

Upper Lands Report



*Planning, Lands & Permits Department
June 2001*

west vancouver
THE WATERFRONT COMMUNITY

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EXECUTIVE SUMMARY

The Upper Lands Report is intended to lead to a framework for future decisions affecting lands between the Upper Levels Highway and Cypress Provincial Park. The majority of those lands would remain as natural forest for the enjoyment of the public. Accordingly, as a decision framework, the Report focuses on the limited area that may be subject to development over the decades to come.

The Report:

- describes the land - its features, opportunities and constraints;
- proposes a foundation of community building principles upon which to base a plan;
- describes specific community objectives, core public facilities and implementation strategies; and
- outlines three alternate scenarios that could be used to produce a long-term policy for Council, and be the basis for the attendant implementation plans and bylaws.

The Report develops a strategy and is not intended to describe a specific development plan or put forward subdivision possibilities. Those would follow, based upon much more thorough Area Development Plans of subareas done at the cost of the individual landowner.

The Upper Lands Steering Committee

Staff would like to express appreciation to the Upper Lands Steering Committee, an advisory group of citizens and landowners appointed by Council in late 1996 to work on the study. The review was delayed and the group's last meeting was in mid-1999. The Report has been completed by staff and it would be unfair to credit or blame the group for its contents. However, over the initial two years the Steering Committee gathered and reviewed all of the information on the land, including the trails and special features. It helped produce initial mapping, held public Open Houses and participated in many meetings leading to the development and refinement of the principles described in this Report. It then considered numerous scenarios, helping to narrow a seemingly infinite number of possibilities. This Report uses the Committee's work as its foundation.

Context

West Vancouver is a residential community located within a spectacular natural setting. Locally, residents strive for comfort and predictability, personal relationships and attractive environments to spend non-working time, live, and raise families. The community is also part of a larger region from which most residents derive their primary financial, educational and leisure time support. Planning for the Upper Lands recognizes this context, and the need to ensure that the whole of the community remains attractive within a healthy region.

A Framework

This Report is written as a discussion paper - one that will lead to a strategy that can be translated into policies, bylaws and programs. It is intended to be a guide to both land owners and future Councils reflecting the type of community residents expect to achieve and the considerations that must be included in any decisions regarding land use and development.

Vision and Principles

For the limited amount of remaining land upon which new development might occur, the community should build upon its experiences and its dreams, creating attractive neighbourhoods within the context of the steep mountainside. The natural assets should form the framework for planning, with creek corridors preserved and primarily in public ownership, linkages between new parks and the forested lands above, and homes sited in a manner sensitive to the terrain. There should be recognizable focal points to enhance a sense of place and provide identity to neighbourhoods. Streets should be pedestrian friendly with a comfortable intimacy and privately maintained boulevard vegetation. Consideration of sustainable development characteristics such as access to transit and local commercial outlets and natural storm drainage should be an integral component of initial planning.

Planning for new development is based upon the four fundamental principles generated by the Upper Lands Steering Committee:

- creation of a strong sense of community;
- encouragement of a diverse community;
- establishment of a sensitivity and connection to the natural environment and mountain qualities; and
- focus on environmental and economic sustainability.

Knowing the Land

The Report notes the importance of having a detailed knowledge of the land, its assets, qualities and constraints, prior to creating subdivision or neighbourhood plans. Any application should be developed within the context of a larger planning area to allow comprehensive consideration of road links, natural open spaces and parks, creation of neighbourhood focal points and acquisition of lands for community facilities. Once a general plan had been approved for the larger area, laying out the basic pattern of land uses, detailed development plans for actual developments and subdivisions could be submitted. The strategy outlines the information requirements for each phase.

The analysis suggests a new approach to density control to further community objectives and gives more power to the public, through Council, to acquire community lands, protect sensitive environmental features and encourage a variety of housing choices.

Plan Choices

This Report puts forward three scenarios for discussion purposes, distinguished primarily by different tools each provides to Council to achieve its community objectives.

In Scenario 1, Status Quo, the current set of tools and the policies of the current OCP are maintained with an enhanced effort to achieve community objectives. This is the most restricted approach, one that places great emphasis on proving out the possibility of conventional subdivisions and which makes limited use of the tools available to Council in law. The main outcomes are continued single family development (lack of housing choice), limited public land ownership, and few tools to acquire school sites and major parks. Most creeks, sensitive environmental lands and difficult terrain would remain in private ownership albeit with certain restrictions on use.

In Scenario 2, all of the new tools and considerations outlined in this Report are put into the plan but the area considered for development does not change from Scenario 1 (development is restricted to below the 1200 foot contour). The result is an ability to acquire significant lands for public use, a greater variety of housing and siting with greater sensitivity to the constraints of the terrain. The community would also expect to see greater amounts of park land and neighbourhood focus or identity.

Scenario 3 is the same as the second in terms of tools, but it allows the community to consider proposals to vary from the currently fixed 1200 foot elevation restriction in limited circumstances. This has two main benefits. It allows for consideration of tradeoffs based upon environmental benefits, where lands below the 1200 foot elevation are preserved in exchange for those developed above. This, in turn, would provide for a more

natural appearance of the mountain side as opposed to the straight-line demarcation between forest and development that the 1200 foot restriction would continue to produce. This scenario may alternatively or additionally allow for possible public acquisition of other private lands above the 1200 foot elevation for permanent community use and preservation.

Next Steps

- Refer to advisory bodies and the community for review and comment
- Produce revised and more specific proposals
- Consider proposals within the context of the OCP review (currently underway and expected to be completed in 2002).
- Revise the OCP, bylaws such as the Zoning Bylaw and other regulations
- Summarize in a “guide for development” document to illustrate the means for implementing the details of the community’s vision.

Two substantial applications have been received for new development in the Upper Lands. This Report recommends that these be processed concurrently with consideration of the document. Approval of the applications could either await the overall policy revision, or if the community benefit were considered sufficient, be considered in advance of the final Plan adoption.



1.0 BACKGROUND

1.1 Purpose of this Report

This Report is intended to lay the groundwork for a community driven, long-term vision for the “Upper Lands” – West Vancouver’s undeveloped area above the Upper Levels Highway. It suggests directions for the future of the area, including the preservation of most of the upper mountainous part in its forested state and appropriate land uses and development practices on the remaining lands. Technical information and analysis in support of suggested directions is also provided.

1.2 Report Origin

The 1988 OCP notes the need to review policies for the Upper Lands. In 1993, a major policy update to the OCP was adopted to incorporate open space principles, including enhanced creek protection and related environmental requirements. These principles, together with other policies for new development, presently form the framework for reviews of applications for development in the Upper Lands. This Report builds on these principles to present a comprehensive analysis including a longer-term vision for the Upper Lands and objectives for future neighbourhoods.

The analysis and community building principles that follow are based, in large part, on the work of the Upper Lands Steering Committee, a group of West Vancouver citizens appointed by Council in late 1996. Over a two-year period, the Committee helped develop an information base, met together to develop the principles and approaches, and held open houses to identify issues and solicit opinions.

1.3 The Upper Lands

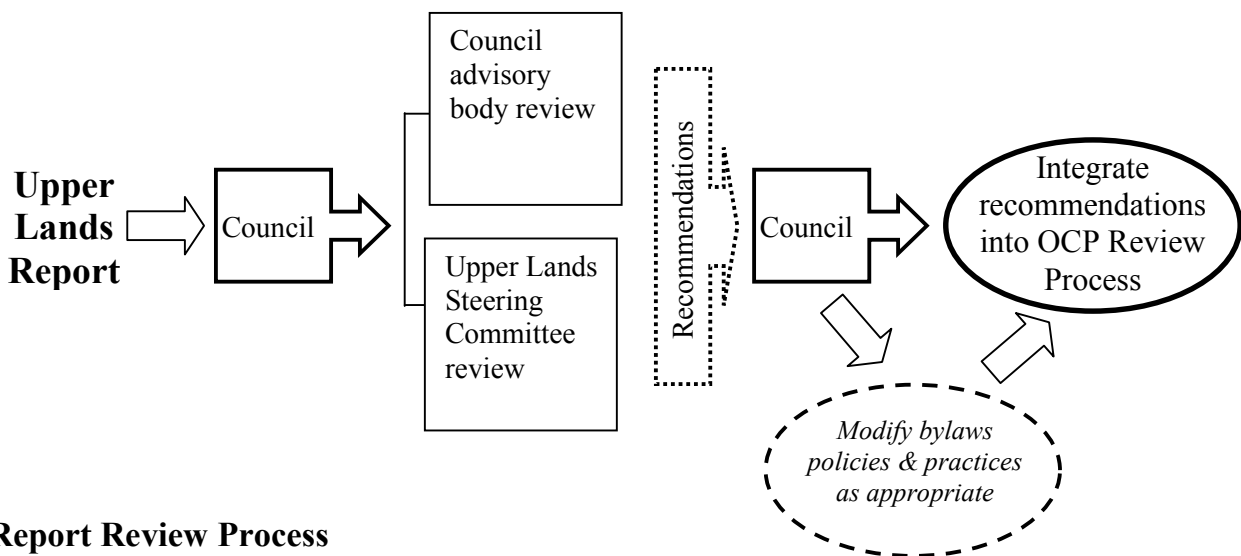
The Upper Lands comprise an area of approximately 6,265 acres defined by:

- to the south – existing development and the Upper Levels Highway #1;
- to the east – the Greater Vancouver Regional District Capilano Watershed;
- to the west – the Sea to Sky Highway #99; and
- to the north – Cypress Provincial Park, watershed lands.

Most of this area is above 1200 feet in elevation and designated for community recreational use. 1600 acres are below 1200 feet in elevation and designated for development (excluding parks).

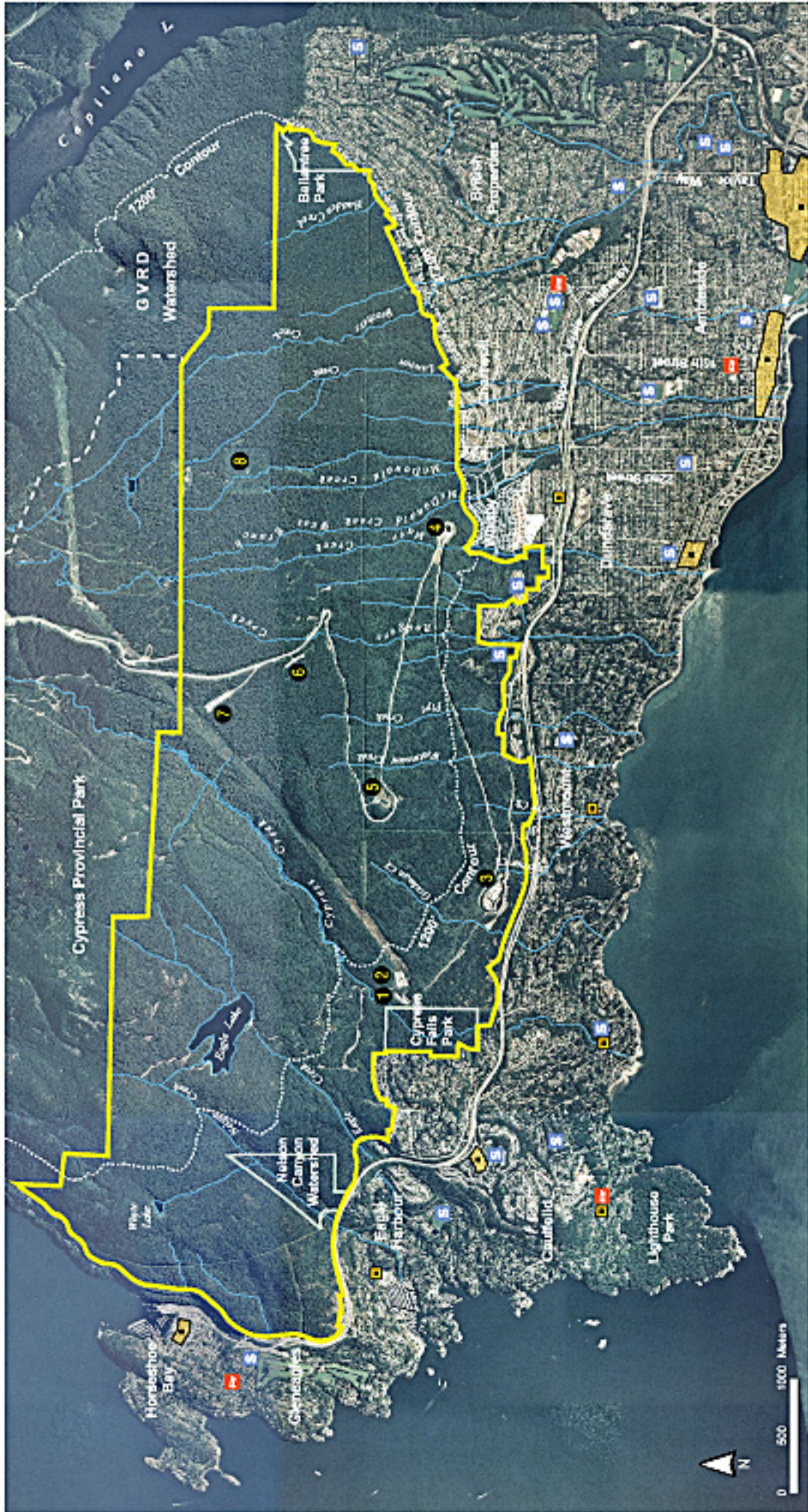
1.4 Outcome

The outcome of the Upper Lands planning review will be enhanced policies in the Official Community Plan (“OCP”), revised municipal regulations (including updates and revisions to subdivision, creek, tree and zoning bylaws) and changes to the District’s procedural policies and practices.



Report Review Process

An official community plan, as defined in the Local Government Act, is “a statement of [Council’s] objectives and policies to guide planning and land use management”. It describes the framework within which more detailed development plans can be created and subdivisions approved. It is to be prescriptive in terms of what is to occur, and flexible in regard to how goals and objectives can be achieved. What might initially appear to be a good idea, based upon preliminary information, may be changed when more detailed site information is available following more intense examination. The broad objectives of the OCP establish a framework for consideration of new development proposals within the Upper Lands. The preparation of development area plans will determine how these objectives are implemented. The process to develop these detailed plans involves substantial time and expense, in-depth on-site research and knowledge and public review. Their approval involves the issuance of development permits and other agreements and may require rezoning.



Study Area

Upper Lands
Report

west VANCOUVER
INCORPORATED 1991

Study Area
 Below 1200' - 1,762 Acres
 Above 1200' - 4,263 Acres
 Total - 6,025 Acres

Total Developed Area of West Vancouver - 6,800 Acres

- Legend**
- 1 School Board/Neighborhood
 - 2 BC Hydro G.S. Station
 - 3 District of West Vancouver Works Yard
 - 4 High-Voltage Lookout
 - 5 Power Pole
 - 6 Parking Lot #5
 - 7 BC Parks Wildlife Yard
 - 8 117th Col Block

- Study Area Boundary
- GVRD Watershed Boundary
- 1,200' Contour
- Forest
- Commercial
- School

- School Board/Neighborhood
- BC Hydro G.S. Station
- District of West Vancouver Works Yard
- High-Voltage Lookout
- Power Pole
- Parking Lot #5
- BC Parks Wildlife Yard
- 117th Col Block

2.0 INITIAL COMMUNITY EXPECTATIONS & VISION

The community's opinion concerning future growth can generally be described as cautious. Residents value the natural setting framing the community from mountain to sea, between forest and creek, that provides some of the Lower Mainland's most magnificent natural amenities and popular recreational activities – the beaches, hiking trails, mountain biking areas, ski runs and parks.

Residents also value the local neighbourhoods in which they live. Control of growth has been part of West Vancouver's policies for most of its history and the community has retained small town characteristics despite being in close proximity to the Lower Mainland's downtown core.

This Report's vision for the Upper Lands is one that:

- **preserves the forest**, both the forested backdrop to the community and significant portions within development areas;
- **controls growth** in terms of amount and impacts on the land and the community;
- **creates inclusive neighbourhoods** offering a variety of housing forms;
- **works with nature** by preserving creeks and other major natural assets; and
- **provides amenities and services** that contribute to, without burden, the community's existing and future qualities.

If this vision is to be achieved, the initial physical scars of new development would be quickly healed. As residents walk, cycle or drive in their new neighbourhoods they would have a sense that their neighbourhood has an identity of its own, one created by natural features and strengthened by communal places such as an elementary school, convenience shopping or a central park. People would be seen out walking on trails that link public areas, other neighbourhoods and the forest areas above, on local streets (where pedestrians would share the narrow road surface safely with slow-moving vehicles) and on sidewalks along the collector roads. There would be opportunities to meet local commercial needs within a short walk or drive away. Local schools would provide community use and meeting places. The housing types would be more varied than in traditional suburbs, reflecting both the terrain and population demands. Multi-family housing would be viewed not only as more environmentally sensitive but also more responsive to housing needs than uniform subdivisions of single family lots.

Above the development areas, the preservation of the forest will have been assured, and well-maintained trails will connect with neighbourhoods below.

If this is the vision, how might we get there?

3.0 COMMUNITY BUILDING PRINCIPLES

Principle 1 Create a Strong Sense of Community

Principle 2 Encourage a Diverse Community

Principle 3 Establish a Sensitivity and Connection to the Natural Environment and Mountain Qualities

Principle 4 Focus on Environmental and Economic Sustainability

The Upper Lands Steering Committee developed an information base, held Open Houses, considered residents' surveys and their own personal experiences, and spent many months debating what guiding considerations could be used for evaluating change. In this consideration, the majority of the mountainside is retained as public forest. The Committee developed core principles intended for application to the areas suited for development. These principles, intended to be used as a foundation of common agreement, are interactive and interdependent. The Committee further proposed a subset of objectives for each principle that would, in turn, eventually have actions or strategies that could be acted upon by Council.



Create a Strong Sense of Community



Encourage a Diverse Community



Establish a Sensitivity and Connection to the Natural Environment and Mountain Qualities



Focus on Environmental and Economic Sustainability

Community Building Principles

Create a Strong Community	Objectives	Possible Strategies or Guidelines
<p>West Vancouver is a community of neighbourhoods - a characteristic that gives it value and strength and a sense of scale that is humane. Neighbourhoods provide a sense of identity, a feeling of belonging and shared interests and at times a temporary refuge from events in the larger community. This sense of community is strong in most older West Vancouver neighbourhoods (e.g. Cedardale, Ambleside, Dundarave, Allamont, Caulfield and Horseshoe Bay) but seems weaker in some of the newer subdivisions above the Upper Levels. A uniform housing type (large houses on large lots), lack of neighbourhood focus (e.g. schools, commercial space) and automobile orientation combined with a short history contribute to this situation.</p>	<p>Focus</p> <ul style="list-style-type: none"> create neighbourhoods with an internal focus (public or private school, park, commercial site) and defined edges (creeks, cliffs, major roads) <p>Accessibility and Connections</p> <ul style="list-style-type: none"> provide local opportunities for people to meet, interact and connect <p>Flexibility</p> <ul style="list-style-type: none"> promote social sustainability - healthy, safe, accessible environments that meet diverse needs over time <p>Fit</p> <ul style="list-style-type: none"> promote 'neighbourliness' in housing design - both in type and layout of buildings on the terrain <p>Safe, intimate streetscapes</p> <ul style="list-style-type: none"> design for pedestrian enjoyment, not just automobile convenience by minimizing impact of streets 	<ul style="list-style-type: none"> use schools, parks or local commercial centres, group mailboxes, trail heads and view points as neighbourhood meeting places encourage safe, visible pedestrian connections as links with other neighbourhoods and as a means of moving through the neighbourhood. discourage private entry gates develop usable bicycle and pedestrian connections by minimizing grade of paths, considering visibility to promote a sense of safety, and installing lights where trails serve as main links to transit or schools apply principles of crime prevention through environmental design encourage work places closer to, or in homes (e.g. telecommuting, home occupations)
<p>Encourage a Diverse Community</p> <p>West Vancouver is increasingly characterized by an aging population, high land values, and limited housing choice to meet changing needs. Consequently, it is more important today to deliberately plan for diversity and flexibility in housing choices. The undeveloped Upper Lands provide opportunities to create robust neighbourhoods that will better meet a variety of needs over time and promote a diversity in occupancy.</p>	<p>Housing variety</p> <ul style="list-style-type: none"> encourage a range of residential lot sizes, housing types and markets <p>Mix of uses</p> <ul style="list-style-type: none"> Schools, public facilities and commercial spaces can be integrated to provide public access and local conveniences 	<p>Possible Strategies or Guidelines</p> <ul style="list-style-type: none"> adopt an overall housing policy for the community and monitor over time so that the goals and needs can be related to any particular application for a neighbourhood plan approval plan at the multi-neighbourhood level for a mix of uses (comprehensive versus unintegrated, small scale development) preplan general requirements and locations for schools, commercial areas and major public facilities site intended focal points in detailed neighbourhood planning.

