kaman Aerospace Corporation as a major traffic generator. There is a signalized pedestrian crosswalk and beacons at the intersection with the Kaman Aerospace Corporation Driveway.

CT-218 (Cottage Grove Road) and Packard Streets
This is a high frequency crash signalized T-intersection.

Park Avenue
This roadway has Pedestrians (students from high school) walking along Park Avenue on north side along shoulder, there are sidewalks on the southside. There is a Town project to install sidewalks on Crestview Drive. CTDOT is installing a new signal at Park Avenue and Crestview Drive.

CT-218 (Cottage Grove Road) and Tyler Street
This intersection had three pedestrian crashes during study period.

Simsbury Road and Penwood Road
This is an unsignalized intersection with high speeds and limited sight distance.

Wintonbury Avenue and School Street
This is a confusing, skewed, stop-controlled intersection near an elementary school that has high percentage of walkers.

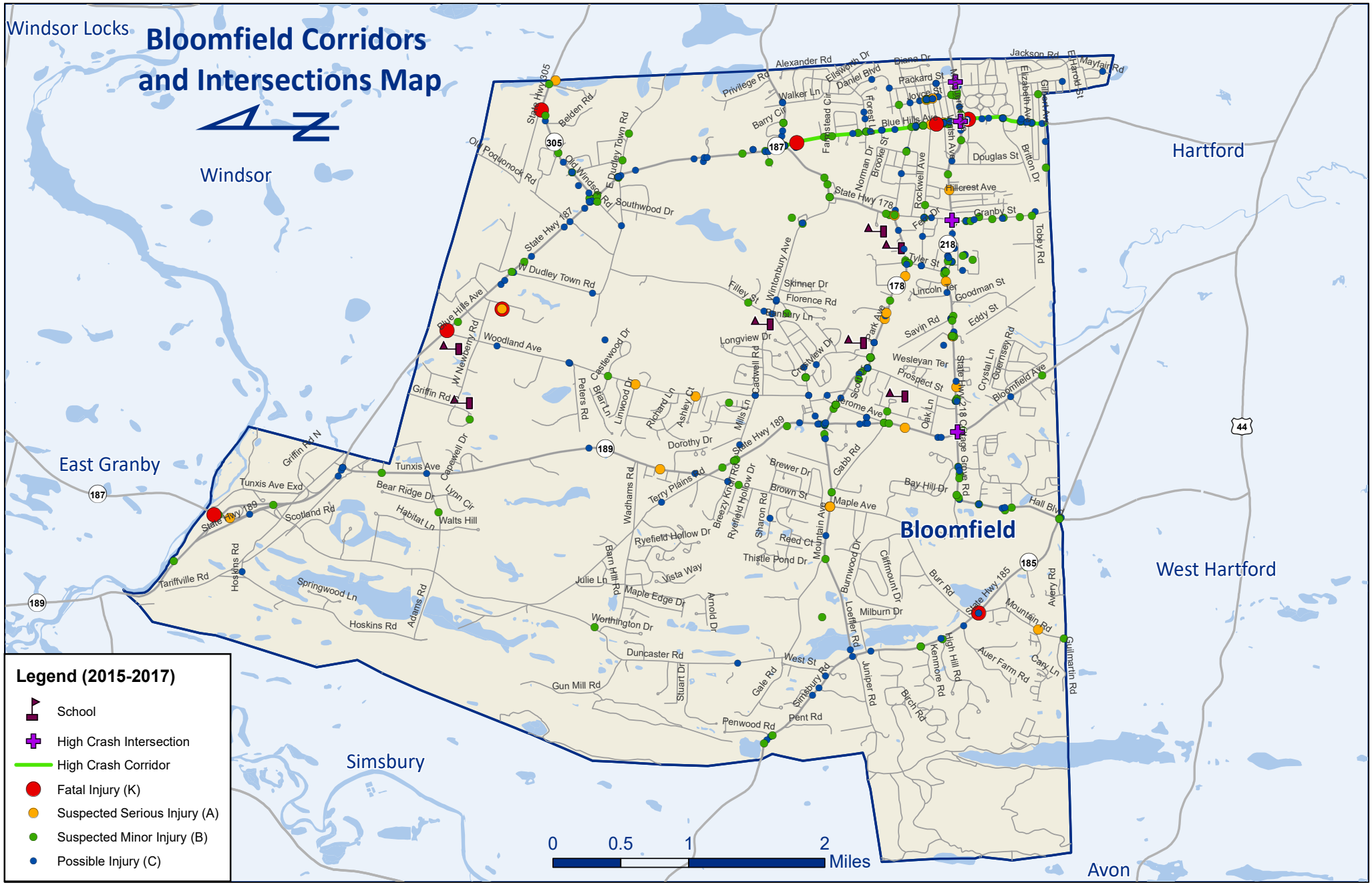
Tunxis Avenue at Park Avenue and Wintonbury Avenue
There is a high frequency of crashes. The State is working on a roundabout project at this intersection which has received public support.

Enforcement
The Town uses dynamic speed feedback signs and police use this data for enforcement. The Town wants to install more dynamic speed feedback signs on State roads and is requesting the State for assistance.

Bloomfield Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	3	3	2
Suspected Serious Injury (A)	10	7	7
Suspected Minor Injury (B)	66	57	82
Possible Injury (C)	102	110	112
Total Injury Crashes	181	177	203

Bloomfield Corridors and Intersections Map



Field Site Inventory

CT-218 (Cottage Grove Road) from Tyler Street to Granby Street

Cottage Grove Road is a four-lane roadway with a raised median in a commercial and residential area. The commercial land is to the south of the roadway and the residential area to the north. There is an access road that runs parallel to Cottage Grove for the homes on the north side.

Intersections are signalized with left turn lanes. There are crosswalks but no pedestrian signals, just a push button activated green light. There is no push button in the median. Sidewalks run along the southern side adjacent to the shopping center.

Recommendations:

- Install pedestrian countdown signals at each intersection and add push button activation in the median.
- Long-Term: Determine ADT to see if road is eligible for a road diet to slow traffic, remove the median, add bike lanes, and narrow the cross section.

CT-187 (Blue Hills Avenue) at CT-305 (Old Windsor Road)

The intersection of Blue Hills Avenue and Old Windsor Road is a four-leg signalized intersection with surrounding commercial uses. Both Blue Hills Avenue approaches consist of an exclusive left-turn lane, a through lane, and a shared through-right lane. The northeast-bound Old Windsor Road approach consists of an exclusive left-turn lane and a shared through-right lane, and the southwest-bound Old Windsor Road approach consists of an exclusive left-turn lane, a through lane, and a right-turn lane. There are no sidewalks or crosswalks at the intersection. The Town identified high truck traffic and relatively high speeds at this intersection.

Recommendation:

- Evaluate the need for No Turn on Red restrictions or signal timing and phasing improvements, such as changes to protected only left-turn phasing and optimizing signal timings.

Cottage Grove Road

Blue Hills Avenue and Old Windsor Road

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-187 (Blue Hills Avenue)	Speeds	Road diet	Low-Medium
	Roadway departures		
	Pedestrian fatality		
CT-187 (Blue Hills Avenue)and CT-218 (Cottage Grove Road)	High crash frequency at intersection congested area	Roundabout	High
CT-218 (Cottage Grove Road) and CT-187 (Blue Hills Avenue)	Front-to-rear crashes	Traffic signal retroreflective backplates	Low-Medium
	Lack of adequate pedestrian amenities	Leading pedestrian interval	Low-Medium
CT-187 (Blue Hills Avenue) at CT-305 (Old Windsor Road)	Intersection crashes	Evaluate the need for No Turn on Red restrictions	Low
		Signal timing and phasing improvements, such as changes to protected only left-turn phasing and optimizing signal timings	Medium
CT-218 (Cottage Grove Road) from Tyler Street to Granby Street	High frequency of crashes	Investigate road diet	Medium-High
	Lack of adequate pedestrian amenities	Install pedestrian signals	Low-Medium
		Install crosswalks at all intersections	Low
CT-187 (Blue Hills Avenue) and Old Windsor Road	Front-to-rear crashes	Traffic signal retroreflective backplates	Low-Medium

TOWN OF BOLTON

2016 U.S. Census Population Estimate: 4,930
Area: 14 square miles
Population Density: 342 per square mile
2016 Vehicle Miles Traveled (VMT): 75,844,810
2016 VMT per Capita: 15,384
Setting: Rural
Date of Meeting with Town: January 18, 2019
Town Representatives: Sandra Pierog (First Selectman), Joyce Stille (Bolton Town Hall Administrator), Patrice Carson (Director of Town Community Development)
Data-Identified High Crash Corridors: US-6 (from Stony Road to South Road)
Data-Identified High Crash Intersections: N/A
Bike and Pedestrian Injury and Fatal Crash Injuries: 0
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 74

Source: VN Engineers

Overview

Bolton is a rural town in CRCOG bordered by Hebron and Andover to the south, Coventry to the east, Vernon to the north, and Manchester and Glastonbury to the west.

Town Input

Notch Road, I-384, US-44 and US-6 Interchange
This interchange is the top concern and priority for the Town. US-6 and US-44 were not designed for the current high capacity. There were no fatalities within this study period, but there have been fatal crashes at this interchange and the Town representatives said there are many near misses due to high speeds and limited sight distance.

Notch Road intersects just west of the US-44 and US-6 split. There is very limited sight distance combined with high ramp speeds at this intersection. According to a CTDOT study the intersection sight distance is 452'. CTDOT made recommendations to realign Notch Road and US-6 Eastbound, cut the rock outcropping back, and widen shoulders for deceleration lanes to be installed. Currently, this project is on hold.

Traffic incident management is an issue at this intersection. Access through this corridor via Notch Road is imperative for emergency responders to access the north side of Bolton. The Town stated that when there is a crash on I-384, US-6, or US-44, motorists east of East Hartford have no prior warning of delay to potentially divert their trip. The Town representatives stated that installing variable message signs (VMS) on I-84 east of East Hartford could mitigate this problem.

I-384 and US-44
Eastbound traffic has one left turn lane and a thru/right lane. There is no left turn signal which causes traffic to back up onto I-384.

US-6
This roadway between Stony Road and South Road is a high frequency crash corridor. There are high traffic volumes, high travel speeds, and high truck traffic (connecting to Providence, RI). Centerline rumble strips were installed but removed because of noise complaints. Curb cuts for businesses cause speed differential crashes and near misses.

Source: VN Engineers

US-44
This roadway has high traffic volumes and travel speed. Travel lanes were narrowed to lower speeds, but the Town representatives stated this has not been effective in curbing this behavior.

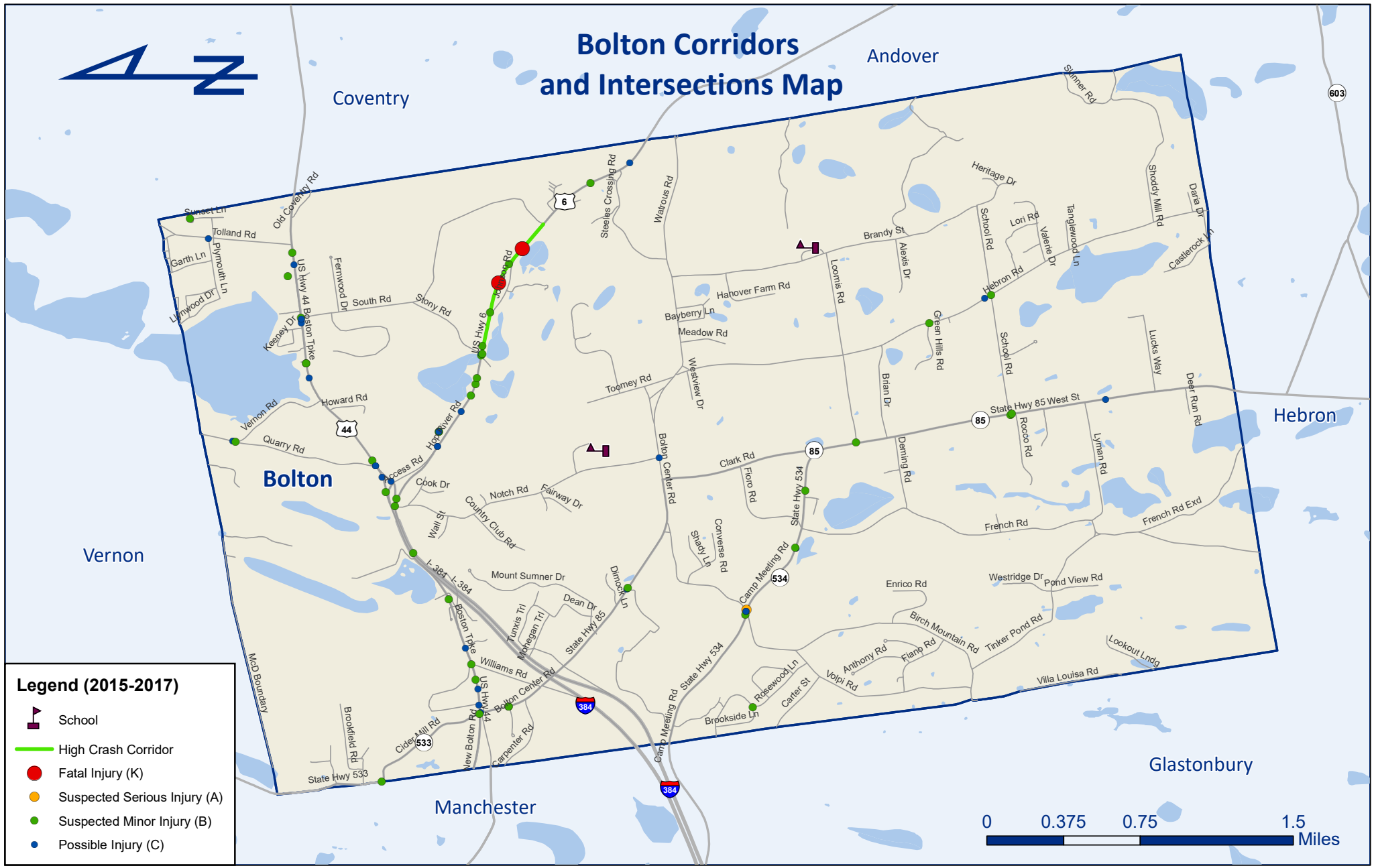
Camp Meeting Road (CT-534) and Birch Mountain Road
This is a skewed stop-controlled T-intersection. Sight distance on Birch Mountain Road is limited. In addition, there is horizontal curvature along both Camp Meeting Road approaches. Stop control is not always obeyed by motorists. The posted speed limit on Camp Meeting Road is 40 MPH.

Source: VN Engineers

Bolton Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	1	1	0
Suspected Serious Injury (A)	0	1	0
Suspected Minor Injury (B)	13	17	11
Possible Injury (C)	10	11	9
Total Injury Crashes	24	30	20

Bolton Corridors and Intersections Map



Field Site Inventory

US-6/US-44/Notch Road

Notch Road is a stop-controlled T-intersection at the US-6 and US-44 split. Sight distance to the west is very limited with horizontal curvature and a rock outcropping. Speed limit is posted at 40 MPH.

Recommendations:

- Cut back outcropping on US-6/US-44 eastbound west of Notch Road.
- Widen shoulder for deceleration lane to be installed.
- Realign US-6 eastbound, Notch Road, Notch Road Extension, and remove Bridge No. 04137.

US-6 looking west from Notch Road

Notch Road and US-6

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
I-384, US-44, US-6 (Hop River Road) Interchange and Notch Road	Limited sight distance from Notch Road	Pursue the CTDOT approved preliminary concept of cutting back rock outcropping, creating the deceleration lane, realigning Notch Road, and US-6 (Hop River Road) eastbound	High
	High speeds		
CT-534 (Camp Meeting Road) and Birch Mountain Road	Skewed stop-controlled intersection with limited sight distance	Realign roadway	High
	Motorists disobey stop sign	High visibility enforcement at intersection	Low-Medium
US-44 (New Bolton Road/Boston Turnpike)	High speeds	High visibility enforcement	Low-Medium
		Dynamic speed feedback signs	Low
US-6 (Hop River Road) between Stony Road and South Road	High frequency crashes along horizontal curvature	Enhance delineation	Low-Medium
	Two fatalities front-to-front and roadway departure (first harmful event)	Edgeline and centerline rumble strips	Low

TOWN OF CANTON

2016 U.S. Census Population Estimate: 10,287
Area: 24 square miles
Population Density: 418 per square mile
2016 Vehicle Miles Traveled (VMT): 79,810,535
2016 VMT per Capita: 7,758
Setting: Rural/Suburban
Date of Meeting with Town: February 5, 2019
Town Representatives: Neil Pade (Town Planner), Emily Kyle (Asst. Town Planner), Tom Richardson (Town Public Works), Chris Arciero (Chief of Police), Robert Skinner(Town), Devon Lechtenberg (CRCOG)
Data-Identified High Crash Corridors: US-44 (from Old Albany Turnpike to E Hill Road)
Data-Identified High Crash Intersections: US-202 and River Rd; US-44 and Dowd Ave
Bike and Ped Injury and Fatal Crash Injuries: 8
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 203

Source: VN Engineers

Overview

Canton is bordered by Burlington and Avon to the south, Simsbury to the east, Granby and Barkhamsted to the north, and New Hartford to the west. Primary roads through town are US-44, US-202, CT-179, CT-309 and CT-177.

Town Input

US-44

This state road has the highest volume of traffic and crashes according to the Town representatives. US-44 accommodates heavy traffic because it is the primary east-west thoroughfare in the region. There are centerline rumble strips on the western side of US-44 near the New Hartford town line. South of the Avon town line there is a propensity of rear end crashes, which the Town said is partially due to the horizontal and vertical curvature of the roadway. There is no center left turn lane along this corridor which has many curb cuts for access to commercial sites. Outside of the study period, there was a pedestrian fatal crash in 2018 along US-44.

US-44 and Lovely Street (CT-177)

This is a large, skewed, signalized intersection with an exclusive pedestrian phase. There are a cluster of crashes at this intersection.

US-202 and River Road

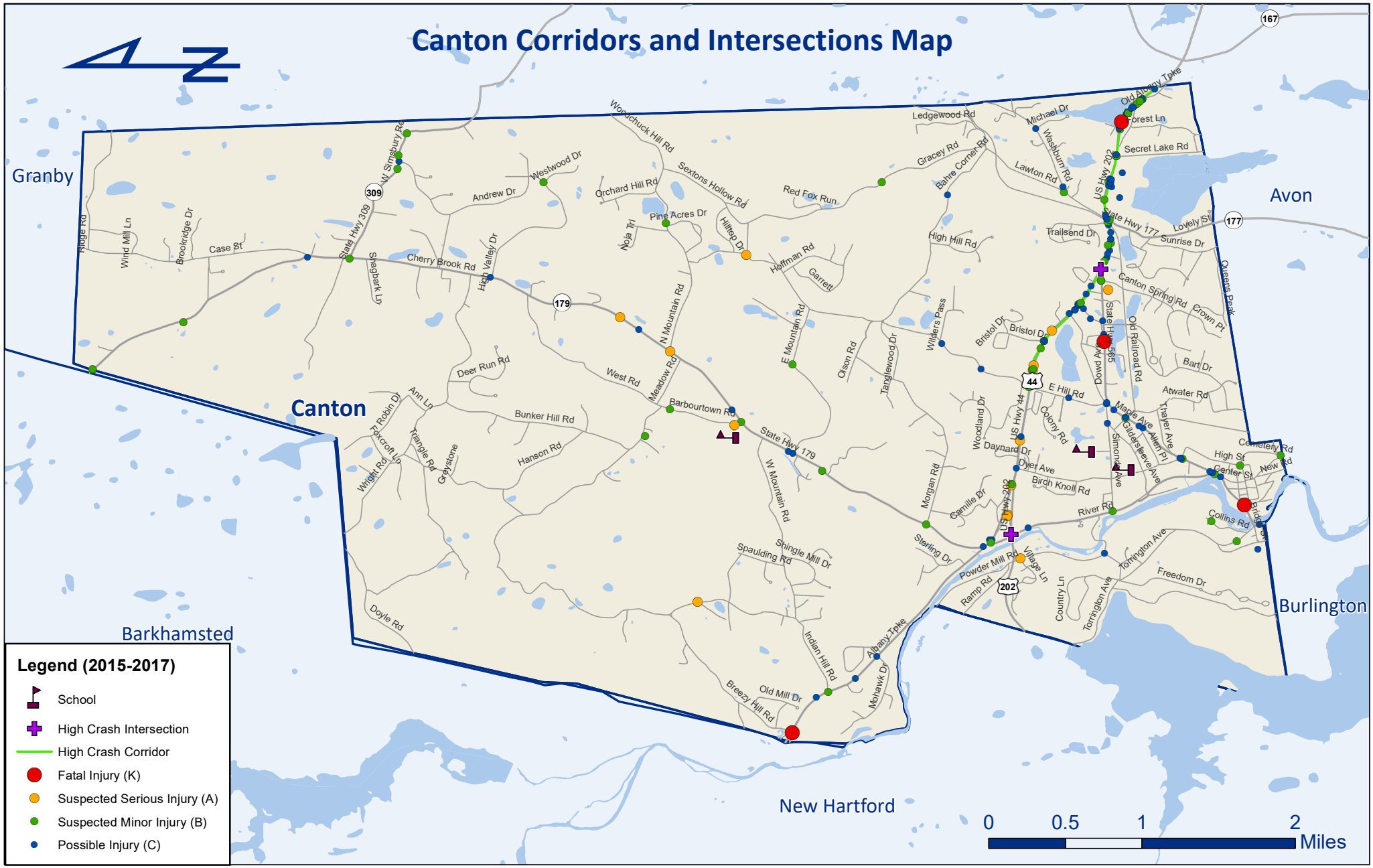
This is a four-way signalized intersection with a cluster of crashes. US-202 westbound does not have a designated left turn lane, which the Town cited contributed to motorists bypassing turning cars and crashing with eastbound US-202 left-turning traffic.

US-44 and CT-565 (Dowd Avenue)

This is a skewed signalized intersection with a cluster of crashes. There is a left turn prohibition from Dowd Avenue. CRCOG proposed an alignment that has not been awarded funding. The Town received funding from the CT Community Connectivity Grant to install sidewalks on US-44 in the Dowd Avenue Town green area.

US-202

This road is a concern for the Town because it is classified as a limited access roadway. The Town emphasized that because of this classification, the State installed shoulder rumble strips. However, this roadway is a common route for cyclists and the rumble strips have created a hazardous route for bicyclists to safely use. CTDOT said the rumble strips have a gap pattern to facilitate access to the shoulder for cyclists. The Town representatives want CTDOT to reclassify the roadway to reflect design standards based on its current use.


Canton Corridors and Intersections Map
Granby
Canton
Avon
Barkhamsted
New Hartford
Burlington
Legend (2015-2017)
School
High Crash Intersection
High Crash Corridor
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
0
0.5
1
2
Miles

Field Site Inventory

US-202 and CT-179 (River Road)

This is a four-way signalized intersection. River Road is four lanes wide with left turn lanes in both north and southbound approaches. US-202 westbound and CT-179 southbound traffic has one travel lane for both left and through traffic. There is no left turn signal for westbound traffic. The road measures approximately 57 feet edge to edge, enough to stripe a left turn lane for the westbound lane. There are guiderails along US-202 with drop-offs on both sides. Any modifications would be best to make within existing roadway cross-section.

East of this intersection northbound CT-179 and westbound US-44 splits off.

Recommendations:

- Restripe road with left hand turn lane along the US-202 westbound approach to River Road.
- Revise signal to include a left turn arrow for east and westbound traffic. Determine if eastbound US-202 can have exclusive left lane and a through right lane.

US-44 and CT-565 (Dowd Avenue)

The intersection of US-44 and Dowd Avenue is a skewed 3-way signaled intersection with surrounding commercial and residential uses, as well as the Town Green abutting the northwest corner of the intersection.

US-44 approaches consist of two shared use approach lanes with no shoulders and the Dowd Avenue approach consists of one through-right lane, minimal shoulders and left turn prohibition. Vehicles traveling eastbound on Dowd Avenue seeking to turn onto US-44 westbound, travel along Canton Green Road or an earlier north-south cross street to an unsignalized intersection with US-44. During peak periods, long queues develop along the Dowd Avenue approach.

Recommendation:

- Pursue funding for CRCOG's redesign of intersection.

Dowd Ave at US-44

US-202 and CT-179

Canton Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	0	0	4
Suspected Serious Injury (A)	4	7	5
Suspected Minor Injury (B)	33	15	24
Possible Injury (C)	27	44	40
Total Injury Crashes	64	66	73

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
US-44 (Albany Turnpike/Dyer Cemetery Road)	Rear end crashes	Investigate road diet with center left turn lane	Medium
	Horizontal and vertical curvature		
	High turning movements		
US-202 and CT-179 (River Road)	High frequency angle crashes	Install left turn lane on US-202 westbound/revise signal	Low-Medium
		Revise signal to include a left turn arrow for east and westbound traffic. Determine if eastbound US-202 can have exclusive left lane and a through right lane.	Low-Medium
US-44 (Albany Turnpike) and CT-565 (Dowd Avenue)	Skewed intersection	Pursue funding for CRCOG's redesign of intersection	Medium-High
US-202 (Albany Turnpike)	Shoulder rumble strips along common bike route	Reclassify roadway to reflect current use	Low
		Shoulder rumble strip with gap pattern to facilitate access to the shoulder for cyclists	Low
US-44(Albany Turnpike) and Colonial Road	Speeding	Dynamic speed feedback signs	Low
		High speed visibility enforcement	Low-Medium
	High traffic	Investigate traffic signal installation	Low-Medium

TOWN OF COLUMBIA

2016 U.S. Census Population Estimate: 5,433
Area: 21 square miles
Population Density: 254 per square mile
2016 Vehicle Miles Traveled (VMT): 57, 829,505
2016 VMT per Capita: 10,644
Setting: Rural
Date of Meeting with Town: January 14, 2019
Town Representatives: Steven Everett (First Selectman), Mark Walter (Town Administrator), Paula Stahl (Planning), George Murphy (Public Works), Andrea Drabicki (Citizen Transportation Committee) and Terri Thompson (CRCOG TIM)
Data-Identified High Crash Corridors: N/A
Data-Identified High Crash Intersections: N/A
Bike and Pedestrian Crash Totals: 3
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 74

Source: VN Engineers

Overview

Columbia is a town in Tolland County. It is bordered by Coventry to the north, by Andover and Hebron to the west, by Windham and Lebanon to the east, and Lebanon to the south.

Town Input

The Town identified high speeds and distracted driving as their main concerns for both State routes and local roadways throughout the Town.

Erdoni Road
This is a rural collector with low volumes and high travel speeds. Speed is posted at 25 MPH. There is minimal roadway cross section with guiderails and posts in various sections, further constraining the cross section. This roadway corridor has high pedestrian use. The Town recently completed a traffic study for the roadway and has begun to implement various recommendations.

CT-66 at West Street/Hunt Road
These intersections are under stop control at CT-66. The sight lines from the side streets are adequate. Entering CT-66 from the side streets can be challenging due to high travel speeds on CT-66. In addition, the utilization of the CT-66 shoulder as an informal bypass lane to pass left turning vehicles is an issue. Increased residential development off Hunt Road has contributed to increased turning movements at the intersection and overall congestion. The Town has requested CTDOT to install a traffic signal, however, traffic volumes and crash history do not warrant a signal.

CT-87 (Jonathan Trumbull Highway) at CT-66

This intersection represents the Town Center. It is an active pedestrian area with community attractions adjacent to the intersection, including the Town Green, Town Hall, Senior Center, Post Office, and Elementary School. The Town would like to further encourage pedestrian and bicycle mobility in this area. A previous proposal to connect the Town Center to the Columbia Lake Beach with a sidewalk was not supported by Town residents. The intersection experiences peak hour congestion. There is a desire to add an exclusive left turn for the CT-87 eastbound approach to address congestion. CT-66 and CT-87 experience high travel speeds through the intersection. The Town completed a safety audit for this intersection and will forward the information to the project team. CTDOT recently completed a traffic signal upgrade and pavement improvements at the intersection.

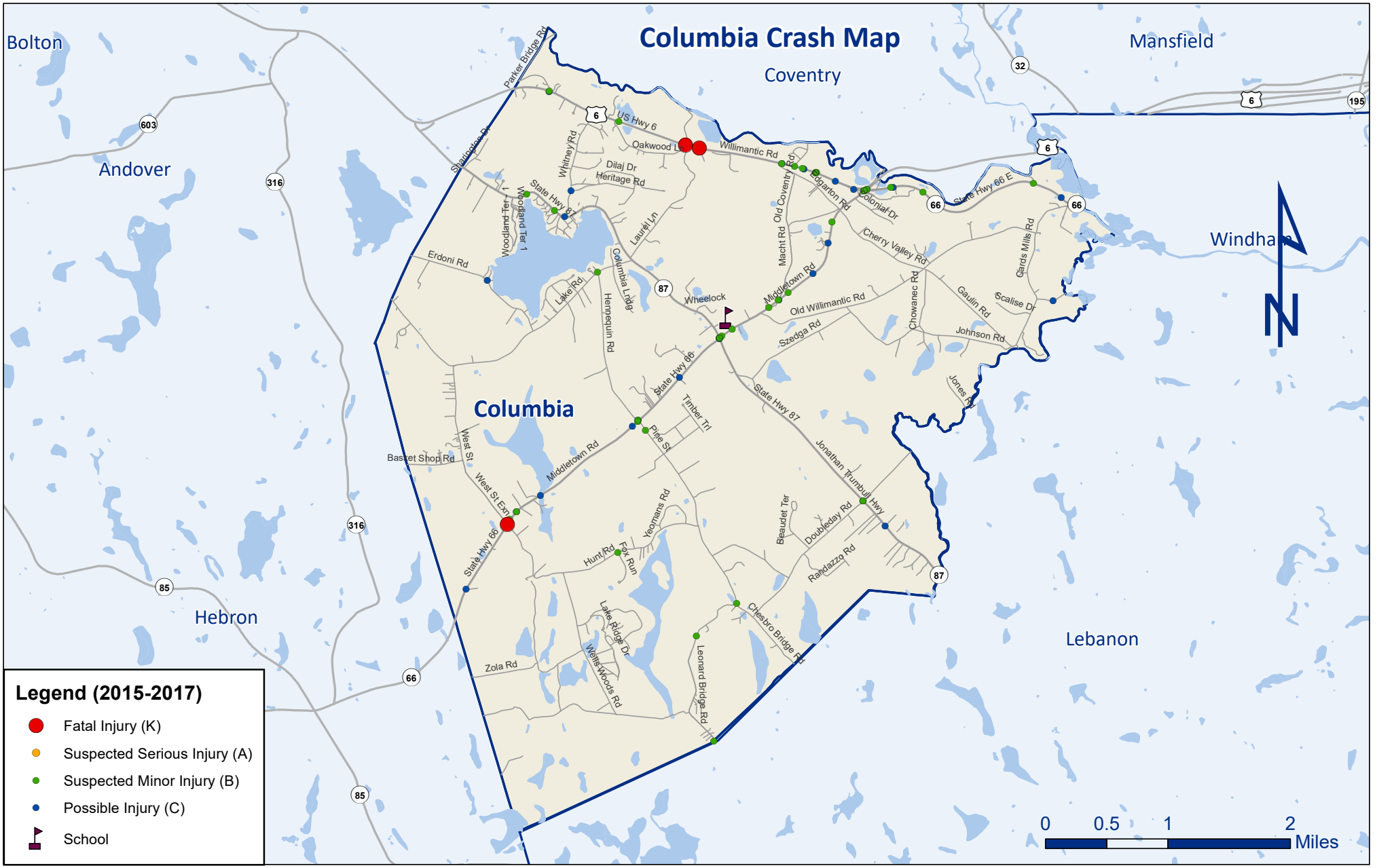
Columbia Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	1	1	1
Suspected Serious Injury (A)	1	0	0
Suspected Minor Injury (B)	7	13	22
Possible Injury (C)	10	11	7
Total Injury Crashes	19	25	30

CT-87 (Jonathan Trumbull Highway)

Between Woodland Terrace and Whitney Road, CT-87 (Jonathan Trumbull Highway) consists of a series of vertical and horizontal curves through the area of the Columbia Lake Dam outlet. Traveling from the west to the east there is a steep grade into a reverse curve that historically experiences crashes. There are guiderails and various waring signs through this section of the corridor.

Source: VN Engineers


Columbia Crash Map
Bolton
Andover
Coventry
Mansfield
Windham
Columbia
Hebron
Lebanon
Parker Bridge Rd
US Hwy 6
Oakwood Ln
Willimantic Rd
Whitney Rd
Dilaj Dr
Heritage Rd
State Hwy 87
Woodland Ter 1
Laurel Ln
Columbia Lndg
Erdoni Rd
Lake Rd
Hennequin Rd
Wheelock
Old Coventry Rd
Edgarton Rd
Colonial Dr
State Hwy 66 E
Macht Rd
Middletown Rd
Cherry Valley Rd
Gards Mills Rd
Chowanec Rd
Gaulin Rd
Scalise Dr
Johnson Rd
Old Willimantic Rd
Szedga Rd
State Hwy 66
Timber Trl
Pine St
State Hwy 87
Jones Rd
Jonathan Trumbull Hwy
Basket Shop Rd
West St
West St Ext
Middletown Rd
Yeomans Rd
Hunt Rd
Fox Run
Beaudet Ter
Doubleday Rd
Randazzo Rd
Chesbro Bridge Rd
Lake Ridge Dr
Wells Woods Rd
Leonard Bridge Rd
Zola Rd
0 0.5 1 2
Miles
Legend (2015-2017)
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
School

Field Site Inventory

CT-87 at CT-66

The intersection of CT-87 and CT-66 is a signalized intersection with an adjacent service station, church, the Town Green and residences. All of the approaches to the intersection are designated as one general purpose lane and both CT-87 approaches include a small raised island. All approaches are also wide enough, when considering the shoulder, to provide an informal by-pass lane to navigate around left-turning vehicles waiting for a gap in oncoming traffic. This can create a sight line issue for opposing left-turning vehicles whereas it is difficult to anticipate a by-pass through vehicle. This is most prevalent for the southbound CT-87 approach.

Recommendations:

- Assess the potential for a roundabout.
- Assess signal timings and phasing to optimize traffic signal operations.

CT-87 Reverse Curve at Columbia Lake Dam

CT-87, from US-6 to Woodland Terrace, consists of a very steep grade that crests at Woodland Terrace into a steep downgrade and a reverse curve through the base of the Columbia Lake Dam.

The posted speed limit through this section of roadway is 35 MPH with residential land use surrounding. Traveling eastbound, curve and steep hill warning signs are present at the crest of hill. Continuing eastbound, chevron curve warning signs are posted along the second curve at the bottom of the hill. Traveling westbound there is a curve warning sign with a 30 MPH advisory speed plaque and a series of chevron warning signs through the curve at the bottom of the hill.

Recommendations:

- For both approaches, consider a reverse curve warning sign and adding chevon warning signs for the first horizontal curve.
- Upgrade all existing chevron warning signs to retroreflective signs to improve visibility.
- High friction surface treatment.

Intersection of CT-87 and CT-66

Reverse curve on CT-87

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-66 (Middletown Road) at West Street and Hunt Road	Congestion	Investigate traffic signal installation	Low-Medium
	High turning movements	Corridor access management	Medium
	Speeding	Dynamic speed feedback sign on CT-66 (Middletown Road)	Low
		High visibility enforcement	Low-Medium
CT-87 (Jonathan Trumbull Highway) at CT-66 (Middletown Road)	Crashes	Investigate a roundabout	Low-High
	High turning movements	Signal optimization	Low-Medium
		High turning movements	Medium-High
CT-87 (Jonathan Trumbull Highway) Corridor (between Woodland Terrace and Whitney Route)	Vertical and horizontal curvature	For both approaches, consider a reverse curve warning sign and adding chevon warning signs for the first horizontal curve	Low
		Upgrade all existing chevron warning signs to retroreflective signs to improve visibility	Low
		High friction surface treatment.	Low

TOWN OF COVENTRY

2016 U.S. Census Population Estimate: 12,433
Area: 38 square miles
Population Density: 330 per square mile
2016 Vehicle Miles Traveled (VMT): 88,279,995
2016 VMT per Capita: 7,100
Setting: Rural
Date of Meeting with Town: January 30, 2019
Town Representatives: Todd Penney (Town Engineer), Mark Palmer (Police Department), John Elsesser (Town Manager), Mark Kiefer (DPW), Devon Lechtenberg (CRCOG)
Data-Identified High Crash Corridors: CT-31 (Main Street) from Standish Road to CT-275
Data-Identified High Crash Intersections: US-44 to Boston Turnpike and CT-3 to Main Street
Bike and Pedestrian Injury and Fatal Crash Injuries: 5
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 163

Source: VN Engineers

Overview

Historic Coventry is the Gateway to Northeast Connecticut's Quiet Corner. It is bordered by Andover and Columbia to the south, Mansfield to the east, Tolland to the north, and Vernon and Bolton to the west.

Town Input

The Town representatives attribute many fatal crashes to high speeds and impaired driving.

US-44 and CT-31(Main Street)
This is a high crash intersection with congestion at peak hours between 4 to 6 PM.

US-44 and CT-31 (Bread and Milk Street)
This is a three-way, signalized intersection with the local side street Northfield Road located just to the west and Swamp Road situated just to the east. CRCOG conducted a study on US-44 and has approved a LOTCIP application to address this intersection. At this time the Town is moving forward to realign Swamp Road to T-intersect US-44 at Bread and Milk Street. The proposed plan is to consolidate Northfield and Swamp Roads into a T-intersection with the proposed Swamp Road alignment in advance west of the signalized intersection. The region is waiting for final approval from CTDOT.

Bread and Milk Street has centerline rumble strips. Addressing the offset intersection and/or investigating the potential installation of a roundabout could mitigate the current safety concerns at the intersection.

Ripley Road and Main Street (CT-31)
This is a one-way, stop-controlled T-intersection. Sight distance from Ripley Hill onto CT-31 is limited. This intersection is adjacent to the local high school, and the Town is concerned with the young drivers at this junction. In addition, sun glare, especially in the morning impedes the sight of drivers. There will be an extension of the sidewalks on Main Street with funding from the CT Community Connectivity Program.

Daly Road
This is a high-volume local road with residential land use along Lake Wangumbaug. There are no shoulders and prevalent vertical (10% grade) and horizontal curvature throughout this roadway. The steep grade from Lake Road to Daly Road and speeding are issues. In 2018, there was a fatal roadway departure crash on Daly Road along the horizontal curves.

The Town wants Daly Road to be reclassified as a collector road. The Town's highest density of population is around the lake. The Town is using Safe Routes to School funding for sidewalks along Daly Road. In addition, the Town is going to reduce travel lanes to 11 feet and add edge lines.

Source: VN Engineers

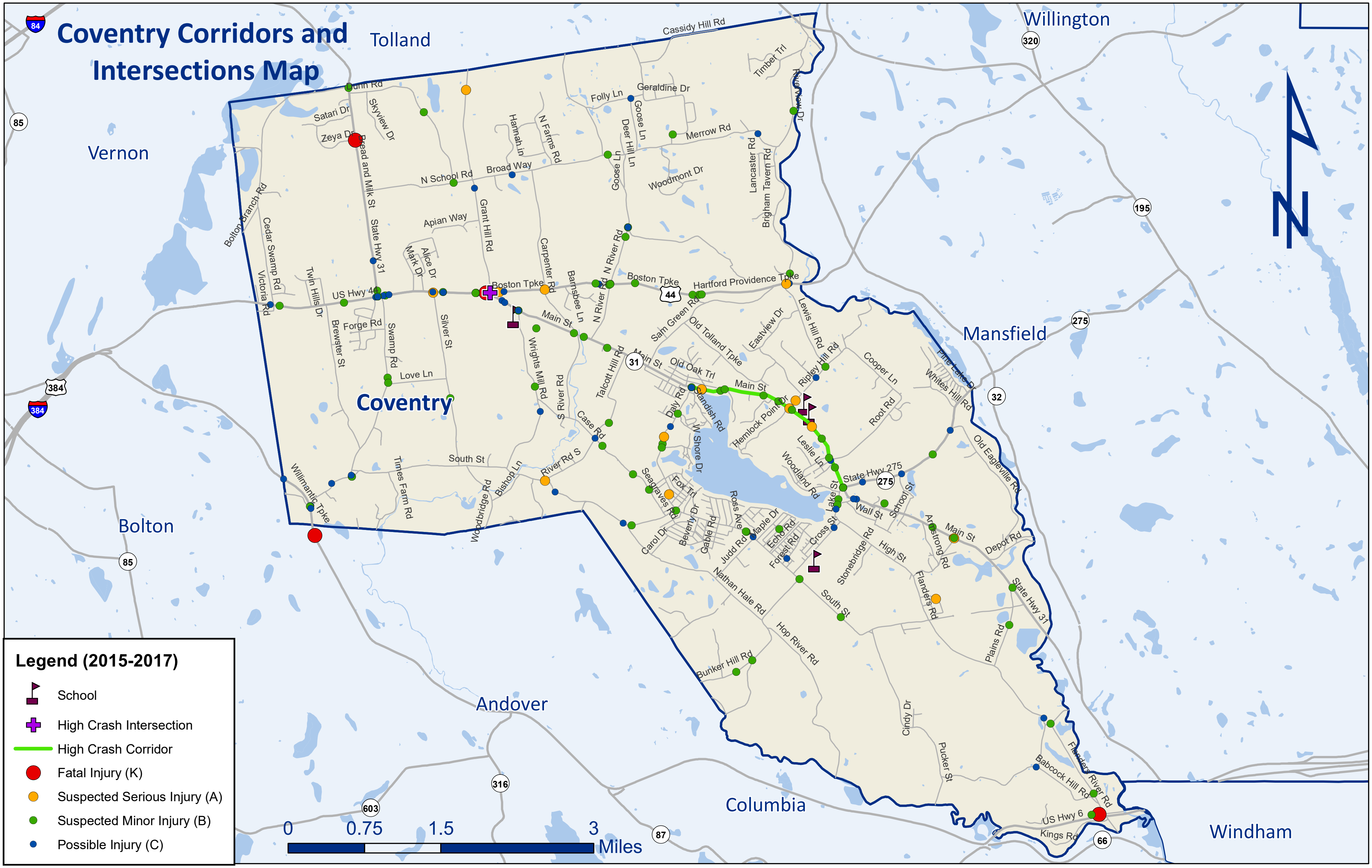
Lake Street and CT-31
This is a two-way stop-controlled intersection with a flashing yellow beacon. The Town is concerned with trucks backing into the gas station located on northwest corner of Lake Street and CT-31, which results in roadway obstruction. In addition, vertical curvature and icy conditions along CT-31 are a concern for motorists.

US-6
This road has wide travel lanes and high travel speeds. CTDOT conducted a safety project along US-6 about 15 years ago which included improved sight lines, mainline alignment, wider shoulders, improved intersection alignments, and the addition of turning lanes at select intersections.

Town wants to install sidewalks to connect around Lake Wangumbaug for improved pedestrian connectivity from the lake area to the Town Center.

Coventry Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	2	1	1
Suspected Serious Injury (A)	3	9	4
Suspected Minor Injury (B)	20	40	26
Possible Injury (C)	21	16	20
Total Injury Crashes	46	66	51


Coventry Corridors and Intersections Map
Tolland
Willington
Vernon
Mansfield
Coventry
Bolton
Andover
Columbia
Windham
Legend (2015-2017)
School
High Crash Intersection
High Crash Corridor
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
0
0.75
1.5
3
Miles
US Hwy 44
Boston Tpke
Hartford Providence Tpke
Main St
State Hwy 275
State Hwy 31
US Hwy 6
South St
N School Rd
Broad Way
Cassidy Hill Rd
Merrow Rd
Bread and Milk St

Field Site Inventory

Ripley Hill Road and CT-31 (Main Street)

This is a T-intersection with stop control on Ripley Hill Road. CT-31 eastbound has vertical curvature, limiting sight distance and glare from the sun in the western sky can impede vision. Coventry High School abuts this intersection.

Speed is posted at 35 MPH. There are retroreflective pedestrian crossing signs on both approaches to the crosswalk, which is striped on the eastern leg of the intersection.

Sidewalks run along the southside of CT-31 to the west of Ripley Hill Road. They continue on the northside of the roadway east of Ripley Hill Road and continue on the east side of Ripley Hill Road, up to the high school driveway.

The Town is currently in the process of submitting an encroachment permit to install RRFBs for the crosswalk here.

Recommendations:

- Investigate converting this intersection into a three-way, stop-controlled intersection.
- Investigate making Main Street near Ripley Hill Road a school zone. Install signage with reduced speed limits and flashing beacons and pavement markings.

Daly Road Corridor

Daly Road is a high traffic volume road along the western side of Coventry Lake, connecting CT-31 to the north and South Street to the south. The roadway is used as a collector for numerous residents and high-density lakeside neighborhoods and is used as a north-south corridor through the town.

The posted speed limit is 30 MPH with a narrow roadway cross section of 20 to 22 feet with numerous vertical and horizontal curves. There is double centerline with no shoulders and no sidewalks along the corridor. The roadway experiences very high travel speeds and frequent crashes.

Recommendations:

- Reclassify Daly Road as a collector given its function and use. With reclassification, establish 11 feet travel lanes with edge lines in both directions.
- Establish a sidewalk along the corridor, enhanced horizontal curve signing and delineation to complete the long-term vision of pedestrian accommodation around Coventry Lake.
- Install high friction surface treatments.

Daly Road

Ripley Hill Road and Main Street

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
US-44 (Boston Turnpike) and Bread and Milk Street	Three way off-set intersections with high frequency crashes	Continue to pursue LOCIP funding for intersection improvements	Low to Medium
Ripley Road and CT-31 (Main Street)	Limited sight distance from Ripley Road (one-way stop-controlled T-intersection)	Investigate a three-way stop-controlled intersection	Low
	In school zone	School zone warning signs and speed limits	Low
Daly Road	Horizontal curvature	Enhanced delineation	Low
		Install high friction surface treatments	Low
	Lack of sidewalks	Install sidewalks	Medium
	Speeding	Reclassify Daly Road as a collector given its function and use.	Low
		Establish 11 feet travel lanes with edge lines in both directions.	Low

TOWN OF EAST GRANBY

2016 U.S. Census Population Estimate: 5,170
Area: 17.5 square miles
Population Density: 295 per square mile
2016 Vehicle Miles Traveled (VMT): 76,259,450
2016 VMT per Capita: 14,750
Setting: Rural/Suburban
Date of Meeting with Town: February 27, 2019
Town Representatives: Gary Haynes (Director of Community Development), Jim Hayden (First Selectman), Devon Lechtenberg (CRCOG)
Bike and Pedestrian Crash Totals: 4
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 89

Source: VN Engineers

Overview

East Granby is located in the northwest CRCOG region. It is bordered by Windsor Locks and Windsor to the east, Suffield to the north, Granby to the west, and Simsbury and Bloomfield to the south.

Town Input

Fatal Crashes
There were three fatal crashes from 2015-2017 on CT-20. The Town representatives stated there was another fatal crash on CT-20 in 2018, outside of this study period. Two of the three fatal crashes on CT-20 were near the Windsor town line. The Town attributes the fatal crash at the intersection of CT-20 and Metacomet Drive to various factors: vertical curvature, limited sight distance, and speeding. The slope was reconstructed by the State, but the Town says it needs to be leveled out more for additional safety. Other traffic concerns include speeding, access management, and the speed differentials on CT-20. The Town is addressing access management by enforcing new businesses adherence to revised access management standards.

CT-20 from Bradley Park Road to East Granby Road at the transition of the CT-20 Expressway
This is the highest priority for the Town. The main concerns are the high speeds from motorists exiting the expressway and transitioning to a lower speed commercial area with a series of curb cuts. In addition, there are high number of heavy vehicles associated with the airport and International Drive. To address the high number of turning movements, the Town is requiring new businesses, especially gas stations to install shorter and fewer curb cuts in addition to one-way access and egress to reduce possible conflict points.

The Town Community Development representative, Gary Haynes, believes this section of CT-20 should be divided due to high speeds and volumes, which would reduce left turn crashes through the corridor. The Town would like to see the section of East Granby Road between the CTDOT Maintenance Facility and CT-20 closed and traffic rerouted to the future signalized intersection of CT-20 and Walnut Drive. The new traffic signal will provide improved access to/from the area and remove the existing high speed conflict points at CT-20 and East Granby Road. The Air National Guard main gate is being relocated from Nicholson Road to Walnut Drive.

CT-20
This road in general has high traffic volume and high speeds, although the posted speed is maintained at 40 MPH. The State Police conduct speeding enforcement campaigns on a frequent basis. There are some vertical and horizontal curve sight line issues. A pedestrian hybrid beacon (PHB) is being installed along CT-20 at the Farmington River Trail crossing for pedestrian and cyclists. Recently, there have been several rear-end crashes at the trail crossing. Westbound CT-20 from Windsor Town line has high rear-end crashes also.

Farmington River Trail crossing on CT-189
The Town would like another PHB consistent with the installation of the one on CT-20.

Hatchett Hill Road (CT-540) and Newgate Road
Both roadways were mentioned by the Town as concerns because of their horizontal and vertical curvature and narrow cross-sections with limited or no shoulders.

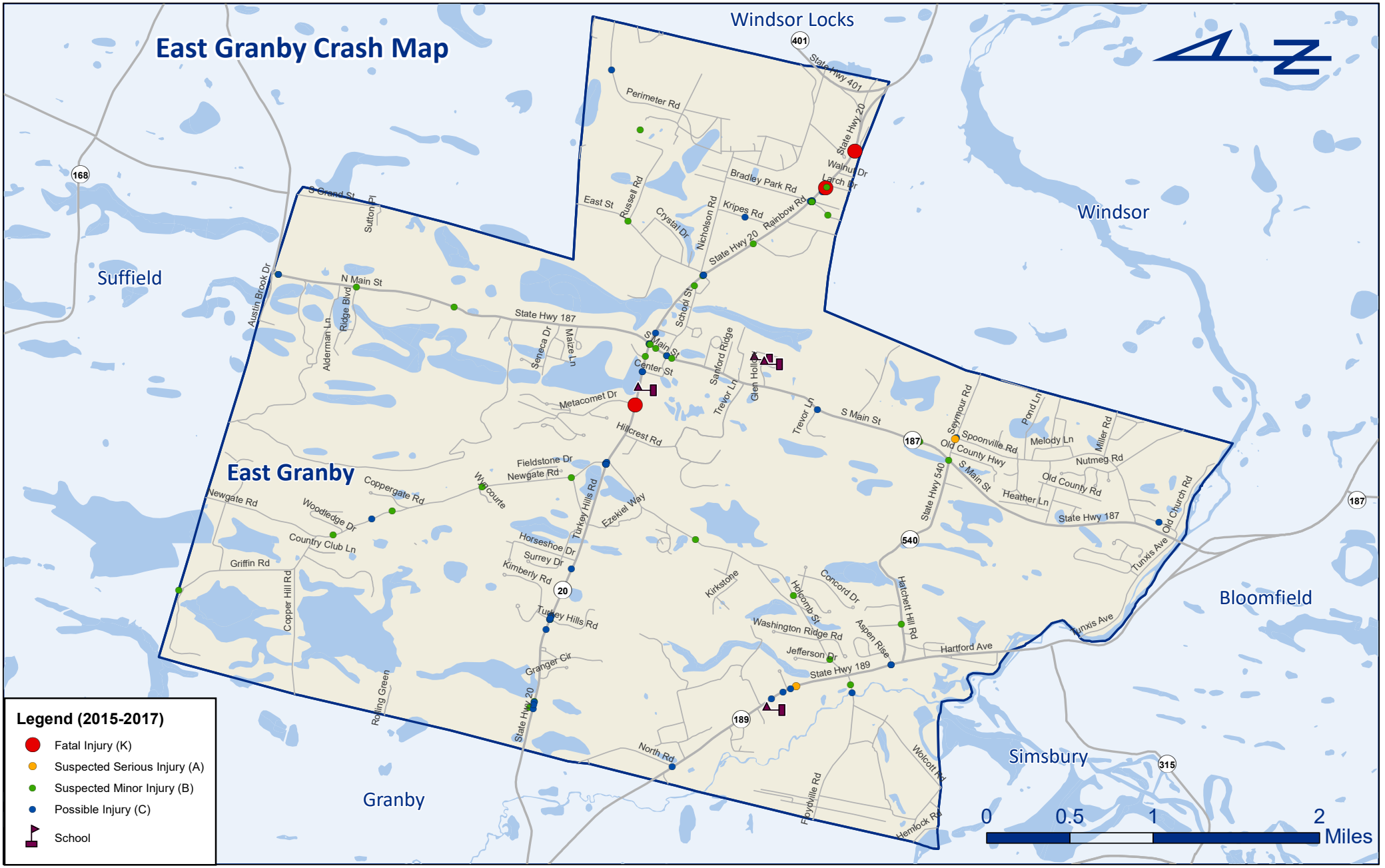
Seymour Road
This is an east-west cut through road with steep grades and heavy truck traffic. Recently, a through truck prohibition was implemented. Centerline rumble strips were installed on Holcomb Street, and the Town said they have been successful.

Bicyclists
To better accommodate bike traffic, the Town would like to see roadways narrowed to the 11 foot standard travel lanes to provide more shoulder width around the Coles Park area.

Source: VN Engineers

East Granby Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	0	1	2
Suspected Serious Injury (A)	0	2	1
Suspected Minor Injury (B)	10	12	13
Possible Injury (C)	13	18	17
Total Injury Crashes	23	33	33


East Granby Crash Map
Windsor Locks
Windsor
Suffield
East Granby
Granby
Bloomfield
Simsbury
Legend (2015-2017)
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
School
0
0.5
1
2
Miles

Field Site Inventory

CT-20 between International Drive and the end of CT-20 Expressway

CT-20 between International Drive and the CT-20 Expressway carries high peak period traffic volumes with high travel speeds. The roadway cross-section consists of two travel lanes in each direction, no shoulders, designated left-turn lanes to local side streets and a painted median on the eastern portion of this roadway segment. The posted speed limit is 45 MPH, however, just to the east of the intersection, the posted speed limit is 55 MPH.

Given its proximity to Bradley International Airport, this section of CT-20 experiences a high percentage of heavy vehicle traffic. Closer to the expressway section of CT-20, there are three local side streets (Larcher Drive, Walnut Drive, and East Granby Road) that intersect CT-20 from the south that create T-intersections. There are exclusive left-turn/deceleration lanes to access these side streets from westbound CT-20.

The Air National Guard will be moving their main access gate from Nicholson Road to CT-20 across from Walnut Drive. A signal will be installed at this intersection.

Recommendations:

- Consider optical speed bars or rumble strips across CT-20 to reduce travel speeds within the transition area between the 55 MPH and the 45 MPH speed zones.
- Consider closing East Granby Street at CT-20 and redirecting traffic to the proposed signalized intersection of Walnut Street and the new National Guard Gate.

CT-189 and the Farmington Canal Heritage Trail

The crossing of the Farmington Canal Heritage Trail and CT-189 currently has a push button activated rapid rectangular flashing beacon (RRFB) at the crossing. In addition, there are advanced pedestrian warning signs along both approaches. However, the vertical curvature on both approaches along CT-189 and the posted 40 MPH speed limit create a difficult crossing scenario for trail users. More non-motorized protection or speed reduction should be considered to ensure trail users can cross this roadway.

Recommendations:

- Pedestrian Hybrid Beacon (PHB).
- Signs advising trail users to cross safely.

CT-20

Trail Crossing at CT-189

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-20 (Rainbow Road) from Bradley Park Road to East Granby Road	Speed differentials	Traffic calming	Low
	High number of curb cuts	Corridor access management	Low
	High left turn angle crashes	Divide this section of CT-20 (Rainbow Road)	High
CT-20 (Rainbow Road) between International Drive and the end of CT-20 (Rainbow Road) Expressway	Speed differentials	Consider optical speed bars or rumble strips across CT-20 (Rainbow Road) to reduce travel speeds within the transition area between 55 MPH and 45 MPH	Low
		Consider closing East Granby street at CT-20 (Rainbow Road) and redirecting traffic to the proposed signalized intersection of Walnut Street and the new national guard gate	Medium
CT-189 at the Farmington Canal Heritage Trail	Pedestrian crossing in 40 MPH zone with imited sight distance along approach	Pedestrian hybrid beacon	Medium
		Signs advising trail users to cross safely	Low
Hatchett Hill Road	Horizontal and vertical curvature	Edge line and centerline rumble strips	Low
		Enhanced delineation	Low
Newgate Road	Horizontal and vertical curvature	Edge line and centerline rumble strips	Low
		Enhanced delineation	Low
Seymour Road	Heavy truck traffic	Enforce thru truck prohibition	Low-Medium

TOWN OF EAST HARTFORD

2016 U.S. Census Population Estimate: 50,237
Area: 18 square miles
Population Density: 2,791 per square mile
2016 Vehicle Miles Traveled (VMT): 523,941,075
2016 VMT per Capita: 10,429
Setting: Urban
Date of Meeting with Town: January 28, 2019
Regional and Town Representatives: Scott Sansom (EH Police Department), Marcia A. LeClerc (Mayor), Keith Chapman (DPW), and Terri Thompson (CRCOG)
Data Identified High Frequency Crash Corridors: CT-502-Silver Lane (From E Hartford Blvd to Forbes Street); CT-44-Burnside Avenue (From Zebulon Street to Manchester Line); CT-517-Main Street (From Willow Street to Silver Lane and from Glastonbury Line to Brewer Street)
Data Identified High Crash Intersections: Roberts Street and Hillside Street; Main Street and Brewer Street; Silver Lane and Forbes Street
Bike and Pedestrian Crash Totals: 88
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 993

Source: VN Engineers

Overview

East Hartford is a town centrally located in the Capitol Region. It is bordered by Glastonbury to the south, Manchester to the east, South Windsor to the north and Hartford to the west.

Town Input

Fatal Crashes
There were four pedestrian fatal crashes from 2015-2017. Pedestrian visibility is an issue which is a concern because there are high pedestrian volumes. One bicycle fatal crash and one motorized vehicle fatal crash occurred in the study period.

East Hartford Police Department (EHPD)
The EHPD has a traffic unit and issues approximately 8,000 tickets annually, mostly for speeding and crash related violations. The police cited an issue with enforcement in certain sections of East Hartford. The Police use crime and crash data to staff personnel, and therefore more personnel have been assigned to higher crime areas that are also lower income with high minority populations. This has caused push back from communities. They are concerned that monitoring of high crash locations can be viewed as racial profiling. Ken Barone at the Institute of Municipal and Regional Policy at CCSU published a study on racial profiling. East Hartford was one of the five state wide municipal departments that exhibited a significant racial or ethnic disparity in motorist stops. The Town is concerned about how the data is perceived by the community.

Burnside Avenue
The road diet on Burnside Avenue has effectively slowed traffic down and made the roadway safer. The road diet entailed reducing the previous four lane cross section to two through lanes, one center left turning lane, and two bike lanes. The Town said they had inquired why the State didn't paint the bike lanes green for further visibility and the State informed them this decision was due to limited funding. The Town would like the bike lanes to be painted green for improved demarcation and visibility.

Burnside Avenue and Hillside Street
This is a signalized T-intersection in an area with high pedestrian volume. There was a pedestrian fatality at this intersection.

Silver Lane
Silver Lane from East Hartford Blvd N and Wildflower Road had a high number of motorized crashes. The Silver Lane section west of East Hartford Blvd is narrow with very limited shoulders. CRCOG is currently conducting a corridor study on Silver Lane to improve multi-modal transportation from Forbes Street to Mercer Avenue there is a $1M project to improve connectivity with bus shelters, lighting and sidewalks.

Main Street (US-5)
This is a high-volume corridor. Pratt and Whitney frontage along Main Street generates significant commuter traffic at the CT-2 Main Street exit. The intersection of Main Street and Brewer Street is a high crash intersection. It has an atypical one-way geometry for this section of Main Street which the town has addressed by increasing the one-way signage. There is significant traffic queuing along Brewer Street.

CT-2 Exit 5A and Main Street
At this intersection traffic volume is heavy and there are design issues. CTDOT has made modifications, but the Town would like additional improvements such as a roundabout at the US-2 exit onto Main Street.

CT-2 and Oxford Drive
This is a high crash intersection due to geometry. The US-2 on and off ramps are slated to be eliminated.

Maple Street
There is speeding along Maple Street. The Town uses dynamic speed feedback signs here to mitigate speeding.

School Street between Tolland Street and Park Avenue
School Street has pedestrian traffic from the local school. The recorded crashes at School Street and Park Avenue are most likely associated with the 18-month construction project of an adjacent land parcel.

Roberts Street and Hillside Street
This is a skewed intersection with high crash frequency. The Town attributes the crashes to speeding.

East Hartford Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	5	3	3
Suspected Serious Injury (A)	22	21	22
Suspected Minor Injury (B)	118	138	138
Possible Injury (C)	165	166	192
Total Injury Crashes	310	328	355


East Hartford Corridors and Intersections Map
Manchester
South Windsor
East Hartford
Glastonbury
Hartford
Wethersfield
Legend (2015-2017)
School
High Crash Intersection
High Crash Corridor
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
0 0.25 0.5 1
Miles

Field Site Inventory

US-44 (Burnside Avenue) and Hillside Street

This is a signalized T-intersection with an exclusive pedestrian phase. There are crosswalks on the west and southern leg of the intersection and sidewalks on all approaches. One possible issue is that there is no right turn on red prohibition, which often creates conflict for pedestrians during an exclusive phase because they are assuming motorists are stopped during walk phase.

Recommendations:

- Install No Turn on Red or Yield to Pedestrian in Crosswalk sign on traffic signal.
- High-visibility crosswalks.
- Evaluate road diet effects on safety.
- Watch for Me CT.

Main Street and Brewer Street

The intersection of Main Street and Brewer Street is a signalized intersection with an adjacent gas station and commercial developments. Main Street is one-way northbound, and the intersection approach consists of a through-left lane, through lane and exclusive right lane. Both Brewer Street approaches to the intersection consists of one general purpose lane. The intersection is heavily congested during peak periods, primarily associated with eastbound Brewer Street left-turns, westbound Brewer Street queue lengths associated with Pratt & Whitney, and heavy traffic volumes associated with the CT-2 ramps.

Recommendation:

- Increase the intersection's capacity by potentially adding an exclusive left-turn lane for the eastbound Brewer Street approach through land acquisition, or prohibiting left-turns for the eastbound Brewer Street approach, or making Brewer Street one-way west between High Street and Main Street.

Main Street and Brewer Street


Hillside Street and Burnside Avenue intersection

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
US-44 (Burnside Avenue) and Hillside Street	Pedestrian safety	Prohibit right turn on red	Low-Medium
		High visibility crosswalks	
		Evaluate road diet effects on safety	
		Watch for Me CT	
CT-502 (Silver Lane)	High crashes	Traffic signal retroreflective backplates	Low-Medium
	Angle crashes	Add cat tracks through intersections	Low
	Speeding	HVE /Dynamic speed feedback signs	Low-Medium
	Pedestrian and bike safety	Investigate roadway illumination	
		Reference the CRCOG Study	
CT-2 Exit 5A off-ramp and Main Street	Weaving travel patterns/rear end crashes	Advanced vehicle warning signs	Low
	Speeding	Dynamic speed feedback signs	Low
Roberts Street and Hillside Street	Angle crashes	Investigate signal clearance timing	Low
	Speeding	Dynamic speed feedback signs	Low
Main Street and Brewer Street	Crashes and congestion	Add an exclusive left-turn lane for the eastbound Brewer Street approach through land acquisition	Low-Medium
		Prohibit left-turns for the eastbound Brewer Street approach	Low
		Consider making Brewer Street one-way west between High Street and Main Street	Low-Medium

TOWN OF EAST WINDSOR

2016 U.S. Census Population Estimate: 11,355
Area: 26.30 square miles
Population Density: 432 per square mile
2016 Vehicle Miles Traveled (VMT): 150,780,405
2016 VMT per Capita: 13,278.77
Setting: Suburban
Date of Meeting with Town: March 12, 2019
Town and Regional Representatives: Joseph Sauerhoefer (DPW), Len Norton (DPW), Richard Austin (Fire Department), Roger Hart (Police Department), Terri Thompson (CRCOG)
Data-Identified High Frequency Crash Corridors: CT-140 (from Wells Road to Windsor Locks Line); CT-5 (from Abbe Road to Main Street)
Bike and Pedestrian Crash Totals: 4
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 207

Source: VN Engineers

Overview

East Windsor is a town in Hartford County with five villages. It is bordered by the town of Enfield to the north, South Windsor to the south, Ellington to the east, and Windsor Locks and Windsor to the west, across the Connecticut River.

Town Input

Town concurred that the principal concern and priority for traffic and roadway improvements is US-5. The Town attributes the crashes along this route to congestion from traffic generators along the corridor including the high school located at US-5 and Tromley Road, I-91 traffic, and commercial and retail businesses located along the corridor.

US-5

This is a high frequency crash corridor according to the 2015-2017 collected data. US-5 narrows down to one travel lane intermittently in each direction which further exacerbates the issues with traffic volume. Also, there are signal timing issues at US-5 and Tromley Road, US-5 and South Water Street (loop detectors are not working), and US-5 and Pasco Drive. These are State-owned traffic signals, but the town has already replaced four loop detectors on the Town Road approaches. The malfunctioning loop detectors increase congestion along US-5, with constant calls on the side street phases, even when no vehicles are present. Emergency Medical Responders are delayed often by congestion on US-5. The Fire Marshal explained that emergency assistance is delayed because US-5 gets so congested with gridlock blocking the passage of any emergency responders, notably at the CT-140 and US-5 intersection. Congestion backs up onto I-91.

The segment of US-5 from Tromley Road northbound is a major concern due to the high congestion, especially during peak commuter hours from 6:30-8:30 AM and 4:00-6:00 PM. Along US-5 from Abbe Road north to Wagner Lane there were 49 injury and fatal crashes from 2015-2017.

The Town wants to widen US-5 along the entire corridor to provide two travel lanes for both directions of travel. There is enough right-of-way from preliminary evaluation to increase the cross section. CRCOG is currently conducting a study on US-5 to evaluate these issues.

US-5 and CT-140
The sight distance at the signalized intersection US-5 and CT-140 is limited due to the varying roadway elevations. CTDOT did lower the crest significantly but the Town says there is still too much variation between the two roadways.

In addition to the current concerns on US-5, there are several projects and proposed development that will affect traffic on this route:

- In Enfield, a 500,000 square-foot truck depot near East Windsor Town Line on US-5 is to be built. Trucks are to be directed to exit I-91 at Exit 46 to bypass East Windsor. The Town is concerned that truck drivers will not comply with this and will use exit 45 and cut through East Windsor, and further contribute to US-5 congestion.
- Future condos to be built on the east side of US-5, south of Tromley Road.
- Proposed casino at US-5 and I-91.

