RF	ck
Director	CAO

COUNCIL AGENDA
Date: January 22, 2018 Item: 5.

DISTRICT OF WEST VANCOUVER
750 17TH STREET, WEST VANCOUVER BC V7V 3T3

5.

COUNCIL REPORT

Date:	January 4, 2018
From:	Vanessa Garrett, Manager of Roads and Transportation
Subject:	**Proposed Speed Humps and other Vertical Deflections Policy 02-20-382**
File:	1805-14

RECOMMENDATION

THAT

1. The "Speed Humps and Other Vertical Deflections Policy 02-20-382" be approved;
2. The "Speed Bump/Ramps Policy #03-20-134", dated January 05, 1987 and amended on November 28, 1988 be rescinded; and
3. The document titled, "Technical Assessment for Speed Humps and other Vertical Deflections" be received for information.

1.0 Purpose

This report describes the Speed Humps and other Vertical Deflections Policy (the Policy) (**Appendix 1**) proposed to replace the existing policy Speed Bump/Ramps Policy #03-20-134 (**Appendix 2**). While this matter may be considered today as an Administrative Policy that does not formally require Council approval, the present policy was approved by a previous Policy and Planning Committee of Council, therefore Council is being requested to rescind the present policy and to replace it with the proposed Speed Humps and Other Vertical Deflections Policy.

2.0 Legislation/Bylaw/Policy

The existing policy dates back to 1987. At that time, Council directed staff to maintain the policy of not permitting speed bumps on public roads, suggesting that the policy pre-dated this time period. It was amended in 1988 to allow for a "test case" of speed deterrent ramps in the lane north of Marine Drive in the 1700 Block. These speed deterrent ramps do not appear in this lane at the present day.

3.0 Background

3.1 Previous Decisions

While there is no official documentation outlining the decision to prohibit speed bumps, it was likely predicated on the fact that speed bumps, arguably the most aggressive form of vertical deflection, were a potential

liability as they could damage low clearance vehicles and bicycles and impede the movement of emergency vehicles.

4.0 Analysis

4.1 Discussion

There are two primary types of physical traffic calming measures – horizontal and vertical. Horizontal measures include infrastructure such as centre medians, curb bump outs or chicanes (a designed serpentine curve in the road). These measures must be used with caution, as they may introduce a hazard on narrow roadways, given that they direct traffic to the shoulder where conflicts with pedestrians and cyclists are more likely. Vertical measures are where the road surface itself is raised to influence driver behaviour, and are less likely to cause pedestrian and cyclist conflicts. It is on this premise that staff took the initiative to investigate a new policy to allow for vertical deflection options that would safely accommodate all road users.

Proposed Policy

The proposed policy would replace the existing Speed Bump/Ramp Policy with a modern approach to vertical traffic calming. Over the years, the abrupt speed bump built crosswise across a road has evolved into safer types of raised alternatives to encourage drivers to reduce their travelling speeds. There are three types of vertical deflections proposed as part the new policy: speed humps, speed cushions, and raised crosswalks. Prior to introducing these measures within an area, other less intrusive engineering, educational and enforcement measures will be considered to address safety concerns.

Policy Outline

Speed humps, speed cushions and raised crosswalks will only be considered:

a. on collector roads, local roads, lanes and municipal parks that are located in school or playground zones; and

b. on roads directly connected to pedestrian generators such as a community facility.

Speed humps, speed cushions and raised crosswalks will not be considered on arterial roads, given that they have higher travel speeds and traffic volumes and are used for goods movement.

Due to the potential risk of vehicle or bicycle damage and associated liability, speed bumps will not be considered as a traffic calming measure.

Prior to the implementation of vertical deflection as a traffic calming measure, the location in question will be reviewed as part of a three-step process:

a. initial screening;
b. point assessment guideline review; and
c. in conjunction with the Community Engagement Policy

Staff will evaluate locations utilizing the Policy in conjunction with the Technical Assessment for Speed Humps and other Vertical Deflections (**Appendix 3**) to determine if traffic calming measures are required and the appropriate type. Vertical deflections will be implemented based on District priorities and fiscal availability.

