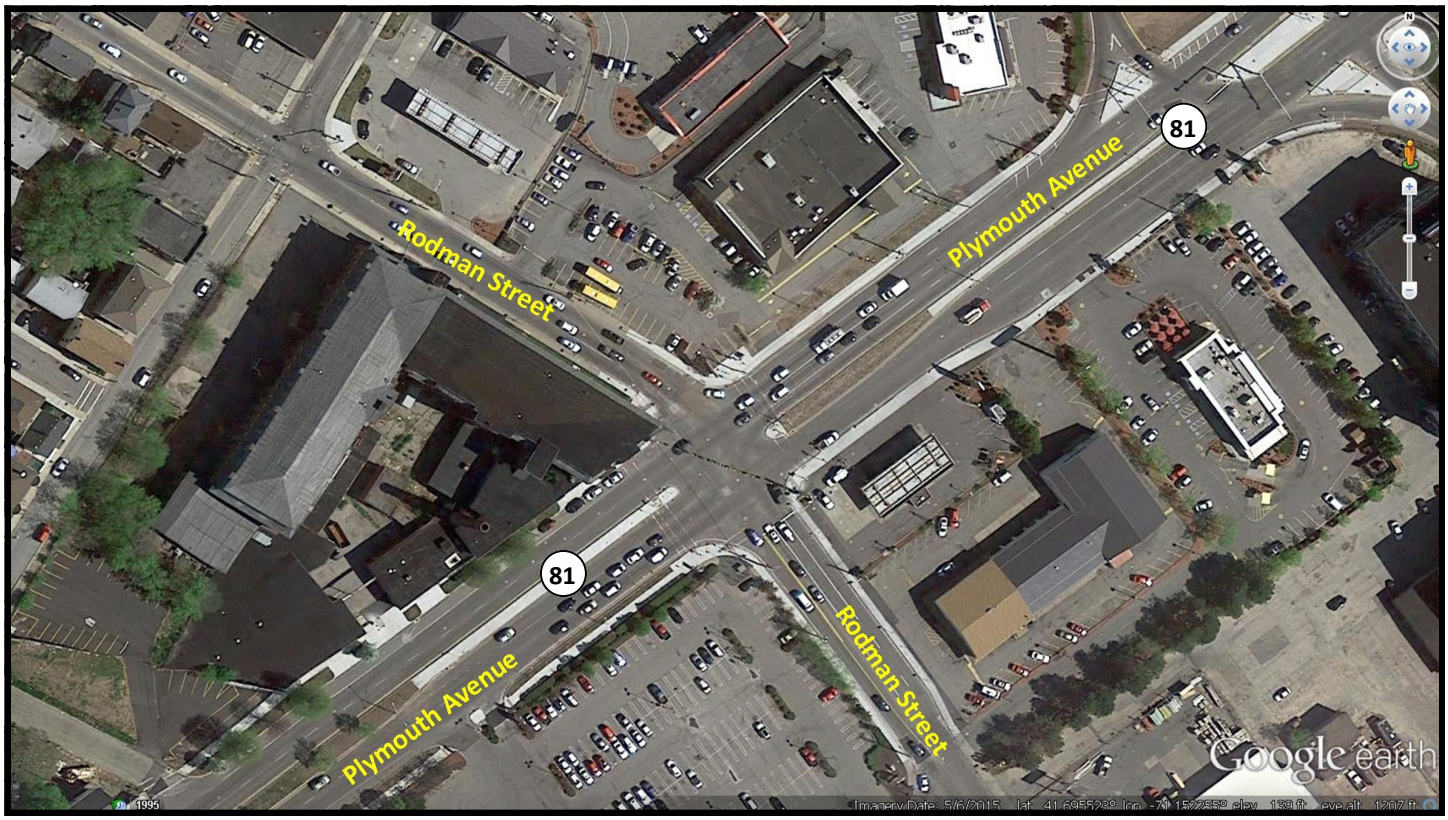
The 100 Most Dangerous Crash Locations In Southeastern Massachusetts 2010-2012



Plymouth Avenue (Route 81) / Rodman Street, Fall River is ranked as the most dangerous intersection in Southeastern Massachusetts. However, improvements were recently completed.

One of the most dangerous things a person does each day is get behind the wheel of a motor vehicle. With the explosion of technology (cell phones and texting) adding to distraction and driver inattention, the danger only escalates. With limited transportation alternatives, most people are forced to get into their cars daily. It is our responsibility as drivers, passengers, pedestrians and bicyclists to be alert and obey traffic rules. We should all act responsibly to keep our roads and ourselves safe.

As the regional planning agency serving 27 communities in southeastern Massachusetts, the Southeastern Regional Planning and Economic Development District (SRPEDD) is constantly striving to increase public awareness of the dangers on our roads. As part of that effort, SRPEDD regularly compiles a list of the most dangerous roadways and intersections in our region. SRPEDD examines locations identified as safety problems on a regular basis and considers safety issues while conducting other types of traffic studies such as signal warrants, congestion studies and corridor studies, to name a few.

The Equivalent Property Damage Only (EPDO) is calculated for close to 600 intersections in our region. The EPDO takes into account the total number of crashes at a location and the severity of each crash by ranking intersections in terms of safety. An average is determined based on the severity of crashes over a 3-year period and the top 100 averages make the dangerous intersections list. The 3-year average was 17.7 for the time period 2006-2008 and has decreased to 15.0 for the time period 2010-2012, indicating that the severity of crashes in our region has decreased.

