

**ROAD SAFETY AUDIT  
PLYMOUTH STREET  
(ROUTE 106)  
AT  
WASHINGTON STREET,  
EAST BRIDGEWATER, MA**



**OLD COLONY PLANNING COUNCIL,  
70 SCHOOL STREET, BROCKTON, MA 02301  
WWW.OCPCRPA.ORG  
PREPARED UNDER MASSDOT CONTRACT # 0052455  
SEPTEMBER, 2011**



# Road Safety Audit

## Plymouth Street (Route 106) at Washington Street

### East Bridgewater, MA

### September 2011



**Old Colony Planning Council**

70 School Street

Brockton, MA. 02301

(508) 583-1833

[www.ocpcrpa.org](http://www.ocpcrpa.org)



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

# Old Colony Metropolitan Planning Organization

Linda Balzotti	Mayor, City of Brockton
William Hallisey, Jr.	Chairman, Board of Selectmen, Plymouth
Eldon Moreira	Board of Selectmen, West Bridgewater
Daniel Salvucci	Vice Chairman, Board of Selectmen, Whitman
Jeff Mullan	Secretary and CEO, MassDOT
Frank DePaola	Highway Administrator, MassDOT
Reinald Ledoux, Jr.	Administrator, BAT
Robert G. Moran, Jr.	President, OCPC

## Joint Transportation Committee

### JTC Officers

JTC Chairman	Noreen O'Toole
JTC Vice Chairman	Sid Kashi

COMMUNITY	DELEGATE / ALTERNATE
Abington – <i>Delegate</i>	Kenan Connell
Abington – <i>Alternate</i>	Bruce Hughes
Avon	Ed Sarni
Bridgewater	Robert Wood
Brockton – <i>Delegate</i>	Michael Thoreson
Brockton – <i>Alternate</i>	Elaine Czaja
East Bridgewater – <i>Delegate</i>	John Haines
East Bridgewater – <i>Alternate</i>	Richard O'Flaherty
Easton – <i>Delegate</i>	Wayne P. Southworth
Easton – <i>Alternate</i>	Maurice Goulet
Halifax	Troy Garron
Hanson	Donald Howard
Kingston	Paul Basler
Pembroke	Gene Fulmine
Plymouth	Sid Kashi
Plympton	Jim Mulcahy
Stoughton – <i>Delegate</i>	Carin Klipp
Stoughton – <i>Alternate</i>	Noreen O'Toole
West Bridgewater	Leonard Graf, III
Whitman	Daniel Salvucci

### Agency Representation

MassDOT	David Mohler
MassDOT	Clinton Bench
MassDOT	Andrew Lehmann
MassDOT District 5	Michael Delaney
MassDOT District 5	Pamela Haznar
MassDOT District 5	Tim Kochan
BAT	Reinald Ledoux, Jr.
BAT	Kathy Riddell
DEP	Christine Kirby
EPA	Donald Cook
FHWA	Michael Chong
FHWA	Paul Maloney
FTA	Mary Beth Mello
FTA	William Gordon
FTA	Noah Berger
Brockton Traffic Commission	Captain Leon McCabe

### OCPC Transportation Staff

Charles Kilmer	Transportation Program Manager
Eric Arbeene	Community Planner
Joshua Callahan	Transportation Intern
Caleb Cornock	Transportation Intern
Jed Cornock	Transportation Planner
Ray Guarino	Transportation Planner
Rodrigo Marion	Transportation Planner
Bill McNulty	Transportation Planner
Susan McGrath	GIS Coordinator
Kyle Mowatt	Assistant Planner
Andrew Vidal	Communication/GIS/IT Specialist



# Old Colony Planning Council (OCPC)



## OCPC Officers

President	Robert G. Moran, Jr.
Treasurer	Lee Hartmann
Secretary	Fred Gilmetti

COMMUNITY	DELEGATE	ALTERNATE
Abington	Christopher Aiello	
Avon	Frank Staffier	Charles Marinelli
Bridgewater	Anthony P. Anacki	
Brockton	Robert G. Moran, Jr.	Preston Huckabee
East Bridgewater	Richard O'Flaherty	
Easton	Jeanmarie Kent Joyce	Steve Donahue
Halifax	John G. Mather	Troy E. Garron
Hanson	Robert Overholtzer	Phillip Lindquist
Kingston	Dennis Randall	
Pembroke	Gerard Dempsey	Daniel Trabucco
Plymouth	Lee Hartmann	Valerie Massard
Plympton	John Rantuccio	James Mulcahy
Stoughton	Scott Turner	Robert E. Kuver
West Bridgewater	Eldon F. Moreira	Nancy Bresciani
Whitman	Fred Gilmetti	Daniel Salvucci
Delegate-at-Large		

