AGENDA ADDENDUM

SPECIAL MEETING OF COUNCIL

Tuesday, June 5, 2012
7:00 p.m.
Council Chamber, Municipal Hall
355 West Queens Road,
North Vancouver, BC

Council Members:
Mayor Richard Walton
Councillor Roger Bassam
Councillor Robin Hicks
Councillor Mike Little
Councillor Doug MacKay-Dunn
Councillor Lisa Muri
Councillor Alan Nixon

NORTH VANCOUVER
DISTRICT

www.dnv.org

THIS PAGE LEFT BLANK INTENTIONALLY

District of North Vancouver
355 West Queens Road
North Vancouver, BC, Canada V7N 4N5
604-990-2311
www.dnv.org

SPECIAL MEETING OF COUNCIL

7:00 p.m.
Tuesday, June 5, 2012
Council Chamber, Municipal Hall
355 West Queens Road, North Vancouver

AGENDA ADDENDUM

THE FOLLOWING LATE ITEMS ARE ADDED TO THE PUBLISHED AGENDA

1. REPORTS FROM COUNCIL OR STAFF

1.1 Bylaw 7934: Proposed Updates to Development Permit Areas (Schedule B) of the District Official Community Plan

File No. 13.6480.30/006.000

Memo: Susan Haid, Manager – Community Development and Sustainability

THIS PAGE LEFT BLANK INTENTIONALLY

NORTH VANCOUVER DISTRICT

Memo

May 31, 2012
File: 13.6480.30/006.000.000

TO: Mayor and Council

FROM: Susan Haid, Manager of Sustainable Community Development

SUBJECT: Desk-Topped Version of the Proposed Updated Development Permit Areas (Schedule B) of the District Official Community Plan

Please note the changes below to District of North Vancouver Official Community Plan Bylaw 7900, 2011, Amendment Bylaw 7934, 2012 (Amendment 4) contained in the attached updated, desk-topped document, which replaces the previous text-only version.

- Photographs and illustrations have been added and the document has been desk-topped to match the main body of the OCP in formatting and appearance.

- Several of the clarification notations on the Streamside Protection, Slope Hazard and Creek Hazard DPA maps referencing specific sections of the bylaw were amended or deleted to align with the numbering and formatting of the desk-topped bylaw version.

- Lastly, minor amendments to the Protection of the Natural Environment DPA map were made to reflect recent information in the consultant's report entitled "Maplewood Environmental Strategy, 28 May 2012 Final (Draft) Report." The former "under review" notation over the Maplewood area of the map has been removed.

Several colour copies of the desk-topped proposed DPAs are available in the Councillor's Office for your information. Copies are also available upon request to Ross Taylor (email taylorr@dnv.org or telephone 604.990.2320) or Karen Rendek (email rendekk@dnv.org or telephone 604.990.2295)

THIS PAGE LEFT BLANK INTENTIONALLY

NORTH VANCOUVER
DISTRICT

Schedule B
Development Permit Areas




DNV
2030

identity

Inspired by nature, enriched by people

Table of Contents

Maps

Introduction

This Schedule B establishes seven Development Permit Areas (DPAs):

1. *Protection of the Natural Environment DPA*;
2. *Streamside Protection DPA*;
3. *Wildfire Hazard DPA*;
4. *Creek Hazard DPA*;
5. *Slope Hazard DPA*;
6. *Form and Character DPA*; and
7. *Energy and Water Conservation and GHG Emission Reduction DPA.*

Part One of this Schedule B designates the areas that are subject to the above DPAs, and delegates the issuance of some development permits to the *District's* General Manager, Planning, Properties and Permits.

Part Two of this Schedule B contains definitions.

Part Three deals with the *Protection of the Natural Environment DPA* and the *Streamside Protection DPA.* It provides the context and objectives for these DPAs and provides exemptions and guidelines applicable to each. Corresponding development approval information areas are designated at the end of Part Three.

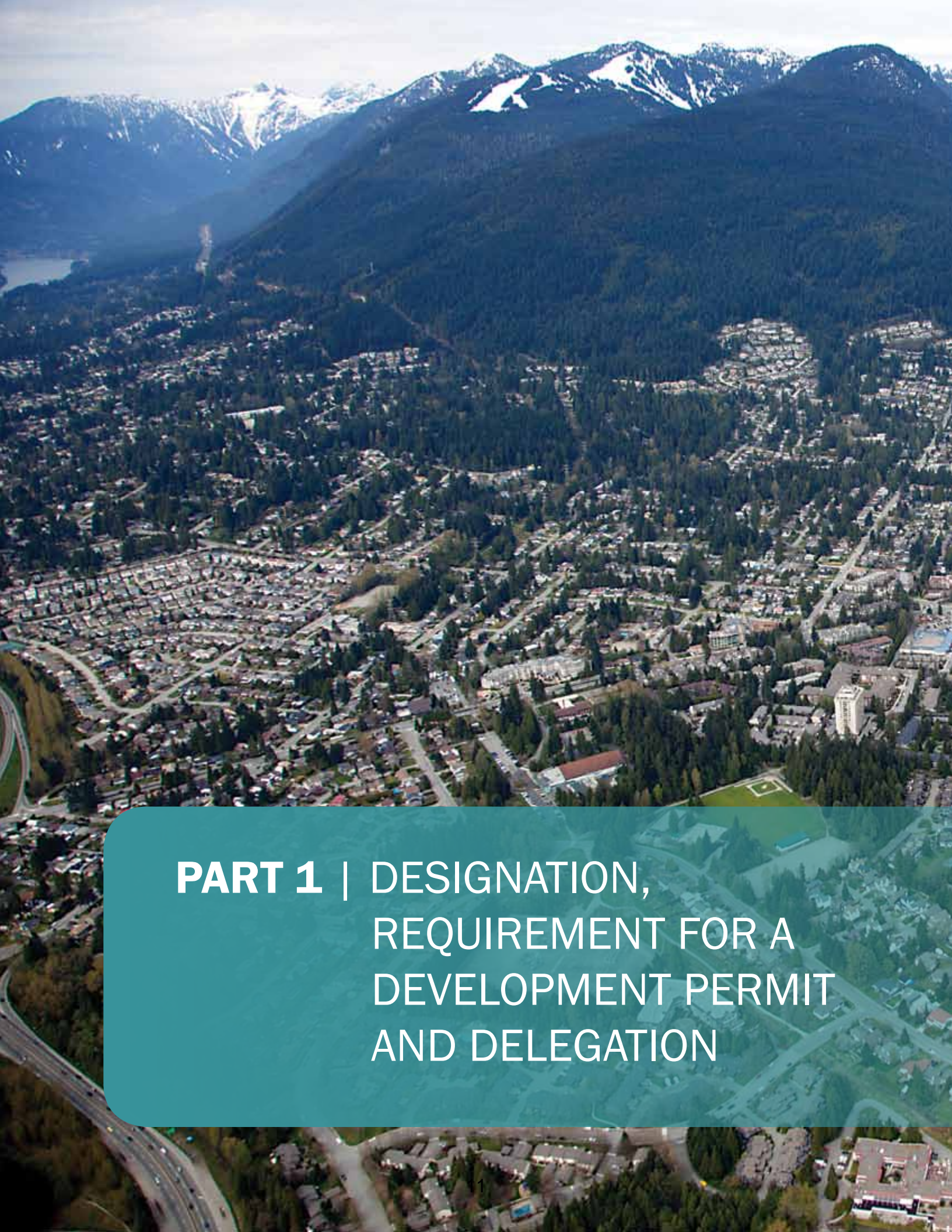
Part Four deals with the *Wildfire Hazard DPA*, the *Creek Hazard DPA* and the *Slope Hazard DPA.* It provides the context and objectives for these DPAs and provides exemptions and guidelines applicable to each. Requirements in relation to hazard assessment reports to be prepared by *qualified professionals* are then provided. A development approval information area is designated at the end of Part Four.

Part Five deals with the *Form and Character DPA.* It provides the context and objectives for this DPA and provides exemptions and guidelines in relation to different types of built form. A development approval information area is designated at the end of Part Five.

Finally, **Part Six** deals with the *Energy and Water Conservation and GHG Emission Reduction DPA.* It provides the context and objectives for this DPA and provides applicable exemptions and guidelines. A development approval information area is designated at the end of Part Six.

Because development guidelines are more flexible than zoning and other regulations, Council is able to exercise discretion on a case by case basis and specify conditions and requirements to meet the intent and objectives of the applicable DPA. A development permit may vary requirements of other *District* bylaws. As an example, in an environmentally sensitive area *Zoning Bylaw* setbacks from a property line might be reduced to locate *development* farther away from a *wetland*. But in no instance may a development permit vary the permitted use or density of land from that which is specified in the *Zoning Bylaw*.

Development permits are registered on title, therefore the specified conditions and requirements that *development* must adhere to "run with the land" remaining in force until rescinded by the issuance of a new development permit.



PART 1 | DESIGNATION, REQUIREMENT FOR A DEVELOPMENT PERMIT AND DELEGATION

A. Designation of Development Permit Areas

1. Protection of the Natural Environment

Pursuant to section 919.1(a) of the *Local Government Act*, all parcels coloured green on Map 1.1 are collectively designated as the protection of the natural environment development permit area (the "*Protection of the Natural Environment DPA")*.

2. Streamside Protection

Pursuant to section 919.1(a) of the *Local Government Act*, all parcels coloured green on Map 1.2 and any other parcel in the *District* that contains a *stream*, or is partly or entirely located:

a) within 15 metres of the *top of bank* of a *stream*; or

b) within 10 metres of the *top of ravine bank* for *ravine*s that are greater than 60 metres in width; or

c) within 30 metres of the *top of bank* of a *stream* for parcels that are 0.5 hectares or larger in area and are located on or adjacent to the Capilano River, Lynn Creek, Seymour River, or on or adjacent to Mackay Creek at any point south of Marine Drive

are collectively designated as the streamside protection development permit area (the "*Streamside Protection DPA")*. For greater certainty, the *Streamside Protection DPA* applies to all parcels that meet the above criteria, whether or not coloured green on Map 1.2.

3. Wildfire Hazard

Pursuant to section 919.1(a) and (b) of the *Local Government Act*, all parcels coloured light and dark orange on Map 2.1 are collectively designated as the wildfire hazard development permit area (the "*Wildfire Hazard DPA*").

4. Protection of Development from Creek Hazards

Pursuant to section 919.1(b) of the *Local Government Act*, all:

a) *potential flood hazard areas*;

b) *potential debris flow and debris flood hazard areas*;

c) parcels that are located wholly or partially within any *potential debris flow and debris flood hazard areas* or *potential flood hazard areas*; and

d) parcels that intersect or touch any red line (the 10 metre reference line) shown adjacent to a *potential flood hazard area* on Map 2.2

are collectively designated as the creek hazard development permit area (the "*Creek Hazard DPA*").

5. Protection of Development from Slope Hazards

Pursuant to section 919.1 (b) of the *Local Government Act*, all:

a) *potential slope hazard areas*;

b) parcels that are located wholly or partially within any *potential slope hazard areas*;

c) parcels upon which there is located a *steep slope* are collectively designated as the slope hazards development permit area (the "*Slope Hazard DPA*"); and

d) parcels that intersect or touch any red line (the 20 metre reference line) adjacent to a *potential slope hazard area* shown on Map 2.3

are collectively designated as the slope hazard development permit area (the "Slope *Hazard DPA*").

6. Form and Character of Commercial, Industrial and Multi-Family Development

Pursuant to subsections 919.1(d), 919.1(e) and 919.1(f) of the *Local Government Act*, all lands coloured red on Map 3.1 and all lands zoned for commercial, industrial or multi-family residential uses in the *Zoning Bylaw*, are collectively designated as the development permit area for form and character of commercial, industrial and multi-family *development* (the "*Form and Character DPA*").

7. Energy and Water Conservation and Reduction of Greenhouse Gas Emissions

Pursuant to subsections 919.1(h), (i) and (j) of the *Local Government Act*, all lands coloured purple on Map 4.1 and all lands zoned in the *Zoning Bylaw*:

a) for commercial, industrial/employment, multi-family and institutional purposes; and

b) zoned Comprehensive Development and containing commercial, employment, multi-family or institutional land uses

are collectively designated as the development permit area for energy and water conservation and greenhouse gas emission reduction development permit area (the "*Energy and Water Conservation and GHG Emission Reduction DPA*").

Photo (left) courtesy of the Lynn Canyon Ecology Centre

B. Requirement for a Development Permit

All *development* and all subdivisions (other than a subdivision of a new building under the British Columbia *Strata Property Act*) within a designated development permit area shall require a development permit unless exempted in accordance with the provisions of this *document*. Development permits issued may include any *development* conditions permitted by the *Local Government Act*, as appropriate to the development permit area and *development* in question.

The requirements and guidelines in this *document* supplement regulations in other *District* development control bylaws – they do not replace them. Issuance of a development permit does not absolve an applicant from compliance with any other *District* bylaw and the requirements and guidelines in this *document* should be read in conjunction with the balance of this *Official Community Plan*, the *Zoning Bylaw*, *Building Regulation Bylaw* and the *Development Servicing Bylaw* in particular.

A development variance may either relax or increase a bylaw requirement if doing so results in an improved form of *development* on a particular parcel of land. It must be noted however, that development permits may not alter the permitted land use or density as specified in the *Zoning Bylaw*, as this is not permitted under the *Local Government Act*.

Under certain conditions, as set out in Parts 3, 4, 5 and 6 of this *document*, *development* may be exempted from the requirement to obtain a development permit. If unsure, property owners may submit a description of a proposed *development* activity with appropriate supporting information, and *District* staff will advise in writing whether the *development* is exempt from the requirement for a development permit.

An *exemption* from the requirement to obtain a development permit in connection with one development permit area shall not act as an *exemption* in connection with another development permit area. Also, an *exemption* from the requirement to obtain a development permit under the *Protection of the Natural Environment DPA* or under the *Streamside Protection DPA* shall not act as an *exemption* in connection with a requirement to obtain an environmental permit in accordance with the provisions of *Environmental Protection and Preservation Bylaw No. 6515*, as amended.

The *District* may impose in a development permit, any condition permitted by law in order to ensure compliance with the guidelines set out in this *document*.

When assessing a development permit application and determining what conditions, if any, should be imposed in a development permit, the applicable guidelines in this *document* should be followed. Alternative methods or materials may be considered where they provide equivalent or better performance and fulfill the objectives of the applicable guidelines. Staff should require that sufficient evidence or proof be submitted to substantiate any claims that may be used regarding use of the alternative method or material.

Where a parcel is designated as more than one type of development permit area, a single development permit may be issued, provided that the guidelines for all applicable development permit areas are addressed in the development permit.

C. Delegation of Authority to Issue Development Permits

In accordance with Section 920 of the *Local Government Act*, the *Council* hereby delegates to the *director* the powers of the *Council* to:

1. issue development permits with or without conditions in connection with the *Protection of the Natural Environment DPA*; *Streamside Protection DPA*; *Wildfire Hazard DPA*; *Creek Hazard DPA*; *Slope Hazard DPA*; and *Energy and Water Conservation and GHG Emission Reduction DPA;*

2. issue *minor development permits* with or without conditions in connection with the *Form and Character DPA; and*

3. provide any approval, acceptance or consent, form any opinion or determination, or require, provide or accept any reports, information or other items in connection with the foregoing as required or permitted in this *document*,

all in accordance with the applicable guidelines set out in this *document*, provided that:

4. the development permit does not involve any variances of the *Zoning Bylaw*;

5. in the case of a streamside protection development permit, the development permit does not involve parcels that are greater than 0.5 hectares in size located on or adjacent to the Capilano River, Lynn Creek or Seymour River, or located on or adjacent to Mackay Creek at any point south of Marine Drive;

6. the *director* may refer any DPA application to Council for decision, and in that event the provisions of this section related to reconsideration do not apply to the application.

7. the *director* may, in accordance with the applicable guidelines herein, require the applicant to provide security to be applied by the *District* to the cost of:

    a) providing landscaping, including vegetation and trees provided to preserve, protect, restore or enhance riparian areas, that the permit requires to be provided;

    b) correcting an unsafe condition that has resulted as a consequence of the contravention of a condition in the permit; and

    c) correcting damage to the environment that has resulted as a consequence of the contravention of a condition in the permit;

8. in imposing the security requirements set out in section 7, the *director* may require security to be maintained for so long as there is a reasonable possibility of contravention of a landscaping condition, the creation of an unsafe condition, and the causing of harm to the environment in connection with the *development* authorized by the permit;

9. within 10 business days of being notified in writing of the *director's* decision regarding a development permit application, the applicant may, upon paying the application fee set out in Schedule "W" of the *District* Fees and Charges Bylaw 6481 (7806), as amended from time to time, request Council to reconsider the *director's* decision by giving notice in writing to the *District's* corporate officer setting out:

    a) the grounds on which the applicant considers the decision is inappropriate; and

    b) the decision that the applicant considers would be appropriate for Council to make having regard to the applicable guidelines herein, including development permit conditions and security conditions that the applicant considers would be appropriate;

10. the *District's* municipal clerk must place each request for reconsideration on the agenda of a meeting of the *Council* to be held not earlier than 2 weeks from the date on which the request for reconsideration and payment of the applicable application fee was received;

11. the *District's* municipal clerk must notify the *director* of each request for reconsideration and the *director* must:

    a) prior to the date of the meeting at which the reconsideration will occur, provide a written report to the *Council* setting out, at the level of detail the *director* considers appropriate, the rationale for the *director's* decision; or

    b) at the meeting at which the reconsideration occurs, provide an oral report on the rationale for the *director's* decision;

12. the *District's* municipal clerk must notify the applicant of the date of the meeting at which the reconsideration will occur; and

13. the *Council* may either confirm the decision of the *director* or substitute its own decision, including with respect to development permit conditions and amounts of security.

PART 2 | DEFINITIONS

In this *document*, the following terms have the meanings assigned to them below:

"accessory" means accessory as defined in the *Zoning Bylaw*;

"active floodplain" means an area of land that supports floodplain plant species and is:

1. adjacent to a *stream* that may be subject to temporary, frequent or seasonal inundation, or
2. within a boundary that is indicated by the *high water mark*;

"APEGBC" means the Association of Professional Engineers and Geoscientists of British Columbia or any replacement or successor professional association;

"buffer" or ***"buffer area"*** means an area that remains undeveloped in order to protect slope stability or to provide a setback from a natural hazard;

"Council" means the Council of the *District*;

"Creek Hazard DPA" means the development permit area designated in Part One section A.4 of this *document*;

"debris flood" means a flood of water that carries an unusually large amount of sediment and/or wood debris, and that is often triggered by a *landslide* dam outbreak;

"debris flow" means a fast moving, liquefied and channelized *landslide* of mixed and unconsolidated water and debris that may occur during unusually wet weather on a steep mountain creek with abundant debris sources;

"defensible space" means the area around a structure where *fuel* and vegetation should be managed to reduce the *risk* of structure fires spreading to the forest or vice versa and to provide safe working space for fire fighters;

"designated flood" generally means an event that has a 1 in 200 chance of occurring in any given year, based on a frequency analysis of unregulated historic flood records or by regional analysis in cases of inadequate stream flow data available. In some cases, a designated flood can be the *flood of record* (for example, when an event greater than the 1 in 200 year event has occurred in recent history);

"designated flood level" means the observed or calculated water surface elevation for a *designated flood*, and is used to determine the *flood construction level*;

"detailed assessment" means a detailed, site-specific study and field review to delineate hazard areas and provide quantitative estimates of hazard or *risk*, the minimum requirements of which detailed assessment are set out in this *document*;

Photos courtesy of the Lynn Canyon Ecology Centre

"development" means any of the following:

1. construction of, addition to or alteration of a building or other structure, including, without limitation:

    a) new building construction;

    b) building additions and alterations, including alterations to exterior materials;

    c) construction of, addition to or alteration of accessory buildings and structures, including pools, hot tubs, sheds and other structures; or

    d) construction of, addition to or alteration of retaining walls; and

2. alteration of land, including, without limitation:

    a) site clearing or removal of vegetation;

    b) landscaping, including planting and clearing;

    c) site grading;

    d) tree cutting;

    e) placement of fill, or disturbance of soils, rocks or other native materials;

    f) creation of impervious and semi-impervious surfaces (such as patios and driveways);

    g) installation, construction or alteration of flood protection or erosion protection works;

    h) installation, construction or alteration of roads, trails, docks, wharves or bridges; or

    i) installation, construction or maintenance of drainage, hydro, water, sewer or other utilities or utility corridors, including underground sprinkler or irrigation systems;

"development approval information" means information about the anticipated impact of the proposed activity or *development* on the community, which information is more particularly described in this *document*;

"director" means the *District's* General Manager, Planning, Properties and Permits and his or her successor in function and his or her designate;

"District" means, depending on the context, The Corporation of the District of North Vancouver or all of the land falling within the jurisdictional boundaries of The Corporation of the District of North Vancouver;

"document" means this Schedule B attached to and forming part of the *District's Official Community Plan Bylaw 7900, 2011*;

"elements at risk" means anything of social, environmental or economic value, including human lives and well-being that may be affected by a natural hazard;

"Energy and Water Conservation and GHG Emission Reduction DPA" means the development permit area designated in Part One section A.7 of this *document*;

"environmental impact study" means a detailed environmental assessment prepared by a *qualified environmental professional* that includes delineation and assessment of the *natural environment protected area* or the *streamside protected area* in relation to a proposed change or *development*;

"exemption" means an exemption from the requirement for a development permit in connection with a given *development*;

"Form and Character DPA" means the development permit area designated in Part One section A.6 of this *document*;

"fire resistive materials" means materials resistant to fire, such as stucco, metal, brick, rock, stone, lumber treated for fire resistance and cementitious products (including hardiplank), but excludes, without limitation, untreated wood, aluminum and vinyl products;

"fire resistive rating" means the time for which a material or construction will withstand the standard fire exposure as determined by a fire test made in conformity with the standard methods of fire testing;

"fire retardant roofing" means Class A and Class B roofing as specified in the Homeowners *FireSmart Manual*, BC Edition, 2004, Province of B.C., as the same may be amended or replaced from time to time, or such other roofing as may be specified by the *District* from time to time;

"flood" means an overflowing or pooling of water on land that is normally dry;

"flood construction level" or ***"FCL"*** means the *designated flood* level plus a specified allowance for *freeboard*, as determined by a *qualified professional*;

"flood of record" means the largest recorded *flood* event on any given stream or river, and when this exceeds the 1 in 200 year instantaneous event it becomes the *designated flood;*

"flood-proofing" means the alteration of land or buildings to reduce or eliminate the potential for *flood* damage and may include the use of increased elevation and/or construction methods that allow for occasional wetting and drying;

"floodway" means the channel of a *watercourse* and those portions of a floodplain that are reasonably required to actively convey the flow of a *designated flood*;

Seymour River (left); Lynn Creek during a 100 year rain storm event (right).



Sun filtering through trees (left); Capilano Canyon (centre); Seymour River (right).

"freeboard" means a vertical distance typically added to the *designated flood level* to account for variation in local hydraulic conditions (such as river bend or large boulders in a stream), to allow for waves rising from winds, and to address uncertainties inherent in engineering assumptions and calculations and introduce a factor of safety to such calculations;

"fuel" means a combustible material;

"gross floor area" means gross floor area as defined in the *Zoning Bylaw*;

"habitable space" means any room or space within a building or structure, which room or space is or can be used for human occupancy, commercial sales, or storage of goods, personal property or mechanical or electrical equipment (including furnaces), and which room or space would be subject to damage if flooded;

"habitat" means the natural home of an organism, including without limitation:

1. in respect of aquatic species, spawning grounds and nursery, rearing, food supply, migration and any other areas on which aquatic species depend directly or indirectly in order to carry out their life processes, or areas where aquatic species formerly occurred and have the potential to be reintroduced; and

2. in respect of other wildlife species, the area or type of site where an individual or wildlife species naturally occurs or depends on directly or indirectly in order to carry out its life processes or formerly occurred and has the potential to be reintroduced;

"habitat compensation" means the enhancement or increase in the productivity of existing *streamside protection areas* or *natural environment protection areas*, or, where appropriate, the replacement, of habitat and vegetation, where measures to avoid, repair or mitigate impacts caused by *development* may not be adequate to protect the *streamside protection areas* or *natural environment protection areas* as the case may be;

"high water mark" means the visible high water mark of a stream where the presence and action of the water are so common and usual, and so long continued in all ordinary years, as to mark on the soil of the bed of the stream a character distinct from that of its banks, in vegetation, as well as in the nature of the soil itself, and includes the active floodplain;

"landslide" means a movement of rock, debris or earth down a slope, and can be the result of a natural sequence of events and/or human activities; landslides include rock falls, rock slumps, rockslides, rock avalanches, rock creep, debris falls, debris slides, *debris flow, debris floods,* earth falls, earth slumps, earth slides, earth flows, earth creep and flow slides;

"master requirements list" or ***"MRL"*** means the information guides published by the *District* and containing requirements for development permits and/or building permits on properties with a range of natural hazards or special circumstances;

"mature stand of trees" means a group of trees in which the contiguous canopy area is greater than 100 square metres and where at least 3 trees are at least 50 years old;

"minor development permit" means a form and character development permit in connection with the following minor *development* activity in the *Form and Character DPA*:

1. minor façade and design changes in respect of a *development* for which a form and character development permit has already been issued by the *District*;
2. installations of up to 100 square metres of new *gross floor area* on a parcel provided that the new gross floor area is an addition to or is accessory to a permanent structure on the parcel; or
3. installation of new antennas on existing telecommunications facilities or changes to existing telecommunications facilities;

"natural boundary" means the natural boundary as defined in the *Land Act* (B.C.) In addition, the natural boundary includes the best estimate of the edge of dormant or old side channels and marsh areas;

Lynn Creek (left); Skunk Cabbage (right).

"natural environment protected area" means the area, in which protection, conservation or enhancement is required in order to protect *mature stands of trees*, *habitat* for *species at risk*, *wetlands*, *raptors'* nesting sites or *wildlife corridors*, as the case may be;

"new building or structure" means a building or structure, excluding an *accessory* building or structure, that contains *habitable space* and that is newly constructed or being constructed or intended to be constructed or that is or is being or is intended to be substantially reconstructed;

"new ICI building or structure" means a building or structure, excluding an *accessory* building or structure and excluding a single family residential building, that contains *habitable space* and that is newly constructed or being constructed or intended to be constructed or that is or is being or is intended to be substantially reconstructed;

"permanent structure" means any lawfully constructed or legally non-conforming building or structure that is a fixture on land and is placed or erected on a permanent foundation;

"potential debris flow and debris flood hazard areas" means those areas identified as such on the Map 2.2;

"potential flood hazard areas" means those areas identified as such on Map 2.2;

"potential slope hazard areas" means those areas identified as such on Map 2.3;

"preliminary assessment" means a preliminary or overview assessment by a *qualified professional* to determine the extent, location or presence of a hazard, the probability of a hazardous event affecting an element at risk, and whether a detailed assessment is required;

"Protection of the Natural Environment DPA" means the development permit area designated in Part One section A.1 of this document;

"qualified environmental professional" means an applied scientist or technologist or registered professional, acting alone or together with another applied scientist or technologist or registered professional, if:

1. the individual is registered and in good standing in British Columbia with an appropriate professional organization constituted under an Act, acting under that association's code of ethics and subject to disciplinary action by that association, and

2. the individual's area of expertise is recognized by the *director* as one that is acceptable for the purpose of providing all or part of an assessment report in respect of that *development* proposal, and

3. the individual is acting within that individual's area of expertise;

"qualified professional" means a professional with appropriate education, training and experience, fully insured and in good standing with the relevant professional association, and means:

1. for the purpose of the *flood* and slope hazard assessments (*Creek Hazard DPA* and *Slope Hazard DPA*), a specialist Professional Engineer or Professional Geoscientist, as appropriate, with experience or training in geotechnical and geohazard assessments, river hydraulics and hydrology and, where appropriate, *debris flow* processes experience or training and/or structural engineering expertise in connection with mitigation works; and

2. for the purpose of the wildfire hazard assessments (*Wildfire Hazard DPA*), a Registered Forest Professional qualified by training or with at least two years experience in the assessment, *fuel* management prescription *development* and mitigation of wildfire hazards in British Columbia;

"raptor" means a bird or its eggs of the order Falconiformes known as vultures, eagles, falcons and hawks or the order Strigiformes known as owls;

"ravine" means a narrow, steep-sided valley that is commonly eroded by running water and has a slope grade greater than 3:1;

"risk" is a measure of the probability and consequence of an adverse affect in relation to health, property, environment or other things;

"risk tolerance criteria" means generally the *risk*-based approach to the management of natural hazards established by the *District*, and more specifically means the risk tolerance criteria established by the *District*, as may be amended from time to time, which said criteria set out the maximum levels of tolerable *risk*s to life for both existing and new *development* within the *District*, and which said criteria should be applied to any *development* in the *Creek Hazard DPA* and in the *Slope Hazard DPA*.

