

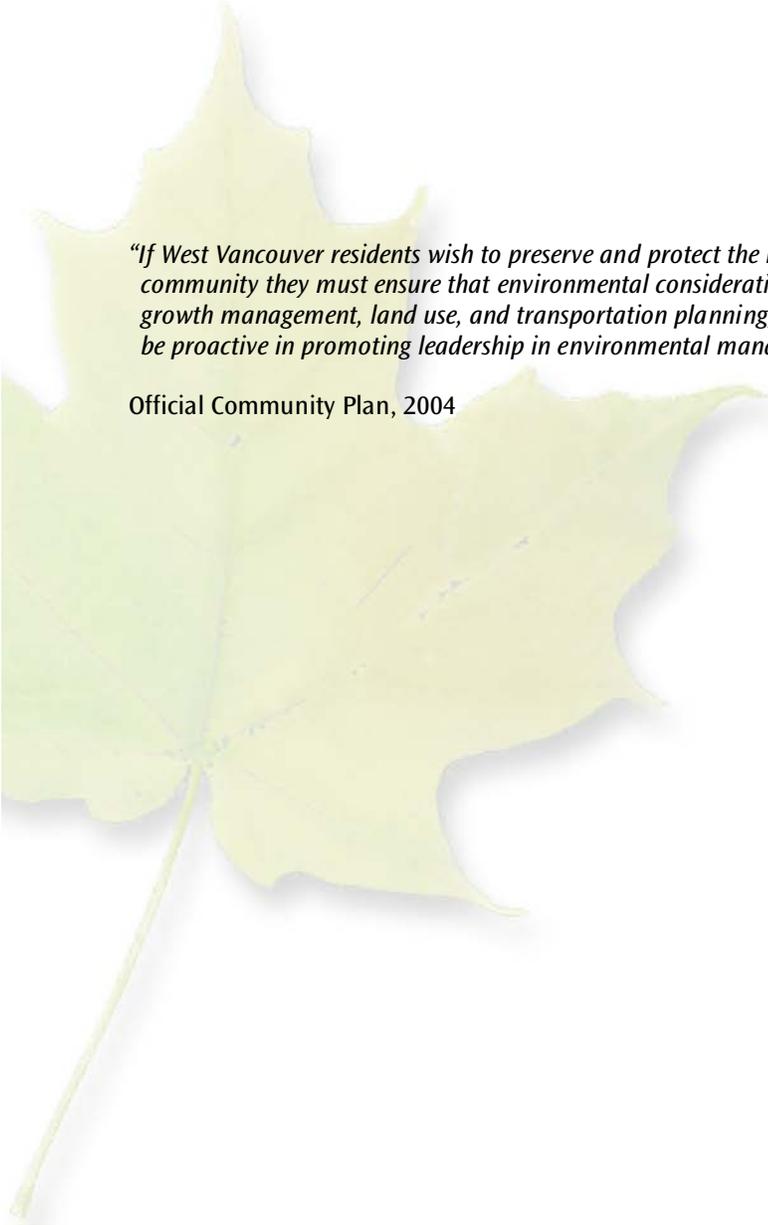
*west vancouver*

# environmental strategy

*Moving towards a healthy  
and sustainable community*

May 2005





*“If West Vancouver residents wish to preserve and protect the natural attributes of the community they must ensure that environmental considerations are an integral part of growth management, land use, and transportation planning, and the municipality must be proactive in promoting leadership in environmental management and best practices.”*

Official Community Plan, 2004

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## **Environmental Strategy Work Plan**

(Attached as separate document)

# *Sustainability, West Vancouver and the Official Community Plan*

The West Vancouver Official Community Plan is the charter for our future. The Plan defines community directions, informs the community and guides Council.

The concept of sustainability is integral to the Official Community Plan.

The Official Community Plan defines sustainability as the act of managing environmental, social and economic impacts so that the ecological and community systems upon which a community depends are not depleted or threatened.



