Old Colony Planning Council
70 School Street, Brockton, MA 02301
508 - 583 -1833
www.ocpcrpa.org

Safety Management Process

2009 Annual Report

Serving
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Abington
Avon
Bridgewater
Brockton
East Bridgewater
Easton
Halifax
Hanson
Kingston
Pembroke
Plymouth
Plympton
Stoughton
West Bridgewater
Whitman

Prepared under
MassDOT Contract
0052455

December, 2009
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Safety Management System
2009 Year End Report

December 2009

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This report was prepared under Contract with the Massachusetts Department of Transportation and the Federal Highway Administration under contract 0052455.

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Raymond Guarino	Transportation Planner
Frances Harrison	Transportation Intern
William McNulty	Transportation Planner
Susan McGrath	GIS Coordinator

Old Colony Planning Council

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OCPC STAFF

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The views and opinions of the Old Colony Planning Council expressed herein do not necessarily state or reflect those of the U.S. Department of Transportation.

This Safety Management System – Year End Summary Report was prepared by the following members of the Old Colony Planning Council staff under the direction of Pat Ciaramella, Executive Director, and the supervision of Charles Kilmer, Transportation Program Manager.

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Old Colony Safety Management System
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1. Executive Summary

The Old Colony Safety Management System consists of a systematic process that has the goal of reducing the number of and severity of traffic crashes on public roads. Recommended actions include providing information for selecting and implementing effective safety strategies and projects. All opportunities to improve roadway safety are identified, considered, and implemented in all phases of highway planning, design, construction, maintenance, and operation. The safety management system incorporates roadway, human and vehicle safety elements. Considered an ongoing effort, Old Colony Planning Council provides collects and maintains all data needed in the estimation of refined performance measures. Staff identify both existing and future needs of the region's transportation system with regard to safety. Subsequently, this report includes development of annual regional listings of high hazard intersections and corridors, and participation in the Highway Safety Improvement Program.

The procedures specific to staff implementation of and maintenance of this safety management system are outlined in the Old Colony Metropolitan Planning Organization's Unified Planning Work Program.

This 2009 Year End Safety Management System Report provides a summary of the tasks completed in 2009 by Old Colony Planning Council in regard to the Safety Management System. It also provides the most recent list of the top 100 most hazardous intersections in the region.

2. Corridor Studies and Regional Studies

Through the Old Colony MPO Unified Planning Work Program, Old Colony Planning Council conducts corridor studies that examine transportation conditions and deficiencies on significant transportation corridors, and regional studies on conditions non-specific to a particular corridor but affecting a large portion of the Region. Corridor studies provide communities and planning agencies a detailed assessment of current conditions, which in turn help guide decisions regarding maintenance and capacity. These studies examine alignment, modes of transportation, facilities, and movement between activity centers or other logical termini. The findings from corridor and regional studies support the development of the Regional Transportation Plan and the Transportation Improvement Program.

In 2009, Old Colony Planning Council conducted the following Corridor and Regional transportation studies:

- Route 18 Corridor Study – Phase 2
    - *Stoughton, Brockton, Whitman, East Bridgewater*
- Route 58 Corridor Study – Phase 1
    - *Abington, Whitman, Hanson, Halifax, and Plympton*
- Route 139 Corridor Study – Phase 1
    - *Abington, Stoughton, Pembroke*
- Route 44 Before and After – Continuing Analysis

Through these and other past corridor studies, Old Colony Planning Council has identified intersections that have a crash rate above the MassDOT District 5 regional average. The regional average crash rate for unsignalized intersections is 0.58, and 0.75 for signalized locations. Table 1 contains the list of unsignalized intersections identified in corridor studies that have an above average crash rate, while Table 2 lists the signalized locations with a crash rate above the MassDOT District 5 regional average.

Table 1: Unsignalized Intersections with Crash Rates Greater than 0.58

Community	Intersection	Crash Rate	MassDOT Top 200?	OCPC Top 100?
Avon	East Main Street (Route 28) at East and West Spring Street	1.300		Yes - 61
Bridgewater	Broad Street (Route 18) at High Street	1.300		
Bridgewater	Bedford Street (Route 18/28) at Grove Street	1.169		
Bridgewater	Bedford Street (Route 18/28) at Winter Street	1.133		
Brockton	Crescent Street (Route 27) at Plymouth Street	0.759		Yes - 91
Brockton	Montello Street (Route 28) at East Nilsson Street	1.149		Yes - 80
Brockton	Montello Street (Route 28) at Plain Street	0.858		
Brockton	North Montello Street (Route 28) at East Battles Street	1.780		
Brockton	North Montello Street (Route 28) at Field Street	1.666		
Brockton	North Montello Street (Route 28) at Wilmington Street	0.705		
Brockton	Pleasant Street (Route 27) at Ash Street	1.392	Yes- 124	Yes - 22
Brockton	Pleasant Street (Route 27) at Belmont Avenue/Augusta Avenue	1.373		
East Bridgewater	Bedford Street (Route 18) at Union Street	1.030		
Easton	Depot Street (Route 123) at Center Street	1.615		
Easton	Depot Street (Route 123) at Central Street	1.362		
Easton	Foundry Street (Route 106) at Prospect Street	1.498		
Easton	Foundry Street (Route 123) at Old Foundry Street	0.740		
Easton	Turnpike Street (Route 138) at West Street / Purchase Street	1.965		
Easton	Washington Street (Route 138) at Easton Industrial Park	1.110		
Easton	Washington Street (Route 138) at Elm Street	0.928		
Easton	Washington Street (Route 138) at Purchase Street / West Street	1.710		
Easton	Washington Street (Route 138) at Union Street	0.867		
Kingston	Main Street (Route 3A) at Crescent Street (Northern End)	0.912		
Kingston	Main Street (Route 3A) at Howlands Lane	1.045		
Kingston	Summer Street (Route 3A) at Green Street	0.609		
Kingston	Summer Street (Route 3A) at Main Street (Route 106) and Linden Street	2.019		
Kingston	Summer Street (Route 53) at Tarklin Road	0.971		
Plymouth	Sandwich Street (Route 3A) at South Street	0.931		
Plymouth	State Road (Route 3A) at Hedges Pond Road	0.658		
Plymouth	State Road (Route 3A) at Herring Pond Road	1.433		Yes - 88
Stoughton	Canton Street (Route 27) at School Street and School Avenue	2.049		Yes - 54
Stoughton	Central Street (Route 27) at Island Street	0.728		
Whitman	South Avenue (Route 27) at Raynor Avenue	0.606		
Whitman	South Avenue (Route 27) at Pleasant Street and Franklin Street (Route 27)	1.211		Yes - 62
Whitman	Temple Street (Route 27) at Beulah Street	0.935		
Whitman	Temple Street (Route 27) at Washington Street	1.037		