As part of the 2018 budget process, four locations for vertical deflections are being considered for implementation (**Appendix 4**):

- 600 Block of Burley Drive;
- 600 Block of Inglewood Avenue;
- 6000 Block of Eagleridge Drive; and
- Westport Road at Marine Drive adjacent to Eagle Harbour Elementary School.

Six months after installation, traffic data will be collected to assess the effectiveness of the implemented measure in reducing speed and improving road safety. Impact on neighbouring streets will also be reviewed.

4.2 Sustainability

The District's Strategic Transportation Plan promotes a modal shift from vehicular transportation to non-motorized alternatives, such as cycling and walking. Thus there is a need to encourage traffic calming methods in order to influence motorist behaviour to decrease driving speeds.

4.3 Public Engagement and Outreach

A draft of the Policy was reviewed and supported by the School Traffic Safety Advisory Committee and the HUB cycling advocacy group.

4.4 Other Communication, Consultation, and Research

A draft of the Policy was reviewed internally by the Bylaws, Communications, Fleet, Parks, and Transit Departments and by the Executive Committee which includes West Vancouver Police and Fire and Rescue Services.

5.0 Options

5.1 Recommended Option

It is recommended that

a. The "Speed Humps and Other Vertical Deflection Policy 02-20-382" dated January 22, 2018 be approved;

b. The current "Speed Bump/Ramps Policy #30-20-134", dated January 05, 1987 and amended on November 28, 1988 be rescinded; and

c. The document titled, "Technical Assessment for Speed Humps and other Vertical Deflections" be received for information.

5.2 Considered Options

Council may decide to retain the current Speed Bump/Ramps Policy #30-20-134, dated January 05, 1987 and amended on November 28, 1988.

Author: for Vanessa Garrett, Manager of Roads and Transportation

Appendices:

Appendix 1: Speed Humps and Other Vertical Deflections Policy 02-20-382
Appendix 2: Speed Bumps/Ramps Policy #03-20-134
Appendix 3: Technical Assessment for Speed Humps and other Vertical Deflections
Appendix 4: Proposed 2018 Vertical Deflection Traffic Calming Projects

APPENDIX 1

District of West Vancouver

Speed Humps and Other Vertical Deflections Policy 02-20-382

Effective Date: January, 2018

District of West Vancouver

CORPORATE POLICY

Engineering & Transportation Division	**Speed Humps and Other Vertical Deflections**
Policy 02-20-382	
CIS File:	

1.0 Purpose

To identify and prioritize circumstances in which Vertical Deflections are to be used for traffic calming.

2.0 General Principles

Vertical Deflections are effective tools used to reduce vehicle speeds in order to address safety concerns. Their implementation must be used strategically to bring the greatest benefit. When used in response to influence motorist behaviour to deter high travelling speeds, they are very effective methods to achieve traffic calming.

3.0 Scope

3.1 This policy applies to four types of specific Vertical Deflections for traffic calming:

a) Speed Humps;
b) Speed Cushions;
c) Raised Crosswalks; and
d) Speed Bumps.

3.2 Vertical Deflections are only considered:

a) in Lanes or municipal parks;
b) on Local Roads and Collector Roads that are either located in school or playground zones; and
c) on roads directly connected to Pedestrian Generators.

Vertical Deflections will not be considered for Arterial Roads.

3.3 Speed Bumps will not be considered as a traffic calming measure in the District given they pose the risk of vehicle damage and liability.

4.0 Definitions

"Arterial Road" refers to a highway whose primary function is to deliver traffic from Collector Roads to freeways or expressways, and between urban regions at the maximum level of service.

"Collector Road" refers to a highway whose primary function is to distribute traffic between Arterial Roads, other Collector Roads, and Local Roads within an area, but which also usually provides full direct access to properties.

"Engineer" refers to a Professional Engineer licenced with the Province of British Columbia, employed at the District of West Vancouver, or a designated employee.

"Lanes" refers to a highway whose primary function is to allow residents and business owners to access their property from the rear instead of the fronting street.

"Local Road" refers to a highway whose primary function is to service vehicle destinations by providing direct access to properties, and which usually connects to other Local Roads or to Collector Roads.

"Pedestrian Generator" refers to any sort of facility that attracts a large number of pedestrian traffic, such as schools, playgrounds, recreation centres or libraries.