*Sustainability is described as having several key integrated and interdependent parts. A healthy environment is a necessary prerequisite for a healthy community and economy.*

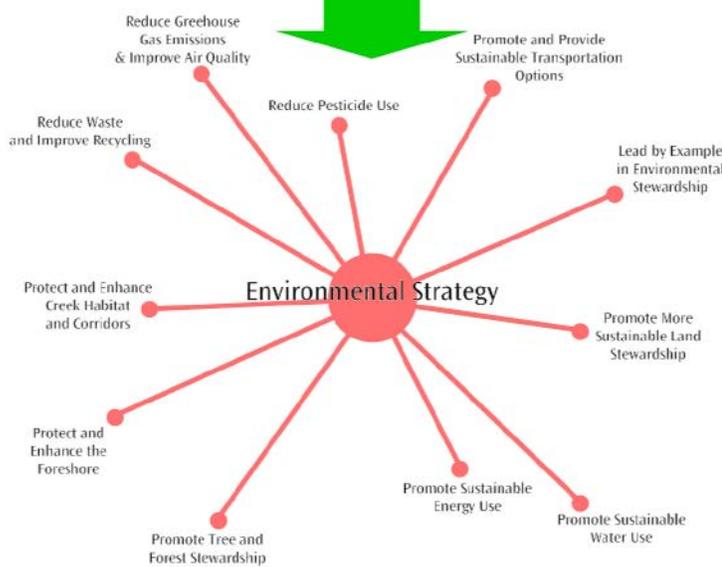
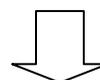
Recognizing that a healthy community depends on a healthy environment, the Environmental Strategy is designed to promote environmental stewardship by protecting our natural resources and preserving ecosystems while recognizing the importance of interconnectedness with social and economic imperatives.

# Environmental Strategy: A Framework for Action



A key principle in the Official Community Plan is:

*Principle 7: Promote environmental stewardship by protecting our natural resources and preserving ecosystems through the development of an environmental strategy.*



The **Environmental Strategy** charts a course for how the environmental policies of the Official Community Plan will be put into practice.

The Environmental Strategy:

- informs people about environmental initiatives and needs;
- identifies and establishes actions for implementation, including review and development of bylaws and regulations;
- focuses thought and processes on issues related to the environment;
- sets priorities;
- establishes a process to monitor progress in achieving environmental goals; and
- coordinates resources in achieving environmental objectives.

## *Tracking Progress – Reporting*



As the District works towards further protecting and enhancing our natural environment, we will critically analyze “how we are doing” in meeting our objectives. We will also celebrate progress as we move towards a more sustainable community.

As West Vancouver strives to meet our environmental objectives through the implementation of this Strategy, we will track our progress, reporting to both Council and the public. We will report on the status of the Recommended Actions and we will consider developing indicators to understand broader environmental trends throughout the community.

In terms of developing indicators, West Vancouver does not have to start from the beginning. Several groups, including other municipalities, have created indicators that are very useful in a variety of contexts.<sup>1</sup> West Vancouver can borrow information and ideas from other groups to facilitate the development of our own indicators. As well, it is often times useful to use the same indicators as other jurisdictions for practical and necessary comparison.

Further, the Strategy is intended as a dynamic document - it can be reviewed and updated to reflect evolving knowledge, circumstances and priorities in the ongoing move towards a more sustainable community.

# ***Guiding Principles***



These principles provided higher-level guidance during the formulation of the Environmental Strategy.

## **Adopt An Integrated, Long-Term Approach**

District policies will recognize the inextricable connections between healthy ecosystems and healthy communities. Future action will consider the long-term impacts of decision-making.

## **Be A Leader**

In making decisions, the District of West Vancouver will endeavour to be a leader in the stewardship of our environment.

## **Coordinate and Cooperate Within the Municipal Structure**

District staff in various departments will work together to address environmental issues, and action on environmental issues will be coordinated and consistent.

## **Develop a Thorough Understanding**

The District will endeavour to develop a thorough understanding of West Vancouver's natural environment.

## **Employ the Precautionary Principle**

The primary element of the Precautionary Principle is the avoidance of risk in the face of uncertainty. If there is ambiguity or uncertainty about the environmental impact of a decision, a cautionary approach will be taken until it can be reasonably assured that there will not be unacceptable or irreversible impacts.

## **Be Adaptive and Responsive**

We will continually monitor progress towards our objectives and carry out evaluations and performance audits. We will be adaptive and responsive to changing circumstances, knowledge and priorities.

