



## **TRANSPORTATION ADVISORY COMMITTEE**

7 Twin Circle Drive, Arlington, MA 02474

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

**From:** Transportation Advisory Committee (TAC)

**Subject:** Curve at Westminster Avenue

**Date:** 26 October 2009

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The Mt. Gilboa Neighborhood has long been known for its traffic safety concerns. Traffic speed has resulted in crashes into homes on the Westminster Avenue curve (the most recent involving a fatality) and a pedestrian fatality on Lowell Street, along with several less serious incidents. In 2007, the Board of Selectmen endorsed the formation of a working group of neighborhood residents and members of the TAC to identify solutions. The Westminster / Mt. Gilboa working group defined the following goals for the project: decrease overall speed, discourage excessive speeding, increase protection at Westminster curve, and increase pedestrian safety. Short-term recommendations were made, approved and implemented that year. Please refer to the TAC report *Short-term Recommendations Westminster Ave and Lowell St* (June 4, 2007).

The recommendations discussed in the following report concentrate on the Westminster Avenue Curve and focus on long-term safety improvements for pedestrians, motorists and residents. The old asphalt sidewalk is to be rebuilt in concrete and granite curbing is to be installed, with a buffer strip left between for grass and street trees. High-reveal granite curbing (@ 9" high) is recommended where the incidents of cars leaving the roadway have occurred (most of this section currently has no curbing), and bollards are recommended to replace several of the chevron signs installed as part of the short-term recommendations. These standard, reinforced steel bollards would be seated in concrete and covered with a decorative sleeve with a reflective band. At the TAC Meeting on 12 August 2009, these recommendations were voted unanimously:

1. Rebuild sidewalk at #72 through #34 in concrete (currently asphalt).
2. Install standard and high-reveal granite curbing at #72 through #34 [see diagram in report], repairing/regrading the road edge as needed.
3. Remove 2 of the 9 chevron signs, and replace 4 of the remaining 7 signs with reinforced, reflective bollards [see attached examples].
4. Consult with individual property owners to increase safety at driveways and retaining walls [see diagram in report].
5. Consult the Tree Warden to evaluate mature trees at # 52/54 and # 40 for replacement and to recommend locations for planting additional trees after construction.

Respectfully submitted,

Elisabeth Carr-Jones – Working Group Chair  
Edward Starr – TAC Chair

### **Transportation Advisory Committee Members:**

Elisabeth Carr-Jones, Jean Clark, Officer Corey Rateau, Jeff Maxtutis, Howard Muise,  
Michael Rademacher, Scott Smith, Edward Starr, and Laura Wiener

**Web site; [www.tac.arlington.ma.us/](http://www.tac.arlington.ma.us/)**

**The Westminster Avenue Curve**  
**Part of the Westminster / Mt. Gilboa Project**  
**Arlington Transportation Advisory Committee (TAC)**  
**October 26, 2009**

## **Introduction**

This report outlines the TAC's recommendations for infrastructure changes to the Westminster Avenue curve. These changes represent the first of the long-term recommendations for the Westminster / Mt. Gilboa project.

## **Project Background**

The Mt. Gilboa Neighborhood has long been known for its traffic safety concerns. Traffic speed has resulted in crashes into homes on the Westminster Avenue curve (the most recent involving a fatality) and a pedestrian fatality on Lowell Street, along with several less serious incidents.

In 2007, the Board of Selectmen endorsed the formation of a working group of neighborhood residents and members of the TAC to identify solutions. The Westminster / Mt. Gilboa working group defined the following goals for the project:

- Decrease overall speed
- Discourage excessive speeding
- Increase protection at Westminster curve
- Increase pedestrian safety.

This process resulted in short-term recommendations that were approved and implemented that year. The recommendations included: installing Stop signs on Westminster to create a 4-way stop at Westmoreland; installing multiple chevron signs at the Westminster curve; installing a speed advisory sign eastbound on Westminster before the curve; painting edge lines on Westminster and installing crosswalk signs on Lowell at three existing crosswalks. Please refer to the TAC report *Short-term Recommendations Westminster Ave and Lowell St* (June 4, 2007) for more information.