## OCPC Staff

Pat Ciaramella	Executive Director
Janet McGinty	Fiscal Officer
Jacqueline Surette	Fiscal Consultant
Jane Linhares	Grants Monitor/Secretary
Patrick Hamilton	AAA Administrator
Lila Burgess	Ombudsman Program Director
Hazel Gauley	Assistant Ombudsman Director
Anne Nicholas	Ombudsman Program Assistant
Jim Watson	Comprehensive Planning Supervisor
Eric Arbeene	Community Planner
Bruce Hughes	Economic Development/Community Planner
Susan McGrath	GIS Coordinator
Andrew Vidal	Communication/GIS/IT Specialist
Charles Kilmer	Transportation Program Manager
Bill McNulty	Transportation Planner
Ray Guarino	Transportation Planner
Jed Cornock	Transportation Planner
Rodrigo Marion	Transportation Planner
Kyle Mowatt	Assistant Planner
Joshua Callahan	Transportation Intern
Caleb Cornock	Transportation Intern

## ***Acknowledgements***

The preparation of this report has been financed in part through grants from the Federal Highway Administration, U.S. Department of Transportation, under Metropolitan Planning Program, Section 104(f) of Title 23, U.S. Code, under Contract 0052455.

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 Planning Level Traffic Study 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.

**Project Manager**

**Bill McNulty, Transportation Planner**  
*wmcnulty@ocpcrpa.org*

Data Collection and Analysis

Jed Cornock, Transportation Planner  
*jcornock@ocpcrpa.org*

Data Collection and Analysis

Ray Guarino, Transportation Planner  
*rguarino@ocpcrpa.org*

Data Collection and Analysis

Rodrigo Marion, Transportation Planner  
*rmarion@ocpcrpa.org*

Mapping and Graphics

Susan McGrath, GIS Coordinator  
*smcgrath@ocpcrpa.org*

Mapping and Graphics

Andrew Vidal, Communication/GIS/IT Specialist  
*avidal@ocpcrpa.org*

# Road Safety Audit of Plymouth Street (Route 106) at Washington Street, East Bridgewater Final Report

---

## Contents

I. Background .....	4
The Audit.....	4
Overview of the Study Area .....	5
Traffic Volumes, Speeds, and Heavy Vehicle Traffic .....	9
Crash History .....	10
Intersection Level of Service and Traffic Signal Warrant Analysis .....	12
Pedestrian and Bicycle Access .....	13
II. Findings and Recommendations.....	14
III. Conclusions .....	16

*Appendix A: Traffic Data (Volumes, Speeds, Vehicle Classifications) for Study Area Roadways*

*Appendix B: AM and PM Peak Hour Turning Movement Counts and Level of Service*

*Appendix C: Results of Traffic Signal Warrant Analysis*

*Appendix D: Intersection Crash Data*

*Appendix E: MassDOT Crash Rate Calculation Worksheet*



## **I. Background**

This document represents the final report for the Road Safety Audit conducted for the intersection of Plymouth Street (Route 106) with Washington Street, Old Plymouth Street, Murray Road, Davenport Street, and Beverly Circle in the Town of East Bridgewater. The Road Safety Audit was prepared in response to a request from the Town to perform a comprehensive assessment of traffic operations and safety at the intersection.

The Road Safety Audit was coordinated by Old Colony Planning Council with technical assistance from the Massachusetts Department of Transportation (MassDOT), and was held in the Town of East Bridgewater on October 27, 2010.

An inventory of all deficiencies and issues identified from the Road Safety Audit process along with both short-term / lower-cost and long-term / higher cost potential improvements was distributed to MassDOT and the Town of East Bridgewater for review and comment in June of 2010.

### **The Audit**

A Road Safety Audit (RSA) is a formal safety performance examination of an existing or future road or intersection by an audit team. Road Safety Audits can be used on any size project, from minor maintenance to mega-projects. There are eight major steps involved in coordinating a road safety audit but these can be simplified in a three step process – identify the corridor/intersection and audit team; conduct the RSA and report on the findings; and follow-up on RSA findings where feasible.