Principle 1

Principle 2

Principle 3

<p>Establish a Sensitivity and Connection to the Natural Environment and Mountain Qualities</p> <p>West Vancouver has a unique and advantageous geography - extending along the ocean on the lower slopes of a heavily forested mountain side, with a multitude of creeks connecting the mountain to the sea, an energy efficient, sun oriented south facing slope, relatively stable soil conditions and bedrock, and panoramic mountain and sea vistas. These assets should be central to any planning decisions. The pursuit of exercise, walking and outdoor recreation will continue to grow as our population ages and the regional population increases.</p>	<p>Objectives</p> <p>Overall forest image</p> <ul style="list-style-type: none"> maintain the overall visual image of a forested mountainside <p>Terrain based development</p> <ul style="list-style-type: none"> develop neighborhood forms and building layout which respect natural constraints and opportunities <p>Minimize footprint and visual impact</p> <ul style="list-style-type: none"> blend development in with the mountain landscape <p>Protect significant natural features</p> <ul style="list-style-type: none"> including area's heritage as a recreational resource <p>Recognize Communal Assets</p> <ul style="list-style-type: none"> provide public access to and between publicly owned natural amenities 	<p>Possible Strategies or Guidelines</p> <ul style="list-style-type: none"> identify key visual elements that contribute to the natural forested appearance prior to development and protect or restore them by: <ul style="list-style-type: none"> phasing clearing in the development process planting to avoid unrestored scarring designing new buildings to step into the terrain and encourage materials and colours that blend in with the forest protecting trees on dominant ridge lines special features, including viewpoints, selected tree stands, creeks, canyons, wetlands and historic features and trails, prior to designing layouts for neighbourhoods discourage wide-scale clearing intended solely to provide uninterrupted, panoramic views design lots and roadways to adapt to the natural hillside topography, terrain and vistas plan natural open spaces to be accessible and in close proximity to development require construction of a comprehensive trail network connecting parks, creeks, schools encourage landscape designs and choice of materials for new developments to retain private views (avoid long term tree issues).
<p>Focus on Environmental and Economic Sustainability</p> <p>The committee believed that the principle of sustainability, i.e. using resources wisely and attempting to minimize the demands on natural resource use should be pursued in local planning decisions in our own community.</p>	<p>Objectives</p> <p>Use land wisely</p> <ul style="list-style-type: none"> preserve and enhance land resources for future generations <p>Respect biophysical limits</p> <ul style="list-style-type: none"> consider impacts on the ecosystem <p>Economic prudence</p> <ul style="list-style-type: none"> consider the financial impacts of development choices to minimize costs over the long term 	<p>Possible Strategies or Guidelines</p> <ul style="list-style-type: none"> provide for protection of watersheds, encouraging public ownership of creek corridors wherever possible require a comprehensive environmental review prior to and as a guide for developments design streets and pedestrian routes to foster transit and possibly bicycle use evaluate servicing costs, including long term, in consideration of neighborhood design explore natural systems for drainage (pervious surfaces, sediment controls) in new development continue to require underground services while looking ahead to new technologies that may require different installations, such as fibre optics and high speed internet trunk lines support community environmental efforts (e.g. Streamkeepers, British Properties Area Homeowners Association) that benefit the health of the creek corridors.

Principle 4

4.0 PLANNING ELEMENTS

4.1 Current Conditions

4.1.1 Official Community Plan Development Policies

1200 Foot Contour: The 1958 Community Plan first included a policy to limit development to a maximum elevation of 1200 feet to minimize municipal costs for water servicing and snow clearing. The policy has been reconfirmed in the 1973 *Guidelines for Development Above the Upper Levels Highway*, and the 1980 and 1988 OCPs. The result is a defined horizontal “edge” between forest and urban development when observed from afar. In spite of its service origins, the 1200 foot contour also serves as an important municipal policy to protect the forested character of the community. This elevation is also near or below the prevailing winter “cloud line” levels, making for better living conditions.

Limited Use Area: Established policies restrict use of lands above the 1200 foot contour to limited purposes such as park or cabins on large lots in order to minimize potential demand for municipal services in the remote region and retain aesthetic and natural values.

Developing Neighbourhoods: The 1988 OCP designates the undeveloped lands below the 1200 foot contour as “*Developing Neighbourhoods*”. The area is largely zoned for development and designated as a Development Permit Area for the purposes of protecting the natural environment and new neighbourhoods from hazardous conditions. A development permit is also required to guide the design of any commercial or multi-family developments.

Clustered Housing: A number of policies promote innovative measures to protect the natural environment in the Developing Neighbourhoods, including a transfer of density concept first included in the 1980 OCP. The intent is to preserve open space under certain conditions by clustering housing development. However, the OCP policies offer little incentive to do this and consequently single family housing has been the predominant form of development.

Open Space System: In 1993 the OCP was amended to strengthen open space policies in the Developing Neighbourhoods. The main components include:

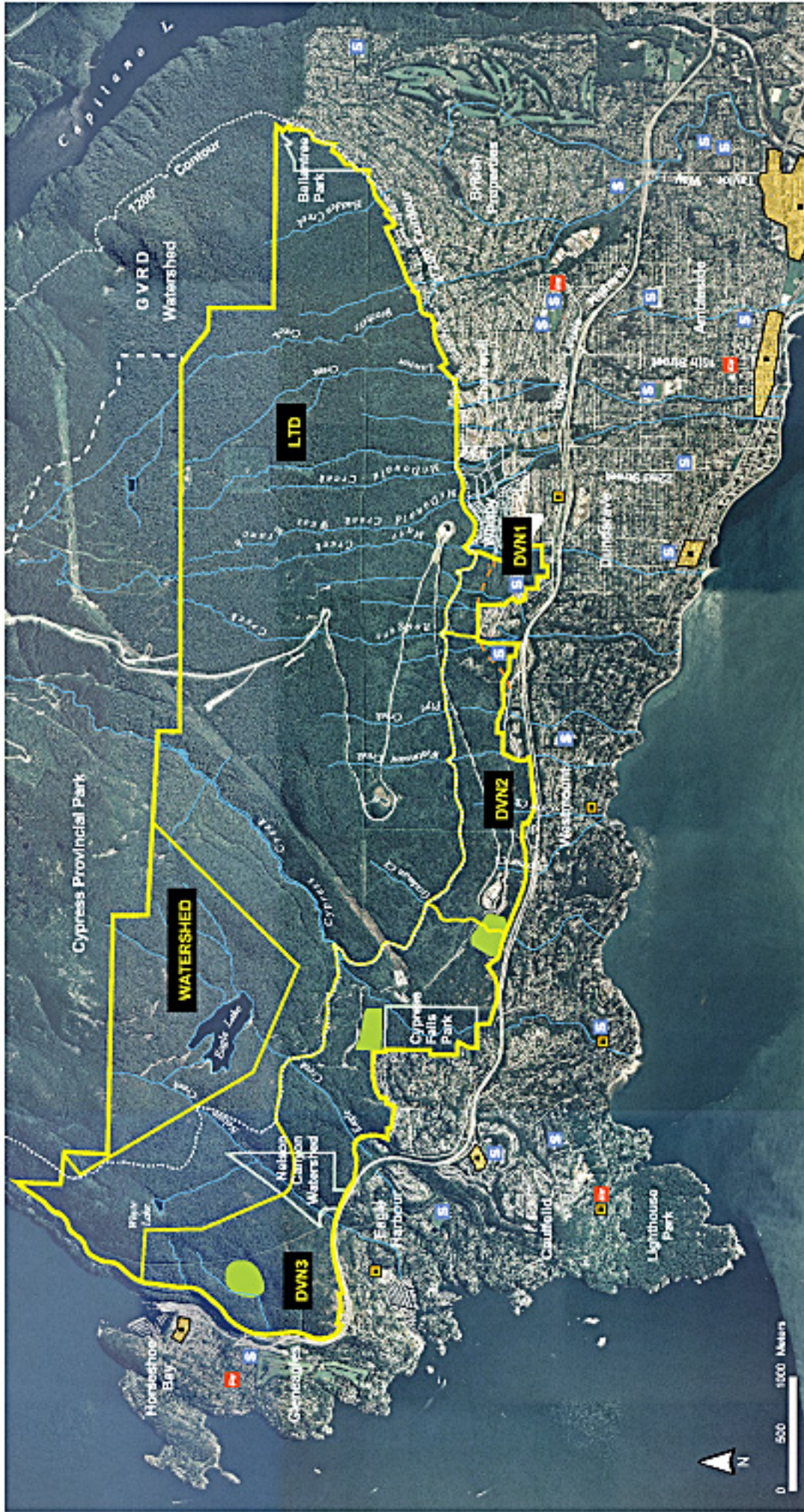
- creeks form the primary basis for the open space framework;
- plans must be based on larger geographic areas (defined by the major creeks and roads) to provide a context for open space decisions;

- greenbelts and landscaped boulevards define neighbourhood edges, buffer traffic, provide a sense of natural corridors and create a parkway image along major roads;
- coordinated pedestrian and bicycle routes;
- identification and protection of unique plant, habitat and other significant ecological features, rock outcrops, viewpoints and historic or cultural features;
- identification of three major park sites to be acquired for community recreational activities; and
- local parks required in neighbourhoods to meet needs for active play areas.

Whitby Estates: In 1999, an area plan amendment was approved to establish specific policies to guide the development of this neighbourhood.



“Cloud line” at approximately 1300’



1988 Official Community Plan

Upper Lands Report

west VANCOUVER

Limited Use
 Appropriate Low Density Public or Quasi-Public Recreational Uses
 Recreational Cabins

Density
 DWN1 - 2.6 UVA
 DWN2 - 1.5-2.5 UVA
 DWN3 - As per zoning

Developing Neighbourhoods (DWN)
 DWN1 - 85 Acres
 DWN2 - 257 Acres
 DWN3 - 821 Acres
 LTD - 3782 Acres

Legend

- Study Area Boundary
- GVRD Watershed Boundary
- 0.007 Contour
- 1.200 Contour
- Forest
- Commercial
- Feeding School
- Proposed Park
- DWN Developing Neighbourhood
- LTD Limited Use



Please Note:
 This image is a computer generated simulation and not an aerial photograph. The simulation was produced by simply a 2D image over a digital terrain model with no vertical exaggeration.

Legend	Developing Neighbourhoods (DWN)	Density	Limited Use
<ul style="list-style-type: none"> Study Area Boundary GVRD Watershed Boundary 1200' Contour 1200' Contour Proposed Park 	<ul style="list-style-type: none"> DWN - 55 Acres DWN2 - 302 Acres DWN3 - 521 Acres LTD - 3782 Acres 	<ul style="list-style-type: none"> DWN1 - 2.5 U/A DWN2 - 1.5-2.5 U/A DWN3 - As per Zoning 	<ul style="list-style-type: none"> Appropriate Low Density Public or Quasi-Public Recreational Uses Recreational Cabins

4.1.2 Regional Context

The *Livable Region Strategic Plan* for Greater Vancouver was created and adopted by all member Municipalities. West Vancouver Council endorsed the strategy in June 1996 and followed up with an amendment to the OCP in 1998 to incorporate its four fundamental strategies, i.e.:

- to protect the green zone;
- to build complete communities with a better balance among jobs, housing and services and a focus on town centres;
- to achieve a compact metropolitan region; and
- to increase transportation choice.

Under the *Strategic Plan*, little of the substantial growth expected in the Greater Vancouver region over the next twenty years is forecast to occur in West Vancouver, or even the North Shore. This is primarily due to transportation and land constraints, but also to encourage and concentrate regional growth more centrally (the “compact region” strategy). When the *Strategic Plan* was endorsed, there were an estimated 17,000 households in the Municipality and an estimated total capacity of 22,700 households including Squamish Nations lands. Based upon a trend projection, the *Strategic Plan* estimated that level to be reached by 2021.

Municipal staff project a lower rate of growth than that estimated in the *Strategic Plan*, due to West Vancouver’s limited land supply and difficult terrain. If this is the case, the projected “build out” would be substantially further into the future. Based upon the major land owner’s (British Pacific Properties) historical rate of development of 20 - 30 lots per year, and a density of 2.5 dwelling per gross acre, the 1000 acres owned by British Pacific Properties below the 1200 foot elevation would take over 100 years to develop. This rate is expected to accelerate due to build-out of the established neighbourhoods, but the land supply for new development is expected to remain well in excess of 25 years.

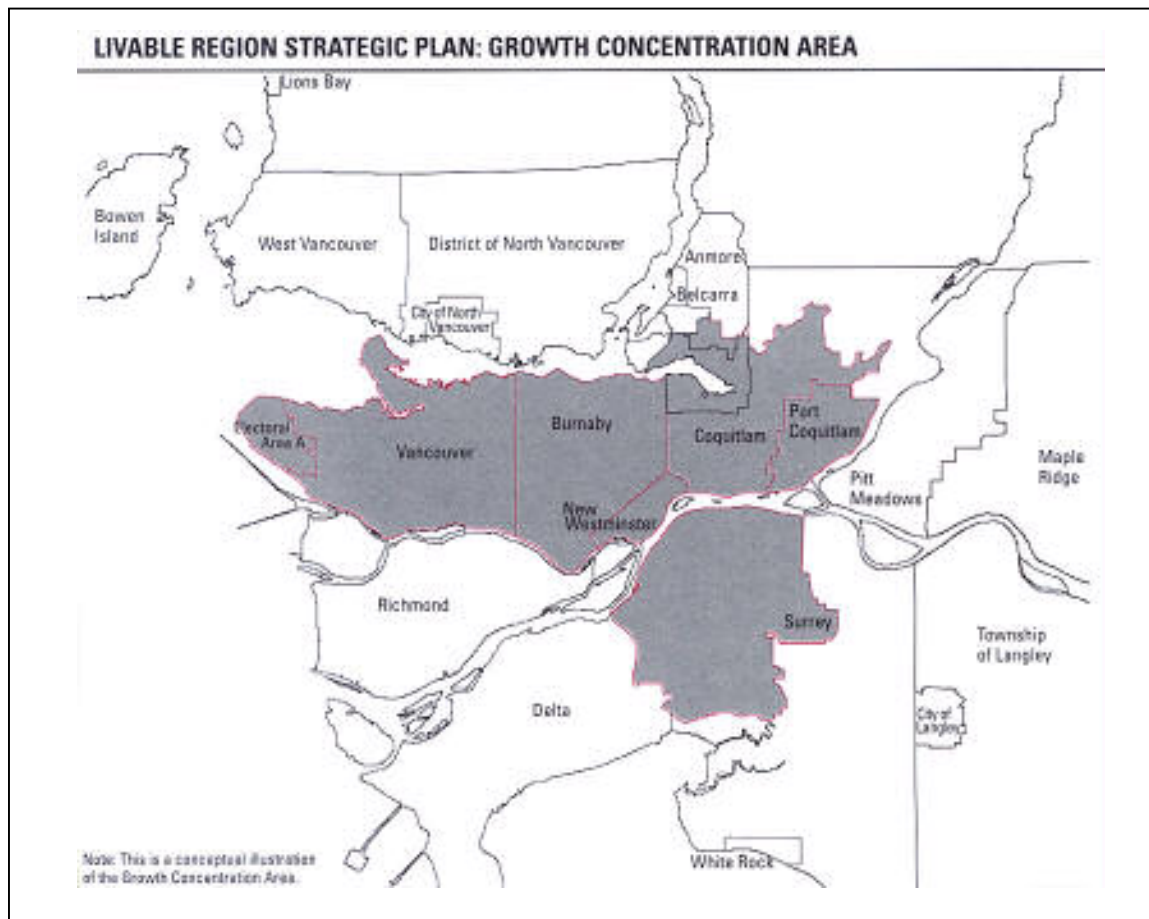
Planning for the Upper Lands is based upon the projection of 4000 new households and slow growth rate. It is anticipated that regular review would be required over the years to adjust to changes in community needs and actual experience. Regardless of the actual rate, facilities, amenities and services would be required at the time of development and it should make little difference whether the plan is realized over 25 years or 100, because good neighbourhoods provided with quality services will result regardless of timing.

The primary purpose of the green zone is to contain urban development and provide and protect the regionally significant natural buffers for the benefit of existing and future

residents. Portions of the Upper Lands are shown as “area under municipal consideration” in the GVRD’s Green Zone plan because the southern boundary of the mountainside regional green zone has yet to be determined. The 1988 OCP states that the Municipality will amend the current designation upon completion of this Report. In each of the development scenarios, the proposed green zone includes the bulk of municipally-owned mountain lands. Further discussion in consideration of this Report will provide for evaluation of options for the private lands.

Directions for Upper Lands Planning

- Provide for the capacity consistent with the *Livable Region Strategic Plan*.
- Consider the four regional strategies in preparation of development scenarios.
- Confirm the green zone boundary following adoption of an amended OCP that reflects the directions of this Report.



4.1.3 Private Land Ownership

In 1931 British Pacific Properties acquired 4700 acres between the Skyline Trail (at an elevation of approximately 2000 feet) and the Upper Levels Highway from the Municipality with a number of conditions, including a requirement that it would construct the Lions Gate Bridge (opened in 1938). Since then, the company has slowly been developing its lands for residential purposes, creating the British Properties, Chartwell, Westhill, Canterbury, and Whitby Estates subdivisions. British Pacific Properties' remaining undeveloped lands comprise about 2200 acres, approximately half of which are below the 1200 foot elevation and zoned for development purposes.

Property Ownership

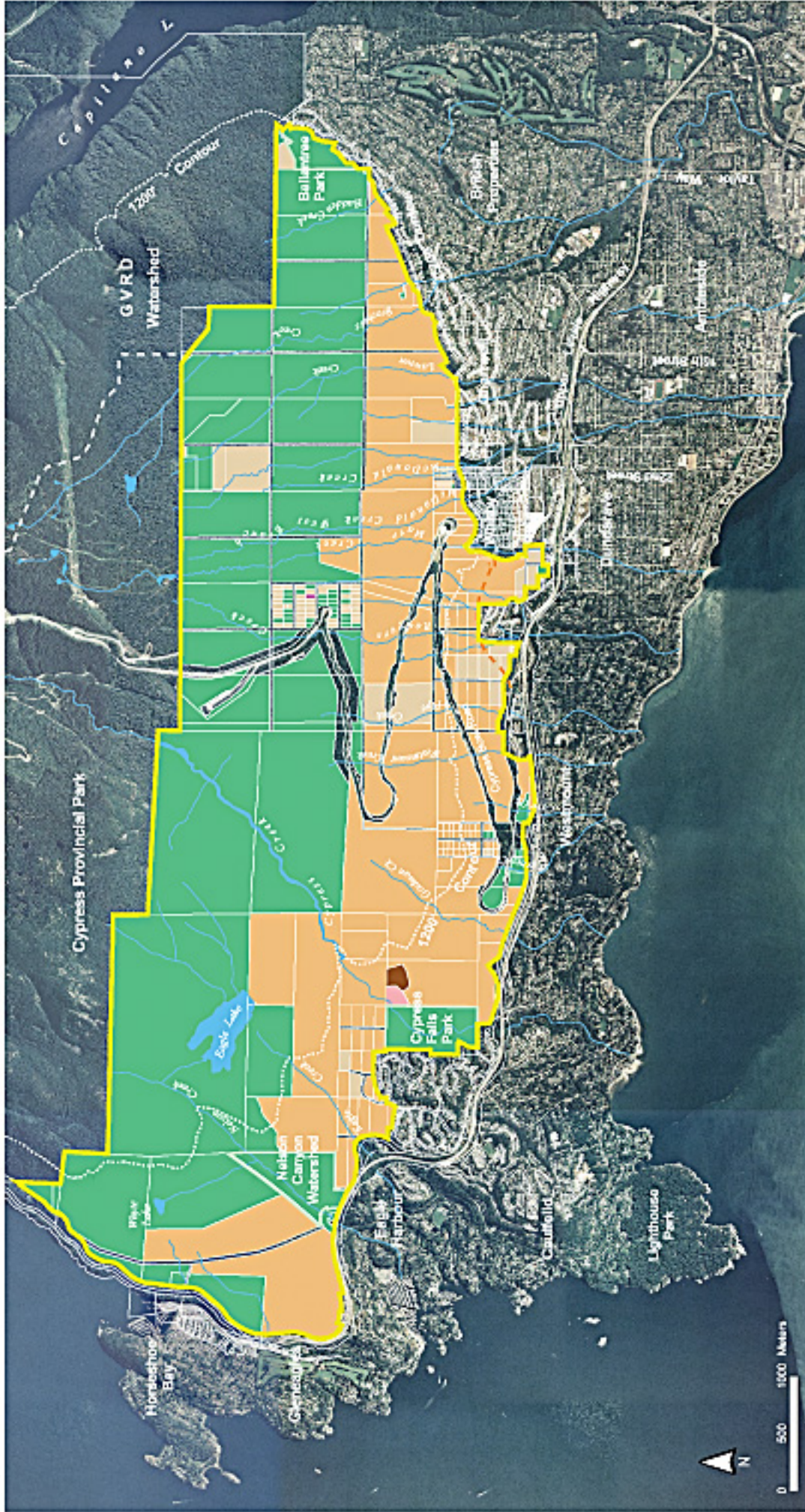
	Below 1200' Elevation	Above 1200' Elevation	Total Area (% study area)
Private lands	1,155	1,720	2,875 acres (43%)
Municipal lands	607	2,783	3,390 acres (57%)
Totals	1,762 acres (26%)	4,503 acres (72%)	6,265 acres (100%)

The near monopoly ownership of private lands provides opportunities unique to West Vancouver, as it facilitates lands being brought onto the market in an orderly and sequential manner that best links municipal infrastructure and comprehensive planning. It also helps negotiations to provide for community services and amenities based on neighbourhood requirements. Such plans are more difficult to achieve where there is a large number of individual parcels, owned by people with differing expectations and time frames for action and no imperative to work in co-operation with one another.

Below 1200 feet in elevation, other privately owned lands include some 20 acres in the vicinity of the Mulgrave private school (under construction west of Rodgers Creek) and several isolated parcels. Above this elevation, there are a number of small recreational parcels (cabin sites typically just under one acre in size) in two areas near Cypress Bowl Road and three larger isolated parcels above the 1200 foot contour (refer to Property Ownership Map). These parcels are zoned for recreational cabin development (minimum 5 acre lot size).

The determination of the Green Zone for the *Livable Region Strategy* involves considerations of private land ownership. The sites not owned by British Pacific Properties may warrant special policy consideration because there is less flexibility to allocate or shift development options by the landowner. For discussion purposes, options that could be reviewed for privately held lands not in the development areas include:

- municipal policy for site acquisition, in whole or in part;
- zoning for minimum uses that would be compatible with Green Zone status;
- maintaining existing 5-acre cabin site zoning, excluding area from the Green Zone;
- designating as “future urban reserve”, not to be within the Green Zone;
- allocation of development potential and its transfer to appropriate areas; and
- allowing large parcels adjacent to open roads to be developed for limited residential purposes, such as one house, if the remainder of the lot is turned over to the Municipality for open space.



