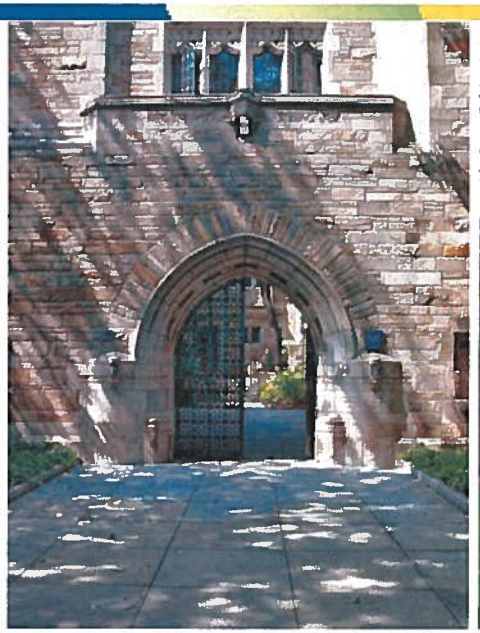
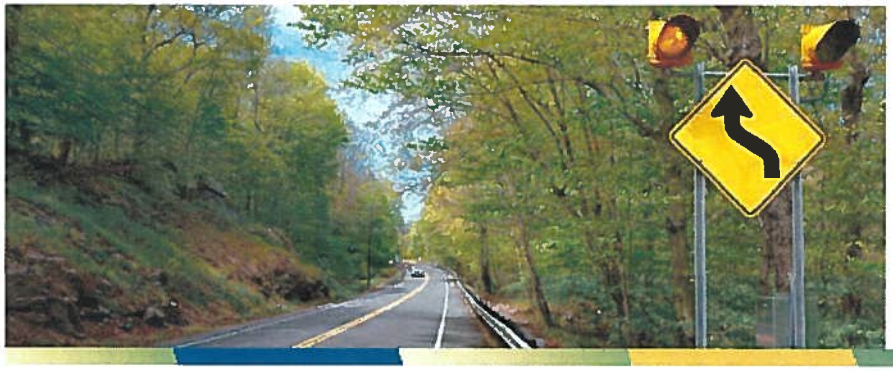
CONNECTICUT

Regional Transportation Safety Plan

SOUTH CENTRAL





SCRCOG
SOUTH CENTRAL REGIONAL COUNCIL OF GOVERNMENTS

CONNECTICUT DEPARTMENT OF TRANSPORTATION

U.S. Department of Transportation
Federal Highway Administration

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report terminology

Term	Definition
5 Year Rolling Average	The average of five individual, consecutive annual points of data (e.g. annual fatality rate)
AADT	Average Annual Daily Traffic
ADT	Average Daily Traffic
Collector Road	The FHWA defines Collector roads as the network that gathers traffic from local roads and directs them to the Arterial Network
HRRR	High Risk Rural Roads
HSIP	Highway Safety Improvement Program
Injury A	Suspected Serious Injury
Injury B	Suspected Minor Injury
Injury C	Possible Injury
Injury K	Fatal Injury
Injury O	Property Damage Only
Local Roads	The FHWA describes Local roads as having the largest percentage of all roadways in terms of mileage. They are intended for short distance travel, except at the origin or destination end of the trip, due to their provision of direct access to abutting land. They are often designed to discourage through traffic
LRTP	Long-Range Transportation Plan
MUTCD	Manual on Uniform Traffic Control Devices
MVMT	Million Vehicle Miles Traveled
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
Per VMT	Describes a crash rate per million vehicle miles
Per Capita	Describes a crash rate per population
Performance Measure	Indicators that enable decision-makers and other stakeholders to monitor changes in system conditions and performance against established visions, goals, and objectives
RTSP	Regional Transportation Safety Plan
SHIP	State Highway Improvement Plan
SHSP	Strategic Highway Safety Plan
TIP	Transportation Improvement Program
VMT	Vehicle Miles Traveled

1 executive summary

In 2017, the Connecticut Department of Transportation published the Connecticut Strategic Highway Safety Plan (SHSP) to guide the State in reducing fatalities and serious injuries along CT roadways. This South Central Regional Transportation Safety Plan was accomplished by the consultant under contract with the Connecticut Department of Transportation. It is in congruence with the CT SHSP and will serve as a road map and strategy to help the Region and all fifteen municipalities collaborate with the State in reducing fatalities and injuries and will increase safety awareness and help the municipalities and Region to focus on their unique safety issues.

The approach used in this study uses similar methodology to the State plan, but at a local level, reflecting the needs of the individual communities and the Region as a whole. In addition, each municipal report includes municipal-specific crash data and incorporates local stakeholder input to develop countermeasures to mitigate injury and fatal crashes.

The plan is data-driven, multimodal, and multidisciplinary. It outlines effective measures and goals to reduce potential future crashes by using a systemic approach which better positions the Region to compete for safety funds and focus on Regional data and local roads. The plan was developed involving SCRCOG staff and local stakeholders from the four E's of transportation safety; engineering, enforcement, education and emergency response.

The overall goal of the South Central RTSP, in congruence with the CTSHSP, is to reduce traffic fatalities and injuries by 15% by 2021. This means a reduction from a three-year average of 4,303 injury and fatal crashes to an annual average of 3,658 in the Region.

The Regional Transportation Safety Plan is a living document. Federal regulations require an update for the SHSP every five years and this Regional safety plan will follow this same update process.

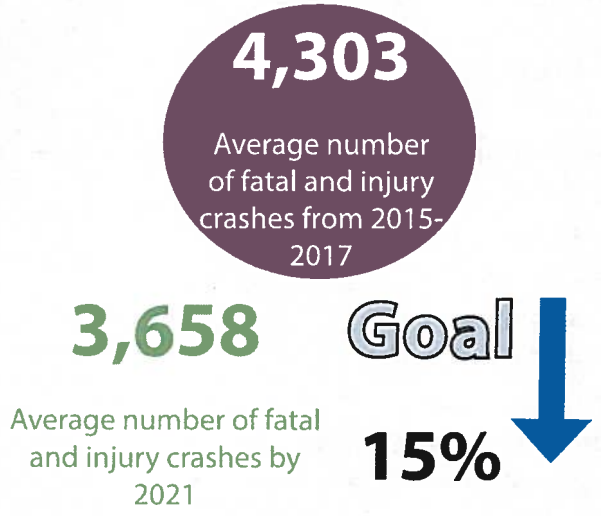
THE FOUR E'S OF TRANSPORTATION SAFETY

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

ENFORCEMENT: State and local law enforcement agencies.

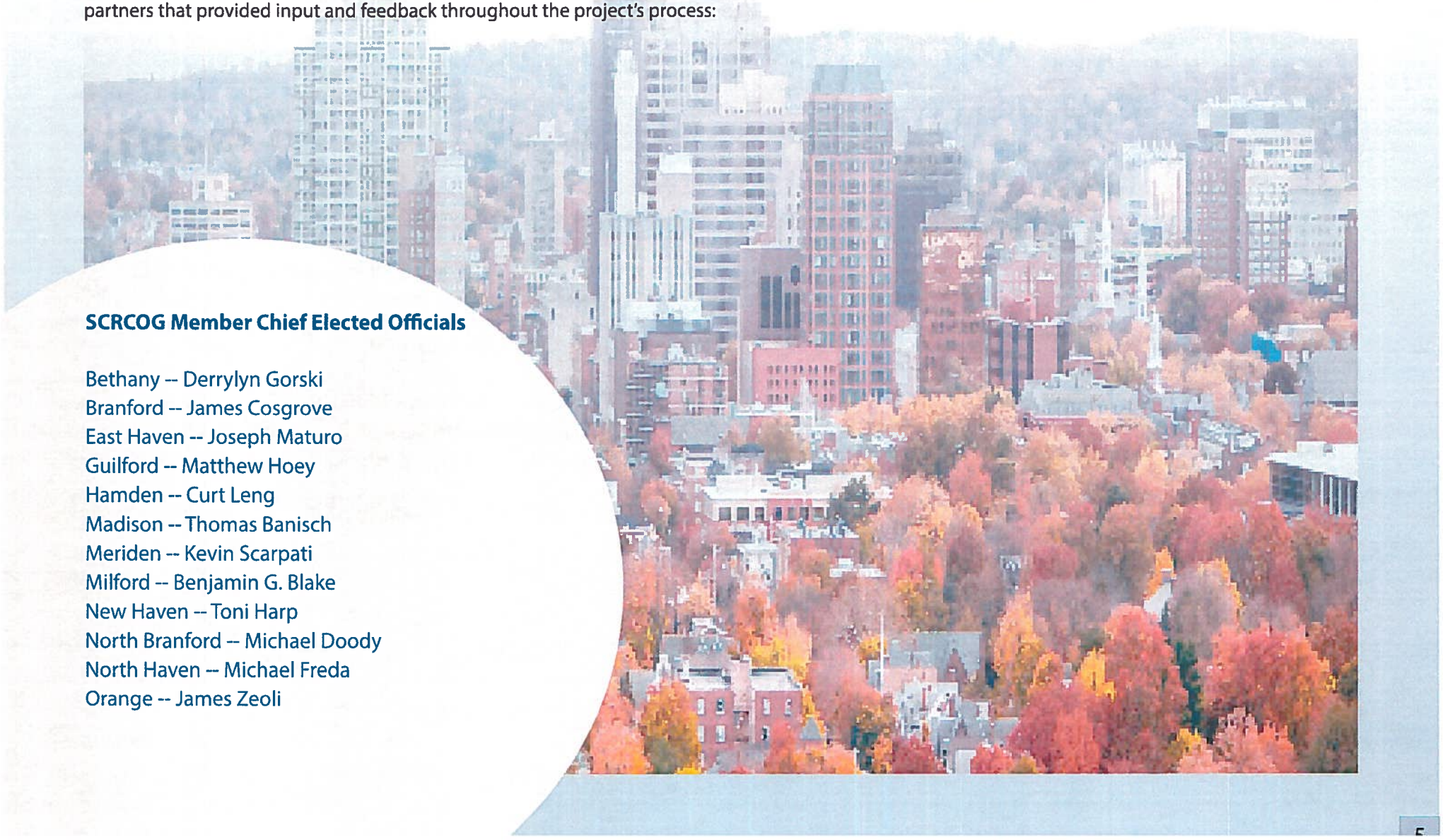
EDUCATION: Prevention specialists, communication professionals, educators, and citizen advocacy groups.

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



2 stakeholders

Stakeholders engaged in the process and development of the South Central RTSP include representatives from the four E's. In order to ensure stakeholder input, the SCRCOG member municipalities were involved with the plan development from the onset of the study. The following is a list of involved safety partners that provided input and feedback throughout the project's process:



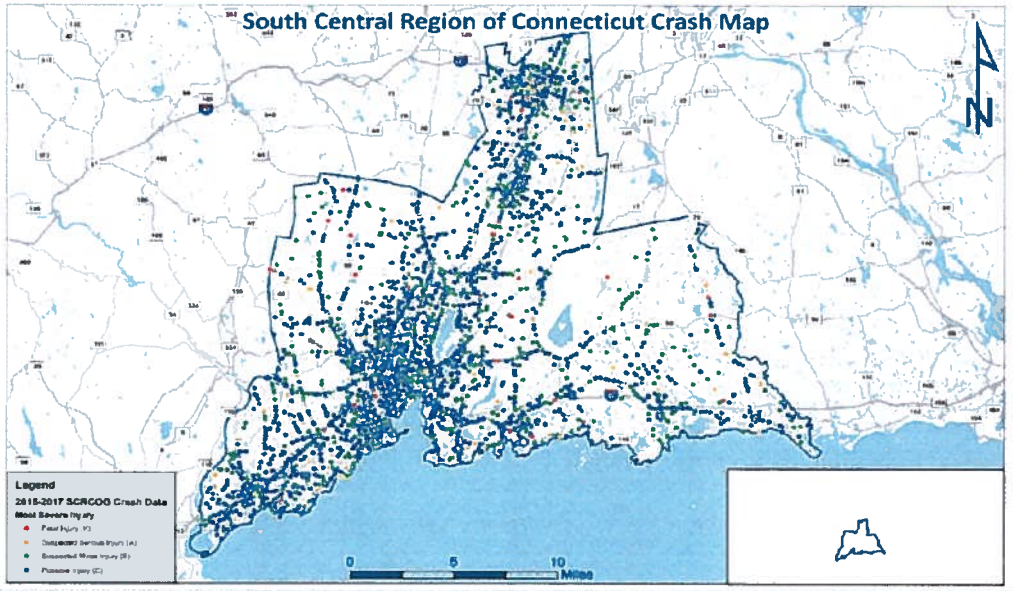
SCRCOG Member Chief Elected Officials

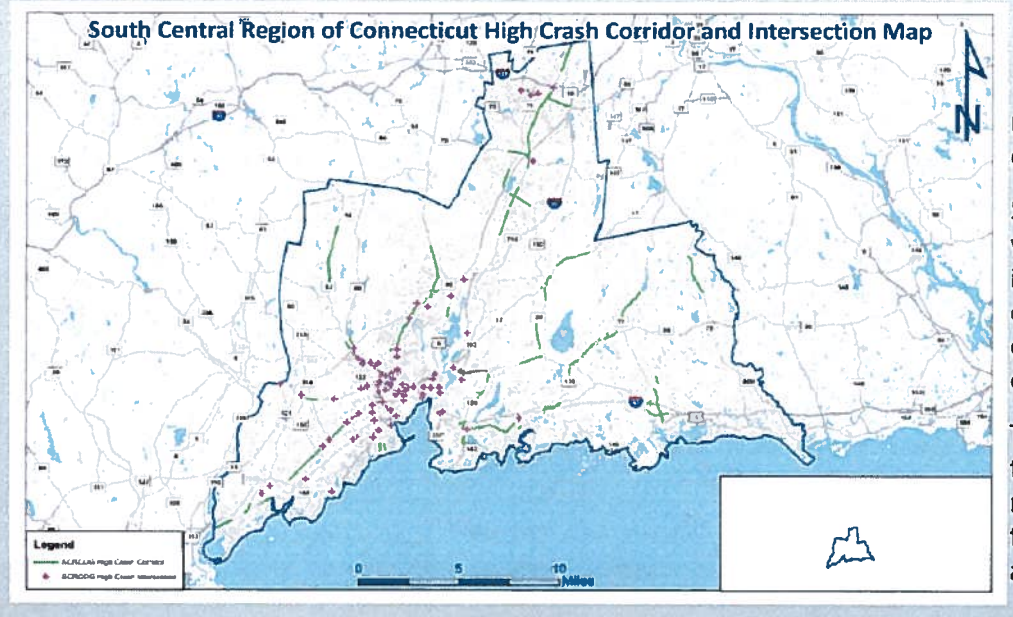
Bethany -- Derrylyn Gorski
Branford -- James Cosgrove
East Haven -- Joseph Maturo
Guilford -- Matthew Hoey
Hamden -- Curt Leng
Madison -- Thomas Banisch
Meriden -- Kevin Scarpati
Milford -- Benjamin G. Blake
New Haven -- Toni Harp
North Branford -- Michael Doody
North Haven -- Michael Freda
Orange -- James Zeoli

3 regional overview

The South Central Region of CT is a diverse area of fifteen municipalities covering 370 square miles, with a population over 570,000. It extends from the City of Milford in the west to the Town of Madison in the east, to the City of Meriden in the north and the City of New Haven centrally situated along Long Island Sound to the south. Four of the fifteen municipalities are cities and the remaining eleven are towns. Each municipality has disparate characteristics and unique transportation system strengths and challenges, which are included in the individual town reports in the appendix.

According to the South Central Connecticut Region Plan of Conservation & Development 2018 Update, the population in the South Central Region will grow by another five percent by 2040, most notably in the more urbanized areas of Hamden, Meriden, New Haven, and West Haven.





This predicted increase in population is important to note because more people will place higher demands on the current system and could lead to higher congestion and mobility challenges.

SCRCOG member municipalities collaborated and contributed with the production of this plan. They provided local and historical insights into the crash data analysis. This included a synopsis of current and upcoming state and local projects, historically challenging traffic sites not always reflected in the data, and input on the selection of municipal-approved countermeasures.

The data gathered and included in this study represents crashes that occurred on both local and state roads. In many cases, numerous crashes occurred on the state system most likely due to the corresponding higher traffic volumes. All roads, except limited access highways, were included in this study.

4 south central rtsp planning process

The initial phase of developing the South Central Regional Transportation Safety Plan included the collection and analysis of 2015-2017 crash data and the individual meetings with chief elected officials, Emergency Medical Services, law enforcement agents, public works directors, municipal engineers and other stakeholders. The collective historical insight into local safety issues and the collected crash data provided a comprehensive overview of the Region's transportation system. Moreover, applying this local input on the data-driven high crash corridor and intersection locations was imperative to developing strategies to reduce injury and fatal incidents on a local and Regional level.

The 2015-2017 injury and fatal crash data for each respective SCRCOG town and/or city was collected and analyzed from the Connecticut Crash Data Repository.

4.1 Data Collection and Methodology

Crash data was extracted from the University of Connecticut's Crash Data Repository website, excluding limited access roads within the three-year data period from January 1, 2015 to December 31, 2017. The crash data included in this report consisted of only injury and fatal crashes after the removal of property damage only crashes.

A value was assigned for each of the four levels of the "Most Severe Injury" field to quantify the injury severity sustained in crashes. To provide the most accurate comparison of the crash severity, the different crash types utilized the FHWA recognized "Equivalent Property Damage Only" (EPDO) rate approach. Each of the four crash severity types were given a unique value. A fatal crash is designated a ranking of 12, a potential serious injury is designated a value of 6, a suspected minor injury is designated a value of 3, and a suspected possible injury is designated a value of 1. The EPDO rate approach to crash severity data was taken from New Jersey DOT[1]. The extracted crash data was downloaded as a comma separated values (CSV) document and put into the mapping program ArcGIS to create a comprehensive map of the Region's crashes.

If an intersection had three or more injury or fatal crashes, it was considered a high crash intersection in the Region and included in the town maps. Additional intersection locations were identified by town representatives due to the potential safety concerns or due to historic site-specific safety issues not reflected in the three years of data analyzed. These were not plotted on the crash maps but were included in the town reports.

Data-driven corridor locations were identified by a critical review of crash frequency on road segments at each town's level. Additional corridor locations were also identified after meeting with town representatives and were included in the town reports to integrate local input and expertise into the plan. Representatives influenced the development of countermeasure recommendations for these plans.

[1]Safety Information Analysis: A Manual for Local Rural Road Owners. Case Studies. (2011, June 17). Retrieved December 11, 2017, from https://safety.fhwa.dot.gov/local_rural/training/fhwasa11210/s5.cfm

4.1.2 Field Work

Maps of each municipality in the Region were made to discuss high crash corridors and intersections with municipal officials across the South Central Region. These meetings were an opportunity to receive municipal input into the crash locations and to get feedback on contributing factors. In many cases, officials confirmed our data and gave specific insight into roadway and behavioral characteristics that were contributing to crashes. Conversely, other high crash locations were deemed to be of less importance by local governments as some crashes tended to be anomalous rather than due to deficiencies in the configuration and condition of the roadway. The input from municipal representatives influenced the development of countermeasure recommendations for these plans. In addition, each representative was also given the opportunity to suggest locations that were not shown on the map to be prioritized in the report.

Each municipal report was written with a summary of the municipality's transportation resources, demographic data, and its location in the Region. The municipal reports include the meeting summary in the Municipal Comments section. Field reviews were completed based on the priority locations of the municipal representatives and the crash data. A summary of the field review and images taken are included in the Field Study section of the municipal reports. Countermeasure tables are included at the end of each municipal report to suggest safety improvements that could be considered in each SCRCOG member town or city.

The top 40 crash locations in the Region were identified to provide a more detailed analysis for specific countermeasure recommendations. For a more detailed description of this process please see the South Central Region Top 40 Crash Locations section of this report.

FIVE PERFORMANCE TARGETS

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)

These performance metrics will be reevaluated on a five-year average. The South Central Regional Transportation Safety Plan will review these same performance metrics and establish the South Central Region target objectives in congruence with the State's plan. This includes a 15% reduction in the number of fatalities and serious injuries on all public roads in The South Central Region by 2021. In order to reach this goal, the RTSP includes estimated completion time (short, medium, and long) and possible cost and funding sources.

TABLE 1:
2015-2017 CRASH FREQUENCY BY TOWN

Town	Total Injury and Fatal Crashes, 2015-2017	Fatal Injury Crashes, 2015-2017
Bethany	110	4
Branford	456	4
East Haven	464	11
Guilford	228	3
Hamden	1,092	7
Madison	134	5
Meriden	1,127	10
Milford	964	5
New Haven	4,885	23
North Branford	221	2
North Haven	566	3
Orange	601	5
Wallingford	775	4
West Haven	1,081	10
Woodbridge	206	3
Total in Region	12,910	99

2015-2017 South Central Region Fatal and Injury Crashes by Town

	2015	2016	2017
Bethany			
Fatal Injury (K)	2	0	2
Suspected Serious Injury (A)	0	0	1
Suspected Minor Injury (B)	18	20	24
Possible Injury (C)	16	11	16
Total	36	31	43
Branford			
Fatal Injury (K)	1	2	1
Suspected Serious Injury (A)	9	7	9
Suspected Minor Injury (B)	55	53	62
Possible Injury (C)	74	83	100
Total	139	145	172
East Haven			
Fatal Injury (K)	3	5	2
Suspected Serious Injury (A)	12	3	12
Suspected Minor Injury (B)	52	40	59
Possible Injury (C)	81	94	101
Total	148	142	174
Guilford			
Fatal Injury (K)	2	1	0
Suspected Serious Injury (A)	8	1	5
Suspected Minor Injury (B)	41	40	28
Possible Injury (C)	44	33	25
Total	95	75	58

	2015	2016	2017
Hamden			
Fatal Injury (K)	1	2	4
Suspected Serious Injury (A)	21	23	13
Suspected Minor Injury (B)	130	114	120
Possible Injury (C)	196	246	222
Total	348	385	359
Madison			
Fatal Injury (K)	1	1	3
Suspected Serious Injury (A)	4	2	5
Suspected Minor Injury (B)	18	14	14
Possible Injury (C)	19	28	25
Total	42	45	47
Meriden			
Fatal Injury (K)	4	2	4
Suspected Serious Injury (A)	47	53	46
Suspected Minor Injury (B)	87	130	75
Possible Injury (C)	208	271	200
Total	346	456	325
Milford			
Fatal Injury (K)	0	3	2
Suspected Serious Injury (A)	31	31	28
Suspected Minor Injury (B)	74	86	55
Possible Injury (C)	216	266	172
Total	321	386	257

	2015	2016	2017
New Haven			
Fatal Injury (K)	4	11	8
Suspected Serious Injury (A)	137	138	139
Suspected Minor Injury (B)	350	299	297
Possible Injury (C)	1144	1170	1188
Total	1635	1618	1632
North Branford			
Fatal Injury (K)	1	1	0
Suspected Serious Injury (A)	9	8	2
Suspected Minor Injury (B)	31	38	30
Possible Injury (C)	30	35	36
Total	71	82	68
North Haven			
Fatal Injury (K)	1	1	1
Suspected Serious Injury (A)	9	13	9
Suspected Minor Injury (B)	66	67	60
Possible Injury (C)	114	110	115
Total	190	191	185
Orange			
Fatal Injury (K)	1	3	1
Suspected Serious Injury (A)	8	9	10
Suspected Minor Injury (B)	55	69	73
Possible Injury (C)	125	131	116
Total	189	212	200

	2015	2016	2017
Wallingford			
Fatal Injury (K)	0	2	2
Suspected Serious Injury (A)	18	10	23
Suspected Minor Injury (B)	81	93	102
Possible Injury (C)	129	158	157
Total	228	263	284
West Haven			
Fatal Injury (K)	1	3	6
Suspected Serious Injury (A)	15	14	18
Suspected Minor Injury (B)	102	140	151
Possible Injury (C)	214	198	219
Total	332	355	394
Woodbridge			
Fatal Injury (K)	1	2	0
Suspected Serious Injury (A)	6	4	11
Suspected Minor Injury (B)	20	20	26
Possible Injury (C)	32	50	34
Total	59	76	71

5 identified top crash locations

In order to select the top 100 motorized vehicle crash locations the K, A, B, C codes were assigned severity ranking weighted scores of 12, 6, 3, 1 and Equivalent Property Damage Only (EPDO) amounts. For example, 1 K (fatal) crash is equivalent to 949 EPDO crashes since the societal cost of a fatality ($16,185,746 as used by CT DOT) is 949 times the cost of a Property Damage Only crash ($17,061 as used by CT DOT).

KABCO Severity Ranking

Severity	Rank	Crash Cost	EPDO Score
K	12	$16,185,746	949
A	6	$938,535	55
B	3	$284,430	17
C	1	$179,924	11
O	0	$17,061	1

Each corridor and intersection were re-scored by using EPDO rather than the prior 12, 6, 3, 1 method. The corridors were sorted from highest to lowest based on the EPDO Severity per mile year. Out of these top 100 crash sites the top 40 were selected based on severity. Based on these locations and their corresponding infrastructure and manner of crash analysis, countermeasures were developed to help the municipalities and the Region prioritize sites and solutions to help mitigate future traffic incidents.

The top bike and pedestrian crash sites were selected using the same methodology.

[1] Federal Highway Administration Crash Costs for Highway Safety Analysis, 2018, Washington DC Federal Highway Administration.

Top Motorized Crash Corridors, 2015-2017 Table

Corridor ID	Town	Route Class	Road Name	Corridor Start	Corridor End	Number of injury and fatal crashes, 2015-2017
SCR3	Meriden	Local 607	E. Main Street	0.05 mi east of E Broad Street	I-91 North on-Ramp	67
SCR4	Meriden	US Route 5	Broad Street	0.07 mi south of E Main Street	Atkins Street	68
SCR5	Meriden	Local 606	W. Main Street	N 4th Street	Tooth Place	66
SCR6	Meriden	US Route 5	S. Broad Street	0.23 mi north of N Colony Road	Charles Street	68
SCR7	Meriden	US Route 5	N. Broad Street	0.02 mi south of Golden Street	0.03 mi south of Town Line	23
SCR8	Wallingford	US Route 5	N. Colony Road	0.11 mi south of Pent Highway	0.17 mi north of S Broad Street	185
SCR9	Wallingford	US Route 5	S. Colony Road	0.02 mi south of Parsons Street	0.02 mi south of High Street	41
SCR11	Wallingford	US Route 5	S. Colony Road	0.08 mi south of Toelles Road	John Street	42
SCR12	Bethany	State 63	Amity Road	0.06 mi north of Round Hill Road	0.10 mi north of Pleasant Drive	20
SCR13	Hamden	State 10	Dixwell Avenue	0.02 mi south of Morse Street	Skiff Street	224
SCR15	Hamden	State 707	Whitney Avenue	0.06 mi north of Millbrook Road	0.26 mi north of Millbrook Road	14
SCR16	Hamden	State 10	Dixwell Avenue	0.05 mi west of Whitney Avenue	0.01 mi east of CT-15	29
SCR17	Hamden	State 10	Whitney Avenue	0.04 mi north of Dixwell Avenue	0.23 mi north of Sherman Avenue	84
SCR19	North Haven	US Route 5	Washington Avenue	0.05 mi south of Clintonville Road	0.07 mi north of I-91SB On-Ramp	37
SCR20	North Haven	US Route 5	State Street	0.05 mi south of Skiff Street	0.16 mi south of School Lane	18
SCR25	Woodbridge	State 63	Amity Road	0.01 mi south of June Street	0.02 mi north of Bradley Road	20

Top Motorized Crash Corridors 2015-2017 Table Continued

Corridor ID	Town	Route Class	Road Name	Corridor Start	Corridor End	Number of injury and fatal crashes, 2015-2017
SCR26	Woodbridge	State 69	Whalley Avenue	CT-15 S On-Ramp	0.16 mi north of Bradley Road	19
SCR29	Orange	State 34	Derby Avenue	0.04 mi west of Orange Center Road	Woodside Drive	44
SCR30	Orange	US Route 1	Boston Post Road	0.09 mi south of Peck Lane	0.03 mi north of Lambert Road	86
SCR31	Orange	US Route 1	Boston Post Road	0.12 mi south of Racebrook Road	0.04 mi south of Dogwood Lane	66
SCR33	Milford	US Route 1	Bridgeport Avenue	0.02 mi south of Kerema Avenue	0.10 mi south of Lawman Road	39
SCR34	Milford	US Route 1	Boston Post Road	Marion Avenue	0.01 mi north of Erna Avenue	20
SCR35	Milford	US Route 1	Boston Post Road	0.08 mi south of Woodruff Road	0.22 mi south of Peck Lane	26
SCR36	Milford	US Route 1	Boston Post Road	0.09 mi south of Milford Circle	0.11 mi north of Red Bush Lane	26
SCR38	Milford	State 162	Broad Street	0.05 mi north of Greens End Place	0.05 mi north of Prospect Street	15
SCR41	West Haven	US Route 1	Boston Post Road	0.04 mi south of Farwell Street	0.01 mi north of Fairfax Street	35
SCR42	West Haven	US Route 1	Boston Post Road	Marginal Drive	0.11 mi east of Marginal Drive	17
SCR43	West Haven	Local 60	Campbell Avenue	0.04 mi south of W Spring Street	0.01 mi north of Alling Street	26
SCR44	West Haven	State 162	Saw Mill Road	0.04 mi south of Allings Crossing Road	I-95 Off-Ramp	42
SCR48	West Haven	Local 139	Elm Street	Orchard Street	0.07 mi west of Savin Avenue	4

Top Motorized Crash Corridors 2015-2017 Table Continued

Corridor ID	Town	Route Class	Road Name	Corridor Start	Corridor End	Number of injury and fatal crashes, 2015-2017
SCR52	New Haven	State 10	Ella T. Grasso Blvd	0.02 mi south of Adeline Street	0.04 mi north of Orange Avenue	40
SCR53	New Haven	State 10	Ella T. Grasso Blvd	0.29 mi south of Legion Avenue	0.04 mi north of Derby Avenue	74
SCR54a	New Haven	State 10	Whalley Avenue	Ella Grasso Blvd	0.05 mi north of W Park Avenue	27
SCR54b	New Haven	State 11	Ella T. Grasso Blvd	0.01 mi south of Irving Street	Whalley Avenue	85
SCR57	New Haven	State 63	Whalley Avenue	0.02 mi north of Phillip Street	0.02 mi south of W Rock Avenue	27
SCR59	New Haven	State 80	Foxon Road	0.04 mi west of Quinnipiac Avenue	Old Foxon Road	60
SCR60	New Haven	State 80	Foxon Road	Middletown Avenue	0.20 mi west of Quinnipiac Avenue	50
SCR61	New Haven	Local 653	Whalley Avenue	0.02 mi west of Ellsworth Avenue	0.02 mi east of Orchard Street	112
SCR65	New Haven	Local 265	Grand Avenue	James Street	0.04 mi east of Poplar Street	49
SCR67	New Haven	State 63	Whalley Avenue	W Prospect Street	0.04 mi north of Fowler Street	63
SCR72	East Haven	Local	Forbes Road	0.04 mi north of Main Street	Sidney Street	5
SCR73	East Haven	State 100	High Street	0.02 mi south of Sidney Street	Laurel Street	14
SCR74	East Haven	State 100	Main Street	0.01 mi west of Chidsey Avenue	Hemingway Avenue	21
SCR75	East Haven	State 100	High Street	0.04 mi south of Main Street	0.05 mi south of Tuttle Place	18
SCR76	East Haven	State 100	High Street	0.02 mi north of Hellstrom Road	0.23 mi north of Corbin Road	8

Top Motorized Crash Corridors 2015-2017 Table Continued

Corridor ID	Town	Route Class	Road Name	Corridor Start	Corridor End	Number of injury and fatal crashes, 2015-2017
SCR77	East Haven	State 100	High Street	0.08 mi south of Grannis Road	Howe Court	10
SCR78	East Haven	State 80	Foxon Road	Dell Drive	0.03 mi east of Michael Street	9
SCR79	East Haven	State 80	Foxon Road	Foxon Blvd	0.08 mi east of Thompson Street	33
SCR81	East Haven	State 142	Hemingway Avenue	0.03 mi south of Short Beach Road	0.04 mi north of Richmond Street	20
SCR82	East Haven	US Route 1	Saltonstall Parkway	Main Street	0.05 mi west of Dominican Road	9
SCR83	East Haven	State 142	Hemingway Avenue	0.04 mi north of Dwight Place	0.01 mi north of Trolley Square	23
SCR86	Branford	US Route 1	E. Main Street	0.04 mi south of I-95SB Off-Ramp	0.01 mi north of N Branford Road	8
SCR87	Branford	US Route 1	W. Main Street	0.06 mi west of Orchard Hill Road	0.06 mi north of Cherry Hill Road	57
SCR88	Branford	State 740	Cedar Street	0.11 mi south of N Main Street	I-95 SB Off-Ramp	39
SCR89	Branford	State 146	Main Street	0.03 mi west of Russell Street	Kirkham Street	9
SCR90	Branford	US Route 1	E. Main Street	Mill Plain Road	0.12 mi east of Sylvia Street	17
SCR91	Branford	US Route 1	W. Main Street	Holsey Avenue	0.04 mi east of Matthew Road	29
SCR92	North Branford	State 80	Foxon Road	0.21 mi west of Totoket Road	0.08 mi east of Doral Farms Road	25
SCR93	North Branford	State 22	Forest Road	0.03 mi south of Arbor Lane	0.04 mi north of Foote Hill Road	11
SCR94	North Branford	State 17	Middletown Avenue	0.07 mi north of Spruce Street	0.11 mi north of Mansfield Drive	21
SCR95	North Branford	State139	Branford Road	0.07 mi north of Twin Lakes Road	Harrison Road	7

Top Motorized Crash Corridors 2015-2017 Table Continued

Corridor ID	Town	Route Class	Road Name	Corridor Start	Corridor End	Number of injury and fatal crashes, 2015-2017
SCR96	North Branford	State 80	Foxon Road	0.05 mi west of Branford Road	0.02 mi west of Brookmeade Court	17
SCR97	North Branford	State 80	Foxon Road	Circo Road	0.04 mi west of Clear Lake Manor Road	15
SCR98	North Branford	State 22	Forest Road	Mill Road	0.05 mi north of Old Forest Road	14
SCR99	North Branford	State 17	Middletown Avenue	Maltby Lane	0.24 mi east of Reeds Gap Road W	18
SCR102	Guilford	US Route 1	Boston Post Road	Peddlers Road	0.26 mi east of State Street	24
SCR104	Guilford	State 77	Durham Road	0.22 mi south of Hemlock Avenue	0.12 mi north of Quonnipaug Hill Road	11
SCR105	Guilford	State 80	Old Toll Road	0.11 mi east of Flat Iron Road	0.05 mi east of Long Hill Road	10
SCR106	Guilford	Local 90	Little Meadow Road	0.12 mi south of Dodge Court	0.04 mi north of Stillmeadow Drive	3
SCR109	Madison	State 79	Durham Road	0.37 mi north of Hathaway Road	Dorset Lane	7
SCR115	Wallingford	State 150	Center Street	0.03 mi west of Washington Street	Constitution Street	32
SCR116	Wallingford	State 68	Church Street	Grove Street	0.05 mi south of N. Plains Industrial Highway	33
SCR117	Wallingford	State 150	N. Turnpike Road	Axis Road	Ridgeland Road	20
SCR124	Hamden	State 10	Fitch Street	0.08 mi north of Prescott Street	Warner Street	13
SCR126	West Haven	Local 60	Campbell Avenue	Captain Thomas Blvd	Leete Street	17
SCR127	West Haven	Local 390	Savin Avenue	Thomas Street	0.02 mi north of Atwater Street	11

Top Motorized Intersection Crash Locations in The South Central Region 2015-2017

Intersection	Town	Roadway One (Route Classification)	Roadway Two (Route Classification)	Number of injury and fatal crashes, 2015-2017
SCR-AR	New Haven	US-1 (US Route)	CT-10 (State)	38
SCR-T	New Haven	MLK Jr. Blvd (State)	Church Street (Local)	27
SCR-O	New Haven	US-1 (US Route)	CT-337 (State)	26
SCR-BC	Orange	CT-152 (State)	CT-34 (State)	19
SCR-CP	New Haven	Chapel Street (Local)	East Street (Local)	14
SCR-BE	New Haven	CT-34 (South Frontage Road) (State)	York Street (Local)	17
SCR-EJ	New Haven	CT-63 (State)	Phillip Street/Blake Street (Local)	13
SCR-I	New Haven	Ella T. Grasso Blvd (State)	Kimberly Avenue (State)	36
SCR-J	New Haven	Whalley Avenue (State Road)	Sherman Parkway (Local)	37
SCR-R	New Haven	CT-80 (State)	CT-103 (State)	40
SCR-G	New Haven	CT-80 (State)	CT-17 (State)	40
SCR-L	New Haven	CT-10 (State)	CT-63 (State)	30
SCR-AB	Meriden	East Main Street (US Route)	Pratt Street (Local)	23
SCR-U	New Haven	CT-10 (State)	CT-34 (State)	27
SCR-Q	West Haven	CT-122 (State)	CT-34 (State)	29
SCR-BO	Hamden	CT-10 (State)	Skiff Street (State)	22
SCR-W	West Haven	US-1 (US Route)	CT-122 (State)	32
SCR-P	Branford	US-1 (US Route)	Cedar Street (State)	29
SCR-AH	New Haven	Elm Street (Local)	York Street (Local)	33
SCR-BH	New Haven	MLK Jr. Blvd (Local)	College Street (Local)	23
SCR-BU	New Haven	Sherman Avenue (Local)	George Street (Local)	17
SCR-BY	East Haven	CT-142 (State)	Main Street (State)	18

Top Motorized Intersection Crash Locations in the South Central Region 2015-2017

Intersection	Town	Roadway One (Route Classification)	Roadway Two (Route Classification)	Number of injury and fatal crashes, 2015-2017
SCR-Z	New Haven	Grand Avenue (Local)	East Street (Local)	19
SCR-AF	New Haven	CT-10 (State)	Washington Avenue (State)	19
SCR-AA	New Haven	Woodward Avenue (Local)	Main Street (State)	26
SCR-BZ	New Haven	Chapel Street (Local)	Ferry Street (Local)	16
SCR-EO	Milford	CT-162 (State)	CT-736 (State)	**11**
SCR-BF	New Haven	MLK Jr. Blvd. (Local)	York Street (Local)	18
SCR-AW	New Haven	Temple Street (Local)	Chapel Street (Local)	15
SCR-EB	West Haven	Campbell Avenue (Local)	West Spring Street (Local)	18
SCR-AS	New Haven	Fitch Street	Whalley Avenue (State)	25
SCR-DP	Wallingford	CT-68 (State)	N. Main Street Ext (Local)	17
SCR-ED	Orange	US-1 (US Route)	CT-114 (State)	17
SCR-BK	New Haven	Whalley Avenue (Local)	Winthrop Avenue (Local)	17
SCR-BJ	New Haven	Chapel Street	Sherman Avenue (Local)	24
SCR-BM	New Haven	Dixwell Avenue (State)	Henry Street (Local)	19
SCR-BW	New Haven	Whalley Avenue (Local)	Norton Street (Local)	19
SCR-ER	West Haven	CT-162 (State)	Allings Crossing Road (Local)	19
SCR-CL	New Haven	S. Frontage Road (State)	College Street (Local)	16
SCR-AJ	New Haven	Grand Avenue (Local)	James Street (Local)	22
SCR-DJ	New Haven	Sherman Avenue (Local)	Goffe Street (Local)	14
SCR-BX	New Haven	Peck Street (Local)	Blatchley Avenue (Local)	13
SCR-AX	New Haven	CT-337 (State)	Main Street Anx (State)	19
SCR-EN	Orange	CT-34 (State)	CT-121 (State)	16
SCR-BT	New Haven	Fitch Street (State)	Blake Street (Local)	24
SCR-AI	New Haven	Elm Street (Local)	Church Street (Local)	23

Top Motorized Crash Locations and Countermeasure Table

Town	Location	ID	Injury and Fatal Crashes	Issue	Countermeasure	Cost	Responsibility
Branford	US-1 and Cedar Street	Intersection P	29	Front-to-rear crashes	Traffic Signal Retroreflective Backplates	Low	State
					Driveway consolidation and relocation for gas station on Cedar Street	Low to Medium	Private and Town
					Investigate Signal Timing	Low to Medium	State
					Dynamic Speed Feedback Signs	Low	Town per State Permit
				Pedestrian	Investigate Curb extensions on Cedar Street crossing	Low to Medium	State
					High-Visibility Crosswalks	Low	State
East Haven	Forbes Place Between Main Street and Sidney Street	Corridor 72	5	Speeding	Traffic Calming (speed table)	Low to High	Town
				Residential Street used as cut through	Investigate a Road Diet	Low to Medium	Town
				Pedestrian crossings	High-Visibility Crosswalks	Low to Medium	Town
East Haven	Foxon Road between Dell Drive and Michael Street	Corridor 78	9	No Crosswalks along Corridor	High-Visibility Crosswalks	Low to Medium	State
				Intermittent Sidewalks	Sidewalks	Medium to High	Town/State
				Speed and Pedestrian Safety	Investigate a Road Diet	Low to Medium	State
East Haven	Main Street between Main Street and Dominican Road	Corridor 82	9	Intersection confusion at Saltonstall Parkway	Redesign Intersection, including driveway closures	Medium to High	State
				Front-to-rear crashes	Dynamic Speed Feedback Signs	Low	City per State Permit
East Haven	Main Street and Hemingway	Intersection BY	18	Front-to-rear crashes	Traffic Signal Retroreflective Backplates	Low	Town
				Pedestrian crossing	Restripe and raise crosswalks	Medium	Town
				Excessive width along Hemingway Avenue Eastbound	Pedestrian Refuge Island	Medium	Town
					Investigate a Road Diet	Medium	Town
Hamden	CT-10 between Prescott Street and Warner Street	Corridor 124	13	Motorized and Non-motorized Vehicle conflicts	Investigate a Road Diet	Low to Medium	State
					Investigate Bike Lanes	Medium to High	State
				Mid-Block crossings	In-street Pedestrian crossing Signs	Low	Town via Encroachment Permit

Town	Location	ID	Injury and Fatal Crashes	Issue	Countermeasure	Cost	Responsibility
Guilford	Boston Post Road between Peddlers Road and Village Walk	Corridor 102	24	Bike Crashes	Investigate Bike Lanes	Medium to High	State
				Front-to-rear crashes	Traffic Signal Retroreflective Backplates	Low	State
				High Conflict Points	Corridor Access Management, possibly close or consolidate driveways	Medium to High	State
Guilford	Church Street between Broad Street and Prospect Hill Road	Corridor 103	27	Dark not lighted crashes	Investigate Roadway Illumination	Medium	Town/State
				Speed	Investigate a Road Diet	Low to Medium	State
				Pedestrian Safety	High-Visibility Crosswalks on southern end of Corridor	Low to Medium	State
Meriden	East Main Street and Pratt Street	Intersection AB	23	Angle crashes	Traffic Signal Retroreflective Backplates	Low	State
					Investigate Signal Timing	Low to Medium	State
Meriden	West Main Street (Between Bradley Avenue and Pratt Street)	Corridor 5	66	Missing Crosswalks	High-visibility Crosswalks at North 3rd Street, Cook Ave, Butler Street Grove Street and Colony Street	Low	State
				Limited Visibility	Traffic Signal Retroreflective Backplates at intersections of Colony, Grove, Butler, and Cook Ave	Low	State
				Angle Crashes	High-visibility Speed Enforcement	Low to Medium	State
					Investigate Signal Timing	Low to Medium	State
				Long Pedestrian crossings	Investigate Curb Extensions at intersections with Cook Ave and Lewis Ave	Medium	State
Milford	Bridgeport Avenue between Kerema Avenue and Lawman Road	Corridor 33	39	Pedestrian crossings	Investigate Curb Extensions	Medium	State
				Missing Crosswalks	High-visibility Crosswalks	Low to Medium	State
				Long gaps without crosswalks	High-visibility Crosswalks west of Spring Street and east of Naugatuck Avenue	Low to Medium	State
				Left turn Crashes at unsignalized intersections	Restricted Left Turn Phase	Low	State

Town	Location	ID	Injury and Fatal Crashes	Issue	Countermeasure	Cost	Responsibility
Milford	Bridgeport Avenue between Marion Avenue and Erna Avenue	Corridor 34	20	Bike crashes	Investigate a Road Diet	Low	State
				Front-to-rear	Dynamic Speed Feedback Signs	Low	Town per State Permit
				Front-to-rear and intersection crashes	Traffic Signal Retroreflective Backplates at Bridgeport Avenue and Boston Post Road	Low	State
New Haven	Ella T. Grasso Blvd (CT-10) between Adeline Street and Orange Avenue	Corridor 52	40	Lack of Sidewalks	Sidewalks	Medium to High	City/State
				Rear-end Collisions	High-visibility Speed Enforcement	Low to Medium	State
					Dynamic Speed Feedback Signs	Low to Medium	City per State Permit
				Missing Crosswalks	High-Visibility Crosswalks	Low to Medium	State
New Haven	Ella T. Grasso Blvd .3 mi south of CT-34 and Derby Avenue	Corridor 53	74	Rear-end collisions	Traffic Signal Retroreflective Backplates	Low	State
					Dynamic Speed Feedback Signs	Low to Medium	City per State Permit
				Bike crash	Bicycles may use full lane Sign	Low	State
New Haven	Whalley Avenue between CT-10 and West Park Avenue	Corridor 54a	27	Missing crosswalks	High-Visibility Crosswalks	Low to Medium	State
				Pedestrian safety	Investigate Curb Extensions	Medium	State
				Rear-end crashes	Traffic Signal Retroreflective Backplates	Low	State
				Pedestrian crashes	Road Safety Audit	Low	State
					In-Street Pedestrian Crossing Signs	Low	State
New Haven	Ella T. Grasso Blvd between Irving Street and Whalley Avenue	Corridor 54b	85	Missing Crosswalks	High-visibility Crosswalks	Low to Medium	State
				Rear End crashes	Traffic Signal Retroreflective Backplates	Low	State
					Dynamic Speed Feedback Signs	Low	City per State Permit
				Pedestrian crossing	Curb Extensions	Medium	State
New Haven	Whalley Avenue between Phillip Street and West Rock Avenue	Corridor 57	27	Dark lighted	Roadway Illumination	Low to Medium	City/State
				Wide lanes	Investigate Road Diet	Low to Medium	State
				Speeding	Investigate Curb Extensions	Medium	State
	Whalley Avenue and Fountain Street			Confusing Intersection/Front-to-rear and Angle crashes	Roadway/lane Reconfiguration	Medium to High	State

Town	Location	ID	Injury and Fatal Crashes	Issue	Countermeasure	Cost	Responsibility
New Haven	Foxon Blvd between Quinnipiac Ave and Old Foxon Blvd	Corridor 59	60	Intersection crashes along Corridor	Traffic Signal Retroreflective Backplates	Low	State
				Front-to-rear	Investigate a Road Diet	Low	State
New Haven	Foxon Blvd between Middletown Avenue and Quinnipiac Avenue	Corridor 60	50	Lack of Crosswalk	High-visibility Crosswalks	Low to Medium	State
				Front-to-rear collisions	Traffic Signal Retroreflective Backplates	Low to Medium	State
				Speeding	Dynamic Speed Feedback Signs (east of I-91 off-ramp)	Low	City per State Permit
New Haven	Whalley Avenue (CT-63) between Ellsworth Aveue and Orchard Street	Corridor 61	112	Pedestrian Awareness and Speeding	Investigate Curb Extensions	Medium	State
					High-Visibility Crosswalks	Low to Medium	State
				Bicycle crashes	Investigate Bike Lanes	Medium to High	State
				Bicycle and Pedestrian Safety	Investigate a Road Diet	Low to Medium	State
New Haven	Grand Avenue Between James Street and Poplar Street	Corridor 65	49	Pedestrian crossing	High-visibility Crosswalks	Low to Medium	State
New Haven	CT-10 and CT-63	Intersection L	30	Near Park and Bus Stop	High-visibility Crosswalks	Low to Medium	State
				Bicycle Safety	Investigate a Road Diet	Medium	State
				Front-to-rear crashes	Dynamic Speed Feedback Signs	Low to Medium	City per State Permit
					Traffic Signal Retroreflective Backplates	Low	State
				Angle crashes	Driveway Consolidation at gas station	Low to Medium	State
					Investigate Signal Timing	Low to Medium	State
New Haven	US-1 and CT-337	Intersection O	26	Front to Rear crashes	Traffic Signal Retroreflective Backplates	Low	State
					Upgrade Delineation	Low	State
					Dynamic Speed Feedback Signs	Low	City per State Permit
					Signal Optimization	Low to Medium	State
				Pedestrian crossing	High-visibility and Raised Crosswalks	Medium	State

Town	Location	ID	Injury and Fatal Crashes	Issue	Countermeasure	Cost	Responsibility
New Haven	CT-80 and CT-103	Intersection R	40	Front-to-rear crashes	Partial closure or reconfiguration of access at gas station on Foxon Blvd west of Quinnipiac Ave	Medium	Private
					Repaint pavement markings	Low	State
					Traffic Signal Retroreflective Backplates	Low	State
				Pedestrian	High visibility crosswalks	Low	State
					Investigate Curb extensions	Low to Medium	State
					Update pedestrian beacon with audible tones	Low to Medium	State
New Haven	North Frontage Road and Church Street	Intersection T	27	Front-to-rear crashes	Traffic Signal Retroreflective Backplates	Low	City
				Speed Transition from Expressway	Dynamic Speed Feedback Signs	Low	City per State Permit
				Dark lighted	Investigate Roadway Illumination	Low to Medium	City
				Pedestrian crashes	High-visibility and Raised Crosswalk	Medium	City
New Haven	CT-10 and CT-34	Intersection U	27	Front-to-rear crashes	Signal Optimization	Low to Medium	State
					Traffic Signal Retroreflective Backplate	Low	State
				School Zone	No Turn on Red Restriction	Low	State
				Dark-lighted	Investigate Roadway Illumination	Low to Medium	State
New Haven	Grand Avenue and East Street	Intersection Z	19	Angle crashes	Traffic Signal Retroreflective Backplates	Low	City
				Near Rail crossing	Investigate Signal timing	Medium	City
				Excessive Travel widths	Narrow travel lanes with Edge Lines	Low	City
				Dark lighted	Investigate Roadway Illumination	Low to Medium	City
				Pedestrian Safety	Investigate Raised Crosswalks	Medium	City
New Haven	Elm Street and Church Street	Intersection AI	23	Pedestrian Safety	Investigate Raised Crosswalks	Medium	City
				Angle and front-to-rear	Traffic Signal Retroreflective Backplates	Low	City
					Add additional Signal Heads	Low	City

Town	Location	ID	Injury and Fatal Crashes	Issue	Countermeasure	Cost	Responsibility
New Haven	CT-10 and York Street	Intersection AH	33	Front-to-rear crashes	Traffic Signal Retroreflective Backplates	Low	State
					Enhance delineation to separate west bound and eastbound directions of Elm Street west of York	Low to High	State
					Investigate Signal Timing	Medium	State
				Pedestrian crashes	Raised Crosswalks	Low to Medium	State
New Haven	Boston Post Road and Ella T. Grasso Blvd	Intersection AR	38	Front-to-rear	Traffic Signal Retroreflective Backplates	Low	State
					Investigate Signal Timing	Low to High	State
					Dynamic Speed Feedback Signs	Low	City per State Permit
				Dark lighted	Roadway Illumination	Low to Medium	City/State
				Pedestrian crossing	Update pedestrian signals	Medium	State
					Investigate Raising Crosswalks	Low to Medium	State
New Haven	Chapel Street and East Street	Intersection CP	14	Pedestrian Safety	High-visibility Crosswalk	Low to Medium	City
					Investigate Raising Crosswalk	Low to Medium	City
				Faded Travel Lane Markings	Restripe Lanes	Low to Medium	City
				Front-to-rear crashes	Traffic Signal Retroreflective Backplates	Low	City
				Limited sight distance at intersection	No Turn on Red sign from Chapel Street to East Street	Low	City
New Haven	CT-63 and Philip Street/Blake Street	Intersection EJ	13	Dark lighted, and unknown lighted Conditions	Investigate Roadway Illumination	Low to Medium	City
				Front-to-rear	Traffic Signal Retroreflective Backplates	Low	State
					Investigate Signal Timing	Low to Medium	State
					Investigate Raised Crosswalks at CT-63 and Blake Street crossings	Low to Medium	State
					Stripe Edge Lines	Low	State
Orange	Derby Avenue between Orange Center Road and Woodside Dr	Corridor 29	44	Front-to-rear crashes	Dynamic Speed Feedback Signs	Low	Town per State Permit
				Isolated Intersection	Traffic Signal Retroreflective Backplates	Low	State
				Guiderail Crash	Shoulder Rumble Strips	Low	State

Town	Location	ID	Injury and Fatal Crashes	Issue	Countermeasure	Cost	Responsibility
Orange	Boston Post Road .1 mi south of Racebrook Road to Dogwood Lane	Corridor 31	66	Three pedestrian crashes/no Sidewalks	Sidewalks	Medium to High	Town
				Angle collisions in dual left turn lane	Exclusive left turns or prohibited lefts at designated locations	Medium to High	State
				Speeding	Dynamic Speed Feedback Sign	Low	Town per State Permit
Wallingford	North Colony Road .1 mi south of Pent Highway to .2 mi north of South Broad Street	Corridor 8	185	Front-to-rear crashes	Dynamic Speed Feedback Signs	Low	Town per State Permit
					Traffic Signal Retroreflective Backplates	Low	State
				Sideswipe and front-to-rear crashes Lane configurations from 2 to 6	Roadway and Lane Reconfiguration	Medium-High	State
				Crashes in unlit locations	Investigate Roadway Illumination	Medium	Town
West Haven	Campbell Avenue between West Spring Street and Alling Street	Corridor 43	26	Missing Crosswalks	High-Visibility Crosswalks	Low to Medium	City
				Angle and Front-to-rear crashes	Traffic Signal Retroreflective Backplates	Low	City
				Front-to-rear crashes	Dynamic Speed Feedback Signs	Low to Medium	City
West Haven	Saw Mill Road between Allings Crossing Road and the I-95 Off-Ramp	Corridor 44	42	Rear-end crashes	Traffic Signal Retroreflective Backplates	Low	State
				Pedestrian Visibility	High-visibility Crosswalks	Low to medium	State
				Conflict Points	Corridor Access Management-reduce the number of driveways	Medium to High	State
West Haven	US-1 and CT-122	Intersection W	32	Pedestrian crossing	Investigate Raise Crosswalks	Low to Medium	State
					High-Visibility Crosswalk	Low	State
				Angle and Rear End crashes	Traffic Signal Retroreflective Backplates	Low to Medium	State
					Dynamic Speed Feedback Signs	Low	City per State Permit

Top Bike and Pedestrian injury and fatal Crash Locations and Countermeasures, 2015-2017