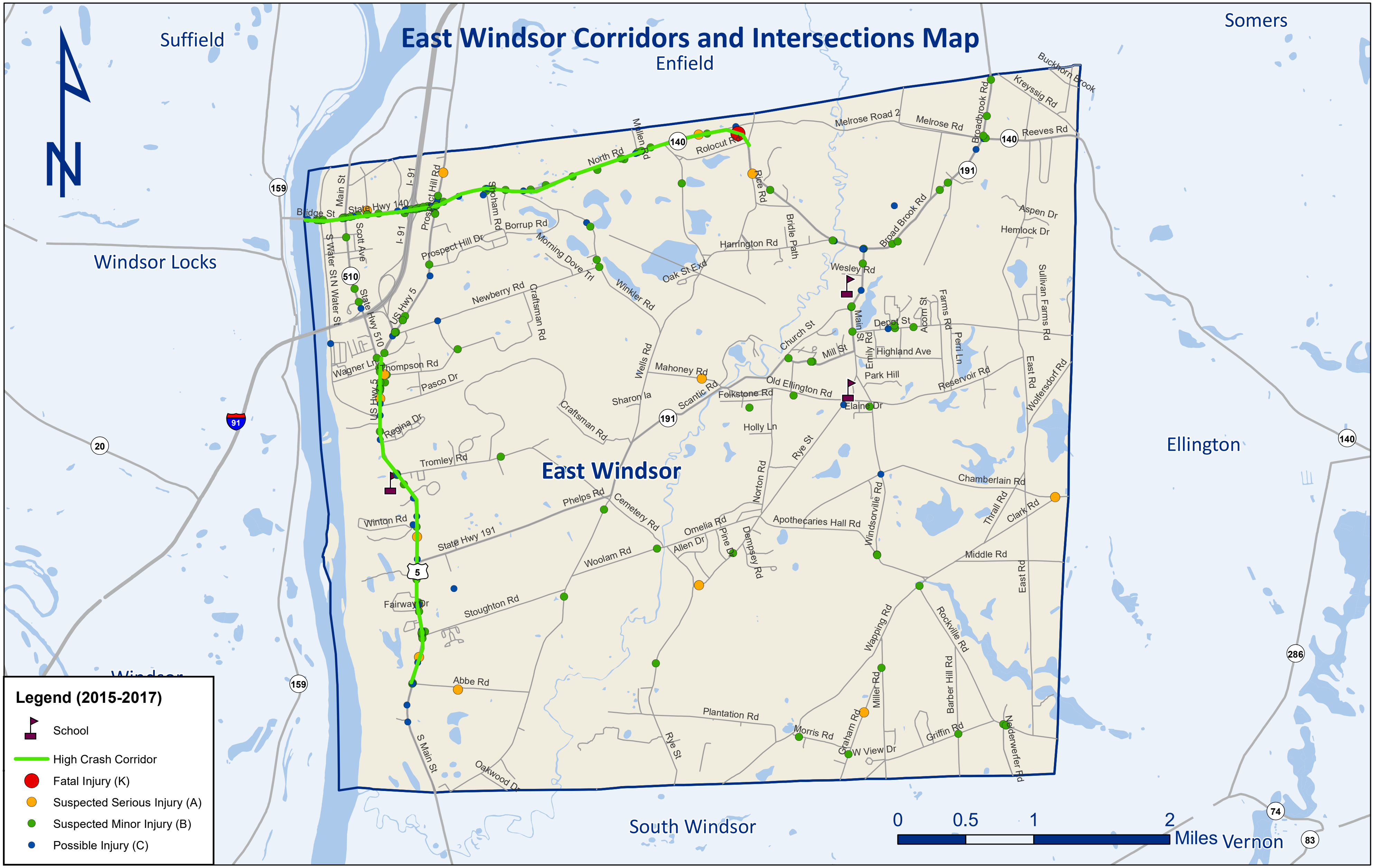
East Windsor Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	0	0	1
Suspected Serious Injury (A)	3	7	4
Suspected Minor Injury (B)	50	29	52
Possible Injury (C)	16	19	25
Total Injury Crashes	69	55	82

CT-140 and Winkler Road
This is a skewed, stop-controlled intersection. Previous police personnel have requested grants to address the intersection of Winkler Road and CT-140, but due to the limited crash numbers the junction has never been a high priority for funding.

Rolocut Road on CT-140
There was a roadway departure fatal crash along the horizontal curve near Rolocut Road on CT-140. Town said there are chevron curve signs in place at this site.

Source: VN Engineers


East Windsor Corridors and Intersections Map
N
Suffield
Enfield
Somers
Windsor Locks
Ellington
Windsor
South Windsor
Vernon
East Windsor
Legend (2015-2017)
School
High Crash Corridor
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
0
0.5
1
2
Miles
Bridge St
State Hwy 140
Main St
I-91
Prospect Hill Rd
Scott Ave
S Water St
N Water St
State Hwy 510
US Hwy 5
Borrup Rd
Prospect Hill Dr
Morning Dove Trl
Newberry Rd
Craftsman Rd
North Rd
Mullen Rd
Rolocut Rd
Rice Rd
Melrose Road 2
Melrose Rd
Broadbrook Rd
Kreyssig Rd
Buckhorn Brook
Reeves Rd
Aspen Dr
Hemlock Dr
Broad Brook Rd
Harrington Rd
Bridle Path
Oak St Ext
Winkler Rd
Wesley Rd
Sullivan Farms Rd
Farms Rd
Acorn St
Depot St
Perri Ln
Highland Ave
Emily Rd
Park Hill
Church St
Mill St
Reservoir Rd
East Rd
Wolfersdorf Rd
Wells Rd
Mahoney Rd
Thompson Rd
Wagner Ln
Pasco Dr
Sharon la
Scantic Rd
Folkstone Rd
Old Ellington Rd
Elaine Dr
Holly Ln
Rye St
Regina Dr
Tromley Rd
Phelps Rd
Cemetery Rd
Norton Rd
Chamberlain Rd
Thrall Rd
Clark Rd
Winton Rd
State Hwy 191
Omelia Rd
Allen Dr
Pine Dr
Dempsey Rd
Apothecaries Hall Rd
Windsorville Rd
Middle Rd
Woolam Rd
Fairway Dr
Stoughton Rd
Wapping Rd
Rockville Rd
Abbe Rd
Miller Rd
Barber Hill Rd
Plantation Rd
Morris Rd
Graham Rd
W View Dr
Griffin Rd
Niederwerfer Rd
S Main St
Oakwood Dr
Rye St
159
91
20
510
140
191
5
286
74
83

Field Site Inventory

US-5 and CT-140

This is a wide four-way signalized intersection with multi-lanes. Adjacent land use is commercial and the intersection is just east of the I-91 on-and off-ramps so traffic volume is high.

There is a crest along CT-140 that limits sight distance especially for motorists traveling eastbound on CT-140. Eastbound CT-140 tapers down from two through lanes to one and westbound widens to two lanes east of the intersection to accommodate traffic to and from I-91.

Recommendations:

- Traffic signal retroreflective backplates for increased visibility.
- Add cat tracks for left turning lanes to guide motorists through intersection.
- Lower crest to increase visibility.
- Investigate roundabout.

US-5 (South Main Street) and South Water Street

The intersection of US-5 and South Water Street is a four-leg signalized intersection with surrounding commercial and residential land uses. Both US-5 approaches consist of an exclusive left-turn lane and through-right lane. The eastbound South Water Street approach consists of a multi-use lane, and the westbound approach, a commercial driveway, also consists of a multi-use lane. Traffic congestion issues with this intersection have been identified and are partly attributed to the malfunctioning loop detectors on South Water Street approach causing constant calls for the side street approach and creating long queues along US-5.

Recommendation:

- Address malfunctioning loop detectors and optimize signal timings and phasing.

US-5 and CT-140

US-5 and South Water Street

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
US-5 (Prospect Hill Road) and CT-140 (Bridge Street/North Road)	Sight distance	Investigate roundabout	High
		Lower crest and add dotted lines to left turning lanes	Low-Medium
US-5 (South Main Street) and South Water Street	Traffic congestion	Optimize signal timings	Medium
		Address malfunctioning loop detectors	Low-Medium
		Optimize signal phasing	Medium
Rolocut Road and CT-140 (North Road)	Roadway departure crashes at horizontal curvature	Increase pavement friction and LED illuminated chevron curve signs	Low
US-5 (Prospect Hill Road) and CT-140 (Bridge Street/North Road)	Congestion	Signal optimization	Low-Medium

TOWN OF ELLINGTON

2016 U.S. Census Population Estimate: 16,071
Area: 34 square miles
Population Density: 471 per square mile
2016 Vehicle Miles Traveled (VMT): 92,070,885
2016 VMT per Capita: 5,729
Setting: Suburban
Date of Meeting with Town: March 11, 2019
Town and Regional Representatives: Lori Spielman (Town First Selectman), Timothy Webb (DPW), Sgt. Brian Santa (Town Police), Devon Lechtenberg (CRCOG)
Data-Identified High Crash Intersections: West Road and Lower Butcher Road; Crystal Lake Road and Burbank Road
Bike and Pedestrian Crash Totals: 4
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 194

Source: VN Engineers

Overview

Ellington is bordered by Vernon and Tolland to the south, Willington and Stafford to the east, Enfield, Somers, and Stafford to the north and East Windsor and South Windsor to the west.

Town Input

Fatal Crashes
There was one speed-related fatal crash on CT-83.

CT-286 at Pinney Road and Lower Butcher Road
This is a signalized intersection with high frequency angle crashes. The CT-286 approaches lack left-turn lanes. The Town has requested that CTDOT install turning lanes to minimize angle crashes.

CT-140 (Crystal Lake Road) and Burbank Road
This is a skewed intersection with very poor sight distance from Burbank Road because of a significant vertical curve on the CT-140 approach to the intersection. The intersection's skew further contributes to the sight line issues for the Burbank Road northbound approach. The Burbank Road approaches to CT-140 are under stop control with CT-140 free flow. In addition, there is a flashing warning beacon. Speeding on CT-140 and high cut through traffic contribute to the challenges at this intersection.

CT-140 at Jobs Hill Road and Tomoka Avenue
This is a signalized intersection with a slight skew. The CT-140 approaches lack left-turn lanes. Town has requested CTDOT install the turning lanes to prevent angle crashes due to motorists traveling around left turn queues and crashing with left turning motorists traveling in the opposite direction.

CT-83 at Main Street
The main concern at this intersection is the lack of adherence to the "No Right Turn on Red" prohibition.

CT-140 east of Buff Cap Road
The Town is concerned with the crashes at the reverse curve on CT-140 east of Buff Cap Road. The CT-83 and Middle Butcher Road has several curbs cuts that Town believes contributes to some of the traffic challenges at this intersection. It is a signalized intersection with a cluster of crashes. At the CT-286 and CT-74 roundabout, the Town stated that it has been a success in limiting the speed and hence the severity of crashes at this former five-way intersection.

CT-140 at Webster Road
This is an offset unsignalized intersection with side street stop control and a flashing yellow signal. The State wants to remove the flashing yellow. The Town will approve of the flashing yellow signal removal if LED powered chevron signs are installed along the curves at this intersection.

Bicyclists and Pedestrians
The Town prohibits official events for walking and biking on Frog Hollow Road due to the high travel speeds along this roadway. In addition the frequent use of farm equipment on the road and a fatal pedestrian crash in the past has further established that this roadway is not amenable for multimodal transportation. There are 2 or 3 cycling tours that pass-through Ellington annually and cyclists use Crane Road to bypass Frog Hollow Road.

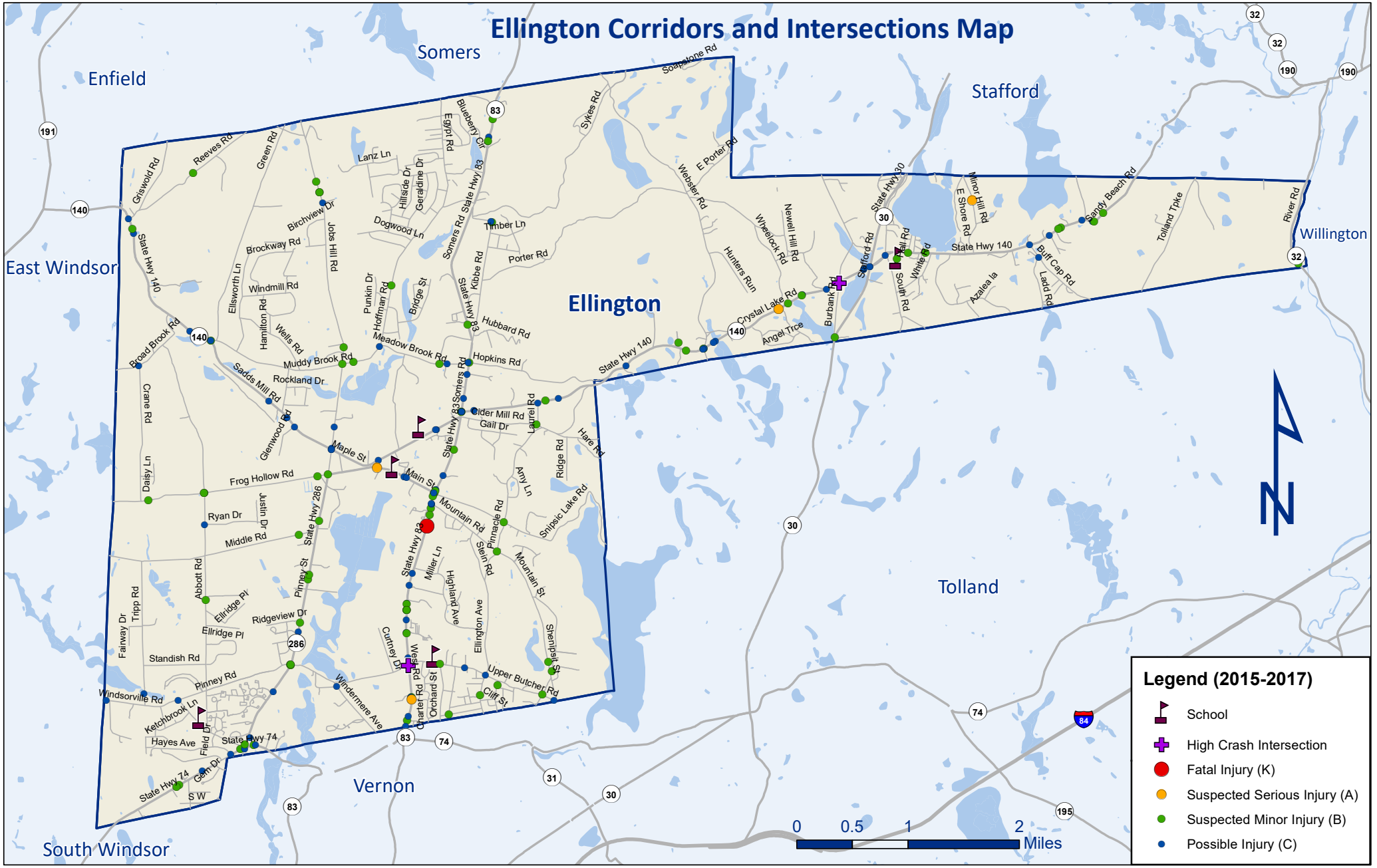
Dynamic Speed Feedback Signs
The Town uses these signs and determines where to install based on need. They currently have two post mounted signs and two trailer speed signs that can collect data.

Enforcement
The Town no longer receives high-visibility enforcement grants for behavior issues, except substance-impaired driving.


Source: VN Engineers

Ellington Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	1	0	0
Suspected Serious Injury (A)	1	3	1
Suspected Minor Injury (B)	26	36	27
Possible Injury (C)	32	32	35
Total Injury Crashes	60	71	63


Ellington Corridors and Intersections Map
Somers
Enfield
Stafford
Willington
East Windsor
Ellington
Tolland
Vernon
South Windsor
Legend (2015-2017)
School
High Crash Intersection
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
0 0.5 1 2 Miles

Field Site Inventory

Windermere Avenue and CT-286 (Pinney Street)

This is a four-way signalized intersection with one travel lane in each direction. The shoulders on Pinney Street are excessively wide and motorists use this to bypass cars queuing up to make left-hand turns. There are no designated left-turn lanes, so motorists use the wide shoulder as a travel lane.

Angle and front-to-rear crashes reported at this intersection.

Recommendations:

- Traffic signal retroreflective backplates.
- Add left-turn lanes on Pinney Street.
- Investigate prohibition for Right Turns on Red from Windermere Ave.

CT-140 (Crystal Lake Road) at Burbank Road

CT-140 generally runs east-west with a posted speed limit of 40 MPH and the surrounding land use is rural residential. The intersection of CT-140 with Burbank Road is a skewed intersection with both side street approaches under stop control, however there is no stop bar for Burbank Road northbound approach. There is also a flashing beacon to increase the visibility of the intersection. There is a right-turn "pocket" separated by a small raised island to address the intersection's skew for vehicles turning right onto Burbank Road from eastbound CT-140.

The sight distance from the southbound approach of Burbank Road is comprised of the severe skew, combined vertical/ horizontal curve to the west along CT-140 and overgrown vegetation.

Recommendations:

- Install stop bar on the Burbank Road northbound approach.
- Clear vegetation along the southside of CT-140, east of Burbank Road, to improve intersection sight lines.
- Consider land acquisitions to better align the intersection and improve sight lines.

CT-140 and Burbank Road


Windermere Ave and Pinney Street

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-286 (Pinney Street) and Windermere Avenue	Angle crashes	Add left turn lanes	Medium
		Investigate prohibition for right turns on red from Windermere Avenue	Low
	Front-to-rear crashes	Traffic signal retroreflective backplates	Low-Medium
CT-140 (Crystal Lake Road) and Burbank Road	Sight distance	Vegetation management	Low
	Missing stop bar	Install stop bar on the Burbank northbound approach	Low
	Sight distance	Consider land acquisitions to better align the intersection and improve sight lines	Medium-High
CT-140 (Sadds Mill Road/Maple Street) and Jobs Hill Road/Tomoka Avenue	Angle crashes	Add left turn lanes	Low-Medium
CT-83 (West Road/Somers Road) and CT-286 (Main Street)	Motorists ignore no right on red prohibition	High visibility enforcement	Low-Medium
CT-140 (Crystal Lake Road) and Webster Road	Horizontal curvature prior to Intersection. CTDOT wants to remove flashing yellow at intersection	Stop sign ahead on Webster Road approach	Low
		Enhanced horizontal curve warning signs	Low
	Limited sight distance from both Webster Road approaches looking west onto CT-140 (Crystal Lake Road)	Dynamic speed feedback signs on CT-140 (Crystal Lake Road) to mitigate speeding	Low

TOWN OF ENFIELD

2016 U.S. Census Population Estimate: 44,368
Area: 33 square miles
Population Density: 1,328 per square mile
2016 Vehicle Miles Traveled (VMT): 422,276,165
2016 VMT per Capita: 9,518
Setting: Suburban
Date of Meeting with Town: May 16, 2019
Town and Regional Representatives: Matthew Meier (Town Police Department), Terri Thompson (CRCOG), Cheryl Assis (CRCOG)
Data Identified High Frequency Crash Corridors: CT-220-Shaker Road (from Elm Street to Summer Street); US-5 (from Old King Street to CT-510); CT-190-Hazard Avenue (from Taylor Road to Glen Arden Lane and from Elm Street to Enfield Street)
Data-Identified High Crash Intersections: Broadbrook Road and Abbe Road; Elm Street and I-91 Off-Ramps; Elm Street and Friendly's/Wendy's Road; Shaker Road and George Washington Road; Hazard Avenue and Phoenix Avenue; Enfield Street and Frew Terrace
Bike and Pedestrian Crash Totals: 55
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 722

Source: VN Engineers

Overview

Enfield is a town in Hartford County, and it is bordered by East Windsor and Ellington to the south, Somers to the east, Massachusetts to the north and Suffield over the Connecticut River to the west.

Town Input

Fatal Crashes

- Motorcycle fatal crash on US-5 involving a heavy truck (2018).
- Pedestrian fatal crash under dark conditions on US-5.
- Substance-involved, young driver with unrestrained occupant fatal crash on CT-192.
- Speed related motorcycle rollover fatal crash on CT-192.
- Roadway departure fatal crash on Powder Hill Road.

I-91 on-and-off ramps and CT-220

This is a high-crash frequency intersection with high traffic density. The signal loops are not functioning, which the Town requested CTDOT to address and there is an issue with right of way according to the Town representative. There are multiple signalized intersections and they are not adequately spaced in this corridor. Queuing and blocking of intersection are the result of high density and signal proximity. There is queuing for I-91 Southbound from CT-220.

CT-220
High density commercial corridor with high number of curb cuts from I-91 to Palomba Drive. Development is proposed for CT-220 and Palomba Drive area. Sidewalks are currently intermittent, and they will be installed with future developments.

CT-220 and George Washington Road
This is a signalized intersection with high crash frequency, mostly front-to-rear crashes. There is a lead left for CT-220, not for George Washington Road.

CT-220 and Taylor
This intersection was redesigned, and the town representative said crashes have increased since design changes were made.

CT-190
CT-190 is a high frequency crash corridor in a commercial area. The highest amount of crashes that occur along CT-190 are from I-91 to Elm Street and from Glen Arch Lane to Scitico Street.

CT-190 underwent a regional corridor study in 2016 with various intersection and multimodal recommendations: http://crcog.org/wp-content/uploads/2016/07/Rt190ES.pdf.

Enfield Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	1	2	2
Suspected Serious Injury (A)	11	5	10
Suspected Minor Injury (B)	119	88	119
Possible Injury (C)	120	124	121
Total Injury Crashes	251	219	252

CT-191 (Broadbrook Road) and Abbe Road
This is a four-way intersection with stop control and supplemental flashing red on local road/flashing yellow on CT-191. Cited as a high frequency crash intersection. Recent improvements were made to the flashing beacon and sight distance was improved.

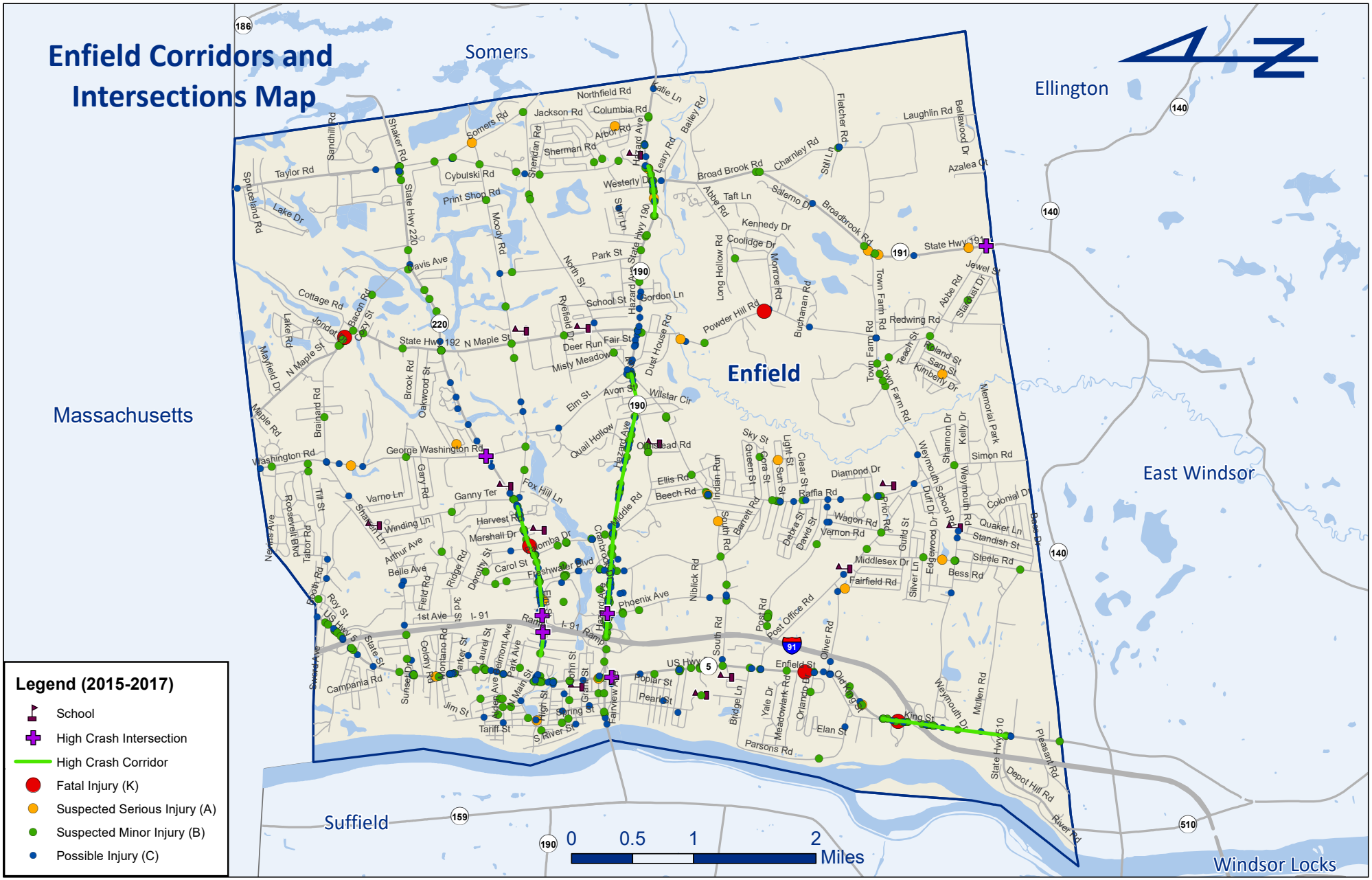
US-5
US-5 has a four-lane cross section. State held a public hearing to discuss a road diet installation on US-5 from Brainard Rd to CT-190. The Town elected to not pursue a road diet on US-5.

Centerline Rumble Strips
The State installed them on US-5 and they were removed after no public buy-in.

Bicyclists and Pedestrians
The State upgraded pedestrian amenities at locations per the Town's request and new crosswalks and yield markings were added.

Source: VN Engineers

Enfield Corridors and Intersections Map



Field Site Inventory

CT-190 (Hazard Avenue) and Palomba Drive

This is a wide signalized four-way intersection, in a commercial area with high traffic volume. I-91 on-and off-ramps are to the west. There are crosswalks and pedestrian beacons on all four legs of the intersection. High frequency of front-to-rear crashes.

Hazard Avenue is a wide four-lane road with additional turning lanes (left and right) at the intersection.

Palomba Drive is a two-way four-lane road. There are turn lanes (left and right) at the intersection.

This intersection is not included for improvements in the CT-190 Corridor Transportation Plan (CRCOG). However, they do recommend sidewalk extension on the northern side of CT-190.

The signal was replaced in 2018.

Recommendations:

- Investigate clearance timing.
- Investigate improved signal coordination along Hazard Avenue.
- Traffic signal retroreflective backplates.

CT-220 (between I-91 and Palomba Drive)

The CT-220 (Elm Street) corridor between I-91 and Palomba Drive is a major east-west corridor with heavy surrounding and adjacent commercial land uses. The roadway generally consists of a six-lane cross-section with two travel lanes in each direction and various turn lanes at the five signalized intersections within about a half mile. The corridor experiences heavy peak period traffic volumes and development continues to occur creating further roadway congestions. The close proximity of traffic signals to each other can contribute to long delays and motorists blocking intersections due to back-ups. A sidewalk exists on the southern side of the roadway with intermittent sidewalks on the northern side.

Recommendations:

- Optimize signal timings/phases and assess lane geometry to respond to peak hour traffic volumes.
- Consider implementing and enforcing a “Don’t Block the Box” program along with traffic signal retroreflective backplates to improve the visibility of the traffic signals within the corridor.
- To improve pedestrian mobility, consider establishing a sidewalk along the entire northside of the roadway corridor.

Palomba Street and Hazard Avenue

CT-220

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
I-91 on and off-ramps and CT-220 (Elm Street)	Signal timing and queuing onto I-91	Request CTDOT fix loop detection	Low-Medium
		Coordinate signal timing along CT-220 (Elm Street)	Medium
CT-220 (Elm Street/Shaker Road/Taylor Road)	High congestion commercial area	Continue corridor access management	Medium
CT-190 (Hazard Avenue) and Palomba Drive	Intersection crashes	Traffic signal retroreflective backplates	Low-Medium
		Investigate signal coordination and timing	Low-Medium
CT-220 (Shaker Road) and George Washington Road	Angle crashes	Investigate adding a lead left for George Washington Road	High
CT-190 (Hazard Avenue)	High crashes from I-91 to Elm Street and from Glen Arch Lane to Scitico Street	Implement some of the traffic calming recommendations from CRCOG's Study, including streetscaping, sidewalks and variable message signs for I-91, and the various intersection improvements	Low-Medium
		Provide left turn lanes at selected locations per the CT-190 (Hazard Avenue) Corridor Study	High
US-5 (Enfield Street/King Street)	High frequency crashes	Reevaluate road diet from Brainard Rd to CT-190 (Hazard Avenue)	Low-Medium
CT-220 (Shaker Road) and Taylor Road	Crash totals increased after improvements made at this intersection	Evaluate crash data since improvements implemented	Low-Medium

TOWN OF FARMINGTON

2016 U.S. Census Population Estimate: 25,524
Area: 28 square miles
Population Density: 908 per square mile
2016 Vehicle Miles Traveled (VMT): 382,528,760
2016 VMT per Capita: 14,987
Setting: Suburban
Date of Meeting with Town: November 28, 2018
Town Representatives: Russ Arnold (DPW), Paul Melanson (Police Chief), Kathy Eagen (Town Manager), Nancy Nickerson (Town Council)
Data-Identified High Frequency Crash Corridors: CT-177-Plainville Avenue (from Burlington Road to Farmington Avenue/School Street), CT-4-Farmington Avenue (From CT-508 to Worthington Drive and from Bridgewater Road to Highwood Road), US-6-Colt Highway (from Waterside Dr. to Scott Swamp Road)
Bike and Pedestrian Crash Totals: 14
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 569

Source: VN Engineers

Overview

Farmington is a town in Hartford County, and it is bordered by Plainville and New Britain to the south, West Hartford and Newington to the east, Avon to the north and Burlington and Bristol to the west.

Town Input

The Town concurred that the high frequency crash corridors and intersections identified are congruent with their areas of concern. General traffic concerns include the congestion in Unionville and the center, the limited capacity of the truss bridge over the Farmington River, US-6, pedestrian/bicycle mobility, CT-177 and CT-4, and congestion on various commuter and school bus routes.

US-6

The Town is concerned with high speeds along US-6, specifically between Pinnacle Road and Waterside Drive. Morning solar glare is an additional challenge for motorists on this section of road. There was one fatal crash in this segment of US-6. The Town originally submitted a request to CTDOT to install a traffic signal at US-6, Pinnacle Road and Reservoir Road but the intersection did not meet traffic signal warrants. Because the signal was not warranted, the Town followed up with a LOTCIP application to install centerline rumble strips and to widen the shoulder between Pinnacle Road and Reservoir Road extending up to Waterside Drive. CTDOT is currently reviewing the request. A new signal is to be installed at the intersection of US-6/Colt Hwy and the I-84 Eastbound on-ramp.

CT-4
The Town stated that CT-4 has various issues. Along CT-4 in the Town Center, the State recently modified signal timing and intersection lane geometry, which has improved mobility and reduced crashes. The Town mentioned that this segment of CT-4 was under construction during the 2015-2017 study's time frame, which could have skewed the data.

CT-4 has received a CT Connectivity Grant for sidewalk extensions and pedestrian signals for the loop around UCONN Health Center, continuing on to Middle Road and South Road.

Unionville
The Town is seeking ways to alleviate the congestion in Unionville and the center due to the constraints of the Farmington River. Currently, there are only two bridges to carry vehicles across. In the past, the Town considered installing an additional bridge over the Farmington River to the east of the Truss bridge towards Unionville. This supplemental structure would help link the subdivisions to the north and south of the river to the high school, Tunxis Meade, and other destinations. This structure could help alleviate the congestion in the Town Center and Unionville. Given the continued growth in traffic volumes, congestion and crashes, this should be considered further.

Farmington Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	1	1	1
Suspected Serious Injury (A)	11	17	16
Suspected Minor Injury (B)	81	85	96
Possible Injury (C)	76	95	89
Total Injury Crashes	169	198	202

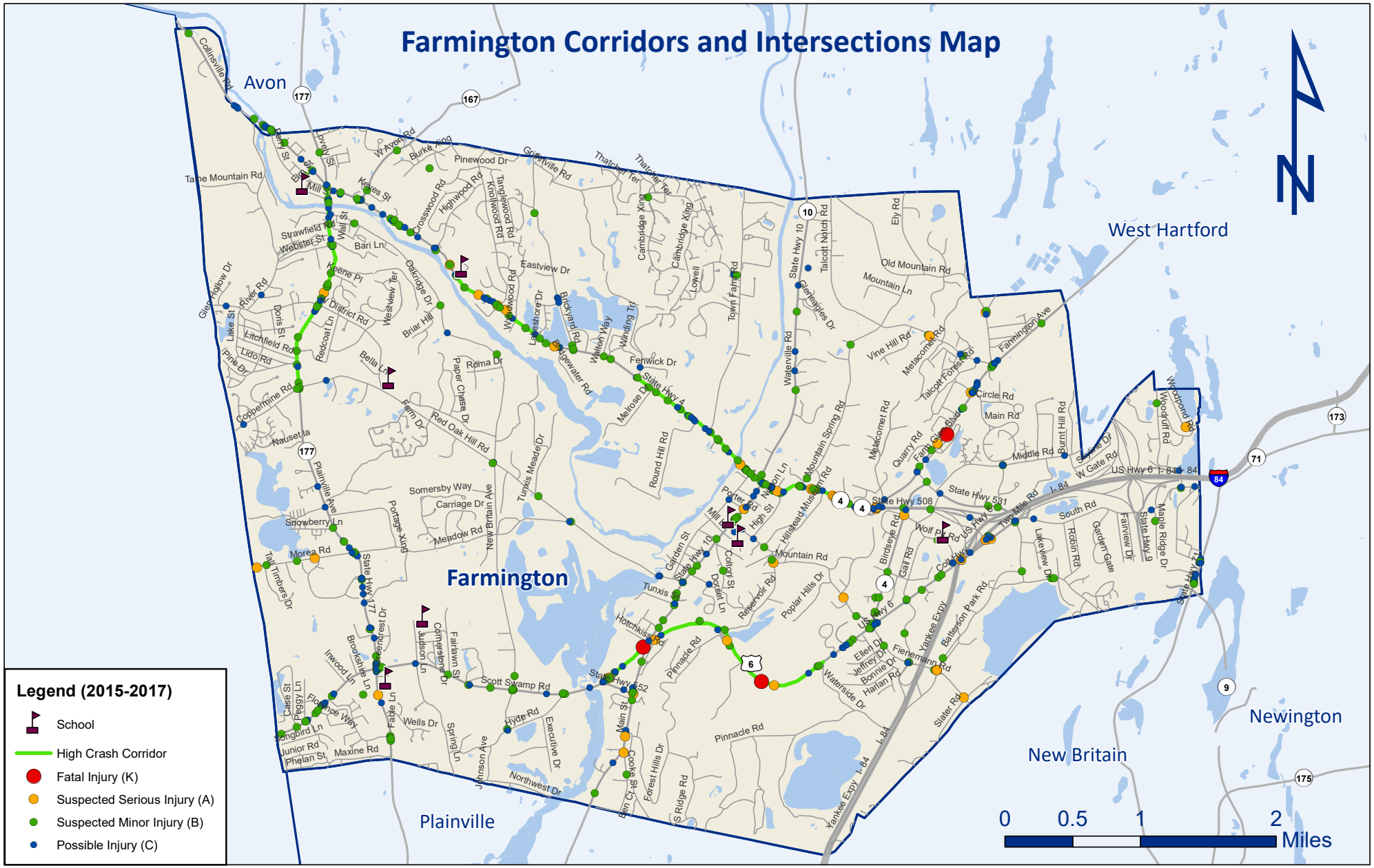
CT-177
The Town stated that CT-177 has various areas of concern. CT-177 at Morea Road and Meadow Road is a major cut through from Burlington for commuter traffic. There have been recent signal and intersections improvements at this junction. The new curbing restricts bypass access to Right Turn on Red.

CT-177 at Burlington Road and W District Road
This is another major cut through from Burlington for commuter traffic. There is a lead left turn signal for northbound CT-177. The Town cited limited sight distance, short signal clearance, and lack of left-turn lanes at this junction as concerns.

CT-177 and US-6
This is a wide intersection. Tunxis Community College, which is located on the southeast corner made modifications to the entry and exit design on their campus which has improved traffic flow and safety at this intersection. Cut through traffic uses River Road to the west of CT-177 to avoid congestion on CT-177.

CT-177 and New Britain Avenue
The Town is installing a right turn lane at this intersection.

Source: VN Engineers


Farmington Corridors and Intersections Map
Avon
West Hartford
Farmington
Plainville
New Britain
Newington
Legend (2015-2017)
School
High Crash Corridor
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
0 0.5 1 2
Miles

Field Site Inventory

CT-177 at Burlington Road and West District Road

This a four-way signalized intersection. Northbound CT-177 has a short lead lag phase that helps clear the intersection, but it is brief and there is no designated left-turn lane. Through traffic queues up behind left-turning vehicles waiting for clearance. If they do not make the left turn signal, through traffic vehicles bypass turning cars on the right using the shoulder as a travel lane.

There are countdown pedestrian signals and crosswalks along all segments of the intersection. Sidewalks run north along the eastern side of CT-177 and east along the northern side of West District Road.

During peak hours traffic queues up along Burlington Road at CT-177 heading west. This is a common commuter route.

Recommendations:

- Add left-turn lane on CT-177 northbound if feasible.
- Increase left-turn clearance time.
- Upgrade signal with retroreflective backplates.
- Add right-turn lane on Burlington Road to CT-177 Southbound.

CT-177 at Morea Road and Meadow Road

The intersection of CT-177 and Morea Road is a four-leg skewed signalized intersection with surrounding residential land uses. The CT-177 approaches consist of an exclusive left-turn lane and through-right turn lane. The Morea Road and Meadow Road approaches both consist of a single general purpose lane. The intersection experiences peak hour congestion considering the intersection is a cut-through route to and from Burlington. CTDOT recently performed intersection signal and geometric improvements that have restricted the use of CT-177 southbound shoulder as a by-pass lane for right-on-red.

Recommendation:

- Assess the benefit and impacts associated with adding an additional exclusive right-turn lane to improve the overall intersection level of service.
- Add right-turn lanes at all four legs of intersection.

CT-177 NB and Burlington Road

CT-177 and Morea Road

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
US-6 (Colt Highway/Scott Swamp Road)	Speeding	High-visibility enforcement	Low
	High number of crashes	Install centerline rumble strips and widen shoulder from Pinnacle Road to Reservoir Road per the LOTCIP application	Low-Medium
Unionville and Center Area	Congestion	Investigate constructing a third in-town crossing and upgrade signals with retroreflective backplates	High
	Capacity issues		
	Constraint from Farmington River		
CT-177 (Lovely Street/South Main Street/Plainville Avenue) and Various Intersections	Crashes at intersections	CT-177 (Plainville Avenue) and Burlington Road - add left-turn lane for CT-177 (Plainville Avenue) northbound and right-turn lane for southbound	Low-Medium
		Upgrade signals with retroreflective backplates	Low-Medium
		Increase left-turn clearance	Low-Medium
CT-177 (Plainville Avenue) and Morea Drive	Intersection related crashes	Assess the benefits and impacts associated with adding right-turn lanes to improve the overall intersection level of service	Low-Medium

TOWN OF GLASTONBURY

2016 U.S. Census Population Estimate: 34,584
Area: 51 square miles
Population Density: 673 per square mile
2016 Vehicle Miles Traveled (VMT): 331,081,490
2016 VMT per Capita: 10,267
Setting: Suburban
Date of Meeting with Town: December 6, 2018
Town Representatives: Sgt. Jeff Hodder (Glastonbury Police Department), Captain Mark Catania (Glastonbury Police Department), Richard J. Johnson (Town Manager), Devon Lechtenberg (CRCOG)
Data Identified High Crash Corridors: Hebron Avenue (from Eastern Blvd to Main Street); Main Street (from Hebron Avenue to East Hartford Line)
Data Identified High Crash Intersections: Hebron Avenue and House Street; Main Street and Griswold Street/Glastonbury Boulevard
Bike and Ped Injury and Fatal Crash Injuries: 29
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 502

Source: VN Engineers

Overview

Glastonbury is a suburban town bordered by Marlborough, East Hampton, and Portland to the south, Rocky Hill and Wethersfield to the west, East Hartford and Manchester to the north, and Bolton and Hebron to the east.

Town Input

The Town concurred that the high crash frequency corridors and intersections highlighted are on par with their observations, but that some of the issues have been remedied with infrastructure improvements.

Hebron Avenue and House Street
The crashes along Hebron Avenue and House Street are prior to the installation of a roundabout at Hebron Avenue/House Street. The Town believes the roundabout will rectify the severity and frequency of crashes along this corridor and at this intersection. There is also a roundabout at New London Turnpike and Hebron Avenue which has improved the overall traffic flow along this corridor.

Williams Street/Oak Street and New London Turnpike
This is a large 5-legged intersection with mixed use development in the surrounding area. Town is currently studying various improvements to reduce the number of legs at the intersection by reconfiguring access/egress to CT-17 in the area.

Main Street to Griswold Street
Mainly peak period traffic congestion. The recent traffic signal replacement and coordination project has significantly improved traffic progression and associated congestion. The crash data presented has most likely not reflected these improvements at this point.

Howe Road west of Mountain Road
Crashes along horizontal curvature and snow-related roadway departures were reported along Howe Road.

New London Turnpike, Douglas Road and Sycamore Street
This intersection is skewed and currently under stop control. The Town is evaluating the potential need for re-alignment and installation of a traffic signal.

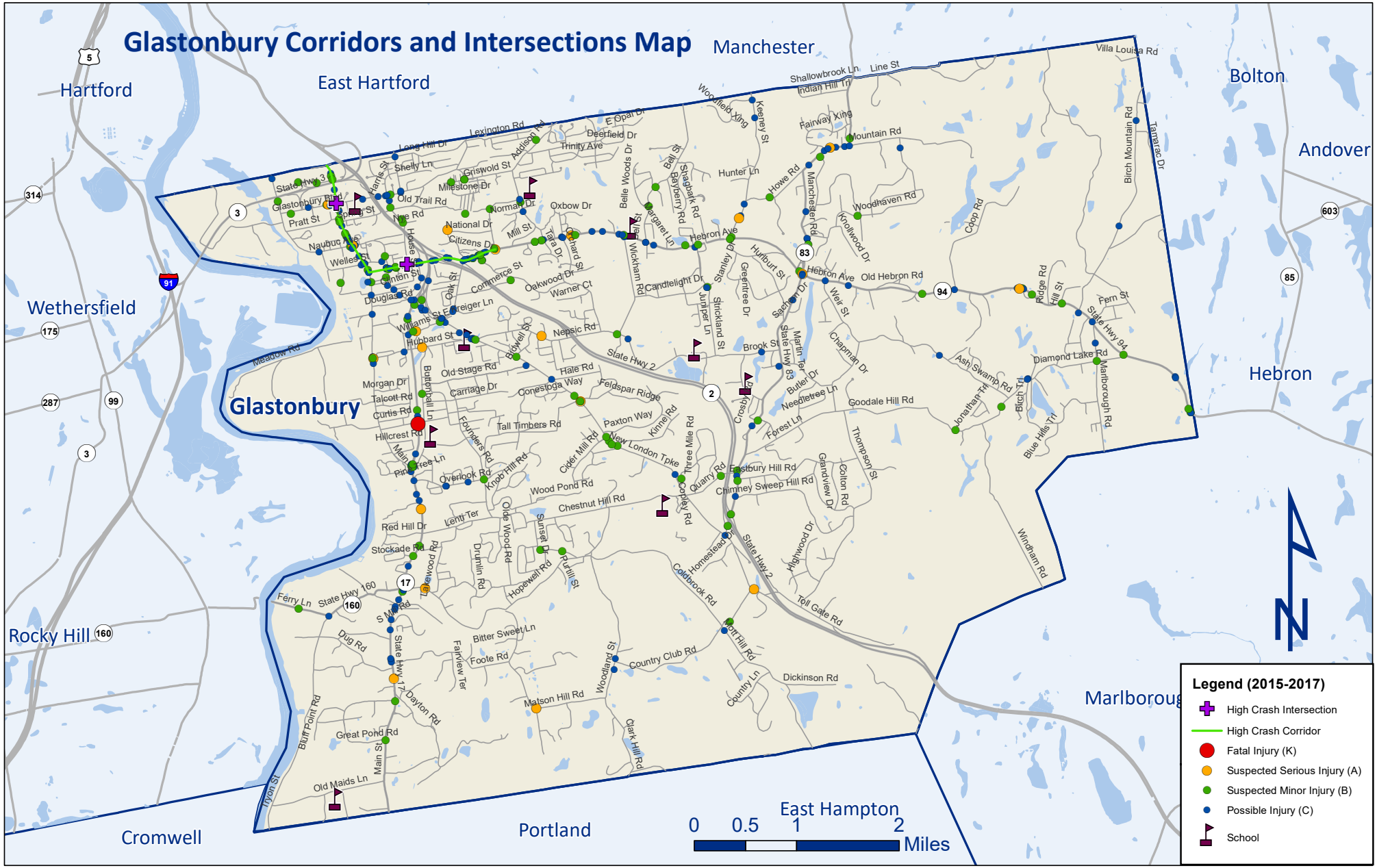
CT-17 and Main Street and Buttonball Lane
CTDOT has recently upgraded the signal equipment, lane designations and pavement at the intersection. The southbound Main Street approach experiences sideswipes and "close calls" as motorist bypass the through-left turn lane to gain access to the exclusive right turn to CT-17 south. Town asked State to extend the Main Street exclusive right-turn lane to provide increased queue length and provide vehicles to bypass the through-left queue.

Bike and Pedestrian Issues
The Town continues to expand their multi use trail system as opportunities present themselves. The Village Center has many visible pedestrian crosswalks (including mid-block) supporting this vibrant pedestrian area. the Town is extending sidewalks along Welles Street.

Glastonbury Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	2	0	1
Suspected Serious Injury (A)	7	8	7
Suspected Minor Injury (B)	65	49	55
Possible Injury (C)	129	105	74
Total Injury Crashes	203	162	137

Source: VN Engineers


Glastonbury Corridors and Intersections Map
Glastonbury
Hartford
East Hartford
Manchester
Bolton
Andover
Hebron
Wethersfield
Rocky Hill
Cromwell
Portland
East Hampton
Marlborough
Legend (2015-2017)
High Crash Intersection
High Crash Corridor
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
School
0 0.5 1 2
Miles

Field Site Inventory

CT-17 at Main Street and Buttonball Lane

CT-17 at Main Street and Buttonball Lane is a signalized intersection with surrounding residential land uses. North of the intersection, CT-17 is a limited access expressway. The CT-17 northbound approach consists of an exclusive left-turn lane and through-right turn lane. The CT-17 southbound approach consists of an exclusive left-turn lane, through lane and through-right-turn lane.

The Buttonball Lane approach consists of a single multi-purpose lane and the Main Street approach consists of an exclusive right-turn lane and the through-left lane.

During peak periods there is not enough storage capacity for the Main Street exclusive right-turn lane creating bypass issues.

Recommendation:

- Extend the storage capacity of the Main Street exclusive right-turn lane to accommodate peak demands and/or optimize the signal timing/ phasing to address the issue.

New London Turnpike at Williams Street East and Oak Street

The intersection of New London Turnpike at Williams Street East, Oak Street and CT-17 off-ramp is a 5-legged signalized intersection with adjacent mix use development. The intersection experiences poor level of service during peak periods.

The Town is currently assessing the ability to reconfigure the current CT-17 off-ramps to New London Turnpike to improve traffic operations in the area. The reconfiguration would eliminate the CT-17 off-ramp at New London Turnpike, Williams Street East and Oak Street by providing full access to New London Turnpike (left and right lanes) at the existing CT-17 off-ramp near Douglas Road. The redesign would include improved alignment of Douglas Road and Sycamore Street and the installation of a traffic signal or roundabout.

Recommendation:

- Implement ramp removal and traffic operation improvements based on the Town conducted study currently underway.

CT-17, Main Street, and Buttonball Lane

CT-17 off-ramp intersection with New London Turnpike, Williams Street, and Oak Street

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
Howe Road west of Mountain Street	Weather roadway departures	High friction surface treatment	Low
	Horizontal curvature	Chevron curve signs with LED Flashers Enhanced delineation	Low
New London Turnpike, Douglas Road, and Sycamore Street	Skewed intersection and congestion	Consider traffic signal to manage the intersection traffic and CT-17 (Glastonbury Expressway/Main Street) Ramps drivers	Low-Medium
CT-17 (Glastonbury Expressway/Main Street) at Main Street and Buttonball Lane	Lack of storage on Main Street	Extend the storage capacity of Main Street's exclusive right-turn lane to accommodate peak demands and/or optimize the signal timings/ phasings to address the issue	Low-Medium
New London Turnpike at Williams Street and Oak Street	Poor service level on ramps during peak hours leads to aggressive driving	Implement the ramp removal and traffic operation improvements based on the Town-conducted study which is currently underway	Low-Medium

TOWN OF GRANBY

2016 U.S. Census Population Estimate: 11,247
Area: 41 square miles
Population Density: 276 per square mile
2016 Vehicle Miles Traveled (VMT): 76,382,090
2016 VMT per Capita: 6,791
Setting: Rural/Suburban
Date of Meeting with Town: February 25, 2019
Town Representatives: Kirk Severance (DPW), Carl Rosensweig (Police Chief), John Ward (Town Manager), Terri Thompson (CRCOG)
Bike and Pedestrian Crash Totals: 6
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 107

Source: VN Engineers

Overview

Granby is a rural suburban town bordered by Canton and Simsbury to the south, East Granby and Suffield to the east, Massachusetts to the north and Hartland and Barkhamsted to the west.

Town Input

Town concurred that the 2015-2017 data reflected their observations of crashes on local and state roadways within Granby.

Fatal Crashes

In the study period, there were five fatal crashes. On Silver Street there was a fatal roadway departure crash which involved high speeds and a young driver. The East Street crash resulted in a pedestrian fatality, which was attributed to glare and the pedestrian walking on the wrong side of the road. At the intersection of CT-20 and Day Street sight distance limitations contributed to crash. The fatal crash on Salmon Brook Street (US-202) occurred along a segment of straight away. High speeds cited. The Town would like centerline rumble strips along this roadway. On Sullivan Drive the fatality involved an ATV.

The CT-189 Corridor

This corridor has several stop-controlled skewed intersections with local roadways. A common feature and concern are the limited sight distances from these side streets combined with high travel speeds of motorists on CT-189. CT-189 at the intersections of Day Street, East Street, Wells Street, Sullivan Drive, and Bushy Hill Road are the major concerns for the town. CT-189 and Sullivan Drive is also near the high school and there are horizontal curves on the CT-189 approach.

Day Street and Bushy Hill Road

Heavy vehicles use Day Street and Bushy Hill Road as north-south cut throughs.

CT-20 and Day Street
This is a side street stop-controlled intersection with limited sight distance and site of a fatal crash. Sun glare on CT-20 was cited as a problem for drivers.

CT-189 at Day Street
This intersection has poor sight lines to the north for motorists exiting Day Street. The Town cut-back the side slope about twenty years ago to improve sight lines, but there is still limited sight distance.

Speeding
The Town uses two portable dynamic speed feedback signs which have data collection capabilities.

Upcoming Projects

- CT-189, CT-10, and CT-20 have high clusters of crashes. CTDOT has a proposed project here for various intersection improvements including signal retiming and geometric improvements.
- CT-10 and Quarry Road - The State is planning on installing a roundabout which is in the design phase.

Centerline Rumble Strips
CTDOT installed centerline rumble strips on various roads as part of systemic safety countermeasure improvement plan.

- Mountain Road - Local road with centerline rumble strips.
- Salmon Brook Street (US-202) - Town DPW thinks this roadway is a good candidate for centerline rumble strips.

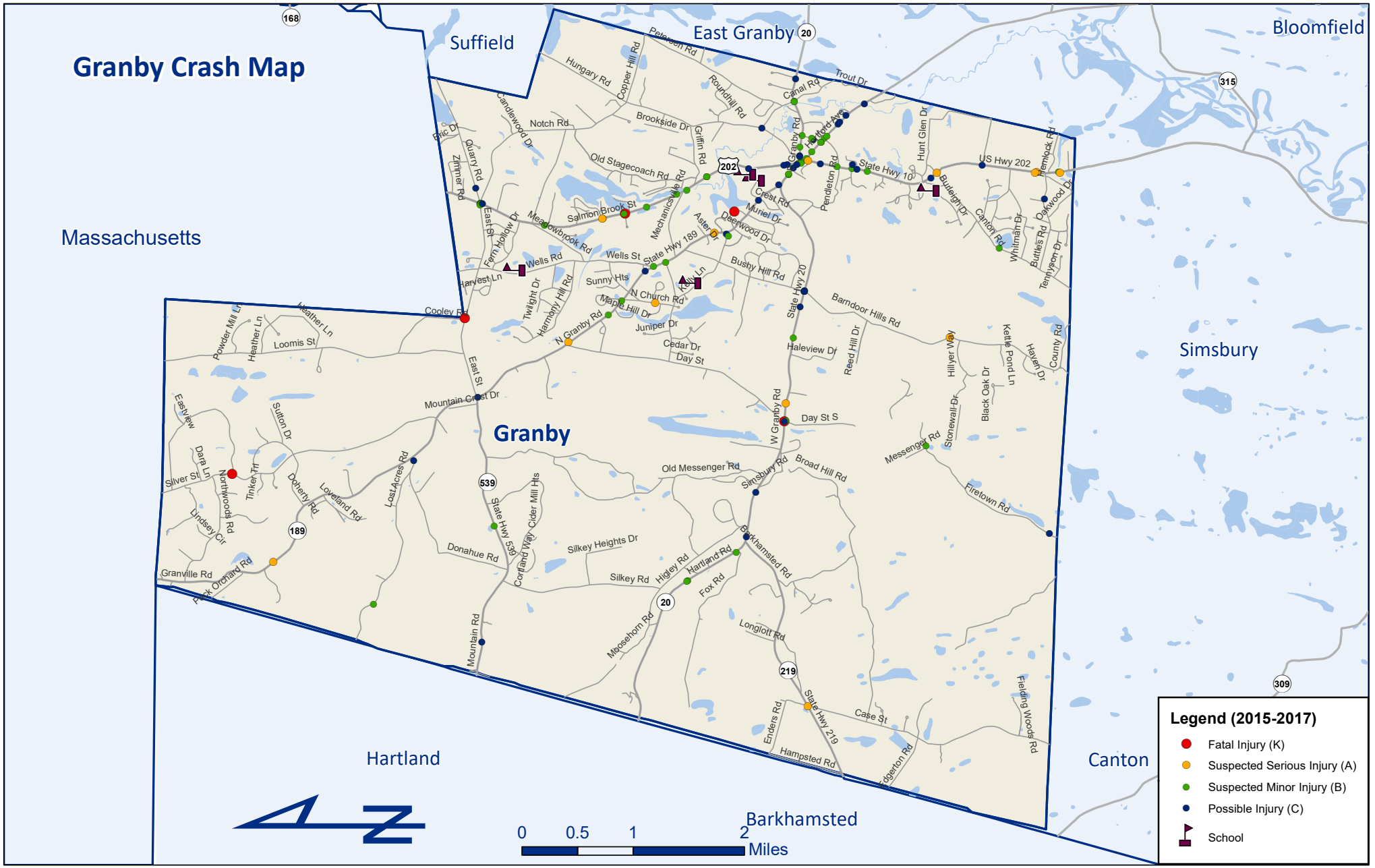
Bike and Pedestrian Issues

- Granby is popular among avid cyclists.
- The Farmington Canal Heritage Trail runs through Granby.
- Fatal cyclist crash not involving a motorized vehicle on very steep portion of Barn Door Hill Road.
- A bicyclist crash involving two cyclists and a motorized vehicle on Day Street.
- Wide shoulders are striped on various roadways.

Source: VN Engineers

Granby Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	3	0	2
Suspected Serious Injury (A)	5	3	5
Suspected Minor Injury (B)	18	13	18
Possible Injury (C)	15	9	16
Total Injury Crashes	41	25	41


Granby Crash Map
Suffield
East Granby
Bloomfield
Massachusetts
Granby
Simsbury
Hartland
Barkhamsted
Canton
Legend (2015-2017)
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
School
0 0.5 1 2
Miles

Field Site Inventory

CT-20 and Day Street

CT-20 intersects with Day Street along a vertical curvature. It is a four-way intersection with stop control only along the Day Street approaches. The speed limit on CT-20 is 45 MPH. There is an advanced intersection ahead warning sign. Sight distance from Day Street is limited.

Recommendations:

- Add flashing beacons to the intersection warning signs.
- Investigate advanced intersection ahead signs with flashing beacons to warn drivers of intersection on all approaches.
- Consider traffic calming to reduce speed on CT-20 (West Granby Road).
- Regular pavement markings maintenance.

CT-189

This corridor has several stop-controlled skewed intersections with local roadways. A common feature and concern are the limited sight distances from these side streets combined with high travel speeds of motorists on CT-189. CT-189 at the intersections of Day Street, East Street, Wells Street, Sullivan Street, and Bushy Hill Road are the major concerns for the town. CT-189 and Sullivan Street is also near the high school and there is horizontal curvature on the CT-189 approach. Speed limit is posted at 40 MPH

Recommendations:

- Consider land acquisitions to better align the intersections and improve sight lines.
- Dynamic speed feedback signs.
- Regular vegetation management.
- Intersection Ahead Sign with flashing beacons at high crashes intersections.
- High friction surface treatments through curvature.

Day Street and CT-20

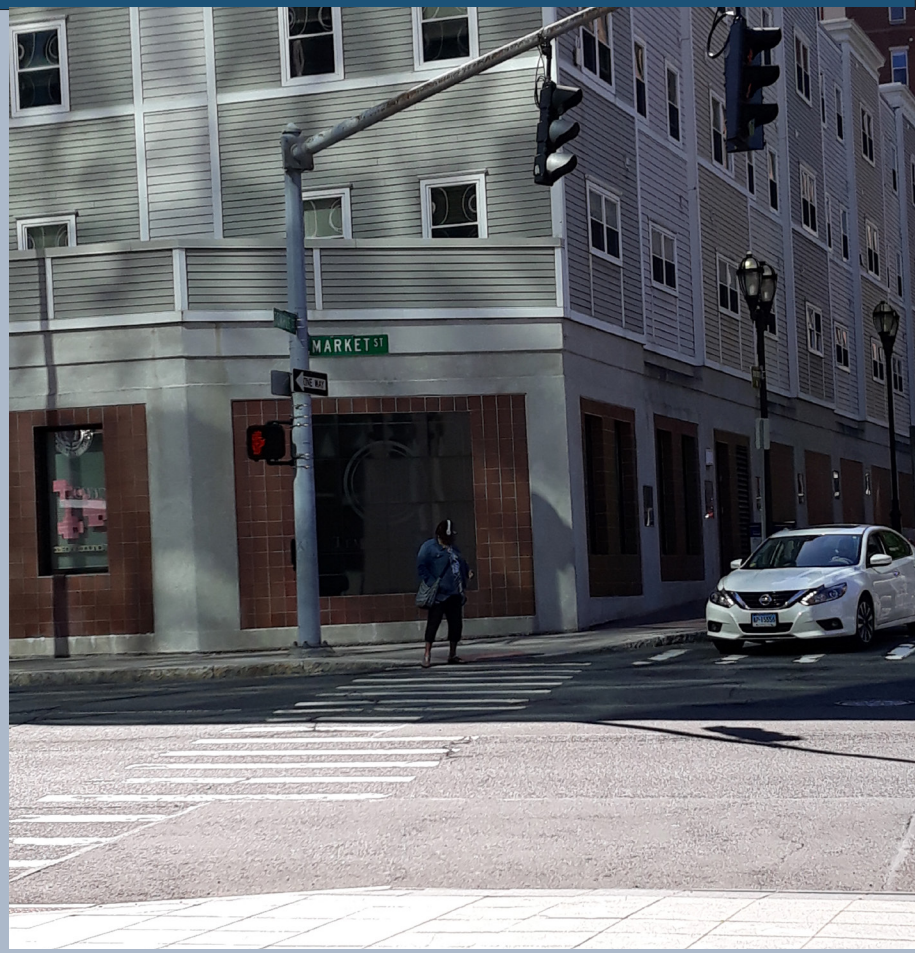
CT-189

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
Day Street and CT-20 (West Granby Road)	Crashes	Intersection ahead sign with flashing beacons	Low
		Regular pavement markings maintenance	Low
	Speeding	Consider traffic calming to reduce speed on CT-20 (West Granby Road) (rumble strips)	Low-Medium
		Dynamic speed feedback sign on CT-20 (West Granby Road)	Low
CT-189 (North Granby Road) and Day Street	Limited sight distance	Consider land acquisitions to better align the intersection and improve sight lines	Medium-High
CT-189 (North Granby Road) Corridor	Limited sight distance	Regular vegetation management	Low
		Intersection ahead sign with flashing beacons at high crashes intersections	Low
	Speeding	Dynamic speed feedback signs	Low
	Several stop-controlled skewed intersections	Consider corridor access management	Low-Medium
CT-189 (North Granby Road) and Sullivan Street	Horizontal curvature	High friction surface treatment	Low
	In school zone	School zone warning signs and speed limits	Low
	Pedestrian traffic	High-visibility crosswalk	Low
	Limited sight distance	Regular vegetation management	Low

CITY OF HARTFORD

2016 U.S. Census Population Estimate: 123,243
Area:17 square miles
Population Density: 7,250 per square mile
2016 Vehicle Miles Traveled (VMT): 801,235,225
2016 VMT per Capita: 6,501
Setting: Urban
Date of Meeting with Town: May 21, 2019
Regional and Town Representatives: Sandy Fry (City of Hartford); Walter Veselka (Director DPW); Frank Dellaripa (Assistance DPW); Lt. Anthony Pia (Traffic Officer); Aimee Chambers (Director Planning Office); Elizabeth Sanderson (Land Use Officer); Devon Lechtenberg (CRCOG); Terri Thompson (CRCOG); Roger Krahn (CRCOG)
Data-Identified High Frequency Crash Corridors: Broad Street (from Garden Street to Maple Avenue), Park Street (from Rowe Avenue to Main Street), Albany Avenue (from Homestead Avenue to Main Street), Wethersfield Avenue (from Wyllys Street to CT-530-Airport Road), Walnut Street (from High Street to Garden Street), Sigourney Street (from Homestead Avenue to Russ Street), Main Street (from Pearl Street to Maple Avenue)
Data-Identified High Crash Intersections: Albany Avenue and Garden Street, Cogswell Street and Asylum Avenue, Wethersfield Avenue and CT-530-Airport Road, New Britain Avenue and Newfield Avenue, Market Street and Morgan Street, Main Street and Jefferson Street
Bike and Pedestrian Fatal and Injury Crashes: 567
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 4,626



Source: VN Engineers

Overview

Hartford is bordered by Wethersfield to the south, East Hartford to the east across the Connecticut River, Windsor and Bloomfield to the north and West Hartford to the west.

City Input

The City representatives emphasized that the major traffic issues are lack of general respect of the “rules of the road” and a need for more education. Increased enforcement is integral to safety, but it is only a component of the needed overall traffic. Infrastructure and education are imperative for traffic safety.

US-44 (Albany Ave) and Garden Street
This is the intersection with the highest number of fatal and injury crashes. Jaywalking is a major issue at this location. The traffic signal is antiquated and has broken loop detectors. Albany Avenue Streetscape and Safety Project is currently in construction and will improve this intersection.

Morgan Street and Market Street
This is in the top high frequency crash intersections. It is a multi-lane signalized intersection under the I-84 overpass. There are very heavy traffic volumes associated with commuter peaks and special events. Police representatives reported this intersection is a priority for improvement. Issues include motorists running red lights, lane configuration confusion, and motorists ignoring lane directional arrows.

Broad Street, Farmington Ave and Asylum Street
This is a confusing signalized intersection with high crashes. It is a major commuter route with significant congestion. There are two signalized intersections within 130 feet of each other, Broad Street at Asylum, and Broad Street at Cogswell Street. There is significant pedestrian activity due to the train station located nearby.

CT-99 (Wethersfield Ave)
This is a high frequency crash corridor with wide corridor running north south. It is a major route between Hartford and Wethersfield.
There are many issues: speeding, minimal crosswalks and schools located along the corridor.

Franklin Street
This roadway has the same speeding issues as Wethersfield Avenue but to a lesser degree – possibly due to the on-street parking which narrows the road width and slows motorists down.

US-44 (Albany Ave)
This is a high frequency crash corridor. Albany Avenue is undergoing a major safety and streetscape improvements project from Garden Street to Homestead Avenue.

Broad Street
This is a high frequency crash corridor with wide cross section and on-street parking.

CT-187 (Blue Hills Ave), Granby Street, and Maple Avenue
There is a high frequency of speeding along these three roads. Law enforcement has targeted these roadways, but speeding violations are still high. Representatives discussed traffic calming measures to reduce speeding such as reducing lane widths and creating visual cues to slow down, etc.

Behavior
The City law enforcement representative stated that behavior is a major contributing factor to the crashes in Hartford. Evasions, car thefts, speeding and substance-involved driving contribute to traffic issues. Pedestrians and cyclists also not following the rules of the road contribute to crashes. Traffic calming measures such as speed tables have been installed to slow motorists, however there is some concern with impact on emergency response. Sixty percent of motorists in Hartford originate from out-of-town and they contribute to the traffic violations.

Law Enforcement
Currently the police use grant money to conduct enforcement campaigns for substance-impaired driving, occupant restraint, distracted driving and speeding. There has been increased enforcement since 2016, with more than double the number of citations (6k to 14k). The police are anticipating a reduction in crashes by increasing enforcement. There is a division of traffic in Hartford PD but it does not investigate crashes. The traffic division conducts enforcement, the patrol unit investigates crashes, and the crime unit investigates fatal crashes.

Speed Tables
Speed tables have been installed throughout the City based on various criteria. Some speed tables are not accurately marked and need chevron arrows, so motorists are aware of the change in roadway.

Pedestrian and Bike Safety

There is a high frequency of pedestrian and bicycle crashes. There are many behavioral issues: riding against traffic, jaywalking, crossing before pedestrian signal phase, drivers not yielding to pedestrians, drivers going through red lights, and distracted walking and driving. The Connecticut Children's Medical Center is conducting a pedestrian study. Albany Avenue and Park Street corridors have the highest pedestrian crash frequency. Pedestrian safety is an issue in the vicinity of the train station.

The City is conducting a City-wide bicycle plan. Hartford has had a complete streets policy since 2016. The City adds bike accommodations where feasible and/or when an opportunity presents itself.