## Recommendations

Our recommendations for the Westminster Avenue Curve concentrate on long-term safety improvements for pedestrians, motorists and residents. The old asphalt sidewalk is to be rebuilt in concrete and granite curbing is to be installed, with a buffer strip left between for grass and street trees. High-reveal granite curbing (@ 9" high) is recommended where the incidents of cars leaving the roadway have occurred (most of this section currently has no curbing), and bollards are recommended to replace several of the chevron signs installed as part of the short-term recommendations. These standard, reinforced steel bollards would be seated in concrete and covered with a decorative sleeve with a reflective band.

### **TAC's recommendations (as detailed in the attached diagram) are:**

1. Rebuild sidewalk at #72 through #34 in concrete (currently asphalt).
2. Install standard and high-reveal granite curbing at #72 through #34 [see diagram], repairing/regrading the road edge as needed.
3. Remove 2 of the 9 chevron signs, and replace 4 of the remaining 7 signs with reinforced, reflective bollards [see attached examples].
4. Consult with individual property owners to increase safety at driveways and retaining walls [see diagram].
5. Consult the Tree Warden to evaluate mature trees at # 52/54 and # 40 for replacement and to recommend locations for planting additional trees after construction.

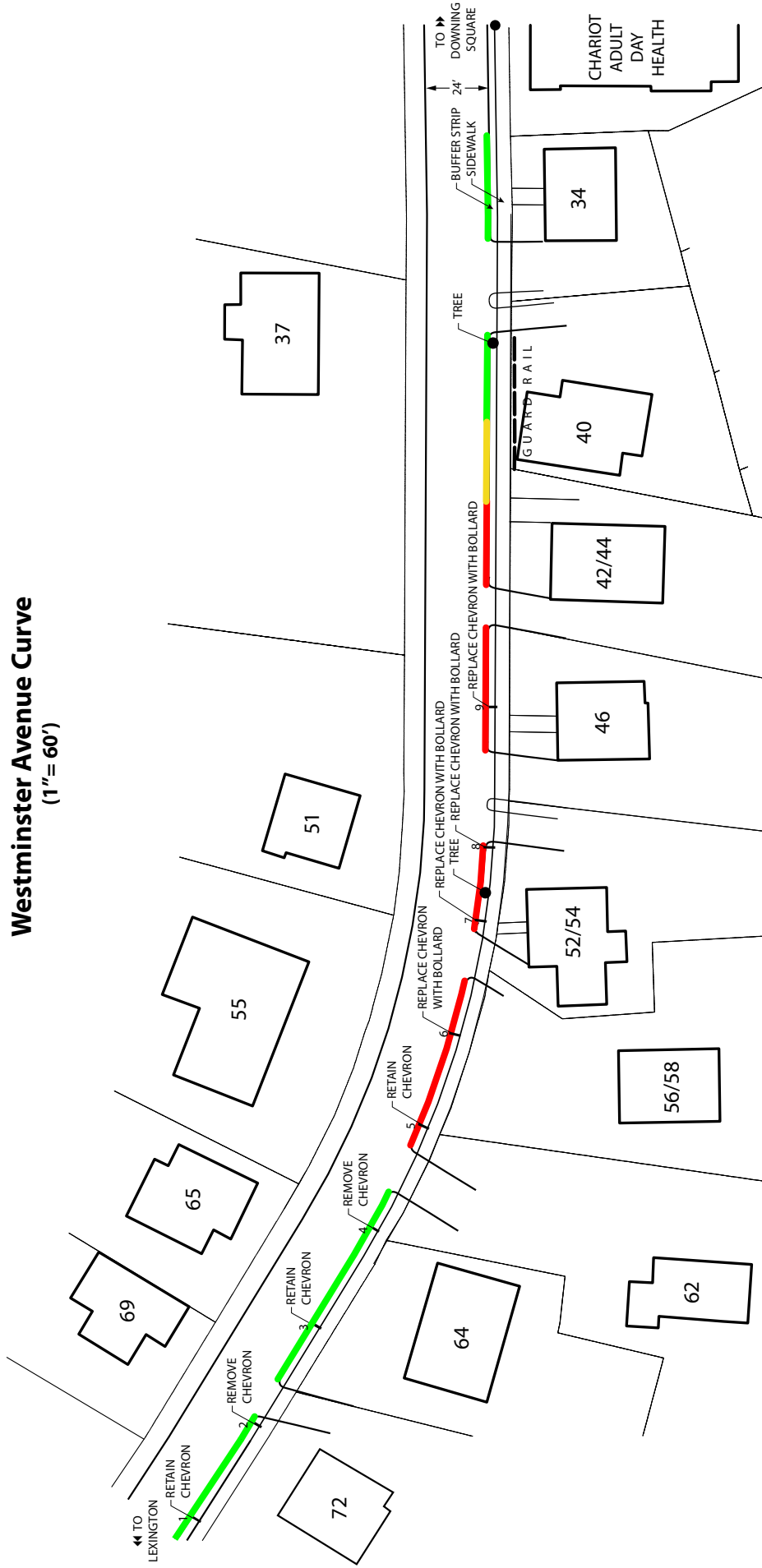
The diagram detailing these recommendations was mailed to the neighbors abutting the work during the week of September 28<sup>th</sup> and has been discussed with neighbors several times previously, including a recent on-site meeting.