Major benefits of road safety audits include:

- An RSA is a proactive tool, not solely dependent on crash data
- An RSA is a planning tool to identify safety issues to be considered in improvement projects
- RSAs help determine if the needs of all road users are adequately met
- RSAs are adaptable to local needs and conditions
- Recommendations can be implemented in small stages as time and resources permit.

The Audit Team for this Road Safety Audit of the intersection of Plymouth Street (Route 106) at Washington Street included MassDOT; East Bridgewater Police Department; East Bridgewater Fire Department; East Bridgewater Department of Public Works; East Bridgewater Board of Selectmen; East Bridgewater residents; and Old Colony Planning Council.



**Figure 1:** East Bridgewater Road Safety Audit Team at Intersection

Prior to the road safety audit, Old Colony Planning Council collected, reviewed, and analyzed data (video of roadway conditions and operations, traffic volume data, turning movement counts, maps, aerial photographs, and crash data). Using the crash data, collision diagrams were produced which showed the crashes and types for locations where they occurred.

The Road Safety Audit was conducted on October 27, 2010. The Road Safety Audit Team met at East Bridgewater Town Hall both prior to a site visit and after the site visit, at which video of roadway operations; traffic and crash data and analysis; and aerial photography was presented and discussed. Weather conditions were rainy and foggy for the field visit.

### **Overview of the Study Area**

The study area consists of the intersection of Plymouth Street (Route 106) Washington Street, Old Plymouth Street, Murray Road, Davenport Street, and Beverly Circle. The intersection is designed in such a manner with one central intersection adjoined by two additional intersections immediately to the north and south. The central intersection features the two main roads, Plymouth Street and Washington Street / Old Plymouth Street, along with Murray Road coming together at five legged intersection with highly skewed angles. Davenport Street intersects with Washington Street just north of the main intersection, while Beverly Circle intersects with Old Plymouth Street just south of the main intersection. Aerial photography of the study area is shown in Figures 2 and 3. Plymouth Street, Washington Street

Plymouth Street (Route 106) at Washington Street, East Bridgewater  
Road Safety Audit



and Old Plymouth Street are classified as Urban Minor Arterials, while the other intersecting roadways are local roads. All of the roadways and the intersection are under the jurisdiction of the Town of East Bridgewater. A restaurant is located on the northwest corner of the intersection, and multiple dwelling condominium structures are located southeast of the intersection. The remaining of the surrounding area features single family residences and undeveloped woodland.

Each leg of the intersection features single lane, shared movement approaches. Plymouth Street (Route 106) is uncontrolled, while all other approaches are controlled by STOP signs. Both the Washington Street approach and Old Plymouth Street approach feature flared turning channels, for right turns out of Washington Street as well as for receiving left turns from Plymouth Street. None of the roadways include shoulders, and there are no sidewalks in the area except on Beverly Circle.

Figure 2: Aerial Image of Intersection and Surrounding Area



**Figure 3: Close-Up Aerial Image of Intersection**





## Traffic Volumes, Speeds, and Heavy Vehicle Traffic

Table 1 summarizes traffic volume, speed, and heavy vehicle data collected with automatic traffic recorders on each of the approaches to the intersection as well as other nearby roadways. Recorded travel speeds are substantially higher than the posted speed limits on both approaches of Washington Street as well as on the westbound approach of Route 106 into the intersection. High travel speeds may be a factor in the frequency and severity of crashes at the intersection.