Table 2: Signalized Intersections with Crash Rates Greater than 0.75

Community	Intersection	Crash Rate	MassDOT Top 200?	OCPC Top 100?
Abington	Bedford Street (Route 18) at Brockton Avenue (Route 123)	1.610	Yes - 124	Yes - 21
Abington	Bedford Street (Route 18)t at Randolph Street and North Street (Route 139)	1.790	Yes - 25	Yes - 6
Avon	East Main Street (Route 28) at Harrison Boulevard	0.926		Yes - 95
Bridgewater	Main Street (Route 28) at Broad Street (Route 18) and Central Square	0.829	Yes - 124	Yes - 44
Bridgewater	Main Street (Route 28) at Center Street and High Street	0.949		
Brockton	Commercial Street (Route 27) at Centre Street (Route 123)	0.837		Yes - 86
Brockton	Commercial Street (Route 27) at Crescent Street (Route 27)	1.341		Yes - 76
Brockton	Court Street (Route 27) at Montello Street (Route 28)	1.353	Yes - 47	Yes - 11
Brockton	Crescent Street (Route 27) at Lyman Street	1.488	Yes - 155	Yes - 23
Brockton	Crescent Street (Route 27) at Quincy Street/Massasoit	0.825		Yes - 47
Brockton	Crescent Street (Route 27) at Wendell Avenue and Crescent Avenue	0.792		
Brockton	Main Street (Route 28) at Brookside Avenue	1.470		
Brockton	Main Street (Route 28) at Plain Street and Keith Avenue	0.864		Yes - 56
Brockton	Montello Street (Route 28) at Centre Street (Route 123)	1.053		Yes - 79
Brockton	Montello Street (Route 28) at Court Street (Route 27)	1.182		
Brockton	Montello Street (Route 28) at Crescent Street	1.183		Yes - 52
Brockton	Montello Street (Route 28) at Grove Street	0.770	Yes - 167	Yes - 27
Brockton	Montello Street (Route 28) at Lawrence Street	1.348		Yes - 51
Brockton	Montello Street (Route 28) at Perkins Avenue	1.067		
Brockton	North Montello Street (Route 28) at Ames Street	1.206		Yes - 38
Brockton	North Montello Street (Route 28) at East Ashland Street	1.342		Yes - 48
Brockton	North Montello Street (Route 28) at Elliot Street	1.167		
Brockton	North Montello Street (Route 28) at Howard Street (Route 37)	1.821		Yes - 28
Brockton	North Pearl Street (Route 27) at Oak Street	0.996		Yes - 10
Brockton	Pleasant Street (Route 27) at Main Street and Court Street	1.235		Yes - 32
Brockton	Pleasant Street (Route 27) at Warren Street	2.437	Yes - 113	Yes - 16
Brockton	Reynolds Memorial Highway (Route 27) at Pleasant Street	0.985		Yes - 30
Brockton	Reynolds Memorial Highway (Route 27) at Westgate Drive and Christys Drive	1.458		Yes - 12
East Bridgewater	Bedford Street (Route 18) at Central Street and Spring Street	1.080		Yes - 70
East Bridgewater	Bedford Street (Route 18) at West Street (Route 106)	1.510		Yes - 24
Easton	Eastman Street (Route 106) at Foundry Street (Route 123)	2.029		
Easton	Foundry Street (Route 106) at Depot Street (Route 123) and Bay Road	1.452	Yes - 143	Yes - 46
Easton	Foundry Street (Route 106) at Turnpike Street (Route 138)	1.675	Yes - 136	Yes - 25
Easton	Washington St (Route 138) at Belmont St (Route 123)	1.847		Yes - 99
Easton	Washington Street (Route 138) at Central Street	1.125		
Easton	Washington Street (Route 138) at Depot Street (Route 123)	1.655		Yes - 59
Easton	Washington Street (Route 138) at Main Street	1.323		Yes - 100
Easton	Washington Street (Route 138) at Stonehill College	0.926		
Plymouth	Court Street (Route 3A) at Cherry Street and Prince Street	0.768		
Plymouth	Court Street (Route 3A) at Samoset Street (Route 44)	1.070		Yes - 87
Plymouth	State Road (Route 3A) at White Horse Beach Road and Beaver Dam Road	1.485		
West Bridgewater	North/South Main Street (Route 28) at East/West Center Street (Route 106)	0.771	Yes - 52	Yes - 8
Whitman	Bedford Street (Route 18) at Temple Street (Route 27)	1.800		Yes - 42
Whitman	Bedford Street (Route 18) at Auburn Street (Route 14)	1.760	Yes - 105	Yes - 18
Whitman	Temple Street (Route 27) at Bedford Street (Route 18)	1.496		Yes - 42

3. Crash Data Management

Old Colony Planning Council continually maintains a database of the most hazardous locations throughout the Region based on crash records and traffic volumes. Crash records from the Registry of Motor Vehicles are provided to OCPC by the Massachusetts Department of Transportation. These records include basic crash information such as date, time, and location; as well as details regarding number of injuries and fatalities, environmental conditions, and direction of travel.

Crash rates are calculated by OCPC using the most recent crash data and traffic volume data. The crash rate is given as crashes per million entering vehicles at a location, typically an intersection.

OCPC also uses a "weighted value" technique to assess the hazard threat at a particular location. The weighted value is based on a numerical rating system which assigns a single point for crashes resulting in property damage only, five points for crashes resulting in injury, and ten points for crashes resulting in a fatality. This weighted value along with the crash rate aids in the determination of how hazardous a particular location may be.

OCPC maintains a list of fatal crash locations, as well as a list of top crash locations in the Region. Table 3 contains the 100 most hazardous intersections in the Old Colony region, based on crashes that occurred over a three-year period from 2005 through 2007. Figure 1displays the locations of these intersections on a map of the region.

Table 4 and Figure 2 list and map, respectively, the most hazardous freeway interchanges in the Old Colony Region. Crashes recorded as occurring at a specific interchange occurred anywhere on the ramp system or within the weaving areas (overpasses and underpasses, acceleration and deceleration lanes, etc).

Table 3: Top 100 Most Hazardous Intersections in the Old Colony Region (2005 – 2007)

Rank	Community	Intersection	Improvement Status	Total Crashes	Average # of Crashes	Traffic Control	Property	Injury	Fatal	EPDO Weighted Average
1	Brockton	West Elm Street at Newbury Street	Design	65	21.67	Stop Sign	23	42	0	233
2	Brockton	Belmont Street (Route 123) at Manley Street	Design	75	25.00	Signal	40	35	0	215
3	Stoughton	Washington Street (Route 138) at Central Street		119	39.67	Signal	98	21	0	203
4	Brockton	West Elm Street at Ash Street	Design	70	23.33	Stop Sign	37	33	0	202
5	Pembroke	Washington Street (Route 53) at Schoosett Street (Route 139) and Columbia Road (Route 53)		71	23.67	Signal	41	30	0	191
6	Abington	Bedford Street (Route 18) at Randolph Street (Route 139) and North Avenue (Route 139)		92	30.67	Signal	68	24	0	188
7	Brockton	North Main Street at Howard Street, Oak Street, and Wilmington Street		74	24.67	Signal	46	28	0	186
8	West Bridgewater	North & South Main Street (Route 28) at East & West Center Street	Design	85	28.33	Signal	61	24	0	181
9	Brockton	West Elm Street at Belmont Avenue	Design	46	15.33	Stop Sign	16	29	1	171
10	Brockton	North Pearl Street (Route 27) at Oak Street		52	17.33	Signal	23	29	0	168
11	Brockton	Court Street (Route 27) at Montello Street (Route 28)		68	22.67	Signal	44	24	0	164
12	Brockton	Reynolds Memorial Highway (Route 27) at Westgate Drive and Christys Drive		62	20.67	Signal	38	24	0	158
13	Brockton	Belmont Street (Route 123) at Linwood Street and Lorraine Avenue	Design	56	18.67	Stop Sign	31	25	0	156
14	Brockton	Pleasant Street (Route 27) at West Street	Construction	63	21.00	Signal	41	22	0	151
15	Brockton	North Main Street at East & West Ashland Street		56	18.67	Signal	33	23	0	148
16	Brockton	Pleasant Street (Route 27) at Warren Avenue and North Warren Avenue	Design	61	20.33	Signal	40	21	0	145
17	Brockton	Belmont Street (Route 123) at Pearl Street		59	19.67	Signal	38	21	0	143
18	Whitman	Auburn Street (Route 14) at Bedford Street (Route 18)		61	20.33	Signal	44	16	1	134
19	Brockton	North Montello Street (Route 28) at Livingston Road and Field Street		42	14.00	Stop Sign	19	23	0	134
20	Brockton	Centre Street (Route 123) at Legion Parkway (Route 123) and Main Street		52	17.33	Signal	32	20	0	132
21	Abington	Bedford Street (Route 18) at Brockton Avenue (Route 123)		58	19.33	Signal	40	18	0	130
22	Brockton	Pleasant Street (Route 27) at Ash Street		37	12.33	Stop Sign	14	23	0	129
23	Brockton	Crescent Street (Route 27) at Lyman Street		48	16.00	Signal	28	20	0	128
24	East Bridgewater	Bedford Street (Route 18) at West Street (Route 106) and East Street		59	19.67	Signal	42	17	0	127

Table 3: Top 100 Most Hazardous Intersections in the Old Colony Region (2005 – 2007), continued