"Slope Hazard DPA" means the development permit area designated in Part One section A.5 of this *document;*

"species at risk" means an extirpated, endangered or threatened species or a species of special concern;

"steep slope" means any land with a slope angle greater than 20 degrees (36%) measured over a vertical distance of at least 10 metres;

"stream" means any of the following:

1. a pond, lake, river, creek or brook whether it usually contains water or not; and

2. a ditch, spring or *wetland* that is connected by surface flow to something referred to in paragraph (1);

"streamside area or habitat" means the area along a *stream* that influences natural features, functions and conditions of a *stream*;

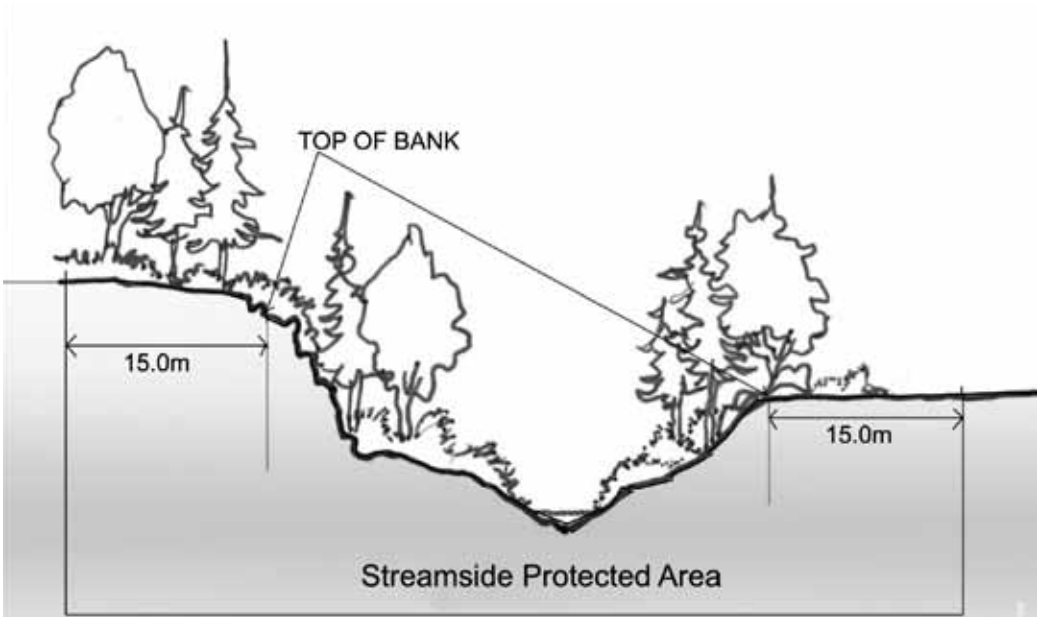
"streamside protected area" means an area adjacent to a *stream* that links aquatic to terrestrial ecosystems and includes both existing and potential streamside vegetation and existing and potential upland vegetation that exerts an influence on the *stream*, the width of which includes the area:

1. from the centreline of the *stream* to a distance of 15 metres measured perpendicularly from the *top of bank* of a *stream* (as illustrated in the following diagram); or:

2. from the centreline of the *stream* to a distance of 10 metres measured perpendicularly from the *top of bank* of a *ravine* for *ravine*s that are greater than 60 metres in width;

3. for parcels greater than 0.5 hectares in size located on or adjacent to the Capilano River, Lynn Creek or Seymour River, or located on or adjacent to Mackay Creek at any point south of Marine Drive, the area from the centreline of the *stream* to a distance of 30 metres measured perpendicularly from the *top of bank* of a *stream.*

For the purpose of this definition, potential streamside vegetation is considered to exist if there is a reasonable ability for regeneration either with assistance through enhancement or naturally;



"Streamside Protection DPA" means the development permit area designated in Part One section A.2 of this *document*;

"top of bank" means:

1. for a floodplain area contained in a *ravine*, the point closest to the boundary of the *active floodplain* of a *stream* where a break in the slope of the land occurs such that the grade beyond the break is flatter than 3:1 at any point for a minimum distance of 15 metres measured horizontally from the break; and

2. for a floodplain area not contained in a *ravine*, the edge of the *active floodplain* of a *stream* where the slope of the land beyond the edge is flatter than 3:1 at any point for a minimum distance of 15 metres measured horizontally from the edge;

"top of ravine bank" means the first significant break in a ravine slope where the break occurs such that the grade beyond the break is flatter than 3:1 for a minimum distance of 15 metres measured horizontally from the break, and the break does not include a bench within the ravine that could be *developed*;

"watercourse" means any natural or man-made depression with well-defined banks and a bed 0.6 metre or more below the surrounding land that serves to give direction to a current of water at least six months of the year, or having a drainage area of two square kilometres or more upstream of the point of consideration;

"wetlands" means land that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal conditions does support, vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, fens, estuaries and similar areas that are not part of the *active floodplain* of a *stream*;

"wildlife corridor" means a series of connected or linked habitats that may include a streamside area or habitat or a series of mature stands or trees, that facilitates or aids in the movement of species;

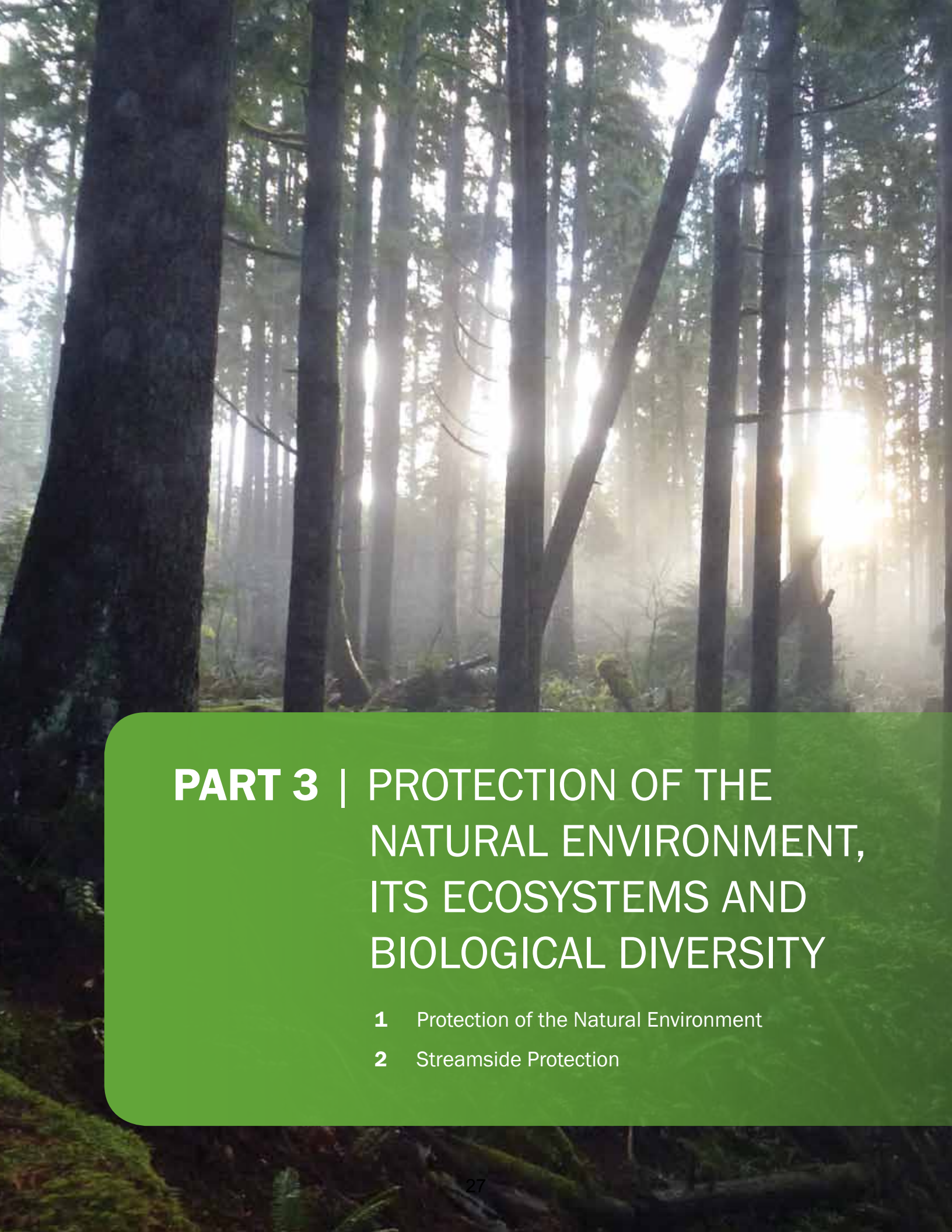
"Wildfire Hazard DPA" means the development permit area designated in Part One section A.3 of this *document;*

"wildfire mitigation" means any action taken to eliminate or reduce the long-term risk of wildfire; and

"wildfire risk area" means that part of the *Wildfire Hazard DPA* that is coloured light orange on map 2.1;

"Zoning Bylaw" means the *District* Zoning Bylaw 3210, 1965. as amended, consolidated or re-enacted from time to time.

The BC Hydro rights of way that cross the District provide corridors that wildlife use to move from one area to another



PART 3 | PROTECTION OF THE NATURAL ENVIRONMENT, ITS ECOSYSTEMS AND BIOLOGICAL DIVERSITY

Context

The natural features of the *District*, including our rivers, wetlands and forests, provide a spectacular setting and strong identity for our community. They also contain ecosystems that provide many functions necessary for our health and well being and the health and well being of a wide variety of plants and animals. The local ecology is crucial to the health of the air we breathe, the water we drink and the soil beneath our feet, and provides a host of ecological services including rainwater interception, soil stability, and temperature regulation. The *District's* intention is to protect and improve the integrity, ecological health and biodiversity of our natural features and systems. This means preserving our rich natural heritage for future generations while enjoying it responsibly today.

There are two development permit areas for the protection of the natural environment, its ecosystems and biological diversity: the *Protection of the Natural Environment DPA* and the *Streamside Protection DPA*.

1 Protection of the Natural Environment

Photo courtesy of the Lynn Canyon Ecology Centre

> "The local ecology is crucial to the health of the air we breathe, the water we drink and the soil beneath our feet..."

A. Objectives

The *Protection of the Natural Environment DPA* and corresponding development approval information area are established to:

1. protect the *District's* natural setting, ecological systems and visual assets as a part of a rich natural heritage for the benefit of present and future generations;
2. protect *wildlife corridor*s and the connectivity of our ecosystems;
3. protect our forested character and enhance the health of our forests, trees and soils;
4. conserve environmentally sensitive areas in order to protect biodiversity;
5. protect forested areas inside our watersheds in order to maintain or enhance hydrological functions; and
6. regulate *development* on parcels in the *Protection of the Natural Environment DPA* in furtherance of the above objectives.

B. Exemptions

The following activities are exempt from the requirement to obtain a protection of the natural environment development permit:

1. *development* that does not encroach or impact in any way on a *natural environment protected area;*
2. renovation or repair of a *permanent structure* on its existing foundation, provided that there is no expansion of the building footprint, including no cantilevered or projecting portions of the permanent structure, and provided that there is no clearing, grading or disturbance of soils, vegetation or trees within the *natural environment protected area*;
3. interior renovations within the existing foundation of a *permanent structure*;
4. public works and services and maintenance activities carried out by, or on behalf of, the *District* generally in accordance with these guidelines and approved by the *director*;
5. *habitat compensation* projects and other *habitat* creation, restoration and enhancement works carried out in accordance with *District* bylaws and a plan approved in writing by the *director;*
6. routine maintenance of existing landscaping and lawn areas;
7. installation of seasonal play or recreational equipment on existing yard/lawn areas, such as sandboxes or swing sets;
8. paths for personal use by the parcel owners, provided they do not exceed 1.0 metre in width, are constructed of pervious natural materials with no concrete, asphalt or pavers and no creosoted or otherwise treated wood, do not involve structural stairs, and require no removal of native vegetation;
9. minor alterations or repairs to existing roads, paths or driveways, provided that there is no further disturbance of land or vegetation; or

Brownies doing restoration planting in the Lower Seymour Conservation Area (left).

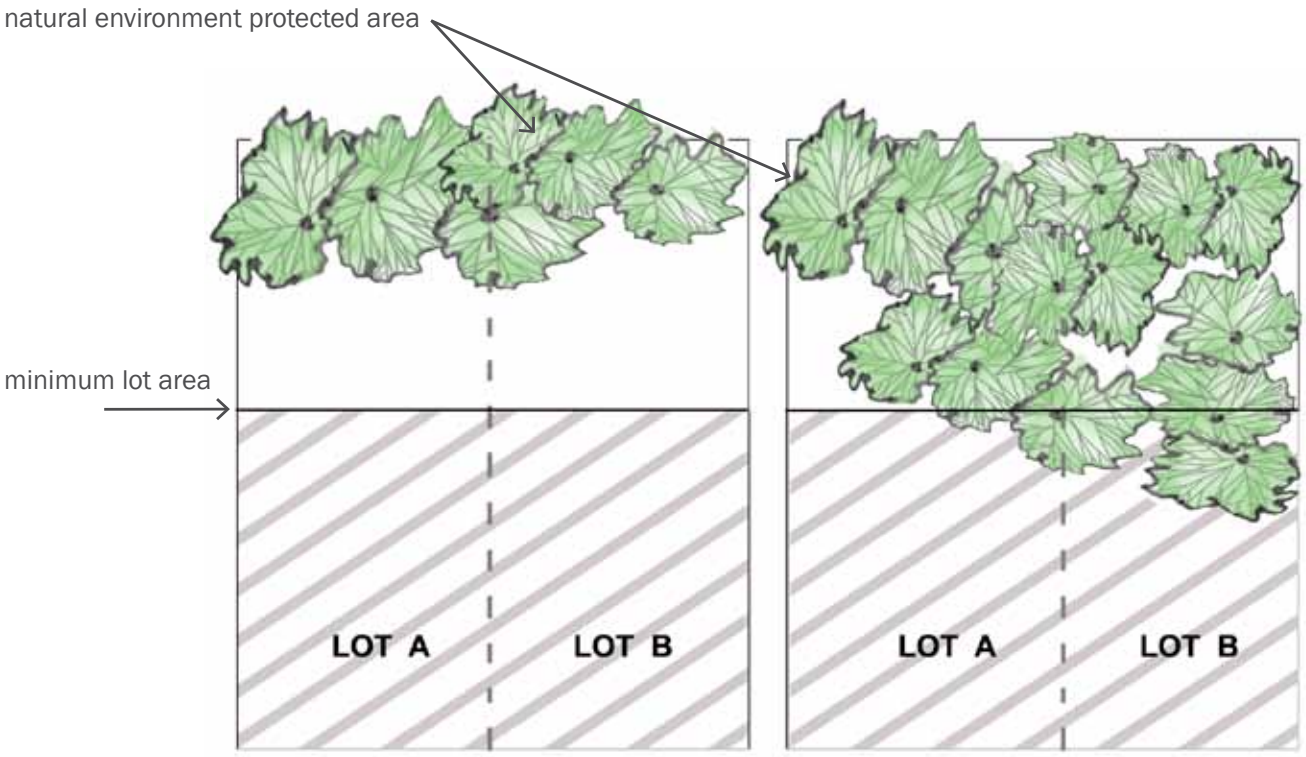
10. subdivision of land where:

a) minimum parcel area requirements are met exclusive of any land within any *natural environment protected area(s)*;

b) *natural environment protected areas* are intact, undisturbed and free of *development* activities and are kept intact, undisturbed and free of *development* activities; and

c) no restoration or enhancement of any *natural environment protected areas* is required.

In order to determine whether a proposed subdivision qualifies for an *exemption*, applicants may be required to provide additional information on the condition of the *natural environment protected area.*



Exempt – minimum lot area for each lot is met outside the protected area

DP Required – minimum lot area includes land in the protected area

C. Guidelines

The following guidelines apply within the *Protection of the Natural Environment DPA*:

1. Efforts should be made to locate *development* away from:

a) habitat for species at risk;

b) mature stands of trees;

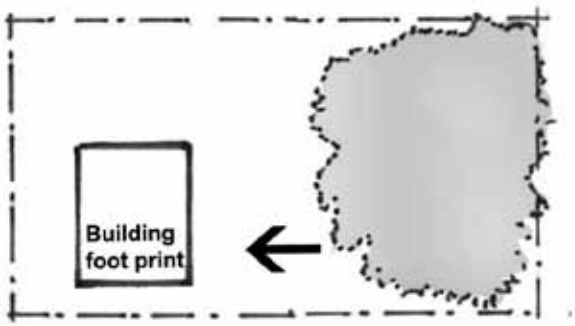
c) raptor's nesting sites;

d) wetlands; and

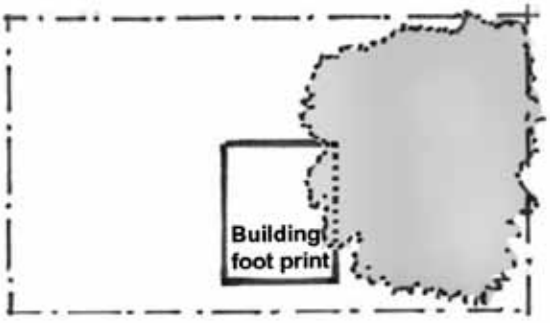
e) wildlife corridors.

This

Not This



This



Not This

2. Without limiting subsection (1) above, proposed *development* should be located and designed so as to minimize any damage to *natural environment protected areas* and efforts should be made to protect and enhance natural tree cover and vegetation, drainage patterns and landforms.

3. New structures on a parcel should be located as far away from *natural environment protected areas* as is feasible and in any event as far away from *natural environment protected areas* as existing *permanent structures*, if any, on the parcel.

4. Applicants may be required to submit a detailed environmental impact study prepared by a *qualified environmental professional*, to identify any potential issues and impacts relating to the proposed *development* and relating to protection, conservation and enhancement of *natural environment protected areas*. The environmental impact study may be required to include:

    a) delineation of the *natural environment protected area* including details on the features and extent of the said area. This may need to be done in conjunction with a certified B.C. Land Surveyor;

    b) description and relevant details of the proposed *development* and an assessment of the impacts of said *development* including impacts associated with the construction, operation and/or maintenance of the *development* on vegetation, wildlife, *habitat*, hydrology and soils;

    c) delineation and identification of any sensitive ecosystems for inclusion on the *District's* sensitive ecosystem inventory; and

    d) where necessary and appropriate, description of any *habitat compensation* projects.

5. Where land and/or natural vegetation in the *natural environment protected area* is disturbed or damaged due to *development*, the applicant may be required to provide *habitat compensation* for the portion of the *natural environment protected area* that will be affected, as approved by the *director*. A *habitat compensation project*, may need to be coordinated with or prepared by the *qualified environmental professional* and based on a legal survey prepared by a certified B.C. Land Surveyor, but in all cases should include:

    a) a site plan drawn to scale showing:

        i. the site of the *development*,

        ii. that portion of the *natural environment protected area* that is impacted, in both size (square metres) and location, and

        iii. the site of the proposed *habitat compensation* project, in both size (square metres) and location;

    b) the details of the *habitat compensation* project based on a principal of no net loss to the *natural environment protected areas*, which may include but is not limited to:

        i. a planting plan, listing each species to be planted and each plant's size (based on a principal of no net loss),

        ii. a tree planting plan based on a 3:1 ratio of replacement trees to trees removed,

        iii. details on soil work, grading and drainage, and

        iv. details on other proposed mitigation measures such as nesting boxes, wildlife snags or habitat piles.

6. Staff may require a legal survey and environmental impact study or letter from a *qualified environmental professional* in order to determine the boundaries of the *natural environment protected area* and confirm that the *development* is not impacting the area.

7. Development Permits issued may require that:

   a) the *natural environment protected area* be protected or enhanced in accordance with the permit;

   b) the timing and sequence of *development* occur within specific dates or construction window to minimize environmental impact;

   c) specific *development* works or construction techniques (e.g., erosion and sediment control measures, fencing off of trees or vegetation, etc.) be used to ensure minimal or no impact to the *natural environment protected area*;

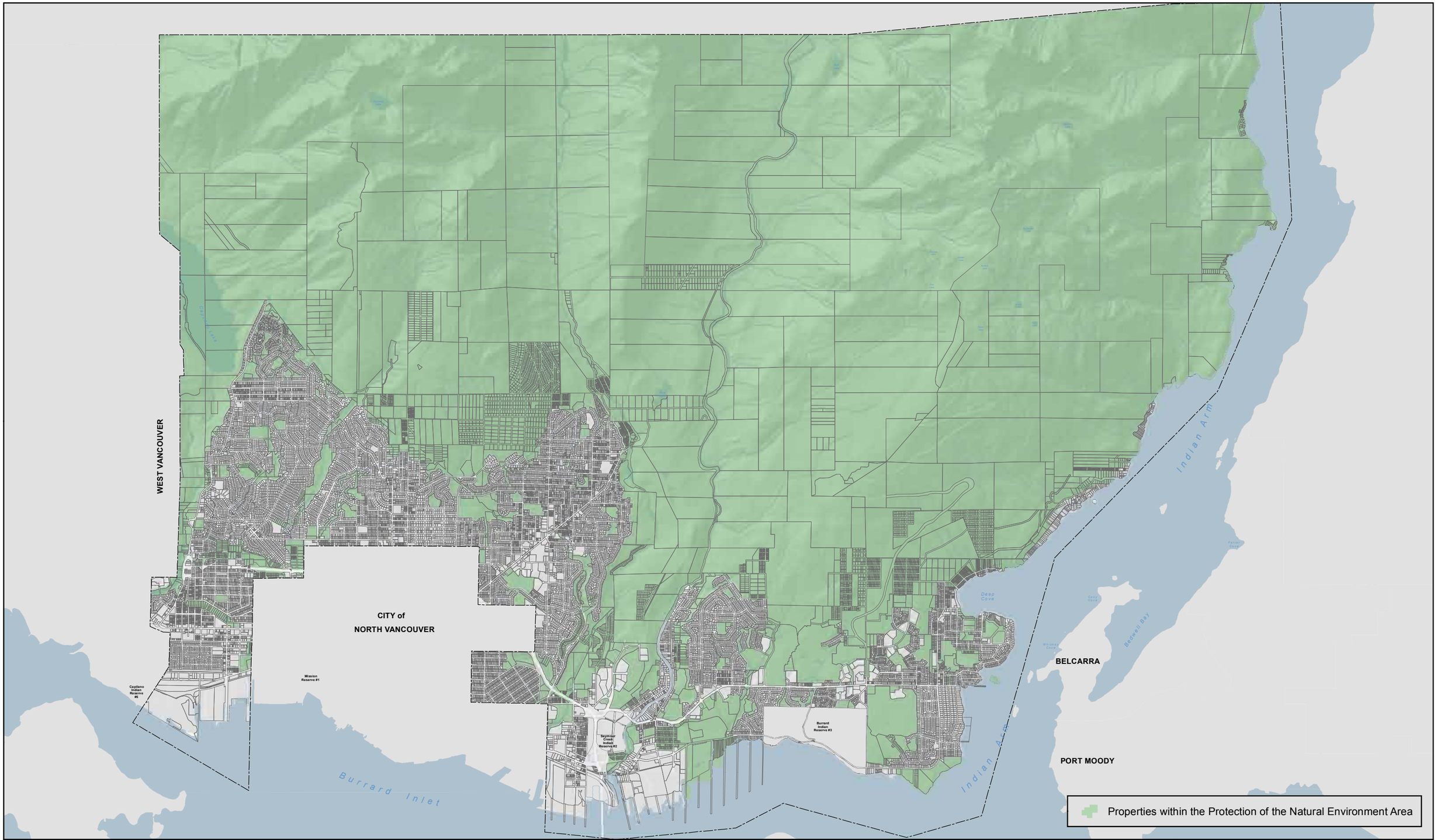
   d) mitigation measures (e.g. removal of impervious surfaces, replanting of riparian species, etc.) be undertaken to reduce impacts or restore habitat within the *natural environment protected area*;

   e) security may be required to secure satisfactory completion of habitat protection works, restoration measures, *habitat compensation* or other works for the protection of the natural environment (the "required works"). The security shall be in the amount of 125% of the estimated value of the required works as determined by the *director* and shall either be:

      i. in the form of a separate cash deposit or letter of credit; or

      ii. if acceptable to the *director* in his or her sole discretion, in the form of the cash deposit or letter of credit provided pursuant to the building permit in relation to the proposed *development* for which the development permit is issued; and

   f) security in the form of a cash deposit or letter of credit may also be required to secure recovery of the cost of any works, construction or other activities with respect to the correction of any damage to the environment that results as a consequence of a contravention of any condition or requirement in the protection of the *natural environment development permit*. The security taken pursuant to the building permit in relation to the proposed *development* for which the development permit is issued shall constitute the security for the purpose of this subsection, and shall not be released until damage, if any, has been remediated to the satisfaction of the *director*.



GIS DEPARTMENT
GEOGRAPHIC INFORMATION SYSTEMS
604.990.2311 www.geoweb.dnv.org gis@dnv.org

NORTH VANCOUVER DISTRICT

PROTECTION OF THE NATURAL ENVIRONMENT DEVELOPMENT PERMIT AREA - MAP 1.1

0 250 500 1,000 1,500 2,000 2,500
Meters

N

Published: May 31, 2012 Scale: **1:55,000**

N:\4-Projects\Departmental\Planning\HaidS\2010 DPA\Natural Enivironment\DPA_NaturalEnvironment_Tab.mxd

2 Streamside Protection

> "The *District's* intention is to protect and improve the integrity, ecological health and biodiversity of our natural systems."

A. Objectives

The *Streamside Protection DPA* and corresponding development approval information area are established to:

1. protect the *District's* natural setting, ecological systems and visual assets as a part of a rich natural heritage for the benefit of present and future generations;
2. protect the *District's* network of *streams*, *wetlands* and riparian *wildlife corridors*;
3. regulate *development* activities in and near *streams* in order to protect the aquatic environment;
4. conserve, enhance and restore *streamside areas* and ensure *development* does not result in net loss of *habitat*; and
5. identify when and how *development* may occur near *streams* in the *District* and the criteria for such *development*.

B. Exemptions

The following activities are exempt from the requirement to obtain a streamside protection development permit:

1. *development* outside the *streamside protected area*;
2. renovation or repair of a *permanent structure* on its existing foundation, provided no further extension or encroachment into the *streamside protected area* occurs, including cantilevered or projecting portions of the *permanent structure*, and provided that there is no clearing, grading or disturbance to soils, vegetation or trees within the *streamside protected area* and no drainage alteration;
3. interior renovations within the existing foundation of a *permanent structure*;
4. public works and services and maintenance activities carried out by or on behalf of the *District* generally in accordance with these guidelines and approved by the *director*;
5. streamside vegetation management such as removal of invasive species and revegetation with native streamside species, according to a plan approved in writing by the *director*;
6. routine maintenance of existing landscaping and lawn areas;
7. installation of seasonal play or recreational equipment on existing yard/lawn areas, such as sandboxes or swing sets;
8. habitat creation, restoration and enhancement works within *streams* that are authorized by all applicable provincial and federal authorities having jurisdiction;
9. *habitat compensation* projects and other habitat creation, restoration and enhancement works that are not within *streams* and are carried out in accordance with *District* bylaws and a plan prepared by a *qualified environmental professional* and approved in writing by the *director*;
10. paths for personal use by the parcel owners, provided they do not exceed 1.0 metre in width, are constructed of pervious natural materials with no concrete, asphalt or pavers and no creosoted or otherwise treated wood, do not involve structural stairs and require no removal of vegetation in a *streamside protection area*;
11. minor alterations or repairs to existing roads, paths or driveways, provided that there is no further disturbance of land or vegetation.
12. subdivision of land where:

    a) minimum parcel area requirements are met exclusive of the *streamside protected area(s);*

    b) the *streamside protected areas* are intact, undisturbed and free of *development* activities and are kept undisturbed, intact and free of *development* activities;

    c) no *development* activities related to the creation and servicing of parcels will occur in the *streamside protected areas*; and,

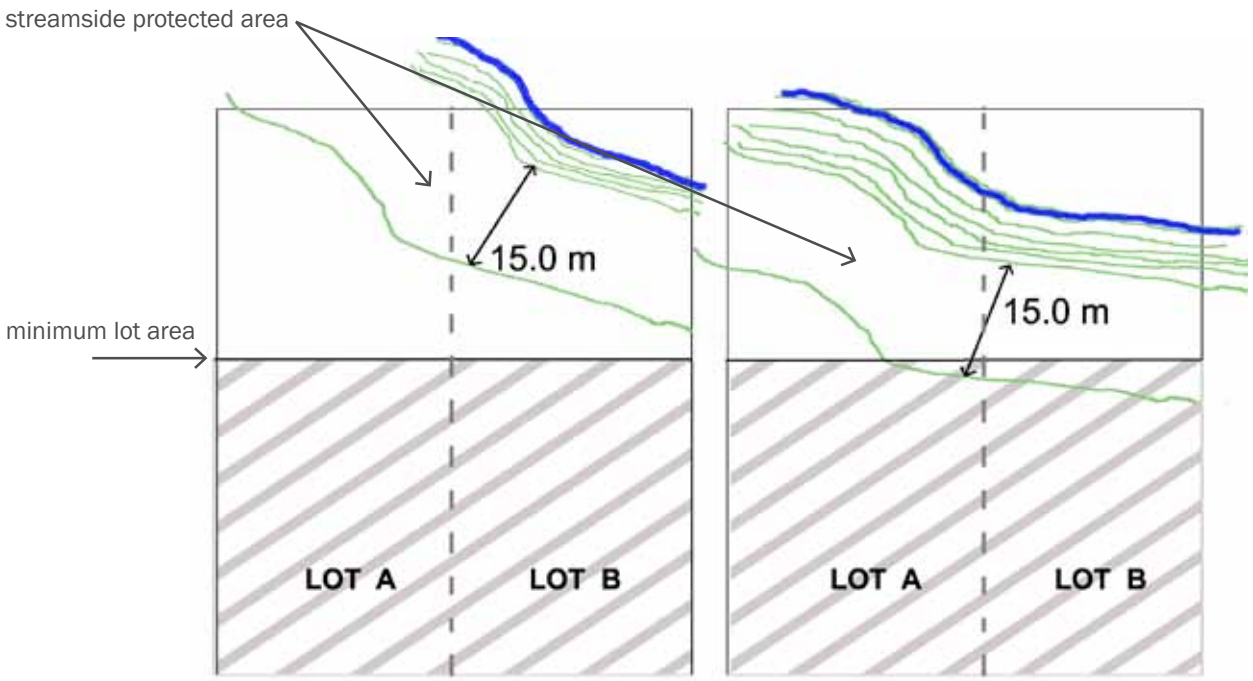
d) no restoration or enhancement of the *streamside protected areas* is required.

e) In order to determine whether a proposed subdivision qualifies for an exemption, applicants may be required to provide additional information on the condition of the existing *streamside protection area*.