## Ongoing Work

Traffic data collected before and after installation of the short-term recommendations confirmed that further neighborhood traffic calming measures were needed. The TAC is studying further long-term infrastructure measures, including the installation of traffic calming devices on Westminster Avenue and Lowell Street and working with Lexington to modify the Westminster Avenue / Lowell Street intersection.

Several discussions regarding the traffic calming devices have been conducted with abutters. The working group plans to continue these discussions, refine the plans and conduct a neighborhood public meeting before submitting the remaining recommendations to the TAC and the Board of Selectmen.

# Westminster Avenue Curve (1" = 60')



- █ standard curbing (6" high)
- █ high-reveal curbing (@ 9" high)
- █ transition section (from 6" to 9")

## TAC Recommendations for Westminster Avenue Curve

1. Rebuild sidewalk at #72 through #34 in concrete (currently asphalt).
2. Install standard and high-reveal granite curbing at #72 through #34, repairing/regrading the road edge as needed.
3. Remove 2 of the 9 chevron signs, and replace 4 of the remaining 7 with reinforced, reflective bollards.
4. Consult with individual property owners to increase safety at driveways and retaining walls.
5. Consult the Tree Warden to evaluate mature trees at #52/54 and #40 for replacement and to recommend locations for planting additional trees after construction.



Condition of Roadway Edge and Sidewalk at Westminster Curve

# RELIANCE FOUNDRY BOLLARDS PRICE SHEET U.S. \$ SEPTEMBER 2009

QUANTITY	USD \$ Prices												
	R-7539	R-7539A ALUMINIUM	R-7551	R-7551A ALUMINIUM	R-7589	R-7589A ALUMINIUM	R-7561	R-7561A ALUMINIUM	R-7592	R-7555	R-7582	R-7565	R-7520
1	\$480	\$512	\$480	\$512	\$530	\$622	\$530	\$622	\$486	\$486	\$537	\$537	\$584
2	\$480	\$472	\$440	\$472	\$490	\$581	\$490	\$581	\$447	\$447	\$497	\$497	\$543
3	\$480	\$448	\$417	\$448	\$466	\$556	\$466	\$556	\$423	\$423	\$473	\$473	\$518
4	\$480	\$433	\$403	\$433	\$451	\$539	\$451	\$539	\$409	\$409	\$457	\$457	\$502
5	\$480	\$420	\$390	\$420	\$438	\$528	\$438	\$528	\$396	\$396	\$444	\$444	\$480
10	\$480	\$409	\$379	\$409	\$426	\$512	\$426	\$512	\$385	\$385	\$432	\$432	\$476
25	\$480	\$397	\$368	\$397	\$414	\$498	\$414	\$498	\$374	\$374	\$420	\$420	\$463
50	\$480	\$388	\$359	\$388	\$405	\$488	\$405	\$488	\$365	\$365	\$411	\$411	\$453
100	\$480	\$379	\$351	\$379	\$396	\$477	\$396	\$477	\$356	\$356	\$401	\$401	\$444