Legend

- Study Area Boundary
- GVRD Watershed Boundary
- 1,200 Contour
- 1,200 Contour
- District of West Vancouver
- British Pacific Properties Ltd.
- Other Private
- School District #45
- British Columbia Hydro & Power
- Crown Land
- Right of Way

Areas

- District of West Vancouver - 8,280 Acres
- British Pacific Properties Ltd. - 2,240 Acres
- Right of Way - 381 Acres
- Other Private - 220 Acres
- BC Hydro - 8 Acres
- School District #45 - 7 Acres
- Crown - 1 Acre

Land Ownership

Upper Lands Report

west VANCOUVER

4.1.4 Cabin Areas

There are a number of privately-owned recreation cabins in the area immediately east of upper Cypress Bowl Road, a legacy of the logging and outdoor recreational activities that took place on Hollyburn in the early 1900s. The area has been restricted to limited recreation uses since it was specifically zoned in the late 1940s. Most cabins are on public lands and are considered by many to have an important place in the history of West Vancouver. These cabins are licensed on 5-year tenures to individuals and families. The leaseholders are responsible for maintaining the cabins and the Parks and Community Services Department inspects the structures yearly. New cabins on public lands are not permitted and ones that deteriorate are demolished.

A few cabins are located on private lots in District Lot 1123 (near the last switchback of the Cypress Bowl Road). Existing zoning requires a minimum site area of two acres for cabins within this area, whereas most lots are just less than one acre in size. Twenty-six of the 68 lots have been acquired by the Municipality and are vacant. Only two new cabins have been constructed in the past 10 years. Cabins are also located in the remote District Lot 1133.

While some of the private lot owners have lobbied over the years to have the zoning amended to allow cabins on their 0.93-acre parcels, consecutive Councils have consistently determined that there would be no public benefit to do so. Owners can assemble three lots to achieve a buildable parcel, and this is not inconsistent with the overall intent of limiting development (given the small number of parcels). Allowing development of the current single parcels could result in construction of over 40 cabins with significant disturbance to the environment and associated difficulties in servicing and control of use. Council's past practice has been to purchase vacant properties at assessed value if offered for sale because there is public benefit in protecting remote sites from development pressures and fragmented ownership. The practice provides private owners with a viable alternative to land assembly, and by using the Provincial assessment, avoids speculative bidding.

Directions for Upper Lands Planning

- **Retain current policies related to maintenance of cabins on public lands.**
- **Reconfirm Council's policy to purchase vacant private lots at assessed value as they become available.**
- **Limit new cabin development to large, privately owned lands.**

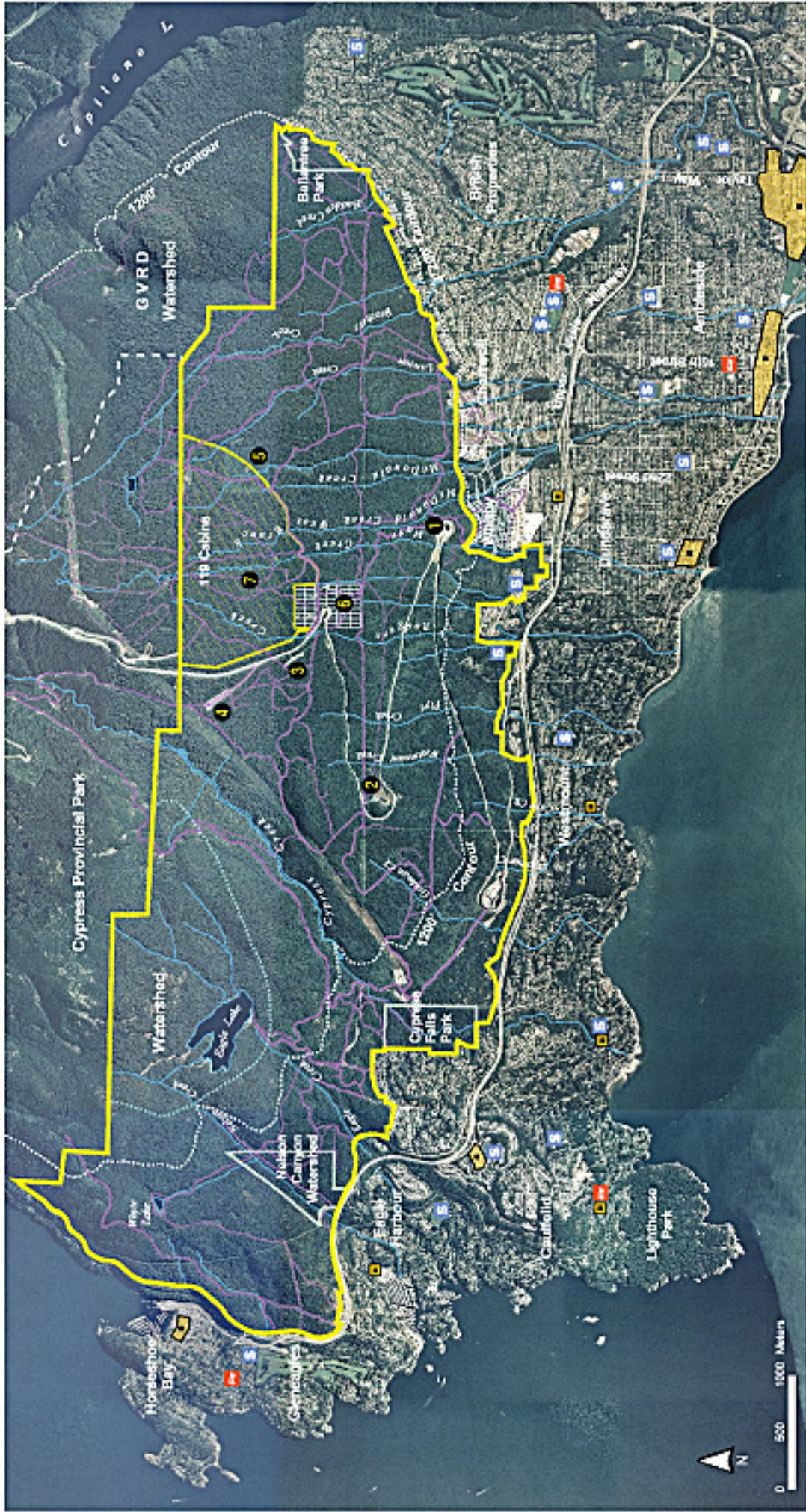
4.1.5 Development Applications

In 1996, the owners of land in the area west of Rodgers Creek applied for rezoning to permit residential development. Council advised the owners that their application for rezoning would be tabled in recognition of this overall review of policies for the Upper Lands being initiated. A 1995 development application for the Whitby Estate area was considered an extension of existing development and approved by Council in 1999. Since 1996, the only approved change in permitted land use has been rezoning to permit the establishment of a site for a private school, and no new applications for subdivision in the Upper Lands have been considered.

Two applications have recently been received, one for an extension of the Deer Ridge multi-family site at Cypress Bowl Road and a second for the “Mulgrave” area from Marr Creek west to Pipe Creek, a modification to the 1996 application for the Rodgers Creek area. This Report suggests that these new applications may be processed concurrent with its public consideration, provided that the proposal is considered to be generally consistent with the OCP and with the basic principles and directions suggested in this review. Formal approval of the applications may depend upon the application and the status of larger policy studies, including the review of the 1988 OCP initiated by Council in 2000. Such a decision would also include consideration of the potential community benefit of an application.

Directions for Upper Lands Planning

- **Consider specific development proposals for sites within the Upper Lands concurrent with the OCP and Upper Lands reviews provided that the proposal is generally consistent with the basic principles and directions suggested in this Report and is determined to be of significant community benefit.**



**Land Use above 1200'
Elevation**

- Legend**
- Study Area Boundary
 - GVRD Watershed Boundary
 - 1,200' Contour
 - Trail
 - Watershed Boundary
 - High New Linkland
 - House site
 - Housing Lot #10
 - RC Parks Block #10
 - 1970s Out Block
 - 1 Acre Lake and Cabins
 - Municipal Drain Area

4.2 Natural Features & Views

4.2.1 Creeks

Twenty-two named creeks (including Disbrow and Montizambert Creeks on Howe Sound and Capilano River on the east boundary), numerous branches and ephemeral (seasonal or periodic) creeks and minor watercourses create watersheds that extend across the area. Current OCP policy promotes retention of creek corridors in a natural state, the minimization of road crossings, trails along the top of banks on some creeks and the use of major creeks to define neighbourhood edges.

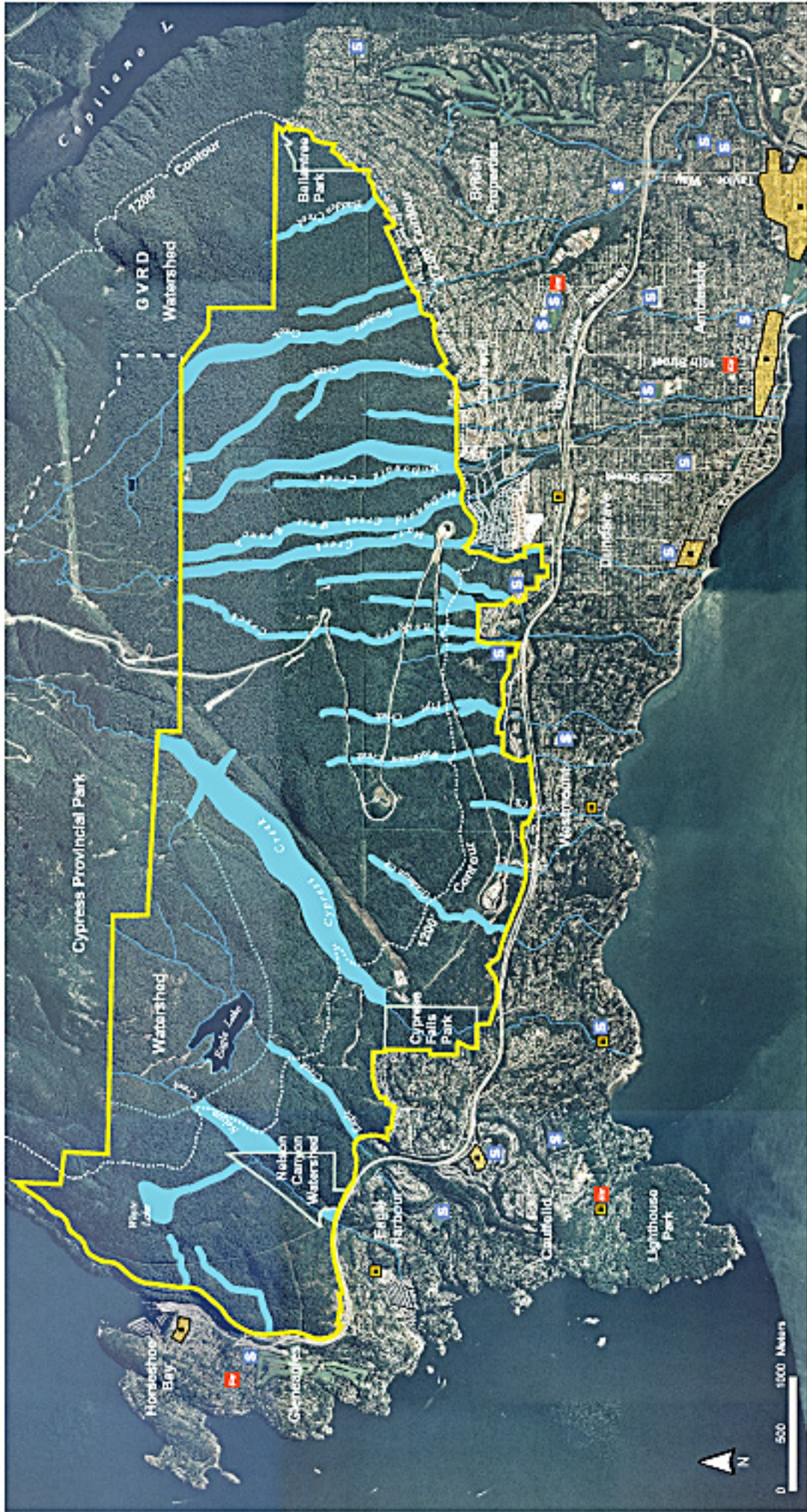
There are substantial natural and man-made barriers to fish passage in many West Vancouver creeks due to the natural topography and historical development practices such as culverting streams. When the Upper Levels Highway was built in the 1950s and eventually upgraded to 4 lanes in the early 1970s, most of the creeks were effectively divided into separate systems by culverts, grates and other large barriers to fish passage. The construction of the Cypress Bowl Road had a similar effect on the many streams that it crosses. Below the Upper Levels Highway, the lower reaches of Brothers and Hadden Creeks have maintained the best salmon capability but Nelson, Wood and Eagle Creeks are considered capable of increased salmon spawning habitat. However, all streams are considered to be important to fish for food supply and water quality purposes even where the creek does not provide fish passage.

The Federal Department of Fisheries and Oceans and the Provincial Ministry of Environment, Lands and Parks work together as the governing authorities charged with protection of fish and aquatic habitat. In undeveloped areas, current development guidelines call for setbacks of 15 to 30 metres from a defined top of the bank and require compensation for any works that affect a watercourse or riparian habitat. West Vancouver has been using these guidelines for recent developments. Although creek corridors have been used historically in the community for hiking and other recreation purposes, recent policy limits trails to locations well back from the top of banks and restricts public access within the stream corridor to avoid damage to the natural habitat. The Province recently adopted the Streamside Protection Regulations of the Provincial Fish Protection Act. The municipal role and policies are to be worked out in cooperation with the Federal/Provincial authorities and implemented by way of agreement within the next 5 years. Additional work will be required to determine applicable requirements for mountainside streams.

Directions for Upper Lands Planning

- **Continue to use creeks to form the framework for the provision of open space in neighbourhood design.**
- **Obtain public ownership of creek areas wherever possible to maximize retention in a natural state or ensure protection by regulation, legal agreements and enforcement.**
- **Ensure that creek protection areas are consistent with, or exceed, the Provincial/ Federal requirements.**
- **Request interpretation of creek protection regulations for the mountain environment and translate this information into policies specific to West Vancouver.**





Legend

- Study Area Boundary
- - - GVRD Watershed Boundary
- - - - - 1,200' Contour
- Watershed Boundary
- Prebuilt
- Commercial
- School
- 30m Creek Area

Area
 30 meter Creek Area - 850 Acres
 > 1,200' - 653 Acres
 < 1,200' - 197 Acres

Notes:
 30 meter creek areas are based on approximate top of bank
 30 meter creek areas are not displayed or calculated for the currently protected areas (West Vancouver municipal parks and Watershed)

Creek Areas

Upper Lands Report



4.2.2 Forests

West Vancouver's Upper Lands comprise one of the rainiest biogeoclimatic areas in British Columbia. Mean annual precipitation near Millstream Road is 2412 mm. Within this zone, there are a number of biogeoclimatic subzones each with different vegetative characteristics due to variation in topography, soils, rainfall, and temperature. As elevation increases, so does the amount of precipitation, both annually and during the growing season with annual precipitation levels ranging from 1830 to 2900 mm per year. Mean annual temperature and the amount of snowfall also increase significantly with gains in elevation, all of which affect the forest.

The Western Hemlock is the most common tree species throughout the area, with widespread stands of Western Red Cedar and Douglas Fir. Where areas have been logged this century, vegetation cover tends to be dense young coniferous/deciduous mixes of predominantly hemlock, fir, cedar, and alder trees mixed with vine maples. Where the micro-climate is drier (more typically in the west), stands of arbutus trees are common.

Logging began in the late 1800s. In the early period, the Western Red Cedar was preferred for the making of shingles, so logging was selective and many of the other species remained untouched. The forests of the higher Upper Lands have also been affected by fires that naturally occurred in the mid 1600s, 1840s and 1920s. Most of the area between the current upper edges of development and the Skyline Trail was clear-cut in the 1950s and has regenerated with first growth mixed species. The only logging to take place above the 1200 foot elevation in recent years was private cutting in a portion of the remote District Lot 1133 in the late 1980s. There is an extensive history of logging in the Upper Lands best appreciated by walking the interpretive logging history walk above Pinecrest Drive in the Lawson Creek area.

Preservation of the remaining and accessible old growth forests has been of substantial public interest in recent years. Oikos Ecological Consultants, in a 1991 report carried out for the Municipality, defines the term 'old growth' as being "synonymous with 'big trees' and the reverent and awesome feeling which they inspire." In fact, old growth is a complex ecology created over a long period that may not be readily apparent. Almost all significant examples of accessible old growth tree stands within the Upper Lands are located on municipally owned lands. Setting priorities for the management, protection and enhancement of these stands is within municipal control. Preservation is considered to be of value to promote public awareness of ancient forests. The more undisturbed that an old growth area remains, the more likely the chance it has of survival.

The original British Properties area was clear cut in the 1930s but tree species characteristic of the northern rainforest climate, aided by good soils and limited slopes, have regrown to create an overall park-like appearance. However, where trees block valued views and limit sunlight residents are calling for tree cutting. Current municipal policy provides for limited tree cutting in parks and boulevards, but not trees on private property. It also restricts cutting where environmental considerations are paramount (e.g. in creek areas).

In newly developing areas, the trees within creek corridors are protected, efforts are made to limit initial tree cutting to building sites and replanting with trees of native species is often required. The decision to replace trees, rather than retain them, involves consideration of tree health, neighbourhood appearance, views and safety in the construction process. Tree management plans may provide for appropriate preservation and restoration. The challenge in these efforts is to balance residents' desires to gain and maintain views and access to sunlight with retention of trees for environmental, aesthetic and privacy purposes.



Remaining stump from previous logging

Directions for Upper Lands Planning

- **Preserve the major portion of municipally owned lands above the 1200 foot elevation as forest.**
- **Adopt a Tree Cutting Permit Bylaw to restrict the cutting of trees in forest areas and require a tree management plan in developing neighbourhoods.**
- **Require a general tree survey and forest assessment in any area development plan.**
- **Provide for tree replacement as a desirable alternative to retention where supported by proper arboricultural principles.**
- **Phase tree clearing at the time of development to minimize the amount of tree loss at any one time.**
- **Promote tree retention through preservation of substantive stands.**
- **Consider the impact of trees on views both into and out from the neighbourhood.**



Forest trail

4.2.3 Other Natural Features

Other natural features of importance include wetlands, glacial and bedrock formations and animal habitat of unusually high value. Where located on municipally owned lands above the 1200 foot elevation, the Municipality is in a position to provide for their protection. In the developing areas, any such features must be identified in the initial detailed inventory and environmental analysis.

Directions for Upper Lands Planning

- **Require a comprehensive environmental assessment to identify unusual or unique natural features in area development plans.**
- **Depending upon the public and ecological importance of such features, incorporate protection of identified features in the detailed development plans.**



There are many habitats and features within the Upper Lands

4.2.4 Public Views and Vistas

Identifying important views as a natural opportunity is considered to be a key part of the initial environmental assessment. Outlooks from the Upper Lands range from framed views through trees tops and creek valleys to panoramic vistas. Views looking out from West Vancouver including views of the local mountains, Mount Baker in Washington State, Lions Gate Bridge, downtown Vancouver, Burrard Inlet, the San Juan and Gulf Islands, local islands and Howe Sound. The best-known public viewpoint is the provincial Hi-View Lookout at the second switchback of Cypress Bowl Road.

Existing policy is that the Municipality will not interfere with trees on individual private property, and neither policy nor law allows the Municipality to force property owners to remove view-blocking vegetation. In terms of public lands, particularly boulevards, the District takes into consideration requests for cutting limbs to provide or restore views or sunlight and may undertake selective tree removal as a part of its tree management program. It is recognized that views outward contribute significantly to property values and owners' enjoyment in West Vancouver. Detailed development plans should address potential future concerns about the loss of sunlight and views due to maturing trees and hedges.



Incredible views are an asset of the Upper Lands

Directions for Upper Lands Planning

- Consider opportunities for views into and out of an area, from public and private areas, in area development plans.



Hi-View Lookout



4.2.5 Views of West Vancouver

The North Shore mountains form one of the region's most familiar views. West Vancouver is seen from cruise ships, aircraft, Stanley Park and Vancouver beaches, from homes and public viewpoints, from offices in downtown Vancouver, North Vancouver, Burnaby, Vancouver, UBC and Bowen Island.

The Upper Lands are also very visible from viewpoints within West Vancouver, including slot views on the north-south streets, panoramic views from open areas in Caulfeild, Dundarave, Ambleside, Park Royal as well as numerous partial views from private and public areas.

Issues identified about the visual appearance of the Upper Lands from afar include:

- a general desire to preserve the forest;
- concern about development visually above the ridge line;
- the aesthetics of the “straight line” created by limiting developments to a specific elevation;
- concern about developments that visually blend together to give the appearance of continuous building; and
- a desire to see new buildings designed to step into the terrain with materials and colours that blend in with the setting.