C. Guidelines

The following guidelines apply within the *Streamside Protection DPA*:

1. All *development* should be located outside the *streamside protected area.*



Exempt – minimum lot area for each lot is met outside the protected area

DP Required – minimum lot area includes land in the protected area

2. Without limiting subsection (1) above, any proposed *development* in the s*treamside protected area* should be located so as to avoid any damaging impact to the *streamside protected area* and so as to minimize intrusion into the s*treamside protected area,* and efforts should be made to protect and enhance the natural features of the s*treamside protected area*, including the natural tree cover and vegetation, drainage patterns and landforms.

3. New structures on a parcel should be located as far away from the *stream* or *wetland* as is possible or feasible and in any event as far away from the stream or wetland as existing *permanent structures*, if any, on the parcel.

4. As noted above, *development* should be located outside the *streamside protected area*, however, where that is not possible, the area within 5 metres of the *top of bank*, edge of *wetlands* or *top of ravine bank* should remain free of *development* including new impervious or semi-impervious surfaces and new structures or extensions of existing *permanent structures*, including decks and patios.

5. Applicants may be required to submit an environmental impact study, prepared by a *qualified environmental professional*, to identify any potential issues relating to the proposed *development* and its impacts on the *streamside protected area* and relating to protection, preservation and enhancement of the *streamside protected area*, including issues and impacts associated with the *District's* broader objectives of streamside protection and *wildlife corridor* enhancement, as set out herein, and to identify any mitigative measures that should be undertaken. Applicants may also be required to obtain approval from Fisheries and Oceans Canada (DFO) under the *Fisheries Act*. Any DFO approvals required by the *District* will be considered as part of the development permit review, but, for greater certainty, the development permit process will also consider impacts to other streamside or environmental values in addition to fish habitat. The environmental impact study may be required to include:

    a) delineation of the *streamside protected area* including details on the features and extent of the said area, this should be done in conjunction with a certified B.C. Land Surveyor;

    b) description and relevant details of the proposed *development* and an assessment of the impacts of said *development* including impacts associated with the construction, operation and/or maintenance of the *development* on vegetation, wildlife, habitat, hydrology and soils;

    c) delineation and identification of any sensitive ecosystems for inclusion on the *District's* sensitive ecosystem inventory; and

    d) where necessary and appropriate, description of any *habitat compensation* projects.

6. Where land and/or natural vegetation in the *streamside protected area* is or may be disturbed or damaged due to proposed *development*, the applicant may be required to provide *habitat compensation* for the portion of the *streamside protected area* that will be affected, as approved by the *director*. A *habitat compensation* plan, may need to be coordinated with or prepared by the *qualified environmental professional* and based on a legal survey prepared by a certified B.C. Land Surveyor, but in all cases should include:

    a) a site plan drawn to scale showing:

        i. the site of the *development*,

        ii. that portion of the *streamside protected area* that is impacted, in both size (square metres) and location, and

        iii. the site of the proposed *habitat compensation* project, in both size (square metres) and location;

    b) the details of the *habitat compensation* project based on a principal of no net loss to the *streamside protected areas*, which may include but is not limited to:



Many existing homes predate modern regulations, these guidelines allow existing homes to remain, but ask that new development follow current practices Photo (Left). Courtesy of the Museum and Archives

i. a planting plan, listing each species to be planted and each plant's size (based on a principal of no net loss),

ii. a tree planting plan based on a 3:1 ratio of replacement trees to trees removed,

iii. details on soil work, grading and drainage, and

iv. details on other proposed mitigation measures such as nesting boxes, wildlife snags or habitat piles; and

c) a cost estimate for the *habitat compensation* works.

7. To determine the location of the *streamside protected area* on a parcel, applicants may be required to confirm, with the assistance of a *qualified environmental professional* and illustrated by certified legal survey, the *top of bank*, *top of ravine bank* and/or edge of *wetlands* in relation to property lines and existing and proposed *development*.

8. Development permits issued may require that:

a) streamside area or habitat and trees or other vegetation within the *streamside protected area* be preserved or enhanced in accordance with the permit;

b) the timing and sequence of *development* occur within specific dates or construction window to minimize impact to streams, fish or wildlife species;

c) specific *development* works or construction techniques (e.g., erosion and sediment control measures, fencing off of trees or vegetation, etc.) be used to ensure minimal or no impact to the *streamside protected area*;

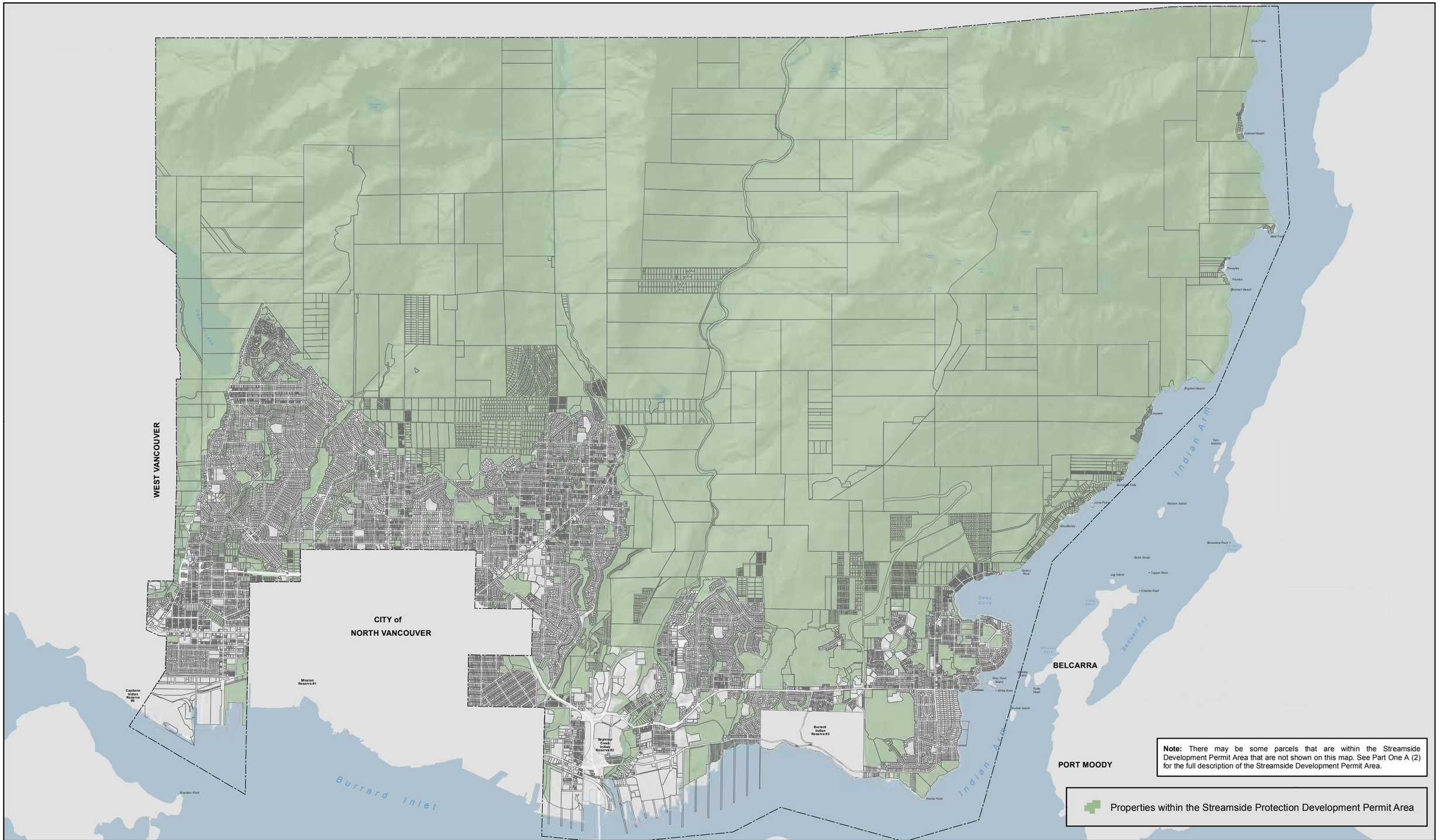
d) mitigation measures (e.g. removal of impervious surfaces, replanting of riparian species, etc.) be undertaken to reduce impacts or restore *habitat* within the *streamside protected area*;

e) security in the form of a cash deposit or letter of credit be provided to secure satisfactory completion of habitat protection works, restoration measures, *habitat compensation* or other works for the protection of the streams and streamside *habitat* (the "required works"). This security shall be in the amount of 125% of the estimated value of the required works as determined by the *director* and shall either be:

   i. in the form of a separate cash deposit or letter of credit; or

   ii. if acceptable to the *director* in his or her sole discretion, in the form of the cash deposit or letter of credit provided pursuant to the building permit in relation to the proposed *development* for which the development permit is issued; and

f) security in the form of a cash deposit or letter of credit be provided to secure recovery of the cost of any works, construction or other activities with respect to the correction of any damage to the environment that results as a consequence of a contravention of any condition or requirement in the streamside protection development permit. The security taken pursuant to the building permit in relation to the proposed *development* for which the development permit is issued shall constitute the security for the purpose of this subsection, and shall not be released until damage, if any, has been remediated to the satisfaction of the *director*.



Note: There may be some parcels that are within the Streamside Development Permit Area that are not shown on this map. See Part One A (2) for the full description of the Streamside Development Permit Area.

Properties within the Streamside Protection Development Permit Area

NORTH VANCOUVER DISTRICT

GIS DEPARTMENT

GEOGRAPHIC INFORMATION SYSTEMS

604.990.2311 www.geoweb.dnv.org gis@dnv.org

STREAMSIDE PROTECTION DEVELOPMENT PERMIT AREA - MAP 1.2

0 250 500 1,000 1,500 2,000 2,500

Meters

N

Published: May 31, 2012 Scale: **1:55,000**

N:\4-Projects\Departmental\Planning\HaidS\2010 DPA\Streamside Protection\DPA_StreamsideProtection_Tab.mxd

Development Approval Information Areas

Land within the *Protection of the Natural Environment DPA* and *Streamside Protection DPA* are also designated collectively as a Development Approval Information Area in accordance with Section 920.01 of the *Local Government Act*. Applicants for protection of the natural environment or streamside protection development permits may be required by the *District* to provide, at the applicant's expense, information in order to demonstrate compliance with the applicable guidelines.

Requirements

If required by the *District*, applicants for a protection of the natural environment development permit or a streamside protection development permit must submit the information set out in this section.

1. Where any *development* is proposed within a *natural environment protected area* or a *streamside protected area*, the *District* may require that a report prepared by a *qualified environmental professional* be provided at the applicant's expense to assess existing conditions and impacts of the proposed *development* on:

    a) *streams* and *streamside areas,* in the case of proposed *development* in a *streamside protected area*; or

    a) *mature stands of trees*, *habitat* for *species at risk*, *wetlands*, *raptors*' nesting sites or *wildlife corridors*, in the case of proposed *development* in a *natural environment protected area*.

2. Information on existing conditions (baseline information) on the site should be provided in a survey plan prepared by a certified B.C. Land Surveyor, that includes, at a minimum, the following:

    a) plans at 1:100 minimum scale with north arrow and minimum 1 metre contour interval;

    b) parcel boundaries and adjacent streets and rights-of-way;

    c) natural features including *streams*, *wetlands*, *top of bank*, *mature stands of trees*, *habitat for species at risk*, *raptors*' nesting sites and *wildlife corridors*;

    d) boundaries of the *streamside protected area* or the *natural environment protected area*, as the case may be, determined in accordance with this *document* and the guidelines herein;

    e) any existing improvements on the parcel including locations and dimensions of existing buildings, driveways, parking areas, utilities, retaining walls and landscaping; and

    f) all trees and vegetation within the natural environment protected area or streamside protected area, as the case may be, highlighting vegetation and trees that will be affected or removed by the proposed *development*. The *District* may require that a tree assessment and retention/restoration plan be completed by a professional arborist in accordance with Master Requirement List (MRL) Form #ENV106 and #ENV108A, which are available for viewing at the *District's* website at www.dnv.org, as amended from time to time.

3. Information on the proposed *development* should, at a minimum, include:

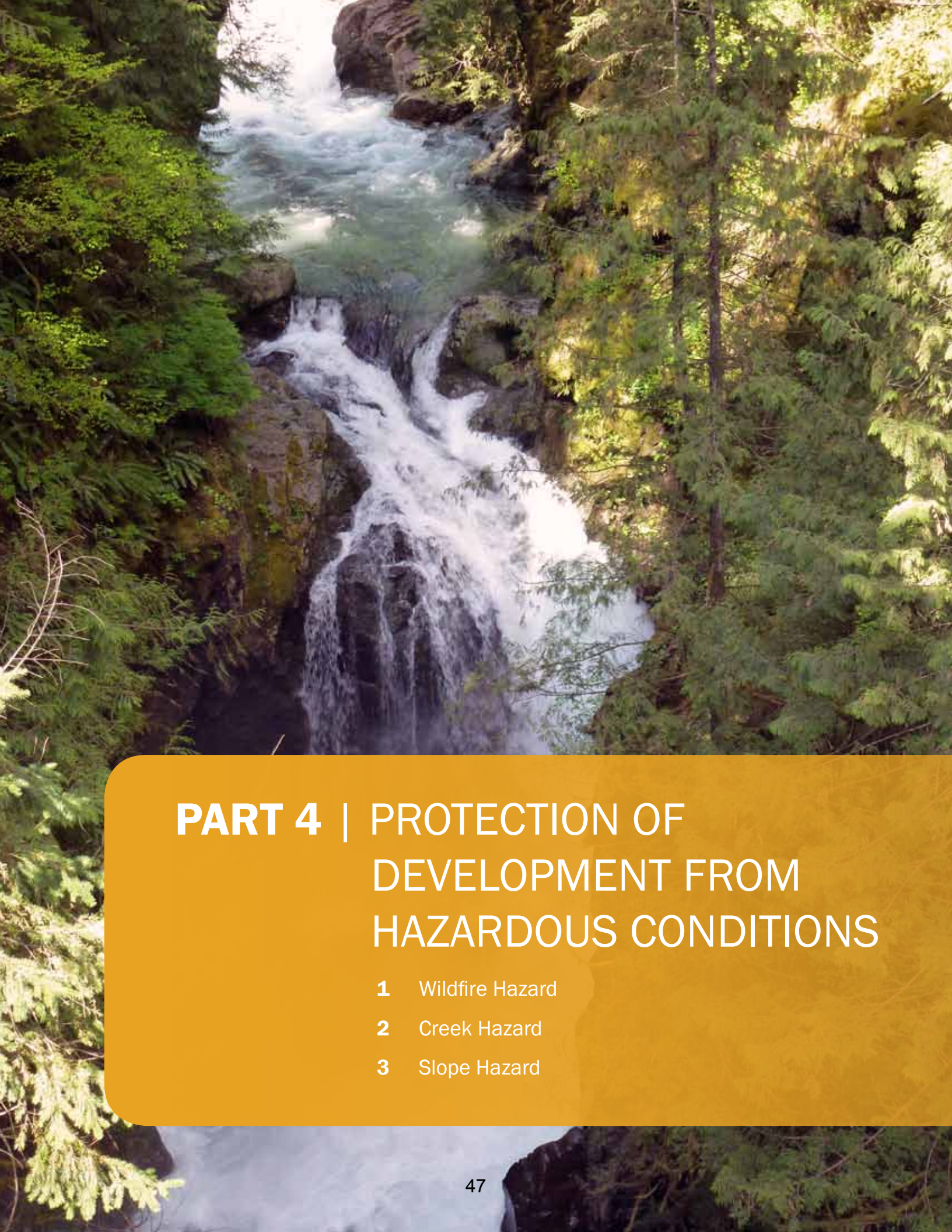
    a) locations and dimensions of proposed buildings, driveways, parking areas and utility services relative to the *natural environment protected area* or *streamside protected area*, as the case may be; and

    b) any temporary encroachment(s) by clearing, grading and other construction-related activities into the *natural environment protected area* or *streamside protected area*, as the case may be, and measures to mitigate and/or compensate such encroachment(s).

4. A written analysis should be provided demonstrating that the proposed *development* is consistent with the applicable development permit guidelines, and identifying any mitigation or compensation measures that are consistent with the guidelines, including measures that may be specified as development permit conditions.

5. The report must describe by plan and text the erosion control measures that are to be put in place during the site preparation and construction stages of the project.

6. If the *director* is not satisfied that the information is sufficient to comply with this section in scope, level of detail or accuracy or in any other respect, the *director* may, within 30 business days of receipt of the information submitted by the applicant, require the applicant to provide, at the applicants expense, further information to reasonably comply with this section.



PART 4 | PROTECTION OF DEVELOPMENT FROM HAZARDOUS CONDITIONS

1 Wildfire Hazard

2 Creek Hazard

3 Slope Hazard

Context

The presence of *steep slopes*, *ravines*, creeks, rivers, floodplains and forested lands combined with occasional extreme weather activity make some areas of the *District* susceptible to conditions that may be hazardous. Such conditions include *debris flow*, *debris flood*, *flood*, slope instability, landslides, erosion, or wildfire. It is the *District's* objective to reduce and mitigate the *risks* associated with *development* in these areas by applying the *District's* ongoing Risk Management Program and taking appropriate precautionary measures through professional studies and assessments in order to guide safe *development*, building design, construction and long-term maintenance and monitoring.

Within this category, there are three development permit areas: the *Wildfire Hazard DPA*, the *Creek Hazard DPA* and the *Slope Hazard DPA*.

1 Wildfire Hazard

"The *District's* intention is to ensure new *development* is resilient to natural hazards and climate change."

A. Objectives

The *Wildfire Hazard DPA* and corresponding development approval information area are established to:

1. ensure that *development* within the *Wildfire Hazard DPA* is managed in a way that:
    a) minimizes the *risk* to property and people from wildfire hazards;
    b) promotes activities to reduce wildfire hazards while still addressing environmental issues; and
    c) minimizes the *risk* of fire to the *District's* forests;
2. proactively manage conditions affecting potential fire behaviour, thereby increasing the probability of successful fire suppression and containment, and thereby minimizing adverse impacts;
3. conserve the visual and ecological assets of the forest for the benefit of present and future generations; and
4. reduce the *risk* of post-fire landslides, *debris flows* and erosion.

B. Exemptions

All *development* is exempt from the requirement to obtain a wildfire hazard development permit other than the construction and installation of a *new building or structure* for which a building permit is required pursuant to the *District's Building Regulation Bylaw*.

C. Guidelines

The following guidelines apply within the *Wildfire Hazard DPA*:

1. Applicants may be required to provide a *preliminary assessment* report and *detailed assessment* report prepared by a *qualified professional*.

2. *New buildings or structures* and associated *accessory* buildings and structures should be located as far away from any *wildfire risk areas* as is reasonably possible or feasible and in any event, as far away from any *wildfire risk areas* as existing *permanent structures*, if any, on the parcel.

3. For parcels that are located entirely within a wildfire risk area, guideline number 2 does not apply, but new buildings or structures and associated *accessory* buildings and structures should be located as far away from any contiguous undeveloped forested areas or areas containing hazardous forest fuel types or accumulations as is reasonably possible or feasible.

4. The following fire resistive materials and construction practices should be required for all subject *development* in the Wildfire Hazard DPA:

    a) *fire retardant roofing* materials should be used, and asphalt or metal roofing should be given preference;

    b) decks, porches and balconies should be sheathed with *fire resistive materials*;

    c) all eaves, attics, roof vents and openings under floors should be screened to prevent the accumulation of combustible material, using 3mm, non combustible wire mesh, and vent assemblies should use fire shutters or baffles;

    d) exterior walls should be sheathed with *fire resistive materials*;

    e) fire-resistive decking materials, such as solid composite decking materials or *fire-resistive* treated wood, should be used;

    f) all windows should be tempered or double-glazed to reduce heat and protect against wind and debris that can break windows and allow fire to enter the *new building or structure*;

    g) all chimneys and wood-burning appliances should have approved spark arrestors; and

    h) building design and construction should generally be consistent with the highest current wildfire protection standards published by the National Fire Protection Association or any similar, successor or replacement body that may exist from time to time.

5. All new hydro servicing that is in, or within 10 metres of, a *wildfire risk area* should be underground, or where this is not feasible, poles of non-combustible materials should be used (concrete).

6. The following landscape and service conditions should be required in respect of subject *development* in, or within 10 metres of, a *wildfire risk area*:

    a) firebreaks should be designed and installed, which may be in the form of cleared parkland, roads, or utility right-of-ways;

    b) wildfire risk mitigation and landscaping should be designed and installed to protect, conserve and enhance natural features of the site and adjacent ecosystems in accordance with *District* bylaws;

    c) if removal of trees or vegetation is deemed necessary by the *qualified professional* for the purpose of reducing wildfire *risk*, *District* approval is required and replacement trees or vegetation may be required by the *District;*

    d) if deemed necessary by the *qualified professional* for the purpose of reducing wildfire *risk*, a *defensible space* of at least 10 metres should be managed around buildings and structures with the goal of eliminating *fuel* and combustible debris, reducing *risk*s from approaching wildfire and reducing the potential for building fires to spread to the forest, and the required *defensible space* may be larger in areas of sloping ground where fire behaviour creates greater *risk*.

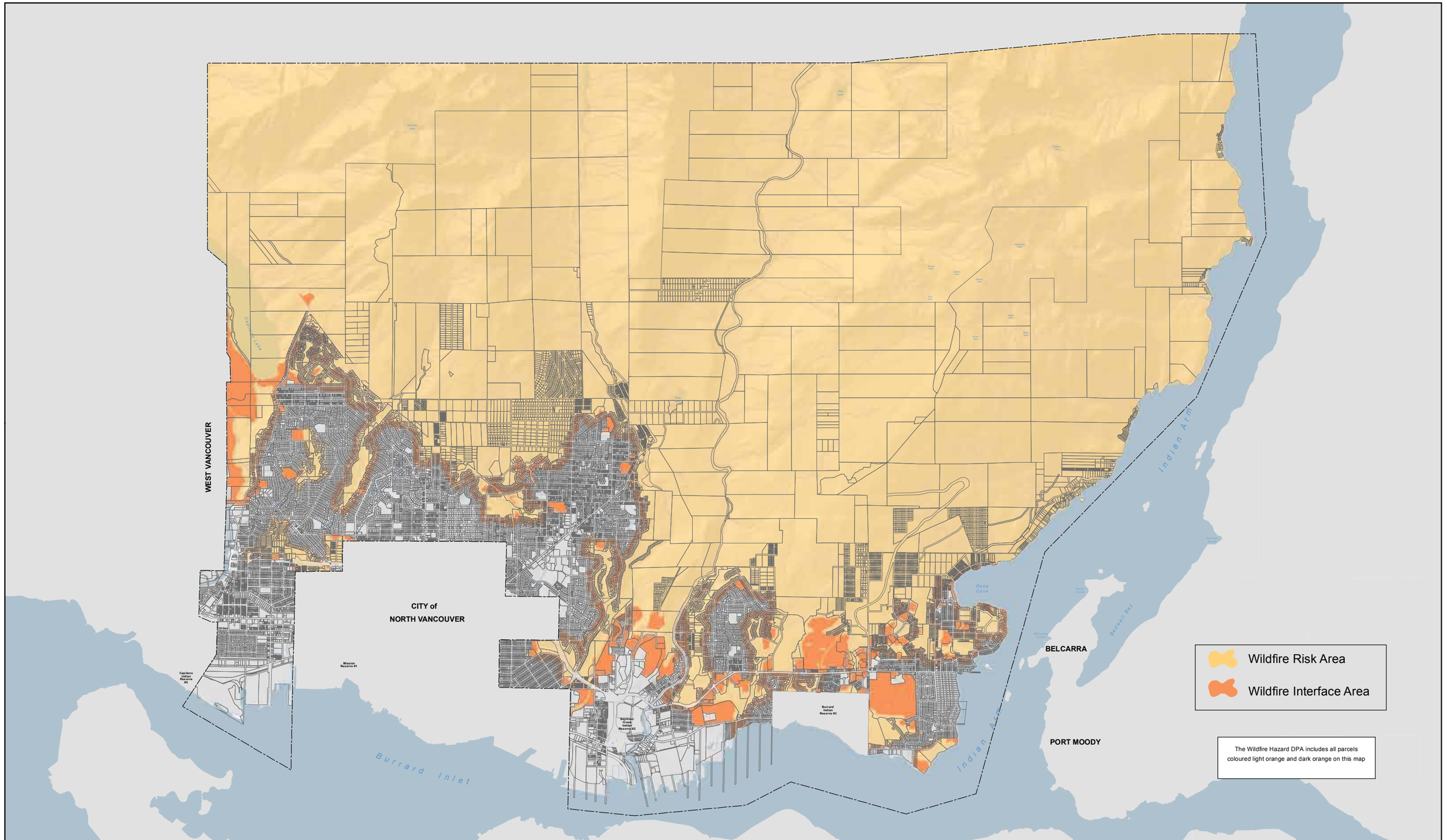
7. Building design and construction should generally be consistent with the highest current wildfire protection standards published by the National Fire Protection Association or any similar, successor or replacement body that may exist from time to time.

8. All wood, vegetation and construction debris identified in the *qualified professional's* report should be removed within three months of permit issuance, or immediately during high fire risk seasons, and the *District* may require security in connection with such removal.

9. Applicants may be required to submit a tree assessment and retention/restoration plan completed by a *qualified professional* in accordance with current standards and *District* report requirements.

Fire Interface Area: homes in Grousewoods (left) and Braemar/Demsey (right) back on to the forest.

This page intentionally left blank



GIS DEPARTMENT
GEOGRAPHIC INFORMATION SYSTEMS
604.990.2311 www.geoweb.dnv.org gis@dnv.org

NORTH VANCOUVER DISTRICT

WILDFIRE HAZARD DEVELOPMENT PERMIT AREA - MAP 2.1

0 250 500 1,000 1,500 2,000 2,500
Meters

N

Published: May 31, 2012 Scale: **1:59,118**

N:\4-Projects\Departmental\Planning\HaidS\2010 DPA\Wildfire Hazards\DPA_WildfireHazard_Tab.mxd

2 Creek Hazard

"Minimize the risk to people and property from creek hazards and mitigate the impacts of flooding within areas already developed."

A. Objectives

The *Creek Hazard DPA* and corresponding development approval information area are established to address the following objectives:

1. minimize the *risk* to people and property from creek hazards;
2. encourage safety in the construction, location and manner of *development*;
3. minimize *development* in high hazard areas due to *debris flow*, *debris flood* areas;
4. mitigate the impacts of flooding within areas already developed;
5. avoid increasing the hazard to or vulnerability of others on the floodplain; and
6. maintain a natural riverine and floodplain regime.

B. Exemptions

The following activities are exempt from the requirement to obtain a creek hazard development permit:

1. public works and services and maintenance activities carried out by, or on behalf of, the *District* and approved by the *director*;
2. *development* involving buildings or structures in which the top of all proposed concrete slabs or underside of all wooden floor systems for all *habitable space* is more than 2 metres above the lowest elevation in the part of the *creek* channel that is adjacent to or closest to the proposed building or structure. This *exemption* does not apply where the *flood* hazard arises from Capilano River, Mackay Creek (below Highway #1), Mosquito Creek, Lynn Creek, or Seymour River; or to *debris flow* or *debris flood* hazards;
3. repairs or renovations (including roof repairs or replacement) to a *permanent structure,* provided that there is no expansion of the building footprint, including no cantilevered or projecting portions of the *permanent structure*;
4. construction of additional storeys above an existing building;
5. additions of less than 25 square metres in area, provided that no other additions have been commenced or constructed within the immediately preceding 24-month period and provided that the proposed addition is not located in a *potential debris flow* or *debris flood area* or a *potential flood hazard area*;
6. replacement or repair of an existing deck, provided that, if the deck is located in a *potential debris flow* or *debris flood area* or a *potential flood hazard area*, the location and dimensions of the deck do not change;
7. *construction* of an *accessory* building permitted by the *Zoning Bylaw*, provided that provided that the *accessory* building is located outside any *potential debris flow* or *debris flood area* and any *potential flood hazard area*;
8. minor alterations or repairs to existing roads, paths or driveways, provided that there is no further disturbance of land or vegetation;
9. *habitat* creation, restoration or enhancement works carried out in accordance with *District* bylaws and a plan approved by the *director*;
10. routine maintenance of existing landscaping and lawn areas;
11. planting of trees or vegetation in accordance with *District* bylaws; or
12. removal of trees or vegetation in accordance with *District* bylaws.

