

## **COMMITTEE OF THE WHOLE – DECEMBER 6, 2011**

### **TRAFFIC CALMING – OPERATIONAL REVIEW WARDS 2, 3 AND 4**

#### **Recommendation**

The Commissioner of Engineering and Public Works recommends:

1. That the Traffic Calming Technical Analysis for the communities of Summeridge Drive, Autumn Hill Boulevard, Vellore Woods subdivision, Vaughan Mills Road, Parkfield Court and Hawkview Boulevard be received; and
2. That the existing bollard extensions at the traffic circles on Summeridge Drive and Autumn Hill Boulevard (Attachments 1 and 2) be removed and replaced with full curb and gutter design at an estimated cost of \$100,000.

#### **Contribution to Sustainability**

Not Applicable.

#### **Economic Impact**

There will be an impact to the 2012 Capital Budget for the installation of curb extensions at the traffic circles on Summeridge Drive and Autumn Hill Boulevard. The estimated cost for this work is \$100,000.00. This project has been submitted for consideration as part of the 2012 Capital budget process.

#### **Communications Plan**

The Summeridge Drive and Autumn Hill Boulevard communities will be notified should the full curb and gutter curb extension design at the traffic circles be approved.

#### **Purpose**

To review and report on the effectiveness of the various existing traffic calming measures installed in Wards 2, 3 and 4.

#### **Background - Analysis and Options**

In 2009 and 2010, a number of traffic calming measures were installed at various locations in Wards 2, 3, and 4. The locations are as follows:

- 1) Summeridge Drive
- 2) Autumn Hill Boulevard
- 3) Vellore Woods subdivision
- 4) Vaughan Mills Road
- 5) Hawkview Boulevard
- 6) Parkfield Court

The traffic studies carried out in these communities indicate that the traffic calming measures have reduced average speeds as well as the number of accidents. Please refer to Attachment 3 for a detailed analysis of these traffic studies.

Temporary bollards have been installed at a number of locations on Summeridge Drive and Autumn Hill Boulevard, to improve the operational effectiveness of the retro-fitted traffic circles. These traffic calming features have dramatically reduced vehicle speeds before entering the traffic circles. The bollards have been in place through two winter seasons with minimal operational problems.

Based on traffic data, staff observations and the collision history reduction, the trial period for the plastic bollards placed in advance of the traffic circle have worked effectively. Staff recommends that the existing bollard extensions at the traffic circles on Summeridge Drive and Autumn Hill Boulevard be removed and replaced with full curb and gutter design.

The existing traffic calming measures installed within the communities of Vellore Woods, Vaughan Mills Road and the speed cushions on Hawkview Boulevard and Parkfield Court are working effectively. Therefore, no further action is required within these communities.

#### Agency Comments

Staff requested comments on the above traffic calming measures from the following agencies:

- Vaughan Fire & Rescue Services
- York Region Public and Catholic School Boards
- York Region Transit
- York Region Police.

The available comments are provided below.

Vaughan Fire & Rescue Services comment that the installed traffic calming measures increase emergency response times as they are forced to slow significantly on approach. There are also associated costs to reported damages to vehicle suspension systems.

To date, staff has not received comments back from York Region Transit or York Region Police.

#### Relationship to Vaughan Vision 2020/Strategic Plan

In consideration of the strategic priorities related to Vaughan Vision 2020, the recommendations of this report will assist to:

- Enhance and Ensure Community Safety, Health & Wellness.

Improvements to community safety have been noted due to the reduction in vehicle speeds and a reduction in the number of collisions. Also, the use of the Radar Message Boards as an educational tool and the partnership with York Regional Police has proven to be effective.

This report is consistent with the priorities previously set by Council.

#### Regional Implications

Not Applicable.

#### Conclusion

It is recommended that no further action is required within the communities of Vellore Woods subdivision, Vaughan Mills Road, Parkfield Court and Hawkview Boulevard as the traffic data indicates a reduction in both vehicle speeds and collisions.

Based on the review for Summeridge Drive and Autumn Hill Boulevard, it is recommended to replace the existing bollard extensions with full curb and gutter design in the amount of \$100,000. The project has been submitted for consideration as part of the 2012 Capital budget process.

**Attachments**

1. Summeridge Drive Traffic Calming Detail
2. Autumn Hill Boulevard Traffic Calming Detail
3. Traffic Calming Technical Analysis