Directions for Upper Lands Planning

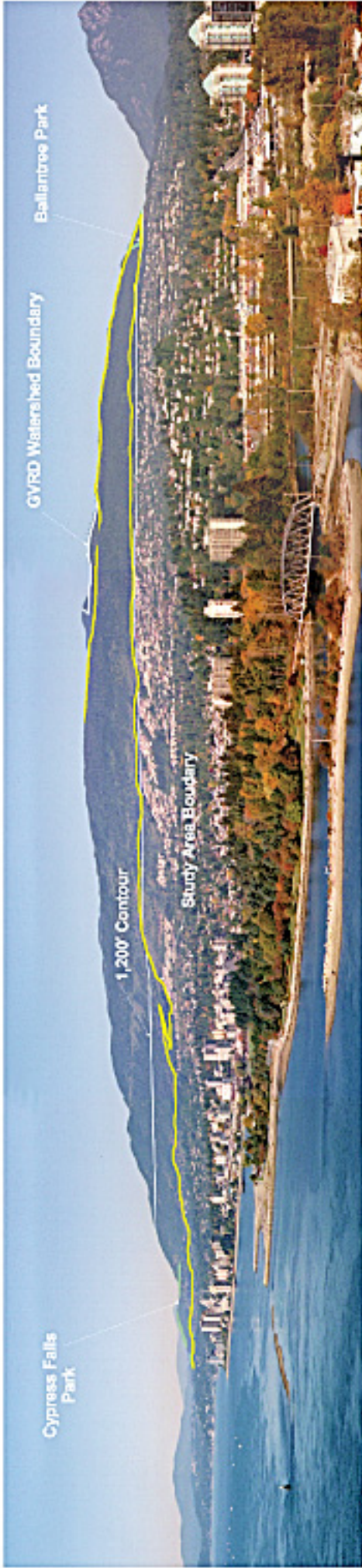
- **Include a view analysis from important public locations within West Vancouver and Vancouver in area development plans.**
- **Identify areas that should not be subject to urban development due to high visual environmental values.**
- **Promote adoption of design guidelines for developments that minimize view impacts from afar.**
- **Locate development below ridge lines or away from prominent features, unless the proposal is designed specifically for such siting (e.g. a monument)**



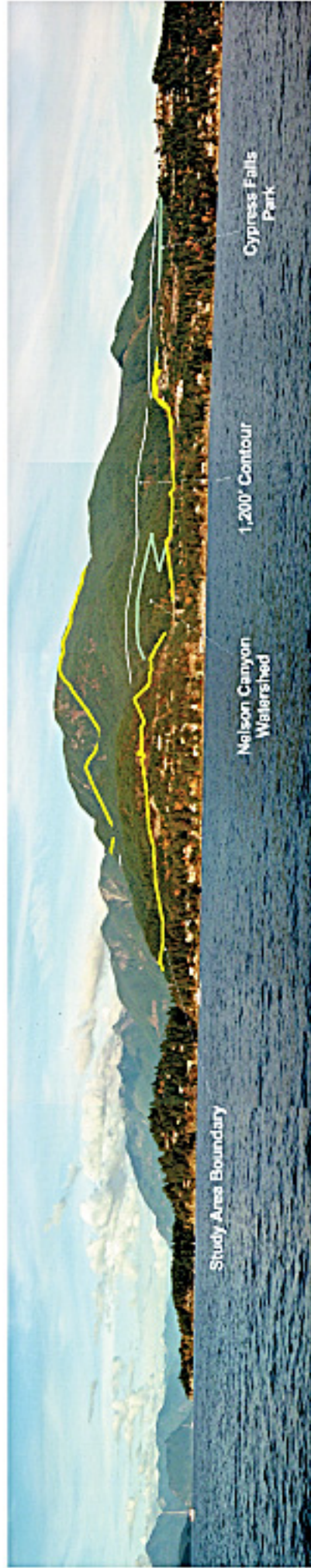
The Upper Lands from Prospect Point in Stanley Park



From Fishermans Cove



West Vancouver as seen from the Lions Gate Bridge



West Vancouver as seen from Passage Island

4.3 Provision of Community Services and Facilities

4.3.1 Transportation

a) Provincial Highways

The Provincial Highway system includes Highway #99 to Whistler (the “Sea to Sky Highway”), Highway #1 (the “Upper Levels Highway”), Taylor Way between Marine Drive and the Highway, Cypress Bowl Road (access to the Cypress Provincial Park) and the Lions Gate Bridge.

The Upper Levels Highway is currently a 4-lane highway with separated east and west travelways. The capacity in each direction is 4000 vehicles per hour. Existing eastbound peak a.m. traffic volumes on the highway at the Cypress Bowl Road area are approximately 2000 vehicles per hour. Off peak volumes at most times are substantially less although large volumes can occur with early and end of day weekend skier traffic from Whistler and ferry unloadings in Horseshoe Bay. In terms of daily traffic volumes, growth in traffic on Highway #1 from outside sources is likely to be more significant than traffic growth due to housing increases in West Vancouver. For peak volumes, the impact is limited by the currently maximized unloading capacity of the ferries and the restrictions of the two lane (single lanes in each direction) Sea to Sky route.

Using typical assumptions regarding traffic generation from households (e.g. 50% of the households generating peak hour trips), development in West Vancouver at full build out would bring peak a.m. traffic volumes close to the Highway’s capacity. Growth from external sources would be additional, but the increase over the current a.m. peak from these sources may be limited by the capacity of routes into the community at such times. Factors that can affect the amount of eventual traffic include:

- the demographics of the community as a whole, such as age and number of children, and its impact on the number of work and school peak hour trips;
- the accessibility to, and consequent proportion of transit use;
- the nature of the economy and where people work (downtown, at home, in off peak hours);
- the rate of employment growth on the North Shore; and
- the limitations on capacity of bridge, ferry and highway routes off the North Shore and the impact on the hours that people choose to travel.

If the capacity of the highway is reached, the Province would give consideration to an increase of one lane of traffic, and such a change would likely apply to the North Shore as a whole. Interchange improvements for vehicular traffic, such as additional ramp capacity, may also be involved.

Obviously, the capacity of Taylor Way and the Lions Gate Bridge in the peak periods was reached many years ago, and any further demand to cross this bridge at this period of time will either lengthen the queues, or extend the shoulders of the peak hour period. Development of a lower level road system on Marine Drive at the Lions Gate bridgehead in the Park Royal area to avoid the congestion could assist in decreasing the congestion in that area.

b) Cypress Bowl Road

Cypress Provincial Park has the greatest number of visitors to any of B.C.'s provincial parks. At the time that the road was constructed, agreements were made between British Pacific Properties and the Ministry to permit a limited number of access points (about 6) from this route into future developments. These include:

- the intersection of the road to Mulgrave School (this intersection may be relocated as part of neighbourhood planning decisions for the east-west connector);
- the existing Deer Ridge intersection;
- a proposed second access road leading to an expanded Deer Ridge development;
- the new road (not open to the public) leading to the Cypress Falls /School Board Works Yard area; and
- opportunity for two to three other access points, likely further north along the road

With its limited access points, steep roadside topography, and the ultimate destination of a Provincial Park, existing municipal policy is to promote and enhance Cypress Bowl Road as a forested parkway. The section of the road between the existing Deer Ridge access point / road to Mulgrave School and the Municipal Works Yard / road to the School Board works yard may be part of the 1000 foot connector. This portion of the route could become the responsibility of the Municipality as urban development in the area proceeds.

c) Municipal Roads

Existing policy requires the construction of an east-west road, commonly known as the “1000 foot connector” or “Chippendale Road extension”, to connect neighbourhoods above the Upper Levels Highway and provide a continuous route usable by transit and bicycles. The preliminary design for the road provides for a connection from Chippendale Road to Chairlift Road by crossing McDonald and Marr Creeks, and eventually connecting to Cypress Bowl Road across from Deer Ridge. It will then extend west from Cypress Bowl Road, starting across from the municipal works yard, and cross Cypress Creek into to the Cypress Estates area and down to the Caulfeild interchange. Given the topography, it is uncertain whether this connecting road would continue (or need to continue) from Cypress to the area above Horseshoe Bay/Eagleridge.

Existing policy also requires that the layout of roads minimize the need for creek crossings, resulting in a development pattern of primary north-south links between the Upper Levels Highway exits and the 1000 foot connector with a number of smaller cul-de-sacs typically ending at creeks. This network is designed to support local traffic movements and, where possible, bicycle and pedestrian connections. Although road circuits for transit routing is also an objective, it is one with unique challenges in mountainous terrain.

Council’s recently adopted Roads Policy encourages the roads to be narrow and designed with the existing topography to maintain the attractive intimacy of local neighbourhood streets and reduce the impact of roads on the steep hillside. A key element of the policy promotes landscaping of the boulevard.

Additional population in the Upper Lands will marginally affect the road network below the Highway. Significant capacity increases are not expected to be required since the capacity of the destination routes such as the Lions Gate Bridge are limited and the remainder of such traffic is for off peak local daytime trips. However, initiatives such as installation of turning and traffic signals on the major north/south roadways may be needed to manage traffic.

d) Transit

Transit routes in the developed neighbourhoods above the Upper Levels Highway are limited to service in the British Properties, in part due to the lack of connecting through routes and the low residential densities. As the 1000 foot connector is built, transit service may be extended to service the new private schools and neighbourhood developments. The form of transit service (vehicle size, hours of service) may change over time to respond to the steeper topography and passenger volumes. However, neighbourhoods and even specific developments should be designed to be transit friendly.

Directions for Upper Lands Planning

- **Continue provision for a “1000 foot connector” as a third east-west route across the community.**
- **Give careful consideration to meeting the needs of people with limited mobility in steeper areas.**
- **Consider transit in street and neighbourhood layout by creating circuits and community destinations.**
- **Evaluate design of local roads and boulevard treatments to minimize potential visual impact on slopes and create aesthetically pleasing streets.**
- **Minimize grade change for the 1000 foot connector to facilitate bicycle use.**



Narrow road and parking pull-outs in the developing Whitby area

4.3.2 Servicing

a) Municipal Water Supplies

Three watersheds supply water to the Eagle Lake Reservoir for storage and distribution of potable water to the western part of the community; the upper Nelson Creek watershed, upper Dick Creek watershed (above Eagle Lake) and Black Creek watershed (a tributary to Cypress Creek). Most of the total watershed area (5.33 square kilometers) is in Cypress Provincial Park and not within the Upper Lands. These watersheds supply the Municipality with approximately 30% of its water, with the remainder coming from the Capilano Lake system.

In addition, the Municipality has water licences on Nelson Creek and Larson Creek just above the Upper Levels Highway that would permit withdrawal of additional supply. The combined water supplies are adequate to meet long-term needs of the community. Changes to the Eagle Lake system may be considered in the future to increase its proportion of supply, but consideration of such changes would not be driven by development decisions.

Nelson Canyon, close to the Upper Levels Highway, is currently designated as a protected watershed. This point of diversion is no longer used for domestic needs, but the Municipal Engineer suggests that it be kept in reserve for emergencies. While this would rule out development, this area offers a spectacular older forest environment and may provide opportunity for public recreation use in its natural state.

Directions for Upper Lands Planning

- **Open Nelson Canyon to permit greater public access.**

b) Storm Drainage and Flood Control

Established policy requires new developments to be designed to handle and protect downstream areas from flooding (detaining up to the 100-year flood level) and that storm water runoff in excess of the ten year return flood level be stored and gradually dispersed to the creeks or ocean. This has resulted in the construction of on-site detention facilities and the installation of a major diversion pipe to carry water overflows to the ocean. While these solutions are currently applied, there is an increasing consideration of alternative site designs and techniques to retain natural flow levels and to deal with flow levels at their source. Storm water management reviews now underway will contribute to improved practices and lead to specific recommendations separate from this Report.

Directions for Upper Lands Planning

- **Consider drainage requirements in detailed development plans, providing for drainage away from structures and retaining walls.**
- **Minimize the amount of site grading and hard surfaces in steeply sloping areas.**
- **Require siltation control measures during construction and revegetation of disturbed areas immediately following completion of construction to avoid siltation during storm events.**

c) Sanitary Sewers

New developments are required to connect to the sanitary sewer system at the developer's cost. The systems are designed to direct flows to the GVRD interceptor that parallels the waterfront and connects to the Lions Gate Treatment Plant. The current system is designed to accept the projected growth, although certain local changes will occur over time to maintain and improve the system. No change in current development practices is suggested.

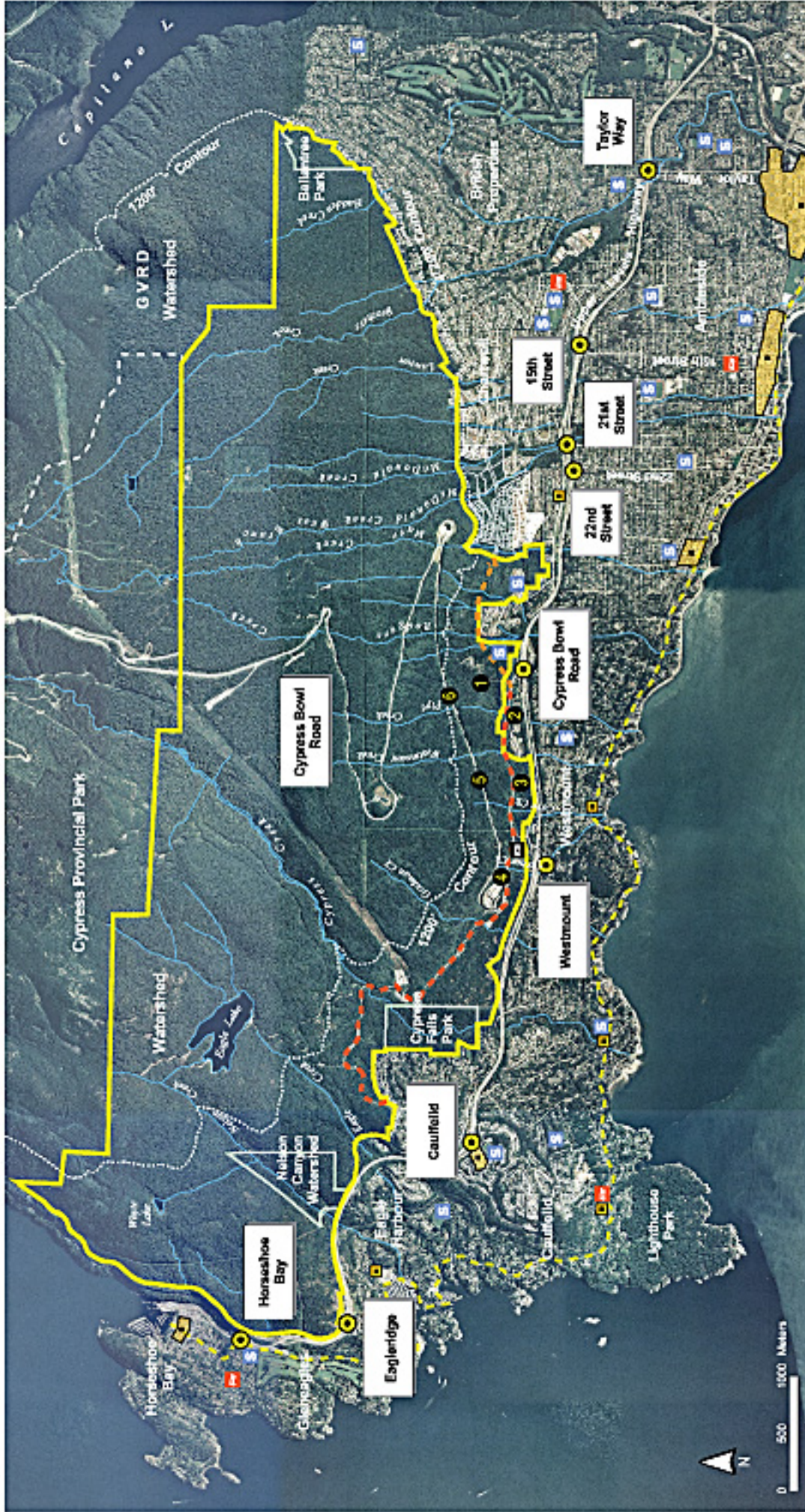
d) Energy and Telecommunications

Current policy requires underground wiring for electrical distribution and telecommunications in new subdivisions. There is the need to keep pace with changing technologies that may require different solutions, such as fibre optics and high-speed Internet trunk lines. No change in municipal policy is suggested.

e) Fire Protection

The forested lands represent a potential forest fire hazard. West Vancouver maintains a well-equipped and trained fire suppression crew to deal with the 10 – 15 wildfires each year.

The 1992 Fire Limit Bylaw requires all new dwellings built in the Upper Lands to have residential sprinkler systems. Notwithstanding, as development occurs there may be need for additional facilities to maintain municipal fire and life support response capabilities. The 1988 OCP identifies a potential location for a new fire hall and training facility above the Westmont highway exit and land has been acquired that could meet that purpose. The site would require an emergency access road to connect the Westmont Interchange with Cypress Bowl Road and preliminary studies have shown that such a route would be feasible. Overall response standards and the need for additional facilities is the subject of a separate fire and safety study. Based upon earlier fire response studies, the land secured by the District above the Westmont interchange would be an appropriate location for a firehall to serve development contemplated in either the current OCP or in this Report.



Legend

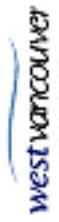
- Study Area Boundary
- GVRD Watershed Boundary
- 1,000 Connector
- Phase 2 - 1,000 Connector
- 1,000 Connector
- Watershed Boundary
- GVRD Sewer Trunk
- ⊕ Highway Interchanges
- ⊕ Freeway
- ⊕ Proposed Freeway
- ⊕ Commercial
- ⊕ School

Cypress Intersections

- 1 Mulgrave / (Dispersible / 1,000 Connector (proposed))
- 2 Deer Ridge
- 3 Deer Ridge / (proposed)
- 4 Works Yard / Cypress Falls
- 5 Possible Future Intersection
- 6 Possible Future Intersection

Transportation & Servicing

Upper Lands Report



4.3.3 Forests, Parks, Trails & Community Facilities

a) Forest Lands

The protection and preservation of municipally-owned forested lands in the Upper Lands has been a long standing policy. A significant portion of private lands in creeks and sensitive areas will be added over time. In addition, the Upper Lands are bounded by major public holdings that are protected for recreation and watershed purposes, including Cypress Provincial Park and the Capilano and Eagle Lake watersheds.

Many hiking trails throughout the Upper Lands owe their existence to early logging and recreation use. Other hiking trails have been created by local hiking groups and municipal park crews. Trails of national importance, the Baden-Powell and Trans Canada trails, cross from the east to the west boundaries of the Municipality.

Mountain bikers use many informal trails within the Upper Lands. While some are fire roads, the majority have been built by the users and cross both public and privately owned lands. Bike use on inadequately constructed trails can cause environmental damage on the steep slopes, so the Municipality has been working in a proactive manner with the different landowners and cyclists to minimize the impacts.

Activities focused on enjoyment of the outdoors are expected to continue to grow in popularity. Concerns have been raised about the capacity of the forest to handle recreational demands and the potential impact that trails and users can have on slopes, wetlands, vegetation and recreation experience.

Directions for Upper Lands Planning

- **Recognize the long term importance of trails for recreational purposes.**
- **Minimize the potential environmental impacts of trail use.**

b) Major Parks

The OCP identifies the following sites to be acquired for major park purposes:

- Cypress Bowl Road (first switchback) @ 25 acres
- above Cypress Falls Park @ 30 acres
- above Horseshoe Bay @ 30 acres

These sites were initially identified in the 1980 OCP as having the best potential to accommodate community-recreation activities that require level land for playing fields, tennis courts and community buildings. Two of the sites in the Cypress area are owned by British Pacific Properties. The site above Horseshoe Bay may use privately owned or municipal land.

The total site area for major parks would, when combined with local park needs for each neighbourhood, be well above the 5% park dedication provision under the Local Government Act. Consequently, to acquire the lands, a combination of techniques may be required including:

- transfer of development potential;
- application of Development Cost Charges;
- dedication at the time of area development plan adoption or subdivision;
- amenity bonusing; and
- land exchange (most likely to be applicable in the area above Horseshoe Bay).

The combination of major park areas, local parks, protected creek corridors, trail systems, and steep slopes would result in substantially more public open space being retained in the Upper Lands than traditionally occurred in the older subdivision.

c) Recreational Facilities

The 1999 *Recreational Facilities Master Plan* concludes that the long-term needs of the community can be accommodated at two public recreational facilities, one at the central 21st /22nd Street location and the other in the west at Gleneagles. Plans are well under way for the design and construction of these new community centres as well as for an expansion of the Aquatic Centre and Seniors' Centre at the central site.

As development occurs in the Upper Lands, the marginal increase in demand for community recreation facilities is projected to be well within the capacity of the two sites. School facilities, whether public or private, would provide for neighbourhood facility needs. The major park sites could accommodate additional buildings if the expectations of the community change over time. Demand may also be met by privately funded facilities that could be created as part of future development proposals (private facilities such as Hollyburn, recreation facilities as part of strata developments, commercial fitness facilities, and non-profit clubs).

Directions for Upper Lands Planning

- **Continue to protect the municipally owned forest lands and enhance their recreational opportunities.**
- **Work with other property owners for the joint use of public trails on private lands in the forested areas.**
- **Continue to require three major sites for active park purposes and to maintain future capacity for other possible community uses.**
- **Continue to require local park sites in new neighborhoods.**
- **Encourage private and non-profit community facilities in the mix of facilities on municipal and private lands (i.e. favourable consideration upon application).**

4.3.4 School Sites

Residential development in the Upper Lands will result in a need for additional public school sites, even if not required for decades hence. Although existing school sites and facilities may have capacity for additional students (roughly the same number of public schools that accommodated 9,000 students in West Vancouver in 1969 accommodate 6,700 students in the system today¹), the projected population growth will result in need for additional sites. The following comparison of schools to households has been used to evaluate this need:

Ratio of Existing Schools to Current Households

Number of Elementary Schools		Schools Per Total Households*	Per Ground Oriented Household
Public	11	1 per 1,545	1 per 1,054
Total Public & Private	13	1 per 1,308	1 per 892

Number of Upper Schools		Schools Per Total Households*	Per Ground Oriented Household
Public	3	1 per 5,667	1 per 3,867
Total Public & Private	4	1 per 4,250	1 per 2,900

* 1996 census: 17,000 dwellings - 11,600 ground oriented (single family/duplex/townhouse) and 5,400 apartments

Notes: The household figures used in this analysis are for West Vancouver only, although upper school students also come from Bowen Island and Lion's Bay, and the school counts do not include the elementary schools in these other communities or small independent schools. "Upper" schools include "middle", "high" and "secondary" schools. "Single family" includes the Municipality's limited duplex housing stock. An additional private school (elementary and upper school) is under construction but not included in the analysis.

The estimate for additional school sites is based on the following growth and use assumptions:

- the 1600 acres of the Upper Lands below the 1200 foot elevation would be developed over time at 2.5 units per acre with a mix of housing types;
- there would likely be a higher ratio of ground oriented dwelling units and a lower ratio of apartments than the current mix;
- the average number of children per household will not change significantly;
- the need is to establish municipal requirements for public school sites only;
- there is additional capacity in existing schools;
- dispersed elementary schools in neighbourhoods are important;
- upper school sites do not have to be neighbourhood oriented;

¹ Since 1969, an elementary site was sold to a private school and an upper school site redeveloped for residential lots. A new public middle school has been added and there are now two private schools offering elementary and secondary education (one under construction).

- school building size can be adjusted to accommodate various populations; and
- independent (private) school presence will continue; new, or expanded, private schools would be expected to acquire land not designated for public school purposes.

These assumptions result in the following estimated public school site requirements:

Household Mix (4,000 new dwellings)	Based on the Public School Ratio only	
	Elementary Schools	Upper Schools
if all ground oriented	3.8 @1/1,054	1.0 @ 1/3,867
retaining the existing housing mix	2.6 @1/1,545	0.7 @ 1/5,667

Note: variations could likely be accommodated by the size of school that is built if the underlying assumptions were to change and a very substantial change would be required to alter the projected school site requirements.