C. Guidelines

The following guidelines apply in the *Creek Hazard DPA*:

1. Applicants may be required to provide a *preliminary assessment* report and *detailed assessment* report prepared by a *qualified professional*.

2. *Development* should:

    a) be constructed in a location and manner that will maximize the safety of residents and property;

    b) be located in the least hazardous part of the site;

    c) be minimized in floodplain areas, or where *development* may impede a natural *floodway;*

    d) comply with *flood* construction requirements identified by a *qualified professional* in a *preliminary assessment* or *detailed assessment* report;

    e) not increase the *risk* or hazard to, or vulnerability of, other properties or structures;

    f) not include *habitable space* below the *flood construction level* specified by the *qualified professional* except in accordance with recommendations made by a *qualified professional* and in compliance with these guidelines;

    g) in connection with renovations to any existing *permanent structure*, where reasonable, reduce *flood* hazard to the existing *permanent structure* by raising the *habitable space* to *flood construction levels*; and

    h) not include the installation of any mechanical equipment or electrical wiring below the *flood construction level* except in accordance with recommendations made by a *qualified professional* and in compliance with these guidelines.

3. Background information on potential *flood*, *debris flood* and *debris flow* hazards may be available through the *District's* Natural Hazard Management Program, and, if so, information in these reports should be referenced as part of any development permit application.

4. Structural and/or non-structural *flood* protection measures should be implemented to mitigate the impacts of *flooding* within areas already developed.

5. Vegetation should be maintained and/or restored along all *creek* banks, valley floors and floodplains and within the required setback from *top of bank* to minimize erosion in accordance with the guidelines applicable to the streamside development permit.

6. *Potential debris flow and debris flood hazard areas* and *potential flood hazard areas* should remain free of *development*, or, if that is not possible, then:

    a) mitigation should be undertaken to reduce *risk* to an acceptable level (*risk* for both the subject property and any adjacent or nearby lands should be addressed); and

    b) conditions (for example conditions relating to the permitted uses, density or scale of building) should be imposed as necessary to reduce potential hazard to acceptable levels,

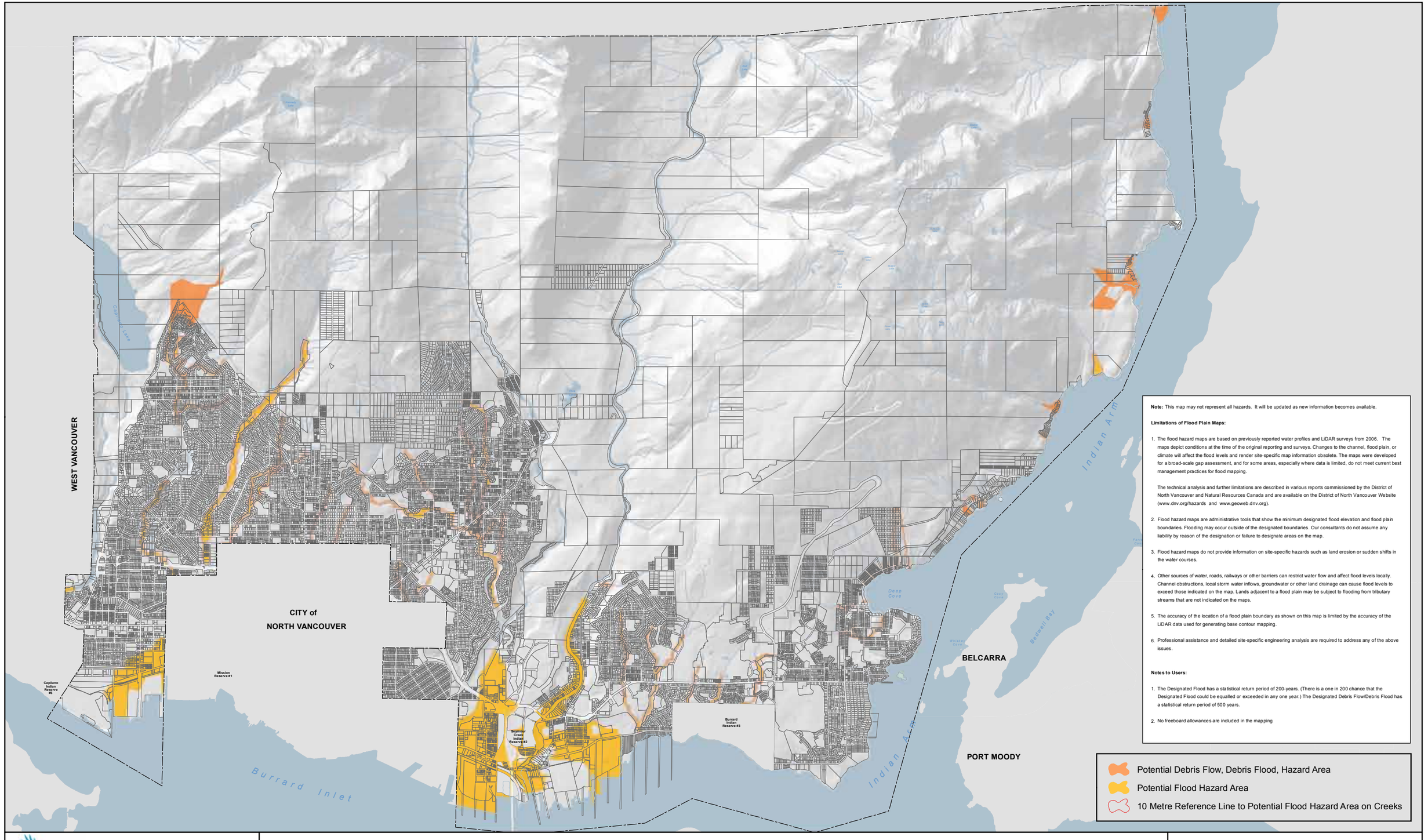
    both as determined by a *qualified professional* in a *preliminary assessment* or *detailed assessment* report.

7. Storm sewer connections should be installed and maintained in accordance with the *District's* Sewer Bylaw to reduce possible erosion of creek banks.

8. Proposed *flood construction levels* should be clearly defined by a *qualified professional*, preferably in Geodetic Survey of Canada datum.

9. Natural riverine and floodplain regimes should be preserved. *Development* should be sited so as to allow normal *creek* processes (erosion and channel migration) and anticipated *flooding* to occur. Where appropriate, this should include actions, such as grading of the site, to deflect *flood* water and to allow for *floodways* or pooling of floodwater.

A new foundation and creek bank stabilization project, after the creek eroded the foundations of the existing house (left). Debris Flow risk reduction: Debris catch basin on one branch of MacKay Creek (right).



Note: This map may not represent all hazards. It will be updated as new information becomes available.

Limitations of Flood Plain Maps:

1. The flood hazard maps are based on previously reported water profiles and LiDAR surveys from 2006. The maps depict conditions at the time of the original reporting and surveys. Changes to the channel, flood plain, or climate will affect the flood levels and render site-specific map information obsolete. The maps were developed for a broad-scale gap assessment, and for some areas, especially where data is limited, do not meet current best management practices for flood mapping.

   The technical analysis and further limitations are described in various reports commissioned by the District of North Vancouver and Natural Resources Canada and are available on the District of North Vancouver Website (www.dnv.org/hazards and www.geoweb.dnv.org).

2. Flood hazard maps are administrative tools that show the minimum designated flood elevation and flood plain boundaries. Flooding may occur outside of the designated boundaries. Our consultants do not assume any liability by reason of the designation or failure to designate areas on the map.

3. Flood hazard maps do not provide information on site-specific hazards such as land erosion or sudden shifts in the water courses.

4. Other sources of water, roads, railways or other barriers can restrict water flow and affect flood levels locally. Channel obstructions, local storm water inflows, groundwater or other land drainage can cause flood levels to exceed those indicated on the map. Lands adjacent to a flood plain may be subject to flooding from tributary streams that are not indicated on the maps.

5. The accuracy of the location of a flood plain boundary as shown on this map is limited by the accuracy of the LiDAR data used for generating base contour mapping.

6. Professional assistance and detailed site-specific engineering analysis are required to address any of the above issues.

Notes to Users:

1. The Designated Flood has a statistical return period of 200-years. (There is a one in 200 chance that the Designated Flood could be equalled or exceeded in any one year.) The Designated Debris Flow/Debris Flood has a statistical return period of 500 years.

2. No freeboard allowances are included in the mapping

- Potential Debris Flow, Debris Flood, Hazard Area
- Potential Flood Hazard Area
- 10 Metre Reference Line to Potential Flood Hazard Area on Creeks

NORTH VANCOUVER DISTRICT

GIS DEPARTMENT
GEOGRAPHIC INFORMATION SYSTEMS
604.990.2311 www.geoweb.dnv.org gis@dnv.org

CREEK HAZARD DEVELOPMENT PERMIT AREA - MAP 2.2

0 250 500 1,000 1,500 2,000 2,500
Meters

N

Published: May 31, 2012 Scale: **1:55,000**

N:\4-Projects\Departmental\Planning\HaidS\2010 DPA\Creek Hazards\DPA_CreekHazard_Tab.mxd

3 Slope Hazard

> "The *District's* intention is to reduce slope hazards and landslide *risk* to people and property by carefully managing *development* and construction practices on or near steeply sloped lands."

A. Objectives

The *Slope Hazard DPA* and corresponding development approval information area are established to address the following objectives:

1. minimize the *risk* to people and property from slope hazard;
2. develop safely and minimize the impacts on or near steeply sloped lands, including the potential run out area below *steep slope*s;
3. reduce slope hazards and landslide *risk* to people and property by carefully managing *development* and construction practices on or near steeply sloped lands;
4. avoid alteration of steeply sloped lands that may cause increased instability of the land or adjacent areas;
5. encourage professional design of structures and mitigative works and to ensure field review during construction and post-construction certification; and
6. encourage ongoing maintenance and monitoring of steeply sloped lands.

B. Exemptions

The following activities are exempt from the requirement to obtain a development permit:

1. public works and services and maintenance activities carried out by, or on behalf of, the *District*, and approved by the *director*;
2. non-structural repairs or renovations (including roof repairs or replacement) to a *permanent structure* provided that there is no expansion of the building footprint, including no cantilevered or projecting portions of the *permanent structure*, and provided that such repairs or renovations do not increase the *gross floor area* of the *permanent structure*;
3. replacement or repair of an existing deck, provided that the location and dimensions do not change;
4. construction of an *accessory* building of less than 25 square metres permitted by the *Zoning Bylaw* provided that the *accessory* building is located outside any *potential slope hazard area* and at least 10 metres away from the crest of any *steep slope*, and provided that no removal of trees or placement of fill will be required;
5. routine maintenance of existing landscaping and lawn areas;
6. habitat creation, *streamside* restoration or similar habitat enhancement works in accordance with *District* bylaws and a plan approved by the *director*; or
7. planting of vegetation, except for the planting of trees within 10 metres of the top of a *steep slope*.

C. Guidelines

The following guidelines apply in the *Slope Hazard DPA*:

1. Applicants may be required to provide a preliminary assessment report and detailed assessment report prepared by a *qualified professional*.
2. Background information on potential slope hazards in some areas is available through the *District's* Natural Hazard Management Program, and the information in these reports should be referenced as part of any development permit application. Such information is available for Berkley, Lynn Valley/Westlynn, Pemberton Heights, Capilano River East, Mosquito Creek, Mount Fromme East, Riverside West and Deep Cove/Cove Cliff, among others.
3. *Development* should minimize any alterations to *steep slope*s, and the *development* should be designed to reflect the site rather than altering the site to reflect the *development*.
4. Terracing of land should be avoided or minimized and landscaping should follow the natural contours of the land.
5. Buildings and structures and landscaping should be located as far as reasonably possible from *steep slope*s or channel discharge/runoff points at the base of slopes.

6. *Potential slope hazard areas* should remain free of *development*, or, if that is not possible, then:

    a) mitigation should be undertaken to reduce *risk* to an acceptable level (*risk* for both the subject property and any adjacent or nearby lands should be addressed); and

    b) conditions (for example conditions relating to the permitted uses, density or scale of building) should be imposed as necessary to reduce potential hazard to acceptable levels,

    both as determined by a *qualified professional* in a *preliminary assessment* or *detailed assessment* report.

7. Stepped and articulated building forms that integrate and reflect the natural site contours and slope conditions should be used, and large unbroken building masses that are unsuitable for sloped conditions should be avoided.

8. The construction of structures, pathways/trails, driveways, utilities, drainage facilities, septic fields, swimming pools, hot tubs, ponds, landscaping or other uses at or near the top or base of *steep slope*s should be avoided. A minimum ten metre *buffer area* from the top or base of any *steep slope* should be maintained free of *development* except as otherwise recommended by a *qualified professional*. On very *steep slope*s, this *buffer area* should be increased.

9. Vegetation should be maintained and/or reinstated on the slopes and within any *buffer* zone above the slopes in order to filter and absorb water and minimize erosion.

10. No fill, including yard clippings, excavated material, sand or soil, should be placed within ten metres of the top of slopes or along pre-existing drainage channels.

11. The base of slopes should not be undercut for building, landscaping or other purposes except in accordance with the recommendations of a *qualified professional* and a permit issued under this section.

12. For homes at the base of slopes, it is preferable for bedrooms to be constructed on the downslope side of the home.

Berkley Landslide (right and left)

13. Designs should avoid the need for retaining walls, particularly to minimize cutting of the uphill slope. Large single plane retaining walls should be avoided. Where retaining walls are necessary, smaller sections of retaining wall should be used. Any retaining structures in steeply sloped areas must be designed by a *qualified professional*.

14. Disturbed slopes should be reinforced and revegetated, especially where gullied or where bare soil is exposed. Planting should be done in accordance with the recommendations of a Landscape Architect or Registered Professional Forester, and a permit issued by the *District*.

15. Native species, including trees, shrubs and other plants, should be used for any new planting.

16. Any structural mitigation measures must be designed by a *qualified professional*.

17. Water should be diverted away from slopes, yards and structures in a controlled manner and ponding should be avoided near slopes.

18. Flow should be contained by capturing roof and pavement drainage.

19. Property, roof drainage and landscaping should be designed and maintained to shed water away from slopes (especially *steep slope*s).

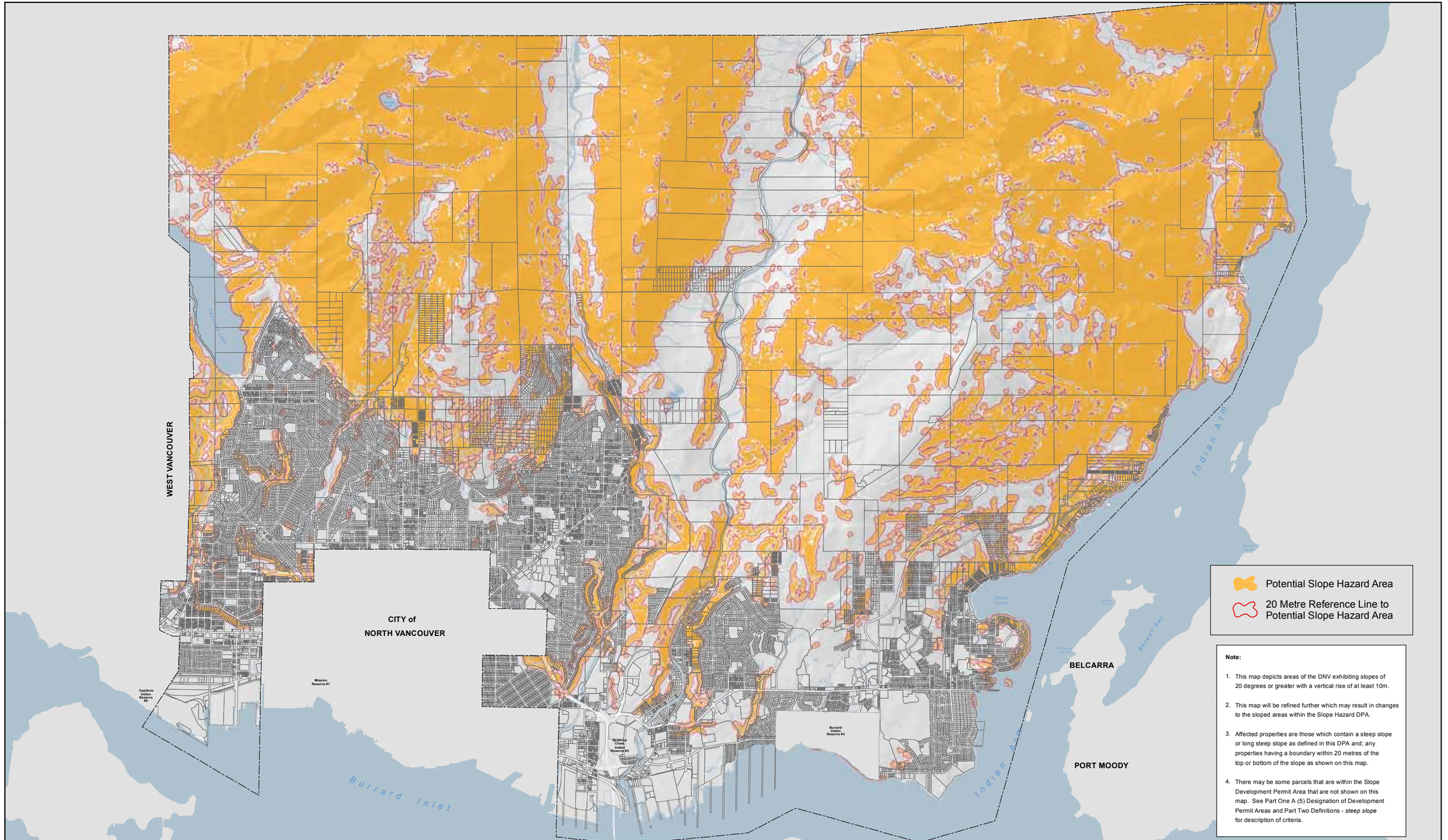
20. Buildings should be connected to the storm drainage system or alternative methods approved by the *District*.

21. Concentrated water (such as roof drainage) should be discharged toward storm drains or street gutters and not over sloped lands.

22. The extent of paved or hard-surfaced areas should be limited, and absorbent or permeable surfaces should be used instead to encourage infiltration where appropriate and reduce runoff.

23. Lots should be graded so water is directed toward the street and away from slopes.

Lynn Valley Headwaters, park road (left); Slope failure on slope next to Mosquito Creek (centre); Landslide (right).



Note:

1. This map depicts areas of the DNV exhibiting slopes of 20 degrees or greater with a vertical rise of at least 10m.
2. This map will be refined further which may result in changes to the sloped areas within the Slope Hazard DPA.
3. Affected properties are those which contain a steep slope or long steep slope as defined in this DPA and; any properties having a boundary within 20 metres of the top or bottom of the slope as shown on this map.
4. There may be some parcels that are within the Slope Development Permit Area that are not shown on this map. See Part One A (5) Designation of Development Permit Areas and Part Two Definitions - *steep slope* for description of criteria.

NORTH VANCOUVER DISTRICT

GIS DEPARTMENT
GEOGRAPHIC INFORMATION SYSTEMS
604.990.2311 www.geoweb.dnv.org gis@dnv.org

SLOPE HAZARD DEVELOPMENT PERMIT AREA - MAP 2.3

0 250 500 1,000 1,500 2,000 2,500
Meters

N

Published: May 31, 2012 Scale: **1:55,000**

N:\4-Projects\Departmental\Planning\HaidS\2010 DPA\Slope Hazards\DPA_SlopeHazard_Tab.mxd

Assessment Reports

1. *Preliminary assessment* reports and *detailed assessment* reports should address the potential for fire, landslip, rockfall, slope failure, *debris flow, debris flood* or flooding, or other hazard (as relevant to the site and the particular development permit designation), and the impact of the proposed *development* on or by such natural hazard conditions should be analyzed and assessed.

2. The appropriate method of assessment and level of effort should be determined by the applicant's *qualified professional* based on all the relevant circumstances, including, without limitation, the type of hazard, the nature and extent of proposed *development*, the particular development permit designation(s), and local site conditions. In some cases it may be appropriate to carry out screening studies based on assessment of the level of hazard or partial *risk* to determine if the proposed *development* may lead to the potential for loss of life caused by natural hazards. Where a potential for loss of life exists, the applicant's *qualified professional* may be required to provide a detailed quantitative *risk* assessment using the *risk tolerance criteria* or factor of safety (FOS) calculations in respect of the proposed *development.*

3. *Preliminary assessment* reports and *detailed assessment* reports should meet all report guidelines published by the *APEGBC* or any replacement or successor body from time to time, and must specify that the land and the proposed *development* may be safely used for the purpose intended.

4. The design flow for *floods* should be the 200-year return period peak instantaneous flow or the *flood of record*, except as otherwise recommended by the applicant's *qualified professional*, provincial standards or guidelines. New culverts and other *watercourse* crossings should be capable of passing this flow with no surcharging. New bridges should be capable of passing this flow with an acceptable *freeboard* allowance.

5. In connection with *development* in the *Creek Hazard DPA*, a *preliminary assessment* may be completed by a *qualified professional* as an initial step to determine whether *risk*s are broadly acceptable. For creeks prone to *debris flow*s or *debris floods*, if the *preliminary assessment* suggests that *risk*s are broadly acceptable, then further *risk* assessment may not be required. For *flood* hazards, a *preliminary assessment* may also suffice, if the proposed *development* is at a greater elevation than the *flood construction level* identified by a *qualified professional* and no erosion *risk* is identified. Where a qualitative hazard assessment and/or *preliminary assessment* report demonstrates that *risk* is not broadly acceptable, a *detailed assessment* should be required.

6. In connection with *development* in the *Slope Hazard DPA*, a *preliminary assessment* including a partial *risk* assessment or qualitative hazard assessment should be completed by a *qualified professional* as an initial step in estimating whether a slope hazard may be present. If the *preliminary assessment* demonstrate that *risk*s are broadly acceptable, further *risk* assessment may not be required. Where a qualitative hazard assessment and/or *preliminary assessment* report demonstrates that *risk* is not broadly acceptable, a *detailed assessment* should be required.

7. In connection with *development* in the *Fire Hazard DPA*, a *preliminary assessment* should be completed by a *qualified professional* as an initial step to assess existing conditions and impacts on wildfire hazard of any proposed *new building or structure* and of all other associated *development* including all landscaping, utilities and other services for the purpose of determining whether *risk*s are broadly acceptable. If the *preliminary assessment* demonstrate that *risk*s are broadly acceptable, further *risk* assessment may not be required. Where a qualitative hazard assessment and/or *preliminary assessment* report demonstrates that *risk* is not broadly acceptable, a *detailed assessment* should be required.

8. Any *detailed assessment* report by a *qualified professional* should, at a minimum:

    a) include plan(s) at 1:100 minimum scale and 1m contour interval:

        i. delineating any *wildfire risk area(s)*, *potential debris flow and debris flood hazard areas*, *potential flood hazard areas* or *potential slope hazard areas*, as the case may be, on or adjacent to the parcel, including details on the features and extent of said areas;

        ii. delineating parcel boundaries and adjacent streets and rights of way;

        iii. identifying any existing *development* including locations and dimensions of existing buildings, *permanent structures*, driveways, parking areas, utilities, retaining walls; and

        iv. indicating the proposed location of all proposed *development*, including, without limitation, site clearing, excavations, roads and driveways, foundations and buildings, utility services, stormwater detention works, drainage works, parking areas or impervious surfaces, retaining walls or other works;

    b) provide all other relevant site information including topography, natural features, infrastructure and surface drainage;

    c) include any relevant climatic, topographical, hydrometric, geological, terrain/slope data, hydrogeological, ecological or other site information;

    d) identify and assess the potential for *landslide, debris flow, debris flood, flood, erosion*, unstable slopes or other hazard on the subject property and applicable surrounding lands and identify how the proposed *development* will be designed and constructed to promote safety of the *development* and of adjacent/down*stream* properties;

    e) determine whether any proposed alterations to the site will affect slope stability or be at risk from *debris flows* or *debris floods*, or flood hazards;

    f) clearly identify suitable building envelopes, setbacks and *flood construction level*s and identify any areas that should remain free of *development*;

    g) provide a clear description of the assumptions and methodology used to undertake the assessment, and the potential magnitude and intensity of any potential hazard events;

    h) provide a review of the historic nature, extent, magnitude, frequency and potential effect of hazards or constraints that may affect the property;

i) identify required or recommended mitigation measures and establish criteria for the design, construction, and long-term maintenance of any *development* or mitigative works proposed on the site (including, without limitation, erosion control during and after construction);

j) review all applicable historical hazard event information and relevant previous reports affecting the site and surrounding area;

k) assess the nature, extent, magnitude, frequency and potential effect of all applicable creek hazards that may affect the property, including the effects on perimeter drainage, storm water management;

l) use current climate data and modeling in connection with the assessment;

m) where the proposed *development* is located in *debris flow/debris flood* hazard areas, demonstrate that the proposed *development* complies with the *District's* current risk tolerance requirements;

n) identify the location and amount of any proposed removal or placement of soil or other fill, and confirm that the change will not adversely affect other properties;

o) identify proposed mitigation measures to reduce *debris flow, debris flood* or flood risks (up to the *flood construction level*) and to reduce slope instability, as the case may be, including but not limited to works to stabilize the watercourse edge or elevate the building site;

p) state that proposed mitigative works will not transfer risk to other properties;

q) establish criteria for the design, construction, and long-term maintenance of any *development* or mitigative works proposed on the site;

r) provide detailed measures to safeguard neighbouring properties and structures from any hazard related to *development* on the subject property;

s) clearly outline the short-term and long-term maintenance requirements, including regular maintenance and any special maintenance requirements after an extreme event;

t) identify any hazard on the subject site that may be related to municipal infrastructure (for example, culverts or storm drainage works);

u) provide a demonstrated review of all relevant background reports;

v) provide detailed recommendations to address bank erosion protection and *flood-proofing* up to *flood construction level*s, in accordance with all provincial and other guidelines that may be in place from time to time;

w) provide a professional opinion, subject to conditions and qualifications contained in the report, that the land may be safely used for the purpose intended and meets provincial guidelines (where applicable);

x) address any other information that the *director* deems relevant or necessary;

y) in respect of fire hazards, include:

i. the extent and nature of existing landscaping including details of trees and ground cover

ii. the exterior materials of existing and proposed buildings (siding and roofs);

iii. the locations and dimensions of proposed buildings, driveways, parking areas and utility services relative to any *wildfire risk area(s)* on or adjacent to the parcel;

iv. a description of all trees and vegetation within the *wildfire risk area(s)* on the parcel highlighting those recommended for removal or mitigation in order to create a defensible space around existing and proposed *development*;

v. a plan for the expedient removal of all wood, vegetation and construction debris resulting from the proposed *development*;

vi. a hazard assessment of the site and adjacent forest *fuel* conditions;

vii. identification of the fire-resistive construction materials and practices, in accordance with these guidelines;

viii. identification of the *defensible space*, in accordance with these guidelines, including details of proposed landscaping; and

ix. any temporary encroachment caused by clearing, grading and other construction-related activities, and measures to mitigate and/or compensate for such encroachment.

9. The applicant may be required to submit written terms of reference indicating the scope of work and professional expertise to be used for the preparation of a *preliminary assessment* or a *detailed assessment*. The terms of reference must be approved by the *director* prior to the information being prepared.

10. All reports and information shall be prepared and provided at the applicant's cost. All reports, opinions and plans shall be signed and sealed by the appropriate *qualified professional*.

11. The *District* may require the submission of plans and reports in electronic format for inclusion in the *District's* hazard database.

Development Approval Information Area

Land within the *Wildfire Hazard DPA*, *Creek Hazard DPA* and *Slope Hazard DPA* are also designated collectively as a Development Approval Information Area in accordance with Section 920.01 of the *Local Government Act*. Applicants for wildfire hazard, creek hazard and slope hazard development permits may be required by the *District* to provide, at the applicant's expense, information in order to demonstrate compliance with the applicable guidelines.

Requirements

The types of plans, studies and other information that may be required in support of *development* applications, in addition to (or as part of) a *preliminary assessment* report or a *detailed assessment* report, include:

1. environmental assessment and mitigation plan by a *qualified environmental professional*;
2. geotechnical stability assessment by a *qualified professional* Engineer or Geoscientist;
3. hydrological assessment of drainage patterns and potential flood and hydraulic hazard by a *qualified professional* Engineer or Geoscientist;
4. assessment of fire hazards and mitigation measures by a registered forest professional, qualified by training or experience with at least two years experience in the assessment, *fuel* management prescription *development* and mitigation of wildfire hazards in British Columbia;
5. structural design and assessment by a *qualified professional* engineer for structural works;
6. site information based on a survey plan prepared by a certified B.C. Land Surveyor;
7. current state of title certificate and copies of all restrictive covenants registered on title, including relevant schedules and attachments;
8. a peer review of a *qualified professional's* report; and
9. reports or other information from additional *qualified professionals* such as designers (as defined in the *District* Building Regulation Bylaw) or B.C. Registered Professional Landscape Architects, as appropriate to the development permit application.