**Report prepared by:**

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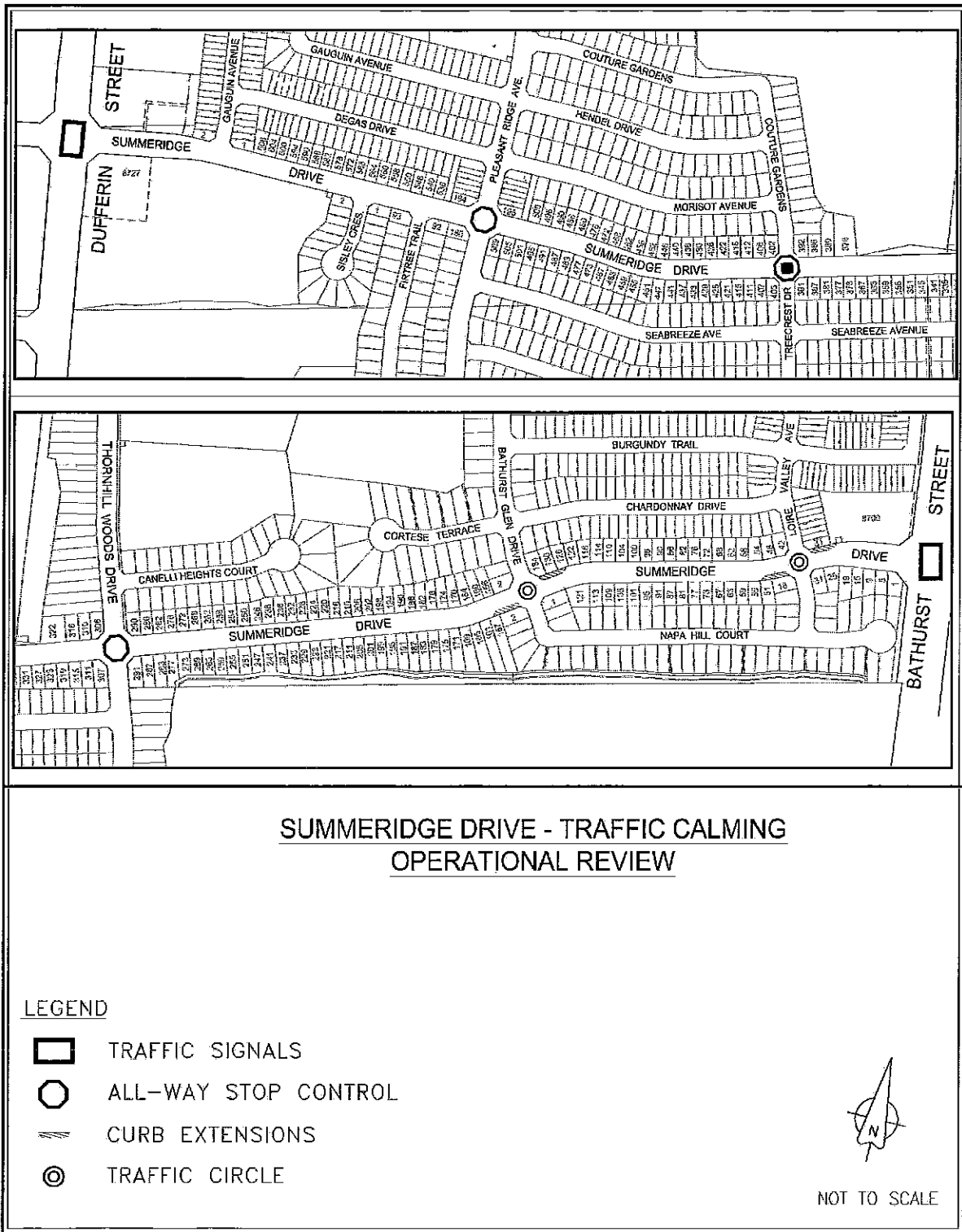
Respectfully submitted,

Paul Jankowski  
Commissioner of Engineering and Public Works

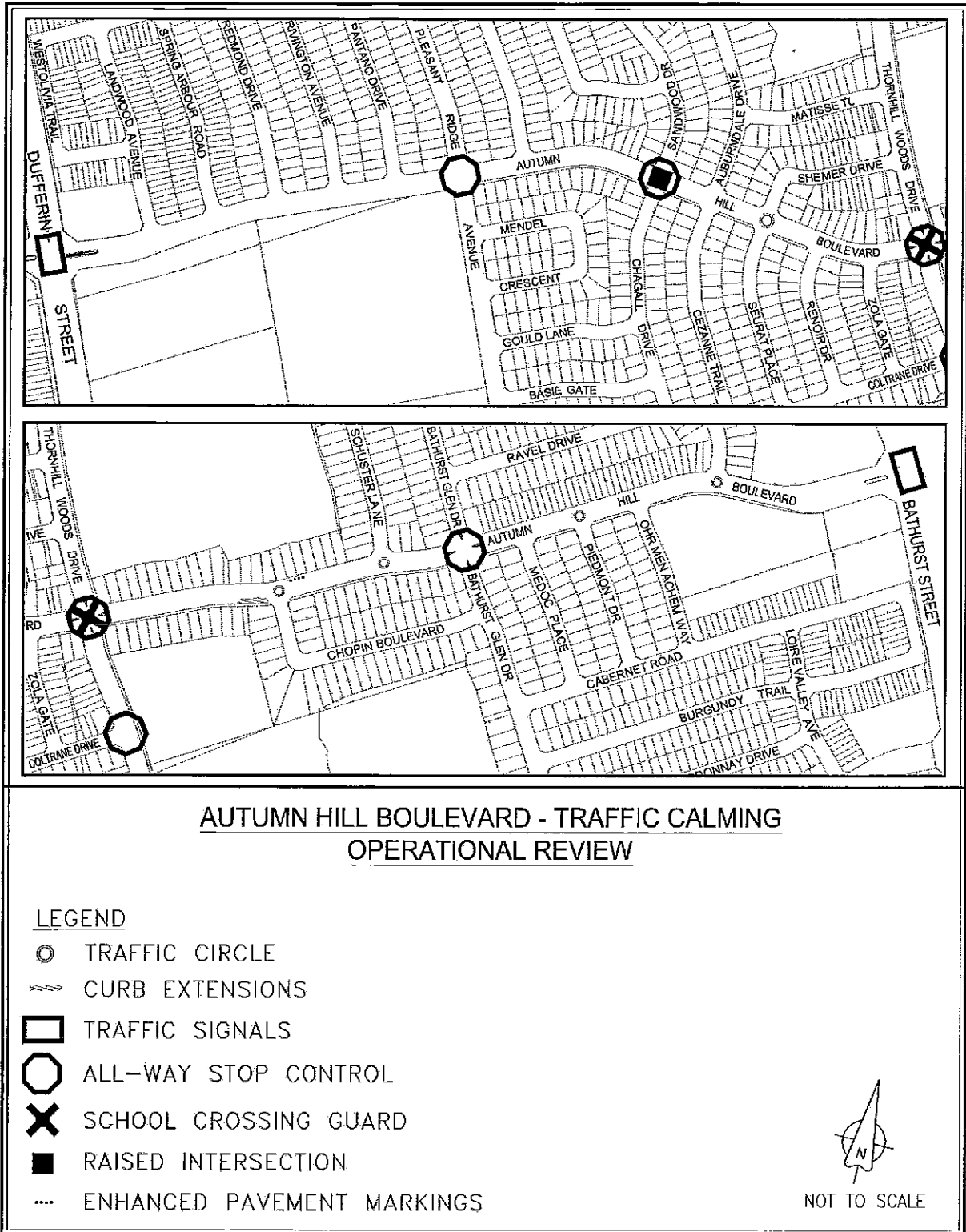
Jack Graziosi  
Director of Engineering Services

MR:mm

# ATTACHMENT No. 1



## ATTACHMENT No. 2



# ATTACHMENT NO. 3

## TRAFFIC CALMING TECHNICAL ANALYSIS

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# 1) Summeridge Drive

The Summeridge Drive Traffic Calming Plan was approved by Council at its meeting on June 16, 2008. The approved traffic calming measures for Summeridge Drive are:

- Two Traffic Circles at the intersections of:
  - Summeridge Drive/Bathurst Glen Drive.
  - Summeridge Drive/Loire Valley Avenue.
- Centre Medians at 11 locations.
- Intersection Medians at:
  - Summeridge Drive/Pleasant Ridge Avenue.
  - Summeridge Drive/Thornhill Woods Drive.
- Intersection Curb Bump-Outs:
  - Summeridge Drive and Gauguin Avenue.

