# ROAD SAFETY AUDIT For Belmont Street at Summer Street Intersection East Bridgewater, MA

February 2013









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### 1.0 Introduction

This Road Safety Audit (RSA) was conducted by the Old Colony Planning Council (OCPC) at the request of the East Bridgewater Department of Public Works. The intersection of Belmont Street and Summer Street was the subject of a previous local assistance planning study completed by OCPC in 2006 at the request of the East Bridgewater Department of Public Works in response to concerns raised by residents regarding safety. The location of the intersection is shown in Figure 1.

### 2.0 The Road Safety Audit

A Road Safety Audit (RSA) is defined by the Federal Highway Administration (FHWA) Road Safety Audits Guidelines as; "A formal safety performance examination of an existing or future road or intersection by an independent audit team." The RSA is a way of doing business to identify road safety issues as well as opportunities for safety improvements for all road users. The RSA includes the following elements:

- Performed by an independent team
- Performed by a multi-disciplined team
- Considers all potential road users
- Accounts for road user capabilities and limitations
- Generates a formal report
- Requires a formal response from the project owner (in this case the Selectmen who have requested this study)

In summary, the RSA is a proactive, formal examination that focuses on road safety, which is conducted by a multi-disciplinary team independent of the project owner (or the requester of the study). The audit team must be adequately qualified individually and as a team. The RSA is qualitative in nature, although crash data, traffic data, and analyses are necessary, and the safety of all road users and facilities are considered. This report includes average daily traffic volume counts, crash data compilation and analyses, and intersection warrant analyses for traffic signal and multi-way stop control implementation.

It is important for participants to understand the roles and responsibilities of organizations involved in the RSA. OCPC is the manager and facilitator of the process, responsible for data collection and compilation, analysis, grant support, and facilitator of the meetings and field visit. The Town of East Bridgewater is responsible for action and implementation of the proposed recommendations made by the support team.



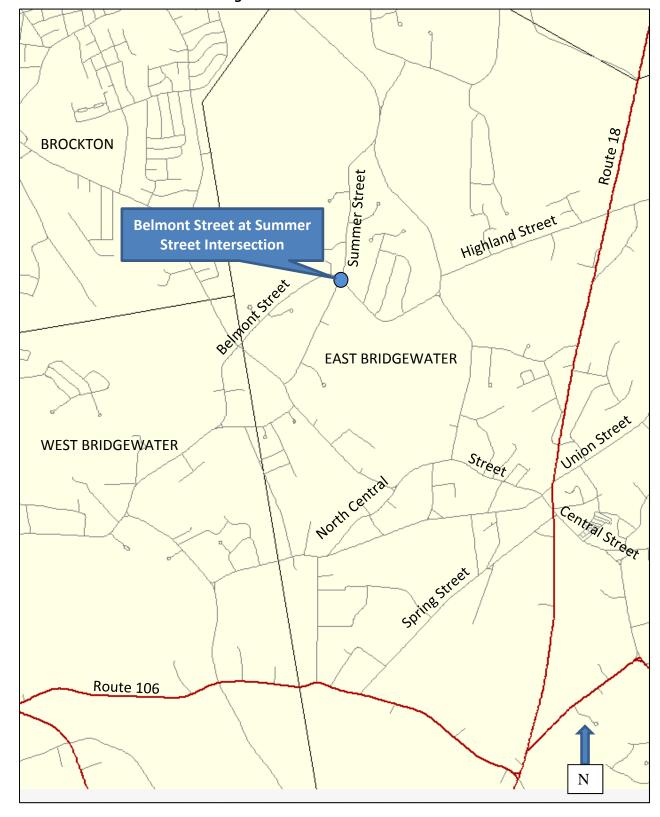


Figure 1- Intersection Location



### 2.1 Choosing the Road Safety Audit Team

The main objective in selecting an RSA team, according to the Federal Highway Administration's (FHWA) *Road Safety Audits Guidelines* is to choose an independent, qualified, and multi-disciplinary team of experts. The recommendations were to include individuals with the following backgrounds:

- Road Safety Specialist With expertise in causal factors that lead to crashes and effective treatments that address the occurrence of such crashes.
- <u>Traffic Operations Engineer</u> Qualified in the field of traffic operations and understand the principles of traffic flow, the causes of congestion, and the proper placement and uses of signs, pavement markings, and traffic signal operations.
- Road Design Engineer With extensive road design experience and familiarity with federal. state, and local standards.
- <u>Local Contact Person</u> With familiarity with the area under review and the traffic safety issues experienced there.
- Other Areas of Specialties These include specialists in human factors, maintenance, law enforcement, first response, pedestrian and bicycle use, and transit use.

The FHWA guidelines recommended that the best practice regarding the size of the team is to limit its size. The team should consult with other individuals if other skill sets are necessary. OCPC compiled a list of potential participants to fill the needs of the team. Those participating in the RSA on December 4, 2012 included:

Robb Kenn, Operations Manager, East Bridgewater DPW
Silpa Munukutla, MassDOT Highway Safety Division
Corey O'Connor, MassDOT Highway Safety Division
Sergeant Mike McLaughlin, East Bridgewater Police Department
Acting Fire Chief Timothy M. Harhen, East Bridgewater Fire Department
Tim Kochan, MassDOT District 5
Jed Cornock, Transportation Planner, OCPC
Ray Guarino, Transportation Planner, OCPC

A copy of the attendance sheet for the pre-audit meeting and the field audit are included in the appendix to this report.

### 2.2 The RSA Procedure

After receiving a request from the East Bridgewater DPW regarding safety at the Belmont Street/Summer Street intersection, OCPC, acting as the RSA manager, identified and contacted (by telephone and email) RSA participants who could act as the independent audit team. OCPC scheduled the RSA December 4, 2012 at 10:00 AM at the East Bridgewater Water Department conference room, 49 Dean Place in East Bridgewater. In addition, OCPC compiled background traffic and crash data for the



intersection, as well as previous studies. The peak hour intersection turning movement counts were updated in September of 2012, and crash data was updated. Crash data was obtained from the East Bridgewater Police Department for the latest available three year period (from December 2009 through December 2012). A previous study completed by OCPC for the intersection was completed September 2006. Speed data for Belmont Street as well as stopping sight distance measurements are available for the intersection in this study.

### 3.0 Background Data and Information for Belmont Street at Summer Street

### 3.1 Physical Attributes

Belmont Street is classified as an urban minor arterial road and Summer Street is classified as a collector road, according to the Massachusetts Department of Transportation (MassDOT) road inventory file. Although the roads are under the jurisdiction of the Town of East Bridgewater, the intersection is eligible for federal funding under the Surface Transportation Program (STP). The intersection of Belmont Street and Summer Street is approximately one-half of a mile from both the West Bridgewater Town Line and Brockton City Line.

Belmont Street is a two-lane roadway with lanes between ten and twelve feet wide on both approaches to the Summer Street intersection. Site visit observations showed the absence of sidewalks and shoulders. White edge lines (Fog lines) and centerlines on both approaches have been added to the intersection since the 2006 OCPC study. Summer Street is a two-lane collector road that runs north south in East Bridgewater from Winter Street to Pleasant Street.

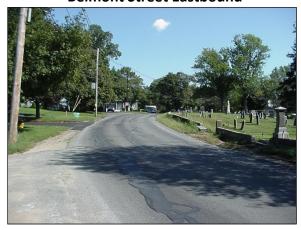
The intersection of Belmont Street and Summer Street is a four-way intersection with stop signs posted on the Summer Street approaches. Belmont Street is the major street, which provides access to Route 28 in West Bridgewater and Route 18 in East Bridgewater. Right turns on the Summer Street approaches are yield controlled and are channeled via a raised island on both approaches. A town monument is located within the right turn island on the northbound approach. A utility pole is located within the right turn island on the southbound approach. The travel lanes approaching the intersection on all four legs average 10 to 12 feet wide. Site visits performed by OCPC staff determined that both Belmont Street and Summer Street lack adequate shoulders and sidewalks.

The intersection is located within a thickly settled area in the northwestern section of East Bridgewater. According to Massachusetts General Law Chapter 90, Section 1, a "thickly settled area" is defined as "the territory contiguous to any way where the dwelling houses are situated at such distances as will average less than two hundred feet between them for a distance of a quarter of a mile or over." The prima fascia speed limit, according to Massachusetts statute, is 30 miles per hour, unless otherwise posted.



Single-family residential development is the predominant land use within this thickly settled area; however, the Beaver Cemetery is located on the southwest corner of the intersection.

**Belmont Street Eastbound** 



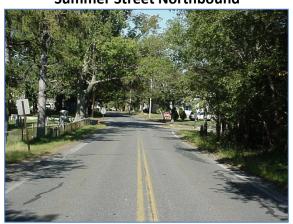
**Belmont Street Westbound** 



**Summer Street Southbound** 



**Summer Street Northbound** 



(Photos of Belmont Street were taken for the OCPC 2006 study)

### 3.2 Average Daily Traffic

Traffic counts were conducted on Belmont Street and Summer Street in 2004 (for the previous OCPC study) and in 2012 for the Road Safety Audit to determine the average daily traffic (total traffic within a 24-hour period). Traffic counts were conducted utilizing automatic traffic recorders at four locations, one on each of the approaches to the intersection at the following locations: Belmont Street east of Summer Street; Belmont Street west of Summer Street; Summer Street north of Belmont Street; and Summer Street south of Belmont Street. The traffic recorders were placed for a forty-eight hour period and recorded vehicle volumes, vehicle speeds, and vehicle classifications (the number of heavy vehicles in the traffic stream). A summary of the data is included in the appendix to this report. Table 1 summarizes the traffic volume



data collected utilizing the automatic traffic recorders at the study area locations for an average weekday (24-hour period).

**Table 1 Average Daily Traffic** 

Traffic Count Location	2004	2004	2004	2012	2012	2012
	East	West	Total	East	West	Total
	Bound	bound		bound	bound	
1. Belmont Street east	1,812	1,841	3,653	1,967	1,888	3,855
of Summer Street						
2. Belmont Street west	1,895	2,026	3,921	2,152	2,142	4,294
of Summer Street						
	2004	2004	2004	2012	2012	2012
	North	South	Total	North	South	Total
	Bound	bound		bound	bound	
3. Summer Street north	970	1,050	2,020	935	992	1,927
of Belmont Street						
4. Summer Street south	492	499	991	487	482	969
of Belmont Street						

As shown in Table 1, Belmont Street east of Summer Street had 3,653 vehicles per day east of Summer Street in 2004 and 3,855 in 2012. This represents an overall increase in 2012 over 2004 of 5.5 percent. The Belmont Street west of Summer Street location, had 3,921 vehicles per day in 2004, and 4,294 vehicles per day in 2012. This represents an overall increase of 9.5 percent. The highest volumes of traffic were recorded on Belmont Street west of Summer Street at 4,294 vehicles per day in 2012. On Summer Street north of Belmont Street, the traffic volumes were 2,020 vehicles per day in 2004, and 1,927 vehicles per day in 2012. This was an overall decrease in traffic of 4.6 percent. The Summer Street south of Belmont Street intersection also experienced a decrease in traffic from 991 vehicles per day in 2004 to 969 vehicles per day in 2012. This was an overall decrease in traffic of 2.2 percent.

### 3.3 Heavy Vehicles and Vehicle Speeds

The automatic traffic recorders on Belmont Street and Summer Street, in addition to recording the 2012 traffic volumes, also recorded the percentage of heavy vehicles and the prevailing speeds in the traffic stream. The heavy vehicle data is classified into categories based on the Federal Highway Administration (FHWA) classification system. Any vehicle with a minimum of two axles and six tires is considered a heavy vehicle. The traffic recorders measured the 85<sup>th</sup> percentile speed, which is the speed that 85 percent of traffic is travelling. The results of the vehicle classification indicate that 9.3 percent of the traffic on Belmont Street east of Summer Street consists of trucks and 7.4 percent of the traffic on Belmont Street west of Summer Street consists of trucks. On Summer Street, north of Belmont Street the vehicle classification was 10.3 percent truck traffic and on Summer Street south of Belmont Street the vehicle classification was nine percent trucks.



The 85<sup>th</sup> percentile speeds were recorded as follows: 40 miles per hour at Belmont Street east of Summer Street, 42 miles per hour at Belmont Street west of Summer Street, 40 miles per hour on Summer Street north of Belmont Street, and 42 miles per hour south of Belmont Street. The speed limit on Belmont Street is 30 miles per hour (based on the prima fascia speed limit in a thickly settled area), and the posted speed limit on Summer Street is 35 miles per hour. In addition, spot speeds were sampled manually using a stop watch on Belmont Street west of Summer Street and Summer Street north of Belmont Street in 2006. The 85<sup>th</sup> percentile speeds at that time were 42 miles per hour eastbound and 33 miles per hour westbound on Belmont Street west of Summer Street, and 36 miles per hour northbound and 35 miles per hour southbound on Summer Street north of Belmont Street.

### 3.4 Intersection Volumes and Levels-of-Service

Manual turning movement counts were conducted in September 2012 at the Belmont Street at Summer Street intersection during the morning, 7:00 AM to 9:00 AM and afternoon, 4:00 PM to 6:00 PM periods to determine the morning and afternoon peak hours (the highest one-hour volumes.) The morning and afternoon peak hour volume summaries are shown in the appendix. These 2012 turning movement counts are compared to the 2006 volumes used in the 2006 OCPC Belmont Street/Summer Street Intersection Study in Table 2.