**Table 1: Traffic on Intersection Approaches**

		Average Daily Traffic	% Heavy Vehicles	Posted Speed Limit	85th Percentile Speed
<b>Route 106, West of Washington Street</b>	<b>Eastbound</b>	3,647	5.6%	45 MPH	46 MPH
	<b>Westbound</b>	3,576	8.1%	45 MPH	48 MPH
	<b>Combined</b>	7,223	7.3%	45 MPH	47 MPH
<b>Route 106, East of Washington Street</b>	<b>Eastbound</b>	3,947	9.3%	35 MPH	48 MPH
	<b>Westbound</b>	4,031	6.8%	35 MPH	49 MPH
	<b>Combined</b>	7,978	8.0%	35 MPH	48 MPH
<b>Washington Street, North of Route 106</b>	<b>Northbound</b>	2,320	4.7%	35 MPH	42 MPH
	<b>Southbound</b>	2,269	8.3%	35 MPH	43 MPH
	<b>Combined</b>	4,589	6.5%	35 MPH	42 MPH
<b>Old Plymouth Street, South of Route 106</b>	<b>Northbound</b>	1,620	8.6%	30 MPH	38 MPH
	<b>Southbound</b>	1,760	3.8%	30 MPH	37 MPH
	<b>Combined</b>	3,380	6.2%	30 MPH	38 MPH
<b>Murray Road, East of Washington Street</b>	<b>Eastbound</b>	69	9.0%	30 MPH	30 MPH
	<b>Westbound</b>	111	7.3%	30 MPH	29 MPH
	<b>Combined</b>	180	7.9%	30 MPH	29 MPH
<b>Davenport Street, East of Washington Street</b>	<b>Eastbound</b>	46	5.6%	30 MPH	24 MPH
	<b>Westbound</b>	50	17.3%	30 MPH	28 MPH
	<b>Combined</b>	96	11.9%	30 MPH	27 MPH
<b>Beverly Circle, West of Old Plymouth Street</b>	<b>Eastbound</b>	32	n/a	30 MPH	n/a
	<b>Westbound</b>	32	n/a	30 MPH	n/a
	<b>Combined</b>	64	n/a	30 MPH	n/a
<b>Loring Road, East of Route 106</b>	<b>Eastbound</b>	75	2.0%	30 MPH	29 MPH
	<b>Westbound</b>	96	4.5%	30 MPH	29 MPH
	<b>Combined</b>	171	4.8%	30 MPH	29 MPH



## Crash History

Table 2 and Figure 4 summarize collisions occurring at the intersection from 2007 through 2010. The most frequent manner of collision occurring at the intersection is between vehicles arriving on the westbound approach of Plymouth Street (Route 106) and the southbound approach of Washington Street, accounting for 8 of the 23 reported crashes occurring at this intersection from 2007 through 2010. The second most common type of collision was between vehicles arriving on the opposing approaches of Route 106. Four collisions were between vehicles arriving on opposite Route 106 approached, categorized as either a head-on collision or an angled collision (one vehicle turning left in front of the other). Three of the reported collisions were between vehicles arriving on the eastbound approach of Route 106 and the southbound approach of Washington Street. Nearly half (eleven) of the reported crashes involved vehicles arriving on the southbound approach of Washington Street.

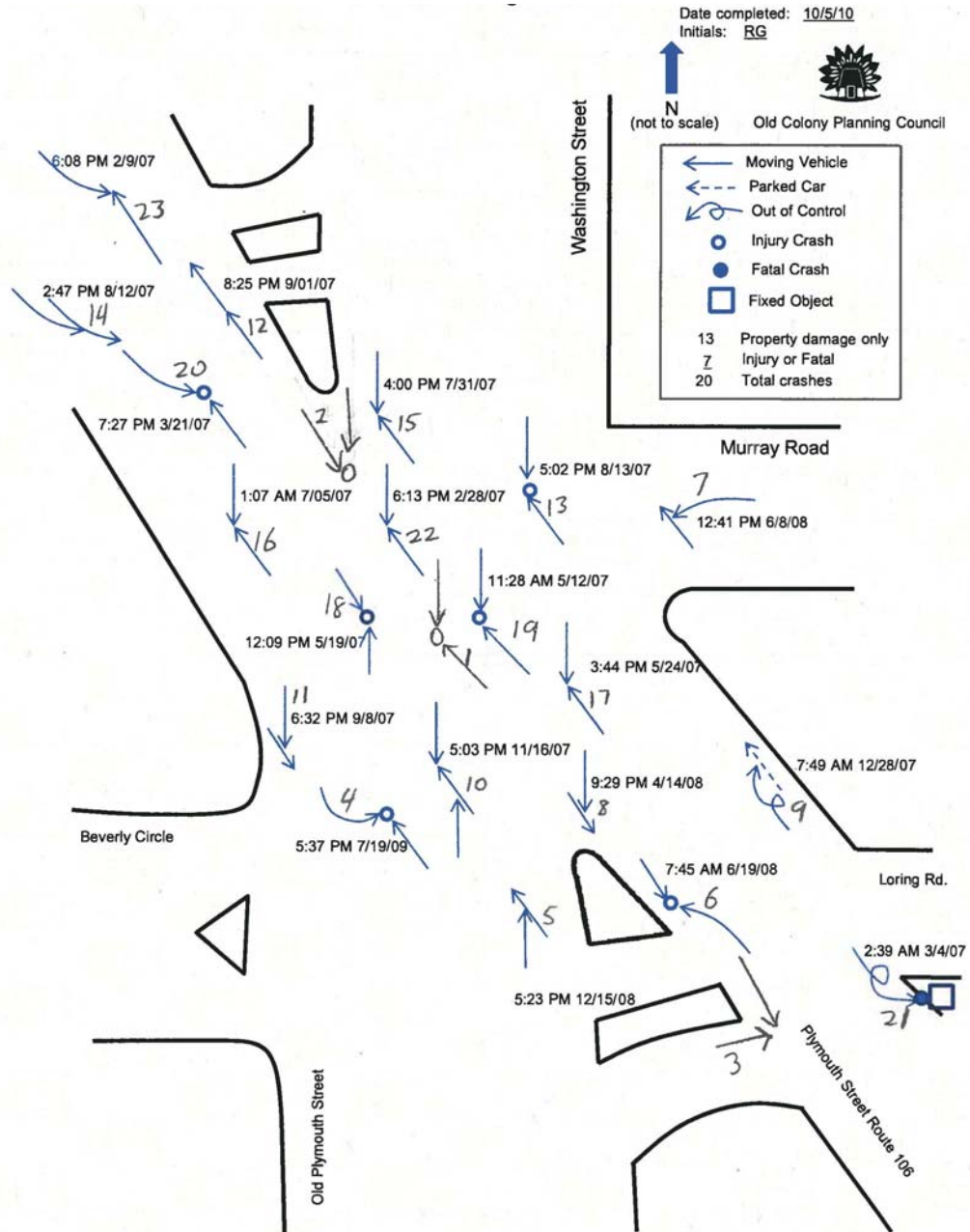
Slightly more than one-third (34.78%) of the crashes occurring at this intersection resulted in injury. There was one report of a fatal crash at the intersection, on March 4, 2007.