Town	Location	ID	Number of Crashes	Conditions at Crash Sites	Countermeasures
East Haven	West Main Street between Main Street and Dominican Road	Corridor 82	1 Pedestrian (fatal)	Dark, not lighted Pedestrian in roadway No Sidewalk	Investigate Roadway Illumination Watch for Me CT Campaign Add Sidewalks
Meriden	West Main Street between North 4th Street and Toothe Place	Corridor 5	6 Pedestrians (One Fatal) 1 Bicycle	Jaywalking, pedestrians disobeying signal, motorists not yielding to pedestrian in crosswalk Dark lighted	Watch for Me CT Campaign No Turn on Reds on intersecting streets High-visibility Crosswalks
Meriden and Wallingford	South Broad Street between North Colony Road and Charles Street	Corridor 6	1 Pedestrian	Pedestrian struck in crosswalk at Front Line Plaza exit Long and faded crosswalk	Investigate Pedestrian Refuge Island High-visibility Crosswalks
Meriden	East Main Street between East Broad Street and I-91 N on ramp	Corridor 3	3 Pedestrians	Crashes at controlled intersections	Watch for Me CT Campaign High-visibility Crosswalks
Meriden	Broad Street between Atkins Street and .07mi south of E Main Street	Corridor 4	6 pedestrians 1 Bicyclist	Midblock crossing Dark lighted	Watch for Me CT Campaign Investigate Roadway Illumination Pedestrian Warning Signs
West Haven	Boston Post Road between Marginal Drive and .1 miles east of Marginal Drive	Corridor 42	2 Pedestrians	Dark, not lighted Sidewalks in poor condition low curb reveal	Watch for Me CT Campaign Investigate Roadway Illumination Pedestrian Warning Signs Improve Sidewalks
West Haven	Campbell Avenue (.04 mile south of west spring street and .01 north of Alling street)	Corridor 43	1 Pedestrian	Pedestrian hit crossing roadway	Watch for Me CT Campaign Investigate Rapid Rectangular Flashing Beacon
Wallingford	North Colony Road between Pent Highway and .17 north of S. Broad Street	Corridor 8	1 Bicycle	Bicyclist struck at CT-15 off ramp No shoulders on roadway	Watch for Me CT Campaign Investigate No Turn on Red for off-ramp
East Haven	Forbes place between Main Street and Sidney Street	Corridor 72	1 Bicycle (Fatal)	Daylight, non-intersection Possible Distracted Cycling, no safety gear	Watch for Me CT Campaign Education - Traffic Skills Course 101
New Haven	Ella T. Grasso Blvd between Adeline Street and Columbus Ave	Corridor 52	6 Pedestrians (one fatal)	Pedestrians crossing at unmarked locations Dark, not lighted conditions Four travel lanes	Watch for Me CT Campaign High-visibility Crosswalks Investigate Roadway Illumination Investiage Road Diet
West Haven	Campbell Avenue between Captain Thomas Blvd and Leete Street	Corridor 126	1 Bicyclist	No bike lanes On-street Parking Bicyclist on Sidewalk	Investigate Road Diet Education - Traffic Skills 101 Bike Course

Town	Location	ID	Number of Crashes	Conditions at Crash Sites	Countermeasures
New Haven	Whalley Avenue between Ellsworth Avenue and Orchard Street	Corridor 61	5 Bicyclist 10 Pedestrian	Dark lighted Conditions Excessive Road Widths /no edge lines Pedestrians crossing crashes	Investigate Roadway Illumination Traffic Skills 101 Bike Course Watch for Me CT Investigate Road Diet Investigate Raised Crosswalk at all intersections
New Haven	Foxon Blvd (CT-80) between Quinnipiac Avenue and Old Foxon Blvd	Corridor 59	8 Pedestrian 2 Bicyclist	Wide intersections Faded crosswalks Four travel lanes and one center turning lane	Investigate Curb extensions Raised Crosswalk at all intersections Investigate Road Diet
New Haven	Ella T. Grasso Blvd between Irving Street and Whalley Avenue	Corridor 54b	2 Pedestrians 2 Bicyclist	Dark lighted conditions Bicyclist on sidewalk	Investigate Roadway Illumination Bike Lanes Limit on-street parking Education - Traffic Skills 101 Bike Course
West Haven	Saw Mill Road between Allings Crossing Road and the I-95 Off-Ramp	Corridor 44	1 Pedestrian 2 Bicyclist	Commercial corridor with four travel lanes Faded crosswalks Bicyclist crash	Investigate Road Diet Corridor Access Management Investigate Raised Crosswalk at Walmart Entrance Education - Traffic Skills 101 Bike Course
Orange	Boston Post Road between Racebrook Road to Dogburn Road	Corridor 31	3 Pedestrian (one fatal)	Distracted Driver Faded pavement markings No Sidewalks	Distracted Driving HVE Road Diet /Restripe MUTCD Pedestrian Warning Sign Investigate Road Diet with edge lines Sidewalks
West Haven	Boston Post Road between Farwell Street and Fairfax Street	Corridor 41	2 Pedestrians 2 Bicyclist	Missing Sidewalks and Crosswalks Four travel lanes Dark lighted Conditions Bicyclist crashes	Add Sidewalks and Crosswalks Investigate Road Diet Watch for Me CT Investigate Roadway Illumination Education - Traffic Skills 101 Bike Course
Guilford	Boston Post Road between Peddlers Road and the Patriot Center	Corridor 102	2 Pedestrians 2 Bicyclist	Bicyclist on wrong side of road Narrow Edge Lines Pedestrian crossing	Education - Traffic Skills 101 Bike Course Widen Edge Lines Investigate Raised Crosswalks

Town	Location	ID	Number of Crashes	Conditions at Crash Sites	Countermeasures
Guilford	Church Street between Broad Street and Prospect Hill Road	Corridor 103	4 Pedestrians (one fatal at Church Street and US-1) 1 Bicyclist	Dark, not lighted crossing Roadways	Watch for Me CT Campaign Investigate Roadway Illumination Enhance Crosswalks
Branford	Main Street between Russell Street and Kirkham Street	Corridor 89	2 Bicycles	Crashes at Driveway Access	Education - Traffic Skills 101 Bike Course Bike Warning Signs
East Haven	Coe Ave between Short Beach Road and Richmond Street	Corridor 81	2 Pedestrians	Faded or missing crosswalks	Add Crosswalk to southern leg of Dodge Avenue and CT-142 Intersection Investigate Raising Crosswalk Watch for Me CT Campaign
East Haven	Main Street between Chidsey Avenue and Hemingway Avenue	Corridor 74	1 Pedestrian	Pedestrian hit in daylight at non-intersection crossing roadway	Watch for Me CT Campaign High-visibility Crosswalks at intersections
East Haven	Foxon Road (CT-80) between Dell Drive and .03 mi east of Michael Street	Corridor 78	3 Pedestrians (2 fatal)	Dark-lighted, Dark, not lighted Crash Conditions	Watch for Me CT Campaign Investigate Roadway Illumination Pedestrian Warning Sign with 12" flashing beacons
Hamden	CT-10 from Dixwell Avenue to .25 mi north of Sherman Avenue	Corridor 17	3 Pedestrians (one fatal)	Dark lighted Pedestrians in shoulder	Watch for Me CT Campaign Investigate Roadway Illumination Pedestrian Warning Sign with 12" flashing beacons
Hamden	CT-10 between Morse street and Skiff Street	Corridor 13	13 Pedestrians 3 Bicyclists	Crosswalk crashes	Raise Crosswalks at CT-10 and Morse Street, Restripe all crosswalks along Corridor
				Crashes at non-intersections Bike crashes	Watch for Me CT Campaign Edge Lines
Hamden	Fitch Street between Prescott Street and Warner Street	Corridor 124	1 Pedestrian 2 Bicyclists	Dark lighted No shoulder Near college	Roadway Illumination Investigate Road Diet Watch for Me CT Campaign
Milford	US-1 between Milford Circle and Red Bush Lane	Corridor 36	2 Pedestrians	Faded Crosswalks Four travel lanes on US-1	Raise Crosswalks at all intersections along Corridor Investigate Curb extensions Exclusive Pedestrian Phases
				Pedestrian crashes	Watch for Me CT Campaign

Town	Location	ID	Number of Crashes	Conditions at Crash Sites	Countermeasures
Milford	US-1 between Woodruff Road and Peck Lane	Corridor 35	1 Pedestrian	Faded and missing crosswalks at Woodruff Road Outdated pedestrian Beacon	High-visibility Crosswalk Update Pedestrian Features
Milford	Bridgeport Ave between Kerema Avenue and Lawman Road	Corridor 33	3 Pedestrians (one fatal at Berwyn Street)	Intersection and non-intersection crashes Dark and daylight conditions	Investigate Roadway Illumination Pedestrian Warning Sign with flashing beacons Traffic Calming with Gateway Treatments Watch for Me CT Campaign Dynamic Speed Feedback Signs
Milford	Bridgeport Ave between Marion Avenue and Erna Avenue	Corridor 34	1 Bicyclist	Daylight T-intersection	Watch for Me CT Campaign Education - Traffic Skills 101 Bike Course
Branford	West Main Street between Orchard Hill Road and Cherry Hill Road	Corridor 87	2 Pedestrians	Dark, not lighted No pedestrian countdown signal at Short Beach Road crash site	Add audible pedestrian countdown signal to US-1 and Short Beach Road Watch for Me CT Campaign
Branford	Cedar Street	Corridor 88	2 Pedestrians	In driveway/ at intersection	Watch for Me CT Campaign
Branford	East Main Street between I-85 SB off-ramp to North Branford Road	Corridor 86	1 Pedestrian	Pedestrian hit on roadway-narrow shoulder and no sidewalk	Watch for Me CT Campaign Pedestrian Warning Signs Sidewalks
Orange	Boston Post Road .1 mi south of Peck Lane north to Lambert Road	Corridor 30	1 Pedestrian 1 Bicyclist	Dark not lighted, non-intersection ped crash Bicyclist	Watch for Me CT Campaign Pedestrian Warning Signs Investigate Road Diet
Milford	Broad Street between Greens End Place and Prospect Street	Corridor 38	1 Pedestrian 1 Bicyclist	Motorist failure to yield right of way to pedestrian Bicyclist riding on sidewalk struck at driveway	Watch for Me CT Campaign Promote Traffic Skills 101 Course
Branford	US-1 between Holsey Avenue and Matthew Road	Corridor 91	2 Pedestrian	Near bus stop/ non-intersection Dark, not lighted	Pedestrian Warning Signs Watch for Me CT Campaign
Wallingford	Church Street between Grove Street and N Plains Industrial Highway	Corridor 116	1 Bicycle	Bicyclist hit in shoulder, narrow shoulder	Investigate Road Diet
Wallingford	CT-150 between Washington Street and Constitution Street	Corridor 115	1 Pedestrian (one fatal) 2 Bicyclists	Intermittent shoulders. Sidewalks adequate. Dark lighted Conditions at intersections	Investigate Roadway Illumination Investigate Road Diet

Town	Location	ID	Number of Crashes	Conditions at Crash Sites	Countermeasures
New Haven	Ella T. Grasso Blvd between Columbus Ave and Legion Avenue	Corridor 53	1 Bicyclist (Fatal)	Available crash data limited No shoulder Near a Park Crash occurred in daylight under dry conditions	Investigate Road Diet
New Haven	Foxon Blvd between Middletown Avenue and Quinnipiac Avenue	Corridor 60	1 Pedestrian	Dark-lighted, at entrance ramp to I-95 Passenger exited vehicle and was struck by motorist Hit and Run	Watch for Me CT Campaign
New Haven	Grand Avenue Between James Street and Fillmore Street	Corridor 65	9 Pedestrians 1 Bicycle	Pedestrians struck by cars making left at intersections along corridor Parked cars possibly block sight distance	Road Safety Audit-Safety Circuit Rider Program Watch for Me CT Campaign
New Haven	Whalley Avenue between CT-10 and West Park Avenue	Corridor 54a	5 Pedestrians	Crashes at non-intersections Four travel lanes/ on-street parking some wide crosswalks	Investigate Road Diet Watch for Me CT Campaign
New Haven	Whalley Avenue between West Prospect Street and Fowler Street	Corridor 67	6 Pedestrians 3 Bicyclists	Driveway access-related crashes dark-lighted	Watch for Me CT Campaign Investigate Roadway Illumination Pedestrian and Bicycle Warning Signs Corridor Access Management Investigate Road Diet
Branford	US-1 between Mill Plain Road and Sylvia Street	Corridor 90	1 Pedestrian	Non-intersection dark lighted	Watch for Me CT Campaign
Wallingford	CT-150 between Axis Road and Ridgeland Road	Corridor 117	2 Pedestrians	crossing at non-intersection Dusk or dark not lighted	Watch for Me CT Campaign Investigate Roadway Illumination Pedestrian Warning Signs
Meriden	US-5 between Golden Street and Town Line	Corridor 7	2 Pedestrians	crossing at Non-intersection and/or dark not lighted	Watch for Me CT Campaign Investigate Roadway Illumination Pedestrian Warning Signs
North Branford	Branford Road between Twin Lakes Road and Harrison Road	Corridor 95	1 Pedestrian	Dark, not lighted Pedestrian struck in shoulder	Watch for Me CT Campaign Investigate Roadway Illumination Pedestrian Warning Signs

Town	Location	ID	Number of Crashes	Conditions at Crash Sites	Countermeasures
New Haven	Boston Post Road and Ella T. Grasso Blvd	Intersection AR	2 Pedestrians	Dark, not lighted Wide crossings	Watch for Me CT Campaign Investigate Roadway Illumination Investigate Curb extensions High-visibility Crosswalks
New Haven	North Frontage Road and Church Street	Intersection T	4 Pedestrian 1 Bicycle	Dark-lighted	Exclusive Pedestrian Phases Investigate Roadway Illumination Watch for Me CT Campaign
West Haven	US-1 and CT-122	Intersection W	2 Pedestrians	Dark-lighted Crash Condition Recent pedestrian upgrades	Investigate Roadway Illumination Monitor crashes for improvements
Branford	US-1 and Cedar Street	Intersection P	1 Pedestrian	Pedestrian struck by motorist turning left	Watch for Me CT Campaign Ensure pedestrian signals working and there is sufficient time for crossing
New Haven	Temple Street and Chapel Street	Intersection CN	7 Pedestrians	Pedestrians struck crossing street	Traffic Signal Retroreflective Backplates High-visibility Crosswalks
New Haven	CT-10 and Bassett Street	Intersection BL	3 Pedestrians 1 Bicycle	Dark-lighted Crash Conditions Faded stop bars	Restripe markings Investigate Roadway Illumination Traffic Signal Retroreflective Plates Watch for Me CT Campaign
Hamden	CT-10 and Dixwell Avenue	Intersection EQ	2 Pedestrian 1 Bicyclist	Wide Pedestrian crossings at intersection	Watch for Me CT Campaign High-visibility Crosswalks Investigate Curb extensions
New Haven	Chapel Street and East Street	Intersection CP	1 Pedestrian	Pedestrian failure to obey signal	Watch for Me CT Campaign
Meriden	East Main Street and Pratt Street	Intersection AB	1 Bicyclist	Dark-lighted	Watch for Me CT Campaign Education - Traffic Skills 101 Bike Course Investigate Road Diet with Bike lanes
East Haven	Main Street and Hemingway	Intersection BY	1 Pedestrian	Older Pedestrian struck crossing (not at intersection)	Watch for Me CT Campaign Investigate Curb extensions Check Pedestrian clearance interval accommodates all users (3.5 feet per second)
New Haven	Whalley Avenue and Fitch Street	Intersection AS	1 Pedestrian 1 Bicyclist	Both Pedestrian and Bicycle struck by motorists making left turn at intersection	Watch for Me CT Campaign Educations- Traffic Skills 101 Bike Course
New Haven	US-1 and Townsend Avenue	Intersection O	1 Pedestrian	Pedestrian struck by motorist under dark-lighted conditions south of intersection	Watch for Me CT Campaign Investigate Roadway Illumination

Town	Location	ID	Number of Crashes	Conditions at Crash Sites	Countermeasures
New Haven	York Street and Howard Avenue	Intersection DD	2 Pedestrians	Dark-lighted Conditions Crosswalks with surface treatments, near hospital	Watch for Me CT Campaign Investigate Roadway Illumination
New Haven	Chapel Street and Orchard Street	Intersection DI	2 Pedestrian 1 Bicyclist	One crash involved minor under 10 Dark lighted conditions	Enforce no turn on red Enhance crosswalks Watch for Me CT Campaign
West Haven	CT-122 and CT-34	Intersection Q	2 Pedestrian 1 Bicyclist	Dark conditions Wide Intersection	Investigate Roadway Illumination Watch for Me CT Investigate Road diet on CT-34
New Haven	North Frontage Road and College Street	Intersection BH	4 Pedestrians	Dark lighted Pedestrian and motorist not complying with signals	Investigate Roadway Illumination Watch for Me CT Campaign
New Haven	Sherman Avenue and Goffe Street	Intersection DJ	2 Bicyclists	Dark lighted	Investigate Roadway Illumination Watch for Me CT Campaign Education - Traffic Skills 101 Bike Course
New Haven	US-5 and Ferry Street and May Street	Intersection AU	2 Pedestrians	Dark lighted	High-visibility Crosswalks Investigate Roadway Illumination Watch for Me CT Campaign
New Haven	South Frontage Street (CT-34) and York Street	Intersection BE	2 Pedestrians (one fatal)	Heavy Traffic Volume Dark-lighted	Investigate curb extensions High-visibility Crosswalks Investigate Roadway Illumination Watch for Me CT Campaign
New Haven	Whalley Ave and Sherman Ave	Intersection J	3 Pedestrians 2 Bicyclists	Dark-lighted texturized crosswalks Whalley Ave has four travel lanes, turning lanes	Investigate Road Diet Pedestrian crossing Warning Sign (W11-2)
New Haven	Grand Avenue and East Street	Intersection Z	2 Pedestrians	Wide cross sections Parallel lined crosswalk	High-visibility Crosswalks Exclusive Pedestrian Signal Phase
New Haven	Elm Street and York Street	Intersection AH	4 Pedestrians	High Pedestrian Traffic Dark-lighted Pedestrians hit in crosswalk	In -Street Yield to Pedestrians in crosswalk sign Investigate Roadway Illumination
New Haven	CT-10 and Orchard Street	Intersection X	2 Pedestrians	Dark, not lighted/ Unknown Lighting	Investigate Roadway Illumination
New Haven	Chapel Street and Ferry Street	Intersection BZ	2 Pedestrians	Skewed intersection Faded crosswalks	High-visibility crosswalks Investigate Curb extensions

Town	Location	ID	Number of Crashes	Conditions at Crash Sites	Countermeasures
New Haven	CT-80 and CT-103	Intersection R	4 Pedestrians 1 Bicyclist	Intersection crashes Crosswalks are faded and wide	Investigate Curb extensions Repaint Crosswalks Exclusive pedestrian phase Education - Traffic Skills 101 Bike Course
Milford	West Main Street and High Street	Intersection EL	1 Pedestrian	Pedestrian struck in crosswalk by car making a right turn	Watch for Me CT Campaign Restripe High-visibility Crosswalks
New Haven	Whalley Avenue and Norton Street	Intersection BW	3 Pedestrians	Wide crossing	Investigate Curb Extensions Evaluate Pedestrian Signals Watch for Me CT Campaign
New Haven	Dixwell Avenue and Henry Street	Intersection BM	3 Pedestrians	Dark-lighted No Turn on Red sign not visible	Investigate Roadway Illumination Relocate No Turn on Red Sign High-visibility Crosswalks
West Haven	US-1 and Fairfax Street	Intersection EE	2 Pedestrians	T-signalized intersection	High-visibility Crosswalk Pedestrian Warning Signs Retroreflective Backplates
West Haven	CT-162 and Main Street	Intersection EC	1 Pedestrian 1 Bicycle	Skewed intersection Crosswalks are faded	High-visibility Crosswalk Watch for Me CT Campaign
New Haven	Whalley Avenue (CT-63) and Davis Street	Intersection CI	1 Pedestrian 1 Bicyclist	Four lane crossing Narrow shoulders	Investigate Road Diet
Hamden	Benham Street and CT-10	Intersection DK	1 Pedestrian	Four-way wide signalized intersection Wide Curb cut at Home Depot entrance	Pedestrian Warning Signs Shorten Driveway Apron
North Haven	CT-22 and Pool Road	NA	1 Fatal Pedestrian	Foggy conditions Intermittent sidewalks Crash report is limited	Pedestrian Warning Signs High-visibility Crosswalks Investigate Roadway Illumination Watch for Me CT Campaign
New Haven	Kossuth Street and Ann Street	NA	1 Fatal Pedestrian	Dark-lighted T-intersection	Pedestrian Warning Signs High-visibility Crosswalks Investigate Roadway Illumination Watch for Me CT Campaign
New Haven	Grand Avenue between Poplar Street and Ferry Street	NA	1 Fatal Pedestrian	Dark-lighted conditions Pedestrian hit at non-junction Limited data	Pedestrian Warning Signs Investigate Roadway Illumination Watch for Me CT Campaign

Town	Location	ID	Number of Crashes	Conditions at Crash Sites	Countermeasures
Meriden	East Main Street between High Street and US-5	NA	1 Fatal Pedestrian	Dark lighted, non-intersection No edge lines Some pedestrian amenities	Stripe edge lines add missing crosswalks Pedestrian Warning Signs Rapid Rectangular Flashing Beacon Watch for Me CT Campaign
Bethany	Wooding Hill Road and CT-69	NA	1 Fatal Pedestrian	Dark, not lighted Non-junction Pedestrian hit in shoulder	Pedestrian Warning Signs Watch for Me CT Campaign
Meriden	Springdale Ave between Lewis Ave and North Spring Street	NA	1 Fatal Pedestrian	Dark, not lighted, non-junction No Crosswalks	Crosswalks Pedestrian Warning Signs Watch for Me CT Campaign
Woodbridge	Rimmon Road between Redwood Lane and westward Road	NA	1 Fatal Pedestrian	Daylight Non-intersection Secondary Incident	Traffic Incident Management Improvement Watch for Me CT Campaign
East Haven	Coe Ave and Proto Drive	NA	1 Fatal Pedestrian	Dark, not lighted, non-junction	Watch for Me CT Campaign
West Haven	Boston Post Road (US-1) between Meloy Road and Jeffrey Street	NA	1 Fatal Pedestrian	Dark, not lighted, non-junction, no pedestrian amenities Work Zone	Investigate pedestrian amenities Watch for Me CT Campaign
West Haven	Boston Post Road (US-1) between Smyrna Street and Rockview Street	NA	1 Fatal Pedestrian	Dark, not lighted, non-junction, no pedestrian amenities	Investigate pedestrian amenities Watch for Me CT Campaign
Meriden	Broad Street (US-5) between Charles street and East Main Street	NA	1 Fatal Pedestrian	Dark, not lighted, non-junction at Stop and Shop Driveway	Investigate pedestrian amenities Watch for Me CT Campaign
Hamden	CT-10 and Skiff Street	SCR-BO	2 Pedestrians	Crashes in Parking Lots near intersection	Watch for Me CT
Milford	US-1 and CT-121	SCR-BQ	1 Pedestrian 1 Bicyclist	Dark lighted Pedestrian hit in crosswalk Bicyclist hit in crosswalk on red light	High-visibility Crosswalks Pedestrian Refuge Islands Watch for Me CT Campaign
New Haven	CT-10 and Blake Street	SCR-BT	2 Pedestrians	Four-lane crossing Non-signalized crosswalks	Investigate Curb extensions Rapid rectangular flashing beacons
New Haven	Sherman Avenue and George Street	SCR-BU	1 Pedestrian	Motorist failed to stop at red	Retroreflective backplates on Traffic Signals

Town	Location	ID	Number of Crashes	Conditions at Crash Sites	Countermeasures
New Haven	Chapel and Ferry Street	SCR-BZ	2 Pedestrians	Motorist failed to yield for pedestrian in crosswalk Pedestrian failed to cross at intersection Faded crosswalks	Investigate Pedestrian Signal Phase Watch for Me CT Campaign High-visibility Crosswalks
New Haven	CT-80 and Eastern Street	SCR-CB	2 Pedestrians	Dark lighted crash conditions Faded crosswalks	Investigate Pedestrian Signal Phase Watch for Me CT Campaign High-visibility Crosswalks
New Haven	CT-63 and Davis Street	SCR-CI	1 Bicyclist 1 Pedestrian	Four travel lanes narrow shoulders	Investigate Road Diet Bike and Pedestrian Warning Signs
New Haven	South Frontage Road and Church Street	SCR-CM	1 Pedestrian	Dark lighted Pedestrian hit in crosswalk	Investigate Roadway Illumination Bike and Pedestrian Warning Signs
New Haven	Elm Street and College Street	SCR-CR	1 Pedestrian	Pedestrian not in crosswalk	Watch for Me CT Campaign
New Haven	Church Street and Columbus Ave	SCR-DF	2 Pedestrians	Wide intersections	Pedestrian Warning Signs High visibility crosswalk
Orange	US-1 and CT-114	SCR-ED	1 Pedestrian	Dark lighted	Pedestrian Warning Signs Watch for Me CT Campaign
New Haven	Ella T. Grasso Blvd and Chapel Street	SCR-AW	2 Pedestrians	Four-way signalized intersection	Investigate Pedestrian Signal Phase Pedestrian warning Signs
New Haven	South Frontage Road and York Street	SCR-BE	2 Pedestrians (one fatal)	Dark-lighted conditions NB Lane on York ends/ motorist continued straight and hit pedestrian	Investigate Roadway Illumination Watch for Me CT
New Haven	North Frontage Road and College Street	SCR-BH	4 Pedestrians	One pedestrian injury a result of motorist running red Pedestrians hit in	Retroreflective backplates

Public Education Resources to Support Behavior Change for State and Local Officials

Drowsy Driving	Support the DPS to provide 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 distracted 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 campaign event through the National Highway Traffic Safety Administration (NHTSA). The US DOT Traffic Safety Marketing provides a Fact Sheet, Sample News Release, and an educational sheet that address drowsy driving prevention.					
Resources for Starting a Drowsy Driving Campaign	http://drowsydriving.org/	https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/drowsydriving_gicplan_030316.pdf	https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/12723-drowsy_driving_asleep_at_the_wheel_031917_v4b_tag.pdf	https://www.fmcsa.dot.gov/driver-safety/sleep-apnea/drowsy-driving-quiz	https://www.nhlbi.nih.gov/files/docs/resources/sleep/dwydrv_y.pdf	https://www.cdc.gov/niosh/docs/2014-150/pdfs/2014-150.pdf
Speeding	"When Speeding Kills" marketing campaign materials are provided by the Connecticut Department of Transportation to encourage safe travel speeds in Connecticut. Alternative campaign materials that share the message "Stop Speeding before it Stops You" are provided by the United States Department of Transportation's Traffic Safety Marketing (TSM) website. Banner Ads, media, logos, radio ads, television ads, and web videos for speed campaigns are provided by the US DOT Traffic Safety Marketing and NHTSA.					
Resources for Starting a Speed Campaign	https://www.mymarketing.gov/get-materials/speed-prevention/stop-speeding-it-stops-you	https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/programs.pdf	https://www.nhtsa.gov/risky-driving/speeding	https://www.nhtsa.gov/risky-driving/speeding#issue-consequences	https://www.nhtsa.gov/risky-driving/speeding#issue-what-drives-speeding	https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/2011_n_survey_of_speeding_attitudes_and_behaviors_tt_811866.pdf
Drunk Driving	The United States Department of Transportation and the National Highway Traffic Safety Administration (NHTSA) provide marketing campaign materials for year-round education such as "Buzzed Driving is Drunk Driving" or "Drive Sober or Get Pulled Over". The United States Department of Transportation issue 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 US DOT 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 are high. Banner ads, media, logos, radio ads, television ads, and web videos for drunk driving campaigns are provided by the US DOT Traffic Safety Marketing 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 Starting a Drunk Driving Campaign	https://www.icsafetymarketing.gov/ds=drunk+driving	https://www.safetymarketing.gov/get-materials/drunk-driving/no-refusal-toolkit	https://www.nhtsa.gov/risky-driving/drunk-driving	https://www.nhtsa.gov/laws-regulations/guidance-documents	https://www.nhtsa.gov/laws-regulations	https://www.nhtsa.gov/drunk-driving/alcohol-measurement-devices
Drugged Driving	NHTSA and the US DOT are working on studies to understand how illegal drugs and prescription medications affect drivers and provide marketing campaign materials are to be used as tools to raise awareness. The US DOT TSM provides a Fact Sheet, Sample News Release, and an educational sheet that address drug-impaired driving prevention. Banner Ads, media, logos, radio ads, television ads, and web videos for drug-impaired driving campaigns are provided by the US DOT Traffic Safety Marketing 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 Starting a Drugged Driving Campaign	https://www.nhtsa.gov/risky-driving/drugged-driving	https://www.safetymarketing.gov/keywords=drug	https://www.rafficsafetymarketing.gov/get-materials/drug-impaired-driving/campaign-	https://www.nhtsa.gov/speeches-presentations/drug-impaired-driving-call-action-closing-remarks	https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/anderle_ddsummit2018.pdf	https://www.nhtsa.gov/speeches-presentations/road-zero

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 United States Department of Transportation provides Traffic Safety Marketing focused on combating distracted driving through Television Ads that are available to every community. Banner Ads, media, logos, radio ads, television ads, and web videos for distracted driving campaigns are provided by the US DOT Traffic Safety Marketing 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 Starting a Distracted Driving Campaign	https://www.icsafetymarketing.gov/get-materials/idea-exchange/topic/distraction	https://www.nhtsa.gov/distracted-driving/distracted-driving-kills	http://www.nsc.org/learn/NSC-Initiatives/Pages/distracted-driving-awareness-month.aspx	https://www.trafficsafetymarketing.gov/get-materials/distracted-driving/u-drive-u-text-u-pay	https://www.nhtsa.gov/speeches-presentations/duid-vision-future	https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812407-distracteddrivingreport.pdf
Pedestrian Safety	The Watch for Me CT campaign is run by the Connecticut Department of Transportation in partnership with the Connecticut Children's Medical Center Injury Prevention Center. This shares 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 webpage provides pedestrian safety related research, tips, curriculum and programs that can be shared in any community to discuss pedestrian safety. The US DOT's Traffic Safety Marketing website provides campaign materials such as banner ads, media, logos, radio ads, television ads, and web videos for pedestrian campaigns used throughout the Country. NHTSA also provides a yearly Communications Calendar that the organization uses to encourage communities to share campaign material by topic at specific times of the year as an increased awareness strategy.					
Resources for Starting a Pedestrian Safety Campaign	http://www.watchformect.org/	https://safety.fhwa.dot.gov/local_rural/pedcampaign/	https://www.rafficsafetymarketing.gov/get-materials/idea-exchange/state/connecticut	https://www.nhtsa.gov/road-safety/pedestrian-safety	https://www.nhtsa.gov/road-safety/pedestrian-safety#topic-did-you-know	https://www.nhtsa.gov/road-safety/pedestrian-safety#topic-resources
Bicyclist Safety	The Watch for Me CT campaign is run by the Connecticut Department of Transportation 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 bicyclist crashes, bicyclist laws, and safety tips. The Watch for Me CT website also includes tips for drivers and campaign materials. NHTSA's bicyclist safety webpage provides bicyclist safety related research, tips, curriculum and programs that can be shared in any community to discuss bicyclist safety. The US DOT's Traffic Safety Marketing website provides campaign materials such as banner Ads, media, logos, radio ads, television ads, and web videos for bicyclist 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 Starting a Bicyclist Safety Campaign	http://www.watchformect.org/	https://www.nhtsa.gov/road-safety/bicycle-safety	https://www.nhtsa.gov/road-safety/bicycle-safety#topic-helmets	https://www.youtube.com/hLlXswx0VvQ&feature=youtu.j4M71hq7Djsuszkie2Z6rlaPXF	https://www.youtube.com/h?v=nf5WQXFvrkk&list=PL2GlXO1j4M71hq7Djsuszkie2Z6rlaPXF&index=3	https://www.bikeleague.org/ridesmart

Older Driver Safety	Older driver campaigns focus on providing resources for older drivers, their families, caregivers, medical providers and law enforcement to education how again and medical conditions can affect driving, hot to asses 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 US DOT Traffic Safety Marketing webpage provides marketing resources for the DriveWell campaign that focuses on older driver safety and mobility.					
Resources for Starting an Older Driver Safety Campaign	https://www.nhtsa.gov/road-safety/older-drivers	https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/uments/812228-detoolderdrivers.pdf	https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/rovisionsolderdrivers.pdf	https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/2015_traffic_safety_fact_sheet_older_population.pdf	https://www.dmv.org/safety-and-driving/elderly-drivers.php	https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/811495.pdf
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 US DOT's Traffic Safety Marketing webpage provides posters that communities can share on social media that are specifically marketed towards younger driver safety.					
Resources for Starting a Younger Driver Safety Campaign	https://www.nhtsa.gov/road-safety/teen-driving	https://www.safetymarketing.gov/younger+drivers	https://www.nhtsa.gov/road-safety/teen-driving#topic-parental-influence	https://www.nhtsa.gov/road-safety/teen-driving#topic-teen-driver-requirements	https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/811894-campaign_for_parents_of_pre-drivers_to_encourage_seat_belt_use.pdf	https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/teen-board-poster_0.pdf
Motorcycle Safety	NHTSA's motorcycle safety message focuses on all road users sharing the road, motorcyclists making themselves visible, the use of DOT-compliant helmets, and riding sober. NHTSA provides information on the safest road behaviors. Banner ads, media, logos, radio ads, television ads, and web videos for motorcycle safety campaigns are provided by the US DOT Traffic Safety Marketing 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 Starting a Motorcycle Safety Campaign	https://www.nhtsa.gov/road-safety/motorcycle-safety	https://www.trafficsafetymarketing.gov/ords=motorcycle	https://www.nhtsa.gov/press-releases/consumer-advisory-safely-share-road-motorcyclists	https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/807709.pdf	https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/unsafehelmets.pdf	https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/811141.pdf
NHTSA Communications Calendar: https://www.trafficsafetymarketing.gov/calendars						

6 funding

General Transportation Funding Sources Available for Municipal Projects*

Local Transportation Capital Improvement Program (LOTCIP) www.ct.gov/dot/lotcip Funds: Bicycles, Pedestrians, Passenger Vehicles, Transit, Bridges
Provides State monies to municipalities for transportation capital improvement projects. The COG 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 http://www.ct.gov/dot/cwp/view.asp?a=2303& Q=536574 Funds: Bicycles, Pedestrians
Provides federal funding, half administered through the State and half administered through COG, 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 Program http://crcog.org/wp-content/uploads/2016/07/CT DOTCMAQProgramGuide.pdf Funds: Bicycles, Pedestrians, Passenger Vehicles, Transit
The Congestion Mitigation and Air Quality Program is managed by the CT DOT 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 http://ctconnectivity.com/ Funds: Bicycles, Pedestrian
This Program offers Connecticut's towns and cities assistance in conducting Road Safety Audit (RSA) at important bike and pedestrian corridors and intersections. An RSA is a process that identifies safety issues and countermeasures to help improve safety and reduce vehicle crashes. NOTE: As of 7/27/2018 The Department is pleased to announce that on Wednesday, July 25th, the State Bond Commission approved the Department of Transportation's request to fund the Community Connectivity Grant Program. On January 25, 2019 Connecticut Transportation Commissioner Joseph J. Giulietti announced that towns and cities across Connecticut will receive $13.4 million in funding under a grant program to construct projects that support pedestrian and bicycle safety, as well as improved accessibility in the state.

Local Road Accident Reduction Program http://www.ct.gov/dot/lib/dot/documents/dtrafficdesign/Local_Roads_Accident_Reduction_Program_for_2013.pdf 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.
Local Bridge Program Funds: Bridges
Applications are accepted annually by CT DOT. The project may include bridge reconstruction, rehabilitation, modifications or improvements such as widening, complete replacement, or complete removal.
Department of Energy and Environmental Protection Recreational Trails http://www.ct.gov/deep/cwp/view.asp?a=2707&q=513740&deepNav_GID=1650 Funds: Bicycles, Pedestrians, Horseback, Recreational Vehicle
This program is administered through the Connecticut Department of Energy & Environmental Protection (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 Town Economic Assistance Program http://www.ct.gov/opm/cwp/view.asp?a=2965&q=382970 Funds: Bicycles, Pedestrians, Passenger Vehicles
The Small Town Economic Assistance Program funds economic development, community conservation and quality-of-life capital projects for localities that are ineligible to receive Urban Action bonds. This program is managed by the Office of Policy and Management, and the grants are administered by various state agencies.

Local Capital Improvement Program (LoCIP) http://www.ct.gov/opm/cwp/view.asp?q=383108 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 & repair, Sidewalk and pavement improvements, Bridges and Bikeway and Greenway Establishment.
BUILD Discretionary Grants https://www.transportation.gov/BUILDgrants 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 http://www.ct.gov/dot/cwp/view.asp?a=2094&q=432886 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 https://www.fhwa.dot.gov/federal-aidessentials/
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.

Adapted from Guide to Transportation Funding Sources for Municipalities, Capitol Region Council of Governments, July 2017.

7 emphasis areas

The top emphasis areas in the South Central Region were selected based on the conclusion that these contributed to the majority of the injury and fatal crashes verified from the 2015-2017 data and on feedback from the individual town representatives. These emphasis areas were selected based on crash types with high potential to achieve the state's 15% reduction of injury and fatal crash rates by 2021. From these data-identified problem areas, strategies and countermeasures were developed in conjunction with stakeholders' input. Each emphasis area's countermeasures are developed according to the four E's of transportation safety. For a total of all K A B C crashes by emphasis area see Appendix B.

The seven emphasis areas are:

1. **Critical Roadway locations**: includes both roadway departures and intersections crashes.
2. **Driver Behavior**: includes substance-involved driving, aggressive driving, distracted driving and unrestrained occupants.
3. **Older Drivers:** includes drivers 65 or older.
4. **Young Drivers:** includes drivers 15-25.
5. **Non-Motorized Users:** includes pedestrians and bicyclists.
6. **Motorcyclist Safety**
7. **Traffic Incident Management**

Performance Measures: Process for implementing strategies. The South Central RTSP follows the 2017 CT SHSP strategy of implementing countermeasures identified for each emphasis area. In all cases, implementation includes site- specific and systemic safety improvements.

A Performance-Based Approach: Connecticut has set annual safety performance measure targets which the regions are encouraged to follow. The regions can also establish their own performance measures, independent of the State's goals.

7.1 Critical Roadway Locations

The critical roadway locations emphasis area includes both roadway departures and intersection crashes. Roadway departure crashes are described as conflicts when vehicles cross an edge line, a center line, or otherwise leave the traveled way. 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 a vehicle difficult. Nighttime can also play a role in lane departure crashes. Behavioral issues, like speeding, impaired driving, and distracted driving can affect the driver's safe vehicle operation and may cause them to depart from the roadway. To improve lane departure safety, consider countermeasures that address keeping vehicles in the travel lane, provide for a safe recovery, and reduce crash severity are imperative. The Region, together with the efforts of federal and state partners, can consider both systemic and site-specific strategies combined with education and enforcement as goals of this plan.

Intersection crashes occur where two roadways meet and due to the complex travel patterns conflict happens. Congestion, limited sight distance, driver behaviors and other variables exacerbate the inherent crash potential at each intersection. Intersections vary widely with regard to geometry, classification (urban or rural), traffic control (signalized or un-signalized), traffic volumes, and design (conventional design or unconventional designs such as roundabouts). Additionally, at-grade rail crossings are considered intersections as trains and roadway users cross paths. Reducing the number of intersection fatalities and serious injuries is possible applying a multidisciplinary approach using strategies that focus on engineering, education, and enforcement.

7.1.1 Intersections

Performance Measure: From 2015-2017 there were 6,411 intersection crashes resulting in injuries or fatalities within the South Central Region. Annually this averages 2,137. Of those 6,411 intersection injury and fatal crashes reported, 34 were fatal.

South Central Region's 2015-2017 intersection injury and fatal crashes make up 15% of the 41,963 intersection injury and fatal crashes in Connecticut.

Performance Objective: In congruence with the CT SHSP, decrease intersection fatalities and serious injuries 20% over the 5-year period of the SHSP. This will result in preventing 427 combined fatalities and injuries per year.

Strategies for Intersections:

1. Implement proven and low-cost systematic 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. *-Engineering*
2. Conduct high-visibility enforcement, media campaigns and public outreach at selected locations with a significant number of intersection crashes. *-Enforcement*
3. Advertise and promote the Safety Circuit Rider and other similar programs that provide training and outreach about intersection safety. *-Education*
4. Incorporate safety elements and countermeasures into all Regional roadway and intersection project designs and maintenance improvements. *-Engineering*
5. Consider No Turn on Red restrictions at data-identified crash locations. *-Engineering*

Strategies for Roadway Departures:

1. Design the roadside to include protection systems (such as cable median, crash cushions and guardrail end treatments) or manage roadside vegetation and trees and other fixed objects to minimize the severity of crashes. *-Engineering*
2. Incorporate the use of proven technology and roadway designs that make roadways safer. *-Engineering*
3. Implement proven systemic safety countermeasures to lessen roadway departure crashes. Examples include prioritized site high friction surface treatments, improved signage on curves, safety edges and center line and edge line rumble stripes. *-Engineering*
4. Conduct high-visibility local enforcement, media campaigns and public outreach on identified corridors with a high number of severe roadway departure crashes. *-Enforcement*
5. Utilize established State programs, such as the Safety Circuit Rider, to provide education, training, and outreach about intersection safety. *-Education*
6. Endorse the CT SHSP and cooperate with spot improvements on CT's State and local roadways . *-Engineering*

7.1.2 Roadway Departures

Performance Measure: From 2015-2017 there were 1,595 roadway departure crashes resulting in injuries or fatalities within The South Central Region . This is an average of 532 crashes annually. Of those 1,595 reported roadway departure crashes, 32 were fatal. The South Central Region roadway departure injury and fatal crashes account for 11% of the 13,704 total roadway departure injury and fatal crashes in Connecticut.

Performance Objective: Decrease fatalities and serious injuries by 20% over the 5-year period of the SHSP. This will result in preventing 106 combined fatalities and injuries per year.

7.2 Driver Behavior

The second emphasis area is Driver Behavior which includes the subset areas of speeding or aggressive driving, unrestrained occupants, substance-involved driving, and distracted driving. These subsections are related to driver behavior and not due 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 as aggressive driving[3]. This does not include road rage which is considered assault.

Performance Measure: Speeding-related injury and fatal crashes totaled 1,078 from 2015-2017. There were 21 fatal crashes with an annual average of 359 injury and fatal crashes from 2015-2017. The South Central Region's aggressive driving injury and fatal crashes make up 23% of the 4,664 total aggressive driving injury and fatal crashes in Connecticut.

Performance Objective: In congruence with the state's goal of an 8% reduction of speed-related fatalities, the South Central Regional objective is to lower the average of 7 speed-related deaths per year to 6 per year by 2021.

Source: NHTSA: https://one.nhtsa.gov/Driving-Safety/Enforcement-&-Justice-Services/HVE%E2%80%93enforcement

Strategies for Aggressive Driving:

1. Explore the possibility of creating safety corridors where a segment of roadway has higher-than-expected number of fatal and serious injury crashes due to driver behaviors. Options include additional signage followed by increased traffic enforcement and zero tolerance for violations. *-Engineering*
2. Support 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. *-Enforcement*
3. Collaboration and resource sharing of scientifically valid speed measurement technology for enforcement. *-Enforcement*
4. Integrate the speed management countermeasures into roadway departure, intersection, and pedestrian safety areas. *-Engineering*

[1] Goodwin, A., Thomas, L., Kirley, B., Hall, W., O'Brien, N., & Hill, K. (2015, November). Countermeasures that work: A highway safety countermeasure guide for State highway safety offices, Eighth edition. (Report No. DOT HS 812 202). Washington, DC: National Highway Traffic Safety Administration.

7.2.2 Unrestrained Occupants

The unrestrained occupants emphasis area involves either passengers or drivers who are not seatbelted, including children not properly positioned in restraint systems. Connecticut enacted a law in October 2017, requiring that children to be in booster seats until they reach a minimum of 60 pounds and they turn eight years old, that toddlers ride in a forward-facing seat with a five-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 two years old and 30 pounds.

Performance Measure: From 2015-2017 there were 567 crashes involving unrestrained occupants that resulted in injury or fatality which is an annual average of 189. Out of these 567 reported 10 of them were fatal. The South Central Region's unrestrained occupant injury and fatal crashes make up 17% of the total 3,172 in Connecticut.

Performance Objectives: In congruence with the CTSHSP, reduce the number of unrestrained occupants injury and fatal crashes from the three-year average of 189 by 10% to an average of 170 by 2021.To increase the statewide observed seat belt use rate from 85.4% in 2015 to 88% or above in 2018. In August 2017, Connecticut surpassed its goal of 88% seat belt compliance rate to 90.3%. The current seat belt usage in Connecticut is 90.3 %. [1]

Strategies for Unrestrained Occupants:

1. Utilize NHTSA's calendar of high-visibility enforcement of safety belts and child safety enforcement. Continue enforcement using check-points and roving and saturation patrols. -Enforcement
2. Encourage agencies like Safe Kids CT, local police and fire departments, Yale New Haven Hospital, MidState Medical Center, the YMCA, the United Way of Greater New Haven, and others to disseminate information and educate the public concerning new child safety seat laws. -Education
3. Publicize the safe car seat-fitting stations in the Region using earned media outlets. -Enforcement and Education
4. Continue the Click it or Ticket enforcement campaign. -Enforcement

[1]CT DOT News Release, August 29,2017. Retreived on January 20, 2018 from http://www.ct.gov/dot/cwp/view.asp?A=1373&Q=595814

7.2.3 Substance-Involved Driving

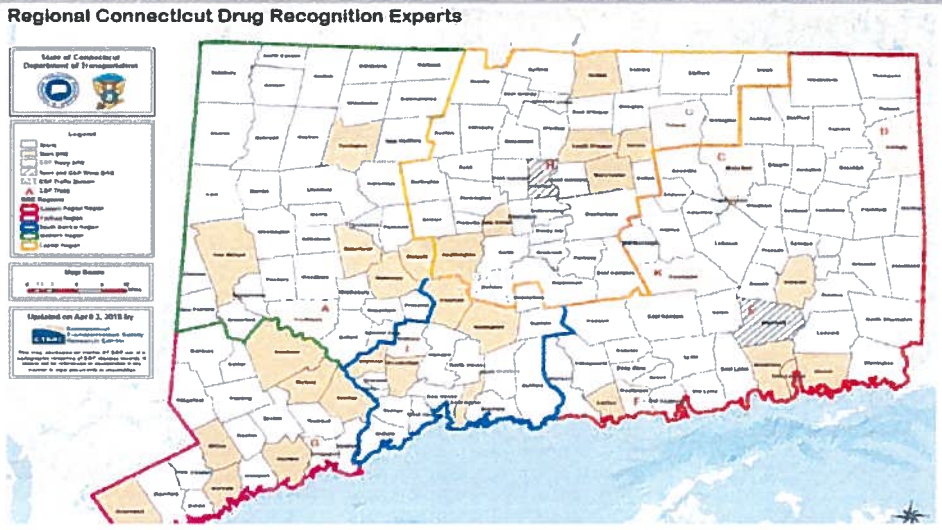
Substance-involved driving involves motorists who are under the influence of alcohol and/or drugs, both prescribed, over-the counter, unprescribed and/or illegal. A driver with blood alcohol concentration (BAC) of 0.08 or higher is considered alcohol impaired. Drug impairment is more challenging to detect and confirm. In addition, it is hard to determine its 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. According to National Highway Traffic Safety Administration (NHTSA), alcohol-impaired crashes accounted for 34% of Connecticut 2016 driving fatalities and 37% of Connecticut 2015 driving fatalities; both years are significantly higher than the 28% national average (Traffic Safety Facts, April 2017)

Performance Measure: From 2015-2017 there were 365 reported substance-involved driving crashes that resulted in injury or death which is an annual average of 116. Of these 365 crashes 7 were fatal. South Central Regional substance-involved injury and fatal crashes make up 17% of the total 2,107 substance-involved injury and fatal crashes in Connecticut.

Performance Objective: To increase the number of Drug Recognition Expert (DRE) practitioners within the South Central Region from five towns to 8 in 2021. The State's goal is to increase the DREs in Connecticut from 31 in 2016 to 45 in 2018. By April 2018, there were 40 DREs in the entire state[1]. The State anticipates additional DREs in the future.

Strategies for Substance-Involved Driving:

1. Augment 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 Protection. *-Enforcement and Education*
2. Cooperate with the SHPS goal to increase the number of certified standardized field sobriety test practitioners and instructors. *-Enforcement and Education*
3. Expand town-specific outreach on 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 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. *-Education*
4. Continue to support MADD CT chapter's outreach and education efforts, including the Victim Impact Panels that take place in East Haven. *-Education*
5. Support policies and programs that increase the availability, convenience, affordability, and safety of transportation alternatives for drinkers who may drive. (Especially during nighttime and weekend hours. *-Engineering*
6. Explore the state proposed data integration project. *-Enforcement*
7. Conduct high visibility impaired driving enforcement program. *-Enforcement*
8. Continue to enforce the interlock devices for all Connecticut DUI/DWI/OUI first time offenders. *-Enforcement*



[1] USDOT and NHTSA 2016 Fatal Motor Vehicle Crashes: Overview October 2017.Retrieved on December 10, 2017 from https://www.nhtsa.gov/press-releases/usdot-releases-2016-fatal-traffic-crash-data
[2] The International Drug Evaluation and Classification Program. . Retrieved on March 1, 2018 from http://www.decp.org/drug-recognition-experts-dre/states-and-countries-with-dres/[3] National Academy of Sciences, January 2018.Retrieved on March 26 from

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 Measure: From 2015-2017 there were 438 reported injury and fatal crashes related to distracted driving, an average of 146 annually. There was one fatality. The Region's distracted driving injury and fatal crashes make up 20% of the total 2,226 distracted driving injury and fatal crashes in Connecticut.

Performance Objective: In line with the CT SHSP, the lack of useful crash data in the area of distracted driving has made it difficult to select a goal measuring the impacts on distraction-related crashes. The performance objective is to decrease fatalities and injuries as a result of crashes caused by driver distraction, especially those caused by hand held mobile phone use. To that end, the quantifiable performance objective is focused on HVE activities. The goal of the CT SHSP is to maintain or increase the number of police agencies participating in high visibility distracted driving enforcement (HVE) from 50 in 2016 to 60 by 2021.

Strategies for Distracted Driving:

1. Conduct distracted driver observational surveys, similar to those done for seat belt use. *-Enforcement*
2. Conduct high visibility distracted-related enforcement, focusing on towns with a higher rates of distracted driving related fatalities and serious injuries. *-Enforcement*
3. In addition to high-visibility enforcement, use unmarked patrol vehicles or spotter techniques in high traffic areas. *-Enforcement*
4. Increase public outreach of distracted driving that reach specific segments of the targeted audience. Coordinate with NHTSA's calendar of outreach. *-Education*

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 as people age their mental and physical abilities may change 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.

Resources for Older Drivers:

1. Coordinate with multi-agencies to address older driver challenges and general safety. *-Education*
2. NHTSA's DriveWell Toolkit to aid older drivers. *-Education*
3. Encourage older drivers to use AARP Smart Driver Course available online or in a classroom. Currently classes are offered in North Haven, Wallingford, East Haven, Orange, Guilford, Meriden, Milford, and Woodbridge Senior and Community Centers.[3] *-Education*

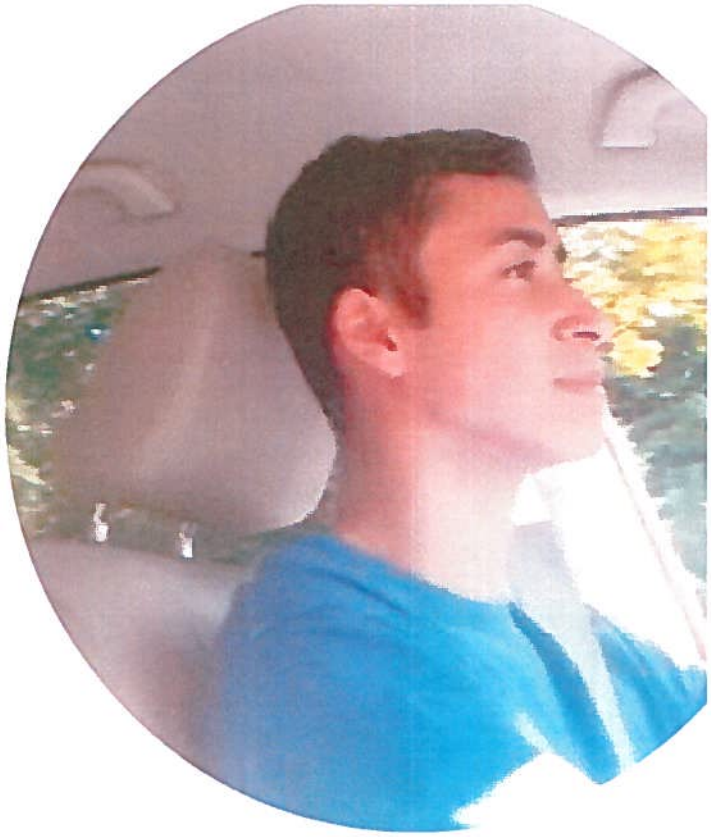
Performance Measure: From 2015-2017 there were 1,287 crashes in The South Central Region involving older drivers that ended in fatal or serious injuries, this is an average of 429 annually. 14 of these 1,287 older driver crashes from 2015-2017 were fatal. The South Central Regional older driver injury and fatal crashes make up 21% of the total 6,022 older driver injury and fatal crashes in Connecticut.

Performance Objective: To decrease the number of drivers aged 65 or older involved in fatal crashes.

1 AARP. AARP Smart Driver Course Locator. Retrieved on March 26.2018 from https://secure.aarp.org/applications/VMISLocator/searchDspLocations.action?cmp=RDRCT-FNDACRS_09_012

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 policy that limits passenger allowance in the first 12 months of licensing, imposes a driver curfew until 18th birthday, requires all passengers in vehicles use seat belts, and prohibits all cell phones and mobile electronic devices while driving. The State also requires pre-licensure driver education for driver and parents.



Strategies for Young Drivers:

1. Continue support for statewide graduated driver licensing. *-Engineering, Education, Enforcement*
2. Enforcement of Young Driver laws, including Zero Tolerance law by organizing and conducting high-visibility enforcement campaigns. *-Enforcement*
3. Continue to promote !MPACT Programs to present their teen driving safety programs to high schools, hospitals, religious organizations and other community organizations at no cost. *-Education*

Performance Measure: From 2015-2017 there were 2,537 crashes involving younger drivers that ended in fatal or serious injuries, an average of 845 annually. 18 of those 2,537 crashes were fatal. The South Central Region's young driver injury and fatal crashes make up 20% of the 12,576 young driver injury and fatal crashes in Connecticut.

Performance Objective: To decrease the three-year average of six fatal injury crashes (2015-2017).

7.5 Non-Motorized Users

The non-motorized emphasis area includes bicyclists and pedestrians. Bicyclists and pedestrians 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/lower cost transportation.

7.5.1 Pedestrians

Performance Measure: From 2015-2017 there were 824 injury and fatal pedestrian crashes in The South Central Region, 25 of these were fatal. That is an average of 275 crashes per year. The South Central Regional pedestrian injury and fatal crashes make up 26% of the total 3,199 pedestrian injury and fatal crashes in Connecticut.

Performance Objective: The South Central RTSP is in congruence with the SHSP's goal of reducing pedestrian injury and fatal crashes 15% over the 5-year period of the SHSP (ending in 2021).

7.5.2 Bicyclists

Performance Measure: From 2015-2017 there were 343 bicycle crashes in the South Central Region, 2 were fatal. That is an average of 114 injury and fatal crashes per year. The South Central Regional bicyclist injury and fatal crashes make up 28% of the 1,244 injury and fatal bicycle crashes in Connecticut.

Performance Objective: The South Central RTSP is in congruence with the SHSP goal of decreasing bicyclist fatalities and serious injuries 15% over the 5-year period of the SHSP (ending in 2021).

