

CITY OF VAUGHAN

EXTRACT FROM COUNCIL MEETING MINUTES OF OCTOBER 19, 2016

Item 6, Report No. 34, of the Committee of the Whole, which was adopted without amendment by the Council of the City of Vaughan on October 19, 2016.

**6 THE USE OF RADAR MESSAGE BOARDS IN THE CITY OF VAUGHAN
CITY-WIDE**

The Committee of the Whole recommends approval of the recommendation contained in the following report of the Deputy City Manager of Public Works and the Director of Transportation Services, Parks and Forestry Operations, dated October 5, 2016:

Recommendation

The Deputy City Manager of Public Works and the Director of Transportation Services, Parks and Forestry Operations in consultation with the Director of By-Law & Compliance, Licensing & Permit Services and the Director of Financial Planning and Development Finance and Deputy City Treasurer recommend:

1. That the Speed Compliance Program (the Program) be continued, and expanded to for a two week period for each School Zone location;
2. That locations where speed is a concern be identified as pilot projects for longer term installation of Radar Message Boards (RMBs); and
3. That a capital project be included in the 2017-2020 Draft Budget for the addition of Radar Message Boards for the proposed expansion of the Program.

Contribution to Sustainability

This report contributes to the goals and objectives within Green Directions Vaughan, the City's Community Sustainability and Environmental Master Plan, specifically:

Goal 3: To ensure that Vaughan is a city that is easy to get around with a low environmental impact.

Objective 3.2: To develop and sustain a network of roads that supports efficient and accessible public and private transit.

Economic Impact

The activities associated with the Program are fully funded through the approved 2016 Operating Budget.

The cost to administer the planned 2016 Program is estimated to be \$67,000 which includes, but is not limited to; program development, equipment set up and dismantling, compilation and analysis of data, and maintenance costs.

The useful life of RMBs varies from five to eight years. The City currently owns ten RMBs, which boards have been in use for over nine years. A new investment for RMBs will be required in 2017 and beyond to continue the Program, including planned program expansion to meet new demands.

Approximately 22 new RMBs will be required to expand the Program to include School Zones (12 RMBs) and pilot projects (10 RMBs) over a longer term period. The average cost of a RMB is approximately \$6,500. The total estimated capital cost for the proposed expansion is approximately \$150,000 for 2017.

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A capital project for the proposed expansion of the Program will be submitted for consideration as part of the 2017 budget process. Funding for the ongoing operating costs to administer the Program will be allocated within the department's operating budget in the respective budget year.

Communications Plan

Staff will inform York Regional Police, the York Region District School Board, and the York Catholic District School Board on the outcome of this report.

Purpose

The purpose of this report is to assess the effectiveness and costs regarding the use of RMBs, and the feasibility of additional pilot projects and permanent locations for these RMBs, as per Council direction at its December 9, 2014 meeting, as outlined in Attachment 1.

Background - Analysis and Options

Radar Message Boards are effective as a community tool to raise awareness of motorist's travel speeds.

The Program is an initiative to raise awareness of motorist travel speeds by using RMBs. The Program is based on the principle that many motorists are somewhat unaware that they are travelling at an excessive rate of speed, since most motorists generally drive at a speed deemed comfortable, depending on road geometry and roadside development. The operating speed electronically displayed on the RMBs is a strong visual reminder to the motorist to comply with the posted speed limit.

Preliminary data indicates that the Program has realized some improvements to compliance of posted speed limit, however, more data and analysis is required.

The Program proactively addresses two types of areas: School Zones and higher capacity roadways with speeding concerns and/or in locations where consistent speeding issues are noted.

School Zones

The Program for School Zones was initially launched in 2005 with the primary focus of using RMBs as an education tool to raise awareness of motorist travel speeds through School Zones. The Program was well received by school administrators, who welcomed raising awareness on safety within school communities.

The 2015 and 2016 School Zones schedule included 48 locations in elementary schools with both the Public and Catholic school boards. The 2016 program schedule is outlined in Attachments 2 and 3. RMBs were placed in a school location for one week in the spring and fall, to align with increased pedestrian activity.