This page intentionally left blank

PART 5 | FORM AND CHARACTER OF COMMERCIAL, INDUSTRIAL AND MULTI-FAMILY DEVELOPMENT

Context

The intent of this development permit area is to guide the form and character of commercial, industrial and multi-family *development* (including intensive residential *development*), and their relationship to the public realm and surrounding neighbourhood in the best way possible to achieve the vision, goals and strategic directions as articulated in the Official Community Plan. The *District* aspires to be a community with a high quality of built environment that reflects the outstanding natural endowment of the North Shore.

Organization

Certain broad design principles and objectives are applicable to all urban *development* throughout the *District*, but there may also be significant differences from neighbourhood to neighbourhood that need to be recognized. Accordingly, the *Form and Character DPA* is organized by *development* typology (form of *development*) as well as by specific geographic areas. General or *District*-wide guidelines apply to all *development* regardless of location and these are supplemented with specific guidelines that apply in the designated Town and Village Centres or other areas for which unique urban design guidelines have been prepared.

Objectives for Form and Character of Development

The *Form and Character DPA* and corresponding development approval information area are established to address the following objectives:

ACCESSIBILITY – Striving to achieve barrier-free *development* and accessibility for all

Many people in our community experience some degree of difficulty in moving about whether due to age, injury, visual or other physical challenges and may have to rely on the use of mobility devices such as wheelchairs, strollers or scooters. The design of buildings and the state of pedestrian conditions in the public realm should serve the broadest possible cross section of society allowing people to function in their day-to-day activities with dignity and independence.

Accessibility means:

- Age friendly *development*
- Ease of approaching, entering and exiting buildings
- Encroachment and barrier-free pedestrian routes
- Barrier-free access to public spaces
- Integration of trees, plants and natural elements for shade, sensory and health benefits

CONNECTIVITY – Enhancing the block and the street

Pedestrian connectivity has to be provided at a much finer grain than for automobiles, i.e. the basic street network. In the context of a *development* and its relationship to the street and the neighbourhood the importance of direct pedestrian routes cannot be overstated. Where blocks are long, there should be at least one clearly marked pedestrian connection mid-block providing convenient access through the property.

A pedestrian friendly *development*:

- Puts the pedestrian first
- Facilitates transit and non-vehicular modes of transportation
- Has a walkable, interconnected block pattern
- Has enhanced way-finding
- Orients buildings and their entries to the street
- Connects or is enhanced by natural amenities and features

DESIGN EXCELLENCE – Creating outstanding and sustainable built form and character

Buildings that are functional for their intended use, appropriately fit into their surroundings and aesthetically attractive demonstrate design excellence. It takes tremendous amounts of energy and other resources to construct a building. Buildings are also major consumers of energy for heating, cooling and lighting. Building design influences the quality of life of residents or workers and the community at large when in a prominent location. Given that their lifetime can exceed 100 years, buildings represent a legacy for future generations.

Outstanding and sustainable *development*:

- Is appropriately scaled and massed within the context of its location
- Has well articulated, timeless architecture
- Has variation and unique features from one building to the next
- Incorporates green roofs, where appropriate, to maximize environmental benefits
- Is solarly-oriented and designed to maximize passive heating and cooling
- Incorporates opportunities for innovative rainwater management
- Integrates the aesthetic, environmental and health benefits of trees and other natural elements
- Incorporates and celebrates important natural features in design
- Uses durable, locally sourced or recycled building materials
- Provides discrete vehicle access to buildings and parking areas

GOOD NEIGHBOUR – Harmonizing with the scale and character of surrounding *development*

Development should be designed in a manner that is neighbourly and is in harmony with the scale and character of its surroundings and minimizes impacts on adjacent properties. *Development* often occurs incrementally; therefore the design must carefully consider both existing and future relationships with surrounding properties and with the public realm. Potential impacts such as overviewing, noise, odour, glare and unsightly building designs or outdoor uses should be minimized through careful design.

Neighbourly *development*:

- Respects the tranquility, privacy and access to sunlight of nearby properties
- Provides transitions to neighbouring massing and scale
- Identifies and minimizes impacts on view corridors
- Provides a street presence with visual interest

PLACEMAKING – Achieving a distinctive look and feel in the District's Town and Village Centres

The Town and Village Centres will each have a unique sense of place and identity based on their physical setting, landmarks, cultural history and other community assets, and be reflective of the shared values of its residents. A centre cannot be said to have a sense of place unless people care deeply about it and think of it as "theirs". Sense of place is created by mental associations of positive experiences. There must be things to do and opportunities to meet people and socialize; in other words, reasons to want to go and spend time there. From an urban design perspective, the key is a well defined public realm.

A place worth caring about has:

- Lasting architectural character
- Places to gather, play, relax, enjoy nature or garden
- Building heights and siting in proportion to street width
- Coordinated and attractive landscaping, street furniture and amenities

SAFETY AND SECURITY – Improving safety and reducing opportunities for crime

Quality building design and site planning can play a role in reducing opportunities for crime and, nearly as importantly, the perception or fear of crime. There are trade-offs, however. Crime reduction strategies, if taken to the extreme, can result in stark or harsh conditions such as minimal landscaping, excessive lighting or unattractive fencing.

Safe and secure *development* has:

- Natural surveillance: putting "eyes on the street"
- Access control: clearly guiding people and vehicles to and from proper entrances
- Territorial control: distinguishing public areas from private areas
- Maintenance: regular maintenance discourages neighbourhood decline

Exemptions

A Form and Character development permit is not required in the following circumstances:

1. If the intended use is limited to single-family residential or institutional uses
2. Interior alterations or renovations to buildings
3. Site improvements such as landscaping, paving and pathways, when the total cost is less than $25,000
4. Accessory buildings less than 50 square metres in size provided they are consistent with the architectural form and character of the principle buildings
5. Temporary buildings or structures intended for construction offices or marketing displays for a period of time that does not exceed the duration of construction
6. Minor exterior renovations that do not significantly alter the building form and character

If unsure, property owners may submit a written description of a proposed *development* activity and District staff will advise in writing whether the *development* is exempt from the requirement for a *development* permit.

A Guidelines for Commercial and Mixed-Use Buildings

> "Shopping streets tend to be the focal point of the community... (and) new *development* should seek to enhance and animate the public realm."

1. PUBLIC REALM AND STREETSCAPE ELEMENTS

DISCUSSION:

Most medium and higher density residential, commercial or mixed-use buildings are located in highly visible and active locations such as shopping streets within the Town or Village Centres or along major thoroughfares. Shopping streets tend to be the focal point of the community, places where neighbours meet, and as such there needs to be a variety of places available to sit and chat. Opportunities to meet and socialize exist in both the public realm, for example seating areas or benches, and on private property with courts and plazas. These public and quasi-public spaces provide opportunities for merchandise display, cafe seating areas, landscaping, informal gathering, public art, and access to premises, and should be designed to be accessible and comfortable to all users.

New *development* should seek to enhance and animate the public realm. Buildings should be oriented to and relate to the street grid. Where a *development* includes multiple buildings, they should be grouped in such a way as to form usable open spaces for the enjoyment of residents and visitors.

Streets that are well defined or "enclosed" by street trees and building façades are more interesting and comfortable for pedestrians than those that are not. Heights of buildings and their setbacks from the property line should be considered in relation to the width of the street and the distance to the building face directly across the street.

Traditional shopping streets are characterized by closely-spaced small shops whereas contemporary retail practice often includes larger formats with only one entrance and blank walls. This has a deadening effect

on the public realm. Building façades should be designed in ways that express individual storefront identity. Street trees and planting also improve the character, aesthetics and enjoyment of the pedestrian, bicycle and vehicular realms of the streetscape.

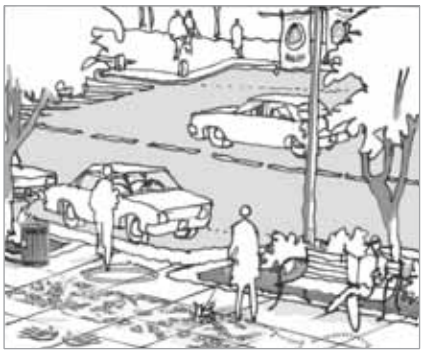


Figure 1

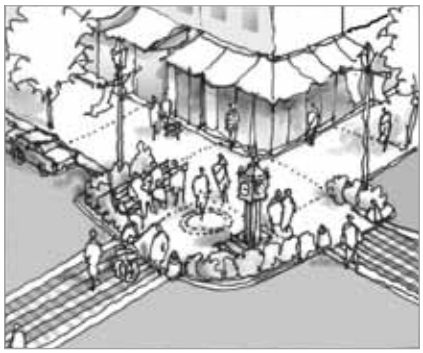


Figure 2

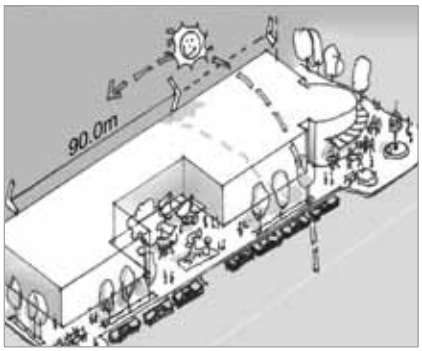


Figure 3

A1.1 Unified Streetscape: Within a given area, a unified streetscape concept for building sites, public open spaces, landscaping elements and universally accessible street furniture (benches, bike racks etc.) should be achieved (see Figure 1).

A1.2: Accessible Pedestrian Routes: Ensure pedestrian routes are smooth, level and clear of encumbrances to ensure direct passage for those with visual impairments or who require mobility aids.

A1.3: Corner Treatment: On shopping streets corner bulges or plazas should be considered at the crossroads of important streets depending on location of adjacent bus stops and type of pedestrian crossing (see Figure 2).

A1.4: Bus Stop Location: Bus stops should be located 20 to 30 metres after an intersection.

A1.5: Midblock Plazas: Where a *development* frontage exceeds 90 metres and there is sun exposure, provision of plazas or courts preferably in a central location is encouraged (see Figures 3 and 4 and A1.10).

A1.6: Corner Storefronts: On corner sites, commercial storefront entries should "turn the corner" to address the adjacent street in a pedestrian-friendly way. Both frontages should be designed as building "fronts" and the buildings should address the corner with strong massing (see Figures 5 and 6).

Figure 4

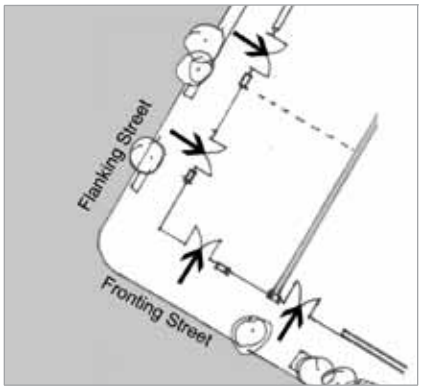


Figure 5

Figure 6

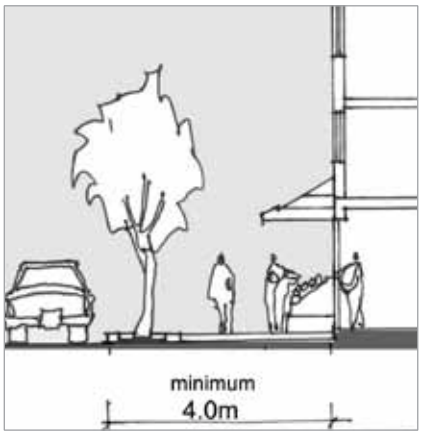


Figure 7

Figure 8

Figure 9

A1.7: Commercial Setback: On both front and flanking streets a 4 metre minimum distance from the curb face to the building façade, which may be a combination of public and private property, is encouraged for commercial and commercial/mixed-use *developments* to accommodate sidewalks, street furniture and utilities (see Figure 7).

A1.8: Enclosure: In order to define and enclose the road space, a strong streetwall is encouraged with a 2 or 3 storey massing at the street side(s) of the building, depending on the desired character of the area, and a step back at the third or fourth floor (see Figures 8 and 9).

A1.9: Unique Building Identity: On shopping streets, the building format should reflect a 10 metre storefront pattern. Building façades should be designed with variations in materials, colour, fenestration and roof forms to express individual storefront or dwelling unit identity (see Figure 10).

A1.10: Breaks in Streetwall: Buildings exceeding 45 metres in length should provide a significant break in the street façade to diminish the visual impact of excessive length (see Figure 11 and A1.5).

A1.11: Storefronts: In order to enliven shopping street environments, larger outlets should be lined at the sidewalk by smaller outlets with their own entries and identity. A rhythm of storefronts from 5 to 10 metres is most appropriate (see Figure 12).

Figure 10

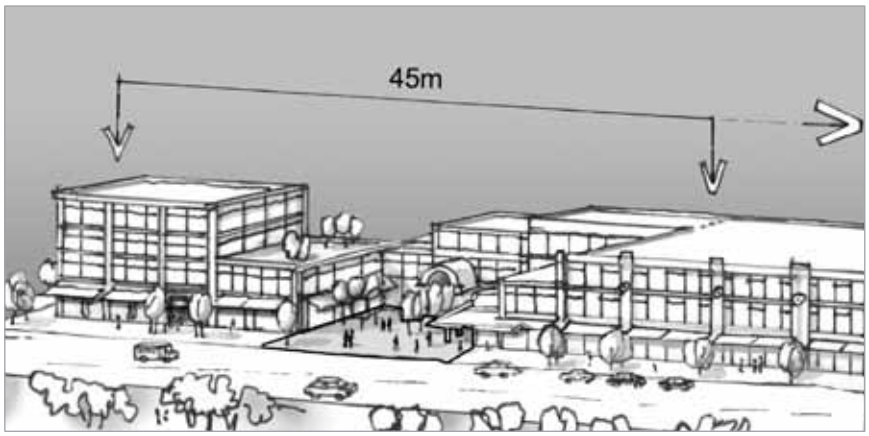


Figure 11

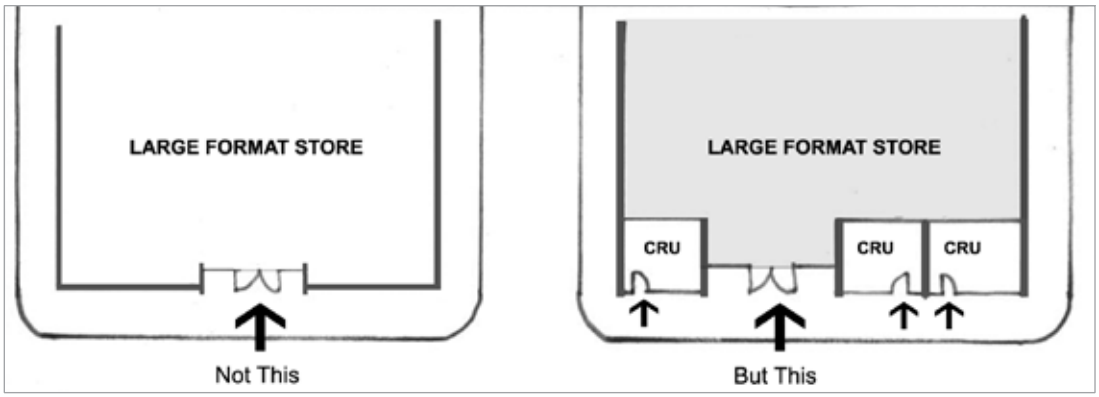


Figure 12

2. SITE PLANNING ELEMENTS

DISCUSSION:

Site planning includes pedestrian and vehicle access; landscaping and open space provision; services and utilities; and parking and loading. Good site planning is essential to the optimal functioning of a *development* and needs to coordinate with public realm objectives and building design. Good site planning also takes advantage of unique natural features, topography and adjacencies to provide opportunities for useable open space, play and urban agriculture.

Outdoor spaces which are defined by trees and landscaping of private and common open space are essential for residential livability and should be provided in all residential and mixed-use *developments*. Landscaping also provides a means of transitioning from private property to the public realm and to neighbouring properties and, if coordinated, provides design continuity within a given local area. Finally, trees and landscaping provide aesthetic, environmental and health benefits, frame outdoor spaces, soften the appearance of paved areas and help to integrate buildings with their setting.

Vehicle parking and loading areas should look and feel subordinate to the intended use of a property and should be designed to have limited impact on neighbouring *development* and the local streetscape. Primary vehicular access to property should be from the rear lane or, where no lane exists, from flanking streets. Vehicle access from the front street is strongly discouraged. Generally, parking should be underground but where surface parking is unavoidable it should be designed as a court at the rear of the property, with suitable paving, tree planting and landscape treatment. Pedestrian access from parking areas to building entrances or lobbies should be safe, accessible, convenient and as direct as possible.

Figure 13

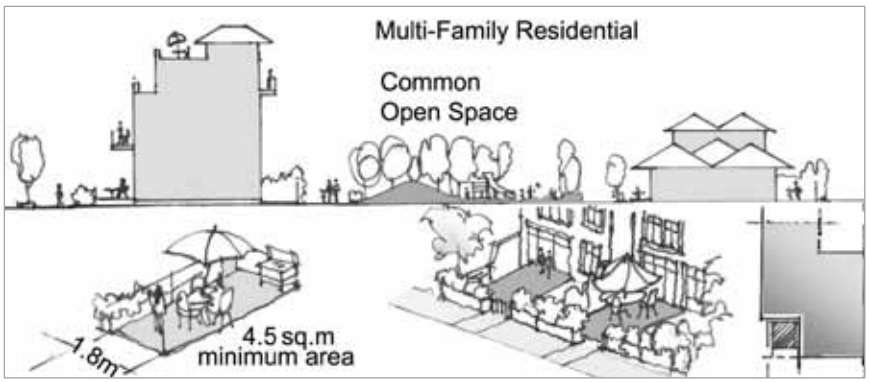


Figure 14

A2.1: Sustainable Landscape Design: Sustainable landscape design should incorporate best practices for tree planting, rainwater management, pedestrian way-finding and lighting, accessibility and feature native and drought tolerant species to provide environmental, health benefits and visual and sensory interest through the seasons. Sustainable landscape design should be coordinated with building design, site servicing, utility placement and neighbourhood objectives such as streetscape improvements (see Figure 13).

A2.2: Semi-Private Space: A minimum of 4.5 square metres of useable, accessible private or semi-private outdoor space accessed directly from the dwelling unit should be provided for each dwelling unit. This may take the form of patios, balconies or rooftop decks (see Figure 14).

A2.3: Common Open Space: Common open space should be conveniently accessible to residents; have sun exposure; wind protection; landscaping; play opportunities; and be visible from dwelling units (see Figures 14, 15 and 16).

A2.4: Pedestrian Pathways and Wheelchair Access: Pedestrian pathways should be direct, accessible, barrier-free and safely routed from parking areas to storefronts and building lobbies. These routes should have a minimum clear width of 2 metres and be at or near the centre of the building (see Figures 17, 18, 19 and 20).

A2.5: Parking Structure Entrances: Driveway access across sidewalks on shopping streets is not permitted where access from a lane or flanking street is possible. Vehicular entrances to parking structures and loading areas should be unobtrusive, architecturally integrated and screened from view from nearby properties and sidewalks with landscaping, trellises or through other means (see Figure 21).

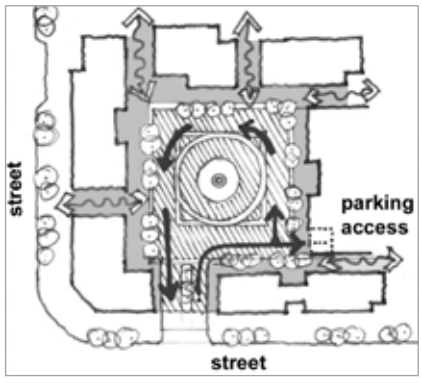


Figure 15

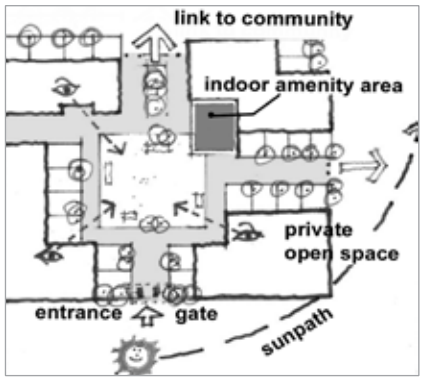


Figure 16

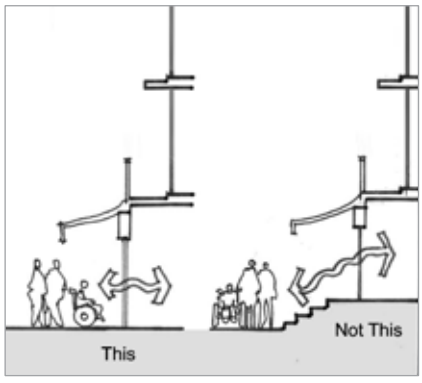


Figure 17

Figure 18

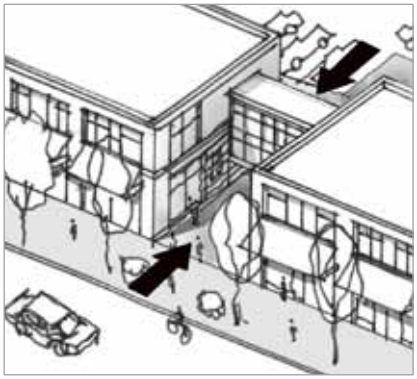


Figure 19

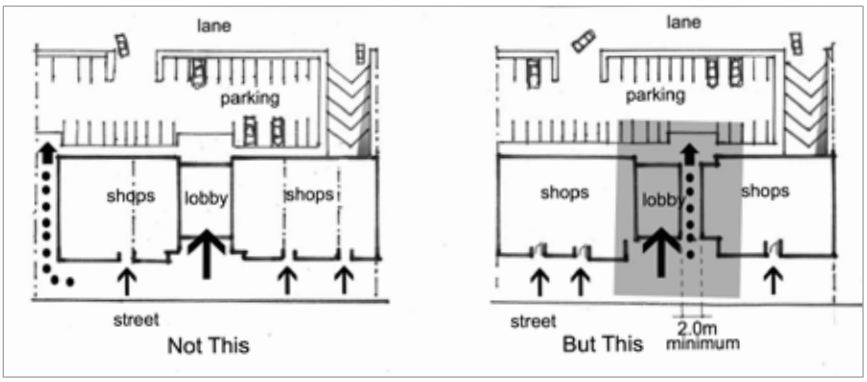


Figure 20

A2.6: Partially Above Grade Parking Structures: If parking structures must be partially above grade, exposed walls should be faced with attractive and durable materials and screened with planting, but in no case should more than 1 metre of a parking structure wall be exposed (see Figure 22).

A2.7: Surface Parking : Surface parking, where permitted, should be screened from view from adjacent properties, public areas and streets with trees, landscaping and architectural elements designed as integral parts of buildings such as overhangs, trellises and planters (see Figure 23).

Figure 21

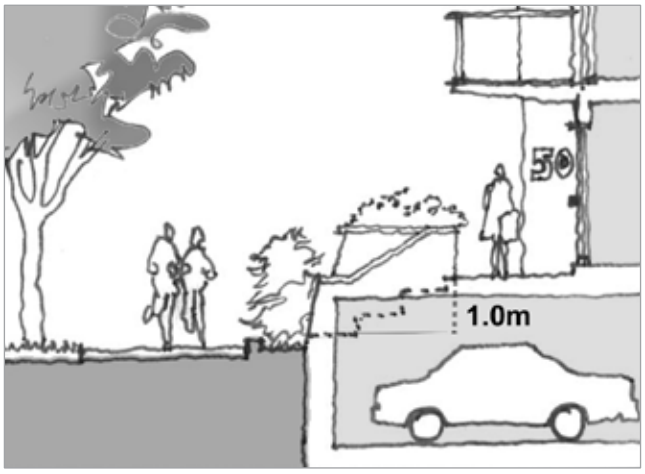


Figure 22

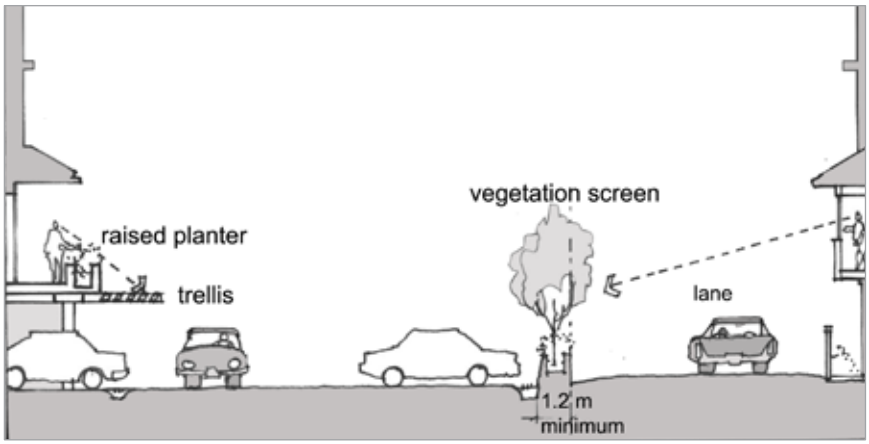


Figure 23

Figure 24

A2.8: Oil and Grit Separators: Oil and grit separators are required in all parking and loading areas and should be located so as not to interfere with pedestrian pathways and wheelchair access.

A2.9: Utility and Service installations: Utility installations, communication equipment, and garbage and recycling facilities should be sited so as to be accessible to service vehicles but not interfere with pedestrian access and screened from view to be as unobtrusive as possible (see Figure 24). Garbage and recycling facilities should be sited to permit use by all residents.

3. BUILDING FORM AND ARCHITECTURAL ELEMENTS

DISCUSSION:

New *development* in the *District* will typically be infill *development*, where acknowledgement of local scale and context is important. New *development* is likely to be more dense than earlier *development* because of changing economic conditions. Where this is the case, new *development* should acknowledge the existing fabric of the area, especially adjacent buildings and buildings across the street, and reflect long-term objectives for the area. At the same time, some variety between buildings in terms of their architectural styling and the palette of materials, textures and colours is encouraged to contribute interest and avoid monotony or repetitive building design, especially for redevelopment along major corridors.

Fenestration (windows and other openings) is a primary element of architectural expression and character. Fenestration also allows natural daylight to penetrate and is a critical consideration in heat loss and gain. Transparency provided by building fenestration is essential to animate shopping streets and to provide surveillance (eyes on the street). Blank walls are strongly discouraged on both fronting and flanking street elevations.

Weather protection provides pedestrian comfort on shopping streets. Structural canopies, fabric awnings and building extensions that are either too shallow or too high off the ground should be avoided. In addition, means of weather protection are important elements in the exterior "face" and streetscape character of buildings, and so should be fully integrated into the overall architectural expression of the building, rather than appearing simply "tacked on".

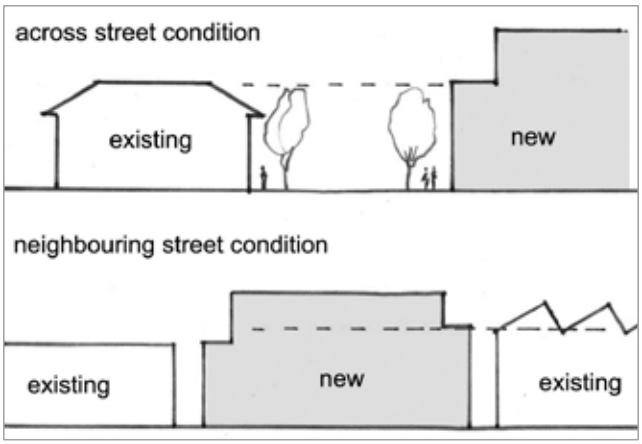


Figure 25

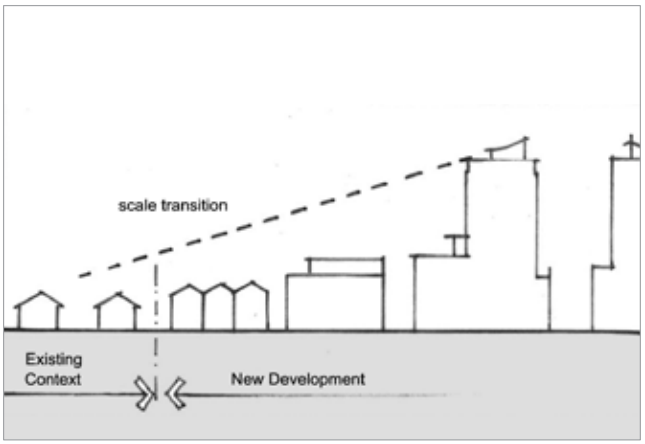


Figure 26

Outdoor and building lighting is essential for wayfinding and for safety and security at night. But lighting can also be a source of irritation if it is intrusive or stark. Hence it is imperative that all sources of outdoor lighting be considered and planned in advance, at the time of development permit application.