Refer to Figure 1 for the traffic calming plan locations.

Staff collected Automatic Traffic Recorder 24-hour data at the following locations. The table shows a comparison in average speeds before and after installation. Speed data was collected in 2010 near the traffic circles.

Location	Direction	2007	2010	Net Change
		Average Speed	Average Speed	Km/h (%)
Summeridge Drive east of Bathurst Glen Drive	Eastbound	51	42	-9 km/h (17%)
	Westbound	50	36	-14 km/h (28%)
Summeridge Drive east of Thornhill Woods Drive	Eastbound	50	38	-12 km/h (24%)
	Westbound	51	37	-14 km/h (27%)
Summeridge Drive east of Treecrest Drive	Eastbound	50	n/a	n/a
	Westbound	50	n/a	n/a
Summeridge Drive east of Gauguin Avenue	Eastbound	47	n/a	n/a
	Westbound	50	n/a	n/a

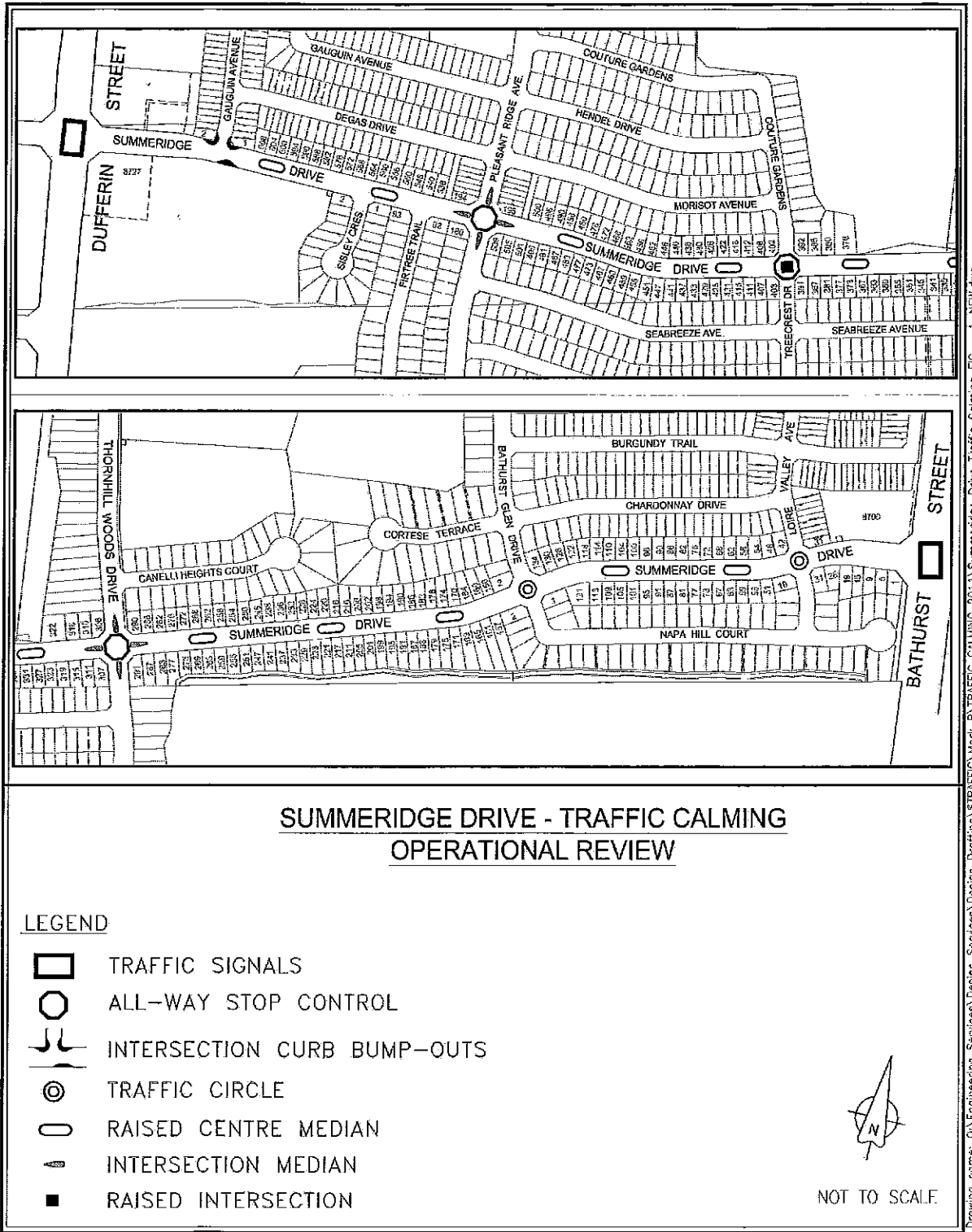
The average speeds saw reductions ranging from 9 to 14 km/h between the 2007 to 2010 studies. The posted speed limit on Summeridge Drive from Bathurst Street to Dufferin Street is 40 km/h. The average speeds noted near Treecrest Drive and Gauguin Avenue in 2007 are similar to those collected elsewhere on Summeridge Drive.

After the installation of all the traffic calming measures for Summeridge Drive, staff received numerous complaints from the community on the retro-fit traffic circles. The design of the traffic circles were incorporated within the existing intersection pavement width. Some of the concerns identified included:

- Motorists are not familiar with the operation of a traffic circle
- Safety for pedestrians to cross
- Speeding around the traffic circle
- Impact to Emergency Service vehicles
- Notification on the newly installed traffic circles

The School Boards provided comment that the traffic circles on Summeridge Drive (particularly Summeridge Drive and Bathurst Glen Drive) are impossible for a 72 seat bus to negotiate thus, routes are planned to avoid left and right turns.