## **Recognize Excellence**

Community stewardship, volunteerism and excellence in development, design, and construction that protect and enhance the natural environment will be recognized and celebrated.

# Objective 1: *Lead by Example in Environmental Stewardship*

## Overview

The District provides many facilities, services and operations that contribute to the physical and social well being of our community. However, the provision of recreational facilities, wastewater treatment, water supply, solid waste disposal and other infrastructure can have a significant impact on the environment.

By furthering environmental stewardship in the provision of our operations, facilities and services, the District will be able to mitigate impacts on the environment, enhance our community and demonstrate leadership. We can achieve increased stewardship through several initiatives including the development and implementation of design and operation standards, the implementation of Environmental Management Systems, improved practices and more sustainable purchasing choices. Further, stewardship and leadership can be promoted throughout the community through the provision of an Environmental Awards Program.

The District has already taken important steps in operationalizing environmental stewardship. New facilities such as the Civic Centre and Gleneagles Community Centre make use of green and efficient energy sources. Facilities for cycling commuters have been provided at Municipal Hall and District crews are working to implement environmentally sensitive work practices.

Continuously working to improve the way in which the District does business is an important step in protecting and enhancing our natural environment.

## Issue Identification

- Ensuring that the District is an environmental leader in the way in which we do business

## Recommended Actions

- 1.1. Develop and implement high performance design and operation standards (i.e.: LEED, Natural Step) for major new and upgraded District facilities, utilities and services
- 1.2. Develop and implement a Environmental Management System for Blue Bus
- 1.3. Educate staff on methods to reduce environmental impacts in the provision of facilities, utilities and services
- 1.4. Integrate sustainability into Purchasing Policy
- 1.5. Develop and implement a District Environmental Awards Program

### Link to the Official Community Plan

*BFA 1: Promote superior environmental design in new development.*

*BF-A 2: Demonstrate municipal leadership by providing a commitment to the environment and sustainability practices.*

*NE 12: Establish comprehensive environmental policies, bylaws, regulations, and practices.*

# Objective 2: Promote More Sustainable Land Stewardship

## Overview

*“The environment is where we all live, and development is what we all do in attempting to improve our lot within that abode. The two are inseparable.” – Gro Harlem Brundtland*

Within the context of our existing and future land use patterns as outlined in the Official Community Plan, many opportunities exist to promote and advance more sustainable land stewardship. Further, new policies and practices, based on “best management practices” are continuously proposed to help us reach our stewardship objectives. Continuing to work with the public, developing and ensuring implementation of best practices in new and existing neighbourhoods, protecting environmentally sensitive areas and preserving our land base and natural biodiversity are all important steps in moving towards more sustainable land stewardship.

In general, patterns of land use in West Vancouver can be characterized in three ways:

1. Existing Neighbourhoods
2. Upper Lands - Limited Use and Recreation
3. Upper Lands - Future Neighbourhoods

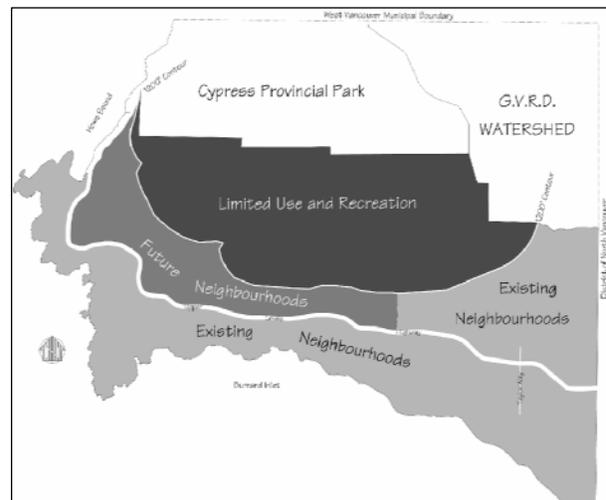
### Existing Neighbourhoods

The existing residential neighbourhoods of West Vancouver are relatively low density, generally defined by their pattern and history of development, landscape character, natural features, local schools, and neighbourhood shopping areas. The commercial areas include the Ambleside town centre, the Park Royal regional shopping centre and smaller neighbourhood and local commercial areas. Given our current zoning, the majority of our existing neighbourhoods are “built out.”