In order to avoid appearing as an afterthought, balconies should be designed as integral parts of buildings. The most successful way to achieve integration is when balconies are partly recessed into the building façades. Enclosed balconies should be avoided, as these limit views and daylight access and increase the visual bulk of buildings.

Roofs are character-defining elements of buildings. Whether roofs are steeply or gently pitched or flat makes a difference to the sense of "fit" in the immediate context and to their impact on views. Elevator penthouses and mechanical equipment on roofs can be highly visible from nearby residences and should be designed carefully.

Visual and acoustical privacy and access to natural light and air are essential elements of livability. This is particularly true in multi-family and mixed-use *developments* where window exposure may be limited. The design of ground-oriented multi-family *development* should include consideration of privacy both within the *development*, and for adjacent dwelling units.

A3.1: Variation in Building Design: There should be subtle design variation between neighbouring buildings to avoid a repetitive appearance.

A3.2: Scale: New and taller *development* should relate and harmonize with the height and scale of neighbouring buildings by incorporating transitional setbacks, building forms and heights (see Figures 25 and 26).

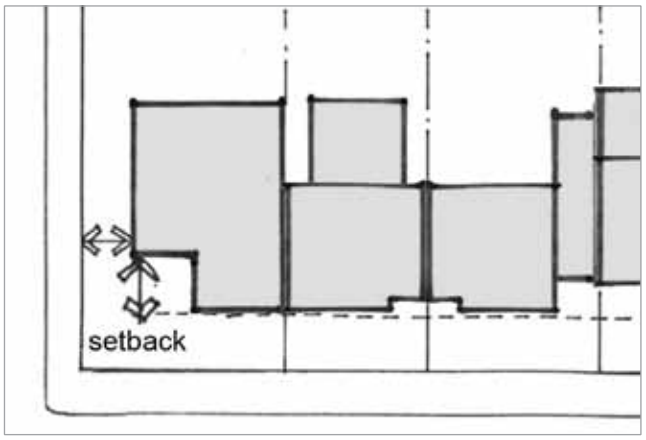


Figure 27

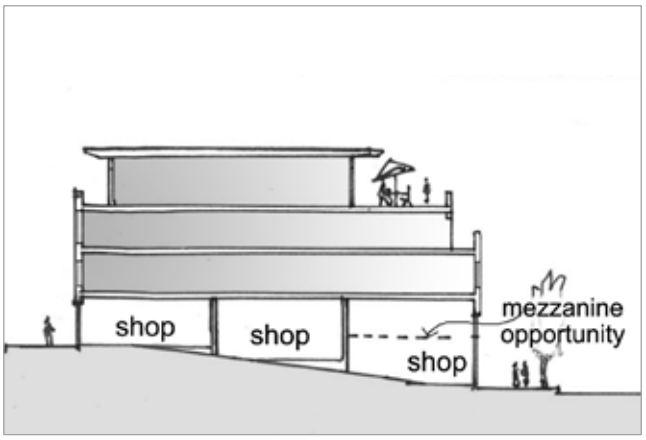


Figure 28

A3.3: Setbacks: Front setbacks should relate to, and harmonize with (but not necessarily equal), setbacks of existing adjacent *development* (see Figure 27).

A3.4: Level Transition from Sidewalk: On sloping sites, ground floor slabs should be stepped so that there is a level transition between the sidewalk and the building lobby or storefront entry. Similarly, rooflines should follow the slope of the site (see Figure 28).

A3.5: Minimize Blank Façades: The width of blank walls should generally be limited to a maximum of 10% of the linear dimension of a building façade facing a street (see Figure 29).

A3.6: Endwalls: Exposed endwalls of buildings should be designed and finished to be aesthetically pleasing. Material and texture choices, art, mosaics and green walls are encouraged for this purpose (see Figure 30).

A3.7: Building Materials and Transitions: Building and structures should be faced with substantial and durable materials such as masonry, stone, ceramic tile, fibre-cement siding, metal and wood. Changes of exterior materials, colours and textures should occur at interior corners and offsets, not in the same horizontal or vertical plane. Detailing should be ample to avoid a "wallpaper" look (see Figures 31 and 32).

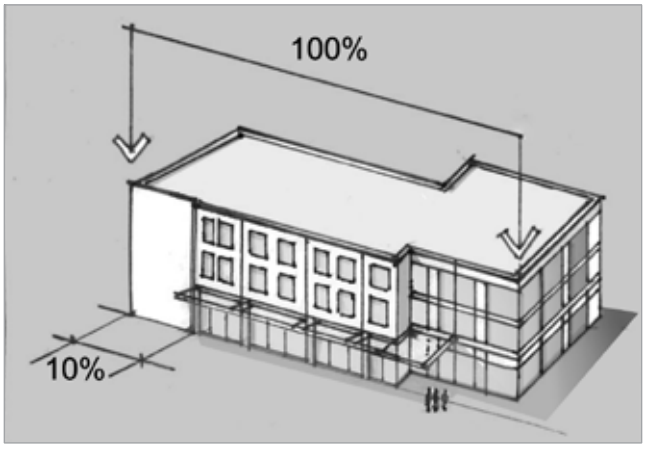


Figure 29

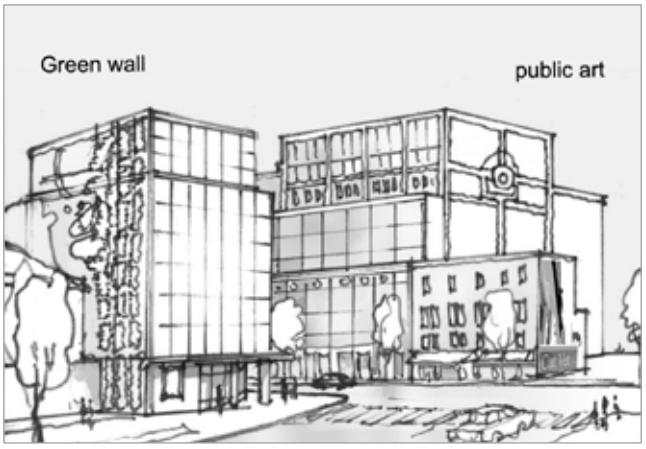


Figure 30

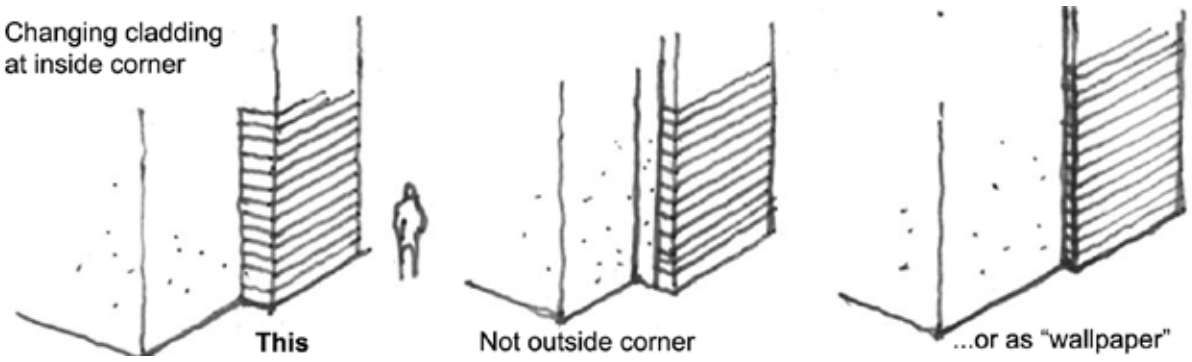


Figure 31

A3.8: Colours and Finishes: Bright and jarring colours and heavy swirling texture stucco patterns are discouraged.

A3.9: Transparent Fronts: Viewing into storefronts and lobbies is encouraged, and should not be obscured by reflective glazing, or window signs (see Figure 33).

A3.10: Solar Orientation: Building massing, windows and openings should capitalize on the solar orientation of the building (see Figure 34).

A3.11: Balconies: Balconies facing streets should be recessed into the main building façade. Guardrails should be transparent to maximize exposure to sunlight for each unit (see Figure 34).

Figure 32

Figure 33

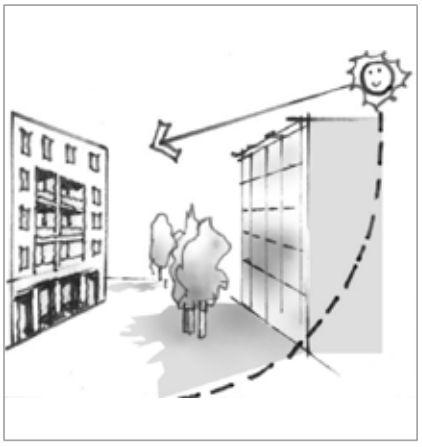


Figure 34

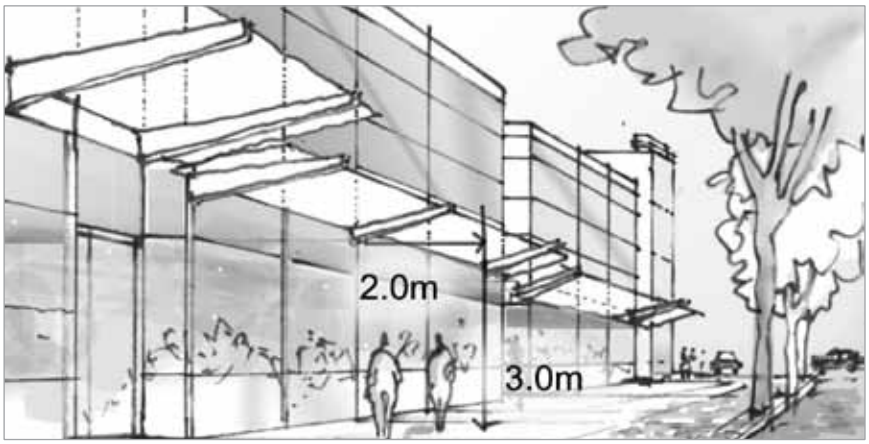


Figure 35

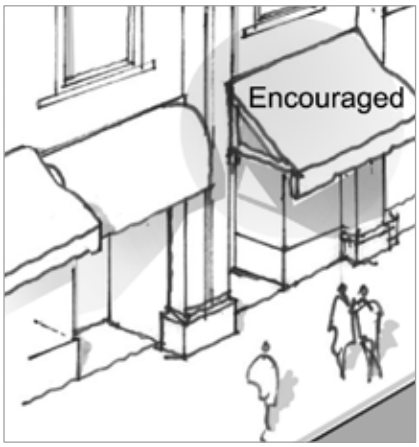


Figure 36

A3.12: Weather Protection: Commercial and mixed-use buildings should provide weather protection along the entire street frontage and particularly in the vicinity of a transit stop (see Figure 35).

A3.13: Canopies and Awnings: Use of transparent, structural canopies or three or four-point fabric awnings is recommended. Canopies and awnings should have a minimum horizontal projection of 2 metres and vertical clearance over the sidewalk should not exceed 3 metres (see Figures 35 and 36).

A3.14: Integration of Awning and Canopy Design: Canopies and awnings should be architecturally integrated with the structure and fenestration of buildings and structures (see Figure 36).

A3.15: Minimum Awning Clearance: On sloping sidewalks, canopies or awnings should not be continuously horizontal. Instead, they should follow the contours of the land while maintaining a minimum clearance (see Figure 37).

A3.16: Signage and Lighting: Signage and lighting should be fully considered and integrated with the building design (see Figure 38).

A3.17: Rooftop Equipment: The size, placement and treatment of rooftop mechanical equipment and the installation of telecommunication facilities should be fully considered and integrated design elements of a building. They should be located and screened to minimize their visual impact and reduce impacts on views from surrounding properties (see Figure 39).

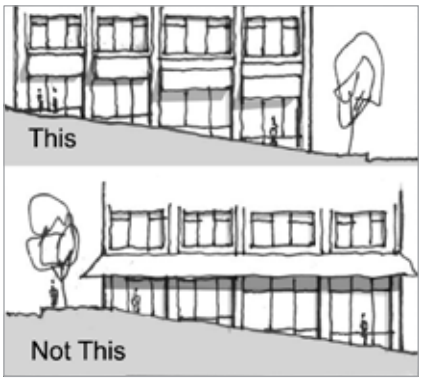


Figure 37

Figure 38

Figure 39

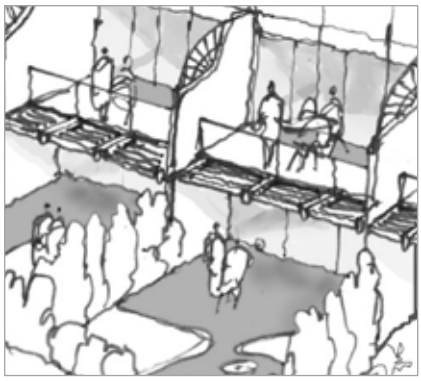


Figure 40

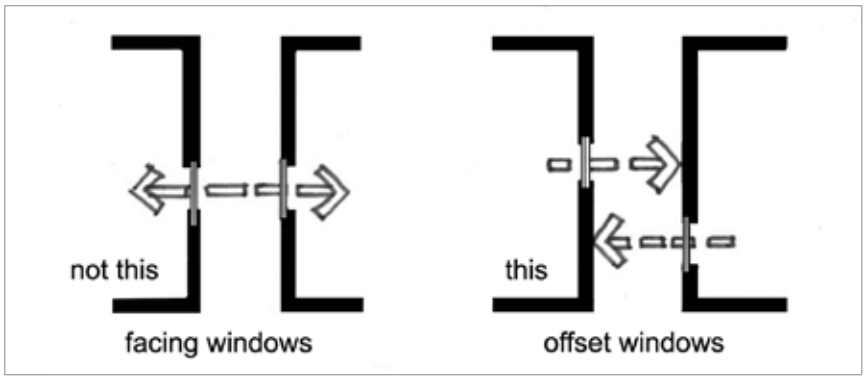


Figure 41

A3.18: Height of Elevator Penthouses and Roof Access Stairs: Elevator penthouses, roof decks and roof access stairs should be kept as low as possible in height and be sited to minimize overlook and view impacts.

A3.19: Noise Levels: Building designs should demonstrate that the A-weighted 24-hour equivalent LEQ sound level (the average sound level over the period of the measurement) in those portions of the dwelling listed below do not exceed the noise levels expressed in decibels set opposite such portions of the dwelling units. Example techniques include use of triple glazing, improved insulation etc.

PORTION OF DWELLING UNIT	NOISE LEVEL (DECIBELS)
bedrooms	35
living, dining, recreation rooms	40
kitchen, bathrooms, hallways	45

A3.20: Window Placement: Windows should be offset to protect privacy. Spatial arrangements and other techniques, such as screening between adjoining balconies or private outdoor spaces, is encouraged. In courtyard *developments*, the distance between facing windows should be no less than 9 metres (see Figures 40 and 41).

A3.21: Layered Landscaping: Layered landscaping treatments and slightly elevated overlook of the public realm are encouraged to improve residential livability. However, changes in elevation should not exceed 1.5 metres (see Figure 42).

Figure 42

B Guidelines for Ground-Oriented Housing

"The built-form of ground-oriented multi-family *development* should be integrated with existing neighbourhoods."

1. PUBLIC REALM, STREETSCAPE ELEMENTS AND NEIGHBOURHOOD FIT

DISCUSSION:

The built-form of ground-oriented multi-family *development* should be integrated with existing neighbourhoods, while enhancing architectural variety. *Development* should reflect the streetscape character of the neighbourhood in which it is located, or in the case of larger *developments*, it should create its own successful streetscape character.

Ground-oriented housing should be designed so that it complements the neighbourhood character, with minimum impact on adjacent properties. *Development* will often occur incrementally as pre-existing lots on record are assembled and consolidated. Accordingly, the design must carefully consider both the existing and future relationships to surrounding properties.

Figure 43

B1.1: Height and Massing: The height and massing of buildings should be in keeping with a single family dwelling or townhouse height, which is typically less than 12 metres. Architectural treatments that reduce apparent building height such as the use of trim, colour accents, secondary roof elements, building recesses and stepped building forms are encouraged (see Figure 43).

B1.2: Roof Treatment: The gable orientation and roof pitch should be sympathetic to the design of neighbouring buildings and help to maximize the space and light between buildings (see Figure 43).

B1.3: Street Orientation: Units are encouraged to be oriented towards, and have a visual connection to the street (see Figure 44).

B1.4: Corner Lots: Buildings on corner lots should "wrap the corner" providing an opportunity to have units facing both streets (see Figures 45).

B1.5: Minimum Frontage: Generally, *development* parcels should have a minimum frontage of 20 metres.

B1.6: Setbacks: The front yard setback should relate to, or appropriately transition from, the established pattern in the area.

Figure 44

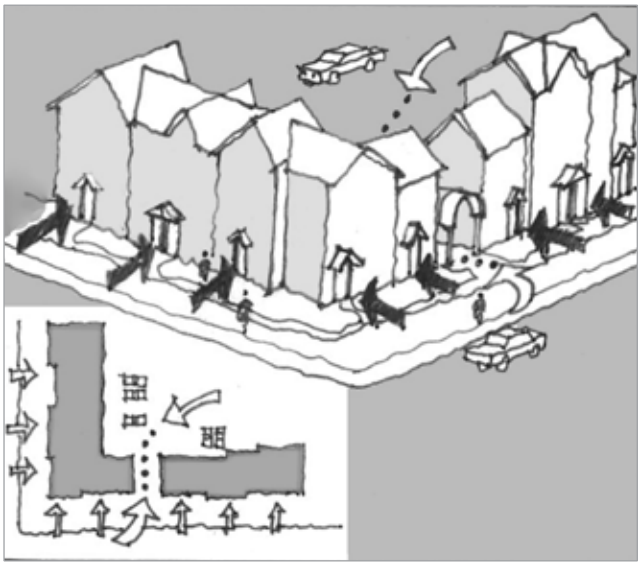


Figure 45

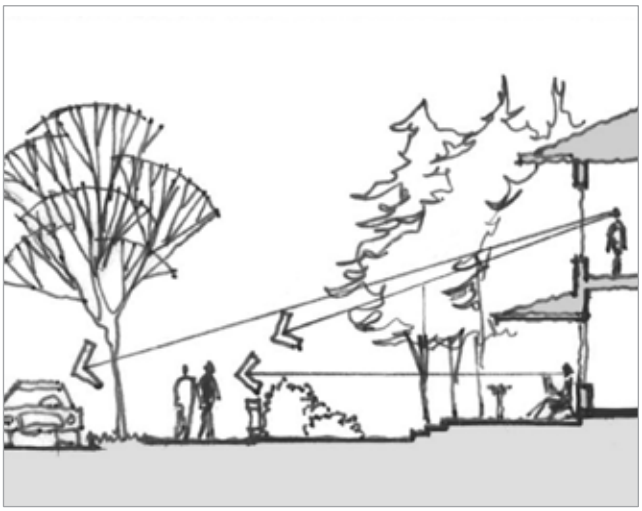


Figure 46

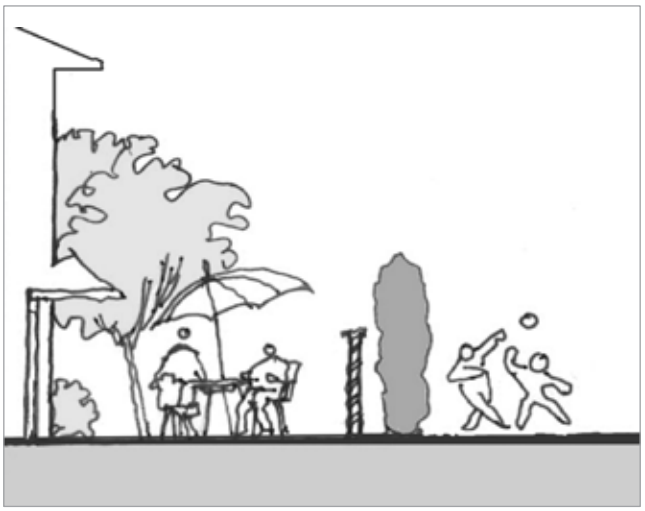


Figure 47

2. SITE PLANNING AND LANDSCAPING

DISCUSSION:

Good site planning and landscaping contribute to neighbourhood character and aesthetics, resident livability and environmental sustainability. In principle, site planning should strive to minimize building coverage, preserve natural features and minimize rainwater run-off. Mature trees shade and cool homes in the summer and absorb carbon dioxide and trap dust particles. Trees and other landscaping provide habitat, aid with energy conservation and absorb rain water, reducing stormwater run-off into creeks. Landscape plans should complement the building design and harmonize with the local setting and be prepared by a BC Registered Landscape Architect.

B2.1: Tree Retention: Healthy mature trees and natural features should be retained where possible.

B2.2: Sustainable Landscape Design: Sustainable landscape design should incorporate best practices for tree planting, rainwater management, accessibility and feature native and drought tolerant species. Sustainable landscape design should also be coordinated with building design, site servicing and utility placement.

B2.3: Street Interface: Landscaping and fencing should be kept low and open in the front yard to foster a strong relationship to the street and maintain visibility through to the front of the building (see Figure 46).

B2.4: Privacy: Incorporate planting and fencing to maximize privacy between dwelling units and neighbouring sites (see Figure 47).

B2.5: Shared Outdoor Space: Units should be clustered to create interesting shared outdoor spaces as well as usable and accessible private outdoor spaces. Encourage/integrate informal gathering, play and urban gardening opportunities (see Figure 48).

B2.6: Private Outdoor Space: At least 9 square metres of usable private outdoor space should be provided for all units (see Figure 49).

B2.7: Outward Facing Aspect: Units should be oriented such that windows from the principle living space of each unit are separated by a minimum of 9 metres from those of any other unit (see Figure 50)

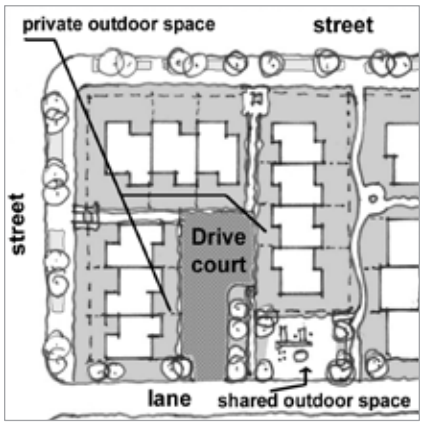


Figure 48

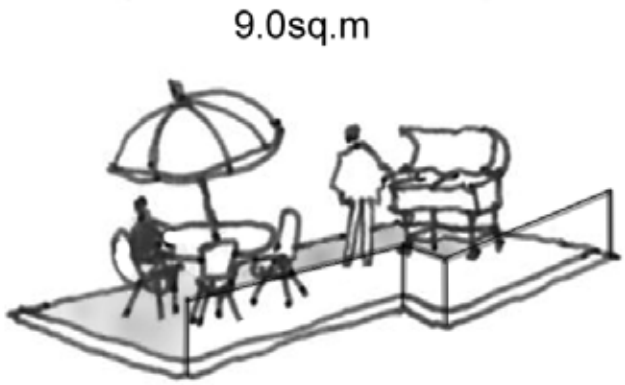


Figure 49

B2.8: Rear Yard Setbacks: Rear yard setbacks should be at least 6 metres, with some variation so that a visual wall is not created along the rear property line.

B2.9: Side Yard Setbacks: Side yard setbacks should be a minimum of 1.2 metres, and up to 3 metres when facing a side street or a single family home.

B2.10: Pedestrian Access: The main pedestrian access route should be from the street rather than the lane or parking area.

B2.11: Parking: Parking spaces should be located off a private driveway, and should not be visible from the street (see Figure 51) .

B2.12: Parking access: When parking is accessed from the front street the number of driveways should be kept to a minimum (see Figure 51).

B2.13: Shared Driveways: Where adjacent to another potential redevelopment site, the driveway should be designed so that it could in future be shared with the adjacent property (see Figure 51).

B2.14: Oil and Grit Separators: Oil and grit separators are required in all parking areas.

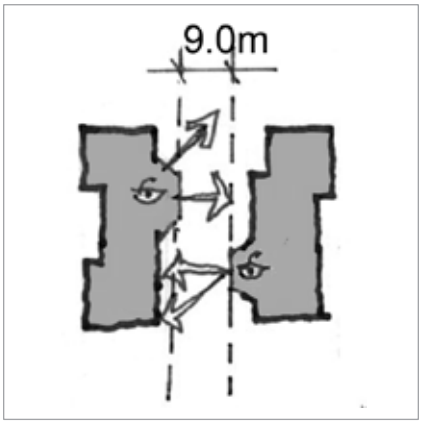


Figure 50

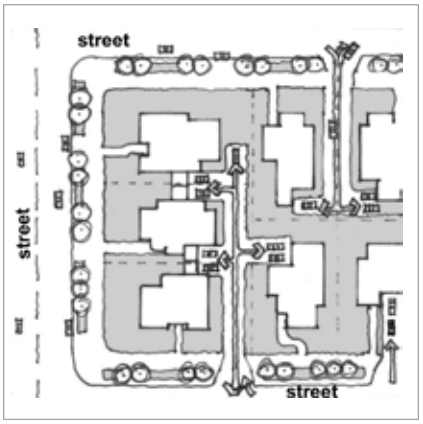


Figure 51

3. ARCHITECTURAL CHARACTER

DISCUSSION:

The built form and character of new ground-oriented multi-family *development* should be consistent with and in harmony with the general rhythm, scale and height of the existing buildings in the neighbourhood. Ground-oriented housing is usually located in or adjacent to single family neighbourhoods. Building design therefore should generally have a single family character and incorporate west coast references while responding to local conditions such as topography, vegetation and heritage resources.

Consideration should be given to unit identity, roofscape, and other architectural elements, including fenestration, materials, and colour. Dormers and similar roof projections should read as subordinate or secondary architectural elements.

Ground-oriented housing should be designed in consideration of the needs of all residents regardless of their state of health, mobility or disabilities. Units should incorporate basic features that allow the units to be adapted to accommodate special needs without expensive retrofitting.

B3.1: Massing: The front façade of buildings should be broken up and portions stepped back to reduce the impression of bulk (see Figure 52).

B3.2: Variations in Design: Subtle design variations should be incorporated between neighbouring buildings to avoid a repetitive appearance.

B3.3: Cladding: Buildings should be clad primarily in natural materials although stucco accents may be used as a subordinate finish.

B3.4: Varied Rooflines: Varied roof lines with overhangs are encouraged.

B3.5: Roofing Materials: Laminated asphalt shingles or fire retardant treated cedar shakes are recommended as roofing materials. Tile roofing is discouraged.

Figure 52

Figure 53

B3.6: Noise Levels: Designs should demonstrate that the noise levels (A-weighted 24-hour equivalent LEQ sound level (the average sound level over the period of the measurement) in those portions of the dwelling listed below should not exceed the noise levels expressed in decibels set opposite such portions of the dwelling units. Examples include use of triple glazing, improved insulation etc.

PORTION OF DWELLING UNIT	NOISE LEVEL (DECIBELS)
bedrooms	35
living, dining, recreation rooms	40
kitchen, bathrooms, hallways	45

B3.7: Heating and Ventilation Systems: Ventilation, heating and cooling systems should be designed and insulated to minimize noise and located to be visually unobtrusive to neighbouring *developments*.

B3.8: Accessible Entrance: A level, no step entrance should be provided to each dwelling. If not possible, then platform areas should be provided at the top and bottom of ramps to facilitate the turning of wheelchairs, strollers and other mobility devices (see Figure 53).

B3.9: Weather Protection: A canopy should be provided over the front entrance.

B3.10: Front Door Width: The front door opening should be no less than 0.9 metre in width.

B3.11: Accessible Doorbell: The front doorbell should be no higher than 1 metre above the entry way

B3.12: Legible Address: The address should be indicated in easy-to-read, 10 centimetre or taller numbers, shown in a clearly contrasting colour.

C Guidelines for Industrial and Business Park Development

> "The intent of these guidelines is to encourage employment opportunities through provision of well-designed, attractive, high-quality *development*"

DISCUSSION:

The intent of these guidelines for industrial and business park *development* is to encourage employment opportunities through provision of well-designed, attractive, high-quality *development* that is visually integrated with surrounding land uses and minimizes negative environmental impacts.

These guidelines apply to *development* on properties zoned for business park, mixed commercial/industrial, light industrial, and heavy or port industrial related uses. These design guidelines apply in addition to the general or *District*-wide design principles and guidelines.

1. BUILDING SITING AND RELATIONSHIP TO STREET:

C1.1: Corner Sites: Higher-visibility corner sites should be accentuated with building elevations that relate to both street frontages (see Figure 54).

C1.2: Building Entrances: Primary building entrances, offices, reception, sales and showroom space should face the street, be easily identifiable and be directly accessible to pedestrians, not separated by parking.

C1.3: Individualization: Individual tenancies should be differentiated by varying colours, materials and finishes and by projecting or recessing entrances from the main building façade (see Figure 55).

Figure 54

Figure 55

2. ARCHITECTURAL CHARACTER:

C2.1: Differentiate Building facades: Landscaping, including tree planting and/or living walls should be used to break up or soften building façades (see Figure 55).

C2.2: Weather Protection: Weather protection should be provided at all pedestrian entrances to buildings (see Figure 56).