According to police reports, eight of the collisions involved drivers failing to stop at the stop signs on Washington Street and Old Plymouth Street.

The intersection has a very high crash rate of 1.34 crashes per million entering vehicles. This crash rate is more than double (123%) of the 2011 regional MassDOT District Five average crash rate (0.60) for un-signalized intersections.

The intersection is #82 on the 2011 Old Colony Regional Top 100 Most Hazardous Intersections list.

**Figure 4: Collision Diagram for Plymouth Street (Route 106) at Washington Street, Old Plymouth Street, Murray Road, and Beverly Circle**



**Table 2: Summary of Crash Data, 2007-2010**

Summary of Crashes Occurring at Intersection of Plymouth Street (Route 106) at Washington Street, Old Plymouth Street, Murray Road, and Beverly Circle (2007 - 2010)					
<b>Total # Crashes:</b>	<b>23</b>			<b>Average Per Year:</b>	<b>5.75</b>
Type of Collision	4-Year Total	% of Total	Time Of Crash	4-Year Total	% of Total
Angled	17	73.91%	12:00-6:00 AM	2	8.70%
Head-On	2	8.70%	6:00 AM-12:00 PM	6	26.09%
Rear End	1	4.35%	12:00-6:00 PM	9	39.13%
Single Vehicle Crash	1	4.35%	6:00 PM-12:00 AM	6	26.09%
Sideswipe, Same Direction	1	4.35%			
Sideswipe, Opposing Direction	1	4.35%			
			<b>Morning Peak (7:00-9:00)</b>	4	17.39%
			<b>Afternoon Peak (4:00-6:00)</b>	6	26.09%
<b>Crashes With Injury:</b>	8	34.78%		<b>Crash Rate:</b>	1.34
<b>Crashes With Fatality:</b>	1	4.35%		<b>% Above MassDOT District 5 Average:</b>	123.00%

### Intersection Level of Service and Traffic Signal Warrant Analysis

The intersection of Plymouth Street (Route 106) with Washington Street and Old Plymouth Street experiences poor levels of service during the morning and afternoon peak commute hours. Calculated delay figures and the corresponding level of service grade are summarized in Table 3.