Rank	Community	Intersection	Improvement Status	Total Crashes	Average # of Crashes	Traffic Control	Property	Injury	Fatal	EPDO Weighted Average
25	Easton	Foundry Street (Route 106) at Turnpike Street (Route 138)	HSIP	50	16.67	Signal	31	19	0	126
26	Brockton	Centre Street (Route 123) at Cary Street and Lyman Street		45	15.00	Signal	25	20	0	125
27	Brockton	Montello Street (Route 28) at Grove Street		32	10.67	Signal	10	22	0	120
28	Brockton	North Montello Street (Route 28) at Howard Street (Route 37) and Albion Street		47	15.67	Signal	29	18	0	119
29	Brockton	North Pearl Street (Route 27) at Reynolds Memorial Highway (Route 27)	Construction	40	13.33	Signal	21	19	0	116
30	Brockton	Pleasant Street (Route 27) at Reynolds Memorial Highway (Route 27)		42	14.00	Signal	25	16	1	115
31	Brockton	Oak Street at Campanelli Industrial Drive		36	12.00	Signal	17	19	0	112
32	Brockton	Pleasant Street (Route 27) at Court Street (Route 27), Main Street, and North Main Street		43	14.33	Signal	26	17	0	111
33	Brockton	Centre Street (Route 123) at Quincy Street		49	16.33	Signal	34	15	0	109
34	Brockton	Belmont Street (Route 123) at West Street		41	13.67	Signal	24	17	0	109
35	Stoughton	Lindelof Avenue (Route 139) at Technology Center Drive and Kay Way		41	13.67	Signal	24	17	0	109
36	Brockton	Main Street at Nilsson Street and East Nilsson Street		42	14.00	Stop Sign	26	16	0	106
37	Brockton	Belmont Street (Route 123) at Brockton Veteran Administration Hospital and Belmont Court	Design	38	12.67	Signal	21	17	0	106
38	Brockton	North Montello Street (Route 28) at Ames Street		30	10.00	Signal	11	19	0	106
39	Stoughton	Turnpike Street (Route 139) at Page Street		53	17.67	Signal	40	13	0	105
40	Brockton	Pearl Street at Pleasant Street		47	15.67	Signal	33	14	0	103
41	Brockton	Forest Avenue at Manomet Street and Bouve Avenue		35	11.67	Signal	18	17	0	103
42	Whitman	Bedford Street (Route 18) at Temple Street (Route 27)		62	20.67	Signal	52	10	0	102
43	Brockton	Centre Street (Route 123) at Plymouth Street		34	11.33	Flashing Beacon	17	17	0	102
44	Bridgewater	Broad Street (Route 18) at Main Street (Route 28) and Central Square (Route 18/28/104)		57	19.00	Signal	46	11	0	101
45	Brockton	Warren Avenue at Bartlett Street and Father Kenney Way		32	10.67	Stop Sign	15	17	0	100
46	Easton	Foundry Street (Route 106) at Depot Street (Route 123) and Bay Road	Design	51	17.00	Signal	39	12	0	99
47	Brockton	Crescent Street (Route 27) at Quincy Street and Massasoit Boulevard	PNF Filed	43	14.33	Signal	29	14	0	99
48	Brockton	North Montello Street (Route 28) at East Ashland Street		42	14.00	Signal	28	14	0	98
49	Brockton	Belmont Street (Route 123) at Warren Avenue		40	13.33	Signal	26	14	0	96
50	Brockton	West Elm Street at Warren Avenue	Design	39	13.00	Signal	25	14	0	95

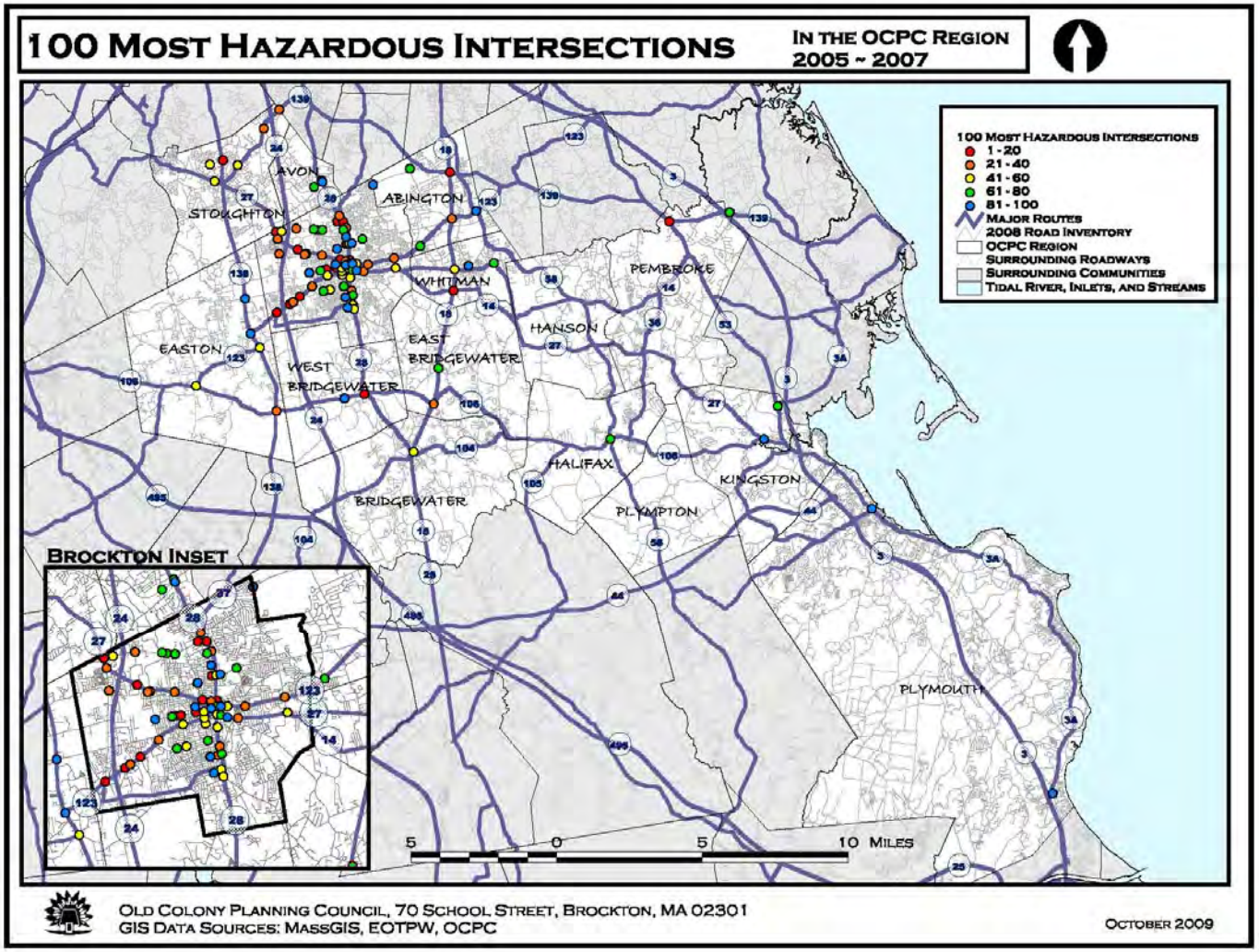
Table 3: Top 100 Most Hazardous Intersections in the Old Colony Region (2005 – 2007), continued

Rank	Community	Intersection	Improvement Status	Total Crashes	Average # of Crashes	Traffic Control	Property	Injury	Fatal	EPDO Weighted Average
51	Brockton	Montello Street (Route 28) at Lawrence Street		30	10.00	Signal	14	16	0	94
52	Brockton	Montello Street (Route 28) at Crescent Street (Route 123)		26	8.67	Signal	9	17	0	94
53	Brockton	Belmont Street (Route 123) at Manomet Street and Belmont Avenue		35	11.67	Stop Sign	22	12	1	92
54	Stoughton	Canton Street (Route 27) at School Street		37	12.33	Stop Sign	24	13	0	89
55	Brockton	Main Street at Perkins Avenue and South Street		33	11.00	Signal	19	14	0	89
56	Brockton	Main Street (Route 28) at Plain Street (Route 28) and Keith Avenue	Design	25	8.33	Signal	9	16	0	89
57	Stoughton	Central Street at Pearl Street		52	17.33	Signal	43	9	0	88
58	Stoughton	Pleasant Street (Route 139) at Central Street		51	17.00	Signal	42	9	0	87
59	Easton	Depot Street (Route 123) at Washington Street (Route 138)		39	13.00	Signal	27	12	0	87
60	Brockton	Oak Street at Reservoir Street		27	9.00	Signal	12	15	0	87
61	Avon	East Main Street (Route 28) at East & West Spring Street		33	11.00	Flashing Beacon	20	13	0	85
62	Whitman	Franklin Street (Route 27) at South Avenue (Route 27) and Pleasant Street		33	11.00	Stop Sign	20	13	0	85
63	Avon	Harrison Boulevard at West Main Street		28	9.33	Signal	14	14	0	84
64	Brockton	West Elm Street at Moraine Street	Design	24	8.00	Stop Sign	9	15	0	84
65	Kingston	Tremont Street (Route 3A) at Summer Street (Route 53)		38	12.67	Signal	27	11	0	82
66	Brockton	Ash Street at Forest Avenue		34	11.33	Signal	22	12	0	82
67	Brockton	Oak Street at Belair Street		26	8.67	Signal	12	14	0	82
68	Brockton	Oak Street at D. W. Field Park Road		26	8.67	Signal	12	14	0	82
69	Brockton	North Cary Street at East Ashland Street		41	13.67	Signal	31	10	0	81
70	East Bridgewater	Bedford Street (Route 18) at Central Street, Spring Street and Maple Avenue		41	13.67	Signal	31	10	0	81
71	Pembroke	Church Street (Route 139) at Union Street		41	13.67	Signal	31	10	0	81
72	Brockton	North Main Street at Ames Street		25	8.33	Stop Sign	11	14	0	81
73	Brockton	Oak Street at Battles Street		27	9.00	Signal	14	13	0	79
74	Abington	Brockton Avenue (Route 123) at Mill Street and Green Street		30	10.00	Stop Sign	18	12	0	78
75	Brockton	Warren Avenue at Forest Avenue		28	9.33	Signal	16	12	0	76