"Point Assessment System" refers to a screening tool focused on the various attributes of a roadway in order to quantify its potential need for vertical deflection. The Point Assessment System is outlined under a separate technical document.

"Raised Crosswalk" refers to a crosswalk that is elevated from the rest of the roadway with ramps on either side.

"Speed Bump" refers to an abrupt rounded ridge built crosswise into the pavement of a road.

"Speed Cushion" refers to raised portions of pavement that are narrow enough to allow emergency vehicles to straddle the cushion without slowing down, but other vehicles are forced to slow down for safe travel.

"Speed Hump" refers to gradually raised portions of pavement that cover the entire width of the road so as to slow all traffic crossing it.

"Vertical Deflection" refers to the raised portion of a road surface to encourage drivers to reduce speeds.

5.0 Policy

5.1 Speed Humps, Raised Crosswalks and Speed Cushions will be considered:

a. in municipal parks, Lanes, or on Local Roads and Collector Roads;

b. located in school or playground zones; and

c. on roads directly connected to Pedestrian Generators.

5.2 Speed Humps, Raised Crosswalks and Speed Cushions will not be considered on Arterial Roads as these are roadways that carry vehicles at higher speeds and volumes and are primarily used for the movement of passengers and goods.

5.3 Speed Bumps will not be considered as a traffic calming measure in West Vancouver.

5.4 Initiation

There are two ways Vertical Deflections will be considered for locations where speeds are identified to be excessive:

i. the District proactively identifies locations, or

ii. external requests are communicated to the Roads and Transportation Department of the Engineering and Transportation Division.

5.5 Prior to implementing a Vertical Deflection measure, staff will conduct a preliminary assessment to determine if the roadway meets initial screening criteria.

5.6 Initial Screening Criteria

To be evaluated for vertical deflections, the roadway must be:

- classified as a Lane or;
- in a municipal park or;
- classified as a Local Road or Collector Road; and
    - located in a school or playground zone; as defined by the limits of the 30km/hr regulatory signs, or;
    - directly connected to a Pedestrian Generator.

If a site meets the above criteria, it is considered through a Point Assessment System to determine the priority level.

A site that does not meet the initial criteria screening and is not eligible for a vertical deflection may be considered for other traffic calming interventions.

Approval Date: Month, day, year	**Approved by:** Council	(space for signatures)
Amendment Date: Month, day, year	**Approved by:** Council	

This page intentionally left blank

This page intentionally left blank

District of West Vancouver
ADMINISTRATIVE POLICY

Engineering & Public Works	**Speed Bumps/Ramps**
Policy #03-20-134	
File #1805-00	

1.0 Purpose

1.1 To establish a policy for the installation of speed bumps and ramps on public road in the District of West Vancouver.

2.0 Policy

2.1 Council, as a matter of policy, does not permit speed bumps on public roads in West Vancouver. Speed bumps may be permitted by the Director of Parks and Recreation within Municipal parks where it may be appropriate to the safety of the park user.

Speed ramps may be installed in lanes with the approval of the Director of Operations.

Approval Date: January 05, 1987	**Approved by:** Policy and Planning Committee
Amendment Date: November 28, 1988	**Approved by:** Policy and Planning Committee

Document # 147681v1

This page intentionally left blank

This page intentionally left blank

APPENDIX 3

District of West Vancouver

Technical Assessment for
Speed Humps and other Vertical Deflections

Effective Date: January, 2018

District of West Vancouver

Engineering & Transportation Division	**Technical Assessment Document**
Speed Humps and Other Vertical Deflections	

1.0 Purpose

To serve as a guideline for District staff when implementing vertical deflections as traffic calming measures. This guideline will provide instructions on:

a) the assessment of locations for vertical deflection traffic calming,
b) the recommended type of vertical deflection to be constructed; and
c) the order of priority as compared with other locations.

This document is a guideline, which will be used in conjunction with Speed Humps and other Vertical Deflections Policy 02-20-382, January 2018 and other Transportation reference manuals to ensure the vertical traffic calming measure being recommended is technically accurate.