The “all ground oriented” ratio (3.8) would be a high projection for public school site requirements, whereas “retaining the existing housing mix” ratio (2.6) would be low. Accordingly three elementary school sites are recommended for the Upper Lands:

- the Whitby Estates site
- a site in the Cypress area
- a site above Horseshoe Bay

These sites are spaced evenly across the undeveloped lands and their specific location would be determined at the time of development. The actual construction of school buildings may be delayed until justified by demand.

The analysis suggests that there may be a need to accommodate the equivalent of one upper school. This requirement may be altered by expansion of Rockridge Middle School to a secondary school, additions to West Vancouver Secondary School, future grade mix and potential development on Bowen Island. If an additional upper school site is required, the most likely location would be in the area of the proposed major park site west of the Cypress Bowl Road (one of the few remaining areas that would have sufficient relatively level lands and access from a major road).

Limited tools are available to provide for acquisition of school sites at no public financial cost. The Province recently amended the provisions for school site acquisition in the Local Government Act, and did so in a manner that appears to be essentially unusable in slow growth municipalities. Alternatives to municipal acquisition and land exchange include Provincial purchase and cooperative negotiation and area development plans. For example, the Whitby Estates site was transferred from British Pacific Properties to the School Board by dedication at no public cost as an outcome of the rezoning process for

the Whitby Estates neighbourhood. It may be possible to acquire the site above Horseshoe Bay by exchange with Municipal land. A site in the Cypress Falls area could also be derived by land exchange, because the School Board owns a site presently used as a playfield in the lower Cypress Estates area.

Directions for Upper Lands Planning

- **In addition to the elementary school site recently acquired in the Whitby Estates area, provide for 2 additional elementary school sites.**
- **Discuss with the School Board the need for, and means to accommodate, the equivalent of one upper school site on existing school sites or in the Cypress Bowl Road area.**
- **Consider a variety of means to acquire school sites at no public financial cost such as transfer of density, land exchange, and rezoning.**
- **Locate sites and design buildings so that the schools serve as neighbourhood focal points.**

4.3.5 Commercial Development

West Vancouver's main commercial service structure is based upon the Park Royal regional centre, the Ambleside district centre and the Dunderave, Caulfeild and Horseshoe Bay neighborhood centres. The Caulfeild village centre (65,000 sq.ft.), in spite of being part of an already approved Land Use Contract, was approved in 1988 despite opposition from local residents fearing property value impact. The centre has become a major asset in the western community area serving as a community focus and benefiting the area's property values and amenity. This commercial base is supplemented by local convenience facilities (gas stations, corner stores, and cafes) at 22nd Street, Cypress Park, Tiddleycove, Fisherman's Cove and Westmount.

There is no commercial development above the Upper Levels Highway with the exception of the Salmon House restaurant/office complex at the entrance to the Panorama Village area. The development is required to provide for local convenience shopping as a condition of its original approval some 25 years ago. A small space for this purpose is included in the office building but, at the request of the owner, Council has permitted it to be occupied by office tenants until there is sufficient market for retail use.

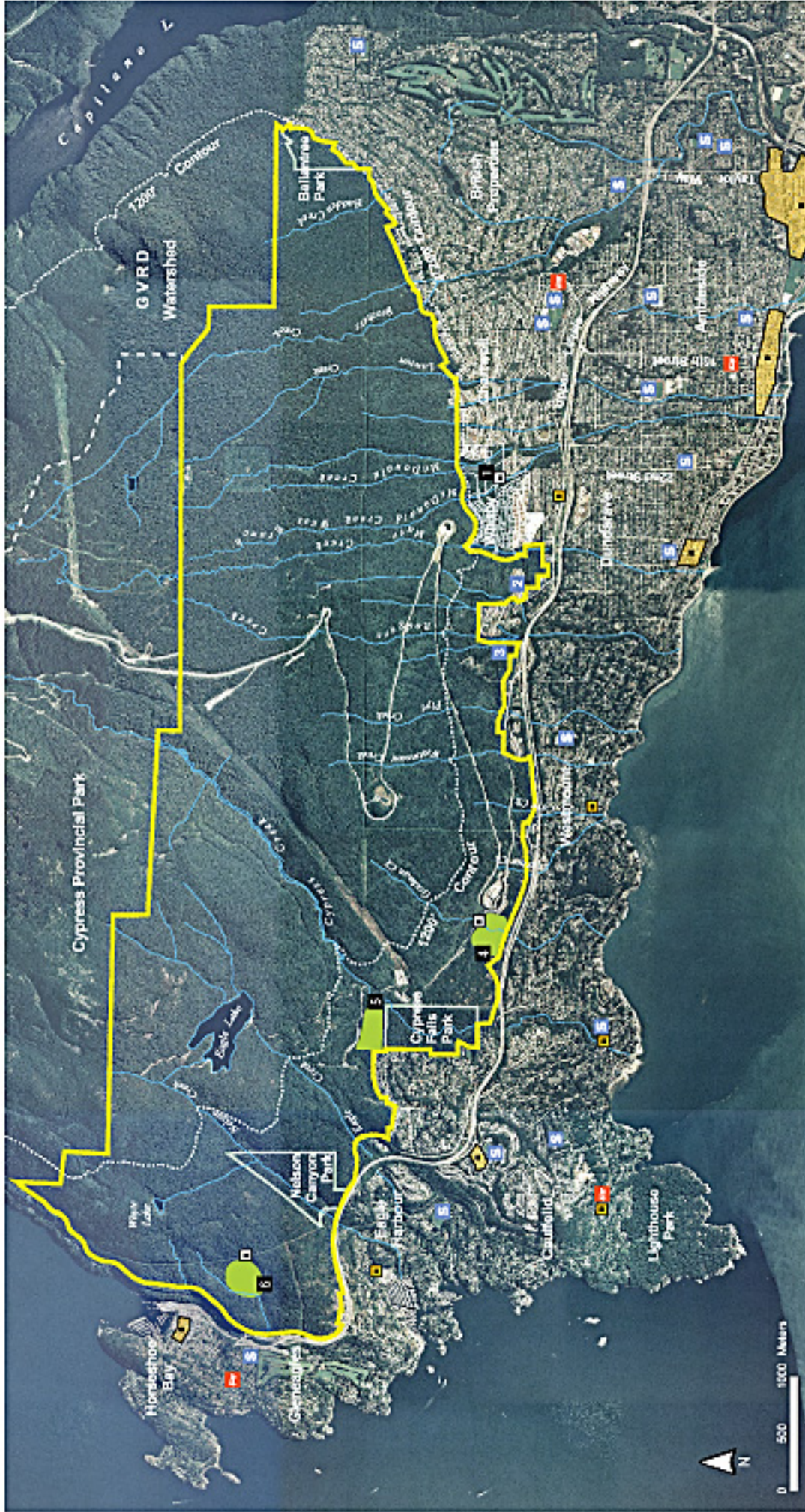
It is generally accepted as a principle of sustainable development that there should be convenient access to retail stores to allow people to meet their day to day needs without having to drive long distances and to serve the needs of those of limited mobility. A neighborhood commercial centre can provide a focus and contribute to sense of community, in keeping with traditional development patterns in West Vancouver.

Based on the development area's size, the linear pattern of development and limited population capacity, it is anticipated that the Upper Lands neighbourhoods could most likely support local convenience commercial sites. It would not appear viable to develop a centre the size of Caulfeild Village, but more likely in the scale of the Cypress Park neighbourhood centre. The market would be expected to support at least two local convenience sites: one in the area west of Cypress Bowl Road (by the major park site and school) and another that may eventually be created in the area above Horseshoe Bay. The Salmon House complex would serve the area to the east, between Cypress Bowl Road and Panorama, and the commercial or community use site in Whitby Estates.

Current projections are that use of dwellings for home occupation purposes will increase in the region. Compared to other Lower Mainland municipalities, a high percentage of West Vancouver residents already use their homes for businesses. Home occupations contribute to healthy communities – neighbourhoods remain occupied by day, travel may be reduced, a market is created for local services of other businesses – and should be encouraged by policy and regulations.

Directions for Upper Lands Planning

- **Make provision for a local convenience centre in the area just west of the Cypress Bowl Road adjacent to the proposed major park and elementary school sites.**
- **Make provision for a local convenience space in the area above Horseshoe Bay.**
- **Provide services for home occupations.**
- **Maintain requirements for a convenience store in the Panorama Centre (Salmon House) at the entry to Folkestone Way.**



Legend

- Study Area Boundary
- GVRD Watershed Boundary
- 1,500 Contour
- Proposed Park
- Final
- Commercial
- Proposed Commercial
- Existing School
- Potential School Site

- School Sites**
- 1 - Whitty Elementary
 - 2 - Co Ingwood Private
 - 3 - Mulgrave Private
 - 4 - Elementary and/or Secondary
 - 5 - Possible Alternative Elementary Location
 - 6 - Elementary

4.4 Housing and Population Projections

4.4.1 District Housing Capacity under existing policy

In 1973, Council adopted a policy that West Vancouver would accept a reasonable population increase as its share of the Lower Mainland growth and that a reasonable ultimate population for the Upper Lands would be based on 2.5 housing units times the overall number of acres. This policy is maintained within the current OCP. Application of the 2.5 units per acre potential to the estimated 1,600 acres in the study area below the 1200 foot elevation results in an ultimate capacity of some 4,000 dwelling units. This figure is considered to be the upper limit on future development capacity under existing policy.

Existing zoning is an indicator of the lower limit on capacity. The following table provides a breakdown of estimated housing capacity in the Upper Lands under existing zoning and shows an estimated capacity of 2200 dwelling units.

Upper Lands Housing Capacity under Existing Zoning

Zone	Permitted Uses (primary)	Minimum Lot Size	Density	Estimated Area (Acres)	Potential Dwelling Units
RS1	<ul style="list-style-type: none"> detached dwellings private stables 	2 acres	.5 units/acres	300	150
RS2	<ul style="list-style-type: none"> detached dwellings 	20,000 sq.ft.	1.5 units/acre	855	1,290
RS7	<ul style="list-style-type: none"> detached dwellings cluster homes 	10,000 sq.ft.	2.5 units/acre maximum	100	250
RS8	<ul style="list-style-type: none"> detached dwellings cluster homes 	10,000 sq.ft.	1.5 units/acre maximum	340	510
Total zoned capacity				1600	2200
CU1	<ul style="list-style-type: none"> cabins parks, playgrounds 	2 acres		4,530	Recreation cabins only.
CU2	<ul style="list-style-type: none"> public recreation watershed 	n/a			
CU7	<ul style="list-style-type: none"> cabins parks, playgrounds 	5 acres			



Zoning within the Upper Lands

Together, the Zoning and OCP policies indicate a capacity for the Upper Lands of between approximately 2200 and 4000 dwelling units.

In addition to the capacity within the Upper Lands, there is some limited additional dwelling capacity in existing single family neighbourhoods and mixed-use commercial/residential areas of approximately 1200 units. The following table provides a breakdown of this additional capacity by area.

Additional Housing Capacity in Established Areas under Existing Policy

Area	Dwelling Units		
	S.F./Duplex	Townhouse/ Apartment	Total
Established Areas			
Caulfeild Land Use Contract Area	100		100
Established Single Family Neighbourhoods ²	340		340
Duplex Zones	60		60
Mixed commercial/ residential areas ³		220	220
Sunset /Ansell Place area ⁴	60		60
SUBTOTAL	560	220	780
Recent new developments			
Whitby Estates	130	125	255
Canterbury – completion	20		20
Sunset Highlands		100	100
SUBTOTAL	150	225	375
TOTAL	710	445	1200

Average household size can be applied to the above figures to estimate future population capacity. West Vancouver’s average household size has remained stable over the past 15 years at 2.5 persons per household. Prior to this period, there was a steady decline in average household size. These trends are consistent with those of the region (average household size for the region declined in the 60’s and 70’s and then stabilized at 2.6 between 1981 and 1996). Current GVRD projections indicate continued stability in average household size over the next decade possibly followed by a small decline.⁵ If a small decline in average household size for West Vancouver over the next 2 decades to 2.4 persons per household is assumed, additional population capacity based on dwelling capacity can be estimated at between 8160 and 13,440 persons. Therefore, a future total population of West Vancouver of between 50,800 and 55,000 could theoretically be accommodated.

² Assumes infill potential of approximately 5% of existing dwellings in single family neighbourhoods excluding the Caulfeild Land Use Contract Area and Sunset/Ansell Place for which a separate calculation has been made.

³ Assumes potential for approximately 6 developments of 20 units each in Ambleside, 5 developments of 10 units each in Dundarave, and 5 developments of 10 units each in Horseshoe Bay.

⁴ Based on Engineering’s sewage treatment plant capacities

⁵ Although the aging population has exerted downward pressure on average household size, other factors have counterbalanced its effect and will likely continue to do so in the future (e.g. an increase in immigrant families of larger households, young adults living with their parents for longer periods). See also GVRD “Housing Demand Projection Discussion Paper” of the DAGMA committee (October 1999) and “Trends in Average Household Size by Structure Type in the GVRD” (June 1999).

West Vancouver Dwelling and Population Capacity (Current Zoning and Policy)

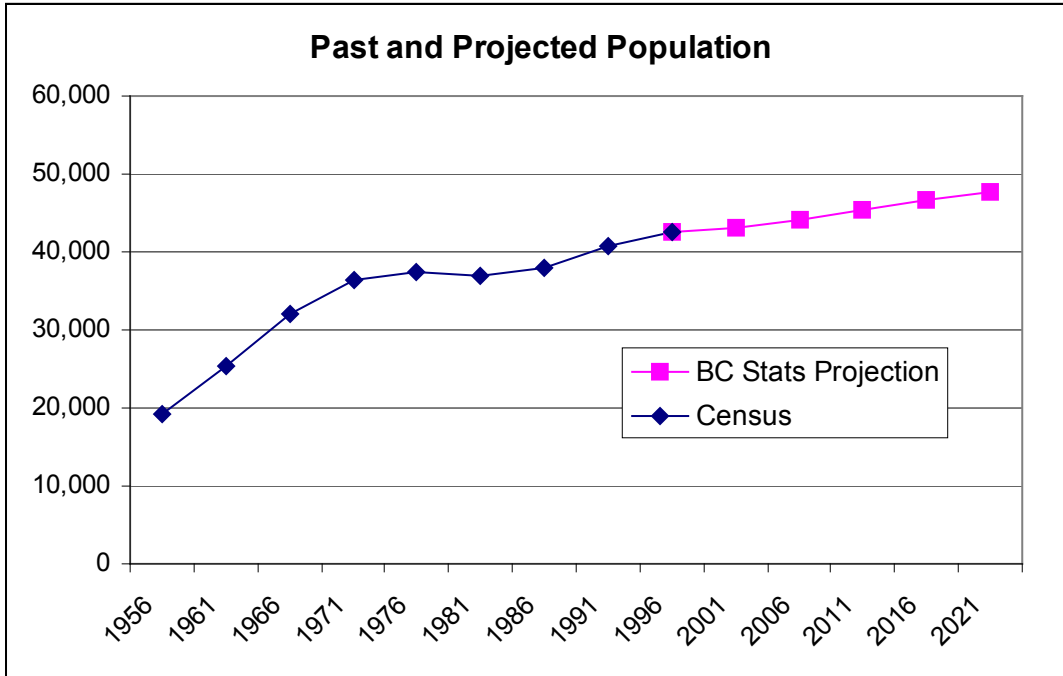
	Est. Dwelling Units	Avg. Household Size	Population Capacity
Established Neighbourhoods			
Current	17,000	2.5	42,600
Additional Capacity	1,200	2.4	2,880
Upper Lands			
Lower Limit (Zoning)	2,200	2.4	5,280
Upper Limit (Policy)	4,000	2.4	9,600
Additional Capacity Subtotal (range)	3,400-5,200		8,160-12,480
Total Future Capacity (range)	20,400-22,200		50,800-55,000

4.4.2 Population Projections and Estimated Housing Demand

a) Population Projections & Trends

Relatively high population growth is projected in the region over the next 20 years, but West Vancouver's growth is expected to continue to be one of the lowest in the region. BC Stats projections indicate an average annual growth rate of approximately .5% over the next 20 years for West Vancouver. This low rate of growth is attributed to the limited capacity of the remaining undeveloped areas, the terrain, expensive land and housing, and a higher proportion of older residents. The low growth projection is consistent with the Regional Strategic Plan objectives, which focus residential and employment growth in regional centres to promote a more effective transportation infrastructure.

The GVRD models estimate that by the year 2021 West Vancouver's population could be approximately 50,000. This is 5000 more people than the GVRD's 1996 estimated base population for West Vancouver of 45,000. (This figure assumes a census undercount of 3.75% on a census population of approximately 43,000.) West Vancouver's projected housing capacity could accommodate the GVRD's population projection. In total numbers, this population growth and associated development is comparable to that which occurred in the 20 year period from 1976-1996. During that time West Vancouver's population increased by approximately 5000 people. The majority of new housing units were added in the last remaining apartment sites, the now built out duplex zones, the Caulfeild Plateau, and the Dundarave and Ambleside mixed use zones.



Note: The BC Stats Projection is calculated by applying the growth rate projected for West Vancouver's local health area (which includes Lions Bay and Bowen Island) to the 1996 census population.

b) The Affect of Demographic Trends on Future Housing Demand

Aging population - Over the past 5 decades West Vancouver has experienced a steady, substantial increase in the proportion of seniors (over age 65) from 10% in 1961 to 21% in 1996. The shift towards an aging population has occurred at regional and national levels, but West Vancouver experienced this trend earlier and to a greater degree than other communities (seniors represented 12% of the GVRD's 1996 population). This can be attributed to the high proportion of young adults with families who moved to West Vancouver during the development boom of the 1950s and 60s when housing was relatively affordable, and who have stayed in the community. In more recent decades, housing costs have increased significantly and in-migration has been largely comprised of middle aged adults who can afford expensive homes. As this group ages, the proportion of seniors is expected to increase further.

These trends point to both current and future demand for various forms of appropriately designed and located seniors housing, including specialized forms of supportive housing, that enable residents to age in place.

Declining proportion of young children and young adults – Over the past 5 decades there has been a significant decline in the proportion of young children age 0-9 (from 38% in 1961 to 9% in 1996) and a consistent low proportion of young adults (with the most noticeable lows in the 1950s, 1960s and 1990s at around 14%). The decline in the proportion of children is partly related to a widespread socio-economic trend towards smaller families. However, in West Vancouver it has been more pronounced than elsewhere, and is partly attributed to the lack of affordable and ground oriented housing for young families.

The proportion of young adults (20 - 34) in West Vancouver is markedly low (14% in 1996, compared to 24% for the region as a whole). This suggests there may be an inadequate supply of suitable housing for this age group, who are typically looking for smaller, relatively more affordable ground-oriented units ("starter housing") and apartments. Past increases in the supply of multi-family housing have been associated with significant increases in the proportion of young adults.

Consistent high proportion of middle aged adults - Middle aged adults have always been attracted to the lifestyle and housing choices in West Vancouver. With its close proximity to downtown Vancouver, quiet atmosphere and expensive single family homes, West Vancouver has experienced constant in-migration of affluent middle aged couples with older children over the decades and will likely continue to do so in the future. Demand for traditional single family homes among this group will also continue.



c) Relationship between Housing Policy and Future Housing Supply

Other than in the Upper Lands, there is limited potential for new dwelling units of any type without changes in existing policy and zoning. The Ambleside apartment area is now built out, as are most of the mixed-use and duplex zones (Dundarave, Ambleside, Horseshoe Bay), and few sites remain for subdivision within single family areas, with the exception of completion of the Caulfeild Plateau. Current zoning and OCP policy for the Upper Lands generally continues the pattern of large lots for single family homes, and provides limited opportunity or incentive for greater housing variety.

British Pacific Properties commissioned a consultant to study housing demand in West Vancouver. The consultant estimates that half of the current housing demand is for apartments and that demand for multi-family housing will continue to increase over the next 5-15 years.

Projected New Housing Demand⁶

Years	Dwelling Units
2001 to 2006	1,130
2006 to 2011	850
2011 to 2016	840
2016 to 2021	720
Total Units	3,540

The lack of designated sites for multi-family housing runs contrary to the increasing demand for such housing within the community. The highest growth rate is that of older seniors who look for units in which they can “age in place”. Many “empty-nesters” look for ground-oriented townhouses or other forms of housing with lower maintenance than large, single family houses on large lots – and many move out of the community due to a lack of such housing choice. The lack of smaller, more affordable housing units and limited rental supply contributes to a higher than typical proportion of the community’s young adults moving out of the community. Young families, even if well off, find it costly to purchase homes in West Vancouver compared to other communities and are hindered by legislation and existing policies that promote the building of unusually large homes and restrictions to single family occupancy. The demand for all forms of housing in West Vancouver is likely to continue to exceed supply, thereby maintaining high values.

Altering policies to address these varied needs would contribute to a continuing, healthy community. This Report also suggests that more varied housing forms would help to achieve a better fit with the physical variations in the land, services and sensitivity to environmental concerns.

⁶ Source: Urban-Eco Consultants - May 2000. Information provided with the permission of BPP.

