CITY OF **VANCOUVER**

ADMINISTRATIVE REPORT

Report Date:	April 3, 2007
Author:	Genevieve Tokgoz
Phone No.:	604.871.6916
RTS No.:	06587
VanRIMS No.:	13-1400-30
Meeting Date:	April 17, 2007

TO: Standing Committee on Transportation and Traffic

FROM: General Manager of Engineering Services

SUBJECT: Annual Speed Hump Installation Program, 2007

RECOMMENDATION

A. THAT speed humps be installed on the local residential street segments specified in this report subject to approval from a resident survey, with funding of $168,000 from the following sources:

- $147,400 from the 2007 Capital for Local Area Traffic Plans and Other Improvements program, subject to approval of the 2007 Street Basic Capital Budget,
- $20,600 from the 2006 Capital for Local Area Traffic Plans and Other Improvements program.

B. THAT commencing in 2008, the Traffic operating Budget be increased by $4,600, without offset, subject to annual Budget Review.

COUNCIL POLICY

In November 1999, Council approved an annual speed hump installation program that would identify the highest ranking local residential street segments for speed hump installation.

PURPOSE

This report seeks approval and funding for the 2007 Annual Speed Hump Installation Program. It identifies the proposed speed hump locations and outlines a method for public consultation.

BACKGROUND

In 1999 the City completed the Speed Hump Pilot Project. The results of that project indicated that speed humps are an effective device for decreasing speeds on local residential streets while not diverting traffic to other streets. In the subsequent seven years, Council has approved the installation of speed humps on 179 street segments throughout the city.

Prior to and following the installation of speed humps in 2001, traffic was monitored on the street segments which received speed humps, as well as on adjacent streets. In every location where speed humps were installed, speeds were reduced. A typical school or playground zone which previously had an 85th percentile speed over 50 km/h has seen this reduced to between 30 and 40 km/h. Residential streets which had 85th percentile speeds over 60 km/h now experience speeds between 40 and 50 km/h.

Diversion of traffic to adjacent residential streets is often a concern when implementing traffic calming measures. Traffic data collected before and after the installation of speed humps in 2001 shows that, in the vast majority of applications, speed humps produce no appreciable diversion of traffic to adjacent streets.

The process for selecting the eligible street segments for speed humps involves identifying priority locations using resident feedback and traffic data, conducting a follow up speed check at the location in question and using an objective ranking system. To date over 1800 speed checks have been conducted in response to resident requests and included in the Speed Hump database, where each segment is assigned a rank. Each year, approximately 30 of the highest priority street segments become eligible for speed humps pending approval from Fire and Rescue Services, local residents, and Council.

In order to choose the street segments to receive speed humps, an objective scoring calculation is used, adapted from a successful program in Portland, Oregon (see Appendix A). This calculation was approved by Council in November 1999 and used to identify the highest priority street segments for speed hump installation. The calculation considers the speed and number of vehicles using the block, as well as attributes of the street, such as nearby pedestrian generators or its status as a greenway or bikeway. The speed measure used is the 85th percentile speed.

DISCUSSION

Thirty one street segments are recommended for speed hump installation this year. Of these segments, 14 are adjacent to parks, 15 are in school zones, and 2 are on bikeways. Thirty segments are in 30 km/h school or playground zones. Table 1 on the following page lists the street segments with information about their ranking and the approximate number of humps to be installed.

Experience shows that speed humps rarely produce significant diversion of traffic to adjacent streets. However, staff recommend that traffic volumes be monitored before and, where diversion of traffic is suspected, after the installation of speed humps.