Methodology

Crash data for 2010 through 2012 was compiled by location and crash type to identify the most dangerous locations in our region. This report identifies the 100 most dangerous intersections, as well as locations with the highest number of pedestrian crashes, bicycle crashes, and road departure crashes. The purpose of this report is to inform the public of the dangers that exist on our roads and initiate actions that will generate improvements to make our roads safer.

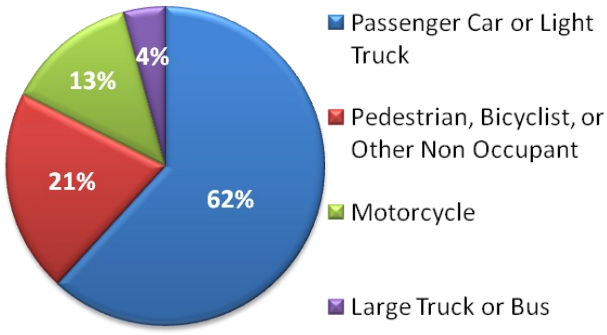
Cost of Crashes

In 2012, the National Safety Council estimated the average cost of each property damage crash to be $8,900. A nonfatal disabling injury was estimated at $78,900, and a fatal crash at $1,410,000. These estimates include lost wages, medical expenses, motor vehicle damage, etc.

Car crashes and/or committing a traffic violation affects insurance premiums. Surcharge points are assessed for traffic violations ranging from moving violations to being at fault in a collision, and amount to significant increases in annual premiums. The system allows drivers in Massachusetts to have greater control over their premiums through safe driving.

Fatal Crashes

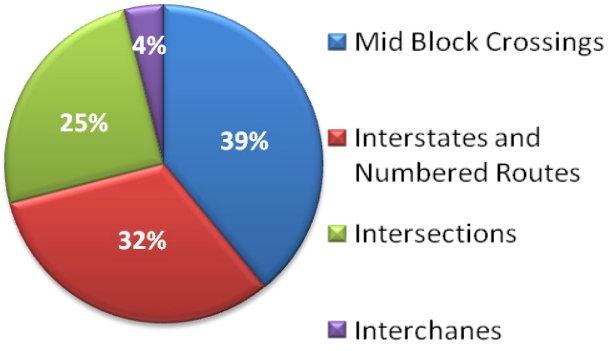
Between 2010 and 2012 there were **165 fatal crashes** in the SRPEDD region, resulting in 177 deaths and 81 people injured. The total number of crashes dropped 13% from the 2006-2008 crash period. A majority of these crashes (63%) were single vehicle / lane departure collisions.



A closer examination of the data showed the composition of fatalities; 102 (61%) crashes involved either a passenger car or light truck; 34 (20%) crashes involved a pedestrian, bicyclist, or other non occupant; 22 (13%) involved a motorcycle; and 7 (4%) involved either a large truck or bus.

Composition of Fatalities

Location data revealed that 64 (39%) of the crashes occurred at mid block crossings; 54 (32%) along interstate highway and state numbered routes; 41 (25%) at intersections; and 6 (4%) at interchanges**.**



Although there was a decrease in fatalities in the SRPEDD region, nationwide Fatality Analysis Reporting System (FARS) data revealed a 3.3 % increase from 2011 to 2012.

Seat Belt Use

In 2012 the rate of seat belt use in Massachusetts was one of the lowest in the nation at 72.7 %, which is 13% below the national average. This low rate of seat belt use may be attributed to the fact that the traffic violation for failure to use a seat belt in Massachusetts is considered a secondary offense. Seat belt laws are divided into two categories: *primary*, adopted by 34 states; and *secondary,* adopted by 16 states. The Primary seat belt law allows police to stop and ticket a driver simply for not wearing a seat belt. The secondary seat belt laws allows police to issue a ticket for not wearing a seat belt only when there is another citable traffic violation. Primary seat belt laws are favored because they are associated with fewer traffic fatalities.

Past efforts to enact a primary seat belt law in Massachusetts have been defeated by the state legislature. The tremendous costs attributed to the most serious crashes resulting in death and disabling injury are paid, in part, by everyone through higher insurance premiums, emergency services, Medicare and Medicaid costs over and above insurance coverage, etc. Consideration for enactment of the primary seat belt law in Massachusetts would reduce the number of deaths from the most serious crashes. Massachusetts has seen an increase in seat belt use between 2006-2008 (67.5% average) and 2010-2012 (73.2% average).

High Crash Curve Locations

The Commonwealth's Strategic Highway Safety Plan (SHSP) is a statewide, comprehensive safety plan that provides a coordinated framework for reducing fatalities and serious injuries on the State's surface transportation network. The plan includes Lane Departure crashes as a strategic emphasis area with a goal of reducing lane departure related fatalities and incapacitating injuries by 20% by 2018.

Middleborough Avenue, East Taunton

A lane departure crash is a non-intersection crash which occurs after a vehicle crosses the edge or center line or otherwise leaves the traveled way. According to data from the Massachusetts Department of Transportation (MassDOT) for the period 2004 to 2011, 55% of all roadway fatalities and 24% of all roadway incapacitating injuries involved lane departure crashes. The majority of lane departure crashes occurred on curves.

MassDOT developed a systematic low cost strategy to address lane departures at locally owned high crash curve locations based on input from town engineers, community officials and Regional Planning Agencies, including SRPEDD. This strategy involved any community interested in addressing one or more high crash curve locations to submit a brief application for each location to MassDOT. MassDOT staff or the consultant (Stantec) then contacted the community and set up a time to visit the location and develop a sign plan which was then submitted to the community for approval. Once approved, MassDOT will provide the community with the materials, including signs prepared by MassDOT's sign shop, posts and the plan to follow. It will be the community's responsibility to install the signs and submit photos of the completed project.