Table 3: Top 100 Most Hazardous Intersections in the Old Colony Region (2005 – 2007), continued

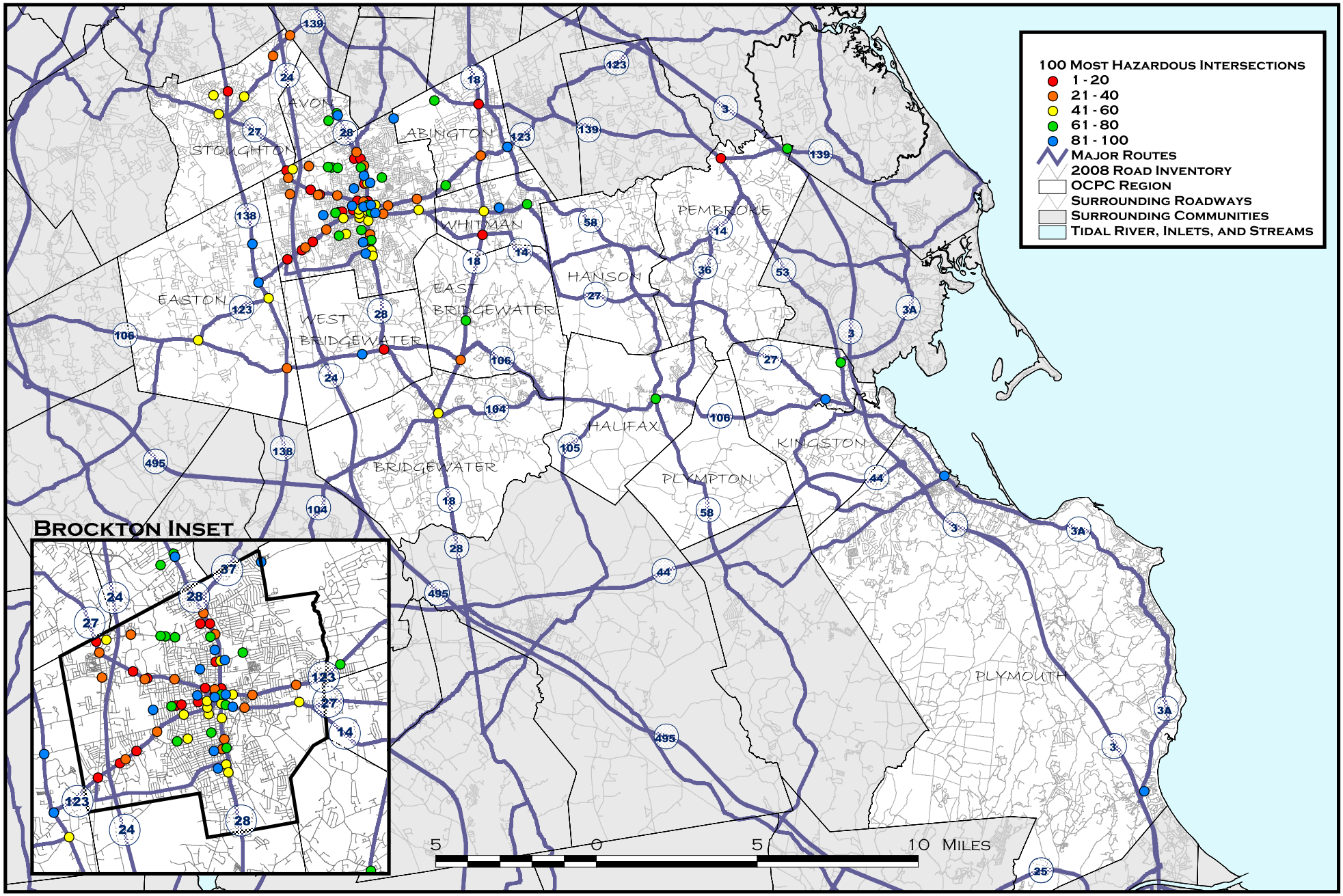
Rank	Community	Intersection	Improvement Status	Total Crashes	Average # of Crashes	Traffic Control	Property	Injury	Fatal	EPDO Weighted Average
76	Brockton	Crescent Street (Route 27) at Commercial Street and Perkins Street		39	13.00	Signal	30	9	0	75
77	Abington	Hancock Street at Chestnut Street		35	11.67	Flashing Beacon	25	10	0	75
78	Halifax	Monponsett Street (Route 58) at Plymouth Street (Route 106)		31	10.33	Signal	20	11	0	75
79	Brockton	Montello Street (Route 28) at Centre Street (Route 123)		27	9.00	Signal	15	12	0	75
80	Brockton	Montello Street (Route 28) at East Nilsson Street		27	9.00	Stop Sign	15	12	0	75
81	Brockton	Main Street / School Street at Fredrick Douglass Avenue		23	7.67	Signal	10	13	0	75
82	Brockton	North Quincy Street at Boundary Avenue and Chestnut Street		22	7.33	Stop Sign	10	11	1	75
83	Brockton	North Main Street at Battles Street		30	10.00	Signal	19	11	0	74
84	West Bridgewater	West Center Street (Route 106) at North & South Elm Street		30	10.00	Signal	19	11	0	74
85	Brockton	Warren Avenue at Nilsson Street		26	8.67	Stop Sign	14	12	0	74
86	Brockton	Centre Street (Route 123) at Commercial Street (Route 27)		31	10.33	Signal	21	10	0	71
87	Plymouth	Court Street (Route 3A) at Samoset Street (Route 44)		37	12.33	Signal	29	8	0	69
88	Plymouth	State Road (Route 3A) at Herring Pond Road		33	11.00	Stop Sign	24	9	0	69
89	Brockton	North Warren Avenue at Prospect Street		21	7.00	Flashing Beacon	9	12	0	69
90	Brockton	West Elm Street at West Street		31	10.33	Signal	22	9	0	67
91	Brockton	Crescent Street (Route 27) at Plymouth Street		23	7.67	Stop Sign	12	11	0	67
92	Abington	Plymouth Street (Route 58) at Centre Avenue (Route 123)		34	11.33	Signal	26	8	0	66
93	Kingston	Pembroke Street (Route 27) at Main Street (Route 106) and Wapping Road (Route 106)		34	11.33	Signal	26	8	0	66
94	Brockton	Warren Avenue at Market Street		26	8.67	Stop Sign	16	10	0	66
95	Avon	East Main Street (Route 28) at Harrison Boulevard		33	11.00	Signal	25	8	0	65
96	Whitman	Washington Street, Park Avenue and West Street		29	9.67	Flashing Beacon	20	9	0	65
97	Brockton	Newbury Street at Highland Street		25	8.33	Stop Sign	15	10	0	65
98	Brockton	East Ashland Street at Mulberry Street		17	5.67	Stop Sign	5	12	0	65
99	Easton	Belmont Street (Route 123) at Washington Street (Route 138)		36	12.00	Signal	29	7	0	64
100	Easton	Washington Street (Route 138) at Main Street		32	10.67	Signal	24	8	0	64