To measure the effectiveness of the Program for School Zones, speed data was collected using Automatic Traffic Recorders (ATRs) on a 24 hour basis at various school locations. The details of the data and analysis are shown in Attachment 4. In general, the data showed compliance of posted speed limit when the RMBs were present.

Higher Capacity Roadways

The higher capacity roadways were considered in two components in the Program:

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- Speed monitoring on a reactive basis in response to concerns raised by residents, and as received by staff. The RMBs were installed for a two (2) week period at each location.
- Focus on collector and feeder roads with consistent speeding issues noted. The RMBs were installed for an eight week period at each location.

Measuring the effectiveness of the Two (2) Week Program

To measure the effectiveness of the Program for the Higher Capacity Roadways, Speed data was collected using ATRs on a 24 hour basis at selected 13 locations for the two (2) week program, as shown in Attachment 4. The results showed that there are some improvements to speeds during the RMBs installation.

Measuring the effectiveness of the eight (8) Weeks Program

Speed data was collected using ATRs on a 24 hour basis for the eight (8) week Program at five (5) locations, as shown in Attachment 4. While the RMBs were installed, the average speed was found to be lowered by seven (7) km/h and the 85th percentile speed was lowered by eight (8) km/h.

Further, a pilot project launched in 2013 to have RMBs installed on Melville Avenue for more than twelve (12) months (excluding winter months), recorded significantly reduced operating speeds for the southbound direction in spring 2015 when the RMBs were installed. The average and 85th percentile speeds for the southbound traffic were reduced by 11 km/h and 17 km/h, respectively.

An environmental scan of other Municipalities found that RMBs were an effective tool to raise awareness of operating speed.

Staff consulted with other municipalities on the use of RMBs, including Town of Richmond Hill, City of Markham, City of Hamilton, City of Brampton, and Calgary.

Similar to the City of Vaughan, other municipalities in the GTHA used RMBs as part of their speed monitoring program, to educate and inform the drivers about their travel speeds and to increase motorists' road and safety awareness. The Town of Richmond Hill currently has 26 RMBs, City of Markham has 16 RMBs, and the City of Hamilton has 10 RMBs, but is in the process of purchasing an additional 8 RMBs per ward (Hamilton has 15 wards). The duration of the programs varied from two weeks, to one (1) month, two (2) months or twelve (12) months in each municipality. In general, locations were based on community requests, validated through traffic data and assessment. Studies suggested that the use of RMBs in these municipalities is effective at reducing the operating speed and increasing compliance to posted speed when present.

A research conducted by the City of Calgary suggested that RMBs appear to be effective in reducing speeds during installation as well as after removal.

The 2017 Program will be a partnership with York Regional Police and expand into School Zones as well as include one long term pilot location within each ward.

The RMBs have been well-received as a community education tool to raise awareness of motorist travel speed. The preliminary data assessment, together with best practices from other municipalities pointed to having the RMBs possible rotation for a two week period and/or longer period of time. Staff recommend expanding the installation of RMBs in School Zones (elementary schools) to a two (2) week period at each location for 67 schools and in higher capacity roadways

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for an eight (8) week period for each location (about 18 locations), and to select (5) five locations where speeding has been identified as a prevalent issue to pilot for an extended period of time. The locations are to be selected based on community requests, validated through traffic data and assessment. A monitoring plan will be developed to further assess the effectiveness of the overall program.

The 2017 Program will be coordinated with the Regional Police in joint efforts to address speeding. Regional Police will arrange direct enforcement at locations with RMBs to create a Halo effect. By aligning the interest and resources of the police and City, the Program will improve effectiveness in efforts towards enhancing road safety.

Relationship to Vaughan Vision 2020/Strategic Plan

In consideration of the strategic priorities related to the Term of Council Service Excellence Strategy Map (2014-2018), the Speed Compliance Program will improve traffic operations and safety for all road users, thus promoting community safety, health and wellness.

Regional Implications

Staff consulted with the York Regional Police regarding the Program and received support. Staff will coordinate with the Regional Police to develop the 2017 Program.

Staff will inform York Regional Police, the York Region District School board, and the York Catholic District School Board on the outcome of this report.