Directions for Upper Lands Planning

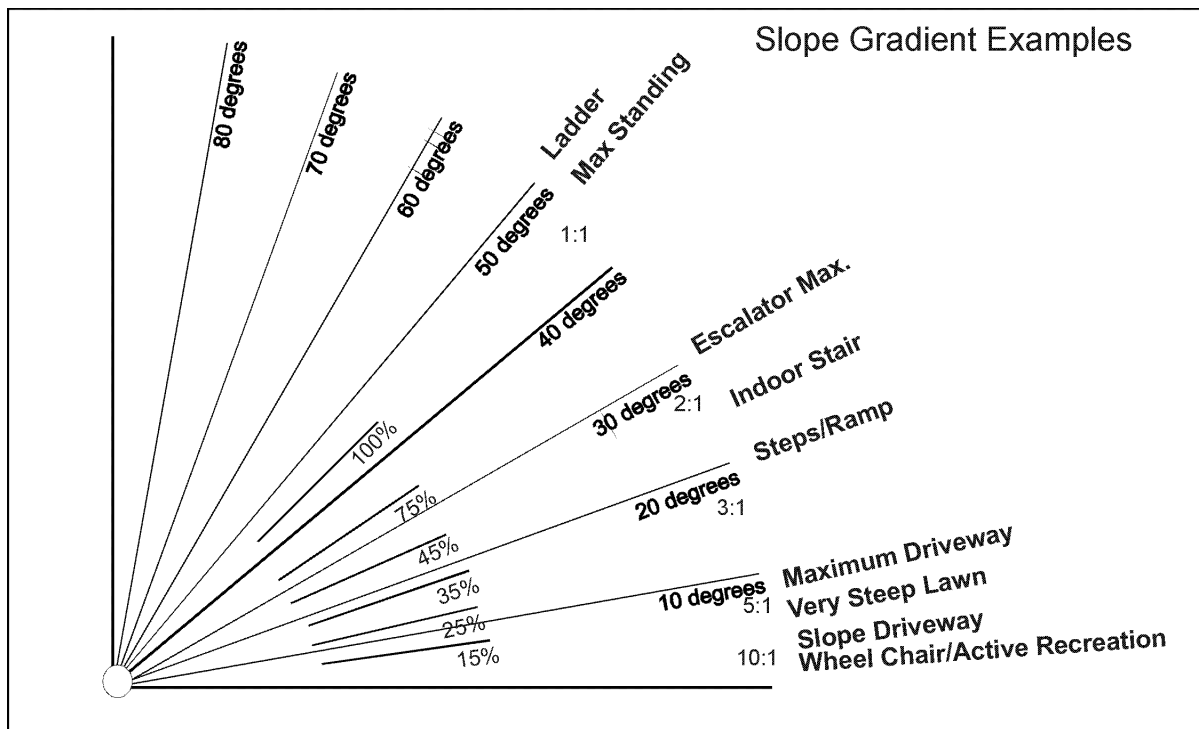
- **Assume continued slow growth rates in accordance with past trends.**
- Encourage greater variety of dwelling types and sizes to meet both projected housing demand and environmental/terrain requirements.**

5.0 DEVELOPMENT GUIDELINES

5.1 Slope

Building on a mountainside means dealing with slopes. Slope affects all aspects of development, including physical, environmental and visual impact, hazard, capacity and cost. Even where building is technically feasible, on some slopes it may fail to meet acceptable community standards and environmental objectives.

The Upper Lands Steering Committee held an all day workshop with select members of the community, developers, architects and planners from other mountain communities in the Province and the United States to better understand how to treat slopes. They learned that some benefits of developing on sloping sites, particularly for West Vancouver's south facing exposures, include solar heat, views, access to sunlight, privacy (compared to the same building configuration on flat lands), an ability to separate cars from pedestrians and an opportunity to reduce apparent bulk by terracing and landscaping. On the other hand, as slope increases, so do potential problems related to erosion, fire spread, soil stability, water runoff, steep roads and trails, revegetation, visibility of development from afar, and the creation of central meeting places.



The following chart describes the type of development that is typical at various slopes.

Slope Gradient Examples

Slope	Description	Example of Residential Area
0%	flat land	Norgate (North Vancouver)
5%	sustainable bicycle grade	lower Ambleside and Dundarave
10%	moderately steep walking trail, limits normal wheel chair, lowest gear for road cyclists	Lower 15 th Street
8% - 15%	conventional roads start crossing the hill (versus going straight up)	Upper Ambleside, older British Properties
15% - 20%	flexible for development, although extensive cuts and fills can be required for roads and structures	Sentinel Hill
20%	steep driveway (ideally, driveway grades would not be more than 12%)	
20%- 35%	increasingly difficult terrain suggests need for compact forms of development or other siting and building measures	Canterbury, Whitby areas (ave. 20-23% slope)
35% - 50%	restricted building potential where buildability depends on terrain (rocky sites likely more suitable)	some waterfront sites, some parts of Caulfeild Plateau, Rockridge
over 50%	considered too steep for most urban development for technical and environmental reasons	The steepest sections of Caulfeild Plateau and Eagleridge
100%	a stepping up of 1:1 (one foot vertical for every one foot of horizontal)	

5.1.1 Building on Slopes

Most technical slope constraints are related to soil types and site specific geological and hydrological conditions. Means of dealing with slope conditions and minimizing impact include detailed consideration of the location and width of roads, servicing options, building siting, slope retention methods, appropriate building types, terracing, cantilevered construction and cuts into the hill (versus fill). Other elements include vehicle parking alternatives, overlook, meeting the needs of persons with limited mobility, visual vulnerability, physical hazards, potential for revegetation, difficulty of repairing disturbances, slope aspect, and views. This attention to slope in design would be part of any detailed development plan.

In addition, subdivisions on mountains are often better planned and visually more pleasing if roads are designed to cross contours versus following them. If a road follows a contour, any access to an abutting site has to go either up or down. If a road goes across the contour (up and down), the connecting driveway can provide level access to the site.

As slope increases, the land area covered by development should generally decrease. Typically, conventional single family development can result in more extensive site disruption than more compact residential uses on sloping sites. The amount of land surface in use depends on the size of building footprint, amount of parking, road and driveway access, and facilities that need level land (pools, lawns, tennis courts).

The following table and diagram illustrate the amount of site disturbance that occurs in a development at different grades, assuming typical roads and a single family house subdivision. It illustrates that grade differences and the amounts of required cuts or fills become unreasonable with conventional subdivision at the higher slope conditions.

Site Impacts

Slope	Grade difference between front and rear of the house	Height of balanced cut on roads	Width of area disturbed for road excavation, fill	Driveway grade change	Driveway length
0%	0	0	0	0	30'
10%	3' - 4'	2'	55'	5' /	66'
20%	6' - 8'	5'	64'	11' / 93'	
30%	10' - 12'	7'	74'	16' / 119'	
40%	13' - 16'	9'	83'	21' / 146'	
50%	16' - 20'	12'	∞	27' / 172'	

Directions for Upper Lands Planning

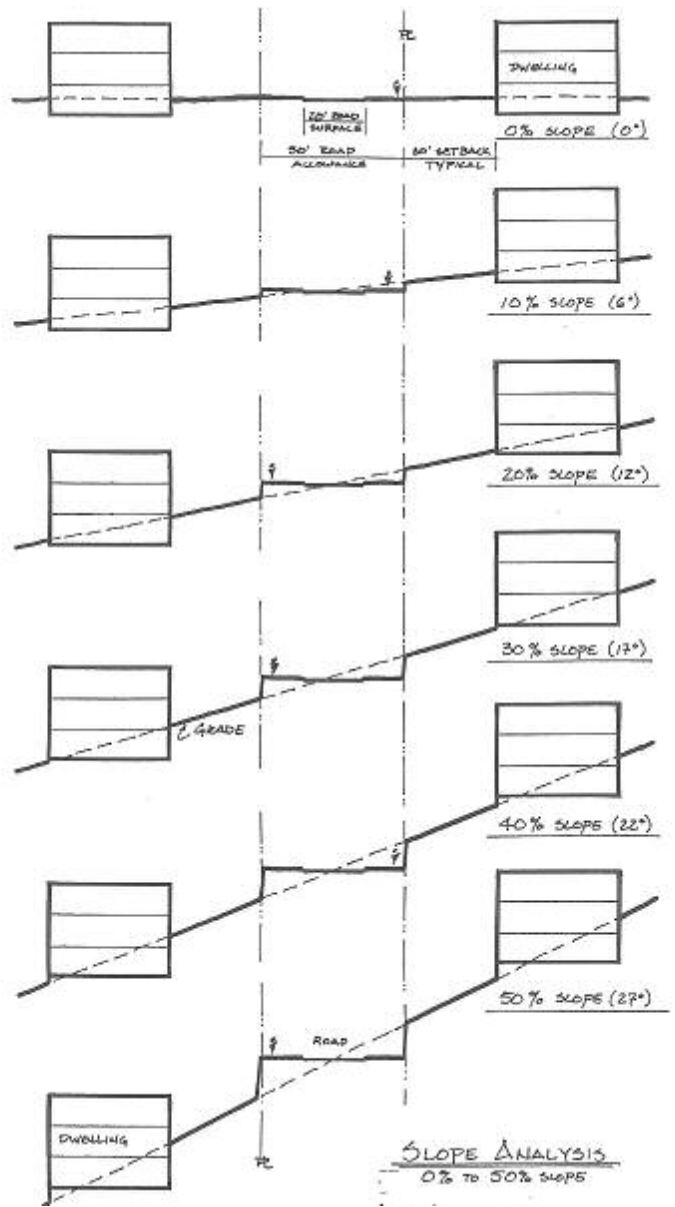
Require slope analysis prior to preparation of an area development plan.

Employ “slope-friendly” housing forms and site development techniques in steeper areas.

Restrict development of “difficult terrain” – areas having slopes greater than 35% - to minimize development impacts. Leave the natural landscape alone whenever possible in this terrain.

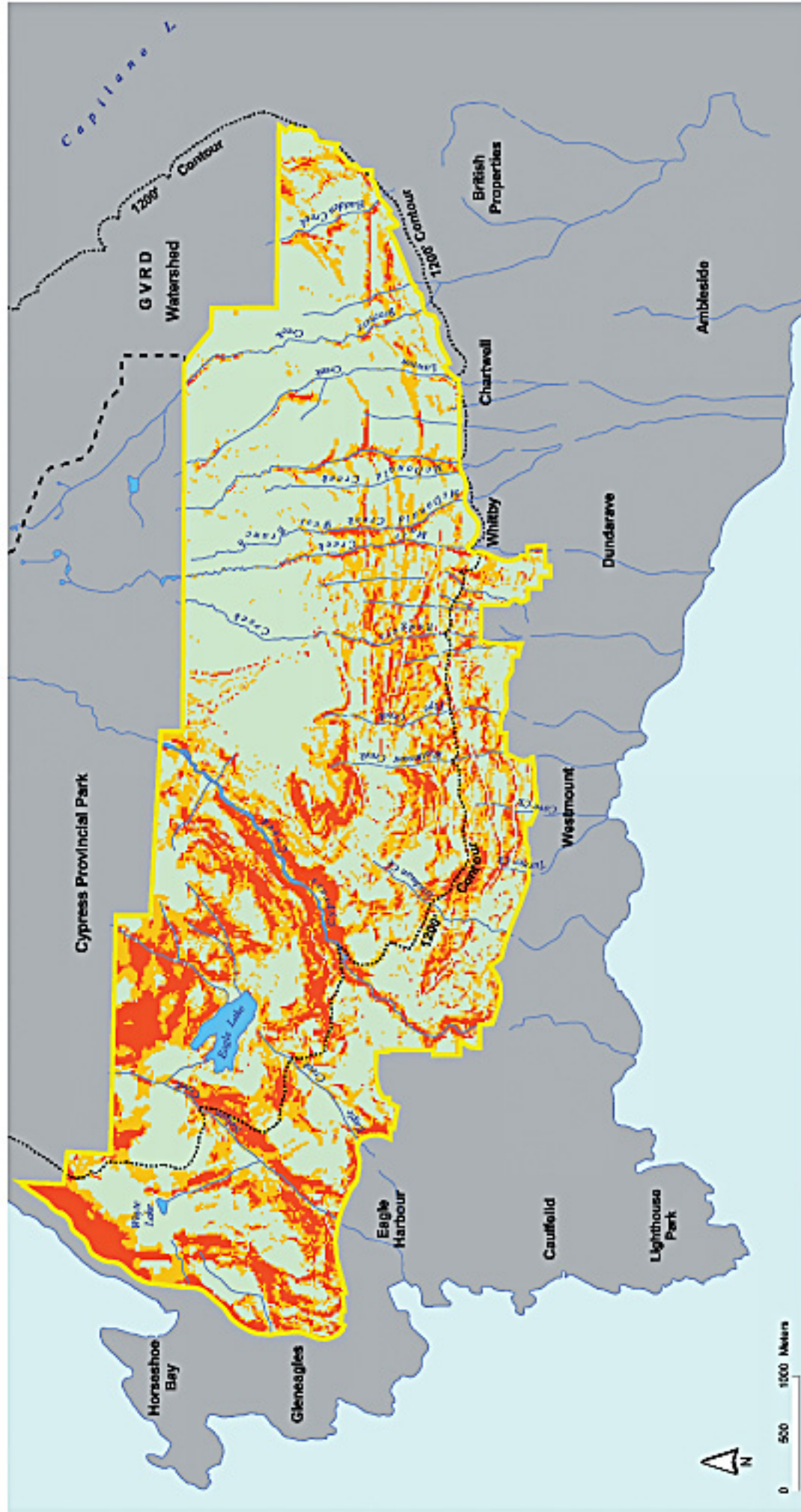
Avoid development of lands having slopes in excess of 50%.

Minimize the amount of site grading required for housing on steeper sites



The map and oblique aerial view on the following pages show areas below 35% slope (best for development although slopes 20-35% may be difficult depending on soil conditions and extent), 35-50% slope (difficult to develop) and over 50% (avoid). This allows a general and generous assessment of land development capacity.

The calculations of slope were derived from topography based upon aerial survey. This is accurate enough to give a general impression of the areas where difficult terrain exists and it is evident that the land is more rugged in the west. Detailed survey at the time of actual subdivision planning will yield somewhat different results.



Legend

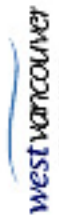
- Study Area Boundary
- GVRD Watershed Boundary
- 1,200' Contour
- 0 - 10% Slope
- 10 - 25% Slope
- 25 - 50% Slope
- 50 - 100% Slope
- 100 - 100% Slope

Upper Lands Slope Classes

Slope Class	Slope Percent	Acres	Percent of Total
1	0 - 10%	3,756	60%
2	10 - 25%	1,420	23%
3	25 - 50%	1,050	17%
Total		6,226	100%

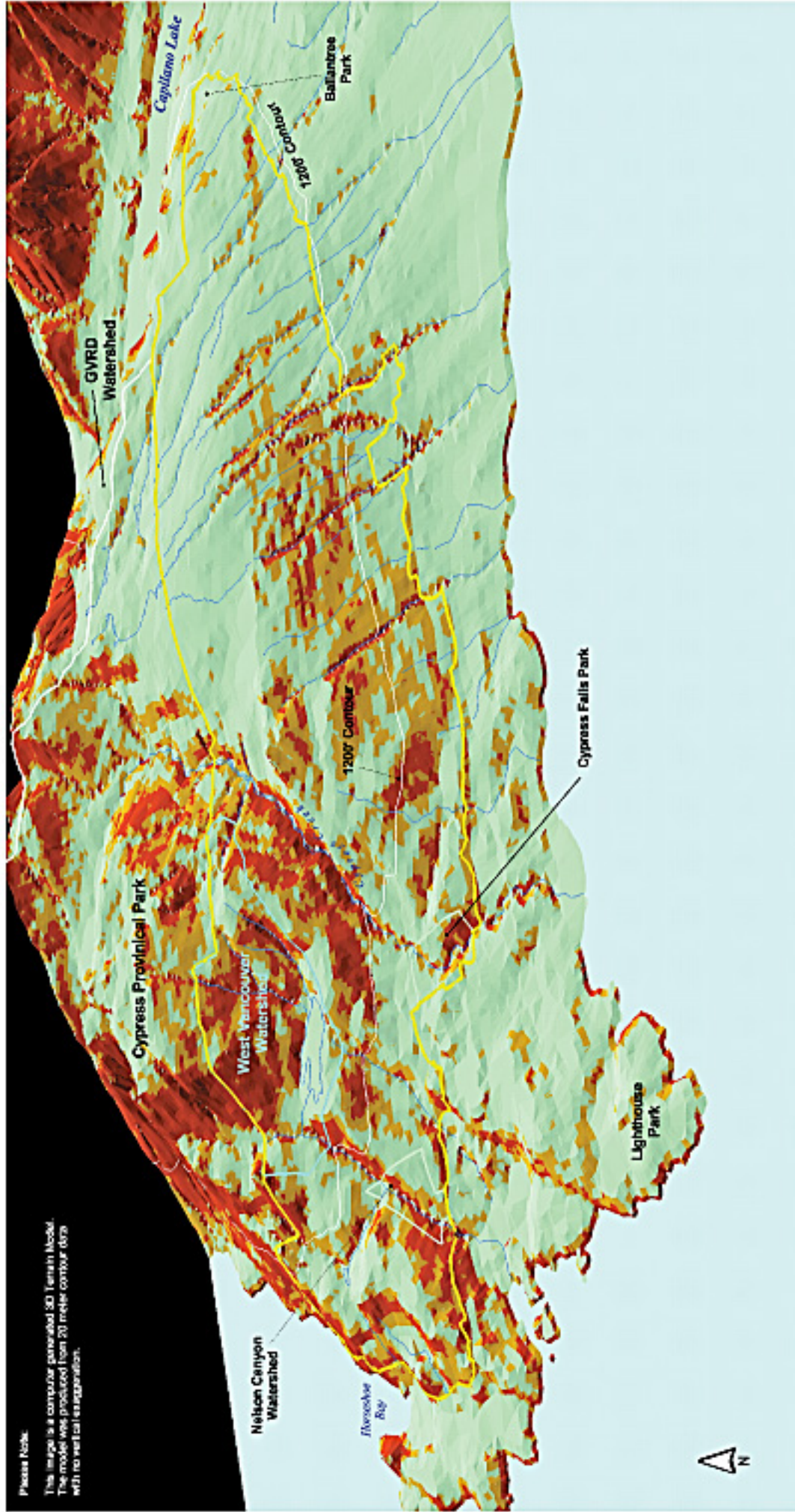
Slope Analysis

Upper Lands Report



Please Note:

This image is a computer generated 3D Terrain Model. The model was produced from 20 metre contour data with no vertical exaggeration.



Legend

- Slope Area Boundary
- GVRD Watershed Boundary
- West Vancouver Watershed Boundary
- 1,200' Contour
- 0 - 20% Slope
- 20 - 30% Slope
- 30 - 100% Slope

Slope Gradient

Upper Lands Report



5.2 Density

Typically, single family densities in West Vancouver range from about 1½ units per acre in Altamont to 6-8 units per acre in Ambleside and parts of the Caulfeild Plateau (close to the shopping centre). Townhouses typically range from 8 to 25 units per acre and apartments from 45 to 100 units per acre, depending on unit size. The following table outlines different neighbourhoods in West Vancouver with relevant data on slope and density.

Residential Area	Units per Acre	Slope	Comments
Sunset Highlands	1.1 (gross) 2.5 (net)	>30-40%	100 stacked townhouses on very steep site
Canterbury / BPP	1.6	22%	Large homes on 14,000+ sq.ft. lots
Rockridge	1.6	10 – 40%	Large lots, curvilinear roads
Gleneagles	1.6	20 - 50%	Narrow, steep waterfront lots, large sloping lots upland
Madrona Ridge	1.9	15 – 25%	Irregular lots; steep, varied terrain
Chartwell	2.2	15 - 20%	Large homes on >12,000 sq.ft. lots
Lower Caulfeild	2.3	10 – 15%	Narrow, winding roads; mixed lots
Upper Ambleside	2.4	8 – 12%	Broken grid; south facing slope
Parthenon Waterfront	2.4	10 – 15%	Large houses, curved roads, varied
Westhill	2.4	15 – 20%	Large homes on >12,000 sq.ft. lots
Whitby Estates, BPP	2.5	24%	New large lots; 3 multi-family sites
Eagle Harbour	2.6	13 – 35%	Varied lot sizes and terrain
Sentinel Hill	2.6	15 – 35%	Narrow lanes; views lots
Stearman Beach	2.8	0-5%	Flat terrain; narrow waterfront lots
Upper Dundarave	2.9	15 – 20%	Grid layout; mixed trees
Caulfeild Plateau	3.4	5 – 50%	Rocky terrain, housing variety, narrow streets
Panorama	14.0	19%	Large terraced apartments

Density can affect many facets of the community - its appearance, the demand for services, community character, business area viability, the ability to provide amenities and community facilities and housing choice. Its regulation is a key provision of planning and should be designed to reinforce West Vancouver's strengths as a community. In evaluating appropriate density levels, recognition must be given to the amount of building, its distribution and layout and the average size of dwelling. The regulation should further community goals for housing and open space, protect the environment, produce desirable neighbourhoods and deal with difficult terrain.

If density is defined as the permitted number of units per acre, different densities can maintain the same site coverage but create differing community impacts. In each of the examples below, two storey buildings cover 11% of the site with the primary difference between 1.5 and 8 units per acre being the variety of unit sizes (housing choice) and compactness of site layout (some having a large amount of common or public open space).

Units/Acre*	sq. ft. /unit	Site Coverage /Acre	Site coverage per lot or unit	Shared Open Space/Acre
1.5	6,700	11%	17%	0
2.5	4,000	11%	17%	0
2.5	4,000	11%	33%	15,000
4.0	2,500	11%	17%	0
8.0	1,250	11%	17%	0
8.0	1,250	11%	50%	20,000

* Assume 30% of land is used for roads, services and park



Westhill – 2.45 units per acre



Rockcliff in Caulfeild – 6.0 units per acre



Salishan on Folkstone – 6.9 units per acre



Deer Ridge – 5.9 units per acre net excluding park land dedication

5.2.1 Current Method of Regulating Density in the Upper Lands

The 1988 OCP uses dwelling units per acre as the way to regulate density in the Upper Lands. The limit in Developing Neighbourhood (DVN) Area 1 (Lawson Creek to Rodgers Creek) is the lesser of 2.5 dwelling units per acre or the theoretical number of possible single family lots using a 10,000 sq. ft. lot minimum (called a “paper” subdivision). The zoned density in DVN Area 2 (Rodgers Creek to Godman Creek, just beyond the Municipal Works Yard) is 1.5 units per acre, with policy that would allow rezoning up to 2.5 units per acre. In the western area, DVN Area 3, the Plan doesn’t specify a density in units per acre but states the current zoning will be retained until further study (varies from 20,000 sq.ft. lot minimum to minimum 2 acre lots). The OCP also allows for a transfer of density from one parcel to another within the defined neighbourhood areas to achieve open space benefits, allowing transfer sites to be developed at densities of up to 8 units per acre.