Within the context of our established densities and working with our partners in the community, there are many opportunities to develop and implement various policies and practices to promote sustainable land stewardship at a site specific or neighbourhood level. For example, the implementation of sediment and erosion control plans during construction and the reduction of hard, impermeable surfacing can contribute to land stewardship.

### Link to the Official Community Plan

- BF-A 1: Promote superior environmental design in new development.
- NE-2: Minimize environmental and visual aspects of new development through design, construction and site restoration requirements.
- G 1: Enhance communication between residents, businesses, organizations and the Municipal Council.
- NE-6: Recognize and manage environmentally sensitive areas
- UL-6: Require Area Development Plans in order to establish future land use and development objectives for neighbourhoods, and to create more detailed Development Permit guidelines for subsequent implementation and subdivision designs
- UL 10: Consider preservation of Municipal Lands above 1200 foot elevation as public forest and limited recreation areas



### **Upper Lands - Limited Use and Recreation**

Protecting our natural land base is an important component of operationalizing land use stewardship. Extensive areas of undeveloped land above the Upper Levels Highway will continue to be preserved in a natural forested state for watershed, open space, limited use and recreation.

### **Upper Lands - Future Neighbourhoods**

Areas of forested private land below the 1200' elevation are to be developed over time as attractive and compact neighbourhoods within a framework of significant open space features. These Future Neighbourhoods, representing approximately 7% of the total land area in the District, will be primarily comprised of homes, parks and protected creeks and greenbelts. Development will be guided by the Official Community Plan's policies, including the implementation of Area Development Plans, that are based on environmental and land stewardship best practices.

## **Issue Identification**

- Protection and enhancement of the environment in existing, developed neighbourhoods
- Ensuring best practices are applied during development and in day to day activities
- Protection of publicly owned wilderness lands above the 1200' contour
- Environmentally sensitive community development of private lands below the 1200' contour

## **Recommended Actions**

- 2.1. Update, develop and provide environmental guidelines, best practices and policies for residents, builders and developers
- 2.2. Ensure environmental policies and regulations are applied to development applications
- 2.3. Identify, manage, protect and seek public ownership of environmentally sensitive lands
- 2.4. Develop and implement Area Development Plans based on environmental and land use stewardship best practices
- 2.5. Identify strategies to best protect and control activities on municipal land above the 1200' contour

# Objective 3: Protect and Enhance Creek Habitat and Corridors

## Overview

There are numerous creeks and watercourses flowing through West Vancouver. In addition to providing a multitude of community benefits, creeks provide valuable habitat for fish and wildlife and are integral to West Vancouver's ecosystems. Several important aquatic and terrestrial species rely on healthy creek habitat.

Fish populations often act as useful measures of the health of a creek.<sup>2</sup> While development pressures have impacted the productive capacity of many of West Vancouver's creeks, several do host salmon spawning - most noticeably Brothers, Hadden, Rogers, Eagle and McDonald. Cutthroat trout also have a resident population in many of the streams.

A creek corridor is determined through Municipal assessment and the application of Provincial and Federal regulations for streamside setbacks, including on-site evaluation by an environmental consultant. It includes the established 100 year flood line of the creek and lands which the Municipality considers to be subject to hazardous conditions, directly associated with the creek environment and particularly sensitive to any potential adjacent development or otherwise an integral part of the corridor.

In the late 1970s, a policy to ensure municipally controlled creek protection areas was established to address flooding concerns. This policy was augmented in 1993 by the establishment of requirements to establish creek preservation areas, aimed at further protecting creek corridors.

As we move forward with protecting our creek resources, the District needs to ensure that:

- appropriate setbacks are provided to adequately protect habitat;
- the deposition of deleterious substances into the District's streams and drainage system are prohibited;
- existing open watercourses are maintained and protected; and
- a mechanism exists to require Sediment Control Plans as part of the development approval process.