Table 2 Peak Hour Traffic (total entering the intersection)

2006	2006	2012	2012
AM Peak	PM Peak	AM Peak	PM Peak
429	545	492	628

Table 2 shows that the PM peak hour experiences the most traffic during the day with 628 vehicles entering the intersection in 2012 during the PM peak hour, and 545 in 2006. In 2006, the PM peak hour entering volume, 545 vehicles, was 116 more or 27 percent over the AM peak hour (429). In 2012, the PM peak hour's entering volume, 628 vehicles, was 136 more than the AM peak hour (492), or 27 percent. The AM peak hour and the PM peak hour showed increases in 2012 over 2006, with the AM peak hour increasing 63 vehicles, or 15 percent, and the PM peak hour increasing 83 vehicles, or 17 percent.



The 2012 peak hour turning movement volumes were used to calculate the intersection levels-of-service, for this Road Safety Audit, which discern the existing traffic operating conditions at the intersection. Level-of-service analyses are a qualitative and quantitative measure based on the techniques published in the <u>Highway Capacity Manual</u> by the Transportation Research Board. Level-of-service is a general measure that summarizes the overall operation of an intersection or transportation facility. It is based upon the operational conditions of a facility including lane use, traffic control, and lane width, and takes into account such factors as operating speeds, traffic interruptions, and freedom to maneuver.

Level-of-service represents a range of operating conditions and is summarized with letter grades from "A" to "F", with "A" being the most desirable. Level-of-service "E" represents the maximum flow rate or the capacity on a facility. The following describes the characteristics of each level-of-service:

- LOS "A" represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream.
- LOS "B" is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is still relatively unaffected.
- LOS "C" is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. Occasional backups occur behind turning vehicles.
- LOS "D" represents high-density, but stable, flow. Speed and freedom to maneuver are restricted, and the driver experiences a below average level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.
- LOS "E" represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform level. Freedom to maneuver within the traffic stream is extremely limited, and generally requires forcing other vehicles to give way. Congestion levels and delay are very high.
- LOS "F" is representative of forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount that can traverse the point, resulting in lengthy queues and delay.

The LOS definitions describe conditions based on a number of operational parameters. There are certain parameters utilized as measures of effectiveness for specific facilities. In the case for intersections, two-lane highways, and arterials, which represent the physical conditions that typify the study area corridors, time delay, average stop delay, and average travel speed are used as measures of operational effectiveness to which levels of service are assigned.



The Belmont Street and Summer Street intersection is classified as a two-way stop controlled intersection (TWSC) rather than an all way stop control intersection (AWSC) because traffic on Summer Street must stop and yield to the Belmont Street traffic, and Belmont traffic has the right of way. Level-of-service analysis was conducted for the intersection in the OCPC 2006 study. The results of the 2006 analysis showed that traffic flow at the Summer Street approaches was LOS "B" during the morning and afternoon peak hours, with very little delay experienced by motorists entering the intersection. The level-of-service analysis was also performed utilizing the 2012 turning movement volumes. The update analysis showed that the traffic flow on the Summer Street approaches is still at the LOS "B" level for the morning and afternoon peak hours.

### 3.5 Available Stopping Sight Distance

The available sight distance on a roadway should be sufficiently long to enable a vehicle traveling at or near the design speed to stop before reaching a stationary object in its path. Sight distance is affected by road conditions, such as grades, curves, and roadside vegetation or other objects (signs, stone walls, fences, etc.). According to the American Association of State Highway and Transportation Officials (AASHTO) – 2011 Geometric Design of Highways and Streets, sight distance is the length of the roadway ahead that is visible to the driver.

In the OCPC 2006 study for the Belmont Street at Summer Street intersection, field measurements were conducted by OCPC staff. The study concluded that the Stopping Sight Distance (SSD) for the Belmont Street eastbound approach is approximately 200 feet, which is adequate for vehicles traveling at the speed limit of 30 miles per hour or less (see Table 6.) However, the 85<sup>th</sup> percentile speed for the traffic heading eastbound on this approach is 42 miles per hour, based on based on the automatic traffic recorder speed study. Traffic approaching the intersection from this direction experiences a sharp curve and a raise in elevation. The 2006 OCPC study concluded that these factors contribute to the inadequate stopping sight distance for this eastbound approach.



### 3.6 Crash Data

The Institute of Transportation Engineers (ITE) Handbook, <u>Manual of Traffic Engineering Studies</u> recommends that three years of crash data be compiled for safety analysis. For analysis purposes, the crash data from the 2006 OCPC study was updated to December of 2012. Table 3 summarizes the updated crash data compiled for this RSA.

Table 3 Crash Summary for Belmont Street/Summer Street – East Bridgewater

		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	total
Crash Type													
	Angle	7	4	2	1	2	3	2	1	1	3	1	27
	Ran off												
	Road/Single												
	Veh. Crash	1	0	0	0	0	1	0	0	0	0	0	2
	Head-on	0	0	0	0	1	0	0	0	0	0	1	2
	total	8	4	2	1	3	4	2	1	1	3	2	31
Crash													
Severity													
	Property												
	Damage Only	7	2	1	0	3	4	1	0	1	2	1	22
	Personal Injury	1	1	1	1	0	0	1	1	0	1	1	8
	Fatality	0	1	0	0	0	0	0	0	0	0	0	1
	total	8	4	2	1	3	4	2	1	1	3	2	31
Time of Day													
	Daylight	7	4	2	1	3	3	1	1	1	3	2	28
	Dark - (with												
	street light)	1	0	0	0	0	1	1	0	0	0	0	3
	total	8	4	2	1	3	4	2	1	1	3	2	31
Road													
Conditions													
	Dry	5	4	2	1	1	1	2	1	0	u	u	17
	wet	3	0	0	0	2	2	0	0	0	u	u	7
	snow and ice	0	0	0	0	0	1	0	0	1	u	u	2
	total	8	4	2	1	3	4	2	1	1	3	2	31

Data source, MassDOT and East Bridgewater Police Department, u = unknown

Table 3 shows that the most crashes to occur in one year between 2002 and 2012 were eight crashes in 2002. The remaining years experienced four or fewer crashes with four crashes in 2003 and 2007. There were three years that experienced one crash, 2005, 2009, and 2010. Table 3 summarizes the crashes based on type of crash, crash severity, time of day, and road condition. The overwhelming majority of the crashes were angle type, with 27, and there were 3 ran-off-road/single vehicle crashes, and two head-on crashes. There was one fatality in 2003; however, according to the East Bridgewater police, that fatality was due to driver medical condition and not because of road conditions or traffic control. Most of the crashes resulted in property damage only (16), and there were five crashes that resulted in personal injury. The majority of the crashes occurred during daylight hours and under dry conditions.

<sup>\*2012</sup> is incomplete year with eleven months, Jan. through November

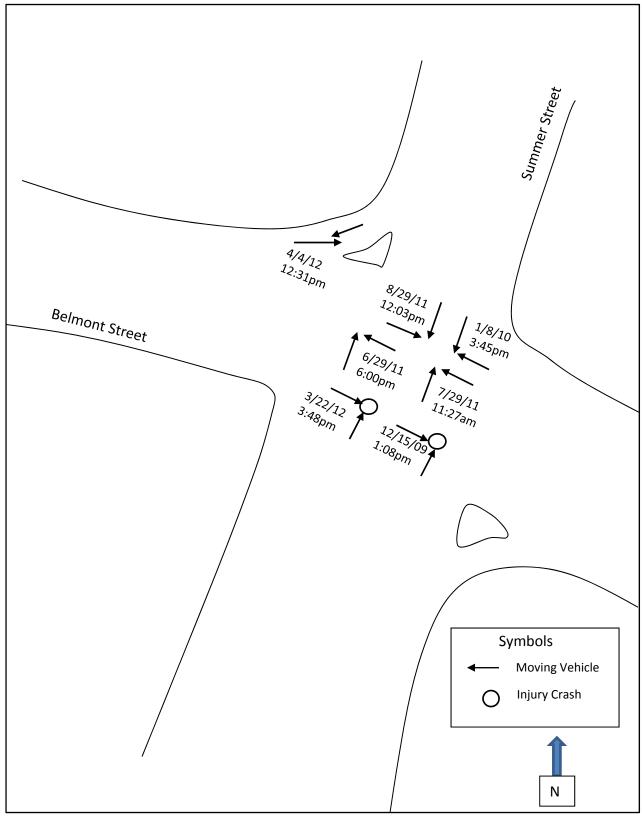


A crash rate was calculated for the Belmont Street at Summer Street intersection. The crash rate indicates the frequency of crashes at intersections and measures the crash exposure. It is based on the number of crashes per million entering vehicles (MEV). The crash rates calculated for intersections in this study are based upon the ITE equation in the Manual of Traffic Engineering Studies. The crash rate per million entering vehicles is the number of accidents in a year (averaged over three years) times one million, divided by the number of vehicles entering the intersection in a year. The crash rate for the intersection was calculated to be 0.40 crashes per million entering vehicles. The average crash rate for un-signalized intersections in MassDOT District 5 is 0.60 MEV. The average crash rate for un-signalized intersections in Massachusetts is 0.61 MEV. The crash rate for this intersection is below both the MassDOT District average and the Massachusetts average.

Figure 2 shows the collision diagram for the Summer Street at Belmont Street intersection for the latest three year period from December 2009 to November 2012.



Figure 2 Collision Diagram Belmont Street at Summer Street (Latest Three Year Crash History Dec 2009 through Nov. 2012)





### 4.0 Safety Challenges and Observed Deficiencies

### 4.1.1 Pre-Audit Meeting and Discussion

OCPC held a pre-audit meeting and discussion with the RSA team regarding traffic and safety issues on December 4, 2012 at the East Bridgewater DPW (Water Division office). OCPC presented the background traffic and crash data to the team and reviewed the purpose, procedures, and timeline for the RSA.

At the pre-audit meeting, the participants discussed the existing conditions and the history of crashes. These included:

- Limited sight distance on Belmont Street for vehicles approaching the intersection eastbound on Belmont Street and for vehicles approaching Belmont Street from Summer Street
- A lack of visibility approaching the intersection prevents approaching motorists from recognizing that there is an intersection ahead
- An uptick in crashes at the intersection during wet and slippery weather
- Belmont Street is used as a cut through for traffic, especially by parcel delivery trucks
- Speeding on Belmont Street
- Poor turning radii for truck turns
- Lack of advanced warning signs
- Channelized islands present obstruction and misalignment
- Trees near the intersection visually blend the Summer Street approaches into the landscape



Road Safety Audit Belmont Street at Summer Street- East Bridgewater









### **4.1.2 Field Audit Findings**

After reviewing the background crash data, traffic volumes, speed data, heavy vehicle data, and discussing the issues, the team re-convened the audit in the field at the Belmont Street at Summer Street intersection. The team inspected sight lines, the condition and placement of signs along the road, channelization islands, and the road alignment. The team also noted the sharp curve and grade on the eastbound Belmont Street approach to Summer Street in front of the cemetery.

### 4.2 Recommendations and Countermeasures for Consideration

The recommendations and countermeasures developed by the RSA participants have been categorized as short-term, mid-term, or long-term based on the definitions shown in Table 4. Additionally, a cost category has been assigned to each improvement based on the parameters also in Table 4.

**Table 4 Time Frame and Cost Categories** 

Tir	me Frame		Costs
Short-term	<1 year	Low	<\$10,000
Mid-term	1–3 years	Medium	\$10,000-\$50,000
Long-term	>3 years	High	>\$50,000

Table 5 summarizes the measures recommended by the RSA team. Included are a both the estimated time frame and costs associated with the recommended safety measures.

Table 5 - RSA Recommendations

POTENTIAL RECOMMENDATIONS	ESTIMATED TIME FRAME AND COSTS
Add advanced warning signs on all approaches	Short-term, low cost
Upgrade retro-reflectivity, sign positioning, and sign size consistency on all signs	Short-term, low cost
Add a yield sign on both sides of channeled right turn lanes	Short-term, low cost
To prevent Belmont Street traffic from turning into right turn channeled lanes, improve placement of "Do Not Enter" signs.	Short-term, low cost
Traffic Calming through use of speed trailers and police enforcement and visibility	Short-term, low cost
Reduce travel lanes to eleven feet to slow down traffic	Short-term, low cost
Pavement markings – "Stop" at stop bars on Summer Street and "Yield" at channelized right turn	Short-term, low cost
Add flashing beacons to intersection, flashing yellow on Belmont Street and flashing red on Summer Street	Mid-term, medium cost
Add stop signs on all approaches making the intersection an all-way stop controlled intersection (intersection meets all way stop warrant based on crash experience)	Short-term, low cost
Reconstruct and re-align the intersection, re-align the wall on the eastbound approach, remove right turn channelization, and improve turning radii	Long-term, high cost
Re-pave the approaches to the intersection – (town to pursue over the next year)	Mid-tem, medium to high cost



### **4.2.1** Alternative Recommendation Analysis

### Flashing Beacons

Flashing beacons, which are installed overhead at intersections, reinforce driver awareness of stop signs, and contribute toward mitigating right angle crashes. The beacons are used to supplement stop signs and to call drivers' attention to the stop signs. Flashing beacons are not as effective as a multi-way stop in reducing the number of fatalities or stop sign violations at intersections, although there is a general reduction in speeds on the major road approaches (according to the Manual on Uniform Traffic Control Devices, MUTCD). This alternative can be used in conjunction with advanced warning signs on the intersection approaches. The flashing beacon should be properly placed where they are clearly visible to approaching drivers. The MUTCD states that a supplemental signal indication can be used on one or more approaches to provide additional visibility to approaching vehicles. Supplemental signal indications on the Belmont Street approaches to the intersection will help slow down traffic in advance of the intersection.