Figure 1: OCPC Top 100 Most Hazardous Intersections, 2005-2007



100 Most Hazardous Intersections

In the OCPC Region
2005 ~ 2007



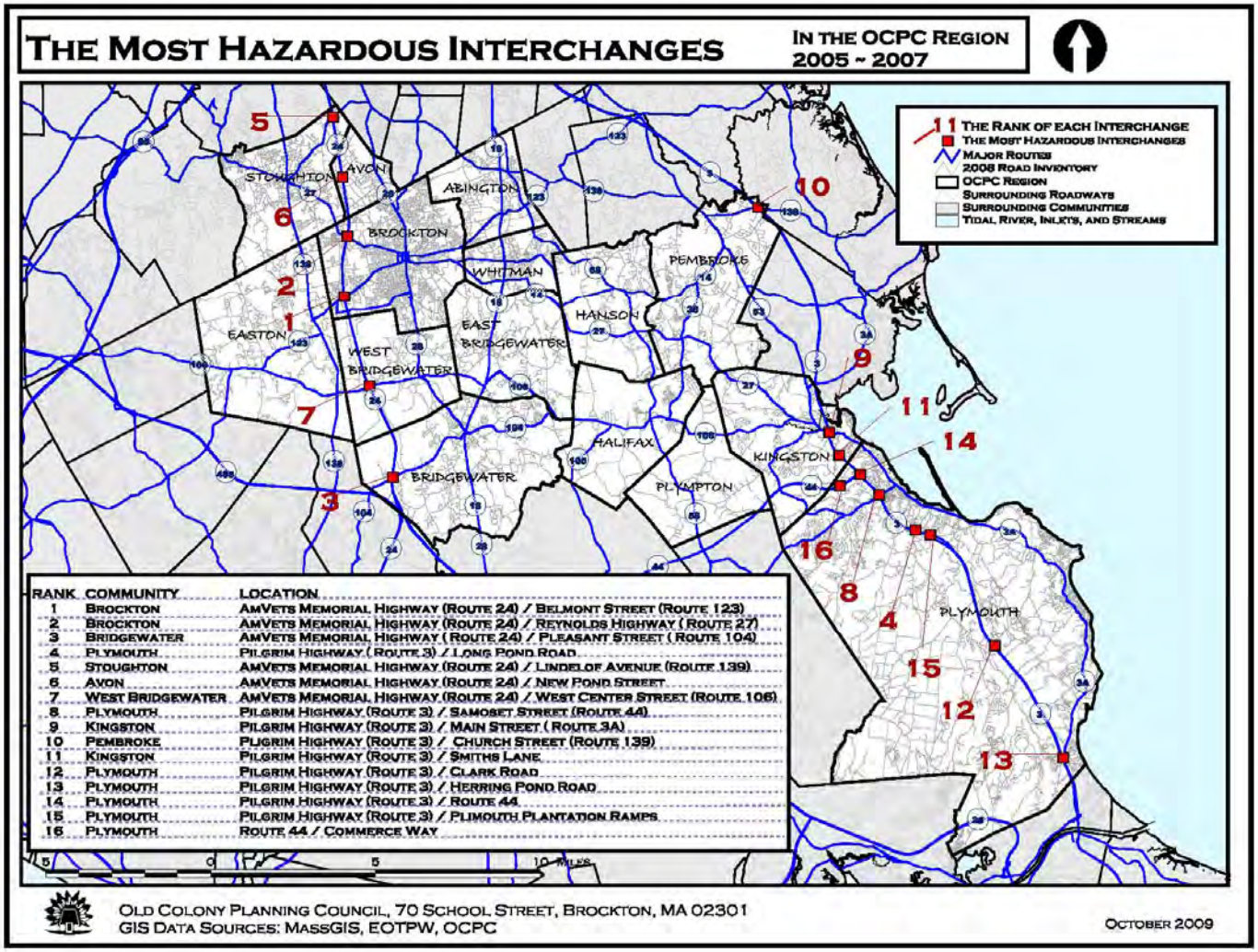
Old Colony Planning Council, 70 School Street, Brockton, MA 02301
GIS Data Sources: MassGIS, EOTPW, OCPC

October 2009

Table 4: Most Hazardous Interchanges in the OCPC Region

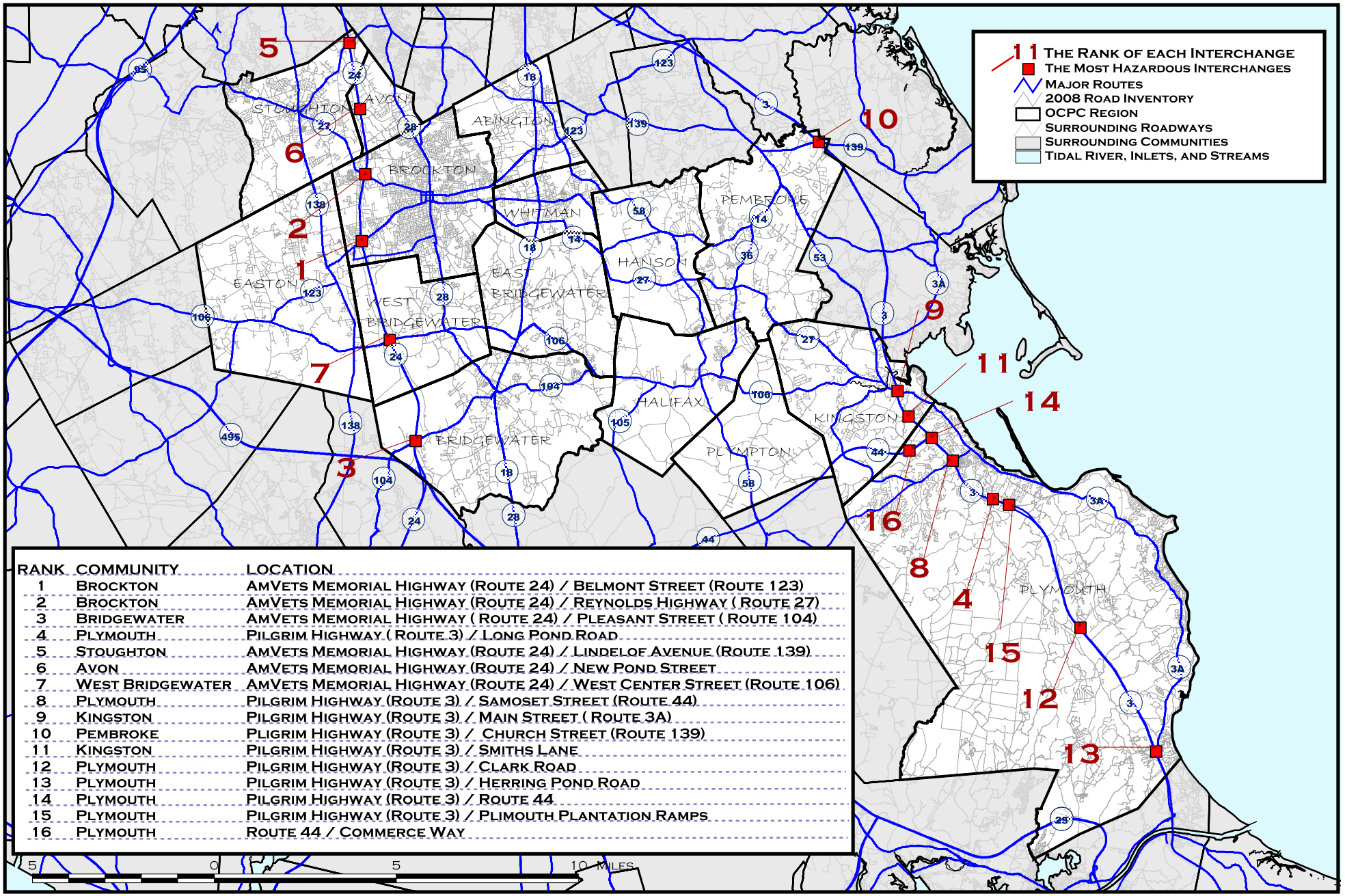
Rank	Community	Interchanges	Total Crashes	Average # of Crashes	Traffic Control	Property	Injury	Fatal	EPDO Weighted Average
1	Brockton	AmVets Memorial Highway (Route 24) / Belmont Street (Route 123)	225	75.00	Yield	134	91	0	589
2	Brockton	AmVets Memorial Highway (Route 24) / Reynolds Memorial Highway (Route 27)	149	49.67	Yield	82	66	1	422
3	Bridgewater	AmVets Memorial Highway (Route 24) / Pleasant Street (Route 104)	136	45.33	Signal	79	56	1	369
4	Plymouth	Pilgrim Highway (Route 3) / Long Pond Road	140	46.67	Signal	88	52	0	348
5	Stoughton	AmVets Memorial Highway (Route 24) / Lindelof Avenue (Route 139)	126	42.00	Yield	73	51	2	348
6	Avon	AmVets Memorial Highway (Route 24) / New Pond Street	108	36.00	Yield	54	51	3	339
7	West Bridgewater	AmVets Memorial Highway (Route 24) / West Center Street (Route 106)	135	45.00	Yield	86	49	0	331
8	Plymouth	Pilgrim Highway (Route 3) / Samoset Street (Route 44)	97	32.33	Signal / Yield	65	32	0	225
9	Kingston	Pilgrim Highway (Route 3) / Main Street (Route 3A)	91	30.33	Signal / Yield	60	31	0	215
10	Pembroke	Pilgrim Highway (Route 3) / Church Street (Route 139)	94	31.33	Signal	66	28	0	206
11	Kingston	Pilgrim Highway (Route 3) / Smiths Lane	65	21.67	Signal	37	28	0	177
12	Plymouth	Pilgrim Highway (Route 3) / Clark Road	52	17.33	Yield	33	19	0	128
13	Plymouth	Pilgrim Highway (Route 3) / Herring Pond Road	39	13.00	Yield	31	8	0	71
14	Plymouth	Pilgrim Highway (Route 3) / Route 44	19	6.33	Yield	11	8	0	51
15	Plymouth	Pilgrim Highway (Route 3) / Plymouth Plantation Highway Ramp	16	5.33	Yield	12	4	0	32
16	Plymouth	Route 44 / Commerce Way	13	4.33	Signal / Yield	10	3	0	25