## Creeks and Stormwater Management

Conventional stormwater management standards require that rain falling on impermeable surfaces be drained into pipes and put directly into watercourses and creeks. This runoff, often polluted, is deposited into streams at high velocities and volumes, resulting in streambed scouring and uneven base flows.<sup>3</sup>

Sustainable practices in stormwater management encourage the infiltration of precipitation into the ground, where it is filtered naturally before reaching creeks. This process regulates the speed at which

### Link to the Official Community Plan

*NE 1: Provide for the protection of creek corridors and other environmentally sensitive lands throughout the municipality.*

*NE 6: Recognize and manage environmentally sensitive areas.*

*P 3: Use creek corridors as a framework for providing open space and sustain creeks in their natural state.*

*NE 8: Integrate storm water management practices with community planning.*

*U 5: Upgrade and manage the storm water and sanitary sewerage collection system to reduce environmental impacts and optimize municipal costs.*

*U 6: Design storm water management and long-term flood control measures to carry out best environmental practices.*

water enters the creek system, effectively replicating the forest-land hydrology that predated development.<sup>4</sup>

The Greater Vancouver Regional District, under the Liquid Waste Management Plan, requires that member municipalities formulate integrated stormwater management plans (ISMP) for each of their watersheds. Currently, District staff are working together and with an outside consultant to further develop and implement an ISMP for McDonald and Lawson Creeks.<sup>5</sup>

Under the terms of reference of the Liquid Waste Management Plan, the District must complete ISMPs for all of our watersheds over the next ten years. Because Lawson and McDonald Creeks have characteristics that are typical for West Vancouver's watersheds, it is hoped that the lessons learned in this plan will be transferable to other areas in the District.

## Issue Identification

- Culverted and channelized watercourses
- Pollution
- Sedimentation
- Habitat protection for fish and wildlife
- Geotechnical, environmental and flood protection concerns
- Property protection
- Resident safety

## Recommended Actions

- 3.1. Develop, update and implement revised bylaws to protect creeks, including designating creek corridors as mandatory Development Permit Areas
- 3.2. Continue to cooperate with the Federal and the Provincial Governments on creek protection initiatives
- 3.3. Implement the recommendations of the Lawson and McDonald ISMP and apply the framework to other watersheds in West Vancouver

# Objective 4: Promote Sustainable Water Use

## Overview

### Water Supply

While West Vancouver is located within a rainforest, given the rate of development, higher standards for water quality, limits in water treatment and storage capacity and high per capita water use, meeting West Vancouver's demand for high quality water could become challenging.

Currently, 60% of West Vancouver's water comes from the Greater Vancouver Regional District (GVRD). The population within the GVRD has been projected to increase by 78% between 1991 and 2041, and a reliable supply of high quality water is needed to meet the long-term demands.<sup>6</sup> The availability of water supplies depends on climatic conditions (for example, temperature, snow-pack, precipitation), and studies have indicated a trend towards global warming, which may affect the future climatic pattern.<sup>7</sup> As a result of these circumstances, a future water deficit is projected, particularly during the high demand summer season.

**Link to the Official Community Plan**

*NE 6: Recognize and manage environmentally sensitive areas.*

*U 4: Upgrade water supply, treatment and distribution, and promote conservation.*

At present, the District of West Vancouver is serviced by three water sources:

1. Capilano Lake – Operated by the GVRD, supplies 60% of West Vancouver's water to homes in the eastern British Properties and below the highway west to McKechnie Park.
2. Eagle Lake – supplies 40% of West Vancouver's water in the western region and the area above the highway east to the British Properties.
3. Montizambert Creek – supplies water to the Sunset Point area (approximately 50 homes).

In June 2002, Council approved the Eagle Lake Development Plan, which aims to maximize access to Eagle Lake water and provide a more secure supply of high quality drinking water in the most environmentally and economically sound way.

The Development Plan is intended to deliver more water from Eagle Lake to the taps of District residents – an increase from 30 percent of households at present to more than 50 percent. As the water can be distributed downhill by gravity, rather than GVRD-supplied water that is pumped uphill, there will be a considerable savings in energy use and costs. The water will be treated to a higher level of filtration through the use of low-pressure membrane filtration technology that has been successfully pilot-tested at Eagle Lake over the last year.

### Water Availability and Use

Seventy percent of West Vancouver's precipitation falls in the fall and winter. Yet the greatest proportion of water consumption happens in the summer. On average, 50 percent more water is used in July than in December.

On average, West Vancouver uses 34 million litres of water per day.

## **Water Quality**

Maintaining water quality is a primary concern for West Vancouver. The protection of watersheds is necessary for maintaining water quality.