Strategies for Non-Motorized Users:

1. Support state advocacy groups including Bike Walk CT and the CT DOT Bike and Pedestrian Advisory Board, and bike stores to strategize best practices for the Region. *-Education*

2. Support CT DOT on the *Pedestrian Signing and Pavement Marking Project* which improves crosswalk visibility on local roads. *-Engineering*

3. Support the Watch for Me CT program http://www.watchformect.org/ *-Education and Enforcement*

4. Support the CT Bike Ped Plan interactive bike map, http://ctbikepedplan.org. *-Education*

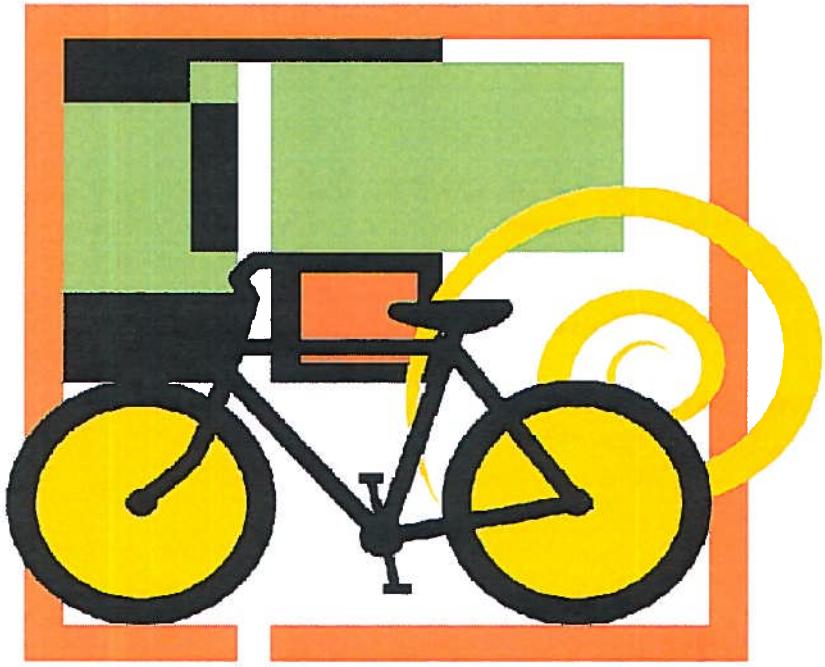
5. Support adoption of the CT DOT's Complete Streets Policy which ensures that the needs of all users of all abilities and ages (specifically including pedestrians, bicyclists, transit users, and vehicle operators) in the planning, programming, design, construction, retrofit and maintenance activities related to all roads and streets as a means of providing a "safe, efficient transportation network which enhances quality of life and economic vitality." http://www.ct.gov/dot/lib/dot/plng_plans/bikepedplan/cs-exo31-signed.pdf *-Engineering*

6. Support law enforcement personnel on the 2014 Vulnerable User Law and the 2015 Bike Bill. *-Education and Enforcement*

7. Support the Connecticut Technology Transfer Center's educational outreach initiatives that promote bike and pedestrian safety. *-Education*

8. Support the road traffic safety project Vision Zero. Vision Zero's goal is to end all traffic deaths and injuries. *- Engineering, Education, and Enforcement*

9. Continue to support policy initiatives to increase vulnerable user safety. *- Engineering, Education, and Enforcement.*



Source: CT Bike Ped Plan http://ctbikepedplan.org

7.6 Motorcyclist Safety

Motorcyclists are another emphasis area in the South Central Region. According to NHTSA 2015 Countermeasures that Work report, per vehicle mile traveled, motorcyclists are about 26 times more likely than passenger car occupants to die in traffic crashes[7]. (A motorcyclist travels at the same speeds and in the same lanes as other motorized vehicles, but without the same degree of protection).

Performance Measure: From 2015-2017 there were 691 motorcycle crashes that ended in fatal or serious injury to the persons involved, 28 crashes were fatal. The annual average for injury and fatal motorcycle crashes is 230. The South Central Regional motorcycle injury and fatal crashes make up 24% of the 2,876 total motorcycle injury and fatal crashes in Connecticut.

Strategies for Motorcyclist Safety:

1. Support CT DMV's Connecticut Rider Education Program (CONREP) for Motorcycle Safety. Currently there is a training site in North Haven. *-Education*
2. Support the insurance industry's rate discount for CONREP graduates. *-Engineering, Education, Enforcement*
3. Support various motorcycle safety awareness resources, such as Helmet-check.org, the Motorcycle Safety Foundation, Interactive Scenic Ride Map, and CT Travel Smart websites. *-Education*

Performance Objective: In congruence with the CT SHSP, decrease the number of motorcyclist fatalities within the three-year average.

1 NHTSA Countermeasures that Work, 2015 8th edition. Retrieved on January 21, 2018 from https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812202-countermeasuresthatwork8th.pdf

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 potentially cause safety issues increasing the risk to uninvolved motorists and can cause congestion delays and secondary incidents. The CT DOT recommends a statewide Traffic Incident Management (TIM) be implemented to coordinate the use of human, institutional, mechanical, and technology resources to reduce the duration and impact of incidents.

Traffic Incident Management (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.

Performance Objectives:

1. Provide ITS technology to reduce response times. *-Engineering*
2. Support CT DOT and the Federal Highway Administration to continue working with the public and private sector partners to address traffic incident safety, operations, and trainings. Investigate CRCOG's traffic incident management coalition to learn best practices. *-Engineering, Education, and Enforcement*
3. Support the CT Travel Smart website and to promote this resource through earned media and public outreach campaigns. *-Education*
4. Encourage public awareness programs for effective on-scene traffic incident management by road users. *-Education*
5. Support Regional coordination of TIM training and exercises. *-Education*
6. Continue CT DOT and The South Central Regional communication regarding coordination and training. *-Education*
7. 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). *-Education*
8. Support a statewide NIMS-based Unified Response Manual (URM). *-Education*
9. Reduce incident duration, which is achieved through (a) reducing the time to detect incidents, (b) initiating an expedient and appropriate response, and (c) clearing the incident as quickly as possible. *-Engineering, Education, and Enforcement*
10. Promote best practices for traffic incident management and provide accessibility to ITS tools. *-Education*
11. Support After-Action Reviews to improve response and scene management. *-Enforcement*
12. Support adequate safety and training resources for CT DOT staff and emergency responders. *-Education*
13. Evaluate expansion of ITS infrastructure to additional Regional corridors based on prioritized need. *-Engineering*
14. Support the development and tracking of TIM performance metrics following national standards and definitions. *- Engineering, Education, and Enforcement*

8 technological advances affecting traffic safety

8.1 Connected and Autonomous Vehicles

Connected and Automated Vehicles (CAV) technologies need to be considered as they are rapidly advancing and may play an integral role in future traffic safety and crash reductions. According to NHTSA, of all serious motor vehicle crashes, "94 percent are due to human error or choices."[1] Fully automated vehicles may be able to see more and act faster than human drivers could, and this may greatly reduce errors, the resulting crashes and their toll. 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.

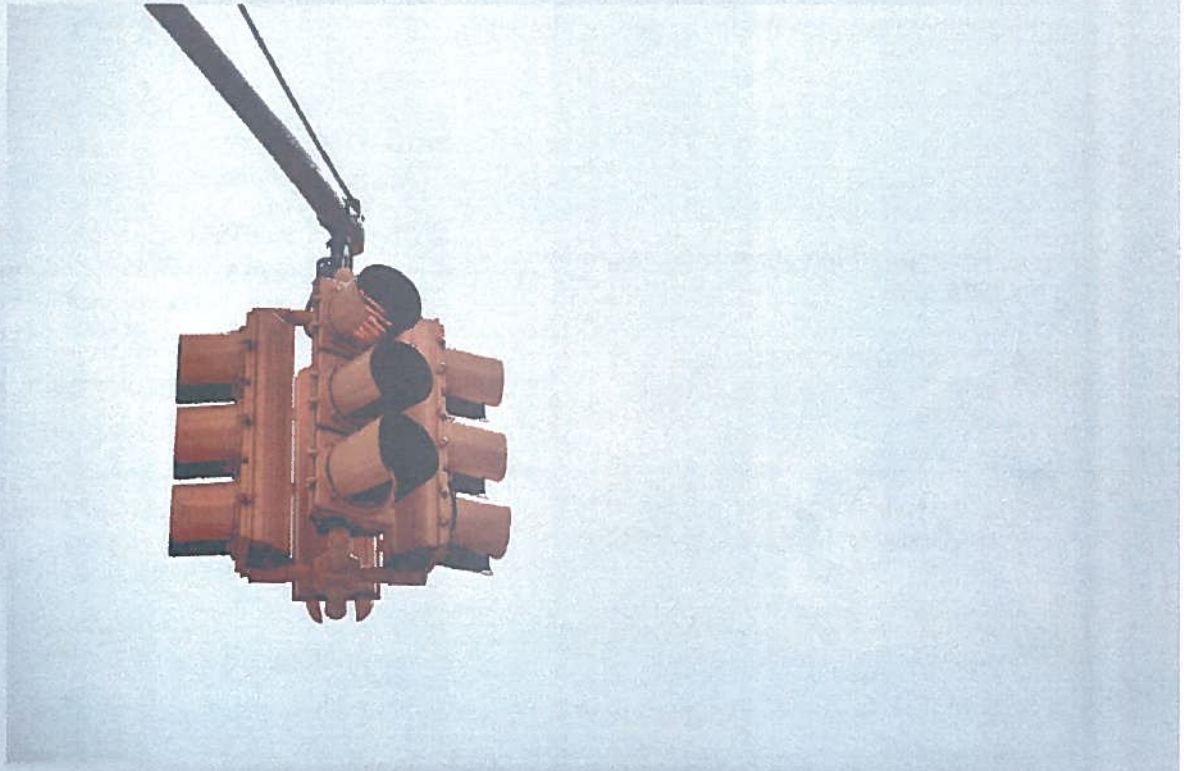
Connected vehicles can communicate with other connected vehicles using wireless technology. This technology can alert drivers to dangerous conditions related to other vehicles. Automated vehicles are vehicles that rely on various on-board automated systems, many times in combination, to operate a motor 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.

1

8.2 Concerns with Data Collection

Connecticut uses the Model Minimum Uniform Crash Criteria Guideline (MMUCC) 2 developed by the National Highway Traffic Safety Administration (NHTSA) and the Governors Highway Safety Association (GHSA). The purpose of this is to standardize data nationally, so that collected data can be compared and used for strategies to prevent crashes. There are some factors that affect traffic safety that are difficult to observe and measure:

- *Alcohol and Drugs: Low alcohol concentration; other drugs including prescription, illicit, and over-the-counter drugs; fatigue; distraction.*
- *Communications technologies and advanced driver assistance systems.*
- *Factors involving teen or novice driving.*
- *Factors involving speed.*



[1] NHTSA Automated Vehicles for Safety. Retrieved January 2018 from https://www.

9 implementation, evaluation and update requirements

9.1 Implementation

Completion of the South Central Region Council of Governments Regional Transportation Safety Plan is just one step towards improved roadway safety locally and statewide. To ensure that these countermeasures are implemented CT DOT and SCRCOG member municipalities will work cooperatively to implement appropriate measures. SCRCOG will review CT DOT safety measures annually as required by federal legislation.

SCRCOG, member municipalities, and CT DOT have provided their Local and Regional knowledge, input, and strategies to this safety plan. Development of this plan was an iterative process with municipal, Regional and state input included from the onset. Throughout the implementation of this plan SCRCOG will be dedicated to assist in bringing these strategies to fruition.

SCRCOG will provide oversight of the safety effort and report progress to CT DOT onthe received data from the member towns as is appropriate. Each emphasis area will be reported at the SCRCOG monthly meetings to ensure progress is being made and to provide member municipalities the opportunity to evaluate the implemented strategies.

Recommended Steps to be taken by SCRCOG:

1. Reporting of RTSP strategies and performance measure progress.
2. Coordination with CT DOT's SHSP committee and emphasis area sub committees to collaborate on state and Regional goals.
3. Annual review of goals and development of new strategies when warranted.

9.2 Evaluation

The SCRCOG RTSP evaluation process will follow the CT SHSP required adherence to the 2016 FHWA Guidance on Strategic Highway Safety Plans and the FAST Act. The RTSP will be updated every five years in accordance with the five year SHSP update process. Areas for Evaluation and Implementation:

- Are strategies current and relevant to ongoing data trends?
- Are strategies being incorporated into local, regional, and state projects?
- Is data showing that fatal and injury crashes in SCRCOG are being reduced in support of the state's goal of a 15% reduction in serious and fatal injury crashes?
- Does the annual state safety reporting reflect the RTSP performance objectives?

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

9.3 Updating the RTSP

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

9.4 Implementation Periods Defined

For the purposes of the RTSP, **short-term** is understood to mean modifications that can be expected to be completed very quickly, perhaps within six months, and certainly in less than a year if funding is available. These include relatively low-cost alternatives, such as striping and signing, and items that do not require additional study, design, or investigation (such as right-of way acquisition). **Mid-term** recommendations may be costlier and require establishment of a funding source, or they may need some additional study or design before implementation. Nonetheless, they should not require significant lengths of time before they can be implemented. 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.

Recent transportation legislation signed into law has provided States with more flexibility with funding to address safety concerns specific to their jurisdiction since the previous SHSP was implemented. Special rules were introduced in MAP-21 and continued with the FAST Act. The special rules direct funding and the development of strategies to mitigate specific safety needs that apply to High Risk Rural Roads (HRRR) and older driver and pedestrian fatal and serious injuries.

9.5 Other Resources

9.5.1 Connecticut Technology Transfer Center's Safety Circuit Rider Program

The Connecticut Technology Transfer Center's Safety Circuit Rider Program is a state-wide program aimed at reducing the frequency and severity of injury and fatal crashes by assisting and supporting local road safety authorities. The initiative offers safety related information, educational programs, technical assistance, and various training opportunities at no costs to all Connecticut municipalities.

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

- Coordination of Road Safety Assessments (RSA's)
- 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
- Assistance with the CT Crash Data Repository

9.5.2 Transportation Demand Management

Reduction of Vehicle Miles Traveled (VMT) produces a naturally accompanying reduction in traffic crashes. In rural areas it is more difficult to implement tactics however, there continue to be methods to reduce transportation demand. These include compact land use, improved transportation options such as transit, nonmotorized transportation planning, ridesharing, telecommuting, taxi service improvements, and bike/transit integration. Changes to the built environment can have potentially dramatic effects on transportation demand.

10 introduction to the individual town reports

The following town reports provide a more in-depth analysis and overview of traffic safety in each of the 15 SCRCOG member municipalities. Each town 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 Town staff were documented. From the data identified and town prioritized locations systemic improvements and site-specific strategies were developed to minimize or prevent fatalities and serious injury crashes in the future. These are listed in tabular format.

appendices

Appendix A
Town Reports

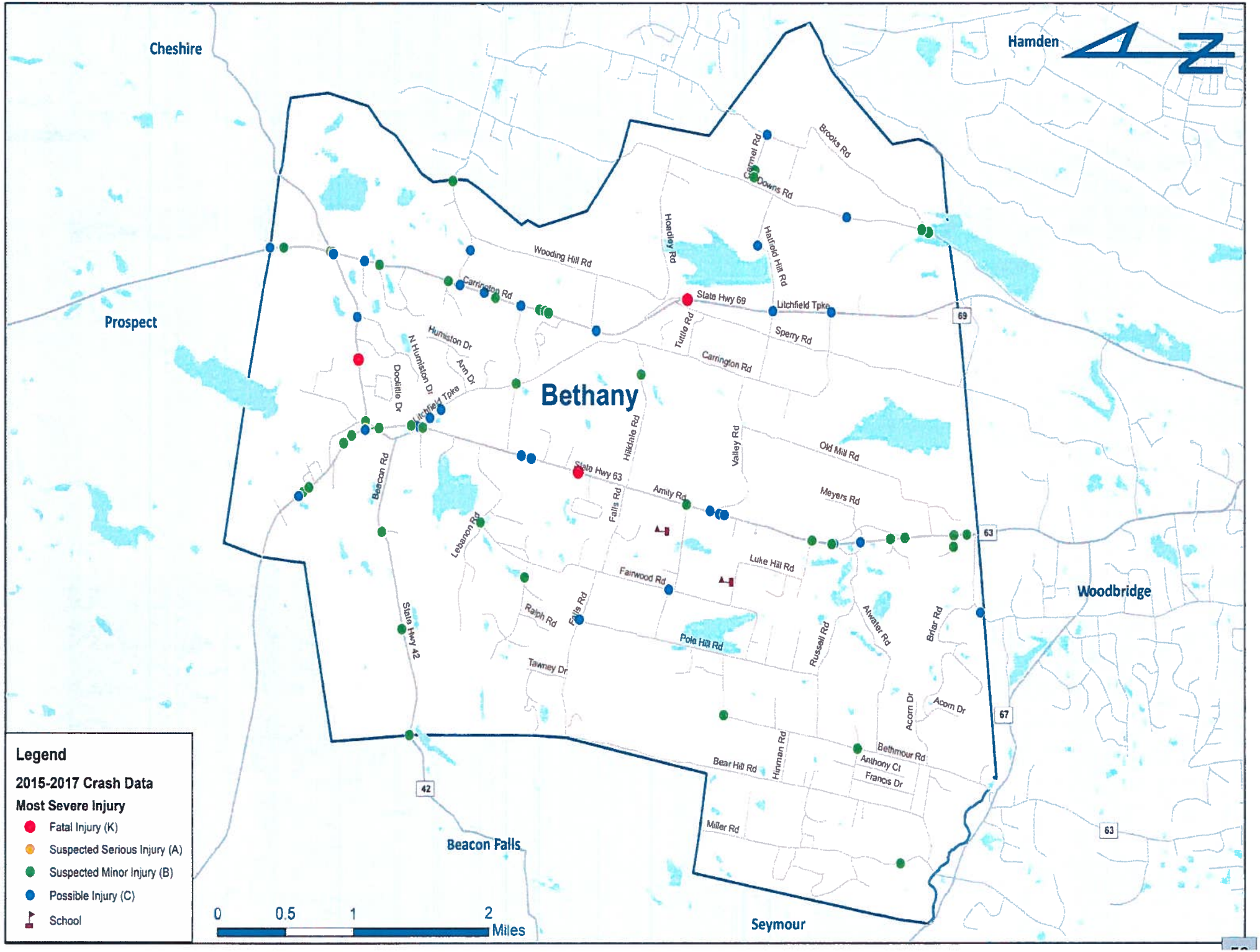
TOWN OF BETHANY

2016 US Census Population Estimate: 5,488
Area: 21.5 Square Miles
Population Density: 260/sq mi
2016 Vehicle Miles Traveled (VMT): 48,533,685
2016 VMT per Capita: 8843
Setting: Suburban/Rural
Date of Meeting with Town: October 2, 2017
Town Representative: Derrylyn Gorski (First Selectman), David Merriam (Resident State Trooper)
Data Identified High Crash Corridors: 12 (CT-63)
Data Identified High Crash Intersections: N/A
Data Identified High Crash Bike and Ped Locations: N/A
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 110

Overview

Bethany is a rural suburban town. It is bordered by Prospect to the north, Hamden to the east, Woodbridge to the south, and Beacon Falls and Seymour to the west. The major thoroughfares are CT-42, CT-69, and CT-63.

Figure 1: CT-69 and Rainbow Road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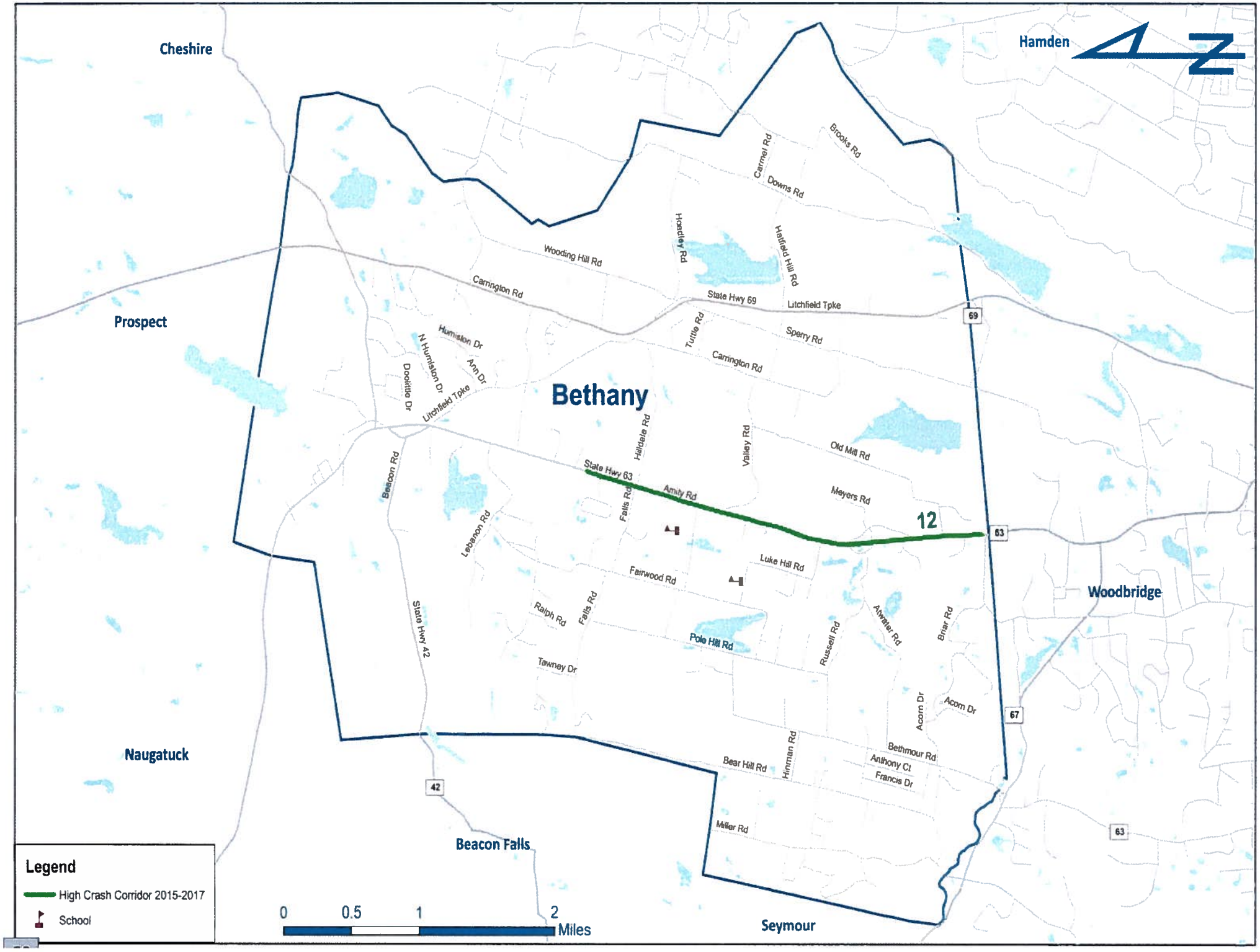
Hamden
Prospect
Bethany
Woodbridge
Beacon Falls
Seymour
Wooding Hill Rd
Carrington Rd
State Hwy 69
Litchfield Tpke
Brooks Rd
Downs Rd
Hoadley Rd
Halfield Hill Rd
Turtle Rd
Sperry Rd
Humiston Dr
N Humiston Dr
Dooklittle Dr
Arm Dr
Hikknite Rd
Valley Rd
Old Mill Rd
Beacon Rd
State Hwy 63
Amity Rd
Falls Rd
Lebanon Rd
Meyers Rd
Luke Hill Rd
Fairwood Rd
Ralph Rd
State Hwy 42
Pole Hill Rd
Russell Rd
Alvater Rd
Briar Rd
Tawney Dr
Acorn Dr
Bethmour Rd
Anthony Ct
Francis Dr
Bear Hill Rd
Hinman Rd
Miller Rd
69
63
67
42
Legend
2015-2017 Crash Data
Most Severe Injury
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
School
0
0.5
1
2
Miles


Cheshire
Hamden
Prospect
Bethany
Woodbridge
Naugatuck
Beacon Falls
Seymour
Wooding Hill Rd
Carrington Rd
State Hwy 69
Litchfield Tpke
Carmel Rd
Brooks Rd
Downs Rd
Hinckley Rd
Hatfield Hill Rd
Turtle Rd
Sperry Rd
Humiston Dr
N Humiston Dr
Ann Dr
Doolittle Dr
Litchfield Tpke
Beacon Rd
Halldale Rd
Valley Rd
Old Mill Rd
State Hwy 63
Amity Rd
Meyers Rd
Falls Rd
Lebanon Rd
Fairwood Rd
Luke Hill Rd
Ralph Rd
Falls Rd
State Hwy 42
Polo Hill Rd
Tawney Dr
Russell Rd
Atwater Rd
Briar Rd
Acorn Dr
Acorn Dr
Hinman Rd
Bear Hill Rd
Bethmour Rd
Anthony Ct
Francis Dr
Miller Rd
12
69
63
67
42
63
Legend
High Crash Corridor 2015-2017
School
0
0.5
1
2
Miles

Field Site Inventory

CT-63 and Russell Road along Corridor 12

This is a two-way stop control at a four-way intersection. Traffic does not stop on CT-63. The adjacent land is mixed use, commercial, private, open space, and residential. Moderate traffic for off-peak hours was observed, including truck traffic. Motorists turning left from Russell Road onto CT-63 north have inadequate sight distance due to a grassy ledge on the western side of CT-63 and the vertical curvature to the south of the intersection. There is also moderate horizontal curvature. Speeding was observed.

Figure 4: Russell Road at CT-63

Town Comments

The Town Representatives concurred that data identified **Corridor 12** along CT-63 is a concern. This segment of CT-63 stretches from the Woodbridge border north to Almar Drive. Within this corridor the Town stated that southbound CT-63 traffic at Russell Road has limited sight distance due to vertical curvature. Willow Tree Montessori School and The Graduate Institute are located on the western side of CT-63 and Pleasant View Garage is on the eastern side. The Montessori School is concerned with the proximity of the roadway and the speeds along CT-63. The Town Officials stated that the speed limit along CT-63 is 45 mph. The intersection of CT-42 and CT-63 is also a concern.

The CT-42 and CT-69 junction is reported to have signal timing issues according to Town Officials and they have notified CT DOT authorities. They stated that there is a high volume of left turn crashes at this location.

The intersection of CT-69 and Rainbow Road is an issue according to the Town Officials. They reported there is no visibility for motorists traveling from Rainbow Road due to the vertical curvature. The Town contacted the State to level off the area and reduce the slope to improve visibility, but this project was not actualized. he intersection of CT-69 and Hatfield Road has limited sight distance from unmaintained vegetation. This road is used as a cut through. According to the Town, injuries are underreported on the State's Uniform Police Crash Report, PR-1. The Town stated that residents are resistant to the perceived excessive roadway signing.

CT-69 and Rainbow Road

This is a T-intersection with stop control on Rainbow Road. Vegetation obstructs sight distance. In addition, the vertical curvature on the southbound approach combined with high speeds significantly impacts sight distance from Rainbow Road. There are advance intersection advisory signs along CT-69 and centerline rumble strips.


Figure 5: CT-69 Centerline Rumble Strips

Countermeasure Considerations

The Town and CT DOT could consider improving the visibility of identified intersections by providing enhanced signing and delineation. Installing an intersection conflict warning systems (ICWS) to detect vehicles on minor roads and communicate their presence to drivers on the main road or notify the driver on the minor road when there is oncoming traffic on the mainline could help motorists better navigate intersections. If turning movements at the intersection within a horizontal or vertical curve are a concern, adding a turn lane for the primary turning movement may also improve intersection flow and provide a storage area for vehicles out of the through travel lane.

Speed feedback signs could assist the Town with speeding issues. This combined with police enforcement can be an effective way to reduce speeding at identified locations[1].

Vegetation management is needed if current growth impedes sight distance.

The Town could request the State evaluate the stop bars along specified state-owned roads all intersections, especially along Rainbow Road at CT-69 to ensure sufficient sight distance.

The Town could coordinate with Office of the State Traffic Administration (OSTA) to determine if a School Zone designation and related signage are warranted for the Montessori School area along CT-63. The Town could also work with the State to consider installing the MUTCD non-vehicular playground warning sign.

The Town could collaborate with enforcement and emergency management services to develop various safety public outreach campaigns, especially around speed. Coordinating with NHTSA's national campaign schedule could further boost the effectiveness of local efforts based on community needs[2]. The NHTSA campaign calendar highlights different behavioral focus areas throughout the year that could improve driver behaviors.

Materials that are provided by the United States Department of Transportation on the Transportation Safety Marketing for Speed Prevention web page[3] could be used. Enforcement and social norming campaign materials that are available to any community include banners, posters, television ads, radio ads, infographics, and other forms of media for behavioral initiatives. See the following countermeasure table for additional recommendations.

Figure 6: Intersection Conflict Warning Signs

1 U.S. Department of Transportation Federal Highway Administration (2012). USDOT Spatial Effectiveness of Speed Feedback Signs. Retrieved from https://safety.fhwa.dot.gov/speedmgt/ref_mats/fhwasa1304/2_6.htm

2 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). NHTSTA 2018 Communications Calendar. Retrieved from https://www.nhtsa.gov/links/NHTSA-2018-CommsCalendar.pdf

3 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). Campaigns Under Speed Prevention. Retrieved from https://www.trafficsafetymarketing.gov/get-materials/speed-prevention/stop-speeding-it-stops-you

Table 5: Bethany Countermeasure Considerations

Intersection or Corridor ID	Route Names	Number of Crashes	Issues	Countermeasures	Estimated Cost	Estimated Time of Completion
Corridor 12	CT-63 (at Russell Road)	20	Sight Distance	Flashing Beacons for Intersection Ahead Signs	Low	Short
				Road Safety Audit	Low	Short
				Make Intersection Four-way Stop Controlled	Low	Short
			Speed near School	School Zone Warning Sign	Low	Short
				Install MUTCD Playground Warning Sign	Low	Short
				Install Guiderail Protection System	Low	Short
				Dynamic Speed Feedback Sign	Low	Short
CT-42 and CT-69			Left-turn crashes	Signal Retiming	Low	Short
CT-69 at Rainbow Road			Sight Distance	Lessen Slope	Medium to High	Mid to Long
				Relocate Stop Bar	Low	Short
				Flashing Beacons for Intersection Ahead Signs	Low	Short
CT-69 at Hatfield Road			Sight Distance	Manage Vegetation	Low	Short
Townwide			Speeding	Dynamic Speed Feedback Signs	Low	Short
				High-visibility Enforcement	Low-Medium	Short-Mid
				USLIMITS2	Low	Short
			Sight Distance at Intersections	Intersection Conflict Warning Systems	Medium	Mid
			Injury Underreporting	PR-1 Training/Evaluation	Low	Short

TOWN OF BRANFORD

2016 US Census Population Estimate: 28,028
Area: 28 square miles
Population Density: 1,001 people per square mile
2016 Vehicle Miles Traveled (VMT): 299,271,165
2016 VMT per Capita: 10,677
Setting: Suburban
Date of Meeting with Town Representatives: September 20, 2017
Town Representative: Janice Plaziak (Town Engineer) Kevin Halloran (Branford Police Department)
Data Identified High Crash Corridors: US-1 **(86, 87, 90 and 91)**, CT-740 **(88)**, CT-146 **(89)**
Data Identified High Crash Intersections: US-1 and Cedar Street **(P)**
Data Identified High Bike and Pedestrian Crash Locations: US-1 **(Corridors 86, 87, 90 and 91)** and CT-740 **(88)**, CT-146 **(89)**
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 442

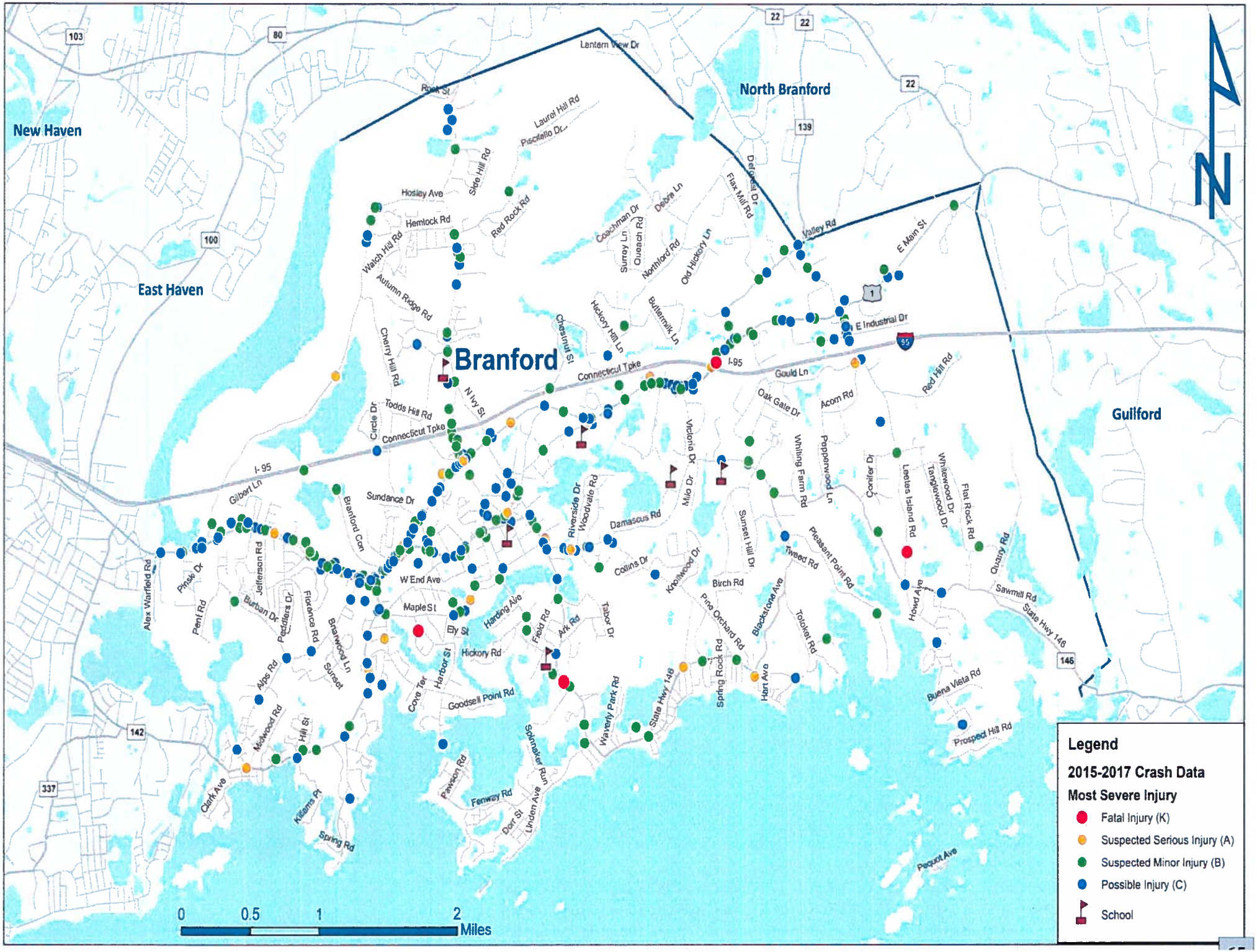
Overview

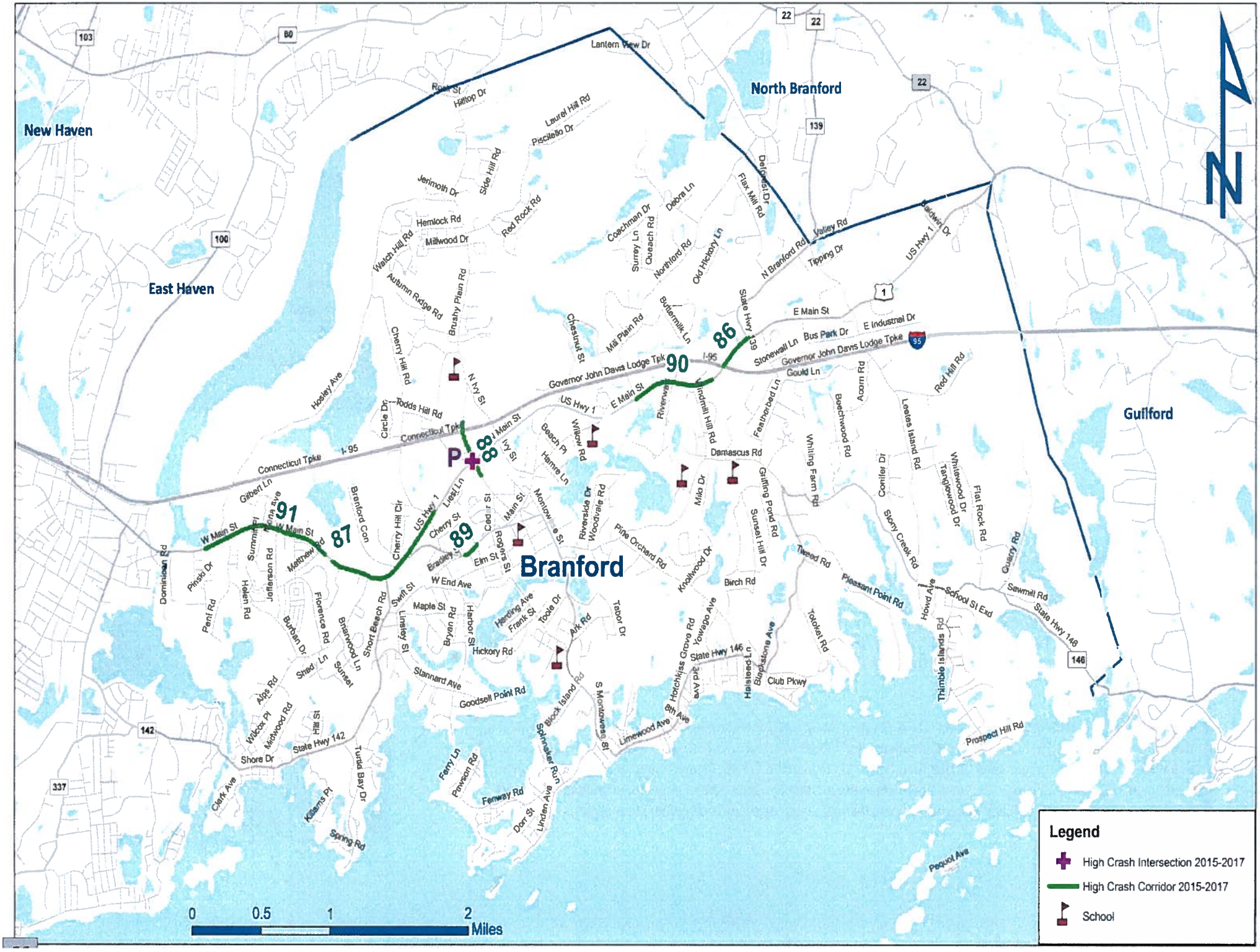
Branford is a shoreline town. It is bordered by North Branford to the north, the Long Island Sound to the south, Guilford to the east, and East Haven to the west.

Town Comments

The Town Representatives concurred that the crash data presented was consistent with the Town's police department's real-time traffic data system. The Town identified speeding and traffic congestion associated with I-95 as significant issues. When I-95 experiences significant congestion, where the four lanes along the Q-Bridge are reduced to two, the Town's state and local roadways become cut through routes. This further induces high speed and local traffic congestion. Cedar Street between US-1 and I-95 Ramps (Corridor 88) and US-1 between CT-142 and CT-146 (Corridor 87) were identified by the Town as high crash and congestion corridors. Town officials also stated that there is a major bottleneck on Interstate 95 eastbound where three lanes extending from the Q-Bridge are reduced to two lanes in a short distance. The associated traffic congestion sends drivers off the interstate on to State and Local roads through Branford. Branford Officials agreed with the data shown on the map but also included the downtown area and the Amtrak bridge as high crash locations. The Town referenced an access management study conducted in 2008 by SCRCOG on West Main Street and US-1 on the western edge of Branford. This section of US-1 was identified in the data as high crash Corridor 91. Speeding was the major issue along all roads. The Town

Figure 7: Cedar Street


Branford
North Branford
New Haven
East Haven
Guilford
Lantern View Dr
Laurel Hill Rd
Pistello Dr
Slate Hill Rd
Hosley Ave
Hemlock Rd
Watch Hill Rd
Red Rock Rd
Autumn Ridge Rd
Cherry Hill Rd
Todds Hill Rd
Circle Dr
N Ivy St
Chestnut St
Coachman Dr
Surrey Ln
Quoach Rd
Debra Ln
Northford Rd
Old Hickory Ln
Flax Mill Rd
Deforest Dr
Valley Rd
E Main St
Hickory Hill Ln
Buttermilk Ln
E Industrial Dr
Connecticut Tpke
I-95
Gould Ln
Red Hill Rd
Oak Gate Dr
Acorn Rd
Victoria Dr
Milo Dr
Riverside Dr
Woodvale Rd
Damascus Rd
Collins Dr
Knollwood Dr
Sunset Hill Dr
Whiting Farm Rd
Peppercorn Ln
Conifer Dr
Leetes Island Rd
Whitewood Dr
Tanglewood Dr
Flat Rock Rd
Quarry Rd
Sawmill Rd
State Hwy 146
Howd Ave
Tweed Rd
Pleasant Point Rd
Birch Rd
Pine Orchard Rd
Blackstone Ave
Tolokel Rd
Hart Ave
Spring Rock Rd
Buena Vista Rd
Prospect Hill Rd
Pequot Ave
Waverly Park Rd
Goodsell Point Rd
Cove Ter
Harbor St
Hickory Rd
Field Rd
Ark Rd
Tabor Dr
Harding Ave
Ely St
Maple St
W End Ave
Sundance Dr
Branford Corn
Gilbert Ln
Alex Warfield Rd
Pinsk Dr
Peni Rd
Jefferson Rd
Burban Dr
Peddlers Dr
Flixence Rd
Briarwood Ln
Sunset
Alps Rd
Mohwood Rd
Hill St
Clark Ave
Kilams Pl
Spring Rd
Pawson Rd
Fenway Rd
Dorr St
Linden Ave
Spinnaker Run
22
139
1
95
103
80
100
142
337
145
0
0.5
1
2
Miles
Legend
2015-2017 Crash Data
Most Severe Injury
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
School


New Haven
East Haven
North Branford
Guilford
Branford
Legend
High Crash Intersection 2015-2017
High Crash Corridor 2015-2017
School
0
0.5
1
2
Miles
86
88
89
90
91
87
P
Governor John Davis Lodge Tpke
Connecticut Tpke
I-95
US Hwy 1
E Main St
W Main St
Main St
State Hwy 146
State Hwy 142
State Hwy 139
State Hwy 148
Pleasant Point Rd
Damascus Rd
Tuttle Ave
Stannard Ave
Goodsell Point Rd
Hickory Rd
Maple St
W End Ave
Cherry St
Elm St
Tuttle Dr
Block Island Rd
Limewood Ave
Fenway Rd
Pequot Ave
Prospect Hill Rd
Thimble Islands Rd
Club Pkwy
Tuxis Rd
Tweed Rd
Birch Rd
Pine Orchard Rd
Knollwood Dr
Sunset Hill Dr
Gaffney Pond Rd
Stony Creek Rd
Whiting Farm Rd
Damascus Rd
Featherbed Ln
Windmill Hill Rd
Riverview Dr
Mill Plain Rd
Buttermilk Ln
Stonewall Ln
Bus Park Dr
E Industrial Dr
Gould Ln
Acorn Rd
Beechwood Rd
Leetes Island Rd
Rod Hill Rd
Flat Rock Rd
Quarry Rd
Sawmill Rd
School St Ext
Howd Ave
Tanglewood Dr
Whitewood Dr
Conifer Dr
Mika Dr
Willow Rd
Beach Pl
Hamre Ln
Riverside Dr
Woodvale Rd
Monroe St
Cedar St
Rogers St
Bradley St
Liest Ln
Cherry Hill Dr
Branford Con
Gilbert Ln
Summit Ave
Matthew Rd
Jefferson Rd
Helen Rd
Penf Rd
Pinski Dr
Dominion Rd
Florence Rd
Burban Dr
Briarwood Ln
Sunset Ln
Shed Ln
Algs Rd
Wilcox Pl
Midwood Rd
Hill St
Shore Dr
Turtle Bay Dr
Adams Pl
Spring Rd
Clark Ave
Ferry Ln
Pownon Rd
Short Beach Rd
Swift St
Linsley St
Bryan Rd
Harbor St
Herding Ave
Frank St
Toole Dr
Ark Rd
Tabor Dr
Yowago Ave
Hotchkiss Grove Rd
3rd Ave
8th Ave
Halstead Ln
Blackstone Ave
Toxoket Rd
Sphinnaker Run
S Montowese St
Linden Ave
Don St
Hosley Ave
Circle Dr
Todds Hill Rd
Cherry Hill Rd
Autumn Ridge Rd
Brushy Plain Rd
Watch Hill Rd
Hemlock Rd
Millwood Dr
Jerimoth Dr
Side Hill Rd
Red Rock Rd
Laurel Hill Rd
Piscitello Dr
Hilltop Dr
Rose St
Lantern View Dr
Chestnut St
N Hwy St
Coachman Dr
Surrey Ln
Queach Rd
Debra Ln
Northford Rd
Old Hickory Ln
Flax Mill Rd
Delgrosi Dr
N Branford Rd
Valley Rd
Tipping Dr
Baldwin Dr
US Hwy 1
103
80
100
142
337
22
139
1
95
146

Field Site Inventory

Corridor 88: Cedar Street

The Cedar Street corridor is mainly between US-1 and I-95 ramps. Speed limit is 30 mph. The roadway cross-section is generally four lanes (two lanes in each direction). The cross section increases at signalized intersections to accommodate additional turn lanes. The surrounding land uses include residential and commercial. In this section of Cedar Street, the roadway cross-section is fully developed given the I-95 bridge abutments to the north and the over 500 foot retaining wall on the southern section of this portion of Cedar Street.

Heavy traffic volumes and associated congestion were observed, as this is a major access/egress point connecting the local roadway system with I-95. There appears to be minimal opportunity for roadway widening to increase capacity based on the constraints described above.

Speeding, aggressive driving, distracted driving, and running red lights/stop signs were all observed along this corridor.

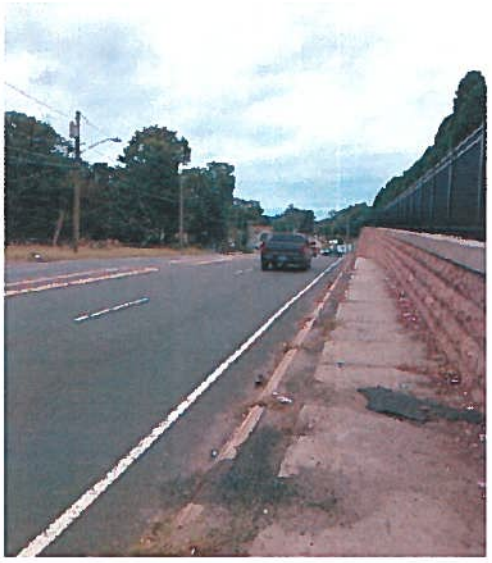


Figure 10: Cedar Street

Corridor 87: US-1

US-1 between Orchard Hill Road and Cherry Hill Road, a varying cross section providing for two through lanes and various turn lanes at the four signalized intersections within approximately 1,000 ft. The posted speed limit is 40 mph with surrounding land uses generally being commercial. This section of US-1 provides access to/from I-95 south via the Exit 53 ramp system and further contributes to peak period traffic. The close traffic signal spacing, four signals within a 1,000 ft. can create inefficiencies in traffic progression during peak periods. This is a commercial area with heavy congestion.

There are intermittent sidewalks on US-1. A worn foot path indicates that pedestrians travel along the eastern side of US-1 after the sidewalk ends. There are also pedestrian beacons located across the I-95 on-and-off ramps and at the junction of US-1 and CT-146. There is a green light activated button at US-1 and CT-142. This is a highly traveled corridor and noted driver behaviors included aggressive driving, distracted driving, improper passing, running red lights/stop signs, and speeding.

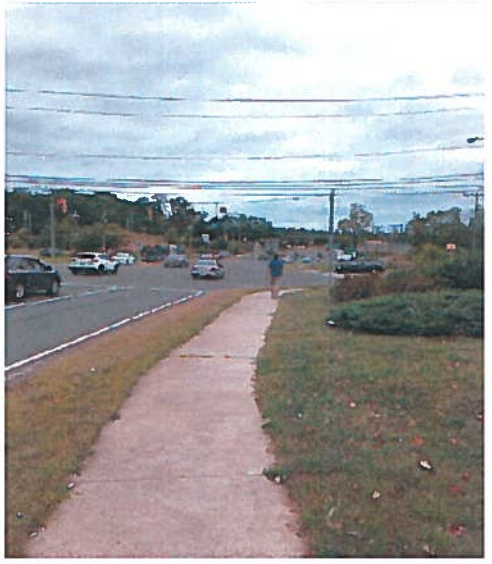


Figure 11: US-1

Countermeasures

For Corridor 87, optimizing signal timings and assessing lane geometry to address peak hour traffic volumes could be beneficial along US-1. Corridor Access Management could improve mobility and reduce potential vehicle conflict due to high turning movements.

Improving the pedestrian environment by enhancing crosswalks, adding curb extensions, and a possible rapid rectangular flashing beacon (RRFB) could mitigate the conflicts between motorized vehicles and walkers.

A potential countermeasure for high crash Intersection P (Cedar Street and US-1) and Corridor 88 (Cedar Street) would be to optimize signal timings to respond to peak hour traffic volumes. Due to the physical constraints of the retaining wall and bridge abutments, geometric modifications do not appear feasible along the corridor. High visibility enforcement along both inventoried corridors could deter aggressive and reckless driving.

Corridor 91 along US-1 is an area that has been analyzed in detail by SCRCOG. The Town could in cooperation with the property owners, implement some of the recommendations in the previously published Access Management Plan to mitigate congestion, improve corridor mobility, and access management.

Since speeding is an issue townwide, the Town could endorse a high-visibility enforcement campaign to deter motorists from speeding. Speed feedback signs, USLIMITS2, and speed tables could also mitigate this trend.

The Town could collaborate with enforcement and emergency management services to develop various safety public outreach campaigns, especially around speed. Coordinating with NHTSA's national campaign schedule could further boost the effectiveness of local efforts based on community needs[1]. The NHTSA campaign calendar highlights different behavioral focus areas throughout the year that could improve driver behaviors.

Materials that are provided by the United States Department of Transportation on the Transportation Safety Marketing for Speed Prevention web page[2] could be used. Enforcement and social norming campaign materials that are available to any community include banners, posters, television ads, radio ads, infographics, and other forms of media for behavioral initiatives. See the following countermeasure table for additional recommendations.

1 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). NHTSTA 2018 Communications Calendar. Retrieved from https://www.nhtsa.gov/links/NHTSA-2018-CommsCalendar.pdf

2 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). Campaigns Under Speed Prevention. Retrieved from https://www.trafficsafetymarketing.gov/get-materials/speed-prevention/stop-speeding-it-stops-you

Table 10: Branford Countermeasure Considerations

Intersection or Corridor ID	Road or Route Names	Number of Crashes	Issues	Countermeasures	Estimated Cost	Estimated Time of Completion
Intersection P	US-1 and Cedar Street	29	Front to Rear Crashes	Traffic Signal Retroreflective BackPlates	Low	Short
				Driveway consolidation at gas station	Low to Medium	Mid
				Dynamic Speed Feedback Signs	Low	Short
			Pedestrians	High-visibility Crosswalks	Low	Short
				Curb Extensions on Cedar Street	Low to Medium	Mid
			Congestion	Signal Optimization	Low	Short
Corridor 86	US-1	8		Needs Further Study		
Corridor 87	US-1	57	High Turning Movements	Corridor Access Management	Medium	Mid to Long
			Aggressive Driving	High-visibility Enforcement	Low to Medium	Short
			Pedestrian Safety	Curb Extension	Medium	Mid
				Watch for me CT Campaign	Low	Short
				Enhance Crosswalks	Low	Short
			Congestion	Signal Optimization	Low	Short
Corridor 88	CT-740 (Cedar Street)	39	Congestion	Signal Optimization	Low	Short
Corridor 89	CT-146 (Main Street)	9	Needs Further Study			
Corridor 90	US-1	17	Needs Further Study			
Corridor 91	US-1	29	Congestion	Corridor Access Management, reference the 2008 Access Management Plan	Low to High	Short-Long
Downtown and Amtrak Bridge			Congestion	Signal Optimization	Low	Short
Townwide			Speeding	Dynamic Speed Feedback Signs	Low	Short
				Speed Tables	Low	Short
				Watch for Me CT Campaign	Low	Short
				USLIMITS2	Low	Short
				High-visibility Enforcement	Low to Medium	Short

***Listed in the Top 40 Crash Sites in The South Central Region, 2015-2017

TOWN OF EAST HAVEN

2016 US Census Population Estimate: 28,807
Area: 13.5 square miles
Population Density: 2,133 per square mile
2016 Vehicle Miles Traveled (VMT): 135,959,580
2016 VMT per Capita: 4,720
Setting: Suburban/Urban
Date of Meeting with Town Representatives: October 13, 2017
Town Representatives: Pete Sheve (EHPD), Chuck Licata (EHFD), Ed Lennon (EHFD), Pat Tracy (EHPD), Jim Naccarato (EHPD), Christopher Soto (Planning and Zoning)
Data Identified High Crash Corridors: Corridors 72 (Forbes Place) Corridors 73-77 (CT-100)**, Corridors 78-79** (CT-80)**, Corridors 80 and 82** (US-1)**, and Corridors 81 and 83** (CT-142)
Data Identified High Crash Intersections: BY (CT-142 and Main Street)
Data Identified High Crash Bike and Ped Locations: Corridor 72 (Forbes Place), 74 (CT-100)**, Corridor 78** (CT-80)**, Corridor 82** (US-1)**, Corridor 81** (CT-142) **and Intersection BY** (CT-142 and Main Street)
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 454

Overview

East Haven is a suburban town along the Connecticut shoreline. It is bordered by New Haven to the west, Branford and North Branford to the east, North Haven to the north, and the Long Island Sound to the south. Major thoroughfares are US-1, I-91, CT-100, and CT-80.

Town Comments

The East Haven Police Department collects and analyzes crash data on a regular basis to identify areas of high traffic concern. The Town shared the fatality numbers and associated data. This data showed that most of the fatalities within the last three years have involved pedestrians. This is a major concern for the Town. The East Haven Police Department has developed a matrix to address traffic issues and incidents.The Town representatives reported several crashes resulting in pedestrian fatalities at CT-80/Foxon Road (Corridors 78 and 79) in the last few years. The Town stated these crashes took place at night, in dark conditions. The Town reported that the western corridor along CT-80 where many pedestrians walk to Walmart is a priority. Additionally, the Town is concerned with the safety of pedestrians from the elderly housing complex located near the New Haven/East Haven Town line. Elderly people in general are more vulnerable to serious or fatal injury when struck by a motor vehicle. The Town would like to mitigate this trend.