2.0 General Principles and Assumptions

The following assumptions are made to evaluate potential sites for vertical deflections as a traffic calming measure:

a) Staff will make every attempt to capture data during periods that are representative of the traffic speed and volume. There will be no extrapolation of data to account for perceived peak times.
b) Installation of vertical deflection will not require unanimous agreement from the affected neighbourhood, however a majority of support from residents is preferred.
c) Traffic data is not adjusted for future traffic growth.
d) All necessary signage and pavement markings associated with vertical deflections will be installed at the time of installation of the vertical deflection.

3.0 Point Assessment and Guideline

The Point Assessment System in **Appendix A** is used to prioritize locations for implementation.

The Applicability Guidelines in **Appendix B** assist in determining type of Vertical Deflection to be considered.

Typical Speed Hump, Speed Cushion and Raised Crosswalk Configurations are shown in **Appendix C**.

Detail Design and Engineering Considerations

a) The Engineer uses the Point Assessment System, Applicability Guideline results, technical data, and principles of this policy to produce a recommendation on vertical deflection as part of an integrated traffic calming plan.
b) During design, the Engineer engages with key stakeholders, such as the Transit Department, emergency responders, and neighbourhood residents in accordance with Community Engagement Policy.
c) Site visits, constraints and historical information, as well as future maintenance and construction plans also inform the Engineer's recommendation.
d) All recommended vertical deflections are designed and constructed in accordance with Canadian Guide to Neighbourhood Traffic Calming guidelines and reflects the judgement and engineering expertise of staff.
e) Less intrusive engineering, education or enforcement methods may be used to achieve the desired result where vertical deflection does not meet the defined criteria.

4.0 Evaluation and Monitoring

The roadway will be monitored after installation of a Vertical Deflection.

Six months post installation, traffic data are collected to assess the effectiveness of the implemented measures in reducing speed and improving safety of road users. Impact on neighbouring streets will also be evaluated.

Appendix A: Traffic Calming Point Assessment System

District of West Vancouver – Engineering and Transportation

VERTICAL DEFLECTION POINT ASSESSMENT. A score of less than 60 points is not to be considered for Vertical Deflection

Location: Date Compiled:

Roadway Type:	☐ Local	☐ Collector

3.6.1.1 Traffic Data

	Feature	Range	Criteria	Max
1.	Speed 85th percentile speed	0 to 20	1 point for every kph above 35 kph	20
2.	Daily Volume	0 to 15	5 points for every 300 vpd;	15
3.	Collisions	0 to 20	5 points for every ICBC collision/year over the past 3 years	20

3.6.1.2 Road Characteristics

4.	Walking Route	0 or 5	5 points if the street is part of the District's pedestrian network, has a sidewalk, or a path	5
5.	School and Playground routes	0 to 20	20 points if there is an elementary school or playground in or adjacent to the study area,	20
6.	Bicycle Concerns	0 to 5	5 points if the road is an existing or planned bicycle route	5
7	Other Pedestrian Generators	0 to 5	5 points for other nearby* Pedestrian Generators such as a community centre, library, retail centre, etc. *(*Nearby = must have direct connection to subject roadway)*	5
8.	Transit Route	0 or 10	10 points if not on an existing or planned transit route	10
9.	Length of Straight Road	0 to 10	1 point per 20m of straight road	10