QUANTITY	USD \$ Prices												
	R-7591	R-7591A ALUMINIUM	R-7553	R-7553A ALUMINIUM	R-7581	R-7581A ALUMINIUM	R-7563	R-7563A ALUMINIUM	R-7538	R-7562	R-7598	R-7552	R-7691
1	\$504	\$522	\$504	\$522	\$554	\$632	\$554	\$632	\$572	\$572	\$522	\$522	\$727
2	\$464	\$482	\$464	\$482	\$514	\$590	\$514	\$590	\$532	\$532	\$482	\$482	\$684
3	\$440	\$458	\$440	\$458	\$490	\$565	\$490	\$565	\$507	\$507	\$458	\$458	\$657
4	\$426	\$443	\$426	\$443	\$474	\$548	\$474	\$548	\$491	\$491	\$443	\$443	\$644
5	\$412	\$429	\$412	\$429	\$460	\$537	\$460	\$537	\$477	\$477	\$429	\$429	\$627
10	\$401	\$418	\$401	\$418	\$448	\$521	\$448	\$521	\$465	\$465	\$418	\$418	\$610
25	\$390	\$406	\$390	\$406	\$436	\$507	\$436	\$507	\$453	\$453	\$406	\$406	\$595
50	\$381	\$397	\$381	\$397	\$426	\$496	\$426	\$496	\$443	\$443	\$397	\$397	\$583
100	\$372	\$388	\$372	\$388	\$417	\$483	\$417	\$483	\$433	\$433	\$388	\$388	\$571

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# RELIANCE FOUNDRY BOLLARDS PRICE SHEET U.S. \$ SEPTEMBER 2009

QUANTITY	USD \$ Prices											
	R-7744	R-7736	R-7835	R-7576	R-7573	R-7571	R-7575	R-7572	R-7901SS REMOVABLE	R-7901 REMOVABLE	R-7902	
1	\$701	\$658	\$617	\$523	\$358	\$398	\$422	\$428	\$455	\$1,007	\$611	\$337
2	\$658	\$617	\$574	\$483	\$322	\$362	\$383	\$390	\$416	\$960	\$570	\$299
3	\$632	\$591	\$549	\$458	\$305	\$345	\$361	\$367	\$393	\$936	\$545	\$278
4	\$619	\$574	\$532	\$443	\$292	\$332	\$347	\$353	\$379	\$912	\$529	\$266
5	\$602	\$562	\$520	\$429	\$280	\$320	\$335	\$341	\$367	\$892	\$518	\$255
10	\$585	\$546	\$504	\$414	\$268	\$308	\$325	\$331	\$356	\$871	\$502	\$246
25	\$571	\$532	\$490	\$400	\$256	\$296	\$314	\$320	\$345	\$852	\$489	\$237
50	\$559	\$521	\$479	\$385	\$244	\$284	\$306	\$311	\$337	\$836	\$478	\$230
100	\$548	\$510	\$468	\$374	\$232	\$272	\$299	\$305	\$329	\$820	\$468	\$223

QUANTITY	USD \$ Prices										
	R-7595	R-7593	R-7530	R-7530A ALUMINIUM	R-7331	R-7331A ALUMINIUM	R-7542	R-7510	R-7611	R-7937	R-7936 BICYCLE
1	\$905	\$898	\$461	\$438	\$461	\$438	\$375	\$1,354	\$451	\$425	\$433
2	\$859	\$853	\$422	\$400	\$422	\$400	\$337	\$1,312	\$412	\$387	\$395
3	\$836	\$830	\$398	\$377	\$398	\$377	\$315	\$1,273	\$389	\$364	\$372
4	\$814	\$808	\$384	\$363	\$384	\$363	\$302	\$1,247	\$375	\$351	\$358
5	\$795	\$789	\$372	\$351	\$372	\$351	\$291	\$1,220	\$362	\$339	\$346
10	\$775	\$769	\$361	\$340	\$361	\$340	\$281	\$1,195	\$352	\$329	\$336
25	\$758	\$753	\$350	\$329	\$350	\$329	\$271	\$1,172	\$341	\$318	\$325
50	\$744	\$738	\$341	\$321	\$341	\$321	\$264	\$1,151	\$333	\$310	\$317
100	\$729	\$724	\$333	\$313	\$333	\$313	\$257	\$1,131	\$325	\$302	\$309

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All prices are FOB our plant, Surrey, British Columbia, Canada. Please contact us for a quote on world-wide delivery to your site.  
 Prices include standard bollard bases and coatings.  
 Removable Warning Kites are available for most of the above Bollards for an extra cost of \$45.00 USD each.  
 Connecting links to attach chain to eyes of the above Bollards are available for an extra cost of \$2.75 USD each.  
 Chain Eye Bolts are available (upon request) at no additional cost. Chain (616") is available for any of our bollards for an extra cost of \$2.80 USD / foot (galvanized and powder coated black).  
 Prices are exclusive of Sales Taxes if and where applicable. These Bollards are a product of China. Prices are subject to change without notice; please contact us for updated pricing.

## Examples of Reinforced Bollards