In the future, there will be an evaluation of the effectiveness of the sign installation, including 3 years of post-installation crash data submitted by the community. In the SRPEDD region, seven communities took advantage of this program, including Fairhaven, Freetown, Middleborough, New Bedford, Norton, Taunton and Westport.

The 100 Most Dangerous Intersections in Southeastern Massachusetts 2010-2012

The following pages list the most dangerous intersections in the 27 SRPEDD communities. Intersections are listed based on their Equivalent Property Damage Only (EPDO) index. The index gives greater significance to crashes where injuries and fatalities occurred. Points are applied to each crash in the following manner: 1 point for a crash involving property damage only; 5 points for a crash involving an injury; 10 points for a crash in which a fatality occurred. Each intersection's EPDO has been calculated for the 2010 through 2012 period and is expressed as an annual average. The intent of this ranking system is to determine the locations where crashes have the most severe consequences.

The 100 Most Dangerous Intersections in Southeastern Massachusetts 2010-2012

Rank	City/Town	Intersection		2010- 2012 Total Crashes	2010-2012 EPDO	Status
1	Fall River	Plymouth Avenuenue	Rodman Street	109	72.3	Studied by SRPEDD / Improvements Completed 2015
2	Raynham	New State Highway (Route 44)	Orchard Street	86	70.0	Under Construction
3	New Bedford	Kempton Street (Route 6)	Route 140/Brownell Avenuenue	51	55.7	Studied by SRPEDD / Under Construction
4	Taunton	County Street (Route 140)	Hart Street	72	50.7	Studied by SRPEDD / Improvements Planned
5	Fall River	President Avenue (Route 6)	North Main Street	55	45.0	Studied in 2015 (Route 79 Boulevard Study)
6	Mansfield	Chauncy Street (Route 106)	Commercial Drive (Route 140)	64	42.7	Improvements Planned
7	Fall River	Bedford Street	Troy Street/High Street	46	40.7	Studied by SRPEDD
8	Seekonk	Fall River Avenue (Route 114A)	Taunton Avenue (Route 44)	71	39.7	
9	New Bedford	JFK Highway (Route 18)	Elm Street	43	38.7	Improvements Completed 2013
10	Swansea	GAR Highway (Route 6)	James Reynolds Road/Market Street (Route 136)	42	38.0	Studied by SRPEDD
11	Attleboro	Washington Street (Route 1)	Highland Avenue (Route 123)	69	37.7	Studied by SRPEDD / Improvements Planned
12	Mansfield	Route 140	School Street	61	36.3	Improvements Completed 2008
13	Taunton	Williams Street	Gordon Owen Riverway	45	36.3	Improvements Planned
14	Middleborough	Route 44	Plympton Street (Route 105)	43	35.7	Improvements Completed 2009
15	Somerset	GAR Highway (Route 6)	Lees River Avenuenue	45	35.0	Studied by SRPEDD
16	Plainville	Washington Street (Route 1)	Taunton Street (Route 152)	40	34.7	Improvements Completed 2006
17	Somerset	GAR Highway (Route 6)	Brayton Point Road	44	33.3	Studied by SRPEDD
18	Seekonk	Fall River Avenue (Route 114A)	County Street	55	33.0	Studied by SRPEDD / Improvements Planned
19	New Bedford	JFK Highway (Route 18)	Potomska Street	33	32.7	Improvements Planned
20	Mansfield	Chauncy Street (Route 106)	North Main Street	53	32.3	Studied by SRPEDD
21	Fall River	Bedford Street	Rock / Third Street	39	30.3	
22	Attleboro	North Main Street (Route 152)	Toner Boulevard	31	29.0	Improvements Completed 2009

The 100 Most Dangerous Intersections in Southeastern Massachusetts 2010-2012

Rank	City/Town	Intersection		2010- 2012 Total Crashes	2010-2012 EPDO	Status
23	New Bedford	JFK Highway (Route 18)	Union Street / MacArthur Drive	41	28.7	Improvements Completed 2013
24	Seekonk	Fall River Avenue (Route 6)	Commerce Way / Seekonk Square	56	28.0	
25	Fairhaven	Bridge Street	Alden Road	43	27.7	Studied by SRPEDD / Improvements Completed
26	Seekonk	Fall River Avenue (Route 114A)	Arcade Avenue / Mill Street (Grist Mill)	39	27.7	Under Construction
27	Middleborough	Route 44	Plymouth Street	31	27.7	Improvements Completed 2009
28	Plainville	Taunton Street (Route 152)	Messenger Street (Route 106)	42	27.3	Studied by SRPEDD / Improvements Completed 2005
29	Somerset	GAR Highway (Route 6)	Brayton Avenuenue	36	26.7	
30	Taunton	Dean Street (Route 44)	Longmeadow Road/ Gordon Owen Riverway	39	26.3	Studied by SRPEDD
31	Attleboro	Washington Street (Route 1)	Mendon Street	34	26.0	
32	Swansea	GAR Highway (Route 6)	Swansea Mall Drive (Route 118)	36	25.3	Minor Improvements Com-pleted 2010
33	Fairhaven	Bridge Street	Route 240	38	24.7	Studied by SRPEDD / Some Improvements Completed
34	Fall River	Pleasant Street	Quarry Street/ County Street	30	24.7	Studied by SRPEDD
35	New Bedford	County Street	Mill Street	33	23.0	Studied by SRPEDD / Improvements Completed 2013
36	Fall River	Broadway	South Main Street/ Globe Street	33	23.0	Studied by SRPEDD
37	North Attleborough	East Washington Street (Route 1)	Chestnut Street	29	23.0	Improvements Planned
38	Fall River	Broadway	Bradford Avenue	29	23.0	
39	Dartmouth	State Road (Route 6)	Slocum Road	25	23.0	
40	Fall River	North Main Street	Route 79	31	22.3	
41	Taunton	Washington Street	Purchase Street	27	22.3	
42	Fall River	Robeson Street	Pine Street	34	22.0	