C2.3: Blank Walls: Blank walls should be avoided and long building walls differentiated by using a variety of materials, textures, colours, window treatments and roof forms.

C2.4: Relationship: The scale, height and massing of new buildings should consider relationships to adjacent buildings (see Figure 57).

C2.5: Decorative Lighting: Up-lighting of trees or backlighting of walls to highlight tree silhouettes is encouraged to enhance the appearance of solid walls.

C2.6: Signage: Signage, landscaping and lighting should be fully considered and integrated with the building design (see Figure 58).

Figure 56

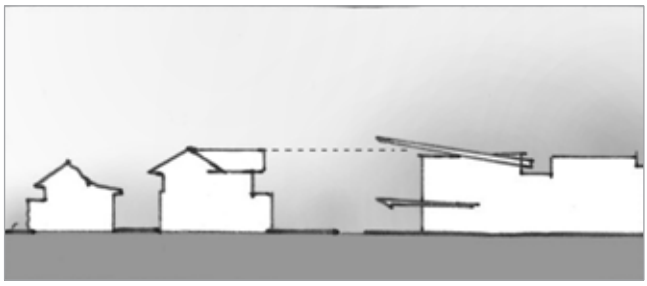


Figure 57

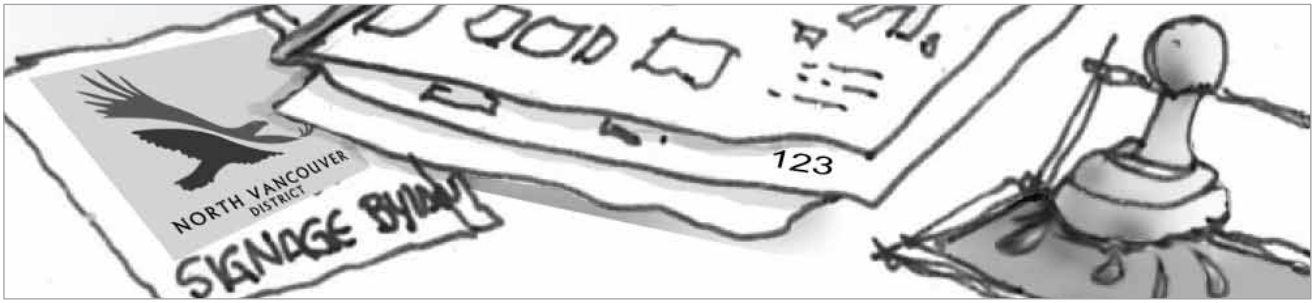


Figure 58

3. PEDESTRIAN AND VEHICLE CIRCULATION:

C3.1: Vehicular Access: Primary vehicle access points to business parks or large multi-tenancy sites should be clearly identifiable and delineated with way-finding signage, decorative or textured paving treatment and landscaping (see Figure 59).

C3.2: Connections: Well defined, accessible, barrier-free and safe pedestrian connections should be provided from the street and parking areas to the main building entrances and to nearby trail systems where appropriate (see Figure 60).

C3.3: Way-finding Signage: On large multi-tenant sites way-finding signage should be provided.

C3.4: Pedestrian Pathways in Parking Areas: Within parking areas, pedestrian routes should be clearly identified, barrier-free and differentiated through techniques such as the use of decorative paving materials, paving patterns and landscaping (see Figure 60).

C3.5: Pathway Lighting: Pedestrian paths should be lit with low landscape lighting or bollard type fixtures.

C3.6: Loading and Delivery: Loading and delivery areas, and access to them, should be separated as much as possible from parking areas, especially visitor parking.

Figure 59

Figure 60

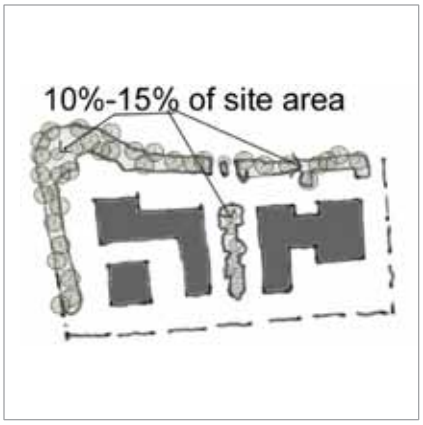


Figure 61

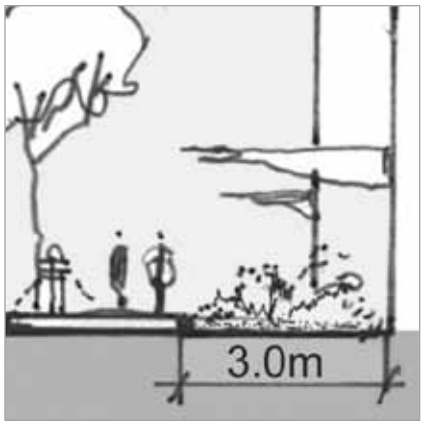


Figure 62

Figure 63

4. LANDSCAPING:

C4.1: Requirements: For large multi-tenant sites, 10 – 15% of the site area should be landscaped (see Figure 61).

C4.2: Integrated Plan: The landscaping plan for a site should follow an overall concept that links site components together and compensates for run-off associated with extensive paved areas through provision of rain gardens or other techniques.

C4.3: Outdoor Seating: Wherever possible, site planning should include accessible outdoor seating areas for use by employees.

C4.4: Native Species: Native and drought-tolerant species should be a focus of the landscape plan.

C4.5: Landscaping Strip: Where possible, there should be a landscaping strip of a minimum 3 metres in width along all property lines abutting streets (see Figure 62).

C4.6: Site Definition: Landscaping should be used to accent site entry points, define pedestrian corridors, frame circulation aisles and break up long rows of parking into small pockets of ten or fewer spaces (see Figure 63).

C4.7: Unused Areas: All boulevards and areas not built upon or used for parking, loading, storage or maneuvering aisles should be landscaped including trees where feasible (Figure 64).

C4.8: Screen Parking : Landscaping should be used to screen parking lots; outdoor storage (where permitted); garbage and recycling areas; and utility boxes (see Figure 65).

Figure 64

Figure 65

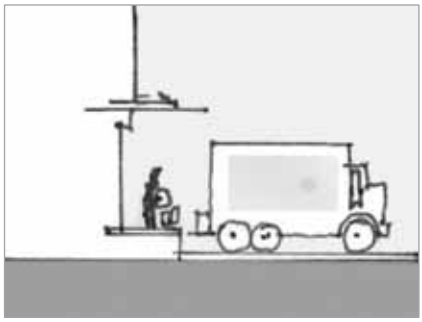


Figure 66

5. PARKING and Loading Areas:

C5.1: Location: The majority of parking spaces should be located at the rear or side of buildings.

C5.2: Loading Areas: Loading areas should be located at the rear or interior of a site (see Figures 66 and 67).

C5.3: Lighting: Free-standing lighting within parking areas should avoid glare to minimize impacts on neighbouring properties.

C5.4: Oil and Grit Separators: Oil and grit separators are required in all parking and loading areas.

6. FENCING AND SCREENING:

C6.1: Storage: Outdoor storage, where permitted must be screened with fencing and landscaping (see Figure 69).

C6.2: Utility and Service Installations: Utilities and service installations such as electrical transformers, gas meters, electrical and communication services should be located so as to be accessible to service vehicles but not interfere with pedestrian access and screened to minimize visibility (see Figure 65).

C6.3: Rooftop Mechanical Equipment: Rooftop mechanical equipment and telecommunication facilities should be hidden from public view with screening designed as an integral component of a building's architecture using materials compatible in quality and colour with building façades.

C6.4: Solid Waste and Recycling Containers: Solid waste and recycling containers, when located outside of buildings, should be sited in completely enclosed bear-proof structures (see Figure 69).

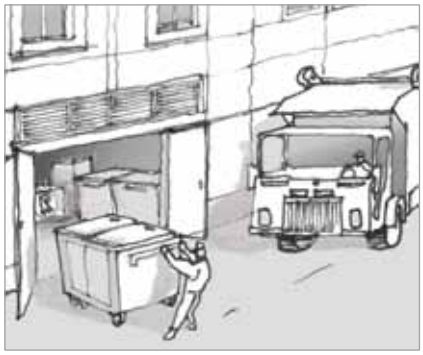


Figure 67

Figure 68

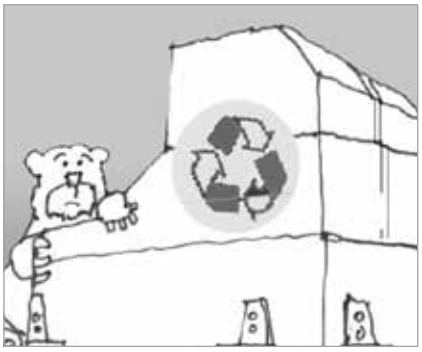
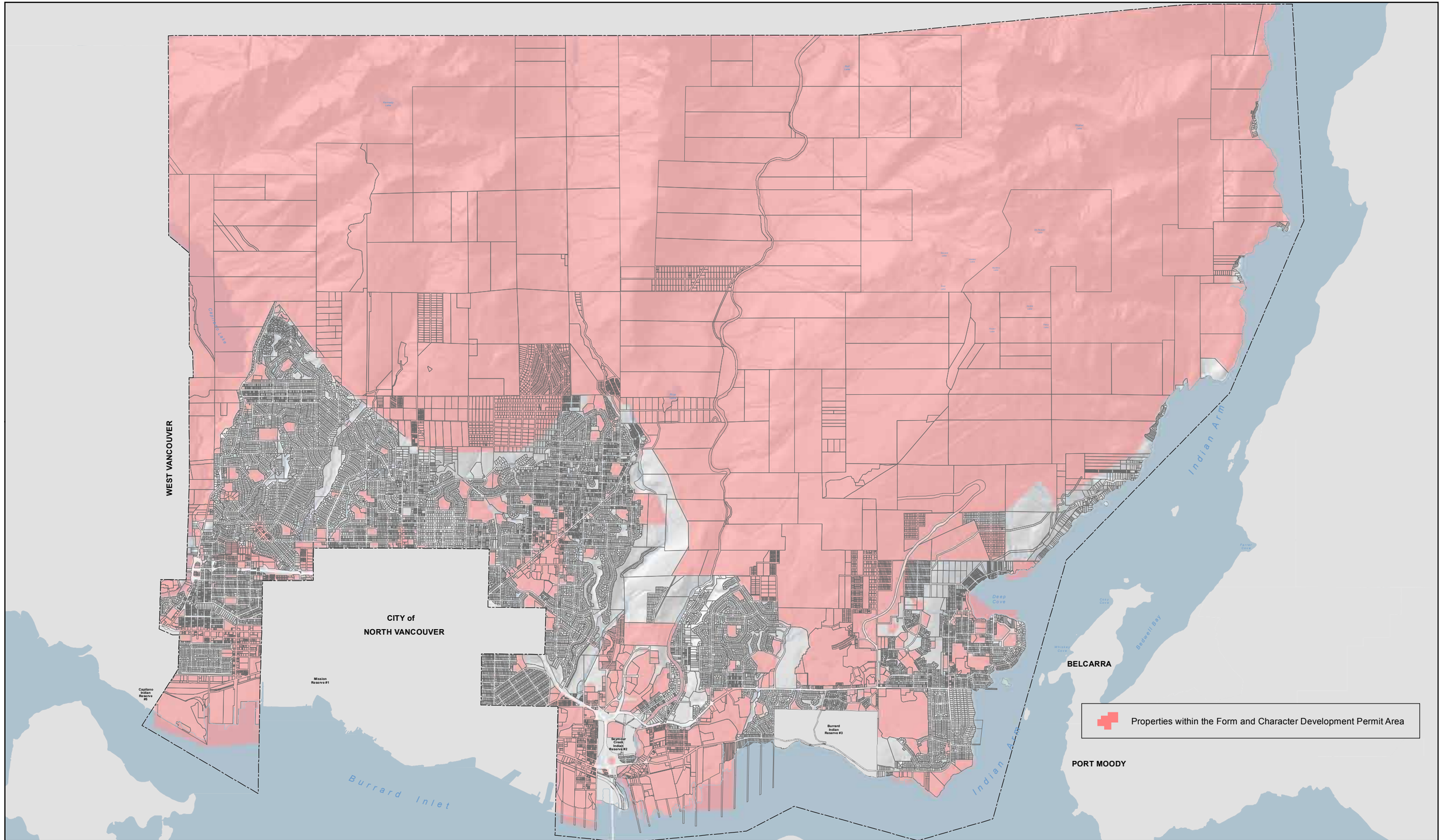


Figure 69



GIS DEPARTMENT
GEOGRAPHIC INFORMATION SYSTEMS
604.990.2311 www.geoweb.dnv.org gis@dnv.org

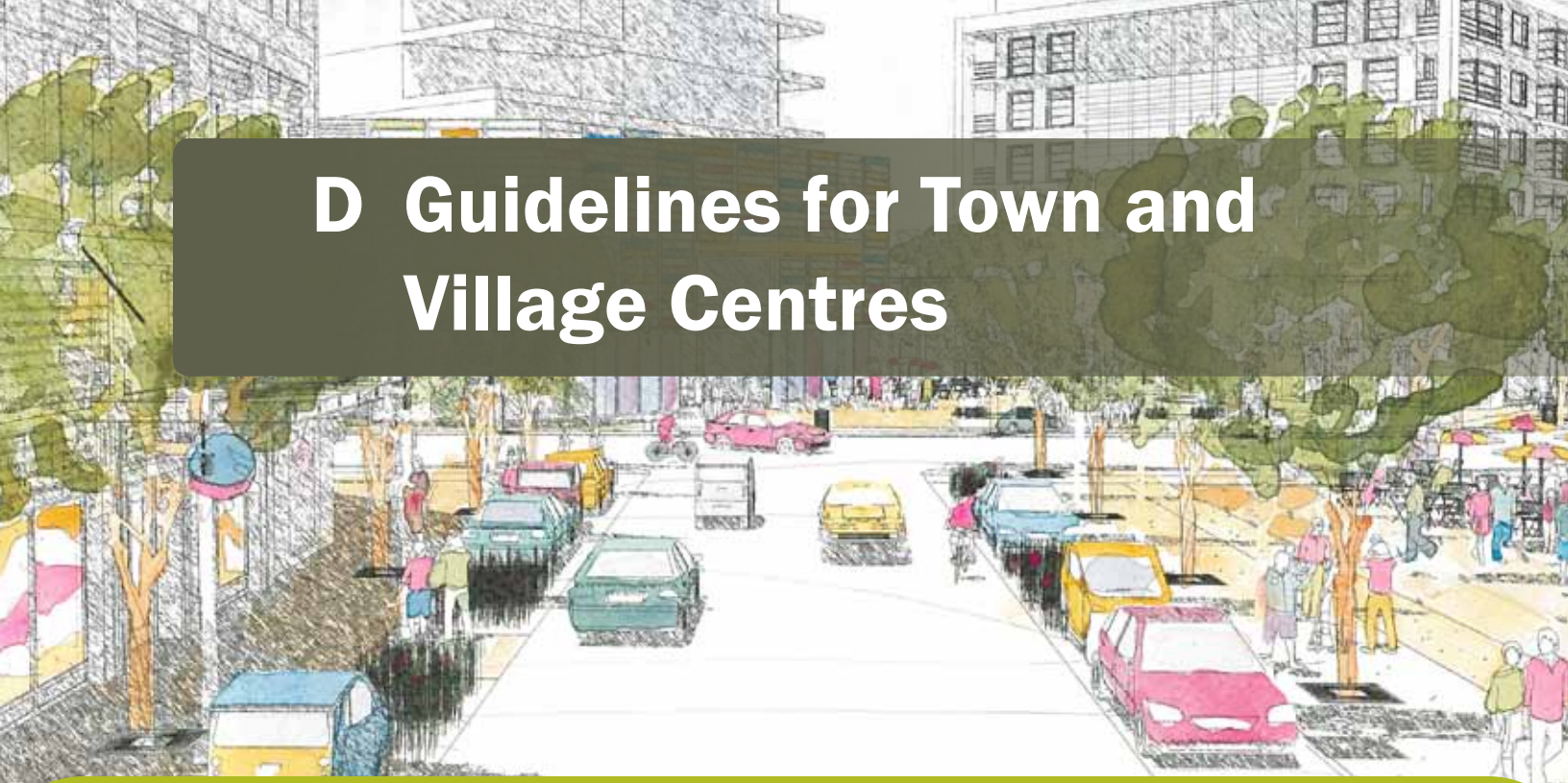
FORM AND CHARACTER DEVELOPMENT PERMIT AREA - MAP 3.1

0 250 500 1,000 1,500 2,000 2,500
Meters

N

Published: May 31, 2012 Scale: **1:55,000**

N:\4-Projects\Departmental\Planning\HaidS\2010 DPA\Form and Character\DPA_FormAndCharacter_Tab.mxd



D Guidelines for Town and Village Centres

"The Town and Village Centres will each have a unique sense of place and identity based on their physical setting, landmarks, cultural history and other community assets"

EDGEMONT VILLAGE CENTRE

These guidelines have been retained from the old District Official Community Plan Schedule B, Bylaw 6300, as amended 1991 and are intended to be updated as part of the more detailed Town and Village Centre Implementation planning processes.

Streetscape and Public Amenities

viii) Public open space should be provided at intersections on Edgemont Boulevard and West Queens Road as indicated in Figure 2.
ix) At least 15% of the parcel should be landscaped or devoted to public amenities such as street trees, outdoor seating, courtyards or public art.
x) All building must incorporate awnings, canopies or overhangs to provide continuous weather protection along the street, over doorways and other pedestrian areas.
xi) The type, design and colour scheme of signs, awnings, and canopies may vary from building to building but must be complementary to one another.
xii) Freestanding signs are not permitted.

Lanes

xiii) All services and utilities should be underground, and refuse containers and storage areas should be well screened or hidden from view.
xiv) All paving, including parking and pedestrian areas, should be co-ordinated to achieve a unified pavement scheme throughout the lanes and appropriate intersections.
xv) Parking and garbage pick-up areas at the rear of buildings should be co-ordinated with the adjacent properties to achieve more efficient layouts.
xvi) Parking areas should be landscaped around their perimeter.
xvii) Underground public parking should be well lit.

4.3.3.2 Guidelines Affecting Site 3, Upper Capilano
3065 Capilano Road to 3175 Capilano Crescent

i) Site Access: vehicular access is limited to Capilano Crescent.

ii) The Southern Intersection of Capilano Crescent and Capilano Road: this intersection should be improved to eliminate the potential for left hand turns into and out of the intersection. South bound traffic will continue to be permitted to exit from Capilano Crescent onto Capilano Road, provided that the design can be done in a manner that is safe and minimises conflict with vehicles travelling south on Capilano Road.

iii) Screening Along Capilano Road and Capilano Crescent: tree preservation and buffer strip planting along the street frontages should be maximised.

iv) Screening Along the Southern Property Line: tree preservation and buffer landscaping along the southern property line should be maximised, and a 3 storey height limit (including roof structure) next to the property line is required.

v) Screening Along the Northern Property Line: tree preservation and buffer landscaping along the northern property line should be maximised, and a two storey height limit (including roof structure) next to the northern property line is required.

vi) Screening Along the River Canyon: in accordance with the Streamside Protection Regulations of the Fish Protection Act, tree retention must be maximised within the Fisheries' setback area, and restorative planting must be provided where buildings are removed.

vii) Construction must be in accordance with the District of North Vancouver's adaptable housing guidelines.

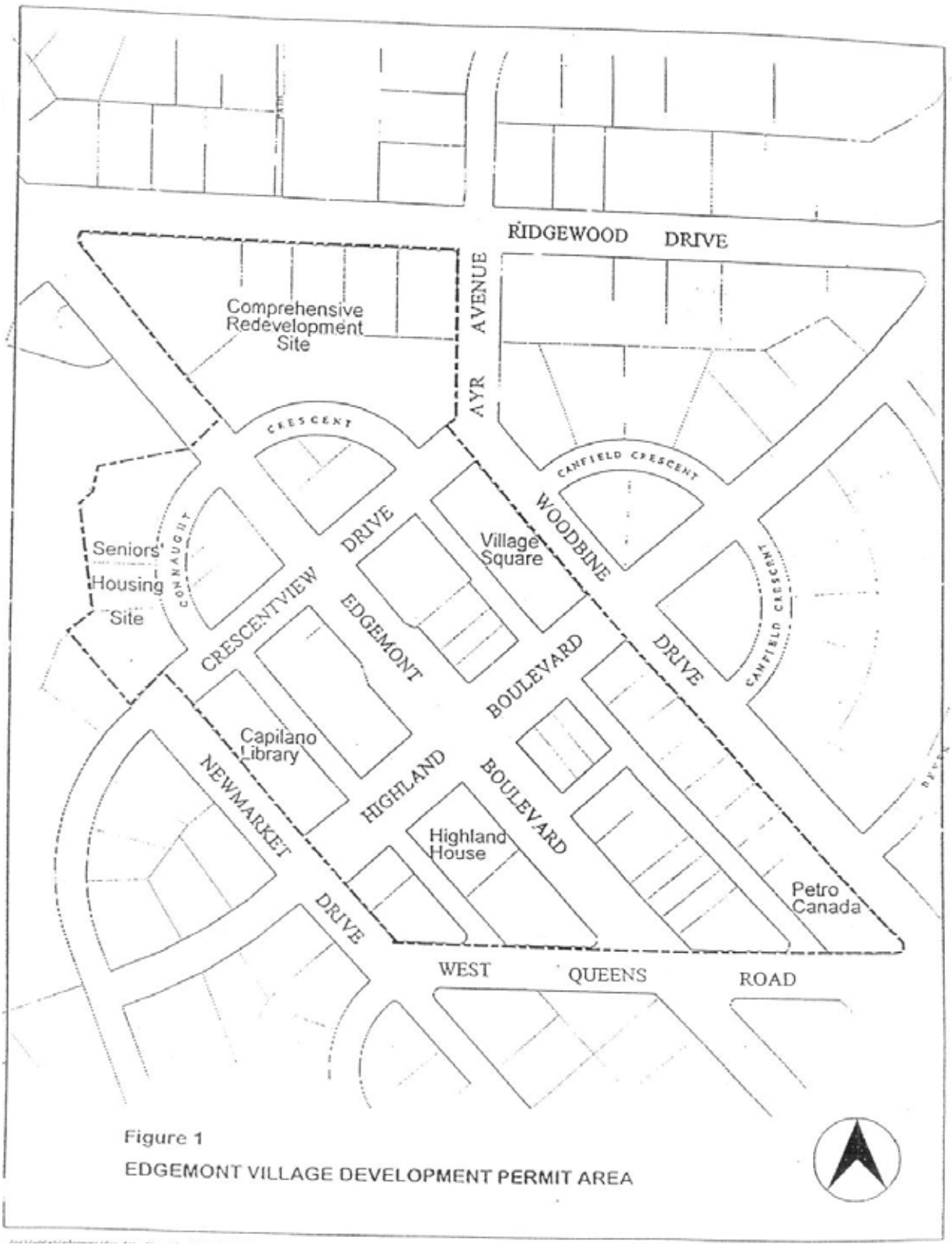


Figure 1

EDGEMONT VILLAGE DEVELOPMENT PERMIT AREA

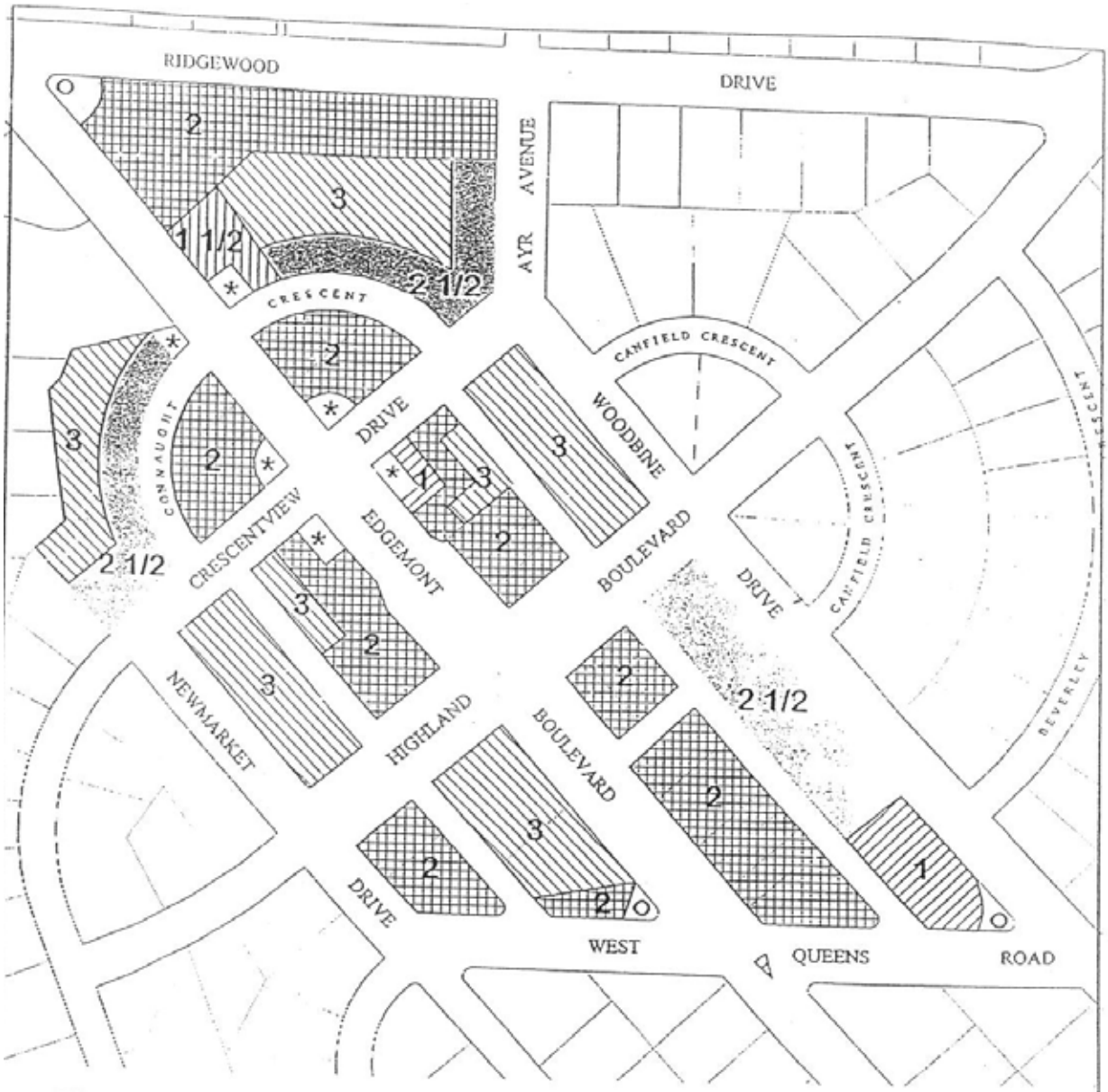


Figure 2 - MAXIMUM BUILDING HEIGHT

LEGEND :

1 storey	2 1/2 — 2 with partial 3rd storey
1 1/2 — 1 with partial 2nd storey	3 storey
2 storey	Mini parks
	public open space

Note:
Building coverage is normally limited to 50 % of site area except where varied in the text of the plan.

Marine Drive Design Guidelines

4.3.1.1 Marine Drive Corridor

New development within the Marine Drive Corridor Development Permit Area must conform to development guidelines that are intended to visually create the impression of a lively and diverse shopping district, minimize vehicle/pedestrian conflicts and improve pedestrian conditions within the Marine Drive Corridor. The intent is to encourage a higher quality of development along Marine Drive and Capilano Road, more in keeping with a lively and diverse retail-shopping street than a highway strip commercial district. The guidelines are intended to promote the expression of a unique Marine Drive Corridor identity through consistently applied streetscape elements.

4.3.1.1.1. Vision For Marine Drive

The following computer generated images are artist's conceptions intended to illustrate what Marine Drive might look like if redevelopment of the strip malls and auto dealerships to mixed-use buildings with apartments located over top of retail shops and small cafes takes place. The simulations permit the comparison of existing conditions with how the character of the street would change if more street trees are added, streetlights are replaced with decorative ones and buildings are sited at the front with parking lots at the rear. Four locations were chosen to demonstrate the types of changes that could take place over time on Marine Drive.

Marine Drive at MacKay looking west as it exists today.

MacKay Avenue is Marine Drive's eastern entry but the existing development there does not recognize this. The buildings are sited at the curb along most of the block but no consistent image is presented for the block as a whole. The existing one-storey buildings are too low in relation to the width of the street to provide streetwall definition.

The addition of a prominent building situated at the corner provides definition at the intersection and complements the existing Avalon/ Indigo building across the street. Planting the median and adding mature street trees contribute to the character of the street.

More street oriented infill buildings provide continuity on the north side of Marine Drive. The addition of banners and decorative street lighting combine to create a visually appealing streetscape.

Adding more street-oriented infill buildings, people on the street and more street trees complete the transformation to a lively and vibrant gateway to the District of North Vancouver.

Marine Drive at Mackay looking west artist's concept.