Conclusion

RMBs have been well-received as a community tool to raise awareness of motorist travel speeds. Preliminary data analysis indicates the Program has realized some improvements to compliance of posted speed limits. It is recommended to continue and expand the 2017 Program. The 2017 Program will expand into School Zones (elementary schools) for a two week period at each location and include one pilot project location in each ward with a Police partnership to continue to measure the effectiveness of the Program. A monitoring plan will be developed to further assess the overall effectiveness of the Program.

Attachments

1. Extract from Council Meeting Minutes of December 9, 2014
2. 2016 Speed Compliance Program Schedule – School Zone
3. 2016 Speed Compliance Program Schedule – Higher Capacity Roadway
4. Summaries for 2015 Radar Message Board Effectiveness Analyses

Report prepared by:

Wai Lam Tang, Senior Traffic Technologist, Ext. 6125
Margie Chung, Manager of Traffic Engineering, Ext. 6173

(A copy of the attachments referred to in the foregoing have been forwarded to each Member of Council and a copy thereof is also on file in the office of the City Clerk.)

**THE USE OF RADAR MESSAGE BOARDS IN THE CITY OF VAUGHAN
CITY-WIDE****Recommendation**

The Deputy City Manager of Public Works and the Director of Transportation Services, Parks and Forestry Operations in consultation with the Director of By-Law & Compliance, Licensing & Permit Services and the Director of Financial Planning and Development Finance and Deputy City Treasurer recommend:

1. That the Speed Compliance Program (the Program) be continued, and expanded to for a two week period for each School Zone location;
2. That locations where speed is a concern be identified as pilot projects for longer term installation of Radar Message Boards (RMBs); and
3. That a capital project be included in the 2017-2020 Draft Budget for the addition of Radar Message Boards for the proposed expansion of the Program.

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Report prepared by:

Wai Lam Tang, Senior Traffic Technologist, Ext. 6125
Margie Chung, Manager of Traffic Engineering, Ext. 6173

Respectfully submitted,

Paul Jankowski
Deputy City Manager of Public Works

Zoran Postic
Director of Transportation Services,
Parks and Forestry Operations

ATTACHMENT No.1

CITY OF VAUGHAN

EXTRACT FROM COUNCIL MEETING MINUTES OF DECEMBER 9, 2014

Item 61, Report No. 41, of the Committee of the Whole, which was adopted without amendment by the Council of the City of Vaughan on December 9, 2014.

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NEW BUSINESS – RADAR MESSAGE BOARDS

The Committee of the Whole recommends approval of the recommendation contained in the following resolution submitted by Councillor Racco, dated December 2, 2014:

Member's Resolution

Submitted by Councillor Yeung Racco.

Whereas radar message boards are recently being used across the City of Vaughan more frequently as a traffic calming measure; and

Whereas traffic engineering staff have already set up school zone radar message board projects and speed compliance radar message board programs as traffic calming initiatives.

Be it therefore resolved:

1. That appropriate staff bring forward a report by the completion of the first quarter of 2015 to a Committee of the Whole meeting regarding the use of radar message boards in the City of Vaughan, including their effectiveness, capital and operating costs, and the feasibility of additional pilot projects and permanent locations for these radar message boards.

The foregoing matter was brought to the attention of the Committee by Councillor Racco.