**Table 3: Existing Level of Service**

		September 2010		
		Volume	Delay	LOS
Washington Street	AM Peak (7:15-8:15)	160	23	C
	Southbound PM Peak (4:45-5:45)	148	63.4	F
Old Plymouth Street	AM Peak (7:15-8:15)	219	31.1	D
	Northbound PM Peak (4:45-5:45)	272	26.3	D

*LOS only applied to STOP controlled approaches for unsignalized intersections*

A traffic signal warrant analysis was completed for the intersection, based on traffic signal warrants from the 2009 Manual on Uniform Traffic Control Devices (MUTCD). Four of the eight specified traffic signal warrants were satisfied for Plymouth Street (Route 106) at Washington Street and Old Plymouth Street. The results of this analysis are summarized in Table 4, and a detailed report on the analysis results is included in the appendix to this report.

**Table 4: Results of Traffic Signal Warrant Analysis**

<b>FHWA 2009 MUTCD Traffic Signal Warrant</b>	<b>Analysis Result</b>
Warrant 1: 8-Hour Volumes	Satisfied
Warrant 2: 4-Hour Volumes	Satisfied
Warrant 3: Peak Hour	Satisfied
Warrant 4: Pedestrian Volumes	Not Satisfied
Warrant 5: School Crossing	Not Satisfied
Warrant 6: Coordinated Signal System	Not Satisfied
Warrant 7: Crash Experience	Satisfied
Warrant 8: Roadway Network	Not Satisfied
Warrant 9: Intersection Near Railroad Crossing	Not Satisfied

**Pedestrian and Bicycle Access**

Plymouth Street, Washington Street, and Old Plymouth Street do not include sidewalks or paved shoulders in their layouts within the study area, leaving pedestrians and bicyclists vulnerable to vehicular traffic. As a result, these roadways experience poor pedestrian and bicycle levels of service, based on methodology developed by the League of Illinois Bicyclists and Sprinkle Consulting. The results of Pedestrian Level of Service (PLOS) and Bicycle Level of Service (BLOS) are included in Table 5 below.

**Table 5: Bicycle and Pedestrian Level of Service**

<b>Street</b>	<b>Analysis</b>	<b>Score</b>	<b>LOS Grade</b>	<b>Compatibility Level</b>
<b>Plymouth Street (Route 106)</b>	<b>Bicycle LOS</b>	5.68	F	Extremely Low
	<b>Pedestrian LOS</b>	4.32	D	Moderately Low
<b>Washington Street</b>	<b>Bicycle LOS</b>	5.17	E	Very Low
	<b>Pedestrian LOS</b>	4.02	D	Moderately Low

*LOS scores based on methodology developed by League of Illinois Bicyclists and Sprinkle Consulting*

Pedestrian Level of Service (PLOS) and Bicycle Level of Service (BLOS) formulas consider geometric characteristics, pavement conditions, traffic volumes, traffic speed and percentage of heavy vehicle data, and any bicycle and pedestrian specific infrastructure (sidewalks, bike lanes, etc) that may be present. While other level of service measures such as those used for vehicular traffic measure capacity, the Pedestrian Level of Service and Bicycle Level of Service are measures of the comfort level experienced by bicyclists and pedestrians.

## II. Findings and Recommendations

**Table 6: Deficiencies Identified By Audit Team, and Suggested Mitigation**

Identified Issue	Low-Cost Basic Countermeasures	Higher Cost Supplemental Countermeasures
Highly complex intersection leads to driver confusion	<ul style="list-style-type: none"> <li>• Test longer term reconfigurations (channel all approaching vehicles from Washington Street to the right) with temporary traffic control devices (portable barriers)</li> <li>• Enhance layout of intersection with highly reflective striping, including fog lines, center lines, and STOP lines</li> </ul>	<ul style="list-style-type: none"> <li>• Reconstruction, separating intersection into two separate intersections</li> <li>• Reconstruction with the installation of a roundabout</li> <li>• Restrict/Remove access to/from Murray Road through either one-way traffic flow away from intersection, or complete closure (access Murray Road from Hillcrest Road)</li> </ul>
High frequency of injuries resulting from crashes	<ul style="list-style-type: none"> <li>• Strict speed enforcement</li> </ul>	<ul style="list-style-type: none"> <li>• Reconstruct intersection with Installation of traffic signals or a roundabout</li> </ul>
High travel speeds on Washington Street	<ul style="list-style-type: none"> <li>• Strict speed enforcement</li> </ul>	<ul style="list-style-type: none"> <li>• Reconstruct roadway using “Road Diet” techniques (narrow travel lanes, installation of bike lanes, wide sidewalks, landscaping, etc.) to reduce travel speeds</li> </ul>
Sight lines between Washington Street and Plymouth Street obscured by signage of median and roadside vegetation	<ul style="list-style-type: none"> <li>• Remove vegetation where possible and trim remaining vegetation</li> <li>• Consolidate / relocate signage mounted on traffic islands</li> </ul>	