Before it reaches our taps, all water is treated and chlorinated. Pre-treated GVRD water enters the District's system directly; Eagle Lake and Montizambert Creek water is stored and treated before entering the system. Regular samples are taken at the source and throughout the system and tested to ensure water quality and safety is maintained at the highest levels.

The pipes in the distribution system are maintained and flushed every year and a construction program is in place to renew pipes in a timely fashion. This ensures that high quality water is maintained and reduces the cost and inconvenience of water main breaks.

Generally, West Vancouver's water is of high quality. However, elevated turbidity levels can occur in water taken from Eagle Lake. As turbidity increases in drinking water, there is a slightly increased risk of gastrointestinal illness.

## **Water Services and Costs**

West Vancouver is faced with high costs of infrastructure for storing, treating and moving water.<sup>8</sup> The relatively low-density residential areas and steep topography result in high municipal costs for delivering water to residents and businesses. Costs associated with maintaining and expanding sewage facilities continue to increase and extracting water from local sources can cause significant environmental degradation.

The water distribution system in West Vancouver consists of 300 km of water mains, 23 reservoirs, 10 pump stations, 1200 hydrants and more than 12,000 individual service connections.

## **Issue Identification**

- Ensure safe, reliable long term water source
- Maintain the environmental integrity of water sources and distribution systems
- Continuance of Water Conservation Program

## **Recommended Actions**

- 4.1. Continue to develop and implement a Water Conservation Strategy<sup>9</sup>
- 4.2. Continue to monitor water to ensure that water meets high quality standards

# Objective 5: Promote Tree and Forest Stewardship

## Overview

We are blessed in West Vancouver with productive soils and a climate that is conducive to phenomenal growth of our plants and trees. Trees are an important part of the built and natural landscapes of West Vancouver and are valued by residents.

In an urban setting, trees provide many environmental benefits including decreasing storm water runoff, filtering air pollutants and stabilizing soil on slopes. Trees also offer shelter from sun, rain and wind and act as a noise buffer. Planting trees within the community provides privacy and helps to create the appearance of well-established neighbourhoods. In many residential areas, trees have grown to obscure views and block sunlight, prompting many residents to call for tree cutting. Current District policy provides for limited tree cutting in boulevards and public lands but does not restrict tree cutting on private property, unless the trees are located in environmentally significant areas, such as adjacent to a creek, or in a covenant area.

More than 72% of the Upper Lands (4,500 acres) is above the 1200' elevation and is predominantly forest. Due to a variety of micro-climatic conditions, the vegetative characteristics of West Vancouver's forests are different throughout the Upper Lands. The Western Hemlock is the most common species throughout the area with widespread stands of Western Red Cedar and Douglas Fir. In drier areas, especially in the west, stands of Arbutus and Shore Pine are common. Additionally, several smaller "urban forests" are spread throughout the District. The forested lands throughout the District provide many benefits to the community and region as well as important habitat for a variety of species. Presently, West Vancouver does not have a forest management plan.

The District tree program has existed for the past fifty years. Initially, the program was a hazard tree program that was funded by residents. The program has evolved to include resident permits for work on public property and more recently, to enforcing other government agency regulations with respect to environmentally sensitive areas. The District has voluntarily adopted the Provincial "streamside protection regulations" and manages the permits for trees located in environmentally sensitive areas as defined by the regulations. The District is involved with trees on private property only where regulations of senior government agencies apply or where tree covenants exist.

### Link to the Official Community Plan

*NE 9: Encourage a "Good Neighbour" approach through education to mitigate instances of trees on private properties that block sunlight and significant views.*

*NE 10: Encourage tree planting on streets and manage cutting and pruning of public trees to maintain the balance between preservation of the streetscape and forested public lands, and residents' desire for access to sunlight and views.*

*NE 11: In planning for development, recognize and manage the effects of tree growth on amenities such as access to sunlight, views and safety*

*P 1: Develop a comprehensive Parks System Plan.*

*P 2: Protect and enhance the natural character of the mountain and coastal landscape in municipal land-use management and planning.*

## Issue Identification

- Balancing residents' desires to gain and maintain views and access to sunlight with retention of trees for environmental, aesthetic and privacy purposes
- Forest habitat protection and restoration
- Distinguishing between forested / treed lands in the built and natural environments and the different management strategies for these areas

## Recommended Actions

- 5.1. Formalize a new tree management policy
- 5.2. Include a forest management component in any Parks and Open Spaces Plan, including strategies for managing forests in the Upper Lands and smaller "urban forests" throughout the community

# Objective 6: Protect and Enhance the Foreshore

## Overview

The foreshore is the waterfront owned by the public (Provincial Crown) lying on the seaward side of a property line.