ATTACHMENT No. 2

2016 Speed Compliance Program Schedule – School Zones			
	Week Of:	Ward	Road
1	21-Mar-16	3	Lawford Road near Guardian Angels CES
2		4	Peter Rupert Avenue near Romeo Dallaire PS
3	28-Mar-16	2	Terra Road near St Catherine of Siena CES
4		1	Killian Road near St David CES
5	4-Apr-16	5	New Westminster Drive near Holy Family CES
6		3	Via Campanile near Pierre Berton PS
7	11-Apr-16	2	Coronation Street near San Marco CES
8		4	Thornhill Woods Drive near Thornhill Woods PS
9	18-Apr-16	5	Atkinson Ave, south of Campbell Ave near Netivot Hatorah Day School
10		1	Barrhill Road, near Our Lady of Peace CES
11	25-Apr-16	3	Velmar Drive, near St Clare CES
12		2	Kipling Avenue, N/S of Burwick Avenue near Woodbridge PS
13	2-May-16	4	Grand Trunk Avenue near Dr. Roberta Bondar PS
14		1	Hawker Road near Blessed Trinity CES
15	9-May-16	5	Worth Boulevard near Ventura Park PS
16		3	Aberdeen Avenue near St Francis of Assisi School
17	16-May-16	2	Napa Valley Avenue near Lorna Jackson PS
18		4	Thomas Cook Avenue near Nellie McClung PS
19	23-May-16	1	Del Franseca Way near St James CES
20		4	Apple Blossom Drive near Carville Mills PS
21	30-May-16	5	Glen Shield Avenue near Our Lady of Rosary CES
22		3	Via Campanile near St Michael the Archangel CES
23	6-Jun-16	2	Napa Valley Avenue near Elder's Mill PS
24		1	St Joan of Arc Avenue near Holy Jubilee CES
25	13-Jun-16	4	Peter Rupert Avenue near St Cecilia CES
26		5	Mullen Drive near Westminster PS
27	20-Jun-16	3	Vellore Park Avenue near St Mary of the Angels CES
28		2	Forest Fountain Drive near St Andrew CES
29	12-Sep-16	4	Forest Run Boulevard near Forest Run PS
30		1	Netherford Road near Joseph A. Gibson PS
31	19-Sep-16	3	Maria Antonia Road near St Veronica CES
32		5	Hilda Avenue near York Hill Elementary School
33	26-Sep-16	2	Bainbridge Avenue near St. Clement CES
34		4	Misty Sugar Trail near Bakersfield PS
35	3-Oct-16	5	Atkinson Ave, east of Rosedale Heights Dr near Rosedale Heights PS
36		3	Vellore Park Avenue near Glenn Gould PS
37	10-Oct-16	1	Islington Ave near Kleinburg PS
38		2	Margaret Mary Road near St. Margaret Mary CES
39	17-Oct-16	4	Ilan Ramon Blvd near Anne Frank PS
40		5	York Hill Boulevard near Eitz Chaim ES
41	24-Oct-16	3	Fossil Hill Road near Fossil Hill PS
42		1	Peak Point Boulevard near St. Raphael the Archangel CES
43	31-Oct-16	4	Via Romano Boulevard near Herbert H. Carnegie PS
44		5	Beverly Glen Boulevard near Wilshire PS
45	7-Nov-16	2	Martin Grove Road near St Angela Merici CES
46		3	La Rocca Avenue near St. Agnes of Assisi School
47	14-Nov-16	1	Melville Avenue near Michael Cranny PS
48		5	Brownridge Drive near Brownridge PS

ATTACHMENT No.3

2016 Speed Compliance Program Schedule - High Capacity Roadway

Extended Period (9/12 months duration)

Date	Ward	Location
April 6, 2016	1	Melville as prior locations 2015

Longer Duration (8 weeks)

Date	Location 1	Ward	Location 2	Ward
March 29 to May 20	Centre Street between Erica Road and Oakbank Road	5	Ner Israel Drive EB: b/w Bathurst Glen Dr and Knightshade Dr WB: east of Knightshade Drive	4
May 24 to July 15	Lady Fenytrose Avenue, between Lady Jessica Drive and Lady Valentina Avenue	4	Thornhill Woods btwn Autumn Hill & Summeridge	4
July 18 to September 9	Chancellor Drive near Chancellor District Park, west of Ansley Grove	3	La Rocca Avenue, east of Alba Avenue	3
September 12 to Nov 4	Zenway Blvd near New Huntington Road	2	Woodbridge Avenue between Kipling Avenue and James Street	2

Shorter Duration (2 weeks)