The “paper” subdivision process is intended to help address the impact of creeks, slopes, roads and parks, but it is indirect and suffers from several critical flaws. It

- directs attention and effort away from the desired development plan to one that is merely technically approvable;
- involves costly survey and topographical analysis and produces a readily approvable single family subdivision;
- entails extensive staff time;
- removes any incentive for a developer to apply for alternative development patterns meeting community and environmental goals;
- penalizes developers for providing smaller units regardless of whether they better fit terrain or community needs; and
- maximizes house size and uniformity.

5.2.2 Proposed Density Strategy

A more comprehensive and direct set of density regulations is proposed to encourage environmentally sensitive development, allow site layouts to fit terrain, create interesting neighbourhoods and encourage housing to meet the community’s current and future needs. The process to determine density has four components:

- a) estimate the overall dwelling capacity;
- b) determine areas to remain free of development;
- c) limit the floor area of buildings related to land capacity;
- d) use density transfer and “amenity” bonus tools for Council to acquire community amenities and municipal facilities.

a) Estimate the overall dwelling capacity

Estimating an overall capacity for the Upper Lands based upon units per gross acre for the designated developable areas would allow planning for population related services and give the community a level of certainty about the impact of development on population. For discussion purposes, that limit could remain the same as the 1988 OCP, namely 2.5 units per gross acre. If the developable area were assumed to be 1,600 acres, then the capacity estimate would be 4,000 dwelling units. Some variation leading to a higher unit count may be desired if it is the community's wish to give greater encouragement to smaller units. Alternatively, application of a lower density per acre due to the high percentage of lands with no, or limited development potential could reduce the ultimate unit count. The concept of a target would remain.

b) Determine areas to remain free of development

Defining those areas on a site to be avoided, e.g. creeks, proposed non-creek parks and very steep terrain with a slope over 50%, would produce a net "developable" area for consideration. On some sites, that may be close to 100% of the land while on others it may be substantially less.

There may be other sensitive parts of the land that are better avoided, but the actual site plan would be developed upon the basis of a thorough environmental analysis and terrain review. This preliminary assessment is an estimate of the "no build" zone.

c) Limit floor area of buildings

Reducing the potential floor area of buildings on sites that have less developable land would tie building size to development potential. For example, if 70 acres of a 100-acre site (70%) were considered developable, then the achievable floor area should be reduced by 70% of the potential square footage. This concept applied to a large planning site is illustrated on the table below.

Site Area	Number of dwellings permitted at 2.5 units/acre	Physically Developable Area (% of site)	Approximate sq. ft of all buildings at 0.35 FAR	Ave. dwelling unit (technical max'm size)
100 acres ⁷	250	4,350,000sq. ft. (100%)	1,520,000	6,100
100 acres	250	2,610,000 sq. ft. (60%)	914,000	3,700

As illustrated, while the maximum number of dwellings remains the same for all sites, a more restrictive site would reduce the amount of building and the average potential unit size. Alternatively, if large units were planned on such restricted sites, the number of units would decrease to reflect the reduced overall floor area. The result in either case would be that the amount of building would not exceed the site's natural capacity, and a greater variety of housing would be encouraged. This policy may be implemented by zoning for "siting circumstances" under the Local Government Act, or if that proves difficult, by requiring rezoning for most developments.

d) Use density transfer and "amenity" bonus tools for Council to acquire community amenities and municipal facilities

Using municipal powers to transfer densities would achieve lands in public ownership, where desired, without the financial costs of acquisition. To accomplish this, Council should encourage density transfers or bonuses from otherwise developable sites (e.g. lands intended to be used for active parks or schools) and undevelopable lands (such as creeks) to development sites.

The above combination of tools would provide for environmentally sensitive development and predictable controls on growth. It also allows for the promotion of housing variety and the achievement of community amenity objectives.

⁷ For comparison, the Whitby Estates neighbourhood now under construction had a site area of 104 acres and was approved for some 250 dwelling units.

Directions for Upper Lands Planning

- **Provide an overall estimate or target for dwelling units in the Upper Lands with adjustment to meet objectives approved by Council for public facilities, major parks and housing variety.**
- **Use environmental principles regarding creeks and slope to restrict lands to be developed (and determine net developable areas).**
- **Relate building area (square footage) to net developable area to prevent over development and do so in a manner that can encourage a variety of dwelling types.**
- **Allow for transfer of density and density bonus if approved by Council to achieve further environmental and land use objectives (e.g. publicly owned green space, school and large park site acquisition, protection of developable but environmentally sensitive land).**
- **Ensure there is a general relation between the housing densities and the impact on the land. As net density increases the form of housing should become more compact and the average size of dwelling should decrease.**
- **Allow flexibility in options for various housing types and unit sizes so that the community building principles can be achieved (i.e. strong sense of community, diverse community, sensitivity to environment) under varying market conditions.**

5.3 Planning Framework

Current policy requires development applications to be based on analysis of larger geographic areas or “precincts” to determine appropriate park sites and open space in new subdivisions. This Report recommends that a more comprehensive approach be taken in review of development proposals using the community building principles. These principles encompass environmental, social and economic elements – elements that go beyond the physical components of this report and require interpretation at the time of development.

Two levels of review for development proposals in the Upper Lands are proposed:

- (1) preparation of an **area development plan** that will provide for comprehensive analysis of circulation patterns, environmental protection, land use and density within the framework set by OCP policy, and
- (2) preparation of a detailed plan to provide for **site-specific analysis** of any development proposal located within the subject area. (see map following page)

5.3.1 Area Development Plans

The “Area Development Plan” will provide the context for future decisions with respect to development proposals. The lands to be included in an Area Development Plan will be defined by major geographic features (creeks, very steep sites), existing urban development, major roads and, where applicable, locations of major community parks and facilities. It will:

- (1) be based on a comprehensive **inventory, mapping and analysis** of the site qualified professionals to provide information on:

✓	slopes	✓	forest cover
✓	soils	✓	significant vegetation
✓	rock outcroppings	✓	aquatic habitat
✓	hazardous conditions	✓	creek corridors
✓	existing trails and views	✓	critical wildlife habitat
✓	visual resources	✓	archaeological resources

- (2) present a schematic **land use plan** to provide for evaluation of the proposed character and impacts of proposed development including:

✓	community focal points	✓	creek crossings
✓	protected open space areas	✓	proposed housing types
✓	roads	✓	active park space
✓	transit	✓	environmentally sensitive areas
✓	open space network, trail hierarchy	✓	environmental impact assessment
✓	major services	✓	storm water management
✓	view impacts	✓	general housing siting

- (3) outline **development concepts** that would apply throughout the implementation of the schematic land use plan such as:
- sequencing of development,
 - environmental protection and monitoring provisions,
 - tree management, and
 - public land acquisition measures and timing (parks, environmental protection areas); and,
- (4) provide a description of the plan’s **compliance with policies** adopted for the area in the OCP and zoning.

Council consideration of an Area Development Plan would be intended to result in adoption of a Schedule to be appended to the OCP. In some cases, rezoning may also be involved.

5.3.2 Detailed Development Plans

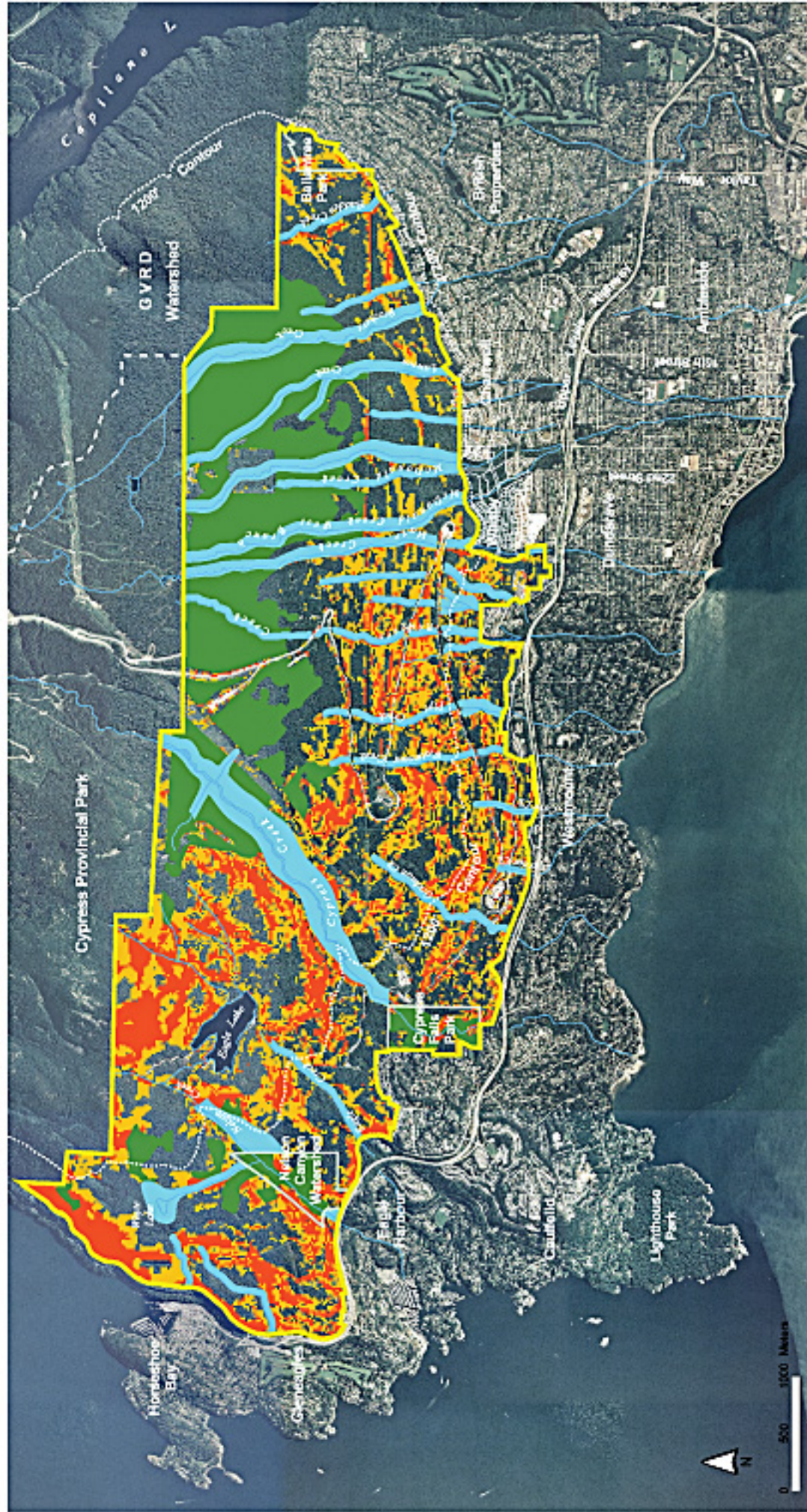
A “Detailed Development Plan ” will provide for detailed evaluation of a specific proposal within the overall framework set by the Area Development Plan, i.e.:

- (1) a **site inventory and analysis** of the specific slopes, soil conditions, vegetation, and any other relevant circumstances of the development site;
- (2) a **subdivision / comprehensive development plan** in sufficient detail to evaluate:

✓	road siting and design	✓	estimated cut and fill
✓	boulevard landscaping	✓	sidewalks
✓	street trees	✓	entry features, central mailboxes
✓	on-site storm water retention	✓	impervious surfaces amount
✓	retaining wall heights	✓	measures to mitigate road impacts
✓	driveway grades	✓	sites with shared driveway access
✓	trail siting and design	✓	site servicing
✓	use of solar/geothermal heating	✓	housing siting, form and character
✓	lot grading plans for lots >20%	✓	building form and character

- (3) an outline of **implementation measures**:
- environmental protection and monitoring provisions,
 - a tree management plan,
 - landscape plan, and
 - design guidelines.

Consideration of the Detailed Development Plan would be intended to result in Council issuance of a Development Permit and conclude public review of an application.

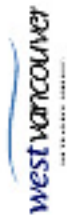


Legend

- Study Area Boundary
- 30m Creek Area
- GVRD Watershed Boundary
- 100 - 500 Year Old Forest
- 1,200m Contour
- 30 - 80% Slopes
- 80 - 100% Slopes

Environmental Sieve

Upper Lands Report



6.0 LAND USE PLANNING SCENARIOS

6.1 Developable Areas

Using available data, a general assessment of the development suitability in the Upper Lands has been completed for the discussion scenarios. The following table and map detail this analysis:

Total land below 1200' in elevation (excl. existing parks)	1,600 acres
Environmentally Sensitive Lands	
Creeks (including creek setback areas)	200 acres
Steep banks, cliff faces with greater than 50% slope	460 acres
Mature forest (over 150 years in age)	40 acres
Total Environmentally Sensitive Lands below 1200	700 Acres
Remaining Lands - 0-35% slope	520 acres
Remaining Restricted Lands - 35-50% slope	380 acres
Total Remaining Lands Below 1200 elevation	900 acres

This assessment is used in all three of the Land Use Planning Scenarios. However, in the Status Quo Scenario, environmentally sensitive lands would remain in private ownership as “developable land”. Acquisition for public ownership would be substantially curtailed and perhaps 50% of privately owned creeks would be in yard areas qualifying as lot area. Very steep land remains “developable”. The following table outlines the differences.

	Scenario #1	Scenario #2	Scenario #3
Total number of dwellings	4,000	4,000	4,000
Gross acres	1,600 acres	1,600 acres	2,100 acres
Less:			
Creek areas	100 (50%)	200	200
Slopes over 50%		460	460
Other mature forest		40	40
Land above 1200' for exchange			500
Net “developable” area	1,500	900	900

In assessing slope, the stated number of acres is based upon generalized outlines of topographic features. When one states that there are 460 acres of land with slope over 50%, it does not mean that all of that land is over 50% or that the land is not “developable” at all. Rather it gives an indication of the relative suitability for development. In those steep areas, under scenarios #2 and #3, a much higher proportion of such land would be protected and the housing form and total square footage would be adjusted to better fit with the terrain.

6.2 Common Elements

This report presents for discussion three Land Use Planning Scenarios within which to develop municipal policies:

- (1) a “Status Quo” scenario based generally on the existing Official Community Plan,
- (2) a scenario based on implementation of the community building principles, maintaining the 1200 elevation as an upper limit to development, and
- (3) a scenario also based on implementation of the community building principles, allowing development above the 1200 elevation in exchange for public ownership of important lands elsewhere.

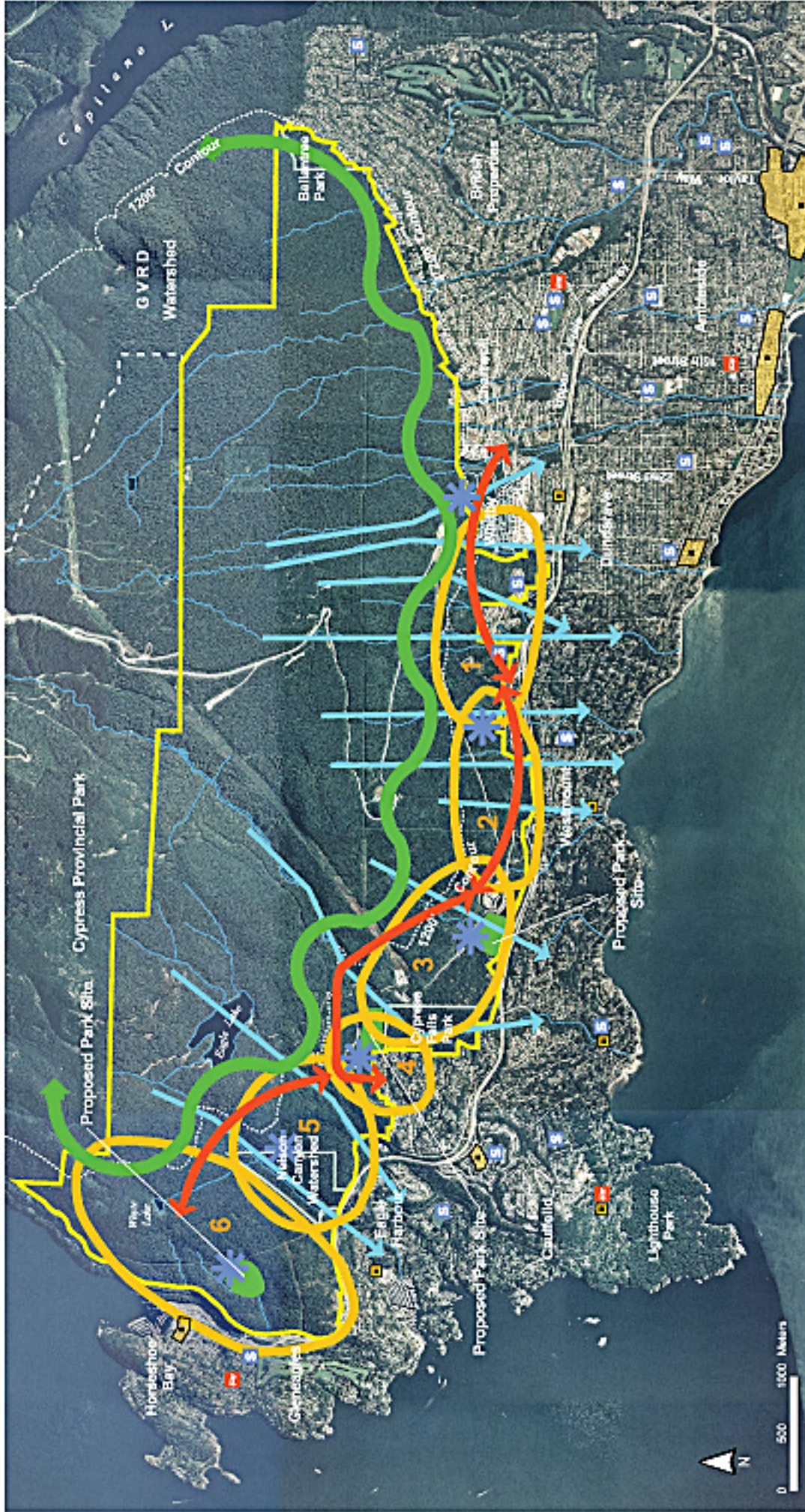
In all Scenarios there are common community benefits that are planned including park and school sites. These large land areas will require approximately 90 acres for major parks and 12-20 acres for the school sites, for a total of 110 acres of the “flattest” lands available.

In each scenario, West Vancouver would strive to achieve the highest quality of development and the best future neighbourhoods possible. Other common elements in each scenario include; planning on the basis of larger areas to determine appropriate open space; roads, services and local site characteristics; protected forests; protected creeks; transportation linkages; proposed schools sites; proposed major park sites, and potential commercial areas

These physical elements are illustrated on the Planning Areas & Components map.

6.3 Other Ideas

Many ideas expressed in community discussions and by the Upper Lands Steering Committee members are not described in this Report and its scenarios. However, our community lives within its dreams, and if those dreams are limited, so may be our future. Ideas for other scenarios include restricting development to a few selected high density nodes surrounded by forest (hi-rises in the forest), very low density large acreage estates and equestrian trails or funicular railways for access to very steep sites where there are no cars (a mountain version of Eagle Island).



- Legend**
- Study Area Boundary
 - GVRD Watershed Boundary
 - 1200' Contour
 - Forest
 - Commercial
 - School

- General Planning Area**
- Transmission Linkage
 - Forest Preservation
 - Coast Contour Protection
 - Proposed Park
 - School & Community Site

- General Planning Areas**
- 1 Murr - Pipe / Westmount Area
 - 2 Pipe / Westmount - Goodman Area
 - 3 Goodman - Cypress Area
 - 4 Cypress - Engle Area
 - 5 Engle - Nelson Area
 - 6 Nelson - Horseshoe Bay Area



Please Note:
 This image is a computer generated simulation and not an actual aerial photograph. The simulation was produced by dropping a 20' stream over a digital terrain model with no vertical exaggeration.