3.6.1.3 Total

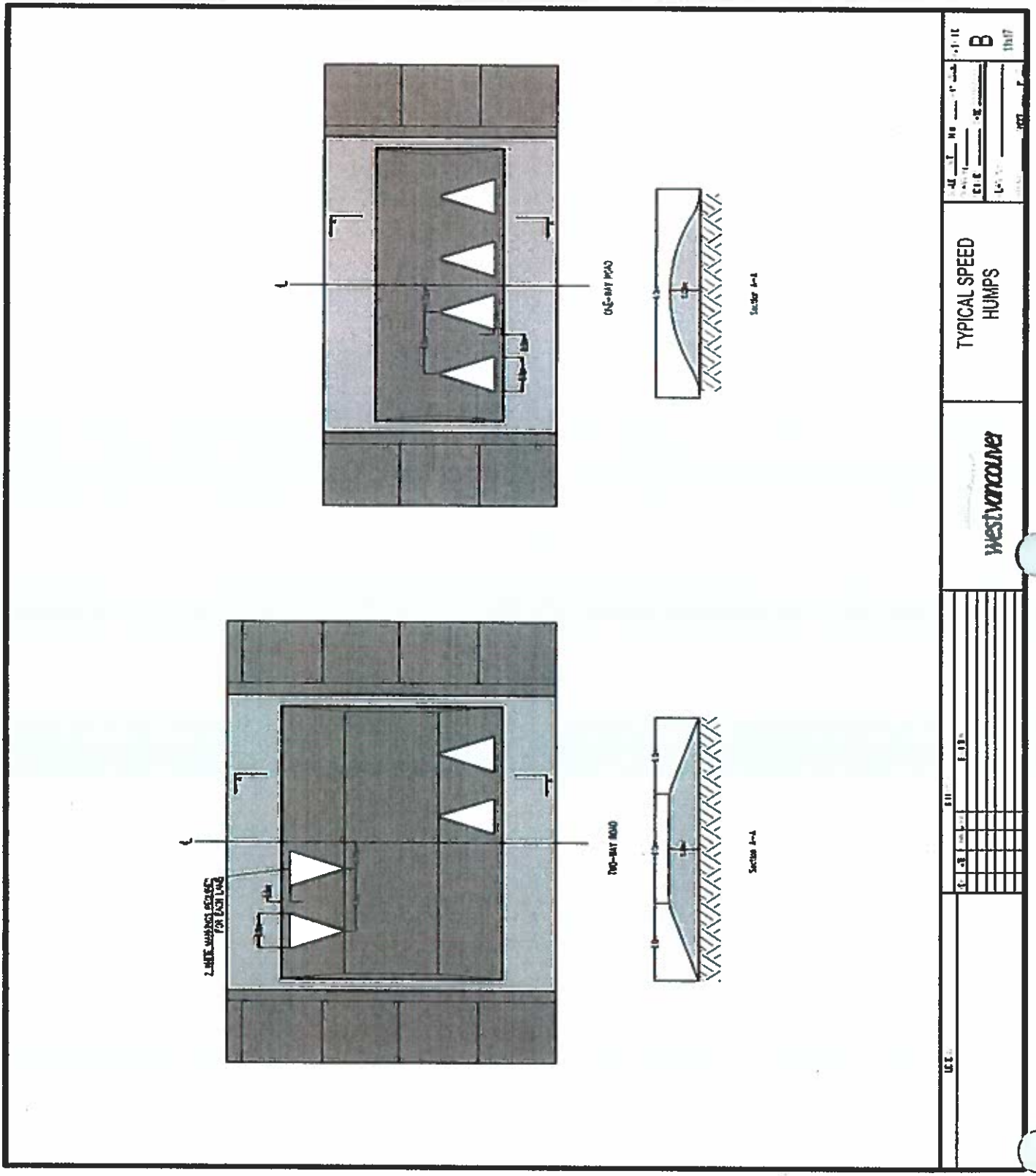
	Minimum 60 points - Does the location meet the minimum requirements		
		☐ YES	☐ NO

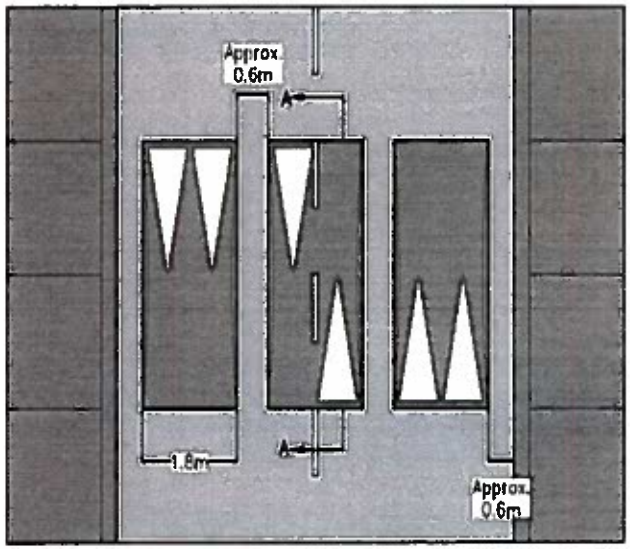
Appendix B: Vertical Deflection Applicability Guideline