FIGURE No. 1



An outside consultant, Ourston Roundabout Engineering was hired, who specialize in traffic circles/round-a-bouts, to address the concerns of pedestrian safety, speeding within the traffic circle and overall operations. The consultant recommended enhancing the existing pedestrian crossing areas at the traffic circles, revising the existing pavement markings and adding curb extensions on the approaches to reduce the vehicle speeds entering the traffic circle.

In Fall 2010, staff completed a number of improvements that were suggested by the consultant and are identified below.

- Yellow durable non-slip material was installed to the existing pedestrian crossing areas at the traffic circles.
- On a trial period, plastic bollards were placed on the approaches as a curb extension design in advance of the traffic circle.
- To advise motorists that they are approaching a traffic circle, "NEW" Starburst warning signs were installed on all approaches.

As part of an educational strategy, Engineering Services staff developed and circulated a pamphlet to the residents within the community in the Fall 2009. The information in the pamphlet addressed the operation of the traffic circle as it relates to motorist and pedestrian movements and right of way.

Additionally, Radar Message Boards were installed on Summeridge Drive at #90 Summeridge Drive (westbound) and at #187 Summeridge Drive (eastbound) from September 24, 2010 to December 14, 2010.

The Radar Message Boards were also part of an education and enforcement program to further improve driver behaviour on Summeridge Drive. The data collected on average speeds by the Radar Message Boards is also consistent with previous data collected.

York Regional Police has also dedicated significant staff time to provide education on the operation of the traffic circles. York Regional Police have conducted enforcement of the existing speed limits after the traffic calming measures were built. Based on feedback from York Regional Police, they have indicated that there has been a considerable improvement in driver habits at the traffic circles.

Automatic Traffic Recorders were installed in 2011 after the installation of the plastic bollards at the following locations. Data collected has remained relatively consistent with previous data collected in 2010.

Engineering Services staff observed that the most effective curb extension was the shortest and most abrupt layout. Arrangements were made to have the other locations shortened to improve their effectiveness. Vehicle speeds have been observed to dramatically reduce before entering the circle. The bollards have been in-place through two winter seasons with minimal operational problems.

Collision history data was compiled for the years 2006 to 2011 to determine the number of collisions on Summeridge Drive pre and post traffic calming measures. From 2006 to late 2008, there were a total of 15 collisions along Summeridge Drive. After installation, there were a total of 4 collisions.

Based on traffic data, staff observations and the collision history reduction, the trial period for the plastic bollards placed in advance of the traffic circle have worked effectively. Staff recommends that the existing bollard extensions at the traffic circles on Summeridge Drive be removed and replaced with full curb and gutter design.

## 2) Autumn Hill Boulevard

The Autumn Hill Boulevard Traffic Calming Plan was approved by Council at its meeting on June 16, 2008. The approved traffic calming measures for Autumn Hill Boulevard are:

- Five Traffic Circles:
  - Autumn Hill Boulevard and Shemer Drive.
  - Autumn Hill Boulevard and Chopin Boulevard.
  - Autumn Hill Boulevard and Schuster Lane.
  - Autumn Hill Boulevard and Piedmont Drive.
  - Autumn Hill Boulevard and Knightshade Drive.
- Centre Medians (8 locations).
- Intersection Medians:
  - Autumn Hill Boulevard and Pleasant Ridge Avenue.
  - Autumn Hill Boulevard and Thornhill Woods Drive.
  - Autumn Hill Boulevard and Bathurst Glen Drive.

Refer to Figure 2 for the traffic calming plan locations.

Staff collected Automatic Traffic Recorder 24-hour data at the following locations. The table shows a comparison in average speeds before and after installation. Speed data was collected in 2010 near the traffic circles.

Location	Direction	2007	2011	Net Change
		Average Speed	Average Speed	Km/h (%)
Autumn Hill Boulevard west of Pleasant Ridge Avenue	Eastbound	45	43	-2 km/h (4%)
	Westbound	46	42	-4 km/h (8%)
Autumn Hill Boulevard west of Thornhill Woods Drive	Eastbound	46	41	-5 km/h (10%)
	Westbound	44	41	-3 km/h (%)
Autumn Hill Boulevard east of Thornhill Woods Drive	Eastbound	46	44	-2 km/h (6%)
	Westbound	40	43	+3 km/h (+8%)
Autumn Hill Boulevard east of Bathurst Glen Drive	Eastbound	50	44	-6 km/h (12%)
	Westbound	46	42	-4 km/h (8%)

The average speeds saw reductions ranging from 2 to 6 km/h between the 2007 to 2011 studies. The posted speed limit on Autumn Hill Boulevard from Bathurst Street to Dufferin Street is 40 km/h.

Additionally, Radar Message Boards were installed on Autumn Hill Boulevard east of Chopin Boulevard from May 2, 2011 to June 10, 2011.

After the installation of all the traffic calming measures for Autumn Hill Boulevard, staff received numerous complaints from the community on the retro-fit traffic circles. The design of the traffic circles were incorporated within the existing intersection pavement width. Some of the concerns identified included:

- Motorists are not familiar with the operation of a traffic circle
- Safety for pedestrians to cross
- Speeding around the traffic circle
- Impact to Emergency Service vehicles
- Notification on the newly installed traffic circles

The School Boards provided comment that the traffic circles on Autumn Hill Boulevard are impossible for a 72 seat bus to negotiate thus, routes are planned to avoid left and right turns.

An outside consultant, Ourston Roundabout Engineering was hired, who specialize in traffic circles/round-a-bouts, to address the concerns of pedestrian safety, speeding within the traffic circle and overall operations. The consultant recommended enhancing the existing pedestrian crossing areas at the traffic circles, revising the existing pavement markings and adding curb extensions on the approaches to reduce the vehicle speeds entering the traffic circle.

In Fall 2010, staff completed a number of improvements that were suggested by the consultant and are identified below.

- Yellow durable non-slip material was installed to the existing pedestrian crossing areas at the traffic circles.
- On a trial period, plastic bollards were placed on the approaches as a curb extension design in advance of the traffic circle.
- To advise motorists that they are approaching a traffic circle, "NEW" Starburst warning signs were installed on all approaches.