Street Segment	Posted Speed Limit	85th Percentile Speed	Traffic Volume (veh/day)	Estimated Number of Speed Humps
Mclean, Venables to William	30 km/h	51 km/h	1200	3
E 53rd, Prince Edward to St. George	30 km/h	51 km/h	1300	4
W 2nd, Blanca to Drummond	30 km/h	50 km/h	200	2
St. George, E 6th to E 8th	30 km/h	46 km/h	1300	2
Crowley, Joyce to Melbourne	30 km/h	46 km/h	900	3
Trafalgar, W 10th to W 12th	30 km/h	43 km/h	1300	2
Carnarvon, W 29th to W 31st	30 km/h	46 km/h	400	3
W 37th, Yew to Arbutus	50 km/h	58 km/h	2300	3
York, Maple to Cypress	30 km/h	39 km/h	3200	2
Sophia, E 21st to E 23rd	30 km/h	44 km/h	900	3
E 3rd, Penticton to Slocan	30 km/h	46 km/h	500	3
Laurel, W 23rd to W King Edward	30 km/h	44 km/h	1500	1
W 20th, Laurel to Heather	30 km/h	47 km/h	500	4
W 14th, Alder to Spruce	30 km/h	45 km/h	600	2
W 7th, Alder to Oak	30 km/h	43 km/h	1900	2
Crown, W 14th to W 16th	30 km/h	45 km/h	1100	3
Blanca, Drummond to W 2nd	30 km/h	44 km/h	1300	2
W 31st, Balaclava to Carnarvon	30 km/h	46 km/h	500	2
Balaclava, W 51st to W 53rd	30 km/h	45 km/h	600	3
W 8th, Yew to Arbutus	30 km/h	42 km/h	1400	2
W 3rd, Bayswater to Macdonald	30 km/h	45 km/h	1000	2
Adanac, Salsbury to Victoria	30 km/h	45 km/h	400	1
Borden, E 60th to E 61st	30 km/h	43 km/h	800	2
E 10th, Clark to Woodland	30 km/h	43 km/h	700	2
E 2nd, Templeton to Garden	30 km/h	43 km/h	800	2
W 22nd, Laurel to Heather	30 km/h	43 km/h	1200	4
E 44th, Sophia to Prince Edward	30 km/h	46 km/h	500	3
Bidwell, Burnaby to Beach	30 km/h	44 km/h	1000	2
Maple, Cornwall to York	30 km/h	40 km/h	1800	2
Raleigh, E 46th to E 48th	30 km/h	44 km/h	600	4
W 67th, Cartier to Hudson		42 km/h	900	3

Table 1: Proposed Speed Humps Locations, 2007

Resident consultation and subsequent approval is an important part of the Speed Hump program. Staff propose that all residents living on the same street segments as the proposed speed humps be surveyed for their opinions. The surveys would ask two questions about

whether the residents are concerned about a speeding problem on their street and whether they approve of speed humps (see Appendix C for an example). Installation of speed humps on each street segment will be subject to a survey response rate greater than 30% and an approval rate greater than 50%. Staff recommend that speed humps be installed on all of the proposed streets that meet these criteria and that staff report back on any locations that do not for further consideration.

Of the more than 100 street segments which were surveyed as part of the 2000 through 2003 Speed Hump Programs, six did not receive support for the installation of speed humps. In 2004 and 2005, all the recommended speed humps were supported by local residents and have been installed. In 2006, the majority of respondents on W 26th Avenue (Laurel Street to Willow Street) did not support the installation of speed humps and speed humps were not installed at this location.

FINANCIAL IMPLICATIONS

The estimated capital cost of installing speed humps, as specified in this report, is $168,000 for the 31 proposed locations. This includes the construction of the asphalt humps, road markings on the asphalt humps, signage, traffic monitoring, and public consultation. Funding of $147,400 is to be provided from the 2007 Local Area Traffic Plans and Other Improvements program (A5a), subject to approval of the 2007 Streets Basic Capital Budget. The remaining $20,600 is to be funded from the 2006 Local Area Traffic Plans and Other Improvements Program.

In addition to the capital costs for this project there will be maintenance costs associated with the signing and road marking of the speed humps. Staff recommend that commencing in 2008 the Traffic Operating Budget be increased by $4,600 per annum, without offset, subject to annual Budget Review.