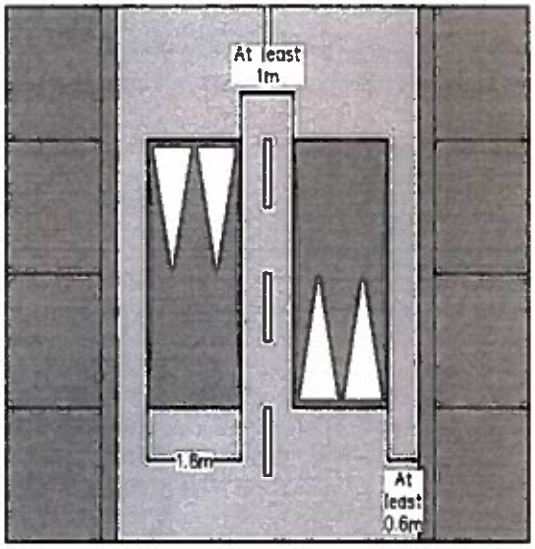
Roadway Consideration	Type of Vertical Deflection		
	Speed Hump	Speed Cushion	Raised Crosswalk
Roadways - High Truck Volume	✗	✓	✓
Lanes	✓	✗	✗
Local Roads	✓	✓	✓
Municipal Parks	✓	✗	✓
Pedestrian Generators	✓	✓	✓
School or Playground Zones	✓	✓	✓
Transit Routes	✗	✓	✓

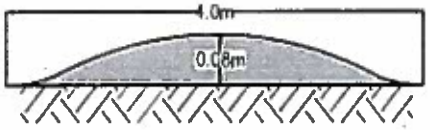
Note: This table is meant as a guideline only.

Appendix C: Typical Speed Hump, Speed Cushion and Raised Crosswalk Configurations