As part of an education strategy, Engineering Services staff developed and circulated a pamphlet to the residents within the community in the Fall 2009. The information in the pamphlet addressed the operation of the traffic circle as it relates to motorist and pedestrian movements and right of way.

York Regional Police has also dedicated significant staff time to provide education on the operation of the traffic circles. York Regional Police have conducted enforcement of the existing speed limits after the traffic calming measures were built. Based on feedback from York Regional Police, they have indicated that there has been a considerable improvement in driver habits at the traffic circles.

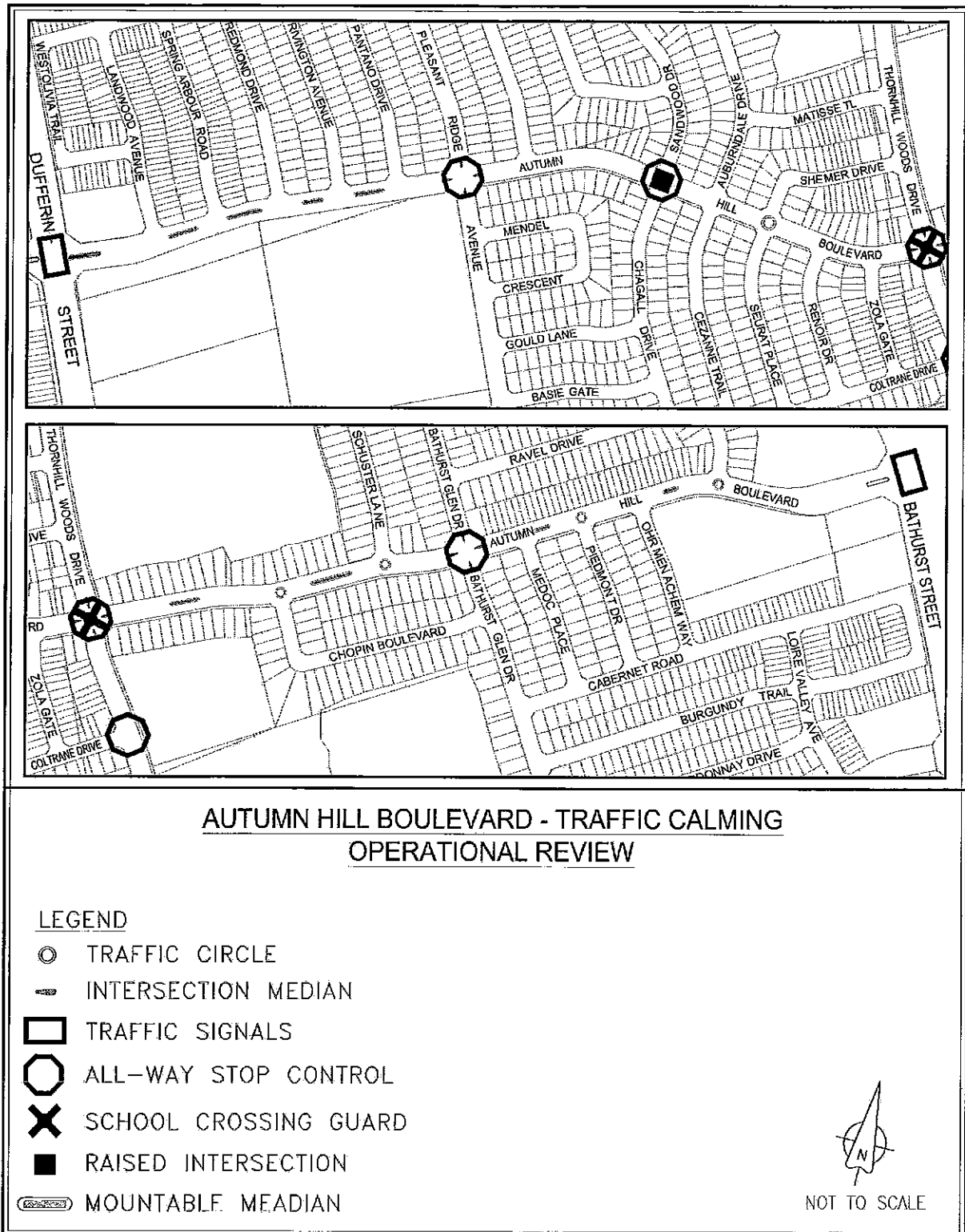
The Radar Message Boards were also part of an education and enforcement program to further improve driver behaviour on Autumn Boulevard. The data collected on average speeds by the Radar Message Boards is consistent with previous data collected.

Collision history data was compiled for the years 2006 to 2011 to determine the number of collisions on Autumn Hill Boulevard pre and post traffic calming measures. From 2006 to late 2008, there were a total of 15 collisions along Autumn Hill Boulevard. After installation, there were a total of 7 collisions.

Engineering Services staff observed that the most effective curb extension was the shortest and most abrupt layout. Arrangements were made to have the other locations shortened to improve their effectiveness. Vehicle speeds have been observed to dramatically reduce before entering the circle. The bollards have been in-place through two winter seasons with minimal operational problems.

Based on traffic studies, the trial plastic bollards placed in advance of the traffic circle have worked effectively. Staff recommends that the existing bollard extensions at the traffic circles on Autumn Hill Boulevard be removed and replaced with full curb and gutter design.

FIGURE No. 2



### 3) Vellore Woods Subdivision

The Vellore Woods Neighbourhood Traffic Calming Plan was approved by Council at its meeting on February 4, 2008. The approved traffic calming measures for the Vellore Woods neighbourhood are:

- Two Speed Humps:
  - Wildberry Crescent south of Skylark Drive.
  - Hawkview Boulevard north of Timberland Drive.
- Centre Medians:
  - Hawstone Road between Starling Boulevard and Tern Drive.
  - Ashberry Boulevard between Starling Boulevard and Royview Crescent.
  - Vellore Woods Boulevard between Bucksaw Drive and Ashberry Boulevard.
  - Vellore Woods Boulevard between Shadetree Crescent and Timberland Drive.
- Intersection Medians:
  - Hawkview Boulevard and Osprey Drive.

Refer to Figure 3 for the traffic calming plan locations.