This **Philip Avenue** location is representative of typical development conditions on Marine Drive. On the south side of the street the buildings are situated at the rear of the property, behind expansive parking lots. The street is uninviting to pedestrians due to the narrow sidewalks and lack of interesting attractions.

A slight widening of the sidewalk, adding street trees and a conversion of the non-descript storefronts to ones with merchandise displays makes the street more visually appealing.

Some street-oriented infill development, adding more trees and changing the lighting to decorative poles that are lower in height yields more of a pedestrian scale to the street character. Placing a building on the southwest corner provides definition to the intersection, which imparts a sense of place.

An infill building with a prominent feature sited at the intersection completes the transformation. With these changes Marine at Philip takes on the character of an urban village instead of a highway commercial strip.

Marine Drive at Phillips looking west as it exists today.

Marine Drive at Philip looking west artist's concept.

Marine Drive Design Guidelines

Today **Capilano Road** between Marine Drive and Fullerton Avenue is devoid of character. Pedestrian conditions are austere and the streetscape is nearly featureless. The traffic island is unattractive and there is no pedestrian crossing.

Capilano Road at Curling looking north as it exists today.

Removing the traffic island and adding a pedestrian crossing reorganize the intersection. Eliminating the overhead wiring on Curling Road removes an eyesore.

Infill development and lower scale street lighting provide more appropriate character and definition to Curling Road. The street oriented infill building on Capilano Road is an aesthetic improvement and eliminates several driveway accesses onto Capilano Road.

A corner building replaces the gas station. This addition enhances the streetscape by completing the streetwall on Curling and Capilano Roads providing much needed continuity and recognizing the intersection.

Capilano Road at Curling looking north artist's concept.

Marine Drive Design Guidelines

Pemberton Avenue has potential to become an interesting shopping street with its wide street width that would allow for a centre median as well as accommodating on-street parking without sacrificing travel lane capacity. Most of the existing buildings are one storey and there are hardly any street trees or other landscaping.

Pemberton north of 16th as it exists today.

Placing mixed use buildings and street trees on the east side of the street presents a more coherent image than the existing mixture of low profile buildings that generally do not relate to one another. The addition of street trees and banners add colour and interest to the street.

Establishing parking bays and a planted median in the centre of the street breaks up the expansive roadway and de-emphasizes the importance of motor vehicles. A well marked pedestrian crossing at mid-block further signifies a pedestrian priority.

The addition of street-oriented shop fronts on the west side of the street generates activity on the street completing the transformation of Pemberton Avenue from a transitional commercial/light industrial street to a people friendly and lively neighbourhood retail district.

Pemberton Avenue at 15th looking north to Marine artist's concept.

4.3.1.1.2 Design Objectives:

a) To promote a unique Marine Drive Corridor identity through a consistently applied streetscape theme.
b) To acknowledge gateway and key intersections through the use of unique design features.
c) To create a more attractive and comfortable environment for shoppers and pedestrians.
d) To improve safety conditions for pedestrians, cyclists and motorists.
e) To co-ordinate siting, character and scale of buildings including signage and landscaping.
f) To preserve and enhance the liveability of adjacent residential neighbourhoods.
g) To achieve an attractive, environmentally sustainable built environment.
h) To achieve linkages between open space components and other public amenities.

Marine Drive Design Guidelines

4.3.1.1.3 Streetscape

The streetscape is defined as the visual character of a street. The main elements are landscaping, especially street trees, building facades and amenities or utilities in the public roadway such as sidewalks, bus shelters, street furniture and lighting. A transportation and resources streetscape theme, which reflects the early development history of Lower Capilano, is the starting point for the Marine Drive design guidelines. The theme suggests strong, robust, practical, purposeful things. Other characteristics include motion, linearity, and dynamic qualities.

Cars define the visual identity - existing situation.

Railway heritage recognized in landscaping. Railway artifact in front of Pemberton Pub, south end of Pemberton Avenue.

The appearance and character of Marine Drive should bear a relation to Lower Capilano's heritage and/or natural landmarks to most effectively express a Lower Capilano community identity. Standardized sidewalk and pavement treatment, street lighting, tree planting and street furniture provides continuity, linking one block to the next and setting Marine Drive apart in comparison to other commercial centres like Edgemont Village or Deep Cove for example.

Selecting a transportation streetscape "theme" that reflects the history and positive characteristics of Lower Capilano is an important starting point of the design guidelines for future redevelopment along Marine Drive. A transportation theme suggests strong, robust, practical, purposeful things. Other characteristics include motion, linearity, and dynamic qualities.

Standardized sidewalk paving lends continuity from block to block.

Trees frame the street. Sidewalk improvements in front of new Avalon development.

Public Art

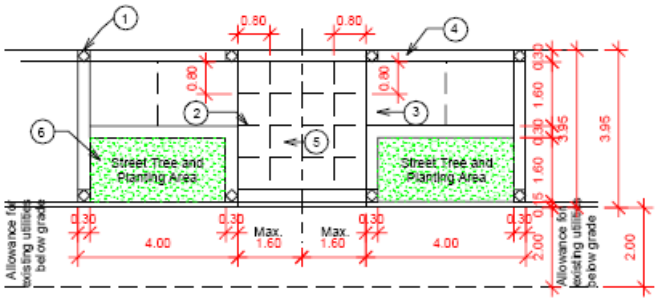
Public art is more meaningful when it reflects the history or reinforces the positive character of the area in which it is placed. Public art objectives for Marine Drive support the program for streetscape improvements that is based on a transportation theme. Possible applications for public streetscape infrastructure include specially designed bus shelters, benches, tree grates, pavement tiles, interpretive or heritage plaques and street signs.

Gateway and other special intersections have the best potential to combine public art with other urban design objectives. They offer prominent and highly visible locations with the available space to accommodate public amenities such as benches and freestanding art pieces.

Sidewalks and Special Paving Areas

Wide sidewalks are a requirement for the pedestrian safety, comfort and ease of circulation that every successful shopping street must have. A consistent sidewalk appearance throughout the length of Marine Drive also contributes an important unifying design element. Decorative bands of exposed aggregate or brick at regular intervals lend continuity and rhythm to the streetscape. Extending the same standards into courtyards, entries and hard landscaping areas on private property is recommended to complement and reinforce the streetscape identity that is being established.

STREET TREES AND SIDEWALK CONCEPT



LEGEND:

1 Decorative keystone (Possible public art project)
2 Scoring patten within broom finish concrete
3 Broom finished concrete
4 Exposed aggregate banding
5 Area for street lights, benches, bike racks, etc.
6 Low maintenance native shrubs, groundcover and street trees (As per overall tree plan)

Street Furniture and Lighting

Street furniture and lighting are important public amenities that are visually prominent, regularly repeated features of the streetscape. Co-ordination of the style and colour scheme of the street furniture is a cost effective means of providing continuity and reinforcing the transportation streetscape theme on Marine Drive. Their style and appearance therefore should be traditional looking, practical and durable.

New light poles will be installed as redevelopment occurs. In the interim the existing poles will be repainted black and pedestrian scale lighting attached to selected poles to increase pedestrian safety at night. Banners hung from selected poles would add visual interest and colour to the streetscape and reinforce the streetscape theme.

Bike Rack

Bench

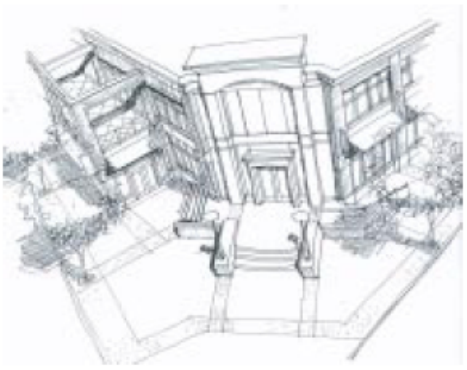
Bollards

Street Trees and Landscaping

Street trees and other landscaping soften the visual impact and help integrate the buildings and pavement into the overall streetscape. Landscaping can also serve as a buffer between various land uses or to screen unattractive sights such as service areas and utility kiosks.

Street trees are one of the more visually prominent features of the streetscape as well as a valuable amenity that adds to property values. Regularly spaced trees located at curbside on both sides of the street create a continuous street tree canopy, buffer pedestrians from moving traffic, and provide shade, colour and texture to the streetscape.

Landscaping on private property should be complementary to the public streetscape through the use of similar colours, plant materials and other details. Rooftop gardens and other usable amenity spaces in mixed-use buildings provide a useful resident amenity and present a more attractive sight when viewed from higher buildings.



Signage

Business signage can and should be an asset to the general appearance and character of the streetscape. Fascia signs contribute rhythm, scale and proportion to otherwise monolithic or bland building facades.

The use of pedestrian oriented signage is encouraged. Pedestrian oriented signage is designed to be readable by pedestrians standing adjacent to the business and by slow moving traffic. Canopy and awning signage is oriented to pedestrians on the opposite side of the street.

The material, colour and detailing of signs should reinforce the building's architectural style and character. Signage should complement the features of a building and not cover or obscure its architectural detailing.

Architectural feature used as a signage

4.3.1.1.3.1 Streetscape Guidelines

a) Public art should reflect the history and reinforce the positive character of Lower Capilano.
b) Gateway and other prominent intersections are the preferred locations for combining public art with other urban design objectives.
c) Wide sidewalks having decorative accents and banding at regular intervals as illustrated in the Development Servicing Bylaw are required along Marine Drive, Pemberton Avenue and Capilano Road frontages.
d) A complimentary paving scheme should be extended into courtyards, entries and hard landscaping areas on private property to complement and reinforce the streetscape identity that is being established.
e) Contrasting paving materials should be utilized wherever foot traffic is not physically separated from vehicle traffic including pedestrian crossings, driveway crossings and pedestrian routes through parking lots.
f) Street trees should normally be spaced 8 to 10 metres apart.
g) Benches should be provided in groupings of two or more and located in or near to building entrances, bus stops or other logical pedestrian areas. At least two benches should be located on each block.
h) There should be a minimum of 2 trash containers on each block installed near to any grouping of benches and/or next to bus shelters.
i) There should be a minimum of two bike racks on each block and they should be located near building entrances.
j) Private landscaping must be complimentary and integrated with the street trees and other landscaping elements in the public realm.
k) Business signage should be pedestrian oriented, meaning it should be designed to be readable from a pedestrian perspective rather than from a traveling automobile.
l) Freestanding signs are not allowed.
m) The material, colour and detailing of signs must reinforce the building's architectural style and character.
n) Signage must complement the features of a building and not cover or obscure its architectural detailing.
o) Window signage must not obscure or clutter the window nor block the passage of light.
p) Signs must be made of high quality, durable materials such as metal, stone or hardwood is recommended and the colours and finishes must be complementary to those of the building.
q) Signs on multiple tenant buildings must have a common style. Signs on each storefront must be similar in height, proportion, material composition, lighting and colour scheme to reinforce the cohesiveness of the building facade.
r) Where wall signs are externally lit, light must be directed toward the sign and away from passers by and motorists. Sign illumination levels must be kept to a minimum to avoid excessive ambient light on the street.

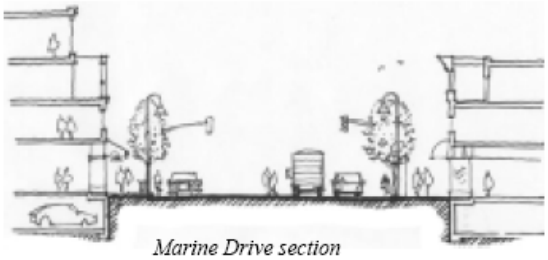
Proportion and Scale of Buildings

The rhythm of building articulations and spaces between them provides a human scale and creates an interesting visual environment for pedestrians. The logical basis for establishing rhythm is the lot pattern or typical property frontage. Windows, doorways or building recesses should occur with regular frequency. A monolithic appearance is to be avoided by breaking up the bulk of large buildings through the regular repetition of "vertical" elements like entrances, regularly spaced windows, alternating wall patterns or materials and other design features.

On the south side of Marine Drive buildings with upper floor setbacks allow more sunlight to penetrate onto sidewalks and courtyards. On the north side of Marine Drive orienting the building height and mass more toward the front property line will maximize privacy and sunlight penetration to the adjacent residential neighbourhood.

At feature intersections like gateways and designated nodes, building prominence is enhanced by the use of height and vertical design elements while at the same time this emphasizes the intersection as a focal point. Diagonal building setbacks accompanied by prominent building entrances at these intersections can provide public open space such as small plazas.

Building recesses in facade



Marine Drive section

South side Marine stepped back to reduce shadowing

4.3.1.1.5.1 Proportion and Scale Guidelines

a) A monolithic appearance is to be avoided by breaking up the bulk of large buildings through the repetition of vertical elements like entrances, regularly spaced windows, alternating wall patterns and materials and other design features.
b) Infill buildings must take into account the scale, façade composition, doorway and window rhythms, building materials and colours of nearby buildings.
c) Setbacks to third storey or higher floors on buildings on the south side of Marine drive are required to allow more sunlight to penetrate onto the street.
d) On the north side of Marine Drive orienting more of the building height and mass toward the front of commercial properties is encouraged.
e) The prominence of designated node and gateway intersections must be recognized through an emphasis on height and vertical design elements of buildings.
f) Diagonal building setbacks and prominent building entrances are encouraged at major intersections to provide public open spaces such as small plazas and, when complemented on opposite corners of the intersection, to recognize the intersection as a focal point.

Marine Drive Design Guidelines

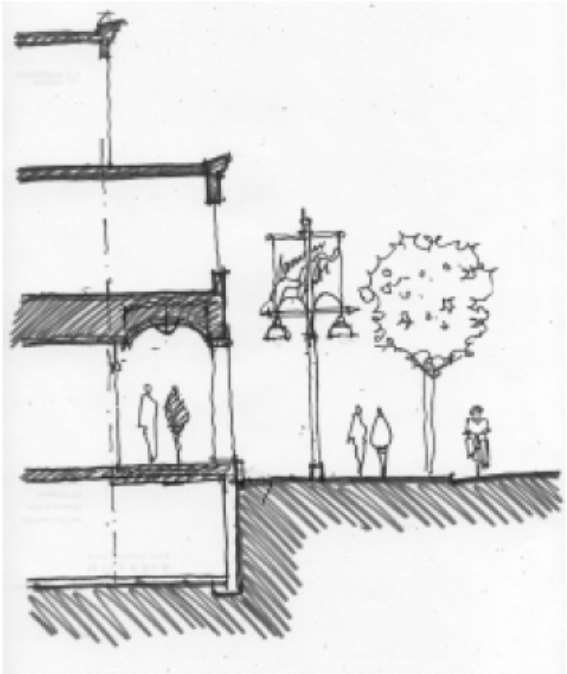
Architectural Character

Creative building architecture set within a unifying framework of design guidelines inspired by an early twentieth century warehouse style to complement the transportation and resource industry heritage of Lower Capilano's early development are intended to reinforce a Lower Capilano identity.
Building styles are to be functional and simple, with strong massing and flat roofs. Masonry (especially brick), heavy timbers, steel and iron are examples of building materials that are consistent with the Marine Drive theme.

Effective weather protection such as canopies and awnings should be provided along the entire building frontage to add colour and interest. On south facing properties, gallerias or colonnaded shopping arcades can provide protection from the natural elements but still receive natural illumination. Use of colonnades or other grade level setbacks is also one way to free up space for wider sidewalks when the road allowance is insufficient for this purpose without incurring the loss of development potential that would result if the buildings were sited behind the property line.

4.3.1.1.6.1 Architectural Guidelines

a) Building design must be inspired by the transportation and resource industry heritage of Lower Capilano's early development. This translates to functional and simple architecture with strong massing and flat roofs.
b) Masonry (especially brick), heavy timbers, steel and iron are examples of building materials that are consistent with the Marine Drive theme.
c) Weather protection must be provided along the entire commercial building frontage. Fabric awnings and canopies or supports for glass structures must utilize strong dark colours like black, dark green or burgundy.
d) Incorporation of green building measures, which conserve energy and resources such as passive heating and lighting systems, energy efficient and low water fixtures and appliances, on-site storm water infiltration and recycled building products is encouranged.



Colonnaded weather protector as part of the building

Example of colonnade

Parking Areas

Surface parking areas that are visible or accessible from Marine Drive break the streetwall and create empty zones that detract from street definition and interrupt pedestrian flow. Parking areas should be sited behind buildings and wherever possible should not be accessible or visible from Marine Drive. Parking lots that are visible from adjacent streets or back onto residential properties should be well screened by walls, fences or landscaping. Parking areas must be well lit to ensure safety, security and maximize use.

Interspersing landscaping in large surface parking lots can soften their impact by breaking the parking down into smaller clusters of ten or fewer spaces. Parking aisles should be separated with planted medians.

Parking entry incorporated in street facade

4.3.1.1.7.1 Parking Area Guidelines

a) Surface parking areas must be sited behind buildings and may not be vehicle accessible or visible from Marine Drive.
b) Parking aisles must be separated by planted medians that are at least 1,5 metres. Hearty,drought-tolerant landscaping that provides habitat for birds and insects should be utilised
c) Parking areas that would be visible from adjacent streets or back onto residential properties must be well screened by walls, fences or landscaping.
d) Parking areas must be well lit to ensure safety and security but care must be taken to avoid glare or spill-over to neighbouring properties.
e) Well marked pedestrian routes must be provided in large parking lots.
f) Parking structures must be designed so that all parked vehicles are hidden from view.
g) Permeable pavings and surfaces should be used to enhance on-site storm water management.

Development approval information areas

Land within the Form and Character DPA is also designated as a Development Approval Information Area in accordance with Section 920.01 of the Local Government Act. Applicants for zoning amendments, form and character *development* permits or temporary use permits may be required by the District to provide, at the applicant's expense, information respecting the impact of the proposed development activity on the community on matters such as, but not limited to, transportation patterns and traffic flow; local infrastructure; utilities capacity; community services, and public facilities including schools and parks.

Any such information deemed by the *District* to be necessary for the purposes of determining requirements to be addressed in a development permit shall be identified and conveyed to the applicant during the preliminary development application process.

This page intentionally left blank

PART 4 | ENERGY AND WATER CONSERVATION AND GREENHOUSE GAS EMISSION REDUCTION DEVELOPMENT PERMIT AREA

Context

The purpose of this development permit area is to complement Council's Green Building Strategy as it applies to new buildings, including private sector and Municipal building projects and, to foster the conservation and efficient use of energy and water to reduce building-generated greenhouse gas emissions.

The construction, operation and maintenance of buildings takes a toll on the natural environment and represent a significant contributor to the creation of greenhouse gas emissions. In 2007, buildings in the *District* were estimated to contribute approximately 50% of the community's greenhouse gas emissions.

The *District* is seeking to reduce community GHG emissions by 8% from the 2007 levels by 2020, 13% by 2030 and 21% by 2050, through initiatives under its own influence, including: land use and transportation planning, *development*/building guidelines and waste reduction strategies. The *District* also supports community wide efforts to reduce GHG emissions by 33% by 2030.

Encouraging developers and builders to incorporate a wide range of measures, designed to work together to reduce a building's impact on the environment, is critical to reducing that portion of the *District's* greenhouse gas emissions attributable to the construction, operation and maintenance of buildings.

Objectives For Energy And Water Conservation And Greenhouse Gas Emission Reduction

The *Energy and Water Conservation and GHG Emissions Reduction DPA* and corresponding development approval information area are established to address the following objectives:

1. reduce consumption in new buildings;
2. create a positive impact on the natural environment and natural earth systems;
3. make the best possible use of existing infrastructure systems and minimize the need for system capacity expansion and extensions;
4. reduce the costs associated with the on-going operation and maintenance of buildings;
5. encourage occupant comfort and health and the efficient use of materials and resources in new buildings; and
6. encourage and support innovation in building design and *development*.

Exemptions

All *development* is exempt other than:

1. any *development* for which an amendment of the *Zoning Bylaw* or the *District's* Official Community Plan is required; and

2. the construction and installation of a *new ICI building or structure* for which a building permit is required pursuant to the *District's Building Regulation Bylaw*.

Despite the foregoing, owners, developers and designers are encouraged to consider these guidelines in site *development*, building, landscaping and engineering decisions relating to all *developments* within the *Energy and Water Conservation and GHG Emission Reduction DPA*, whether or not an energy and water conservation development permit is required.

Guidelines

The following guidelines apply within the *Energy and Water Conservation and GHG Emission Reduction DPA*. These guidelines are not intended to be a definitive listing. Rather, they suggest issues to be considered and designers may respond to these guidelines in a variety of different ways. Creativity is encouraged.

Except where specific standards are referenced, these guidelines are not prescriptive. Designers are directed to consider a variety of synergistic approaches, particularly, passive design strategies, rather than active mechanical systems, to reduce a building's energy and water consumption and greenhouse gas emissions and improve occupant thermal comfort.

While these guidelines relate specifically to energy and water conservation and ghg emission reductions, it is important to consider other measures which reduce a building's overall carbon footprint by incorporating a variety of strategies to make the best use of the site, improve indoor air quality and utilize materials which can be sourced locally or regionally and reused/recycled at the time of construction and upon demolition.

A *qualified professional* retained by the applicant is required to provide a written report summarizing the proposed measures to be incorporated in the proposed *development*.

Development should be designed and constructed so that the energy budget for proposed buildings and structures, once complete, will be at least 33% better than the applicable standard in the Model National Energy Code for Buildings or at least 24% better than the applicable standard in ASHRAE 90.1 – 2007.

For Energy Conservation the following guidelines apply:

1. an integrated design process should be utilized to identify opportunities to reduce a building's energy consumption;

2. the effectiveness of the building envelope, including glazing, to reduce heat loss should be maximized;

3. overall building energy performance and interior thermal comfort should be maximized through a combination of passive design strategies, including, but not limited to:

    - the sizing and placement of windows and the incorporation of operable windows to increase opportunities for natural ventilation, reducing the reliance on mechanical HVAC systems;
    - the orientation of buildings to take maximum advantage of site specific climatic conditions especially in terms of solar access and wind flow, when possible;
    - the use of thermally broken window frames and high performance glazing;
    - the incorporation of roof overhangs, fixed fins or other solar shading devices to ensure that south facing windows are shaded from peak summer sun but enable sunlight penetration during winter months;
    - design building massing and solar orientation to improve the passive performance of the structure

4. various measures should be utilized to reduce the heat island effect of a building's roof and heat transfer into the building, including: green roofs; Energy Star-rated or high albedo roofing material; or, other appropriate measures;

5. opportunities for the distribution of natural daylight into a building's interior spaces to reduce the energy consumption of electric lighting should be maximized. Avoid the use of heavily tinted or reflective glazing that reduces solar heat gain but also reduces the penetration of daylight and increases glare;

6. solar thermal or solar electric technologies should be incorporated, but, where it is not possible to incorporate solar technologies during initial construction of a building, the building should be designed to be solar ready;

7. on-site renewable energy systems should be pursued where feasible;

8. mechanical systems should be designed to enable interconnection to future district energy systems in those areas identified by the *District* as having potential for such systems;

9. on-site landscaping should be designed to promote opportunities for passive heating/cooling without negatively affecting the potential for solar thermal or solar electric systems on the site and on surrounding properties;

10. the planting of appropriate trees within parking lots should be maximized to provide shade, store carbon and reduce heat build-up; and

11. daylight-responsive controls should be incorporated in all regularly occupied spaces sited adjacent to windows/skylights.

For Water Conservation the following guidelines apply:

1. an integrated design process should be utilized to identify opportunities to reduce a building's water consumption and incorporate strategies for the capture and use of stormwater for landscaping purposes;

2. the stormwater and building water discharge should be managed on site to the extent possible. Measures could include:

    - maximizing pervious surfaces to enhance stormwater infiltration opportunities
    - incorporating bioswales and rain gardens for infiltration
    - using drought-tolerant and native plants and other xeriscaping techniques to minimize the need for landscape irrigation;
    - maximizing the use of topsoil or composted waste for finish grading to assist in infiltration and increase the water holding capacity of landscaped areas;

3. where a site is adjacent to open space or a watercourse, infiltrated stormwater should be directed to that receiving environment if appropriate; and

4. automated control systems should be utilized where temporary or permanent mechanical irrigation systems are required.

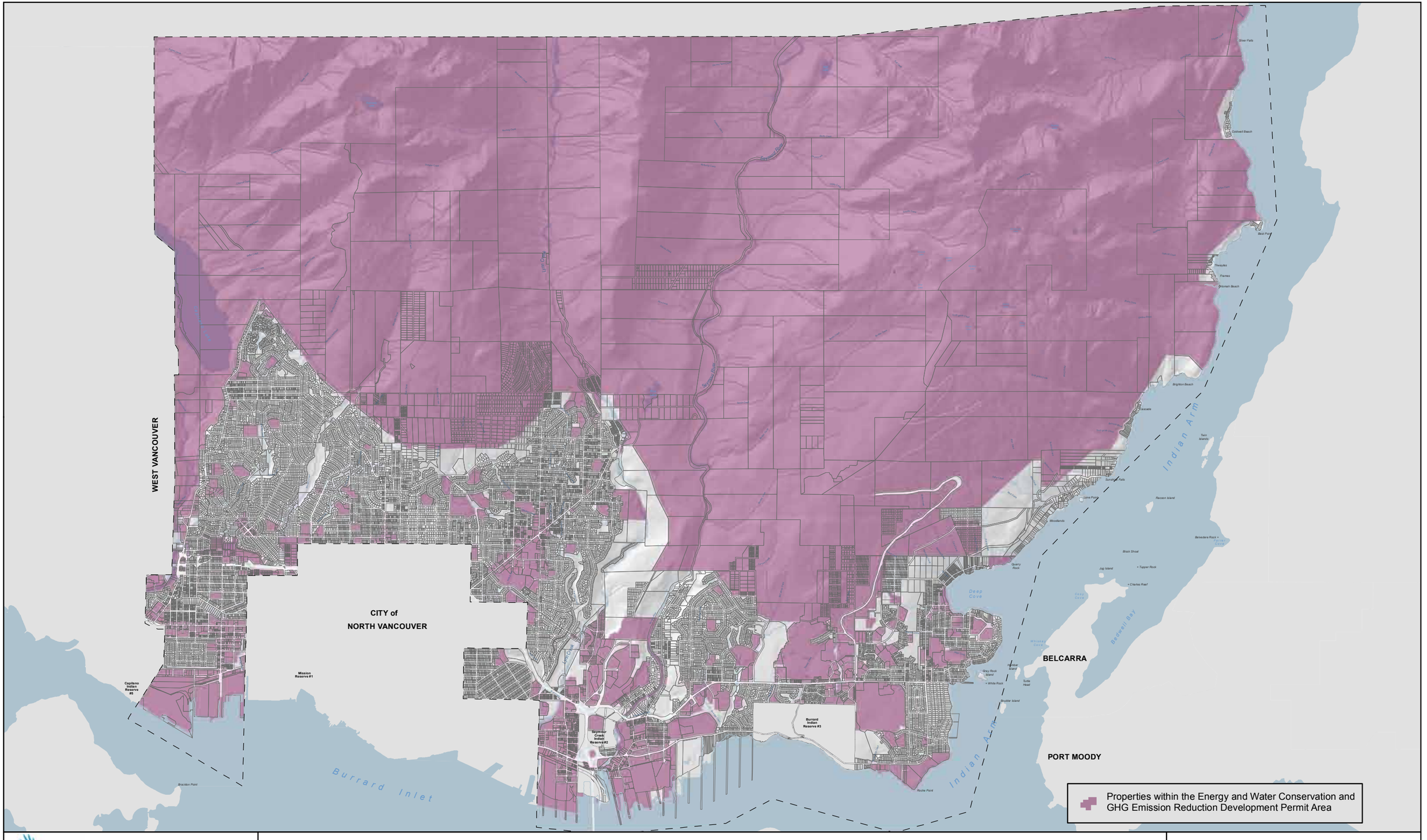
For Greenhouse Gas Emission Reductions the following guidelines apply:

1. building materials which are durable for the use intended should be selected;
2. locally or regionally sourced building materials should be used to reduce transportation energy costs;
3. existing building materials should be reused where practical;
4. building materials which may be reused or recycled upon building demolition should be selected;
5. a construction waste management plan should be developed and areas for the collection of recyclable materials during construction should be provided on site; and
6. building products which have low, or no-VOC off-gassing potential should be selected.

Development approval information area

Land within the *Energy and Water Conservation and GHG Emission Reduction DPA* is also designated as a Development Approval Information Area in accordance with Section 920.01 of the Local Government Act. Applicants for energy and water conservation development permits may be required by the *District* to provide, at the applicant's expense, information in order to demonstrate compliance with the energy and water conservation guidelines.

Any such information deemed by the *District* to be necessary for the purposes of determining requirements to be addressed in a development permit shall be identified and conveyed to the applicant during the preliminary development application process.



GIS DEPARTMENT
GEOGRAPHIC INFORMATION SYSTEMS
604.990.2311 www.geoweb.dnv.org gis@dnv.org

ENERGY AND WATER CONSERVATION AND GHG EMISSION REDUCTION DEVELOPMENT PERMIT AREA - MAP 4.1

0 250 500 1,000 1,500 2,000 2,500
Meters

N

Published: May 31, 2012 Scale: **1:55,000**

N:\4-Projects\Departmental\Planning\HaidS\2010 DPA\Energy Conservation\DPA_EnergyConservation_Tab.mxd

Inspired by nature, enriched by people