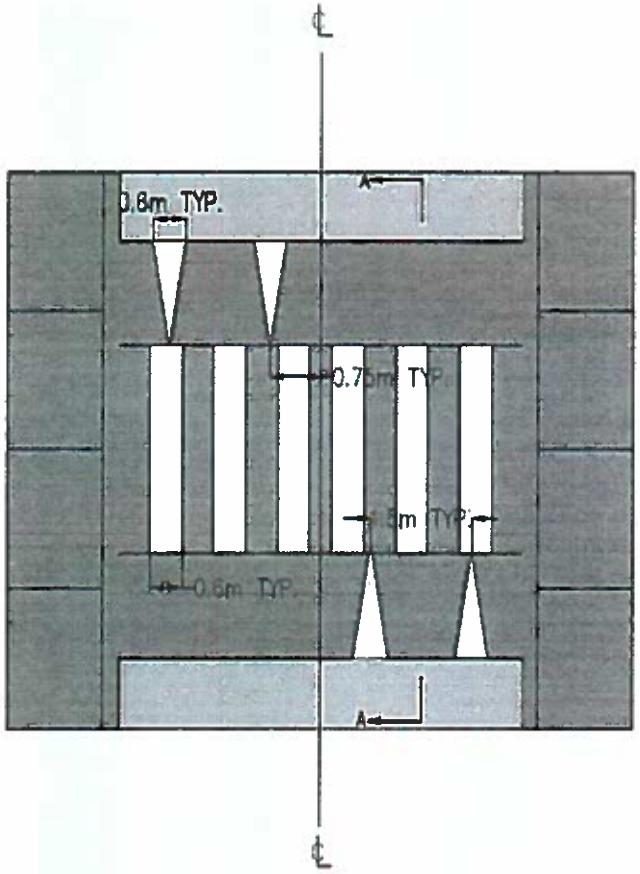


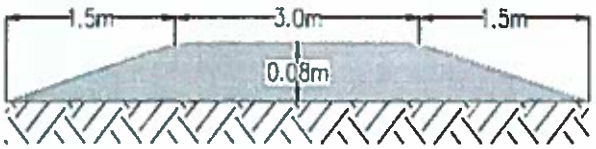
Section A-A

westvancouver

TYPICAL SPEED CUSHIONS

B





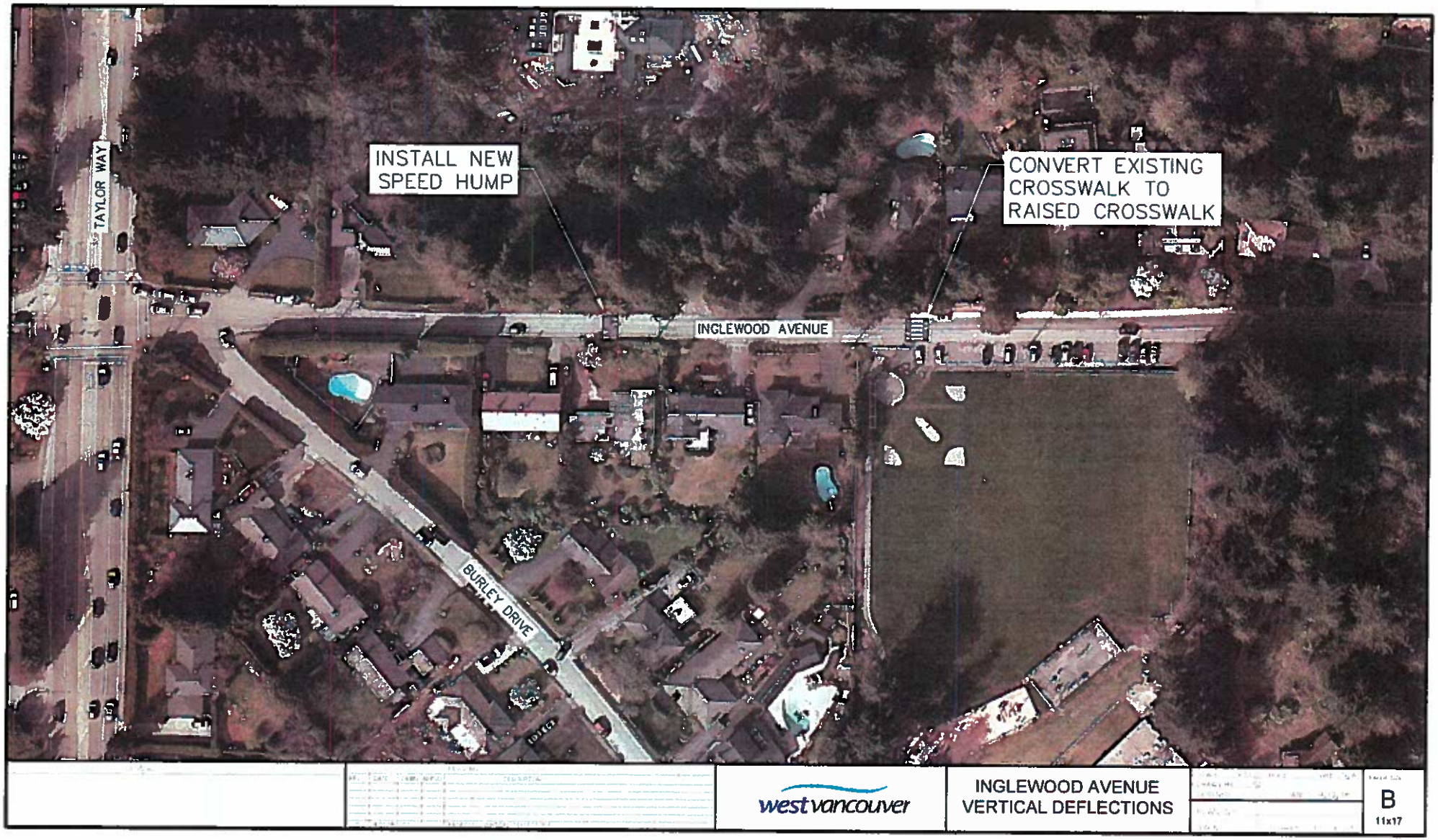
Section A–A

		westvancouver	TYPICAL RAISED CROSSWALK	B 11x17

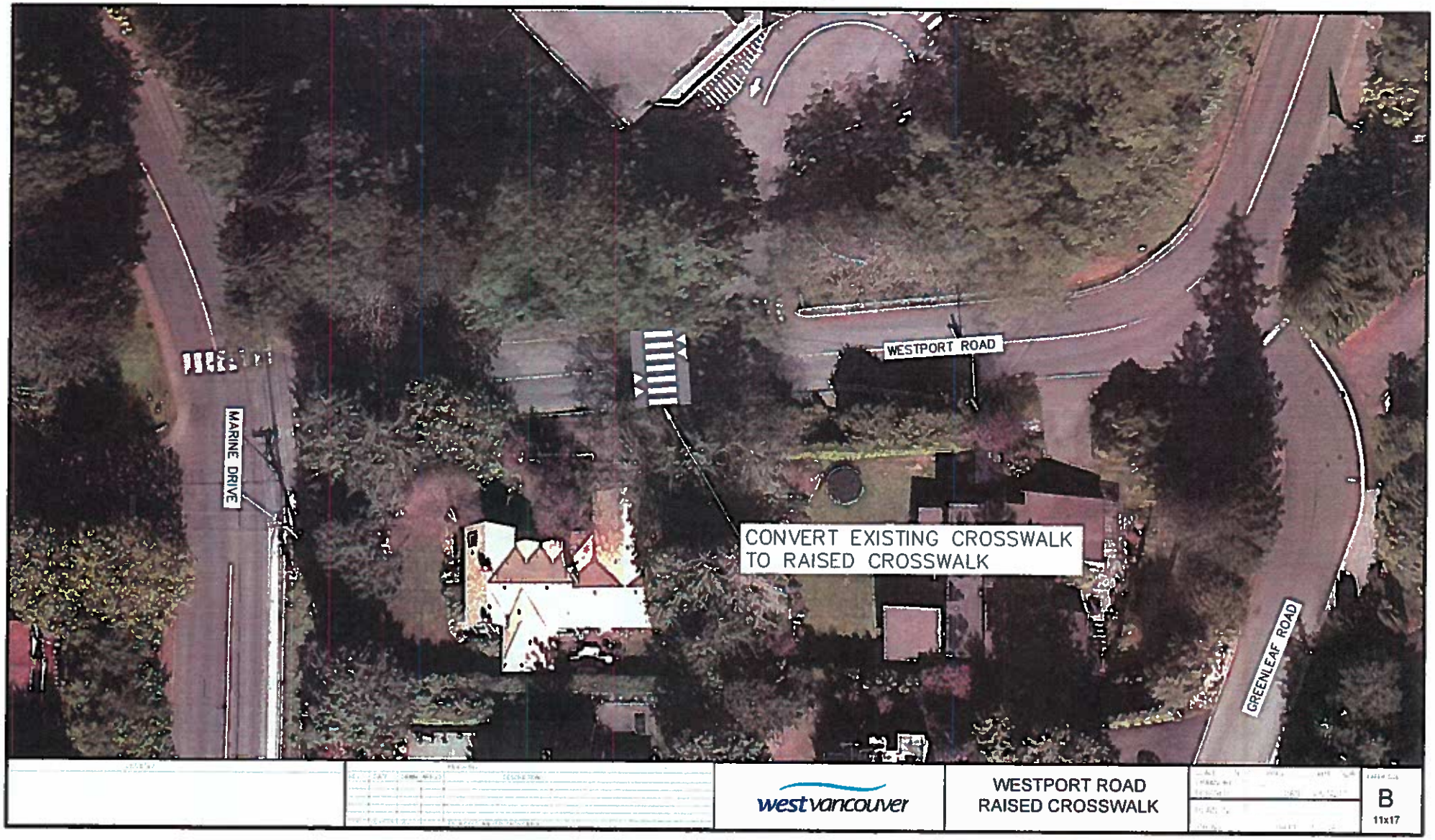
1333781v1

APPENDIX 4

		westvancouver	600 BLOCK BURLEY DRIVE SPEED HUMPS		B 11x17


INSTALL NEW SPEED HUMP
CONVERT EXISTING CROSSWALK TO RAISED CROSSWALK
TAYLOR WAY
INGLEWOOD AVENUE
BURLEY DRIVE
westvancouver
INGLEWOOD AVENUE VERTICAL DEFLECTIONS
B
11x17

		westvancouver	EAGLERIDGE DRIVE VERTICAL DEFLECTIONS		B 11x17


WESTPORT ROAD
MARINE DRIVE
CONVERT EXISTING CROSSWALK
TO RAISED CROSSWALK
GREENLEAF ROAD
westvancouver
WESTPORT ROAD
RAISED CROSSWALK
B
11x17