Staff collected Automatic Traffic Recorder 24-hour data at the following locations. The table shows a comparison in average speeds before and after installation. Before speed data was not collected for the four Centre Median locations.

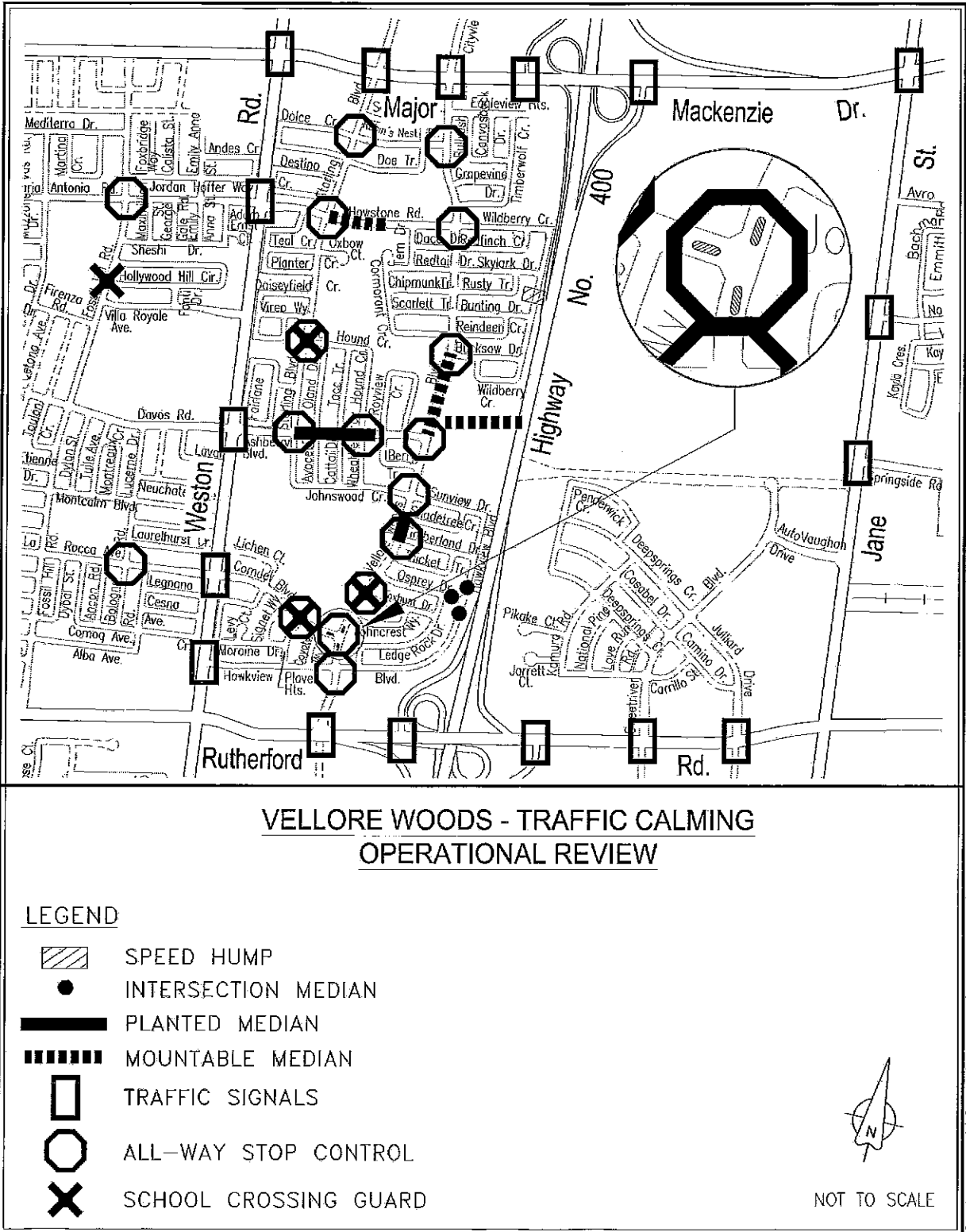
Location	Direction	2007	2011	Net Change
		Average Speed	Average Speed	Km/h (%)
Hawkview Boulevard north of Timberland Drive	Eastbound	44	32	-12 km/h (27%)
	Westbound	46	29	-17 km/h (37%)
Wildberry Crescent south of Skylark Drive	Eastbound	41	28	-13 km/h (31%)
	Westbound	40	29	-11 km/h (27%)
Hawstone Road east of Starling Boulevard	Eastbound	n/a	47	n/a
	Westbound	n/a	46	n/a
Ashberry Boulevard east of Ohlund Drive	Eastbound	n/a	41	n/a
	Westbound	n/a	41	n/a
Vellore Woods Boulevard north of Ashberry Boulevard	Northbound	n/a	47	n/a
	Southbound	n/a	46	n/a
Vellore Woods Boulevard north of Timberland Drive	Northbound	n/a	38	n/a
	Southbound	n/a	37	n/a

The average speeds saw reductions ranging from 11 to 17 km/h at the two speed hump locations on Hawkview Boulevard and Wildberry Crescent.

Due to the intersection geometrics, the intersection median on the west approach at Hawkview Boulevard and Osprey Drive will be relocated further west. The relocation of the median will allow waste collection vehicles to successfully negotiate turning movements from Hawkview Boulevard to Osprey Drive.

Collision history data was compiled for the years 2006 to 2011 to determine the number of collisions on the subject roads pre and post traffic calming measures. From 2006 to 2009, there were a total of 10 collisions on the subject roads (7 on Vellore Woods Boulevard, 2 on Hawstone Road, 1 on Ashberry Boulevard). After installation, there have been no recorded collisions on these streets in the area of the traffic calming installations.

FIGURE No. 3



Based on the above information, the traffic calming measures have reduced vehicle speeds and improved safety. Staff recommends that no further action is required within this community as the existing traffic calming measures are working effectively.

#### 4) Vaughan Mills Road

The Vaughan Mills Road near Humberview Drive Traffic Calming Plan was approved by Council at its meeting on June 16, 2008. The approved traffic calming measures for Vaughan Mills Road are:

- Chicane at Vaughan Mills Road south of Humberview Drive.
- Mountable Traffic Circle at Vaughan Mills Road and Humberview Drive.
- 2 Chicanes/Curb Extensions on Vaughan Mills Road, north of Humberview Drive to Roselawn Drive

Refer to Figure 4 for the traffic calming plan locations.

