



## **TRANSPORTATION ADVISORY COMMITTEE**

7 Twin Circle Drive, Arlington, MA 02474

### **Memorandum**

**To:** Board of Selectmen, Arlington, Massachusetts

**From:** Transportation Advisory Committee

**Subject:** Recommendations for Marathon Street and Waldo Road

**Date:** October 4, 2010

Reference: Report of 5/31/2006, Recommendations for Marathon and Waldo

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Marathon Street and Waldo Road are in a residential area, near the East Arlington business district. The intersection of Marathon/Waldo has two-way stop control, with stop signs facing Waldo. A resident has requested that stop signs be added to Marathon Street.

### **Investigation**

The intersection was previously investigated in 2006. The current investigation (2010) revealed

- 2,600 vehicles / day (2002 data) entering the intersection from Marathon Street.
- 1,130 vehicles / day (6/23 – 6/24/2010) entering from Waldo Road (110 vehicles / peak hour)
- 8 crashes during the past 5 years, primarily with vehicles traveling eastbound on Waldo. This is approximately twice as high as the expected number of crashes using the MassDOT district 4 crash rate of 0.59 crashes / million entering vehicles.
- A visibility issue, created by hedges at the west corner of this intersection.

### **Our Recommendations, voted unanimously on 9/15/2010**

1. On the left side of Marathon Street, just before Waldo Road, place a no parking here to corner sign, 20' from the intersection.
2. Add the plaque "Cross Traffic Does Not Stop" (2009 MUTCD W4-4P) just below the stop sign on Waldo Road eastbound (Figure 2)
3. Enforce Section 6.22 of the Zoning Bylaw, regarding traffic visibility around corners.
4. Maintain the stop bars on Waldo Road at the intersection.

The traffic volumes on Waldo Road are not high enough to warrant a three-way stop sign. (See [http://tac.arlington.ma.us/documents/guidelines\\_all\\_way\\_stop.pdf](http://tac.arlington.ma.us/documents/guidelines_all_way_stop.pdf))

Respectfully submitted,

Scott Smith – Lead

Ed Starr – Co-Chair TAC

## Appendix 1, Figures



W4-4P

Figure 1 Aerial View (Traffic on Marathon is coming from the lower left part of the picture)

Figure 2 Plaque to be placed under a stop sign

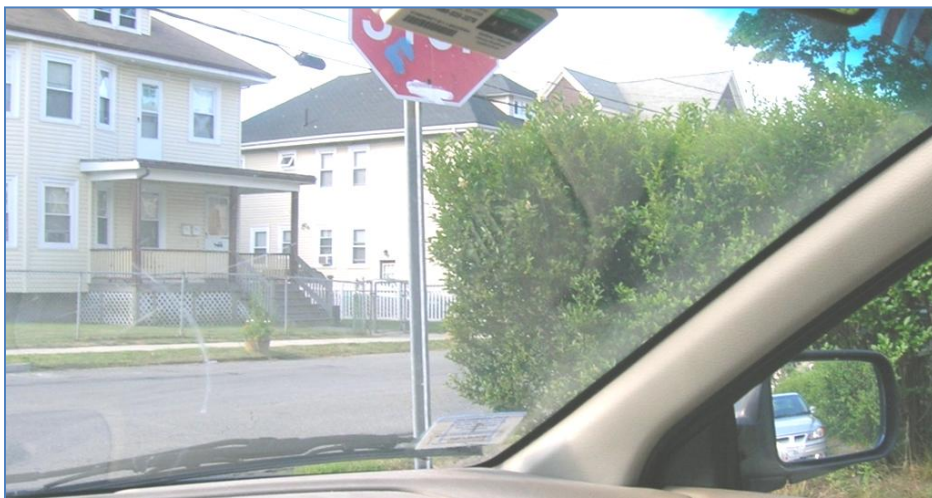


Figure 3 Driver's View from Car Stopped at the Stop Line at Waldo Eastbound



Figure 4 Driver's View of Marathon Street after Pulling Partway into Intersection

## **Appendix 2: Excerpt from 2009 Manual on Uniform Traffic Control Devices (MUTCD) on Multi-way stops**

### **Section 2B.07 Multi-Way Stop Applications**

Support:

- 01 Multi-way stop control can be useful as a safety measure at intersections if certain traffic conditions exist. Safety concerns associated with multi-way stops include pedestrians, bicyclists, and all road users expecting other road users to stop. Multi-way stop control is used where the volume of traffic on the intersecting roads is approximately equal.
- 02 The restrictions on the use of STOP signs described in Section 2B.04 also apply to multi-way stop applications.

*Guidance:*

- 03 *The decision to install multi-way stop control should be based on an engineering study.*
- 04 *The following criteria should be considered in the engineering study for a multi-way STOP sign installation:*
- A. Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.*
- B. Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.*
- C. Minimum volumes:*
- 1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and*
  - 2. The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but*
  - 3. If the 85<sup>th</sup>-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.*
- D. Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.*

Option:

- 05 Other criteria that may be considered in an engineering study include:
- A. The need to control left-turn conflicts;*
  - B. The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;*
  - C. Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop; and*
  - D. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection.*

## **Appendix 3: Excerpt from Arlington Zoning Bylaw**

### **Section 6.22 - Traffic Visibility Across Corners**

Between the property lines of intersecting streets and a line joining points on such lines twenty (20) feet distant from their point of intersection or in the case of a rounded corner, the point of intersection of their tangents, no building or structure in any residence district may be erected and no vegetation other than shade trees may be maintained between a height of three (3) feet and seven (7) feet above the plane through their curb grades.