Week of	Ward	Location
April 4, 2016	2	Vaughan Mills Road, north of Jolana Ct (NB), south of Thomson Creek Blvd (SB)
April 18, 2016	4	Valley Vista Drive, between Thomas Cook Ave and Upper Post Rd
May 2, 2016	3	Misty Meadow Drive in front of house #152 and #163
May 16, 2016	3	Poetry Drive between Flourish Street
May 30, 2016	4	Stegman's Mill – west of Windrush Rd
June 13, 2016	4	Summeridge, east of Thornhill Woods
June 27, 2016	2	Kipling Ave, north of Woodbridge Ave
July 11, 2016	4	Autumn Hill east of Thornhill Woods
July 25, 2016	3	Fossil Hill Road, south of Via Toscana/Muscadel Road
August 8, 2016	2	Wycliffe Avenue, near house #233
August 22, 2016	2	Medallion Blvd-See Vince for location
September 6, 2016	1	Hunterwood Chase btwn Antonini Ct & Mapledown Way
September 19, 2016	3	Velmar Drive between Cartwright and Blackburn
October 3, 2016	2	Medallion Blvd east of Morningstar Dr
October 17, 2016	4	Freedom Trail between Grand Trunk Avenue and Dufferin Street
October 31, 2016	1	Valley Vista Drive near Southdown Avenue
November 14, 2016	1	Kirby Road east of Highway #27

ATTACHMENT No. 4

2015 Speed Compliance Program Schedule – School Zones

Road	Posted Speed (km/h)	With RMBs Present				After RMBs (Spring 2016)			
		Average Speed (km/h)		85th Percentile Speed (km/h)		Average Speed (km/h)		85th Percentile Speed (km/h)	
		NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
Peter Rupert Avenue near St. Cecilia CES	40	50	42	58	49	39	34	45	42
Glen Shields Avenue near Glen Shields PS	40	36	35	43	42	34	29	40	38
Cunningham Drive near Divine Mercy CES	40	32	40	38	46	45	41	54	48
Napa Valley near St. Stephen CES	40	35	38	43	45	36	38	47	49
Vellore Woods Boulevard near St. Emily CES	40	33	37	39	44	38	33	46	40
Mullen Drive near Holy Family CES	40	39	34	48	48	38	43	48	53
Forest Run Boulevard near Forest Run PS	40	36	40	44	47	46	38	55	52
Mast Road near St. James CES	40	26	29	40	40	32	34	43	43
Hilda Avenue near York Hill Elementary School	40	45	42	56	50	54	55	67	67
Juliard Drive near Juliard PS	40	36	38	45	45	44	40	54	52
Forest Fountain Drive near St. Andrew CES	40	38	36	44	44	44	40	52	48
Greenpark Boulevard near St. Gregory the Great Academy CES	40	34	34	43	44	34	38	41	47
Murray Farm Lane near Teston Village PS	40	29	26	34	30	21	26	31	36
Brownridge Drive near St. Joseph the Worker CES	40	36	33	41	40	36	37	43	44
Thornhill Woods Drive near Thornhill Woods PS	40	34	36	40	44	39	37	47	44
Discovery Trail near Discovery PS	40	35	35	43	41	36	40	47	50
Kipling Avenue near Woodbridge PS	40	44	49	52	57	46	47	55	56
Aberdeen Avenue near Immaculate Conception CES	40	42	32	48	40	44	42	54	53
Napa Valley Avenue near St. Padre Pio CES	40	33	29	40	41	41	38	48	45
Thomas Cook Avenue near Nellie McClung PS	40	36	40	43	47	40	36	47	44
Fossil Hill near Fossil Hill PS	40	41	38	51	48	36	31	45	44
Martin Grove Road near St. Angela Merici CES	40	32	32	44	40	40	37	48	44
Grand Trunk Avenue near Dr. Roberta Bondar PS	40	44	39	51	48	44	45	55	55
Hawker Road near Maple Creek PS	40	32	37	41	43	37	40	45	48
Belview Avenue near St. John Bosco CES	40	38	34	46	44	38	34	47	41
Islington Avenue near Kleinburg PS	40	28	25	36	33	28	36	40	46
Average		37		45		39		48	