The 100 Most Dangerous Intersections in Southeastern Massachusetts 2010-2012

Rank	City/Town	Intersection		2010- 2012 Total Crashes	2010-2012 EPDO	Status
43	Fall River	Broadway	Middle Street	30	22.0	
44	Taunton	Washington Street	East Brittannia Street	26	22.0	Studied by SRPEDD / Improvements Completed
45	Fall River	President Avenue (Route 6)	Robeson Street	25	22.0	
46	Attleboro	County Street (Route 123)	Thacher Street	25	22.0	Studied by SRPEDD / Improvements Completed 2003
47	Seekonk	Fall River Avenue (Route 6)	Mink Street (Route 114A) / Sam's Club	45	21.7	Improvements Completed 2005
48	Fall River	President Avenue (Route 6)	Davol Street (NB & SB)	45	21.7	
49	Taunton	Broadway (Route 138)	Washington Street	41	21.7	Improvements Planned
50	Fall River	Davol Street	Central Street	29	21.7	
51	Fall River	Pleasant Street	Quequechan Street	25	21.7	
52	Attleboro	Washington Street (Route 1)	May Street	36	21.3	Improvements Planned
53	Taunton	Washington Street	Hodges Avenuenue	28	21.3	
54	Somerset	GAR Highway (Route 6)	Riverside Avenue (Route 138) / Bridge Street Bridge	28	21.3	
55	Swansea	GAR Highway (Route 6)	Gardners Neck Road	24	21.3	
56	New Bedford	JFK Highway (Route 18)	Cove Street /Rodney French Boulevard	18	21.0	Improvements Planned
57	New Bedford	Kempton Street (Route 6)	Rockdale Avenuenue	30	20.7	
58	Mansfield	Chauncy Street (Route 106)	Copeland Drive	26	20.7	Studied by SRPEDD
59	New Bedford	Church Street	Park Avenuenue	25	20.3	Studied by SRPEDD / Improvements Planned
60	North Attleborough	South Washington Street (Route 1)	Allen Avenue / Emerald Square Mall	32	20.0	
61	Raynham	New State Highway (Route 44)	Shaw's Plaza (#270-350)	20	20.0	
62	Seekonk	Taunton Avenue (Route 44)	Arcade Avenuenue	31	19.7	Studied by SRPEDD / Town Initiating Project
63	Fairhaven	Huttleston Avenue (Route 6)	Alden Road	37	19.0	Studied by SRPEDD

The 100 Most Dangerous Intersections in Southeastern Massachusetts 2010-2012

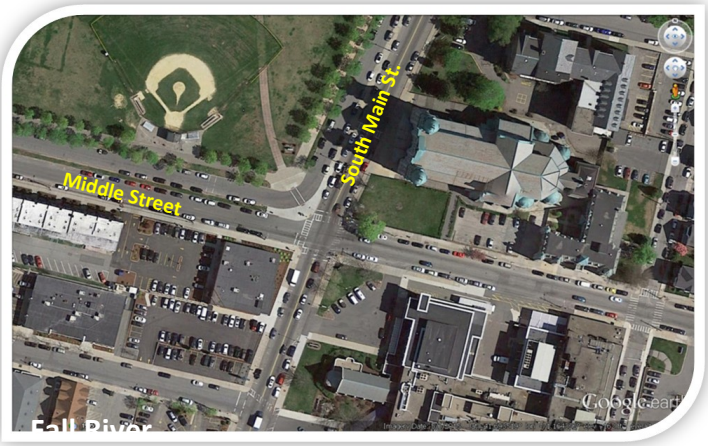
Rank	City/Town	Intersection		2010- 2012 Total Crashes	2010-2012 EPDO	Status
64	Taunton	Broadway (Route 138)	East Brittannia Street	25	19.0	Studied by SRPEDD / Improvements Completed
65	Fall River	Rhode Island Avenue/Mariano Bishop Boulevard	Tucker Street	25	19.0	Studied by SRPEDD
66	Raynham	Broadway (Route 138)	Carver Street	24	19.0	Studied by SRPEDD
67	Attleboro	North Main Street (Route 152)	Holden Street	28	18.7	
68	New Bedford	Pleasant Street	Elm Street	20	18.7	
69	Attleboro	Pleasant Street (Route 123)	Peck Street	20	18.7	
70	North Attleborough	South & East Washington Street (Route 1/1A)	Hoppin Hill Road (Route 120)	31	18.3	Improvements Planned
71	Seekonk	Arcade Avenuenue	Ledge Road	19	18.3	
72	New Bedford	Belleville Avenuenue	Coggeshall Street	22	18.0	Studied by SRPEDD / Improvements Completed 2009
73	New Bedford	Acushnet Avenue / JFK Highway NB (Route 18)	Coggeshall Street	22	18.0	Studied by SRPEDD / Improvements Completed 2013
74	Fairhaven	Main Street	Howland Road	25	17.7	Studied by SRPEDD
75	New Bedford	Route 6/Kempton Street	Pleasant, Purchase, Sixth and Middle Streets	20	17.7	Studied by SRPEDD / Improvements Planned
76	Mansfield	Chauncy Street (Route 106)	Forbes Boulevard	28	17.3	
77	Swansea	Swansea Mall Drive (Route 118)	Swansea Mall and Swansea Crossing Plaza	20	17.3	
78	Fall River	President Avenue (Route 6)	Highland Avenuenue	20	17.3	Studied by SRPEDD / Improvements Completed
79	Lakeville	Bedford Street (Route 18)	Main Street and Precinct Street (Route 105)	30	16.7	Pedestrian Improvements Planned
80	Fairhaven	Huttleston Avenue (Route 6)	Main Street	26	16.7	Studied by SRPEDD / Improvements Completed 2014