### All Way Stop Signs with Flashing Beacons

This alternative requires the posting of a stop sign on all four approaches to the intersection. The flashing red beacon will also face all four intersection approaches. The advantage to this alternative is that it offers a low cost, quick fix solution to the safety problems at the intersection. Advanced warning signs will be required on the approaches especially on the eastbound approach, due to high speeds and the limitations on sight distance on this approach. This will allow vehicles to slow down in advance of the stop control at the intersection.

The multi-way stop-control strategy targets un-signalized intersections with patterns of right angle crashes with moderate volumes. According to the MUTCD, specific criteria should determine stop sign installation. The criteria are based on the vehicle volumes or the number of crashes within a twelve-month period and the traffic volumes.

The traffic volumes at the Summer Street and Belmont Street intersection did not satisfy the minimum volumes for the multi-stop control warrant.<sup>1</sup> However, the crash data showed that a multi-way stop control is warranted based on the crash experience between August 2007 and April 2008. Six crashes occurred within a 12 month period, and five of these crashes were angle type, which can be mitigated utilizing all-way stop control. The crash data and the warrant analysis are provided in the appendix of this report.

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<sup>&</sup>lt;sup>1</sup> According to the MUTCD - If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2; however, the 70 percent volumes also did not satisfy MUTCD warrants for all way stop control or traffic signals.



### Traffic Signals

The MUTCD provides the basis for the consideration of the installation of traffic control signals. The MUTCD guidance states that the selection and use of traffic control signals should be based on an engineering study of roadway conditions. These warrants provide an analysis of traffic operations that define the minimum conditions under which installing traffic control signals might be justified. The MUTCD states that a traffic control signal should not be installed unless one or more of the warrants are satisfied.

Traffic signals assign the right-of-way to traffic movements at an intersection and provide a number of advantages including:

- They provide for the orderly movement of traffic.
- They increase the traffic-handling capacity of the intersection if proper physical layouts and control measures are used, and if the signal timing is reviewed and updated on a regular basis (every two years) to ensure that it satisfies current traffic demands.
- They reduce the frequency and severity of certain types of crashes, especially right-angle collisions.
- They are coordinated to provide for continuous or nearly continuous movement of traffic at a definite speed along a given route under favorable conditions.
- They are used to interrupt heavy traffic at intervals to permit other traffic, vehicular or pedestrian, to cross.

It is important to note that the MUTCD states that a traffic control signal should not be installed if it will seriously disrupt progressive traffic flow. The signal warrant analysis performed for the intersection based on the MUTCD is included in the appendix to this report.

The results of the warrant analysis show that the existing traffic volumes at the intersection did not meet any of the warrant criteria in the MUTCD to justify a traffic signal at the Summer Street and Belmont Street intersection. The warrant analysis is included in the appendix to this report.

### 5.0 Conclusions and Next Steps

### **5.1** Recommendation Summary

A number of safety improvement opportunities have been described in this report, along with their potential impacts, to address the identified deficiencies at the Belmont Street at Summer Street intersection. It is important to note that many treatments are both low cost and short term and that there is a complementary nature of some of these safety strategies in that one improvement will aid with multiple safety issues. In addition, it should be noted that the approach towards improved safety is dynamic in nature and warrants revisiting over time.



The intersection does not satisfy the MUTCD warrants for the installation of a traffic signal, however, low cost solutions such as adding "STOP" pavement markings at the stop bar and at the yield points from the channelized right turns on the Summer Street approaches, stricter speed enforcement along Belmont Street, and flashing beacons can improve overall safety. Other potential low cost improvements the intersection include adding warning signs on the eastbound and westbound Belmont Street approaches (intersection ahead).

### 5.2 Next Steps

The Road Safety Audit process will conclude with a review and finalization of the findings and recommendations by the RSA participants, and a formal response should be prepared by the Town of East Bridgewater that includes a plan for implementation of improvements.



### 6.0 Appendix

- 6.1 Audit Meeting Agenda December 4, 2012
- 6.2 Safety Audit and Meeting Sign-up Sheet (12/4/12)
- 6.3 Morning and Afternoon Intersection Peak Hour Turning Movement Data
- 6.4 Automatic Traffic Recorder Vehicle Volumes. Speeds, and Vehicle Classifications
- 6.5 AM and PM Intersection Peak Hour Levels-of-Service
- 6.6 Signal Warrant and All-Way Stop Analyses Summaries
- **6.7** Crash Rate Work Sheet
- 6.8 2006 OCPC Belmont Street at Summer Street Traffic Study

### **APPENDIX**

## ROAD SAFETY AUDIT Belmont Street at Summer Street Intersection East Bridgewater, MA

February 2013









Prepared by:

**Old Colony Planning Council** 

70 School Street Brockton, MA. 02301

(508) 583-1833

www.ocpcrpa.org

MassDOT Contract # 69649

### **AGENDA**

### Road Safety Audit East Bridgewater Belmont Street at Summer Street

Old Colony Planning Council
70 School Street
Brockton, MA
02301

Meeting Location: East Bridgewater Water Dept.

49 Dean Place,
East Bridgewater, MA
Tuesday, December 4, 2012
10:00 AM to 12:00 noon

10:00 AM

Welcome and Introductions

10:05 AM

Discussion and Safety Issues

- Traffic volumes, crash history, past studies
- Existing geometries and conditions

10:45 AM

Site Visit

- Group visit to Belmont and Summer Street intersection
- Identify potential improvements

11:15 AM

**Discussion of Potential Improvements** 

- Re-assemble at meeting location to discuss observations
- Discuss Potential Improvements and finalize recommendations

12:00 noon

Adjourn for the Day

 A draft report will be developed by OCPC with conclusions and recommendations for review and comment

### <u>Instructions for participants:</u>

- Before attending the Road Safety Audit on December 4<sup>th</sup>, participants are encouraged to drive or walk through the intersection and complete elements of the RSA Prompt list with a focus on safety.
- Participants are reminded that this is a collaborative process and mutual respect of opinions is a key element to overall success.
- After the RSA, participants will receive a draft of the RSA report for review and comment to ensure that it is reflective of the RSA conclusions and recommendations.

### OLD COLONY PLANNING COUNCIL 70 SCHOOL STREET BROCKTON, MA 02301-4097

www.ocpcrpa.org

### **Belmont Street & Summer Street Intersection Road Safety Audit**

### ATTENDANCE SHEET

DATE: December 4, 2012 - 10:00 A.M.

NAME	TOWN/AGENCY	EMAIL	PHONE NUMBER
ROB KENN	EKT BEIDGEWATER DPW	rkenn e ebmass.com	508-378-1420
SILPA MUNUKUTLA	MASSDOT HSD.	Silpa, munukutia @ State, ma, us	857,368,9637.
CORDY OCOMEN	MASS DOT, HIGHWAY SAFTY		857-368-9639
Timothy Kochan	11 pistacts	finothy Nochan Ostate ma	UN508 884-4254
MIKE MELAVEHIN Sarge	64ST BRIDGEWATER P.D	MMCKAUGHLINGEBMASS.CO	M 508-378-7223
Timothy M. Harhan	East Brogant FD	Firschiefe esfireon	(508)378-2071
Harhen Acting		'	
Ray Gravino	OCPC		
Jed Cornock	OCPL		
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Community: East Bridgewater

Weather: Clear

Board # & Staff: TDC-8(2) / AV

Traffic Control: Two Way Stop

File Name: Belmont Street & Summer Street\_PM

Site Code: 83

Start Date : 9/20/2012

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Groups Printed- Unshifted - Bank 1 - Bank 2

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		Sun	nmer S	Street			Beli	mont S	Street			Sun	nmer S	Street			Belr	mont S	Street		
		So	uthbo	und			W	estbo	und			No	rthbo	und			Ea	astbou	ınd		
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
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04:00 PM	18	10	2	2	32	1	29	2	2	34	9	5	0	0	14	0	37	16	0	53	133
04:15 PM	22	13	3	0	38	4	29	1	1	35	5	6	0	0	11	0	50	12	0	62	146
04:30 PM	23	6	2	0	31	5	33	5	0	43	4	6	0	0	10	0	46	14	2	62	146
04:45 PM	16	5	10	0	31	0	34	4	0	38	11	7	0	0	18	0	60	12	0	72	159
Total	79	34	17	2	132	10	125	12	3	150	29	24	0	0	53	0	193	54	2	249	584
05:00 PM	14	4	6	0	24	4	33	7	0	44	11	2	1	0	14	0	51	10	0	61	143
05:15 PM	17	4	11	0	32	5	41	11	0	57	11	3	0	0	14	0	57	14	0	71	174
05:30 PM	12	7	1	1	21	4	49	4	0	57	5	3	0	0	8	0	51	16	0	67	153
05:45 PM	21	3	5	0	29	3	36	8	0	47	13	5	0	0	18	1	30	12	0	43	137
Total	64	18	23	1	106	16	159	30	0	205	40	13	1	0	54	1	189	52	0	242	607
<b>Grand Total</b>	143	52	40	3	238	26	284	42	3	355	69	37	1	0	107	1	382	106	2	491	1191
Apprch %	60.1	21.8	16.8	1.3		7.3	80	11.8	8.0		64.5	34.6	0.9	0		0.2	77.8	21.6	0.4		
Total %	12	4.4	3.4	0.3	20	2.2	23.8	3.5	0.3	29.8	5.8	3.1	0.1	0	9	0.1	32.1	8.9	0.2	41.2	
Unshifted	137	49	40	0	226	25	269	40	0	334	65	34	1	0	100	1	379	105	0	485	1145
% Unshifted	95.8	94.2	100	0	95	96.2	94.7	95.2	0	94.1	94.2	91.9	100	0	93.5	100	99.2	99.1	0	98.8	96.1
Bank 1	0	1	0	2	3	0	0	0	3	3	0	0	0	0	0	0	0	0	2	2	8
% Bank 1	0	1.9	0	66.7	1.3	0	0	0	100	0.8	0	0	0	0	0	0	0	0	100	0.4	0.7
Bank 2	6	2	0	1	9	1	15	2	0	18	4	3	0	0	7	0	3	1	0	4	38
% Bank 2	4.2	3.8	0	33.3	3.8	3.8	5.3	4.8	0	5.1	5.8	8.1	0	0	6.5	0	0.8	0.9	0	0.8	3.2

Community: East Bridgewater

Weather: Clear

Board # & Staff: TDC-8(2) / AV

Traffic Control: Two Way Stop

File Name: Belmont Street & Summer Street\_PM

Site Code: 83 Start Date: 9/20/2012

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		Sum	mer S	treet			Belr	nont S	Street			Sun	mer S	treet			Beli	nont S	Street		1
		So	uthbo	und			W	estbo	und			No	rthbo	und			E	astbou	ınd		
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Ar	alysis l	From 0	4:00 PI	M to 05	:45 PM	- Peak	1 of 1														
Peak Hour for	Entire	Interse	ction E	Begins a	at 04:45	PM															
04:45 PM	16	5	10	0	31	0	34	4	0	38	11	7	0	0	18	0	60	12	0	72	159
05:00 PM	14	4	6	0	24	4	33	7	0	44	11	2	1	0	14	0	51	10	0	61	143
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05:30 PM	12	7	1	1	21	4	49	4	0	57	5	3	0	0	8	0	51	16	0	67	153
Total Volume	59	20	28	1	108	13	157	26	0	196	38	15	1	0	54	0	219	52	0	271	629
% App. Total	54.6	18.5	25.9	0.9		6.6	80.1	13.3	0		70.4	27.8	1.9	0		0	80.8	19.2	0		
PHF	.868	.714	.636	.250	.844	.650	.801	.591	.000	.860	.864	.536	.250	.000	.750	.000	.913	.813	.000	.941	.904
Unshifted	54	19	28	0	101	12	148	24	0	184	36	14	1	0	51	0	219	51	0	270	606
% Unshifted	91.5	95.0	100	0	93.5	92.3	94.3	92.3	0	93.9	94.7	93.3	100	0	94.4	0	100	98.1	0	99.6	96.3
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank 2	5	1	0	1	7	1	9	2	0	12	2	1	0	0	3	0	0	1	0	1	23
% Bank 2	8.5	5.0	0	100	6.5	7.7	5.7	7.7	0	6.1	5.3	6.7	0	0	5.6	0	0	1.9	0	0.4	3.7

Community: East Bridgewater

Weather: Clear

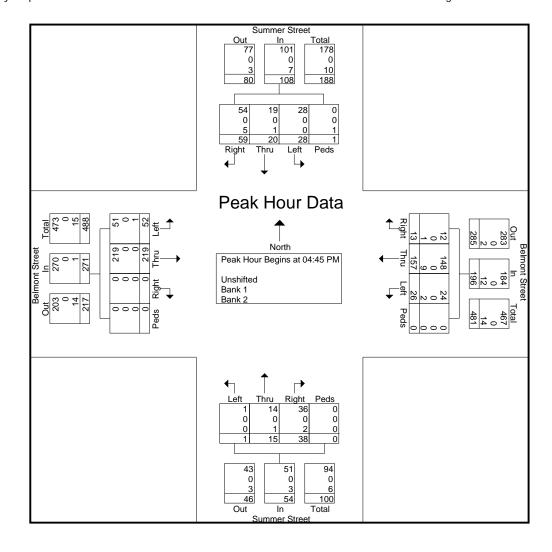
Board # & Staff: TDC-8(2) / AV

Traffic Control: Two Way Stop

File Name: Belmont Street & Summer Street\_PM

Site Code: 83 Start Date: 9/20/2012

Page No : 5



Community: East Bridgewater

Weather: Clear

Board #/Staff: TDC-8 (1) / KM Traffic Control:Two Way Stop File Name: Belmont Street & Summer Street\_AM

Site Code: 83

Start Date : 9/20/2012

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Groups Printed- Unshifted - Bank 1 - Bank 2