Source: VN Engineers

Hartford Total Crashes by Severity

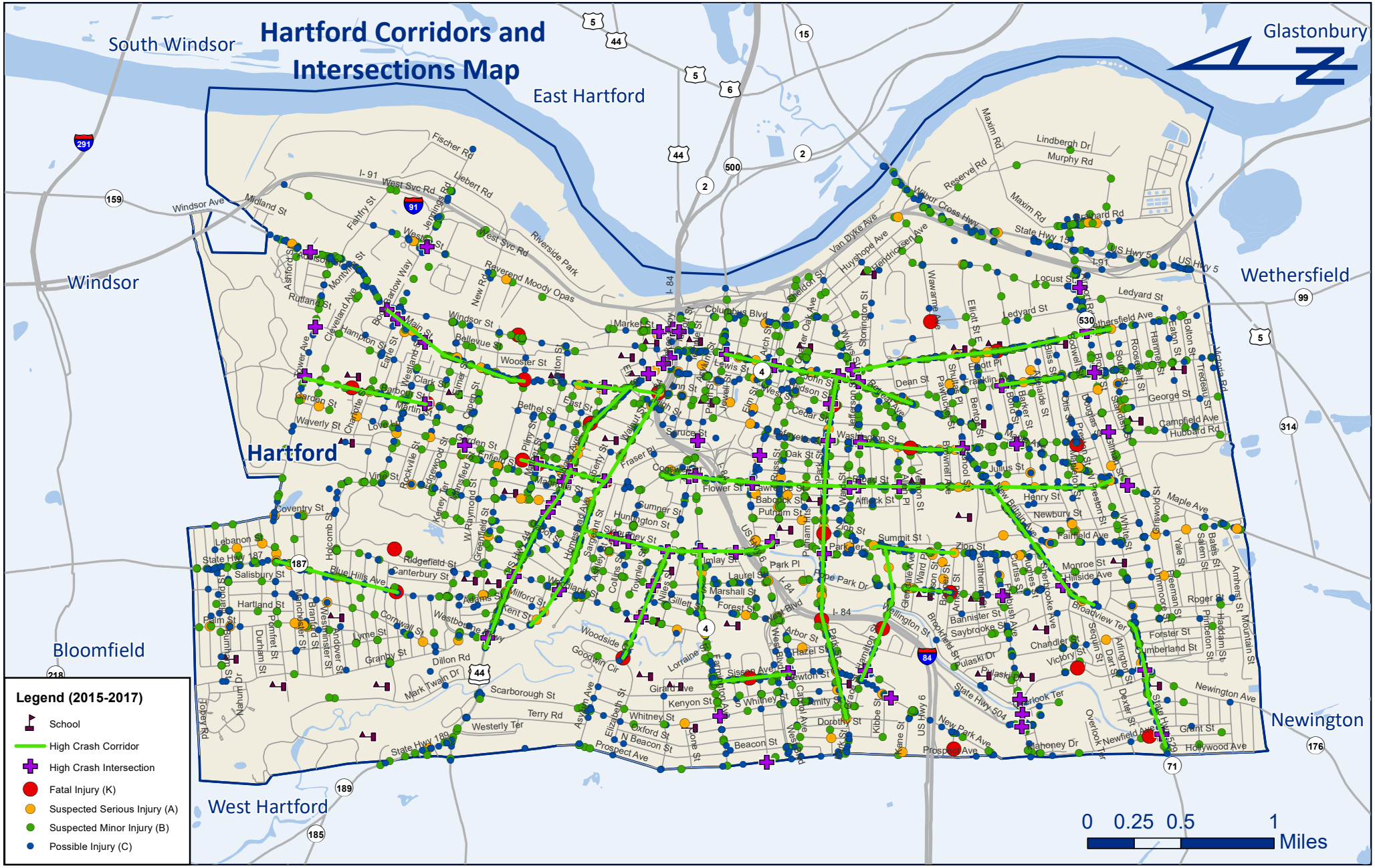
Crash Severity	2015	2016	2017
Fatal Injury (K)	9	7	10
Suspected Serious Injury (A)	74	90	66
Suspected Minor Injury (B)	584	765	619
Possible Injury (C)	770	836	794
Total Injury Crashes	1,437	1,698	1,490

They are seeking to add bike accommodations on Main Street, Maple Street, Main North Street, and along Farmington Avenue. Education needed for bike and pedestrian safety on a City-wide scale.

Infrastructure

Equipment is obsolete on the State system; the City is requesting CTDOT install updated signals. City has improved/replaced many traffic signals and will continue to do so as funding becomes available. The City would like to install roundabouts where feasible to slow traffic and reduce conflict points. Wethersfield Avenue corridor may be good candidate to help reduce speeds, create gateways and transition points, etc. Main Street and Albany Avenue roundabout design with STP funding had been in design by CTDOT. The project is currently halted.

Source: VN Engineers


Hartford Corridors and Intersections Map
South Windsor
East Hartford
Glastonbury
Windsor
Wethersfield
Hartford
Bloomfield
West Hartford
Newington
Legend (2015-2017)
School
High Crash Corridor
High Crash Intersection
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
0 0.25 0.5 1
Miles

Field Site Inventory

Wethersfield Avenue

The Wethersfield Avenue corridor is approximately 2 miles long and is a key gateway corridor to the City from the Wethersfield town line. The roadway cross-section generally consists of one travel lane in each direction with a center left-turn lane. On-street parking is generally provided on both sides of the street from the town line to Elliot Street. From Elliot Street to Main Street, on-street parking is provided on the western side of the street with bicycle lanes provided in both directions. Land uses generally consist of dense residential and commercial uses along the corridor with high pedestrian activity. The corridor is wide with approximately ten signalized intersections and experiences heavy congestion during peak periods and high travel speeds during off peak hours. Streetscape and traffic calming measures have recently been installed in the southern section of corridor from the town line to South Street for approximately a half-mile.

Recommendations:

- Consider corridor-wide Complete Street strategies.
- Continue bike accommodations from Elliot Street to the town line.
- Introduce bump-outs at key crossing points to improve pedestrian mobility.
- Consider replacing some of the signalize intersections with roundabouts to improve peak hour congestion and reduce high travel speeds through the corridor.

Behavioral Issues City-Wide

Throughout the City of Hartford there is a need for improved rules of the road adherence for bicyclists, pedestrians, and drivers. The following behaviors were discussed and observed:

- Jaywalking.
- Drivers not yielding to pedestrians.
- Bicyclists riding on sidewalks or against traffic.
- Distracted walking and driving.
- Red light violations.

Recommendations:

- City-wide multilingual outreach campaign to educate the public on rules of the road.
- Watch for Me CT Campaign.

Special Note: The City of Hartford had 118 pedestrian crashes and 22 bicyclist crashes. In 39 of these 118 pedestrian crashes, drivers were not licensed (33%). The data showed that for bicyclist crashes, 7 of 22 drivers (32%) were not licensed.

Elliot Street

Pedestrian in Hartford

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
Wethersfield Avenue	Congestion	Consider corridor-wide Complete Streets strategies	Low
	Pedestrian and bike safety	Continuing bike accommodations from Elliot Street to town line, introduce bump-outs at key crossing points to improve pedestrian mobility	Medium-High
	Speeding	Consider replacing some signalized intersections with roundabouts	High
Broad Street, Farmington Avenue, and Asylum Street	High crashes	Traffic signal retroreflective backplates and enhance paving markings	Low-Medium
	Congestion	Investigate signal optimization	Medium
		Coordinate signal timing between two intersections	Low
	Pedestrian safety	Updated pedestrian signals to hybrid beacons	Medium
		High-visibility crosswalk	Low
Morgan Street and Market Street	High crashes	Traffic signal retroreflective backplates	Low-Medium
	Congestion	Signal optimization	Medium
	Lane configuration	Lane geometry evaluation	Low
CT-187 (Blue Hills Avenue), Granby Street, and Maple Avenue	Speeding	High-visibility enforcement	Low
		Traffic calming (reducing lane widths)	Low-High
		Dynamic speed feedback signs	Low
City-wide	Rules of the road violations	City-wide bike and pedestrian plan	Low
		City-wide public outreach campaign	Low-Medium
		High-visibility enforcement	Low

TOWN OF HEBRON

2016 U.S. Census Population Estimate: 9,529
Area: 37 square miles
Population Density: 258 per square mile
2016 Vehicle Miles Traveled (VMT): 65,359,820
2016 VMT per Capita: 6,859
Setting: Rural Suburban
Date of Meeting with Town: March 28, 2019
Town Representatives: Mike O'Leary (First Selectman), Dan Greenwood (Hebron Resident Trooper), Kevin Kelly (Director-DPW)
Bike and Pedestrian Fatal and Injury Crashes: 2
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 77

Source: VN Engineers

Overview

Hebron is a suburban town in Tolland County, and it is bordered by Bolton and Andover to the north, Columbia and Lebanon to the east, Colchester to the south and Glastonbury and Marlborough to the west.

Town Input

Fatal Crashes

There were four fatal crashes during the study period, as follows:

- East Street: Fatal from tree falling on motorist
- Intersection of CT-316 and CT-66: Fatal angle crash at traffic signal due to red light violation.
- Intersection of CT-207 and CT-85: Roadway departure fatal crash along horizontal curvature.
- CT-207: Motorcycle fatal in front-to-rear crash. Motorcyclist struck when stopped to make left turn into local establishment with clear sight lines.

CT-66 and CT-316

This is a skewed signalized intersection. Shoulder widths on CT-66 are excessive and cars use the shoulder to bypass motorists turning left. There is no exclusive left turn on CT-66. There is a LoTCIP Project at this intersection with a concept plan in preliminary design that was approved by CRCOG. Currently the project is waiting on funding. The new design will address the lack of signal for the commercial site on the south side of CT-66 and will upgrade the pedestrian signal and crosswalks. This is a concurrent pedestrian phased signal. The Town wants to prohibit right turns on red at intersections with pedestrian features in town including this one. Signal needs to be optimized with the intersection of CT-85 and CT-66.

CT-66

This corridor has high speeds, high traffic volume and high turning movements. There is vertical and horizontal curvature.

CT-85
Sidewalks are being installed intermittently along CT-85 for approximately one mile from CT-66. A Rectangular Rapid Flashing Beacon (RRFB) is going to be installed to help pedestrians cross CT-85 to follow the proposed walkway.

CT-85 and CT-66
This is a signalized intersection with an exclusive pedestrian phase. Loops were cut on CT-85 Southbound due to utility work this winter. The Town is waiting for CTDOT to fix the loop detector. According to District 2 these loops have since been repaired.

Martin Road
This local road has high traffic volume primarily because it connects to CT-2. This is a federally recognized roadway. A fatal crash at the intersection of West Street and Martin Road occurred prior to the 2015-2017 data set. The Town wants to reconstruct this roadway.

Source: VN Engineers

CT-66 and Burrows Hill Road
This is a stop-controlled intersection with limited sight distance to the west from Burrows Hill Road due to vertical curvature. It is difficult for motorists to traverse CT-66 from Burrows Hill Road due to high speed and curvature along CT-66.

CT-316 at Andover Town Line
CT-316 has horizontal and vertical curvature. In addition, there are drainage issues and the roadway ices over in the winter. A fatal crash along this segment of CT-316 occurred prior to 2015.

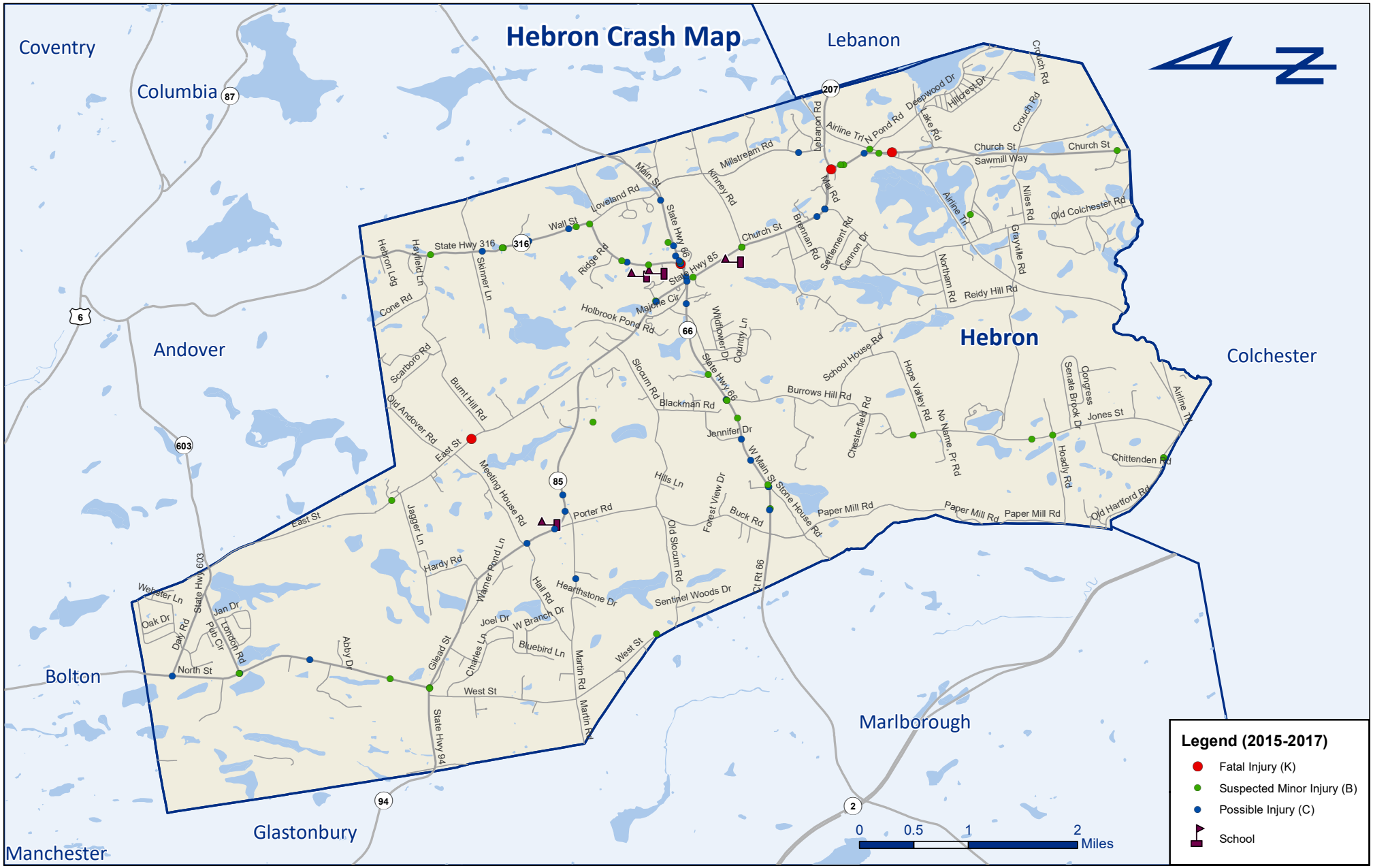
Centerline Rumble Strips
The Town wants centerline rumble strips to be installed on CT-85 and CT-207. They prioritized the segment of CT-85 from Old Colchester Road to North Road.

Schools along CT-316
Town wants to redesign the arrival and dismissal infrastructure. They will add an additional exit which will affect CT-316.

Cyclists
CT-85 is a popular among bicyclists that the Town would like to officially designate as a bike route. Airline Trail is on the eastern side of town off CT-207. The Town is trying to connect the Airline Trail to the center of town with a stone dust trail funded by CTDEEP and through the CTDOT Community Connectivity Program.

Hebron Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	2	0	2
Suspected Serious Injury (A)	0	0	0
Suspected Minor Injury (B)	19	8	12
Possible Injury (C)	9	15	10
Total Injury Crashes	30	23	24


Hebron Crash Map
Coventry
Columbia
Lebanon
Andover
Hebron
Colchester
Bolton
Marlborough
Glastonbury
Manchester
Legend (2015-2017)
Fatal Injury (K)
Suspected Minor Injury (B)
Possible Injury (C)
School
0 0.5 1 2 Miles

Field Site Inventory

Martin Road Corridor (Marlborough Town Line to CT-85)

Martin Road is designated as rural major collector with a posted speed limit of 35 MPH. The roadway connects CT-85 to the Town of Marlborough, provides access to and from CT-2 and serves adjacent neighborhoods. The roadway cross-section is approximately 24 feet and consists of one travel lane in each direction with no established shoulder. Storm water drainage along the road generally consists of open drainage with a series of cross culverts throughout the corridor. Localized high travel speeds coupled with vertical/ horizontal geometry and poor pavement conditions contribute to a safety concern for this highly used roadway corridor. The 4-way stop-controlled intersection of Martin Road and Porter Road was also identified as an intersection with confusing geometry and regulatory control. The southbound Porter Street approach is split into three approaches all under separate stop control with the left and right approach island separated. The geometry encourages rolling stops and the top signs being ignored and treated as yield control.

Recommendations:

- Add signage for the vertical and horizontal curvature.
- The Town would like to reconstruct Martin Road to address poor pavement conditions, improve drainage in key areas, upgrade drainage, sight lines, etc.
- Address the confusing geometry of the 4-way intersection of Martin Road and Porter Road, the southbound Porter Street approach could be simplified by modifying the geometry to provide a signal lane approach that would be regulated under one STOP sign.

Burrows Hill Road and West Main Street-CT-66

This is a stop-controlled, skewed intersection with limited sight distance to the west from Burrows Hill Road due to vertical curvature. It is difficult for motorists to traverse CT-66 from Burrows Hill Road due to high speed and curvature along CT-66.

Burrows Hill Road consists of one travel lane in each direction and no shoulder. There are no edge lines just center line pavement markings.

CT-66 consist of one travel lane in each direction with approximately four feet of shoulder on both sides. Speed limit is posted at 45 MPH.

Recommendations:

- Vegetation management.
- Install dynamic speed feedback signs on CT-66.
- Flashing beacons for Intersection Ahead signs.

West Main Street from Burrows Hill Road

Martin Road

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
Martin Road and Porter Street	Intersection crashes	Modify the geometry to provide a signal lane approach that would be regulated under one stop sign	Medium-High
	Poor pavement condition, drainage and sight distance issues	The Town would like to reconstruct Martin Road to address poor pavement conditions, improve drainage in key areas, upgrade drainage, sight lines, etc	Medium
	Vertical and horizontal curvature	Enhance delineation	Low
Burrows Hill Road and CT-66 (West Main Street)	Speeding	Install dynamic speed feedback signs on CT-66 (West Main Street)	Low
		High-visibility enforcement	Low-Medium
	Sight distance	Vegetation management	Low
		Flashing beacons for Intersection ahead signs	Low
CT-66 (West Main Street) Corridor	Speeding	Dynamic speed feedback signs	Low
		High speed visibility enforcement	Low-Medium
	High traffic	Signal optimization	Low-Medium
	High turning movements	Consider corridor access management	Low
	Vertical and horizontal curvature	Install high friction surface treatment	Low
		Enhance delineation	Low

TOWN OF MANCHESTER

2016 U.S. Census Population Estimate: 57,873
Area: 27 square miles
Population Density: 2,120 per square mile
2016 Vehicle Miles Traveled (VMT): 572,223,640
2016 VMT per Capita: 9,888
Setting: Urban
Date of Meeting with Town: May 10, 2019
Regional and Town Representatives: Jeff LaMalva (Town Engineer); Scott Shanley (General Manager); Jim Mayer (Town Traffic Engineer); Terri Thompson (CRCOG)
Data Identified High Frequency Crash Corridors: Adams Street (from Tolland Turnpike to Hilliard Street); Middle Turnpike E & W (from Adams Street to Brookfield Street); US-6-E Center Street (from Summit Street to Parker Street); Broad Street (From Columbus Street to US-6-E Center Street); CT-83-Main Street (from Woodbridge Street to Charter Oak Street/ Hartford Road)
Data-Identified High Crash Intersections: Buckland Street and Buckland Hills Dr; Pleasant Valley Road and Buckland Hills Mall Entrance; Buckland Street and Pavilion Dr; Adams Street and Tolland Turnpike; Middle Turnpike West and I-84 Ramps; Middle Turnpike W and Tower Road; CT-502-Spencer Street and Hillstown Road; Hartford Road and McKee Street; CT-83-Main Street and Harford Road/Charter Oak Street; CT-30-Deming Street and Avery Street; CT-30-Deming Street and Hale Road
Bike and Pedestrian Fatal and Injury Crashes: 117
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 1,335

Source: VN Engineers

Overview

Manchester is a town in Hartford County, bordered by Glastonbury to the south, Vernon and Bolton to the east, South Windsor and Vernon to the north and East Hartford to the west.

Town Input

Buckland Street and Pleasant Valley Road
This is a high crash frequency intersection. The Town is addressing this intersection with improvements through the Local Road Accident Reduction Program (LRARP).

Plans will include:

- Eliminating channelizing islands.
- Installing Leading Pedestrian Intervals (LPIs).
- Installing Conditional "No Turn on Red" and Conditional "Yield to Pedestrians" illuminated signs.
- Flashing right-turn yellow arrows which was determined feasible by the manufacturer.

Tolland Turnpike and Adams Street
This is a high crash frequency four-way signalized intersection. The Town is redesigning the intersection through LRARP with the same design features as Buckland Street and Pleasant Valley such as LPIs, eliminating channelizing islands, conditional No Turn on Red and Yield to Pedestrian.

Hartford Road and McKee Street
This is a high crash signalized intersection, adjacent to the I-384 Exit 2 ramps. High turning movements with entrance and exits to liquor store and Dunkin Donuts on Hartford Road increase conflict points. The Town is seeking future LOTCIP funding to improve with possible roundabout concept.

Adams Street (North of Middle Turnpike West)
Crashes have occurred along horizontal curves. Town will install flashing chevron curve signs to minimize horizontal curves crashes.

Middle Turnpike and Tower Rd
This intersection is a high crash location. The Town is updating signal with left turn lanes.

Main Street and Middle Turnpike
This is a narrow signalized intersection with capacity issues, angle crashes and high pedestrian traffic. Adjacent commercial driveways can be problematic during peak periods. The Town is planning to install cross hatching at the Cumberland Farms Middle Turnpike driveway to discourage blocking the driveway for exiting and entering vehicles.

Spencer Street
CTDOT installed a road diet in 2018 which incorporated a center left turn lane in lieu of the 4-lane cross-section.

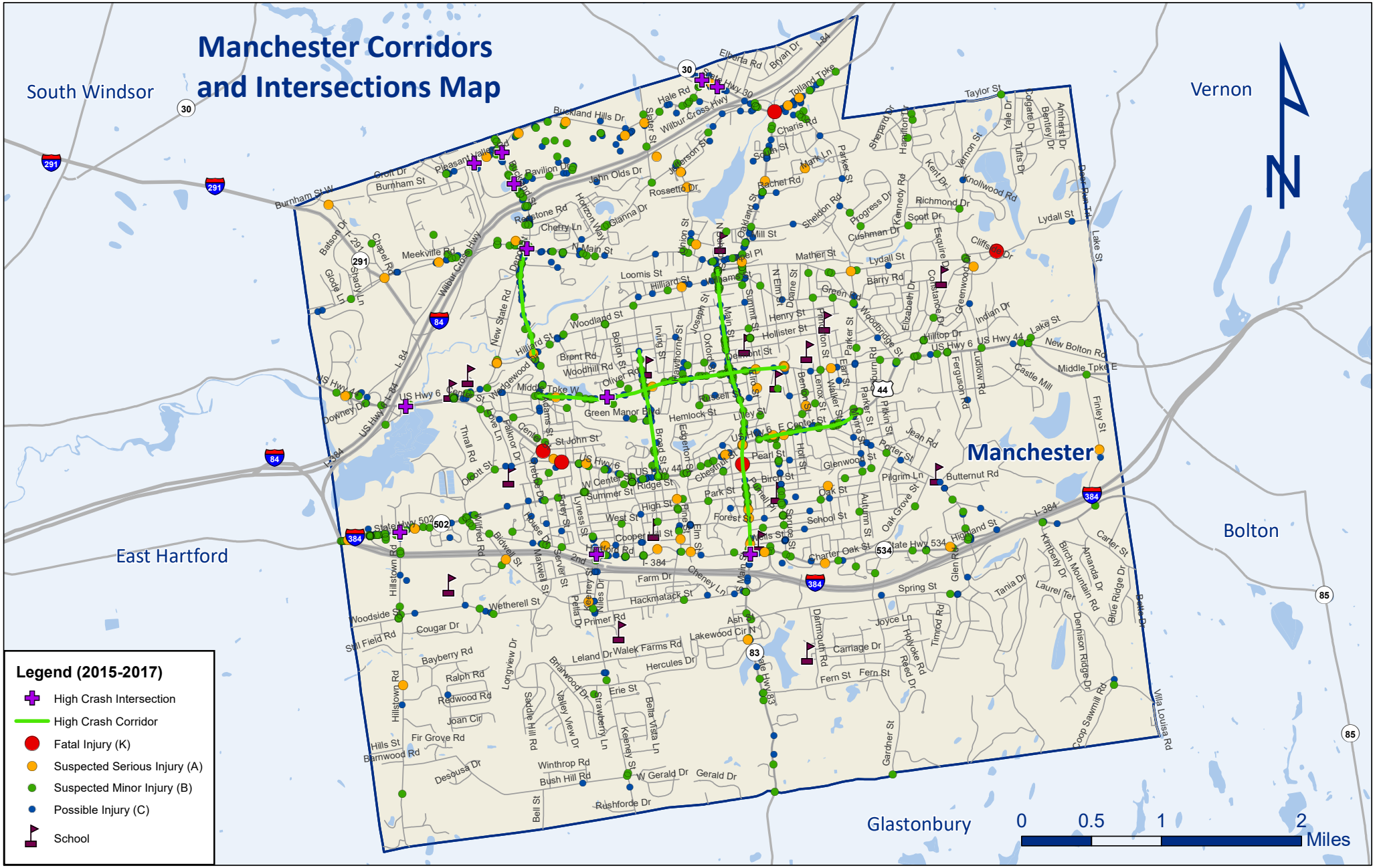
Pedestrians and Cyclists
Funding from CT Community Connectivity Grant to install pedestrian enhancements between sections of CT-83 in the downtown area. There were three fatal pedestrian crashes on Main Street from Maple to Oak Street. The Town has installed sign prohibiting jaywalking along a portion of Main Street. There was a cyclist fatality at Oakland Road and Sheldon Street.

Multi-Use Trails
Charter Oak Greenway Trail is a multi-use trail in Town. The Town plans on installing a multi-use trail along Hillstown Road and making other key connections in their well developed multi-use trail system.

Manchester Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	1	3	1
Suspected Serious Injury (A)	21	21	23
Suspected Minor Injury (B)	159	157	168
Possible Injury (C)	247	285	249
Total Injury Crashes	428	466	441

Manchester Corridors and Intersections Map



Field Site Inventory

Hartford Road at McKee Street

The intersection of Hartford Road and McKee Street is a signalized intersection less than 200 feet from the I-384 westbound off- and on-ramps associated with Exit 2. The intersection experiences traffic congestion and difficult maneuvers during the morning peak period primarily due to the proximity of the signalized intersection to the westbound off-ramp. The queue associated with the northbound approach to the intersection blocks left-turns seeking to go south from the off-ramp. In addition, right-turns seeking to go north to McKee Street or access the exclusive left-turn lane at the intersection to navigate to Hartford Road westbound are also consistently inhibited by the northbound queue.

Recommendation:

- The Town has developed a concept plan that includes geometric changes utilizing available ROW to address the challenging peak period traffic movements, improve pedestrian mobility and provide additional parking in support of surrounding businesses.

Main Street (CT-83) and Middle Turnpike

The intersection of Main Street and Middle Turnpike is a signalized intersection that experiences poor levels of service during the peak periods.

Both the Main Street northbound and southbound approaches consist of an exclusive left-turn lane and a shared through right lane. The Middle Turnpike approaches also consist of an exclusive left-turn lane and a shared through right lane. All the approaches have very tight turning radii with limited opportunity for improvement due to the proximity of the adjacent commercial uses, utility poles, and signal equipment. The intersection has an exclusive pedestrian phase which is heavily utilized. The local high school is near this intersection. The high utilization of the exclusive pedestrian phase further deteriorates the poor level of service during peak periods. There is limited opportunity to improve the intersection lane geometry and/or turning radii due to the proximity of the adjacent commercial uses and other obstructions.

Recommendations:

- The introduction of a concurrent pedestrian phase with a leading pedestrian interval could potentially be implemented to provide improved intersection level of service during the peak period.
- In addition, permanent easements, property takings, and utility relocations could potentially be considered to improve turning radii and improve intersection geometry.

Hartford Road and McKee Street

Main Street and Middle Turnpike

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-534 (Hartford Road) at McKee Street	Congestion	Consider a roundabout concept to address the challenging peak period traffic movements, improve pedestrian mobility and provide additional parking	High
	Difficult maneuvers		
	Left-turn blocking		
CT-83 (Main Street) and US-44 (Middle Turnpike)	Limited turning radii	Consider permanent easements, property takings and utility relocations to improve turning radii and intersection geometry	Medium-High
	Pedestrian mobility during peak periods	Consider a concurrent pedestrian phase with a leading pedestrian interval to provide intersection level of service	Low-Medium
Middle Turnpike and Tower Road	High crashes	Signal optimization	Low-Medium
		Traffic signal retroreflective backplates	Low-Medium
Town-wide	Pedestrian and bicyclist fatalities	Rectangular rapid flashing beacons (RRFBs)	Medium
		In-street pedestrian crossing signs	Low
		Watch for Me CT safety pedestrian/bike campaign	Low-Medium
		Enhance pedestrian pathways for better pedestrian connectivity	Low
		High-visibility crosswalks with surface treatment	Medium

TOWN OF MANSFIELD

2016 US Census Population Estimate: 25,969
Area: 45 square miles
Population Density: 584 per square mile
2016 Vehicle Miles Traveled (VMT): 164,387,970
2016 VMT per Capita: 6,330
Setting: Rural
Date of Meeting with Town: May 23, 2019
Town and Regional Representatives: Sergeant Timme (Resident State Trooper); Terri Thompson (CRCOG)
Bike and Pedestrian Fatal and Injury Crashes: 15
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 258

Source: VN Engineers

Overview

Mansfield is a rural town located in Tolland County, and is bordered by Chaplin to the east, Windham to the south, Coventry to the west and Willington and Ashford to the north. It is home to the main campus of the University of Connecticut.

Town Input

UCONN and the Town

Storrs/Mansfield is a small rural town and home to UCONN which increases the steady population of about 15,000 residents to 35,000 persons from August to May. This has a profound impact on traffic volume, traffic safety, and as a result the Town should have a larger law enforcement department to address the 8-month spike in population. To address the impact on the Town, UCONN has their own campus police. But many students live off campus and place a demand on the Town's services, including emergency management. In addition, major events at the university require the State's Troop C to supply officers to assist with traffic.

The Town has an ordinance to require renters produce a car parking plan to limit the number of vehicles designated to each property. Most crashes in Town are attributable to weather and substance involved driving.

Fatal Crashes

- CT-195 - Substance-Impaired roadway departure fatal crash
- CT-195 north of CT-632 - Front-to-rear fatal crash
- CT-32 - Substance-Impaired roadway departure fatal crash
- North Eagleville Road - Substance-Impaired pedestrian fatal crash
- CT-195 - Substance-Impaired front-to-front motorcycle fatal crash

CT-195

There are high crash numbers from US-44 to CT-275, representing the center of the UCONN campus. This corridor is the highest priority location in town due to conflicts between pedestrians and motorists. Many front-to-rear crashes are associated with distracted driving. In the center of Town, along CT-195 there are crosswalks, bulb outs, sidewalks, decorative lighting, medians, narrow travel lanes and on-street parking which slow traffic down. However, there is some concern regarding emergency response abilities due to these features. The gateway into the university and the northern section of CT-195 has a steep downhill, pedestrians crossings are not as protected as in the downtown, and the cross section is wider. Due to CT-195 running through the campus, pedestrian safety is imperative to this major state route. Incident Access is a concern on CT-195 according to the State Trooper. CT-195 is the major route to the downtown and to UCONN and local schools. Streetscaping impedes emergency vehicles from easily accessing area. There is no gateway treatment indicating you are entering a pedestrianized zone or UCONN. Roundabouts were discussed as a possible countermeasure to slow motorists as they enter the corridor adjacent to UCONN.

A roundabout at Four Corners, the intersection CT-195/US-44 (Storrs Road and Middle Turnpike) is an effective countermeasure to slow motorists as they enter the corridor adjacent to UCONN. This roundabout is ranked number 41 in priority on the CRCOG Roundabout Screening Study.

Due to its proximity to the intersection of CT-195/CT-320 (Storrs Road and Willington Drive), an additional roundabout is needed at this location to prevent traffic backups at this signalized intersection effecting the efficiency of the roundabout at CT-195/US-44.

Mansfield Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	3	1	1
Suspected Serious Injury (A)	2	2	4
Suspected Minor Injury (B)	47	53	42
Possible Injury (C)	24	44	35
Total Injury Crashes	76	100	82

US-44 and CT-32

This is a four-way skewed signalized intersection. There is limited sight distance along the US-44 eastbound approach and CT-32 northbound approach. The Town is very concerned about this intersection because it has a Level 5 maintenance classification which has resulted in delayed response to repairing equipment. According to the Town, a default setting of a flashing yellow in all directions has occurred twice from outages.

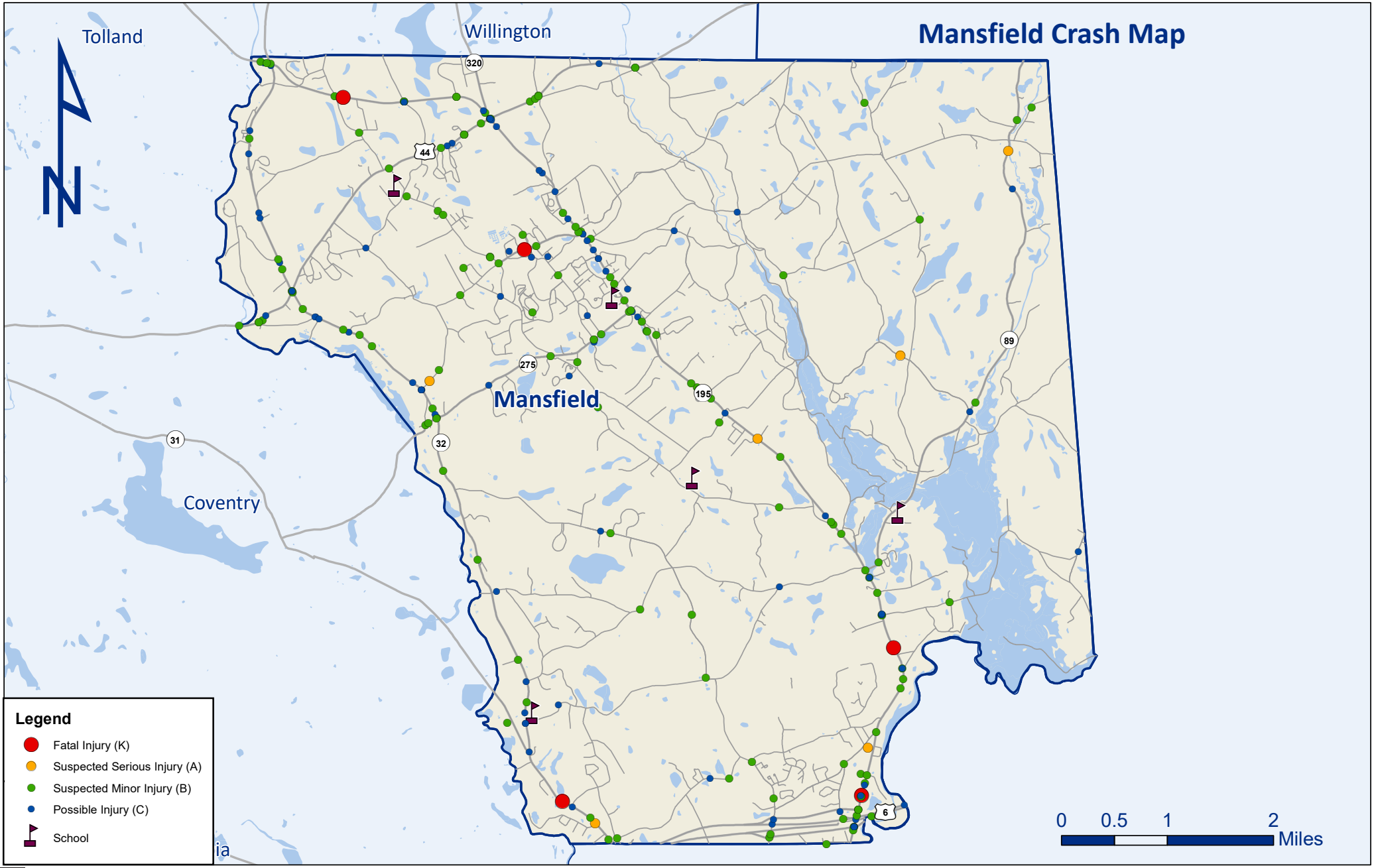
Pedestrians

Distracted walking is a major concern, particularly in areas adjacent (or within) to campus with high traffic volumes such as CT-195 (Storrs Road) and CT-430 (North Eagleville Road).

Substance-Involved Driving

Prior to Uber/Lyft, substance-involved driving and walking among college students was high. Now, students use ride share programs for transportation. Town uses high visibility enforcement grants to fund substance involved driving enforcement campaigns.

Source: VN Engineers


Mansfield Crash Map
Tolland
Willington
Mansfield
Coventry
320
44
275
195
89
31
32
6
Legend
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
School
0 0.5 1 2
Miles

Field Site Inventory

CT-32 and US-44

The intersection of CT-32 and US-44 is a severely skewed signalized intersection. The intersection is a western gateway intersection to the UCONN campus and is heavily used during UCONN special events. The US-44 eastbound approach is up hill with a very large tree within four feet of the paved shoulder on the southeast corner of the intersection. The tree canopy envelopes the US-44 roadway corridor and can detract from a motorist's cone of vision to the traffic signal for this approach. Due to the skew of the intersection, westbound US-44 heavy vehicles taking a right onto CT-32 significantly encroach over the CT-32 centerline. According to the State Police, the intersection has a Level 5 maintenance classification which has resulted in delayed response for equipment repair issues.

Recommendations:

- Widen the intersection to address the inadequate turning radii or consider a roundabout to address turning vehicles encroaching over the centerline.
- Consider trimming or removing the large tree to improve sight lines to the traffic signal.
- Coordinate with CTDOT to increase the maintenance level of the intersection to improve response time associated with traffic signal issues.

CT-195

The CT-195 corridor from Moulton Road to South Eagleville Road has high pedestrian volume along the main thoroughfare in Town. The northern segment of this route intersects the UCONN campus and the southern segment is in the center where many students and UCONN related personnel dine, shop, and live. The roadway is a two-lane cross section, with multiple pedestrian mid-block and intersection crossings. Advanced pedestrian crossing warning signs are properly located prior to marked crosswalks.

There is no gateway treatment on the northern entrance into the campus area and the vertical curvature for southbound traffic can increase speed if motorists are not aware. There is a UCONN sign at the crest of the hill prior to the descent but nothing indicating the high propensity of pedestrians in the corridor. The southern approach to the corridor has the benefit of traffic calming from the new streetscaping projects with islands, bump outs, narrow travel lanes, and stamped crosswalks.

Recommendations:

- Gateway treatment for southbound traffic at CT-195 and Moulton Road.
- RRFBs.
- High-visibility crosswalks at the pedestrian crossings along campus.
- Bumpouts if feasible.
- Add roundabouts at the intersections of CT-195 and US-44, and CT-195 and CT-320.

CT-195 Traffic Calming Features

CT-32 and CT-44-Crash on Day of Field Site Visit

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-32 (Stafford Road) and US-44 (Middle Turnpike)	Skewed alignment	Widen the intersection to address the inadequate turning radii or consider a roundabout to address turning vehicles encroaching over the centerline	High
	Traffic signal limited sight distance	Consider trimming or removing the large tree to improve sight lines to the traffic signal	Low
	CTDOT delayed response for equipment issues	Coordinate with CTDOT to increase the maintenance level of the intersection to improve response time associated with traffic signal issues	Low
CT-195 (Storrs Road)	Pedestrian crossing	High-visibility crosswalks at the pedestrian crossing along UCONN campus	Low
		Update pedestrian beacon to Rectangular Rapid Flashing Beacon (RRFB)	Low-Medium
	Speeding	Bump outs	Low-Medium
		Gateway treatment for southbound traffic at CT-195 (Storrs Road) and Moulton Road	Low-Medium
		Add roundabouts at the intersections of CT-195 and US-44, and CT-195 and CT-320	Low-Medium
Town-wide	High traffic	High-visibility crosswalks	Low
	Distracted walking	Watch for Me CT pedestrian safety campaign	Low-Medium

TOWN OF MARLBOROUGH

2016 U.S. Census Population Estimate: 6,402
Area: 23 square miles
Population Density: 275 per square mile
2016 Vehicle Miles Traveled (VMT): 126,880,935
2016 VMT per Capita: 19,818
Setting: Rural Suburban
Date of Meeting with Town: January 17, 2019
Town and Regional Representatives: Peter Hughes (Town of Marlborough); Devon Lechtenberg (CRCOG)
Bike and Pedestrian Fatal and Injury Crashes: 0
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 79

Source: VN Engineers

Overview

Marlborough is a suburban and rural town. It is bordered by Glastonbury to the north, Hebron to the east, Colchester to the south and East Hampton to the west.

Town Input

Fatal Crashes

- Edstrom Road: Roadway departure fatal crash.
- Hebron Road: Front-to-front fatal crash.

North Main Street and CT-66

There is vertical curvature on North Main Street eastbound approach to CT-66. There may be a lack of advanced intersection warning signs for this approach. The Town leveled out the roadway, but sight distance is still limited for motorists travelling southbound on North Main Street. New Big Y development is expected to significantly increase traffic volumes at this intersection.

CT-66

The northbound CT-66 climbing lane (north of CT-2) is a concern due to the short merge and high speeds. There is radar speed enforcement. The Town stated centerline rumble strips were not reinstalled after CTDOT paved the corridor. However, a field visit confirmed there are centerline rumble strips along CT-66 north of CT-2. CT-66 carries about 18,000 vehicles per day north of CT-2 and about 5,000 VPD south of South Main Street. Big Y and Dunkin' Donuts recently opened on CT-66 which could have a significant impact on traffic volumes and patterns of travel.

CT-2 ramps at Exit 12 and 13

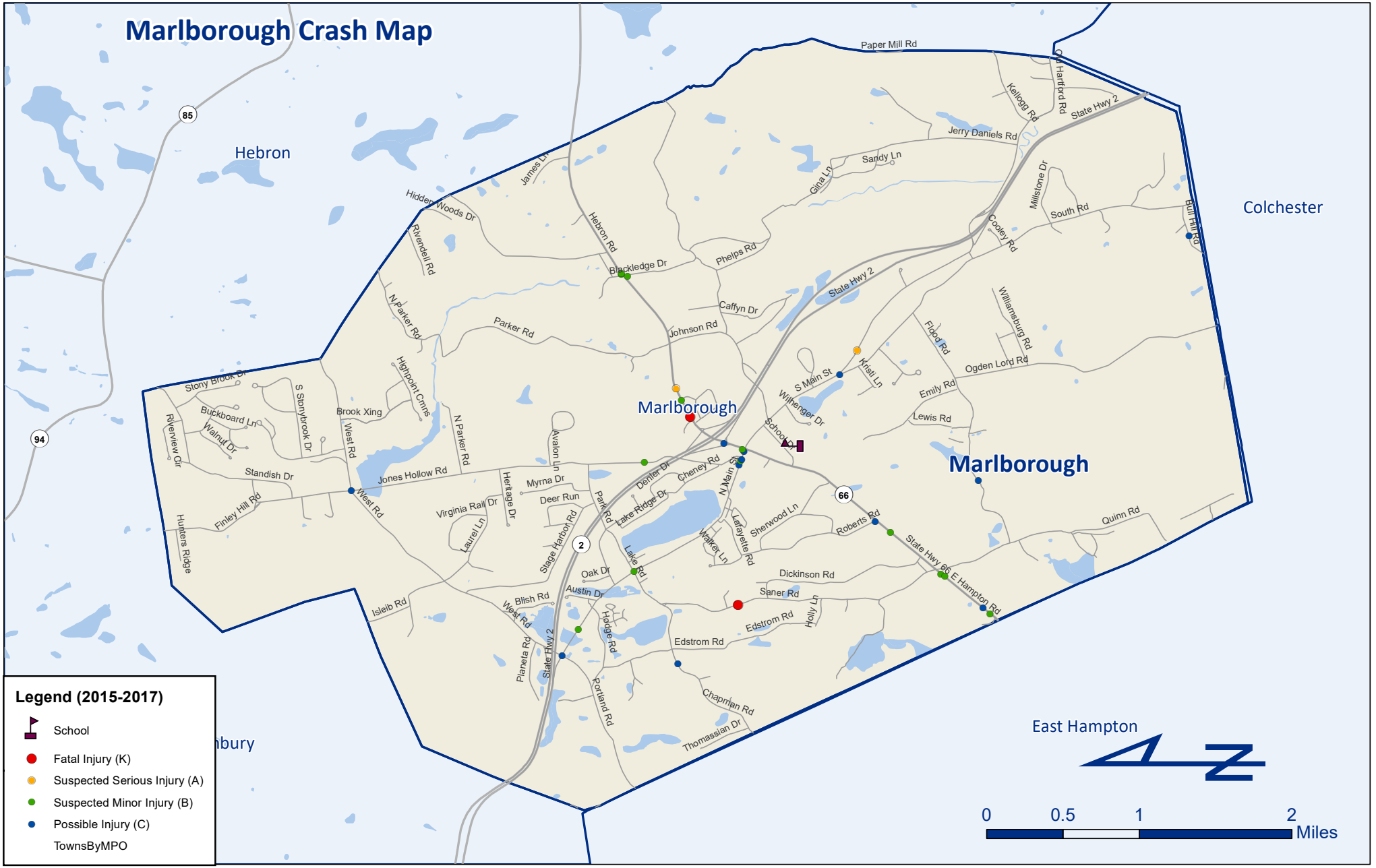
Both CT-2 off-ramps are signalized for through traffic and left-turns; right-turns are stop-controlled. Exit 12 (CT-2 EB) onto CT-66 is used by motorists to avoid the queue for Exit 13, which backs up on CT-2. The Town is concerned with off-ramps at Exit 12 and Exit 13. CTDOT has plans to install video detection cameras at the signals. The Town wants CTDOT to T-up exit ramps and eliminate the right turn stop-controlled Y-intersection.

Lake Road/(Route 2) Chapman/North Main Street

This intersection has limited sight distance from vertical curvature. There is constraint from a house situated adjacent to road. The Town sought LRARP funding but was not successful.

CT Community Grant

This grant for the Town Center includes a sidewalk extension project located on 5 Cheney Road, 30 Jones Hollow Road, and 26 North Main Street.



Legend (2015-2017)

- School
- Fatal Injury (K)
- Suspected Serious Injury (A)
- Suspected Minor Injury (B)
- Possible Injury (C)
- TownsByMPO

Field Site Inventory

CT-2 Off-Ramps at Exit 13

The two CT-2 off-ramps at Exit 13 are both signalized with T-intersections for through/left travel. For motorists turning right from CT-2 WB off-ramp to travel eastbound on CT-66 there is a separate Y-intersection with stop control. And for the CT-2 EB off -ramp at exit 13 motorists turning right to travel westbound on CT-66 also have a sweeping right with stop control.

There are no centerline rumble strips through this section of CT-66. Traffic was light at off-peak hours. CT-66 has a posted 45 MPH speed limit.

Recommendations:

- Conduct capacity analysis to determine if you could incorporate right turn movements for both signals at the off-ramps and CT-66 and then eliminate the right turn Y-intersection.
- Update signal for all travel directions.
- Install advanced intersection ahead warning signs for westbound CT-66.
- Inventory centerline rumble strips along CT-66 and add where needed.

CT-66

The eastbound climbing lanes along CT-66 are along steep vertical curvature. Travel lanes are narrow and there are very narrow to non-existent shoulders. The two lanes merge into one travel lane within a short distance, forcing motorists to jockey for position.

There are physical constraints on both sides of the roadway including steel post guiderails and ledges. There is no room to widen the roadway.

There are centerline rumble strips along this section of CT-66. High speeds were observed.

Recommendations:

- Continue to conduct high-visibility enforcement in this corridor to mitigate speeding.
- Investigate lowering speed limit.
- Redesign merge so that vehicle conflict is reduced.
- Investigate eliminating climbing lane and adding shoulder along eastbound travel lane.
- Add safety edges to minimize roadway departure crashes where there is roadway drop off.

CT-2 Off-Ramps

CT-66 Climbing Lanes

Marlborough Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	2	0	1
Suspected Serious Injury (A)	0	2	3
Suspected Minor Injury (B)	8	13	4
Possible Injury (C)	16	10	20
Total Injury Crashes	26	25	28

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-2 (Veterans of Foreign Wars Highway) Off-Ramps at Exit 13 along CT-66 (East Hampton Road/Hebron Road)	Confusing intersection	Eliminate sweeping right configuration, realign intersection, and update signal for all travel directions	Medium-High
		Install advanced intersection ahead warning signs for westbound CT-66 (East Hampton Road/Hebron Road)	Low
	Missing centerline rumble strips in sections of CT-66	Inventory centerline rumble strips along CT-66 and add where needed	Low
CT-66 (East Hampton Road/Hebron Road)	Speeding climbing lane	Redesign merge	Low-Medium
		Eliminate climbing lane	Medium-High
		Investigate lowering speed limit	Low
		Continue HVE for speeding	Low-Medium
		Add safety edges	Low-Medium
		Safety edge where no guardrail along CT-66 (East Hampton Road/Hebron Road) is present	Low-Medium
Lake Road/Chapman/North Main Street	Limited sight distance	Vegetation management	Low
		Intersection ahead sign with flashing beacons	Low

CITY OF NEW BRITAIN

2016 U.S. Census Population Estimate: 72,558
Area: 13 square miles
Population Density: 5,455 per square mile
2016 Vehicle Miles Traveled (VMT): 335,628,085
2016 VMT per Capita: 4,626
Setting: Urban
Date of Meeting with Town: December 13, 2018
Town and Regional Representatives: Carl Gandza (NB Traffic), Rob Trottier (NB Engineering), Steven King (NB Police Department), Mark Moriarty (NB Director of Public Works), Devon Lechtenberg (CRCOG)
Data-Identified High Frequency Crash Corridors: Allen Street (from Farmington Avenue to CT-71-Stanley Street); Broad Street (from Burritt Street to High Street); North Street (from Main Street to CT-71-Stanley Street); South Main Street (from Chestnut Street to Veterans Dr); Ellis Street (from Greenwood Street to East Street); CT-175-East Street (from CT-9 to Newington Tower)
Data-Identified High Crash Intersections: Hartford Road and CT-9-NB Ramps; Osgood Avenue and Corbin Avenue; Corbin Avenue and W Main Street; Corbin Avenue and CT-72 Ramps; Main Street and Myrtle Street/ East Main Street; Main Street and Lafayette Street; E Main Street and Martin Luther King Dr; CT-71-Stanley Street and North Street; Stanley Street and E Main Street; Stanley Street and Pleasant Street; Stanley Street and Ellis Street
Bike and Pedestrian Fatal and Injury Crashes: 184
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 1,523

Source: VN Engineers

Overview

New Britain is a city located in southwestern CRCOG. It is bordered by Berlin to the south, Newington to the east, Farmington to the north and Plainville to the west.

City Input

The City of New Britain is progressive in its approach to safety and securing funding to further their various complete streets projects and other city-wide traffic improvements. One concern the City has is how to pursue funding for projects that are partially or exclusively on State-owned roads. They have had success with LRARP funding in the past, but this source does not include State-owned roadways. New Britain has a high rate of auto pedestrian crashes. They are looking for education and outreach methods and programs. The City has older infrastructure that doesn't accommodate heavy volumes of traffic. Congestion, distracted driving, and speeding are concerns for the City.

CT-71 (Stanley Street) and Hartford Road
Stanley Street (to the south) and Hartford Road are CT-71, while Stanley Street to the north of the intersection is a City street. There are a high number of near crashes. A Road Safety Audit (RSA) was performed for this intersection as part of Phase I of the Community Connectivity Program. The City would like to T-up this intersection and remove the confusing channelizing islands on Stanley Street (CT-71). In conjunction with geometry revisions to this intersection, Firehouse Lane can be closed (eliminated) at Hartford Road and become an access driveway to the firehouse.

CT-372 (Corbin Avenue), Lincoln Street, 10 Acre Road, and Monroe Street
There are many near crashes. Confusing geometry with a mix of signalized and stop controlled intersections. There is a flow issue on Monroe Street. A short spur traveling north from Corbin Avenue is parallel with Corbin Avenue which is redundant and creates more conflict points. The city could consider adding a left-turn pocket on Lincoln Street southbound approach.

CT-71 (Stanley Street) and Ellis Street
Signalized intersection provides access from the CT-9 ramps and Stanley Street which is a north-south corridor in the City. They are both classified as local roads so the City will pursue LRARP funding when available. There was a fatality at this intersection. The current controller has issues with trucks from Ellis Street to Stanley Street traveling through this intersection frequently. The radius is not adequate for heavy truck turning movements.

CT-372 (Corbin Avenue) and CT-555 (West Main Street)
This is a signalized intersection near the CT-72 ramps with high frequency crashes and high traffic volume. Capacity is an issue. The high number of curb cut and driveways close to the intersection are concerns. The City owns Corbin Avenue north of intersection which they have repaved and updated pavement markings. CT-372 North (Corbin Ave) has high left turn volume.

CT-71 (Martin Luther King Drive) and East Main Street
This is a signalized intersection with the second highest traffic volume intersection in City. Three of the four approaches are State roads. Adjacent to CT-9 southbound exit to Downtown New Britain. The City has a LOTCIP Project in design for Complete Streets improvements on the East Main Street eastbound approach. Traffic queues up on East Main Street east of intersection.

Main Street, East Main Street, and Myrtle Street
The City has a LOTCIP project to implement Complete Streets improvements at this intersection. The improvements include lane reductions, curb extensions, bike lanes and other pedestrian improvements.

Main Street and Lafayette Street
The City has a LRARP project to implement Complete Streets improvements at this intersection. The improvements include curb extensions and signalizing the intersection with exclusive pedestrian phase.

CT-71 (Martin Luther King Drive) and Stanley Street
The Police have been monitoring this intersection. Speed and distraction are the issues.

East Street, East Main Street, and CT-174 (Newington Avenue)
This is an offset intersection with heavy east-west volume and sight distance is limited. There is No Turn on Red from Newington Avenue, but motorists ignore this.

South Main Street and Ellis Street
This intersection is near CT-9 northbound and southbound ramps. Bottlenecking and heavy truck traffic are problematic. The State is redesigning the signal.

South Main Street Corridor
This corridor has high traffic volume and high turning movements. There are No Turn on Red lane pockets. Another concern is the poor illumination and high pedestrian traffic.

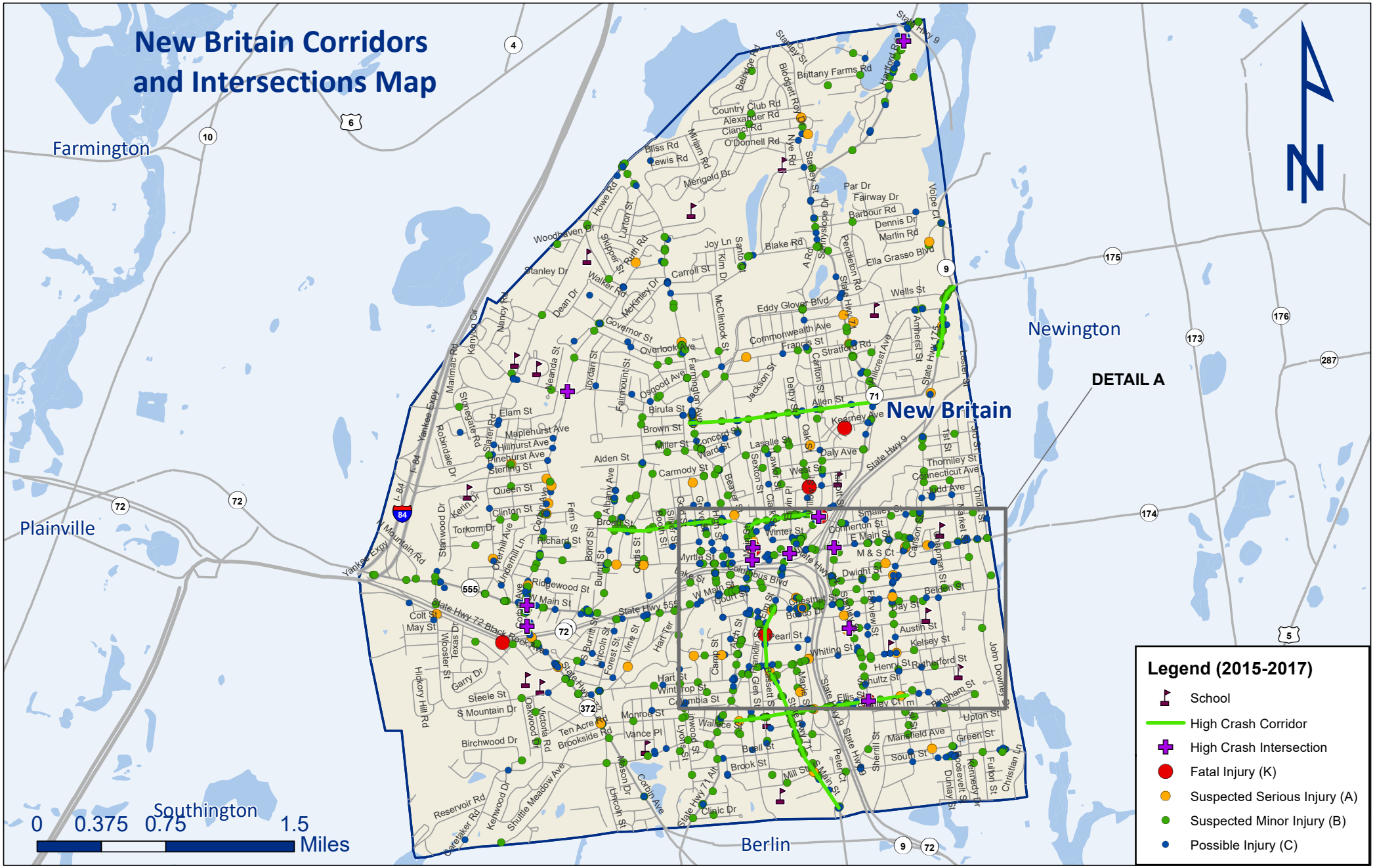
Stanley Street and Pleasant Street
This is a two way stop controlled intersection near Guida's Dairy. There is conflict between trucks and passenger vehicles due to narrow cross section and high truck travel.

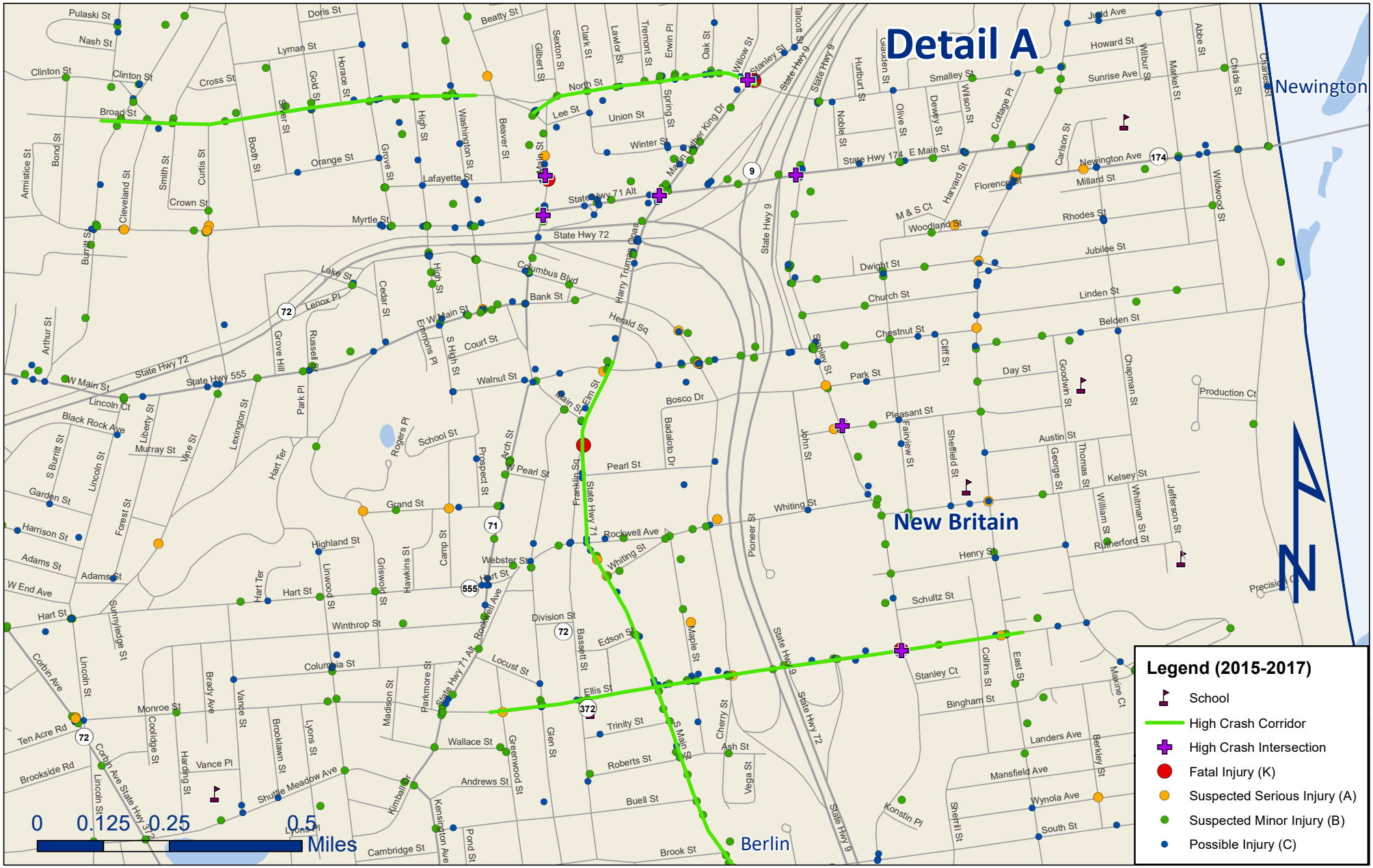
Osgood Avenue and Corbin Avenue
This intersection was repaved. It's a highly pedestrianized area, near the Hospital for Special Care and CREC school.

New Britain Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	2	6	3
Suspected Serious Injury (A)	23	20	20
Suspected Minor Injury (B)	215	207	266
Possible Injury (C)	216	276	269
Total Injury Crashes	456	509	558

New Britain Corridors and Intersections Map




Detail A
Newington
New Britain
Berlin
0 0.125 0.25 0.5 Miles
Legend (2015-2017)
School
High Crash Corridor
High Crash Intersection
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)

Field Site Inventory

CT-372 (Corbin Avenue) and CT-555 (West Main Street)

This is a signalized four-way intersection in a commercial corridor. The City owns Corbin Avenue north of the intersection, north, east, and south of the signal is state owned. CT-72 on- and off-ramps are about a quarter mile south of the intersection on Corbin Avenue. This contributes to heavier traffic flow. There are left turn lanes on all approaches and exclusive right turns on westbound West Main Street and southbound Corbin Avenue.

There are excessive curb cuts at the gas stations on southwest, northwest, and northeast corners. Driveways are located too close to the intersection which may contribute to the crashes here. Front-to-rear crashes are reportedly common at the signal. In addition, the crosswalks are faded.

Recommendations:

- Prohibit right turn on red.
- High visibility crosswalks.
- Retroreflective back plates.
- Corridor Access Management-work with business owners to eliminate, reduce or reconfigure driveways.

CT-71 (Hartford Road) at Stanley Street

CT-71 at Stanley Street is a 3-legged, severely skewed, signalized intersection adjacent to an apartment complex, Stanley Golf Course and a City fire station. Due to the severe skew, the intersection is extremely elongated, has confusing approach lane geometry and raised islands for lane channelization.

The CT-71 northbound approach consists of an exclusive left-turn lane and a through lane. The CT-71 southbound approach consists of general-purpose lane and right-turn pocket set back from the stop bar to address the skew. The Stanley Street approach consists of a travel lane with accommodations for a U-turn to access CT-71 northbound between two raised islands.

Recommendations:

- Realign the intersection by shortening the intersection.
- As part of this potential project, the intersection of Firehouse Lane and CT-71 can be eliminated and used as an access drive to the Fire Station.

Corbin Avenue south of West Main Street


CT-71 and Stanley Street

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-372 (Corbin Avenue) and CT-555 (West Main Street)	Pedestrian safety	High-visibility crosswalks	Low
	High curb cuts	Corridor access management	Low-Medium
	Front-to-rear crashes	Traffic signal retroreflective backplates	Low-Medium
		Prohibit right turn on red	Low
Martin Luther King Drive and Stanley Street	Speeding	Watch for Me CT campaign	Low
	Distracted drivers	Install dynamic speed feedback signs on Stanley Street	Low
		High-visibility enforcement	Low-Medium
CT-372 (Corbin Avenue), Lincoln Street, 10 Acre Road, and Monroe Street	Confusing intersection	Consider adding a left-turn pocket on Lincoln Street southbound approach	Medium
		Analyze intersection geometry	Low
South Main Street Corridor	High turning movements	Corridor access management	Medium
	Poor illumination	Roadway illumination	Medium
	Pedestrian traffic	High-visibility crosswalks	Low
		Pedestrian refuges	Medium
CT-71(Martin Luther King Drive/Stanley Street) and Stanley Street	Confusing geometry	Realign the intersection by shortening the intersection	Medium
		Eliminate Firehouse Lane and CT-71 (Martin Luther King Drive/Stanley Street) intersection (make driveway for emergency vehicles)	Low

TOWN OF NEWINGTON

2016 U.S. Census Population Estimate: 30,423
Area: 13 square miles
Population Density: 2,305 per square mile
2016 Vehicle Miles Traveled (VMT): 221,561,205
2016 VMT per Capita: 7,283
Setting: Suburban
Date of Meeting with Town: May 13, 2019
Town and Regional Representatives: Tom Molloy (Town Highway Department); Chris Schroeder (Town FD); Craig Minor (Town Planner); Stephen Clark (Town PD); Gary Fuerstenberg (Town Engineer); Devon Lechtenberg (CRCOG)
Data-Identified High Frequency Crash Corridors: CT-505-Fenn Road (from CT-175-Cedar Street to Ella Grasso Road); CT-175-Cedar Street (from CT-505-Fenn Road to Maple Hill Avenue and from Mill Street Extension to Patricia M. Genova Dr); CT-173-Willard Avenue (from CT-175-Cedar Street to Alumni Road/Fisk Dr); US-5-Berlin Turnpike (from Selden Street to Pascone Pl)
Data-Identified High Crash Intersections: US-5-Berlin Turnpike and CT-287-Prospect Street; CT-176-Main Street and CT-175-E Cedar Street; CT-173-Willard Avenue and CT-175-Cedar Street; CT-176-Main Street and Robbins Avenue; CT-175-E Cedar Street and Maple Hill Avenue; CT-175-E Cedar Street and CT-505-Fenn Road; CT-505-Fenn Road and Ella Grasso Road; US-5-Berlin Turnpike and Richard Street; US-5-Berlin Turnpike and Pascone Place
Bike and Pedestrian Fatal and Injury Crashes: 23
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 732

Source: VN Engineers

Overview

Newington is a mainly residential suburb located in Hartford County, and it is bordered by West Hartford to the north, Wethersfield and Rocky Hill to the east, Berlin to the south and New Britain and Farmington to the west.

Town Input

Willard Avenue (CT-173) and Garfield Street
This is one-way stop-controlled T-intersection with stop control on Garfield Street. At peak commuter hours, 4:30-5:30 PM, traffic queues up and there are insufficient gaps for motorists making lefts onto Willard Avenue leading to near misses or angle crashes.