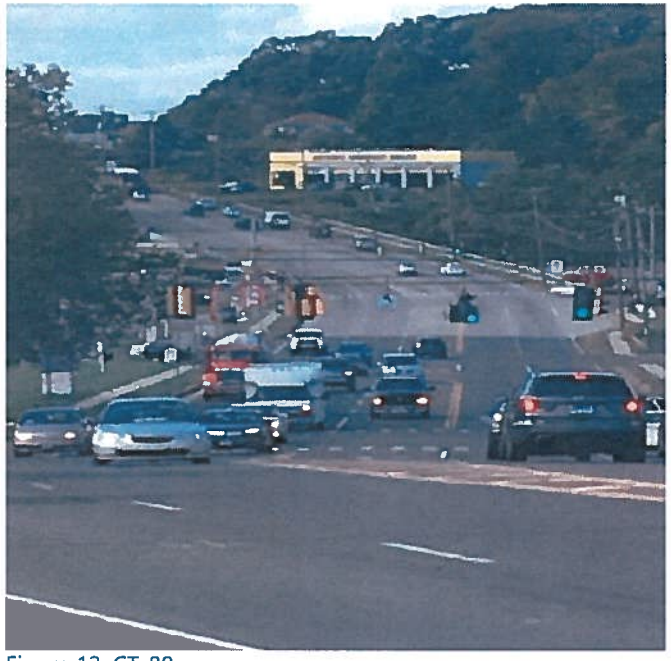
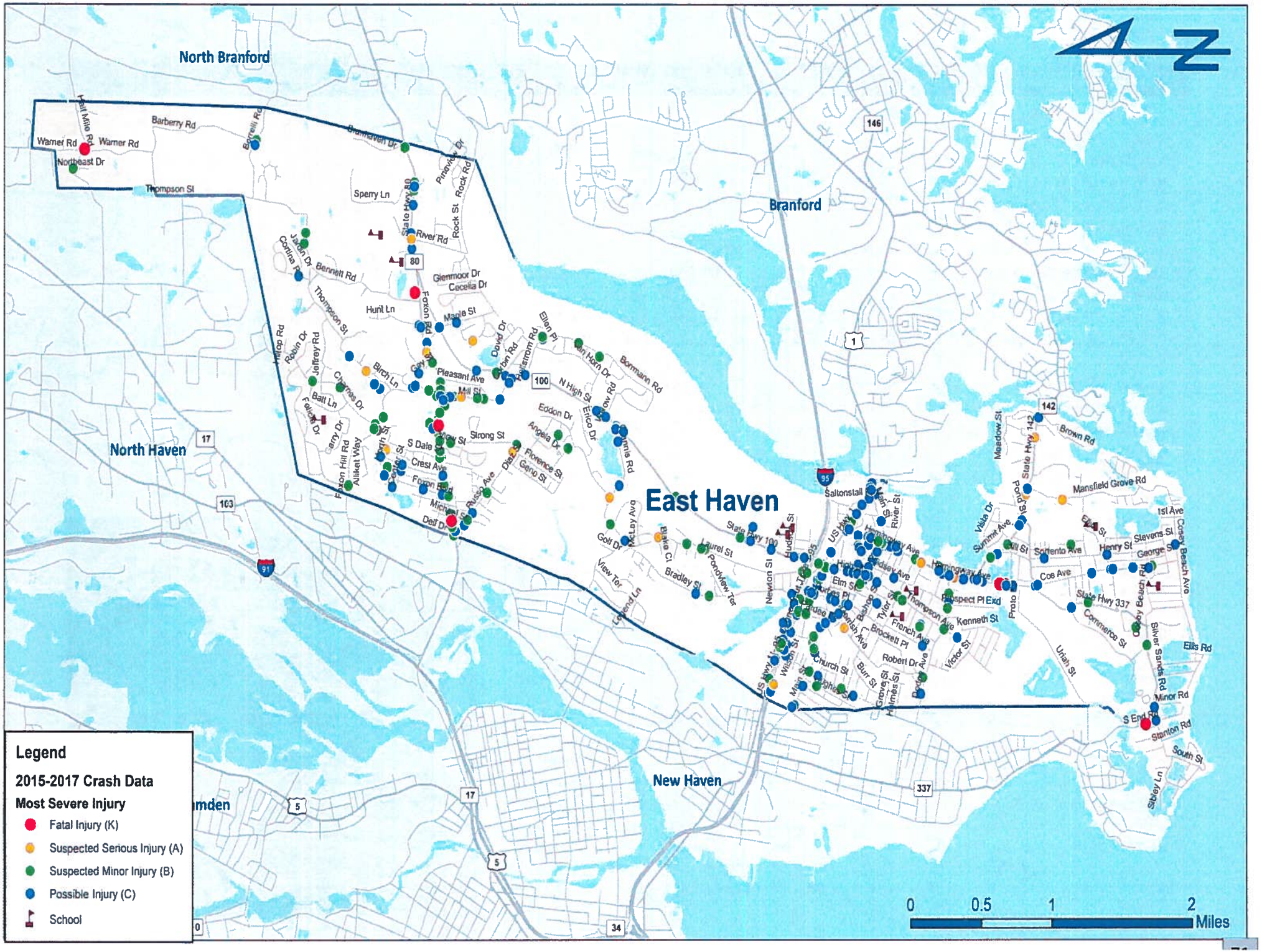


Figure 12: CT-80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North Haven
East Haven
New Haven
Legend
2015-2017 Crash Data
Most Severe Injury
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
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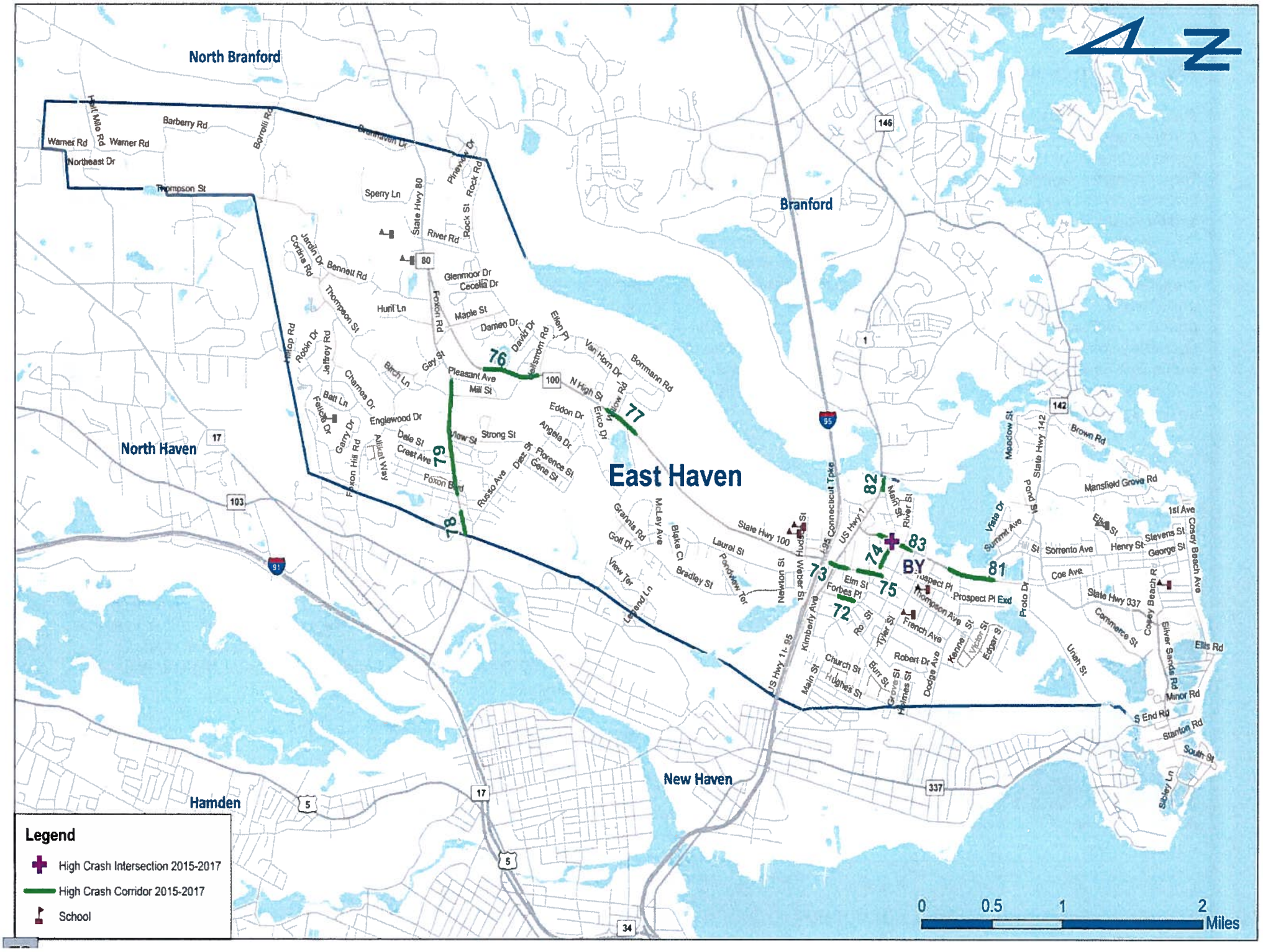
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North Haven
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Warner Rd
Northeast Dr
Thompson St
Sperry Ln
State Hwy 80
River Rd
Rock St
Rock Rd
Glenmoor Dr
Cecelia Dr
Bennett Rd
Jardin Dr
Cortina Rd
Hurif Ln
Foxon Rd
Maple St
Damen Dr
David Dr
Ellen Pl
Van Horn Dr
Bormann Rd
Pleasant Ave
Mill St
N High St
Eddon Dr
Erico Dr
Strong St
Angela Dr
Florence St
Gene St
Dale St
Crest Ave
Foxon Blvd
Russo Ave
Dee St
Englewood Dr
Batt Ln
Birch Ln
Gary Dr
Allstat Way
Foxon Hill Rd
Phillop Rd
Robin Dr
Taylor Rd
Charnes Dr
Grannis Rd
McLay Ave
Blake Ct
Bradley St
Golf Dr
View Ter
Legend Ln
Laurel St
Pondview Ter
Newton St
Stephen Webber St
State Hwy 100
US Hwy 1
I-95 Connecticut Turnpike
US Hwy 1- I-95
Main St
River St
Elm St
Forbes Pl
Kimberly Ave
Church St
Hughes St
Bun St
Grove St
Holmes St
Dodge Ave
Robert Dr
French Ave
Tyler St
Kenne St
Edgar St
Prospect Pl
Prospect Pl Ext
Thompson Ave
Proto Dr
Meadow St
Pond St
State Hwy 142
Vista Dr
Summit Ave
Hill St
Sorrento Ave
Coe Ave
Brown Rd
Mansfield Grove Rd
Elliot St
Henry St
Stevens St
George St
1st Ave
Cosey Beach Ave
Cosey Beach R
State Hwy 337
Commerce St
Silver Sands Rd
Ellis Rd
Minor Rd
S End Rd
Stanton Rd
South St
Sibley Ln
Union St
Half Mile Rd
Barnes Rd
Brentwood Dr
Pinewood Dr
Rock Rd
Cheney Rd
Fenton Rd
Fenton Pl
Garry Dr
Allstat Way
Foxon Hill Rd
Phillop Rd
Robin Dr
Taylor Rd
Charnes Dr
Batt Ln
Birch Ln
Gary St
Pleasant Ave
Mill St
Strong St
Dale St
Crest Ave
Foxon Blvd
Russo Ave
Dee St
Florence St
Gene St
Englewood Dr
Granniss Rd
McLay Ave
Blake Ct
Bradley St
Golf Dr
View Ter
Legend Ln
Laurel St
Pondview Ter
Newton St
Stephen Webber St
State Hwy 100
US Hwy 1
I-95 Connecticut Turnpike
Main St
River St
Elm St
Forbes Pl
Kimberly Ave
Church St
Hughes St
Bun St
Grove St
Holmes St
Dodge Ave
Robert Dr
French Ave
Tyler St
Kenne St
Edgar St
Prospect Pl
Prospect Pl Ext
Thompson Ave
Proto Dr
Meadow St
Pond St
State Hwy 142
Vista Dr
Summit Ave
Hill St
Sorrento Ave
Coe Ave
Brown Rd
Mansfield Grove Rd
Elliot St
Henry St
Stevens St
George St
1st Ave
Cosey Beach Ave
Cosey Beach R
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Commerce St
Silver Sands Rd
Ellis Rd
Minor Rd
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83
BY
146
1
95
142
17
103
91
100
5
34
337
Legend
High Crash Intersection 2015-2017
High Crash Corridor 2015-2017
School
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0.5
1
2
Miles

Town Comments Continued

The Town Officials also expressed concern with the eastern end of CT-80 where a future apartment development is in the negotiation stages with Town Zoning Officials. The Town also expressed concern with the amount of trucks that frequent this route. Sidewalks are intermittent and shoulder widths are inadequate along this corridor. Town ordinance requires sidewalk construction for new development. The Town Representatives also stated motorists do not yield to pedestrians, even within crosswalks. Coe Avenue, south of CT-337, has many pedestrian and bicyclists. The Town did not prioritize Corridors 80 and 82. Corridor 82 is the Town's commercial center along US-1.Corridor 73 (CT-100) is the only north/south corridor in the Town. The Town representatives suggested the installation of a traffic roundabout and various other alternatives to assist in reducing congestion and addressing the safety issues along US-1, CT-100, Forbes Place and Kimberly Avenue, but public outreach attempts have been unsuccessful. Sidewalks are being installed along CT-100. Main Street underwent a streetscape redevelopment project in 2007, which the Town stated caused motorist confusion due to the design. The Town representatives stated that some of the congestion from traffic exiting I-95 to access US-1 is from motorists traveling to US-1 within East Haven and to destinations further east within Branford. According to the Town Representatives congestion during peak hours is an issue, particularly near the I-95 entrance and exit ramps because traffic backs up onto local roads.

Figure 15: CT-80 Foot Path

Figure 16: CT-80 East of Thompson Street

Field Site Inventory

CT-80, West of Thompson Street Corridors 78 and 79

CT-80 west of Thompson Street and east of I-91 is a four lane east-west corridor with primarily commercial buildings. There are intermittent sidewalks along both lanes of travel and foot paths through the grass interconnecting missing walkways indicating pedestrian frequency. Shoulders are very narrow. The speed limit is posted at 35 mph. Pavement markings are in fair condition. Traffic volume was moderate at off-peak hours. The corridor has moderate vertical and horizontal curvature. High turning movements were observed.

CT-80 East of Thompson Street

This section of CT-80 is primarily residential in contrast with the land use to the west of Thompson along CT-80. There are also municipal buildings and schools. Travel lanes are reduced to one in each direction. This section has sidewalks on both sides with adequate buffers providing pedestrians with better an improved environment than the commercial section of CT-80. The shoulder widths along this section of CT-80 are adequate.

Kimberly Avenue and Forbes Place

This intersection is highly congested due to the I-95 off-ramp that feeds into Frontage Road/US-1 which runs parallel to Kimberly Avenue. This is a common route for motorists exiting I-95 to access the Town.

The intersection of Kimberly Avenue and Parker Place is a three-way stop with a four-way approach. Traffic has a stop control along Kimberly Avenue, but there is no regulatory signage for motorists traveling southbound along Forbes Place. Traffic was noted queueing up in this area. The Town had a conceptual design plan, but there was a lack of public support.

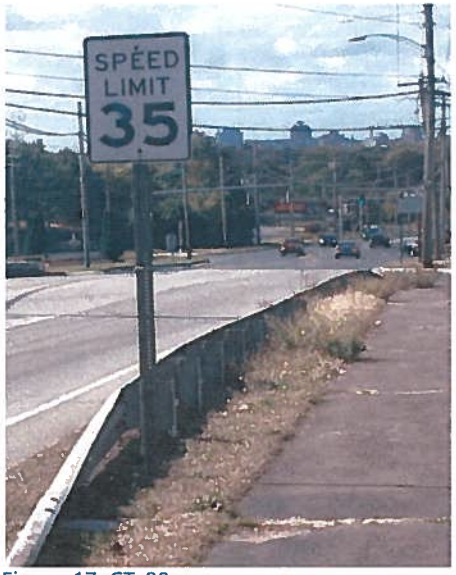


Figure 17: CT-80

Countermeasures

The Town could consider improving pedestrian amenities along CT-80, increasing lighting, installing rapid rectangular flashing beacon (RRFB), and conducting a townwide pedestrian awareness campaign (Watch for me CT http://www.watchformect.org). These strategies could enhance the corridor for pedestrians.

In general, the Town could adopt a Complete Streets Policy to ensure that all transportation users are considered in future design projects. Speed feedback signs could be strategically placed throughout the Town, especially along the data identified high crash corridors. In addition, high-visibility enforcement could help mitigate aggressive driving. A roundabout or other alternative solution could be considered again for the Forbes Place and Kimberly Avenue intersection. The Town has a conceptual design plan for this difficult intersection, but the public did not endorse the project. The Town could demonstrate how the current configuration is hazardous and due to the geometry and heavy traffic flow off I-95.

The Town could collaborate with enforcement and emergency management services to develop various safety public outreach campaigns, especially around speed. Coordinating with NHTSA's national campaign schedule could further boost the effectiveness of local efforts based on community needs[1]. The NHTSA campaign calendar highlights different behavioral focus areas throughout the year that could improve driver behaviors.

Materials that are provided by the United States Department of Transportation on the Transportation Safety Marketing for Speed Prevention web page[2] could be used. Enforcement and social norming campaign materials that are available to any community include banners, posters, television ads, radio ads, infographics, and other forms of media for behavioral initiatives. See the following countermeasure table for additional recommendations.

1 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). NHTSTA 2018 Communications Calendar. Retrieved from https://www.nhtsa.gov/links/NHTSA-2018-CommsCalendar.pdf

2 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). Campaigns Under Speed Prevention. Retrieved from https://www.trafficsafetymarketing.gov/get-materials/speed-prevention/stop-speeding-it-stops-you

Table 15: East Haven Countermeasure Considerations

Intersection or Corridor ID	Road or Route Names	Number of Crashes	Issues	Countermeasures	Estimated Cost	Estimated Time Frame
Corridor 72	Forbes Place	5	Speeding	Traffic Calming (Speed Tables)	Low to High	Short-Mid
			Pedestrian crossing	High-visibility Crosswalks	Low to Medium	Short-Mid
			Intersection Mobility	Roundabout or other alternative designs	High	Long
Corridor 73	CT-100	14	Needs Further Study			
Corridor74	Main Street	21				
Corridor 75	CT-100	18				
Corridor 76	CT-100	8				
Corridor77	CT-100	10				
Corridor 78	CT-80	9	High Curb Cuts	Corridor Access Management	Medium	Mid
			Pedestrian Safety	Rapid Rectangular Flashing Beacon	Medium	Mid
				Illumination	Low-Medium	Short-Mid
				Add Missing Sidewalks	Medium	Mid
				High-visibility Crosswalks	Low	Short
				High-visibility Enforcement	Low	Short
				Watch for Me CT Campaign	Low	Short
Corridor 79	CT-80	33	High Curb Cuts	See Above		
			Pedestrian Safety			
Corridor 82	US-1	9	Intersection Confusion	Redesign intersection, including driveway closures	Medium to High	Mid-Long
			Merging Traffic	Install Transverse Rumble Strips on US-1	Low	Short
			Front to Rear Crashes	Dynamic Speed Feedback Signs	Low	Short
Corridor 81	CT-142	20	Needs Further Study			
Corridor 83	CT-142	23				
Intersection BY	Main Street and Hemingway Avenue	18	Front to Rear Crashes	Traffic Signal Retroreflective Backplates	Low	Short
			Excessive width on Hemingway	Investigate Road Diet	Medium	Mid
				Pedestrian Refuge Island	Medium	Mid
				High-visibility Crosswalk	Medium	Mid
CT-80 east of Thompson Street			Speeding	USLIMITS2	Low	Short
				Dynamic Speed Feedback Signs	Low	Short
				High-visibility Enforcement	Low	Short
Townwide			Pedestrian Safety	Watch for me CT Campaign	Low	Short
			Motorized and non-motorized vehicle conflicts	Watch for me CT Campaign	Low	Short
				Town Adoption of Complete Streets Policy	Low	Short

TOWN OF GUILFORD

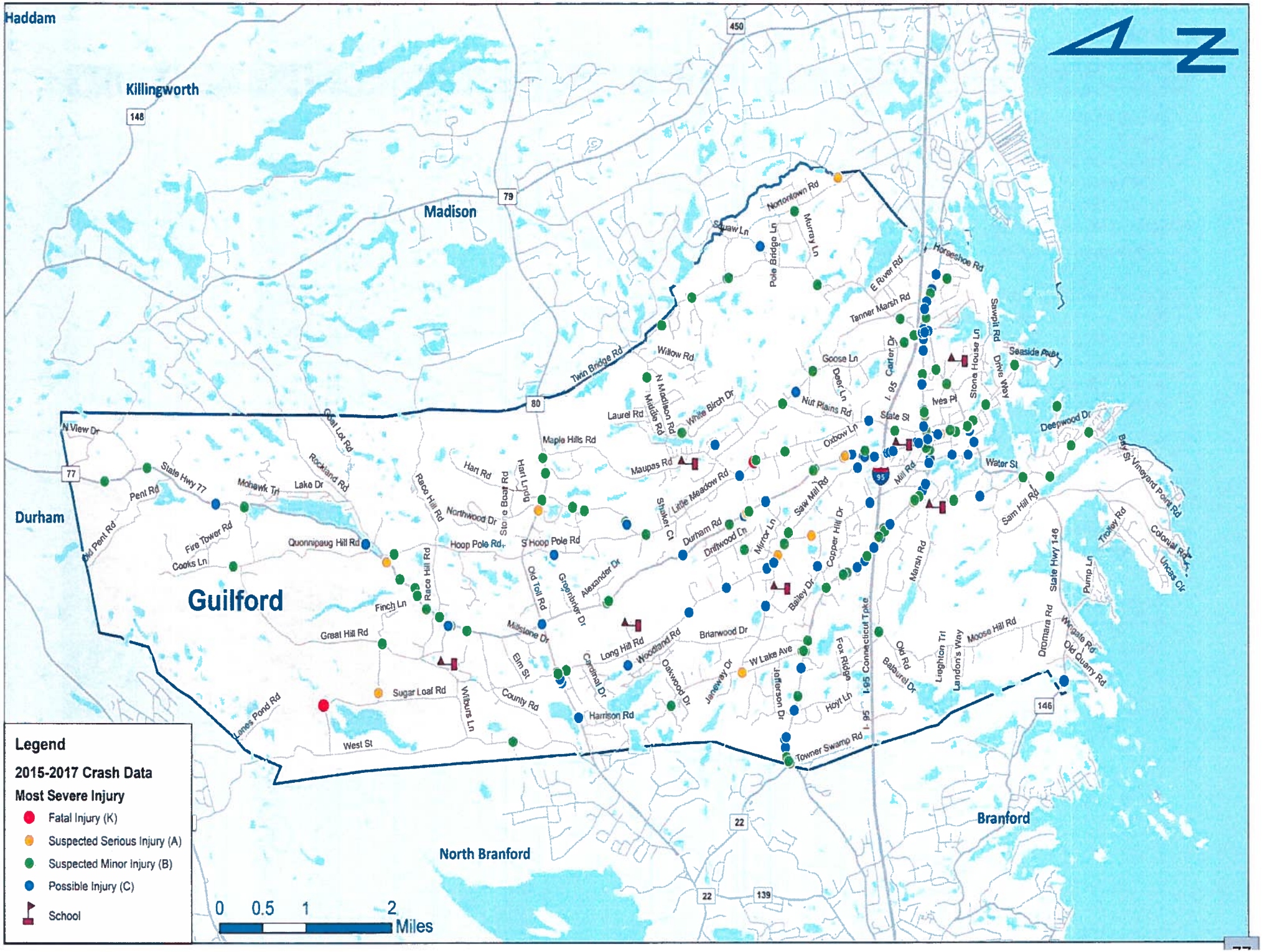
2016 US Census Population Estimate: 22,277
Area: 49.7 square miles
Population Density: 450 people per square mile
2016 Vehicle Miles Traveled (VMT): 241,423,775
2016 VMT per Capita: 10,837
Setting: Rural/Suburban
Town Representatives: Jim Portley (Town Engineer) and Jeffrey C. Hutchinson (Guilford Police Department)
Date of Meeting with Town Representatives: September 19, 2017
Data Identified High Crash Corridors: 102(US-1)**, 103** (CT-77)**, 104** (CT-77)**, 105** (CT-80)**, 106** (CT-90, Little Meadow Road)
Data Identified High Crash Intersections: N/A
Bike and Ped Locations: US-1 **(Corridors 102, 103)**
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 224

Overview

Guilford is a shoreline town bordered by Madison to the east, Durham to the north, Branford and North Branford to the west, and the Long Island Sound to the south.

For east and west transportation access there are three major roads that intersect Guilford; Interstate 95, CT-80 and US-1 (Boston Post Road). CT-77 allows for north and south town access.

Figure 18: Guilford Green


Haddam
Killingworth
Madison
Durham
Guilford
North Branford
Branford
Legend
2015-2017 Crash Data
Most Severe Injury
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
School
0 0.5 1 2
Miles

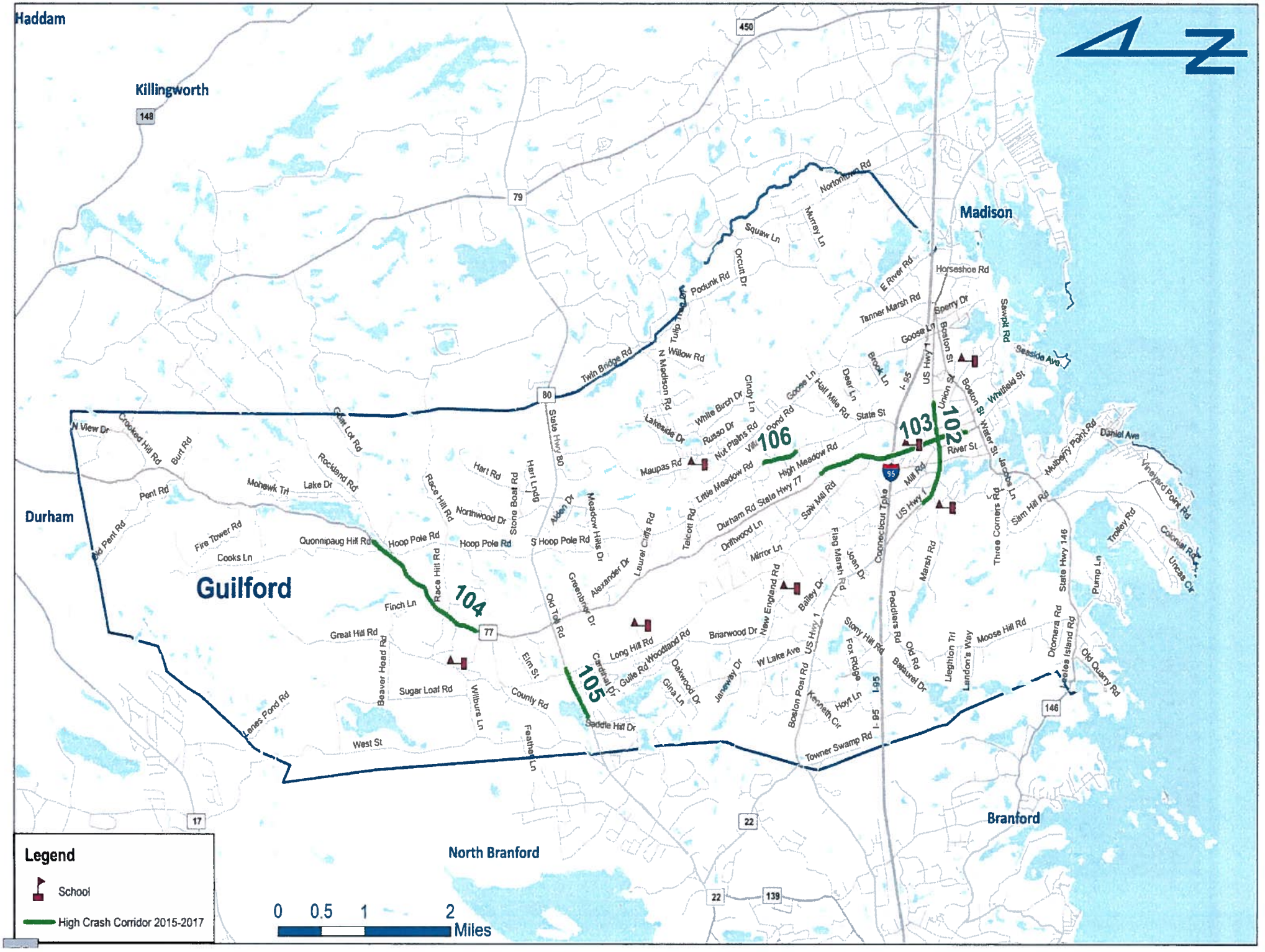

Haddam
Killingworth
Madison
Durham
Guilford
Branford
North Branford
104
105
106
102
103
Legend
School
High Crash Corridor 2015-2017
0 0.5 1 2
Miles

Figure 21: US-1 at CT-146

Town Comments

The Town representatives stated that rear-end crashes along Corridors 102 (US-1) and 103 (CT-77 from mile markers 0.9-1.93) were due to speeding and distracted driving. Traffic signal pedestrian crossing indications have been installed at the US-1 and CT-77 intersection.

Corridor 104 along CT-77 and 105 along CT-80 were discussed but the Town did not prioritize these roadway segments. According to the Town, Corridor 106 (Little Meadow Road) is not a high priority.

Even though limited access highways are not included in this study the Town did discuss I-95 at Exit 59 because it affects local traffic patterns. At the I-95 exit ramp at Goose Lane, the Town reported rear-end crashes. Due to the lack of an east bound off-ramp at Exit 60 in Madison, Madison residents use exit 59 in Guilford resulting in high traffic volumes within the Town. This congestion contributes to high crash rates at Exit 59. In the SCRCOG Long Range Transportation Plan this issue is addressed and the Town and Region look to CT DOT to address these interchange issues.

The intersection of US-1 and CT-146 is a concern for the Town. The two routes form a Y-intersection. CT DOT considered improving this roadway configuration by redesigning the Y-intersection to a T-intersection. This reconfiguration was not implemented.

The Town officials also expressed concern with Long Hill Road at New England Road, due to roadway geometry and a high volume of inexperienced motorists from the nearby Guilford High School. The Town reported that speeding and distracted driving throughout the Town are concerns. According to the local police data, 67-70% of all crashes are on state roads. Northern Guilford is rural, in contrast with the southern Region which is more suburban.


Figure 22: Goose Lane at I-95 Ramo

Field Site Inventory

Inventory of Goose Lane at I-95 Southbound Ramps (Exit 59) and US-1

The I-95 SB ramps intersect with Goose Lane approximately 75-feet north of US-1. There are two closely spaced signalized intersections that operate under the same controller. Vehicle queues back up between the intersections. Left-turn lanes are provided on all four approaches at Goose Lane/US-1 intersection. There is a No Turn on Red sign posted for westbound US-1 approach at Goose Lane; right turns on red permitted for all other approaches. The Mobil gas station on the SW corner of US-1 has an unsignalized driveway within the limits of the signalized intersection. The Shell gas station on the SE corner also has a driveway very close to the intersection.

Figure 23: US-1 at CT-146

At Long Hill Road and New England Road

This intersection is in a primarily residential neighborhood. Guilford High School is just west of this junction at 605 New England Road. Sidewalks are located on the southern side of New England Road and continue onto the western side of Long Hill Road. There is a one-way stop control on New England Road. This stop sign is low. There is limited sight distance to the south from New England Road. Due to the horizontal and vertical curvature sight distance is limited in both directions on Long Hill Road. The cable guide rail system along the eastern side of Long Hill Road is in poor condition. There are no shoulder edge lines. Travel lanes are wide, traffic volume is low; higher during school arrival and dismissal times.

Inventory of US-1 and CT-146

This is a Y-intersection with residential and commercial driveways. There are many curb cuts and turning movements along both roadways. The acute angle of intersection forces motorists on CT-146 to turn their head around to see oncoming motorists on eastbound US-1. The sight distance to the right (east) from CT-146 needs to be investigated to confirm whether it meets CT DOT guidelines. Adjacent land use is residential and commercial. The Route 146 approach is stop sign controlled. An intersection control beacon provides flashing red for the Route 146 approach and flashing yellow for the US-1 approaches. The pavement is in moderately good condition with center striping markings and 3-4 foot edge lines.

Speed limit on CT-146 is 30 mph. Traffic volume was moderate at off-peak hours. Motorists traveling west on US-1 turn left onto CT-146 causing cars to queue up. Cars then pass left turning motorists on the right side using the shoulder as a travel lane. There is no left turn lane, and the roadway width does not meet CT DOT guidelines for a bypass lane.

Figure 24: Long Hill Road at New England Road

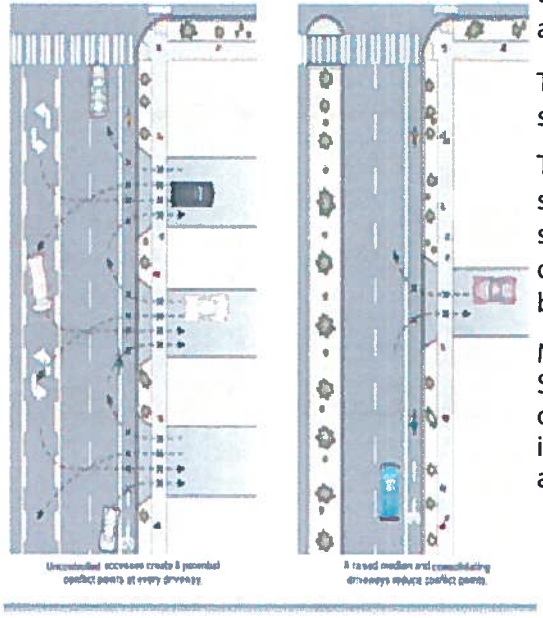
COUNTERMEASURES

At the intersection of Goose Lane at I-95 Southbound Ramps (Exit 59) and US-1, the Town could ask the State to consider evaluating signal phasing and timing changes to improve traffic flow. Future access management could be developed to potentially address driveway consolidation within limits of signalized intersection.[1]

Figure 25: US-1

At Long Hill Road and New England Road the Town could evaluate the adequacy of sight distance at this intersection. Removing vegetation is a short-term and low-cost solution. Slow Down pavement markings along Long Hill Road could encourage slower speeds. Adding edge lines and tightening up the travel lanes could also help with speed mitigation. Long-term treatments could include tightening up the intersection by reducing travel lanes, adding edge lines, adding a left turn only lane or a roundabout. Speed feedback signs could be used to alert motorists to travel speeds.

US-1 and CT-146: The Town could request the State to consider installing a left turn bay at the US-1/CT-146 intersection. The town could request CTDOT to investigate alternate designs. Corridor access management along US-1 could help with high turning movements. This could include driveway consolidation, limiting movement designs for driveways (such as right-in/right-out only). According to the FHWA successful corridor access management involves balancing overall safety and corridor mobility for all users along with the access needs of adjacent land uses[2].



The Town could request investigate installing variable message signs at prioritized locations and dynamic speed feedback signs at high speed sites.

The Town could collaborate with enforcement and emergency management services to develop various safety public outreach campaigns, especially around speed. Coordinating with NHTSA's national campaign schedule could further boost the effectiveness of local efforts based on community needs[3]. The NHTSA campaign calendar highlights different behavioral focus areas throughout the year that could improve driver behaviors.

Materials that are provided by the United States Department of Transportation on the Transportation Safety Marketing for Speed Prevention web page[4] could be used. Enforcement and social norming campaign materials that are available to any community include banners, posters, television ads, radio ads, infographics, and other forms of media for behavioral initiatives. See the following countermeasure table for additional recommendations.

1 U.S. Department of Transportation Federal Highway Administration. (2017). Proven Safety Countermeasures. Retrieved from https://safety.fhwa.dot.gov/provencountermeasures/#

2 U.S. Department of Transportation Federal Highway Administration. (2017). Corridor Access Management. Retrieved from https://safety.fhwa.dot.gov/provencountermeasures/corridor_access_mgmt/

3 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). NHTSTA 2018 Communications Calendar. Retrieved from https://www.nhtsa.gov/links/NHTSA-2018-CommsCalendar.pdf

Table 18: Guilford Countermeasure Considerations

Intersection or Corridor ID	Route Names	Number of Crashes	Issues	Countermeasures	Estimated Cost	Estimated Time of Completion
Corridor 102	US-1	24	Speeding	High-visibility Enforcement	Medium	Short-Long
				USLIMITS2	Low	Short
				Dynamic Speed Feedback Signs	Low	Short
			Distracted Driving	DDHVE Grant Application	Low	Short-Mid
				High-visibility Enforcement	Medium	Short
				Distracted Driving Campaign	Low	Short
			Front to Rear Crashes	Traffic Signal Retroreflective Backplates	Low	Short
			Bike Crashes	Investigate Bike Lanes	Low to Medium	Short-Mid
			High Turning Movements	Corridor Access Management	Medium	Mid
Corridor 103	CT-77	27	Speeding	Narrow Lanes	Low to Medium	Short-Mid
			Dark not lighted Crashes	Investigate Roadway Illumination	Medium	Mid
			Pedestrians	High-visibility Crosswalks on southern end of corridor	Low to Medium	Mid
			Distracted Driving	See Above		
Corridor 104	CT-77	11	Needs Further Study		TBD	
Corridor 105	CT-80	10				
Corridor 106	Little Meadow Road	3				
US-1 at CT-146			Illegal shoulder passing	Investigate Alternate Designs	Medium	Mid
			Skewed alignment	Investigate Alternate Designs	High	Long
				Road Safety Audit	Low	Short
Long Hill Road at New England Road			Sight Distance	Slow Down Pavement Markings	Low	Short
			Speeding	Add Edge Lines	Low	Short
				High-visibility Enforcement	Medium	Short-Mid
Goose Lane at I-95 Southbound Ramps/US-1			Congestion	Signal Optimization	Medium	Mid
				Variable Message Signs to Alert Motorists to Local Traffic Conditions	Low	Short
Townwide			Lane Widths	Reduce Lane Widths to 11' where feasible	Low	Short
			Speeding	Dynamic Speed Feedback Signs	Low	Short

TOWN OF HAMDEN

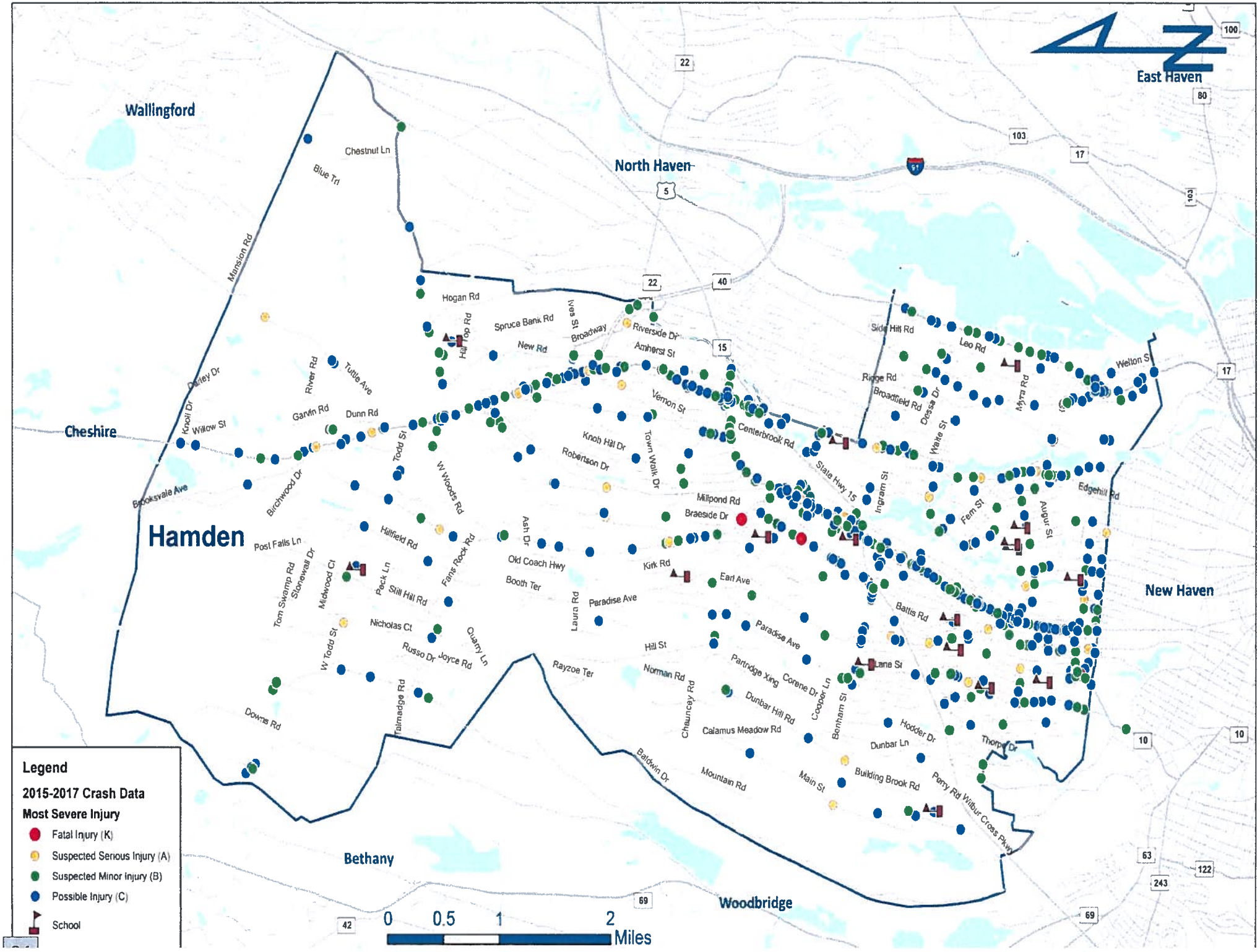
2016 US Census Population Estimate: 61,125
Area: 33.1 square miles
Population Density: 1,800 people per square mile
2016 Vehicle Miles Traveled (VMT): 326,624,630
2016 VMT per Capita: 5,344
Setting: Suburban/Urban
Town Representatives: John Capiello (Hamden PD) Edward Armeo (Hamden PD), Brett Ferrara (Hamden PD)
Date of Meeting with Town Representatives: September 29, 2017
Data Identified High Crash Corridors: 13 **(CT-10, Dixwell Avenue)**, 15 **(Whitney Avenue)**, 16 **(CT-10, Dixwell Avenue)**, 17 **(CT-10, Whitney Avenue)**, 124 **(Fitch Street)**
Data Identified High Crash Intersections: DK **(CT-10 at Benham Street)**, BO **(CT-10 at Skiff Street)**, EQ **(CT-10 at Dixwell Avenue)**
Data Identified High Crash Bike and Ped Locations: CT-10 (Corridor 13), CT-10 (Corridor 17), Fitch Street (Corridor 124), CT-10 at Dixwell Avenue (Intersection EQ)
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 1069

Overview

Hamden is an urban/suburban town. It is bordered by North Haven to the east, Cheshire to the north, New Haven to the south, and Woodbridge and Bethany to the west. Southern Hamden is more urban and northern area is more rural.

The Wilbur Cross Parkway runs through the center of the town connecting Hartford to the north and the New York metropolitan area to the south. CT-40 links to Interstate 91. The main route from the town center to New Haven is Dixwell Avenue (CT-10).

Figure 26: Hamden Town Hall


Wallingford
North Haven
East Haven
Cheshire
Hamden
New Haven
Bethany
Woodbridge
Legend
2015-2017 Crash Data
Most Severe Injury
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
School
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Chestnut Ln
Blue Trl
Mansion Rd
Hogan Rd
Spruce Bank Rd
New Rd
Broadway
Riverside Dr
Amherst St
Vernon St
Centerbrook Rd
State Hwy 15
Side Hill Rd
Leo Rd
Welton St
Ridge Rd
Broadfield Rd
Dessie Dr
Myra Rd
Waite St
Ingram St
Fern St
Augur St
Edgehill Rd
Millpond Rd
Braeside Dr
Knob Hill Dr
Robertson Dr
Town Walk Dr
Todd St
W Woods Rd
Ash Dr
Old Coach Hwy
Booth Ter
Kirk Rd
Earl Ave
Paradise Ave
Laura Rd
Hillfield Rd
Farms Rock Rd
Post Falls Ln
Tom Swamp Rd
Stonewall Dr
Midwood Ct
Peck Ln
Still Hill Rd
Nicholas Ct
W Todd St
Russo Dr
Joyce Rd
Quarry Ln
Talmadge Rd
Downs Rd
Rayzoe Ter
Hill St
Norman Rd
Chauncey Rd
Partridge Xing
Corene Dr
Dunbar Hill Rd
Calamus Meadow Rd
Coogan Ln
Bonham St
Lane St
Battis Rd
Hodder Dr
Dunbar Ln
Thorpe Dr
Baldwin Dr
Mountain Rd
Main St
Building Brook Rd
Perry Rd Wilbur Cross Pkwy
Brooksvale Ave
Birchwood Dr
Garvin Rd
Dunn Rd
River Rd
Tuttle Ave
Derrey Dr
Knoll Dr
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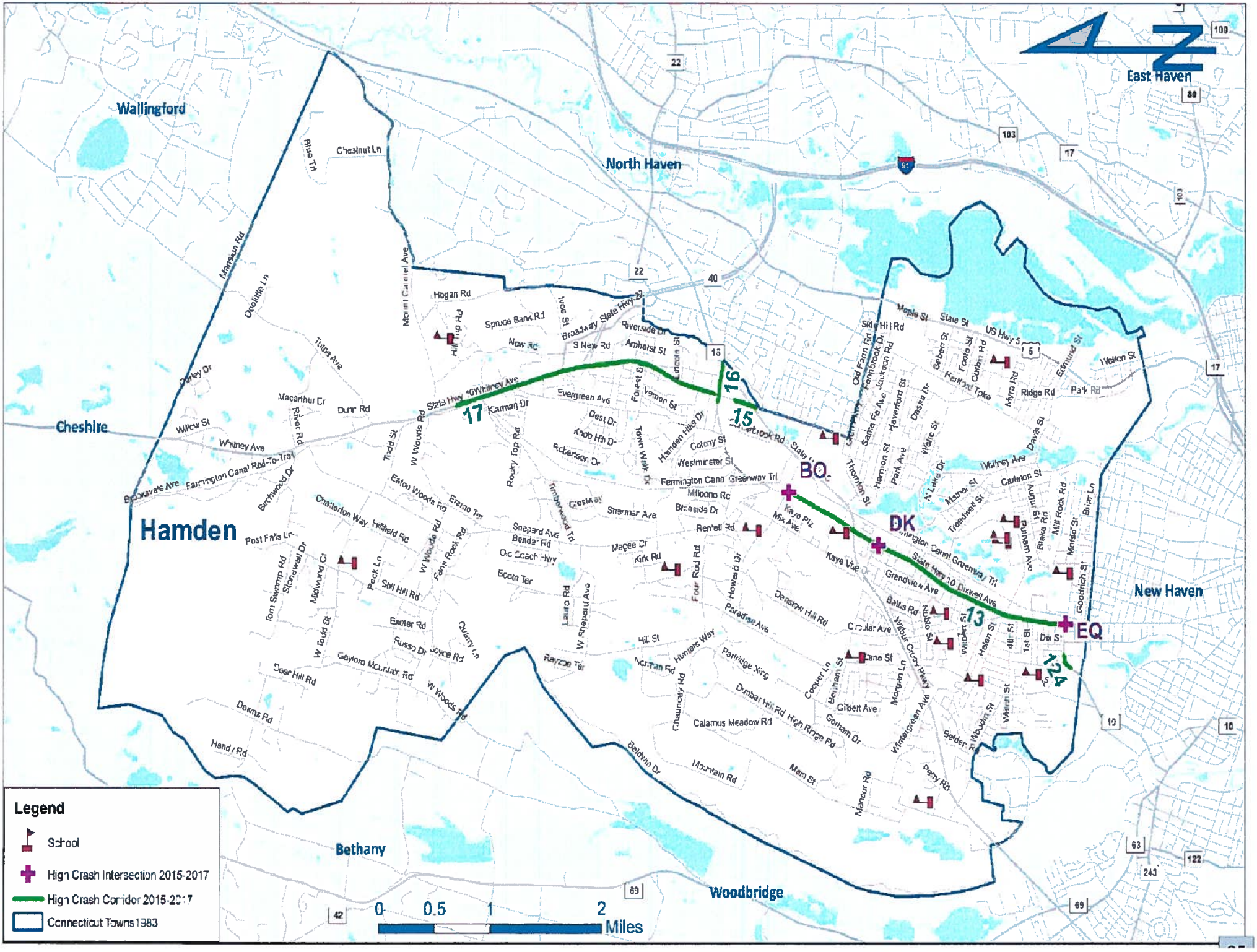
Wallingford
North Haven
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Woodbridge
Legend
School
High Crash Intersection 2015-2017
High Crash Corridor 2015-2017
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14
Whitney Ave
State Hwy 10
Farmington Canal Greenway Trl
Dixwell Ave
Grand Ave
Broadway
Dixwell Ave
Ridge Rd
Park Rd
Mill Rock Rd
Goodrich St
Hartford Turnpike
Mansfield Rd
Cheshire Rd
Dodge Ave
Chestnut Ln
Hogan Rd
Spruce Bank Rd
Hill Top Rd
Mount Carmel Ave
Lincoln St
Amherst St
Riverside Dr
Maple St
State St
US Hwy 5
Side Hill Rd
Old Farm Rd
Hemlock Dr
Jackson Rd
Sylvan Ave
Santa Fe Ave
Hereford St
Dessa Dr
Foote St
Cuban Rd
Edmund St
Welton St
Myra Rd
Daisy Dr
Wells St
Dwight St
Carleton St
Augur St
Blake Rd
Bunnell Ave
Briar Ln
Trowbridge St
Munson St
Davis St
Whitney Ave
Dunn Rd
Macarthur Dr
River Rd
Wilbur St
Todd St
W Woods Rd
Evergreen Ave
Forest St
Vernon St
Dent Dr
Knob Hill Dr
Ackerson Dr
Rocky Top Rd
Town Walk Dr
Hamden Hills Dr
Colony St
Westminster St
Fenwick Rd
Miloono Rd
Breeside Dr
Sherman Ave
Crestway
Timberwood Trl
Eaton Woods Rd
Elaine Ter
Charleton Way
Whitfield Rd
Birchwood Dr
Beaver Ave
Farmington Canal Rail-to-Trail
Post Falls Ln
Fern Swamp Rd
Stonewall Dr
Mohawk Ct
Peck Ln
Still Hill Rd
Fawn Rock Rd
W Woods Rd
Shepard Ave
Bonde Rd
Old Coach Hwy
Booth Ter
Macee Dr
Kirk Rd
Four Rod Rd
Howard Dr
Rentell Rd
Kaye Plz
Mix Ave
Kaye Vue
Grandview Ave
Dunstan Hill Rd
Paradise Ave
Circular Ave
Balls Rd
Noble St
Webster St
Helen St
Dix St
Exeter Rd
Russo Dr
Joyce Rd
Quarry Ln
Gaylord Mountain Rd
Deer Hill Rd
W Woods Rd
Downs Rd
Hand Rd
Lamont Rd
W Shepard Ave
Rayzoe Ter
Hill St
Humiston Way
Norman Rd
Partridge Xing
Cooper Ln
Bentham St
Morgan Ln
Winterbrook Ave
Gilbert Ave
Gorham Dr
Chauncey Rd
Calamus Meadow Rd
Dunbar Hill Rd
High Ridge Rd
Belgian Dr
Mountain Rd
Main St
Meinzer Rd
Perry Rd
Selden St
Malden St
Whalley Ave
Winchester Ave
Wilbur Cross Pkwy
Morris Cove
Sackett Point Rd
Quinnipiac River
Lake Saltonstall
Lake Whitney
Lake Watrous
Sleeping Giant State Park
Mount Carmel
Mount Sanford
Mount Higby
Mount Denham
Mount Pleasant
Mount Prospect
Mount Tom
Mount Vernon
Mount Zion
Mount Pisgah
Mount Misery
Mount Carmel
Mount Sanford
Mount Higby
Mount Denham
Mount Pleasant
Mount Prospect
Mount Tom
Mount Vernon
Mount Zion
Mount Pisgah
Mount Misery

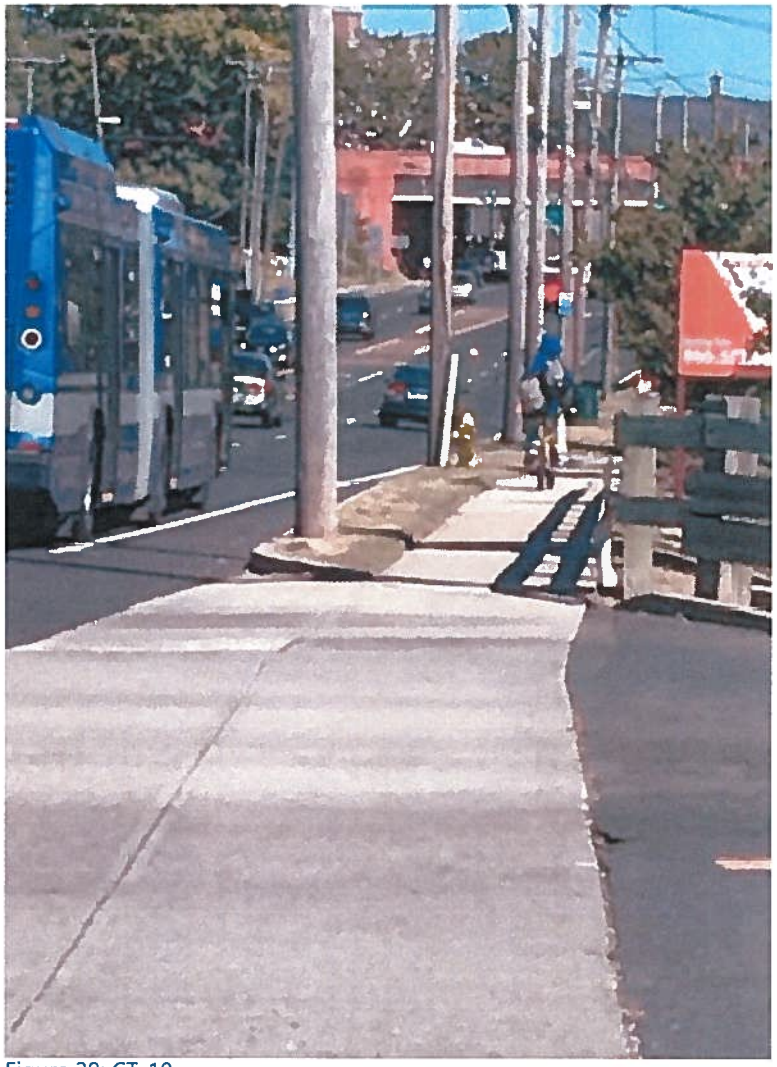


Figure 29: CT-10

Town Comments

The Town representatives stated that crashes along Corridors 16 and 17 along CT-10 are due to high volume of traffic. The Town Representatives commented that Corridor 17 along Whitney Avenue north of Mount Carmel is commonly traveled by Quinnipiac University students, there are few pedestrian amenities. Students walk along the shoulder predominantly under darkened conditions. The Town and University have made efforts to address safety issues concerning students crossing Whitney Avenue. The Town representatives stated that there have been several crashes involving pedestrians along this corridor.

Hamden Police representatives noted that the CT-10 and Skiff Street Extension (Intersection BO) crashes are partially attributed to the lack of sufficient left-hand turn clearance time for southbound CT-10 motorists traveling onto Skiff Street Extension. There is insufficient all-red clearance time between the southbound left-turn phase and the northbound phase, resulting in side angle collisions with motorists attempting to clear the three lanes to reach Skiff Street Extension. The left turn bay area is inadequate. The Town representatives elaborated that heavy traffic volume is due to limited alternative east west corridors within the Town.

The Dixwell Avenue and Whitney Avenue intersection along Corridor 16 is also a concern for the Town. CT DOT Signal Replacement Project (SPN 61-151) is currently addressing the timing issues at this junction. This intersection is in a high volume high congestion area. CT-10 was recently repaved which the has resulted in an increase in speeding. The Town conducted public hearings to reduce the two-travel lane configuration along CT-10 (Whitney Avenue) to one through lane in both directions and the public rejected this proposal.

The identified fatality at Hartford Turnpike and Davis Street is attributed to high speeds. Ridge Road at Haverford Street has sight distance issues. CT-10 (Fitch Avenue) is a concern for the Town. There is conflict between Tilcon trucks and SCSU student pedestrians and motorists.