	Summer Street Belmont Street											K 1 - Ba	nk 2								
		Sun	nmer S	treet			Bel	mont S	treet			Sur	nmer S	treet			Bel	mont S	treet		
		Sc	outhboo	und			W	/estbou	nd			N	orthbou	ınd			E	astbou	nd		
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	12	3	3	0	18	4	35	3	0	42	4	2	0	0	6	1	21	13	0	35	101
07:15 AM	12	0	4	0	16	0	58	2	0	60	9	4	1	0	14	0	27	8	0	35	125
07:30 AM	12	1	3	0	16	1	44	2	1	48	6	6	1	0	13	0	23	26	1	50	127
07:45 AM	12	2	6	0	20	3	34	5	0	42	10	8	0	0	18	0	40	21	0	61	141
Total	48	6	16	0	70	8	171	12	1	192	29	20	2	0	51	1	111	68	1	181	494
08:00 AM	9	2	5	0	16	2	34	2	0	38	2	4	0	0	6	0	24	15	0	39	99
08:15 AM	11	3	1	0	15	5	33	4	0	42	3	6	1	0	10	0	16	16	0	32	99
08:30 AM	7	2	1	1	11	1	33	4	0	38	2	5	0	0	7	0	18	12	0	30	86
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Total	34	10	7	1	52	10	124	13	0	147	7	19	1	1	28	1	83	49	0	133	360
Grand Total	82	16	23	1	122	18	295	25	1	339	36	39	3	1	79	2	194	117	1	314	854
Apprch %	67.2	13.1	18.9	8.0		5.3	87	7.4	0.3		45.6	49.4	3.8	1.3		0.6	61.8	37.3	0.3		
 Total %	9.6	1.9	2.7	0.1	14.3	2.1	34.5	2.9	0.1	39.7	4.2	4.6	0.4	0.1	9.3	0.2	22.7	13.7	0.1	36.8	
Unshifted	76	15	21	0	112	15	290	25	0	330	36	38	2	0	76	2	185	112	0	299	817
 % Unshifted	92.7	93.8	91.3	0	91.8	83.3	98.3	100	0	97.3	100	97.4	66.7	0	96.2	100	95.4	95.7	0	95.2	95.7
Bank 1	1	1	2	1	5	2	1	0	1	4	0	0	1	1	2	0	1	0	1	2	13
% Bank 1	1.2	6.2	8.7	100	4.1	11.1	0.3	0	100	1.2	0	0	33.3	100	2.5	0	0.5	0	100	0.6	1.5
Bank 2	5	0	0	0	5	1	4	0	0	5	0	1	0	0	1	0	8	5	0	13	24
% Bank 2	6.1	0	0	0	4.1	5.6	1.4	0	0	1.5	0	2.6	0	0	1.3	0	4.1	4.3	0	4.1	2.8

Community: East Bridgewater

Weather: Clear

Board #/Staff: TDC-8 (1) / KM Traffic Control:Two Way Stop File Name: Belmont Street & Summer Street\_AM

Site Code: 83

Start Date : 9/20/2012

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			nmer St outhbou			Belmont Street Westbound					Summer Street Northbound										
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analy	sis From	07:00 A	M to 08	:45 AM -	Peak 1 o	f 1															
Peak Hour for Er	ntire Inter	section	Begins a	at 07:00 <i>P</i>	M																
07:00 AM	12	3	3	0	18	4	35	3	0	42	4	2	0	0	6	1	21	13	0	35	101
07:15 AM	12	0	4	0	16	0	58	2	0	60	9	4	1	0	14	0	27	8	0	35	125
07:30 AM	12	1	3	0	16	1	44	2	1	48	6	6	1	0	13	0	23	26	1	50	127
07:45 AM	12	2	6	0	20	3	34	5	0	42	10	8	0	0	18	0	40	21	0	61	141
Total Volume	48	6	16	0	70	8	171	12	1	192	29	20	2	0	51	1	111	68	1	181	494
% App. Total	68.6	8.6	22.9	0		4.2	89.1	6.2	0.5		56.9	39.2	3.9	0		0.6	61.3	37.6	0.6		
PHF	1.00	.500	.667	.000	.875	.500	.737	.600	.250	.800	.725	.625	.500	.000	.708	.250	.694	.654	.250	.742	.876
Unshifted	45	6	14	0	65	7	167	12	0	186	29	19	1	0	49	1	109	66	0	176	476
% Unshifted	93.8	100	87.5	0	92.9	87.5	97.7	100	0	96.9	100	95.0	50.0	0	96.1	100	98.2	97.1	0	97.2	96.4
Bank 1	0	0	2	0	2	1	1	0	1	3	0	0	1	0	1	0	0	0	1	1	7
% Bank 1	0	0	12.5	0	2.9	12.5	0.6	0	100	1.6	0	0	50.0	0	2.0	0	0	0	100	0.6	1.4
Bank 2	3	0	0	0	3	0	3	0	0	3	0	1	0	0	1	0	2	2	0	4	11
% Bank 2	6.3	0	0	0	4.3	0	1.8	0	0	1.6	0	5.0	0	0	2.0	0	1.8	2.9	0	2.2	2.2

Community: East Bridgewater

Weather: Clear

Board #/Staff: TDC-8 (1) / KM

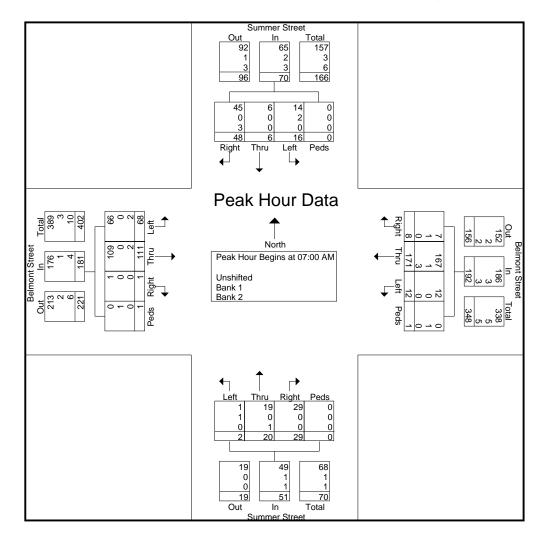
Traffic Control:Two Way Stop

File Name: Belmont Street & Summer Street\_AM

Site Code: 83

Start Date : 9/20/2012

Page No : 5



Station ID:

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

Community: East Bridgewater Com#\_UR/FC: 83\_U6 Recorder #: Jamar #14 Layout: L6 Basic (2')

Site Code: 83 Date Start: 18-Sep-12 Date End: 19-Sep-12 Summer St, south of Belmont St

Start	17-Sep	-12	Т	ue	W	/ed	Th	u	Fı	ri	Sa	t	Sur	n	Week Av	erage
Time	NB .	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	ŠB
12:00 AM	*	*	4	3	4	1	*	*	*	*	*	*	*	*	4	2
01:00	*	*	1	1	0	1	*	*	*	*	*	*	*	*	0	1
02:00	*	*	1	1	1	1	*	*	*	*	*	*	*	*	1	•
03:00	*	*	2	0	1	2	*	*	*	*	*	*	*	*	2	1
04:00	*	*	2	3	2	4	*	*	*	*	*	*	*	*	2	
05:00	*	*	5	6	5	6	*	*	*	*	*	*	*	*	5	6
06:00	*	*	29	8	26	6	*	*	*	*	*	*	*	*	28	7
07:00	*	*	46	27	39	15	*	*	*	*	*	*	*	*	42	21
08:00	*	*	34	17	34	25	*	*	*	*	*	*	*	*	34	21
09:00	*	*	25	23	23	20	*	*	*	*	*	*	*	*	24	22
10:00	*	*	26	24	24	15	*	*	*	*	*	*	*	*	25	20
11:00	*	*	26	39	21	39	*	*	*	*	*	*	*	*	24	39
12:00 PM	*	*	30	26	30	30	*	*	*	*	*	*	*	*	30	28
01:00	*	*	34	33	23	34	*	*	*	*	*	*	*	*	28	34
02:00	*	*	35	37	29	27	*	*	*	*	*	*	*	*	32	32
03:00	*	*	43	54	41	35	*	*	*	*	*	*	*	*	42	44
04:00	*	*	53	44	43	48	*	*	*	*	*	*	*	*	48	46
05:00	*	*	35	59	39	40	*	*	*	*	*	*	*	*	37	50
06:00	*	*	31	34	26	42	*	*	*	*	*	*	*	*	28	38
07:00	*	*	16	20	21	33	*	*	*	*	*	*	*	*	18	26
08:00	*	*	6	14	18	13	*	*	*	*	*	*	*	*	12	14
09:00	*	*	15	13	9	13	*	*	*	*	*	*	*	*	12	13
10:00	*	*	3	6	7	3	*	*	*	*	*	*	*	*	5	4
11:00	*	*	5	8	3	8	*	*	*	*	*	*	*	*	4	8
Total	0	0	507	500	469	461	0	0	0	0	0	0	0	0	487	482
Day	0		100		930		0		0		0		0		969	
AM Peak			07:00	11:00	07:00	11:00									07:00	11:00
Vol.			46	39	39	39									42	39
PM Peak			16:00	17:00	16:00	16:00									16:00	17:00
Vol.			53	59	43	48									48	50
Comb.																
Total		0		1007		930		0		0		0		0		969

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

Community: East Bridgewater Com#\_UR/FC: 83\_U6 Recorder #: Jamar #14 Layout: L6 Basic (2')

Station ID: Site Code: 83 Date Start: 18-Sep-12 Date End: 19-Sep-12 Summer St, south of Belmont St

Start	18-Sep-12		NB		SB		nbined	19-Sep-	NB		SB		Combined	
								Wed						
Time 12:00	Tue	<u>A.M.</u> 0	P.M.	A.M 1	<u>P.M.</u> 8	A.M 1	P.M. 15	vveu	A.M. 4	P.M. 3	A.M 1	P.M. 11	A.M. 5	<u>P.M.</u> 14
12:15		0	8	1	5	1	13		0	9	0	9	0	18
12:13		0	6	0	3	0	9		0	6	0	5	0	11
12:45		4	9	1	10	5	19		0	12	0	5	0	17
01:00		0	8	0	9	0	17		0	9	0	13	0	22
01:00		0	10	0	6	0	16		0	6	0	5	0	11
01:13		1	9	0	4	1	13		0	1	0	7	0	8
01:45		0	7	1	14	1	21		0	7	1	9	1	16
02:00		0	10	0	13	0	23		0	8	0	5	0	13
02:00		1		1	6	2	14		0	7		6	0	
02:15		0	8	0	10	0	13		-		0	5	1	13 14
02:30				0	8				1	9	1	11	1	
		0	14	-		0	22			5 7				16
03:00		2	9	0	15	2	24		1	9	1	8	2 1	15
03:15		0	9	0	12	0	21		0		1	6		15
03:30		0	12	0	9	0	21		0	15	0	8	0	23
03:45		0	13	0	18	0	31		0	10	0	13	0	23
04:00		0	13	0	12	0	25		0	10	0	8	0	18
04:15		0	9	0	9	0	18		0	9	0	11	0	20
04:30		0	16	2	12	2	28		1	10	0	17	1	27
04:45		2	15	1	11	3	26		1	14	4	12	5	26
05:00		1	10	1	22	2	32		1	7	1	13	2	20
05:15		2	9	1	14	3	23		2	6	3	9	5	15
05:30		1	10	3	16	4	26		1	15	2	11	3	26
05:45		1	6	1	7	2	13		1	11	0	7	1	18
06:00		4	11	0	11	4	22		2	6	1	15	3	21
06:15		3	4	2	10	5	14		3	8	1	12	4	20
06:30		14	6	4	7	18	13		12	5	2	9	14	14
06:45		8	10	2	6	10	16		9	7	2	6	11	13
07:00		5	4	5	6	10	10		3	7	2	12	5	19
07:15		7	5	9	8	16	13		11	3	6	12	17	15
07:30		17	1	5	3	22	4		14	7	2	6	16	13
07:45		17	6	8	3	25	9		11	4	5	3	16	7
08:00		10	2	5	1	15	3		9	5	4	6	13	11
08:15		7	3	3	4	10	7		9	6	7	2	16	8
08:30		8	1	4	2	12	3		8	2	7	1	15	3
08:45		9	0	5	7	14	7		8	5	7	4	15	9
09:00		7	2	4	3	11	5		8	3	5	2	13	5
09:15		10	7	10	2	20	9		5	2	4	4	9	6
09:30		2	2	4	4	6	6		2	0	6	2	8	2
09:45		6	4	5	4	11	8		8	4	5	5	13	9
10:00		5	0	5	1	10	1		8	2	1	1	9	3
10:15		3	1	8	1	11	2		3	2	3	1	6	3
10:30		8	1	4	3	12	4		7	3	3	0	10	3
10:45		10	1	7	1	17	2		6	0	8	1	14	1
11:00		8	0	12	1	20	1		4	0	8	0	12	0
11:15		4	1	9	3	13	4		4	2	8	5	12	7
11:30		8	2	11	3	19	5		9	0	11	3	20	3
11:45		6	2	7	1	13	3		4	1	12	0	16	1
Total		201	306	152	348	353	654		180	289	135	326	315	615
Day Tota	ıl		07	50	00	10	07		46	69	40	61	930	
% Total		20.0%	30.4%	15.1%	34.6%				19.4%	31.1%	14.5%	35.1%		
Peak		07:15	04:00	10:45	04:45	07:15	04:30		07:15	03:15	11:00	04:15	07:15	04:15
Vol.		51	53	39	63	78	109		45	44	39	53	62	93
P.H.F.		0.750	0.828	0.813	0.716	0.780	0.852		0.804	0.733	0.813	0.779	0.912	0.861
** *													-	