**Table 6, continued: Deficiencies Identified by Audit Team, and Suggested Mitigation**

Identified Issue	Low-Cost Basic Countermeasures	Higher Cost Supplemental Countermeasures
Drivers are running STOP signs on Washington Street	<ul style="list-style-type: none"> <li>• Use doubled-up (left and right sides of road) advance “STOP AHEAD” warning signs</li> <li>• Increase visibility of STOP signs by using retroreflective materials on sign and posts (reflective strips)</li> <li>• Use highly visible and reflective street striping for STOP lines and STOP lettering</li> </ul>	<ul style="list-style-type: none"> <li>• Install a flashing control beacon</li> <li>• Install LED lights on STOP sign border</li> <li>• Install raised minimum 6’ splitter island, with doubled up oversized STOP signs on right and left side of approach</li> </ul>
Visibility of paved traffic islands blend into roadway environment	<ul style="list-style-type: none"> <li>• Use contrasting material (mulch, low-profile vegetation such as grass, etc.) on islands in place of asphalt</li> <li>• Maintain fog lines around border of traffic islands to enhance visibility</li> </ul>	
Lack of infrastructure for pedestrians and bicyclists	<ul style="list-style-type: none"> <li>• Install “Share The Road” type signage</li> </ul>	<ul style="list-style-type: none"> <li>• Install sidewalks on Plymouth Street, Washington Street, and Old Plymouth Street</li> <li>• Widen roadways to include paved shoulders or bicycle lanes</li> </ul>



### III. Conclusions

It is recommended that the Town of East Bridgewater implement the following low-cost, basic countermeasures identified through this Audit as an initial measure to improve safety at the location.

**Table 7: Low-Cost, Short Term Countermeasures to Improve Safety**

Countermeasure	Crash Reduction Factor	Typical Threshold For Applying Measures	Additional Implementation Factors	Typical Implementation Cost
Basic signage and marking improvements <ul style="list-style-type: none"> <li>• Doubled Up Left and Right "Stop Ahead" Signs</li> <li>• Doubled Up Left and Right STOP Signs</li> <li>• Doubled Up Left and Right Advance Intersection Warning Signs on Washington Street and Old Plymouth Street Approaches</li> <li>• Reflective street paint for Stop Line and Crosswalks</li> </ul>	40%	4-5 Crashes in 5 Years	None	\$5,000 - \$8,000
Solar Powered flashing LED Beacons on Advance Warning Signs and on STOP Signs	10% (13% in Right Angled Collisions)	8-10 crashes in 5 Years	None	\$5,000 - \$15,000
Dynamic Warning Signs Advises Through Traffic of Vehicle in stopped control approaches	Unknown	10-20 crashes in 5 years	5 angle crashes in 5 years or inadequate sight distance from STOP approach	\$10,000 - \$25,000
Transverse rumble strips on STOP controlled approaches	28%	3 running STOP sign crashes in 5 years	Inadequate stopping sight distance	\$3,000 - \$10,000
Reflective strips on STOP sign posts	Unknown	5 Crashes in 5 Years	Sign visibility of conspicuity significantly degraded at night	Less than \$1,000



---

Installation of these low-cost safety enhancements at the intersection of Plymouth Street (Route 106) at Washington Street and Old Plymouth Street, followed by regular observation and analysis of traffic and safety conditions (crash patterns) is recommended as initial mitigation that can be implemented in the short term while any longer term, higher cost infrastructure improvements are planned and designed.

Continued regular and strict enforcement of speed on the approaches to the intersection, along with stop sign enforcement, should be implemented immediately to curb the frequency and severity of crashes occurring at the intersection.

In consideration of the intersection's crash history, its current 2011 ranking as #82 on the Top 100 Most Hazardous Intersections in the region, and its complex existing design, it is recommended the Town of East Bridgewater continue to work with Old Colony Planning Council and the Massachusetts Department of Transportation (MassDOT) Highway Division District Five on long term, permanent infrastructure improvements such as reconstruction and traffic signal installation for this intersection.