The foreshore provides important habitat for a variety of species, including birds, fish and mammals. It also provides numerous community benefits. However, human settlement and natural processes are changing the character and nature of the foreshore in West Vancouver, with significant impacts.

Consider the idyllic perception of West Vancouver's shoreline, as described in the 1983 Waterfront Inventory:

*"Historically, West Vancouver's coastline consisted of 19 miles of natural, rugged and relatively unspoiled shoreline, with sheer cliffs on which rare fishing birds nested; with tidal pools abundant with aquatic flora and fauna of a variety unequalled anywhere in the Gulf of Georgia area; with a few small but delightful bays in which small boats could find haven and where the few local boat owners could moor safely the year round. The beaches may have been somewhat short on sand, but were clean and uncrowded, sufficient for both the local resident and visiting picnickers."*<sup>10</sup>

This picture of the foreshore has changed. Development pressures, both along the shoreline and in upland areas, provide significant challenges for the environmental integrity and public enjoyment of the foreshore. Several encroachments exist, including seawalls to protect properties from flooding during storm events.

Accretion also plays an important role on the foreshore. Accretion refers to the build up of land on the foreshore created by the action of natural forces, such as tides. Upland owners have a common law right to the property below them if it is naturally accreted. There are also man-made encroachments of varied extent and size. As of March 2003, there were approximately 100 encroachments, 85 of which had been surveyed.

Several examples of important work have been initiated with respect to foreshore planning in West Vancouver. In particular, the Ambleside - Dundarave Long Term Shoreline Planning Framework <sup>11</sup> outlines an integrated approach to foreshore planning that could provide useful and necessary background in developing a foreshore policy based on environmental protection.

## Issue Identification

- Habitat protection
- Public access
- Appropriate location, use and operation of Municipal infrastructure
- Property protection
- Natural Aesthetics
- Marina Use

## Recommended Actions

- 6.1. Develop and implement a Foreshore Policy based on environmental protection

### Link to the Official Community Plan

*NE 3: Maintain, protect and enhance the shoreline and foreshore and, where feasible, provide for public access.*

*P 7: Protect the shoreline and significant environmental and cultural features.*

# Objective 7: Promote Sustainable Energy Use

## Overview

We use energy to heat our homes, turn on our lights and to drive our cars. However, North Americans consume more energy per capita than anywhere else in the world. Our patterns of energy consumption result in many environmental impacts – climate change, pollution and ozone layer depletion to name a few. Our use of energy is influenced by several factors including lifestyle choices and patterns of development. Nonetheless, there are many things that citizens can do to reduce energy use, resulting in concomitant environmental benefits.



In terms of improving energy efficiency, reducing energy consumption is often more cost-effective than increasing supply.<sup>12</sup> Increasing our energy efficiency can be achieved through such things as the design of more energy efficient buildings and the use of public or non-motorized transportation. If additional energy supply is required, there are more sustainable options, such as solar and geothermal energy.<sup>13</sup> Local governments can play an important role in both changing patterns of energy consumption and supporting more sustainable energy sources through policies, bylaws and various incentives.

In West Vancouver, hydroelectric power and natural gas are the two major conventional energy sources. Transportation, especially in the form of single occupancy vehicles consumes significant portions of energy. Finally, West Vancouver is demonstrating environmental leadership with some important “green energy” projects.

### Hydroelectric Power

Residential use of hydroelectric power accounts for the majority of energy consumption in the District (68.5% for 2001/02). Four hydroelectric substations provide West Vancouver with hydroelectric power.