CONCLUSION

Speed humps are an effective means by which to reduce vehicle speeds on local streets. The locations identified in this report are the highest priority locations, in accordance with the ranking system approved by Council in November 1999. Staff recommend that speed humps be installed in 31 locations, subject to resident approval. Staff will report back on any locations that are not approved by the survey and will monitor traffic on street segments where appropriate.

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APPENDIX A - SPEED HUMP SAMPLE SCORE CALCULATION

e.g. Vanness Avenue 3400 block

Raw Data

Sample size =	98 vehicle speeds
Average Daily Traffic (ADT) volume =	3000
85th percentile speed (calculated) =	52 km/h
Design speed limit =	40 km/h

Primary Score

Speed Points:
3 points for each km/h over 8 km/h above the design speed (max. 50)
(52 - (40 + 8)) x 3 = 12 points

Volume Points:
1 point for every 100 vehicles ADT
(3000/100) = 30 points

Primary subtotal = **42 points**

Is the primary subtotal greater than 40? If NO, Stop.
If YES, proceed to secondary scoring.

Secondary Score

Additional Speed Points for **excessive speed**
(percentage of vehicles travelling over
16 km/h above the design speed)
percent travelling > 40 + 16 = 56km/h) : 8% 8 points

5 points for each school zone (maximum 10) 0 points

5 points for each pedestrian generator (maximum 15)
(2 pedestrian generators SkyTrain Station and retail area) 10 points

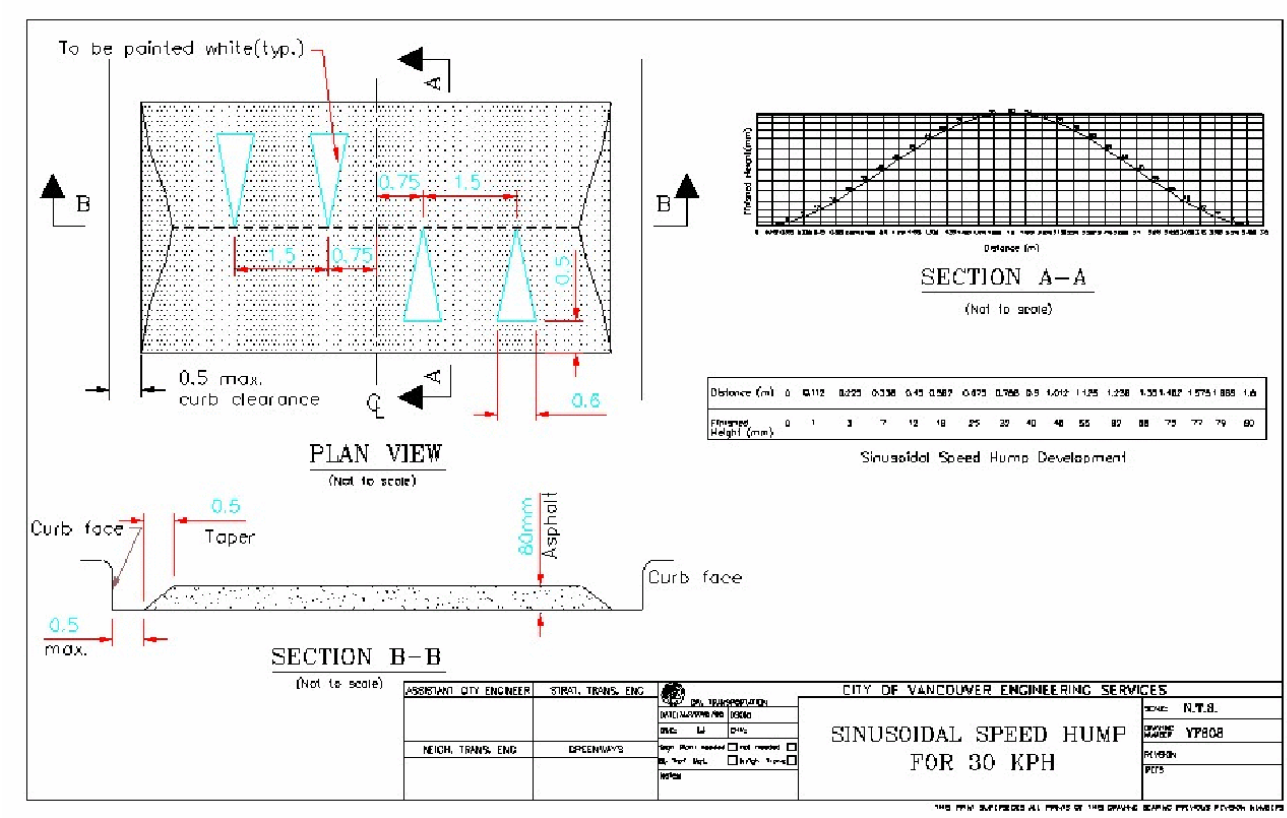
5 points if adjacent to a Greenway (is part of the BC Parkway) 5 points