Speeding is an issue along CT-10 after 10 P.M. when the corridor's traffic signals convert to flashing yellow beacons. Two cut-through routes that are a concern are Shephard Avenue and Evergreen Avenue. Town has conducted high visibility speed enforcement campaigns.

Field Site Inventory

CT-10 and Skiff Street Extension High Crash Intersection BO is at CT-10 and Skiff Street Extension, located in a commercial area of Hamden. This is a four-way signalized intersection with a grassy pedestrian median dividing traffic on the northside of the intersection along CT-10. There is a leading exclusive left turn phase for southbound CT-10 (protected only). The all-red clearance following the left-turn phase does not provide sufficient time for southbound left-turning vehicles to clear the intersection before the northbound through movement vehicle phase begins. This creates conflicts between northbound motorists and southbound left-turns when the phase changes. Long queues and congestion contribute to aggressive driving and the quick acceleration on green for CT-10 northbound travel.

Figure 30: Pedestrians crossing CT-10 at Skiff Street

High Crash Intersection DK at CT-10 (Dixwell Avenue) and Benham Street/Parkway Plaza is a four-way signalized intersection in a highly commercial area. There are protected left turns for all approaches. There are painted crosswalks and pedestrian signals along the southern and western legs of the intersection. Trees limit sight distance to the left from the eastbound Benham approach. There is a no right-turn on red sign at eastbound Benham and CT-10.

The crossing is flush with the driveway entrance to Parkway Plaza and is missing pedestrian signal heads along the eastern and northern segments of the intersection.

The pedestrian crossing distance across Parkway Plaza driveway (eastern leg) is long and there are no detectable warning strips or pedestrian signals provided. There was a cyclist traveling on the sidewalk. Shoulder widths are inadequate for cyclists.

Figure 31: CT-10 and Benham Street/Parkway Plaza

Countermeasure Considerations

The Town and CT DOT could consider signal timing modifications at CT-10 and Skiff Street Extension, primarily for the left turn clearance time. Installing Medians or pedestrian crossing islands, a FHWA proven safety countermeasure, could enhance multi-modal transportation. The Town and CT DOT could increase all-red clearance interval timing for southbound CT-10 to allow sufficient time for left turning traffic. This modification could mitigate angle crashes and near misses. In addition, the Town and CT DOT could evaluate the yellow change intervals. The Town, with CT DOT approval and proper engineering, could also install raised crosswalks at this intersection, as well as others around the Town.

Table 22: Hamden Countermeasure Considerations Continued

At CT-10, (Dixwell Avenue) and Benham Street/Parkway Plaza, the Town could request the State restripe center lines and arrows for higher visual cues. The Town and CT DOT could also evaluate the yellow change intervals. Shortening the crossing on Parkway Plaza driveway and installing missing pedestrian signals and ADA compliant detectable warning strips could enhance the pedestrian environment. The Town could also consider applying corridor access management treatments where applicable. This is a proven FHWA safety countermeasure. Treatments could include driveway consolidation or relocation, restricting movements exiting driveways, installing medians to prevent across-roadway travel[1].

In the area around SCSU, Corridor 124, the Town could request a road safety audit to determine countermeasures[2].

Along Corridor 17, Whitney Avenue, the Town could consider installing walkways or more well-defined roadway shoulders to accommodate pedestrians. This is another proven safety countermeasure for improved pedestrian mobility and safety . In addition, installing medians or pedestrian crossing islands could also improve the pedestrian environment. Speed feedback signs could be strategically placed throughout the Town, in particular along the data identified high crash corridors.

The Town could collaborate with enforcement and emergency management services to develop various safety public outreach campaigns, especially around speed. Coordinating with NHTSA's national campaign schedule could further boost the effectiveness of local efforts based on community needs . The NHTSA campaign calendar highlights different behavioral focus areas throughout the year that could improve driver behaviors.

Materials that are provided by the United States Department of Transportation on the Transportation Safety Marketing for Speed Prevention web page[3] could be used. Enforcement and social norming campaign materials that are available to any community include banners, posters, television ads, radio ads, infographics, and other forms of media for behavioral initiatives. See the following countermeasure table for additional recommendations.

Intersection or Corridor ID	Road or Route Names	Number of Crashes	Issues	Countermeasures	Estimated Cost	Estimated Time Frame
Corridor 13	CT-10 (Dixwell Ave)	224	Congestion	Public Transportation Promotion/ Incentives	Low	Short - Long
			Pedestrians	Traffic Calming	Low to Medium	Short
			Long distance intervals between intersections	Add Mid-Block crossings	Low	Short
			Missing Crosswalks	High-visibility Crosswalks	Low to Medium	Short
			Wide Travel Lanes	Narrow travel lanes	Low to Medium	Short-Mid
			High Curb Cuts	Corridor Access Management	Medium	Mid
Corridor 15	Whitney Avenue	14	Congestion	See Above		
			High Frequency Curb Cuts			
Corridor 16	CT-10 (Dixwell Ave)	29	Congestion	CT DOT Signalization Project	TBD	
Corridor 17	CT-10 (Whitney Ave)	84	Speed	USLIMITS2	Low	Short
				Dynamic Speed Feedback Signs	Low	Short-Mid
				High-visibility Enforcement	Medium	Short

1 U.S. Department of Transportation Federal Highway Administration. (2017). Proven Safety Countermeasures: Corridor Access Management. Retrieved from https://safety.fhwa.dot.gov/provencountermeasures/corridor_access_mgmt

2 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). NHTSTA 2018 Communications Calendar. Retrieved from https://www.nhtsa.gov/links/NHTSA-2018-CommsCalendar.pdf

Intersection or Corridor ID	Road or Route Names	Number of Crashes	Issues	Countermeasures	Estimated Cost	Estimated Time-Frame
Corridor 124	CT-10 (Fitch Street/ Dixwell Avenue)	13	Motorized and Non-Motorized Vehicle Conflicts	Investigate and Improve Pedestrian amenities	Low-medium	Short-Mid
				Bike Lanes	Medium to High	Short-Mid
			Mid-Block crossing	In-Street Pedestrian crossing Sign	Low	Short
Intersection DK	CT-10 at Benham Street	12	Pedestrian Safety	Restripe Center Lines and Pavement Arrows	Low	Short
				Shorten or Raise Driveway crossing	Medium	Mid
Intersection BO	CT-10 at Skiff Street	22	Pedestrian Safety	Remove Vegetation from Pedestrian Beacons	Low	Short
				Pedestrian Refuges	Medium	Mid
				High-visibility Crosswalk	Medium	Mid
			Angle Crashes	All-red Clearance Timing	Low	Short
Intersection EQ	CT-10 at Dixwell Avenue	11	Faded Pavement Markings	Restripe	Low	Short
			Pedestrian Safety	Driveway Access management	Medium	Mid
Townwide			Speed	See Above		
			Pedestrian Safety	Watch for Me CT Campaign	Medium	Mid
			Motorized and Non-Motorized Vehicle Conflicts	Distracted Driving High-visibility Enforcement	Medium	Mid

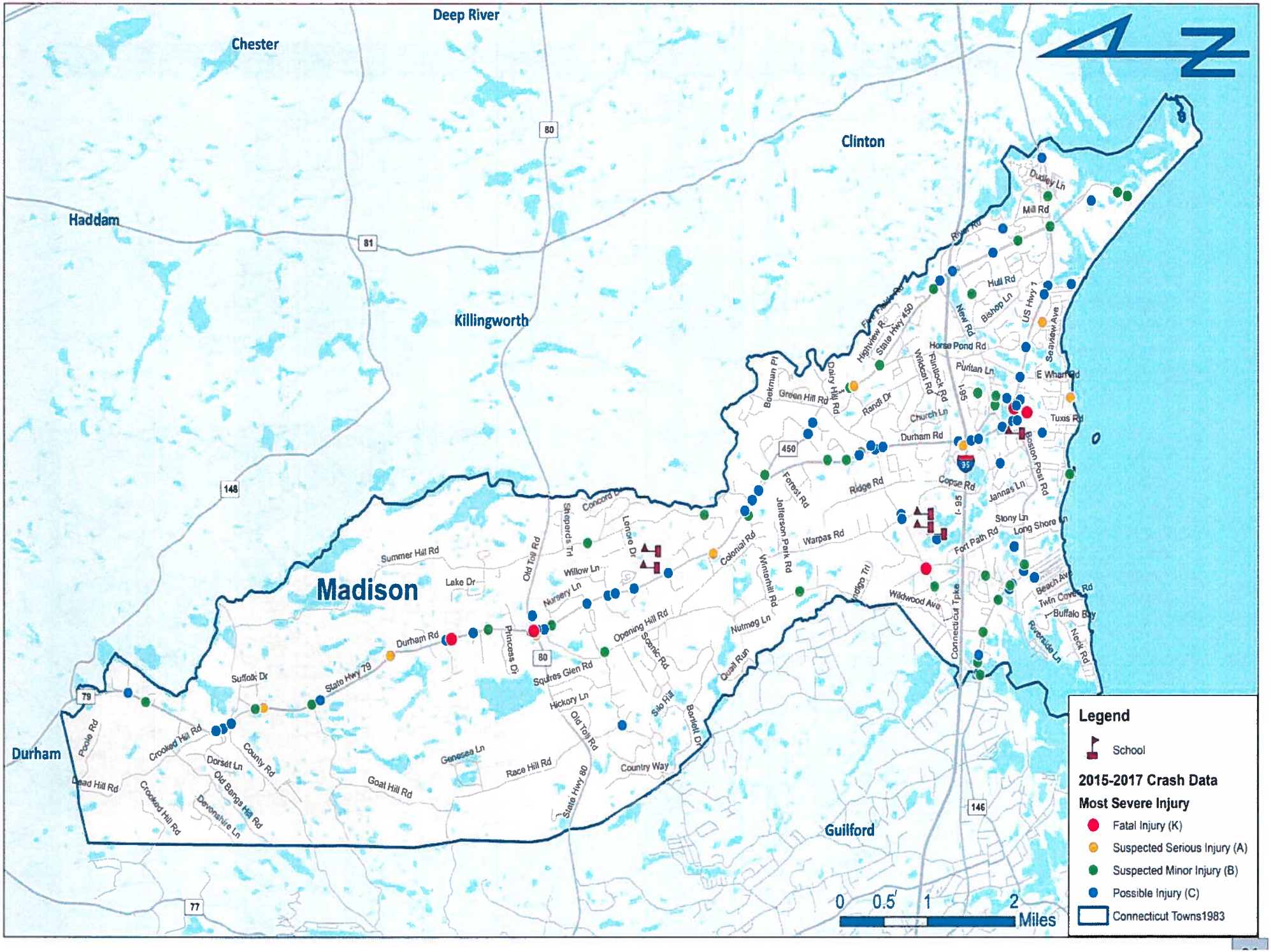
TOWN OF MADISON

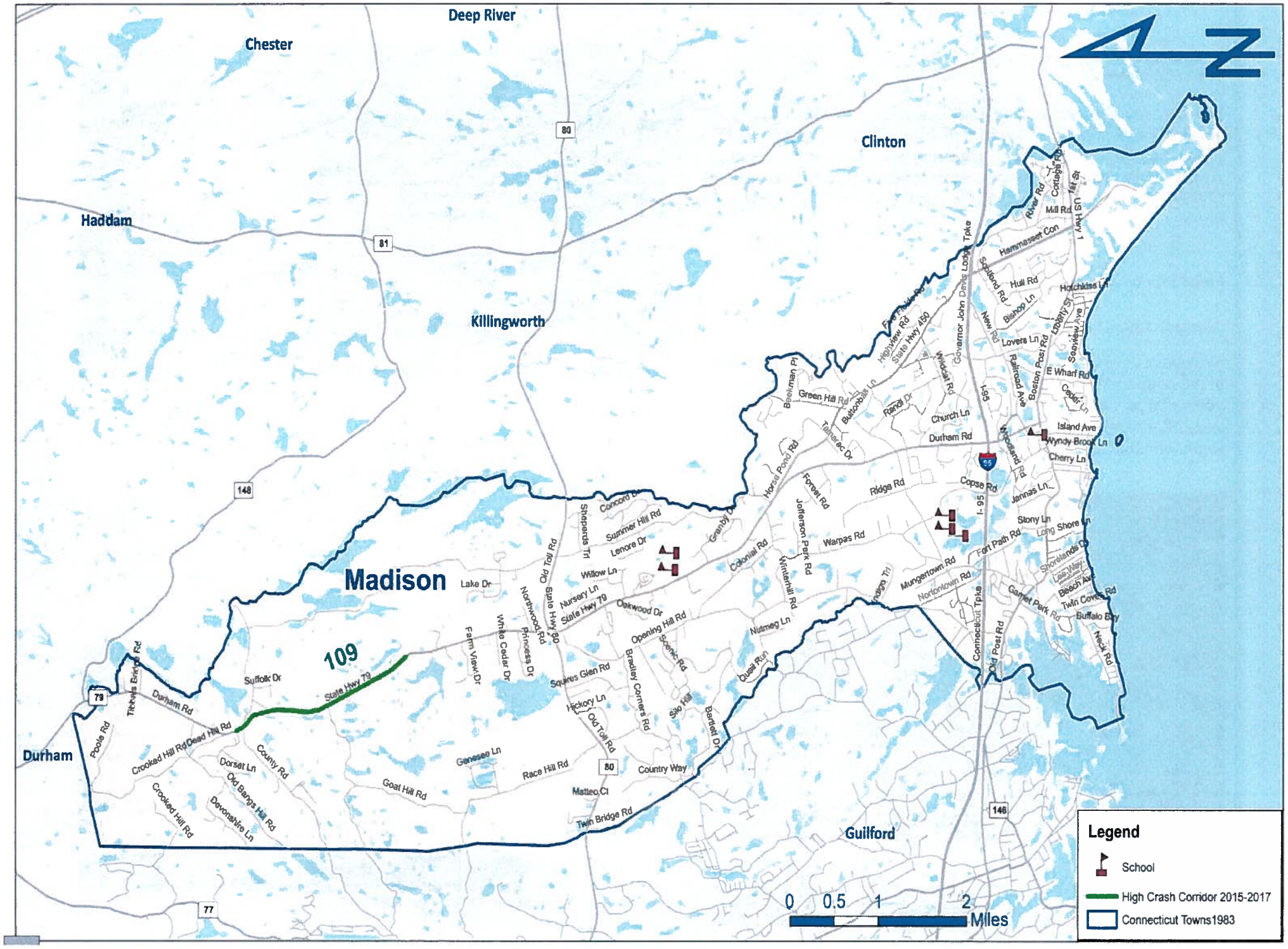
2016 US Census Population Estimate: 18,151
Area: 36.8 square miles
Population Density: 496 people per square mile
2016 Vehicle Miles Traveled (VMT): 210,178,315
2016 VMT per Capita: 11,579.43
Setting: Suburban
Town Representatives: Tom Banisch (First Selectman), Chief Drumm (Madison Police Department)
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 129
Data Identified High Crash Corridors: CT-79, Durham Road (**Corridor 109**)
Data Identified High Crash Intersection: NA
Bike and Ped Locations: NA

Overview

Madison is bordered by Clinton and Killingworth to the east, Guilford to the west, Long Island Sound to the south, and Durham to the north. The main thoroughfares in Madison are Interstate 95, US-1, CT-450, CT-80, and CT-79. There was one high crash corridor identified in Madison on CT-79.

Figure 32: Genesee Rec Area


Deep River
Chester
Clinton
Haddam
Killingworth
Madison
Durham
Guilford
80
81
148
79
77
146
450
95
Legend
School
2015-2017 Crash Data
Most Severe Injury
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
Connecticut Towns1983
0 0.5 1 2
Miles


Deep River
Chester
Clinton
Haddam
Killingworth
Madison
Durham
Guilford
109
Legend
School
High Crash Corridor 2015-2017
Connecticut Towns1983
0 0.5 1 2 Miles

Town Comments

The Town representatives agreed with the data-driven high crash corridor as the area of priority for safety countermeasure consideration. They stated that they did not require a meeting with us to confirm our findings. The only comment they made was regarding the crashes near the CT-79/CT-80 circular intersection. They stated speeding is a contributing factor.

Figure 35: CT-79

Field Site Inventory

Corridor 109: CT-79 (Durham Road)

High crash Corridor 109 is along CT-79 (Durham Road). The north half of the segment from Goat Hill Road to Dorset Lane consists of several horizontal curvatures. The southern half of the segment is a straight away. There are intersections along this segment with overgrown vegetation that needs to be managed. The speed limit is 45 mph.

Figure 36: Corridor 109, CT-79

CT-80 and CT-79 (Durham Road)

This is a circular intersection with a yield-controlled entry. There are two driveway access points at this approach. The speed limit on both intersecting roads is 50 mph. There is no advanced signage to alert vehicles to decelerate. Pavement and pavement markings are in good condition.

Figure 37: Corridor 109 CT-79

Countermeasure Considerations

CT-79 (Corridor 109) could benefit from speed control. Although not typically utilized in Connecticut, converging chevron markings are recognized as surface markings that work well on rural main roads by the federal highway administrations[1]. These markings are placed so that the width of the patterns and the space between each chevron decreases as drivers pass over them giving the illusion that vehicles are traveling faster, and that the lane is narrowing[2]. This corridor could also benefit from enhanced delineation and high friction pavement to alert motorists to drive at safe speeds.

A reduction in speed could increase safety on high crash roads. The World Health Organization explains that higher speeds contribute to higher risk of a crash and to higher severity of a crash. USLIMITS2 is a tool provided by the FHWA to determine safe speeds for any road type. This tool uses multiple road safety criteria to show if the current posted speed is appropriate or if it should be adjusted[3]. This tool could be used on CT-79 (Coridoor 109) and also for the intersection of CT-79 and CT-80 to evaluate if the current speeds on the intersecting roads are appropriate for a roundabout approach.

The Town could collaborate with enforcement and emergency management services to develop various safety public outreach campaigns, especially around speed. Coordinating with NHTSA's national campaign schedule could further boost the effectiveness of local efforts based on community needs[4]. The NHTSA campaign calendar highlights different behavioral focus areas throughout the year that could improve driver behaviors.

Materials that are provided by the United States Department of Transportation on the Transportation Safety Marketing for Speed Prevention web page[5] could be used. Enforcement and social norming campaign materials that are available to any community include banners, posters, television ads, radio ads, infographics, and other forms of media for behavioral initiatives. See the following countermeasure table for additional recommendations.

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1 U.S. Department of Transportation Federal Highway Administration. (2017). Engineering Countermeasures for Reducing Speeds. Retrieved from https://safety.fhwa.dot.gov/speedmgt/ref_mats/eng_count/

2 U.S. Department of Transportation Federal Highway Administration. (2017). Factors Influencing Operating Speeds and Safety on Rural and Suburban Roads. Retrieved from https://www.fhwa.dot.gov/publications/research/safety/15030/009.cfm

3 U.S. Department of Transportation Federal Highway Administration. (2017). Proven Safety Countermeasures: USLIMITS2. Retrieved from https://safety.fhwa.dot.gov/provencountermeasures/uslimits2/

4 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). NHTSTA 2018 Communications Calendar. Retrieved from https://www.nhtsa.gov/links/NHTSA-2018-CommsCalendar.pdf

5 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). Campaigns Under Speed Prevention. Retrieved from https://www.trafficsafetymarketing.gov/get-materials/speed-prevention/stop-speeding-it-stops-you

High Crash Intersection or Corridor ID	Roadway Numbers	Number of Crashes	Issues	Countermeasures	Estimated Cost	Estimated Time of Completion
109	CT-79	7	Speeding	Converging Chevron Markings	Low	Short
				High-visibility Enforcement	Low-Medium	Short-Mid
				USLIMITS2	Low	Short
				Dynamic Speed Feedback Signs	Low	Short
			Sight Distance	Vegetation Control	Low	Short
			Horizontal Curvature	Enhanced Delineation	Low	Short
				Increased Pavement Friction	Low	Short
CT-79 & CT-80			Speeding	USLIMITS2	Low	Short
				Additional Warning signage	Low	Short
				Dynamic Speed Feedback Signs	Low	Short
Townwide			Speed	Speed Safety Campaign	Low-Medium	Short-Mid
				Dynamic Speed Feedback Signs	Low	Short
			Pedestrian Safety	Watch for Me CT Campaign	Low	Short

CITY OF MERIDEN

Population 60,868
Area: 24.16 square miles
Population Density: 2,467 people per square mile
2016 Vehicle Miles Traveled (VMT): 491,650,985
2016 VMT per Capita: 8,246
Setting: Urban/ Suburban
City Representative: Bob Bass (Director of Public Works)
Date of Meeting with City Representatives: October 6, 2017
Data Identified High Crash Corridors: East and West Main Street (**3 and 5**), US-5 (**4, 6 and 7**)
Data Identified High Crash Intersections: East Main Street and Pratt Street (**AB**), West Main Street (**DQ**), US-5 and Camp Street (**DU**)
Data Identified High Crash Bike and Pedestrian Locations: East Main Street **(Corridor 3) and** US-5 **Corridors 6 and 7**
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 1,127

Overview

Meriden is bordered by Wallingford to the south, Cheshire to the west, Berlin and Southington to the north, and Middletown and Middlefield to the east. The City's main thoroughfares are I-91, I-691, US-5, and CT-15.

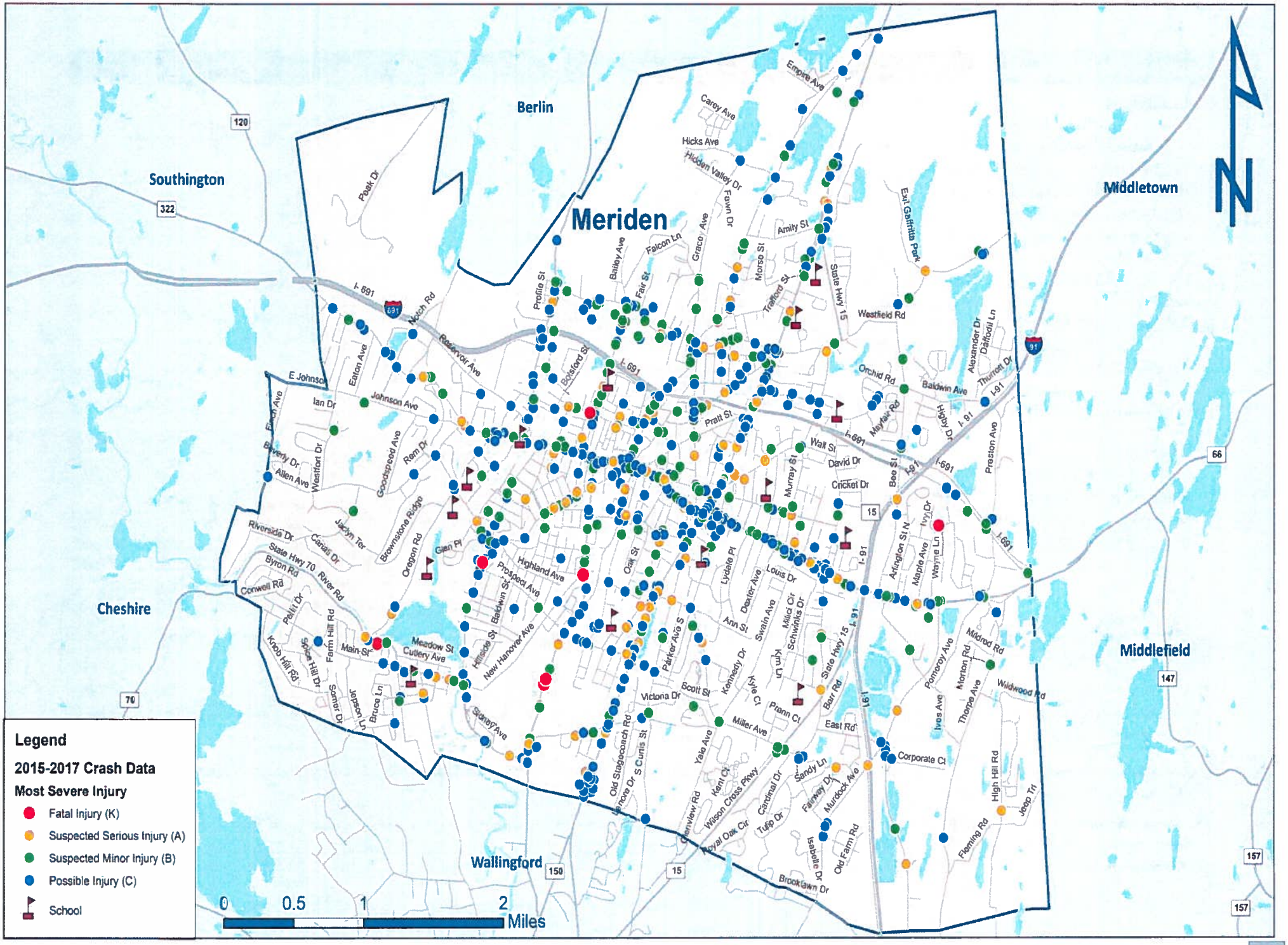
Town Comments

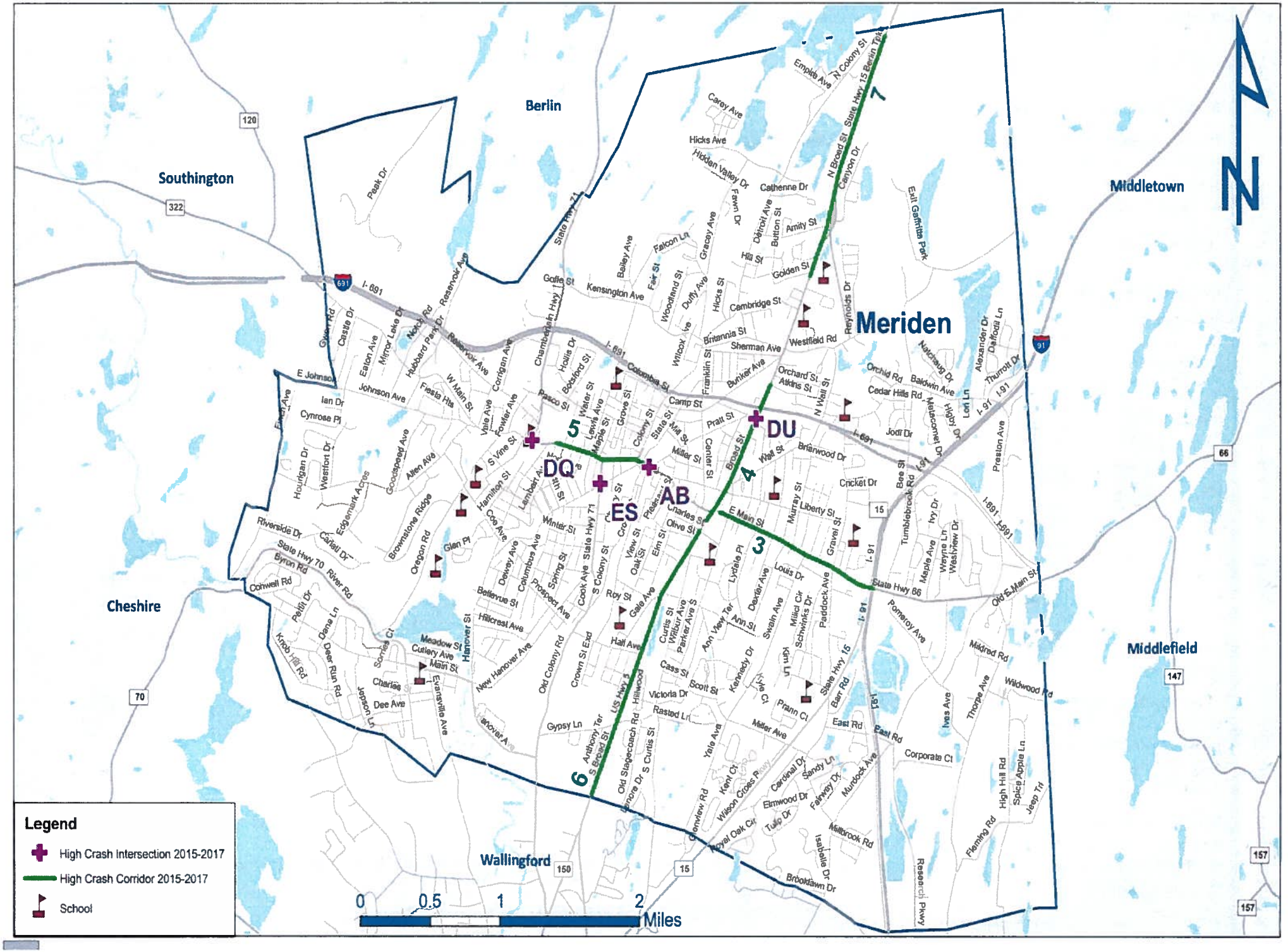
The City reviewed the crash data and pointed out that most of the crashes have occurred on State Routes and are under the jurisdiction of CT DOT. The City identified the East Main Street Corridor between I-91 and CT-5 as an area that appears to have shown a reduction of crashes due to the introduction of a center left turn lane. The City feels this is a a good approach to reduce crashes along heavily traveled commercial corridors and would like to see a two-way left-turn lane lane introduced on CT-5 just north of the Wallingford Town Line (Corridor 6).

The City has focused on safety improvements on local roads introducing LED STOP signs, road diets, bike paths, sidewalk improvements, LED chevron warning signs, etc. along local streets. The City is not supportive of center or edge rumble strips due to the potential increase in pavement deterioration. The City noted they utilize micro-mills and nova-chip applications and rumble strips would compromise the lifecycle of the pavement.

The local police department does own and use portable speed trailers to the greatest extent possible and they find them very helpful in reducing speeds at select locations throughout the City.

The City commented that they would like CT DOT to improve signage along State Routes and clear vegetation interfering with sight lines within the State (and City) ROW to assist in reducing crashes. If vegetation needs to be cleared within the State right-of-way the District 1 office should be contacted regarding an encroachment permit.


Meriden
Berlin
Southington
Cheshire
Wallingford
Middletown
Middlefield
Legend
2015-2017 Crash Data
Most Severe Injury
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
School
0
0.5
1
2
Miles
N
I-691
I-91
State Hwy 15
State Hwy 70
Westfield Rd
Pratt St
Walt St
Cook Hill Rd
Spruce Hill Dr
Farm Hill Rd
Main St
Meadow St
Cutlery Ave
Hanover St
New Hanover Ave
Highland Ave
Prospect Ave
Baldwin St
Oak St
Parker Ave S
Ann St
Dexter Ave
Swain Ave
Lydale Pl
Louis Dr
Kennedy Dr
Victoria Dr
Scott St
Miller Ave
Prann Ct
Bair Rd
East Rd
Corporate Ct
Old Stagecoach Rd
Yale Ave
Glenview Rd
Wilson Cross Pkwy
Kent Ct
Cardinal Dr
Tulip Dr
Royal Oak Cir
Fairway Dr
Murdock Ave
Sandy Ln
Isabelle Dr
Old Farm Rd
Brooklawn Dr
Fleming Rd
High Hill Rd
Jeep Trl
Wildwood Rd
Thorpe Ave
Ives Ave
Pomeroy Ave
Morton Rd
Mildred Rd
Arlington St N
Maple Ave
Wayne Ln
Ivy Dr
Preston Ave
Hubby Dr
Thurrott Dr
Alexander Dr
Daffodil Ln
Orchid Rd
Baldwin Ave
Meyer Rd
Bee St
Murray St
David Dr
Cricket Dr
Exit Griffin Park
Empire Ave
Carey Ave
Hicks Ave
Hidden Valley Dr
Fawn Dr
Amity St
Morse St
Trafford St
Graco Ave
Falcon Ln
Bailey Ave
Fair St
Profile St
Bristol St
Peak Dr
Notch Rd
Reservoir Ave
E Johnson Ave
Eaton Ave
Ian Dr
Johnson Ave
Ram Dr
Goodspeed Ave
Westfort Dr
Beverly Dr
Allen Ave
Riverside Dr
Canal Dr
Jaclyn Ter
Brownstone Ridge
Oregon Rd
Glen Pl
Byron Rd
Cornell Rd
River Rd
Pelliri Dr
Knob Hill Rd
Sonner Dr
Jonson Ln
Bruce Ln
Stanley Ave
120
322
691
15
91
66
70
150
147
157


Berlin
Southington
Cheshire
Meriden
Middletown
Middlefield
Wallingford
DU
DQ
AB
ES
1
2
3
4
5
6
7
Legend
High Crash Intersection 2015-2017
High Crash Corridor 2015-2017
School
0
0.5
1
2
Miles
N

Field Site Inventory

Maple Avenue (North of Ivy Drive)

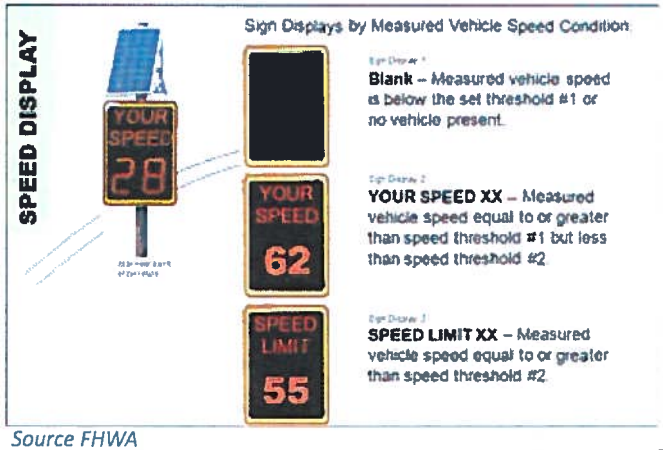
Maple Avenue is a local residential street with a steep downgrade into a horizontal curve just north of Ivy Drive. To emphasize the change in alignment, the City installed a new electronic chevron sign, coupled with traditional chevon signs, that "lights up" as vehicles approach the curve to signify to the driver that there is a sharp curve ahead. There are no edge lines along Maple Avenue.

This type of application could be potentially used in other communities with similar challenges.

Figure 41: CT-10

Countermeasure Considerations

To mitigate crashes along sharp horizontal curvatures, the City of Meriden could continue to install LED illumination to emphasis chevron signs. This would increase the visibility of the horizontal curve to motorist. This countermeasure could be considered when addressing high crash locations associated with horizontal curvature. In addition, the City could enhance pavement markings, including edge lines to visually cue drivers to stay in lane.



Source FHWA

A semi-road diet by adding center left-turn lane along US-5 north of Wallingford could contribute to better mobility along this commercial corridor and could reduce crashes.

Figure 40: CT-10

For speed reduction strategies the City could continue to employ the use of speed feedback signs, combined with High-visibility Enforcement and public outreach campaigns.

The Town could collaborate with enforcement and emergency management services to develop various safety public outreach campaigns, especially around speed. Coordinating with NHTSA's national campaign schedule could further boost the effectiveness of local efforts based on community needs[1]. The NHTSA campaign calendar highlights different behavioral focus areas throughout the year that could improve driver behaviors.

Materials that are provided by the United States Department of Transportation on the Transportation Safety Marketing for Speed Prevention web page[2] could be used. Enforcement and social norming campaign materials that are available to any community include banners, posters, television ads, radio ads, infographics, and other forms of media for behavioral initiatives. See the following countermeasure table for additional recommendations.

1 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). NHTSTA 2018 Communications Calendar. Retrieved from https://www.nhtsa.gov/links/NHTSA-2018-CommsCalendar.pdf

2 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). Campaigns Under Speed Prevention. Retrieved from

Intersection ID	Corridor ID	Route Names	Number of Crashes	Issues	Countermeasures	Estimated Cost
N/A	3	East Main Street	67	Needs Further Study		TBD
N/A	4	US-5				TBD
N/A	5	West Main Street	66			TBD
N/A	6	US-5	68	High Turning movements	Currently under study	High
N/A	7	US-5	23	Needs Further Study		TBD
DQ	N/A	West Main Street (CT-17)	11			TBD
DU	N/A	US-5	11			TBD
ES	N/A	CT-71 (Hanover Street)	11			TBD
AB	N/A	CT-66 at Pratt Street	23			TBD
Ivy Drive at Maple Avenue				Horizontal Curvature	Enhanced delineation and LED illuminated Chevron curve signs	Low
Townwide				Horizontal Curvature	Enhanced delineation and LED illuminated Chevron curve signs	Low
				Speeding	Dynamic Speed Feedback Signs	Low
					Speed Awareness Campaign	Mid
					Traffic Calming -bulb outs, speed tables, etc...	Low-Mid
					USLIMITS2	Low
					High-visibility Enforcement	Mid

CITY OF MILFORD

2016 US Census Population Estimate: 54,054
Area: 26.12 square miles
Population Density: 2,069 people per square mile
Setting: Urban/Suburban
Date of Meeting with City Representative: September 25, 2017
City Representative: Sergeant Jay Kraynak (Police Sergeant)
Data Identified High Crash Intersections: Old Gate Lane and E Town Road (Intersection AM), US-1 and CT-121 (Intersection BQ), Old Gate Lane and Woodmont Road (Intersection CF), West Main Street and High Street (Intersection EL), CT-162 and CT-736 (Intersection EO)
Data Identified High Crash Corridors: US-1 (Corridors 33, 34, 35, and 36), CT-162 (Corridor 38)
Bike/ Pedestrian Crash Locations: US-1 (Corridors 33, 34, 35, and 36), CT-162 (Corridor 38), Old Gate Lane and E Town Road (Intersection AM), US-1 and CT-121 (Intersection BQ), West Main Street and High Street (Intersection EL)
Total Number of Crashes: 966

Overview

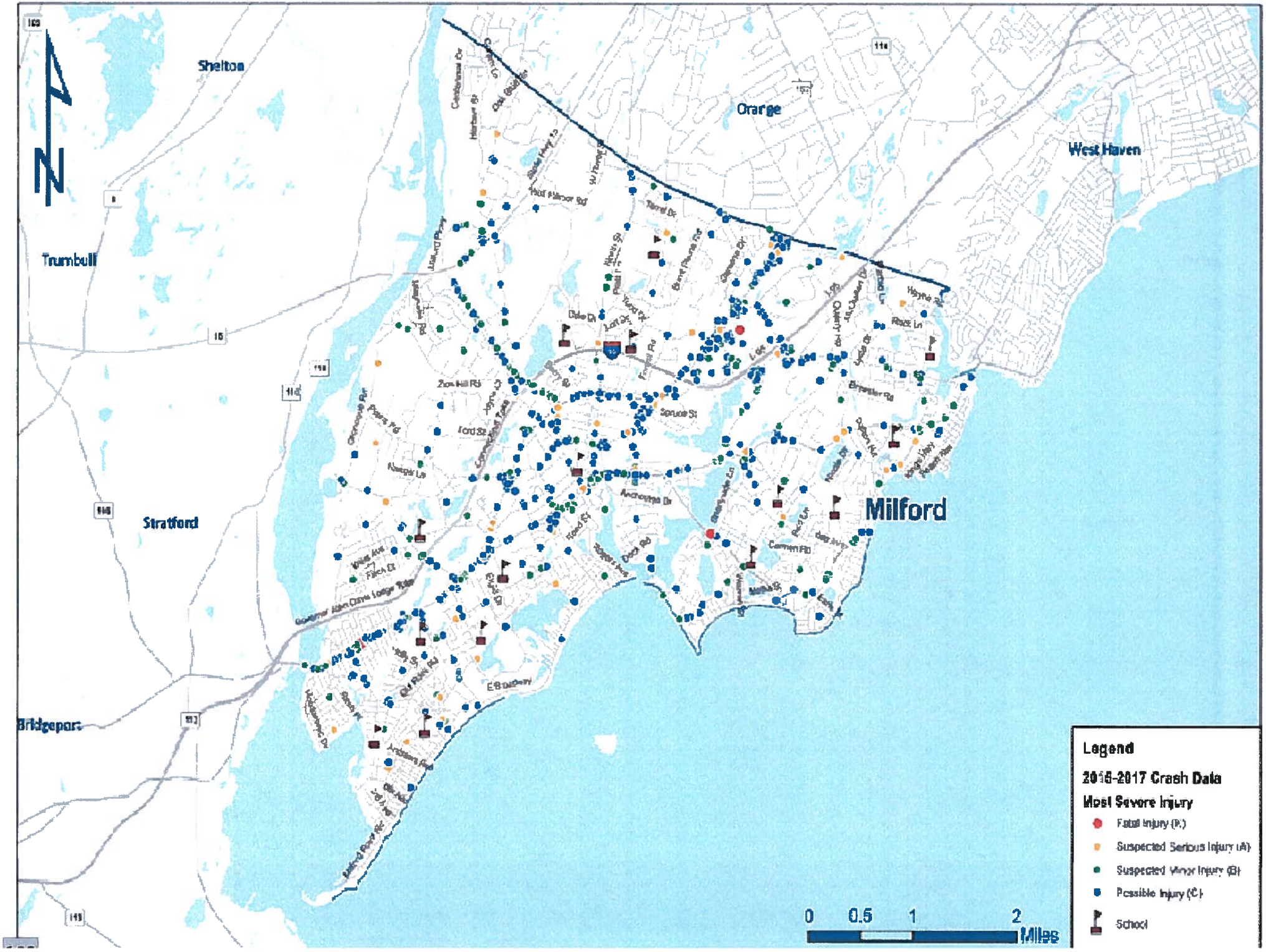
Milford is a city with an estimated population of 54,054 people in the South-Central Region of Connecticut. Orange and West Haven border it to the north, to the west by Shelton, to the southwest by Stratford, and to the east by the Long Island Sound. The City 's main thoroughfares are I-95, US-1, CT-121, and CT-796. I-95 and US-1 both connect Milford to West Haven and Stratford. CT-121 connects Milford to Orange. CT-15 connects Milford to Orange and Trumbull. Milford is a large suburban community along the coast of the Long Island Sound. General transportation safety concerns are congestion in certain areas within the City.

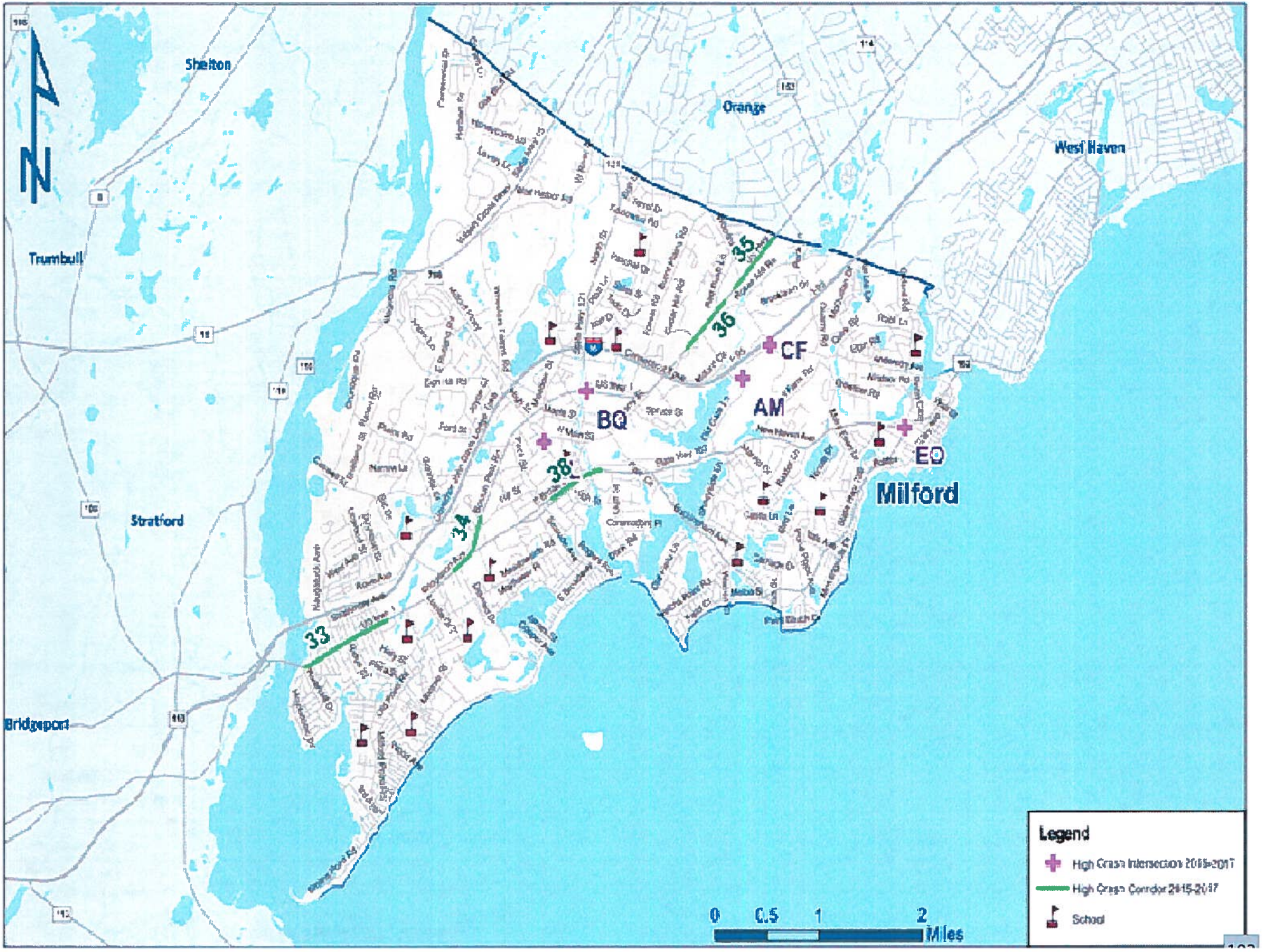
Town Comments

The City representative stated high crash Corridors 33 and 34 were low priority locations. Corridors 35 and 36 crash history was attributed to heavy congestion, but the City did not prioritize them. Corridor 38 was not considered a high priority by the City participants.

The City Official stated US-1 (Bridgeport Avenue) and Avery Avenue is a high priority location. The city representative said that there would be a potential increase in traffic congestion with the opening of a new apartment building. This intersection is already an area with high congestion. A second-high crash intersection that was suggested by the City was East City Road and Old Gate Lane.

Old Gate Lane and CT-162 and US-1 and Cherry Street are congested intersections. Congestion is an issue throughout Milford, especially on US-1. The representative reported that reflective stop signs and four speed feedback signs have been installed in various sites in the Town. A pedestrian safety study was conducted that endorsed crosswalks and rectangular rapid flashing beacons.


Shelton
Orange
West Haven
Trumbull
Stratford
Milford
Bridgeport
Legend
2016-2017 Crash Data
Most Severe Injury
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
School
0 0.5 1 2
Miles


Shelton
Orange
West Haven
Trumbull
Stratford
Bridgeport
Milford
CF
AM
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38
0 0.5 1 2
Miles
Legend
High Crash Intersection 2015-2017
High Crash Corridor 2015-2017
School

Field Site Inventory

Intersection AM: East Town Road and Old Gate Lane

Figure 44: East Town Road and Old Gate Lane

This is a four-way signalized intersection that has two protected left turn lanes from both approaches on Old Gate Lane and one protected left turn lane from the Lowes access road. The main issue identified at this location was the left progression cutting into other lanes and the stop bar located too far back from the intersection on East Town Road. Heavy trucks were seen going through this intersection. There was heavy traffic volume on East Town Road.

Intersection BQ: CT-121 and US-1

There is a total of six approaches at this intersection. CT-121 (North Street) branches to meet with US-1 (Boston Post Road) twice at the southern end of the intersection. Orange Avenue is an offset leg of the intersection. There are ten curb cuts and driveways located with 130 feet of the intersection. Pavement and pavement markings are in fair condition on US-1. Pavement on CT-121 an Orange Avenue is in fair condition, but pavement markings are in poor condition. The speed limit on US-121 is 25 mph south of the intersection and 35 mph north of the intersection. US-1 speed limit is 40 mph. The posted speed limit on Orange Avenue is 25 mph.

Figure 45: Old Gate Lane

Intersection CF: Old Gate Lane and Woodmont Road

The northeastern leg of the intersection is the on ramp for Interstate 95 Northbound. There is a protected left turn lane from both approaches on Woodmont Road. There are two protected left turn lanes from Old Gate Lane. Lane widths are adequate but there are no shoulders on either road. There are no ADA compliant ramps or signage to alert motorists of the potential presence of pedestrians.

Figure 46: US-1 (Bridgeport Avenue at Avery Avenue

US-1 (Bridgeport Avenue) and Avery Avenue

This is a three-way intersection with stop control on Avery Avenue. Heavy traffic volume on US-1. Avery Avenue is used as a cut through to US-1. There are two signalized intersections just east and west of here. The turn radius from every direction is adequate. Pavement and pavement markings are in good condition. The stop sign is tilted and has markings that could suggest that it has been hit by passing vehicles. There was one sidewalk and ramp on the east side of Avery Avenue but not on the west side of the street. There is no pedestrian signage or crosswalk for crossing Avery Avenue.

Countermeasure Considerations

Possible solutions for Intersection AM at East Town Road and Old Gate Lane could be to move the stop bar and add a No Turn on Red sign for Lowe's to keep vehicles from cutting into other lanes. The intersection of US-1 and Avery Avenue could be evaluated for potential signal timing adjustment to allow for safer turns. The intersection of US-1 and CT-121 could benefit from improved pavement markings and additional signage for when CT-121 branches at the southern end of the intersection. The intersection of CT-162 and Old Gate Lane could also benefit from signing and pavement marking improvements to better visually cue motorists.

Intersections with a high number of curb cuts could be better managed to limit the creation of driveways at locations with poor sightlines and high traffic volumes. Further access management along heavy corridors could be accomplished through driveway consolidation, relocation, or closure. The Federal Highway Association (FHWA) encourages access management in the Highway Safety Manual based on data that shows there can be a 25-31% reduction in injury and fatal crashes along urban/suburban arterial roads[1].

A reduction in speed could increase safety on high crash roads. USLIMITS2 is a tool provided by the FHWA to determine safe speeds for any road type. This tool uses multiple road safety criteria to show if the current posted speed is appropriate or if it should be adjusted[2].

The City could collaborate with enforcement and emergency management services to develop various safety public outreach campaigns, especially around speed. Coordinating with NHTSA's national campaign schedule could further boost the effectiveness of local efforts based on community needs[3]. The NHTSA campaign calendar highlights different behavioral focus areas throughout the year that could improve driver behaviors.

Materials that are provided by the United States Department of Transportation on the Transportation Safety Marketing for Speed Prevention web page[4] could be used. Enforcement and social norming campaign materials that are available to any community include banners, posters, television ads, radio ads, infographics, and other forms of media for behavioral initiatives. See the following countermeasure table for additional recommendations.