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

Community: East Bridgewater Com#\_UR/FC: 83\_U6 Recorder #: Jamar #14 Layout: L6 Basic (2')

Station ID: Site Code: 83 Date Start: 18-Sep-12 Date End: 19-Sep-12 Summer St, south of Belmont St

Start	17-Sep-12	18-Sep-12	19-Sep-12	20-Sep-12	21-Sep-12	22-Sep-12	23-Sep-12	Week
Time 12:00 AM	Mon *	Tue7	Wed	Thu	Fri *	Sat	Sun *	Average
01:00	*	2	5 1	*	*	*	*	6 2
02:00	*	2		*	*	*	*	
02:00	*	2	2 3	*	*	*	*	2 2
03.00	*	5	6	*	*	*	*	6
05:00	*	າ 11	11	*	*	*	*	11
06:00	*	37	32	*	*	*	*	34
07:00	*	<b>73</b>	54	*	*	*	*	64
	*			*	*	*	*	
08:00 09:00	*	51 48	59 43	*	*	*	*	55 46
10:00	*		39	*	*	*	*	46
	*	50		*	*	*	*	
11:00	*	65	60	*	*	*	*	62
12:00 PM	*	56	60	*	*	*	*	58
01:00	*	67	57	*	*	*	*	62
02:00	*	72	56	*	*	*	*	64
03:00	*	97	76	*	*	*	*	86
04:00	*	97	91	*	*	*	*	94
05:00		94	79					86
06:00	*	65	68	*	*	*	*	66
07:00		36	54	*		*		45
08:00	*	20	31	*	*	*	*	26
09:00	*	28	22	*	*	*	*	25
10:00	*	9	10	*	*	*	*	10
11:00	*	13	11	*	*	*	*	12
Total	0	1007	930	0	0	0	0	968
Percentage	0.0%	104.0%	96.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak		07:00	11:00					07:00
Vol.		73	60					64
PM Peak		15:00	16:00					16:00
Vol.		97	91					94

Community: East Bridgewater Com#\_UR/FC: 285\_U6 Recorder #: Jamar #10 Layout: L6 Basic (2')

Station ID: Site Code: 83 Date Start: 18-Sep-12 Date End: 19-Sep-12 Summer St, north of Belmont St

Start	17-Sep	-12	7	Гие		Ved	Th	u	Fı	ri	Sa	t	Sun		Week Ave	erage
Time	NB .	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	ŠB
12:00 AM	*	*	9	6	5	2	*	*	*	*	*	*	*	*	7	4
01:00	*	*	1	2	5	2	*	*	*	*	*	*	*	*	3	2
02:00	*	*	1	1	1	1	*	*	*	*	*	*	*	*	1	1
03:00	*	*	4	1	1	1	*	*	*	*	*	*	*	*	2	1
04:00	*	*	2	5	3	4	*	*	*	*	*	*	*	*	2	4
05:00	*	*	17	12	15	11	*	*	*	*	*	*	*	*	16	12
06:00	*	*	59	23	53	26	*	*	*	*	*	*	*	*	56	24
07:00	*	*	101	58	103	53	*	*	*	*	*	*	*	*	102	56
08:00	*	*	92	38	95	47	*	*	*	*	*	*	*	*	94	42
09:00	*	*	75	48	66	47	*	*	*	*	*	*	*	*	70	48
10:00	*	*	51	53	43	40	*	*	*	*	*	*	*	*	47	46
11:00	*	*	52	61	50	60	*	*	*	*	*	*	*	*	51	60
12:00 PM	*	*	56	59	50	68	*	*	*	*	*	*	*	*	53	64
01:00	*	*	56	86	44	70	*	*	*	*	*	*	*	*	50	78
02:00	*	*	50	68	45	76	*	*	*	*	*	*	*	*	48	72
03:00	*	*	62	105	56	80	*	*	*	*	*	*	*	*	59	92
04:00	*	*	64	112	65	121	*	*	*	*	*	*	*	*	64	116
05:00	*	*	79	107	71	89	*	*	*	*	*	*	*	*	75	98
06:00	*	*	56	50	52	55	*	*	*	*	*	*	*	*	54	52
07:00	*	*	41	36	27	37	*	*	*	*	*	*	*	*	34	36
08:00	*	*	16	31	19	41	*	*	*	*	*	*	*	*	18	36
09:00	*	*	13	30	11	23	*	*	*	*	*	*	*	*	12	26
10:00	*	*	10	19	12	14	*	*	*	*	*	*	*	*	11	16
11:00	*	*	6	8	6	4	*	*	*	*	*	*	*	*	6	6
Total	0	0	973	1019	898	972	0	0	0	0	0	0	0	0	935	992
Day	0		199	92	187	70	0		0		0		0		1927	
AM Peak			07:00	11:00	07:00	11:00									07:00	11:00
Vol.			101	61	103	60									102	60
PM Peak			17:00	16:00	17:00	16:00									17:00	16:00
Vol.			79	112	71	121									75	116
Comb. Total		0		1992		1870		0		0		0		0		1927

Community: East Bridgewater Com#\_UR/FC: 285\_U6 Recorder #: Jamar #10 Layout: L6 Basic (2')

Station ID: Site Code: 83 Date Start: 18-Sep-12 Date End: 19-Sep-12 Summer St, north of Belmont St

Start	18-Sep-12	NB		SB	Cor	mbined	19-Sep-		NB		SB	Combir	ned
Time	Tue A.M.		A.M.	P.M.	A.M.	P.M.	Wed	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	1	22	3	13	4	35	1100	3	8	2	27	5	35
12:15	2	14	1	18	3	32		1	13	0	16	1	29
12:30	2	8	0	14	2	22		0	16	0	17	Ö	33
12:45	4	12	2	14	6	26		1	13	Ö	8	1	21
01:00	0	9	0	12	0	21		1	11	1	18	2	29
01:15	1	13	1	13	2	26		2	7	1	16	3	23
01:30	0	13	0	26	0	39		0	13	0	17	0	30
01:45	0	21	1	35	1	56		2	13	0	19	2	32
02:00	0	19	0	21	0	40		1	12	0	20	1	32
02:15	1	12	1	8	2	20		0	12	1	15	1	27
02:30	0	10	0	17	0	27		Ö	10	0	19	Ö	29
02:45	0	9	0	22	0	31		0	11	0	22	0	33
03:00	2	12	0	41	2	53		1	7	1	20	2	27
03:15	1	13	0	29	1	42		0	17	0	15	0	32
03:30	1	19	1	20	2	39		0	16	0	21	0	37
03:45	0	18	0	15	0	33		0	16	0	24	0	40
04:00	0	12	2	30	2	42		Ö	12	Ö	21	Ö	33
04:15	0	14	1	21	1	35		0	14	2	30	2	44
04:30	0	23	1	32	1	55		1	18	1	37	2	55
04:45	2	15	1	29	3	44		2	21	1	33	3	54
05:00	5	20	4	39	9	59		3	19	4	24	7	43
05:15	1	18	0	31	1	49		1	13	2	25	3	38
05:30	3	23	5	21	8	44		4	20	2	21	6	41
05:45	8	18	3	16	11	34		7	19	3	19	10	38
06:00	8	13	5	14	13	27		6	11	9	17	15	28
06:15	16	13	5	17	21	30		14	15	6	19	20	34
06:30	20	12	7	12	27	24		14	11	5	13	19	24
06:45	15	18	6	7	21	25		19	15	6	6	25	21
07:00	17	17	20	10	37	27		19	5	22	9	41	14
07:15	18	14	12	8	30	22		18	7	9	13	27	20
07:30	34	6	15	7	49	13		36	9	9	8	45	17
07:45	32	4	11	11	43	15		30	6	13	7	43	13
08:00	31	4	9	5	40	9		27	7	13	13	40	20
08:15	21	5	8	6	29	11		23	3	10	12	33	15
08:30	20	4	12	13	32	17		26	4	14	9	40	13
08:45	20	3	9	7	29	10		19	5	10	7	29	12
09:00	18	4	7	6	25	10		10	3	8	5	18	8
09:15	24	5	18	11	42	16		21	4	8	7	29	11
09:30	18	2	9	9	27	11		17	0	16	4	33	4
09:45	15	2	14	4	29	6		18	4	15	7	33	11
10:00	15	2	8	2	23	4		8	1	9	5	17	6
10:15	9	2	16	8	25	10		10	7	10	5	20	12
10:30	15	2	13	6	28	8		12	2	8	1	20	3
10:45	12	4	16	3	28	7		13	2	13	3	26	5
11:00	15	0	15	1	30	1		11	1	12	0	23	1
11:15	14	2	19	4	33	6		12	2	12	2	24	4
11:30	8	2	17	2	25	4		11	1	13	2	24	3
11:45	15	2	10	1	25	3		16	2	23	0	39	2
Total	464	509	308	711	772	1220		440	458	294	678	734	1136
Day Total		973		019		92			98		72	1870	
% Total	23.3%	25.6%	15.5%	35.7%			2	3.5%	24.5%	15.7%	36.3%		
Peak	07:30	05:00	10:45	04:30	07:15	04:30	(	07:30	04:45	11:00	04:15	07:30	04:15
Vol.	118	79	67	131	162	207		116	73	60	124	161	196
P.H.F.	0.868	0.859	0.882	0.840	0.827	0.877	(	0.806	0.869	0.652	0.838	0.894	0.891

Community: East Bridgewater Com#\_UR/FC: 285\_U6 Recorder #: Jamar #10 Layout: L6 Basic (2')

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

Station ID: Site Code: 83 Date Start: 18-Sep-12 Date End: 19-Sep-12 Summer St, north of Belmont St

Start Time	17-Sep-12 Mon	18-Sep-12 Tue	19-Sep-12 Wed	20-Sep-12 Thu	21-Sep-12	22-Sep-12 Sat	23-Sep-12	Week
12:00 AM	*	rue 15	vved7	tnu *	Fri *	Sai	Sun *	Average 11
01:00	*	3	7	*	*	*	*	
02:00	*			*	*	*	*	5
03:00	*	2 5	2 2	*	*	*	*	2 4
04:00	*	7	7	*	*	*	*	7
05:00	*	29	26	*	*	*	*	28
06:00	*	82	79	*	*	*	*	80
07:00	*	159	156	*	*	*	*	158
08:00	*	130	142	*	*	*	*	136
09:00	*	123	113	*	*	*	*	118
10:00	*	104	83	*	*	*	*	94
11:00	*	113	110	*	*	*	*	112
12:00 PM	*	115	118	*	*	*	*	116
01:00	*	142	114	*	*	*	*	128
02:00	*	118	121	*	*	*	*	120
03:00	*	167	136	*	*	*	*	152
04:00	*	176	186	*	*	*	*	181
05:00	*	186	160	*	*	*	*	173
06:00	*	106	107	*	*	*	*	106
07:00	*	77	64	*	*	*	*	70
08:00	*	47	60	*	*	*	*	54
09:00	*	43	34	*	*	*	*	38
10:00	*	29	26	*	*	*	*	28
11:00	*	14	10	*	*	*	*	12
Total	0	1992	1870	0	0	0	0	1933
Percentage	0.0%	103.1%	96.7%	0.0%	0.0%	0.0%	0.0%	
AM Peak		07:00	07:00					07:00
Vol.		159	156					158
PM Peak		17:00	16:00					16:00
Vol.		186	186					181

Community: East Bridgewater Com#\_UR/FC: 83\_U5 Recorder #: Jamar #6 Layout: L6 Basic (2')

Station ID: Site Code: 83 Date Start: 18-Sep-12
Date End: 19-Sep-12
Belmont St, west of Summer St

Start	17-Sep	-12	Т	Tue	V	Ved	Thu	ı	Fr	i	Sa	nt	Sun		Week Ave	erage
Time	EB .	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	ŴВ
12:00 AM	*	*	10	5	6	4	*	*	*	*	*	*	*	*	8	
01:00	*	*	2	3	6	3	*	*	*	*	*	*	*	*	4	
02:00	*	*	1	4	2	3	*	*	*	*	*	*	*	*	2	
03:00	*	*	5	7	1	4	*	*	*	*	*	*	*	*	3	
04:00	*	*	7	13	4	13	*	*	*	*	*	*	*	*	6	
05:00	*	*	20	42	24	39	*	*	*	*	*	*	*	*	22	
06:00	*	*	91	113	75	121	*	*	*	*	*	*	*	*	83	1
07:00	*	*	169	208	172	239	*	*	*	*	*	*	*	*	170	2
08:00	*	*	153	166	158	163	*	*	*	*	*	*	*	*	156	1
09:00	*	*	127	105	115	98	*	*	*	*	*	*	*	*	121	1
10:00	*	*	97	107	82	92	*	*	*	*	*	*	*	*	90	1
11:00	*	*	100	113	102	100	*	*	*	*	*	*	*	*	101	1
12:00 PM	*	*	102	112	94	106	*	*	*	*	*	*	*	*	98	1
01:00	*	*	114	141	99	112	*	*	*	*	*	*	*	*	106	1
02:00	*	*	137	133	135	148	*	*	*	*	*	*	*	*	136	1
03:00	*	*	185	181	175	156	*	*	*	*	*	*	*	*	180	1
04:00	*	*	220	171	221	199	*	*	*	*	*	*	*	*	220	1
05:00	*	*	268	183	266	170	*	*	*	*	*	*	*	*	267	1
06:00	*	*	139	113	156	138	*	*	*	*	*	*	*	*	148	1
07:00	*	*	98	95	86	83	*	*	*	*	*	*	*	*	92	
08:00	*	*	52	55	56	78	*	*	*	*	*	*	*	*	54	
09:00	*	*	28	49	51	36	*	*	*	*	*	*	*	*	40	
10:00	*	*	29	20	33	28	*	*	*	*	*	*	*	*	31	
11:00	*	*	14	6	13	11	*	*	*	*	*	*	*	*	14	
Total	0	0	2168	2145	2132	2144	0	0	0	0	0	0	0	0	2152	21
Day	0		43		42		0		0		0		0		4294	
AM Peak			07:00	07:00	07:00	07:00									07:00	07:
Vol.			169	208	172	239									170	2
PM Peak			17:00	17:00	17:00	16:00									17:00	16:
Vol.			268	183	266	199									267	1
Comb. Total		0		4313		4276		0		0		0		0		429