Main Street (CT-176) and Dowd Street
This intersection has severe drainage issues that causes the road to close every year due to flooding.

Robbins Avenue and Main Street (CT-176)
This is a high frequency crash intersection. The Town is currently developing plans for a complete street project through this corridor.

Fenn Road and Ella Grasso Boulevard
This is a four-way signalized intersection adjacent to the CT-9 on-ramps. It is a high frequency crash location (including a fatal crash).

Cedar Street (CT-175)
This is a high frequency crash corridor, west of CT-173 and in the Main Street vicinity. Traffic volumes are high - it is a cut through for east-west travel and travel to Hartford.

Enforcement
Low staffing impedes traffic enforcement. Due to the town's police department racial profiling citation from the CCSU Study, the current law enforcement agents are hesitant to pull over minority motorists who violate laws. The primary issue is that the residential demographics are not the same as the roadway user demographics because a high volume of people using Newington roads are not residents. This disparity in motorist population vs. residential population skews the actual percentage of minorities and overall users in town.


Source: VN Engineers

The officers stated that because of this it appears that they are racially profiling. However, percentages reflect that this is not actually occurring and now officers are hesitant to enforce traffic laws including enforcing equipment violations if a vehicle has a minority driver. Traffic violation stops have decreased from approximately 8,500 a few years ago to 4,000 annually.

Pedestrians and Cyclists
There was a pedestrian fatal crash at CT-174 and Pheasant Run which was attributed to a substance-involved driver.

The Town is concerned with several crosswalk installations on the Berlin Turnpike. Berlin Turnpike has high frequency pedestrian crossings from motels in the area that have been used as homes for many of the clients.

CT Community Connectivity Grant will be used for the Mill Pond Park Connectivity Project (sidewalks, crosswalks, reduction of lane widths, and bike racks on Garfield Street, Audubon Avenue, Willard Avenue/CT-173).

Newington Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	5	2	0
Suspected Serious Injury (A)	11	19	11
Suspected Minor Injury (B)	53	108	111
Possible Injury (C)	132	150	130
Total Injury Crashes	201	279	252


Newington Corridors and Intersections Map
Wethersfield
Hartford
Rocky Hill
Berlin
West Hartford
New Britain
Farmington
Newington
Legend (2015-2017)
School
High Crash Intersection
High Crash Corridor
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
0 0.25 0.5 1
Miles

Field Site Inventory

Robbins Avenue and Main Street

The signalized intersection of Robbins Avenue and Main Street is elongated and severely skewed with surrounding residential uses and two adjacent pocket parks. There are sidewalks along the western side of Main Street, both sides of the western leg of Robbins Avenue and pedestrian crosswalk across the western leg of Robbins Avenue. The severe skew makes it difficult for heavy vehicles to execute right turns.

The intersection is heavily congested during peak periods and further exacerbated by traffic signal loss time associated with the elongated intersection geometry.

Recommendations:

- The intersection has been an area of concern due to high traffic volumes and surrounding constraints with modifications being made over the years. The Town could consider a double roundabout to separate the intersection into two individual intersections to reduce delays.
- Improve turning radii to better accommodate heavy vehicles.

Willard Avenue (CT-173) and Garfield Street

Willard Avenue (CT-173) and Garfield Street is a one-way stop-controlled T-intersection with stop control on the local road. At peak commuter hours, 4:30-5:30 PM, traffic queues up and there are insufficient gaps for motorists making lefts from Garfield Street onto Willard Avenue.

In addition to the volume of traffic, Willard Avenue has vertical curvature and motorists travel at high speeds. The posted speed limit on Willard Avenue is 40 MPH.

The crosswalk on Garfield Street is faded.

Recommendations:

- Repaint bar-type crosswalks.
- Enforce speed limit on Willard Avenue.
- Traffic calming (Willard Avenue).
- Dynamic speed feedback signs.
- Flashing beacon for intersection ahead.

Robbins Avenue and Main Street

Willard Avenue and Garfield Street

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-173 (Willard Avenue) and Garfield Street	Difficult left turn access to CT-173 (Willard Avenue)	Traffic calming on CT-173 (Willard Avenue) at the intersection	Low
		Flashing beacons for intersection ahead signs	Low
	Speeding	Install dynamic speed feedback signs on CT-173 (Willard Avenue)	Low
		High-visibility enforcement	Low-Medium
Robbins Avenue at CT-176 (Main Street)	Skewed intersection (difficult right turns)	Improve turning radii to better accommodate heavy vehicles	Medium-High
	Congestion	Consider a double roundabout to separate the intersection into two separate intersections controlled by roundabouts to reduce delays	High
Fenn Road and Ella Grasso Boulevard	High crashes	Traffic signal retroreflective backplates	Low-Medium
		High-visibility enforcement	Low-Medium
		Signal optimization	Low-Medium

TOWN OF PLAINVILLE

2016 U.S. Census Population Estimate: 17,677
Area: 10 square miles
Population Density: 1,822 per square mile
2016 Vehicle Miles Traveled (VMT): 226,393,805
2016 VMT per Capita: 12,807
Setting: Suburban
Date of Meeting with Town: November 13, 2018
Town Representatives: Robert E. Lee (Town Manager), John Bossi (Town Engineer)
Data-Identified High Crash Corridors: CT-10-East Street (From CT-372 E Main Street to Bartlett Street); CT-177-N Washington Street (From Cody Avenue to Camp Street)
Data-Identified High Crash Intersections: CT-177-N Washington Street and Day Street; CT-177-Unionville Avenue and Northwest Drive; CT-177-N-Washington Street and Bradley Street; CT-177-N Washington Street and CT-72 Ramps; CT-10-East Street and CT-372-New Britain Avenue
Bike and Pedestrian Fatal and Injury Crashes: 23
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 531

Source: VN Engineers

Overview

Plainville is a town in CRCOG, bordered by Southington to the south, New Britain to the east, Farmington to the north, and Bristol to the west.

Town Input

The Town concurred that the high crash frequency corridors and intersections highlighted are on par with their observations. In general, the cluster of high crash frequency intersections and corridors along CT-177 around the CT-72 junction are due to high traffic volumes associated with peak periods and motorists ignoring traffic controls.

The proposed Farmington Canal Heritage Trail alignment is currently proposed to pass behind Cody Avenue and under CT-72 to avoid the congested intersection of CT-72 and CT-177. However, if this alignment is found infeasible, an alternative alignment has also been identified through the intersection of CT-72 and CT-177.

Camp Street and CT-177
At this intersection, motorists ignore the no left turn regulatory sign prohibiting left turns from Camp Street to CT-177. This is common during peak periods when the intersection is used to avoid the signalized intersection of CT-177 and Corbin Avenue.

CT-177 and CT-72
Motorists ignore the No Turn on Red sign for the center right turn lane on CT-72 off-ramp. Speed differential transitioning from the CT-72 mainline to the off-ramp was also raised as an issue.

CT-372 and CT-10
This is a wide, skewed signalized intersection. There are recently installed pedestrian features at this intersection. The Town representatives stated the current yellow clearance interval is not adequate. Angle crashes occur due to motorists permitting other motorists to traverse the travel lanes. CT-372 westbound at CT-10 does not provide a permissive left signal, increasing lengthy queuing during peak periods.

CT-10 South of CT-372
This corridor has high number of curb cuts given its a heavy commercial area. The intermittent left turn lanes throughout the corridor create confusion. The corridor is potentially wide enough to accommodate a possible center turn lane. The Town stated that CT-10 is due to be repaved soon.

Source: VN Engineers

CT-10 at Shuttlemeadow Road
The State is updating the signal at this skewed intersection.

CT-177 and Northwest Drive
The Town inquired into time of crashes due to speculation that the crashes were during off-peak hours when signals are timed to flashing yellow.

CT-177 and Bradley Street
There is gas station at this intersection which went through the CTDOT approval process and now is fully constructed.

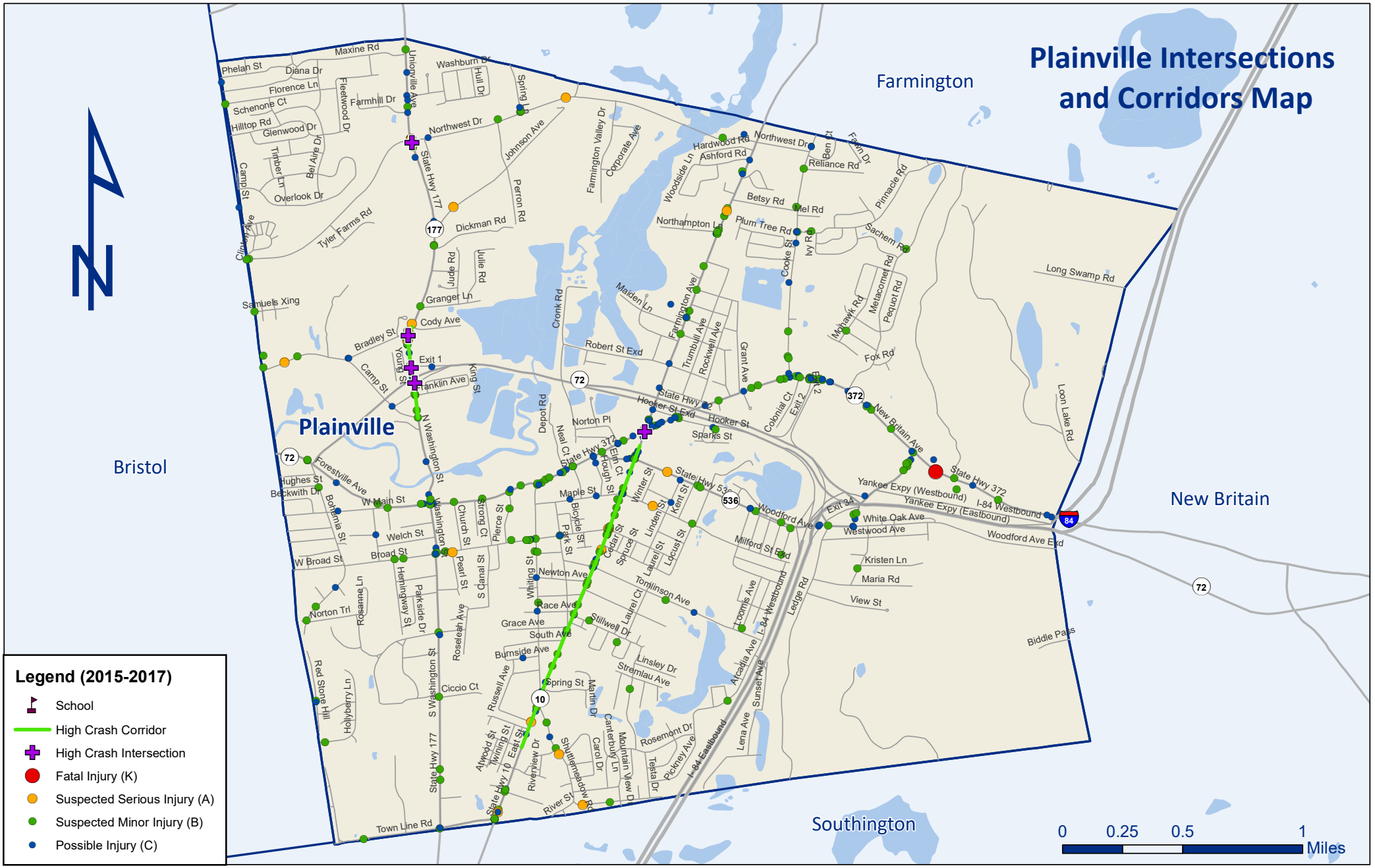
CT-177 and Corban Ave
There are long peak period delays at this intersection.

CT-10 and Town Line Road
Sight distance issue was reported at this intersection. Vehicles for sale are in the Right-of-Way and impede motorist sight lines. The traffic signal is programmed to flash during off-peak hours.

Plainville Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	1	1	2
Suspected Serious Injury (A)	7	10	7
Suspected Minor Injury (B)	77	90	77
Possible Injury (C)	76	87	96
Total Injury Crashes	161	188	182

Plainville Intersections and Corridors Map



Field Site Inventory

CT-10 and CT-372

The intersection of CT-10 and CT-372 is a wide signalized skewed intersection with surrounding commercial use. Both the CT-372 westbound and eastbound approaches consist of an exclusive left-turn lane and a shared through, right lane. The CT-10 approaches (northbound and southbound) consist of exclusive left-turn, right-turn and through right lanes. There are updated pedestrian features at this intersection.

Town representatives stated the current yellow clearance interval is not adequate. Angle crashes result because motorists permit other motorists to cut through travel queues. CT-372 westbound at CT-10 does not provide a permissive left signal, increasing lengthy queuing during peak periods.

Recommendations:

- Traffic signal retroreflective backplates.
- Signal optimization - Including clearance time and adding a permissive left.
- Maintain crosswalks and pedestrian signals.

CT-177 and CT-72 Ramps

The signalized intersections of CT-177/CT-72 westbound off-ramp/Day Street and CT-177/CT-72 eastbound on-ramp are heavily used and congested during peak periods. CT-7 eastbound on-ramp is heavily used and congested during peak periods.

Right on Red for the CT-72 off-ramp at CT-177 is only permitted from the outside lane, however this is often ignored. In addition, the two-exclusive right-turn lanes merge onto northbound CT-177 that is immediately designated as an exclusive left-turn and through-lane associated with the intersection of CT-177 and Bradley Street.

Peak period congestion is further exasperated by the proximity of the signalized intersection immediately to the south at CT-177, Corban Avenue and Franklin Street. This intersection is used as a cut-through via Corban Avenue to access the CT-72 ramps.

Recommendations:

- Optimize and coordinate signal timings and assess lane geometry for the three signalized intersections to respond to peak hour traffic volumes.
- Implement and enforce "Do Not Block the Box" for the intersection of CT-177, Corban Avenue and Franklin Avenue.
- Consider designating Corban Avenue one-way away from CT-177. Consider the potential signalization of Camp Street and CT-177 to accommodate the diverted trips associated with the proposed one-way designation of Corban Avenue.

CT-10 and CT-372

CT-72 ramps at CT-177

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-10 (Farmington Avenue/East Street) and CT-372 (East Main Street/New Britain Avenue)	Angle crashes	Traffic signal retroreflective backplates	Low-Medium
		Investigate clearance intervals and signal optimization	Low
	Pedestrian crossing	Maintain high-visibility crosswalks	Low
CT-10 (Farmington Avenue/East Street) Corridor	High curb cuts	Corridor access management	Medium
	High turning movements	Investigate TWLTL	Low-Medium
	Pavement marking condition	Repaint pavement markings	Low
Camp Street and CT-177 (Washington Street)	Illegal left turns from Camp Street	Curb construction on Camp Street to obligate the right-turn only	Low-Medium
CT-10 (Farmington Avenue/East Street) and Town Line Road	Sight distance	Signal optimization	Low-Medium
		Vegetation management	Low
CT-372 (East Main Street/Forestville Avenue) and CT-72 Ramps	Congestion	Peak hour signal optimization	Low
	Gridlock	Do Not Block the Box for CT-177 (North Washington Street), Corban Avenue and Franklin Avenue	Low
	Traffic flow	Consider designating Corban Avenue one-way away from CT-177 (North Washington Street), and the potential signalization of Camp Street and CT-177 (North Washington Street), to accommodate the diverted trips associated with the proposed one-way designation of Corban Avenue	Medium-High

TOWN OF ROCKY HILL

2016 U.S. Census Population Estimate: 20,119
Area: 14 square miles
Population Density: 1,490 per square mile
2016 Vehicle Miles Traveled (VMT): 309,537,520
2016 VMT per Capita: 15,385
Setting: Suburban
Date of Meeting with Town: December 12, 2018
Town Representatives: Stephen Sopelak, James Sollmi, Michael Custer, John Mehr, Devon Lechtenberg (CRCOG)
Data-Identified High Crash Corridors: Silas Deane Highway (from Town Line Road to Elm Street); CT-3-Cromwell Avenue (From Cooper Beech Dr to CT-411-West Street)
Data-Identified High Crash Intersections: Cromwell Avenue and CT-411-West Street; I-91 off-ramp and CT-411-West Street; Silas Deane Highway and Town Line Road
Bike and Pedestrian Fatal and Injury Crashes: 15
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 313

Source: VN Engineers

Overview

Rocky Hill is a town bordered by Glastonbury to the east, Wethersfield to north, Newington and Berlin to the west and Cromwell to the south. I-91 runs through the town with exits at the two main local highways CT-3 and CT-99.

Town Input

CT-3
This is a concern for the Town. It is a commercial corridor with high curb cuts, high traffic volumes, and speeding. Additional development is proposed for the southern leg of CT-3 so the Town anticipates an increase in traffic along CT-3.

West Street and I-91 On-Ramps
The large business development on Corporate Place to the west of the I-91 ramps is a major source of traffic generation. During commuter peak hours traffic from Corporate Place significantly contributes to congestion on West Street at the I-91 on-ramps. The I-91 South on-ramp for eastbound traffic has an exclusive left turn signal preceded by a permissive phase. The State has increased the protected left turn clearance for peak hours. Crashes are reported to be a result of a misperception of clearance time and heavy traffic volume. The westbound on-ramp for I-91 south is a sweep configuration. Motorists must yield to traffic traveling on the ramp from West Street eastbound. Sideswipe crashes are common here.

Brook Street
There is a new CREC school being built; an increase in bus traffic is anticipated.

CT-411 (West Street) and CT-3
This intersection experiences heavy peak period traffic volumes. The eastbound West Street approach includes a double left that can be challenging for heavy trucks, however heavy truck traffic utilizes this turn to access Sysco and Burris from I-91.

I-91 Off-Ramps and CT-99 (Silas Deane Highway)
I-91 northbound and southbound off-ramps include high speed sweep configurations under yield control. Motorists enter Silas Deane Highway at high speeds with difficult sight lines. The Town has requested CTDOT reconfigure these off-ramps to be more perpendicular at Silas Deane Highway to eliminate these two conflict points. Silas Deane Highway is a built up roadway with mixed used development and is a major north-south corridor. There is some pedestrian activity on Silas Deane Highway, but not much pedestrian amenities.

Silas Deane Highway
This is a four-lane commercial corridor with significant number of curb cuts and high turning movements. Sideswipe and front-to-rear crashes are common. The Town stated that there was not enough public support to install a center left turn lane along the corridor.

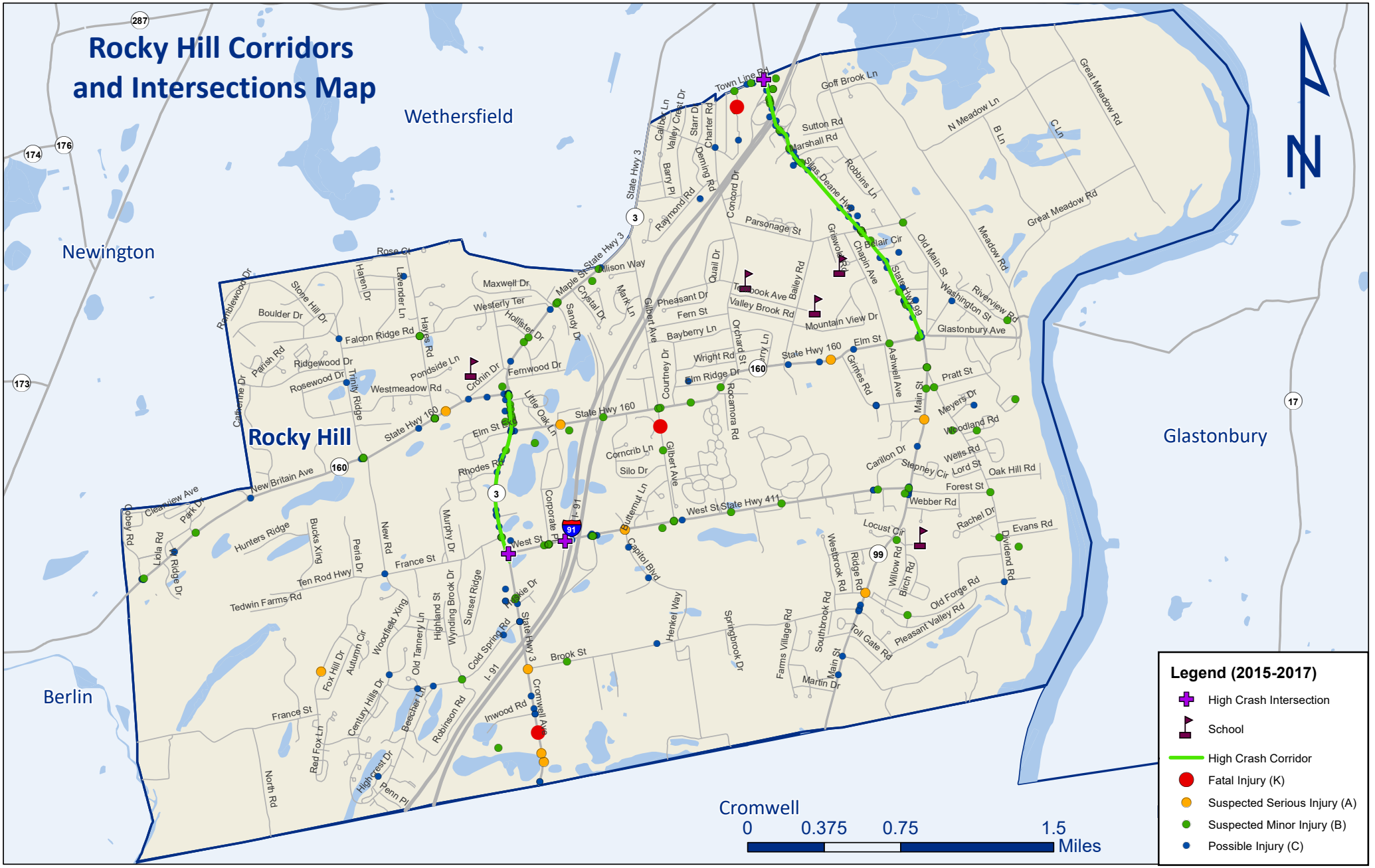
Silas Deane Highway and Town Line Road
Town Line Road serves as an access to the Town Line Plaza and can be very congested during peak periods. There is a midblock pedestrian crossing on Town Line Road in an area with a very wide cross-section.

Town Center (Silas Deane Highway, Old Main Street)
The Town continues to implement streetscape and traffic calming improvements in and around the Town Center through a series of projects.


Source: VN Engineers

Rocky Hill Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	0	3	0
Suspected Serious Injury (A)	3	2	6
Suspected Minor Injury (B)	28	32	43
Possible Injury (C)	67	72	57
Total Injury Crashes	98	109	106


Rocky Hill Corridors and Intersections Map
Wethersfield
Newington
Rocky Hill
Glastonbury
Berlin
Cromwell
0 0.375 0.75 1.5
Miles
Legend (2015-2017)
High Crash Intersection
School
High Crash Corridor
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)

Field Inventory

I-91 Ramps at CT-99 (Silas Deane Highway)

The I-91 Interchange at the Silas Deane Highway is a partial cloverleaf with signal control for through and left-turns and yield control for right-turns from the off-ramps.

Due to the curvature of the ramps and the high speeds of vehicles transitioning from I-91 to the Silas Deane Highway, the yield condition can be difficult to navigate resulting in sideswipe crashes and near misses.

Recommendation:

- Consider removing the right-turn yield conditions and adding exclusive right-turn lanes to the existing traffic signals at each ramp.

CT-411 (West Street) and I-91 On-Ramps

The large business development on Corporate Place to the west of the I-91 ramps is a major source of traffic generation. During commuter peak hours, traffic from Corporate Place significantly contributes to congestion on West Street at the I-91 on-ramps.

The I-91 southbound on-ramp for eastbound traffic has an exclusive left turn signal preceded by a permissive phase. The State has increased the protected left turn clearance for peak hours. Crashes are reported to be a result of misperception of clearance time and heavy traffic volume. The westbound on-ramp for I-91 south is a sweep configuration. Motorists must yield to traffic traveling on the ramp from West Street eastbound. Sideswipe crashes reported.

Recommendations:

- Traffic signal retroreflective backplates.
- Reinvestigate signal timing during peak hours or upgrade signal system.

I-91 off-ramp at Silas Deane Highway

West Street at the I-91 on-ramp

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-411 (West Street) and I-91 On-Ramps	Intersection crashes	Enforcement of red light violations	Low-Medium
		Traffic signal retroreflective backplates	Low-Medium
		Investigate signal optimization	Low
I-91 Northbound and Southbound Off-Ramps and CT-99 (Silas Deane Highway)	Sideswipe crashes	Consider removing the right-turn yield conditions and adding exclusive right-turn lanes to the existing traffic signals at each ramp	Medium-High
CT-99 (Silas Deane Highway)	Front-to-rear crashes	Signal optimization	Low-Medium
		Traffic signal retroreflective backplates signs	Low-Medium
	High turning movements	Consider installing center right/left turn lanes along the corridor	Low-Medium
CT-3 (Maple Street/Cromwell Avenue) Corridor	High curb cuts	Consider corridor access management for reduction of driveways	Medium-High
	Speeding	High speed visibility enforcement	Low-Medium
		Dynamic speed feedback signs	Low
	High traffic	Signal optimization	Low-Medium

TOWN OF SIMSBURY

2016 U.S. Census Population Estimate: 24,407
Area: 34 square miles
Population Density: 720 per square mile
2016 Vehicle Miles Traveled (VMT): 145,860,205
2016 VMT per Capita: 5,976
Setting: Suburban
Date of Meeting with Town: December 11, 2018
Town Representatives: Maria Carpiola (Town Manager), Nick Boulter (Chief of Police), Jeff Shea (Town Engineer), Thomas Roy (Director of Public Works) and Mike Glidden (Director of Planning)
Data-Identified High Crash Corridors: CT-10-Hopemeadow Street (from Ely Lane to Woodland Pl); CT-167-Bushy Hill Road (From Stratton Brook Road to Sidney Way)
Total Number of Bike and Ped Injury and Fatal Crashes: 5
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 278

Source: VN Engineers

Overview

Simsbury is a town in Hartford County, and it is bordered by Granby and East Granby to the north, East Granby and Bloomfield to the east, Avon and Bloomfield to the south and Canton to the west.

Town Input

There were two corridors identified as high frequency crash corridors within the Town. These two corridors included portions of US-202 and CT-167. The Town identified high speeds and distracted driving as ongoing concerns throughout the Town. The following locations were sites of fatalities:

- US-202 (south of CT-185)–Substance-impaired fatal crash
- CT-167 (south of Overlook Terrace) - Front-to-front distracted driving fatal crash
- CT- 309 (west of Farms Village Road) - Motorcycle fatal crash due to medical issue

US-202

This is a high volume roadway with high travel speeds. Most of the crashes are related to high travel speeds and motorists following too close.

CT-167

This intersection has high volume, high travel speeds and is in an area of significant horizontal and vertical curves. The Town has recommended The Ethel Walker School upgrade the existing mid-block pedestrian crossing south of Sand Hill Road to a PHB (aka HAWK signal).

Notch Road Corridor

This corridor carries about 5,000 vpd, is used as a cut-through and experiences high travel speeds. Notch Road is part of the Farmington Canal Loop Trail and is currently marked with bicycle sharrows. A late summer bike/vehicle crash was reported.

CT-309 (West of CT-167)
This section of CT-309 has a series of vertical and horizontal curves with challenging sight lines. CTDOT is in the process of upgrading some of the warning signs associated with the curves. This series of curves has been studied for realignment in the past. The pavement is in poor condition and is prone to icing. Utilizing higher friction surface pavement could help address roadway departure crashes in this area.

CT-315 (Between CT-189 and US-202)
This roadway has high speeds, high traffic volumes, steep grades with horizontal and vertical curvature. It is very challenging for bicyclists, yet is a key corridor for bicyclists with connectivity to Tariffville and the on-going development of multi-use trails in the area.

US-202 (South of Latimer Road)
A cluster of crashes was reported in this section of US-202. US-202 has high traffic volumes and travel speeds. The Farmington Canal Heritage Trail crosses US-202 at a mid-block crossing. CTDOT recently completed roadway work in the corridor and has committed to installing a center rumble strip once brought to the public for approval.

CT-309 at US-202
This is a three-legged skewed signalized intersection. CTDOT recently installed new traffic signal equipment. Northbound advance left/through traffic signal phase can sometimes create a "block the box" condition; blocking the southbound movement during the following signal phase. During the northbound left turn permissive phase, motorists tend to accept small gaps due to congestion. The southbound approach is posted as No Turn on Red, however, it is regularly ignored creating issues for pedestrians within the crosswalk. The area has active pedestrian use.

Nod Road Corridor
This is a rural road along the Farmington River with approximately 3,000 vehicles per day. It is used as a cut-through route to CT-10 in Avon. Increased traffic volumes with increased development is expected to continue. Nod Road has very narrow cross-section and is a heavily used bike route. High travel speeds with a posted speed limit of 40 MPH in the northern section and 30 MPH in the southern section were reported. The horizontal curvature at the Country Club has been an issue. The Town has developed a realignment plan to minimize the curve through a land swap with the Country Club, however the project has not been successful in obtaining the required grant funding.

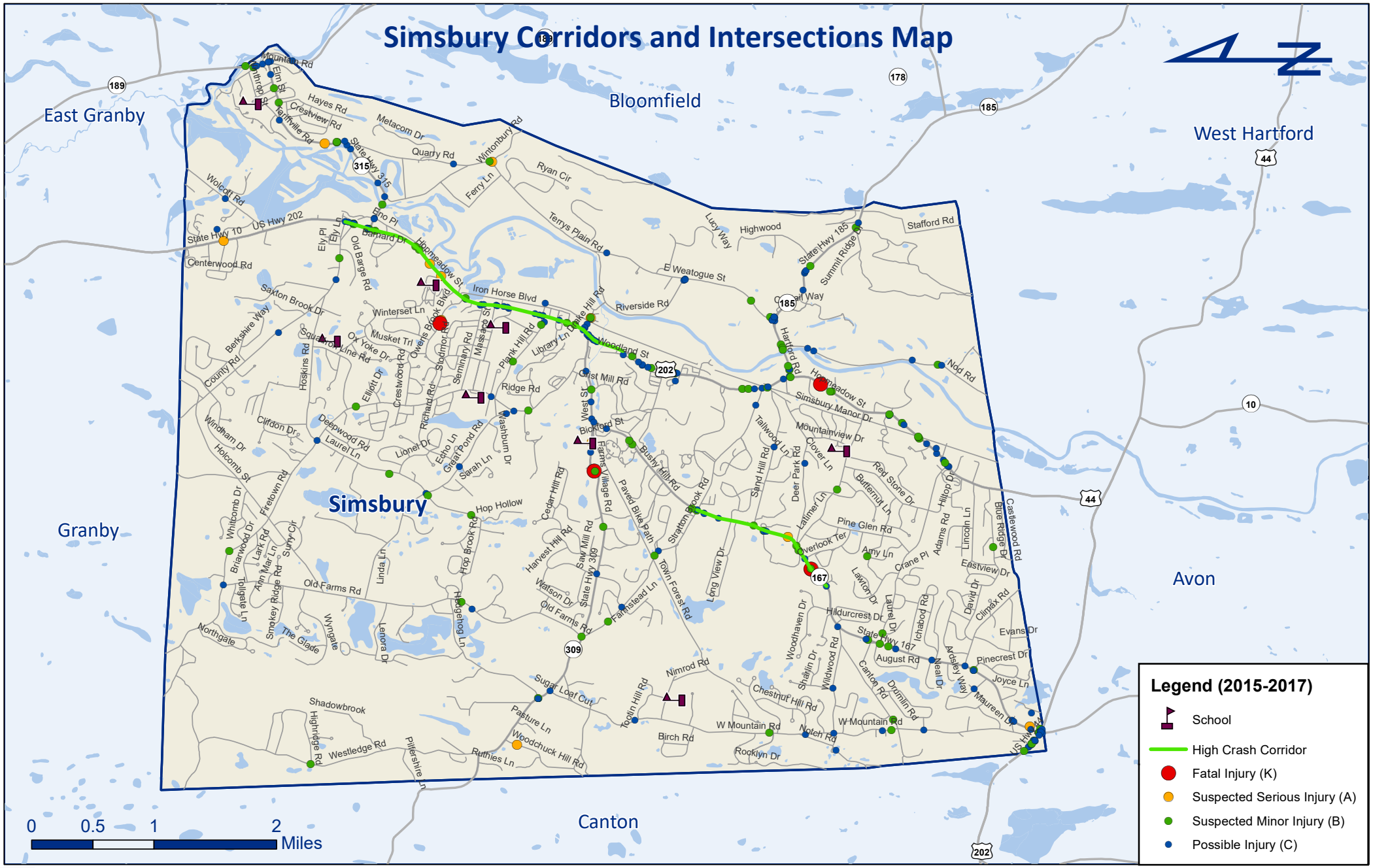
CT-185 at East Weatogue Street
This is an unorthodox intersection under stop- and yield-control with high-speed through traffic on CT-185. Left-turn median "pockets" create minimal storage during the peak and create back-ups. The back-ups created by the lack of left turn storage create an informal CT-185 eastbound bypass utilizing the shoulder. Significant steep grade of CT-185 westbound induces high travel speeds though the intersection.

CT-185 at Nod Road
Significant peak period congestion with long back-ups impacting intersections to the east and west. The heavy volume in the CT-185 westbound making left-turns forces use of shoulder as bypass for through movement. The intersection is fully built-out considering the constraints associated with the adjacent Truss Bridge and the historic Pinchot Sycamore Tree. CTDOT developed a series of alternates and identified a preferred alternative for the realignment of Nod Road to the east for improved intersection geometry and to mitigate on-going congestion. The project was shelved because of natural resource concerns. The Town would like to see the project reintroduced because of the continued and growing congestion and flooding issues of Nod Road; both contributing to emergency response challenges considering there are only a few crossings of the Farmington River in this area.

Simsbury Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	2	1	1
Suspected Serious Injury (A)	3	4	4
Suspected Minor Injury (B)	29	36	26
Possible Injury (C)	64	61	47
Total Injury Crashes	98	102	78

Simsbury Corridors and Intersections Map



Field Inventory

CT-185 (Hartford Road) at East Weatogue Street

The intersection of CT-185 and East Weatogue Street is a three-legged unsignalized intersection with CT-185 under free flow conditions.

A 50-foot median island separates eastbound and westbound CT-185 traffic through the intersection. East Weatogue Street approach to the intersection provides stop control for left-turns and a separate right-turn pocket under stop control for right-turns. The large median island requires additional stop control within the median for left-turns from East Weatogue Street and an additional yield control within the median for CT-185 left-turns to East Weatogue Street. However, there is only room for two vehicles to queue within the island contributing to long delays during peak periods.

In addition, there is no CT-185 eastbound by-pass lane at East Weatogue Street further contributing to delays.

Recommendations:

- Consider providing a by-pass lane for eastbound CT-185.
- Evaluate the potential to install a roundabout or traffic signal at this location.

Nod Road Corridor near Country Club

Nod Road is a rural road along the Farmington River with a narrow cross-section of 24 feet with no shoulders.

The road bisects the Tower Ridge Country Club, including the parking area where a mid-block pedestrian crossing of Nod Road is provided for patrons. Just north of the mid-block crossing there is a sharp horizontal curve with chevron warning signs. The Town has developed a re-alignment concept to soften the curve by seeking a land swap with the Country Club to utilize their parking lot on the western side of the road. The parking area would be used for the re-aligned roadway and the abandoned road segment would be used for displaced parking to be closer to the Country Club.

Recommendation:

- Implement the Town's recommended plan to address the sharp horizontal curve and eliminate the need for the unprotected midblock pedestrian crossing.

CT-185 and East Weatogue Road

Horizontal curve along Nod Road

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-315 (Elm Street/Tariffville Road)between CT-189 and US-202 (Hopmeadow Street)	Speeding	Dynamic speed feedback signs	Low
		Speed safety campaign	Low-Medium
	High traffic	Road safety audit	Low
		Signal optimization	Low-Medium
	Bicycle safety	Share the road campaign	Low-Medium
		High visibility enforcement	Medium
	Horizontal and vertical curvature	Limited sight distance signs	Low
		Enhanced delineation	Low
		Increased pavement friction	Low
CT-185 (Hartford Road) and East Weatogue Street	Traffic queue	Enhance pavement markings and signs	Low
		Consider roadway/lanes reconfiguration-bypass lane and roundabout	High
Nod Road Corridor	Vertical and horizontal curvature	Increased pavement friction	Low
		Lessen slope on critical road segments	Medium-High

TOWN OF SOMERS

2016 U.S. Census Population Estimate: 11,092
Area: 28 square miles
Population Density: 392 per square mile
2016 Vehicle Miles Traveled (VMT): 60,730,160
2016 VMT per Capita: 5,475
Setting: Rural Suburban
Date of Meeting with Town: April 30, 2019
Town Representatives: Bud Knorr (First Selectman), Kim Littig (Police Department), Todd Rolland (DPW), John Roache (Fire Chief), Jeff Bord (Town Engineer), and Terri Thompson (CRCOG)
Bike and Ped Injury and Fatal Crash Injuries: 5
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 105

Source: VN Engineers

Overview

Somers is a rural suburban town bordered by Massachusetts to the north, Enfield to the west, Ellington to the south and Stafford to the east.

Town Input

Fatal Crashes
Fatal crashes from 2015-2017 were more a result of driver behavior than infrastructure, as follow:

- 9th District Road - Speed-related young driver fatal
- CT-190 - Pedestrian (Flagger) fatal
- CT-190 - Roadway departure fatal crash
- CT-83 - Roadway departure fatal crash

Enforcement
The Town has one resident trooper and seven town officers. Police conduct substance-impaired high visibility enforcement. A dynamic speed feedback sign trailer is set up first to gather data and then activated to provide drivers with their traveling speed.

CT-190 and Gulf Road/Turnpike Road
This is a two-way stop-controlled intersection with a flashing yellow on CT-190 and flashing red on Gulf Road and Turnpike Road. There have been a cluster of crashes at this intersection.

CT-190 has vertical curvature and the speed limit is 45 MPH. Stop signs have supplemental signs that indicate that oncoming traffic does not stop. There are advanced intersection advisory signs on CT-190. The intersections to the north on Turnpike Road are all way Stop-controlled. The Town wonders if design inconsistency contributes to the crashes at Gulf Road and CT-190. The Town wants to improve this site with enhanced signage and investigate other best practices. This is a common route for out-of-town drivers and UCONN related traffic.

Pedestrian crossing on CT-190 in front of Sonny's Place
Sonny's Place is a recreation center. Attendees (including children) park across the street at a funeral home and then, they have to navigate the CT-190 crossing. There are no pedestrian amenities here. In addition, Sonny's Place is planning on expansion so the Town will discuss with the owners about installing pedestrian accommodations. The Town wants to determine options for pedestrian amenities at this site.

Stafford Road and Hampton Road
This is a two-way Stop-controlled intersection with limite sight distance. There have been fatal and injury crashes at this junction. Speeding on Hampton Road contributes to crashes.

George Wood Road and CT-186
This is a two-way Stop-controlled intersection with crashes possible due to drivers expecting this to be a four-way Stop. One reason motorists could be confused is that the intersection of CT-186 and Half Hill Road to the north is four way stop controlled. Inconsistency could contribute to driver error.

Horizontal Curve Signs
Horizontal curve chevron signs have been installed by CTDOT throughout town on town-owned roads only.

Centerline Rumble Strips
The Town does not have any centerline rumble strips. Town said most crashes are not front-to-front. In addition, the town roads are chip seal which the Town worries is less amenable to rumble strips.

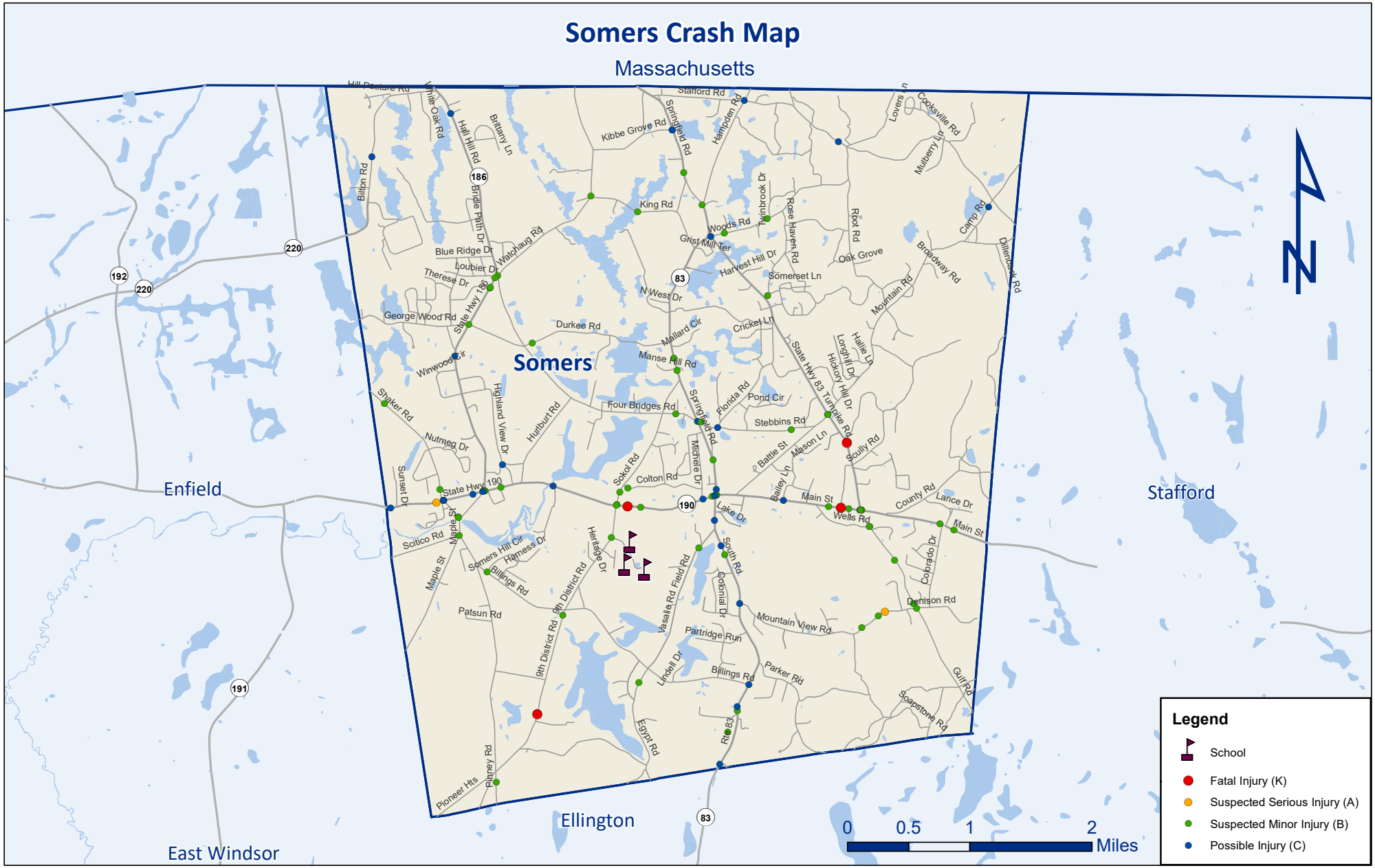
Business District
At CT-190 and CT-183, a signal upgrade is slated for this summer. The Town endorses roundabouts for this area. Town wants to enhance the Main Street Business district with sidewalk connectivity.

Sidewalks
Town would like to connect the intersection of CT-83 and CT-190 to the park and high school campus on Field Road with sidewalks.

Somers Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	0	2	2
Suspected Serious Injury (A)	0	1	1
Suspected Minor Injury (B)	24	20	21
Possible Injury (C)	9	11	14
Total Injury Crashes	33	34	38

Source: VN Engineers


Somers Crash Map
Massachusetts
Somers
Enfield
Stafford
Ellington
East Windsor
Legend
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-190 and Gulf Road and Turnpike Road

This is a two-way stop-controlled intersection, with stop control on the town local roads, Gulf Road and Turnpike Road. Traffic volume was moderate. The posted speed limit of 45 MPH and CT-190's vertical curvature make it difficult for motorists to find an adequate traffic gap from the two side streets.

Sight distance from both local roads is limited. From Gulf Road looking east, there is a significant ledge on the southside of CT-190 and a crest on the roadway that impedes sight distance for left hand turning motorists. Lowering the ledge on the south leg could improve sight distance. From Turnpike Road sight distance is limited by the roadway elevation differential to CT-190 and by the ledge on the north leg of CT-190. There is also a pole on the north leg in the line of sight.

There are advance intersection signs on CT-190 for both approaches.

Recommendations:

- Lower ledge that impedes sight distance. This would require investigating right of way.
- Work with utility company to relocate pole on north leg of CT-190.
- Dynamic speed feedback signs

CT-190 (Main Street) at Sonny's Place

CT-190 near Sonny's Place, an indoor/ outdoor amusement venue, consists of one travel lane in each direction with 5 foot shoulders and a posted speed limit of 40 MPH.

The amusement venue has been expanding and utilizing off-site parking at the property across CT-190 for spillover parking, creating a pedestrian crossing concern due to lack of formal pedestrian crossing control. In addition, street lighting is not present, creating additional concern during evening hours.

Recommendation:

- Consider conducting a pedestrian study for pedestrian crossing considerations, such as the installation of a Pedestrian Hybrid Beacon coupled with traffic calming measures within the area.

CT-190 and Gulf Road


CT-190 and Sonny's Place

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-190 (Main Street) and Gulf Road/ Turnpike Road	Angle crashes	Investigate lowering ledges on south and northside of CT-190 (Main Street)	Low-Medium
	Limited sight distance and Speeding	Relocate utility pole	Low-Medium
		Dynamic speed feedback signs	Low
Pedestrian Crossing at Sonny's Place	Lack of pedestrian amenities at mid block crossing	Traffic calming	Low-Medium
		PHB or RRFB	Low-Medium
		Watch for Me CT Campaign	Low
Stafford Road and Hampden Road	Crashes	Install W4-4P supplemental sign "Oncoming Traffic Does Not Stop"	Low
		Vegetation management on southwest corner of Hampden Road	Low
		Investigate installing four way stop	Low
George Wood Road and CT-186 (Hall Hill Road)	Two way stop control	Install W4-4P supplemental sign "Oncoming Traffic Does Not Stop"	Low
CT-190 (Main Street) and CT-83 (Springfield Road/South Road)	High frequency crashes	Signal redesign	Funded and planned for Summer 2019
CT-190 (Main Street) and CT-83 (Springfield Road/South Road) to Park and high school campus	Lack of sidewalks	Seek funding for sidewalks through STEAP, LoCIP	Low-Medium

TOWN OF SOUTH WINDSOR

2016 U.S. Census Population Estimate: 25,737
Area: 28 square miles
Population Density: 919 per square mile
2016 Vehicle Miles Traveled (VMT): 225,131,270
2016 VMT per Capita: 8,747
Setting: Suburban
Date of Meeting with Town: May 14, 2019
Town and Regional Representatives: Scott Roberts (Asst. Town Manager/ Public Safety), Matthew Galligan (Town Manager), Jeff Doolittle (Town Engineer), Michele Lipe (Town Planner), Scott Custer (Chief DP), Terri Thompson (CRCOG),
Data-Identified High Frequency Crash Corridors: CT-194-Sullivan Avenue (from US-5-John Fitch Blvd to Ayers Road and from Sand Hill Road to Deming Street); CT-30-Ellington Road (From CT-194-Sullivan Avenue to Pleasant Valley Road)
Data-Identified High Crash Intersections: CT-194-Sullivan Avenue and CT-30-Ellington Road
Bike and Pedestrian Crash Totals: 12
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 414

Source: VN Engineers

Overview

South Windsor is a suburban town with industrial and commercial districts. It is bordered by East Windsor to the north, Ellington and Vernon to the east, East Hartford and Manchester to the south and Windsor to the west through Connecticut River.

Town Input

There were no fatal crashes during the study period. Prior to the 2015-2017 study period the fatal crashes in town were speed related.

CT-194 (Sullivan Avenue) and Buckland Road
Buckland Road consists of a four lane cross section with median dividers. The Town wants to limit the roadway to two travel lanes in the northern section. The entire corridor has reported front-to-rear and distracted driving crashes. In addition, U-turns contribute to many crashes. The State had plans to widen the Sullivan Avenue section of CT-194 but this was not initiated.

Four Corners
Recent improvements at this intersection include: signal upgrades to include longer pedestrian phases, pedestrian ramps, countdown signals, and ramps. This route is in a residential area. Posted speed limit is 40 MPH. The residents' perception that motorists travel higher than the speed limit was refuted by the Police through data collection. The Town would like centerline rumble strips installed on this corridor.

Avery Street and Beelzebub Road
The Town was considering a roundabout at this intersection. But, instead they made it a four-way stop and realigned the offset intersection. The Town stated that these improvements have made the intersection more efficient and safer.

CT-74
This roadway has horizontal and vertical curvature. This is a high frequency crash corridor due to weather related conditions.

CT-74 and Sand Hill Road
Town endorses a roundabout at this intersection to reduce crashes.

CT-30 (Ellington Road) and Lakewood Road
Rectangular rapid flashing beacon to be installed here for an improved pedestrian crossing.

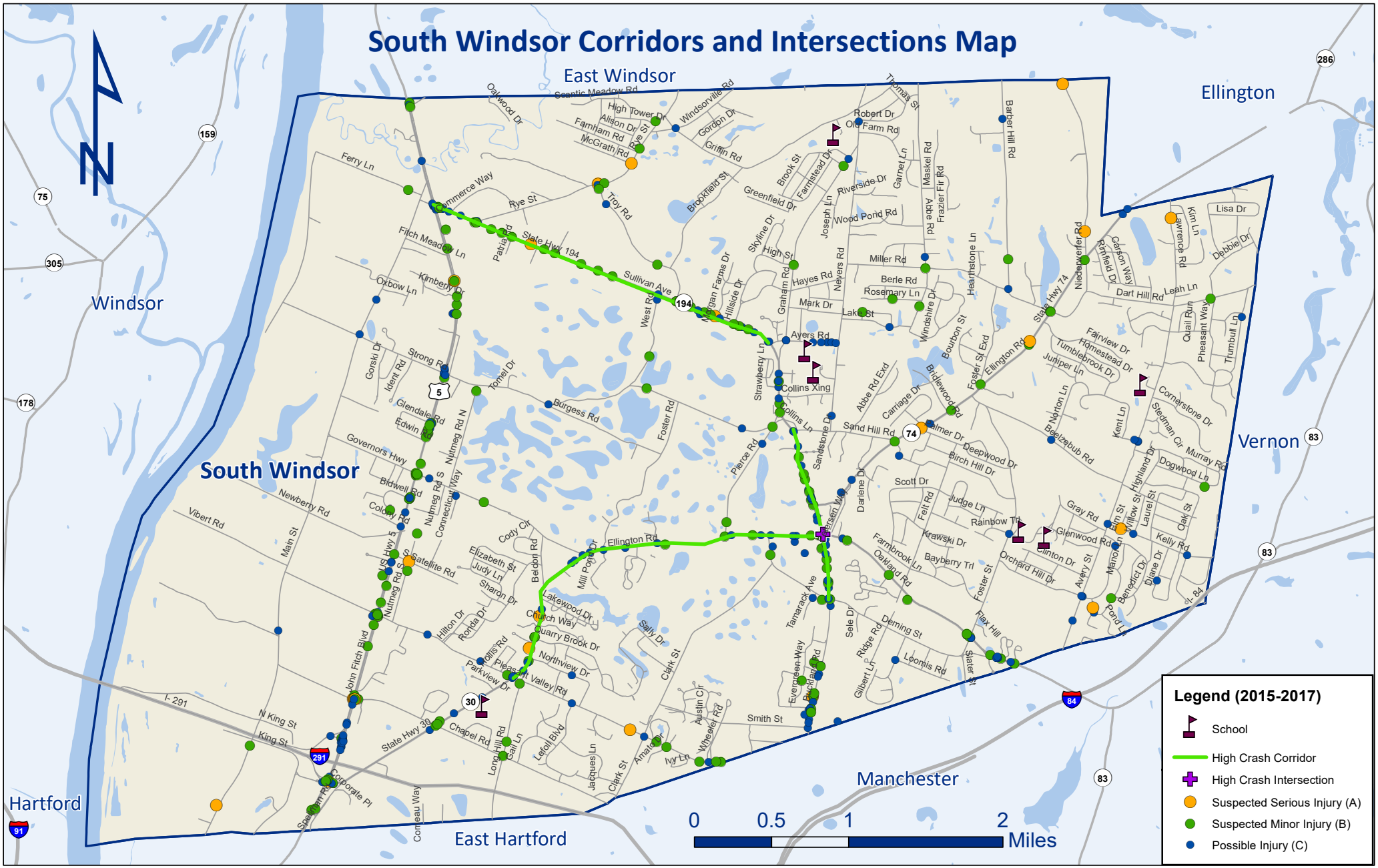
Centerline Rumble Strips
Town endorses these strips and wants more added to streets in the Town.

Bikes and Pedestrians
The Town was granted funds from the CT Community Connectivity Program for sidewalks on Pleasant Valley Road and Clark Street.

Source: VN Engineers

South Windsor Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	0	0	0
Suspected Serious Injury (A)	8	6	8
Suspected Minor Injury (B)	56	54	53
Possible Injury (C)	70	77	82
Total Injury Crashes	134	137	143


South Windsor Corridors and Intersections Map
East Windsor
Ellington
Windsor
South Windsor
Vernon
Manchester
Hartford
East Hartford
Legend (2015-2017)
School
High Crash Corridor
High Crash Intersection
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
0
0.5
1
2
Miles

Field Site Inventory

CT-194

The CT-194 corridor from Ayers Road to US-5 is a high crash frequency corridor. Its two-lane cross section is characterized by high curb cuts into commercial sites with multiple signalized intersection with left turning lanes. The majority of reported crashes are front-to-rear.

Intermittent centerline rumble strips have been installed along segments of the corridor. There are minimal sight distance issues because roadway is straight with slight vertical and horizontal curvature. Speed is posted at 40 MPH.

Major traffic generators along CT-194 just east of US-5 are Hyundai, Mobis and Vistar. Roadway widens to four travel lanes in front of these sites until the US-5 intersection.

Recommendations:

- Traffic signal retroreflective backplates.
- Future corridor access management.
- Dynamic speed feedback signs.
- High-visibility enforcement.
- Next Vendor in Place restripe to consistent 11 foot lanes.

Buckland Road (between Manchester Town Line and Cedar Avenue)

The Buckland Road corridor between the Manchester Town Line and Cedar Avenue is a north-south corridor with heavy surrounding and adjacent commercial land uses including regional attractions, such as the Buckland Hills Mall and Evergreen Walk retail centers. It is also a heavy commuter route with access to and from I-84.

The roadway generally consists of a landscaped median dividing a six-lane cross-section with two travel lanes in each direction and various turn lanes (including some double left-turn lanes) at the signalized intersections. A vertical crest curve peaks at the intersection of the southern access road to Evergreen Walk somewhat impacting sight lines to the traffic signal heads. In addition, the crest curve can make it difficult for motorists unfamiliar with the area to see the entrance signs to Evergreen Walk.

Recommendation:

- Traffic signal retroreflective backplates.

CT-194

Buckland Road vertical curvature approaching signal at Evergreen Walk

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
Buckland Road Corridor between Manchester TL and Cedar Avenue	Traffic signals need to be more visible	Traffic signal retroreflective backplates	Low-Medium
CT-194 (Sullivan Avenue/Buckland Road)	Speeding	High-visibility enforcement	Low
		Next Vendor in Place restripe to consistent 11 foot lanes	Low
	Front-to-rear crashes	Dynamic speed feedback signs	Low
	Sight distance	Traffic signal retroreflective backplates	Low-Medium
	High turning movements	Corridor access management	Medium
CT-30 (Ellington Road)	Speeding	Dynamic speed feedback signs	Low

TOWN OF SOUTHINGTON

2016 U.S. Census Population Estimate: 43,685
Area: 36 square miles
Population Density: 1,213 per square mile
2016 Vehicle Miles Traveled (VMT): 454,118,765
2016 VMT per Capita: 10,395
Setting: Suburban
Date of Meeting with Town: October 25, 2018
Town Representatives: Keith Hayden (DPW), Jack Daly (Chief Police Department), Jim Grappone (Assistant Town Engineer), and Bill Palmieri (Southington Police Department), Terri Thompson (CRCOG)
Data-Identified High Crash Corridors: CT-10-Queen Street (from Lazy Lane to Plainville Town line); CT-229-West Street (from Jude Lane to Plainville Town Line); CT-10-Main Street (from Old Turnpike Road to W Main Street); Marion Avenue (from Frost Street to Main Street); Meriden-Waterbury Turnpike (CT-322) (from Old Mountain Road to Birch Drive)
Data-Identified High Crash Intersections: West Street and West Queen Street; Meriden-Waterbury Turnpike (CT-322) and Canal Street
Total Number of Bike and Ped Injury and Fatal Crashes: 26
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 673

Source: VN Engineers

Overview

Southington is bordered by Berlin to the east, New Britain, Plainville, and Bristol to the north, Wolcott to the west, and Cheshire and Meriden to the South.

Town Input

Burritt Street and Jeanette Court

The Town of consulted UCONN's T2 Center and shifted the pavement markings South approximately 3 feet to improve the sightline for vehicles exiting Jeanette Court. Advance warning signs were also installed along Burritt Street to alert drivers of the intersection.

Old Mountain Road

This is another priority for the Town. The roadway is narrow with a 20 foot drop off along a section of roadway with no guiderail. The Town would like a

guiderail to be installed to lessen the severity of roadway departure crashes. Old Mountain Road was repaved in 2022 and bituminous concrete curbing was installed in some segments.

Long Bottom Road

This road has horizontal curvature and narrow travel lanes.

CT-10 and Norton Street

CTDOT has the modification of CT-10 and CT-322 in their current budget.

West Center Street and West Street

This intersection remains an area of concern. The Town has developed a concept plan to realign the offset West Center Street legs of the intersections

CT-229 (West St)

This road has high cluster of crashes and is a traffic concern. The Town said that NVCOG and CRCOG are negotiating a corridor study for this roadway. NVCOG & CRCOG commissioned BL Companies to perform a corridor study for Route 229 which was completed in the summer of 2022. Both the existing and anticipated future conditions of the corridor were examined. Numerous improvements have been recommended along this corridor with complete streets in mind, or streets that are designed to enable safe and reasonable access for all users. Proven countermeasures for the project include: speed management, high visibility crosswalks, leading pedestrian intervals, pedestrian walkways, backplates with retroreflective borders, dedicated turning lanes, yellow change intervals, enhanced lighting, and pavement friction management.

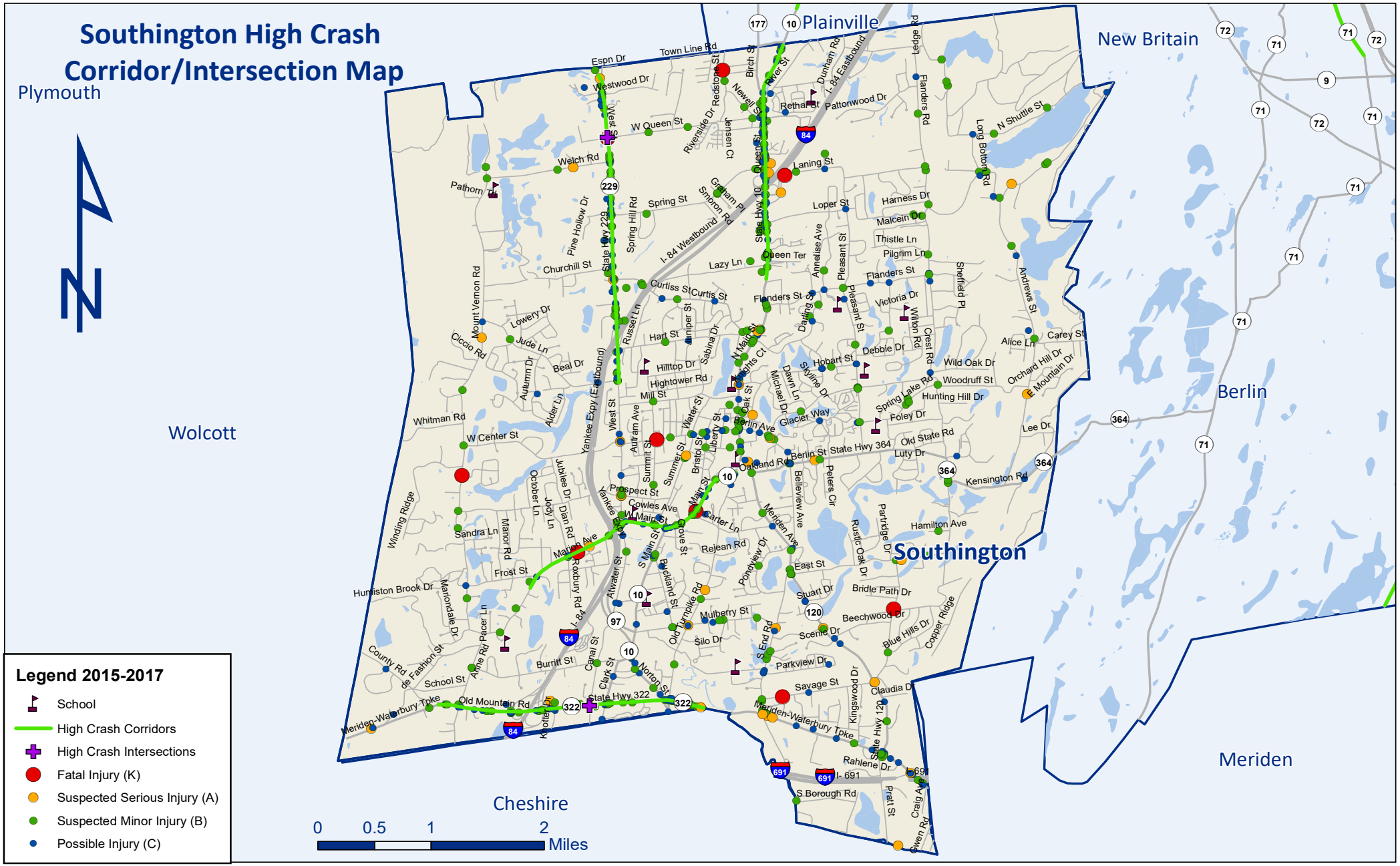
Andrews Street, Sheldon Road, and Carey Street

This is a priority for the Town due to the off set intersection of Andrews St and Carey St.

Southington Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	2	5	2
Suspected Serious Injury (A)	16	8	16
Suspected Minor Injury (B)	65	127	115
Possible Injury (C)	103	99	115
Total Injury Crashes	186	239	248

Southington High Crash Corridor/Intersection Map



Field Site Inventory

Andrews Street and Carey Street

Andrews Street and Carey Street form an offset intersection with stop control on Carey Street. The intersection is not at grade and there is not a right turn prohibition from Andrews Street onto Carey Street despite the difficult turning radius.

There is a short extension road to the south of this intersection that is not marked which is referred to as the Andrews Street Extension on Google Earth. Motorists familiar with roadways use this leg to access Carey Street from Andrews Street.

The approach to Carey Street along Andrews Street has moderate vertical and horizontal curvature which limits sight distance in both directions. The speed limit is posted at 30 MPH.

Recommendations:

- Investigate realigning intersection.
- Lower elevation differentials.
- Dynamic speed feedback signs on Andrews St.

Burritt Street and Jeanette Court

Burritt Street and Jeanette Court are both two-way local roads in a residential area that form an intersection, but turning from Jeanette Court is difficult. At the stop bar on Jeanette Court, turning onto Burritt Street is hazardous because the geometry of the bridge and parapet with fencing creates sight distance obstructions, preventing drivers from adequately seeing oncoming traffic and seeing past the crest.

Recommendation:

- Investigate stop sign warrants for all-way stop control.

Old Mountain Road

This is a two-way local road in a rural area. The road is narrow with no shoulder on either side and on both sides of the road there is a very steep slope that drops about twenty feet without any guiderails to reduce the severity of any roadway departure crashes.

While the data indicates that this area has not been an area of concern in the last three years, the Town of Southington believes this is a crash waiting to happen.

Recommendations:

- Install guiderail protection system.
- Investigate installation of edge line rumble strips.

Andrews Street and Carey Street

View of the I-84 parapet on Burritt Street from Jeanette Court

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
Burritt Street and Jeanette Court	Sight obstructed due to bridge parapet	Investigate stop sign warrant for three-way stop	Low
Old Mountain Road	Narrow roadway with drop off/no guiderail protection system	Install guiderail	Medium
		Stripe edge lines and add edge line rumble strips in designated areas	Low
Andrews Street and Carey Street and Sheldon Road	Skewed intersection and limited sight distance from Carey St	Realign intersection	Medium
		Eliminate extension	Medium
	Speeding	Dynamic speed feedback signs	Low
West Center Street and West Street	High frequency of crashes	Investigate stop sign warrant for stop control on west street	Low
Long Bottom Road	Horizontal curves	Enhanced delineation including chevron curve signs	Low

TOWN OF STAFFORD

2016 US Census Population Estimate: 11,758
Area: 58 square miles
Population Density: 203 persons per square mile
2016 Vehicle Miles Traveled (VMT): 71,039,220
2016 VMT per Capita: 6,042
Setting: Rural Suburban
Date of Meeting with Town: April 22, 2019
Town and Regional Representatives: Thomas Duncan (Lieutenant), Mary Mitta (First Selectman), and Devon Lechtenberg (CRCOG)
Data Identified High Frequency Crash Corridors:
CT-190-West Main Street (From Bradley Drive to Park Street)
Bike and Pedestrian Crash Totals: 4
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 123

Source: VN Engineers

Overview

Stafford is a rural suburban town bordered by Massachusetts to the north, Somers to the west, Ellington and Willington to the south, and Union to the east.

Town Input

Stafford is a geographically large town and has a high percentage of horizontal and vertical curvature on its roadways. The Town has prioritized traffic safety to reduce fatal and injury crashes on all of their roadways. They have accomplished this through a systematic and holistic approach to education, enforcement and engineering.

Fatals

- CT-190 at Somers Town line-Motorcycle substance impaired fatal crash.
- CT-32 and Stony Lane-Motorcycle fatal crash–poor equipment.
- CT-32 north of Crow Hill Road-Roadway departure crash along a horizontal curve.

Enforcement

The Town is a former International Association of Chief of Police Law Enforcement Challenge winner for its safety successes. The increase in citations since 2004 has resulted in a corresponding decrease in crashes.

Dynamic speed feedback signs and radar speed feedback trailers have been effective in reducing speeding. There have been no speed related fatal crashes during this study from 2015-2017.

All the enforcement in Stafford is complemented with education. All town police cars are marked so that their presence is recognized.

The Town needs more equipment for enforcement especially for speeding and substance-impaired driving.

CT-319 and Spellman Road
This intersection has an at-grade rail crossing which was improved by the State. However, the modifications to the crossing created a significant dip in the roadway which the Town considered hazardous. The Town persisted in communication with the State until the road levels were modified.

Town-wide
Town-wide vegetation management has improved sight lines at various locations. In addition, CTDOT has trimmed vegetation which has increased drying time rates on roadways with tree coverage. The Town and State collaborated to install chevron curve signs and enhanced delineation along horizontal curves throughout the Town. The Town updated stop signs with retroreflective materials.