1 U.S. Department of Transportation Federal Highway Administration. (2017). Proven Safety Countermeasures: Corridor Access Management. Retrieved from https://safety.fhwa.dot.gov/provencountermeasures/corridor_access_mgmt/

2 U.S. Department of Transportation Federal Highway Administration. (2017). *Proven Safety Countermeasures: USLIMITS2*. Retrieved from https://safety.fhwa.dot.gov/provencountermeasures/uslimits2/

3 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). NHTSTA 2018 Communications Calendar. Retrieved from https://www.nhtsa.gov/links/NHTSA-2018-CommsCalendar.pdf

4 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). Campaigns Under Speed Prevention. Retrieved from https://www.trafficsafetymarketing.gov/get-materials/speed-prevention/stop-speeding-it-stops-you

Intersection or Corridor ID	Roadway Names	Number of Crashes	Issues	Countermeasures	Estimated Cost	Estimated Time of Completion
Intersection AM	E Town Road & Old Gate Lane	16	Stop Bar Positioning	Reposition Stop Bar	Low	Short
			Sidewalk Condition	Clean Up Vegetation	Low	Short
				Widen if Necessary	Low-Medium	Short-Mid
Intersection BQ	US-1 at CT-121	15	Pavement Marking Condition	Repaint Pavement Markings	Low	Short
			Corridor Access Management	Driveway Consolidation	Medium	Mid
			Signal Visibility	Traffic Signal Retroreflective Backplates	Low	Short
Corridor 33	Bridgeport Avenue	39	Pedestrian crossings	Investigate Curb Extensions	Medium	Mid
			Missing Crosswalks	High-visibility Crosswalks	Low to Medium	Short-Mid
			Long gaps without crosswalks	High-visibility Crosswalks west of Spring Street and east of Naugatuck Avenue	Low to Medium	Short-Mid
			Left turn Crashes at unsignalized intersections	Restricted Left Turn Phase	Low	Short
Corridor 34	Bridgeport Avenue between Marion Avenue and Erna Avenue	20	Bike Crashes	Investigate Road Diet	Low	Short
			Front to Rear	Dynamic Speed Feedback Signs	Low	Short
			Front to Rear and Intersection Crashes	Traffic Signal Retroreflective Backplates at Bridgeport Avenue and Boston Post Road	Low	Short
Woodmont Road & Old Gate Lane			Pedestrian Design	High-visibility Crosswalks	Low	Short
				Leading Pedestrian Interval	Low	Short
				MUTCD W11-2 (Pedestrian Warning) Sign	Low	Short
				MUTCD W11-15 (Bicycle/Pedestrian warning) Sign	Low	Short
			Signal Visibility	Traffic Signal Retroreflective Backplates	Low	Short
CT-162 at Old Gate Lane			Directional Signage	Correct to Intersection	Low	Short
			Directional Pavement Markings	Correct to Intersection	Low	Short
			Pedestrian Design	Fix Pedestrian Signal	Low	Short
				Vegetation Control	Low	Short
				Additional Signage, See Above	Low	Short
US-1 at Avery Avenue			Stop Sign Condition	Reposition/Replace if Necessary	Low	Short
			Pedestrian Design	See Above	Low	Short
Corridor 35	US-1	26	Conflict Points and Congestion	Corridor Access Management	Low-High	Short-Long
Corridor 36	US-1	26	Conflict Points and Congestion	Corridor Access Management	Low-High	Short-Long
Townwide			Pedestrian Safety	Watch for Me CT Campaign	Low	Short
			Speeding	Speed Safety Campaign	Low-Medium	Short-Mid
				USLIMITS2	Low	Short

CITY OF NEW HAVEN

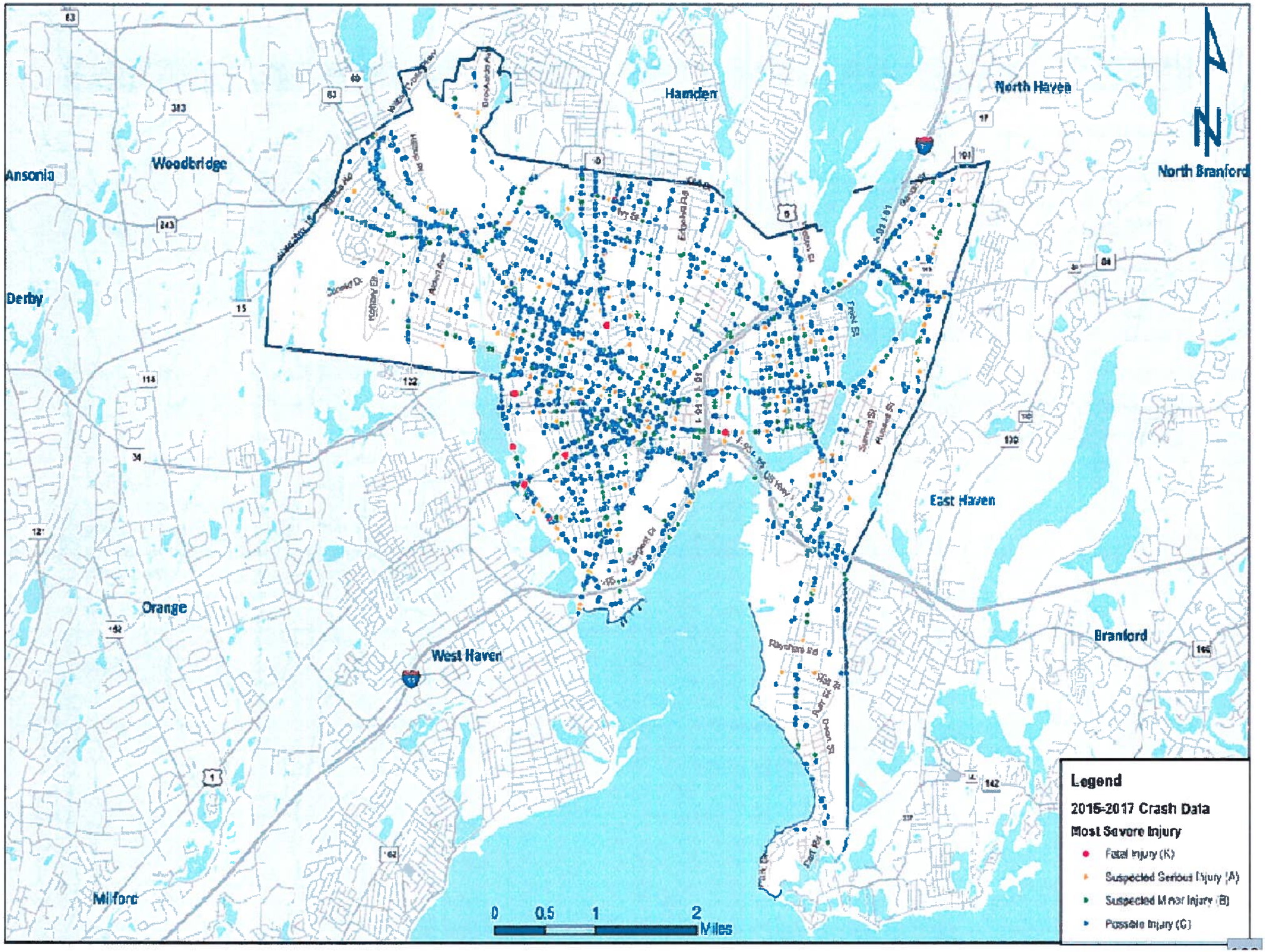
2016 US Census Population Estimate: 129,934
Area: 20.12 square miles
Population Density: 6,457 people per square mile
2016 Vehicle Miles Traveled (VMT): 733,517,870
2016 VMT per Capita: 5,645
Date of Meeting with City Representative: October 18, 2017
City Representative: Doug Hausladen, Director of New Haven's Transportation and Parking Department
Setting: Urban
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 4,885

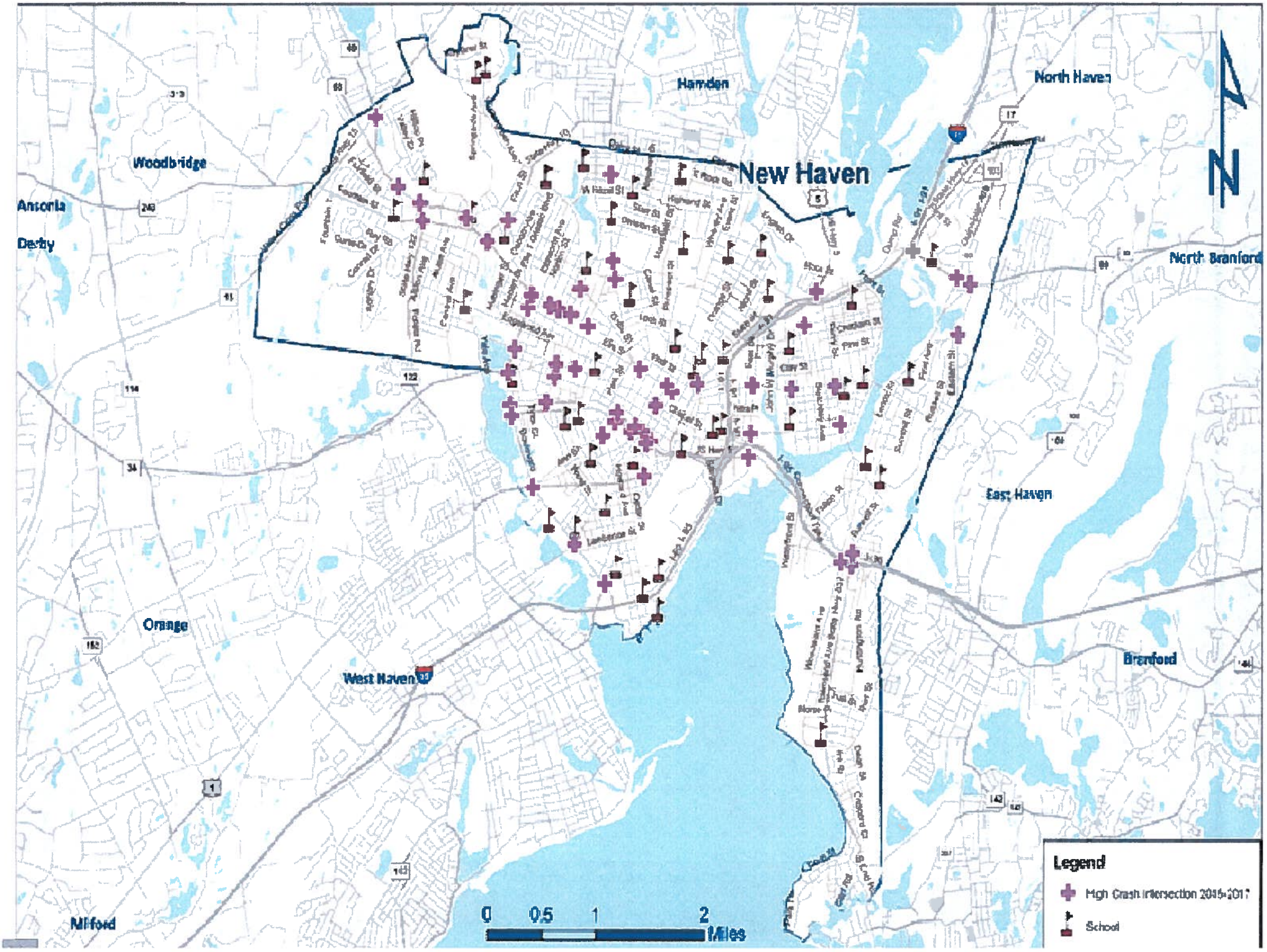
New Haven High Crash Corridors

Corridor ID	Road Number	Road Name	Bike and Pedestrian Crash Locations
54a	10	Whalley Avenue	x
57	63	Whalley Avenue	
52	10	Ella Grasso Blvd	x
65	265	Grand Avenue	x
60	80	Foxon Blvd	x
59	80	Foxon Blvd	x
67	63	Whalley Avenue	x
53	10	Ella Grasso Blvd	x
54b	10	Ella Grasso Blvd	x
61	653	Whalley Avenue	x

Overview

New Haven is the second-largest municipality in Connecticut with a population of 129,934 people. It is bordered to the northwest by Woodbridge and Orange, to the north by Hamden, to the northeast by North Haven, to the east by East Haven, to the west by West Haven, and to the south by the Long Island Sound. The City's main thoroughfares are I-95, US-1, US-5, CT-243, CT-122, CT-80, CT-69, CT-63, CT-15, and CT-10.


Hamden
North Haven
North Branford
Woodbridge
Ansonia
Derby
Orange
West Haven
Milford
East Haven
Branford
0 0.5 1 2 Miles
Legend
2015-2017 Crash Data
Most Severe Injury
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)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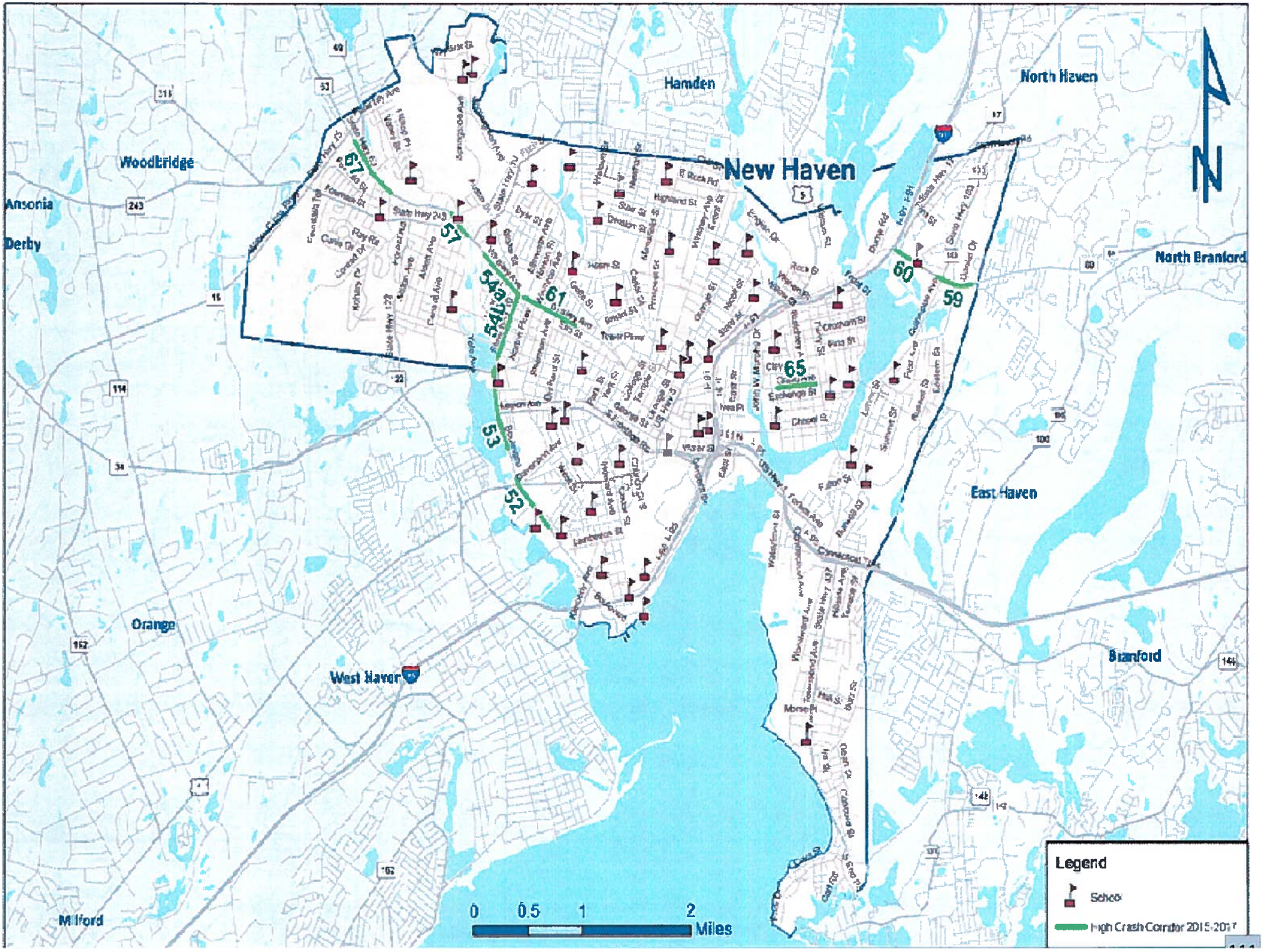
Legend
High Crash Intersection 2015-2017
School


Hamden
North Haven
New Haven
Woodbridge
Ansonia
Derby
North Branford
East Haven
Orange
West Haven
Branford
Milford
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52
60
59
65
0 0.5 1 2 Miles
Legend
School
High Crash Corridor 2015-2017

Town Comments

The City of New Haven representative concurred that the crash data and maps presented were generally consistent with known problem areas throughout the City, however, they had several distinct problem areas of concern.

Whalley Avenue, High Crash Corridor 57 (on the CT-63 segment), Corridor 54a (on the CT-63/CT-10 overlap), and Corridor 61 (on CT-10) were all of concern with emphasis placed on Whalley Ave. On Corridor 57, the intersection of CT-243 and CT-63 (Fountain Street and Whalley Avenue) was the subject of a 2009 SCRCOG study which recommended a traffic median that was recently installed, but there continues to be issues related to the non-standard intersection and nearby offset. The Connecticut Department of Transportation recently completed improvements to Whalley Avenue, but this road remains a concern according to the City representative.

There is a high percentage of angle crashes because of one and two-way stop-controlled intersections (i.e., non-all-way stop). The intersection of Woodward Avenue and Townsend Avenue (CT-337) is an issue for the City. This may be attributed to a high number of property damage only (PDO) crashes.

Corridor 52 on CT-10 (Ella Grasso Blvd) is a major concern for the City of New Haven.

East Street has three corridors of concern for the City. It is also a major bicycle route.

The New Haven representative wants the traffic signal at the intersection of State Street and Trumbull Street to be replaced.

Intersection of Orange Street and Trumbull Street/Interstate 91 ramps

This is one of the highest volume intersections in the City, with the ramp termini from the Interstate 91 north on ramp and southbound on and off ramps. The intersection processes over 30,000 vehicles per day.

Figure 51: Intersection of Orange Street and Trumbull Street – Facing Interstate 91 On/Off Ramps

The signalized intersection is one of the primary access points to the City and Yale University from the north. It is usually congested during peak hours when colleges are in session and backups extend on all approaches significantly during these times. The intersection also provides a one-way connection from Trumbull Street to the unsignalized State Street intersection. There are existing and continuous sidewalks along the non-ramp intersection approaches and no paved shoulders. There is heavy pedestrian and bicycle usage of the intersection.

All approaches have at least two lanes with exclusive turning lanes except for the off ramps with three lanes including an exclusive left onto Orange Street southbound, a single through lane onto Trumbull Street and an exclusive right turn lane onto Orange Street northbound.

The departing lanes toward the Interstate 91 on ramps and the skewed Trumbull Street one-way connection to State Street allow for a relatively unmanaged traffic flow departing the intersection heading eastbound. The intersection corners include mostly residential and professional office developments on Orange Street and permit parking on the Trumbull Street connection to State Street.

Figure 52: Intersection of Orange Street and Trumbull Street: Stop Bar and Crosswalk Pavement Markings (Trumbull Street Approach)

Intersection of Trumbull Street of State Street/Interstate 91 On-Ramp

The one-way Trumbull Street approach has two travel lanes and is stop sign controlled. Trumbull Street intersects with State Street (three lanes north of the intersection). This is a four-legged intersection, with the on-ramp to Interstate 91 northbound on the opposite side of the eastbound Trumbull Street approach. With this on-ramp, the intersection carries heavy peak hour volumes with a painted island channelizing the northbound right turn lane onto the ramp.

The speed limit on State Street is 25 mph, however observed speeds were frequently above 40 mph. Sightlines are unobstructed except when the on-street parking along State Street reduces the sight lines for Trumbull Street exiting traffic flow.

There are crosswalks on each leg of the intersection except the south leg, with the shortest crosswalk across State Street's two-lane approach. There are very wide sidewalks on each approach to the intersection except the on-ramp.

The combination of long crosswalks and higher speeds and heavy traffic volumes presents a challenge to pedestrians and bicyclists. Sharrows are painted in the lanes for State Street.

The adjacent development is heavy commercial/office development on the southwest corner, and an iconic restaurant and office use on the northwest corner. The east side of the intersection is CT DOT Right of Way for the on ramp to Interstate 91.

Figure 53: Intersection of State Street and Trumbull Street (Trumbull Street Approach - Facing Interstate On-Ramp

Figure 54: Intersection of State Street and Trumbull Street (State Street Crosswalk on Northeast Side of the Intersection)

Countermeasure Considerations

Countermeasures for the intersection of Orange Street and Trumbull Street/I-91 ramps to address the lack of delineation and signage could include milling and overlaying the pavement at the intersection followed by thermoplastic pavement markings and updated signing. Thermoplastic markings last the longest and are best installed on new pavement. However, in the immediate term, epoxy resin/paint pavement markings could be placed as there are very worn markings and delineated lanes.

In addition, adaptive traffic signal control could be a consideration for the high fluctuations in traffic volume demands within this segment of Trumbull. Finally, the Trumbull Street connector to State Street could be better defined with curbing and pavement markings as well as a bike lane.

Other countermeasures for the intersection of Trumbull Street and State Street could include a traffic signal warrant analysis to confirm the expectation that a traffic control signal is warranted. Alternatively, a single lane modern roundabout should be reviewed to determine viability as there is significant ROW for the on-ramp side of the intersection. Roundabouts have been identified as a proven safety countermeasure by the Federal Highway Administration (FHWA) and have a substantial amount of safety benefits in comparison with other intersection designs. The FHWA recommends roundabouts for intersections identified as needing safety improvements[1].

Median or refuge islands could be considered on Trumbull Street in lieu of the traffic signal option for the existing condition as well as pedestrian crossing beacons to enhance the visibility of the pedestrians crossing the intersection approaches. Raised medians can reduce pedestrian crashes by 46% and pedestrian crossing islands can reduce pedestrian crashes by 56%[2].

A reduction in speed could increase safety on high crash roads. The World Health Organization explains that higher speeds contribute to higher risk of a crash and to higher severity of a crash. USLIMITS2 is a tool provided by the FHWA to determine safe speeds for any road type. This tool uses multiple road safety criteria to show if the current posted speed is appropriate or if it should be adjusted[3].

The Town could collaborate with enforcement and emergency management services to develop various safety public outreach campaigns, especially around speed. Coordinating with NHTSA's national campaign schedule could further boost the effectiveness of local efforts based on community needs[4]. The NHTSA campaign calendar highlights different behavioral focus areas throughout the year that could improve driver behaviors.

Materials that are provided by the United States Department of Transportation on the Transportation Safety Marketing for Speed Prevention web page[5] could be used. Enforcement and social norming campaign materials that are available to any community include banners, posters, television ads, radio ads, infographics, and other forms of media for behavioral initiatives. See the following countermeasure table for additional recommendations.

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1 U.S. Department of Transportation Federal Highway Administration. (2017). *Proven Safety Countermeasures: Roundabouts*. Retrieved from https://safety.fhwa.dot.gov/provencountermeasures/roundabouts/

2 U.S. Department of Transportation Federal Highway Administration. (2017). *Proven Safety Countermeasures: Medians and Pedestrian crossing Islands in Urban and Suburban Areas*. Retrieved from https://safety.fhwa.dot.gov/provencountermeasures/ped_medians/

3 U.S. Department of Transportation Federal Highway Administration. (2017). *Proven Safety Countermeasures: USLIMITS2*. Retrieved from https://safety.fhwa.dot.gov/provencountermeasures/uslimits2/

4 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). NHTSTA 2018 Communications Calendar. Retrieved from https://www.nhtsa.gov/links/NHTSA-2018-CommsCalendar.pdf

5 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). Campaigns Under Speed Prevention. Retrieved from https://www.trafficsafetymarketing.gov/get-materials/speed-prevention/stop-speeding-it-stops-you

New Haven Countermeasure Considerations

High Crash Corridor or Intersection ID	Roadway Numbers	Number of Crashes	Issues	Countermeasures	Estimated Cost	Estimated Time of Completion
Corridor 52	Ella T. Grasso Blvd (CT-10) between Adeline Street and Orange Avenue	40	Lack of Sidewalks-conflict with parking on west side and no sidewalks on east side of street	Sidewalks	Medium to High	Mid-Long
			Rear End Crashes	High-visibility Speed Enforcement	Low to Medium	Short-Mid
				Dynamic Speed Feedback Signs	Low	Short-Mid
			Missing Crosswalks	High-Visibility Crosswalks	Low	Short
Corridor 53	Ella T. Grasso Blvd (CT-10).3 miles south of CT-34 and Derby Avenue	74	Rear End Collisions	Traffic Signal Retroreflective Backplates	Low	Short
				Dynamic Speed Feedback Signs	Low	Short
			Bike Crash	Bicycles may use full lane Sign	Low	Short
Corridor 54a	Whalley Avenue between CT-10 and West Park Avenue	27	Missing Crosswalks	High-Visibility Crosswalks	Low	Short
			Pedestrian Safety	Curb Extensions	Medium	Mid
			Rear End Crashes	Traffic Signal Retroreflective Backplates	Low	Short
			Pedestrian Crashes	Road Safety Audit	Low	Short
				In-Street Pedestrian crossing Signs	Low	Short
Corridor 54b	Ella T. Grasso Blvd between Irving Street and Whalley Avenue	85	Missing Crosswalks	High-visibility Crosswalks	Low	Short
			Rear End Crashes	Traffic Signal Retroreflective Backplates	Low	Short
				Dynamic Speed Feedback Signs	Low	Short
			Pedestrian crossing	Investigate Curb Extensions	Medium	Mid
Corridor 57	Whalley Avenue between Phillip Street and West Rock Avenue	27	Dark-lighted	Investigate Roadway Illumination	Low to Medium	Short-Mid
			Wide lanes	Investigate Road Diet	Low to Medium	Short-Mid
			Speeding	Investigate Curb Extensions	Medium	Mid
	Whalley Avenue and Fountain Street		Confusing Intersection/ Front to Rear and Angle Crashes	Roadway/lane Reconfiguration	Medium to High	Mid-Long
Corridor 59	Foxon Blvd (CT-80) between Quinnipiac Avenue and Old Foxon Blvd	60	Intersection Crashes along Corridor	Traffic Signal Retroreflective Backplates	Low	Short
			Front to Rear	Investigate Road Diet	Low to Medium	Short-Mid

High Crash Corridor or Intersection ID	Roadway Numbers	Number of Crashes	Issues	Countermeasures	Estimated Cost	Estimated Time of Completion
Corridor 60	Foxon Blvd (CT-80) between Middletown Avenue and Quinnipiac Avenue	50	Lack of Crosswalk	High-Visibility Crosswalks	Low	Short
			Front Rear Collisions	Traffic Signal Retroreflective Backplates	Low	Short
			Speeding	Dynamic Speed Feedback Signs (east of I-91 off-ramp)	Low	Short
Corridor 61	Whalley Avenue (CT-653) between Ellsworth Avenue and Orchard Street	112	Pedestrian Awareness and Speeding	Investigate Curb Extensions	Medium	Mid
			Pedestrian Awareness	High-Visibility Crosswalks	Low to Medium	Short-Mid
			Bicycle Crashes	Bike Lanes	Medium to High	Mid-Long
			Bicycle and Pedestrian Safety	Investigate Road Diets	Low to Medium	Short-Mid
Corridor 65	Grand Avenue (CT-265) Between James Street and Poplar Street	49	Pedestrian crossing	High-visibility Crosswalks	Low to Medium	Short-Mid
			Pedestrian crossing and Speeding	Curb Extensions	Medium	Mid
			Speeding	Investigate Road Diets	Low to Medium	Short-Mid
			Dark-lighted	Roadway illumination	Low to Medium	Short-Mid
Corridor 67	Whalley Avenue (CT-63) between West Prospect Street and Fowler Street	63	Pedestrian crossing	High-visibility Crosswalks	Low to Medium	Short-Mid
			Pedestrian crossing and Speeding	Investigate Curb Extensions	Medium	Mid
			Angle and Front to Rear Crashes	Dynamic Speed Feedback Signs	Low	Short
	Amity Road and Whalley Avenue		Difficult intersection - Driveways close to signal	Roadway configuration including driveway closures	Medium to High	Mid-Long
Intersection L	CT-10 and CT-63	30	Locations near Park and Bus Stop	High-visibility Crosswalks	Low to Medium	Short-Mid
			Bicycle Safety	Investigate Road Diet	Medium	Mid
			Front to Rear Crashes	Dynamic Speed Feedback Signs	Low to Medium	Short-Mid
				Traffic Signal Retroreflective Backplates	Low	Short
			Angle Crashes	Signal Timing	Low to Medium	Short-Mid

High Crash Corridor or Intersection ID	Roadway Numbers	Number of Crashes	Issues	Countermeasures	Estimated Cost	Estimated Time of Completion
Intersection O	US-1 and CT-337	26	Front to Rear Crashes	Traffic Signal Retroreflective Backplates	Low	Short
				Upgrade Delineation	Low	Short
				Dynamic Speed Feedback Signs	Low	Short
				Signal Optimization	Low to Medium	Short-Mid
			Pedestrian crossing	High-visibility Crosswalks	Medium	Mid
Intersection R	CT-80 and CT-103	40	Front to Rear Crashes	Partial Closure of Reconfiguration of Driveways to gas stations on Foxon Blvd to the west of Quinnipiac	Medium	Mid
				Repaint pavement markings	Low	Short
				Traffic Signal Retroreflective Backplates	Low	Short
			Pedestrian	High-visibility Crosswalks	Low	Short
				Investigate Bump outs	Low to Medium	Short-Mid
				Update pedestrian beacon with audible tones	Low to Medium	Short-Mid
Intersection T	North Frontage Road and Church Street	27	Front to Rear Crashes	Traffic Signal Retroreflective Backplates	Low	Short
			Speed Transition from Expressway	Dynamic Speed Feedback Signs	Low	Short
				Transverse Rumble Strips	Low	Short
			Dark lighted Conditions	Investigate Roadway Illumination	Low to Medium	Short-Mid
			Pedestrian Crashes	High-visibility Crosswalk with Surface Treatment	Medium	Mid
Intersection U	CT-10 and CT-34	27	Front to Rear Crashes	Signal Optimization	Low to Medium	Short-Mid
				Traffic Signal Retroreflective Backplate	Low	Short
			High Pedestrian and School Zone	No Right on Red Restriction	Low	Short
			Dark-lighted	Investigate Roadway Illumination	Low to Medium	Short-Mid
Intersection Z	Grand Avenue and East Street	19	Angle Crashes	Traffic Signal Retroreflective Backplates	Low	Short
			Near active Rail crossing	Signal timing	Medium	Mid
			Excessive Travel widths	Narrow travel lanes with Edge Lines	Low	Short
			Dark lighted	Investigate Roadway Illumination	Low to Medium	Short-Mid
			Pedestrian Safety	High-visibility Crosswalk with	Medium	Mid

High Crash Corridor or Intersection ID	Roadway Numbers	Number of Crashes	Issues	Countermeasures	Estimated Cost	Estimated Time of Completion
Intersection AI	Elm Street and Church Street	23	Pedestrian Safety	High-visibility Crosswalk with Surface Treatment	Medium	Mid
			Angle and Front to Rear	Traffic Signal Retroreflective Backplates	Low	Short
				Add additional Signal Heads	Low	Short
Intersection AH	CT-10 and York Street	33	Front to Rear Crashes	Traffic Signal Retroreflective Backplates	Low	Short
				Enhance delineation to separate west bound and eastbound directions of Elm Street west of York	Low	Short-Mid
				Signal Timing	Medium	Short
			Pedestrian Crashes	High-visibility Crosswalk with Surface Treatment	Low to Medium	Short-Mid
Intersection AR	Boston Post Road and Ella T. Grasso Blvd	38	Front to Rear	Traffic Signal Retroreflective Backplates	Low	Short
				Signal Timing	Low to High	Short-Long
				Add puppy tracks to show travel path of traffic on Ella T Grasso through the intersection.	Low	Short
			Dark lighted	Roadway Illumination	Low to Medium	Short-Mid
			Pedestrian crossing	Update pedestrian signals	Medium	Mid
				Investigate Raising Crosswalk	Low to Medium	Short-Mid
Intersection CP	Chapel Street and East Street	14	Pedestrian Safety	High-visibility Crosswalk with Surface Treatment	Low to Medium	Short-Mid
				Raise Crosswalk	Low to Medium	Short-Mid
			Faded Travel lane Markings	Restripe Lanes	Low to Medium	Short-Mid
			Limited sight distance at intersection	No Right on Red sign from Chapel Street to East Street	Low	Short

High Crash Corridor or Intersection ID	Roadway Numbers	Number of Crashes	Issues	Countermeasures	Estimated Cost	Estimated Time of Completion
Intersection EJ	CT-63 and Philip Street/ Blake Street	13	Dark-lighted, and unknown lighted Conditions	Investigate Roadway Illumination	Low to Medium	Short-Mid
			Front to Rear	Traffic Signal Retroreflective Backplates	Low	Short
				Signal Timing	Low to Medium	Short-Mid
				Raise Crosswalks at CT-63 and Blake Street crossings	Low to Medium	Short-Mid
				Stripe Edge Lines	Low	Short
Orange Street and Trumbull Street			Pavement Markings	Repaint pavement markings	Low	Short
			Fluctuating Traffic Demands	Adaptive Control Signalization	High	Long
State Street and Trumbull Street			Lane Visibility	Curbing	Medium	Mid
				Bike Lanes	Low- Medium	Short-Mid
			Traffic Control Deficiencies	Signal Analysis	Low	Short
			Pedestrians	Median and Turn Lane Refuge Island	Medium	Mid
CT-243 and CT-63			Offset Intersection	Analyze Road Geometry	Low	Short
Townwide			Speeding	USLIMITS2	Low	Short
				Dynamic Speed Feedback Signs	Low	Short
			Pedestrians	Watch for Me CT Campaign	Low	Short

TOWN OF NORTH BRANFORD

2016 US Census Population Estimate: 14,198
Area: 26.7 square miles
Population Density: 532
2016 Vehicle Miles Traveled (VMT): 97,223,590
2016 VMT per Capita: 6, 847
Setting: Suburban/Urban
Date of Meeting with Town Representatives: September 20, 2017
Town Representatives: Kurt Weiss, PE (Town Engineer), Sergeant Lovelace (North Branford PD)
Data Identified High Crash Corridors: Corridor 92 (CT-80), **Corridor 93** (CT-22), **Corridor 94** (CT-17), **Corridor 95** (CT-139), **Corridor 96** (CT-80), **Corridor 97** (CT-80), **Corridor 98** (CT-22), **Corridor 99** (CT-17)
Data Identified High Crash Intersections: N/A
Data Identified High Crash Bike and Ped Locations: N/A
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 221

Overview

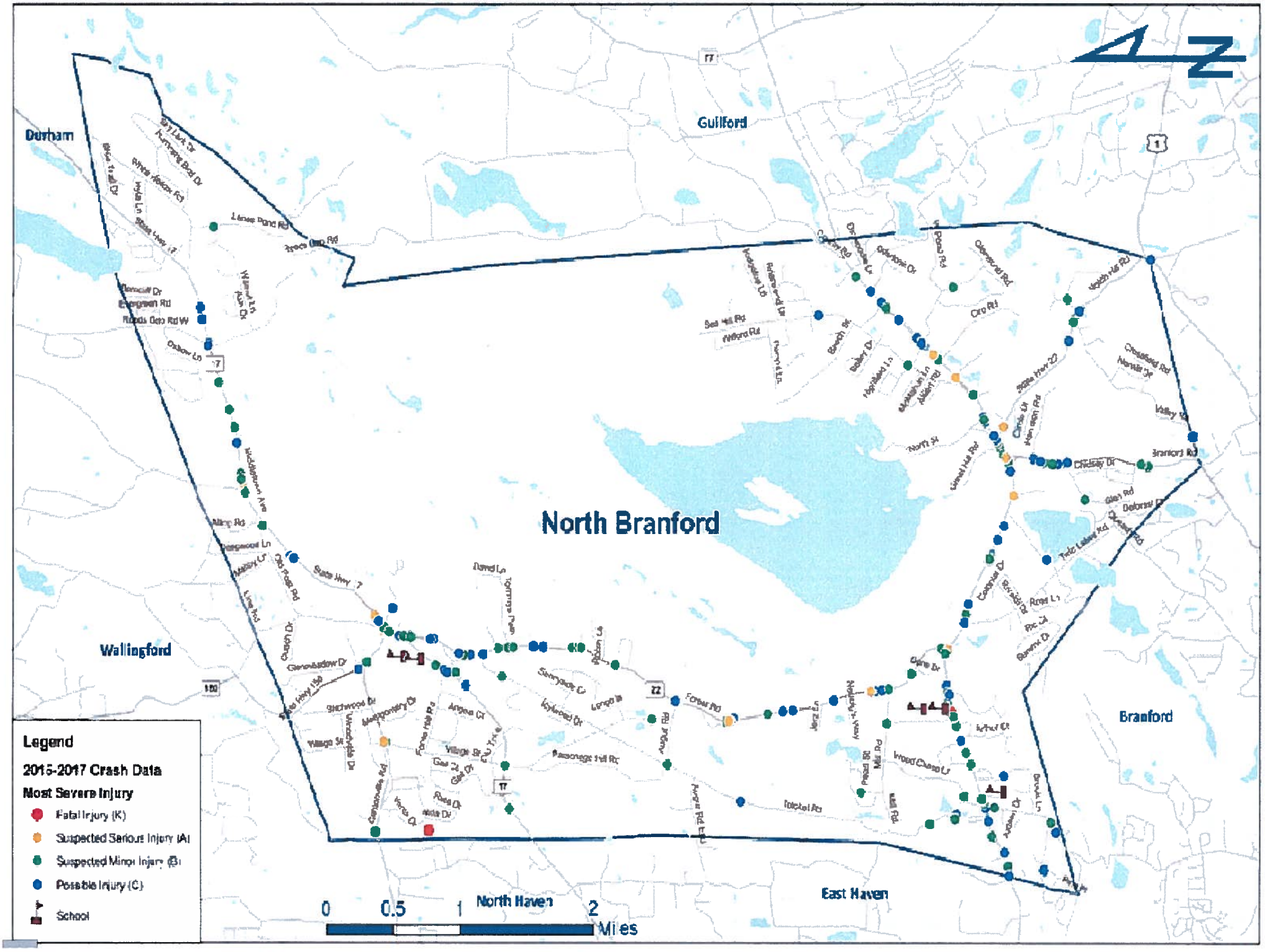
North Branford is one of the lesser populated towns in the Region and is known for agriculture. Wallingford, Durham, and North Haven border it to the north, East Haven to the west, Guilford to the east and Branford to the south.

Figure 55: North Branford

Town Comments

The Town representatives concurred that the crash data and maps presented were generally consistent with known problem areas throughout Town. However, they did have several distinct problem areas some of which were not shown on the crash maps including West Pond Road and CT-80, Foote Hill Road and CT-17, CT-150 and CT-22, and Old Post Road and Middletown Avenue.

In addition, it was suggested that two fatalities shown on the map should not be considered in the overall study as they are not related to roadway conditions and safety. One was an ATV crash in a corn field and another was narcotics-related.The Town has implemented citizen-requested speed traps and has used funding to deter substance involved driving. Generally, speeding is the primary issue along with aggressive and distracted driving.


Durham
Guilford
North Branford
Wallingford
Branford
North Haven
East Haven
Legend
2015-2017 Crash Data
Most Severe Injury
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
School
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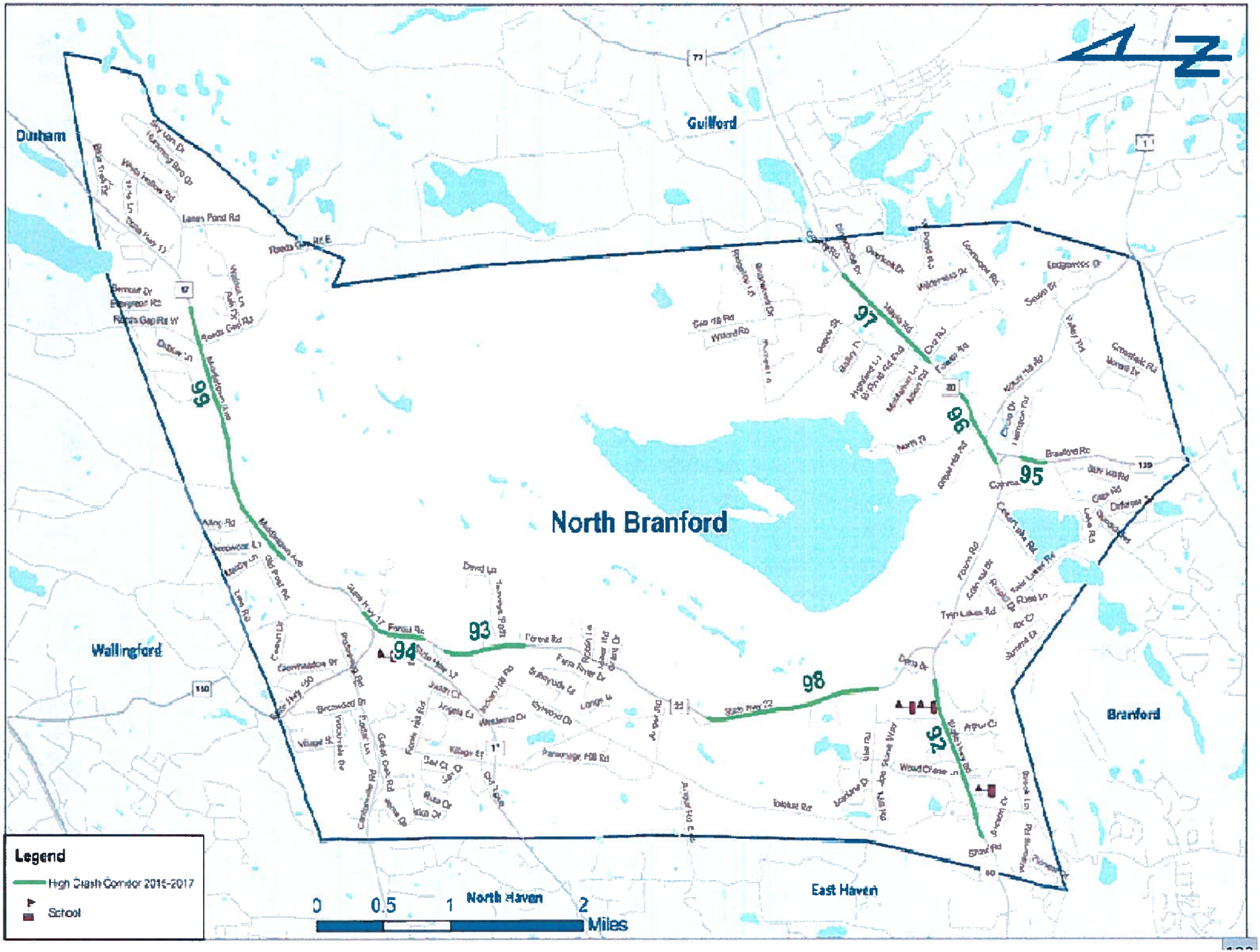
0.5
1
2
Miles


Durham
Guilford
North Branford
Wallingford
North Haven
East Haven
Branford
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Legend
High Crash Corridor 2015-2017
School
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Miles

Field Site Inventory

Forest Road (CT-22) at Mill Road (Corridor 98)

Posted speeds are 45 miles per hour along CT-22 and 25 mph along the local side streets. Mill Road serves as the secondary access to North Branford High School and is busy with school traffic during morning and afternoon peak hours.

There are no sidewalks along the rural intersection approaches and shoulders are wide. There is limited pedestrian and bicycle usage of the intersection. Pedestrian advisory signs are posted along Forest Road. Both intersection roadways are two lanes with no turning lanes.

Sightlines at the intersection are impeded by vegetation and geomety. CT-22 is on a sweeping horizontal curve through the intersection and Mill Road is on a relatively steep and short uphill to the CT-22 roadway.

Figure 58: Forest Road (Route 22)

Figure 59: Mill Road at CT-22

Intersection of CT-22 (Clintonville Road), CT-17 (Middletown Avenue), Old Post Road (Corridor 94) and Mansfield Drive

This intersection is the northwestern portion of the triangular intersection of the CT-22 and CT-17, with Old Post Road a local roadway to the north and Mansfield Drive the eastern leg.

For this portion of the intersection, CT-22 is on a long sweeping vertical curve through the signalized CT-22 intersection with Mansfield Drive. CT-22 is significantly elevated above the intersection as it traverses westerly and through the unsignalized Old Post Road intersection. Old Post Road is stop controlled. In this section, CT-22 is one way westbound through the Old Post Road intersection.

Figure 60: Mansfield Drive

CT-22 is two-way, with the eastbound approach entering an extreme right turn and steep downhill section to the lower part of the triangle intersection. Speeds in this short section of the intersection are posted for 25 mph, due to the extreme turns and grades. There are no sidewalks or crosswalks.

The intersection carries a significant volume of dump trucks along CT-22. The adjacent development is commercial, institutional, retail and residential.

Figure 61: Trucks along CT-22

Countermeasure Considerations

Along Corridor 94 at the intersection of CT-22 (Clintonville Road), CT-17 (Middletown Avenue), Old Post Road (Corridor 94) and Mansfield Drive countermeasures could include new and longer lasting pavement markings to fully delineate the proper lanes through the intersection. Long-term considerations of this intersection could include intersection reconfiguration due to the extreme grades and geometry of the approaches. A previous SCRCOG study explored alternative designs for this area and was not favored by the Town nor the residents.

For the intersection of Forest Road (CT-22) at Mill Road along Corridor 98, potential countermeasures could include clearing the sight lines of vegetation as well as restriping Mill Road to provide a two-lane exit. A study could be conducted to determine if a fully signalized controlled intersection is feasible. Along CT-22, additional clearing of vegetation along the northbound shoulder areas could be considered.

Townwide the issues of speeding and distracted driving could be mitigated with high-visibility enforcement, dynamic speed feedback signs, and the promotion of Watch for Me CT campaign safety messages.

The Town could collaborate with enforcement and emergency management services to develop various safety public outreach campaigns, especially around speed. Coordinating with NHTSA's national campaign schedule could further boost the effectiveness of local efforts based on community needs[1]. The NHTSA campaign calendar highlights different behavioral focus areas throughout the year that could improve driver behaviors.

Materials that are provided by the United States Department of Transportation on the Transportation Safety Marketing for Speed Prevention web page[2] could be used. Enforcement and social norming campaign materials that are available to any community include banners, posters, television ads, radio ads, infographics, and other forms of media for behavioral initiatives. See the following countermeasure table for additional recommendations.

1 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). NHTSTA 2018 Communications Calendar. Retrieved from https://www.nhtsa.gov/links/NHTSA-2018-CommsCalendar.pdf

2 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). Campaigns Under Speed Prevention. Retrieved from https://www.trafficsafetymarketing.gov/get-materials/speed-prevention/stop-speeding-it-stops-you

North Branford Countermeasure Considerations

Intersection or Corridor ID	Route Names	Number of Crashes	Issues	Countermeasures	Estimated Cost	Estimated Time of Completion
Corridor 92	CT-80	25	Needs Further Study		TBD	
Corridor 93	CT-22	11			TBD	
Corridor 94	CT-17	21	Delineation	Install Raised Island in lieu of Pavement Markings for Eastbound Traffic	Medium	Mid
				Enhance Pavement Markings	Low	Short
Corridor 95	CT-139	7	Needs Further Study		TBD	
Corridor 96	CT-80	17				
Corridor 97	CT-80	15				
Corridor 98	CT-22	14	Traffic Queue	Install Two Lanes Exit on Mill Street	High	Long
			Limited Sight Distance	Vegetation Management	Low	Short
				Install Fully Signalized Control during School Arrival and Departure	High	Long
Corridor 99	CT-17	8	Needs Further Study		TBD	
Townwide			Speeding	High-visibility Enforcement	Low	Short
				Dynamic Speed Feedback Signs	Low	Short
			Distracted Driving	Distracted Driving High-visibility Enforcement	Low	Short
				Watch for Me CT Campaign	Low	Short

TOWN OF NORTH HAVEN

2016 US Census Population Estimate: 23,709
Area: 21.12 square miles
Population Density: 1,123 people per square mile
2016 Vehicle Miles Traveled (VMT): 507,176,625
2016 VMT per Capita: 21,391.73
Setting: Urban/Suburban
Date of Meeting with Town Representatives: September 22, 2017
Town Representatives: Jonathan Bodwell, PE (Town Engineer), Anthony DePascale (North Haven PD)
Data Identified High Crash Corridors: US-5 (**Corridors 19 and 20**)
Data Identified High Crash Intersections: Dixwell Avenue and Hartford Turnpike (**Intersection BP**), Universal Drive and Montowese Avenue (**Intersection CV**), North Frontage Road and Montowese Avenue (**Intersection DN**). CT-10 and Skiff Street (**Intersection EK**)
Bike/Pedestrian Related Crash Locations: CT-10 and Skiff Street (Intersection EK

Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 566

Overview

North Haven is a town of about 23,709 people in the South Central Region of Connecticut. It is bordered to the north by Wallingford, to the east by North Branford, to the south by East Haven and New Haven, and to the west by Hamden. North Haven's main thoroughfares are Interstate 91, CT-15, US-5, CT-103, CT-22, and CT-17.

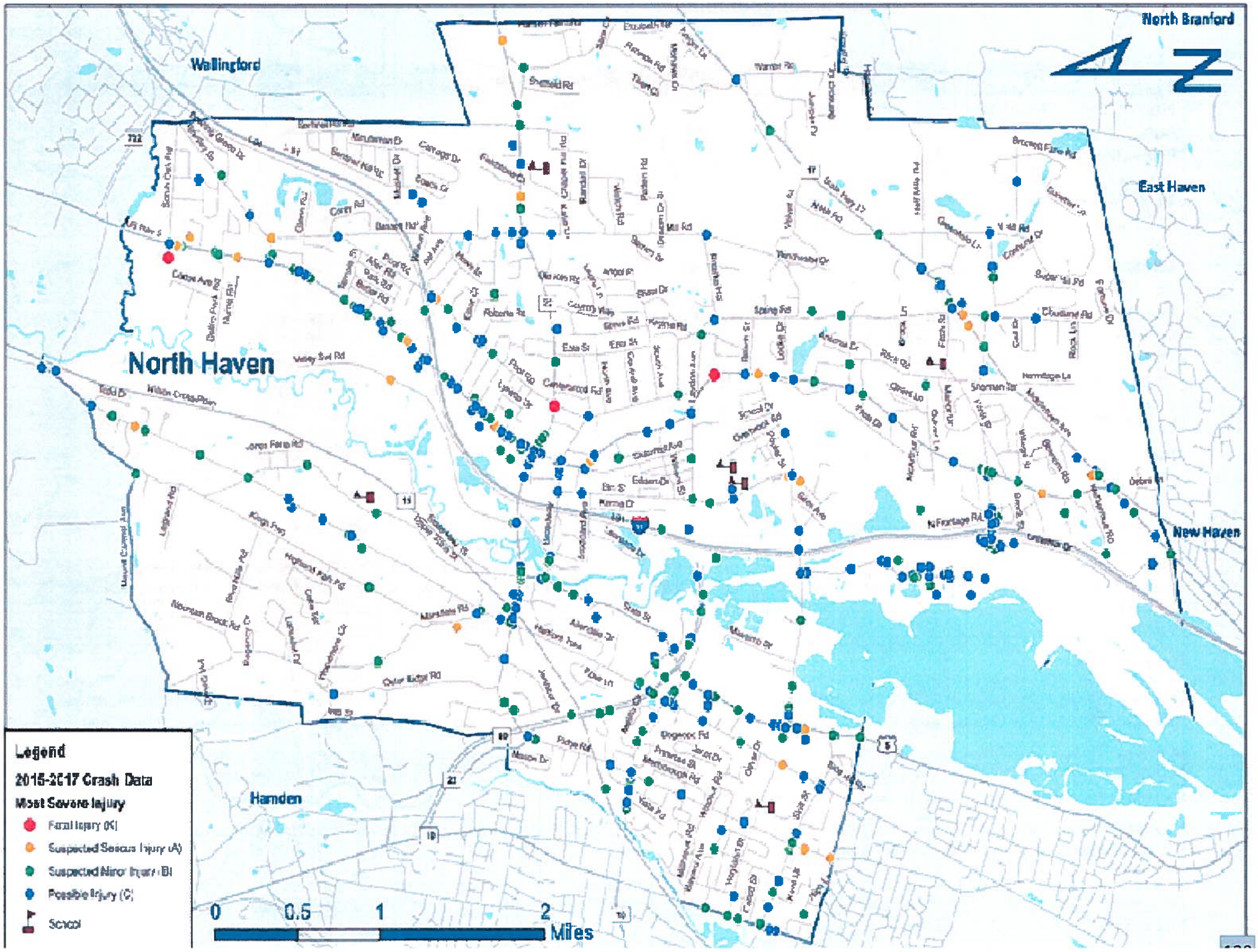
Town Comments

The Town representatives concurred that the crash data presented was generally consistent with known problem areas along US-5. The Town is concerned with the combination of the driving tendencies of patients traveling to a local clinic and irregular roadway geometry along US-5 near Sackett Point Road.

At the intersection of Montowese Avenue and the I-91 on-ramps traffic backs up significantly from vehicles leaving big box stores turning to get onto I-91 NB. The Town felt this location is a suitable candidate for "don't block the box" striping treatment. The North Haven Fire Department recently implemented the Town's first treatment of this kind in front of their station.

A pedestrian fatality along US-5 near Scrub Oak Road was identified. There is a hotel in this area that generates pedestrian trips along the roadway and mid-block crossings during the evening with poor street lighting.

US-5 is a concern for the Town. The intersection of the Hartford Turnpike and Dixwell Avenue was identified as the highest priority by the Town. The Town officials were also concerned with Homewood Avenue and the Hartford Turnpike. Also, the intersection of CT-17 and Spring Road was an area of concern that was not identified within the crash data.


North Branford
Wallingford
East Haven
North Haven
New Haven
Hamden
Legend
2015-2017 Crash Data
Most Severe Injury
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
School
0
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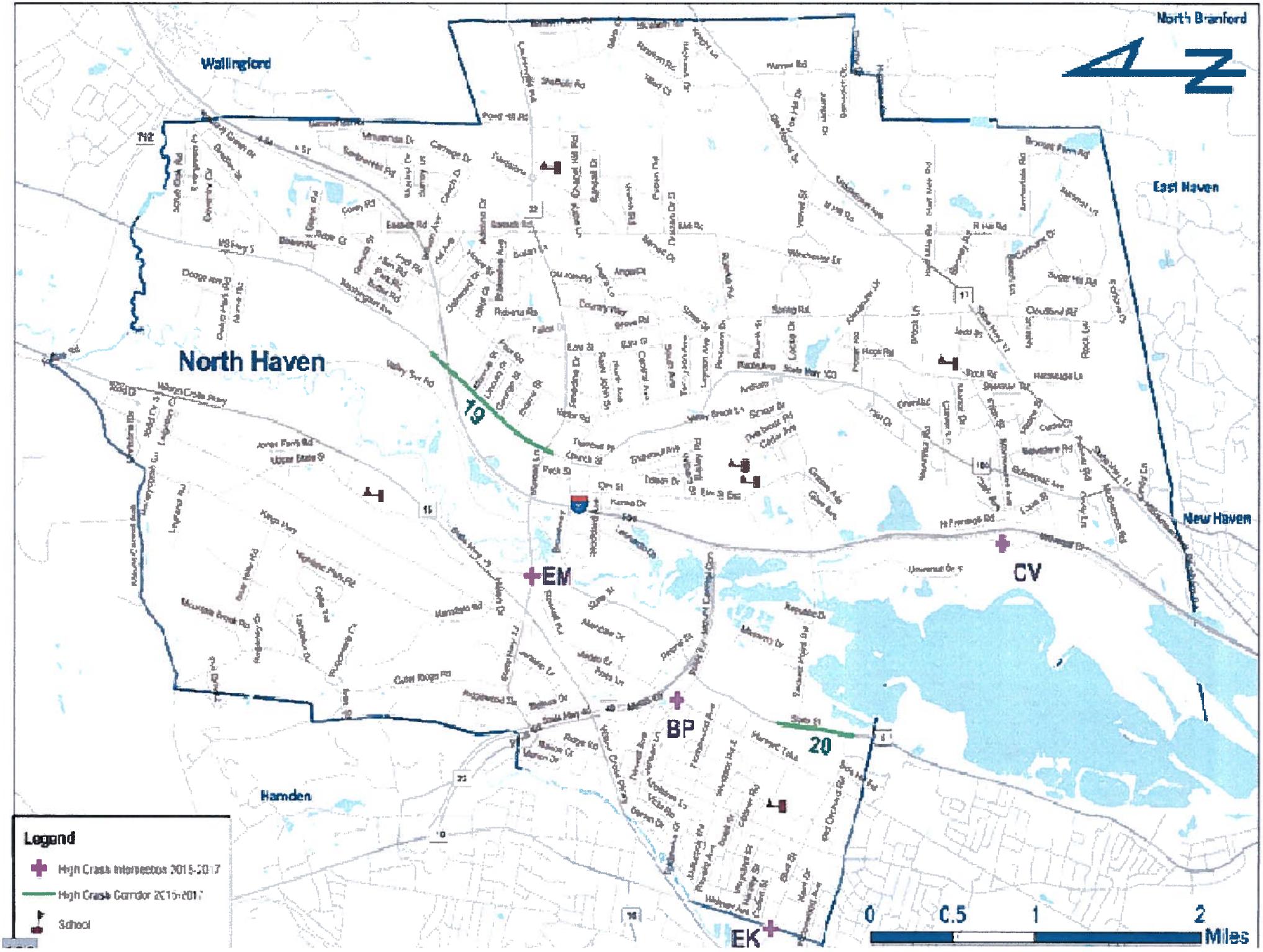
Miles


North Branford
Wallingford
North Haven
East Haven
New Haven
Hamden
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Legend
High Crash Intersection 2015-2017
High Crash Corridor 2015-2017
School
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Miles

Intersection of CT-17, Spring Road and Cloudland Road

The intersection of Spring Road, Cloudland Road and CT-17 is an offset intersection under stop control. The offset between Spring Road and Cloudland Street is approximately 175 ft. CT-17 is part of a bike route with a posted speed limit of 45 mph. The surrounding land use is residential. The Spring Road approach is divided with a median that contains utility poles, electrical transformer/ vault, and a fire hydrant impeding sight lines from Spring Road to the north. There are separate overhead flashing beacons reinforcing stop control for both side streets. The Cloudland Road approach to CT-17 creates a skewed intersection impacting motorists sight lines looking to the south.

Figure 64: Aerial Image of Cloudland Rd and Spring Rd

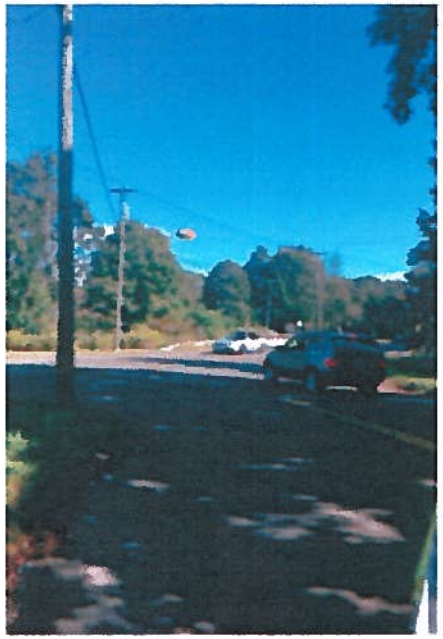

Figure 65: Facing intersection from Cloudland Rd Approach

Hartford Turnpike and Homewood Avenue

Hartford Turnpike generally runs north-south with a posted speed limit of 35 mph.

Surrounding land use is residential. The intersection of Hartford Turnpike with Homewood Avenue is an unsignalized intersection with both approaches of Homewood Avenue under stop control. Both Homewood Avenue approaches also have Stop Ahead pavement markings. A guiderail has been installed protecting the property on the northeast corner of the intersection. Sight distances appear to be adequate except for vegetation on the southwest corner. In addition, the placement of the Stop bar on the eastbound Homewood Avenue appears to be set back. Homewood Avenue is used as a cut-through between Ridge Road and US-5, potentially inducing higher traffic volumes and travel speeds.

Figure 66: Intersection of Hartford Turnpike and Homewood Ave, North Leg

Figure 67: Overgrown Vegetation at Southwest Corner of Intersection

Countermeasure Considerations

Realigning the Cloudland Road intersection with CT-17 to address the existing skew and addressing utility structures within the median of the Spring Road approach to improve sight lines could mitigate existing concerns. Pavement markings could be repainted to improve the visibility of lane boundaries and the stop bars at this intersection.

Adding Don't Block the Box pavement marking and signage at the intersection of Montowese Avenue and the I-91 on-ramps could improve mobility through area.