Community: East Bridgewater Com#\_UR/FC: 83\_U5 Recorder #: Jamar #6 Layout: L6 Basic (2')

Station ID: Site Code: 83 Date Start: 18-Sep-12 Date End: 19-Sep-12 Belmont St, west of Summer St

Ctort	10 Con 10		EB		WB	Cor	nbined	19-Sep-		EB		WB	Combi	
Start	18-Sep-12							Wed	A.M.					P.M.
Time 12:00	Tue	<u>A.M.</u> 2	P.M. 30	A.M 4	P.M. 14	A.M 6	P.M. 44	vvea	A. <sub>IVI</sub>	P.M. 20	A.M. 2	P.M. 33	A.M. 3	53
12:00		5	27	1	32	6	59		4	30	0	26	4	56
				•			53			25		23		
12:30		3	19	0	34	3			0		2		2	48
12:45		0	26	0	32	0	58		1	19	0	24	1	43
01:00		0	33	1	23	1	56		1	23	0	31	1	54
01:15		2	23	1	30	3	53		2	23	1	36	3	59
01:30		0	22	0	40	0	62		1	24	2	29	3	53
01:45		0	36	1	48	1	84		2	29	0	16	2	45
02:00		0	29	0	24	0	53		1	34	0	30	1	64
02:15		0	33	2	37	2	70		1	29	2	34	3	63
02:30		0	35	1	34	1	69		0	37	0	42	0	79
02:45		1	40	1	38	2	78		0	35	1	42	1	77
03:00		2	32	1	42	3	74		0	34	0	42	0	76
03:15		1	46	1	44	2	90		0	52	1	40	1	92
03:30		2	59	4	40	6	99		0	43	2	35	2	78
03:45		0	48	1	55	1	103		1	46	1	39	2	85
04:00		1	41	8	41	9	82		1	37	5	43	6	80
04:15		0	54	2	39	2	93		0	58	5	45	5	103
04:30		4	66	2	43	6	109		1	65	3	53	4	118
04:45		2	59	1	48	3	107		2	61	0	58	2	119
05:00		4	71	8	53	12	124		3	60	11	39	14	99
05:15		0	81	6	51	6	132		6	84	3	46	9	130
05:30		8	67	12	47	20	114		6	67	7	50	13	117
05:45		8	49	16	32	24	81		9	55	18	35	27	90
06:00		12	36	22	32	34	68		8	38	20	39	28	77
			31	22	31	46				41	26	43	45	84
06:15		24 27	36	33	27		62 63		19		-			
06:30						60			22	36	34	29	56 67	65
06:45		28	36	36	23	64	59		26	41	41	27	67	68
07:00		35	26	51	38	86	64		30	28	56	24	86	52
07:15		32	30	50	27	82	57		32	19	66	27	98	46
07:30		50	25	59	11	109	36		55	17	59	17	114	34
07:45		52	17	48	19	100	36		55	22	58	15	113	37
08:00		40	10	46	10	86	20		36	19	48	24	84	43
08:15		27	12	40	15	67	27		38	10	44	20	82	30
08:30		37	17	45	15	82	32		36	17	34	17	70	34
08:45		49	13	35	15	84	28		48	10	37	17	85	27
09:00		35	10	25	7	60	17		26	14	20	14	46	28
09:15		43	5	27	24	70	29		33	14	26	8	59	22
09:30		32	5	30	12	62	17		25	8	26	7	51	15
09:45		17	8	23	6	40	14		31	15	26	7	57	22
10:00		30	10	26	3	56	13		17	11	23	5	40	16
10:15		22	6	25	9	47	15		21	6	19	10	40	16
10:30		19	8	19	4	38	12		20	9	28	5	48	14
10:45		26	5	37	4	63	9		24	7	22	8	46	15
11:00		25	1	28	1	53	2		20	4	20	2	40	6
11:15		23	4	33	4	56	8		24	1	31	6	55	7
11:30		23	6	36	1	59	7		28	4	21	2	49	6
11:45		29	3	16	0	45	3		30	4	28	1	58	5
Total		782	1386	886	1259	1668	2645		747	1385	879	1265	1626	2650
Day Tota	ı		168		45		313		21	32		44	4276	
% Total		18.1%	32.1%	20.5%	29.2%	10	•		17.5%	32.4%	20.6%	29.6%	.270	
70 TOtal		. 0. 1 /0	OZ. 1 /0	20.070	20.2/0				. 7 . 0 / 0	UL.7/0	20.070	20.070		
Peak		07:15	04:45	07:00	04:45	07:00	04:45		07:30	04:45	07:00	04:00	07:00	04:30
Vol.		174	278	208	199	377	477		184	272	239	199	411	466
P.H.F.		0.837	0.858	0.881	0.939	0.865	0.903		0.836	0.810	0.905	0.858	0.901	0.896
1 1.1.		0.031	0.000	0.001	0.333	0.000	0.303		0.000	0.010	0.303	0.000	0.501	0.090

Community: East Bridgewater Com#\_UR/FC: 83\_U5 Recorder #: Jamar #6 Layout: L6 Basic (2')

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

Station ID: Site Code: 83 Date Start: 18-Sep-12 Date End: 19-Sep-12 Belmont St, west of Summer St

Start	17-Sep-12	18-Sep-12	19-Sep-12	20-Sep-12	21-Sep-12	22-Sep-12	23-Sep-12	Week
12:00 AM	Mon *	Tue	Wed	Thu_*	Fri	Sat	Sun	Average
	*	15	10	*	*	*	*	12 7
01:00	*	5	9	*	*	*	*	
02:00 03:00	*	5 12	5 5	*	*	*	*	5 8
04:00	*	20	າ 17	*	*	*	*	18
05:00	*	62	63	*	*	*	*	62
06:00	*	204	196	*	*	*	*	200
07:00	*	377	411	*	*	*	*	394
08:00	*	319	321	*	*	*	*	320
09:00	*	232	213	*	*	*	*	222
10:00	*	204	174	*	*	*	*	189
11:00	*	213	202	*	*	*	*	208
12:00 PM	*	214	200	*	*	*	*	207
01:00	*	255	211	*	*	*	*	233
02:00	*	270	283	*	*	*	*	276
03:00	*	366	331	*	*	*	*	348
04:00	*	391	420	*	*	*	*	406
05:00	*	451	436	*	*	*	*	444
06:00	*	252	294	*	*	*	*	273
07:00	*	193	169	*	*	*	*	181
08:00	*	107	134	*	*	*	*	120
09:00	*	77	87	*	*	*	*	82
10:00	*	49	61	*	*	*	*	55
11:00	*	20	24	*	*	*	*	22
Total	0	4313	4276	0	0	0	0	4292
Percentage	0.0%	100.5%	99.6%	0.0%	0.0%	0.0%	0.0%	
AM Peak		07:00	07:00					07:00
Vol.		377	411					394
PM Peak		17:00	17:00					17:00
Vol.		451	436					444

Community: East Bridgewater Com#\_UR/FC: 83\_U5 Recorder #: Jamar #5 Layout: L6 Basic (2')

Station ID: Site Code: 83 Date Start: 18-Sep-12 Date End: 19-Sep-12 Belmont St, east of Summer St

Start	17-Sep	-12	Т	ue	V	/ed	Thi	J	F	ri	Sa	at	Sun		Week Av	erage
Time	EB .	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	ŴВ
12:00 AM	*	*	6	5	5	3	*	*	*	*	*	*	*	*	6	
01:00	*	*	3	2	2	4	*	*	*	*	*	*	*	*	2	
02:00	*	*	1	4	2	3	*	*	*	*	*	*	*	*	2	
03:00	*	*	4	7	1	4	*	*	*	*	*	*	*	*	2	
04:00	*	*	9	10	5	10	*	*	*	*	*	*	*	*	7	
05:00	*	*	18	37	19	35	*	*	*	*	*	*	*	*	18	
06:00	*	*	72	97	65	99	*	*	*	*	*	*	*	*	68	
07:00	*	*	148	183	138	210	*	*	*	*	*	*	*	*	143	1
08:00	*	*	123	156	132	149	*	*	*	*	*	*	*	*	128	1
09:00	*	*	100	96	93	83	*	*	*	*	*	*	*	*	96	
10:00	*	*	78	85	78	71	*	*	*	*	*	*	*	*	78	
11:00	*	*	80	96	92	95	*	*	*	*	*	*	*	*	86	
12:00 PM	*	*	80	80	83	83	*	*	*	*	*	*	*	*	82	
01:00	*	*	98	94	97	98	*	*	*	*	*	*	*	*	98	
02:00	*	*	128	119	134	117	*	*	*	*	*	*	*	*	131	
03:00	*	*	181	149	172	129	*	*	*	*	*	*	*	*	176	•
04:00	*	*	215	134	215	167	*	*	*	*	*	*	*	*	215	
05:00	*	*	254	164	248	151	*	*	*	*	*	*	*	*	251	
06:00	*	*	128	124	154	141	*	*	*	*	*	*	*	*	141	
07:00	*	*	95	101	92	106	*	*	*	*	*	*	*	*	94	
08:00	*	*	46	56	63	67	*	*	*	*	*	*	*	*	54	
09:00	*	*	33	42	53	36	*	*	*	*	*	*	*	*	43	
10:00	*	*	26	16	33	26	*	*	*	*	*	*	*	*	30	
11:00	*	*	16	11	15	18	*	*	*	*	*	*	*	*	16	
Total	0	0	1942	1868	1991	1905	0	0	0	0	0	0	0	0	1967	18
Day	0		38	10	389	96	0		0		0		0		3855	
AM Peak			07:00	07:00	07:00	07:00									07:00	07
Vol.			148	183	138	210									143	
PM Peak			17:00	17:00	17:00	16:00									17:00	17
Vol.			254	164	248	167									251	•
Comb.		0		3810		3896		0		0		0		0		385

Community: East Bridgewater Com#\_UR/FC: 83\_U5 Recorder #: Jamar #5 Layout: L6 Basic (2')

Station ID: Site Code: 83 Date Start: 18-Sep-12 Date End: 19-Sep-12 Belmont St, east of Summer St

Start	18-Sep-12	2	EB	\	WB	Cor	nbined	19-Sep-		EB	,	WB	Combir	ned
Time	Tue	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Wed	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00		1	19	3	11	4	30		2	16	1	21	3	37
12:15		4	21	2	20	6	41		3	29	0	24	3	53
12:30		1	19	0	26	1	45		0	16	2	15	2	31
12:45		0	21	Õ	23	0	44		0	22	0	23	0	45
01:00		0	29	1	18	1	47		1	24	0	28	1	52
01:15		1	25	0	27	1	52		0	24	0	26	0	50
01:30		1	10	Ö	20	1	30		0	18	3	26	3	44
01:45		1	34	1	29	2	63		1	31	1	18	2	49
02:00		0	21	0	23	0	44		0	32	0	18	0	50
02:15		0	29	2	31	2	60		1	34	1	29	2	63
02:30		0	35	1	33	1	68		0	34	0	33	0	67
02:45		1	43	1	32	2	75		1	34	2	37	3	71
03:00		2	32	1	23	3	55		0	37	0	32	0	69
03:15		0	43	2	36	2	79		0	44	1	34	1	78
03:30		1	57	3	33	4	90		0	47	2	29	2	76
03:45		1	49	1	57	2	106		1	44	1	34	2	78
04:00		1	47	7	35	8	82		1	41	5	33	6	74
04:15		0	52	0	30	0	82		0	55	3	43	3	98
04:30		4	59	1	35	5	94		2	58	1	40	3	98
04:45		4	57	2	34	6	91		2	61	1	51	3	112
05:00		2	66	6	36	8	102		2	51	8	30	10	81
05:15		1	90	7	44	8	134		7	<i>7</i> 5	4	46	11	121
05:30		8	56	10	52	18	108		4	69	8	40	12	109
05:45		7	42	14	32	21	74		6	53	15	35	21	88
06:00		8	40	14	41	22	81		7	38	15	42	22	80
06:15		16	23	22	29	38	52		8	43	20	38	28	81
06:30		19	31	28	29	47	60		21	33	26	29	47	62
06:45		29	34	33	25	62	59		29	40	38	32	67	72
07:00		36	20	39	46	75	66		28	30	48	35	76	65
07:15		28	26	51	27	79	53		25	21	57	31	82	52
07:30		34	25	49	12	83	37		39	18	51	21	90	39
07:45		50	24	44	16	94	40		46	23	54	19	100	42
08:00		28	12	50	13	78	25		35	18	41	23	76	41
08:15		21	11	38	14	59	25		26	13	39	10	65	23
08:30		34	12	37	10	71	22		25	19	36	15	61	34
08:45		40	11	31	19	71	30		46	13	33	19	79	32
09:00		29	9	27	5	56	14		29	17	17	14	46	31
09:15		34	6	27	19	61	25		24	11	27	7	51	18
09:30		21	10	27	10	48	20		14	8	20	5	34	13
09:45		16	8	15	8	31	16		26	17	19	10	45	27
10:00		22	7	21	4	43	11		15	13	13	5	28	18
10:15		17	6	22	6	39	12		22	3	15	7	37	10
10:30		16	10	15	2	31	12		18	7	23	7	41	14
10:45		23	3	27	4	50	7		23	10	20	7	43	17
11:00		19	2	28	4	47	6		17	3	20	6	37	9
11:15		10	2	21	3	31	5		19	5	31	7	50	12
11:30		25	7	30	2	55	9		32	2	21	4	53	6
11:45		26	5	17	2	43	7		24	5	23	1	47	6
Total		642	1300	778	1090	1420	2390		632	1359	766	1139	1398	2498
Day Tota	I	19	942	18	68	38	10			991		05	3896	
% Total		16.9%	34.1%	20.4%	28.6%				16.2%	34.9%	19.7%	29.2%		
Peak		07:00	04:30	07:15	05:15	07:15	04:45		07:30	04:45	07:00	04:00	07:00	04:45
Vol.		148	272	194	169	334	435		146	256	210	167	348	423
P.H.F.		0.740	0.756	0.951	0.813	0.888	0.812		0.793	0.853	0.921	0.819	0.870	0.874