5 points if the street segment is part of a Bikeway 5 points

5 points if the street segment lacks a continuous sidewalk 5 points

Secondary subtotal = **33 points**

TOTAL SCORE (Primary + Secondary) = **75 points**


To be painted white(typ.)
A
B
0.75
1.5
1.5
0.75
0.5
0.5 max.
curb clearance
℄
0.6
PLAN VIEW
(Not to scale)
Distance (m)
SECTION A–A
(Not to scale)
Distance (m) 0 0.112 0.225 0.338 0.45 0.562 0.675 0.788 0.9 1.012 1.125 1.238 1.351 1.462 1.575 1.688 1.8
Finished Height (mm) 0 1 3 7 12 18 25 32 40 48 55 62 68 73 77 79 80
Sinusoidal Speed Hump Development
Curb face
0.5
Taper
80mm
Asphalt
Curb face
0.5
max.
SECTION B–B
(Not to scale)
ASSISTANT CITY ENGINEER
STRAT. TRANS. ENG
NEIGH. TRANS. ENG
GREENWAYS
CITY OF VANCOUVER ENGINEERING SERVICES
SINUSOIDAL SPEED HUMP
FOR 30 KPH
SCALE: N.T.S.
DRAWING NUMBER: YP808
REVISION
DATE

April 2007

Dear Resident:

RE: Speed Hump Program

This survey seeks your opinion of vehicle speed on your street and whether or not you approve of the installation of speed humps.

Speed humps are proven as an effective means by which to decrease vehicle speeds on local, residential streets. In response to a neighbourhood complaint about speeds on your street, the City has taken field measurements and confirmed that vehicle speeds are high on your street and that your street is a good candidate for speed humps. City Council has therefore approved speed humps for your street, **subject to your approval**.

At least 30% of the residences on your street must respond to this survey and 50% of the responses must support the installation of speed humps. Should you approve speed humps, you can expect them to be placed 50-70 m (160-230 ft) apart. They should not affect parking. A typical design showing the dimensions of the humps is shown on the reverse side of this letter, for your information.

Please give this survey your consideration and return it in the addressed, postage paid envelope provided by May 15, 2007. Alternatively, you may fax the completed survey to 604-871-6192. Your name and address must be included on the survey in order to validate your response; however, individual replies will be kept confidential in accordance with the *Freedom of Information and Protection of Privacy Act* (FOIPPA).

The results of this survey will determine whether speed humps will be installed on your street. If you have any questions about speed humps in general, or how they will be installed on your street, please call me at 604-873-7343 or e-mail me at david.rawsthorne@vancouver.ca.

Yours truly,

Genevieve Tokgoz, E.I.T.
Greenways & Neighbourhood Transportation Branch