Education
The Town has a robust safety education program: billboards with safety messages, Safe Teen Week observed at the high school, safety presentations at civic and religious organizations, and promotion of the AARP Driver Safety Refresher Course. A School Resource Officer is paid for by the annual Board of Education budget, which allows other officers to focus on enforcement and education strategies throughout the Town.

CT-140 and Tolland Avenue
This is a stop-controlled, skewed three-way intersection. Stop control is on Tolland Avenue. CT-140 has been repaved.

CT-319 and CT-190
The State is going to install a roundabout at this intersection in 2020, to reduce the angle crashes. The project will be 100% federally funded.

Main Street
There is on-street parking on both sides of roadway with narrow travel lanes though downtown. The Town stated the roadway neck downs are difficult for trucks to navigate; however, they are a good traffic calming measure. This street had poor illumination and new LED lights has been installed by the Town. In addition, Town representatives want bump outs to be considered for pedestrian crossings.

CT-190
This is a state road with a cluster of crashes from Orcutville Road east to CT-140. Many of the incidents are front-to-rear crashes and are related to congestion and distraction. The Town is concerned with the high number of crashes in this area.

The vertical curvature along CT-190 where the Johnson Memorial Hospital is situated is an issue in inclement weather. Ambulances struggle to climb the slope, and the Town has to wait until the State plows the roadway. The Town would like the State to prioritize this segment of CT-190 and does not want to treat the roadway, at times vehicles get stuck on the hills due to snow.

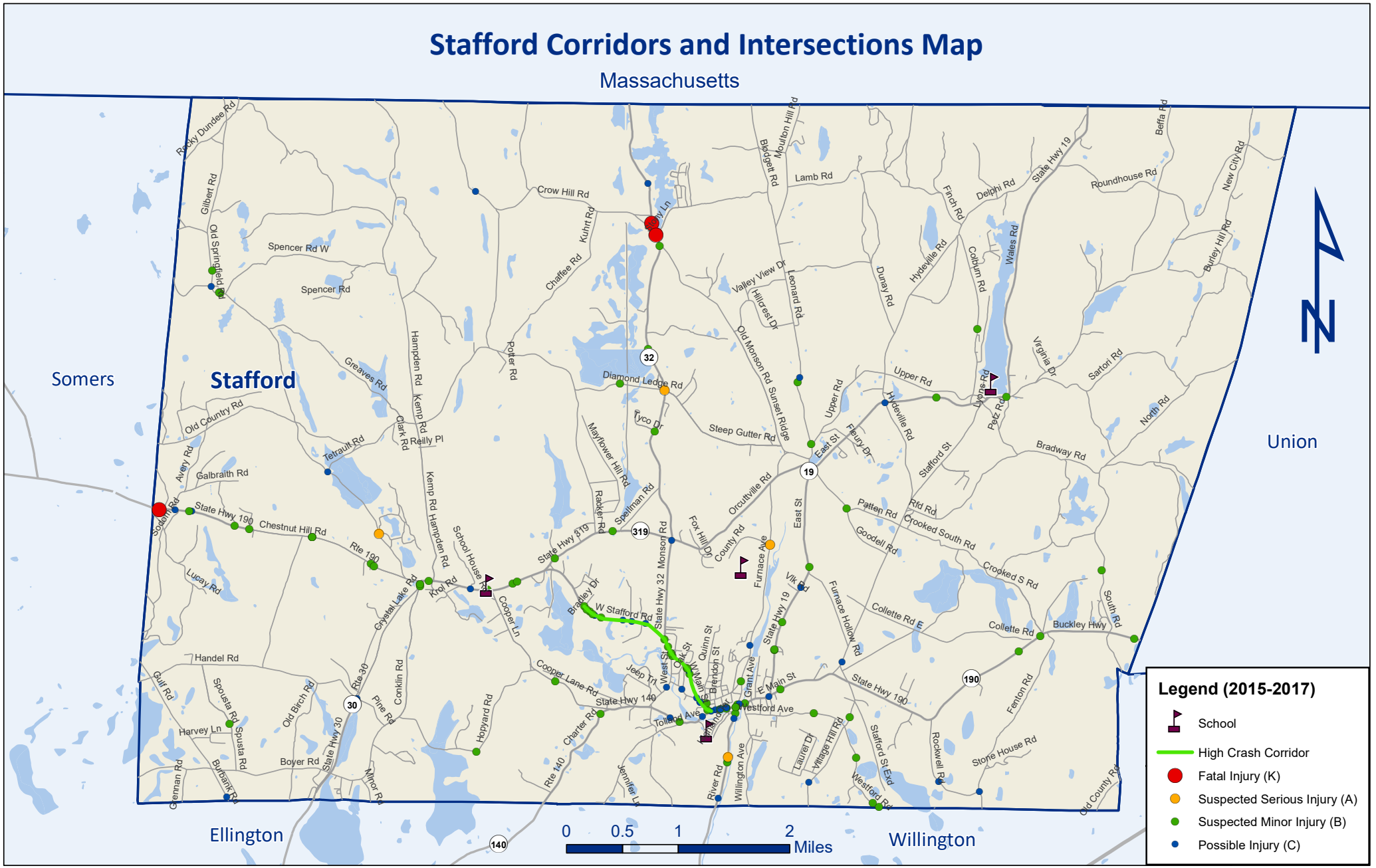
School zone warning signs with flashing beacons were installed on CT-190. The flashers operate during arrival and dismissal times (45 minutes before and after).

Stafford Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	0	2	1
Suspected Serious Injury (A)	0	3	2
Suspected Minor Injury (B)	27	21	27
Possible Injury (C)	9	12	19
Total Injury Crashes	36	38	49

Stafford Corridors and Intersections Map

Massachusetts



Legend (2015-2017)

- School
- High Crash Corridor
- Fatal Injury (K)
- Suspected Serious Injury (A)
- Suspected Minor Injury (B)
- Possible Injury (C)

Field Site Inventory

CT-190 Corridor (access to Johnson Memorial Hospital)

Johnson Memorial Hospital is a regional, fully integrated hospital and is also the largest employer in the region. CT-190 provides the only access to and from Johnson Memorial Hospital, so it is a critical roadway serving the region from a health and emergency access perspective. CT-190 near the hospital is a rural roadway with a travel lane in each direction, varying shoulder widths and a posted speed limit of 45 MPH. The hospital's entrance is situated at the top of a significant vertical curve (hill) with long steep downgrades along CT-190 to both the east and west. During minor snow events, it can be difficult to access the hospital due to these steep grades. During larger snow events, the established CTDOT plow route and schedule has a difficult time keeping the road clear for access to the hospital for emergency vehicles and staff.

Recommendation:

- The Town should work with CTDOT District 1 to modify the plow routes and schedule to provide more plow passes in this area.

CT-140 and Tolland Avenue

CT-140 and Tolland Avenue is a stop-controlled Y-intersection with stop control on Tolland Avenue. CT-140 has been repaved. The two roadways intersect at a slope, with the higher downgrade along Tolland Avenue.

There is significant roadway elevation differential and tight turning radii from Tolland Avenue to CT-140. The turning radius from CT-140 onto Tolland Ave Motorists traveling east on CT-140 have to make a difficult turning maneuver onto Tolland Avenue due to tight turning radius. Sight distance is limited for all approaches due to roadway curvature and the offset of the travel lanes.

Recommendations:

- Level the grade between CT-140 and Tolland Avenue and relocate existing electrical poles.
- Repave and restripe CT-140 (Park Street)
- Investigate possibility for an all-way stop at CT-140 and Tolland Ave.
- Dynamic speed feedback sign on CT-140.

CT-140 and Tolland Avenue

CT-190 vertical curvature

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-190 (Chesnut Hill Road/West Stafford Road/West Main Street/Main Street/East Main Street) Corridor (access to Johnson Memorial Hospital)	Difficult access to regional integrated hospital in inclement weather (vertical curve)	Coordinate with CTDOT District 1 to potentially modify the plow routes and schedule to provide more plow passes in this particular area	Low-Medium
CT-140 (Park Street) and Tolland Avenue	Difficult intersection with limited sight distance and turning radii issues	Level out the grade between CT-140 (Park Street) and Tolland Avenue and relocate existing electrical poles	Medium-High
		Repave and restripe CT-140 (Park Street)	Medium
		Dynamic speed feedback sign on CT-140 (Park Street)	Low
		Investigate installing three way stop	Low-Medium
Main Street Corridor	Narrow travel lanes	Eliminate one side on street parking to increase travel lane widths	Low
	Poor illumination	Updated roadway illumination	Low-Medium
	Pedestrian crossing	Raise crosswalks	Low-Medium

TOWN OF SUFFIELD

2016 U.S. Census Population Estimate: 15,625
Area: 42 square miles
Population Density: 370 per square mile
2016 Vehicle Miles Traveled (VMT): 97,317,030
2016 VMT per Capita: 6,228
Setting: Rural/Suburban
Date of Meeting with Town: April 9, 2019
Town and Regional Representatives: Melissa Mack (First Selectman), Bill Hawkins (Planning and Zoning), Gerry Turbet (Town Engineer), Art Groux (EMS), Mike Thibedeau (Fire Department), Richard Brown (Police Department), Chuck Flynn (Fire Department), Terri Thompson (CRCOG)
Data-Identified High Frequency Crash Corridors: CT 168-Mountain Road (from Phelps Road to CT-187-North Grand Street); CT-159-East Street N (From CT-513-Bridge Street to Thompsonville Road)
Bike and Pedestrian Crash Totals: 12
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 195

Source: VN Engineers

Overview

Suffield is a town located in the Connecticut River Valley and is bordered by Enfield to the east, East Granby and Windsor Locks to the south, Granby and Massachusetts to the west and Massachusetts to the north.

Town Input

Fatal Crashes

There were three fatal crashes during this study period:

- CT-168 on the Massachusetts state line-substance-impaired motorcycle fatal crash.
- East Street (CT-159) north of Boston Neck Road–substance-impaired motorcycle fatal crash.
- East Street (CT-159) at Bridge Street (CT-513)-fatal crash.

CT-159

This route has high traffic volume and high travel speeds. The integrity of most of the intersections along CT-159 is compromised due to growing traffic volumes, vertical curvature and high mainline speeds.

CT-159 and CT-190
This is a signalized four-way intersection with high peak period commuter traffic volumes. Recent CTDOT improvement left the No Turn on Red sign posted for CT-190 northbound on the side of the road not visible to the first two queued vehicles. The Town wants the State to place the sign on the signal arm.

CT-75
This State road is a concern for high traffic volumes and heavy motorcycle and bicycle use.

CT-168
Crashes on CT-168 to the west of North Stone Road were along the vertical and horizontal curves. Inclement weather and high travel speeds are contributing crash factors. A portion of the corridor is designated as an oversized truck route given its east-west access to the CT-190 bridge over the Connecticut River.

South Stone Road
This road has high traffic volumes and is used as a cut through.

CT-168 at South Stone and North Stone
This is under stop control with high approach speeds and rolling stops. Speed tables were installed a few years ago, but this has not fully prevented speeding.

Possible Tolls
The Town representatives expressed concern that the installation of a tolling system on the state highways will negatively affect Suffield due to increased traffic within their Town, especially with their proximity to the attractions like the casino, the Big E in Springfield, and Bradley Airport.

CT-75 and Bridge Street
This is a signalized T-intersection with close proximity to the intersection of CT-75 and CT-168, which is 250 feet to the north. CTDOT is currently redesigning this signal and proposing geometric modifications for this site. The Town advocates roundabouts at both intersections but not sure it they are feasible due to ROW constraints. They will investigate this possibility.

Source: VN Engineers

Pedestrians and Cyclists
Suffield is a popular destination or thru destination for cyclists but the roadways have narrow shoulders and narrow cross sections. CT-75 is the most popular bike route. The Town would like CTDOT to narrow travel lanes to 11 feet to and designate additional shoulder width for cyclists along state routes.

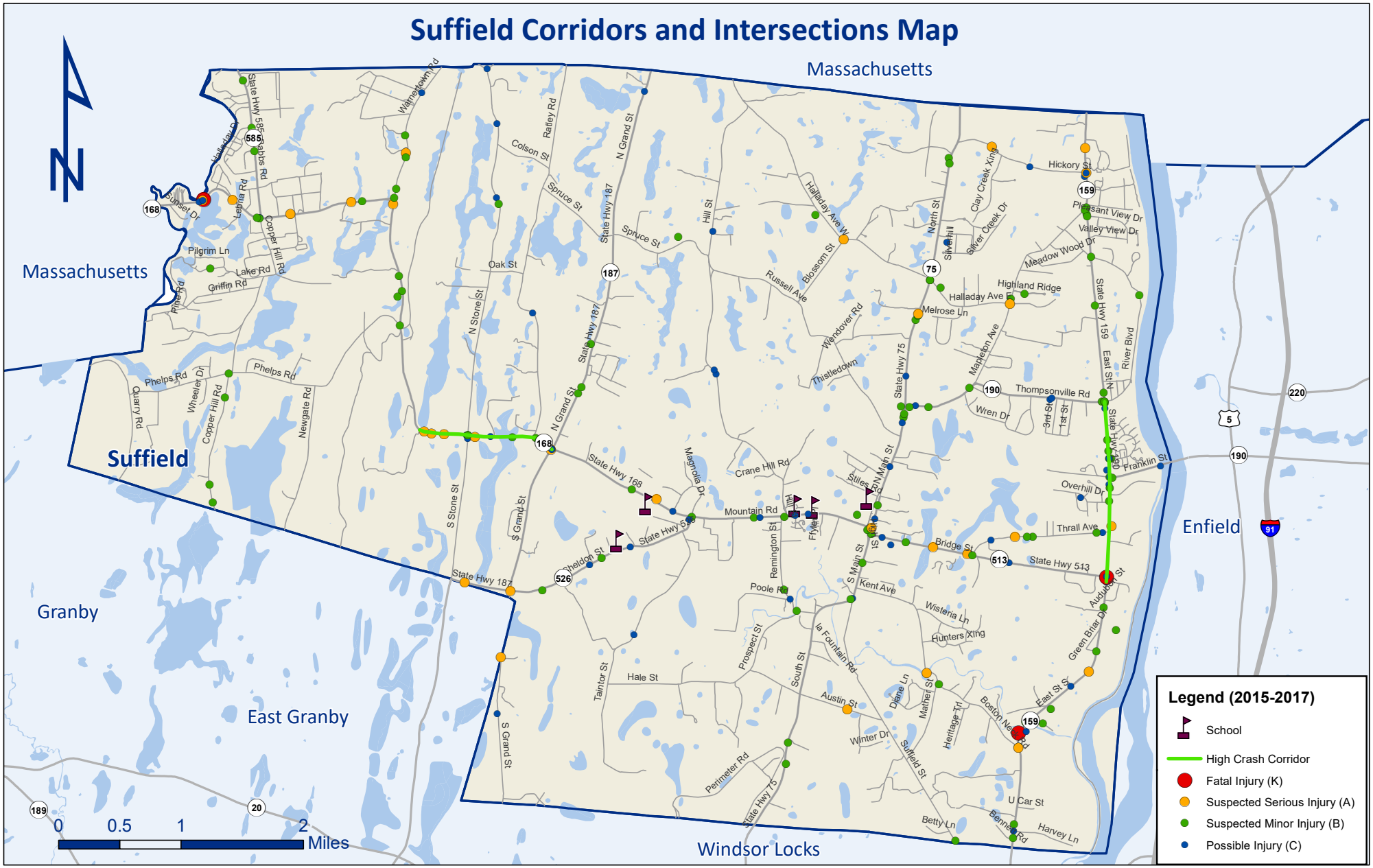
There have been fatal pedestrian crashes along Bridge street, Mapleton Avenue, and near Suffield Academy. The mid-block crosswalks located on CT-75, Mountain Road and Bridge Street, near Town Center, should be evaluated to determine level of use, location, visibility, etc. Sidewalks are being added to Mountain Road and Bridge Street and a multi-use trail is being installed on Mountain Road using a LOTCIP Grant. CT-190 is also getting sidewalks with funding from a CT Community Connectivity Grant.

CT-187 to CT-168 to the CT-190 Bridge
This is a designated oversized vehicle route which concerns the Town because this is where the development of new sidewalks and multi-use trails are being installed and there are schools along these corridors.

Suffield Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	3	0	0
Suspected Serious Injury (A)	6	11	13
Suspected Minor Injury (B)	33	33	32
Possible Injury (C)	24	18	22
Total Injury Crashes	66	62	67

Suffield Corridors and Intersections Map



Field Site Inventory

CT-168 from Remington Street west of Sheldon Street

This segment of CT-168 is the site of a proposed 10-foot-wide multi-use path of approximately 4,500 feet on the northside of Mountain Road connecting to the existing sidewalk on the southside of CT-168. This is a highly traveled corridor with the speed limit posted at 35 MPH.

One of the proposed crosswalks would be just west of Sheldon Street which has limited sight distance due to horizontal curvature. The posted speed limit is 35 MPH which puts into question if this is the optimal spot for a crosswalk. If a crosswalk is installed just west of Sheldon Street, advanced warning signs and other pedestrian crossing amenities should be investigated and installed for additional safety.

Recommendations:

- Install an advanced pedestrian crossing warning sign with flashers prior to crosswalk.
- Rectangular rapid flashing beacon or pedestrian hybrid beacon.
- High-visibility crosswalk.

CT-159 and Boston Neck Road

CT-159 generally runs north-south with a posted speed limit of 35 MPH. Surrounding land use is agricultural and rural -residential. The intersection of CT-159 with Boston Neck Road is a skewed three-legged intersection with the side street approach of Boston Neck Road under stop control. Sight distance is limited due to the skew of the intersection and horizontal and vertical curves of CT-159.

Recommendation:

- Consider land acquisitions to better align the intersection and improve sight lines.

CT-159 and Boston Neck Road

Horizontal curve on CT-168 looking west towards proposed crosswalk site

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-168 (Mountain Road) from Remington Street to Sheldon Street	Pedestrian safety	Investigate best site for the high-visibility crosswalks	Low
		Watch for Me CT campaign	Low
		Investigate installing a pedestrian hybrid beacon or RRFB	Low-Medium
		MUTCD W11-2 (Pedestrian Warning) Sign with flashers	Low
CT-168 (Mountain Road) at South Stone Street and North Stone Street	Speeding	Dynamic speed feedback signs	Low
		Update stop signs to flashing LED stop sign on Stone Street	Low
		High visibility enforcement	Low-Medium
	Sight distance	Vegetation management	Low
CT-75 (North Street/North Main Street/ South Main Street/South Street)	Congestion	Signal optimization	Low-Medium
	Heavy motorcycle and bicycle use	Add bike lanes	Low-Medium
		Share the Road campaign	Low-Medium
		Adoption of complete streets policy	Low
CT-159 (East Street South) and Boston Neck Road	Limited sight distance	Realign intersection	Medium

TOWN OF TOLLAND

2016 U.S. Census Population Estimate: 14,791
Area: 40 square miles
Population Density: 373 per square mile
2016 Vehicle Miles Traveled (VMT): 261,401,685
2016 VMT per Capita: 17,673
Setting: Rural
Date of Meeting with Town: April 10, 2019
Town and Regional Representatives: Steve Werbner (Town Manager); Heidi Samokar (Director Planning and Development); Terri Thompson (CRCOG); Kevin Eklund (State Police)
Data-Identified High Frequency Crash Corridors: CT 195-Merrow Road (From Old Post Road to Baxter Street)
Bike and Pedestrian Crash Totals: 7
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 157

Source: VN Engineers

Overview

Tolland is a rural small town located in Tolland County, and is bordered by Willington to the east, Coventry to the south, Ellington and Vernon to the west and Ellington to the north.

Town Input

Inclement Weather
Inclement weather associated with snow and ice tend to be more prevalent in Tolland and can significantly impact travel on local and state roads. In some cases, the Town ends up plowing and sanding some state routes because of poor road conditions. The Town would like to work with CTDOT to develop priority corridors to assist in mitigating poor travel conditions on key roads. They recommend inclement weather warning signs for the portion of I-84 that historically has had a very high frequency of crashes due to poor weather conditions.

Speeding and Distracted Driving
These two behavior related issues are a consistent concern in Town.

CT-30 at Brown Bridge Road
This intersection is under side street stop control with a flashing yellow beacon and with the side street having a flashing red beacon. There are high travel speeds along CT-30 and poor sight lines from the side streets. The Town has requested assistance from CTDOT to address this location. State Police actively monitor this location for high travel speeds.

CT-195 between Rhodes Road and Storrs Town Line
This intersection has high travel speeds, aggressive driving, and minimal road cross-section. There are issues at key intersections along the corridor. Inclement weather impacts the road corridor. This is a commuter route to UCONN and heavily used for UCONN basketball games. It is a good candidate for centerline rumble strips.

CT-195 at Baxter Street and Anthony Street

This intersection is under side street stop control, however it can be difficult to exit side streets due to lack of gaps. The intersection has been studied by CTDOT and CRCOG and does not meet signal warrants. The Town stakeholders were concerned regarding impacts caused by future developments.

CT-195 at Big Y Driveway

New median islands with vegetation have been installed, however, the Town would like CTDOT to identify a standard low maintenance hardy plant species that can be used for this type of treatment.

CT-30 at Old Post Road

This intersection has high traffic volume and travel speeds on CT-30. There are numerous commercial driveways. There is inadequate sight distance from Old Post Road. The Town would like this intersection signalized.

CT-74 at Shepard Road

There was recent construction of road, signage and drainage improvements along this section of CT-74, however, the guide rail south of Shepard Road was not reinstalled.

Enforcement

The State Police actively monitor speed with recently purchased speed data/ indicator collectors. They focus enforcement efforts based on data from the speed data collectors.

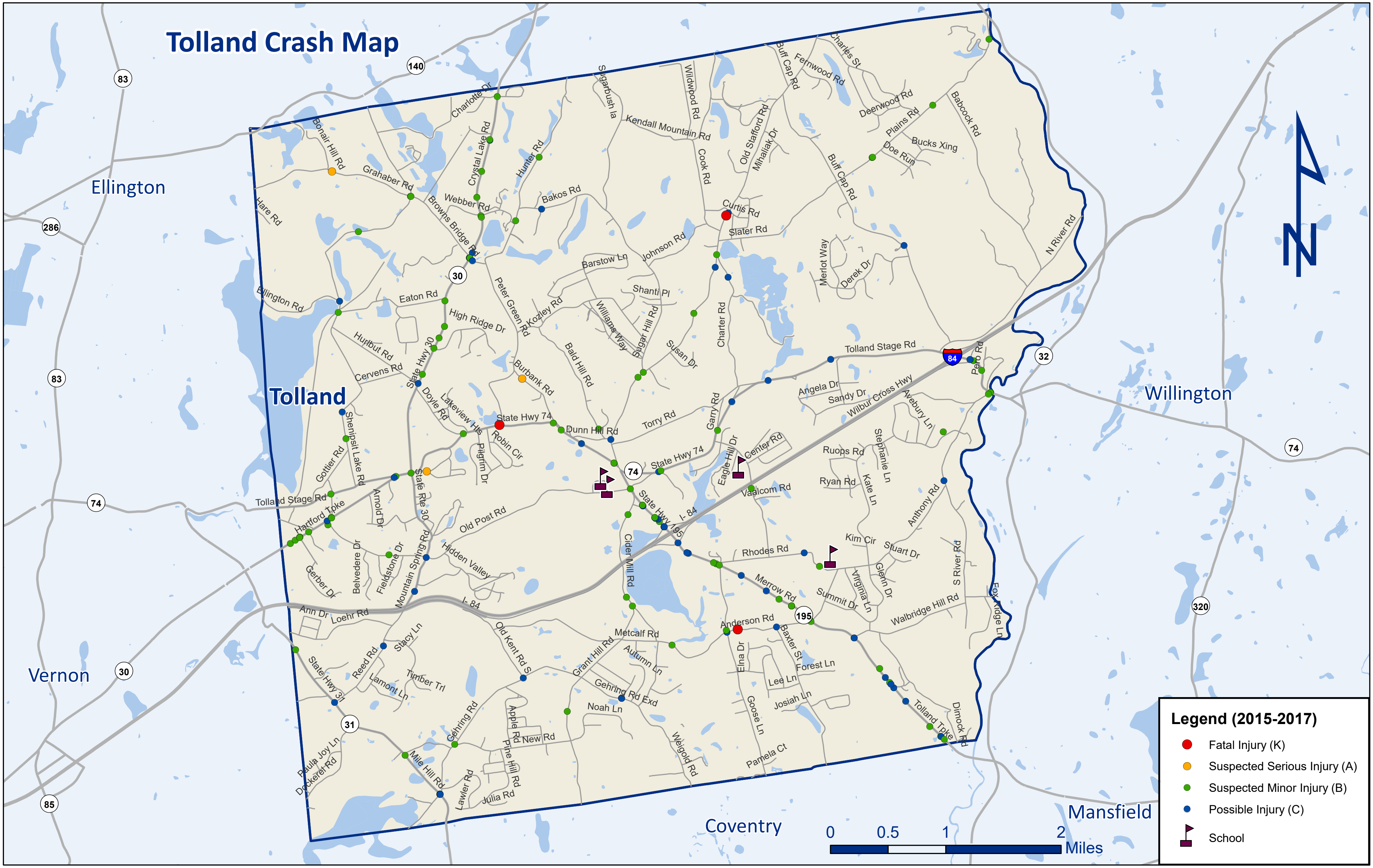
Bike Issues

The Town is currently developing a town-wide bike plan as part of their Plan of Conservation and Development.

Tolland Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	1	1	1
Suspected Serious Injury (A)	0	3	0
Suspected Minor Injury (B)	39	28	25
Possible Injury (C)	17	18	24
Total Injury Crashes	57	50	50

Source: VN Engineers


Tolland Crash Map
Tolland
Ellington
Vernon
Willington
Coventry
Mansfield
Legend (2015-2017)
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
School
0
0.5
1
2
Miles
N
I- 84
State Hwy 74
State Hwy 195
State Hwy 31
State Rte 30
Tolland Stage Rd
Tolland Tpke
Hartford Tpke
Old Post Rd
Anderson Rd
Merrow Rd
Rhodes Rd
Walbridge Hill Rd
Metcalf Rd
Grant Hill Rd
Gehring Rd
Mile Hill Rd
Old Kent Rd S
Cider Mill Rd
Eagle Hill Dr
Center Rd
Vaalcom Rd
Torry Rd
Dunn Hill Rd
Burbank Rd
Peter Green Rd
Kozley Rd
Bald Hill Rd
Sugar Hill Rd
Charter Rd
Curtis Rd
Slater Rd
Johnson Rd
Barstow Ln
Kendall Mountain Rd
Cook Rd
Old Stafford Rd
Buff Cap Rd
Fernwood Rd
Charles St
Babcock Rd
Deerwood Rd
Plains Rd
Bucks Xing
N River Rd
S River Rd
Crystal Lake Rd
Charlotte Dr
Hunter Rd
Bakos Rd
Webber Rd
Browns Bridge Rd
Grahaber Rd
Bonair Hill Rd
Hare Rd
Ellington Rd
Eaton Rd
High Ridge Dr
Hurlbut Rd
Cervens Rd
Sheripsit Lake Rd
Gottier Rd
Arnold Dr
Mountain Spring Rd
Hidden Valley
Loehr Rd
Ann Dr
Reed Rd
Stacy Ln
Timber Trl
Lamont Ln
Apple Rd
New Rd
Pine Hill Rd
Julia Rd
Lawler Rd
Weigold Rd
Pamela Ct
Goose Ln
Josiah Ln
Lee Ln
Forest Ln
Baxter St
Elna Dr
Dimock Rd
Fox Ridge Ln
Anthony Rd
Kim Cir
Stuart Dr
Ryan Rd
Ruops Rd
Kate Ln
Stephanie Ln
Angela Dr
Sandy Dr
Wilbur Cross Hwy
Merlot Way
Derek Dr
Pero Rd
83
286
74
30
31
85
140
195
32
320
84

Field Site Inventory

CT-30 at Brown Bridge Road/Hunter Road

CT-30 generally runs north-south with a posted speed limit of 45 MPH and the surrounding land use is rural residential. The intersection of CT-30 with Brown Bridge Road/Hunter Road is a skewed intersection with both side street approaches under stop control. The intersection also has a flashing beacon to increase the visibility of the intersection.

The Brown Bridge Road approach has obstructed sight lines due to vertical and horizontal curve. There is no stop bar. An outdated stop ahead sign is located approximately 500 feet back from the intersection along this approach. In addition, sight distance to the north from Brown Bridge Road is obstructed by a vertical curve along CT-30 and a utility control box on the northwest corner of the intersection. The Hunter Road approach also has poor sight distance to the north due to the vertical curve along CT-30.

Recommendations:

- Improve the Brown Bridge Road approach by updating the advanced warning sign to inform drivers of the stop ahead and installing a stop bar.
- Improve sight line from Brown Bridge Road looking north by relocating the obstructing utilities.

CT-30 at Old Post Road

Near Old Post Road, CT-30 has a posted speed limit of 45 MPH with one travel lane in each direction and approximately four-foot shoulders. The surrounding land use is generally commercial. Old Post Road is under stop control with no established shoulders. On the Old Post Road approach, both the stop bar and stop sign are set approximately 20 feet from the edge of CT-30 impacting sight lines in both directions. To the north, sight lines are significantly obstructed by a stone wall and overgrown brush and are further compromised by the stop control being setback from the intersection. To the south, the sight lines are obstructed by a "moveable" advertisement sign and a permanent sign associated with the adjacent gas station.

Recommendation:

- Improve sight lines from Old Post Road by reviewing the stop sign and stop bar location, removing overgrown brush to the south and eliminating or relocating commercial signage to the north.

Browns Bridge and CT-130

Old Post Road and CT-30

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-30 (Crystal Lake Road) at Brown Bridge Road and Hunter Road	Intersection issues	Update the advanced warning sign to inform drivers of the stop ahead	Low-Medium
		Relocate stop bar	
	Sight distance	Relocate utilities	Low-Medium
CT-30 (Hartford Turnpike) at Old Post Road	Limited sight distance at the intersection	Review stop sign and stop bar location	Medium
		Remove overgrown brush	Low
		Relocate commercial signage	Low
CT-195 (Merrow Road/Tolland Turnpike) between Rhodes Road and Storrs Town Line	Speeding	High-visibility enforcement	Low-Medium
	High traffic	Signal optimization	Low-Medium

TOWN OF VERNON

2016 U.S. Census Population Estimate: 29,148
Area: 18 square miles
Population Density: 1,647 per square mile
2016 Vehicle Miles Traveled (VMT): 289,221,985
2016 VMT per Capita: 9,923
Setting: Suburban
Date of Meeting with Town: May 20, 2019
Town and Regional Representatives: Jim Kenny (Chief Police); David Smith (Town Engineer); Allison Maynard (Social Services); Daniel Champagne (Mayor); Michael Purcaro (Town of Vernon); Devon Lechtenberg (CRCOG)
Data-Identified High Frequency Crash Corridors: CT-83-Windsor Avenue (From Windermere Avenue to CT-74-Windsorville Road and from Green Circle Road to Wilshire Drive); CT-30-Hartford Turnpike (from Hillside Avenue to Pitkin Road); CT-527-West Street (from West Main Street to South Street)
Data-Identified High Frequency Crash Intersections: CT-83-Talcottville Road and Regan Road CT-83-Talcottville Road and Kelly Road; CT-30-Hartford Turnpike and Bolton Road; CT-30-Hartford Turnpike and Grove Street
Bike and Pedestrian Crash Totals: 27
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 479

Source: VN Engineers

Overview

Vernon is a town located in Tolland County, and is bordered by Tolland and Coventry to the east, Bolton and Manchester to the south, South Windsor and Manchester to the west and Ellington to the north.

Town Input

Fatal Crashes

- CT-30 - Unrestrained fatal crash.
- Bolton Road - Substance impaired/aggressive driving/no helmet motorcycle fatal crash.
- Bolton Road - Substance impaired/older driver/aggressive driving motorcycle fatal crash.
- CT-83 - A town representative stated a serious injury crash on CT-83 near Merline Drive resulted in a fatality. The repository does not reflect this updated crash classification.

Enforcement
The police chief expressed concern over the disparity between resident demographics versus actual in-town road-user demographics that skew any racial profiling studies and consequently affects enforcement. Officers are reluctant to pull over underrepresented motorists because they don't want to be stigmatized for racial profiling.

Drug Recognition Experts (DREs) - The Town of Vernon has two DREs and would like to increase the number of certified officers but the program is cost prohibitive. The Town would like the State to fund the trainings, especially considering potential enforcement issues with the future marijuana legalization.

CT-30 (Hartford Turnpike) and East Street
East Street is one-way from Hartford Turnpike. Angle crashes are prevalent at this intersection from motorists making a left turn onto East Street from Hartford Turnpike eastbound who get struck from through motorists on Hartford Turnpike westbound. A future apartment complex will affect traffic at this intersection and the CT-30 and CT-31 intersection to the west. This intersection is close to the intersection of CT-30 and CT-31.

CT-30 (Hartford Turnpike) and Grove Street (CT-31)
This is a high crash four-way signalized intersection. Most of the incidents involve angle crashes. There is no dedicated left turn signal phasing for Grove Street southbound. During rush hour oncoming motorists wave cars onto Hartford Turnpike which often result in angle crashes. A new signal is being installed at this intersection by CTDOT.

CT-30 (Hartford Turnpike) and West Street
This is a stop controlled Y-intersection creating very difficult sight constraints from the side street (West Street). There are a high number of rear-end crashes at this intersection. Constraint due to historic home on the northwest corner limits redesign of the intersection. The State has already made some improvements.

CT-83 (Talcottville Road) and Regan Road
This is a four-way signalized intersection with high volumes of peak period traffic and reported front-to-rear crashes.

CT-83 (Talcottville Road) and Kelly Road
This is a wide four-way signalized intersection with the most traffic volume in the Town. The Town reported this intersection has high crash frequency.

CT-83 and CT-31 Corridors
These two corridors have high traffic volume/congestion particularly during peak periods. They are both commuter routes to and from I-84, from surrounding communities and major north-south routes in town.

CT-527 (West Street)
This is a high volume local collector road serving significant residential development.

CT-30 (Hartford Turnpike) and Rein's Deli Plaza
This is a four-way signalized intersection, cross streets are commercial driveways. There are no designated left turn lanes or left-turn signal phasing.

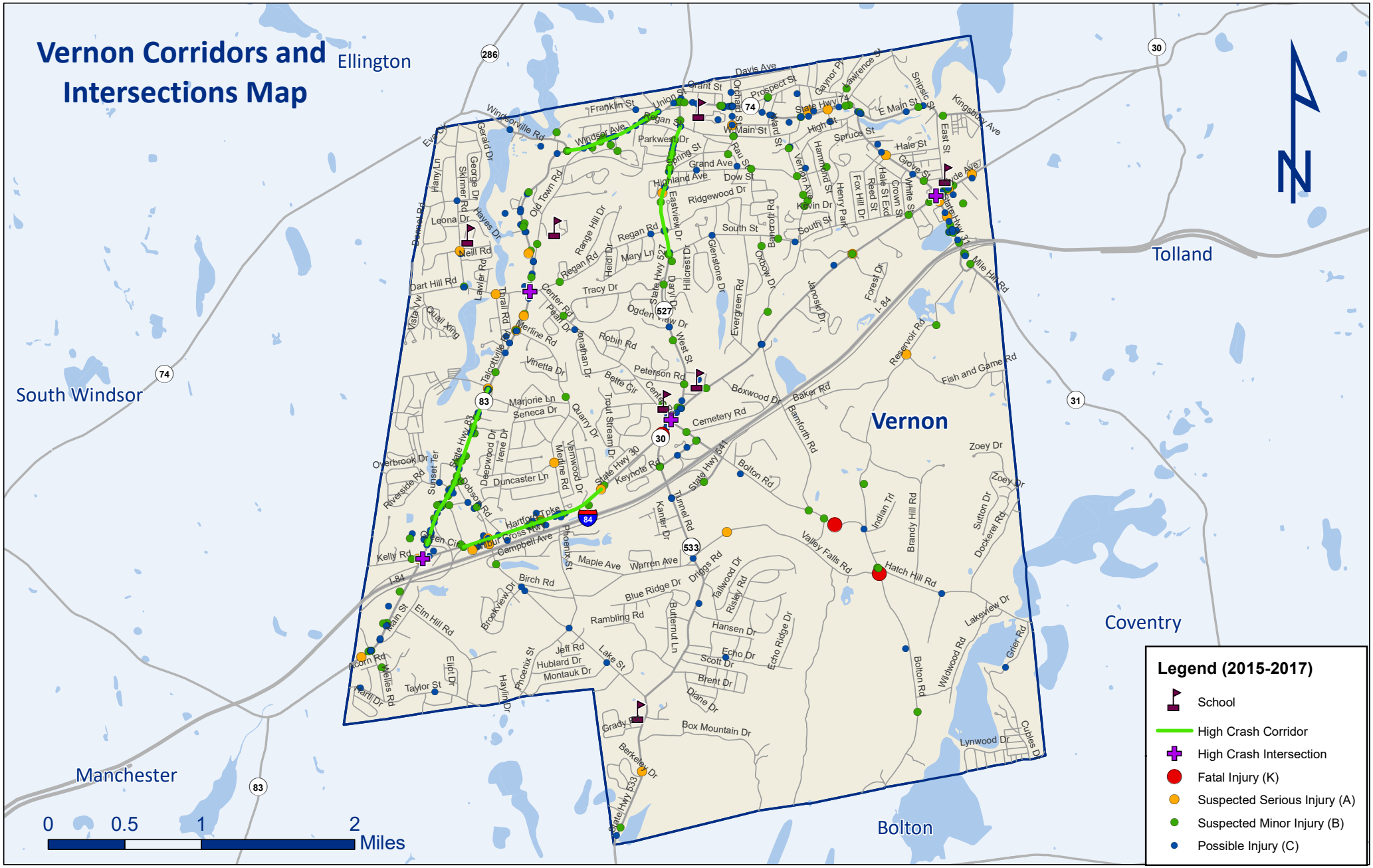
Pedestrian Safety
High volumes of pedestrians on Hartford Turnpike despite the lack of sidewalks. Pedestrians also use CT-83 which also lacks sidewalks.

I-84 at Reed Road/Mountain Road Overpass Area (Tolland)
A new Interchange at this location would assist in relieving the on-going growth in traffic volumes through Vernon by providing an alternative route to Ellington and Somers. An interchange was removed at this location in the past due to grade considerations.

Vernon Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	1	1	1
Suspected Serious Injury (A)	8	14	7
Suspected Minor Injury (B)	42	61	56
Possible Injury (C)	85	101	102
Total Injury Crashes	136	177	166

Vernon Corridors and Intersections Map



Field Site Inventory

CT-527 (West Street) and CT-30 (Hartford Turnpike)

This is a skewed stop-controlled Y-intersection with limited sight distance for motorists from West Street turning left onto CT-30. Sight distance is limited by the vegetation adjacent to the historic home on the north eastern corner and a series of utility poles along the northern side of CT-30. In addition, there is a slight crest on CT-30 west of West Street.

There has been a high number of front-to-rear crashes at this intersection.

Another factor to consider is this intersection is located near Vernon Center Middle School and Center Road School and is directly adjacent to the Vernon Police Department.

Recommendations:

- Investigate a signal warrant or multi-way stop control.
- Investigate roundabout.
- Dynamic speed feedbacks signs to reduce high speed on CT-30 North (before West Street intersection).
- Prohibit left turn from West Street to CT-30 and add Right turn Only sign in planting area of CT-30 right of way.

CT-30 (Hyde Ave) at East Street and South Grove Street

The intersection of CT-30, East Street and South Grove Street is an offset unsignalized intersection with both East Street and South Grove Street designated as one-way away from the intersection.

This one-way configuration is to prohibit vehicles from exiting the side streets due to its close proximity (approximately 200 feet east) to the heavily congested signalized intersection of CT-30 and CT-31 (Grove Street). Vehicles turning left onto East Street from CT-30 westbound are often blocked by two lanes of queued westbound vehicles from the adjacent intersection. Crashes occur when a motorist in the first lane waves on the left turning vehicle and the motorist cannot assess if there is an appropriate gap in traffic in the second westbound lane.

Recommendations:

- Prohibit eastbound left-turns from CT-30 to East Street by installing a center median.
- Consider closing the section of East Street from Fern Street to CT-30. Diverted trips could utilize Kingsbury Ave and or CT-31 to access points to the north access points to the north.

West Street and CT-30

CT-30 (Hyde Ave) at East Street and South Grove Street

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-527 (West Street) and CT-30 (Hartford Turnpike)	Sight distance	Investigate multi way stop sign warrants	Low-Medium
		Investigate a roundabout	High
	Front-to-rear crashes	Prohibit left turn from West Street to CT-30 (Hartford Turnpike) and add Right Turn Only sign	Low-Medium
		Investigate traffic signal installation to control the intersection	Low-Medium
	Speeding	Install dynamic speed feedback signs	Low
CT-30 (Hyde Avenue) at East Street and South Grove Street	Turning vehicle crashes	Prohibit eastbound left turns from CT-30 (Hyde Avenue) to East Street	Low-Medium
	Traffic queue in left turn lane from CT-30 (Hyde Avenue) to East Street		
	Traffic queue in left turn lane from CT-30 (Hyde Avenue) to East Street Congestion	Consider closing the section of East Street from Fern Street to CT-30 (Hyde Avenue)	Medium-High
CT-83 (Talcottville Road) and Kelly Road	High crashes	Traffic signal retroreflective backplates	Low-Medium
		Investigate signal phasing and timing	Low
CT-83 (Talcottville Road) and Kelly Road	Front-to-rear crashes	Traffic signal retroreflective backplates	Low-Medium
Hartford Turnpike and CT-83 (Talcottville Road)	Pedestrian safety - high volume and lacks sidewalk	Seek funding for sidewalks through STEAP and LOTCIP	Low-Medium

TOWN OF WEST HARTFORD

2016 U.S. Census Population Estimate: 62,903
Area: 22 square miles
Population Density: 2,859 per square mile
2016 Vehicle Miles Traveled (VMT): 407,737,485
2016 VMT per Capita: 6,482
Setting: Suburban
Date of Meeting with Town: January 8, 2019
Town and Regional Representatives: Duane Martin (West Hartford Engineering) and Greg Sommer (West Hartford Engineering)
Bike and Pedestrian Crash Totals: 101
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 1,437

Source: VN Engineers

Data-Identified High Frequency Crash Corridors

CT-189-Bloomfield Avenue (from US-44 Albany Avenue to Bloomfield town line)	Park Road (from Prospect Avenue to Quaker Lane South)
CT-218-North Main Street (from West Ridge Drive to Lawler Road and from Fern Street to Park Road)	New Park Avenue (from Layton Street to Oakwood Avenue)
Trout Brook Drive (from Farmington Avenue to Park Road)	CT-529 - New Britain Avenue (from Shield Street to Davenport Road)
Farmington Avenue (from South Highland Street to Quaker Lane South)	Farmington Avenue (from Outlook Avenue to Four Mile Road)

Data-Identified High Crash Intersections

South Main Street and CT-173 - New Britain Avenue	Farmington Avenue and Trout Brook Drive
CT-71 - New Britain Avenue and Ridgewood Road	Trout Brook Drive and Boulevard
New Park Avenue and Flatbush Avenue	Trout Brook Drive and Asylum Avenue
Prospect Avenue and Kane Street	US-44-Albany Avenue and Trout Brook Drive

Overview

West Hartford is a larger town within CRCOG. The Town is bordered by Hartford to the east, Newington to the south, Farmington and Avon to the west and Bloomfield to the north.

Town Input

The Town discussed the five fatalities on non-limited access highways in the three years of collected data. Two were on CT-44 one possibly due to speeding. Two fatalities involved pedestrians. The Town wants to stay abreast of crashes so that they remain cognizant of any potential traffic safety concerns.

Bike and Pedestrian Issues
There is heavy bike and pedestrian traffic in town. The Town has an active advocacy group-the Pedestrian and Bicycle Commission. The Town has adopted a complete streets policy and has developed a bicycle facility plan which the Town references and incorporates into its town-wide projects. Bike lanes have been added and on-street parking has been reduced on South Main Street, Boulevard Avenue, and Asylum Avenue.

CT-173 (New Britain Avenue)
This roadway has high crash frequency and congestion. Peak hour traffic is diverted from I-84 congestion. CTDOT has completed the corridor study and determined that a road diet is not feasible from Berkshire to Mayflower. Signal phasing is an issue with no internal clearance.

CT-173 (New Britain Avenue) at Quaker Lane and Newington Road
This is an offset signalized intersection with exclusive pedestrian phase. Congestion and queueing occur at intersection which results in aggressive driving. The Town wants internal clearance phasing. The Town has sent recommended improvements to CTDOT.

New Park Ave and Flatbush Avenue
Some issues at this intersection are congestion, queueing, pedestrian traffic from CTfastrak, pedestrians jaywalking, constrained right of way, built out environment. The new Cumberland Farms on the southwest corner is highly patronized and the CTfastrak and I-84 east on-ramps are to the east of the intersection. New Park Avenue southbound has heavy left turn volume. Town considering possibility of double left turn lane. The crashes at New Park Ave and Foley Street are related to the issues at the intersection of New Park Ave and Flatbush Ave. A corridor study of New Park Ave was completed and LOTCIP application for improvements was submitted.

CT-218 (North Main Street)/US-44 (Albany Avenue) at Bishop's Corner
There are high curb cuts at this intersection. The Town already closed some driveways to improve access and reduce conflct points. CTDOT is looking at this intersection, analyzing crash history with a focus on pedestrian and bicycle safety. This was part of the CT Community Connectivity Grant. This intersection at Bishop's Corner is an area of significant congestion, high frequency of curb cuts, bus stops, and pedestrian activity. CTDOT planning is currently studying safety and pedestrian improvements at this intersection.

CT-44 (Albany Ave) at Trout Brook Drive/King Philip Drive
The Town owns the northern and southern leg of intersection. There are only one southbound and one northbound left-turn lanes and video detection were added.

There is heavy vehicle volume northbound turning left, so left turn lanes were extended. The Town states this intersection has improved due to these modifications. The Town has recently submitted a request for CTDOT to review this intersection for timing and phasing.

Trout Brook Drive and Asylum Avenue
UConn-owned parcel at this intersection is undergoing possible development which could warrant signal and roadway improvements.
The Town stated that the westbound leg of Asylum Avenue needs a right turn lane.

North Main Street
This is a high traffic corridor. A Phase 2 of a study plan for North Main Street is currently underway and includes a road diet that would reduce the four travel lanes to three with center left-turn lane.

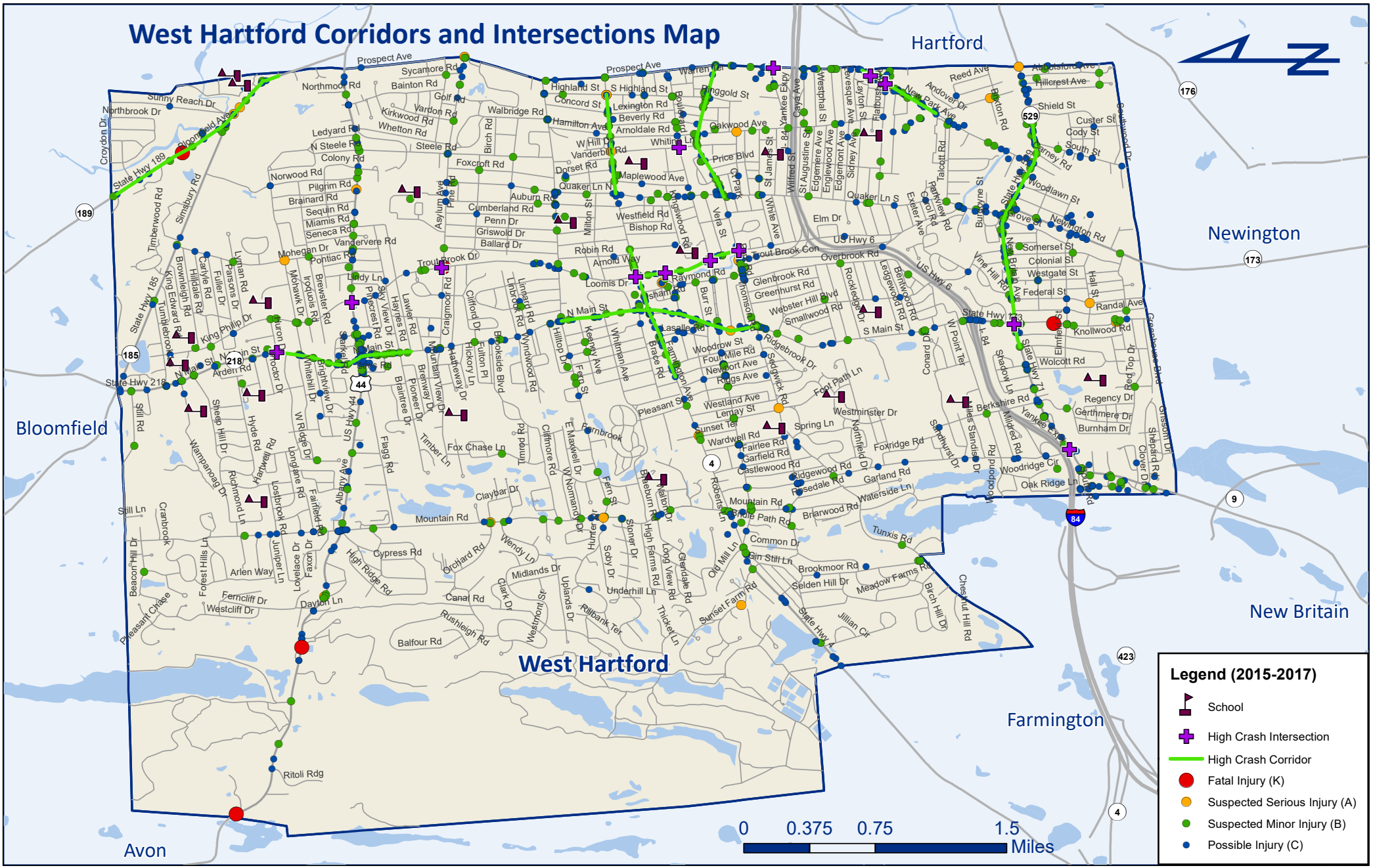
Simsbury Road and North Main Street
West Hartford wanted a roundabout at this intersection, but the Town of Bloomfield did not approve of it (the intersection is on the Town line). The intersection needs more left turn opportunities.

CT-189 (Bloomfield Avenue)
There is concern due to the vertical crest limiting sight distance at the high school driveway. These concerns were forwarded to CTDOT.

West Hartford Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	0	3	2
Suspected Serious Injury (A)	13	8	6
Suspected Minor Injury (B)	181	155	182
Possible Injury (C)	292	314	281
Total Injury Crashes	486	480	471

Source: VN Engineers


West Hartford Corridors and Intersections Map
Hartford
Newington
Bloomfield
West Hartford
New Britain
Farmington
Avon
0 0.375 0.75 1.5
Miles
Legend (2015-2017)
School
High Crash Intersection
High Crash Corridor
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)

Field Site Inventory

CT-173 (New Britain Avenue) and Grove Street/Quaker Lane South/Newington Road)

This intersection is along a heavy commuter route. It is a signalized four-way intersection with high traffic volumes and significant delays during the peak periods. There are three other signalized intersections with high traffic near this intersection. Motorists encroach on the crosswalks and intersection gridlock is common during signal changes.

In addition, there is high pedestrian traffic at the intersection. There are pedestrian signals. The Town repaved Quaker Lane and installed new crosswalk markings in 2019.

CT-173 - New Britain Avenue and Newington Road is an offset signalized T-intersection with an exclusive pedestrian phase and high traffic. This is a cut through for drivers to and from Newington. There are three closely spaced signalized intersections with high traffic, causing congestion in the crosswalks and intersection during signal changes. Pedestrian activity is high. The existing pedestrian signals are functioning. New Britain Avenue and Newington Road have posted speed limits of 30 MPH. Congestion and queuing at the intersection result in aggressive driving.

Recommendations:

- Intersection signal coordination.
- Repaint crosswalk on Quaker Lane South.
- Traffic signal retroreflective backplates.
- Intersections signal coordination.
- Traffic signal retroreflective backplates.
- Corridor access management.

New Park Avenue and Flatbush Avenue

This is a signalized four-way intersection with high traffic. Flatbush Avenue has a vertical slope and speeding was observed. This roadway has traffic from I-84 and US-6 traveling to the center of West Hartford. CTfastrak and I-84 east on-ramps are to the east of the intersection.

New Park Avenue southbound has heavy left turn volume. The curb cuts on Flatbush Avenue (East) near the intersection cause congestion as cars queue to make left turns into driveways. There are pedestrian signals.

Recommendations:

- High-visibility crosswalks.
- Signal optimization.
- Dynamic speed feedback sign.
- Traffic signal retroreflective backplates.

New Britain Ave and Grove Street and Quaker Lane South

New Park Avenue and Flatbush Avenue

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-173 (New Britain Avenue) and Grove Street/Quaker Lane South/Newington Road	Intersection crashes	Traffic signal retroreflective backplates	Low-Medium
	High curb cuts	Consider corridor access management	Low-Medium
	Traffic queue	Intersections signal optimization and coordination	Low-Medium
	Pedestrian safety	Watch for Me CT Campaign	Low
		High-visibility crosswalks - restripe crosswalk in Quaker Lane South	Low
New Park Avenue and Flatbush Avenue	Congestion	Traffic signal retroreflective backplates	Low-Medium
	Speeding	Dynamic speed feedback sign to install on Flatbush Avenue	Low
	Pedestrian traffic	High-visibility crosswalks	Low
	Traffic queue	Signal optimization	Low-Medium
CT-173 (New Britain Avenue)	High number of crashes	Corridor access management	Medium
	Congestion		
Fern Street and Walbridge Road	Pedestrian safety	High-visibility crosswalks	Low
		Watch for Me CT campaign	Low

TOWN OF WETHERSFIELD

2016 U.S. Census Population Estimate: 26,195
Area: 12 square miles
Population Density: 2,113 per square mile
2016 Vehicle Miles Traveled (VMT): 346,691,235
2016 VMT per Capita:13,235
Setting: Suburban
Date of Meeting with Town: February 1, 2019
Town and Regional Representatives: Derrick Gregor (Town Engineer), Kathy Bagley (Director-DSYS), Donald Crabtree (Town PD), Peter Gillespie (Town Planner), Devon Lechtenberg (CRCOG), Cheryl Assis (CRCOG)
Data-Identified High Frequency Crash Corridors: CT-99-Silas Deane Highway (from CT-3-Maple Street to Town Line Road)
Data-Identified High Crash Intersections: CT-99-Silas Deane Highway and CT-175-Wells Road; CT-314-Berlin Turnpike and Nott Street
Bike and Pedestrian Crash Totals: 23
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 460

Source: VN Engineers

Overview

Wethersfield is bordered by Hartford to the north, Rocky Hill to the south, Newington to the west and across the Connecticut River by East Hartford on the northeast and Glastonbury to the east.

Town Input

From 2015-2017, there were four fatal crashes in Town. Three of the four fatal crashes involved pedestrians. The town concurred that the dark conditions in these areas along with pedestrians crossing at unmarked locations were factors in these fatal crashes.

Silas Deane Highway
This is a high volume, four-lane corridor with a high number of crashes. There are many commercial and retail locations along the roadway.

Silas Deane Highway and Church Street
This is a high volume, signalized, four-way intersection. CTDOT moved crosswalks away from the intersection which concerns the Town because this may increase pedestrian crashes from right turns on red. The crosswalks are set so far back that motorists are not as likely to look for pedestrian before turning. This is especially disconcerting because this intersection is adjacent to several schools. A crossing guard is stationed at this intersection for school arrival and dismissal.

CT-99 (Silas Deane Highway) and Maple Street
This is a signalized four-way intersection with high volume, significant commuter traffic to and from Putnam Bridge, and a cluster of crashes. The Town said that they are more concerned about this intersection than Silas Deane Highway and Wells Road.

CT-99 (Silas Deane Highway) and Mill Street
This a signalized four-way intersection with exclusive pedestrian phase. Town said that because this is a popular commercial area and has high pedestrian usage, the signals should be redone to optimize timing. There were two pedestrians fatal crossing at mid-block.

CT-175 (Wells Road) and Goff Road
CTDOT is updating the traffic signals at this intersection. There is a through-left lane and exclusive right lane for the westbound Wells Road approach to Goff Road. The left turn in the eastbound lane on Wells Road at Goff Rd needs a left turn pocket. Goff Road is used as a cut through. This intersection is congested given it is along a key east-west corridor.

CT-314 (Jordan Lane) and Wolcott Hill Road
This is a confusing, four-way, stop controlled intersection given the overpass of CT-15 with a cluster of crashes. When there is congestion or a crash on I-91, motorists use Silas Deane Highway and Wolcott Hill Road as a cut through.

Nott Street and Wolcott Hill Road
This is a skewed stop-controlled intersection with Wolcott Hill Road which splits around Francis Green, creating two intersections with Nott Street. It is near Charles Wright Elementary School which has a high percentage of walkers.

Wolcott Hill Road
The Town said that the LOTCIP funded improvements on Wolcott Hill Road north of Jordan Lane will include full road reconstruction, bike lanes, and pedestrian crossing improvements.

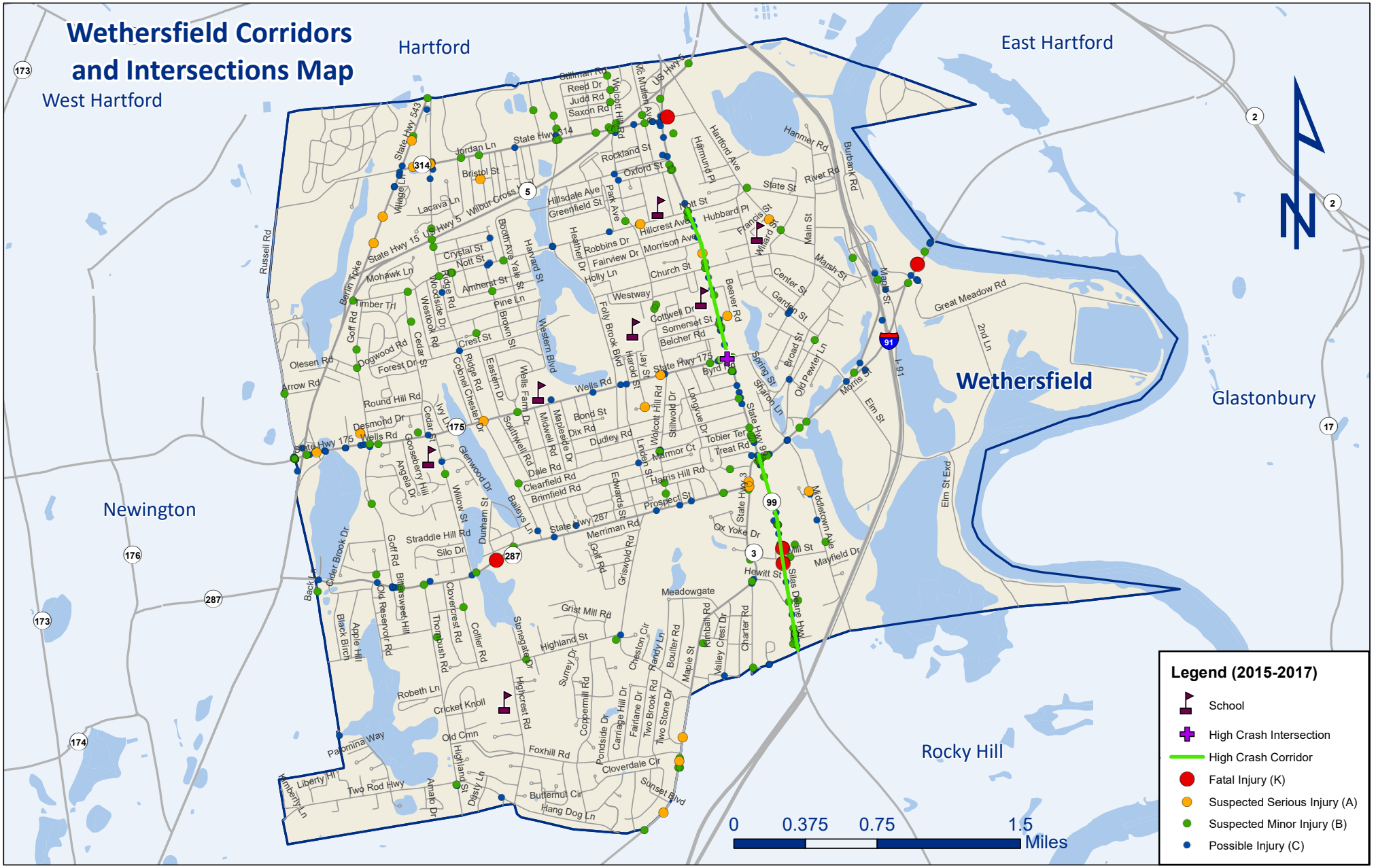
Pedestrian and Bike Plan
The Town is developing a town-wide bike and pedestrian plan with public input. Cyclists commute to Hartford along Wolcott Hill Road which has bike lanes north of Victoria Road.

Source: VN Engineers

Wethersfield Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	2	2	4
Suspected Serious Injury (A)	13	8	4
Suspected Minor Injury (B)	70	65	52
Possible Injury (C)	82	81	77
Total Injury Crashes	167	156	137

Wethersfield Corridors and Intersections Map



Field Site Inventory

CT-314 (Jordan Lane) at Wolcott Hill Road

The intersection of Jordan Lane and Wolcott Hill Road is a skewed, unsignalized intersection under a raised section of US-5/CT-15 via a bridge of approximately 450 feet. All approaches are under stop control with the northbound markings providing a shared left and through lane and an exclusive right-turn lane, and the southbound markings providing a shared right and through lane with an exclusive left-turn lane. Due to the bridge piers within the footprint of the intersections and the skew, the intersection can be confusing with sight line obstructions from the bridge piers and the intersection skew. Recent intersection improvements have included median separation of the Wolcott Hill Road approaches and pedestrian crosswalk improvements.

Recommendation:

- The presence of the bridge piers significantly restricts further geometric improvements at this location. Consider augmenting lighting under the bridge which may improve sight distances at night.
- Investigate a roundabout.

Nott Street and Wolcott Hill Road

This intersection is a skewed, four-way stop-controlled intersection with Wolcott Hill Road in a primarily residential neighborhood. Wolcott Hill Road has two two-way legs that are stop-controlled at Nott Street. There is a grassy median in the center.

Left turns are prohibited from the western leg of Wolcott Hill Road onto Nott Street.

There are sidewalks along all approaches and there are crosswalks with advanced crossing signs. This intersection is near Charles Wright Elementary School which has many designated walkers. The speed limit is posted at 30 MPH.

Recommendations:

- Realign skewed intersection.
- Make each leg of Wolcott Hill Road on the northern side of Nott Street one way.
- Investigate a roundabout combined with median and predstrian crossing islands.
- Restripe crosswalks.

Jordan Lane and Wolcott Hill Road

Nott Street at Wolcott Hill Road looking west

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-99 (Silas Deane Highway) and Mill Street	Congestion	Signal optimization	Low-Medium
	Two fatal pedestrian crashes	In-street pedestrian crossing sign	Low
		High-visibility enforcement	Medium
	Pedestrian safety	Watch for Me CT campaign	Low
		High-visibility crosswalks	Low
CT-99 (Silas Deane Highway) and Maple Street	High crashes	High-visibility enforcement	Low-Medium
		Signal optimization	Low-Medium
		Traffic signal retroreflective backplates	Low-Medium
CT-314 (Jordan Lane) at Wolcott Hill Road	Confusing intersection	Consider roadway/lane reconfiguration	Medium-High
		Investigate a roundabout	High
Prospect Street	Congestion	Signal optimization	Low-Medium
	Speeding	Dynamic speed feedback signs	Low
Nott Street and Wolcott Hill Road	Pedestrianized area	Restripe crosswalks to be more visible	Low
	Skewed offset intersection with crashes	Investigate roundabout	High
		Realign intersection	Medium-High
		Make each leg of Wolcott Hill Road on the northern side of Nott Street one way.	Low

TOWN OF WILLINGTON

2016 U.S. Census Population Estimate: 5,872
Area: 33 square miles
Population Density: 176 per square mile
2016 Vehicle Miles Traveled (VMT): 160,475,900
2016 VMT per Capita: 27,329
Setting: Rural/Suburban
Date of Meeting with Town: April 25, 2019
Town and Regional Representatives: Erika Wiecenski (First Selectman), Sgt. Steven King (CT State Police-C), Stuart Cobb (Emergency Management Department), Terri Thompson (CRCOG)
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 53

Source: VN Engineers

Overview

Willington is bordered by Stafford and Union to the North, Mansfield to the south, Ashford to the east and Tolland and Ellington to the west.

Town Input

Fatal Crashes:

- Roadway departure crash on CT-32, south of Adamec Road, along a horizontal curve.
- Older driver roadway departure crash along the horizontal curvature under snowy conditions on Daleville Road.

The Town representatives stated that most crashes are along State roads CT-32, CT-74, and CT-320. Many persons involved in crashes are out-of-town drivers who are unfamiliar with the roadway geometry in the town. UConn generated traffic on the southside of Town is an issue. There has also been a high number of motorcycle crashes. The Town endorses centerline rumble strips as a countermeasure for front-to-front crashes.

CT-320 and Pinney Hill Road
This is a four-way intersection with stop control on Pinney Hill Road. There is limited sight distance along the vertical curvature when traveling north on CT-320. The State removed vegetation along the road to improve sight lines. There is heavy UConn generated traffic in this area.

CT-32
Along CT-32 there are many students walking on the roadway shoulder and a high number of roadside departure crashes. The State installed high curve signs along various horizontal curves which has improved roadway safety. Town stated that CT-32 between CT-74 to the Mansfield Town line is a concern. The speed limit in this area varies from 35 MPH on the Mansfield Town line segment to 45 MPH closer to CT-74.

CT-32 and Baxter Road
This is a stop-controlled T-intersection. There were many fatal crashes in this area prior to this study period, many of which involved motorcycle roadway departures and speeding.

CT-74 and Glass Factory Road
This stop controlled T-intersection has had a cluster of crashes. The town stated that speeding and the vertical curvature are contributing crash factors. One of the issues are cars accelerating as they approach the intersection, specifically along the climbing lane on CT-74 eastbound, west of the intersection.

CT-74 and CT-320
The vertical curvature has contributed to the cluster of crashes at this intersection.

CT-74 North of Daleville Road
The vertical curvature and narrowing roadway contributes to front-to-front crashes.

CT-320 and Hancock Road
This is a one way, stop-controlled, T-intersection, with a dip in the road that limits driver's sight distance.

CT-320 and FedEx Distribution Center and Truck Stop
There is a lack of signage for trucks entering FedEx. In addition, there is no stop sign on CT-320 which has led to drivers' confusion and crashes.