Community: East Bridgewater Com#\_UR/FC: 83\_U5 Recorder #: Jamar #5 Layout: L6 Basic (2')

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

Station ID: Site Code: 83 Date Start: 18-Sep-12 Date End: 19-Sep-12 Belmont St, east of Summer St

Start Time	17-Sep-12 Mon	18-Sep-12 Tue	19-Sep-12 Wed	20-Sep-12 Thu	21-Sep-12 Fri	22-Sep-12 Sat	23-Sep-12 Sun	Week
12:00 AM	*	1ue	vved		<u> ГІІ</u>	Sai		Average 10
01:00	*	5	6	*	*	*	*	6
02:00	*	5		*	*	*	*	
03:00	*	າ 11	5 5	*	*	*	*	5 8
04:00	*	19	15	*	*	*	*	17
05:00	*	55	54	*	*	*	*	54
06:00	*	169	164	*	*	*	*	166
	*	331	348	*	*	*	*	340
07:00	*			*	*	*	*	
08:00	*	279	281	*	*	*	*	280
09:00	*	196	176	*	*	*	*	186
10:00	*	163	149	*	*	*	*	156
11:00	*	176	187	*	*	*	*	182
12:00 PM	*	160	166	*	*	*	*	163
01:00	*	192	195	*	*	*	*	194
02:00		247	251	*			*	249
03:00	*	330	301	*	*	*	*	316
04:00		349	382					366
05:00	*	418	399	*	*	*	*	408
06:00	*	252	295	*	*	*	*	274
07:00	*	196	198	*	*	*	*	197
08:00	*	102	130	*	*	*	*	116
09:00	*	75	89	*	*	*	*	82
10:00	*	42	59	*	*	*	*	50
11:00	*	27	33	*	*	*	*	30
Total	0	3810	3896	0	0	0	0	3855
Percentage	0.0%	98.8%	101.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak		07:00	07:00					07:00
Vol.		331	348					340
PM Peak		17:00	17:00					17:00
Vol.		418	399					408

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Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		ર્ન	7		ર્ન	7		4			4	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	15	38	28	20	59	52	219	0	26	157	13
Peak Hour Factor	0.75	0.75	0.75	0.84	0.84	0.84	0.94	0.94	0.94	0.86	0.86	0.86
Hourly flow rate (vph)	1	20	51	33	24	70	55	233	0	30	183	15
Pedestrians					1			1			1	
Lane Width (ft)					12.0			12.0			12.0	
Walking Speed (ft/s)					4.0			4.0			4.0	
Percent Blockage					0			0			0	
Right turn flare (veh)			3			3						
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	607	603	234	606	595	192	199			233		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	607	603	234	606	595	192	199			233		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	100	95	94	90	94	92	96			98		
cM capacity (veh/h)	340	383	799	351	387	835	1373			1317		
Direction, Lane #	NB 1	SB 1	SE 1	NW 1								
Volume Total	72	127	288	228								
Volume Left	1	33	55	30								
Volume Right	51	70	0	15								
cSH	1136	816	1373	1317								
Volume to Capacity	0.06	0.16	0.04	0.02								
Queue Length 95th (ft)	5	14	3	2								
Control Delay (s)	11.4	12.8	1.8	1.2								
Lane LOS	В	12.0 B	Α	Α								
Approach Delay (s)	11.4	12.8	1.8	1.2								
Approach LOS	В	12.0 B	1.0	1.2								
Intersection Summary												
Average Delay			4.5									
Intersection Capacity Ut	ilization		38.0%		CU Leve	el of Sei	vice		Α			
Analysis Period (min)			15	•		. J. J.						
individual cried (min)			.0									

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Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		ર્ન	7		ની	7		4			4	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	20	29	16	6	48	68	111	1	12	171	8
Peak Hour Factor	0.71	0.71	0.71	0.88	0.88	0.88	0.74	0.74	0.74	0.80	0.80	0.80
Hourly flow rate (vph)	3	28	41	18	7	55	92	150	1	15	214	10
Pedestrians		1			1			1			1	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)			3			3						
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	589	590	153	599	586	221	225			152		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	589	590	153	599	586	221	225			152		
tC, single (s)	7.6	6.5	6.2	7.2	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	4.0	4.0	3.3	3.6	4.0	3.4	2.2			2.2		
p0 queue free %	99	93	95	95	98	93	93			99		
cM capacity (veh/h)	308	383	897	337	390	808	1337			1433		
Direction, Lane #	NB 1	SB 1	SE 1	NW 1								
Volume Total	72	80	243	239								
Volume Left	3	18	92	15								
Volume Right	41	55	1	10								
cSH	871	1118	1337	1433								
Volume to Capacity	0.08	0.07	0.07	0.01								
Queue Length 95th (ft)	7	6	6	1								
Control Delay (s)	11.9	11.7	3.4	0.6								
Lane LOS	В	В	Α	Α								
Approach Delay (s)	11.9	11.7	3.4	0.6								
Approach LOS	В	В										
Intersection Summary												
Average Delay			4.3									
Intersection Capacity Ut	tilization		38.1%	I	CU Leve	el of Ser	vice		Α			
Analysis Period (min)			15									
,												

# Warrants Summary Report

### 1: Belmont at Summer

#### **Intersection Information:**

	Major Street	Minor Street
Street Name	Belmont Street	Summer Street
Direction	EB/WB	NB/SB
Number of Lanes	1	1
Approach Speed	30	35

	Met?	Notes
Warrant 1, Eight-Hour Vehicu	lar Volume	
	No	
Condition A or B Met?	No	1 Hours met (8 required)
Condition A and B Met?	No	1 Hours met (8 required)
Warrant 2, Four-Hour Vehicul	ar Volume	
	No	0 Hours met (4 required)
Warrant 3, Peak Hour		
Warrant 3, Peak Hour	No	•
Warrant 3, Peak Hour  Condition A Met?	No No	0 Hours met (1 required)
		0 Hours met (1 required) 0 Hours met (1 required)
Condition A Met?	No	` ' '
Condition A Met?	No No	` ' '
Condition A Met? Condition B Met?	No No	` ' '
Condition A Met? Condition B Met?	No No	` ' '
Condition A Met? Condition B Met?  Warrant 4, Pedestrian Volume	No No	0 Hours met (1 required)

Federal 2009

### **Intersection Information:**

	Major Street	Minor Street		
Street Name	Belmont Street	Summer Street		
Direction	EB/WB	NB/SB		
Number of Lanes	1	1		
Approach Speed	30	35		

Warra	nt	Met?	Notes
Warra	nt 5, School Crossing		
		No	
Warra	nt 6, Coordinated Signal Sys	tem	
		No	
Warra	nt 7, Crash Experience		
		No	
	Volume Condition?	No	0 Hours met (8 required)
Ped Co	ondition?	No	3 Hours met (8 required)
10/	et O. Dandurau Naturaula		_
warra	nt 8, Roadway Network	No	
		No	
Worra	nt O Interception Near a Gree	do Crossino	
warra	nt 9, Intersection Near a Grad	No No	
		INU	

Federal 2009 2

### **Intersection Information:**

	Minor Street		
Street Name	Belmont Street	Summer Street	
Direction	EB/WB	NB/SB	
Number of Lanes	1	1	
Approach Speed	30	35	

Warrant	Met?	Notes	
AWSC Warrant, Multiway	Stop Application		
	No		
Condition A Met?	No		
Condition B Met?	No		
Condition C Met?	No		

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## CRASH RATE WORKSHEET

CITY/TOWN :	East B	ridgewater			COUNT DA	TE:	2012	MHD USE ON
DISTRICT :	5	UNSIGN	ALIZED :	X	SIGNA	LIZED :		Source #
		~	INTERSEC	TION DATA	\ ~			
MAJOR STREET		Belmont Stre						RIN#
MINOR STREET(	S) :	Summer Str	eet					RIN#
								RIN#
								RIN#
								RIN#
				1	Summer St			
INTERSECTION		North			Summer St			INTERSECTI
DIAGRAM (Label Approaches	<b>)</b>	Belmont Stre	eet			Belmont -	2	REF #
(Labor Approaches	,		<b>→</b>	1		`		
					<b>†</b>			
				Summer St	3			
				Peak Hou	Volumes			
APPROACH:		1	2	3	4	5	6	
DIRECTION:		SB	WB	NB	EB	Total		
VOLUMES (AM/P	M) :	107	196	54	885	1242		
"K" FACTOR:		0.09	APPROA	CH ADT :	13,800	ADT = TOTAL	VOL/"K" FACT.	
TOTAL # OF ACCIDENTS :		6	# OF YEARS :	3		GE # OF NTS ( <b>A</b> ) :	2.00	
CRASH RATE CA	ALCULA	ATION :	0.397	RATE =	<u>( A * 1,0</u> ( ADT	000,000 ) * 365 )		
Comments :								
District 5 Av	/erage:	Signalized Unsignalized	0.77 0.60	Statewid	e Average:	Signalized Unsignalized	0.81 0.61	
Percentage Diffe	rence							
District 5 A	verage:	Signalized Unsignalized	-48.43% -33.82%	Statewid	e Average:	Signalized Unsignalized	-50.98% -34.91%	