The 100 Most Dangerous Intersections in Southeastern Massachusetts 2010-2012

Rank	City/Town	Intersection		2010- 2012 Total Crashes	2010-2012 EPDO	Status
81	Fairhaven	Bridge Street	Adams Street	26	16.7	
82	Attleboro	Newport Avenue (Route 1A)	Carleton Street and Pitas Avenue	22	16.7	
83	New Bedford	Acushnet Avenuenue	Ashley Boulevard and Belair Street	18	16.7	
84	New Bedford	Hathaway Road	Shawmut Avenuenue	17	16.7	Improvements Completed 2014
85	Seekonk	Newman Avenue (Route 152)	Arcade Avenuenue	25	16.3	
86	Swansea	Bark Street	Stevens and Buffington Streets	21	16.3	Studied by SRPEDD
87	Attleboro	Washington Street (Route 1)	Scott Street	16	16.3	
88	Seekonk	Newman Avenue (Route 152)	Central and Pine Streets (Bakers Corner)	28	16.0	
89	Dartmouth	State Road (Route 6)	Faunce Corner Road/ Old Westport Road	28	16.0	Studied by SRPEDD / Improvements Planned
90	Fairhaven	Huttleston Avenue (Route 6)	Bridge Street	24	16.0	Studied by SRPEDD
91	Attleboro	Washington Street (Route 1)	Como Drive	20	16.0	
92	Fall River	Plymouth Avenuenue	Pleasant Street and Thirteenth Street	31	15.7	Studied by SRPEDD / Under Construction
93	Fairhaven	Huttleston Avenue (Route 6)	Sconticut Neck Road / Route 240	31	15.7	
94	Swansea	GAR Highway (Route 6)	Maple Avenuenue	23	15.7	
95	Raynham	New State Highway (Route 44)	South Street West	18	15.3	
96	New Bedford	Brownell Avenuenue	Hawthorn Street	14	15.3	Improvements Completed 2011
97	Taunton	Taunton Green	Main Street and Weir Street	25	15.0	Studied by SRPEDD
98	Fall River	Broadway	Columbia Street	25	15.0	
99	Somerset	Wilbur Avenue (Route 103)	Brayton Point Road	22	15.0	
100	Taunton	Winthrop Street (Route 44)	North Walker Street	21	15.0	

Pedestrian Crashes

From 2010 to 2012, there were 809 vehicle crashes involving pedestrians in the SRPEDD region, of which 31 were fatal and 609 resulted in injuries. This shows a 52% increase in fatal crashes, a 49% increase in injury crashes and a 34% increase in total pedestrian crashes from the last period studied, 2006-2008. While it is difficult to pinpoint the exact cause of the increase in crashes, it should be noted that reporting methods for these types of crashes could have improved over the time period and nationwide the incidence of injury crashes due to distracted driving have increased. The National Highway Traffic Safety Administration has also reported an increase in pedestrian accidents over the same reporting time frame. Although trends in Massachusetts have shown a decrease in total fatalities and incapacitating injuries, this trend does not apply to pedestrian crashes.



The locations of these crashes are important to note in order to prioritize safety improvements related to pedestrian travel. Of these pedestrian crashes, 356 (44%) occurred at intersections, while 453 (56%) occurred at mid-block locations. Of the 356 intersection crashes, 94 occurred at signalized intersections whereas 262 occurred at unsignalized intersections, accounting for nearly 33% of all crashes involving pedestrians.

This is indicative of the relative safety of signalized intersections for pedestrians and the lack of adequate pedestrian accommodations along roadways and at unsignalized intersections. Signalized intersections allow for protected pedestrian phases and therefore minimize vehicle to pedestrian conflicts.

The high number of crashes at unsignalized intersections may be attributed to the failure of either the pedestrian or the driver to yield appropriately. Contributing factors to these crashes might include lack of knowledge of the rules of the road, improper pavement markings or improper signage. The presence of crosswalks often give pedestrians confidence in crossing the street where motorists often do not expect pedestrians and fail to yield to them, as is the law. Contrarily, the lack of crosswalks lead to jaywalking at locations that are not safe due to vehicle speeds or sight-distance issues. Both of these issues contributed to the high number of crashes involving pedestrians at unsignalized intersections. The table below displays intersections with a minimum of 3 reported crashes from 2010-2012.