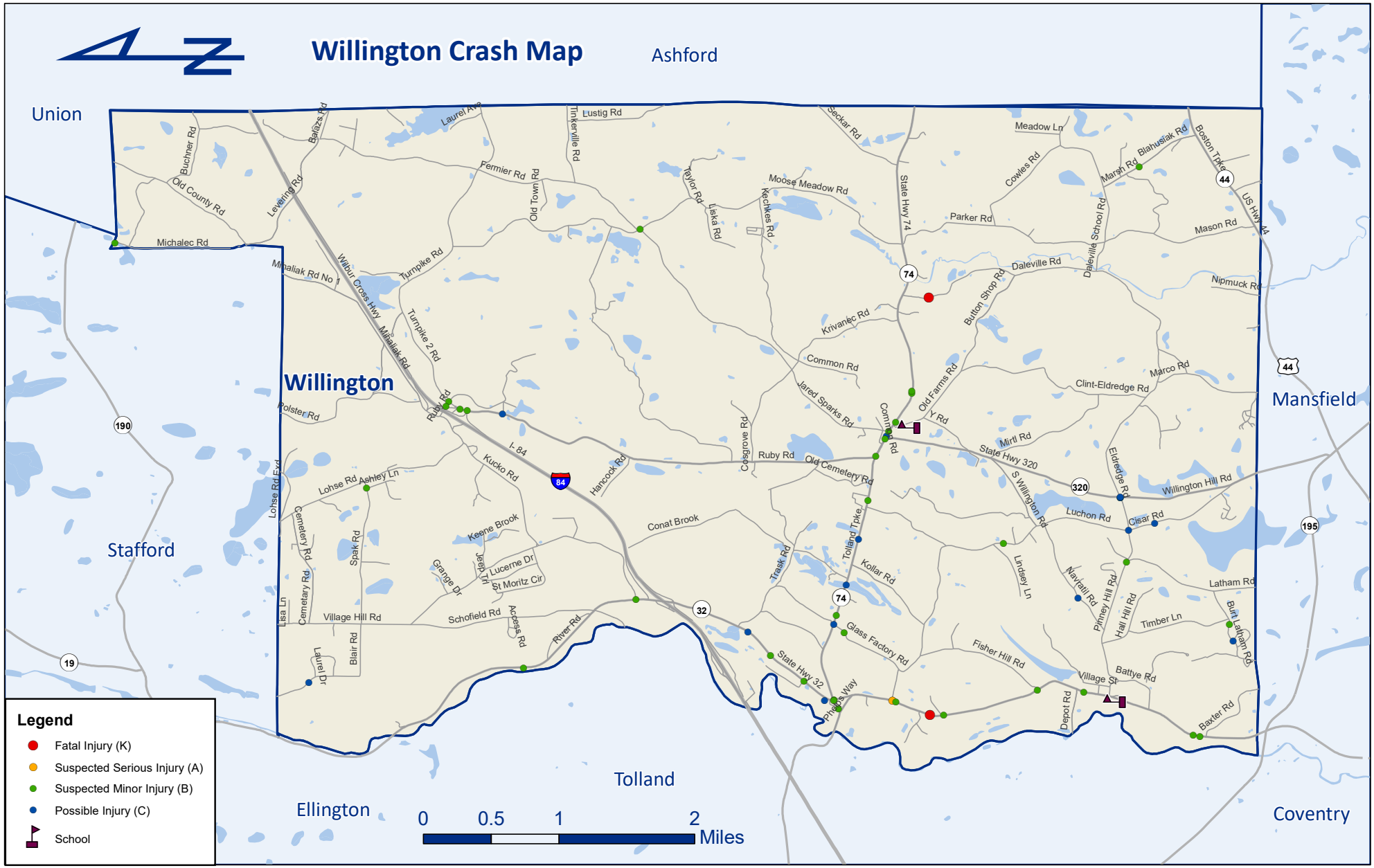
Willington Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	1	1	0
Suspected Serious Injury (A)	0	1	0
Suspected Minor Injury (B)	9	15	11
Possible Injury (C)	4	7	4
Total Injury Crashes	14	24	15

CT-32 and CT-74
This is a signalized, four-way intersection. The traffic island on CT-74 adjacent to Dunkin' Donuts can impede emergency vehicles by blocking cars in the traffic lane with inadequate width for first responders to bypass. Town is requesting emergency preemption at the signal.

Pedestrians
The Town is rural and has few pedestrians except along local roads and CT-32. CT-32 is a state road and has narrow to no shoulders. Residents of the assisted living facility on CT-32 at Village Street walk along CT-32 to access the convenience store at CT-32 and CT-195. There are some advance pedestrian crossing signs and crosswalks in CT-32 at the Hall Memorial School and the Federated Church of Willington. Their parking lots are across the street from their facilities.

Source: VN Engineers


Willington Crash Map
Ashford
Union
Willington
Stafford
Mansfield
Tolland
Ellington
Coventry
Legend
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
School
0
0.5
1
2
Miles

Field Site Inventory

CT-32 at Hall Memorial School

Hall Memorial School is located on the west side of CT-32 just south of Pinney Hill Road. The adjacent land use is rural residential.

The school's parking lot is situated on the east side of CT-32, across from the school facility. The speed limit in this area is 35 MPH, but there is a school zone speed limit of 25 MPH when activated.

There is a midblock crosswalk connecting the school to the parking lot, with two orange cones placed along the center line. In addition there are crosswalk advisory signs and an advanced school zone with a 25 MPH sign with flashing beacons along both approaches.

Recommendations:

- Dynamic speed feedback sign.
- Enforcement of school zone speed limit.
- RRFB (Town has submitted a permit to install RRFBs at this crossing and speed feedback signs).

CT-32 from CT-74 to CT-195

This is a two lane roadway that extends roughly three miles from CT-195 in the south to CT-74. The corridor has vertical and horizontal curvature. There are centerline and edge line pavement markings throughout the corridor. The shoulder measures about 2 to 3 feet wide.

It's a rural residential road with a few commercial and public sites. The primary concern is speed and potential conflict with pedestrians at the Hall Memorial School and the Federated Church of Willington.

Recommendations:

- Dynamic speed feedback signs.
- Edgeline and centerline rumble strips at prioritized locations or potential locations.

CT-32

Midblock crossing on CT-32 at Hall Memorial School

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-32 (River Road) Corridor	Speeding	Dynamic speed feedback sign	Low
	Crashes	Edgeline and centerline rumble strips at prioritized locations or potential locations	Low-High
CT-32 (River Road) at Hall Memorial School and Federated Church	Speeding	Dynamic speed feedback sign	Low
		Enforce school zone speed limit	Low
	Pedestrian crossing	RRFB	Low-Medium
CT-320 (Willington Hill Road) and Pinney Hill Road	Limited sight distance	Vegetation management	Low
		Limited sight distance sign	Low
	Speeding	Intersection ahead sign with flashing beacons	Low
		Dynamic speed feedback sign	Low
CT-32 (River Road) and Baxter Road	Crashes	High-visibility speed enforcement	Low
	Speeding	Repaint stop line on Baxter Road and updated stop sign to LED flashing Stop sign	Low
		Dynamic speed feedback sign	Low

TOWN OF WINDSOR

2016 U.S. Census Population Estimate: 28,875
Area: 30 square miles
Population Density: 976 per square mile
2016 Vehicle Miles Traveled (VMT): 599,538,780
2016 VMT per Capita: 6,482
Setting: Suburban
Date of Meeting with Town: March 26,2019
Town and Regional Representatives: Don Melanson (Town PD), Bob Jarvis (Engineer DPW), Peter Souza (Town Manager), Devon Lechtenberg (CRCOG)
Data-Identified High Frequency Crash Corridors: CT-305-Bloomfield Avenue (from William Street to Colonial Drive); CT-159-Windsor Avenue (from Ford Road to Norman Avenue)
Data-Identified High Crash Intersections: I-91 Off-Ramp and Windsor Avenue
Bike and Pedestrian Crash Totals: 22
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 389

Source: VN Engineers

Overview

Windsor is a town in Hartford county. It is bordered by East Granby and Windsor Locks to the north, East Windsor and South Windsor to the east across the Connecticut River, Hartford to the south and East Granby and Bloomfield to the west.

Town Input

Local Road Accident Reduction Program (LRARP)
The Town has pursued funding for safety improvements under the LRARP in the past but was not successful. The LRARP provides federal funding for safety improvements on local roads. However, the higher crash locations in Windsor are primarily on State-owned roadways.

Bloomfield Avenue (CT-305)
A CRCOG corridor study was completed in 2009, which included recommendations for multiple improvements along this corridor.

Intersection of Day Hill Road and CT-187
The Town is concerned about the size of this intersection combined with high speeds and multiple turning lanes.

I-91 Off-Ramp On Hartford Border Line
There is heavy congestion in this area especially during peak hours, primarily due to the commuting patterns from Hartford to Windsor.

CT-305 (Bloomfield Avenue) and Addison Road
CT-305 has high traffic congestion between Addison Road and I-91 during the peak hours. The intersection of Bloomfield Avenue and Addison Road is a congested intersection with no left-turns, so traffic backs up on Bloomfield Ave waiting for clearance gaps.

CT-159 (Windsor Avenue)
CTDOT implemented a road diet last year on the southern section of CT-159 from the Hartford border to just south of I-291. This road diet reduced the cross section from two through-lanes in each direction to one through-lane in each direction with a physical median. Wider shoulders were striped to provide a bypass area for left-turning vehicles instead of dedicated left-turn lanes.

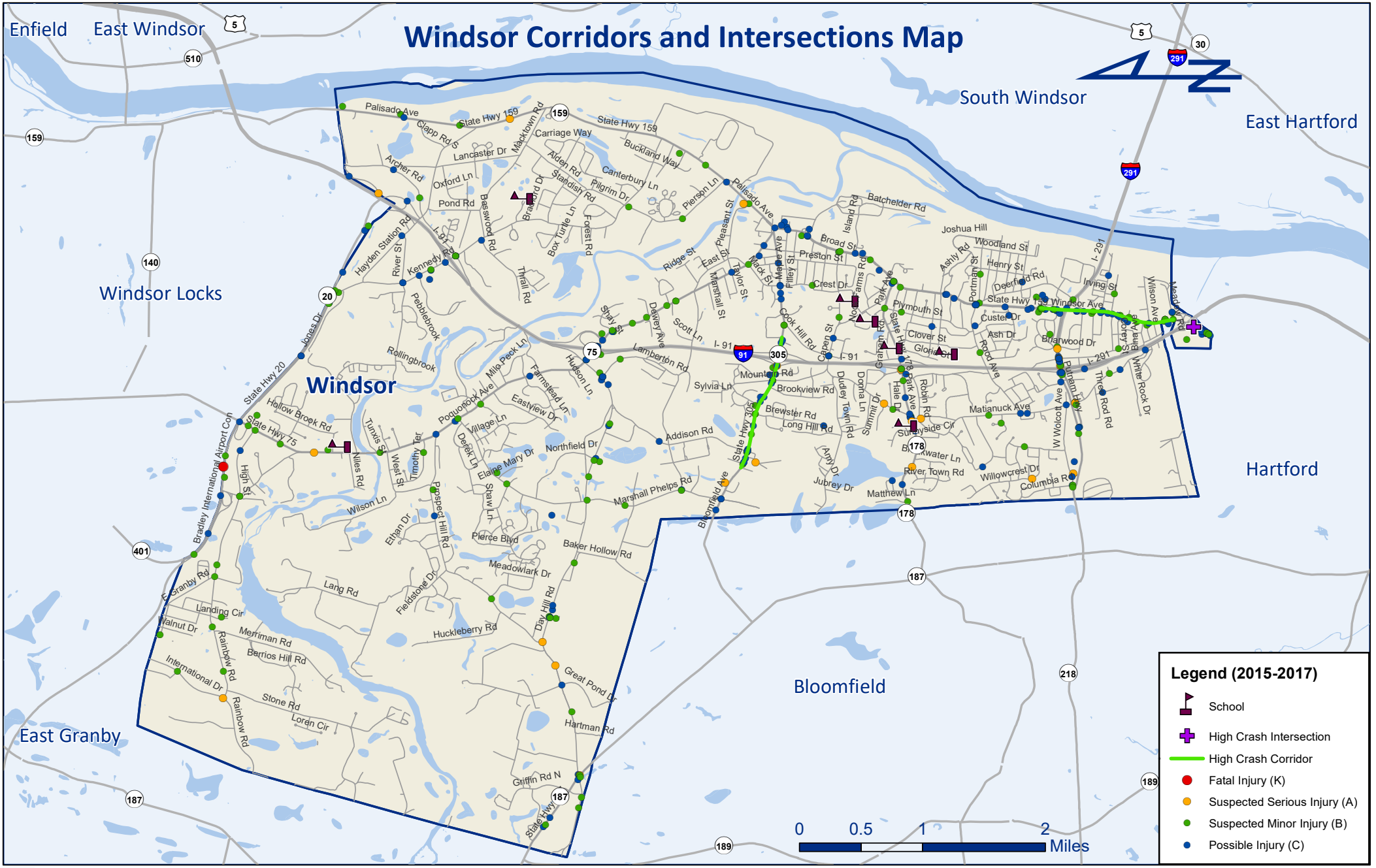
CT-159 (Windsor Avenue)at Corey Street and Private Drive
The Town investigated installing a traffic signal at this intersection, but it was not warranted.

CT-305 (Bloomfield Avenue) and Brewster Road
There was a weather-related fatality near this intersection that is not shown in the data because its outside the study period.

Windsor Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	0	1	0
Suspected Serious Injury (A)	4	11	8
Suspected Minor Injury (B)	34	50	82
Possible Injury (C)	47	70	82
Total Injury Crashes	85	132	172

Source: VN Engineers


Windsor Corridors and Intersections Map
Enfield
East Windsor
South Windsor
East Hartford
Windsor Locks
Windsor
Hartford
Bloomfield
East Granby
Legend (2015-2017)
School
High Crash Intersection
High Crash Corridor
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
0 0.5 1 2 Miles

Field Site Inventory

CT-159 (Windsor Avenue) and Corey Street

Windsor Avenue generally runs north-south with a posted speed limit of 35 MPH. Windsor Avenue consists of one travel lane in each direction, a landscaped median and on-street parking on both sides of the street.

The intersection of Windsor Avenue with Corey Street and an adjacent commercial driveway form a non-signalized, four-way intersection. The Corey Street approach is under stop control but the driveway is under free flow. Sight distances appear adequate from both Corey Street and the commercial driveway, however, the roadway cross-section is wide and the trees in the median can be distracting for motorists making a left turn from Corey Street.

There are numerous commercial and residential driveways near the intersection. The Town investigated the potential of installing a traffic signal at this location, however it was not warranted based on traffic volumes.

Recommendation:

- Consider access management and driveway consolidation for commercial properties with more than one driveway.
- Vegetation management for street trees in the median.

Day Hill Road and CT-187

Day Hill Road generally runs east-west with a posted speed limit of 40 MPH.

CT-187 consists of two travel lanes in each direction, a landscaped median and turning lanes at the intersection approach.

The intersection of Day Hill Road with CT-187 forms a wide, signalized, four-way intersection. The concern with this intersection appears to be the high speed of the vehicles passing through it.

Recommendations:

- Consider intersections signal optimization and coordination.
- High visibility speed enforcement.
- Narrow travel lane widths where feasible.

Windsor Avenue and Corey Street

CT-187 and Day Hill Road

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
CT-159 (Windsor Avenue) and Corey Street	Distracted driving	Vegetation management for street trees in the median	Low
	Intersection issues	Consider corridor access management	Low-Medium
		Consider driveway consolidation for commercial properties with more than one driveway	Low-Medium
Day Hill Road and CT-187 (Blue Hills Avenue and Extension)	Wide intersection	Intersections signal optimization and coordination	Low
	Speeding	High-visibility speed enforcement	Medium
		Narrow travel lanes	Low
	Multiple turning movements	Corridor access management	Low-Medium
CT-305 (Bloomfield Avenue) and Addison Road	Congestion	Traffic signal retroreflective backplates	Low-Medium
	Traffic queue	Signal optimization	Low-Medium

TOWN OF WINDSOR LOCKS

2016 U.S. Census Population Estimate: 12,512
Area: 9 square miles
Population Density: 1,390 per square mile
2016 Vehicle Miles Traveled (VMT): 115,930,205
2016 VMT per Capita: 9,266
Setting: Suburban
Date of Meeting with Town: May 6, 2019
Town and Regional Representatives: Philip Sissick (Town DPW), Chris Kervick (First Selectman), Devon Lechtenberg (CRCOG)
Data-Identified High Frequency Crash Corridors: N/A
Data-Identified High Crash Intersections: CT-140-Bridge Street and Main Street
Bike and Pedestrian Crash Totals: 18
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 179

Source: VN Engineers

Overview

Windsor Locks is home to Bradley International Airport. It is bordered by Suffield to the north, East Windsor to the east across the Connecticut River, Windsor to the south and East Granby to the west.

Town Input

CT-75

This is a high crash corridor. There is high pedestrian traffic and also high truck traffic as CT-75 serves as a principal truck route. The speed limit is posted at 40 MPH. Because it is near Bradley International Airport, the corridor has a mix of hotels, restaurants, pedestrians and motorized vehicles.

There was one pedestrian fatal on CT-75 within the study period. In the last five years, there have been three pedestrian fatalities on CT-75. Despite the high pedestrianized area there are no marked crosswalks along CT-75.

There is a $1.5 million LOTCIP project to install crosswalks and sidewalks on CT-75 from CT-20 north to Spring Street. The Town is currently waiting on CTDOT to approve the contractor's bid to begin construction. CTDOT had a plan to install a roundabout at CT-20 and CT-75, add a median and improve corridor access management on CT-75, but this project did not move forward. However, the Town still endorses these infrastructure improvements.

Main Street (CT-159) and Bridge Street/Church Street
This is a high frequency crash intersection. A new Hartford Line Train Station is being installed north of this intersection. This project is currently in the design stage. Multiple constraints affecting this intersection include the river, the canal, the canal bank, and the railroad.

Upcoming Traffic and Economic Development Projects include:

- New Hartford Line Train Station (State Project) - The Town is waiting for notification when they will start.
- Conversion of Church Street into a cul-de-sac.
- Complete Streets Project on Main Street includes sidewalks, angled and parallel parking, lane narrowing, crosswalks and bike lanes.
- Community Connectivity Grant was awarded for a bike/pedestrian way on the eastern side of Main Street, including a bridge at CT-140.
- Montgomery Mill conversion into an apartment complex.

Suffield Street and North Main Street
This is a skewed, one-way, stop-controlled intersection with a reported cluster of crashes.

Source: VN Engineers

Old County Road
This is a local road used as a cut through to avoid CT-20. Trucks use this route also which leads to conflict with local residents. The southern end is both residential and industrial and the northern end is residential. This corridor is a concern for the Town due to speeding and truck volume. The Town endorses traffic calming measures and engineering designs to deter trucks from using this local road and to slow speeds down.

Old County Road and Halfway House Road
This is a four-way, stop-controlled intersection with high crash frequency.

West Street
This is a narrow local roadway (18-foot cross section). There was one serious injury in study period. There are no sidewalks despite high pedestrian activity. The Town plans on installing sidewalks on the east side with municipal funds. The Town wants to install traffic calming devices like speed tables but they need to accommodate fire vehicles. This is a priority for the Town.

CT-20
There are two proposed developments that could affect traffic along this corridor: a sports complex on the east side of CT-20 and a mixed-use project with retail, restaurants, and residences at CT-20 and CT-75.

Windsor Locks Total Crashes by Severity

Crash Severity	2015	2016	2017
Fatal Injury (K)	0	1	0
Suspected Serious Injury (A)	1	3	3
Suspected Minor Injury (B)	21	30	26
Possible Injury (C)	28	34	32
Total Injury Crashes	50	68	61


Windsor Locks Corridors and Intersections Map
Suffield
Enfield
East Granby
Windsor Locks
East Windsor
Windsor
0 0.25 0.5 1 Miles
Legend (2015-2017)
School
High Crash Intersection
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)

Field Site Inventory

Old County Road at Halfway House Road

The intersection of Old County Road and Halfway House Road is under four-way stop control within a mixed residential and commercial area. Old County Road consists of one travel lane in each direction with approximately 4-foot shoulders, sidewalks on both sides and a posted speed limit of 35 MPH. Old County Road is as a major cut-through route to and from Bradley International Airport and carries a significant number of heavy vehicles.

Halfway House Road consists of one travel lane in each direction, minimal shoulder, a sidewalk on the southern side and a posted speed limit of 30 MPH. At the intersection, pedestrian crosswalks are located across all legs of the intersection.

Field observations indicated consistent rolling stops through the intersection on all approaches.

Recommendations:

- Traffic calming along the entire length or portions of Old County Road to deter high travel speeds, cut-through traffic and heavy vehicles from consistently utilizing the local roadway to access Bradley International Airport. Traffic calming measures could include raised intersection treatments, speed tables, neckdowns, roundabouts, etc.
- Restripe crosswalks.

Old County Road and Halfway House Road

Old County Road and Halfway House Road

Countermeasure Considerations

Intersection or Corridor	Issues	Countermeasures	Estimated Cost
Old County Road at Halfway House Road	Consistent rolling stops	Traffic calming along the entire length or portions of Old County Road to deter high travel speeds, cut through traffic and heavy vehicles (could be raised intersection treatments, speed tables, enforcement, neckdowns, roundabouts)	Medium-High
	Pedestrian safety	High-visibility crosswalks	Low
Old County Road at CT-140 (Elm Street)	Pedestrian crossings	Add pedestrian beacons to pedestrian crossing signs on CT-140	Low
		High-visibility crosswalks	Low
	Speeding	Dynamic speed feedback signs	Low
Old County Road Corridor	Congestion	Consider corridor access management for traffic calming measures and engineering design to deter heavy vehicles from using this local road and to slow speeds down.	Medium
	Speeding		
	Heavy vehicles		
	High traffic		
Suffield Street and CT-159 (North Main Street)	Skewed Y-intersection	Road safety audit	Low
	High crashes	Dynamic speed feedback sign	Low
		High visibility enforcement	Low-Medium

INTERSECTION FATAL AND INJURY CRASHES

Municipality	2015	2016	2017
Andover	5	0	5
Avon	40	36	39
Berlin	48	77	83
Bloomfield	89	86	98
Bolton	8	9	6
Canton	30	24	29
Columbia	9	8	14
Coventry	12	18	18
East Granby	12	17	12
East Hartford	102	129	144
East Windsor	25	21	28
Ellington	22	31	27
Enfield	123	107	103
Farmington	58	53	68
Glastonbury	68	50	38
Granby	16	11	17
Hartford	809	996	891
Hebron	6	5	9
Manchester	235	216	214
Mansfield	21	37	32
Marlborough	4	3	1
New Britain	231	260	278
Newington	91	136	118
Plainville	68	73	55
Rocky Hill	45	48	37
Simsbury	39	25	29
Somers	7	12	15
South Windsor	68	60	58
Southington	82	103	122
Stafford	6	5	17
Suffield	28	13	20
Tolland	19	13	16
Vernon	71	89	84
West Hartford	306	281	263
Wethersfield	69	53	63
Willington	1	8	5
Windsor	46	80	98
Windsor Locks	23	29	25
TOTALS	**2,942**	**3,222**	**3,179**

ROADWAY DEPARTURE FATAL AND INJURY CRASHES

Municipality	2015	2016	2017
Andover	3	4	7
Avon	13	18	22
Berlin	26	31	33
Bloomfield	21	21	21
Bolton	8	7	6
Canton	13	7	16
Columbia	5	9	6
Coventry	17	23	18
East Granby	1	8	10
East Hartford	48	51	48
East Windsor	12	12	16
Ellington	23	24	18
Enfield	27	33	32
Farmington	26	35	29
Glastonbury	55	32	39
Granby	8	6	13
Hartford	100	116	78
Hebron	14	9	8
Manchester	44	61	51
Mansfield	23	27	24
Marlborough	15	11	14

Municipality	2015	2016	2017
New Britain	70	61	61
Newington	20	23	24
Plainville	31	41	29
Rocky Hill	7	10	14
Simsbury	17	22	19
Somers	13	11	20
South Windsor	30	16	29
Southington	25	43	46
Stafford	16	21	17
Suffield	25	30	25
Tolland	13	16	23
Vernon	15	19	16
West Hartford	45	46	46
Wethersfield	24	19	17
Willington	9	13	4
Windsor	21	19	35
Windsor Locks	9	10	11
TOTALS	**892**	**965**	**945**

OLDER DRIVER FATAL AND INJURY CRASHES

Municipality	2015	2016	2017
Andover	2	1	1
Avon	19	11	14
Berlin	21	18	24
Bloomfield	22	22	30
Bolton	5	5	5
Canton	7	9	14
Columbia	1	2	7
Coventry	6	9	2
East Granby	3	4	4
East Hartford	18	28	25
East Windsor	3	7	12
Ellington	7	9	6
Enfield	26	39	43
Farmington	22	20	22
Glastonbury	26	21	15
Granby	8	4	12
Hartford	64	94	77
Hebron	1	3	1
Manchester	44	46	43
Mansfield	11	9	7
Marlborough	2	3	2

Municipality	2015	2016	2017
New Britain	20	42	54
Newington	27	42	30
Plainville	18	16	16
Rocky Hill	13	15	22
Simsbury	11	10	14
Somers	0	3	2
South Windsor	16	15	20
Southington	28	34	25
Stafford	4	4	5
Suffield	6	5	7
Tolland	7	1	2
Vernon	18	26	16
West Hartford	62	60	69
Wethersfield	17	26	18
Willington	2	5	0
Windsor	8	10	22
Windsor Locks	9	5	5
TOTALS	**584**	**683**	**693**

YOUNG DRIVER FATAL AND INJURY CRASHES

Municipality	2015	2016	2017
Andover	4	10	3
Avon	10	25	20
Berlin	31	38	39
Bloomfield	32	35	32
Bolton	7	7	2
Canton	24	16	15
Columbia	7	9	7
Coventry	16	22	15
East Granby	3	7	11
East Hartford	71	66	68
East Windsor	17	9	19
Ellington	20	19	19
Enfield	47	56	52
Farmington	45	47	47
Glastonbury	31	37	26
Granby	7	7	7
Hartford	300	359	280
Hebron	11	7	7
Manchester	99	69	91
Mansfield	28	32	37
Marlborough	6	6	3
New Britain	103	86	139
Newington	38	61	64
Plainville	37	33	38
Rocky Hill	14	25	20
Simsbury	16	23	22
Somers	6	12	14
South Windsor	25	26	26
Southington	45	47	54
Stafford	9	14	11
Suffield	11	22	20
Tolland	14	19	19
Vernon	37	36	21
West Hartford	113	84	92
Wethersfield	24	38	23
Willington	7	6	5
Windsor	29	23	41
Windsor Locks	10	16	13
TOTALS	**1,354**	**1,454**	**1,422**

ASLEEP OR FATIGUED FATAL AND INJURY CRASHES

Municipality	2015	2016	2017
Andover	3	1	1
Avon	2	3	0
Berlin	2	6	1
Bloomfield	3	4	2
Bolton	1	3	1
Canton	1	1	4
Columbia	0	1	1
Coventry	3	2	1
East Granby	1	0	1
East Hartford	5	5	8
East Windsor	0	4	0
Ellington	4	2	1
Enfield	7	10	3
Farmington	4	10	12
Glastonbury	5	7	4
Granby	1	1	3
Hartford	3	13	6
Hebron	2	0	0
Manchester	8	3	1
Mansfield	1	2	2
Marlborough	2	1	3

Municipality	2015	2016	2017
New Britain	7	3	9
Newington	3	4	3
Plainville	3	2	1
Rocky Hill	1	1	1
Simsbury	0	5	1
Somers	0	2	3
South Windsor	4	3	5
Southington	2	7	7
Stafford	1	7	1
Suffield	1	2	3
Tolland	4	2	2
Vernon	2	2	2
West Hartford	8	9	8
Wethersfield	2	2	6
Willington	2	3	1
Windsor	3	2	3
Windsor Locks	0	1	1
TOTALS	**101**	**136**	**112**

SPEEDING FATAL AND INJURY CRASHES

Municipality	2015	2016	2017
Andover	1	4	1
Avon	3	5	10
Berlin	17	25	12
Bloomfield	20	17	13
Bolton	4	5	5
Canton	10	4	11
Columbia	3	3	5
Coventry	9	13	10
East Granby	2	6	3
East Hartford	39	33	45
East Windsor	14	12	13
Ellington	14	11	9
Enfield	16	10	21
Farmington	24	21	18
Glastonbury	22	19	14
Granby	8	5	5
Hartford	160	76	59
Hebron	2	3	7
Manchester	21	47	32
Mansfield	23	20	14
Marlborough	5	4	5
New Britain	45	39	74
Newington	20	11	15
Plainville	26	21	27
Rocky Hill	3	7	8
Simsbury	16	12	13
Somers	11	10	5
South Windsor	29	12	21
Southington	18	27	26
Stafford	5	9	13
Suffield	10	11	6
Tolland	9	8	16
Vernon	12	16	15
West Hartford	71	77	34
Wethersfield	44	34	24
Willington	6	8	7
Windsor	12	17	21
Windsor Locks	9	2	9
TOTALS	**763**	**664**	**646**

SUBSTANCE-IMPAIRED FATAL AND INJURY CRASHES

Municipality	2015	2016	2017
Andover	2	1	0
Avon	1	5	2
Berlin	6	5	12
Bloomfield	8	4	6
Bolton	5	0	0
Canton	2	4	4
Columbia	2	1	3
Coventry	4	6	8
East Granby	1	1	2
East Hartford	16	18	18
East Windsor	5	11	13
Ellington	3	2	1
Enfield	14	14	17
Farmington	14	12	10
Glastonbury	9	9	7
Granby	5	1	5
Hartford	34	54	43
Hebron	4	1	3
Manchester	23	36	34
Mansfield	10	8	5

Municipality	2015	2016	2017
Marlborough	3	3	1
New Britain	32	36	30
Newington	16	17	11
Plainville	11	15	12
Rocky Hill	2	5	7
Simsbury	5	4	5
Somers	5	4	1
South Windsor	16	3	2
Southington	4	14	21
Stafford	1	5	3
Suffield	9	9	5
Tolland	3	1	2
Vernon	8	10	15
West Hartford	15	11	15
Wethersfield	10	10	13
Willington	1	0	1
Windsor	5	8	7
Windsor Locks	5	6	4
TOTALS	**319**	**354**	**348**

DISTRACTED DRIVING FATAL AND INJURY CRASHES

Municipality	2015	2016	2017
Andover	3	4	2
Avon	12	13	6
Berlin	15	20	15
Bloomfield	15	11	19
Bolton	5	2	0
Canton	6	10	4
Columbia	0	2	2
Coventry	8	13	4
East Granby	7	5	2
East Hartford	25	23	26
East Windsor	10	9	8
Ellington	8	8	11
Enfield	35	20	27
Farmington	29	45	40
Glastonbury	20	13	14
Granby	4	2	4
Hartford	109	98	70
Hebron	4	3	5
Manchester	32	43	38
Mansfield	10	10	8

Municipality	2015	2016	2017
Marlborough	3	4	3
New Britain	44	35	38
Newington	24	35	26
Plainville	24	19	17
Rocky Hill	8	6	11
Simsbury	10	16	5
Somers	4	1	5
South Windsor	16	24	20
Southington	22	24	23
Stafford	4	5	4
Suffield	7	13	7
Tolland	12	8	4
Vernon	15	15	8
West Hartford	48	47	43
Wethersfield	23	21	10
Willington	1	2	1
Windsor	3	8	14
Windsor Locks	7	9	9
TOTALS	**632**	**646**	**563**

NON-MOTORIZED USER FATAL AND INJURY CRASHES

Municipality	2015	2016	2017
Andover	0	2	0
Avon	2	2	3
Berlin	8	3	3
Bloomfield	0	2	11
Canton	4	2	2
Columbia	0	2	1
Coventry	1	3	1
East Granby	2	0	2
East Hartford	25	34	29
East Windsor	2	2	0
Ellington	4	0	0
Enfield	17	16	22
Farmington	3	6	5
Glastonbury	11	10	8
Granby	2	2	2
Hartford	161	217	189
Hebron	1	0	1
Manchester	32	51	34
Mansfield	2	10	3

Municipality	2015	2016	2017
New Britain	63	52	69
Newington	5	11	7
Plainville	8	6	9
Rocky Hill	1	5	9
Simsbury	0	5	0
Somers	2	2	1
South Windsor	1	9	2
Southington	7	12	7
Stafford	2	1	1
Suffield	3	5	4
Tolland	3	2	2
Vernon	8	14	5
West Hartford	33	30	38
Wethersfield	7	13	3
Windsor	3	6	13
Windsor Locks	3	11	4
TOTALS	**426**	**548**	**490**

MOTORCYCLE FATAL AND INJURY CRASHES

Municipality	2015	2016	2017
Andover	0	1	1
Avon	2	2	3
Berlin	7	12	5
Bloomfield	5	8	3
Bolton	2	1	1
Canton	2	1	1
Columbia	0	0	1
Coventry	2	3	4
East Granby	1	6	1
East Hartford	15	13	17
East Windsor	7	7	7
Ellington	7	16	11
Enfield	17	8	13
Farmington	4	5	3
Glastonbury	8	5	2
Granby	2	0	1
Hartford	47	58	37
Hebron	1	2	3
Manchester	24	20	11
Mansfield	9	6	10

Municipality	2015	2016	2017
New Britain	37	36	33
Newington	6	7	9
Plainville	8	16	3
Rocky Hill	4	7	3
Simsbury	4	3	3
Somers	4	5	3
South Windsor	4	3	3
Southington	11	15	12
Stafford	6	6	7
Suffield	8	2	4
Tolland	3	3	4
Vernon	6	17	12
West Hartford	8	14	8
Wethersfield	4	4	3
Willington	3	2	4
Windsor	7	5	3
Windsor Locks	3	3	4
TOTALS	**288**	**322**	**253**

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.
Signal	**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 on 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).
Safety	**Corridor Access Management** Cost: Low to Medium	This is a proven safety countermeasure. Access management refers to the design, application, and control of entry and exit points along a roadway. It can enhance safety for all modes, facilitate walking and biking, and reduce trip delay and congestion.	Successful corridor access management involves balancing overall safety and corridor mobility for all users along with the access needs of adjacent land uses. Some strategies are: driveway consolidation, limited-movement designs for driveways, raised medians, intersections designs, turn lanes and lower speed.

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

Appendix D: Top Non-Motorized Crash Locations and Countermeasures

Top Non-Motorized Crash Corridors and Countermeasures, 2015-2017

Rank	Municipality	Location	EPDO	Person Type	Crash Details	Infrastructure Countermeasures	Non-Infrastructure Countermeasures
1	Manchester	CT-83 (Main St) from Myrtle St to Delmont St	1,091	6 Pedestrians 2 Bicyclists (1 Fatal)	Older pedestrians, dark-lighted condition, substance-impaired, inattentive bicyclist hit crossing roadway	Investigate roadway illumination, high-visibility crosswalks, In-Street Yield to Pedestrian in crosswalk sign	Traffic Skills 101 Bike course Watch for Me CT Campaign Share the Road Campaign
2	Hartford	Bond St from Wethersfield Ave to Franklin Ave	1,031	3 Pedestrians 1 Bicyclist (Fatal)	Physically impaired and distracted pedestrian hit crossing Franklin Ave at crosswalk, pedestrian hit at driveway access, bicyclist hit crossing roadway, daylight and dark-lighted conditions	High-visibility crosswalks, investigate pedestrian hybrid beacons on Franklin Ave	Watch for Me CT Campaign
3	Hartford	Hudson St from Park St to Buckingham St	1,026	2 Pedestrians 4 Bicyclists (1 Fatal)	Pedestrians and bicyclist hit crossing roadway at marked crosswalk, bicyclists hit cycling in roadway, dark-lighted and daylight conditions	Traffic signal retroreflective backplates, high-visibility crosswalks, investigate roadway illumination	Watch for Me CT Campaign
4	East Hartford	CT-502 (Silver Ln) from Simmons Rd to Forbes St	1,020	2 Pedestrians 1 Bicyclist	Pedestrians hit while crossing roadway (mid-block) not visible, bicyclist hit cycling on roadway, daylight and dark-lighted condition	Investigate roadway illumination, high-visibility crosswalks, MUTCD R9-2 sign (Cross Only at Crosswalks)	Watch for Me CT Campaign, Bike and Pedestrian Safety
5	Hartford	Park St from Wadsworth St to Hudson St	1,009	2 Pedestrians 3 Bicyclists	Pedestrian hit crossing mid-block-marked crosswalk, pedestrian hit crossing roadway at intersection, failure to obey traffic signs, bicyclists hit in roadway (not visible), daylight and dark-lighted condition	High-visibility crosswalks, ensure pedestrian crossing lights are functioning, investigate road illumination, traffic signal retroreflective backplates	Watch for Me CT Campaign, Police enforcement
6	Hartford	Chapel St N from High St to Ann Uccello St	1,004	2 Pedestrians (1 Fatal)	Pedestrian (not visible) hit crossing roadway, pedestrian hit crossing roadway at marked crosswalk, dark-lighted condition	High-visibility crosswalks, investigate roadway illumination	Watch for Me CT Campaign
7	New Britain	Franklin Sq from Pearl St to Chestnut St	1,004	2 Pedestrians (1 Fatal)	Pedestrian hit on roadway, not visible, pedestrian hit crossing roadway at marked crosswalk, daylight and dark-lighted condition	Investigate Roadway illumination, high-visibility crosswalks, MUTCD W11-2 sign (Pedestrian Warnings)	Watch for Me CT Campaign

Top Non-Motorized Crash Corridors and Countermeasures, 2015-2017

Rank	Municipality	Location	EPDO	Person Type	Crash Details	Infrastructure Countermeasures	Non-Infrastructure Countermeasures
8	Windsor	CT-75 (Ella Grasso Tpke) from CT-20 (BIA Con) to Loten Dr	1,004	2 Pedestrians (1 Fatal)	Pedestrians hit crossing roadway mid-block, dark-not lighted and dark-lighted condition	Investigate roadway illumination, add pedestrian pathways for better pedestrian connectivity, consider road diet	Watch for Me CT Campaign, Police Enforcement
9	Hartford	Park St from Hudson St to John St	993	1 Pedestrian 3 Bicyclists (1 Fatal)	Pedestrian hit crossing roadway at marked crosswalk, bicyclists hit crossing roadway, daylight and dark-lighted condition	High-visibility crosswalks, ensure pedestrian crossing lights is functioning, investigate roadway illumination, traffic signal retroreflective backplates	Watch for Me CT Campaign Police Enforcement
10	Hartford	Hudson St from Jefferson St to Park St	993	2 Pedestrians 2 Bicyclist (1 Fatal)	Pedestrians hit crossing roadway at marked crosswalk, bicyclist hit crossing roadway, bicyclist hit cycling on roadway (wrong-way riding), daylight and dark-lighted condition	Traffic signal retroreflective backplates, high-visibility crosswalks, investigate roadway illumination, traffic signal retroreflective backplates	Watch for Me CT Campaign Share the Road Campaign, Traffic Skills 101 Course
11	New Britain	Arch St from West Pearl St to Walnut St	993	3 Pedestrians 1 Bicyclist (1 Fatal)	Pedestrians hit crossing Arch St on in unmarked-crosswalk, one substance-impaired pedestrian, young bicyclist hit crossing roadway	Investigate roadway illumination, high-visibility crosswalks, MUTCD R9-2 sign (Cross Only at Crosswalks), MUTCD W16-1P sign (Share the Road)	Watch for Me CT Campaign
12	West Hartford	South Main St from Elmfield St to CT-173 (New Britain Ave)	970	2 Pedestrians 1 Bicyclist (1 Fatal)	Pedestrians hit crossing roadway, one not visible, bicyclist hit crossing roadway at marked crosswalk, daylight and dark-lighted	High-visibility crosswalks, MUTCD W11-15 sign (Bicycle/Pedestrian)	Watch for Me CT Campaign
13	Hartford	Wethersfield Ave from Barker St to Bond St	965	1 Pedestrian 1 Bicyclist (1 Fatal)	Pedestrian hit while crossing street not in crosswalk, dark-not lighted condition, on-street parking, older bicyclist hit on roadway	Cross Only at Crosswalk sign, traffic signal retroreflective backplates, traffic calming, investigate on-street parking options	Watch for Me CT Campaign

Top Non-Motorized Crash Corridors and Countermeasures, 2015-2017

Rank	Municipality	Location	EPDO	Person Type	Crash Details	Infrastructure Countermeasures	Non-Infrastructure Countermeasures
14	Hartford	Garden St from Pliny St to Greenfield St	965	1 Pedestrian 1 Bicyclist (1 Fatal)	Pedestrian hit crossing roadway (improperly), bicyclist hit cycling along roadway, daylight and dark-lighted condition	High-visibility crosswalks, traffic signal retroreflective backplates	Watch for Me CT Campaign Share the Road Campaign
15	Enfield	US-5 (King St) from Weymouth Rd to Old King St	965	2 Pedestrians (1 Fatal)	Police officer hit, dark-not lighted condition, pedestrian fatality, substance-impaired, dark-not lighted condition	Investigate roadway illumination	Watch for Me CT Campaign, Obey the Orange Work Zone Safety
16	Hartford	Chapel St N from Ann Uccello St to Pleasant St	949	1 Pedestrian (Fatal)	Pedestrian hit crossing roadway (not visible), dark-lighted condition	High-visibility crosswalks, investigate roadway illumination	Watch for Me CT Campaign
17	Southington	Savage St from Woodland Dr to Rockwood Dr	949	1 Pedestrian (Fatal)	Pedestrian hit walking along roadway against traffic in travel lane, daylight condition	Add pedestrian pathways for pedestrian connectivity, high-visibility crosswalks	Watch for Me CT Campaign
18	Bloomfield	CT-187 (Blue Hills Ave) from Glenwood Ave to Brookdale Ave	949	1 Pedestrian (Fatal)	Older pedestrian hit while crossing roadway, dark-lighted condition	Provide sidewalks on Glenwood Ave, traffic signal retroreflective backplates	Watch for Me CT Campaign, Police Enforcement
19	Newington	Fenn Rd from Mobil Station south of Holly Dr to Holly Dr	949	1 Pedestrian (Fatal)	Pedestrian hit on roadway, dark-lighted condition	Roadway illumination, add pedestrian pathways	Watch for Me CT Campaign
20	Bloomfield	CT-187 (Blue Hills Ave) from Englewood Ave to Glenwood Ave	949	1 Pedestrian (Fatal)	Pedestrian hit crossing roadway, dark-lighted condition	Provide sidewalks on Glenwood Ave, roadway illumination on CT-187 (Blue Hills Ave)	Watch for Me CT Campaign

Top Non-Motorized Crash Corridors and Countermeasures, 2015-2017

Rank	Municipality	Location	EPDO	Person Type	Crash Details	Infrastructure Countermeasures	Non-Infrastructure Countermeasures
21	Hartford	Campfield Ave from Preston St to Otis St	949	1 Pedestrian (Fatal)	Pedestrian hit crossing roadway, dark-lighted condition	High-visibility crosswalks, dynamic speed feedback signs, traffic calming	Watch for Me CT Campaign
22	Enfield	US-5 (Enfield St) from Orlando Rd to Orbit Dr	949	1 Pedestrian (Fatal)	Pedestrian hit on roadway (shoulder), dark-lighted condition	High-visibility crosswalks, add pedestrian pathways for better pedestrian connectivity, investigate roadway illumination	Watch for Me CT Campaign
23	Hartford	Preston St from Rockingham St to Campfield Ave	949	1 Pedestrian (Fatal)	Distracted pedestrian hit crossing roadway	Restripe crosswalk at Preston St and Campfield Ave, stripe edge lines to narrow lanes	Watch for Me CT Campaign
24	Hartford	Wethersfield Ave from Bond St to Mannz St	949	1 Bicyclist (Fatal)	Bicyclist hit cycling along roadway, against traffic, daylight	Dynamic speed feedback signs, MUTCD W16-1P sign (Share the Road), curb extensions	Watch for Me CT Campaign, Traffic Skills 101 Bike Course, Share the Road
25	West Hartford	Trout Brook Dr from Craigmoor Rd to Asylum Ave	949	1 Pedestrian (Fatal)	Pedestrian hit crossing Trout Brook Dr in marked crosswalk, clear and dark-lighted condition	Repaint crosswalk stripes in Trout Brook Dr and Asylum Ave, add sidewalks on east side of Trout Brook Dr, leading pedestrian interval	Watch for Me CT Campaign
26	Newington	Mill St Ext from CT-175 (Cedar St) to end	949	1 Pedestrian (Fatal)	Substance-impaired, older pedestrian hit crossing roadway in marked crosswalk, dark-lighted condition, signalized intersection	The crosswalks at Mill St Ext were reconfigured after the fatal pedestrian crash to reduce crossing distance	Watch for Me CT Campaign
27	Southington	Savage St from Rockwood Dr to Bridle Path Dr	949	1 Pedestrian (Fatal)	Pedestrian hit walking along roadway, against traffic in travel lane, daylight condition	Add pedestrian pathways for pedestrian connectivity, high-visibility crosswalks	Watch for Me CT Campaign

Top Non-Motorized Crash Corridors and Countermeasures, 2015-2017

Rank	Municipality	Location	EPDO	Person Type	Crash Details	Infrastructure Countermeasures	Non-Infrastructure Countermeasures
28	Enfield	US-5 (Enfield St) from Orbit Dr to Meadow Lark Rd	949	1 Pedestrian (Fatal)	Pedestrian hit crossing Enfield St on roadside (shoulder), dark-not lighted condition	If a new sidewalk is constructed on the east side of US-5 (Enfield St) provide a marked crosswalk	Watch for Me CT Campaign
29	Hartford	Campfield Ave from Douglas St to Preston St	949	1 Pedestrian (Fatal)	Pedestrian hit crossing roadway	High-visibility crosswalks, dynamic speed feedback signs, traffic calming	Watch for Me CT Campaign
30	Newington	CT-175 (Cedar St) from Mill St Ext to Hartt Ln	949	1 Pedestrian	Pedestrian hit crossing roadway in travel lane, daylight condition	Dynamic speed feedback signs and traffic calming at CT-175 (Cedar St)	Watch for Me CT Campaign
31	Mansfield	CT-430 (N Eagleville Rd) from Ledoyt Rd to Discovery Dr	949	1 Pedestrian (Fatal)	Substance-impaired pedestrian hit in driveway, dark-lighted condition	High-visibility crosswalks, MUTCD W11-2 sign (Pedestrian Warning)	Watch for Me CT Campaign
32	Newington	Ella Grasso Blvd from CT-9 to Mobil Station south of Holly Dr	949	1 Pedestrian (Fatal)	Pedestrian hit crossing roadway in marked crosswalk, dark-lighted condition	Traffic signal retroreflective backplates, investigate roadway illumination	Watch for Me CT Campaign
33	Hartford	Preston St from Campfield Ave to George St	949	1 Pedestrian	Pedestrian hit walking in driveway, daylight condition	Add edge lines on Preston St for traffic calming, traffic signal retroreflective backplates at Campfield Ave intersection	Watch for Me CT Campaign
34	Hartford	Merrill St from Prospect Ave to New Park Ave	949	1 Pedestrian (Fatal)	Pedestrian hit in roadway in daylight condition	High-visibility crosswalks on Merrill St/New Park Ave intersections, tree pruning, traffic calming (speed bumps) on Merrill St and Prospect Ave	Watch for Me CT Campaign

Top Non-Motorized Crash Corridors and Countermeasures, 2015-2017

Rank	Municipality	Location	EPDO	Person Type	Crash Details	Infrastructure Countermeasures	Non-Infrastructure Countermeasures
35	Southington	Rockwood Dr from Savage St to Mountain Edge Dr	949	1 Pedestrian (Fatal)	Pedestrian hit walking along roadway against traffic in the travel lane, daylight condition	Add pedestrian pathways for better and safe pedestrian connectivity, high-visibility crosswalks	Watch for Me CT Campaign
36	Hartford	Ann Uccello St from Chapel St N to High St	949	1 Pedestrian (Fatal)	Pedestrian (not visible) hit crossing roadway, dark-lighted condition	Roadway/Lane configuration to lower turning speeds off of Chapel Street, Improving safety for crossing pedestrians, high-visibility crosswalks, Investigate Roadway Illumination	Watch for Me CT Campaign
37	East Hartford	Sawka Dr from Summerset Dr to Summerset Dr	949	1 Pedestrian (Fatal)	Distracted pedestrian hit in driveway access, daylight condition	Install traffic calming infrastructure	Watch for Me CT Campaign
38	West Hartford	Asylum Ave from Fox Meadow Ln to Trout Brook Dr	949	1 Pedestrian (Fatal)	Pedestrian hit crossing roadway at marked crosswalk, failure to obey traffic signs, dark-lighted and dry condition	High-visibility crosswalk on Trout Brook Dr and Asylum Ave, add sidewalks on east side of Trout Brook Dr, provide signal heads for pedestrian on Trout Brook Dr intersection and modify signal timings, leading pedestrian interval	Watch for Me CT Campaign
39	Wethersfield	Jordan Ln from CT-99 (Silas Deane Hwy) to Hartford Ave	949	1 Pedestrian (Fatal)	Substance-impaired pedestrian hit on roadway under dark-lighted condition	Add sidewalks on north side at railroad tracks to alleviate the need to cross Jordan Lane and minimizes vehicle/ pedestrian conflict	Watch for Me CT Campaign
40	Wethersfield	CT-99 (Silas Deane Hwy) from Hewitt St to Mill St	949	1 Pedestrian (Fatal)	Pedestrian hit crossing roadway, dark-lighted condition	High-visibility crosswalks on driveways, investigate roadway illumination	Watch for Me CT Campaign

Top Non-Motorized Crash Corridors and Countermeasures, 2015-2017

Rank	Municipality	Location	EPDO	Person Type	Crash Details	Infrastructure Countermeasures	Non-Infrastructure Countermeasures
41	Newington	CT-175 (Cedar St) from CT-173 (Willard Ave) to Mill St Ext	949	1 Pedestrian (Fatal)	Pedestrian under the influence hit crossing roadway, failure to obey traffic signs, dark-lighted condition	High-visibility crosswalks at each end corridor, MUTCD W11-2 sign (Pedestrian Warnings)	Watch for Me CT Campaign
42	Enfield	Orbit Dr from Orlando Rd to US-5 (Enfield St)	949	1 Pedestrian (Fatal)	Pedestrian hit crossing roadway on shoulder, dark-lighted condition	Provide a marked crosswalk and add sidewalk on the east side of US-5 (Enfield St)	Watch for Me CT Campaign
43	Newington	CT-174 (New Britain Ave) from CT-173 (Willard Ave) to Erwin Ct	949	1 Pedestrian (Fatal)	Pedestrian hit crossing roadway (not visible) on travel lane, dark-lighted condition	Install sidewalks along the length of the corridor	Watch for Me CT Campaign
44	Tolland	Anderson Rd from Goose Ln to Baxter St	949	1 Pedestrian (Fatal)	Pedestrian hit on roadway (travel lane)	Install sidewalks along the length of the corridor	Watch for Me CT Campaign
45	Wethersfield	CT-99 (Silas Deane Hwy) from Mill St to CT-3 (Maple St)	949	1 Pedestrian (Fatal)	Physically impaired pedestrian hit crossing roadway, dark-lighted condition	High visibility crosswalks, investigate roadway illumination	Watch for Me CT Campaign
46	New Britain	CT-9 from CT-174 (E Main St) Off Ramp to East St	949	4 Pedestrians (1 Fatal)	Two pedestrians hit, substance-impaired, dark-lighted, pedestrians hit in travel lane, disabled vehicle related, dark-lighted condition	Traffic calming, traffic signal retroreflective backplates, investigate roadway illumination	Watch for Me CT Campaign
47	Berlin	US-5 (Wilbur Cross Hwy) SB from Worthington Ridge Rd to Middletown Rd	949	1 Pedestrian (Fatal)	Pedestrian hit crossing roadway, dark-lighted condition	Provide sidewalks or multiple paths adjacent to the roadway, investigate roadway illumination	Watch for Me CT Campaign

Top Non-Motorized Crash Corridors and Countermeasures, 2015-2017

Rank	Municipality	Location	EPDO	Person Type	Crash Details	Infrastructure Countermeasures	Non-Infrastructure Countermeasures
48	Somers	CT-190 (Main St) from Sokol Rd to Maple Ridge Dr	949	1 Pedestrian (Fatal)	Pedestrian under the influence hit on roadway, failure to yield right-of-way, daylight condition	Shared-use paths (SUP), provide a safe crossing for pedestrian to access both halves of the cemetery	Watch for Me CT Campaign
49	Southington	Lanning St from CT-10 (Queen St) to Doral Ln	949	1 Pedestrian (Fatal)	Pedestrian hit in travel lane (disabled vehicle related), snowy conditions	Provide sidewalks to entire corridor to separate pedestrians from motor vehicles	Watch for Me CT Campaign
50	Berlin	US-5 (Wilbur Cross Hwy) NB from Bishops Curve to Middletown Rd	949	1 Pedestrian (Fatal)	Pedestrian hit crossing roadway, dark-lighted condition	Provide sidewalks or multiple paths adjacent to the roadway to improve the walking environment, investigate roadway illumination	Watch for Me CT Campaign
51	Hartford	Franklin Ave from South St to Elliot St	368	14 Pedestrians 3 Bicyclists	Behavioral issues by drivers and non-motorized users	High-visibility crosswalks, curb extensions across Franklin Ave, pedestrian median refuge islands, investigate roadway illumination	Watch for Me CT Campaign High Visibility Enforcement Police Enforcement
52	Hartford	US-44 (Albany Ave) from Irving St to Brook St	269	10 Pedestrians 1 Bicyclist	Speeding, lack of sufficient pedestrian crossing amenities	High-visibility crosswalks, traffic signal retroreflective backplates, leading pedestrian interval, investigate roadway illumination	Watch for Me CT Campaign
53	Hartford	Barbour St from Capen St to Taylor Dr	254	8 Pedestrians 3 Bicyclists	Pedestrians and bicyclists hit on roadway, dark-lighted condition	Add bike lanes, curb extensions, high-visibility crosswalks, dynamic speed feedback signs	Watch for Me CTCampaign, Traffic Skills 101 Bike Cours
54	Hartford	Sigourney St from Collins St to Ashley St	215	6 Pedestrians	Pedestrian and driver behavioral issues contributed to crashes, not obeying traffic signals	Traffic signal retroreflective backplates, leading pedestrian interval	Watch for Me CT Campaign

Top Non-Motorized Crash Corridors and Countermeasures, 2015-2017

Rank	Municipality	Location	EPDO	Person Type	Crash Details	Infrastructure Countermeasures	Non-Infrastructure Countermeasures
55	Hartford	Main St from Ely St to Pavilion St	209	4 Pedestrians 2 Bicyclists	Dark conditions	High-visibility crosswalks, pedestrian median refuge islands	Watch for Me CT Campaign
56	Hartford	Main St from Gold St to Asylum Ave	208	10 Pedestrians 2 Bicyclists	All pedestrians and bicyclists hit in crosswalk, drivers failed to yield	Leading pedestrian interval at Pearl St intersection	Watch for Me CT Campaign
57	Hartford	Main St from Pavilion St to Battles St	181	6 Pedestrians 1 Bicyclist	Bicyclist and pedestrians hit in roadway	High-visibility crosswalks on Battles St, road diets with implementation of bicycle lanes along the corridor	Watch for Me CT Campaign High Visibility Enforcement
58	Manchester	US-6 (Center St) from Arch St to Benton St	170	4 Pedestrians 5 Bicyclists	Bicyclist and pedestrians hit in roadway	Traffic signal retroreflective backplates, high-visibility crosswalks, traffic calming, MUTCD W16-1P sign (Share the road)	Watch for Me CT Campaign, Traffic Skills 101 Bike Course
59	Hartford	Jefferson St from Broad St to Washington St	166	5 Pedestrians 3 Bicyclists	No marked crosswalks	High-visibility crosswalks on Broad St, leading pedestrian interval	Watch for Me CT Campaign
60	Hartford	Woodland St from Farmington Ave to Asylum Ave	165	2 Pedestrians 1 Bicyclist	Pedestrians and bicyclist hit crossing roadway	Traffic signal retroreflective backplates and leading pedestrian interval at all signals	Watch for Me CT Campaign
61	Hartford	Ashley St from May St to Sigourney St	160	5 Pedestrians	Crashes in crosswalk	Leading pedestrian interval and traffic signal retroreflective backplates at Sigourney St intersection, high-visibility crosswalks	Watch for Me CT Campaign
62	Hartford	Sigourney St from Ashley St to Sargeant St	154	5 Pedestrians	Pedestrians hit crossing roadway, driver behavioral issues, under various conditions	Traffic signal retroreflective backplates, leading pedestrian interval	Watch for Me CT Campaign

Top Non-Motorized Crash Corridors and Countermeasures, 2015-2017

Rank	Municipality	Location	EPDO	Person Type	Crash Details	Infrastructure Countermeasures	Non-Infrastructure Countermeasures
63	Hartford	Park St from Broad St to Hungerford St	148	7 Pedestrians 3 Bicyclists	Lack of sufficient pedestrian and bicycle accommodations	Leading pedestrian interval at Broad St intersection, traffic signal retroreflective backplates, curb extensions on Hungerford St and Park St intersection, bike lanes along entire corridor	Watch for Me CT Campaign
64	Hartford	Garden St from Mather St to Pliny St	148	5 Pedestrians	Drivers encroaching the pedestrian crossing	Traffic signal retroreflective backplates, leading pedestrian interval and high-visibility crosswalks at Mather St intersection	Watch for Me CT Campaign Police Enforcement
65	East Hartford	US-5 (Main St) from Chapel St to Locust Ct	148	5 Pedestrians	Speeding and lack of sufficient pedestrian amenities	Leading pedestrian interval, road diet along corridor, investigate roadway illumination	Watch for Me CT Campaign
66	Hartford	Ashley St from Sigourney St to Huntington St	143	4 Pedestrians	Pedestrians hit on roadway (crosswalk)	Leading pedestrian interval and traffic signal retroreflective backplates at Sigourney St intersection, high-visibility crosswalks	Watch for Me CT Campaign
67	New Britain	Main St from Lafayette St to Lee St	143	8 Pedestrians (1 Fatal)	Speeding and wide pedestrian crossings	Curb extensions on Lafayette St intersection, traffic calming along corridor	Watch for Me CT Campaign
68	Hartford	Broad St from Park St to Grand St	138	7 Pedestrians 2 Bicyclists	Motorists encroaching on crosswalks	Traffic signal retroreflective backplates, leading pedestrian interval at Park St, high-visibility crosswalks at Park St and Grand St intersections	Watch for Me CT Campaign
69	East Hartford	US-5 (Main St) from Burnside Ave to John St	137	4 Pedestrians	Wide crossing	Remove the skew and reconfigure the intersection to a 90 degree angle, leading pedestrian interval on Burnside Ave intersection	Watch for Me CT Campaign

Top Non-Motorized Crash Corridors and Countermeasures, 2015-2017

Rank	Municipality	Location	EPDO	Person Type	Crash Details	Infrastructure Countermeasures	Non-Infrastructure Countermeasures
70	Hartford	Garden St from Albany Ave to Mather St	137	7 Pedestrians (1 Fatal)	Drivers encroaching the pedestrian crossing	Traffic signal retroreflective backplates, leading pedestrian intervals and high-visibility crosswalks at both intersections	Watch for Me CT Campaign Police Enforcement
71	Hartford	Central Row from Main St to Prospect St	132	9 Pedestrians	Motorists encroaching on crosswalks	Traffic signal retroreflective backplates, leading pedestrian interval at Main St intersection	Watch for Me CT Campaign
72	West Hartford	Farmington Ave from Trout Brook Dr to Outlook Ave	127	5 Pedestrians 3 Bicyclists	Insufficient bike infrastructure and pedestrians needed to establish presence in the intersection	Leading pedestrian interval at the Trout Brook Dr intersection, striped crosswalks in all intersections, add bike lanes to the corridor	Watch for Me CT Campaign
73	Hartford	Main St from Battles St to US-44 (Main St)	122	5 Pedestrians	Pedestrians hit crossing Main St, under various conditions	High-visibility crosswalks at intersections, traffic signal retroreflective backplates at all signals, traffic calming	Watch for Me CT Campaign
74	Hartford	Park St from Washington St to Cedar St	120	6 Pedestrians	Motorists encroaching on crosswalks	Traffic signal retroreflective backplates, traffic calming and striped crosswalks in Washington St intersection	Watch for Me CT Campaign High Visibility Enforcement
75	Hartford	Asylum Ave from Atwood St to Willard St	120	4 Pedestrians 2 Bicyclists	Drivers encroaching the crosswalks and speeding	High-visibility crosswalks, traffic signal retroreflective backplates, traffic calming in Willard St intersection	Watch for Me CT Campaign
76	Hartford	Park St from Newton St to New Park Ave	116	4 Pedestrians 1 Bicyclist	Motorists encroaching on crosswalks	Traffic calming and traffic signal retroreflective backplates in New Park Ave intersection, high-visibility crosswalks on Newton St intersection	Watch for Me CT Campaign
77	Hartford	Park St from Zion St to Putnam St	116	5 Pedestrians	Motorists encroaching on crosswalks	Traffic calming, traffic signal retroreflective backplates and high-visibility crosswalks at each intersections	Watch for Me CT Campaign High Visibility Enforcement

Top Non-Motorized Crash Corridors and Countermeasures, 2015-2017

Rank	Municipality	Location	EPDO	Person Type	Crash Details	Infrastructure Countermeasures	Non-Infrastructure Countermeasures
78	Hartford	Park St from Park Ter to Zion St	116	4 Pedestrians 1 Bicyclist	Motorists encroaching on crosswalks	Traffic calming, traffic signal retroreflective backplates and high-visibility crosswalks at each intersections	Watch for Me CT Campaign High Visibility Enforcement
79	Hartford	Park St from Lawrence St to Broad St	115	6 Pedestrians 2 Bicyclists	Pedestrians and bicyclists hit crossing roadway, under various conditions	Traffic signal retroreflective backplates, traffic calming on Broad St, investigate roadway illumination	Watch for Me CT Campaign
80	Hartford	Albany Ave from Sigourney St to Vine St	115	6 Pedestrians 2 Bicyclists	Failure to yield and failure to obey signals, distracted by electronic device	Traffic calming, traffic signal retroreflective backplates at all signals, Roadway/Lane reconfiguration at Vine St intersection	Watch for Me CT Campaign
81	New Britain	Broad St from Curtis St to High St	111	6 Pedestrians 1 Bicyclist	Motorists encroaching on the crosswalks	Traffic calming and traffic signal retroreflective backplates at all signals	Watch for Me CT Campaign
82	New Britain	CT-555 (W Main St) from Russell St to Main St	103	5 Pedestrians 3 Bicyclists	Pedestrians hit crossing roadway, pedestrian hit on shoulder, older pedestrian hit crossing roadway, bicyclist hit while crossing roadway from sidewalk, dark-lighted condition	Traffic signal retroreflective backplates, MUTCD R9-2 sign (Cross Only at Crosswalks), high-visibility crosswalks	Watch for Me CT Campaign, Education - Traffic Skills 101 Bike Course
83	Hartford	Main St from Temple St to Chapel St	94	5 Pedestrians 1 Bicyclist	Bicyclist and pedestrians hit in marked-crosswalk, dark-lighted, pedestrian hit waiting to cross roadway, on street parking	Investigate roadway illumination traffic signal retroreflective backplate, high-visibility crosswalks	Watch for Me CT Campaign
84	New Britain	E Main St from CT-9 to Stanley St	61	4 Pedestrians (1 Fatal)	Two pedestrians hit, substance-impaired,dark-lighted, pedestrian hit in travel lane, disabled vehicle related, dark-lighted condition	Traffic calming, traffic signal retroreflective backplates, striped crosswalks at Stanley St intersection, investigate roadway illumination	Watch for Me CT Campaign
85	New Britain	S Main St from Roberts St to Ellis St	44	1 Pedestrian 2 Bicyclists	Pedestrian hit crossing roadway, failure to yield right-of-way, bicyclists hit crossing roadway	Traffic calming, traffic signal retroreflective backplates, high-visibility crosswalks	Watch for Me CT Campaign

Top Non-Motorized Crash Intersections and Countermeasures, 2015-2017

Rank	Municipality	Location	EPDO	Person Type	Crash Details	Infrastructure Countermeasures	Non-Infrastructure Countermeasures
1	Manchester	US-44 (Center St) and Adams St	949	2 Pedestrians (1 Fatal)	Pedestrians hit crossing roadway at mid-block, dark-lighted condition	Traffic signal retroreflective backplates, investigate roadway illumination	Watch for Me CT Campaign
2	Hartford	Ann Uccello St and Chapel St south	949	1 Pedestrian (Fatal)	Pedestrian hit crossing roadway, clear and dark-lighted condition	Traffic signal retroreflective backplates, investigate if pedestrian crossing lights is functioning	Watch for Me CT Campaign,
3	Wethersfield	CT-99 (Silas Deane Hwy) and Jordan Ln	949	4 Pedestrians (1 Fatal)	Pedestrians hit crossing roadway, dark-lighted condition, wide crossing	Traffic signal retroreflective backplates, restripe marked crosswalks at intersection, leading pedestrian interval	Watch for Me CT Campaign
4	Newington	Ella Grasso Blvd and Fenn Rd	949	2 Pedestrians (1Fatal)	Pedestrians hit crossing roadway at unmarked crosswalk, dark-lighted condition	Add sidewalks at east side of Fenn Rd, traffic signal retroreflective backplates, stripe marked crosswalks at intersection	Watch for Me CT Campaign
5	Newington	Cedar St and Mill St Ext (CDS)	949	6 Pedestrians (1 Fatal)	Motorists encroaching on the crosswalks	Dynamic speed feedback signs on Cedar St, traffic signal retroreflective backplates at intersection	Watch for Me CT Campaign
6	Hartford	Broad St and Russ St	114	3 Pedestrians 2 Bicyclists	Pedestrians hit crossing roadway at marked crosswalk, pedestrian hit crossing roadway at mid-block, bicyclists hit cycling along roadway daylight and dark-lighted condition	Traffic signal retroreflective backplates, add pedestrian crossing lights, updated the traffic signals with left or right turn signals	Watch for Me CT Campaign

Top Non-Motorized Crash Intersections and Countermeasures, 2015-2017

Rank	Municipality	Location	EPDO	Person Type	Crash Details	Infrastructure Countermeasures	Non-Infrastructure Countermeasures
7	Manchester	East Middle Tpke and Brookfield St	110	4 Pedestrians	Pedestrians hit crossing roadway at unmarked crosswalk, daylight and dark-lighted condition	Dynamic speed feedback signs, investigate roadway illumination	Watch for Me CT Campaign
8	Hartford	Farmington Ave and Forest St	109	1 Bicyclist	Bicyclist hit crossing Forest St at marked crosswalk, dark-not lighted condition	High-visibility crosswalks, dynamic speed feedback signs	Watch for Me CT Campaign Traffic Skills 101 Bike Course
9	Hartford	Park St and New Park Ave	99	1 Pedestrian	Pedestrian hit while crossing New Park Ave, not in crosswalk, clear and daylight condition	Traffic signal retroreflective backplates, high-visibility crosswalks, curb extensions	Watch for Me CT Campaign
10	Manchester	Keeney St and Hartford Rd	93	1 Pedestrian	Pedestrian hit crossing Keeney St at marked crosswalk, daylight condition	Traffic signal retroreflective backplates, restripe marked crosswalks at intersection	Watch for Me CT Campaign
11	Plainville	Unionville Ave and Bradley St	55	1 Pedestrian	Pedestrian hit crossing roadway at unmarked crosswalk, clear and dark-lighted	Add pedestrian pathways, traffic signal retroreflective backplates	Watch for Me CT Campaign
12	Manchester	US-6 (East Center St) and Goodwin St	27	1 Pedestrian	Pedestrian hit crossing roadway at unmarked crosswalk, dark-lighted	Stripe high-visibility crosswalks at Goodwin St, dynamic speed feedback signs on US-6 (East Center St)	Watch for Me CT Campaign

EPDO Methodology

The EPDO network screening analysis was conducted according to the following steps in a GIS and tabular format: Crash costs were developed using Federal Highway Administration's (FHWA) national guidance (https://safety.fhwa.dot.gov/hsip/docs/fhwasa17071.pdf).