Crash Nu	City/Town Name	Crash Date	Crash Time	Crash Severity	Total	Manner of C	Road Sur	Ambient Ligh	Weather Condition	At Roadway Intersection
Oradii Na	2002		JIGGIT TITLE	Craon Coverity	Total	Marinor or O	. toda odi	A THOISTIC LIGI	duilor doridition	A Rodding Interested
1464163		24-Jan-2002	9:15 AM	Property damage of	0	Angle	Wet	Daylight	Cloudy	BELMONT STREET/SUMMER STREET
		06-Feb-2002	6:11 PM	Property damage of		Angle	Dry	Dark - lighted	•	BELMONT STREET/SUMMER STREET
	EAST BRIDGEWATER	30-Mar-2002	11:02 AM	Property damage of		Angle	Wet	Daylight	Cloudy/Clear	BELMONT STREET/SUMMER STREET
		03-Sep-2002	6:30 PM	Non-fatal injury	1	Single vehicl	Dry	Daylight	Cloudy	BELMONT STREET/SUMMER STREET
	EAST BRIDGEWATER	18-Nov-2002	7:59 AM	Property damage o	0	Angle	Dry	Daylight	Cloudy/Rain	BELMONT STREET/SUMMER STREET
		20-Dec-2002	6:35 AM	Property damage of		Angle	Wet	Daylight	Rain/Cloudy	BELMONT STREET/SUMMER STREET
	EAST BRIDGEWATER	17-Jul-2002	6:27 AM	Property damage of		Angle	Dry	Daylight	Clear/Clear	SUMMER STREET/BELMONT STREET
		28-Sep-2002	2:45 PM	Property damage o		Angle	Dry	Daylight	Clear	SUMMER STREET/BELMONT STREET
	2003									
	EAST BRIDGEWATER	14-Jan-2003	12:36 PM	Fatal injury	1	Angle	Dry	Daylight	Clear/Clear	BELMONT STREET / SUMMER STREET
	EAST BRIDGEWATER	18-Jul-2003	6:57 PM	Non-fatal injury	2	Angle	Dry	Daylight	Clear/Clear	SUMMER STREET / BELMONT STREET
	EAST BRIDGEWATER	18-Aug-2003	7:26 AM	Property damage of	0	Angle	Dry	Daylight	Clear/Clear	SUMMER STREET / BELMONT STREET
1649388		24-Oct-2003	1:55 PM	Property damage of	0	Angle	Dry	Daylight	Cloudy/Cloudy	SUMMER STREET / BELMONT STREET
	2004									
					Nonf		Surface			
Crash						Manner of		Ambient		At Roadway
Number	City/Town Name	Crash Date	Crash Time	Crash Severity		Collision	n	Light	Weather Condition	Intersection
	•	07-Mar-2004	12:42 PM	Property damage of	•	Angle	Dry	Daylight	Clear/Clear	BELMONT STREET / SUMMER STREET
		15-May-2004	10:00 AM	Non-fatal injury		Angle	Dry	Daylight	Clear/Clear	BELMONT STREET / SUMMER STREET
	2005		•				. ,			
Crash						Manner of	Koad	Ambient		At Roadway
Number	Year	Crash Date	Crash Time			Collision	Surface	Light	Weather Condition	•
1851518	East Bridgewater	01-Feb-2005	9:49 AM	Non-fatal injury	1	Angle	Dry	Daylight	Clear/Clear	BELMONT STREET / SUMMER STREET
	2006									
				_						
2054571	East Bridgewater	09-May-2006		Property damage o			Wet	Daylight	Rain	BELMONT STREET / SUMMER STREET
2060303	East Bridgewater East Bridgewater	09-May-2006 09-Jun-2006	9:45 AM	Property damage of	nly (no	c Angle	Wet	Daylight	Cloudy/Rain	BELMONT STREET / SUMMER STREET
	East Bridgewater East Bridgewater East Bridgewater	09-May-2006 09-Jun-2006 20-Nov-2006	9:45 AM		nly (no	c Angle				
2060303 2128109	East Bridgewater East Bridgewater East Bridgewater 2007	09-May-2006 09-Jun-2006 20-Nov-2006	9:45 AM 1:19 PM	Property damage of Property dama	nly (no	c Angle c Angle	Wet Dry	Daylight Daylight	Cloudy/Rain Clear	BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET
2060303 2128109 CrashNum	East Bridgewater East Bridgewater East Bridgewater 2007	09-May-2006 09-Jun-2006 20-Nov-2006 CrashDate	9:45 AM 1:19 PM CrashTime	Property damage of Property DamageOnline	nly (no nly (no Total	c Angle c Angle MannerofColl	Wet Dry RoadSurfa	Daylight Daylight AmbientLight	Cloudy/Rain Clear WeatherCondition	BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET AtRoadwayIntersection
2060303 2128109 CrashNum 2227041	East Bridgewater East Bridgewater East Bridgewater 2007 ber East Bridgewater	09-May-2006 09-Jun-2006 20-Nov-2006 CrashDate 30-Aug-2007	9:45 AM 1:19 PM CrashTime 11:51 AM	Property damage of Property DamageOnline PDO	nly (no nly (no Totali	c Angle c Angle MannerofColl Angle	Wet Dry  RoadSurfa Dry	Daylight Daylight AmbientLight Daylight	Cloudy/Rain Clear WeatherCondition Clear/Other	BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET  AtRoadwayIntersection BELMONT STREET / SUMMER STREET
2060303 2128109 CrashNum 2227041 2273253	East Bridgewater East Bridgewater East Bridgewater 2007 ber East Bridgewater East Bridgewater	09-May-2006 09-Jun-2006 20-Nov-2006 CrashDate 30-Aug-2007 20-Dec-2007	9:45 AM 1:19 PM CrashTime 11:51 AM 11:16 AM	Property damage of Property DamageOnly PDO PDO	TotalN	c Angle c Angle MannerofColl Angle Angle	Wet Dry  RoadSurfa Dry Slush	Daylight Daylight  AmbientLight  Daylight  Daylight	Cloudy/Rain Clear WeatherCondition Clear/Other Cloudy/Snow	BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET  AtRoadwayIntersection  BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET
2060303 2128109 CrashNuml 2227041 2273253 2155134	East Bridgewater East Bridgewater East Bridgewater 2007 ber East Bridgewater East Bridgewater East Bridgewater East Bridgewater	09-May-2006 09-Jun-2006 20-Nov-2006 CrashDate 30-Aug-2007 20-Dec-2007 14-Jan-2007	9:45 AM 1:19 PM CrashTime 11:51 AM 11:16 AM 3:35 PM	Property damage of Property DamageOnly PropertyDamageOnly PDO PDO PDO PDO	TotalN 0 0	c Angle c Angle MannerofColl Angle Angle Single vehicle	Wet Dry  RoadSurfa Dry Slush Wet	Daylight Daylight  AmbientLight Daylight Daylight Daylight Daylight	Cloudy/Rain Clear WeatherCondition Clear/Other Cloudy/Snow Cloudy/Rain	BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET  AtRoadwayIntersection  BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET SUMMER STREET / BELMONT STREET
2060303 2128109 CrashNum 2227041 2273253	East Bridgewater East Bridgewater East Bridgewater  2007 ber East Bridgewater East Bridgewater East Bridgewater East Bridgewater	09-May-2006 09-Jun-2006 20-Nov-2006 CrashDate 30-Aug-2007 20-Dec-2007 14-Jan-2007 27-Oct-2007	9:45 AM 1:19 PM CrashTime 11:51 AM 11:16 AM 3:35 PM 6:22 PM	Property damage of Property DamageOnly PDO PDO	TotalN 0 0	c Angle c Angle MannerofColl Angle Angle	Wet Dry  RoadSurfa Dry Slush	Daylight Daylight  AmbientLight  Daylight  Daylight	Cloudy/Rain Clear WeatherCondition Clear/Other Cloudy/Snow Cloudy/Rain	BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET  AtRoadwayIntersection  BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET
2060303 2128109 CrashNuml 2227041 2273253 2155134 2249176	East Bridgewater East Bridgewater East Bridgewater  2007 ber East Bridgewater East Bridgewater East Bridgewater East Bridgewater East Bridgewater East Bridgewater	09-May-2006 09-Jun-2006 20-Nov-2006 CrashDate 30-Aug-2007 20-Dec-2007 14-Jan-2007 27-Oct-2007	9:45 AM 1:19 PM CrashTime 11:51 AM 11:16 AM 3:35 PM 6:22 PM	Property damage of Property DamageOnly PDO PDO PDO PDO PDO PDO	TotalN 0 0 0 0	c Angle c Angle MannerofColl Angle Angle Single vehicle Angle	Wet Dry RoadSurfa Dry Slush Wet Wet	Daylight Daylight  AmbientLight Daylight Daylight Daylight Daylight Dark - lighted	Cloudy/Rain Clear WeatherCondition Clear/Other Cloudy/Snow Cloudy/Rain Rain/Cloudy	BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET  AtRoadwayIntersection BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET SUMMER STREET / BELMONT STREET SUMMER STREET / BELMONT STREET
2060303 2128109 CrashNuml 2227041 2273253 2155134 2249176	East Bridgewater East Bridgewater East Bridgewater  2007 ber East Bridgewater East Bridgewater East Bridgewater East Bridgewater East Bridgewater East Bridgewater	09-May-2006 09-Jun-2006 20-Nov-2006 CrashDate 30-Aug-2007 20-Dec-2007 14-Jan-2007 27-Oct-2007 2008 03-Apr-2008	9:45 AM 1:19 PM CrashTime 11:51 AM 11:16 AM 3:35 PM 6:22 PM	Property damage of Property DamageOnly PropertyDamageOnly PDO PDO PDO PDO Injury	TotalN 0 0 0 0	c Angle c Angle MannerofColl Angle Angle Single vehicle Angle Angle Angle	Wet Dry RoadSurfa Dry Slush Wet Wet	Daylight Daylight  AmbientLight Daylight Daylight Daylight Dark - lighted  Daylight	Cloudy/Rain Clear  WeatherCondition  Clear/Other Cloudy/Snow Cloudy/Rain Rain/Cloudy  Cloudy	BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET  AtRoadwayIntersection BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET SUMMER STREET / BELMONT STREET SUMMER STREET / BELMONT STREET  BELMONT STREET / SUMMER STREET
2060303 2128109 CrashNuml 2227041 2273253 2155134 2249176	East Bridgewater East Bridgewater East Bridgewater  2007 ber East Bridgewater	09-May-2006 09-Jun-2006 20-Nov-2006 CrashDate 30-Aug-2007 20-Dec-2007 14-Jan-2007 27-Oct-2007 2008 03-Apr-2008 02-Jan-2008	9:45 AM 1:19 PM 1:19 PM 11:51 AM 11:16 AM 3:35 PM 6:22 PM 4:44 PM 6:36 PM	Property damage of Property DamageOnly PDO PDO PDO PDO PDO PDO	TotalN 0 0 0 0	c Angle c Angle MannerofColl Angle Angle Single vehicle Angle	Wet Dry RoadSurfa Dry Slush Wet Wet	Daylight Daylight  AmbientLight Daylight Daylight Daylight Daylight Dark - lighted	Cloudy/Rain Clear  WeatherCondition  Clear/Other Cloudy/Snow Cloudy/Rain Rain/Cloudy  Cloudy	BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET  AtRoadwayIntersection BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET SUMMER STREET / BELMONT STREET SUMMER STREET / BELMONT STREET
2060303 2128109 CrashNum 2227041 2273253 2155134 2249176 2310566 2287604	East Bridgewater East Bridgewater East Bridgewater  East Bridgewater East Bridgewater East Bridgewater East Bridgewater East Bridgewater East Bridgewater East Bridgewater East Bridgewater East Bridgewater	09-May-2006 09-Jun-2006 20-Nov-2006 CrashDate 30-Aug-2007 20-Dec-2007 14-Jan-2007 27-Oct-2007 2008 03-Apr-2008 02-Jan-2008	9:45 AM 1:19 PM CrashTime 11:51 AM 11:16 AM 3:35 PM 6:22 PM 4:44 PM 6:36 PM	Property damage of Property DamageOnly PropertyDamageOnly PDO PDO PDO PDO Injury PDO	TotalN 0 0 0 0	c Angle c Angle MannerofColl Angle Angle Single vehicle Angle Angle Angle Angle Angle	Wet Dry RoadSurfa Dry Slush Wet Wet	Daylight Daylight  AmbientLight Daylight Daylight Daylight Dark - lighted  Daylight Dark - lighted	Cloudy/Rain Clear  WeatherCondition  Clear/Other Cloudy/Snow Cloudy/Rain Rain/Cloudy  Cloudy Cloudy Cloudy	BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET  AtRoadwayIntersection BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET SUMMER STREET / BELMONT STREET SUMMER STREET / BELMONT STREET BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET
2060303 2128109 CrashNum 2227041 2273253 2155134 2249176	East Bridgewater East Bridgewater East Bridgewater  2007 ber East Bridgewater East Bridgewater East Bridgewater East Bridgewater East Bridgewater East Bridgewater	09-May-2006 09-Jun-2006 20-Nov-2006 CrashDate 30-Aug-2007 20-Dec-2007 14-Jan-2007 27-Oct-2007 2008 03-Apr-2008 02-Jan-2008 15-Dec-2009	9:45 AM 1:19 PM 1:19 PM 11:51 AM 11:16 AM 3:35 PM 6:22 PM 4:44 PM 6:36 PM	Property damage of Property DamageOnly PropertyDamageOnly PDO PDO PDO PDO Injury	TotalN 0 0 0 0	c Angle c Angle MannerofColl Angle Angle Single vehicle Angle Angle Angle	Wet Dry RoadSurfa Dry Slush Wet Wet	Daylight Daylight  AmbientLight Daylight Daylight Daylight Dark - lighted  Daylight	Cloudy/Rain Clear  WeatherCondition  Clear/Other Cloudy/Snow Cloudy/Rain Rain/Cloudy  Cloudy	BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET  AtRoadwayIntersection BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET SUMMER STREET / BELMONT STREET SUMMER STREET / BELMONT STREET  BELMONT STREET / SUMMER STREET
2060303 2128109 CrashNuml 2227041 2273253 2155134 2249176 2310566 2287604	East Bridgewater East Bridgewater East Bridgewater  2007  ber East Bridgewater	09-May-2006 09-Jun-2006 20-Nov-2006 CrashDate 30-Aug-2007 20-Dec-2007 14-Jan-2007 27-Oct-2007 2008 03-Apr-2008 02-Jan-2008 15-Dec-2009 2010	9:45 AM 1:19 PM 1:19 PM 11:51 AM 11:16 AM 3:35 PM 6:22 PM 4:44 PM 6:36 PM	Property damage of Property damage of Property DamageOnly PDO PDO PDO PDO Injury PDO Injury	TotalN 0 0 0 0 2 0	c Angle c Angle MannerofColl Angle Angle Single vehicle Angle Angle Angle Angle Angle Angle Angle	Wet Dry  RoadSurfa  Dry Slush Wet  Wet  Dry Dry  Dry	Daylight Daylight Daylight Daylight Daylight Daylight Daylight Dark - lighted Daylight Dark - lighted	Cloudy/Rain Clear  WeatherCondition  Clear/Other Cloudy/Snow Cloudy/Rain Rain/Cloudy  Cloudy Cloudy Cloudy Clear	BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET  AtRoadwayIntersection  BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET SUMMER STREET / BELMONT STREET SUMMER STREET / BELMONT STREET  BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET
2060303 2128109 CrashNuml 2227041 2273253 2155134 2249176 2310566 2287604	East Bridgewater East Bridgewater East Bridgewater  2007  ber East Bridgewater	09-May-2006 09-Jun-2006 20-Nov-2006  CrashDate 30-Aug-2007 20-Dec-2007 14-Jan-2007 27-Oct-2007 2008 03-Apr-2008 02-Jan-2008 15-Dec-2009 2010 08-Jan-2010	9:45 AM 1:19 PM 1:19 PM 11:51 AM 11:16 AM 3:35 PM 6:22 PM 4:44 PM 6:36 PM	Property damage of Property DamageOnly PropertyDamageOnly PDO PDO PDO PDO Injury PDO	TotalN 0 0 0 0 2 0	c Angle c Angle MannerofColl Angle Angle Single vehicle Angle Angle Angle Angle Angle	Wet Dry RoadSurfa Dry Slush Wet Wet	Daylight Daylight  AmbientLight Daylight Daylight Daylight Dark - lighted  Daylight Dark - lighted	Cloudy/Rain Clear  WeatherCondition  Clear/Other Cloudy/Snow Cloudy/Rain Rain/Cloudy  Cloudy Cloudy Cloudy	BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET  AtRoadwayIntersection BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET SUMMER STREET / BELMONT STREET SUMMER STREET / BELMONT STREET BELMONT STREET / SUMMER STREET BELMONT STREET / SUMMER STREET
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