Top Intersections with Pedestrian Crashes 2010-2012

Community	Intersection	Injuries	Fatalities	Total Crashes
Fall River	South Main Street at Middle Street	5	0	5
Fall River	Plymouth Avenue at Rodman Street	4	0	4
Fall River	South Main Street at Cottage Street	4	0	4
New Bedford	Route 6 / Pleasant Street / Foster Street (Octopus)	3	1	4
Fall River	Broadway at Middle Street	3	0	4
Fall River	Eastern Avenue at County Street	3	0	3
New Bedford	Purchase Street at Wamsutta Street	3	0	3
New Bedford	Ashley Boulevard @ Nash Road	1	0	3
Taunton	County Street (Route 140) at Taunton Depot Drive	1	0	3

Everyone is a Pedestrian

Everyone has different preferences when it comes to transportation but the one mode of travel we all share is walking. Even if you usually drive or take the bus or train, at some point in the day, everyone is a pedestrian. Whenever you are not in your vehicle, you are a pedestrian, even getting to and from other modes of transportation.

Unfortunately, pedestrians were one of the few groups of road users to experience an increase in fatalities in the United States in 2011, up 3% from 2010 and totaling 4,432 deaths. Nationally, pedestrians accounted for 14% of total traffic fatalities.

In 2011 in our region, pedestrian fatalities accounted for 15% of total traffic fatalities. In 2012, that number jumped to 21%. SRPEDD is working hard to raise awareness of the dangers to pedestrians, and to provide outreach and education to combat these crashes.

Nearly 3 out of 4 pedestrian deaths occur in urban environments (73%), at non-intersections (70%), during the nighttime (70%), and many involve alcohol. More than a third (37%) of the pedestrians killed, and 1 in 8 (13%) of the drivers in pedestrian fatalities, had blood alcohol concentrations (BACs) of .08 g/dL or higher in 2011, the illegal limit in every State. Either the driver or pedestrian, or both, had some alcohol in 47% of all fatal pedestrian crashes. What we know is that pedestrians and drivers do not obey laws and signals consistently and many often use cell phones and music players while walking or driving. Only 60% of pedestrians said they expected drivers to stop when they were in crosswalks, even though they have the right-of-way (Review of Studies on Pedestrian and Bicyclist Safety, 1991-2007, www.ntl.bts.gov/lib/45000/45700/45710/811614.pdf).

Traffic Safety Facts

- In 2012, 4,743 pedestrians died in traffic crashes — a 6% increase from the number reported in 2011.
- In 2012, pedestrian deaths accounted for 14% of all traffic fatalities in motor vehicle traffic crashes.
- In 2012, more than one fifth of the children ages 10 to 15 killed in traffic crashes were pedestrians.
- Nearly one-third (32%) of pedestrian fatalities occurred between 8 p.m. and 11:59 p.m.
- Alcohol involvement— either for the driver or the pedestrian—was reported in 48% of all fatal pedestrian crashes.
- Nearly one-fifth of the pedestrians killed in 2012 were involved in hit-and-run crashes.

Blinking LED pedestrian signage in Taunton's Downtown area.

EVERYONE IS A PEDESTRIAN

NHTSA
www.nhtsa.gov

Bicycle Crashes

From 2010 to 2012, there were 339 crashes involving a bicycle in Southeastern Massachusetts, resulting in 245 injuries and 2 deaths. A third of these crashes were concentrated along twenty-four specific corridors in the region. The following table lists corridors with 3 or more crashes over the 3-year period and identified crashes occurring at intersections or mid-block locations.

Most roadways have no formal bicycle accommodations, forcing bicyclists to share travel lanes with motor vehicle traffic. Properly designed and designated bicycle lanes, such as those along Bark Street and Route 118 in Swansea, or separate bicycle paths, such as the Phoenix Trail in Fairhaven and Mattapoisett, provide much safer conditions for bicyclists.

Massachusetts has taken an active role in providing bicycle accommodations at actuated signalized intersections. Massachusetts has also taken further steps by issuing the Healthy Transportation Policy Directive, requiring projects constructed with federal and state funds to include bicycle and pedestrian infrastructure where feasible.

SRPEDD continues working with local and statewide bicycle groups promoting bicycle accommodations (paths and separate bike lanes) throughout the region. Expansion of bicycle facilities (shared road or exclusive paths) is a goal of SRPEDD's 2016 Regional Transportation Plan.

Top Corridors with Bicycle Crashes 2010-2012

Community	Corridor	Crashes at Intersections	Crashes at Mid-Block Locations	Total Crashes
Fall River	South Main Street	5	4	9
Fall River	Bedford Street	6	2	8
New Bedford	Purchase Street	4	3	7
Wareham	Cranberry Highway (Route 6/28)	3	4	7
Fairhaven	Huttleston Avenue (Route 6)	5	1	6
New Bedford	Coggeshall Street	3	3	6
Fall River	Pleasant Street	2	3	5
New Bedford	Acushnet Avenue (Route 18)	2	3	5
New Bedford	Ashley Boulevard (Route 18)	3	2	5
Attleboro	Washington Street (Route 1)	2	2	4
Fall River	County Street	2	2	4
New Bedford	Brock Avenue	3	1	4
Seekonk	Newman Avenue (Route 152)	2	2	4
Taunton	Weir Street	3	1	4
Attleboro	South Main Street (Route 152)	0	3	3
Attleboro	North Main Street (Route 152)	3	0	3
Dartmouth	Slocum Road	2	1	3
Fairhaven	Howland Road	3	0	3
Fairhaven	Sconticut Neck Road	1	2	3
Fall River	North Main Street	1	2	3
Fall River	Plymouth Avenue	2	1	3
Mansfield	School Street	2	1	3
Middleborough	East Grove Street (Route 28)	0	3	3
New Bedford	Pleasant Street	2	1	3