2015 Speed Compliance Program Schedule - Short Duration (2 Weeks)

Week Of:	Road	Posted Speed (km/h)	Before RBMs						With RBMs Present						After RBMs (2016 Spring)					
			Average Speed (km/h)			85th Percentile Speed (km/h)			Average Speed (km/h)			85th Percentile Speed (km/h)			Average Speed (km/h)			85th Percentile Speed (km/h)		
			NB/EB	SB/WB		NB/EB	SB/WB		NB/EB	SB/WB		NB/EB	SB/WB		NB/EB	SB/WB		NB/EB	SB/WB	
20-Apr-15	Islington Avenue b/w Stegman's Mill Rd and Nashville Rd	40	33	28		41	38		27	25		35	34		30	29		40	40	
4-May-15	Woodbridge Avenue near Forest Drive	40	49	48		56	55		46	38		54	44		46	49		54	56	
18-May-15	Julia Valentina Avenue near Noah Crescent (Northeast)	50	36	33		46	46		40	38		49	51		40	42		48	51	
1-Jun-15	Autumn Hill Boulevard, east of Dufferin Street near Rivington Avenue	40	44	43		53	52		40	35		52	46		44	43		54	54	
29-Jun-15	Queen Filomena Avenue, near Giocondo Way	50	47	50		56	59		39	48		48	55		50	50		60	60	
13-Jul-15	Rowntree Dairy Road near Marycroft Avenue	50	59	53		70	61		49	42		58	49		57	55		69	63	
10-Aug-15	Summeridge Drive between Treecrest and Pleasant Ridge	40	44	46		54	55		41	38		50	48		50	45		60	53	
24-Aug-15	Islington Avenue b/w Stegman's Mill Rd and Nashville Rd	40	33	28		41	38		27	25		35	33		30	29		40	40	
7-Sep-15	Stanton Avenue near Trammel Drive	50	46	42		59	53		40	44		51	52		47	48		55	55	
21-Sep-15	Kipling Avenue near Gordon Road	40	56	53		64	62		42	47		44	54		51	48		63	57	
5-Oct-15	Grand Trunk Ave near Freedom Tr	50	48	47		55	55		44	43		51	50		51	45		63	55	
19-Oct-15	Langstaff Rd near Woodcroft Ln	50	60	59		74	72		59	56		66	63		67	66		77	74	
2-Nov-15	Rosebury Lane near Rosewood Court	50	27	24		43	43		30	30		35	33		35	33		47	44	
Average			44			54			40			48			45			55		

2015/2016 Speed Compliance Program Schedule - Long Duration (8 Weeks)

RMB Duration	Data Collected After	Road	Posted Speed (km/h)	Before RMBs				With RMBs Present				After RMBs (Spring 2016)			
				Average Speed (km/h)		85th Percentile Speed (km/h)		Average Speed (km/h)		85th Percentile Speed (km/h)		Average Speed (km/h)		85th Percentile Speed (km/h)	
				NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
March 30 to May 22, 2015	1 Year	Stegman's Mill Road near Ravensdale Gate	40	68	71	81	84	56	59	66	68	59	63	67	72
August 4 to Sept 21, 2015	7 Months	Chancellor Drive b/wm Aberdeen Ave and Ansley Grove Road	40	46	50	53	58	43	47	52	54	48	51	56	58
Oct 12 to Dec 4, 2015	4 Months	Lady Fenyoze Avenue south of Sweet Valerie Court	50	49	49	59	57	41	43	51	50	46	44	56	53
March 28 to May 20, 2016	2 Months	Ner Israel Drive near Knightshade Drive	50	48	51	55	60	42	46	49	53	46	44	55	53
May 24 to July 15, 2016	2 Weeks	Lady Fenyoze Avenue between Lady Jessica Drive and Lady Valentina Avenue	50	48	49	58	57	39.7	41.5	43.8	50	47	48	56	56
Average				53		52		46		54		50		58	

Speed Compliance Program Schedule - Extended Period (9/12 months duration)

Location	Posted Speed (km/h)	Before RMBs				With RMBs Present (Fall 2015)			
		Average Speed (km/h)		85th Percentile Speed (km/h)		Average Speed (km/h)		85th Percentile Speed (km/h)	
		NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
Melville Ave Northbound - north of Hawker Rd	50 - 40	52	58	62	73	51	47	59	56
Melville Ave Southbound - south of Norwood	50 - 40	54	52	65	66	52	54	62	63

n Melville Changed from 50km/h to 40km/h in September 2013