Figure 2: OCPC Most Hazardous Interchanges, 2005-2007



The Most Hazardous Interchanges

In the OCPC Region
2005 ~ 2007



RANK	COMMUNITY	LOCATION
1	Brockton	AmVets Memorial Highway (Route 24) / Belmont Street (Route 123)
2	Brockton	AmVets Memorial Highway (Route 24) / Reynolds Highway (Route 27)
3	Bridgewater	AmVets Memorial Highway (Route 24) / Pleasant Street (Route 104)
4	Plymouth	Pilgrim Highway (Route 3) / Long Pond Road
5	Stoughton	AmVets Memorial Highway (Route 24) / Lindelof Avenue (Route 139)
6	Avon	AmVets Memorial Highway (Route 24) / New Pond Street
7	West Bridgewater	AmVets Memorial Highway (Route 24) / West Center Street (Route 106)
8	Plymouth	Pilgrim Highway (Route 3) / Samoset Street (Route 44)
9	Kingston	Pilgrim Highway (Route 3) / Main Street (Route 3A)
10	Pembroke	Pligrim Highway (Route 3) / Church Street (Route 139)
11	Kingston	Pilgrim Highway (Route 3) / Smiths Lane
12	Plymouth	Pilgrim Highway (Route 3) / Clark Road
13	Plymouth	Pilgrim Highway (Route 3) / Herring Pond Road
14	Plymouth	Pilgrim Highway (Route 3) / Route 44
15	Plymouth	Pilgrim Highway (Route 3) / Plimouth Plantation Ramps
16	Plymouth	Route 44 / Commerce Way

Old Colony Planning Council, 70 School Street, Brockton, MA 02301
GIS Data Sources: MassGIS, EOTPW, OCPC

October 2009

4. Local Technical Assistance Studies

Through the Local Highway Transportation Planning Technical Assistance (LTA) Task of the Unified Planning Work Program, Old Colony Planning Council provides local traffic planning and technical analysis services to its member communities. The objective of the LTA program is to provide a quick and effective response mechanism to handle special, short-term transportation issues and/or projects as they arise. Recommendations from such studies may include short, medium, and long term improvements to address safety deficiencies. Some recommendations are low cost, such as signage and striping, whicle others may be higher cost such as installation of traffic signals.

In 2009, Old Colony Planning Council conducted the following LTA projects in response to requests from the host communities:

East Bridgewater

- West Union Street at North Central Street – Intersection Safety and Stop Sign Warrant Analysis

Easton

- Turning Movement Counts and Traffic Counts for Flow and Safety Analysis around Easton Public Schools Traffic Circulation

Halifax

- Plymouth Street (Route 106) at Thompson Street (Route 105) – Traffic Signal Warrant Analysis
- Plymouth Street (Route 106) at Carver Street – Traffic Signal Warrant Analysis
- Plymouth Street (Route 106) – Pedestrian Safety

Pembroke

- Elm Street at Spring Street – Intersection Safety with Multiway Stop Sign Warrant Analysis
- North Pembroke Roadways – Heavy Vehicle Traffic and Speed Analysis

Plymouth

- John Alden Road / Priscilla Beach Road – Speed Analysis and Traffic Calming Study
- Plympton Road (Route 80) at Carver Road – Traffic Signal Phasing and Safety Analysis
- Traffic Calming Follow-Up Study – Roads in Chiltonville Area

Stoughton

- Bay Road Detour Circulation

West Bridgewater

- West Center Street (Route 106) at Howard Street – Intersection Safety and Traffic Signal Warrant Analysis (Potential TIP Project)
- South Main Street (Route 106) at Bryant Street and Ash Street – Intersection Safety and Traffic Signal Warrant Analysis

Whitman

- Washington Street at West Street and Park Avenue – Intersection Safety with Multiway Stop and Traffic Signal Warrant Analysis
- South Avenue (Route 27) and Franklin Street – Intersection Safety Analysis (Potential TIP Project)

5. Road Safety Audits

The Federal Highway Administration defines a Road Safety Audit (RSA) as *the formal safety examination of an existing or future road or intersection by an independent, multidisciplinary team*. The purpose of an RSA is to *identify potential safety issues and possible opportunities for safety improvements* considering all roadway users.

The Highway Division of MassDOT has embraced the RSA program as a low cost opportunity to make significant safety improvements at any number of stages ranging from project development and planning through existing operation. Similarly, Old Colony Planning Council has adopted many of the Road Safety Audit principles as a tool in evaluating problem locations identified through the Local Highway Technical Assistance program.

Statewide, in 2009, the Highway Division of MassDOT targeted hazardous intersections for Road Safety Audits and potential Highway Safety Improvement Program (HSIP) funding for improvements. More information from the Commonwealth on the HSIP Program can be found in Section 8 of this report.

Coordinated with MassDOT, Old Colony Planning Council participated on Road Safety Audits of the following intersections: Belmont Street (Route 123) at Linwood Street and Lorraine Avenue in Brockton; Foundry Street (Route 106) at Prospect Street in Easton; Washington Street (Route 138) at Elm Street in Easton; Washington Street (Route 138) at Union Street in Easton; Foundry Street (Route 106) at Bay Road and Depot Street (Route 123) in Easton; Foundry Street (Route 106) at Turnpike Street (Route 138) in Easton); and Canton Street (Route 27) at School Street in Stoughton. Additionally, OCPC conducted a Road Safety Audit at Main Street in Brockton as part of the Local Highway Technical Assistance Program.

Belmont Street (Route 123) at Linwood Street and Lorraine Avenue, Brockton

The Massachusetts Department of Transportation (MassDOT, formerly EOT) in cooperation with Old Colony Planning Council conducted a Road Safety Audit of the intersection of Belmont Street (Route 123) at Linwood Street and Lorraine Avenue in Brockton on September 1, 2009. The intersection was selected for an RSA through the State's Strategic Highway Safety Plan (SHSP) based on its status as a high hazard intersection. The intersection ranks 13th on OCPC's list of 100 Most Hazardous Intersections. The RSA team identified several deficiencies with the intersection, as well as potential improvements. These deficiencies and recommended improvements are contained within the Final Report completed by Beta Group for MassDOT. Please note that this project was selected for FFY 2009 HSIP Design funds.

Main Street Road Safety Audit, Brockton

A Road Safety Audit was conducted by Old Colony Planning Council for Main Street in Brockton. The need for an RSA was identified from a Local Technical Assistance request

from the City of Brockton to examine overall pedestrian safety and the feasibility of installation of a pedestrian crossing traffic signal in front of the Brockton Housing Authority residential complex there. The RSA Team consisted of OCPC Staff, representatives from Brockton City Departments (Fire, Housing, Police), Brockton Area Transit, and MassDOT (formerly MassHighway). The RSA team identified several deficiencies with the corridor between Brookside Avenue and Plain Street, as well as potential improvements. These deficiencies and recommended improvements are contained within the Final Report completed by Old Colony Planning Council.

Foundry Street (Route 106) at Prospect Street, Easton

The Massachusetts Department of Transportation (MassDOT, formerly EOT) in cooperation with Old Colony Planning Council conducted a Road Safety Audit of the intersection of Foundry Street (Route 106) and Prospect Street in Easton on July 14, 2009. The intersection was selected for an RSA through the State's Strategic Highway Safety Plan (SHSP) based on its status as a high hazard intersection and history of severe crashes. The RSA team identified several deficiencies with the intersection, as well as potential improvements. These deficiencies and recommended improvements are contained within the Final Report completed by Beta Group for MassDOT. The Town of Easton has submitted a Project Need Form for this location.

Foundry Street (Route 106) at Bay Road and Depot Street (Route 123) – Five Corners, Easton

The Massachusetts Department of Transportation (MassDOT) in cooperation with Old Colony Planning Council conducted a Road Safety Audit of Five Corners in Easton, the intersection of Foundry Street (Route 106), Bay Road, and Depot Street (Route 123) on December 21, 2009. The intersection was selected for an RSA through the State's Strategic Highway Safety Plan (SHSP) based on its status as a high hazard intersection and its selection for design and construction of improvements using HSIP funds. The RSA team identified several deficiencies with the intersection, as well as potential improvements. These deficiencies and recommended improvements are contained within the Final Report. The intersection is currently under design and programmed in the Old Colony Transportation Improvement Program for FFY 2010. This project was selected for FFY 2010 HSIP construction funds.

Foundry Street (Route 106) at Turnpike Street (Route 138), Easton

The Massachusetts Department of Transportation (MassDOT) in cooperation with Old Colony Planning Council conducted a Road Safety Audit of the intersection of Foundry Street (Route 106), and Turnpike Street (Route 138) on December 21, 2009. The intersection was selected for an RSA through the State's Strategic Highway Safety Plan (SHSP) based on its status as a high hazard intersection. The RSA team identified several deficiencies with the intersection, as well as potential improvements. These deficiencies and recommended improvements are contained within the Final Report. A Project Need Form for this location is under development by OCPC.