Systematic Approaches to Low Cost Safety Enhancements

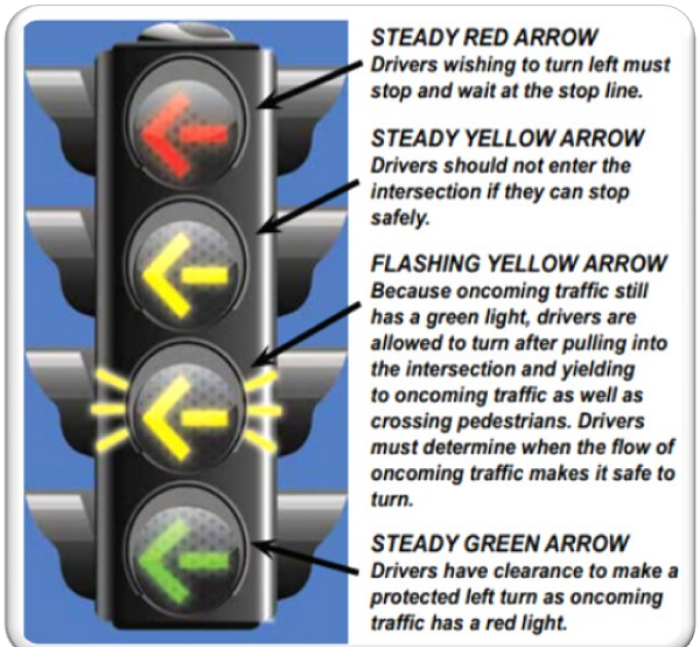
The Federal Highway Administration developed a systematic low cost approach to intersection safety enhancements, MassDOT pursued this approach which is consistent with strategies in their Strategic Highway Safety Plan (SHSP) to reduce fatal and injury crashes at intersections. Improvements consisted of the "basic set of sign and pavement markings" which research shows results in a crash reduction of 40%.

Quequechan St. at Pleasant St.
Fall River, MA

Using the 2006-2008 crash data, stop-controlled intersections throughout the region that had 9 or more crashes were identified. Communities interested in improvements to their intersections were asked to do the following: 1) review the identified intersections to ensure they were correctly identified as stop-sign controlled intersections; 2) verify that the identified jurisdiction (state or local) was correct; and 3) identify improvements made or planned at these locations.

Nine SRPEDD communities took advantage of this program and provided the necessary information to MassDOT that resulted in improvements to 45 intersections. These communities were Attleboro, Dighton, Fairhaven, Fall River, Marion, Middleborough, Plainville, Seekonk & Wareham.

Flashing Yellow Arrow Retrofit Project



From BayState Roads TechNotes #64

Approximately 25 percent of all crashes that occur at traffic signals in Massachusetts have been attributed to left-turning vehicles. Due to the angle of impact of collision, a crash that involves a left-turning vehicle is more likely to cause injuries or fatalities. As a part of the goal to significantly reduce fatalities and injuries on our streets and highways, the Massachusetts Department of Transportation (MassDOT) will be activating new traffic signal technology for left turns that has been proven to increase safety at intersections. This new signal face is referred to as a Flashing Yellow Arrow (FYA).
http://www.massdot.state.ma.us/highway/Departments/TrafficandSafetyEngineering/TrafficSignals/FlashingYellowArrow.aspx

Existing traffic signal systems provide left-turning vehicles with a Steady Green Left Arrow for a period of time when opposing traffic is stopped, which is followed by a Steady Yellow Left Arrow. Following the Yellow Left Arrow, a Steady Green Circular light is provided and left-turning vehicles are permitted to proceed, but are required to yield to oncoming traffic. Left-turning vehicles are no longer protected and are vulnerable to oncoming traffic. Motorists either forget or do not comprehend that a Steady Green Circular light requires left-turning vehicles to yield to oncoming traffic. In the late 1990's engineers began to add a supplemental sign, LEFT TURN YIELD ON GREEN, to reinforce this message, but these crashes continue to prevail.

The new signal heads have four left-turn arrows: one steady red arrow, indicating that left turns are prohibited; one steady yellow arrow, indicating the signal is changing from green to red; a new, Flashing Yellow Arrow (FYA), indicating that drivers can proceed with left turns after yielding to oncoming vehicles; and one steady green arrow, indicating left turns are protected. The signal transitions from a Steady Green Left Arrow to a Steady Yellow Left Arrow. However, instead of providing the traditional Steady Green Circular for the phase where left turns are required to yield, a Flashing Yellow Left Arrow is displayed to left-turning vehicles when opposing traffic has a green signal. The flashing yellow arrow is a better indicator to the left-turning drivers communicating that they must yield to oncoming traffic.

Studies have shown that, on average, left-turn crashes are reduced by approximately 20% with the FYA signal. Drivers typically find the Flashing Yellow Arrow display to be self-explanatory and need no further instruction. However, drivers that do not understand the meaning of the Flashing Yellow Left Arrow tend to make a safe maneuver, i.e. stopping and yielding to oncoming traffic, whereas left-turning drivers that do not understand the meaning of the traditional Steady Circular Green often do just the opposite.