Staff collected Automatic Traffic Recorder 24-hour data for the data collected in 2007. The data collected in 2010 was collected by Radar Message Speed Boards. The table shows a comparison in average speeds before and after installation.

Location	Direction	2007	2010	Net Change
		Average Speed	Average Speed	Km/h (%)
Vaughan Mills Road south of Humberview Drive	Northbound	53	47	-6 km/h (11%)
	Southbound	56	52	-4 km/h (7%)
Vaughan Mills Road south of Roselawn Drive	Northbound	48	46	-2 km/h (4%)
	Southbound	49	49	-0 km/h (0%)

The average speeds saw reductions ranging from 0 to 6 km/h between the 2007 to 2011 studies on Vaughan Mills Road south of Roselawn Drive. The posted speed limit on Vaughan Mills Road is 40 km/h.

Additionally, Radar Message Boards were installed on Vaughan Mills Road south of Humberview Drive from March 21, 2011 to April 29, 2011.

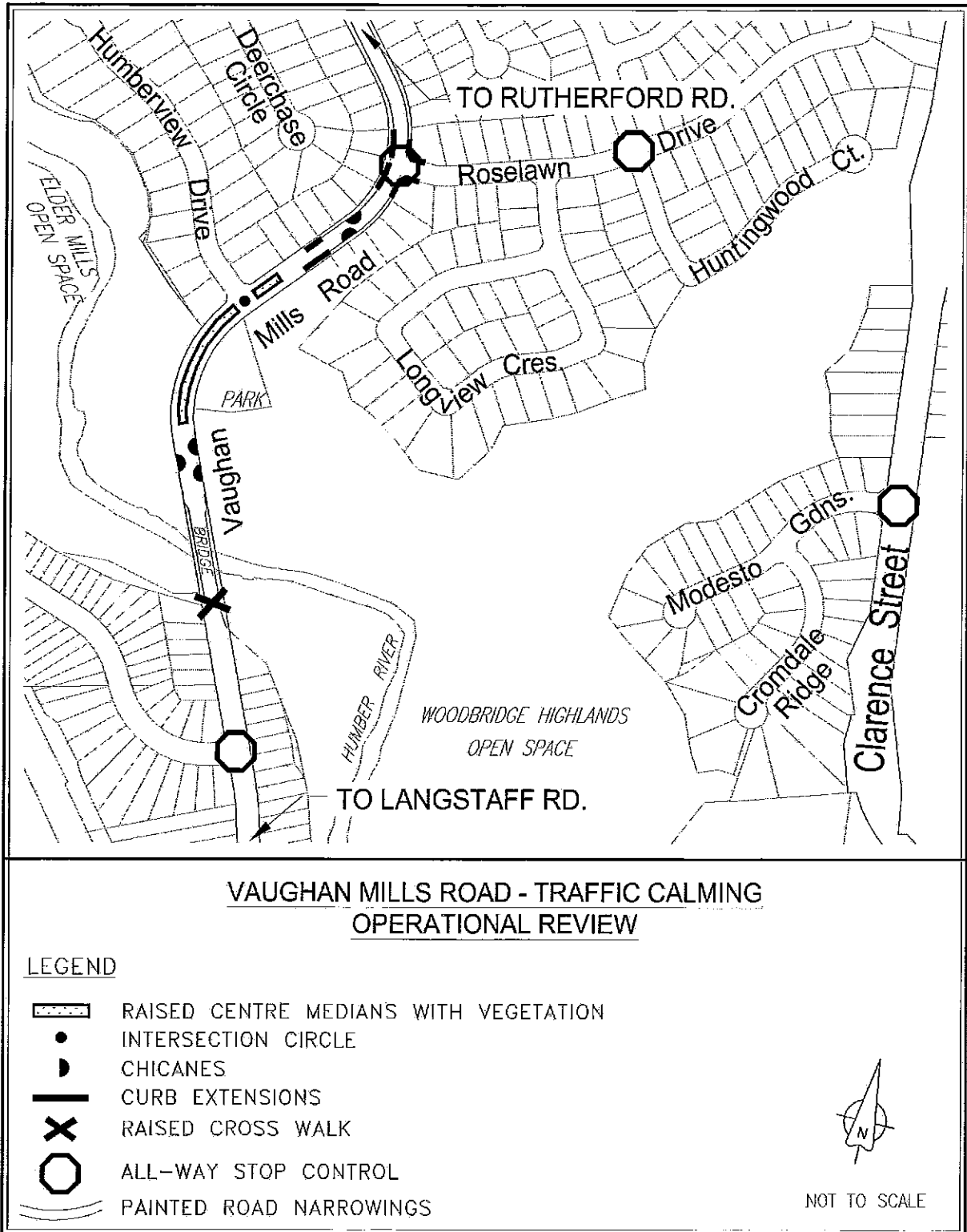
The Radar Message Boards were an additional educational tool to further improve driver behaviour on Vaughan Mills Road. The average speed data collected by the Radar Message Boards is also consistent with previous data collected.

The School Boards indicated that the traffic circle at Vaughan Mills Road and Humberview Drive is difficult for a school bus to negotiate and provided a comment that this intersection would be better served with an all-way stop control. The traffic circle at this intersection is mountable to allow school buses and other trucks the ability to turn onto Humberview Drive.

Collision history data was compiled for the years 2006 to 2011 to determine the number of collisions on Vaughan Mills Road pre and post traffic calming measures. From 2006 to late 2008, there was one collision. After installation, there have been no recorded collisions on Vaughan Mills Road in the area of the traffic calming installations.

Based on above information, the traffic calming measures are working effectively to reduce vehicle speeds and improve safety. Staff recommends no further action is required within this community as the existing traffic calming measures are working effectively.

FIGURE No. 4



5) Hawkview Boulevard

The Hawkview Boulevard Traffic Calming Plan was approved by Council at its meeting on May 12, 2009. The approved traffic calming measure for Hawkview Boulevard was:

- Speed Cushion on Hawkview Boulevard east of Ledge Rock Drive.