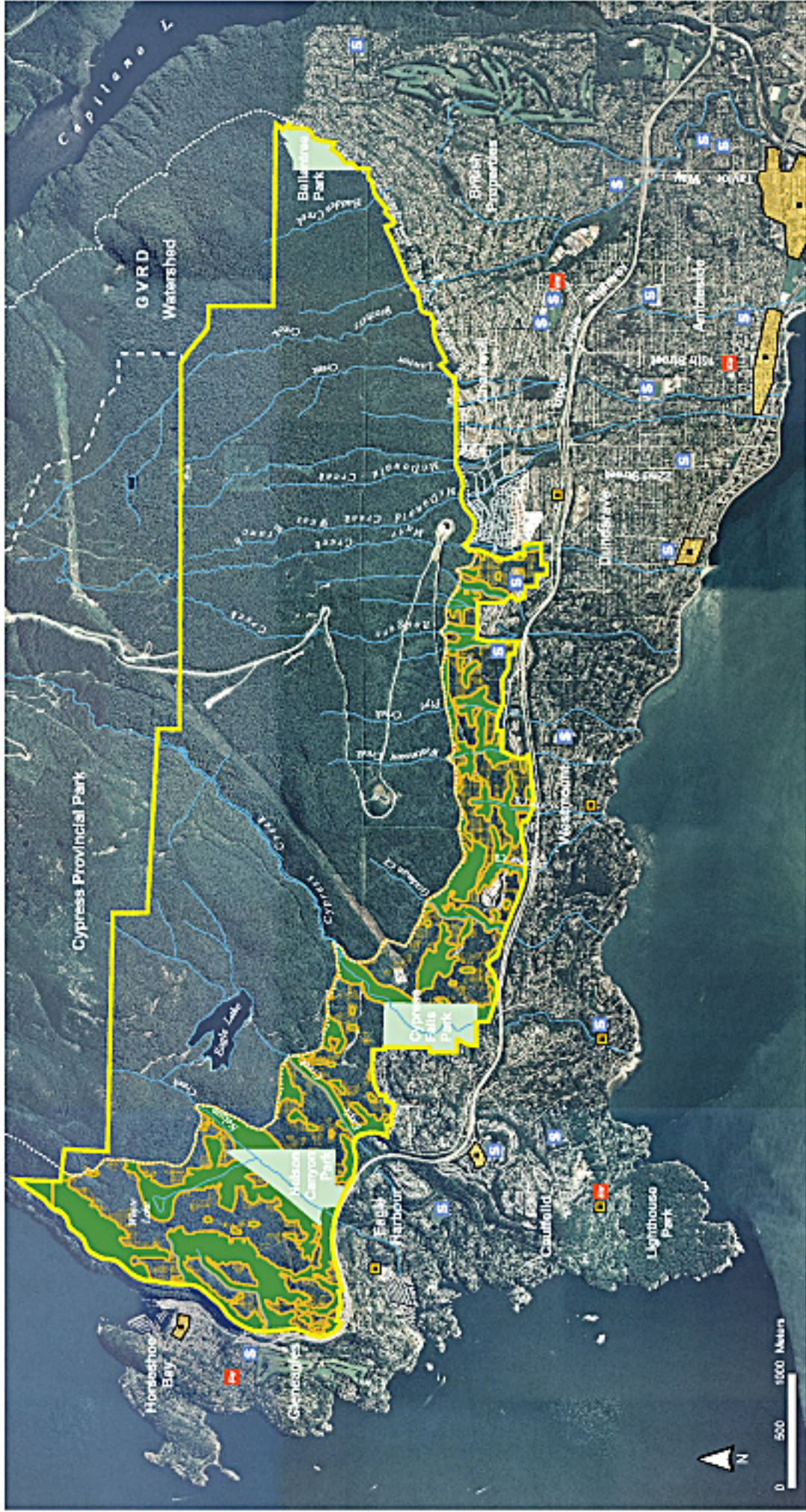
Development Assessment Below 1,200' Elevation

Upper Lands Report



Legend

- Study Area Boundary
- GVRD Watershed Boundary
- 1,200' Contour
- Outside Area



Legend

- Study Area Boundary
- GVRD Watershed Boundary
- 1,200' Contour
- Freeway
- Commercial
- School
- Suitable Area
- Difficult Terrain Area
- Environmentally Excluded Area

Areas Below 1,200' Elevation

- Parks - 107 Acres
- Creek Areas - 203 Acres
- 150+ Forest - 40 Acres
- Slopes >50% - 438 Acres
- Slopes 35-50% - 883 Acres
- Slopes 0-35% - 519 Acres

6.4 Scenario #1 - Status Quo

The Status Quo scenario is based on policies developed in the 1970's and contained in the 1988 OCP that limits development to below the 1200 contour, and in Areas 1 & 2 to an overall density of 2.5 dwelling units per acre. This Scenario assumes the 2.5 dwelling unit per acre density would be extended to include Area 3.

Density Implications

- maintains and extends current policy allowing a density of 2.5 units per acre
- maintains requirement for a “paper” subdivision based upon single family lots to prove out density
- maintains policy to allow density transfers within, but not between, the areas

Land Use Policies

- maintains 1200 foot elevation limit for development
- maintains policy to acquire 3 major park sites primarily through Development Cost Charges which, over time, fail to keep up with actual land values
- protects creeks and limits development in hazardous condition areas
- introduces policy to designate 3 elementary school sites

Assessment of Main Attributes in Terms of Major Community Objectives

Attributes	Comments
Major parks	Limited acreage unless significant public expenditure
Local parks	Minimal area – no incentive to dedicate greater park area than the minimum 5%
Creeks	Mainly private - no incentive to dedicate creek areas as public lands
Steep lands	Avoidance mainly related to engineering hazard
Sensitive areas	Limited incentive to save, and limited tools to acquire or protect
Diversity and flexibility of housing	Strong pressure to create single family lots, although the increasingly steep remaining lands will result in greater housing variety
Housing needs	Limited diversity
Neighbourhood focal points	No overall plan to accomplish and the density implications discourage concentration
Appearance from afar	Mainly single family houses, forested “stripes” along creek corridors
Ability to adapt to terrain variation	Development Permit review of single family lots and building siting intended to minimize impact of development on steep slopes
Trails and roads	Extensive road system for low density lots. Limited ability to negotiate trails requiring park land dedication
Acquisition of schools sites	Public expenditure required
Lands above 1200'	Private land unresolved. Limited acquisition of small parcels. Public lands are proposed for preservation

Assessment in Relation to the Four Principles

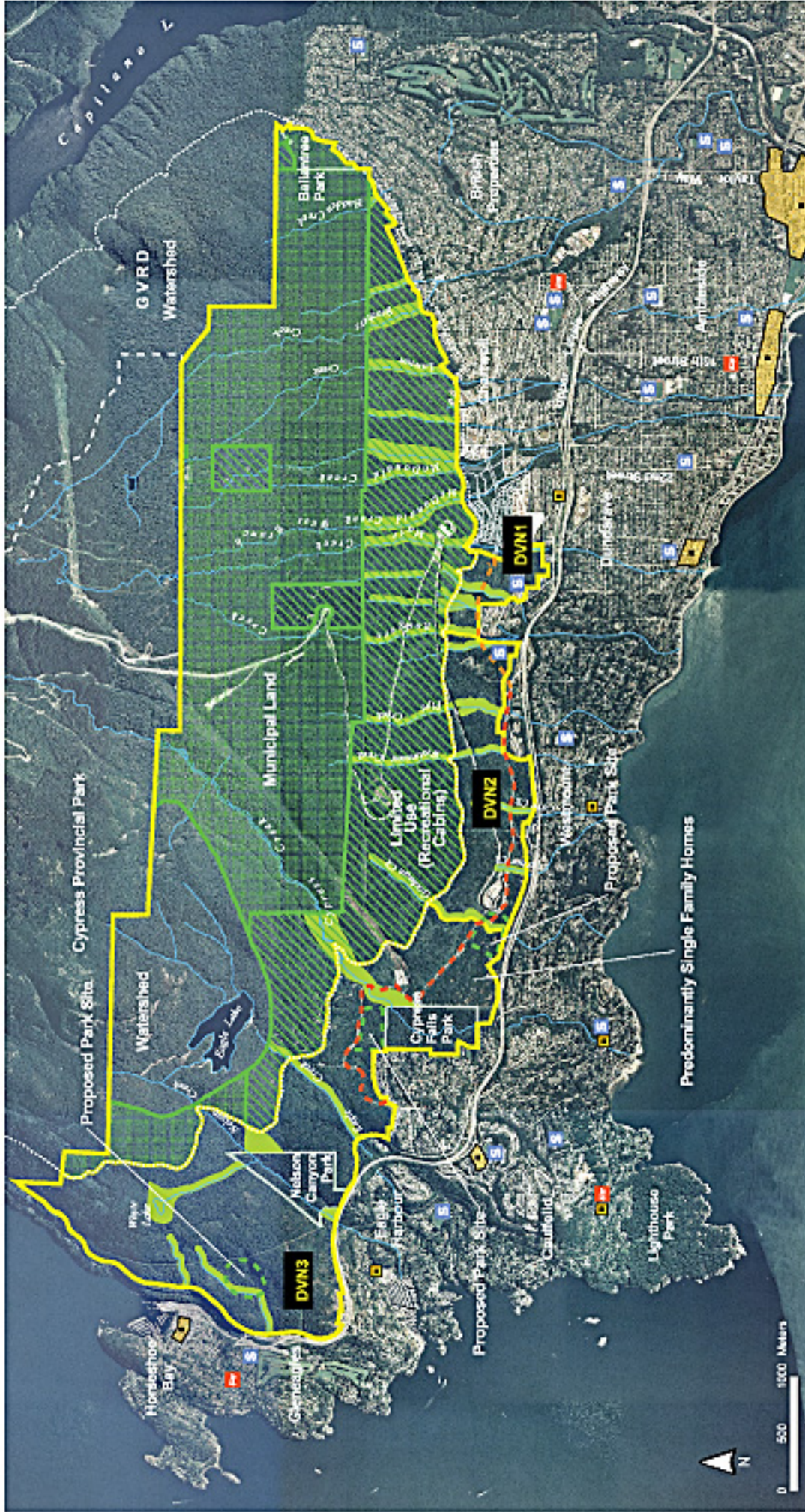
Principle	Assessment
Create a strong sense of community	Not supportive - lack of an overall plan to create focal points and sense of place
Encourage a diverse community	Not supportive - primarily single family, larger homes at exclusive prices; little provision for seniors or more modest homes for young families and empty nesters
Establish a sensitivity and connection to the natural environment and mountain qualities	Minimal support - few tools to acquire land or to encourage open space by transfer of density and amenity bonuses
Focus on environmental and economic sustainability	Minimal support - no policies for road/transit design, trail incentives, density around service nodes.

Assessment in Relation to Developable Lands

The Status Quo is based upon 2.5 units per gross acre. This is consistent with the other two scenarios to allow for a comparison of the advantages and disadvantages of different approaches to planning the Upper Lands.

The main element of Status Quo is the retention of a “paper subdivision” as opposed to an environmental analysis in determining site buildability and building type. In a “paper subdivision”, single family lots are the basis for planning, there is no authority to acquire private land and the creeks and steep areas remain as part of the lots in private ownership. Assuming that all of the land is available for either lot area or building, net buildable area will include almost the entire site. In addition, there is no incentive to transfer density off potential park sites or school sites, since the “paper subdivision” financially encourages them to be developed as single family lots.

While the unit per acre density may seem lower than Scenarios 2 & 3, it is because more land is included in private ownership and the amount of public and protected green space is reduced. Some restrictions on building would continue on steep sites and very difficult terrain. Total building square footage and average unit size would be greater. The developer is encouraged to maximize the amount of land used.



Status Quo

Upper Lands Report

west VANCOUVER

Legend

- Proposed Park
- 1,000' Connector
- 1,000' Connector
- 1,000' Connector
- 30m Clear Area
- Predominantly Single Family Homes
- Limited Use (Recreational Cabins)
- Municipal Land
- Study Area Boundary
- GVRD Watershed Boundary
- 1,000' Connector
- Freeway
- Commercial
- School
- Developing Neighbourhood

DWN Developing Neighbourhood

6.5 Scenario #2 - Community Building Principles Below 1200-foot Elevation

Scenario #2 alters policies and regulations to better meet the community building principles and objectives. The four community building principles are:

1. create a strong sense of community,
2. encourage a diverse community,
3. establish a sensitivity and connection to the natural environment and mountain qualities, and
4. focus on environmental and economic sustainability.

This scenario does so by establishing community focal points, incentives for obtaining school and major park sites and for protecting environmentally sensitive areas. More importantly, it is intended to provide Council with additional tools to achieve both environmental and neighbourhood quality benefits, particularly with respect to density controls. Planning would be focused upon environmental considerations and on achieving a strong sense of community in identifiable neighbourhoods. Broad geographic planning areas would be based on the Upper Lands natural boundaries as illustrated in the land use scenarios.

Density Implications

- provides overall density estimates based upon 2.5 units per acre
- encourages density transfers to achieve environmental and housing goals (unrestricted by area)
- defines more restricted “buildable areas” based upon slope and environment
- reduces building square footage on the more restricted lands
- allows for flexibility and bonusing to obtain public lands for schools, trails and parks

Land Use Policies

- maintains 1200 foot elevation limit for development
- maintains policy to acquire 3 major park sites, but improves methods for public acquisition because the sites can be acquired through combination of Development Cost Charges, density transfers, amenity bonusing without significant public expenditure
- introduces policy and means to acquire school sites
- enhances policies to protect the natural environment (including creek setback areas) and development from hazardous conditions
- introduces convenience commercial areas

Assessment of Main Attributes in Terms of Major Community Objectives

Attributes	Comments
Major parks	Meets identified needs without significant public expenditures
Local parks	Greater potential to obtain appropriate park area
Creeks	Maximizes creek preservation area through incentives for dedication
Steep lands	Avoidance related to environmental policy plus engineering hazard
Sensitive areas	More protection if transfer and bonus tools used to acquire or protect
Diversity and flexibility of housing	More variety
Housing needs	Greater variety of housing forms
Neighbourhood focal points	Provides an overall plan to use in planning. Incentive to consider some concentration around a central place
Appearance from afar	More green - green buffers with a mix of single family and more compact forms
Ability to adapt to terrain variation	Encourages more compact housing layouts and types on difficult terrain, and adjusts square footage downwards in such conditions
Trails and roads	More trails and open space linkages
Acquisition of schools sites	Can better negotiate acquisition by allowing density transfer & bonusing
Lands above 1200'	Equivalent to Scenario 1

Assessment in Relation to the Four Principles

Principle	Assessment
Create a strong sense of community	Supportive - overall plan to create focal points and sense of place.
Encourage a diverse community	Supportive - provision for encouraging forms of housing that may be more suitable for seniors, young families and empty nesters.
Establish a sensitivity and connection to the natural environment and mountain qualities	Supportive - tools to acquire land or to encourage open space by transfer of density and amenity bonuses.
Focus on environmental and economic sustainability	Supportive - policies for road, trail & transit design plus higher density around service nodes. Elements of sustainability but somewhat limited by low density and steep terrain.

Assessment in Relation to Developable Lands

Unlike Scenario #1, the land most suitable for development is identified through an environmental and terrain analysis. The number of units remains the same at 4,000, but the areas where they may be located and the resulting form and unit size would vary with terrain and environmental constraints. Because the unit number is based upon gross acres, there is no disincentive to transfer creeks into public ownership and provide park and school sites. The analysis represented in the scenario map indicate that the net land suitable for development would be closer to 900 acres, with about 2/3 under 35% slope. If schools and major parks are excluded, development might occur on about 800 acres, including the private open space.

6.6 Scenario #3 - Community Building Principles Including Certain Lands Above 1200-foot Elevation

Scenario #3 differs from Scenario #2 in one significant aspect, it may allow development on certain lands above the 1200 foot elevation, in exchange for public ownership of environmentally sensitive lands elsewhere. This land could be in the area below the 1200 foot elevation on lands that would otherwise be developed or it could include private lands above the 1200 foot that the community wishes to acquire and protect as public lands. The additional preserved lands are not shown on the Map. The areas identified as possible for development above 1200 feet are limited to those that are topographically suitable and that do not require access through existing neighbourhoods.

Density Implications

(in addition to those listed in Scenario #2)

- could affect pattern of development, but overall density should be similar to other scenarios

Land Use Policies

(in addition to those listed in Scenario #2)

- introduces policy that would generally maintain 1200 foot elevation limit for development, but allow consideration of exchange in limited areas.

Assessment of Main Attributes in Terms of Major Community Objectives
(in addition to those listed in Scenario #2)

Attributes	Comments
Major Parks	Forested lands – could allow for public acquisition of privately held lands above 1200’ for preservation as forest park
Sensitive Areas	More protection – could allow for public acquisition of environmentally sensitive or other critical areas above and below 1200’
Appearance from Afar	Forest edge at 1200 foot would be more natural (not straight edge, horizontal line)
Ability to adapt to terrain	May allow for preservation of additional difficult terrain below 1200’ in exchange for development above 1200’
Private lands above the 1200 foot elevation	Mostly unresolved - limited acquisition of small parcels. Some larger areas may be acquired in exchange for limited development.

Assessment in Relation to the Four Principles
(in addition to those listed in Scenario #2)

Principle	Assessment
Focus on environmental and economic sustainability	Allows for acquisition of maximum acreage for environmental protection Development at higher levels could be less favorable due to snow clearing, location above fog/cloud line

Assessment in Relation to Developable Lands

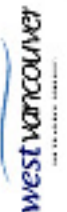
The total number of dwelling units remains at 4,000. However, more sensitive lands below the 1200 foot elevation that would otherwise be developed could be preserved by allowing development of those lands shown above the 1,200 foot elevation. If this occurred, the location of development would change but the net developable land would remain unchanged from Scenario #2. Alternatively, with a small increase in the number of overall dwellings, it may be possible to acquire private lands above the 1200 foot elevation for public forest park. If this were to occur, the total number of dwellings and net developable area may increase somewhat.

A primary community concern would be whether a precedent would be set by allowing limited development above the 1200 foot elevation. It is proposed that this only be considered if there is a resulting major public environmental or open space benefit.



Implementation of Community Building Principles with Greater Environmental Emphasis

Upper Lands Report



- Limited Use or Attempt to Acquire in Whole or Part
- Proposed Forest Park

- Areas with > 40% Slope within Possible Development Area
- John's Creek Area
- Proposed Park
- Difficult Terrain Area
- Development Area
- Municipal District

- ### Legend
- Study Area Boundary
 - GVRD Watershed Boundary
 - 1,200' Contour
 - Freeway
 - Commercial
 - School
 - School & Community Site
 - 1,000' Contour
 - Phase 2 - 1,000' Contour

7.0 Summary of Directions

Regional Context

- Provide for the capacity consistent with the *Livable Region Strategic Plan*.
- Consider the four regional strategies in preparation of development scenarios.
- Confirm the green zone boundary following adoption of an amended OCP that reflects the directions of this Report.

Cabin Areas

- Retain current policies related to maintenance of cabins on public lands.
- Reconfirm Council's policy to purchase vacant private lots at assessed value as they become available.
- Limit new cabin development to large, privately owned lands.

Development Applications

- Consider specific development proposals for sites within the Upper Lands concurrent with the OCP and Upper Lands reviews provided that the proposal is generally consistent with the basic principles and directions suggested in this Report and is determined to be of significant community benefit.

Creeks

- Continue to use creeks to form the framework for the provision of open space in neighbourhood design.
- Obtain public ownership of creek areas wherever possible to maximize retention in a natural state or ensure protection by regulation, legal agreements and enforcement.
- Ensure that creek protection areas are consistent with, or exceed, the Provincial/Federal requirements.
- Request interpretation of creek protection regulations for the mountain environment and translate this information into policies specific to West Vancouver.

Forests

- Preserve the major portion of municipally owned lands above the 1200 foot elevation as forest.
- Adopt a Tree Cutting Permit Bylaw to restrict the cutting of trees in forest areas and require a tree management plan in developing neighbourhoods.
- Require a general tree survey and forest assessment in any area development plan.

- Provide for tree replacement as a desirable alternative to retention where supported by proper arboricultural principles.
- Phase tree clearing at the time of development to minimize the amount of tree loss at any one time.
- Promote tree retention through preservation of substantive stands.
- Consider the impact of trees on views both into and out from the neighbourhood.

Other Natural Features

- Require a comprehensive environmental assessment to identify unusual or unique natural features in area development plans.
- Depending upon the public and ecological importance of such features, incorporate protection of identified features in the detailed development plans.

Public Views and Vistas

- Consider opportunities for views into and out of an area, from public and private areas, in area development plans.

Views of West Vancouver

- Include a view analysis from important public locations within West Vancouver and Vancouver in area development plans.
- Identify areas that should not be subject to urban development due to high visual environmental values.
- Promote adoption of design guidelines for developments that minimize view impacts from afar.
- Locate development below ridge lines or away from prominent features, unless the proposal is designed specifically for such siting (e.g. a monument)

Transportation

- Continue provision for a “1000 foot connector” as a third east-west route across the community.
- Give careful consideration to meeting the needs of people with limited mobility in steeper areas.
- Consider transit in street and neighbourhood layout by creating circuits and community destinations.
- Evaluate design of local roads and boulevard treatments to minimize potential visual impact on slopes and create aesthetically pleasing streets.
- Minimize grade change for the 1000 foot connector to facilitate bicycle use.

Servicing

- Open Nelson Canyon to permit greater public access.
- Consider drainage requirements in detailed development plans, providing for drainage away from structures and retaining walls.
- Minimize the amount of site grading and hard surfaces in steeply sloping areas.
- Require siltation control measures during construction and revegetation of disturbed areas immediately following completion of construction to avoid siltation during storm events.

Forests, Parks, Trails & Community Facilities

- Recognize the long term importance of trails for recreational purposes.
- Minimize the potential environmental impacts of trail use.
- Continue to protect the municipally owned forest lands and enhance their recreational opportunities.
- Work with other property owners for the joint use of public trails on private lands in the forested areas.
- Continue to require three major sites for active park purposes and to maintain future capacity for other possible community uses.
- Continue to require local park sites in new neighborhoods.
- Encourage private and non-profit community facilities in the mix of facilities on municipal and private lands (i.e. favourable consideration upon application).

School Sites

- In addition to the elementary school site recently acquired in the Whitby Estates area, provide for 2 additional elementary school sites.
- Discuss with the School Board the need for, and means to accommodate, the equivalent of one upper school site on existing school sites or in the Cypress Bowl Road area.
- Consider a variety of means to acquire school sites at no public financial cost such as transfer of density, land exchange, and rezoning.
- Locate sites and design buildings so that the schools serve as neighbourhood focal points.

Commercial Development

- Make provision for a local convenience centre in the area just west of the Cypress Bowl Road adjacent to the proposed major park and elementary school sites.
- Make provision for a local convenience space in the area above Horseshoe Bay.
- Provide services for home occupations.
- Maintain requirements for a convenience store in the Panorama Centre (Salmon House) at the entry to Folkestone Way.

Population Projections and Estimated Housing Demand

- Assume continued slow growth rates in accordance with past trends. Encourage greater variety of dwelling types and sizes to meet both projected housing demand and environmental/terrain requirements.

DEVELOPMENT GUIDELINES

Building on Slopes

Require slope analysis prior to preparation of an area development plan.

Employ “slope-friendly” housing forms and site development techniques in steeper areas. Restrict development of “difficult terrain” – areas having slopes greater than 35% - to minimize development impacts. Leave the natural landscape alone whenever possible in this terrain.

Avoid development of lands having slopes in excess of 50%.

Minimize the amount of site grading required for housing on steeper sites

Proposed Density Strategy

- Provide an overall estimate or target for dwelling units in the Upper Lands (say 4,000), with some adjustment to meet the objectives approved by Council for public facilities, major parks and housing variety.
- Use environmental principles regarding creeks and slope to restrict lands to be developed (and determine net developable areas).
- Relate building area (square footage) to net developable area to prevent over development and do so in a manner that can encourage a variety of dwelling types.
- Allow for transfer of density and density bonus if approved by Council to achieve further environmental and land use objectives (e.g. publicly owned green space, school and large park site acquisition, protection of developable but environmentally sensitive land).
- Ensure there is a general relation between the housing densities and the impact on the land. As net density increases the form of housing should become more compact and the average size of dwelling should decrease.
- Allow flexibility in options for various housing types and unit sizes so that the community building principles can be achieved (i.e. strong sense of community, diverse community, sensitivity to environment) under varying market conditions.

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