Washington Street (Route 138) at Elm Street, Easton

The Massachusetts Department of Transportation (MassDOT, formerly EOT) in cooperation with Old Colony Planning Council conducted a Road Safety Audit of the intersection of Washington Street (Route 138) and Elm Street in Easton on July 13, 2009. The intersection was selected for an RSA through the State's Strategic Highway Safety Plan (SHSP) based on its status as a high hazard intersection and history of severe crashes. The RSA team identified several deficiencies with the intersection, as well as potential improvements. These deficiencies and recommended improvements are contained within the Final Report completed by Beta Group for MassDOT. The Town of Easton has submitted a Project Need Form for this location.

Washington Street (Route 138) at Union Street, Easton

The Massachusetts Department of Transportation (MassDOT, formerly EOT) in cooperation with Old Colony Planning Council conducted a Road Safety Audit of the intersection of Washington Street (Route 138) and Union Street in Easton on July 13, 2009. The intersection was selected for an RSA through the State's Strategic Highway Safety Plan (SHSP) based on it's status as a high hazard intersection and history of severe crashes. The RSA team identified several deficiencies with the intersection, as well as potential improvements. These deficiencies and recommended improvements are contained within the Final Report completed by Beta Group for MassDOT. The Town of Easton has submitted a Project Need Form for this location.

Canton Street (Route 27) at School Street, Stoughton

The Massachusetts Department of Transportation (MassDOT, formerly EOT) in cooperation with Old Colony Planning Council conducted a Road Safety Audit of the intersection of Canton Street (Route 27) at School Street in Brockton on September 1, 2009. The intersection was selected for an RSA through the State's Strategic Highway Safety Plan (SHSP) based on it's status as a high hazard intersection. The intersection ranks 13th on OCPC's list of 100 Most Hazardous Intersections. The RSA team identified several deficiencies with the intersection, as well as potential improvements. These deficiencies and recommended improvements are contained within the Final Report completed by Beta Group for MassDOT.

6. Safe Routes To School

The Massachusetts Safe Routes to School (SRTS) program promotes healthy alternatives for children and parents in their travel to and from school. It educates students, parents and community members on the value of walking and bicycling for travel to and from school.

The Massachusetts Safe Routes to School program is managed by the Massachusetts Department of Transportation. Following a successful pilot program developed by WalkBoston and funded by MassDOT (formerly EOTPW), an expanded program was established in 2005 through MassRIDES, the Commonwealth's travel options program. MassRIDES offers schools technical support to customize programs and training.

The Safe Routes to School program (SRTS) aims to reduce congestion, air pollution, and traffic congestion near participating schools, while increasing the health, safety, and physical activity of elementary and middle school students.

Safe Routes programs:

- Establish healthy lifetime habits for students
- Increase children's independence
- Help students arrive at school ready to learn
- Teach safe pedestrian, bicyclist, and driver skills

Safe Routes to School includes, education, encouragement, enforcement, engineering, and evaluation to ensure a comprehensive and successful program to increase walking and bicycling to and from school.

As the title of the program suggests, safety is a central theme concerning the initiatives and goals of the program. Some of these specific initiatives include the design and maintenance of effective school zones, maximizing safety at street crossings, and reducing travel speeds. The following material is from the National Center for Safe Routes To School:

> The School Zone
>
> Ideally, the school zone starts at the front door and encompasses the campus and as many blocks as possible that surround the school and have a high concentration of school-generated traffic. Often the school zone includes the streets along the school and usually the area one to two blocks around it. The school zone should be marked with special signing to alert drivers of the high concentration of children. School crossing signs, speed signs, school zone pavement markings and other traffic calming devices remind drivers to treat the area with special care and attention.

The 2003 Manual on Uniform Traffic Control Devices (MUTCD), Part 7 sets forth principles and standards for controlling traffic in school areas. These principles and standards provide information on appropriate design, application and maintenance of all traffic control devices (including signs, signals and markings) and other controls (including adult school crossing guards, student patrols and grade-separated crossings) required for the special pedestrian conditions in school areas.[1]

Properly designed and applied traffic calming devices encourage good driver and pedestrian behavior in the school zone. Traffic calming measures such as high visibility crosswalks, street narrowing and signage can be in place all the time. Since school zones are locations frequented by children, making the area safe for children anytime of day is a sound investment for the community.

Crossing the Street

A child's journey to school on a bicycle or by foot will likely require crossing one or more streets. Many situations arise at street crossings that can impact the safety of the crossing for all pedestrians. Underlying good, safe design at pedestrian crossings is the need to keep the street crossing simple. The development of safe crossings for children is guided by several principles including the need to:

- Establish or identify good crossing locations.
- Reduce crossing distances.
- Use appropriate traffic controls such as marked crosswalks, traffic signals and warning signs or flashers.
- Slow motor vehicle speeds.

Slowing Down Traffic

High-speed motor vehicles pose a serious threat to the safety of children who are crossing streets. One of the biggest challenges in providing children with safe walking and bicycling routes to school involves slowing down traffic.

Slower motor vehicle speeds allow drivers to stop in a shorter distance and reduce the chance of injuring a pedestrian or bicyclist. A motor vehicle traveling on a level surface at a rate of 40 mph will need nearly 300 feet between the vehicle and the child to stop in time to avoid a collision. This distance is reduced to approximately 197 feet for a vehicle traveling at 30 mph, 112 feet for a vehicle traveling at 20 mph and 77 feet for a vehicle traveling at 15 mph.

Pedestrian crash severity is also much lower at low motor vehicle speeds. If a pedestrian is struck by a motor vehicle traveling at 40 mph there is an 85 percent likelihood that the pedestrian will be killed. This percentage drops to 45 percent at 30 mph and 5 percent at 20 mph. Thus, slowing motor vehicle speeds not only

reduces the chance of a crash due to the shorter stopping distance that is required, but it also reduces the chance of a pedestrian fatality or serious injury

When slowing or "calming" traffic, the right design invites the right driver response. The guiding principle of traffic calming is to influence driver speeds and behavior through good design whenever possible, rather than by traffic control measures such as traffic signals and STOP signs.
There are many design and engineering tools that can be used to slow down traffic and make it safer for children to walk and bicycle to school including:

- Narrow Lanes
- Chokers and Chicanes
- Speed Humps
- Raised Pedestrian Crosswalks
- Neighborhood Traffic Circles
- Reduced Corner Radii
- Speed Sensitive Signals

The Massachusetts Safe Routes to School program offers schools technical assistance designing, implementing, marketing, and evaluating initiatives tailored to each school's needs and priorities. Participating schools receive free promotional materials to implement Safe Routes to School, plus no-cost educational materials targeted to students, parents, and community leaders. Training prepares school stakeholders to identify school access challenges and design solutions. School partners qualify for infrastructure improvements to enhance safety along school routes.

Old Colony Planning Council provides technical assistance to communities and the school systems in their Safe Routes To School programs.

The following schools are partnered with MassRIDES on participation in the Safe Routes To School Program:

Table 3: Safe Routes To School Participating Schools

Community	Schools
Abington	Center School
Brockton	Brookfield Elementary School
	Downey Elementary
East Bridgewater	Central Elementary School
	Mitchell Middle School
Easton	F.L. Olmstead School
	Richardson School
Pembroke	North Pembroke Elementary
Stoughton	West Elementary School

7. Bicycle and Pedestrian Safety

Bicyclists and pedestrians are particularly vulnerable users of the transportation system due to their exposure to motor vehicle traffic. Ensuring the safety of cyclists and pedestrians is a key goal in promoting an efficient and well-balanced transportation network.

Old Colony Planning Council Staff routinely partake in workshops and other educational opportunities to broaden our knowledge and skill set regarding bicycling and pedestrian safety.

The following are tasks and activities completed in 2009 aimed at increasing safety for bicyclists and pedestrians throughout the Region. Note that in addition to these projects and tasks, pedestrian and bicycle access and safety are considered in all transportation planning activities and land use development review activities completed by Old Colony Planning Council.

Moving Together Conference 2009: OCPC Staff participated in the 2009 Moving Together Conference, annually organized and hosted by BayState Roads – the Massachusetts Local Technical Assistance Program (LTAP). The Conference offered a variety of workshops aimed at education the audience in various aspects of bicycle and pedestrian access and safety.

South Main Street (Elderly Housing Complex) Pedestrian Safety: In response to a request from the City of Brockton to investigate the feasibility of installing a pedestrian traffic signal in front of the Brockton Housing Authority housing complex on South Main Street, OCPC conducted a Road Safety Audit for that stretch of roadway. Since conditions at the location did not satisfy minimum warrants for the installation of traffic signals, the RSA was conducted to identify all deficiencies and hazards in that area, and identify measures to increase safety for pedestrians and motorists in that area.