Countermeasures for the intersection of the Hartford Turnpike and Homewood Avenue include relocating the stop bar on the Homewood Avenue eastbound approach and clearing vegetation. Consider speed tables and other traffic calming measures also could be considered along Homewood Avenue to deter high speed cut-through traffic.

A reduction in speed could increase safety on high crash roads. USLIMITS2 is a tool provided by the FHWA to determine safe speeds for any road type. This tool uses multiple road safety criteria to show if the current posted speed is appropriate or if it should be adjusted[1].

The Town could collaborate with enforcement and emergency management services to develop various safety public outreach campaigns, especially around speed. Coordinating with NHTSA's national campaign schedule could further boost the effectiveness of local efforts based on community needs[2]. The NHTSA campaign calendar highlights different behavioral focus areas throughout the year that could improve driver behaviors.

Materials that are provided by the United States Department of Transportation on the Transportation Safety Marketing for Speed Prevention web page[3] could be used. Enforcement and social norming campaign materials that are available to any community include banners, posters, television ads, radio ads, infographics, and other forms of media for behavioral initiatives. See the following countermeasure table for additional recommendations.

1 U.S. Department of Transportation Federal Highway Administration. (2017). Proven Safety Countermeasures: USLIMITS2. Retrieved from https://safety.fhwa.dot.gov/provencountermeasures/uslimits2/

2 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). NHTSTA 2018 Communications Calendar. Retrieved from https://www.nhtsa.gov/links/NHTSA-2018-CommsCalendar.pdf

3 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). Campaigns Under Speed Prevention. Retrieved from https://www.trafficsafetymarketing.gov/get-materials/speed-prevention/stop-speeding-it-stops-you

Intersection or Corridor ID	Route Names	Number of Crashes	Issues	Countermeasures	Estimated Cost	Estimated Time of Completion
Corridor 19	US-5	18	Road Safety Audit		Low	Short
Corridor 20	US-5	37				
Montowese and I-91 on-ramp			Mobility	Don't Block the Box Sign and Pavement Markings	Low	Short
CT-5 and Dixwell Avenue			Road Safety Audit		Low	Short
CT-17, Spring Road, & Cloudland Road			Road Geometry	Roadway Realignment	Medium-High	Mid-Long
			Pavement Marking Conditions	Repaint Pavement Markings	Low	Short
			Pedestrian Safety	Sidewalks	Medium	Mid-Long
				High-visibility Crosswalks	Low	Short
				MUTCD W11-2	Low	Short
Hartford Turnpike & Homewood Avenue			Speeding	Dynamic Speed Feedback Signs	Low	Short
			Stop Bar position	Reposition Stop Bar	Low	Short
			Sight Distance	Vegetation Control	Low	Short
			Pedestrian Safety	Sidewalks	Medium	Mid-Long
				High-visibility Crosswalks	Low	Short
				MUTCD W11-2	Low	Short
Townwide			Speeding	Dynamic Speed Feedback Signs	Low	Short
				USLIMITS2	Low	Short
			Pedestrian Safety	Watch for Me CT Campaign	Low	Short

TOWN OF ORANGE

2016 US Census Population Estimate: 13,912
Area: 17.42 square miles
Population Density: 799 people per square mile
2016 Vehicle Miles Traveled (VMT): 285,412,845
2016 VMT per Capita: 20,516
Setting: Urban/Suburban
Date of Meeting with Town Representatives: October 5, 2017
Town Representatives: Robert J. Gagne (Chief of Police), Max Martins (Assistant Chief of Police)
Data-Driven High Crash Intersections: CT-152 and CT-34 **(Intersection BC)**, Dogbum Road and CT-34 (**Intersection CZ**), US-1 and CT-114 (**Intersection ED**), US-1 and Old Lambert Road (**Intersection EF**), CT-34 and CT-121 (**Intersection EN**)
Data-Driven High Crash Corridors: CT-34 **(Corridor 29)** and US-1 **(Corridor 30 and Corridor 31)**
Bike/Pedestrian Related Crash Locations: US-1 **(Corridor 30 and Corridor 31)**
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 601

Overview

Orange is a town with an estimated population of 13,912 people in the South-Central Region of Connecticut. It is bordered to the north by New Haven and Woodbridge, to the east by West Haven, to the west by Derby and Shelton, and to the south by Milford. The Town's main thoroughfares are I-95, US-1, CT-152, CT-114, CT-34, and CT-15.

Figure 68: Orange Town Hall


Derby
Woodbridge
New Haven
Shelton
Orange
West Haven
Milford
Legend
2015-2017 Crash Data
Most Severe Injury
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
School
0
0.5
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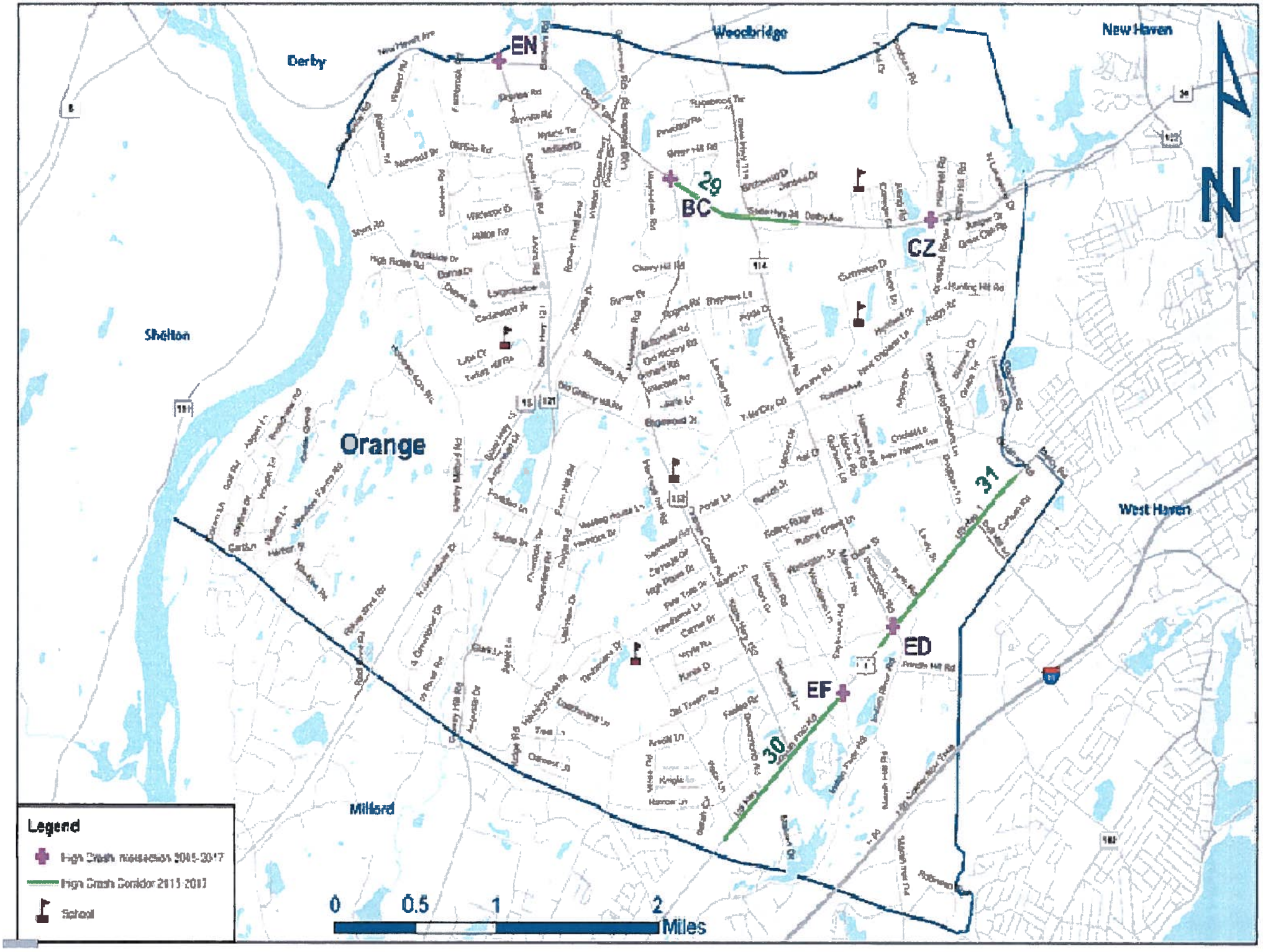
Miles


Derby
Woodbridge
New Haven
Shelton
Orange
Milford
West Haven
EN
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EF
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Legend
High Crash Intersection 2015-2017
High Crash Corridor 2015-2017
School
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Miles
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Town Comments

The Town representatives concurred that High Crash Intersection BC (CT-152 and CT-34) is a concern because the intersection is skewed and offset. In addition, there is a utility pole located in a small raised median on the southbound approach adding additional confusion. The signal timing could also be adjusted to improve operational efficiency.

High Crash Intersection EN (CT-34 and CT-121) operates at poor levels of service during peak period. The town representatives suggested dedicated left turn lanes which could help alleviate congestion.

The signal timing at intersection of CT-34 and CT-114 appears to be inadequate. This intersection was recently upgraded by the Connecticut Department of Transportation (CT DOT); however, signal timing is still not optimal.

Overgrown vegetation along the westbound CT-34 approach impedes sight lines to the CT-15 on-ramp. It was also reported by the Town that poor visibility of the on-ramp signs leads to aggressive lane changes and high-speeds as motorists enter the on-ramps. The Town would like to see the CT DOT provide improved maintenance of the overgrown vegetation to minimize these types of conditions along state routes throughout Town.

Center left turns have been designed for US-1 between CT-152 and the Milford Town Line (Corridor 30) and the Town is waiting for the implementation of the design.

The Town representatives suggested that the crashes on Corridor 31 may be due to opposing left turns into the many commercial curb cuts that are located along this heavy traffic volume segment US-1. A center left turn lane was previously installed along this corridor and the Town reported that it has had a significant impact in reducing crashes. There was no comment on the other corridors and intersections identified with the Orange representative.

Field Site Inventory

Intersection BC: CT-34 and CT-152

The intersection of CT-34 and CT-152 is a skewed, signalized intersection with a minor offset. The surrounding land use is residential. CT-34 westbound lane geometry consists of a dedicated left turn lane, a through lane and a shared through-right lane; CT-34 eastbound lane geometry consists of a dedicated left turn lane, two through lanes and a shared through-right lane; CT-152 northbound lane geometry consists of an exclusive left lane and a shared through-right lane; and the CT-152 southbound lane geometry consists of a single general-purpose lane. The southbound approach has a raised center median with a utility pole located in an undesirable location.

Figure 72: Corridor 30: US-1 (Boston Post Road)

Figure 71: Intersection of CT-34 and CT-152/Orange Center Road (West Leg of Intersection)

Corridor 30: US-1

High Crash Corridor 30 on US-1 (Boston Post Road) is generally a four-lane cross-section within a heavily commercialized area and has a posted speed limit of 40 mph. There are a considerable number of curb cuts providing access/egress to/from adjacent business. Heavy peak hour traffic along US-1 significantly reduces the number of available gaps in traffic for vehicles entering US-1 and vehicle executing left turns into driveways from US-1. There are no pedestrian amenities.

Countermeasure Considerations

Confusion at Intersection BC could be mitigated by moving the utility pole that is on the median located at the north side of CT-34 (Derby Avenue) and Orange Center Road. The yellow pavement marking around this median could be repainted to improve visibility. The lane geometry and placement of the median at this intersection could be considered for improvement. Congestion at this intersection could be improved after a study and change to the signal timing cycle.

Corridor 30 along US-1 could be improved by installing the proposed center left turn lanes. Future corridor access management could prevent further congestion. Pedestrian warning signs could be installed.

The only options for pedestrians along Corridor 30 and 31 are to walk in the grass or along the roadway. Pedestrian warning signs and sidewalks could be installed. Corridor 31 speeding could be mitigated with dynamic speed feedback signs. In addition, exclusive left turns or prohibited lefts at designated locations could reduce angle crashes in dual left turn lanes.

Dynamic Speed Feedback signs could be installed along high crash corridors where speed is a factor. The City could market driving at safe speeds through outreach. The City could collaborate with enforcement, emergency management services, and the Region to develop various safety public outreach campaigns. Coordinating with NHTSA's national campaign schedule could further boost the effectiveness of local efforts based on community needs. The NHTSA campaign calendar highlights different behavioral focus areas, such as speed, throughout the year that the Region could jointly participate in to improve driver behaviors[1].

The Town could collaborate with enforcement and emergency management services to develop various safety public outreach campaigns, especially around speed. Coordinating with NHTSA's national campaign schedule could further boost the effectiveness of local efforts based on community needs[2]. The NHTSA campaign calendar highlights different behavioral focus areas throughout the year that could improve driver behaviors.

Materials that are provided by the United States Department of Transportation on the Transportation Safety Marketing for Speed Prevention web page[3] could be used. Enforcement and social norming campaign materials that are available to any community include banners, posters, television ads, radio ads, infographics, and other forms of media for behavioral initiatives. See the following countermeasure table for additional recommendations.

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2 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). NHTSTA 2018 Communications Calendar. Retrieved from https://www.nhtsa.gov/links/NHTSA-2018-CommsCalendar.pdf

3 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). Campaigns Under Speed Prevention. Retrieved from https://www.trafficsafetymarketing.gov/get-materials/speed-prevention/stop-speeding-it-stops-you

Orange Countermeasure Considerations

High Crash Intersection or Corridor ID	Roadway Names	Number of Crashes	Issues	Countermeasures	Estimated Cost	Estimated Time of Completion
Intersection BC	CT-34 & CT-152	19	Traffic Signal Timing	Signal Timing Evaluation	Low	Short
			Sight Distance	Relocate Utility Pole	Medium	Mid
			Congestion at Peak Hour	Lane Geometry Evaluation	Low	Short
Intersection EN	CT-34 & CT-121	16	Heavy Traffic Queue	Dedicated Left Turn Lanes	High	Mid-Long
CT-34 & CT-114			Traffic Signal Timing	Signal Timing Evaluation	Low	Short
CT-34 & CT-15 on-ramp			Sight Distance	Vegetation Control	Low	Short
Corridor 30	US-1	86	Heavy Traffic Queue	Dedicated Left Turn Lanes	High	Mid-Long
			Corridor Access Management	Driveway Consolidation	High	Mid-Long
			Pedestrian Design	MUTCD W11-2 (Pedestrian Warning) Sign	Low	Short
				MUTCD W11-15 (Bicycle/Pedestrian warning) Sign	Low	Short
Corridor 29	Derby Avenue	44	Front to Rear Crashes	Dynamic Speed Feedback Signs	Low	Short
			Isolated Intersections	Traffic Signal Retroreflective Backplates	Low	Short
			Guardrail Crash	Shoulder Rumble Strips	Low	Short
Corridor 31	US-1	66	Pedestrian Crashes	Sidewalks	Medium to High	Mid-Long
			Angle Crashes in dual left turn lane	Exclusive left turns or prohibited lefts at designated locations	Medium to High	Mid-Long
			Speeding	Dynamic Speed Feedback Signs	Low	Short
			Heavy traffic Queue	Dedicated Left Turn Lanes	High	Mid-Long
Townwide			Speed	Speed Safety Campaign	Medium	Mid
				USLIMITS2	Low	Short
			Pedestrian Safety	Watch for Me CT Campaign	Low	Short

TOWN OF WALLINGFORD

2016 US Census Population Estimate: 44,660
Area: 39.87 square miles
Population Density: 1,120 people per square mile
2016 Vehicle Miles Traveled (VMT): 533,279,965
2016 VMT per Capita: 11,940
Setting: Suburban
Town Representative: Anthony DeMaio (Wallingford Police Department)
Date of Meeting with Town Representatives: September 29, 2017
Data Identified High Crash Corridors: US-5 (**8 and 9**), CT-150 (**115 and 117**), and CT-68 (**116**)
Data Identified High Crash Intersections: CT-68 and North Main Street (**DP**)
Data Identified High Bike and Ped Crash Locations: US-5 **(Corridor 8),** CT-150 **(Corridors 115 and 117),** CT-68 **(Corridor 116)**
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 775

Overview

Wallingford is bordered by Meriden to the south, Cheshire to the west, Hamden, North Haven, and North Branford to the south and Durham and Middlefield to the east. Located in the Hartford-New Haven-Springfield corridor, Wallingford is traversed by US-5, CT-91, and State Highways CT-15 (Wilbur Cross Parkway), CT-68, CT-71 and CT-150.

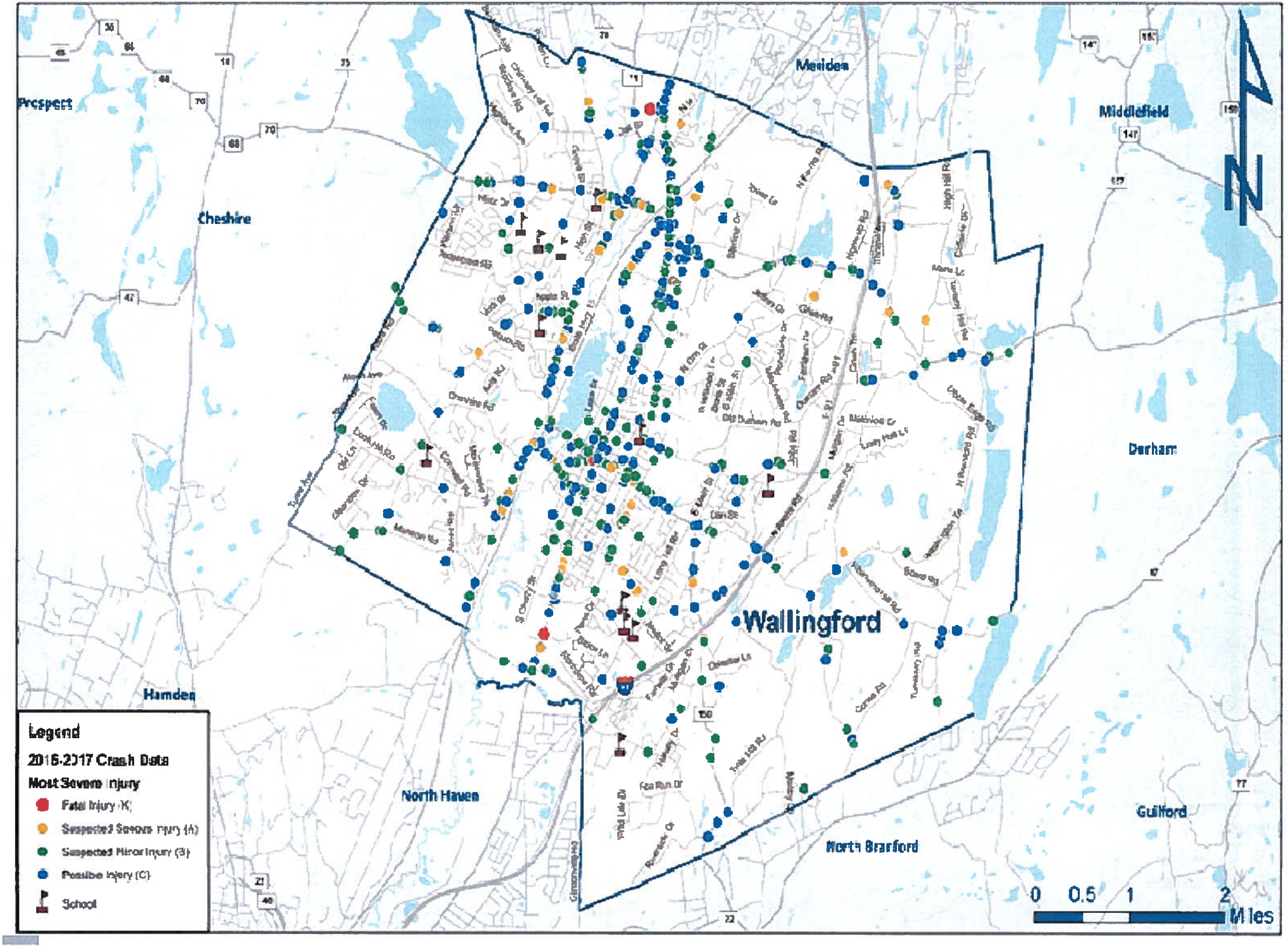
Figure 73: Choate Campus

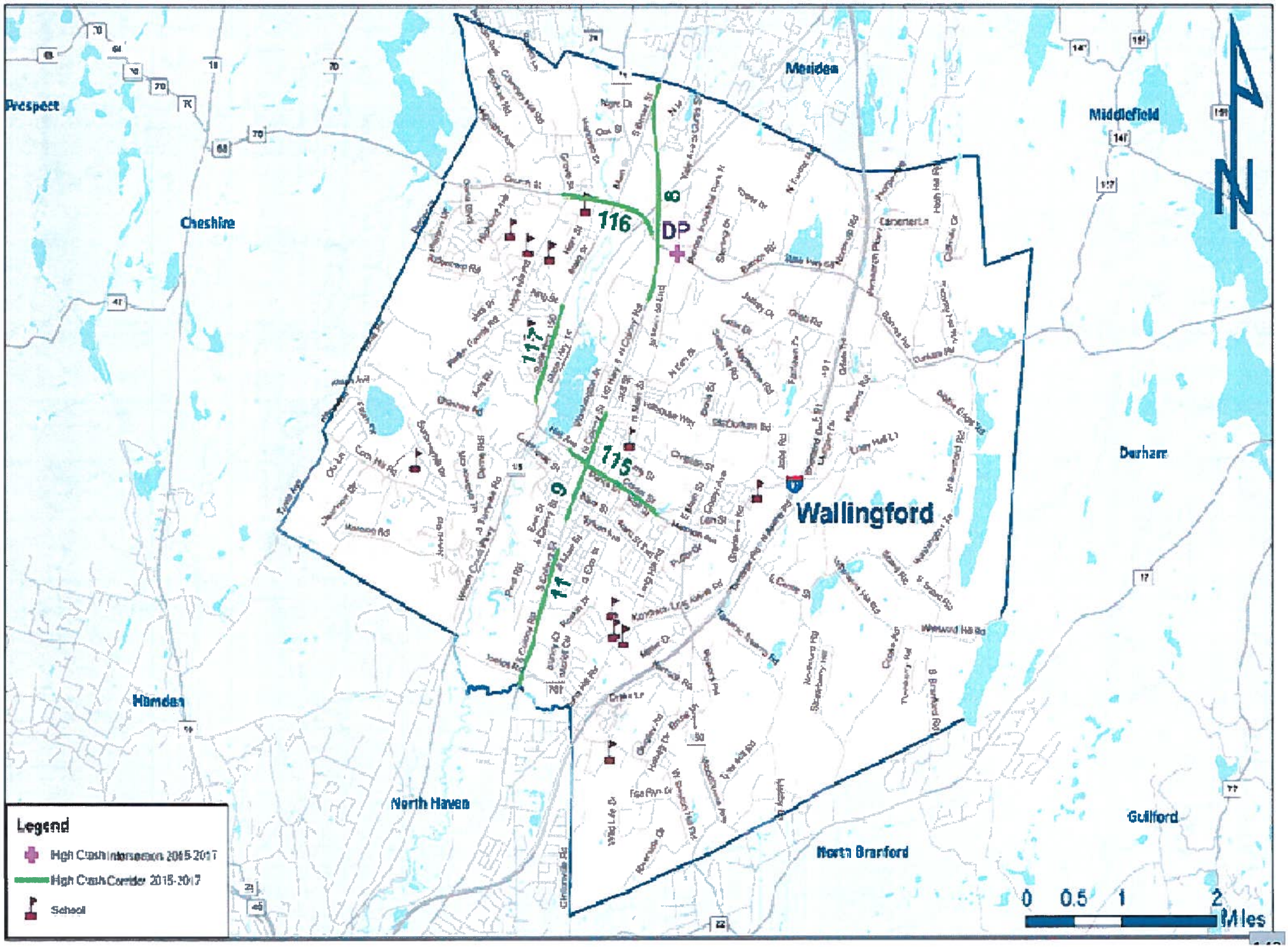
Town Comments

The Town representative concurred that the crash data presented was consistent with their general understanding of high crash locations in Town. The Town official did have several distinct problem areas, one was identified on the crash map, as Corridor 8 along US-5. The other concern was along the highly pedestrianized intersection of North Elm Street and Christian Street in the center of the Choate Rosemary School campus.

The Town recently worked with SCRCOG and a consultant to evaluate, catalog, and map roughly 5,000 signs in Town to aid in developing an approach in bringing all signs into MUTCD compliance.

Choate Rosemary Hall's campus is integrated into the local road system and the high volumes of pedestrian activity throughout this area has been challenging to manage. Students tend to cross the street erratically throughout mid-blocks. The Town is not interested in introducing established mid-block crossings and raised crosswalks. A crash near the Choate campus has led to a further push for pedestrian amenities around the campus. The Town recently held a pedestrian safety training class that included a field review along the Choate campus.


Prospect
Cheshire
Meriden
Middlefield
Durham
Wallingford
Hamden
North Haven
North Branford
Guilford
Legend
2016-2017 Crash Data
Most Severe Injury
Fatal Injury (K)
Suspected Severe Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
School
0 0.5 1 2
Miles


Prospect
Cheshire
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Durham
Wallingford
Hamden
North Haven
North Branford
Guilford
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115
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11
Legend
High Crash Intersection 2015-2017
High Crash Corridor 2015-2017
School
0 0.5 1 2
Miles

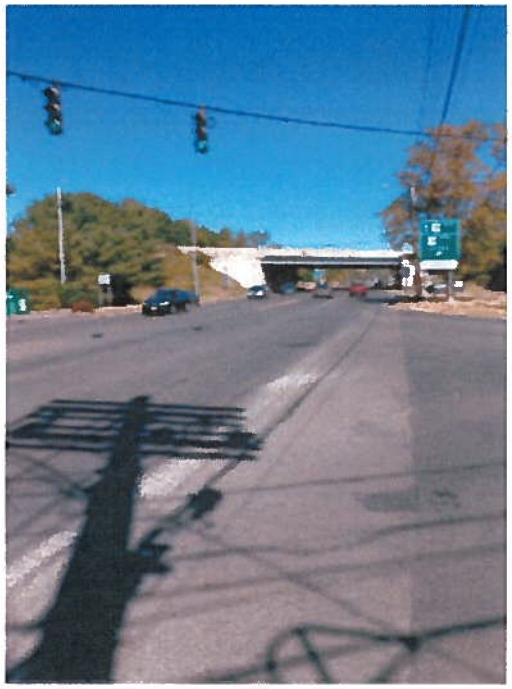


Figure 76: CT-5 Northbound at CT-15 north ramps

Field Site Inventory

Intersection of CT-15, CT-5 and Yale Avenue (Along Corridor 8)

The CT-15 ramp system at CT-5 provides full access to/from CT-15 northbound and southbound. The surrounding land uses are commercial. The southbound ramps are under signalized control. The ramps being offset by approximately 300 ft. within the offset there is also full access to/from an active Park and Ride facility with over 50 parking spaces. The Park and Ride lot driveway is under stop control. The CT-5 northbound approach stop bar is set back to permit access to the Park and Ride and the CT-15 southbound ramp. This configuration contributes to less efficient traffic signal operation and poor levels of service during peak periods.

The northbound ramps of CT-15 are also under signalized control at CT-5. However, approximately 200 feet to the south, the intersection of CT-5 and Yale Avenue is also signalized. The close spacing of the signals coupled with heavy traffic, contribute to mobility issues during peak periods.

Pavement and pavement markings were in poor condition. Traffic volume was high during off-peak hours, including trucks. There are no edge lines. Pedestrians were seen along this corridor, but there are no walkways.

Motorists were observed engaging in distracted driving and aggressive driving. A SCRCOG study evaluated options for this area.

Figure 77: Mid-Block crossing at Choate School.

North Elm Street and Christian Street

The intersection of North Elm Street and Christian Street is a four-way intersection with single lane approaches. The intersection is under stop control for all approaches. The intersection is within the center of the Choate Rosemary Hall campus and experiences significant pedestrian traffic associated with the school throughout the day and evenings. Crosswalks and ramps are present for all approaches.

Motorists were observed running stop signs with pedestrians present. The travel lanes do not have shoulders. Traffic volumes were moderate at off-peak hours. The sight distance appeared to be adequate.

Figure 78: CT-5 Non-standard Pedestrian Features

Countermeasure Considerations

Traffic calming measures such as curb-extensions and pedestrian hybrid beacons could enhance the pedestrian environment along North Elm Street and Christian Street. In addition, high-visibility enforcement of this area could help mitigate motorists disregarding the stop control. The Town could adopt a Complete Streets Policy to include all transportation users in future planning.

Potential countermeasure for CT-15 at CT-5 and Yale Avenue would be to optimize signal timings and assess lane geometry to respond to peak hour traffic volumes. To potentially mitigate distracted and aggressive driving high-visibility enforcement campaigns and public outreach could be effective townwide level. In addition, restriping pavement markings could better direct drivers in this congested corridor, reducing any potential confusion.

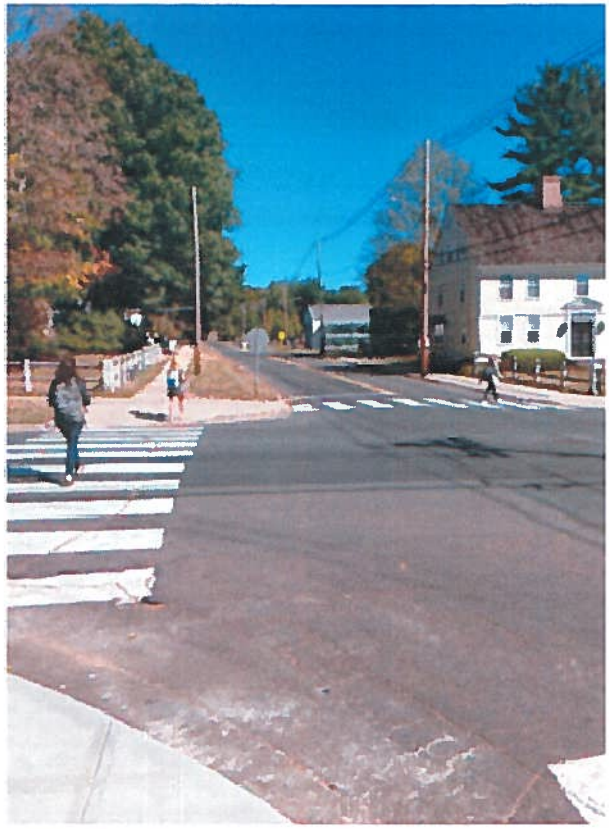


Figure 79: North Elm Street and Christian Street

Slowing vehicle speeds on the highlighted corridors could reduce conflicts with oncoming traffic. Speed Feedback Signs could be installed to encourage motorists to travel at lower, safer speeds by displaying their current speed if it exceeds the posted limit. These interactive signs can be effective at reducing speeds by 5 mph.

The Town could collaborate with enforcement and emergency management services to develop various safety public outreach campaigns, especially around speed. Coordinating with NHTSA's national campaign schedule could further boost the effectiveness of local efforts based on community needs[1]. The NHTSA campaign calendar highlights different behavioral focus areas throughout the year that could improve driver behaviors.

Materials that are provided by the United States Department of Transportation on the Transportation Safety Marketing for Speed Prevention web page[2] could be used. Enforcement and social norming campaign materials that are available to any community include banners, posters, television ads, radio ads, infographics, and other forms of media for behavioral initiatives. See the following countermeasure table for additional recommendations.

1 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). NHTSTA 2018 Communications Calendar. Retrieved from https://www.nhtsa.gov/links/NHTSA-2018-CommsCalendar.pdf

2 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). Campaigns Under Speed Prevention. Retrieved from https://www.trafficsafetymarketing.gov/get-materials/speed-prevention/stop-speeding-it-stops-you

Wallingford Countermeasure Considerations

Intersection or Corridor ID	Route Names	Number of Crashes	Issues	Countermeasures	Estimated Cost	Estimated Time of Completion
DP	CT-68 and North Main Street Ext	17	Needs Further Study		TBD	
Corridor 8	US-5	185	Mobility	Future Corridor Access Management	Low-Medium	Short-Mid
			Congestion	Road Safety Audit	Low	Short
				Signal Optimization	Medium	Mid
			Aggressive Driving	High-visibility Enforcement	Low	Short
			Front to Rear Crashes	Dynamic Speed Feedback Signs	Low	Short
				Traffic Signal Retroreflective Backplates	Low	Short
			Sideswipe and Front to Rear Crashes, Lane configurations from 2 to 6	Roadway and Lane Reconfiguration	Medium-High	Mid-Long
			Crashes in unlit locations	Investigate Roadway Illumination	Medium	Mid
			Distracted Driving	High-visibility Enforcement	Low	Short
Corridor 9	US-5	41	Needs Further Study		TBD	
Corridor 11	US-5	42				
Corridor 115	CT-150	32				
Corridor 116	CT-68	33				
Corridor 117	CT-150	20				
N/A	North Elm Street and Christian Street	N/A	Pedestrian Safety	Pedestrian Hybrid Beacons	Medium	Mid
				Investigate Bulb outs	Low-Medium	Mid
				Watch for me CT Campaign	Low	Short
Townwide			Motorized and non-motorized conflicts	Complete Streets Policy	Low	Short
			Speeding	High-visibility Enforcement	Low	Short
				Dynamic Speed Feedback Signs	Low	Short
				USLIMITS2	Low	Short

CITY OF WEST HAVEN

2016 US Census Population Estimate: 54,516
Area: 10.92 square miles
Population Density: 4,994 people per square mile
2016 Vehicle Miles Traveled (VMT): 295,748,550
2016 VMT per Capita: 5,424.99
Setting: Urban/Suburban
Date of Meeting with Town Representative: November 30, 2017
Town Representative: Sergeant D'Amato
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 1,081

Overview

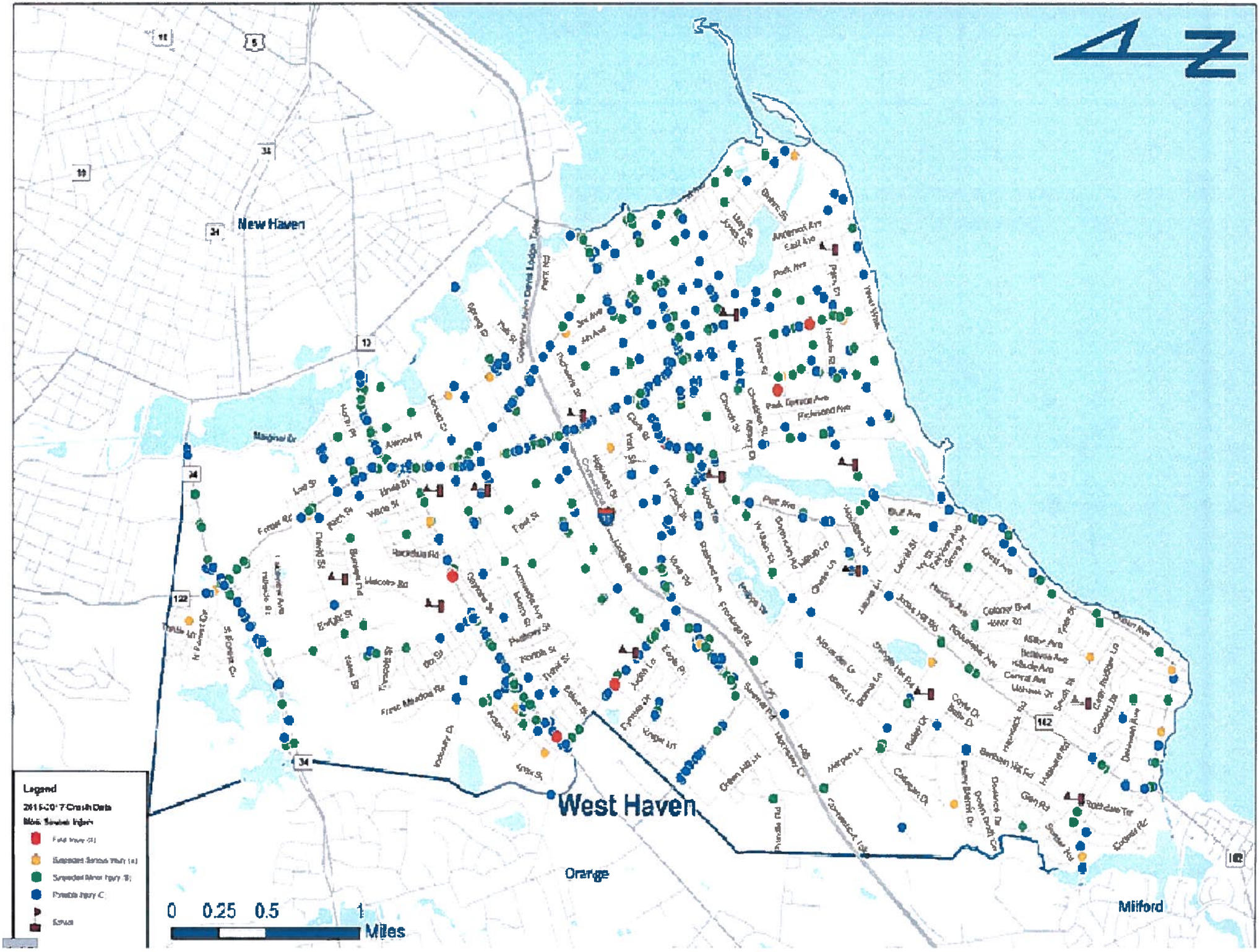
West Haven is a city with an estimated population of 54,516 people in the South Central Region of Connecticut. It is bordered to the north by New Haven, to the west by Orange, to the south and east by the Long Island Sound. The Town's main thoroughfares are I-95, US-1, CT-162, CT-122, and CT-34. I-95 and US-1 both connect West Haven to New Haven and Milford. CT-162 connects West Haven to Milford. CT-122 connects West Haven to New Haven. CT-34 connects West Haven to New Haven and Milford. General transportation safety concerns are congestion.

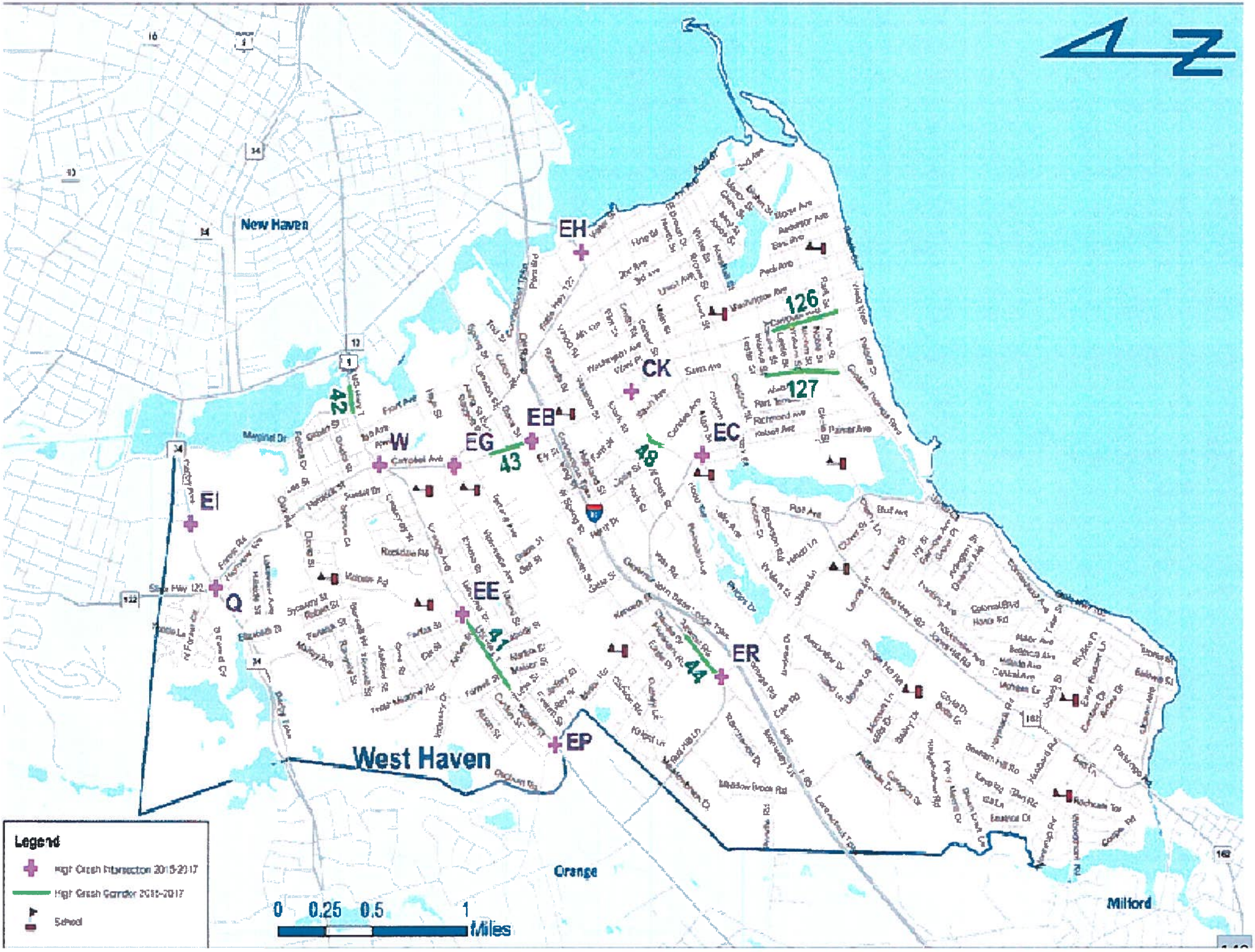
Data-Driven High Crash Corridors

Corridor ID	Road Number
48	Elm Street
127	Savin Avenue
42	US-2
126	Campbell Avenue
43	Campbell Avenue
41	US-1
44	CT-162

Data-Driven Bike and Pedestrian Crash Locations

Corridor ID	Road 1	Road 2 (If Intersection)
42	US-2	NA
126	Campbell Avenue	NA
43	Campbell Avenue	NA
41	US-1	NA
44	CT-162	NA
NA	CT-162	Main Street
NA	US-1	Fairfax Street
NA	CT-122	Campbell Avenue
NA	CT-122	CT-34
NA	US-1	CT-122


New Haven
West Haven
Orange
Milford
Legend
2015-2017 Crash Data
0 0.25 0.5 1
Miles


New Haven
West Haven
Orange
Milford
EH
CK
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EC
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126
127
43
42
48
41
44
Legend
High Crash Intersection 2015-2017
High Crash Corridor 2015-2017
School
0 0.25 0.5 1
Miles

City Comments

The City representative concurred that the crash data and maps presented were generally consistent with known problem areas throughout the city with few exceptions. As shown on the maps, Corridor 44, Sawmill Road (CT-162) is a high crash corridor and according to the Sergeant, it is the corridor with the most crashes in the City. Corridor 44 runs from the Interstate 95 southbound ramps to the curve at the intersection with Bull Hill Lane, where CT-162 curves north towards US-1. The City representative believes traffic volume contributes to crashes locally, from Interstate 95 and numerous curb cuts. The City representative noted that there are many crashes along this corridor at the I-95 ramps and Shell Gas Station (444 Saw Mill Rd). Motorists traveling westbound cross four lanes of traffic to access the gas station and two of these eastbound lanes are designated for turning. Drivers are often hit by eastbound motorists while attempting to enter the driveway to the gas station.

The West Haven representative considers Orange Avenue (US-1) to be the second highest crash corridor in the City which is the Corridor 41 section from Tuthill Road easterly to Fairfax Street. Like Corridor 44, the City believes that high volumes and numerous curb cuts contribute to the high crash rates.

The City representative took exception to the depiction on the crash map for Corridors 126 and 127 in the south end along Campbell and Savin Avenues respectively as being high crash locations. They felt that those corridors shouldn't be listed and may be the result of recent motorcycle fatalities that are not likely related to roadway conditions.

Intersection W (US-1 and CT-122) was not considered a high priority due to recent alignment changes. The other corridors and intersections shown on the crash map were not considered significant by the City Police Department.

Field Site Inventory

Corridor 44: Sawmill Road (CT-162)

Corridor 44 is a high crash location that runs from the Interstate 95 southbound ramps and just over one quarter mile westerly to the Bull Hill Lane signalized intersection.The posted speed limit is 35 mph.

Within the approximate one quarter mile of high crash corridor, there are four signalized intersections, with three of the four high traffic generators, including the Interstate 95 southbound ramps, Walmart site driveway and Allings Crossing Road intersections. Within this corridor the traffic volumes fluctuate significantly between the intersections given the high generators on the side streets.

The corridor roadway is two through lanes in each direction with exclusive turning lanes at each of the four intersections. Except for the Walmart site frontage, there are smaller curb cuts in between each of the intersections contributing to traffic flow interruptions.

There are existing and continuous sidewalks along the northern side of the corridor and crosswalks with paved nominal width shoulders of 4 feet or less. There are Do Not Block the Intersection signs. Long queues were observed in some of the turning lanes (Allings Crossing Road). The corridor roadway was reconstructed in the last 15 years with improvements to the Interstate 95 ramp system.The corridor is commercialized.

Figure 82: CT-162/ Sawmill Road

Corridor 41: Orange Avenue (US-1)

Corridor 41 is the second highest crash location and runs from the Tuthill Road intersection easterly to the Fairfax Avenue intersection. Speed is posted at 35 mph.

There are four signalized intersections, with all four intersections from lower volume side streets and no significant traffic generators within the corridor. Within this corridor the traffic volumes do not fluctuate significantly between the intersections. US-1 is the primary driver for traffic volumes in the area serving in the principal arterial role as it is classified.

The corridor roadway has two through lanes in each direction with no exclusive turning lanes at each of the four intersections except for the Farwell Street intersection. There are dozens of smaller curb cuts in between each of the intersections contributing to traffic flow interruptions and turning vehicle conflict.

The corridor includes typical US-1 development with numerous retail, commercial, institutional and very limited residential development along the corridor.

Figure 83: US-1

Countermeasure Considerations

While High Crash Corridor 44 and Interstate 95 ramps were reconstructed in the last 15 years, the spacing of the intersections and significant traffic flow fluctuations between the intersections indicates there is a need for improved traffic flow progression in the corridor. Allings Crossing Road is a significant generator of traffic to the corridor as is Walmart and the Interstate 95 ramps. With the numerous curb cuts, coordinated traffic flow may be easily interrupted in between intersections.

Countermeasures for Corridor 44 should include a traffic signal timing evaluation to update the current timing and coordination between the intersections and potential improvements in the splits and offsets as well as possibly the cycle lengths. The City could request the State to run the four intersections in one peak hour coordinated system and have only off-peak coordination with adjacent signals. Adaptive traffic signal control may be a consideration for the high fluctuations in traffic volume demands within Corridor 44.

Corridor access management should also be reviewed and considered in future redevelopments in the corridor. A prime example of good management of curb cuts is the Walmart site development, with a single point of access and long site frontage without additional curb cuts. Corridor access management can have a 25-31% reduction in injury and fatal crashes along urban and suburban arterials according to the Federal Highway Administration and the Highway Safety Manual[1].

Countermeasures for High Crash Corridor 41 should include a traffic signal timing evaluation to understand the current timing and coordination between the intersections and potential improvements in the splits and offsets as well as possibly the cycle lengths. Exclusive turn lanes may be desirable at intersections on Corridor 41 where there is a pattern of turning vehicle crashes or traffic signal timing advances. Finally, curb cut management should be reviewed and considered in future redevelopments in the corridor.

The Town could collaborate with enforcement and emergency management services to develop various safety public outreach campaigns, especially around speed. Coordinating with NHTSA's national campaign schedule could further boost the effectiveness of local efforts based on community needs[2]. The NHTSA campaign calendar highlights different behavioral focus areas throughout the year that could improve driver behaviors.

Materials that are provided by the United States Department of Transportation on the Transportation Safety Marketing for Speed Prevention web page[3] could be used. Enforcement and social norming campaign materials that are available to any community include banners, posters, television ads, radio ads, infographics, and other forms of media for behavioral initiatives. See the following countermeasure table for additional recommendations.

1 U.S. Department of Transportation Federal Highway Administration. (2017). Proven Safety Countermeasures: Corridor Access Management. Retrieved from https://safety.fhwa.dot.gov/provencountermeasures/corridor_access_mgmt/

2 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). NHTSTA 2018 Communications Calendar. Retrieved from https://www.nhtsa.gov/links/NHTSA-2018-CommsCalendar.pdf

3 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). Campaigns Under Speed Prevention. Retrieved from https://www.trafficsafetymarketing.gov/get-materials/speed-prevention/stop-speeding-it-stops-you

West Haven Countermeasure Considerations

High Crash Intersection or Corridor ID	Roadway Names	Number of Crashes	Issues	Countermeasures	Estimated Cost	Estimated Time of Completion
Corridor 43	Campbell Avenue	26	Missing Crosswalks	High-visibility Crosswalks	Low	Short
			Angle and Front to Rear Crashes	Traffic Signal Retroreflective Back plates	Low	Short
				Dynamic Speed Feedback Signs	Low	Short
Corridor 44	CT-162	42	Traffic signal timing	Signal timing evaluation	Low	Short
				Adaptive traffic control	Medium	Mid
			Front to Rear Crashes	Traffic Signal Retroreflective Back plates	Low	Short
			Pedestrians	High-visibility Crosswalks	Low	Short
			Conflict Points	Shorten eastbound left turn lane into Denny's and the westbound left turn lane to the west of the gas station into the vacant building	Medium	Mid
			Conflict Points	Corridor Access Management, reduction of driveways	Medium-High	Mid-Long
Corridor 41	US-1	35	Traffic signal timing	Signal timing evaluation	Low	Short
				Adaptive traffic control	Medium	Mid
			Turning vehicle crashes	Dedicated turn lanes	Medium	Mid
			Conflict Points	Corridor Access Management, reduction of driveways	Medium-High	Mid-Long
Corridor 127	Savin Avenue	11	Motorcyclist Safety	Motorcycle Awareness Campaign	Low-Medium	Short-Medium
Corridor 126	Campbell Avenue	17	Motorcyclist Safety	Motorcycle Awareness Campaign	Low-Medium	Short-Medium
Intersection W	US-1 and CT-122	32	Pedestrians	High-visibility Crosswalks	Low	Short
			Angle and Front to Rear Crashes	Traffic Signal Retroreflective Back plates	Low	Short
				Dynamic Speed Feedback Signs	Low	Short
Townwide			Speeding	USLIMITS2	Low	Short
				High-visibility Enforcement	Low-Medium	Short-Mid
				Speed Campaign	Low-Medium	Short-Mid
			Conflict Points	Corridor access Management, reduction of driveways	Medium-High	Mid-Long
			Pedestrian Safety	Watch for Me CT Campaign	Low	Short

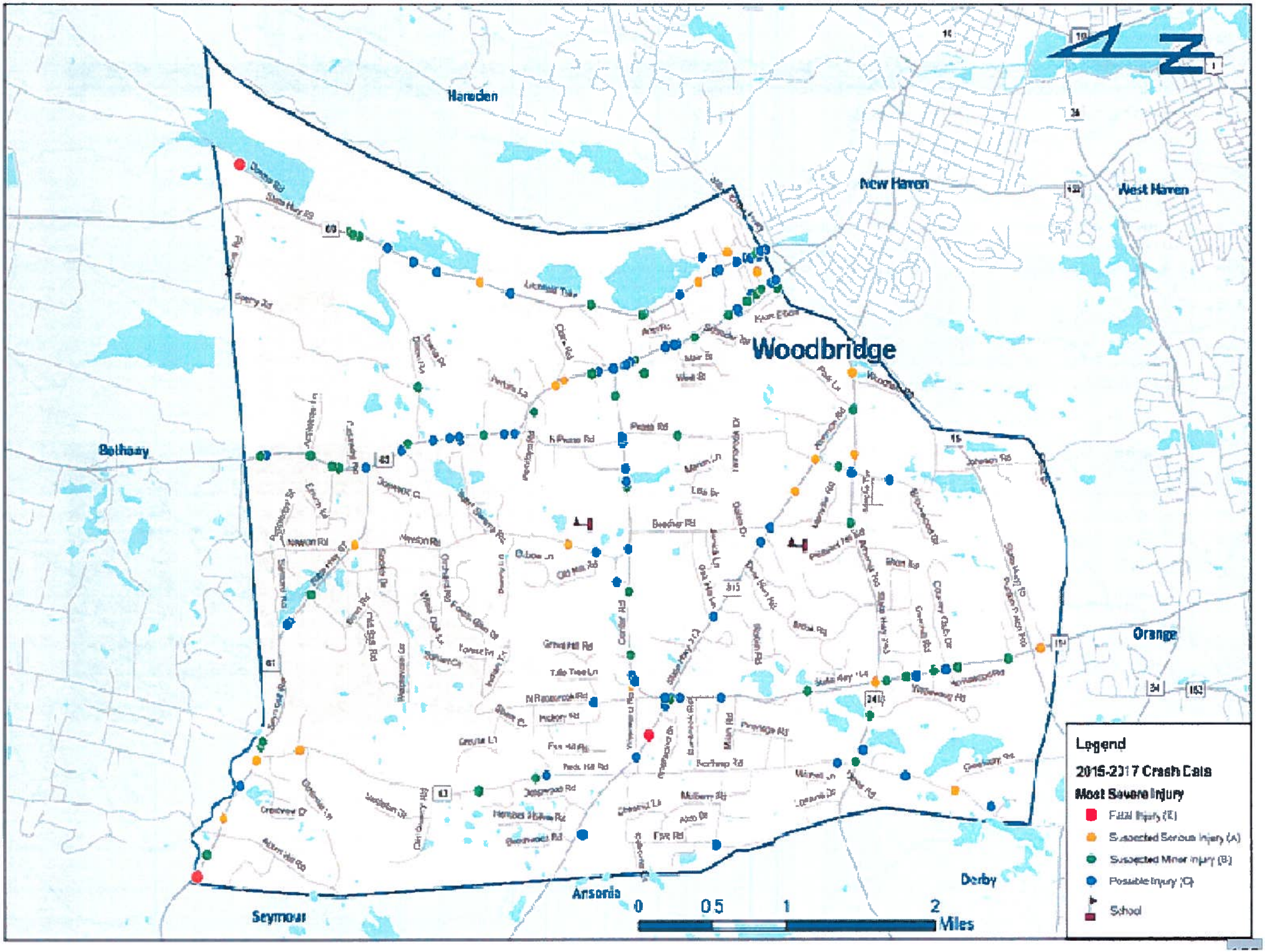
TOWN OF WOODBRIDGE

2016 US Census Population Estimate: 8,842
Area: 19.2 square miles
Population Density: 470/Square mile
2016 Vehicle Miles Traveled (VMT): 151,777,585
2016 VMT per Capita: 17,165
Setting: Rural/Suburban
Date of Meeting with Representatives: October 12, 2017
Town Representatives: Frank Cappiello (Chief of Police) and Raymond C. Stuart (Deputy Chief)
Data Identified High Crash Corridors: 25 (CT-63, Amity Road), **26** (CT-69, Litchfield Turnpike)**Data Identified High Crash Intersections:** N/A
Bike and Ped Locations: N/A
Total Number of Crashes Involving Injuries or Fatalities, 2015-2017: 206

Overview

Woodbridge is a town on the western edge of The South Central Region. It is bordered by Orange and New Haven to the south, Hamden to the east, Bethany to the north and Seymour, Ansonia and Derby to the west. The Town's main thoroughfares are CT-63, CT-69, CT-67, CT-15, and CT-114.