Refer to Figure 5 for the location of the speed cushion.

Staff collected Automatic Traffic Recorder 24-hour data at the following location. The table shows a comparison in average speeds before and after installation.

Location	Direction	2007	2011	2011	Net Change
		Average Speed West of Speed Cushion	Average Speed West of Speed Cushion	Average Speed East of Speed Cushion	Km/h (%)
Hawkview Boulevard east of Ledge Rock Drive	Eastbound	45	37	35	-8 to -10 km/h (18-23%)
	Westbound	46	37	36	-9 to -10 km/h (20-22%)

The average speeds saw reductions ranging from 8 to 10 km/h at the speed cushion location on Hawkview Boulevard. The posted speed limit on Hawkview Boulevard is a statutory 50 km/h.

Collision history data was compiled for the years 2006 to 2011 to determine the number of collisions on Hawkview Boulevard pre and post the traffic calming measures. There have been no recorded collisions on Hawkview Boulevard in the area of the speed cushion from 2006 to 2011.

Based on traffic studies, staff recommends no further action is required within this community as the existing speed cushion is working effectively.

6) Parkfield Court

The Parkfield Court Traffic Calming Plan was previously approved by Council at its meeting on July 13, 2010. The approved traffic calming measures for Parkfield Court was:

- Speed Cushion on Parkfield Court north of Creekwood Court.

Refer to Figure 6 for the traffic calming plan location.

Staff collected Automatic Traffic Recorder 24-hour data at the following location. The table shows a comparison in average speeds before and after installation.

Location	Direction	2009	2011	Net Change
		Average Speed	Average Speed	Km/h (%)
Parkfield Court north of Creekwood Court	Northbound	24	15	-9 km/h (37%)
	Southbound	25	15	-10 km/h (40%)

The average speeds saw reductions of 9 to 10 km/h between the 2009 to 2011 studies on Parkfield Court north of Creekwood Court. The average speeds are very low, reflecting both the new Speed Cushion installation as well as the residential nature of this cul-de-sac. The speed limit on Parkfield Court is a statutory 50 km/h.

Collision history data was compiled for the years 2006 to 2011 to determine the number of collisions on Parkfield Court pre and post the traffic calming measures. There have been no recorded collisions on Parkfield Court from 2006 to 2011.

Based on traffic studies, staff recommends no further action is required within this community as the existing speed cushion is working effectively.

FIGURE No. 5

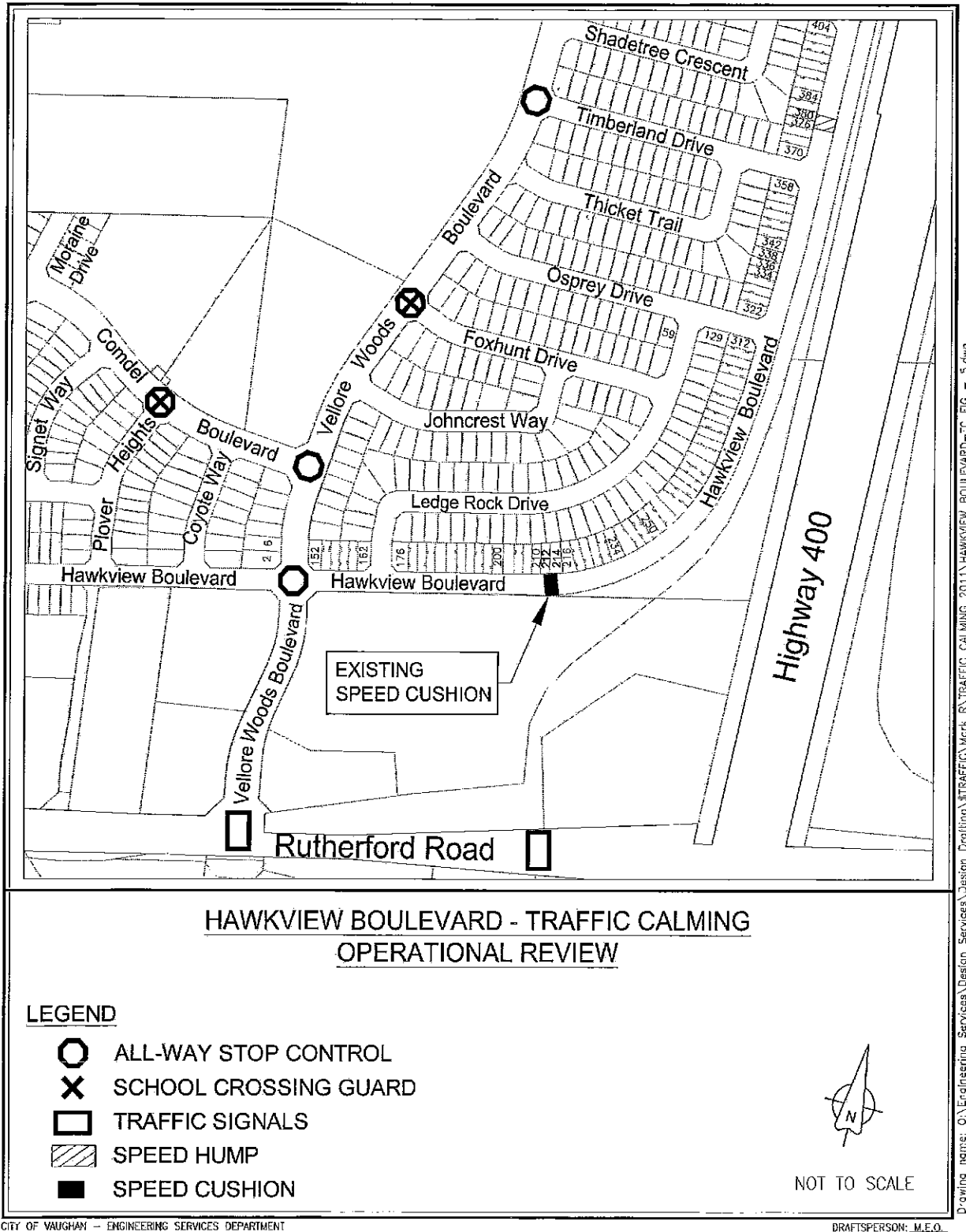


FIGURE No. 6