After applying an adjustment factor for Connecticut, each severity was assigned the following overall crash cost: **K** (fatal): $16,185,746, **A** (suspected serious injury): $938,535, **B** (suspected minor Injury): $284,430, **C** (possible injury): $179,924, and **O** (no apparent injury): $17,061. The ratio of these combined direct and indirect crash-related costs provided the weights for each maximum severity associated with each crash: K: 949, A: 55, B: 17, C: 11, PDO: 1. See table on page 11.

Roads were segmented in GIS to break each centerline at each intersection. Crashes were joined to the road centerline network using a GIS spatial join. The maximum search radius was 100 feet for segments and 250 feet for intersections. If a crash occurred within 100 feet of more than one road centerline, it was joined to all centerlines within 100 feet.

Note: More complex methodologies join each crash to a single centerline; however, this is typically the result of exhaustive crash accuracy analysis and the error associated with multiple joins is addressed later in the methodology.

The associated weights for each joined crash were summed for each centerline segment and intersection. Segments were then ranked according to their summed EPDO weights divided by the mile length of the segment.

Note: More complex analyses segment the road network according to a uniform length (e.g., 0.1 miles). This accounts for bias associated with segments of differing length. The EPDO per mile method attempts to address this bias and provide a rough estimate for planning-level purposes.

The top 20% of scored segments were selected for further review; individual segments were aggregated by route/street name to develop contiguous individual sites. Any segment less than 0.02 miles long (~100 feet) was not included in the analysis. Final corridors had to be at least 0.1 miles long and have at least 3 total crashes.

Final cuts were made to the ranked list of sites based on these criteria and all limited access roads were removed, top ranked corridors and intersections were inspected visually to determine if there were overlapping sites. If intersections overlapped with a corridor(s), then the analyst determined if the high crash location was the result of the single intersection issue or the corridor as a whole. The top crash locations are divided into intersections (Table 5.2.1) and corridors (Table 5.2.2) and ranked based on EPDO.

Note: The final EPDO score should not be used as an objective standard. This observed crash-based analysis is subject to regression-to-the-mean and should only be used as a relative metric for sites during the specific analysis period.

The top non-motorized crash locations were selected and ranked based on the same methodology. The non-motorized crash countermeasures were selected based on the Connecticut Uniform Police Crash Reports and a desktop review of the affiliated locations.

Appendix F: CRCOG Roundabout Screening

To: Roger Krahn, CRCOG

Date: 6/24/22

Project #: 42852.00

From: Joseph Balskus, Project Manager

Re: Roundabout Screening Study
Screening Methodology

The Roundabout Screening Study is underway with the crash screening and volume screening efforts. This memorandum summarizes the completed screening efforts and is the Task 2 deliverable for the scope of work prepared to describe the following 5-step screening process: 1) Crash Methodology, 2) Traffic Volume Screening Methodology, 3) Geometry of Intersection, 4) Known Congestion/Operational hotspots, and 5) Desktop reviews. These steps outline the screening process to identify potential locations of single lane roundabouts in the CRCOG region.

Development of Intersection Locations

An existing GIS-based intersection inventory for the CRCOG region is not available. VHB developed the following methodology to create intersections for use in the roundabout study. The methodology leverages Esri's ArcGIS Pro software.

Input Data

CTDOT State Roads GIS Feature Class

CTDOT Local Roads GIS Feature Class

Methodology for Creating Intersection Locations:

1. Combine the State & Locals roads feature classes into a Composite Roads layer.
2. Perform an **Intersect** geoprocessing analysis where the Composite Roads layer is intersected with itself, which produces point features where roads intersect "cross" each other.
3. Perform a **Dissolve** geoprocessing analysis on the results of Step 2 to create a single intersection point for each road crossing. The Dissolve function eliminates overlapping points. Approximately 34,000 potential intersection locations were identified after the Dissolve analysis.
4. Perform a **Buffer** geoprocessing analysis against the results of Step 3. A 5-ft buffer distance was used.
5. Perform an **Intersect** geoprocessing analysis where the Results of Step 4 (intersection buffers) are intersected with the Composite Roads Layer. The result is a list of intersection approaches for each potential intersection location.
6. Perform a **Summary Statistics** analysis on the results of Step 5 to count the number of intersection approaches at each potential intersection location. This step is necessary to eliminate non-roadway intersections such as intersections at town lines, stream crossings, ramp merges, etc.
7. Delete potential intersection locations where the approach count from Step 5 was less than 3. This process eliminates road merges where a ramp merge with the mainline or where two divided roads merge together, breaks in roads at town lines and stream crossings, etc.
8. Several additional GIS overlay analyses were performed against the potential intersection locations to further reduce the number of potential intersections, resulting in a final intersection layer for use in the roundabout

study. For example, a functional class evaluation was performed on the intersection approaches to identify which intersections were local/local, were associated with an interstate or freeway, and ownership. VHB eliminated all local/local intersections, in accordance with the scope of work, that stated that the screening study would only consider intersections with a functional classification of minor collector road or higher on at least one leg of the intersection. The results of the analysis are summarized below by ownership (ownership information pulled from CTDOT's road inventory database):

- 4,508 Local Intersections (all approaches are owned by the municipality)
- 3,650 State/Local Intersections (DOT owns at least one of the intersection approaches)
- Total = 8,158 Intersections

These total intersections may include some duplicates resulting from median divided intersections. These will be filtered during the screening process.

9. Finally, a series of summary analyses were run against the intersection locations and their associated roadway approaches to identify the following information:
    - min/max functional classification
    - min/max speeds,
    - min/max lane count
    - street names

In Summary, a total of 8,158 intersections within the CRCOG region will undergo the 5-step screening as described in the following steps. The data for these screened intersections will be provided to CRCOG in GIS data set for CRCOG to disseminate to the communities as needed.

Figures 1 through 3 below provide a graphical summary of the genesis of the above roadway screening to generate the total listing of screened intersections.

Figure 1: State & Local Roads within CRCOG Region

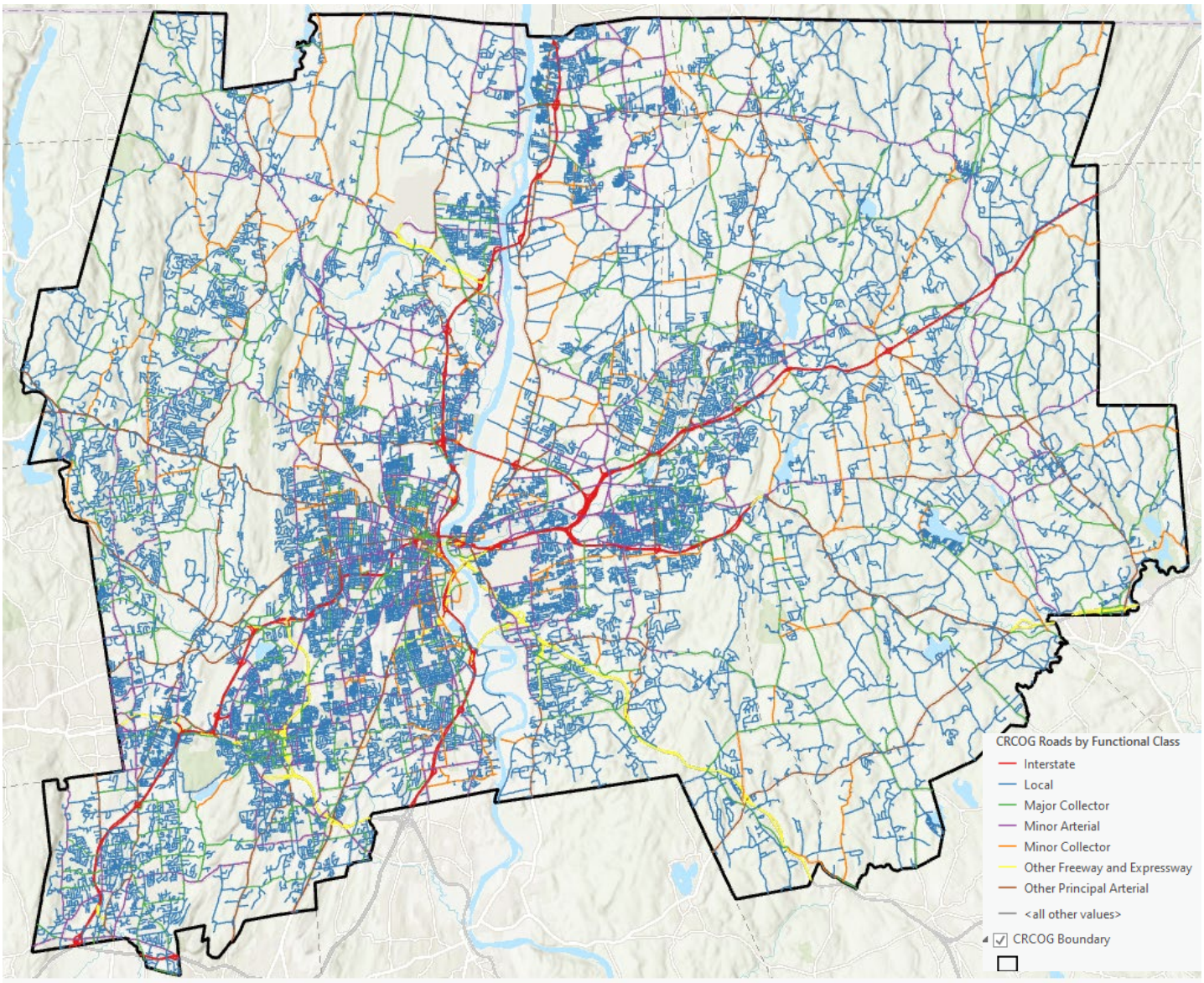
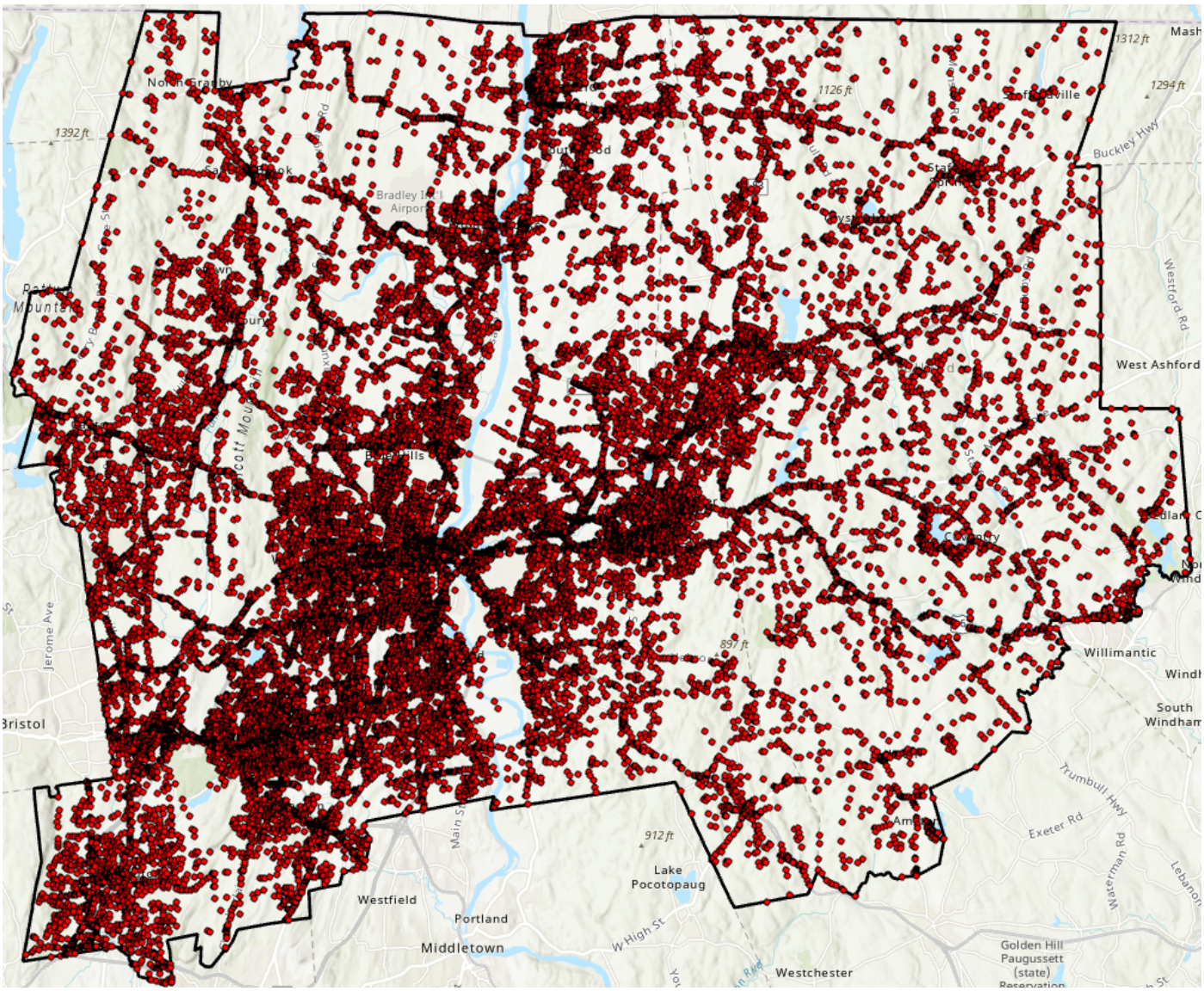
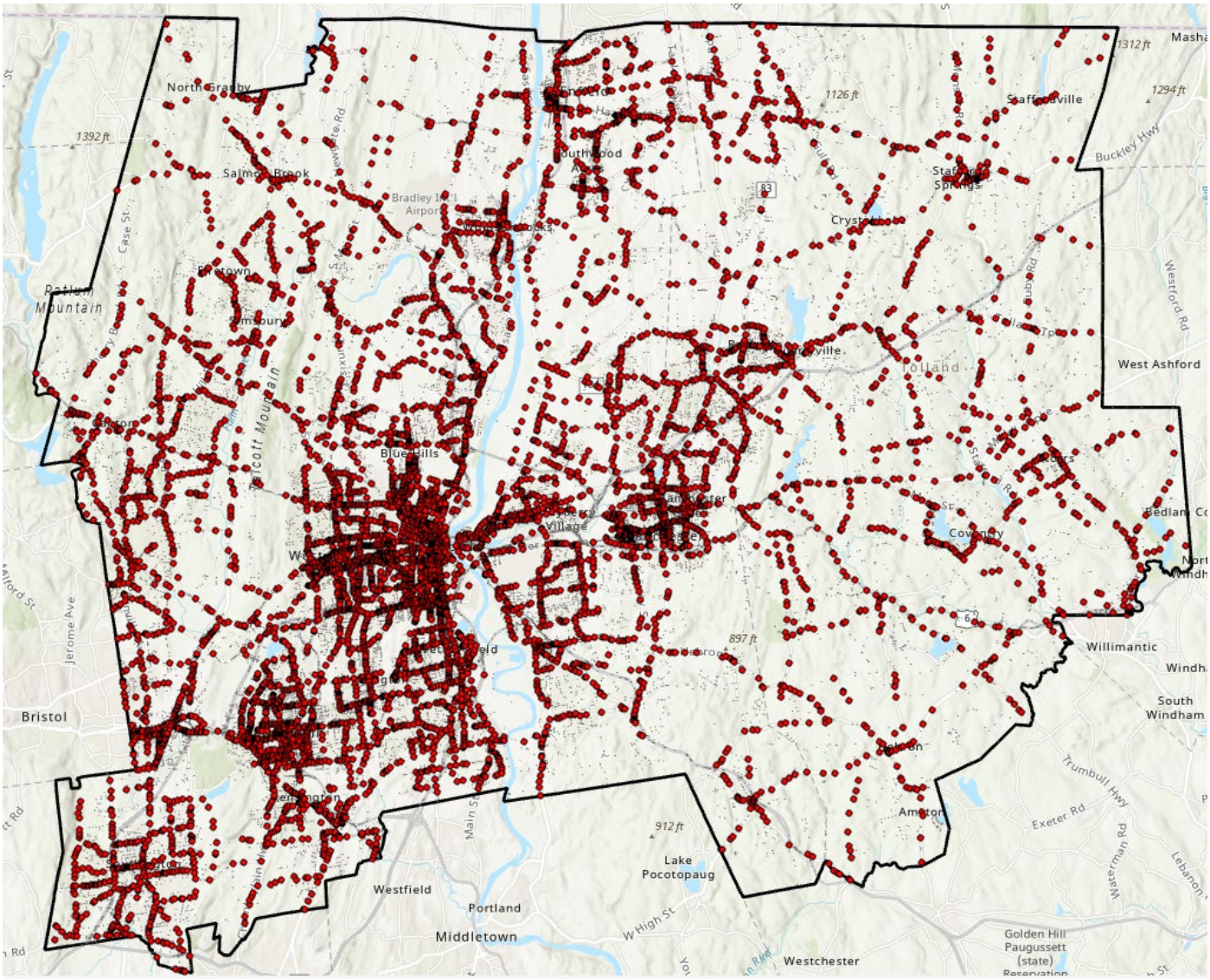


Figure 2: Preliminary Intersection Locations



This figure depicts the results of initial list of intersection locations with the CRCOG region. These locations were generated by intersecting the State & Locals roads, where the result is a point location where roads intersect "cross" each other. Only intersections with a functional classification of minor collector road or higher on at least one leg are included.

Figure 3: Study Area Intersections



This figure depicts the results of the intersection creation methodology. 8,158 intersection locations were identified for analysis. Many of these intersections will be eliminated after the crash data screening is applied to each location.

Step 1: Crash Methodology

The primary and initial screening criteria in the screening process is the crash data from the Connecticut Crash Data Repository (CTCDR). The crash data is being entered into a geodatabase to allow for summarization of the data to screen for locations with a documented crash history. The VHB Team is using the Connecticut Roadway Safety Management System (CRSMS) in part to inform the initial screening methodologies.

The following screening methodology is being utilized for the selection criteria elements, using a single elimination type process, based on the following steps:

The CTDOT Regional Transportation Safety Plan (RTSP) developed a crash severity weighting that was reviewed as part of this roundabout crash screening efforts and considered in the development of the following crash screening severity weighting. The RTSP severity weighting is included in the Appendix for refence. A new severity weighting formula was developed in concert with current FHWA requirements and Highway Safety Manual.

A. Crash Data Collection and Severity Weighting

i. Document number of crashes from CT Crash Data Repository over the 3-year period from 2017 to 2019.

ii. Apply the Equivalent Property Damage Only (EPDO) severity ranking methodology, similar to the that included in the CRCOG Regional Transportation Safety Plan 2020. VHB is using the EPDO screening methodology used in the CT Roadway Safety Management System from December 2020 (see Appendix for an explanation of the severity ranking weights). Below is a summary of the weighting factors by crash severity (KABCO injury scale):

K – Weight Factor = 574
A – Weight Factor = 30
B – Weight Factor = 11
C – Weight Factor = 6
O – Weight Factor = 1

For example, using the intersection of Newington Ave at John Downey Drive in New Britain, there are 11 PDO crashes, 2 C crashes, 7 B crashes, 0 A crashes, and 0 K crashes during a 3- year period, the related EPDO score for this location can be calculated as:

$$\text{Weighted Crash Score:} \quad \frac{(11*1+2*6+7*11+0*30+0*574)}{3} = 33.33$$

As noted in the FHWA Highway Safety Improvement Manual, the KABCO Injury Scale is frequently used by law enforcement for classifying injuries and also can be used for establishing crash costs. (K – Fatal; A – Incapacitating injury; B – Non-incapacitating injury; C – Possible injury; and O – No injury.)

iii. Perform crash query based on highest weighted crash score based on EPDO (as per procedures outlined in the CRSMS).

B. Crash Data Processing with Intersection Locations

i. There are 89,383 total crashes with the CRCOG Region over the 3-year period from 2017 to 2019. Using the intersection layer developed for the roundabout study, VHB filtered the 89,383 crashes down to a subset of intersection crashes based on the methodology below:

- Using the ***Traffic Way Class*** Attribute within crash database, filtered out any crashes that did not occur on a roadway (for example in parking lots and Non-Trafficway Crashes)
  Crash Count = 85,399
- VHB analyzed the ***Crash Specific Location*** Attribute in the crash database to evaluate using only those crashes where the Crash Specific Location Attribute = Intersection. Based on our analysis, we ignored this potential filter. *VHB found too many front-to-rear crashes that were physically located at an intersection, that were miscoded (coded as non-intersection related in the crash database)*.
- The study area intersections were buffered by 125 feet (250' diameter study area) from the center of each intersection. This results in a 250-foot diameter circle as shown on the figures below. This is the same buffer used in the Regional Transportation Safety Plans (RTSP) for CTDOT. For the purposes of the roundabout study, the 125-foot intersection buffers serve as the intersection influence zone for screening the crash data on each approach to the intersection. See Figures 4, 5, 6, and 7.
- The 125' intersection buffers were intersected with the 85,399 crashes as the final GIS filter resulting in a subset of crashes associated with the study area intersection locations.
  Total Crashes within Intersection Study Area = 45,942

VHB then performed a summary statistics analysis, where each 125-foot intersection buffer was summarized by crash severity with the results joined to the intersection locations as attribute data for use in running the EPDO screening analysis. Below is a count of the crash data associated with the study area intersections looking at crash severity and the collision type.

Count of crashes in the study area by severity:
K = 70 (Fatality)
A = 512 (Serious/incapacitating injury)
B = 5,350 (Non-incapacitating injury)
C = 7,103 (Possible injury)
O = 32,887 (No injury)
Null = 20

Collision Type Summary:
Angle= 12,328
Front to Front =1,111
Front to Rear = 18,631
Rear to Rear = 70
Rear to Side = 310
Sideswipe, opposite Direction = 1008
Sideswipe, same direction = 6,122
Other, Unknown, Not Applicable = 6,362

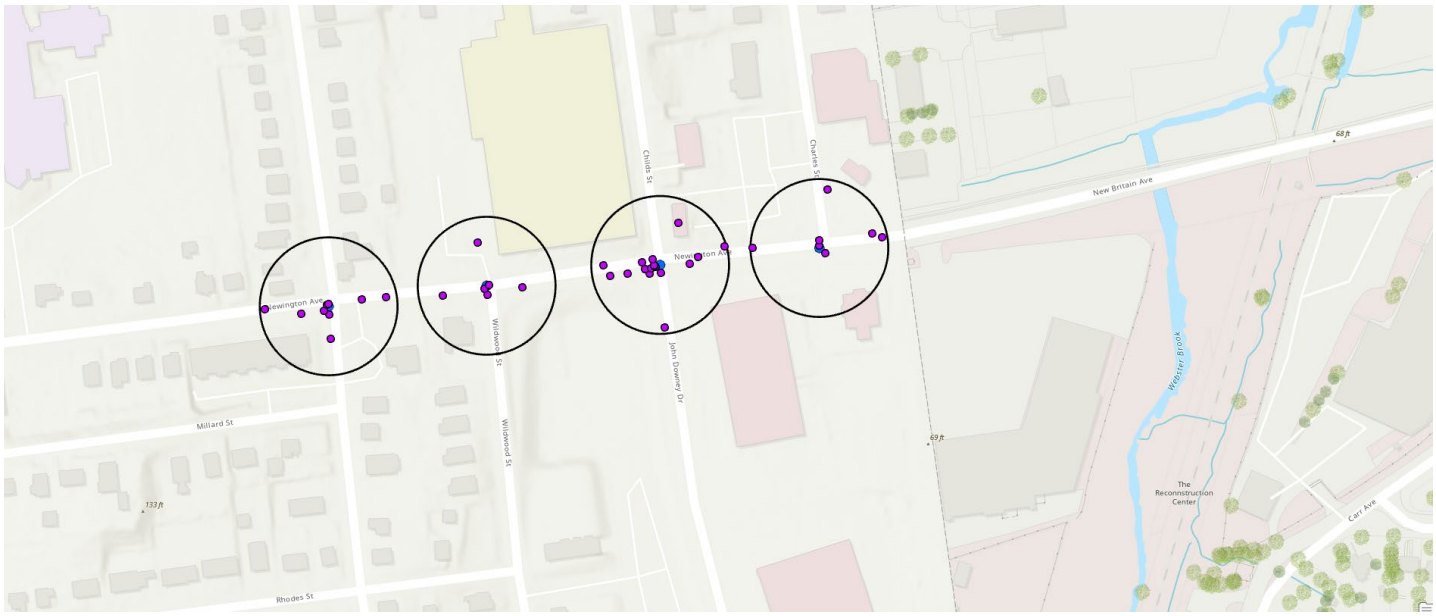
Figure 4: 125-foot radius Intersection Buffers

This figure illustrates the 125-foot buffer area generated for each study intersection for use in screening the crash data. Note how local/local intersection locations have been removed. This segment of Newington Avenue is in New Britain.

Figure 5: CRCOG crash locations show within 125-foot radius Intersection Buffers

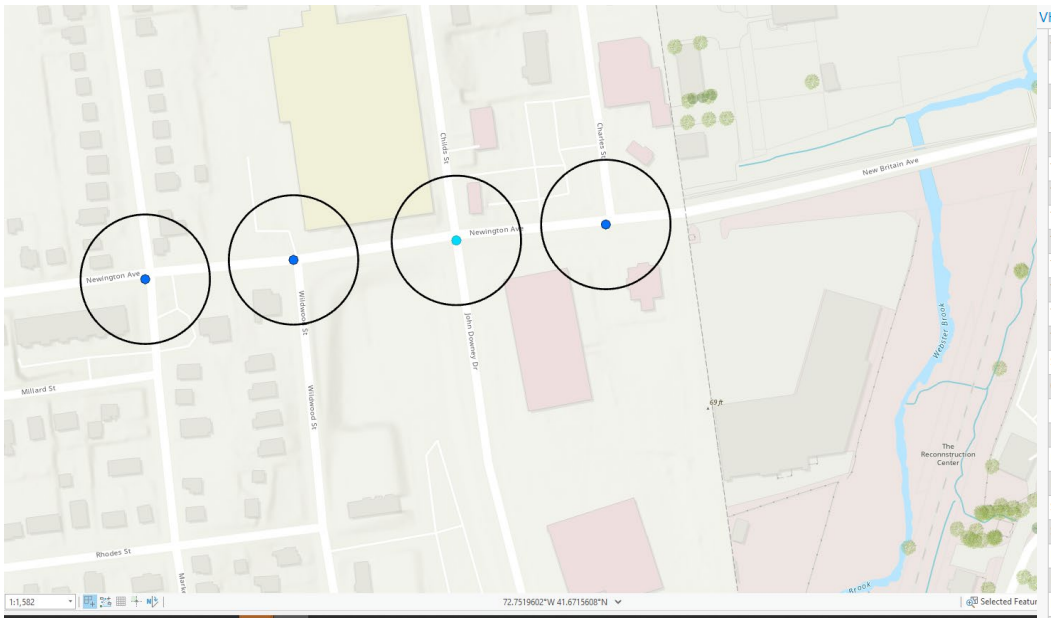
This figure depicts the crashes within the CRCOG region in relation to the 125-foot intersection buffers along Newington Avenue in New Britain.

Figure 6: Crashes Filtered to Intersection Buffers



This figure depicts the results of the preliminary crash analysis where crashes are filtered down to the project area intersection locations (Newington Avenue). For each intersection buffer, the total crashes and crash severity were summarized for use in the EPDO screening analysis.

Figure 7: Example Crash Summary Results



VHB Intersection Results - 8969

Town	NEW BRITAIN
Min AADT	6700
Max AADT	13000
Min Functional Class	Local
Max Functional Class	Minor Arterial
Total Crashes	20
Total K Crashes	0
Total A Crashes	0
Total B Crashes	7
Total C Crashes	2
Total O Crashes	11
Total KA Crashes	0
Total KABC Crashes	9
Score	33.333333
Ownership	State/Other
Minimum Speed	35
Maximum Speed	35
Minimum Lanes	2
Maximum Lanes	4
Street 1	NEWINGTON AVE
Street2	CHILDS ST
Route ID	174-E
ParcelImpactCount	2
Parcel Impact Areas (SF)	1050.770752

This figure illustrates the crash data summary for the intersection in the center of the image: Newington Avenue at John Downey Drive. For this location there are 11 PDO crashes, 2 C crashes, 7 B crashes, 0 A crashes, and 0 K crashes during a 3-year period, the related EPDO score for the intersection can be calculated as:

$$\text{Weighted Crash Score: } \frac{(11*1+2*6+7*11+0*30+0*574)}{3} = 33.33$$

Step 2: Traffic Volume Screening Methodology

The volume screening methodology will be applied to all intersections that were screened under Step 1 Crash Screening. VHB is using the traffic volume data available within the Connecticut Roadway Safety Management System (CRSMS) for all locations screened in Step 1.

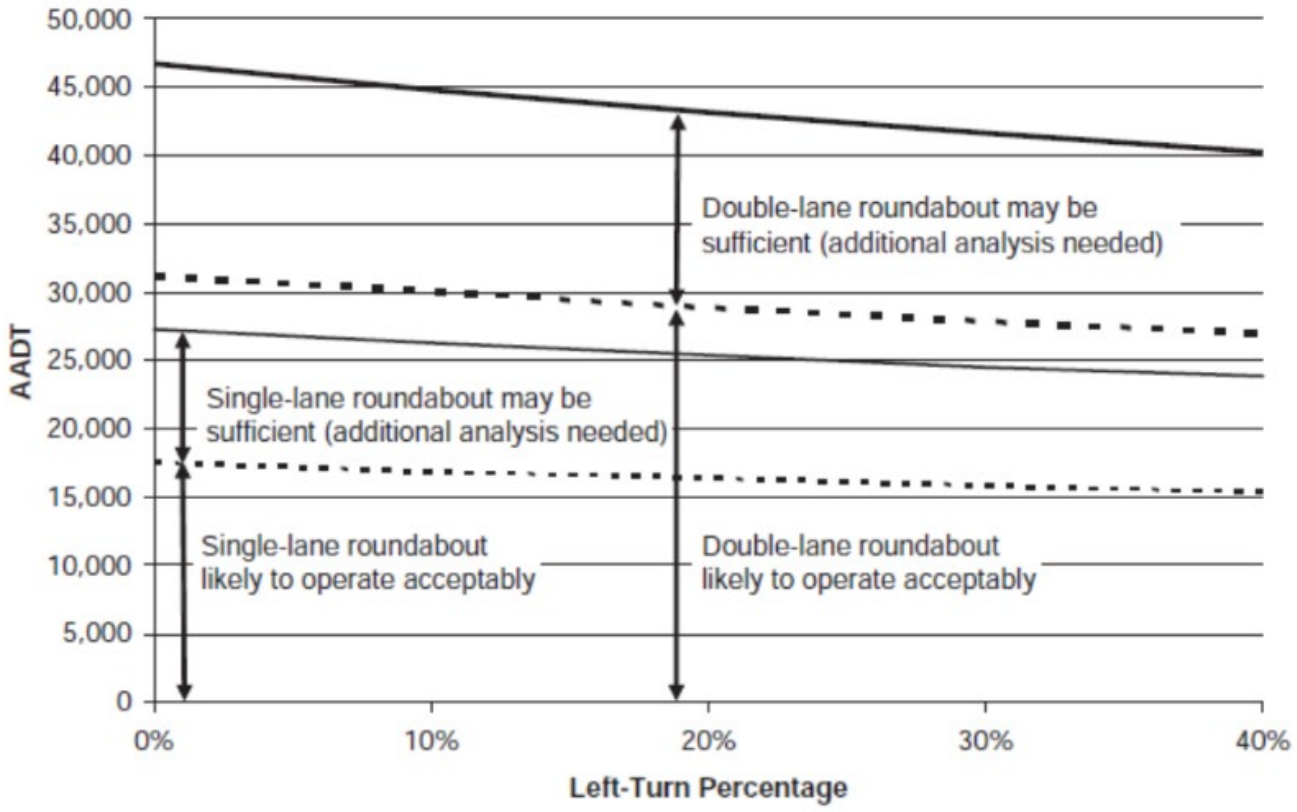
In addition, locations where traffic volume data is not available in the CRSMS, traffic data has been obtained from the CRCOG Travel Demand Model for inclusion in the data sets to ensure all screened intersections can be reviewed for traffic volumes.

All traffic volume data to be utilized will be taken from years prior to 2020 (the pandemic).

The following traffic volume screening steps will be conducted on all the 8,158 study intersection locations.

The NCHRP Report 672 Roundabouts: An Informational Guide, Exhibit 3-12, as shown below, is the primary reference to guide the traffic volume screening. Left turning volume data are not available and therefore an assumed 20% left-turn percentage will be used for all locations in the screening. This results in intersections with average daily traffic (ADT) exceeding 25,000 being eliminated from further consideration in this single lane roundabout screening. The ADT value used, will be selected from the one intersection approach leg with the highest bi-directional ADT. See Figure 9 for a sample intersection, where the screening will use the 13,000 east leg ADT volume, for the overall intersection value in the screening.

Figure 8: NCHRP 672 Exhibit 3-12



In addition, the intersections will be further screened with a volume adjustment factor to better evaluate the likelihood of a single lane roundabout working at the given location. The following system is proposed for each location under the 25,000 ADT threshold:

Table 1 ADT Range & Volume Adjustment Factors

ADT Range		Factor
0	10,000	1.00
10,000	12,000	0.90
12,000	14,000	0.75
14,000	15,000	0.50
15,000	17,000	0.25
17,000	25,000	0.10
25,000	>	0.00

As shown above, locations above 25,000 ADT are essentially eliminated from further consideration.

Intersections with ADT less than 10,000 are assured to be roundabout ready locations based upon capacity, and the value of 1 is proposed. While the NCHRP Exhibit 3-12 shows 15,000 ADT to be a threshold, using the proposed adjustment factors provides a very high level of confidence in the operational capacity of the intersections being converted to single lane roundabouts. Also, it is important to note that the volume data being used for the screening efforts are existing traffic volume counts from a variety of sources. The ADT values are not adjusted to future forecasted volumes. Therefore, if there is anticipated growth in volumes, using the factor helps account for some anticipated growth and ensures that a single lane roundabout is a good candidate for the screened intersections for further planning and development into an improvement project.

These volume adjustment factors will be utilized in an overall intersection scoring system applied to all 8,158 intersections, as presented in the following sections.

Figure 9: Sample Intersection Diagram with Volumes

Newington Avenue at John Downey Drive
New Britain, CT

Step 3: Geometry of Intersection

Each of the screened intersections will be fitted with a nominal 120-foot diameter circle to determine the potential fit of the circle at each of the screened intersections. The fitment will be done entirely in GIS mapping and use tools to place the circle at the GIS determined center of the intersection while depicting intersection features available in the mapping including Right Of Way (ROW), buildings and other features. Where possible, shifting the 120-foot diameter circle to avoid a ROW or building impact will be considered unless additional impacts are incurred during the Desktop Review Step.

The following will be considered in the review of the intersection geometry overlaid with the circle:

- In locations where the overlaid circle extends into ROW, the GIS system will generate an area of ROW and building impact which will be summarized per location.
- The impacted ROW will be listed as to ownership criteria: private, municipal, State
- Locations with impacts to private ROW greater than 2,000 square feet will be eliminated
- Locations with impacts to private buildings greater than 200 square feet will be eliminated if the roundabout cannot be adjusted to avoid the impact
- For locations with ROW and building impacts less than the noted thresholds, a summary of the impacts at these locations will be provided.

Figure 10: Sample Fitment – Intersection of Newington Avenue at John Downey Drive, New Britain

The geometric fitting test will be summarized with a list of locations that work and a summary graphic.

The following scoring system is proposed to evaluate the impacts to ROW and buildings with locations that have zero impacts given a total factor of 1.00.

ROW Impact:	2,000	-	x square feet
Building Impact:	200	-	x square feet
Total ROW Impact Factor:	(sum)/2,200		

Locations with no impact will have a factor of 1.0, all others will be less than 1.0, and any locations with negative scores will be given a score of 0.0 and thereby eliminated from further consideration.

Sample Intersection Calculation (Newington Ave. & John Downey Drive in New Britain):

Private parcel ROW impact = 1,050.7 square feet

Building impact = 42

Total ROW Impact Factor = (1050.7+42)/2,200 = .50

SUMMARY OF STEP 1, 2, and 3 SCORING

To rank the top locations using the above 3 screening steps; a scoring system is used combining the Step 1 weighted crash score, Step 2 volume adjustment factor, and Step 3, Total ROW Impact score. This provides the crash, volume, ROW score (CRV Score) using the following calculation:

CVR Score = Weighted Crash Score * Volume Adjustment Factor * Total ROW Impact Factor

KABC Filter

For the purposes of ranking, only potential sites with 6 or more KABC (injury related crashes) crashes over the 3-year analysis period, were included in the final ranking. The KABC filter was applied to focus on sites with high benefit/cost ratios for a proposed improvement.

Figure 10 Example CVR Score Calculation (Newington Avenue at John Downey Drive in New Britain):

Step 1: Weighted Crash Score of 33.33

Step 2: Volume Adjustment Factor = 0.75

(ADT of the highest volume leg, east leg = 13,000)

Step 3: Total ROW Impact Factor = .50

CVR Score Calculation: CVR Score = 33.33 * 0.75 * 0.50 = 12.5

Step 4: Known Congestion/Operational Hotspots

Intersections that do not meet the screening criteria but are intersections with known congestion, operational problems and locations suggested by the CRCOG Transportation Committee members via the survey email to municipalities will also be reviewed and screened for consideration.

If these locations were previously eliminated from the crash and volume screening, they will be reviewed for geometry fitting of the roundabout and considered in the screening process.

Step 5: Desktop Reviews

Using the highest CVR scores resulting after Step 3, the list will then be adjusted to include intersections as noted in Step 4. The top ranked locations, with the 100 highest CVR scores will be reviewed at the desktop level to determine if conversion of the intersection to a roundabout is feasible considering obvious site condition impacts that would result from the physical construction of the roundabout.

The desktop reviews of existing site conditions will be conducted to identify obvious major constraints, such as adjacent buildings, major utilities, or significant historic structures based on available GIS data and aerial mapping. The desktop reviews will include a graphical and tabulated summary of the locations with the roundabout locations to be considered for future design projects.

In addition, the screening process will consider an effort to ensure that all CRCOG communities are represented with at least one roundabout location.

The 100 screened locations will be summarized by location and will provide a summary of key criteria at each intersection location (e.g., number of crashes in 3-year period, ADT, state or local ownership, etc.)

Analysis of Potential Crash Reductions

After the completion of the desktop reviews, the roundabout locations will be reviewed for potential crash reductions using AASHTO and NCHRP procedures. This analysis step will be the final step in the screening process to document the screening of the top 100 locations and supplemented with a crash reduction summary.

These procedures will be used to demonstrate the safety benefits of the recommended roundabout locations.

i. Use procedures from the AASHTO Highway Safety Manual (HSM) to predict expected changes in crash frequency based on conversion of intersections to roundabouts. These procedures include using the Empirical Bayes (EB) method to determine the expected crash frequency for the identified candidate signalized/unsignalized intersections and then using the appropriate Crash Modification Factor from the Crash Modification Factor Clearinghouse to determine the expected crash frequency with the roundabout. The EB method is implemented through the use of HSM spreadsheet tools developed by AASHTO and/or safety performance factors calibrated by CTDOT, if available. Figure 11 below is a sample screenshot of the AASHTO spreadsheet tool, which allows a user to input existing geometric and traffic volumes for the signalized/unsignalized intersection, generating an output for the expected number of crashes. Separate spreadsheets are available for different location types: rural two-lane roads, rural multi-lane highways, and urban and suburban arterials. The Enhanced Interchange Safety Analysis Tool (ISATe) is also available from AASHTO to analyze ramp termini.

ii. The CMF Clearinghouse lists a variety of CMFs that show the potential reduction in the frequency of crashes as a result of a conversion of an intersection to a roundabout. Each CMF is assigned a star value to indicate the quality of the data used to establish the CMF and its standard error. Where possible, CMFs with higher star ratings are to be used. The CMF Clearinghouse also groups roundabout CMFs based on the conversion to single-lane roundabouts (separate CMFs are available for multi-lane roundabouts):

- Intersection to single-lane roundabout
- Stop-Controlled intersection to single-lane roundabout
- No control/yield intersection to single-lane roundabout
- Two-way stop-controlled intersection to single-lane roundabout
- All-way stop-controlled intersection to single-lane roundabout
- Signalized intersection to modern roundabout
- Unsignalized intersection to single-lane roundabout

iii. Each CMF includes parameters that indicate the applicability of the CMF. Such parameters include:

- Urban or rural location
- Crash severity the CMF addresses
- Type of crash the CMF addresses
- Roadway geometry
- Minimum and maximum traffic volume

iv. Figure 12 below shows how various CMFs in the Clearinghouse can be compared and illustrates the various parameters behind each CMF. The project team will use the CMF comparison tool to select an appropriate set of CMFs to be consistently applied to the top sites to determine the expected percent reduction in crashes. While the HSM has a listing of roundabout CMFs, these are also included in the CMF Clearinghouse – therefore, the Clearinghouse has the best set of CMFs available for use.

v. Identify potential economic benefit of crash reductions based on the outcomes of the EB analysis and applying economic benefit values used and calibrated by CTDOT as appropriate.

vi. Determine a threshold value of number of crashes reduced over a 3-year period, to be considered for additional roundabout screening, or eliminated from screening.

Figure 11: AASHTO Spreadsheet Tool

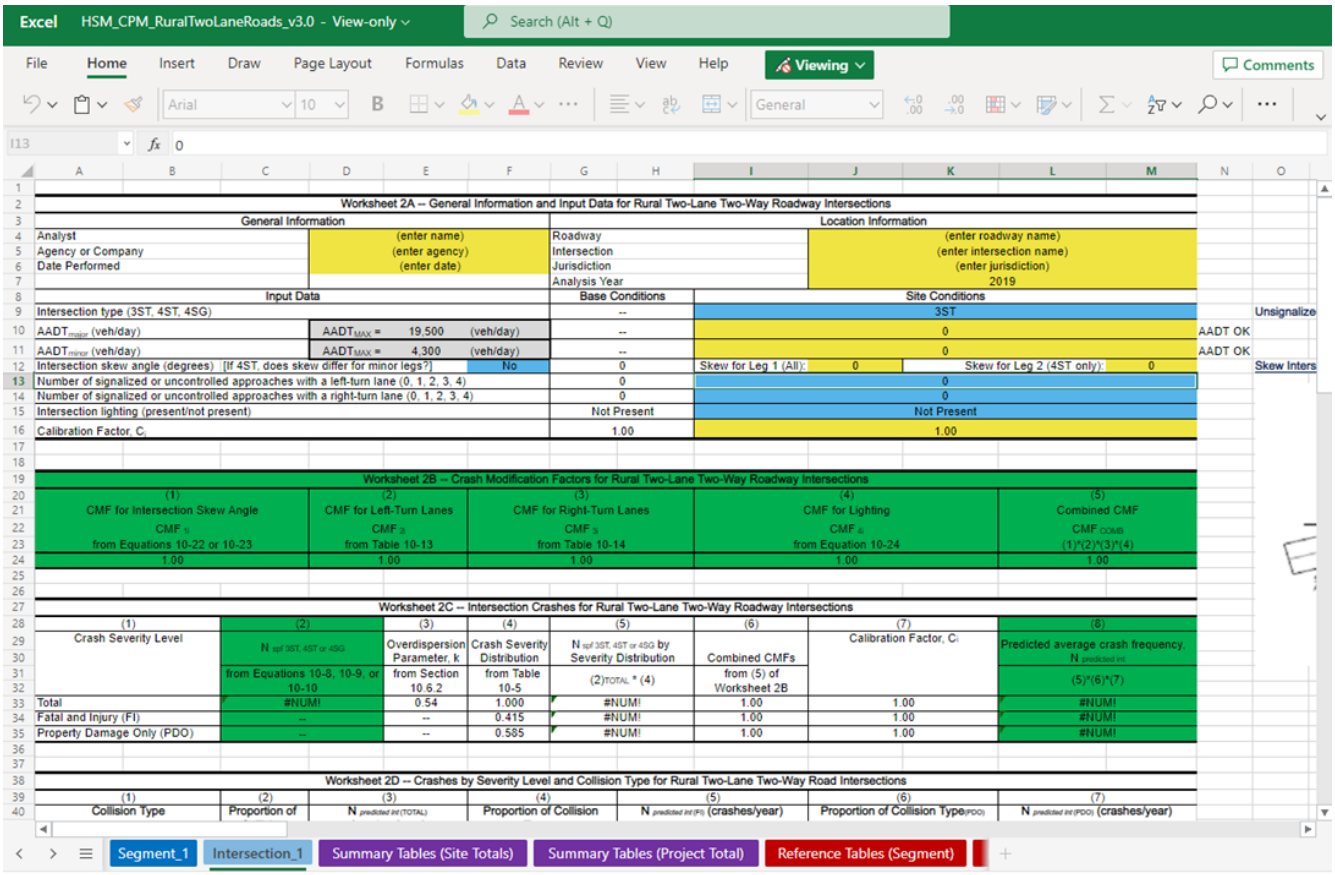

Excel
HSM_CPM_RuralTwoLaneRoads_v3.0 - View-only
Search (Alt + Q)
File
Home
Insert
Draw
Page Layout
Formulas
Data
Review
View
Help
Viewing
Comments
Arial
10
General
I13
0
Worksheet 2A -- General Information and Input Data for Rural Two-Lane Two-Way Roadway Intersections
General Information
Location Information
Analyst
(enter name)
Roadway
(enter roadway name)
Agency or Company
(enter agency)
Intersection
(enter intersection name)
Date Performed
(enter date)
Jurisdiction
(enter jurisdiction)
Analysis Year
2019
Input Data
Base Conditions
Site Conditions
Intersection type (3ST, 4ST, 4SG)
--
3ST
Unsignalize
AADTmajor (veh/day)
AADTMAX = 19,500 (veh/day)
--
0
AADT OK
AADTminor (veh/day)
AADTMAX = 4,300 (veh/day)
--
0
AADT OK
Intersection skew angle (degrees) [If 4ST, does skew differ for minor legs?]
No
0
Skew for Leg 1 (All): 0
Skew for Leg 2 (4ST only): 0
Skew Inters
Number of signalized or uncontrolled approaches with a left-turn lane (0, 1, 2, 3, 4)
0
0
Number of signalized or uncontrolled approaches with a right-turn lane (0, 1, 2, 3, 4)
0
0
Intersection lighting (present/not present)
Not Present
Not Present
Calibration Factor, Ci
1.00
1.00
Worksheet 2B -- Crash Modification Factors for Rural Two-Lane Two-Way Roadway Intersections
(1) CMF for Intersection Skew Angle CMF1i from Equations 10-22 or 10-23
(2) CMF for Left-Turn Lanes CMF2i from Table 10-13
(3) CMF for Right-Turn Lanes CMF3i from Table 10-14
(4) CMF for Lighting CMF4i from Equation 10-24
(5) Combined CMF CMFCOMB (1)*(2)*(3)*(4)
1.00
1.00
1.00
1.00
1.00
Worksheet 2C -- Intersection Crashes for Rural Two-Lane Two-Way Roadway Intersections
(1) Crash Severity Level
(2) Nspf 3ST, 4ST or 4SG from Equations 10-8, 10-9, or 10-10
(3) Overdispersion Parameter, k from Section 10.6.2
(4) Crash Severity Distribution from Table 10-5
(5) Nspf 3ST, 4ST or 4SG by Severity Distribution (2)TOTAL * (4)
(6) Combined CMFs from (5) of Worksheet 2B
(7) Calibration Factor, Ci
(8) Predicted average crash frequency, Npredicted int (5)*(6)*(7)
Total
#NUM!
0.54
1.000
#NUM!
1.00
1.00
#NUM!
Fatal and Injury (FI)
--
--
0.415
#NUM!
1.00
1.00
#NUM!
Property Damage Only (PDO)
--
--
0.585
#NUM!
1.00
1.00
#NUM!
Worksheet 2D -- Crashes by Severity Level and Collision Type for Rural Two-Lane Two-Way Road Intersections
(1) Collision Type
(2) Proportion of
(3) Npredicted int (TOTAL)
(4) Proportion of Collision
(5) Npredicted int (FI) (crashes/year)
(6) Proportion of Collision Type (PDO)
(7) Npredicted int (PDO) (crashes/year)
Segment_1
Intersection_1
Summary Tables (Site Totals)
Summary Tables (Project Total)
Reference Tables (Segment)

Figure 12: Clearinghouse CMF Example

Countermeasure Name	Conversion of stop-controlled intersection into single-lane roundabout	Conversion of stop-controlled intersection into single-lane roundabout	Convert all-way, stop-controlled intersection to roundabout	Convert all-way, stop-controlled intersection to roundabout
CMF ID	206	207	242	4933
CMF	0.28	0.42	1.03	0.544
Study Reference	PERSAUD ET AL., 2001	PERSAUD ET AL., 2001	RODEGERDTS ET AL., 2007	QIN ET AL., 2013
Unadjusted Standard Error CMF	*0.06*	*0.07*	*0.15*	*0.196*
CMFunction				
Star Rating				
Rating Score Total	*130*	*130*	*55*	*45*
Crash Type	All	All	All	All
Crash Severity	*All*	*All*	*All*	*Fatal,Serious injury,Minor injury*
Crash Time of Day				*All*
Area Type	*Urban*	*Rural*	*All*	*All*
Road Division Type				*All*
Road Type	Not specified	Not specified	Not Specified	Not specified
Number of Lanes			*1 or 2*	*2,4*
Intersection Type	Roadway/roadway (not interchange related)	Roadway/roadway (not interchange related)	Roadway/roadway (not interchange related)	Roadway/roadway (not interchange related)
Intersection Geometry	*Not specified*	*Not specified*	*4-leg*	*3-leg,4-leg*
Traffic Control	Stop-controlled	Stop-controlled	Stop-controlled	Stop-controlled
Speed Limit				
Study Type	2	2	2	2
Years From				*1994*
Years To				*2010*
Traffic Volume Unit	*Annual Average Daily Traffic (AADT)*	*Annual Average Daily Traffic (AADT)*	*Unit Unknown*	*Annual Average Daily Traffic (AADT)*
Min Traffic Volume				
Max Traffic Volume				
Min Major Rd Volume				*4100 (total entering)*
Max Major Rd Volume				*48100 (total entering)*
Min Minor Rd Volume				
Max Minor Rd Volume				
Avg Traffic Volume				
Avg Major Rd Volume				
Avg Minor Rd Volume				
State of Origin				WI
Municipality				*Statewide*
Country				*USA*
Comments				*- Study included three-year before and after crash data for each site.- Reported traffic volume is total entering volume.*

Summary

As noted in the foregoing screening methodology, this memorandum provides a comprehensive screening process for reviewing intersections in the CRCOG region for potential conversion to a modern single lane roundabout, using the available traffic volume and crash data from CTDOT and CRCOG sources.

The process includes a hierarchy of weighted crash score, volume adjustment factor, and right of way impact factor. A score is developed in order to rank the locations with the greatest potential to convert to a modern single lane roundabout.

These ranked locations will then be reviewed at the "desktop" level, using available online mapping and GIS resource data, as well as local knowledge. This desktop engineering review of these locations will provide a final determination on viability.

The basis for this screening effort is data. Using the available data in this 5 step screening process, appropriate single lane roundabout locations were identified in a very efficient and defined process.

An overall roundabout screening methodology for the CRCOG region needs to be dynamic, and can be modified in the future as conditions warrant, such as providing additional locations where mini-roundabouts and/or multilane roundabouts may be appropriate. However, the goal of this particular screening effort is to identify locations that can be considered for future funding of additional studies and design leading to construction of the safest form of intersection control: modern single lane roundabouts.

Appendix

Adjusted EPDO Weighting Summary

Adjusted EPDO Weighting Summary

The equivalent property damage only (EPDO) method used by UCONN in its CRSMS tool calculates a combined frequency and severity score for each site by assigning weighting factors to crashes by crash severity and monetary consequences. 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 initial weighting factors are estimated by the Federal Highway Administration (FHWA) using the 2001 dollar values and documented in the **"Safety Analyst User Manual"** based on the mean comprehensive monetary costs for each severity level. Level K has a mean comprehensive cost equal to $5,800,000 per crash, and a weight factor equal to 1450; level A has a mean comprehensive cost equal to $402,000 per crash, and a weight factor equal to 100; level B has a mean comprehensive cost equal to $80,000 per crash, and a weight factor equal to 20; level C has a mean comprehensive cost equal to $42,000 per crash, and a weight factor equal to 10; level PDO has a mean comprehensive cost equal to $4,000 per crash, and a weight factor equal to 1. The EPDO score is weighted to the per mile per year unit for segments and per year for intersections and is then used for ranking sites. However, the 2001 dollar values might not be representative to the current values due to the inflation. Therefore, the weighting factors of crash severities used in this study are adjusted to the current economic situation using the Consumer Price Index (CPI) and Employment Cost Index (ECI) released by the U.S. Bureau of Labor Statistics (BLS). BLS releases the CPI and ECI monthly. However, the monthly changes of CPI and ECI are very small and UCONN decided to update the weighting factors for EPDO analysis once a year. **The latest EPDO weights used in the CRSMS from December 2020 are**:

K – Weight Factor = 574 ,
A – Weight Factor = 30,
B – Weight Factor = 11,
C – Weight Factor = 6,
O – Weight Factor = 1

These weights are different than those used in the previous CRCOG RTSP study as VHB determined weights in that study based off FHWA's **national guidance** ((https://safety.fhwa.dot.gov/hsip/docs/fhwasa17071.pdf) and adjusted them for Connecticut, rather than using UCONN's approach of adjusting the values in the Safety Analyst tool. Using the RTSP approach Level K has a mean comprehensive cost equal to $16,185,746 per crash, and a weight factor equal to 949; level A has a mean comprehensive cost equal to $938,535 per crash, and a weight factor equal to 55; level B has a mean comprehensive cost equal to $284,430 per crash, and a weight factor equal to 17; level C has a mean comprehensive cost equal to $179,924 per crash, and a weight factor equal to 11; level PDO has a mean comprehensive cost equal to $17,061 per crash, and a weight factor equal to 1.

December 2020 CRSMS User Manual			
Severity	**Value**	**Ratio**	**Weight**
K	**$ 6,415,389**	**573.5195**	**574**
A	**$ 338,576**	**30.26783**	**30**
B	**$ 123,646**	**11.05364**	**11**
C	**$ 69,541**	**6.216789**	**6**
O	**$ 11,186**	**1**	**1**

June 2019 CRSMS User Manual			
Severity	Value	Ratio	Weight
K	$ 5,800,000	1450	1450
A	$ 402,000	100.5	100
B	$ 80,000	20	20
C	$ 42,000	10.5	10
O	$ 4,000	1	1

CRCOG RTSP Weights			
Severity	Value	Ratio	Weight
K	$ 16,185,746	948.6986	949
A	$ 938,535	55.01055	55
B	$ 284,430	16.67136	17
C	$ 179,924	10.54592	11
O	$ 17,061		1

CRCOG Roundabout Screening Study
Top Ranked 100 Locations
3/9/2023 (4-10-23 Recommended Highlights: Yellow= Local Roads, Blue= State Roads)

Rank	CVR Score	Municipality	Major Road	Minor Road	Total Crashes	Total KABC Crashes	Crash Score	ADT	ADT Factor	ROW Issues	Geometric Factor	Recommended	Comment
1	250.20	HARTFORD	MAIN ST	MAHL AVE/PAVILLION ST	31	10	417.00	13500	0.75	Moderate	0.80	Yes	
2	232.65	HARTFORD	CHAPEL ST. NO/WALNUT ST/I-84 EB RAMP	HIGH ST	60	11	232.67	9900	1	None	1.00	No	Volumes
3	187.54	HARTFORD	NEW BRITIAN AVE	SUMMIT ST/FAIRFIELD AVE	17	6	216.33	10600	0.9	Insignificant	0.96	Yes	
4	187.50	BERLIN	MILL ST (CT 372)	SAVAGE HILL RD/BECKLEY RD	12	6	208.33	10300	0.9	None	1.00	Yes	
5	162.28	HARTFORD	FRANKLIN AVE	BUSHNELL ST	13	7	213.67	8600	1	Significant	0.76	No	ROW
6	149.93	HARTFORD	WASHINGTON ST	VERNON ST # 2	34	11	229.00	12100	0.75	Insignificant	0.87	Yes	
7	145.27	HARTFORD	FRANKLIN AVE	BLISS ST	13	7	213.67	8600	1	Significant	0.68	No	Fatal likely occurred at Bushnell
8	131.67	HARTFORD	WESTLAND ST	BARBOUR ST	18	6	205.33	5700	1	Significant	0.64	No	ROW
9	108.48	HARTFORD	HOMESTEAD AVE/WALNUT ST	GARDEN ST #1	54	28	270.67	13100	0.75	Moderate	0.53	Yes	
10	89.31	HARTFORD	ALBANY AVE (US 44)	BROOK ST	19	6	215.33	13400	0.75	Significant	0.55	No	ROW
11	81.67	HARTFORD	WETHERSFIELD AVE	ADELAIDE ST	19	7	212.33	12000	0.9	Significant	0.43	No	ROW
12	79.75	HARTFORD	MORGAN ST (US 44)	MARKET ST	128	30	127.00	12800	0.75	Insignificant	0.84	No	ROW
13	67.43	SOUTHINGTON	MERIDAN-WATERBURY TPKE (CT 322)	CLARK ST (CT 509)	15	7	215.67	11700	0.9	Moderate	0.35	Yes	Vols, Signal System
14	65.05	HARTFORD	ZION ST # 1	WARD ST	18	9	220.33	10400	0.9	Significant	0.33	No	ROW
15	64.30	HARTFORD	FARMINGTON AVE	BROAD ST	84	23	89.67	12600	0.75	Insignificant	0.96	No	Needs Multi-Lane Rdbt
16	63.79	HARTFORD	TRUMBULL ST	CHAPEL ST SOUTH	47	18	67.00	7100	1	Significant	0.95	No	ROW, Vols?
17	58.25	HARTFORD	MAIN ST #2	CHARTER OAK AVE/BUCKINGHAM ST	36	14	233.00	15900	0.25	Moderate	1.00	Yes	
18	55.72	HARTFORD	NEW BRITAIN AVE	HILLSIDE AVE	44	15	247.00	10600	0.9	Significant	0.25	No	ROW
19	53.33	HARTFORD	ANN UCELLO ST #1 /PLEASANT ST	CHAPEL ST NORTH	41	12	53.33	6800	1	Significant	1.00	No	ROW
20	52.44	HARTFORD	MAIN ST (US 44)/MORGAN ST	CHAPEL ST NORTH	78	24	82.67	12500	0.75	Moderate	0.85	No	Volumes
21	51.91	VERNON	HARTFORD TURNPIKE (CT 30)	RESERVIOIR RD/GROVE ST (CT 31)	67	17	67.00	11200	0.9	Insignificant	0.86	Yes	

CRCOG Roundabout Screening Study
Top Ranked 100 Locations
3/9/2023 (4-10-23 Recommended Highlights: Yellow= Local Roads, Blue= State Roads)

Rank	CVR Score	Municipality	Major Road	Minor Road	Total Crashes	Total KABC Crashes	Crash Score	ADT	ADT Factor	ROW Issues	Geometric Factor	Recommended	Comment
22	51.21	HARTFORD	ALBANY AVE (US 44)	GARDEN ST # 1	85	22	271.00	16000	0.25	Significant	0.76	No	ROW, Recent Project
23	51.17	HARTFORD	CAPITOL AVE	LAUREL ST	47	13	57.00	10300	0.9	Moderate	1.00	Yes	
24	50.42	HARTFORD	FRANKLIN AVE	BOND ST	32	17	55.67	8600	1	Significant	0.91	Yes	
25	47.97	HARTFORD	PARK TERR	SIGOURNEY ST/RUSS ST	47	18	64.00	13600	0.75	None	1.00	No	Already Converted to a Roundabout
26	46.67	NEW BRITAIN	COLUMBUS BLVD	CHESTNUT ST	26	11	46.67	8100	1	Insignificant	1.00	Yes	
27	44.32	HARTFORD	CAPITOL AVE	BROAD ST	56	19	66.67	10300	0.9	Insignificant	0.74	Yes	
28	42.87	HARTFORD	FRANKLIN AVE	BROWN ST	42	7	45.00	8600	1	Significant	0.95	No	ROW
29	42.05	NEW BRITAIN	COLUMBUS BLVD/CT 9 SB ENT/EXIT RAMP	ELLIS ST	26	11	45.00	8600	1	Insignificant	0.93	Yes	
30	40.74	NEWINGTON	WILLARD AVE (CT 173)	ROBBINS AVE	33	17	54.33	13500	0.75	Significant	1.00	Yes	
31	40.15	HARTFORD	WASHINGTON ST	JEFFERSON ST	51	22	75.33	12100	0.75	Moderate	0.71	Yes	
32	39.45	VERNON	HARTFORD TPKE (CT 30)	BOLTON RD/CENTER RD	48	12	52.33	11300	0.9	Moderate	0.84	Yes	
33	38.50	BERLIN	FRONTAGE RD/MILL ST (CT 372)	WORTHINGTON RIDGE (CT 372-SOUTH/572- NORTH)	26	12	51.33	13700	0.75	Moderate	1.00	Yes	
34	37.99	WEST HARTFORD	NEW PARK AVE	FLATBUSH AVE	70	22	76.67	14600	0.5	Significant	0.99	No	Volumes
35	37.50	HARTFORD	I-84-W-115	SIGOURNEY ST	40	12	41.67	11900	0.9	Insignificant	1.00	No	Volumes, on Structure
36	36.06	HARTFORD	WASHINGTON ST	PARK ST	64	15	75.33	12100	0.75	Moderate	0.64	Yes	
37	35.40	WEST HARTFORD	PROSPECT AVE	KANE ST	33	11	39.33	10500	0.9	None	1.00	Yes	
38	34.75	HARTFORD	I-84 EB ON RAMP	BROAD ST	64	12	46.33	13100	0.75	None	1.00	No	Bridge Piers
39	34.50	COVENTRY	BOSTON TURNPIKE (US 44)	MAIN ST (CT 31)	30	11	38.33	10300	0.9	Insignificant	1.00	Yes	

CRCOG Roundabout Screening Study
Top Ranked 100 Locations
3/9/2023 (4-10-23 Recommended Highlights: Yellow= Local Roads, Blue= State Roads)

Rank	CVR Score	Municipality	Major Road	Minor Road	Total Crashes	Total KABC Crashes	Crash Score	ADT	ADT Factor	ROW Issues	Geometric Factor	Recommended	Comment
40	34.23	NEW BRITAIN	EAST MAIN	MAIN ST	37	17	47.33	13100	0.75	None	0.96	No	Recent Project
41	33.60	MANSFIELD	MIDDLE TURNPIKE (US 44)	STORRS RD (CT 195)	37	12	37.33	10900	0.9	None	1.00	Yes	
42	32.70	WINDSOR	WINDSOR AVE (CT 159)	ROOD AVE	25	10	36.33	10600	0.9	Insignificant	1.00	No	Realgnment needed, Major utility impacts
43	32.47	HARTFORD	ASYLUM AVE	BROAD ST/COGSWELL ST	95	20	81.67	14300	0.5	Insignificant	0.80	No	Volumes
44	32.33	HARTFORD	I-91 NB RAMP	I-91 SB RAMP	37	10	32.33	5200	1	None	1.00	No	Steep Grade
45	32.33	BLOOMFIELD	BLOOMFIELD AVE (CT 189)	PARK AVE/MTN AVE (CT 178)	27	9	32.33	9900	1	Insignificant	1.00	Yes	
46	31.68	HARTFORD	I-84 EB OFF/WB ON	CAPITOL AVE/OAK ST	32	13	52.00	10300	0.9	None	0.68	Yes	
47	31.00	VERNON	TALCOTTVILLE RD (CT 83)	HARTFORD TURNPIKE/KELLY RD (CT 30)	49	11	41.33	12700	0.75	None	1.00	Yes	
48	30.60	HARTFORD	MAPLE AVE	FAIRFIELD AVE # 1	18	8	34.00	11000	0.9	Insignificant	1.00	No	ROW, Potential historic impact
49	30.50	HARTFORD	STATE ST	MARKET ST	53	6	40.67	13400	0.75	None	1.00	No	Potential Wetlands, Utility impacts
50	30.09	GLASTONBURY	GLASTONBURY BLVD/GRISWOLD ST	MAIN ST	63	9	49.00	13400	0.75	None	0.82	No	Hybrid may be needed, signal system
51	29.38	HARTFORD	FARMINGTON AVE	SIGOURNEY ST	68	19	72.33	12600	0.75	Moderate	0.54	No	ROW, Signal System
52	29.00	VERNON	HARTFORD TURNPIKE (CT 30)	DOBSON RD	37	6	29.00	9100	1	None	1.00	Yes	
53	28.80	ENFIELD	ENFIELD ST (US 5)/FRANKLIN ST (CT 514)	CT 190 WB RAMP	17	8	32.00	11800	0.9	None	1.00	Yes	
54	27.90	WEST HARTFORD	PROSPECT AVE/CAYA AVE	I-84 EB RAMPS	28	10	31.00	10500	0.9	None	1.00	Yes	
55	27.82	HARTFORD	FRANKLIN AVE	SOUTH ST	22	9	29.00	8600	1	Significant	0.96	No	ROW

CRCOG Roundabout Screening Study
Top Ranked 100 Locations
3/9/2023 (4-10-23 Recommended Highlights: Yellow= Local Roads, Blue= State Roads)