Figure 84: CT-63 approaching Bradley Road


Hamden
New Haven
West Haven
Woodbridge
Bethany
Orange
Ansonia
Derby
Seymour
Legend
2015-2017 Crash Data
Most Severe Injury
Fatal Injury (K)
Suspected Serious Injury (A)
Suspected Minor Injury (B)
Possible Injury (C)
School
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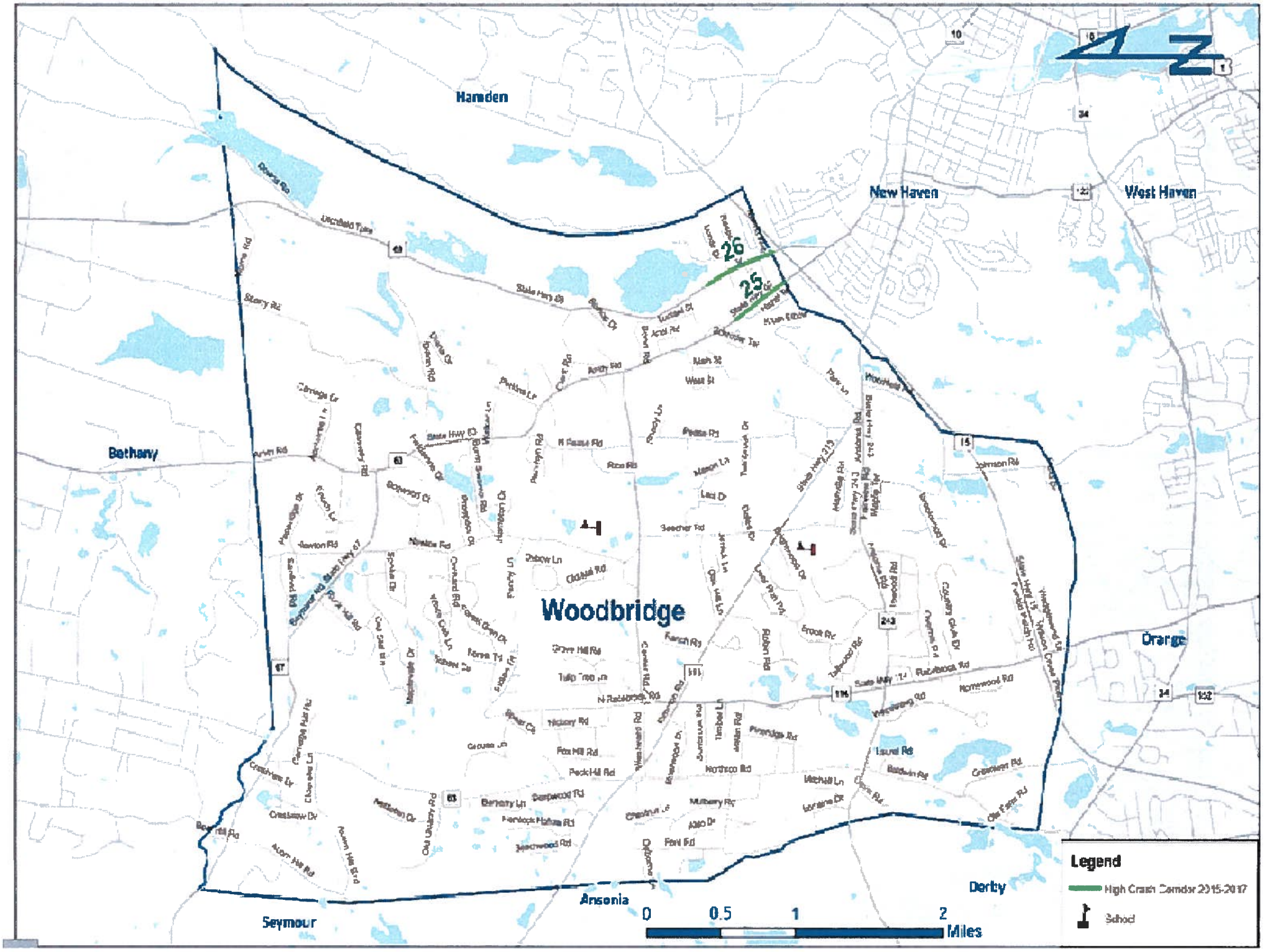
Miles


Hamden
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High Crash Corridor 2015-2017
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Town Comments

The Town representatives concurred that selections of CT-63 and CT- 69 triangle along high crash **Corridors 25** and **26** are high priorities. They attributed this to heavy congestion during the peak traffic periods near the CT-15 ramps. The State has planned short-term and long-term improvements in this area. Additional information on the planned projects is available on the Town website. The short-term plan (State Project No. 92-672) consists of roadway and traffic signal improvements along CT-69 to improve capacity and operational deficiencies. The long-term plan is to construct a connector road between CT- 63 and CT-69 and to reconfigure the CT-15 ramps onto this connector road.

The Town representatives prioritized CT-63 at Bradley Road along high crash **Corridor 25**. The State has investigated crashes at this intersection three times in the past 15 years. The Town has requested the installation of a traffic signal at this intersection in the past, but the State determined that it was not warranted.

A new housing development called Woodbridge Village was approved by the Office of State Traffic Administration (OSTA), but the Town is not aware of any immediate plans to construct. The developer has requested extensions from OSTA to keep the certificate active. If this development is constructed, the installation of a traffic signal may be warranted at the Route 63/Bradley Road intersection.

Figure 87: CT-63

Figure 88: Rimmell Road

CT-313 at Peck Hill Road, Northrop Road, and Ford Road is not a data-driven intersection, but the Town highlighted this junction. Numerous residents have expressed safety concerns about this intersection, primarily due to the skewed alignment.

CT-313 at Johnson Road is a concern for the Town. Improvements are proposed at this intersection under SPN 173-451. This project will include the installation of video detection and actuated flashing warning lights to warn oncoming motorists on CT-313 when a vehicle is entering the intersection.

The Town reported that Dillon Road is a concern due to speeding and cut through traffic. Motorists travel this local road as a cut-through between CT-69 and CT-63. The Woodbridge Police Department has used speed trailers on this road as a traffic calming measure. A change to one-way traffic flow was considered in the past to reduce cut-through traffic, but this change was never implemented. Tony Lorenzetti from the Safety Circuit Rider Program has conducted road safety audit to address some of the Town's concerns.
Residents on Landin Street were concerned with high speeds. With State assistance in the public outreach process the Town installed speed humps and speed table. These were a popular traffic calming measure, and many other residents in Town have requested speed humps in other locations since these were installed.

As part of a State program, center line rumble strips were installed at multiple locations throughout the Town within the last two years. The Town has developed a matrix for assessing and ranking citizen concerns to evaluate concerns objectively and effectively use limited safety resources.

Field Site Inventory

Rimmon Road (CT-313) at Northrop Road/Ford Road

This is a stop-controlled skewed intersection with a grade differential on the approaching legs. Stop signs are located on Ford Road at Northrop Road and on Northrup Road at CT-313. There is an advanced intersection advisory sign on the CT-313 southbound approach. The junction has inadequate sight distance from Northrop Road to right onto Rimmon Road and from Ford Road to right onto Northrop Road. CT-313 also has significant vertical curvature. Traffic volume was moderate.

Figure 89: Northrop Road and Ford Road

High Crash Corridor 25 CT-63 (Amity Road) from New Haven Town Line to Bradley Road

CT-63 runs in a north south direction. There is one lane of traffic along the southern section of the corridor. At Landin Street northbound traffic divides into two lanes. The southbound travel lane is wider than the northbound lanes. Shoulders measure about 3 feet. The speed limit is posted at 25 mph. This is a commercial area with high curb cuts and high turning movements. Traffic was moderate to high. In addition, there are pedestrians along this corridor with limited pedestrian amenities. Sidewalks are intermittently located. This is a CT Transit route.

Amity Road/CT-63 at Bradley Road along Corridor 25

This is a T-intersection with stop control on Bradley Road. At this intersection, CT-63 is a four-lane roadway (two through lanes in each direction) The Bradley Road approach consists of a left-turn lane and a right-turn lane. The stop sign on Bradley Road is set back behind stop bar. The pavement markings are faded. There is no crosswalk and a sidewalk ramp is located on the southeast corner.

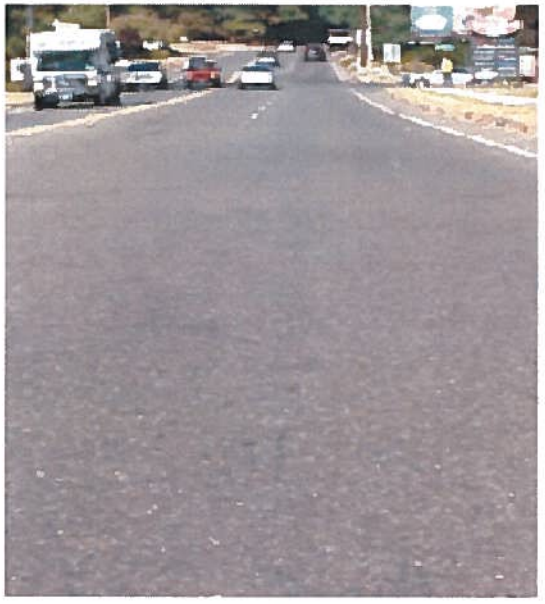

Figure 90: CT-63 approaching Bradley Road

Countermeasure Considerations

Congestion on Corridors 25 (CT-63) and 26 (CT-69) is currently being addressed by the State. The State has planned short-term and long-term improvements in this area, including traffic signal improvements along CT-69 to improve capacity and operational deficiencies. The long-term plan is to construct a connector road between CT- 63 and CT-69 and to reconfigure the CT-15 ramps onto this connector road.

For the intersection of CT-313 at Northrop Road/Ford Road advanced intersection signage with flashing beacons on both approaches could be considered. Intersection ahead pavement markings could also alert drivers to the upcoming roadway configuration. To mitigate speed the Town could consider speed feedback signs. The Town could support the SPN 173-451 project to address the issues at the intersection of CT-313 and Johnson Avenue.

For high crash Corridor 25 the Town could work with the property owners to develop a future corridor access management plan that includes driveway consolidation. Center road treatment could be installed to narrow lanes, slow speeds. With the narrower travel lanes, the Town could expand shoulders to standard widths. For speed awareness the Town could consider speed feedback signs along this corridor. Improving amenities such as repainting crosswalks and adding speed tables at crosswalks on side streets could create a more pedestrian friendly environment. The Town could adopt local ordinance requiring sidewalk construction with new development.

Designating Dillon Road a one-way could mitigate speeding. At the intersection of CT-63 and Bradley Road the Town could ask CT DOT to investigate restriping Route 63 to provide a southbound left-turn lane. And if future development occurs the Town and State could monitor traffic signal warrants if there are traffic volumes increases. Due to the poor pavement marking conditions the Town could coordinate with the State to update the pavement markings in this corridor.

The Town could collaborate with enforcement and emergency management services to develop various safety public outreach campaigns, especially around speed. Coordinating with NHTSA's national campaign schedule could further boost the effectiveness of local efforts based on community needs[1]. The NHTSA campaign calendar highlights different behavioral focus areas throughout the year that could improve driver behaviors.

Materials that are provided by the United States Department of Transportation on the Transportation Safety Marketing for Speed Prevention web page[2] could be used. Enforcement and social norming campaign materials that are available to any community include banners, posters, television ads, radio ads, infographics, and other forms of media for behavioral initiatives. See the following countermeasure table for additional recommendations.

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1 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). NHTSTA 2018 Communications Calendar. Retrieved from https://www.nhtsa.gov/links/NHTSA-2018-CommsCalendar.pdf

2 U.S. Department of Transportation National Highway Traffic Safety Administration. (2017). Campaigns Under Speed Prevention. Retrieved from https://www.trafficsafetymarketing.gov/get-materials/speed-prevention/stop-speeding-it-stops-you

Woodbridge Countermeasure Considerations

Intersection or Corridor ID	Road or Route Names	Number of Crashes	Issues	Countermeasures	Estimated Cost	Estimated Time of Completion
Corridor 25	CT-63	20	Pedestrian Safety	Town Ordinance to require future developers install sidewalks	Low	Short
				Watch for Me CT campaign	Low	Short
				Walkways	Medium-High	Mid
				Rapid Rectangular Flashing Beacons	Low	Short
			Congestion	Corridor Access Management	Low-Medium	Short-Mid
				Coordinate with State on Current Project	Low	Short
			Narrow Shoulders	Narrow travel lanes and increase shoulder widths	Low	Short
			Signalized Intersection	Continue to monitor traffic to determine if traffic signal warranted at CT-63 and Bradley Road	Low-Medium	Short-Long
			Speeding	High-visibility Enforcement	Low-Medium	Short-Long
				Dynamic Speed Feedback Signs	Low	Short
CT-313 and Northrop Road/Peck Hill Road			Skewed alignment	Add Flashing Beacons to intersection Ahead Signs on CT-313	Low	Short
				Dynamic Speed Feedback Signs on CT-313	Low	Short
Dillon Road			Speeding and Cut Through Road	Designate it a one way	Low-Medium	Short-Mid
CT-313 and Johnson Road			Intersection Issues	Support SPN 173-451	Low	Short
26	CT-69	19	Congestion	Corridor Access Management	Low-Medium	Short-Mid
			Sight distance	Enhanced Intersection Ahead Sign for Northbound Approach	Low	Short
				Intersection Ahead Pavement Marking	Low	Short
Townwide			Speeding	Dynamic Speed Feedback Signs	Low	Short
				High-visibility Enforcement	Low-Medium	Short-Mid

SOUTH CENTRAL RTSP GLOSSARY

5 year rolling average means the average of five individual, consecutive annual points of data (e.g. annual fatality rate).

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.

HMVMT means hundred million vehicle miles traveled.

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 2-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.

Transfer means, in accordance with provisions of 23 U.S.C. 126, a State may transfer from an apportionment under section 104(b) not to exceed 50 percent of the amount apportioned for the fiscal year to any other apportionment of the State under that section.

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Appendix B Emphasis Area Tables

Intersections	2015	2016	2017
Bethany			
Suspected Serious Injury (A)	0	0	1
Suspected Minor Injury (B)	4	7	9
Possible Injury (C)	4	4	10
Total	**8**	**11**	**20**
Branford			
Suspected Serious Injury (A)	4	2	3
Suspected Minor Injury (B)	21	22	27
Possible Injury (C)	35	40	48
Total	**60**	**64**	**78**
East Haven			
Fatal Injury (K)	1	0	1
Suspected Serious Injury (A)	6	2	5
Suspected Minor Injury (B)	25	14	22
Possible Injury (C)	37	31	37
Total	**69**	**47**	**65**
Guilford			
Fatal Injury (K)	1	0	0
Suspected Serious Injury (A)	3	0	1
Suspected Minor Injury (B)	16	13	8
Possible Injury (C)	12	18	15
Total	**32**	**31**	**24**
Hamden			
Fatal Injury (K)	0	0	4
Suspected Serious Injury (A)	9	7	4
Suspected Minor Injury (B)	56	36	45
Possible Injury (C)	78	102	95
Total	**143**	**145**	**148**
Madison			
Fatal Injury (K)	0	1	1
Suspected Serious Injury (A)	1	1	1
Suspected Minor Injury (B)	8	3	7
Possible Injury (C)	5	17	10
Total	**14**	**22**	**19**

Intersections	2015	2016	2017
Meriden			
Fatal Injury (K)	1	0	1
Suspected Serious Injury (A)	19	13	26
Suspected Minor Injury (B)	35	56	39
Possible Injury (C)	90	122	109
Total	**145**	**191**	**175**
Milford			
Fatal Injury (K)	0	2	1
Suspected Serious Injury (A)	15	16	16
Suspected Minor Injury (B)	27	29	20
Possible Injury (C)	93	130	73
Total	**135**	**177**	**110**
New Haven			
Fatal Injury (K)	2	5	5
Suspected Serious Injury (A)	81	84	87
Suspected Minor Injury (B)	210	182	172
Possible Injury (C)	643	729	731
Total	**936**	**1000**	**995**
North Branford			
Suspected Serious Injury (A)	5	3	2
Suspected Minor Injury (B)	14	18	11
Possible Injury (C)	14	13	13
Total	**33**	**34**	**26**
North Haven			
Fatal Injury (K)	1	0	0
Suspected Serious Injury (A)	2	5	2
Suspected Minor Injury (B)	30	29	26
Possible Injury (C)	46	63	58
Total	**79**	**97**	**86**
Orange			
Fatal Injury (K)	0	1	0
Suspected Serious Injury (A)	3	3	1
Suspected Minor Injury (B)	18	25	25
Possible Injury (C)	51	50	44
Total	**72**	**79**	**70**

Intersections	2015	2016	2017
Wallingford			
Fatal Injury (K)	0	1	1
Suspected Serious Injury (A)	8	3	11
Suspected Minor Injury (B)	34	44	46
Possible Injury (C)	71	89	84
Total	**113**	**137**	**142**
West Haven			
Fatal Injury (K)	0	2	2
Suspected Serious Injury (A)	5	8	5
Suspected Minor Injury (B)	45	73	61
Possible Injury (C)	100	81	102
Total	**150**	**164**	**170**
Woodbridge			
Suspected Serious Injury (A)	1	0	5
Suspected Minor Injury (B)	7	9	15
Possible Injury (C)	19	24	15
Total	**27**	**33**	**35**
SCRCOG Totals	**2016**	**2232**	**2163**

Roadway Departures

	2015	2016	2017
Bethany			
Suspected Minor Injury (B)	6	8	8
Possible Injury (C)	7	3	7
Total	**13**	**11**	**15**
Branford			
Fatal Injury (K)	1	1	1
Suspected Serious Injury (A)	5	2	3
Suspected Minor Injury (B)	12	13	13
Possible Injury (C)	7	10	12
Total	**25**	**26**	**29**
East Haven			
Fatal Injury (K)	0	1	0
Suspected Serious Injury (A)	2	1	5
Suspected Minor Injury (B)	10	6	10
Possible Injury (C)	7	8	12
Total	**19**	**16**	**27**
Guilford			
Fatal Injury (K)	1	1	0
Suspected Serious Injury (A)	1	0	4
Suspected Minor Injury (B)	15	14	13
Possible Injury (C)	9	6	4
Total	**26**	**21**	**21**
Hamden			
Fatal Injury (K)	1	1	0
Suspected Serious Injury (A)	5	6	4
Suspected Minor Injury (B)	20	25	12
Possible Injury (C)	24	35	41
Total	**50**	**67**	**57**
Madison			
Fatal Injury (K)	0	0	2
Suspected Serious Injury (A)	3	1	3
Suspected Minor Injury (B)	5	5	4
Possible Injury (C)	6	3	6
Total	**14**	**9**	**15**

Roadway Departures

	2015	2016	2017
Meriden			
Fatal Injury (K)	2	1	2
Suspected Serious Injury (A)	10	12	9
Suspected Minor Injury (B)	13	24	19
Possible Injury (C)	21	25	16
Total	**46**	**62**	**46**
Milford			
Fatal Injury (K)	0	1	1
Suspected Serious Injury (A)	3	7	5
Suspected Minor Injury (B)	22	18	12
Possible Injury (C)	20	28	23
Total	**45**	**54**	**41**
New Haven			
Fatal Injury (K)	3	2	2
Suspected Serious Injury (A)	20	22	12
Suspected Minor Injury (B)	29	28	37
Possible Injury (C)	68	66	52
Total	**120**	**118**	**103**
North Branford			
Fatal Injury (K)	1	0	0
Suspected Serious Injury (A)	1	1	1
Suspected Minor Injury (B)	4	10	9
Possible Injury (C)	5	6	4
Total	**11**	**17**	**14**
North Haven			
Fatal Injury (K)	0	1	1
Suspected Serious Injury (A)	3	3	2
Suspected Minor Injury (B)	18	13	18
Possible Injury (C)	17	7	15
Total	**38**	**24**	**36**

Roadway Departures

	2015	2016	2017
Orange			
Fatal Injury (K)	1	1	0
Suspected Serious Injury (A)	1	3	4
Suspected Minor Injury (B)	12	7	7
Possible Injury (C)	14	13	14
Total	**28**	**24**	**25**
Wallingford			
Fatal Injury (K)	0	1	0
Suspected Serious Injury (A)	1	2	6
Suspected Minor Injury (B)	20	21	20
Possible Injury (C)	7	11	10
Total	**28**	**35**	**36**
West Haven			
Fatal Injury (K)	1	0	0
Suspected Serious Injury (A)	4	2	6
Suspected Minor Injury (B)	13	22	22
Possible Injury (C)	18	17	27
Total	**36**	**41**	**55**
Woodbridge			
Fatal Injury (K)	0	1	0
Suspected Serious Injury (A)	3	0	4
Suspected Minor Injury (B)	4	9	5
Possible Injury (C)	6	12	7
Total	**13**	**22**	**16**
SCRCOG Totals	**512**	**547**	**536**

Speeding	2015	2016	2017
Bethany			
Fatal Injury (K)	1	0	0
Suspected Minor Injury (B)	3	3	6
Possible Injury (C)	4	1	3
Total	**8**	**4**	**9**
Branford			
Fatal Injury (K)	0	1	0
Suspected Serious Injury (A)	1	0	1
Suspected Minor Injury (B)	5	4	5
Possible Injury (C)	6	5	9
Total	**12**	**10**	**15**
East Haven			
Fatal Injury (K)	0	2	0
Suspected Serious Injury (A)	1	1	1
Suspected Minor Injury (B)	5	1	3
Possible Injury (C)	3	6	4
Total	**9**	**10**	**8**
Guilford			
Fatal Injury (K)	0	1	0
Suspected Minor Injury (B)	9	4	5
Possible Injury (C)	8	1	1
Total	**17**	**6**	**6**
Hamden			
Suspected Serious Injury (A)	6	2	4
Suspected Minor Injury (B)	19	13	8
Possible Injury (C)	17	17	15
Total	**42**	**32**	**27**
Madison			
Fatal Injury (K)	0	0	2
Suspected Serious Injury (A)	3	0	1
Suspected Minor Injury (B)	3	1	2
Possible Injury (C)	2	0	2
Total	**8**	**1**	**7**
Meriden			
Fatal Injury (K)	1	1	0
Suspected Serious Injury (A)	10	10	10
Suspected Minor Injury (B)	18	21	15
Possible Injury (C)	27	32	27
Total	**56**	**64**	**52**

Speeding	2015	2016	2017
Milford			
Suspected Serious Injury (A)	3	7	3
Suspected Minor Injury (B)	9	9	6
Possible Injury (C)	16	10	9
Total	**28**	**26**	**18**
New Haven			
Fatal Injury (K)	0	3	2
Suspected Serious Injury (A)	15	14	13
Suspected Minor Injury (B)	29	21	22
Possible Injury (C)	61	44	37
Total	**105**	**82**	**74**
North Branford			
Fatal Injury (K)	1	0	0
Suspected Serious Injury (A)	1	1	0
Suspected Minor Injury (B)	0	3	4
Possible Injury (C)	2	2	2
Total	**4**	**6**	**6**
North Haven			
Suspected Serious Injury (A)	4	1	0
Suspected Minor Injury (B)	4	8	11
Possible Injury (C)	10	5	12
Total	**18**	**14**	**23**
Orange			
Fatal Injury (K)	0	2	0
Suspected Serious Injury (A)	2	2	3
Suspected Minor Injury (B)	7	5	12
Possible Injury (C)	9	9	8
Total	**18**	**18**	**23**
Wallingford			
Fatal Injury (K)	0	1	0
Suspected Serious Injury (A)	1	3	9
Suspected Minor Injury (B)	7	14	16
Possible Injury (C)	5	8	8
Total	**13**	**26**	**33**

Speeding	2015	2016	2017
West Haven			
Fatal Injury (K)	0	0	2
Suspected Serious Injury (A)	4	5	6
Suspected Minor Injury (B)	18	11	15
Possible Injury (C)	21	15	20
Total	**43**	**31**	**43**
Woodbridge			
Fatal Injury (K)	0	1	0
Suspected Serious Injury (A)	0	2	1
Suspected Minor Injury (B)	2	4	2
Possible Injury (C)	3	8	0
Total	**5**	**15**	**3**
SCRCOG Totals	**386**	**345**	**347**

Unrestrained Occupant

	2015	2016	2017
Bethany			
Suspected Serious Injury (A)	0	0	1
Suspected Minor Injury (B)	0	2	4
Possible Injury (C)	0	1	3
Total	**0**	**3**	**8**
Branford			
Fatal Injury (K)	1	0	1
Suspected Serious Injury (A)	1	1	0
Suspected Minor Injury (B)	1	4	3
Possible Injury (C)	2	3	1
Total	**5**	**8**	**5**
East Haven			
Suspected Minor Injury (B)	1	0	2
Possible Injury (C)	2	1	3
Total	**3**	**1**	**5**
Guilford			
Suspected Minor Injury (B)	0	1	2
Possible Injury (C)	0	1	1
Total	**0**	**2**	**3**
Hamden			
Fatal Injury (K)	1	0	0
Suspected Serious Injury (A)	2	2	1
Suspected Minor Injury (B)	6	7	5
Possible Injury (C)	2	4	3
Total	**11**	**13**	**9**
Madison			
Suspected Serious Injury (A)	1	0	1
Suspected Minor Injury (B)	3	0	1
Possible Injury (C)	1	1	0
Total	**5**	**1**	**2**
Meriden			
Fatal Injury (K)	1	1	0
Suspected Serious Injury (A)	4	3	2
Suspected Minor Injury (B)	9	10	4
Possible Injury (C)	10	6	3
Total	**24**	**20**	**9**

Unrestrained Occupant

	2015	2016	2017
Milford			
Suspected Serious Injury (A)	0	0	2
Suspected Minor Injury (B)	2	5	2
Possible Injury (C)	4	5	2
Total	**6**	**10**	**6**
New Haven			
Fatal Injury (K)	0	1	1
Suspected Serious Injury (A)	7	9	8
Suspected Minor Injury (B)	11	7	7
Possible Injury (C)	97	44	58
Total	**115**	**61**	**74**
North Branford			
Fatal Injury (K)	0	1	0
Suspected Serious Injury (A)	0	1	0
Suspected Minor Injury (B)	1	1	2
Possible Injury (C)	0	2	0
Total	**1**	**5**	**2**
North Haven			
Suspected Serious Injury (A)	1	4	1
Suspected Minor Injury (B)	6	3	4
Possible Injury (C)	4	0	6
Total	**11**	**7**	**11**
Orange			
Fatal Injury (K)	1	0	0
Suspected Serious Injury (A)	2	2	1
Suspected Minor Injury (B)	3	4	6
Possible Injury (C)	5	1	9
Total	**11**	**7**	**16**
Wallingford			
Suspected Serious Injury (A)	5	2	4
Suspected Minor Injury (B)	11	2	10
Possible Injury (C)	5	7	7
Total	**21**	**11**	**21**

Unrestrained Occupant

	2015	2016	2017
West Haven			
Fatal Injury (K)	0	0	1
Suspected Serious Injury (A)	3	0	1
Suspected Minor Injury (B)	3	7	4
Possible Injury (C)	1	4	1
Total	**7**	**11**	**7**
Woodbridge			
Suspected Serious Injury (A)	2	0	1
Suspected Minor Injury (B)	2	1	0
Possible Injury (C)	2	0	1
Total	**6**	**1**	**2**
SCRCOG Totals	**226**	**161**	**180**

Substance Involved Driving

	2015	2016	2017
Bethany			
Suspected Minor Injury (B)	0	2	0
Possible Injury (C)	2	0	2
Total	**2**	**2**	**2**
Branford			
Suspected Serious Injury (A)	3	2	0
Suspected Minor Injury (B)	2	2	7
Possible Injury (C)	5	2	5
Total	**10**	**6**	**12**
East Haven			
Suspected Serious Injury (A)	0	0	1
Suspected Minor Injury (B)	2	0	2
Possible Injury (C)	0	5	2
Total	**2**	**5**	**5**
Guilford			
Suspected Serious Injury (A)	0	0	2
Suspected Minor Injury (B)	2	3	2
Possible Injury (C)	0	2	2
Total	**2**	**5**	**6**
Hamden			
Suspected Serious Injury (A)	1	2	0
Suspected Minor Injury (B)	1	3	2
Possible Injury (C)	5	3	2
Total	**7**	**8**	**4**
Madison			
Suspected Serious Injury (A)	1	0	0
Suspected Minor Injury (B)	0	1	1
Total	**1**	**1**	**1**
Meriden			
Fatal Injury (K)	1	0	0
Suspected Serious Injury (A)	5	4	2
Suspected Minor Injury (B)	3	10	2
Possible Injury (C)	8	10	3
Total	**17**	**24**	**7**

Substance Involved Driving

	2015	2016	2017
Milford			
Suspected Serious Injury (A)	0	1	0
Suspected Minor Injury (B)	4	2	3
Possible Injury (C)	5	2	6
Total	**9**	**5**	**9**
New Haven			
Fatal Injury (K)	0	1	2
Suspected Serious Injury (A)	4	3	2
Suspected Minor Injury (B)	13	14	3
Possible Injury (C)	11	16	7
Total	**28**	**34**	**14**
North Branford			
Suspected Serious Injury (A)	0	2	1
Suspected Minor Injury (B)	0	1	1
Possible Injury (C)	0	1	0
Total	**0**	**4**	**2**
North Haven			
Suspected Serious Injury (A)	1	2	0
Suspected Minor Injury (B)	4	3	1
Possible Injury (C)	0	2	0
Total	**5**	**7**	**1**
Orange			
Suspected Serious Injury (A)	1	1	0
Suspected Minor Injury (B)	7	4	1
Possible Injury (C)	4	1	1
Total	**12**	**6**	**2**
Wallingford			
Suspected Serious Injury (A)	3	2	3
Suspected Minor Injury (B)	8	6	9
Possible Injury (C)	3	3	5
Total	**14**	**11**	**17**

Substance Involved Driving

	2015	2016	2017
West Haven			
Fatal Injury (K)	0	1	0
Suspected Serious Injury (A)	0	1	1
Suspected Minor Injury (B)	4	4	0
Possible Injury (C)	8	5	3
Total	**12**	**11**	**4**
Woodbridge			
Suspected Serious Injury (A)	0	0	2
Suspected Minor Injury (B)	3	1	2
Possible Injury (C)	1	3	0
Total	**4**	**4**	**4**
SCRCOG Totals	**125**	**133**	**90**

Distracted	2015	2016	2017
Bethany			
Suspected Minor Injury (B)	3	1	2
Possible Injury (C)	1	0	3
Total	**4**	**1**	**5**
Branford			
Suspected Minor Injury (B)	4	6	1
Possible Injury (C)	1	3	1
Total	**5**	**9**	**2**
East Haven			
Suspected Serious Injury (A)	1	0	0
Suspected Minor Injury (B)	4	0	2
Possible Injury (C)	5	3	5
Total	**10**	**3**	**7**
Guilford			
Suspected Serious Injury (A)	0	0	1
Suspected Minor Injury (B)	6	4	1
Possible Injury (C)	4	0	2
Total	**10**	**4**	**4**
Hamden			
Suspected Serious Injury (A)	0	3	3
Suspected Minor Injury (B)	8	1	1
Possible Injury (C)	1	13	5
Total	**9**	**17**	**9**
Madison			
Suspected Minor Injury (B)	2	2	1
Possible Injury (C)	1	2	1
Total	**3**	**4**	**2**
Meriden			
Suspected Serious Injury (A)	5	5	1
Suspected Minor Injury (B)	6	6	7
Possible Injury (C)	8	6	3
Total	**19**	**17**	**11**
Milford			
Suspected Serious Injury (A)	1	0	3
Suspected Minor Injury (B)	8	3	4
Possible Injury (C)	8	9	6
Total	**17**	**12**	**13**

Distracted	2015	2016	2017
New Haven			
Fatal Injury (K)	0	1	0
Suspected Serious Injury (A)	4	5	3
Suspected Minor Injury (B)	12	7	3
Possible Injury (C)	24	13	11
Total	**40**	**26**	**17**
North Branford			
Possible Injury (C)	0	0	1
Total	**0**	**0**	**1**
North Haven			
Suspected Serious Injury (A)	0	1	1
Suspected Minor Injury (B)	4	5	7
Possible Injury (C)	2	2	2
Total	**6**	**8**	**10**
Orange			
Suspected Serious Injury (A)	0	1	1
Suspected Minor Injury (B)	5	7	5
Possible Injury (C)	5	5	3
Total	**10**	**13**	**9**
Wallingford			
Suspected Minor Injury (B)	5	4	3
Possible Injury (C)	5	8	5
Total	**10**	**12**	**8**
West Haven			
Suspected Serious Injury (A)	3	0	1
Suspected Minor Injury (B)	1	6	6
Possible Injury (C)	3	4	6
Total	**7**	**10**	**13**
Woodbridge			
Suspected Serious Injury (A)	0	0	1
Suspected Minor Injury (B)	2	0	4
Possible Injury (C)	2	5	1
Total	**4**	**5**	**6**
SCRCOG Totals	**154**	**141**	**117**

Older Drivers	2015	2016	2017
Bethany			
Fatal Injury (K)	0	0	1
Suspected Minor Injury (B)	4	0	4
Possible Injury (C)	2	1	0
Total	**6**	**1**	**5**
Branford			
Fatal Injury (K)	1	0	0
Suspected Serious Injury (A)	0	2	2
Suspected Minor Injury (B)	9	6	8
Possible Injury (C)	8	16	21
Total	**18**	**24**	**31**
East Haven			
Suspected Serious Injury (A)	1	0	0
Suspected Minor Injury (B)	9	4	7
Possible Injury (C)	9	17	9
Total	**19**	**21**	**16**
Guilford			
Suspected Serious Injury (A)	3	0	1
Suspected Minor Injury (B)	6	9	6
Possible Injury (C)	6	8	5
Total	**15**	**17**	**12**
Hamden			
Fatal Injury (K)	0	0	1
Suspected Serious Injury (A)	3	3	0
Suspected Minor Injury (B)	16	10	17
Possible Injury (C)	23	26	27
Total	**42**	**39**	**45**
Madison			
Fatal Injury (K)	0	1	0
Suspected Serious Injury (A)	0	1	2
Suspected Minor Injury (B)	3	1	4
Possible Injury (C)	5	6	1
Total	**8**	**9**	**7**
Meriden			
Suspected Serious Injury (A)	4	5	2
Suspected Minor Injury (B)	6	8	6
Possible Injury (C)	15	24	10
Total	**25**	**37**	**18**

Older Drivers	2015	2016	2017
Milford			
Fatal Injury (K)	0	3	1
Suspected Serious Injury (A)	7	3	3
Suspected Minor Injury (B)	6	12	8
Possible Injury (C)	39	37	27
Total	**52**	**55**	**39**
New Haven			
Fatal Injury (K)	1	0	0
Suspected Serious Injury (A)	6	2	3
Suspected Minor Injury (B)	21	17	8
Possible Injury (C)	58	71	47
Total	**86**	**90**	**58**
North Branford			
Fatal Injury (K)	0	1	0
Suspected Serious Injury (A)	2	0	1
Suspected Minor Injury (B)	5	6	3
Possible Injury (C)	10	6	6
Total	**17**	**13**	**10**
North Haven			
Suspected Serious Injury (A)	0	1	0
Suspected Minor Injury (B)	13	10	7
Possible Injury (C)	22	20	11
Total	**35**	**31**	**18**
Orange			
Fatal Injury (K)	0	0	1
Suspected Serious Injury (A)	2	0	0
Suspected Minor Injury (B)	16	14	6
Possible Injury (C)	12	15	15
Total	**30**	**29**	**22**
Wallingford			
Fatal Injury (K)	0	0	2
Suspected Serious Injury (A)	6	0	3
Suspected Minor Injury (B)	11	10	13
Possible Injury (C)	10	14	16
Total	**27**	**24**	**34**

Older Drivers	2015	2016	2017
Woodbridge			
Suspected Serious Injury (A)	0	1	2
Suspected Minor Injury (B)	3	4	4
Possible Injury (C)	4	4	6
Total	**7**	**9**	**12**
SCRCOG Totals	**415**	**437**	**364**

Young Drivers (25 and Under)

	2015	2016	2017
Bethany			
Fatal Injury (K)	0	0	1
Suspected Minor Injury (B)	4	6	6
Possible Injury (C)	3	4	3
Total	**7**	**10**	**10**
Branford			
Suspected Serious Injury (A)	1	0	1
Suspected Minor Injury (B)	19	13	8
Possible Injury (C)	11	15	8
Total	**31**	**28**	**17**
East Haven			
Fatal Injury (K)	0	2	0
Suspected Serious Injury (A)	3	0	6
Suspected Minor Injury (B)	17	9	13
Possible Injury (C)	14	20	18
Total	**34**	**31**	**37**
Guilford			
Fatal Injury (K)	1	1	0
Suspected Serious Injury (A)	1	1	3
Suspected Minor Injury (B)	11	10	6
Possible Injury (C)	10	6	4
Total	**23**	**18**	**13**
Hamden			
Suspected Serious Injury (A)	3	7	4
Suspected Minor Injury (B)	25	25	31
Possible Injury (C)	38	50	38
Total	**66**	**82**	**73**
Madison			
Suspected Serious Injury (A)	1	1	1
Suspected Minor Injury (B)	3	4	4
Possible Injury (C)	5	2	3
Total	**9**	**7**	**8**
Meriden			
Fatal Injury (K)	1	1	0
Suspected Serious Injury (A)	11	10	7
Suspected Minor Injury (B)	25	45	15
Possible Injury (C)	47	53	29
Total	**84**	**109**	**51**

Young Drivers (25 and Under)

	2015	2016	2017
Milford			
Suspected Serious Injury (A)	6	4	7
Suspected Minor Injury (B)	22	16	11
Possible Injury (C)	27	53	24
Total	**55**	**73**	**42**
New Haven			
Fatal Injury (K)	0	2	1
Suspected Serious Injury (A)	31	32	17
Suspected Minor Injury (B)	75	72	35
Possible Injury (C)	203	218	111
Total	**309**	**324**	**164**
North Branford			
Fatal Injury (K)	1	0	0
Suspected Serious Injury (A)	1	2	0
Suspected Minor Injury (B)	8	13	8
Possible Injury (C)	2	6	8
Total	**12**	**21**	**16**
North Haven			
Fatal Injury (K)	0	1	0
Suspected Serious Injury (A)	0	3	1
Suspected Minor Injury (B)	10	14	19
Possible Injury (C)	23	18	17
Total	**33**	**36**	**37**
Orange			
Fatal Injury (K)	0	1	0
Suspected Serious Injury (A)	1	1	2
Suspected Minor Injury (B)	12	18	15
Possible Injury (C)	15	18	18
Total	**28**	**38**	**35**
Wallingford			
Fatal Injury (K)	0	1	0
Suspected Serious Injury (A)	2	1	2
Suspected Minor Injury (B)	21	18	22
Possible Injury (C)	19	17	17
Total	**42**	**37**	**41**

Young Drivers (25 and Under)

	2015	2016	2017
West Haven			
Fatal Injury (K)	0	0	2
Suspected Serious Injury (A)	5	2	5
Suspected Minor Injury (B)	28	29	31
Possible Injury (C)	44	33	36
Total	**77**	**64**	**74**
Woodbridge			
Fatal Injury (K)	0	2	0
Suspected Serious Injury (A)	3	1	2
Suspected Minor Injury (B)	3	8	10
Possible Injury (C)	7	14	5
Total	**13**	**25**	**17**
SCRCOG Totals	**823**	**903**	**635**

Bicycle Crashes	2015	2016	2017
Bethany			
Possible Injury (C)	1	0	0
Total	**1**	**0**	**0**
Branford			
Suspected Serious Injury (A)	1	0	1
Suspected Minor Injury (B)	1	1	1
Possible Injury (C)	0	1	1
Total	**2**	**2**	**3**
East Haven			
Fatal Injury (K)	0	1	0
Possible Injury (C)	0	1	0
Total	**0**	**2**	**0**
Guilford			
Suspected Minor Injury (B)	1	1	1
Possible Injury (C)	1	1	0
Total	**2**	**2**	**1**
Hamden			
Suspected Serious Injury (A)	1	0	0
Suspected Minor Injury (B)	6	6	2
Possible Injury (C)	2	2	0
Total	**9**	**8**	**2**
Madison			
Suspected Minor Injury (B)	0	1	2
Possible Injury (C)	0	0	1
Total	**0**	**1**	**3**
Meriden			
Suspected Serious Injury (A)	3	3	2
Suspected Minor Injury (B)	7	6	5
Possible Injury (C)	0	1	1
Total	**10**	**10**	**8**
Milford			
Suspected Serious Injury (A)	2	1	0
Suspected Minor Injury (B)	2	2	0
Possible Injury (C)	1	1	2
Total	**5**	**4**	**2**

Bicycle Crashes	2015	2016	2017
New Haven			
Fatal Injury (K)	0	0	1
Suspected Serious Injury (A)	12	9	11
Suspected Minor Injury (B)	29	22	41
Possible Injury (C)	28	31	29
Total	**69**	**62**	**82**
North Haven			
Suspected Serious Injury (A)	0	0	1
Suspected Minor Injury (B)	1	0	1
Possible Injury (C)	1	0	0
Total	**2**	**0**	**2**
Orange			
Suspected Serious Injury (A)	1	0	0
Suspected Minor Injury (B)	2	1	1
Possible Injury (C)	1	1	0
Total	**4**	**2**	**1**
Wallingford			
Suspected Serious Injury (A)	0	0	3
Suspected Minor Injury (B)	3	2	4
Possible Injury (C)	0	0	2
Total	**3**	**2**	**9**
West Haven			
Suspected Serious Injury (A)	0	0	1
Suspected Minor Injury (B)	5	3	7
Possible Injury (C)	3	2	5
Total	**8**	**5**	**13**
Woodbridge			
Suspected Serious Injury (A)	1	0	0
Possible Injury (C)	0	1	0
Total	**1**	**1**	**0**

Pedestrians	2015	2016	2017
Bethany			
Fatal Injury (K)	1	0	0
Possible Injury (C)	1	0	0
Total	**2**	**0**	**0**
Branford			
Suspected Serious Injury (A)	2	3	2
Suspected Minor Injury (B)	4	4	1
Possible Injury (C)	3	3	5
Total	**9**	**10**	**8**
East Haven			
Fatal Injury (K)	2	1	1
Suspected Serious Injury (A)	6	1	2
Suspected Minor Injury (B)	4	2	6
Possible Injury (C)	2	1	5
Total	**14**	**5**	**14**
Guilford			
Fatal Injury (K)	1	0	0
Suspected Serious Injury (A)	2	0	0
Suspected Minor Injury (B)	1	0	1
Possible Injury (C)	0	1	1
Total	**4**	**1**	**2**
Hamden			
Fatal Injury (K)	0	1	0
Suspected Serious Injury (A)	2	4	2
Suspected Minor Injury (B)	6	15	7
Possible Injury (C)	10	6	4
Total	**18**	**26**	**13**
Madison			
Fatal Injury (K)	0	0	1
Suspected Minor Injury (B)	1	0	0
Possible Injury (C)	0	1	0
Total	**1**	**1**	**1**
Meriden			
Fatal Injury (K)	2	1	1
Suspected Serious Injury (A)	3	11	10
Suspected Minor Injury (B)	9	19	8
Possible Injury (C)	9	12	5
Total	**23**	**43**	**24**

Pedestrians	2015	2016	2017
Milford			
Fatal Injury (K)	0	1	0
Suspected Serious Injury (A)	5	4	3
Suspected Minor Injury (B)	4	5	4
Possible Injury (C)	10	8	8
Total	**19**	**18**	**15**
New Haven			
Fatal Injury (K)	0	3	2
Suspected Serious Injury (A)	18	35	33
Suspected Minor Injury (B)	47	43	42
Possible Injury (C)	53	83	76
Total	**118**	**164**	**153**
North Branford			
Suspected Minor Injury (B)	1	2	0
Total	**1**	**2**	**0**
North Haven			
Fatal Injury (K)	1	0	0
Suspected Serious Injury (A)	2	0	4
Suspected Minor Injury (B)	4	2	0
Possible Injury (C)	1	0	1
Total	**8**	**2**	**5**
Orange			
Fatal Injury (K)	0	1	0
Suspected Serious Injury (A)	1	0	0
Suspected Minor Injury (B)	3	1	2
Possible Injury (C)	1	0	1
Total	**5**	**2**	**3**
Wallingford			
Fatal Injury (K)	0	0	1
Suspected Serious Injury (A)	2	1	3
Suspected Minor Injury (B)	2	5	4
Possible Injury (C)	4	5	5
Total	**8**	**11**	**13**

Pedestrians	2015	2016	2017
West Haven			
Fatal Injury (K)	0	1	2
Suspected Serious Injury (A)	3	3	3
Suspected Minor Injury (B)	7	7	11
Possible Injury (C)	7	7	5
Total	**17**	**18**	**21**
Woodbridge			
Fatal Injury (K)	1	0	0
Possible Injury (C)	1	0	0
Total	**2**	**0**	**0**
SCRCOG Totals	**249**	**303**	**272**

Motorcycle	2015	2016	2017
Bethany			
Suspected Minor Injury (B)	0	3	0
Total	**0**	**3**	**0**
Branford			
Suspected Serious Injury (A)	2	2	1
Suspected Minor Injury (B)	7	11	8
Possible Injury (C)	4	1	2
Total	**13**	**14**	**11**
East Haven			
Fatal Injury (K)	0	1	1
Suspected Serious Injury (A)	2	1	4
Suspected Minor Injury (B)	6	3	7
Possible Injury (C)	2	5	3
Total	**10**	**10**	**15**
Guilford			
Fatal Injury (K)	0	1	0
Suspected Minor Injury (B)	5	7	2
Possible Injury (C)	1	0	0
Total	**6**	**8**	**2**
Hamden			
Fatal Injury (K)	0	0	3
Suspected Serious Injury (A)	5	5	2
Suspected Minor Injury (B)	6	7	3
Possible Injury (C)	1	2	7
Total	**12**	**14**	**15**
Madison			
Fatal Injury (K)	1	0	0
Suspected Serious Injury (A)	0	0	1
Suspected Minor Injury (B)	3	1	0
Possible Injury (C)	0	4	1
Total	**4**	**5**	**2**
Meriden			
Fatal Injury (K)	1	0	3
Suspected Serious Injury (A)	6	7	7
Suspected Minor Injury (B)	10	19	8
Possible Injury (C)	2	6	0
Total	**19**	**32**	**18**

Motorcycle	2015	2016	2017
Milford			
Suspected Serious Injury (A)	7	8	6
Suspected Minor Injury (B)	4	8	10
Possible Injury (C)	5	1	2
Total	**16**	**17**	**18**
New Haven			
Fatal Injury (K)	2	3	3
Suspected Serious Injury (A)	23	30	21
Suspected Minor Injury (B)	30	29	38
Possible Injury (C)	27	24	22
Total	**82**	**86**	**84**
North Branford			
Suspected Serious Injury (A)	1	4	1
Suspected Minor Injury (B)	1	1	6
Possible Injury (C)	0	1	1
Total	**2**	**6**	**8**
North Haven			
Fatal Injury (K)	0	0	1
Suspected Serious Injury (A)	3	4	0
Suspected Minor Injury (B)	2	8	1
Possible Injury (C)	2	1	1
Total	**7**	**13**	**3**
Orange			
Fatal Injury (K)	0	1	1
Suspected Serious Injury (A)	1	0	5
Suspected Minor Injury (B)	3	5	3
Possible Injury (C)	1	2	1
Total	**5**	**8**	**10**
Wallingford			
Fatal Injury (K)	0	1	0
Suspected Serious Injury (A)	5	4	3
Suspected Minor Injury (B)	12	10	4
Possible Injury (C)	1	1	1
Total	**18**	**16**	**8**

Motorcycle	2015	2016	2017
West Haven			
Fatal Injury (K)	0	2	2
Suspected Serious Injury (A)	6	6	4
Suspected Minor Injury (B)	10	12	6
Possible Injury (C)	3	8	6
Total	**19**	**28**	**18**
Woodbridge			
Fatal Injury (K)	0	1	0
Suspected Serious Injury (A)	0	0	2
Suspected Minor Injury (B)	1	0	0
Possible Injury (C)	1	1	0
Total	**2**	**2**	**2**
SCRCOG Totals	**215**	**262**	**214**

Appendix C Countermeasure Selection

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

Infrastructure Countermeasure Table

	Measure	Description	Application^
Signage	**Speed Feedback Signs**[1][2]	A changeable message sign that displays the speed of approaching vehicles.	To be used where motorized vehicle speed is a concern.
	Cost		
	Low		
	CMF**		
	0.54[3]		
Signage	**Retroreflective Signal Backplates**	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		
	Low		
	CMF**		
	0.85 (U)[4]		
Signage	**Change Left-Turn Phase to Protected Phasing**	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.[5]
	Cost		
	Low		
	CMF**		
	0.78[6]		
Signage	**Flashing Advanced Warning Beacons**	A beacon that provides a warning to motorists about an intersection ahead.	To be used in advance of an intersection.
	Cost		
	Low to Medium		
	CMF**		
	0.64[1]		

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 Elvik, R. and Vaa, T., "Handbook of Road Safety Measures." Oxford, United Kingdom, Elsevier, (2004).
4 Federal Highway Administration. (2017). Backplates with Retroreflective Borders. https://safety.fhwa.dot.gov/provencountermeasures/blackplate/
5 Federal Highway Administration. (2004). Signalized Intersections: Informational Guide. https://www.fhwa.dot.gov/publications/research/safety/04091/04.cfm

	Measure	Description	Application^
Signage	**Rapid rectangular flashing beacons** Cost High CMF** 0.71[1]	The rapid rectangular flashing 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 CMF** 0.76[2] (R)	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 CMF** 0.84[3] (R)	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 CMF** 0.55[4] (R)	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**	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.[5]	For use in areas with wide travel lanes and where speed is a concern (MUTCD Chapter 3I).

1 Federal Highway Administration. (2017). Rapid rectangular flashing beaconss. https://safety.fhwa.dot.gov/provencountermeasures/ped_hybrid_beacon/

2 Liu, P., Huang, J., Wang, W., Xu, C., "Effects of Transverse Rumble Strips on Safety of Pedestrian Crosswalks on Rural Low-Volume Roads in China," Presented at the 90th Meeting of the Transportation Research Board, Washington, D.C., (2011).

3 Torbic, D.J., et al. NCHRP Report 641: Guidance for the Design and Application of Shoulder and Centerline Rumble Strips

4 Torbic, D.J., et al. NCHRP Report 641: Guidance for the Design and Application of Shoulder and Centerline Rumble Strips

	Measure	Description	Application^
Pavement Markings	**Regulatory Pavement Markings[1]**	Pavement markings, such as "25 mph", that emphasize regulatory signage (MUTCD Section 3B.20).	To be used as a supplement to regulatory signs.
	Cost		
	Low		
	CMF**		
	(UNK)		
Pavement Markings	**Crosswalks**	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.
	Cost		
	Varies, Low markings only Moderate markings and simple ADA landings; High significant pedestrian safety features required		
	CMF**		
	0.4 – 0.75[2][3] (V) (P) (R)		
Pavement Markings	**Road Reconfigurations**	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.
	Cost		
	Low to High		
	CMF**		
	Varies		
Physical Environment	**Buffered Shoulders**	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.
	Cost		
	Low for restriping existing paved shoulder, high for constructing new paved shoulder		
	CMF**		
	0.2925 ((V) (P)		

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

2 ITE Committee 5A-5. (1998). Design and Safety of Pedestrian Facilities. Washington, D.C.: Institute of Transportation Engineers.

3

	Measure	Description	Application^
Physical Environment	**Bike Lanes**[1] Cost *Varies CMF** 0.65 (V) (B)	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 Maintenance: low; Paving/ repaving: high CMF** 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.
Physical Environment	**Median Crossing Islands** Cost Medium CMF** 0.54 – 0.61[2] (V) (P)	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**[3] Cost Medium CMF** (UNK)	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.

1 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.

2 Zegeer, C. V., Stewart, R., Huang, H., and Lagerwey, P., "Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations: Executive Summary and Recommended Guidelines," FHWA-RD-01-075, McLean, Va., Federal Highway Administration, (2002).

3 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.

	Measure	Description	Application^
Physical Environment	**Roadway Illumination**[1] Cost Medium CMF** 0.27 – 0.8 (R)	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 CMF** 0.47 – 0.71[2] (S) (U)	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 CMF** 0.98[3]	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	**Left Turn Lanes at Two-Way Stop Controlled Intersections** Cost Low to High CMF** 0.52 – 0.72[4]	Auxiliary turn lanes provide physical separation between turning traffic that is slowing or stopped and adjacent through traffic at approaches to intersections.	Installing left-turn lanes and/or right-turn lanes should be considered for the major road approaches for improving safety at both three- and four-leg intersections with two-way stop control on the minor road, where significant turning volumes exist, or where there is a history of turn-related crashes.
Physical Environment	**Shared Use Paths**	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 Hall, J. W., Brogan, J. D., &Kondreddi, M. (2004). Pedestrian Safety on Rural Highways. FHWA-SA-04-008. Washington, D.C.: Federal Highway Administration.

2 Harkey, D.L., R. Srinivasan, J. Baek, B. Persaud, C. Lyon, F.M. Council, K. Eccles, N. Lefler, F. Gross, E. Hauer, J. Bonneson, "Crash Reduction Factors for Traffic Engineering and ITS Improvements", NCHRP Project 17-25 Final Report, Washington, D.C., National Cooperative Highway Research Program, Transportation Research Board, (2008).

3 Ye, Z. and D. Veneziano. "Safety Impact of Gateway Monuments." TRB 89th Annual Meeting Compendium of Papers CD-ROM. Washington, D.C. 2010.

4 Srinivasan, R., B. Lan, and D. Carter. "Safety Evaluation of Signal Installation With and Without Left Turn Lanes on Two Lane Roads in Rural and Suburban Areas." Report No. FHWA/NC/2013-11. North Carolina Department of Transportation. Raleigh, North Carolina. (2014).

	Measure	Description	Application^
Physical Environment	**Shared Use Paths**	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.
	Cost		
	Medium to High		
	CMF**		
	0.11 – 0.35[1] (V) (P)		
Physical Environment	**Sidewalks and Walkways**	Pedestrian facilities that are separated from the roadway. Can be made of asphalt, concrete, or crushed stone. Sidewalks are usually paved and separated from the street by curbing. Pedestrian walkways may be separated from the roadway with a physical barrier or a landscaped strip.	To be used in areas with a high volume of pedestrians and high motor vehicle speeds or in areas where on-road bicycle/pedestrian travel is prohibited. (RV)
	Cost		
	Medium to High		
	CMF**		
	0.11 – 0.35[2] (V) (P)		

^Legend: (RV) = Rural Village

* Measures may vary greatly in cost. For example, some measures may be achieved through redistribution of space on the current roadway or it may require expansion of the roadway. CMF's are based upon all crash types unless otherwise noted. Notations for other crash types may include: (V)=motorized vehicles, (B)=bicycles, (P)=pedestrians, or location information (R)=rural, (S)=suburban, (U)=urban. For those CMF's that are unknown, (UNK) = Unknown. Unless otherwise noted, CMFs can be found in the CMF clearinghouse (http://www.cmfclearinghouse.org). However, users should consult the original publication to determine applicability to their scenario.

1 Gan, A., Shen, J., and Rodriguez, A., "Update of Florida Crash Reduction Factors and Countermeasures to Improve the Development of District Safety Improvement Projects." Florida Department of Transportation, (2005).

2 Gan, A., Shen, J., and Rodriguez, A., "Update of Florida Crash Reduction Factors and Countermeasures to Improve the Development of District Safety Improvement Projects." Florida Department of Transportation, (2005).

PHOTO SOURCES

New Haven, CT Long	Page 5	Source: TripSavy, https://www.tripsavvy.com/top-things-to-do-in-new-haven-ct-4140280
Regional Drug Recognition Experts Map	Page 47	Source: CT DOT, Regional Drug Recognition Experts, November 17, 2017
M.A.D.D. Logo	Page 47	Source: Mothers Against Drunk Driving, www.madd.org/Connecticut
Texting While Driving	Page 48	Source: AARP:-https:www.aarp.org/auto/friver-safety/info-2015/distracted-driving-texting-safety.html#slide2
Older Driver Example	Page 49	Source: NHTSA Older Drivers, https://www.nhtsa.gov/road-safety/older-drivers