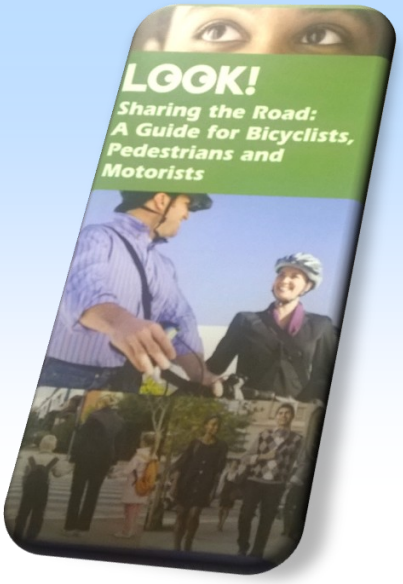
As a pilot project MassDOT installed a Flashing Yellow Arrow signal at the intersection of Pittsfield Road (U.S. Route 20) and Holmes Road in Lenox, a location that had a history of a high number of left turn crashes. Completed in January, 2013, the intersection has seen a significant reduction in left turn crashes. By December of 2014, a period of almost two years, the high-crash intersection has only seen one left-turn crash. This was the first instance where this technology was employed in Massachusetts. MassDOT is in the midst of a systemic retrofit project that will convert all eligible traffic signals on the State Highway System from the traditional display to the Flashing Yellow Arrow. This work will take place at over 350 traffic signals, covering more than 140 cities and towns and every District in the Commonwealth. Construction on this project is expected to start in 2015 and last two to three years. There are 30 locations in the SRPEDD region, covering 14 communities that are due for this new technology. The communities are Attleboro, Dartmouth, Freetown, Mansfield, Middleborough, New Bedford, North Attleborough, Norton, Plainville, Raynham, Somerset, Swansea, Taunton and Wareham.

A Multi Disciplined Strategy

Based on MassDOT's goal of reducing fatalities and injuries by 20% in 5 years, MassDOT, along with emphasis area teams of stakeholders, including SRPEDD, developed a multi-disciplined strategy to reduce these crashes. This strategy consists of targeted enforcement, public education and outreach, and identifying infrastructure needs. Of the 11 communities initially identified as eligible, two, New Bedford and Fall River, are the current participants in the SRPEDD region.

The first facet of the program which is now in progress is targeted enforcement, with the intent to fund stepped up enforcement with local police departments, specifically related to pedestrian and bicycle issues. This, too, has multiple components in its approach. Police issue citations and warnings to drivers, pedestrians and bicyclists alike and track feedback from all road users which may help gain a better understanding of infrastructure needs and issues.

The educational and awareness program includes several components aimed at drivers, pedestrians and bicyclists. In Massachusetts, once drivers obtain their licenses, there is no re-testing process and no easy opportunities for drivers to learn about changes that have taken place since they initially received their licenses.



Education, awareness and outreach is provided so drivers, pedestrians and bicyclists can learn about new bicycle and pedestrian safety elements. Such elements include introduction of sharrows, bike boxes, bike lanes, leading pedestrian indicators and pedestrian countdowns. Publicizing these elements and the rules of the road related to bicycle and pedestrian safety are a crucial part of this effort.

MASSACHUSETTS
Safe Routes to School
Mass.gov/MassDOT/SafeRoutes

Based on the crash data for the priority communities, school aged children (ages 5 - 15) account for 14% of all pedestrian injuries and 22% of bicycle injuries. Therefore, this task will also involve working with the Safe Routes to Schools Program and individual schools to increase bicycle and pedestrian safety awareness and training for school aged children.

The last facet of this program is identifying infrastructure needs to improve facilities for all users. By tracking needs and feedback through education and enforcement components infrastructure needs such as, sidewalks, crosswalks and bicycle accommodations, can be identified. MassDOT would then work with local communities to make the infrastructure improvements in outlying years of the program.

Thacher Elementary School, Attleboro

A Safe Routes to School project included approximately 1,500 feet of new sidewalk along the easterly side of James Street from the intersection of Brownell Street to the intersection of Carpenter Street was constructed. A small portion of new sidewalk along the westerly side of James Street was also constructed from Maple Street to Carpenter Street. New crosswalks and ADA-compliant wheelchair ramps were constructed at the intersections of James Street with Brownell, Orange, Mulberry, Maple, & Carpenter Streets. Included in the improvements were new pavement markings, and new traffic and pedestrian warning signs.

SRPEDD—Focusing on Safety

SRPEDD regularly conducts safety audits / studies at intersections and roadways that have been identified as safety problems. Each audit / study involves a detailed review of crash reports on file with police, as well as an analysis of the operational characteristics of the site. Local police departments have been extremely cooperative in providing access to their files, as well as sharing their unique knowledge of the circumstances contributing to crashes in their communities.

Federal and state transportation planning funds provided by the Federal Highway Administration and the Massachusetts Department of Transportation have enabled SRPEDD to conduct numerous safety studies over the years, which aided in the implementation of improvement projects. Additional intersections have been studied and are awaiting action on recommended improvements. Other intersections and roadways have studies underway or planned in the coming year. We continue to be a resource for safety planning to our member communities.

This report is a critical part of the Regional Transportation Plan for Southeastern Massachusetts. The Plan is an ongoing effort of the SRPEDD staff, community representatives through the Joint Transportation Planning Group (JTPG) and the Southeastern Massachusetts Metropolitan Planning Organization (SMMPO).

FOR MORE INFORMATION

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Massachusetts Commission
Against Discrimination (MCAD)
One Ashburton Place, 6th Floor
Boston, MA 02109
617-994-6000
TTY: 617-994-6196

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English: If this information is needed in another language, please contact SRPEDD's Title VI Coordinator by phone at (508) 824-1367.

Portuguese: Caso esta informação seja necessária em outra idioma, por favor contar o coordenador em Título VI do SRPEDD pelo telephone (508) 824-1367.

Spanish: Si necesita esta información en otro idioma, por favor contacte al coordinador de SRPEDD del Título VI al (508) 824-1367.

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