Halifax Route 106 Pedestrian Safety Study: The Town of Halifax requested OCPC conduct a count of pedestrians crossing Route 106, particularly in the area of the school, Post Office, Town Hall, and Police Station. A count of pedestrians and bicyclists crossing the street was conducted to determine the feasibility of installing traffic signals for pedestrian crossings. Comprehensive traffic data (volumes, speeds, and vehicle classifications) was also collected along the roadway. While pedestrian crossing volumes did not satisfy warrants for traffic signal installation, a report was completed for the Town providing them with suggestions for improving safety for pedestrians and motorists.

Easton Public Schools Traffic Circulation (Technical Assistance): The Town of Easton undertook a Study of traffic circulation around their public schools complex, in preparation of improving safety and traffic flow. Old Colony Planning Council provided technical assistance with data collection, including a count of pedestrians and cyclists in the area.

West Bridgewater Sidewalks: Old Colony Planning Council is working with the Highway Division of MassDOT, the Town of West Bridgewater, and the State Legislature to identify needs and plan sidewalks for Howard Street and South Street.

8. Other Activities

Traffic Records Coordination Committee

Old Colony Planning Council participates, as a partner with other Massachusetts regional planning agencies, on the Commonwealth of Massachusetts' Traffic Records Coordination Committee (TRCC). The TRCC was formed for the purpose of improving the quality of crash record data, and for improving access for end users to the data compiled based on crash records. The Committee serves as the State's official records coordinating committee for Section 408 grant funds, and it serves as the Traffic Records Sub-Committee for the state's Strategic Highway Safety Plan (required under SAFETEA-LU). The TRCC meets on a regular basis to prioritize grants under Section 408 State Traffic Information System Improvement Grant Program (also part of SAFETEA-LU). The purpose of the TRCC is described in its mission statement: Through the coordinated efforts of its member organizations, (The TRCC) provides a forum for the creation, implementation, management, and dissemination of accessible, accurate, complete, consistent, integrated, timely, and useful traffic records data to aid decision-makers working to reduce transportation-related fatalities, injuries, and economic loss in Massachusetts.

Highway Safety Improvement Program

The purpose of the Highway Safety Improvement Program (HSIP) is to reduce the number of fatal and injury crashes by targeting high crash locations. Projects, using (HSIP) funding, are required by SAFETEA-LU, the Federal Legislation, to be selected based a data driven process. As such, the following criteria for determining project eligibility in the HSIP program (as determined by MassDOT in coordination with the regional planning agencies):

- Locations must originate from a comprehensive list of the highest crash locations. The primary source of data will be the MassDOT database (which is based on the Registry of Motor Vehicle (RMV) Crash Data System) and the High Crash Locations report (which includes Intersections, Pedestrian and Bicycle Crash Clusters based on weighted severity of crashes that have been geolocated). However, RPA's may use their own data that have been edited to more accurately rank locations within their Region. It is also recognized that there is often a time delay with the release of the crash data from the RMV. If more up-to-date crash data are obtained from an alternative source and the data show that a particular location would rank high on a Region's ranked list, the locations may be considered for eligibility in the HSIP program.

- With the intent of the HSIP program to reduce the number of fatalities and serious injuries on Massachusetts' roads, candidate projects must be locations where the data indicates a high incidence of crash severity. The Equivalent Property Damage Only (EPDO) index (Property Damage = 1 Point; Injury = 5 Points; Fatality = 10 points), or another measure that focuses more on the fatalities and injuries, will continue to be

preferred for ranking locations because it provides a comparative measure of severity. When feasible crash rate formulas (EPDO per Million Entering Vehicles or per million vehicle miles traveled) can be used to rank locations as this measure not only accounts for severity, but also exposure.

- All HSIP candidate locations will require an accompanying Road Safety Audit (RSA) report, or an engineering or planning report to determine eligibility. The report must include a detailed analysis of crash data/crash reports to identify the nature of the crash problem as well as identify appropriate corrective measures to address the problem. MassHighway is currently developing templates for the RSA reports which will be required to be completed as part of each application.

- All HSIP projects will require a before and after evaluation (to be developed). MassHighway is currently developing the criteria and templates for these before and after studies.

- Candidate projects must be selected from one of the following categories:

Intersections – Intersections must be within the top 5% of all intersection crash clusters within the geographic boundaries of each region based on MassHighway's statewide crash database, from a ranked list prepared by the RPA, or a combination of the two. Note that the MassHighway list is based on located crashes only.

The emphasis for project selection should be on those locations ranking highest on the list, reflecting the highest crash intersection clusters in terms of crash severity (injury and/or fatality). Selection of intersection that rank lower on the list are acceptable, however, there must be reasons provided as to why those locations which ranked higher, were not selected. Examples may include: lack of public support or political will to pursue the project; or, improvements are pending developer mitigation; etc.

The table below is based on MassHighway's 2004-2006 crash data. It provides the total number of intersection clusters and the number of intersection clusters within the top 5% in each region. It is recognized that a ranked list, developed by an RPA, may more accurately reflect the specific locations in that Region, therefore the RPA ranked list may be used to reflect the top crash intersection locations within that region. If more up-to-date crash data are obtained from an alternative source and those data show that a location would rank higher on a Region's ranked list, the location may be considered for eligibility in the HSIP program.

Intersections

RPA	Number of Intersections	Intersections in the Top 5%
BRPC	1023	51
CCC	1162	58
CMRPC	4360	218
FRCOG	416	21
MAPC	20404	1020
MRPC	1794	90
MVC	41	2
MVPC	2610	131
NMCOG	2342	117
NPEDC	46	2
OCPC	2707	135
PVPC	3781	189
SRPEDD	5801	290

Pedestrians - The pedestrian crash location cluster must be within the top 5% of all pedestrian crash locations (based either on the list provided by MassDOT or from the list prepared by the RPA). Note that the MassDOT list is based on located crashes only. In addition, a simple reason must be provided why locations higher on the list are not selected. Based on the 2002-2006 crash data, the following table provides the number of pedestrian locations by RPA and the number of pedestrian locations within the top 5%. It is recognized that a ranked list, developed by an RPA, may more accurately reflect the specific locations in that Region, therefore the RPA ranked list may be used to reflect the top pedestrian crash locations within that region. If more up-to-date crash data are obtained from an alternative source and those data show that a location would rank higher on a Region's ranked list, the location may be considered for eligibility in the HSIP program.

Pedestrian Crash Locations

RPA	Number of Pedestrian Crash Locations	Locations in the Top 5%
BRPC	21	1
CCC	4	1
CMRPC	107	6
FRCOG	6	1
MAPC	583	29
MRPC	21	1
MVPC	69	3
NMCOG	72	4
OCPC	70	4
PVPC	53	3
SRPEDD	122	6

Bicycles - The bicycle crash location cluster must be within the top 5% of all bicycle crash locations (based either on the list provided by MassDOT or from the list prepared by the RPA). Note that the MassDOT list is based on located crashes only. In addition, a simple reason must be provided why locations higher on the list are not selected. Based on the 2002-2006 crash data, the following table provides the number of bicycle locations by RPA and the number of bicycle locations within the top 5%. It is recognized that a ranked list, developed by an RPA, may more accurately reflect the specific locations in that Region, therefore the RPA ranked list may be used to reflect the top bicycle crash locations within that region. If more up-to-date crash data are obtained from an alternative source and those data show that a location would rank higher on a Region's ranked list, the location may be considered for eligibility in the HSIP program.

Bicycle Crash Locations

RPA	Number of Bicycle Crash Locations	Locations in the Top 5%
BRPC	13	1
CCC	17	1
CMRPC	36	2
FRCOG	10	1
MAPC	301	15
MRPC	7	1
MVC	1	1
MVPC	35	2
NMCOG	42	2
OCPC	45	2
PVPC	57	3
SRPEDD	71	4

Lane Departure - Massachusetts has been identified as a Lead State for Lane Departure crashes. Nearly ½ of all fatal crashes and 25% of all incapacitating injury crashes are Lane Departure crashes. Approximately two years ago, MassDOT mapped the top lane departure locations within each RPA and began a program to perform RSAs at some of these locations. The countermeasures identified and recommended, at these lane departure locations, can be eligible for HSIP funding. Furthermore, if the RPAs perform RSAs at other top lane departure locations and countermeasures are identified, these, too, may be eligible for HSIP funding. Once the 2007 crash file is closed, MassDOT will prepare an updated top lane departure location map for each RPA. This can then be used for identification of lane departure locations and possible RSA sites for HSIP eligibility.

Other - There may be other crash types within a region that have not been identified as a state-wide issue and therefore, a ranking has not been prepared. Examples are locations where collisions with deer, motorcycle crashes, truck crashes, etc. may be a problem. This criterion may be used as long as the RPA can justify a project based on providing the data that shows that this crash type and location is a priority within that Region.

HSIP Project Selection Process