Rank	CVR Score	Municipality	Major Road	Minor Road	Total Crashes	Total KABC Crashes	Crash Score	ADT	ADT Factor	ROW Issues	Geometric Factor	Recommended	Comment
56	26.75	HARTFORD	PULASKI CIR (CT 598)/WELLS ST	HUDSON ST	47	9	35.67	13800	0.75	Insignificant	1.00	Yes	
57	26.27	HARTFORD	CHURCH ST	SPRUCE ST	55	10	40.00	6400	1	Insignificant	0.66	No	Crash data incorrect
58	26.24	WEST HARTFORD	TROUT BROOK DR	ASYLUM AVE	31	10	221.33	16300	0.25	Moderate	0.47	Yes	
59	26.24	HARTFORD	SIGOURNEY ST	HAWTHORN ST	23	7	30.67	11900	0.9	Insignificant	0.95	Yes	
60	25.80	HARTFORD	WESTBOURNE PKWY	BLUE HILLS AVE (CT 187)	30	7	30.00	11300	0.9	Insignificant	0.96	Yes	
61	25.57	ENFIELD	SHAKER RD (CT 220/CT 402)	TAYLOR RD (CT 220)	23	11	34.33	11400	0.9	None	0.83	Yes	
62	25.38	NEW BRITAIN	MARTIN LUTHER KING DR (CT 71)	WINTER ST	24	14	41.33	13200	0.75	Insignificant	0.82	Yes	
63	25.34	HARTFORD	WETHERSFIELD AVE	ELLIOTT ST	21	8	35.00	12000	0.9	Moderate	0.80	Yes	
64	25.00	FARMINGTON	SOUTH RD/COLT HIGHWAY (CT 531)	TWO MILE RD	30	6	25.00	10000	1	None	1.00	Yes	
65	24.70	HARTFORD	I-84 EB OFF/WB ON	SPRUCE ST	39	11	44.33	12200	0.75	Insignificant	0.74	No	Signal System
66	24.60	HARTFORD	WHITE ST	HARVARD ST	22	10	27.33	10600	0.9	Insignificant	1.00	Yes	
67	24.46	HARTFORD	PARK ST	PARK TERR	67	27	92.00	13600	0.75	Moderate	0.35	Yes	
68	24.29	WEST HARTFORD	BOULEVARD	FOUR MILE RD	22	13	43.67	6100	1	Moderate	0.56	No	ROW
69	24.02	SOUTHINGTON	WEST ST (CT 229)	WEST QUEEN ST	43	13	243.33	21100	0.1	Insignificant	0.99	No	Grade, Volumes
70	23.88	HARTFORD	ASYLUM AVE	WOODLAND ST	49	16	61.00	14300	0.5	Moderate	0.78	Yes	
71	23.25	SOUTHINGTON	WATERBURY TURNPIKE (CT 322)	I-691 WB RAMPS	23	9	31.00	12100	0.75	None	1.00	Yes	

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Rank	CVR Score	Municipality	Major Road	Minor Road	Total Crashes	Total KABC Crashes	Crash Score	ADT	ADT Factor	ROW Issues	Geometric Factor	Recommended	Comment
72	23.20	BLOOMFIELD	MOUNTAIN AVE (CT 178)	MAPLE AVE/BROWN ST	21	8	30.00	10400	0.9	Insignificant	0.86	Yes	
73	23.17	NEW BRITAIN	WHITING ST	WEBSTER ST (ACTUALLY GLEN ST)	11	6	26.67	4100	1	Significant	0.87	No	ROW
74	23.14	HARTFORD	CHAPEL ST SOUTH	ANN UCCELLO ST # 1	47	6	29.00	7000	1	Significant	0.80	No	I-84 Overpass
75	23.11	HARTFORD	FAIRFIELD AVE #1	ZION ST #2	36	11	35.33	12900	0.75	Insignificant	0.87	Yes	
76	23.04	VERNON	UNION ST (CT 83/CT 74)	WEST ST (CT 74/CT 83)	55	7	36.67	10100	0.9	Moderate	0.70	Yes	
77	23.00	HARTFORD	CAPITOL AVE	WASHINGTON ST/TRINITY ST	23	8	30.67	12100	0.75	None	1.00	Yes	
78	22.98	MANCHESTER	MIDDLE TURNPIKE WEST/MIDDLE TURNPIKE EAST #1	MAIN ST (CT 83)	44	14	54.33	13300	0.75	Significant	0.56	No	ROW
79	22.25	NEW BRITAIN	CHESTNUT ST/ ELM ST (CT 71)	HARRY TRUMAN OP	24	9	29.67	12700	0.75	None	1.00	Yes	
80	22.20	MANSFIELD	STORRS RD (CT 195)	NORTH FRONTAGE RD (CT 632)	19	7	24.67	10900	0.9	None	1.00	Yes	
81	21.83	SOUTHINGTON	WATERBURY TURNPIKE (CT 322)/RUGGLES ROW	I-84 EB RAMPS	31	13	43.67	14700	0.5	None	1.00	Yes	
82	21.75	ENFIELD	KING ST (US 5)	I-91 NB RAMPS	17	10	29.00	12900	0.75	Insignificant	1.00	Yes	
83	21.69	HARTFORD	ALBANY AVE (US 44)	BALTIMORE ST	18	7	26.00	11200	0.9	Significant	0.93	No	ROW, Recent Project
84	21.67	NEW BRITAIN	MAIN ST #1	CHESTNUT ST/ARCH ST	15	7	21.67	6600	1	None	1.00	Yes	
85	21.67	WILLINGTON	RIVER ROAD (CT 32)	TOLLAND TURNPIKE (CT 74)	15	6	21.67	5200	1	None	1.00	No	Steep Grade
86	21.60	EAST HARTFORD	MAIN ST # 1	BROAD ST/MAPLE ST	30	9	31.67	13300	0.75	Insignificant	0.91	Yes	
87	21.59	HARTFORD	VINE ST	GREENFIELD ST	36	17	58.67	5600	1	Significant	0.37	Yes	
88	21.31	WEST HARTFORD	BOULEVARD	RAYMOND RD	32	14	40.67	6100	1	Insignificant	0.52	Yes	

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89	21.00	SOUTHINGTON	ATWATER ST	I-84 EB RAMP/MARION AVE	24	8	28.00	12400	0.75	None	1.00	Yes	
90	20.90	HARTFORD	TRUMBULL ST	CHAPEL ST NORTH	25	6	25.00	7100	1	Insignificant	0.84	No	Signal System
91	20.75	SOUTHINGTON	MERIDEN WATERBURY TURNPIKE (CT 322)/I-84 WB EXIT	I-84 ENTRANCE RAMP	18	8	27.67	12700	0.75	None	1.00	Yes	
92	20.70	CANTON	US 202	RIVER RD (CT 179)	24	8	23.00	11600	0.9	None	1.00	Yes	
93	20.64	BERLIN	MILL ST (CT 372)	MIDDLETOWN RD/BERLIN ST	22	11	29.00	13000	0.75	None	0.95	Yes	
94	20.32	NEW BRITAIN	SLATER RD/ALEXANDER DR/ FIENEMANN RD	FARMINGTON AVE	28	8	35.67	12800	0.75	Insignificant	0.76	Yes	
95	19.67	NEW BRITAIN	CHESTNUT ST	CT RTE 9 SB EXIT RAMP	9	6	19.67	4500	1	None	1.00	Yes	
96	19.57	EAST HARTFORD	SILVER LANE (CT 502)	FORBES ST	28	8	29.33	10800	0.9	Insignificant	0.74	Yes	
97	19.54	HARTFORD	PROSPECT AVE	WARRENTON AVE	32	11	35.67	7100	1	Significant	0.55	No	ROW
98	19.50	WINDSOR	KENNEDY RD	ARCHER RD/I-91 NB EXIT RAMP	15	7	21.67	10300	0.9	None	1.00	Yes	
99	19.39	HARTFORD	MARKET ST	PLEASANT ST	33	8	32.67	12800	0.75	Moderate	0.79	Yes	
100	18.87	NEW BRITAIN	STANLEY ST # 1	EAST MAIN ST	25	9	28.33	12800	0.75	Moderate	0.89	Yes	

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Rank	CVR Score	Municipality	Major Road	Minor Road	Muni Identified List	Total Crashes	Total KABC Crashes	ADT	Intersection Control Type	ROW Issues	Recommended	Comments
Not in Top 300	3.30	ANDOVER	JONATHAN TRUMBULL HIGHWAY/WILLIMANTIC RD (US 6)	JONATHAN TRUMBULL HIGHWAY (CT 87)	No	6	1	10600	Signal	None	No	Lack of Crash History
Not in Top 300	6.74	ANDOVER	JONATHAN TRUMBULL HIGHWAY (US 6)	LAKE RD	No	7	2	10600	Signal	Insignificant	No	Lack of Crash History
Not in Top 300	13.20	ANDOVER	JONATHAN TRUMBULL HIGHWAY (US 6)	HEBRON RD (CT 136)	No	14	4	11200	Signal	Moderate	No	Lack of Crash History
Not in Top 300	4.58	AVON	LOVELY ST (CT 177)	WESTMONT RD/COUNTRY CLUB RD	No	11	4	9400	Signal	Significant	Yes	
147	13.26	AVON	WEST AVON RD (CT 167)	COUNTRY CLUB RD	No	14	6	12400	Signal	Moderate	Yes	
Not in Top 300	5.36	AVON	COUNTRY CLUB RD	BURNHAM RD	No	5	4	5700	All-Way Stop	Moderate	Yes	
4	187.50	BERLIN	MILL ST (CT 372)	SAVAGE HILL RD/BECKLEY RD	No	12	6	10300	Signal	None	Yes	
93	20.64	BERLIN	MILL ST (CT 372)	MIDDLETOWN RD/BERLIN ST	No	22	11	13000	Signal	None	Yes	
33	38.50	BERLIN	FRONTAGE RD (CT 572)/MILL ST (CT 372)	WORTHINGTON RIDGE (CT 372-SOUTH/572- NORTH)	No	26	12	13700	Signal	Moderate	Yes	
72	23.20	BLOOMFIELD	MOUNTAIN AVE (CT 178)	MAPLE AVE/BROWN ST	No	21	8	10400	Signal	Insignificant	Yes	
45	32.33	BLOOMFIELD	BLOOMFIELD AVE (CT 189)	PARK AVE/MOUNTAIN AVE (CT 178)	No	27	9	9900	Signal	Insignificant	Yes	
196	7.91	BLOOMFIELD	WINTONBURY AVE (CT 178)	EAST WINTONBURY AVE (CT 178)	No	33	11	15600	Signal	Insignificant	No	Volumes
Not in Top 300	191.33	BOLTON	WEST ST (CT 85)	LYMAN RD	No	1	1	4400	Side Street Stop	Insignificant	No	Lack of Crash History
Not in Top 300	16.20	BOLTON	BOSTON TURNPIKE (US 44)	QUARRY RD	No	10	3	10200	Signal	Moderate	Yes	
Not in Top 300	5.78	BOLTON	BOSTON TURNPIKE (US 44)	SOUTH RD	No	13	2	9600	Signal	Moderate	Yes	
Not in Top 300	7.49	CANTON	RIVER RD (CT 179)	MAPLE AVE	Yes	15	5	12700	<Null>	<Null>	Yes	
92	20.70	CANTON	US 202	RIVER RD (CT 179)	No	24	8	11600	Signal	None	Yes	
Not in Top 300	9.00	CANTON	ALBANY TURNPIKE (US 44)	CHERRY BROOK RD (CT 179)	No	10	3	10300	Signal	None	Yes	
Not in Top 300	193.56	COLUMBIA	MIDDLETOWN RD (CT 66)	HENNEQUIN RD/PINE ST	No	12	4	7700	Side Street Stop	Insignificant	Yes	
Not in Top 300	14.67	COLUMBIA	MIDDLETOWN RD (CT 66)	JONATHAN TRUMBULL HIGHWAY (CT 87)	No	14	5	8800	Signal	None	Yes	
Not in Top 300	21.00	COLUMBIA	WILLIMANTIC RD (US 6)	WILLIMANTIC RD (CT 66)	No	30	4	12400	Signal	None	Yes	
Not in Top 300	3.04	COVENTRY	SOUTH ST	SEAGRAVES RD	No	3	1	1700	Side Street Stop	Insignificant	No	Lack of Crash History
Not in Top 300	12.08	COVENTRY	MAIN ST (CT 31)	STONEHOUSE RD/LAKE ST	Yes	11	5	4900	<Null>	<Null>	<Null>	Volumes, Grade, Recent Project
39	34.50	COVENTRY	BOSTON TURNPIKE (US 44)	MAIN ST (CT 31)	No	30	11	10300	Signal	Insignificant	Yes	
Not in Top 300	12.67	EAST GRANBY	SOUTH MAIN ST (CT 187)	HATCHETT HILL RD	No	8	4	6500	Signal	None	Yes	
Not in Top 300	0.00	EAST GRANBY	RAINBOW RD (CT 20)	BRADLEY PARK RD	No	33	7	33400	Signal	Insignificant	No	Volumes
Not in Top 300	15.67	EAST GRANBY	NORTH MAIN ST (CT 187)	SOUTH STONE RD	Yes	7	5	6900	<Null>	<Null>	Yes	

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86	21.60	EAST HARTFORD	MAIN ST	BROAD ST/MAPLE ST	No	30	9	13300	Signal	Insignificant	Yes	
96	19.57	EAST HARTFORD	SILVER LANE (CT 502)	FORBES ST	No	28	8	10800	Signal	Insignificant	Yes	
183	9.23	EAST HARTFORD	CONNECTICUT BLVD (US 44)	SOUTH PROSPECT ST	No	12	6	11500	Signal	Significant	No	ROW
276	3.90	EAST WINDSOR	I-91-S-103	PROSPECT HILL RD (US 5)	No	57	8	20800	Signal	None	No	Volumes
125	15.73	EAST WINDSOR	BRIDGE ST (CT 140)	MAIN ST	No	17	6	13100	Signal	Moderate	Yes	
Not in Top 300	2.28	EAST WINDSOR	PROSPECT HILL RD (US 5)	NORTH RD (CT 140)	No	24	7	18600	Signal	Significant	No	Volumes
167	11.17	ELLINGTON	WEST RD (CT 83)	LOWER BUTCHER RD	No	17	9	8700	Signal	Moderate	Yes	
Not in Top 300	4.53	ELLINGTON	PINNEY ST (CT 286)	WINDERMERE AVE	No	16	2	6200	Signal	Moderate	Yes	
Not in Top 300	1.47	ELLINGTON	CRYSTAL LAKE RD (CT 140)	BURBANK RD	No	21	10	3400	Side Street Stop	Moderate	Yes	
82	21.75	ENFIELD	KING ST (US 5)	I-91 NB EXIT AND ENTRANCE RAMPS	No	17	10	12900	Signal	Insignificant	Yes	
53	28.80	ENFIELD	ENFIELD ST (US 5)/FRANKLIN ST (CT 514)	CT 190 WB RAMP	No	17	8	11800	Signal	None	Yes	
61	25.57	ENFIELD	SHAKER RD (CT 220/CT 402)	TAYLOR RD (CT 220)	No	23	11	11400	All-Way Stop	None	Yes	
252	4.70	FARMINGTON	SCOTT SWAMP RD (US 6)	PLAINVILLE AVE (CT 177)	No	51	12	22100	Signal	Insignificant	No	Volumes
110	17.00	FARMINGTON	I-84-W-100	FARM SPRINGS RD	No	18	6	12400	Signal	None	Yes	
64	25.00	FARMINGTON	SOUTH RD/COLT HIGHWAY (CT 531)	TWO MILE RD	No	30	6	10000	All-Way Stop	None	Yes	
Not in Top 300	-13.03	GLASTONBURY	HEBRON AVE	HOUSE ST	No	22	8	6800	<Null>	<Null>	No	Already a roundabout
50	30.09	GLASTONBURY	GLASTONBURY BLVD/GRISWOLD ST	MAIN ST	No	63	9	13400	Signal	None	No	Volumes, Signal System
Not in Top 300	-8.70	GLASTONBURY	GRISWOLD ST	HOUSE ST	No	17	6	14500	Signal	Moderate	Yes	
Not in Top 300	12.67	GRANBY	BARKHAMSTED RD (CT 219)	CASE ST	No	4	2	7200	Side Street Stop	Insignificant	No	Lack of Crash History
Not in Top 300	7.05	GRANBY	WEST GRANBY RD (CT 20)	BUSHY HILL RD	No	9	4	9400	Side Street Stop	Significant	No	Lack of Crash History
Not in Top 300	25.33	GRANBY	HARTLAND RD (CT 20)	DAY ST	No	12	5	9200	Side Street Stop	None	Yes	
3	187.54	HARTFORD	NEW BRITIAN AVE	SUMMIT ST/FAIRFIELD AVE	No	17	6	10600	Signal	Insignificant	Yes	
2	232.65	HARTFORD	CHAPEL ST. NORTH/WALNUT ST/I-84 EB RAMP	HIGH ST	No	60	11	9900	Signal	None	No	Signal System
1	250.20	HARTFORD	MAIN ST	MAHL AVE/PAVILLION ST	No	31	10	13500	Signal	Moderate	Yes	
Not in Top 300	18.00	HEBRON	MAIN ST (CT 66)	CHURCH ST	No	24	5	9500	Signal	None	Yes	
Not in Top 300	8.48	HEBRON	MAIN ST (CT 66)	MILLSTREAM RD	No	3	3	7700	Side Street Stop	Moderate	No	Lack of Crash History
Not in Top 300	8.33	HEBRON	GILEAD ST (CT 85/CT 94)	NORTH ST (CT 85)	No	5	2	3800	Side Street Stop	Insignificant	No	Lack of Crash History
135	14.67	MANCHESTER	I-84-W-302	MIDDLE TURNPIKE WEST (US 44/US 6)	No	13	10	14200	Signal	None	Yes	
78	22.98	MANCHESTER	MIDDLE TURNPIKE WEST/MIDDLE TURNPIKE EAST #1	MAIN ST (CT 83)	No	44	14	13300	Signal	Significant	No	ROW
130	15.33	MANCHESTER	MIDDLE TURNPIKE EAST # 1	SUMMIT ST	No	19	7	9000	Signal	Significant	Yes	
80	22.20	MANSFIELD	STORRS RD (CT 195)	NORTH FRONTAGE RD (CT 632)	Yes	19	7	10900	Signal	None	Yes	

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204	7.57	MANSFIELD	MIDDLE TURNPIKE (US 44)	STAFFORD RD (CT 32)	Yes	18	6	6100	Signal	<Null>	Yes	
41	33.60	MANSFIELD	MIDDLE TURNPIKE (US 44)	STORRS RD (CT 195)	Yes	37	12	10900	Signal	None	Yes	
Not in Top 300	13.50	MARLBOROUGH	HEBRON RD (CT 66)	SOUTH MAIN ST	No	29	3	13700	Signal	None	Yes	
Not in Top 300	8.50	MARLBOROUGH	CT 2 EAST EXIT RAMP	HEBRON RD (CT 66)	No	19	3	13700	Side Street Stop	None	Yes	
Not in Top 300	11.00	MARLBOROUGH	CT 2-E-30	PORTLAND RD	No	3	3	4200	All-Way Stop	None	No	Lack of Crash History
29	42.05	NEW BRITAIN	COLUMBUS BLVD/CT 9 SB ENTRANCE/EXIT RAMP	ELLIS ST	No	26	11	8600	Signal	Insignificant	Yes	
26	46.67	NEW BRITAIN	COLUMBUS BLVD	CHESTNUT ST	No	26	11	8100	Signal	Insignificant	Yes	
40	34.23	NEW BRITAIN	EAST MAIN	MAIN ST	No	37	17	13100	Signal	None	No	Recent Project
116	16.67	NEWINGTON	PANE RD	CHURCH ST	No	21	6	13100	Signal	Insignificant	Yes	
30	40.74	NEWINGTON	WILLARD AVE (CT 173)	ROBBINS AVE	No	33	17	13500	Signal	Significant	Yes	
115	16.75	NEWINGTON	MAIN ST (Ct 176)	MARKET SQ	No	18	6	11800	Signal	Moderate	Yes	
123	16.20	PLAINVILLE	WOODFORD AVE (CT 536)	LEDGE RD	No	14	6	11400	Side Street Stop	Significant	No	Structure, grades
122	16.25	PLAINVILLE	CT 72-N	NORTH WASHINGTON ST CT 177)	No	20	7	13100	Signal	None	Yes	
217	6.59	PLAINVILLE	CT 72-N-28	DAY ST	No	62	20	20500	Signal	Insignificant	Yes	
Not in Top 300	21.33	ROCKY HILL	MAIN ST (CT 99)	GORMAN RD	No	10	5	8900	Signal	None	Yes	
211	7.00	ROCKY HILL	I-91-S-47	WEST ST (CT 411)	No	52	17	19300	Signal	None	No	Volumes, Signal System
237	5.27	ROCKY HILL	SILAS DEANE HIGHWAY (CT 99)	TOWN LINE RD	No	48	15	23900	Signal	None	No	Volumes, Signal System
131	15.30	SIMSBURY	BUSHY HILL RD (CT 167)	STRATTON BROOK RD	No	16	6	11900	Signal	None	Yes	
Not in Top 300	6.32	SIMSBURY	HOPMEADOW ST (US 202/CT 10)	WEST ST (CT 167)	No	16	4	14100	Signal	None	Yes	
Not in Top 300	13.25	SIMSBURY	HARTFORD AVE (CT 189)	ELM ST (CT 315)/MOUNTAIN RD	No	18	5	12900	Signal	None	Yes	
112	16.95	SOMERS	MAIN ST (CT 190)	GULF RD	No	27	9	7900	Side Street Stop	Insignificant	Yes	
Not in Top 300	14.98	SOMERS	MAIN ST (CT 190)	SOUTH RD (CT 83)	No	19	5	7400	Signal	Moderate	Yes	
Not in Top 300	7.72	SOMERS	HALL HILL RD (CT 186)	GEORGE WOOD RD	No	8	4	2100	Side Street Stop	Insignificant	Yes	
226	6.13	SOUTH WINDSOR	OAKLAND RD (CT 30)	SLATER ST/FOSTER ST	No	21	6	13600	Signal	Significant	No	ROW, grades
249	4.80	SOUTH WINDSOR	SULLIVAN AVE (CT 194)	HILLSIDE DR	No	15	6	12200	Side Street Stop	Moderate	Yes	
156	12.33	SOUTH WINDSOR	JOHN FITCH BLVD (US 5)	SULLIVAN AVE (CT 194)	No	39	14	16700	Signal	None	No	Volumes
71	23.25	SOUTHINGTON	WATERBURY TURNPIKE (CT 322)	I-691 WB RAMPS	No	23	9	12100	Signal	None	Yes	
13	67.43	SOUTHINGTON	MERIDAN-WATERBURY TURNPIKE (CT 322)	CLARK ST (CT 509)	No	15	7	11700	Signal	Moderate	Yes	
69	24.02	SOUTHINGTON	WEST ST (CT 229)	WEST QUEEN ST	No	43	13	21100	Signal	Insignificant	No	Volumes, Grades
Not in Top 300	2.89	STAFFORD	CRYSTAL LAKE RD (CT 30)	CONKLIN RD	No	4	1	3800	Side Street Stop	Significant	No	Lack of Crash History
Not in Top 300	8.54	STAFFORD	CRYSTAL LAKE RD (CT 30)	CONKLIN RD	No	6	2	3800	Signal	None	No	Lack of Crash History
Not in Top 300	1.60	STAFFORD	MONSON RD (CT 32)	ORCUTTVILLE RD (CT 319)	No	6	1	3300	Signal	Insignificant	No	Lack of Crash History
Not in Top 300	18.33	SUFFIELD	MOUNTAIN RD (CT 168)	SOUTH STONE ST/NORTH STONE ST	Yes	10	5	6400	Side Street Stop	None	Yes	

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134	14.72	SUFFIELD	EAST ST NORTH (CT 159)	THOMPSONVILLE RD (CT 190)	No	25	9	10000	Signal	Insignificant	Yes	
Not in Top 300	17.00	SUFFIELD	NORTH ST (CT 75)	HALLADAY AVE EAST	No	11	5	6000	Side Street Stop	None	Yes	
Not in Top 300	9.00	TOLLAND	I-84 RAMP TERMINAL	MERROW RD (CT 195)	No	24	4	14500	Signal	None	Yes	
Not in Top 300	14.67	TOLLAND	I-84-E-272	TOLLAND STAGE RD (CT 74)	No	19	3	5700	Side Street Stop	None	Yes	
Not in Top 300	14.87	TOLLAND	CRYSTAL LAKE RD (CT 30)	HUNTER RD	No	16	5	4100	Side Street Stop	Insignificant	Yes	
47	31.00	VERNON	TALCOTTVILLE RD (CT 183)	HARTFORD TURNPIKE/KELLY RD (CT 30)	No	49	11	12700	Signal	None	Yes	
32	39.45	VERNON	HARTFORD TURNPIKE (CT 30)	BOLTON RD/CENTER RD	No	48	12	11300	Signal	Moderate	Yes	
21	51.91	VERNON	HARTFORD TURNPIKE (CT 30)	RESERVIOIR RD/GROVE ST (CT 31)	No	67	17	11200	Signal	Insignificant	Yes	
34	37.99	WEST HARTFORD	NEW PARK AVE	FLATBUSH AVE	No	70	22	14600	Signal	Significant	No	Volumes
54	27.90	WEST HARTFORD	PROSPECT AVE/CAYA AVE	I-84 EB RAMPS	No	28	10	10500	Signal	None	Yes	
37	35.40	WEST HARTFORD	PROSPECT AVE	KANE ST	Yes	33	11	10500	Signal	None	Yes	
296	3.40	WETHERSFIELD	SILAS DEANE HIGHWAY (CT 99)	EXECUTIVE SQ	No	28	7	23900	Signal	Insignificant	No	Volumes
272	4.00	WETHERSFIELD	SILAS DEANE HIGHWAY (CT 99)	MAPLE ST	No	70	7	21700	Signal	None	No	Volumes, Signal System
267	4.13	WETHERSFIELD	SILAS DEANE HIGHWAY (CT 99)	WELLS RD	No	44	12	20600	Signal	None	No	Volumes, Signal System
Not in Top 300	3.88	WILLINGTON	TOLLAND TURNPIKE (CT 74)	MOOSE MEADOW RD	No	4	1	4100	Side Street Stop	Insignificant	No	Lack of Crash History
85	21.67	WILLINGTON	RIVER ROAD (CT 32)	TOLLAND TURNPIKE (CT 74)	No	15	6	5200	Signal	None	No	Grade
Not in Top 300	7.33	WILLINGTON	RIVER RD (CT 32)	VILLAGE HILL RD	No	2	2	5700	Side Street Stop	Insignificant	No	Lack of Crash History
42	32.70	WINDSOR	WINDSOR AVE (CT 159)	ROOD AVE	No	25	10	10600	Signal	Insignificant	No	Cost, Geometry
133	15.00	WINDSOR	I-91-S-209	PARK AVE (CT 178)	No	20	6	13700	Signal	None	Yes	
98	19.50	WINDSOR	KENNEDY RD	ARCHER RD/I-91 NB EXIT RAMP	No	15	7	10300	Signal	None	Yes	
Not in Top 300	8.33	WINDSOR LOCKS	SOUTH MAIN ST (CT 159)	LAWNACRE RD	No	10	2	8000	Signal	None	No	Cost, Lack of Crash History
Not in Top 300	51.18	WINDSOR LOCKS	OLD COUNTY RD	HALFWAY HOUSE RD	No	20	4	10300	All-Way Stop	Moderate	Yes	
Not in Top 300	8.62	WINDSOR LOCKS	SOUTH MAIN ST (CT 159)	MAIN ST (CT 159/CT 140)	No	14	5	11400	Signal	Moderate	Yes	

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Rank	CVR Score	Municipality	Major Road	Minor Road	Municipal Comments	Intersection Control	Grade Issues	Skew	Potential Environmental Issues	ROW Issues	Utility Issues	Viable	Hybrid Needed	Mini Roundabout Possible	Road Diet Required	Recommended	Notes	Operational Issues
Not in Top 300	Not in Top 300	Andover	HEBRON RD (CT 316)	SCHOOL ROAD		Side Street Stop	No	No	Wetlands	Significant	Minor	Yes	No	Yes	No	No	Only 1 crash (type C injury). Crash data does not warrant roundabout installation. Mini roundabout might be viable if desired for speed or operational concerns.	
Not in Top 300	Not in Top 300	Andover	LAKE ROAD	LAKESIDE DR	for a micro roundabout	All-Way Stop	No	Minor		Insignificant	Minor	No	No	Yes	No	No	Crash and volume data not available (roads may not be collectors?) but does not appear to be high volume or high crash location. Mini roundabout could probably fit but installation would likely be based more on operational issues than safety issues.	Y-shaped all-way stop with two residential driveways within the intersection.
Not in Top 300	Not in Top 300	Canton	MAPLE AVE/BRIDGE ST	RIVER RD (CT 179)	High incident area due to numerous complaints requesting intersection improvements. Evaluated by local study committee for possible inclusion for roundabout. Town Plan of Development recommends development of roundabout based on public concerns.	Side Street Stop	No	Minor	Wetlands	Significant	Minor	Maybe	No	Maybe	No	Yes	0 KA, 5 KABC (one injury short of meeting KABC filter, therefore not ranked), 15 crashes overall. Size of roundabout would be limited by available ROW, trail, and parking on east side. ROW will be required from car dealership, possibly also from residential property across from River Road - will still be tight fit. Residential driveway within the intersection and on either side may be limited by splitter islands.	Elevated boardwalk section of Farmington River Trail immediately adjacent on west side, between road and Farmington River.
Not in Top 300	Not in Top 300	Canton	ALBANY TURNPIKE (US 44)	DOWD AVE (CT 565)/CANTON SPRINGS RD	High incident area, with much traffic. Numerous complaints from residents to improve interconnections of these roadways. Specific concerns raised on Canton Springs Road and stacking of vehicles from 44 to west.	Signal	No	Minor	Historic	Significant	Minor	No	Likely	Maybe	No	No	Between the three intersections, total of 69 crashes overall, 1 KA (A), 12 KABC. Volumes on Rte 44 (28,100 ADT) too high for a single lane roundabout, would require multi-lane roundabout which can be considered but not as part of this study. Mini roundabout at Dowd/Canton Green intersection could be viable with minimal or no ROW (18 crashes, 5 KABC at that intersection alone). Consider making Canton Springs one-way away Rte 44?	Triangle area with three close intersections - 3 legged signal on Rte 44, 3 legged side street stop on Rte 44, and 4 legged side street street stop on Dowd and Canton Green.
Not in Top 300	Not in Top 300	Canton	ALBANY TURNPIKE (US 44)	US 202	This intersection previously evaluated by Will Britnell while at DOT. We have one of his concept sketches we'd like to submit.	Signal	Minor	Significant		None	No	Yes	No		No	Yes	1 KA(A), only 4 KABC therefore not ranked, 9 crashes overall. Low crash numbers, but 4 of the 9 crashes involved injuries (including 1 type A) indicating severity and serious crash potential, likely due to high speeds. Max ADT volume of 17,900 may not be accurate based on the intersection configuration.	Intersection of (2) one-way turning roadways between Rtes 44 and 202.
Not in Top 300	Not in Top 300	Canton	MAPLE AVE/DOWD AVE (CT 565)	SIMONDS AVE/OLD CANTON RD	This intersection is a main connection between school complexes, recreational complexes, and serves as a connection between the two economic centers. It requires numerous crossing vehicle movements in a small area.	Side Street Stop	No	Minor	Wetlands	Insignificant	Minor	Yes	No	No	No	No	Only 4 crashes overall, 0 KA, 2 KABC. Location(s) would likely function better and be less confusing as a 5 legged roundabout but crash data does not warrant installation.	Actually two intersections - T intersection on Rte 179 with side street stop control, and adjacent four legged intersection with stop control on three legs but not on the leg coming from Rte 179. Intersections separated by approximately one car length.
Not in Top 300	Not in Top 300	Canton	LAWTON RD	WASHBURN RD	High incident area, with many complaints for traffic violations. Highest ADTs. Numerous requests from public to improve intersection.	All-Way Stop	Minor	Significant		Insignificant	Minor	No	No	Yes	No	No	3 crashes overall, 0 KA, 1 KABC. Difficult topo on west side. Crashes do not warrant installation. Mini roundabout could be considered if desired for operational concerns.	
Not in Top 300	Not in Top 300	Coventry	MAIN ST (CT 31)	RIPLEY HILL RD	This intersection receives a high volume of traffic in the AM and PM peaks of the HS and Middle School complex. There is a pedestrian component to this area.	Side Street Stop	Minor	No		Insignificant	Minor	Yes	No	Yes	No	No	Only 3 crashes overall, 0 KA, 1 KABC (therefore not ranked). Crash data does not warrant roundabout installation. If desired for operational reasons, ROW is available in NE quadrant.	unsignalized intersection with a marked crosswalk for school on NE quadrant.
Not in Top 300	Not in Top 300	Coventry	MAIN ST (CT 31)	STONEHOUSE RD (CT 275)/LAKE ST	High volume intersection with a yellow flashing on Main Street approach and red flashing on Lake & Stonehouse. Main Street has a steep gradient for the SB approach. CDOT just redid the Main STreet corridor from Stonehouse to Mason Street (east)	Side Street Stop	Significant	Minor	Historic	Significant	Minor	No	No	No		No	11 crashes overall, 0 KA, only 5 KABC (therefore not ranked, was #243 before KABC filter). Grade, topo, and close building on SW corner limit ability to construct roundabout without significant ROW acquisitions. If building could be acquired, roundabout could be viable, but building may have historic considerations.	
Not in Top 300	Not in Top 300	Enfield	POST OFFICE RD	RAFFIA RD/SIMON RD		Signal	No	Significant	Hazardous Waste	Significant	Significant	Maybe	No		No	No	0 KA, only 2 KABC (therefore not ranked), 5 crashes overall. Due to severe skew, would likely have to use a peanut shape roundabout, which would require ROW, but land required is currently vacant. Crash data does not warrant roundabout.	Very skewed intersection. Three package store driveways on NE quadrant.
Not in Top 300	Not in Top 300	Farmington	FARMINGTON AVE (CT 4)	OLD MOUNTAIN RD/TALCOTT NOTCH RD	This came out from the CRCOG Route 4 Uconn study	Signal	No	Minor		None	Minor	Yes	Likely		Yes	Yes	0 KA, 8 KABC, 28 overall. Hybrid design required but space available. Oval shape probably best fit. Ranked #503 but geometric score seems incorrect, therefore rank should be higher.	five legged signal
Not in Top 300	Not in Top 300	Hartford	ALBANY AVE (US 44)	BLOOMFIELD AVE (CT 189)	List from City	Signal	Minor	Minor		Insignificant	Minor	Yes	Likely	No	No	No	20 Crashes, 0 KA, 4 KABC therefore not ranked. Crash data does not warrant installation. Viable as a hybrid design in lieu of signal replacement.	
Not in Top 300	Not in Top 300	Hartford	ALBANY AVE (US 44)	MAIN ST/ELY ST	List from City	Signal	No	Minor		None	Minor	Yes	Likely		No	Yes	42 crashes, 0 KA, 10 KABC. Very high crash and injury location. Awkward geometry. Intersection is currently part of signal system, would need to evaluate effect on adjacent intersections. Oval shape for best fit.	5 legged signalized intersection (one leg is one-way away from intersection), high pedestrian volumes.
Not in Top 300	Not in Top 300	Hartford	REV R A MOODY OVERPASS	WESTON ST	List from City	Signal	No	No		Insignificant	Minor	Yes	Likely		Yes	No	3 Crashes all PDO. Data does not warrant installation.	
Not in Top 300	Not in Top 300	Hartford	LEIBERT RD	JENNINGS RD	List from City	Signal	Minor	No		None	Minor	Yes	Maybe		No	No	2 crashes, both PDO. Viable location but crash data does not warrant installation.	

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Not in Top 300	Not in Top 300	Hartford	BOCE BARLOW WAY	WINDSOR ST	List from City	Signal	Minor	No		Insignificant	Minor	Yes	Likely		No	Yes	Ranked #360. 29 Crashes, 1 KA (A), 13 KABC. High crash and injury location. Hybrid design likely needed, space available.	
214	6.92	Hartford	MAIN ST	WINDSOR ST	List from City	Signal	No	Minor		Insignificant	Minor	Yes	Likely		No	Yes	Ranked #214. 23 Crashes, 0 KA, 10 KABC. High crash and injury location. Hybrid design likely required, space limited but may be available on west side.	
56	26.75	Hartford	PULASKI CIRCLE		list from City											Yes	Reviewed as ranked site #56.	
77	23.00	Hartford	CAPITOL AVE	WASHINGTON ST/TRINITY ST	List from City											Yes	Reviewed as ranked site #77	
136	14.49	Hartford	MAPLE AVE	KING ST/WEBSTER ST	Possible Peanut?	Signal	No	Significant	Hazardous Waste	Moderate	No	Maybe	Maybe		No	Yes	Barry Square. Ranked #136. 15 Crashes, 0 KA, 6 KABC, which does not include more crashes and injuries at Bond Street. Peanut roundabout can control all 6 legs, reduce some confusion and awkward movements. Very tight ROW on south end, will likely need ROW, will be close to buildings.	6 legged signalized intersection, including Maple/Bond intersection, currently not signalized.
Not in Top 300	Not in Top 300	Hartford	MAIN ST/MAPLE AVE	JEFFERSON ST/WYLLYS ST	List from City	Signal	No	Significant		Moderate	Minor	Yes	Likely	No	No	Yes	61 crashes, 0 KA, 11 KABC. Peanut shaped roundabout needed, hybrid design. ROW very tight. roundabout would address awkward and conflicting movements.	Skewed signalized 5 legged intersection (one leg is one-way away). Awkward through and left turn movements.
Not in Top 300	Not in Top 300	Hartford	MAPLE AVE	RETREAT AVE	List from City	Signal	No	Significant		Moderate	Minor	Maybe	Maybe		Yes	Yes	(data not available due to recent reconstruction, street lines do not intersect) Further investigation warranted.	
137	14.40	Hartford	MAPLE AVE	BROAD ST/WHITE ST/DOUGLAS ST	List from City	Signal	No	Significant	Hazardous Waste	Moderate	No	Maybe	Maybe	No	No	Yes	Three ranked intersections among these 4 - #137 (Maple at Douglas) with 13 crashes, 0 KA, 7 KABC, #234 (Broad at White) with 13 crashes, 0 KA, 7 KABC, and #526 (Broad at Maple) with 15 crashes, 2 KA (A), 6 KABC. There is some overlap between these crashes, but not much. One roundabout to replace all these intersections would be viable by placing where the triangular island is currently, but may be difficult to find a way to intersect White and Broad outside of the roundabout (without taking significant ROW). Would need a detailed traffic analysis to confirm operational performance.	Currently 4 intersections in a triangle shape. one signal, one all-way stop, one side street stop, one leg (Douglas) is one-way away from Maple. Shallow left turn movements from Maple onto Broad and from White onto Maple.
103	18.30	Hartford	MAPLE AVE	FREEMAN ST	List from City	Signal	No	Minor		None	No	Yes	No		No	Yes	Ranked #103. 16 crashes, 0 KA, 7 KABC. Geometric score will be 1.0 with shifted score, making ranking higher. Fits within existing intersection, addresses offset alignments, eliminates awkward movements.	Offset signalized intersection, awkward through movements to/from side streets, left turns from Maple onto side streets interfere with each other.
48	30.60	Hartford	MAPLE AVE	FAIRFIELD	List from City											No	Reviewed as ranked site #48	
Not in Top 300	Not in Top 300	Hartford	MAPLE AVE	FRANKLIN AVE	List from City	Signal	No	Significant	Historic	Insignificant	No	Yes	Maybe		No	Yes	10 crashes, 1 KA (A), 5 KABC (1 short of 6 KABC filter therefore not ranked - low rank before filter due to geometry score which should be close to 1.0 with shifted circle). Half of crashes involved injuries. Small park on SE quadrant might be slightly impacted, depending on size of roundabout.	Skewed signal, shallow SB left turn movement.
Not in Top 300	Not in Top 300	Hartford	COLUMBUS BLVD	SHELDON	List from City	Signal	Minor	No		Insignificant	No	Maybe	Likely	No	No	Yes	36 crashes, 0 KA, 5 KABC. Hybrid design likely required, space may be limited and/or retaining wall may be needed on NE quadrant adjacent to on-ramp.	5 legged signal, 5th leg is on-ramp to Whitehead Highway.
Not in Top 300	Not in Top 300	Hartford	AIRPORT RD	BRAINARD RD	List from City	Signal	Minor	No		None	Minor	Yes	Likely	No	No	No	38 crashes, 0 KA, 7 KABC. Volumes too high for single lane roundabout. A hybrid or multi-lane roundabout would likely work well here but a detailed traffic analysis would be needed.	EB right turn bypass for heavy volume movement. Three legs plus driveway.
Not in Top 300	Not in Top 300	Hartford	BRAINARD RD	MURPHY RD	List from City	Signal	No	No	Hazardous Waste	None	Minor	Yes	Likely	No	No	No	22 crashes, 0 KA, 5 KABC. Volumes too high for a single lane roundabout. Multi-lane or hybrid design could work, although detailed traffic analysis would be needed. Roundabout could help with potential for wrong-way movements onto Route 15 expressway. Previous issue of U-turns from off-ramp should be addressed with new Charter Oak Bridge ramps. Roundabout would've made these U-turns easier (could be considered a pro or a con - probably a moot point now).	SB RT bypass for heavy movement onto Rte 15.
179	9.83	Hartford	NEW BRITAIN AVE	NEWINGTON AVE	List from City	Signal	Minor	Significant		Moderate	Minor	Yes	Maybe		Yes	Yes	Ranked site #179. 38 Crashes, 0 KA, 12 KABC. Skewed geometry suggests peanut shaped roundabout. ROW tight on NW and SE quadrants.	Skew creates long left turn movements from New Britain Ave in both directions.
66	24.60	Hartford	NEW BRITAIN AVE	WHITE/CHANDLER	List from City	Signal	Minor	Significant		None	Minor	Yes	Maybe		No	Yes	Two ranked intersections - #66 and #250, although they overlap. Ranks will be higher with shifted circles. Roundabout would address unusual geometry and awkward, unsafe movements.	Three intersections in a triangular shape. Shallow angle of intersection between New Britain and White leads to awkward left turn from White onto NBA.
37	35.40	Hartford	PROSPECT AVE	KANE ST	List from City											Yes	Reviewed as ranked site #37	
Not in Top 300	Not in Top 300	Manchester	SPENCER ST/W CENTER ST (CT 502)	OLCOTT ST/HARTFORD RD	In lieu of signal replacement. Roundabout can fit within existing paved area/ROW. Landfill on Olcott St receives construction debris via heavy vehicles. The Town has asked DOT repeatedly to review this. 3 yrs+ of crash data now avail since road diet.	Signal	No	No		None	No	Yes	Maybe		No	No	Only 4 KABC (therefore not ranked), 0KA, 16 overall. Very viable location for a roundabout, fits within existing intersection, but not warranted by current crash history.	
Not in Top 300	Not in Top 300	Manchester	N MAIN ST (CT 83)	N SCHOOL RD/MAIN ST	Rail trail gap to be filled crossing south leg. Shared-use path connection northerly to school/park would benefit from safer crossing at intersection. In lieu of signal replacement.	Signal	No	No		Insignificant	Minor	Yes	Likely	No	Yes	No	0 KA, 4 KABC (not ranked, #1281 before KABC filter), 21 overall. Viable location but not warranted based on current crash data.	High pedestrian volumes

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260	4.40	Manchester	CENTER ST/E CENTER ST (US 6/44)	MAIN ST (CT 83)	Town considering as part of Downtown road diet/complete streets project. Improve safer access between Town Hall, Library, Town offices on NW & NE corners with downtown. In lieu of signal replacement.	Signal	No	Minor	Historic	Insignificant	Minor	Yes	Likely	No	Yes	Yes	Ranked #260. 2 KA(both A), 7 KABC, 34 overall. Parks on 2 sides but probably can be avoided. Perhaps use oval shape. Hybrid design likely needed. Must consider impact on Manchester Road Race.	Currently split phased due to lack of LT lanes on E-W legs.
264	4.23	Manchester	S MAIN ST (CT 83)	HARTFORD RD/CHARTER OAK ST (CT 534)	Improve safety and access to/from Charter Oak Park and Charter Oak Greenway to Bennet Academy (public school) and Downtown	Signal	No	No		None	No	Yes	Likely	No	Yes	Yes	Rank #264. 1KA(A), 12 KABC, 28 overall. Hybrid design would be required, but plenty of space available. Must consider impact on Manchester Road Race.	Current EB thru lane alignment conflicts with WB LT lane, requires shift. High ped volumes due to Greenway, church, CVS, and recreation fields.
Not in Top 300	Not in Top 300	Manchester	S MAIN ST (CT 83)	I-384 EXIT 3 EB OFF-RAMP/HACKMATACK ST	Improve safety and access to/from Charter Oak Greenway. Road diet over bridge should be considered. Hackmatack cut through to other major N/S arterial (Keeney St)	Signal	No	No		None	No	Yes	Maybe		Yes	No	0 KA, 3 KABC (therefore not ranked), 10 overall. Very viable location for a roundabout but not warranted by current crash data, however could be considered for potential to prevent wrong-way movements onto I-384 off-ramp.	residential driveway in NW corner could be limited by a raised splitter island. Better as a a driveway onto Rte 83 with a roundabout (possibly with no lefts out)?
Not in Top 300	Not in Top 300	Manchester	WETHERRELL ST	I-384 EXIT 2 EB OFF-RAMP/BRIDGE ST	Unsafe daily PM peak queue spill back onto I-384 EB. Sister traffic signal at intersection of Keeney St at Wetherell St and Charter Oak Greenway should be reviewed together.	Side Street Stop	Significant	No		Insignificant		Maybe	No		No	Yes	Only 2 KABC (therefore not ranked), 0 KA, 6 overall. Adjacent signal at Keeney has 0 KA, 5 KABC, 16 overall so also not ranked but combination (7 KABC) would be ranked. Roundabout at Keeney could be limited by bridge over I-384? Roundabout at off-ramp would reduce potential for wrong-way move onto I-384 and help prevent potential for crashes due to spillback onto expressway. Two roundabouts might not be justified by safety reasons alone.	Queues backing onto I-384 create safety issues. roundabout here could overload adjacent signal at Keeney Street - would need to consider both intersections together.
Not in Top 300	Not in Top 300	Manchester	HILLSTOWN RD	GREAT PATH (MANCHESTER COMM COLLEGE MAIN ENTRANCE)	High speeds mixed with college student drivers. Town owned land on west side. State owned land on east side.	Side Street Stop	Minor	No		None	No	Yes	No	Maybe	No	No	Crash data does not support installation	
Not in Top 300	Not in Top 300	Manchester	E CENTER ST (US 6/44)	PORTER ST/LENOX ST	In conjunction with a road diet in lieu of signal replacement.	Signal	No	Significant	Historic	Insignificant	Minor	Maybe	Maybe	No	Yes	Yes	5 KABC therefore 1 injury short of being ranked, 0 KA, 15 overall. Was ranked #208 before KABC filter. Shifting circle would improve geometry score. Impact to landscaped area (possible park area?) could be offset with central island area. Must consider impact to Manchester Road Race but could be minimal. EB bypass lane should be closed with a roundabout, could be retained for use during race.	EB RT bypass lane not needed due to volumes but used by Manchester Road Race. Approach angle of Porter Street very shallow.
Not in Top 300	Not in Top 300	Manchester	E CENTER ST (US 6/44)	PARKER ST	Awkward offset intersection with Town owned land in the center. In lieu of signal replacement.	Signal	Significant	Significant		Significant	Minor	No	No	Maybe	No	No	Only 4 crashes overall, 0 KA, 1 KABC. Roundabout not warranted by current crash data. Would require significant ROW to include the south leg in a roundabout.	poor ISD from south leg, awkward offset with N-S legs, N leg split into two two-way legs.
Not in Top 300	Not in Top 300	Manchester	S MAIN ST (CT 83)	FERN ST	High speeds. Limited accecss to neighborhoods SE of intersection so Fern St is a primary access point. Town owned land on west side. Wide ROW on east side.	Side Street Stop	No	No		Insignificant	No	Yes	No	Yes	No	No	Only 2 crashes, both PDO, roundabout not warranted by current crash data.	
Not in Top 300	Not in Top 300	Manchester	MIDDLE TURNPIKE E (US 6/44)	GARTH RD/LAKE ST	High speeds. Needs road diet. Garth Rd major access point to large res subdiv to south.	Side Street Stop	No	Minor		None	Minor	Yes	No		Yes	No	Only 1 PDO crash. Roundabout not warranted by crash data. If roundabout is desired for speed control in conjunction with road diet, consider combining with Middle Turnpike East (acquisition of some church property required) and installing 5 legged oval roundabout slightly north of current Route 6.	
Not in Top 300	Not in Top 300	Manchester	MIDDLE TURNPIKE E (US 6/44)	VERNON ST/COOK ST/RIVERSIDE DR/MIDDLE TURNPIKE E FRONTAGE RD	High speeds. Needs road diet. Buckley School on Vernon St (Town is proposing bike lanes). Town's Senior Center on NW corner. In lieu of signal replacement.	Signal	Minor	Minor	Hazardous Waste	Significant	Minor	Maybe	No	No	Yes	No	4 KABC therefore not ranked, 0 KA, 9 overall. Impact to diner parking lot would be significant. Vernon Street and Riverside Drive could be realigned to the east to reduce the impact on the diner but would require ROW, possibly oval shaped roundabout with offset N-S legs? Roundabout and road diet would help reduce speeds but not currently warranted by crash data.	Diner parking lot close to road has poor access, likely to be impacted by a roundabout.
Not in Top 300	Not in Top 300	Manchester	TOLLAND TURNPIKE (CT 30/83)	PARKER ST	In lieu of sign replacement. Major shopping plaza & other nearby driveways have restricted access due to SR safety issues. Would address speeds and provide safe U-turn opportunities. DOT suggested road diet but Vernon did not support was dropped from VIP	Signal	No	No		Insignificant	Minor	Yes	Likely	No	Yes	Yes	Ranked #363. 0 KA, 7 KABC, 19 overall. High volumes, hybrid would be required but space is available. Part of coordinated signal system, investigate whether Taylor Street is part of same system and if so consider replacing Taylor Street also.	
162	11.67	Manchester	CENTER ST (US 6/44)	ADAMS ST	Offset intersection running split phasing. Poor ISD from north. Could provide improved access to plaza. Elementary school to the SW with walking routes.	Signal	No	Significant	Hazardous Waste	Significant	Minor	Yes	Maybe		No	Yes	Ranked #162. 0KA, 8 KABC, 22 overall. ROW needed either from parking lot on SE corner (as shown with relocated circle in GIS) with realignment of south leg or (likely) total acquisition of residential property in NW corner which would not require any road realignment. Significant safety and operational improvements with a roundabout.	5 legged signalized intersection (one leg is one-way away from intersection) with significant offset on N-S legs.
Not in Top 300	Not in Top 300	Manchester	ADAMS ST	NEW STATE RD	High crash location (two major crashes this year -- one took out service pole other took out cabinet and mast arm). High speed straight roadway with limited visibility to signal. In lieu of signal replacement.	Signal	No	Minor		Insignificant	Minor	Yes	No		No	No	only 3 KABC (therefore not ranked, was 1720 before KABC filter), 0 KA, 3 KABC. Crash data does not warrant roundabout in spite of comment suggesting this is a high crash location. Suggest continual review of crash data. Viable location if crash numbers increase or in lieu of signal replacement.	

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Not in Top 300	Not in Top 300	Mansfield	STORRS RD (CT 195)	SOUTH EAGLEVILLE RD (CT 275)/CHARLES SMITH WAY	High pedestrian traffic due to university housing											Yes	27 crashes, 0 KA, 4 KABC (therefore does not meet the 6 KABC filter, not ranked). High crash location, though mostly PDO crashes, was ranked #157 before KABC filter. One-way exit only driveway just south of intersection serving apartments would be impacted by splitter island (no lefts out but could make U-turn at roundabout) - likely would help crashes at driveway also. High pedestrian area, currently have wide crosswalks (4 lanes plus median), would be shorter with roundabout. ROW needed owned by town or State (UConn).	
Not in Top 300	Not in Top 300	Mansfield	STORRS RD (CT 195)	HANKS HILL RD/FLAHERTY RD	Skewed Road	Side Street Stop	Significant	Significant	Wetlands	Insignificant	Minor	Yes	No		No	No	6 Crashes, 0 KA, 1 KABC therefore not ranked. Viable location to address awkward geometry issues but crash data does not warrant installation.	Unsignalized intersection with two side street approaches on the same side of Route 195. Crosswalk across south leg of Rte 195. Flaherty Road has skew and grade issues. Small businesses on east side with driveways.
80	22.2	Mansfield	STORRS RD (CT 195)	NORTH FRONTAGE RD (CT 632)		Signal	Minor	No		None	No	Yes	Maybe		Yes	Yes	Ranked #80. 19 Crashes, 0 KA, 7 KABC. Should be paired with Rte 195/S. Frontage intersection.	North half of two-way frontage road system parallel to Route 6 expressway. Long crosswalk on west side.
Not in Top 300	Not in Top 300	Mansfield	STORRS RD (CT 195)	SOUTH FRONTAGE RD (CT 633)	On ramps to Route 6 East	Signal	Minor	No		None	Minor	Yes	Maybe		Yes	Yes	15 crashes, 0 KA, 5 KABC (1 short of meeting KABC filter therefore not ranked - was #148 before filter). Pair with 195/N. Frontage intersection.	South half of frontage road system parallel to Route 6 expressway. Long crosswalk on west leg.
Not in Top 300	Not in Top 300	Mansfield	STORRS RD (CT 195)	WARRENVILLE RD (CT 89)	Church parking lot and bus stop near intersection	Signal	Significant	No		Insignificant	Minor	Yes	No	Maybe	No	No	9 crashes, 0 KA, 2 KABC therefore not ranked (was #514 before KABC filter). Crash data does not warrant installation. Steep topo on west side limits ability to widen, retaining wall needed. ROW very tight, additional ROW may be needed if sidewalks are to be installed. Mini roundabout may be viable in lieu of signal replacement. Operational improvement might improve safety at adjacent intersection on Rte 195 at Browns Road.	Steep church driveway on west side, crosswalk on south leg, no sidewalks.
Not in Top 300	Not in Top 300	Mansfield	STORRS RD (CT 195)	HORSEBARN HILL RD	High pedestrian traffic due to university housing	Signal	No	No		Insignificant	Minor	Yes	No		No	No	7 Crashes, 0 KA, 1 KABC. Very viable location but crash data does not warrant installation. Should be considered for roundabout in lieu of signal replacement, together with 195/ N. Eagleville intersection. ROW needed owned by State (UConn).	High pedestrian volumes
Not in Top 300	Not in Top 300	Mansfield	STORRS RD (CT 195)	NORTH EAGLEVILLE RD (CT 430)	High pedestrian traffic due to university campus/housing	Signal	No	No		None	Minor	Yes	No		No	No	10 Crashes, 0 KA, 1 KABC therefore not ranked. Very viable location but crash data does warrant installation. Should be considered in lieu of signal replacement and/or speed control in high pedestrian area. ROW needed owned by State (UConn).	High pedestrian volumes
41	33.60	Mansfield	STORRS RD (CT 195)	MIDDLE TURNPIKE (US 44)	Numerous Curb Cuts											Yes	Reviewed as Ranked site #41	
Not in Top 300	Not in Top 300	Mansfield	STORRS RD (CT 195)	STAFFORD RD (CT 32)	Gas station/businesses at intersection	Signal	Minor	Minor	Hazardous Waste	None	Minor	Yes	No		No	No	16 crashes but 0 injuries. Viable location but crash data does not warrant installation.	
204	7.57	Mansfield	MIDDLE TURNPIKE (US 44)	STAFFORD RD (CT 32)	Has been identified for improvements in the Eastern Gateways Study	Signal	Significant	Significant		Insignificant	Minor	Yes	No		No	Yes	18 Crashes, 0 KA, 6 KABC. Ranked #204. Land needed in NE corner owned by State (UConn), land in SW corner seems to be part of existing ROW? SE quadrant also owned by UConn. Oval shape and/or realignments likely needed due to skew, but land is available.	
Not in Top 300	Not in Top 300	Mansfield	STAFFORD RD (CT 32)	SOUTH EAGLEVILLE RD (CT 275)		Signal	Significant	No	Historic	Significant	Minor	No	No	Maybe	No	No	14 crashes but only 1 injury, does not warrant installation. Significant ROW needed for roundabout. ROW very tight. Area has historic significance, church on SW quadrant. . Previous requests for guardrail on NW quadrant due to complaints about vehicles running off road near house west of intersection on Route 275. Mini roundabout might be viable with no or minor ROW needed.	
Not in Top 300	Not in Top 300	Newington	MAPLE HILL AVE	ROBBINS AVE		Signal	No	Minor		None	Minor	Yes	No		No	No	10 Crashes overall, 0 KA, 2 KABC. Would be good operational improvement if could align or combine with Lantern Hill, but does not appear practical. If alignment not possible, would have to analyze impact on Lantern Hill. Crash history (only 2 KABC) does not warrant installation.	Offset with Lantern Hill, Robbins Ave leg has stop controlled right turn bypass.
Not in Top 300	Not in Top 300	Newington	DEMING ST	CULVER ST		All-Way Stop	No	Minor		Insignificant	Minor	Yes	No	Yes	No	No	Only 1 crash, no injuries therefore installation not warranted based on safety. Mini roundabout could be viable if needed for operational issues.	
Not in Top 300	Not in Top 300	Newington	FENN RD/W HARTFORD RD	WEST HILL RD/RESERVOIR RD		Signal	Minor	Significant		None	Minor	Yes	No		No	Yes	9 Crashes overall, 1 KA (A), only 2 KABC therefore not ranked, (was #695 before KABC filter), Awkward alignment of E-W legs. Plenty of ROW available. Near school. Possible oval	side streets offset with curves to align but still poor alignment. Long, curving through movements conflict with short E-W left turns.
Not in Top 300	Not in Top 300	Newington	MAIN ST (CT 176)	HOPKINS DR	?Town transfer station	Side Street Stop	No	No		Insignificant	Minor	Yes	No		No	No	0 Crashes therefore installation not warranted based on safety.	
Not in Top 300	Not in Top 300	Newington	CEDAR ST (CT 175)	ALUMNI RD	improve access to industrial area and remove gate on Alumni	Signal	No	No		Moderate	Minor	Maybe	Likely	No		No	Volumes too high for single lane roundabout, proximity to Maple Hill signal could be problematic.	250 feet west of Maple Hill/Old Farm signal, some crashes due to that signal.
Not in Top 300	Not in Top 300	Newington	CEDAR ST (CT 175)	FENN RD	Signal operates at LOS F	Signal	Minor	No		None	Minor	Yes	Likely			No	120 crashes overall, 0 KA, 23 KABC - very high crash location but volumes too high for a single lane roundabout. Multi-lane roundabout would likely work, space available.	
Not in Top 300	Not in Top 300	Newington	FENN RD	MYRA COHEN WAY		Signal	Minor	No	Wetlands	Insignificant	Minor	Yes	Likely	No		Yes	17 Crashes overall, 0 KA, 8 KABC, ranked #392 after KABC filter. Geometric factor appears to be incorrect therefore actual rank should be higher. Over half of crashes are injury crashes therefore high severity. Hybrid design likely needed, might impact wetlands or ROW, space available on NE quadrant.	Access to Busway station
180	9.68	Newington	WILLARD AVE (CT 173)	GARFIELD ST	few residents have requested a signal	Side Street Stop	No	No		Insignificant	Minor	Yes	No		No	Yes	10 Crashes overall, 0 KA, 7 KABC, ranked #180. 7/10 crashes involved injuries - high severity. Town owns land on SE corner, CL&P owns NE corner.	
Not in Top 300	Not in Top 300	Newington	FENN RD	HOLMES RD		Signal	Minor	No		None	Minor	Yes	No		No	No	5 crashes overall, 0 KA, 1 KABC. Viable location but crash history does not warrant installation.	

CRCOG Roundabout Screening Study
Municipal Suggested Locations
3/9/23

Rank	CVR Score	Municipality	Major Road	Minor Road	Municipal Comments	Intersection Control	Grade Issues	Skew	Potential Environmental Issues	ROW Issues	Utility Issues	Viable	Hybrid Needed	Mini Roundabout Possible	Road Diet Required	Recommended	Notes	Operational Issues
Not in Top 300	Not in Top 300	Newington	FENN RD	COMMERCE CT		Side Street Stop	Minor	No		Insignificant	Minor	Yes	No		No	Yes	8 crashes, 1 KA (A), 5 KABC (was #237 before filter, one injury short of KABC filter therefore not ranked). High crash numbers for an unsignalized T intersection. Roundabout here likely to help at King Artur's Way.	Unsignalized T intersection, steep side slope opposite side street from King Artur's Way residential development which intersects Fenn to the north. Impractical to align the two side streets.
Not in Top 300	Not in Top 300	Suffield	MAIN ST (CT 75)	MOUNTAIN RD (CT 168)/BRIDGE ST (CT 513)	Intersection functions poorly with transitions that are too short. Significant portion of traffic travels to-from Mountain Rd to Bridge.	Signal	No	No		Insignificant	Minor	Yes	Maybe	No	No	Yes	Individually, both intersections have only 4 KABC crashes so neither is ranked, but combining them would meet the filter. The Rte 75/168 intersection was #190 before the KABC filter. Combined 23 crashes overall, 2 KA (both As), 8 KABC. ROW needed is town owned.	2 closely spaced signals at "T" intersections with significant volume making the "Z" movements. Significant pedestrian volumes at both locations.
Not in Top 300	Not in Top 300	Suffield	THOMPSONVILLE RD (CT 190)	MAPLETON AVE	190 throughway added later to assist in truck movements. Sign controls at locations with limited sightline and difficult angle. Enough traffic to warrant better controls.	Side Street Stop	No	Minor		None	Minor	Yes	No		No	No	crash data only available at southern end of NB RT bypass leg (0 crashes). Need to check data at the actual intersection. Also, geometry score should be 1.0 based on more appropriate location of circle. Manual review of UConn Crash Data indicates no crashes at this location, therefore installation not recommended based on available crash data.	Side approach split into (2) two-way legs. Left turns from Rte 75 have to stop immediately after making turn, very short queueing distance.
Not in Top 300	Not in Top 300	Suffield	MAIN ST (CT 75)	PRIVATE ROADS	Significant traffic competing with pedestrian crossings associated with adjacent boarding school use.	Side Street Stop	No	No		None	Minor	Yes	No		No	No	Only 4 crashes, 0 KA, 2 KABC, therefore not ranked and does not warrant roundabout installation based on crash data. No data available at acute intersection to the north, if any significant crashes there, could reconsider. Roundabout would eliminate acute intersection with poor two-way visibility.	private road parallel to Rte 75 has acute angle exit onto Rte 75.
Not in Top 300	Not in Top 300	Suffield	SHELDON ST (CT 187)	N MAIN ST (CT 187)/SOUTH STONE ST	Dangerous. Northbound traffic on North Main Street continuing onto South Stone in Suffield may not yield to westbound traffic on Sheldon (187). Stopped traffic at both stop signs have tough alignment for sightline. East Granby is in agreement.	Side Street Stop	No	No		None	No	Yes	No		No	Yes	7 overall, 0KA, 5 KABC. Data only available at one of the three intersections, if others added, likely would be over the 6 KABC filter. 5 of the 7 crashes resulted in injuries. Acute angles at two intersections results in poor two-way visibility. Geometry score with circle in proper location would give higher score. Probably have to "T" Austin Brook into Stone, make one approach to roundabout.	Actually 3 intersections, one 4-legged two way stop and two 3 legged skewed intersections with stops on legs with acute angles
Not in Top 300	Not in Top 300	Suffield	MOUNTAIN RD (CT 168)	N STONE ST/S STONE ST	Numerous documented accidents.	Side Street Stop	Minor	No		None	Minor	Yes	No		No	Yes	10 Crashes overall, 0 KA, 5 KABC (1 short of meeting KABC filter therefore not ranked, was #117 before filter). 5 of 10 crashes resulted in injuries including 4 type B.	
58	26.24	West Hartford	TROUT BROOK DR	ASYLUM AVE	Future redevelopment of the former UConn campus which is located on the NW and NE corners of this intersection. Town is also planning to extend a multi-use trail along the west side of Trout Brook Drive which should generate more pedestrian activity.											Yes	Reviewed as ranked location #58	
Not in Top 300	Not in Top 300	West Hartford	PARK RD	QUAKER LANE SOUTH	Skewed geometry may lend itself to a peanut shaped roundabout.	Signal	No	Significant	Hazardous Waste	Significant	Minor	No	Maybe	Maybe	No	No	0 KA, 3 KABC therefore not ranked, 15 crashes overall. Skew makes it impossible to install roundabout (even a peanut) without significant ROW. Crash data does not warrant installation. Mini roundabout could be viable.	
Not in Top 300	Not in Top 300	West Hartford	MOUNTAIN RD	FERN ST/HUNTER DR		Signal	No	Minor		Insignificant	Minor	Yes	Maybe		No	No	0 KA, 2 KABC (therefore not ranked), 15 crashes overall. Space available (with town owned land) but crash data does not warrant installation. Could be considered in lieu of signal replacement.	
Not in Top 300	Not in Top 300	West Hartford	PARK RD	OAKWOOD AVE/ARNOLDALE RD		Signal	No	Minor	Hazardous Waste	Significant	Minor	No	No	Yes	No	No	1 KA (Fatal), 5 KABC (1 short of meeting KABC filter), 11 crashes overall. Crash data warrants improvement but single lane roundabout would require significant ROW (probable total takes) on SW and NE quadrants. Mini roundabout should be considered here due to crash severity.	
Not in Top 300	Not in Top 300	Wethersfield	JORDAN LN (CT 314)	WOLCOTT HILL RD	High traffic volume, stop controlled, multiple Thru/LT/RT-turn lanes	All-Way Stop	No	Minor	Hazardous Waste	Moderate	Minor	Yes	Maybe	No	Yes	Yes	23 overall crashes, 0 KA, 7 KABC. Weighted score is incorrect (using ADT of Rte 15 overhead which provides an ADT Factor of 0.0, should be 1.0). Piers limit location of roundabout and features. Shopping Center parking lot on SE quadrant and gas station lot on NW quadrant may be impacted. Adjusted circle location shown does not consider pier locations and will have to be adjusted.	Rte 15 bridge overhead, piers in the intersection. Multiple turn lanes and a right turn bypass at an all-way stop intersection creates confusion.
Not in Top 300	Not in Top 300	Wethersfield	WOLCOTT HILL RD	NOTT ST	High traffic/pedestrian/bike volume, stop-controlled, wide/offset intersection, school nearby	All-Way Stop	No	Significant		Significant	Minor	No	No	No	No	No	7 crashes, all PDOs. No way to install a roundabout to include both legs of Wolcott Hill Road without taking significant property. Not warranted by crash data.	North leg of Wolcott Hill is split into (2) two-way legs with an internal stop and very acute angle of intersection. The legs of Wolcott Hill Road are offset from each other.

CAPITOL RTSP GLOSSARY

Emphasis area means a highway safety priority in a State's SHSP, identified through a data-driven, collaborative process.

Highway safety improvement project means strategies, activities and projects on a public road that are consistent with a State strategic highway safety plan and corrects or improves a hazardous road location or feature or addresses a highway safety problem.

Non-infrastructure projects are projects that do not result in construction. Examples of non-infrastructure projects include road safety audits, transportation safety planning activities, improvements in the collection and analysis of data, education and outreach, and enforcement activities.

Older driver special rule applies if traffic fatalities and serious injuries per capita for drivers and pedestrians over the age of 65 in a State increases during the most recent two-year period for which data are available, as defined in the Older Driver and Pedestrian Special Rule Interim Guidance dated February 13, 2013.

Performance measure means indicators that enable decision-makers and other stakeholders to monitor changes in system condition and performance against established visions, goals, and objectives.

Programmed funds mean those funds that have been programmed in the Statewide Transportation Improvement Program (STIP) to be expended on highway safety improvement projects.

Roadway Functional Classification means the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide.

Strategic Highway Safety Plan (SHSP) means a comprehensive, multi-disciplinary plan, based on safety data developed by a State Department of Transportation in accordance with 23 U.S.C. 148.

Systematic refers to an approach where an agency deploys countermeasures at all locations across a system.

Systemic safety improvement means an improvement that is widely implemented based on high risk roadway features that are correlated with specific severe crash types.

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Source: VN Engineers