- Glenmore (at the northern end of Millstream in British Properties)
- John Lawson at Belleview & 17th Street
- Hillcrest at 3520 Wentworth Avenue
- Horseshoe Bay (approximately 1 km from the north end of Marine Drive)

The Park Royal area also receives some power from the Norgate substation, which is located in the District of North Vancouver.<sup>14</sup> From 1997 to 2002, the 334 new BC Hydro accounts were created, reflecting relatively slow growth in our community.<sup>15</sup>

Many homes in West Vancouver could improve their energy efficiency by improving their design and construction. Residents actively participating in energy saving activities, such as BC Hydro’s PowerSmart Program can decrease our demand for energy.

### BC Gas

Another key energy source for West Vancouver is natural gas and the consumption of natural gas is increasing at a relatively slow rate. As with hydroelectric power, the largest proportion of natural gas users are from the residential sector.

### Transportation

The transportation sector consumes significant quantities of energy - from the fuel required to power vehicles, to the energy used to build roads and infrastructure. As well, the automobile allows for homes

and services to be spread further apart, which in turn requires more energy to provide services such as water and electricity.<sup>16</sup>

Calculating the amount of energy that is used by the transportation sector is very challenging. Nevertheless, the Ecological Footprint<sup>17</sup> concept can shed some important insight into the energy patterns of mobility.<sup>18</sup> Using Ecological Footprint analysis, we can show that driving a car requires ten times more energy than riding a bike. Energy policies that aim to reduce the use of single occupancy vehicles will result in energy savings – not only in the form of actual energy used to drive the car, but in the reduction of infrastructure and services necessitated by sprawl.

### **Green Energy Projects**

There are several projects in the District of West Vancouver that use innovative energy sources as well as design and construction techniques to improve energy efficiency.

1. *Gleneagles*

Gleneagles Community Centre integrates structural, mechanical and electrical systems to foster energy efficiency and environmental sustainability. The community center utilizes radiant slab heating and cooling, ground source energy and intelligent ventilation systems to achieve significant efficiencies.

2. *Civic Center*

The new Civic Center site at West Vancouver uses green and efficient energy sources.<sup>19</sup>

3. *Eagle Lake Micro Hydro Project*

In 2003, The District of West Vancouver joined with Pacific Cascade Hydro Inc. in a unique partnership project to generate “green” energy by harnessing water flow from the municipality’s Eagle Lake water supply.<sup>20</sup> Hydroelectricity will be generated as the water flows down through a turbine installed above the water reservoir and into the distribution system.

## **Issue Identification**

- Long term, sustainable energy production and use

## **Recommended Actions**

- 7.1 Encourage residents to reduce energy use through various education initiatives
- 7.2 Identify options to encourage residents to utilize “green” (i.e. solar, geothermal) energy sources

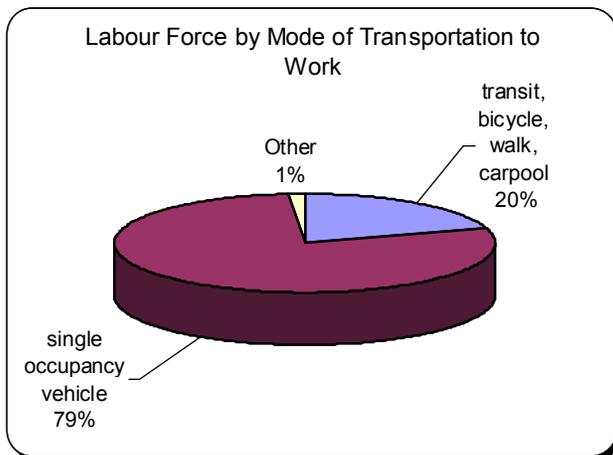
# Objective 8: Promote and Provide Sustainable Transportation Options

## Overview

Transportation moves people from place to place and is an essential component of a healthy economy and community. However, scientists, policy makers, and citizens are recognising that some forms of transportation, including the use of single occupancy vehicles, have significant environmental impacts.<sup>21</sup> Climate change, air pollution and urban sprawl are all consequences of some of our transportation choices.

Reducing greenhouse gas emissions associated with vehicle use is a key step in addressing the challenges of climate change. Climate change has the potential to alter our environment, ecosystems, and economy in fundamental and often unpredictable ways.<sup>22</sup> In the Greater Vancouver Regional District, approximately 39% of greenhouse gases and 53% of all “smog forming pollutants”<sup>23</sup> are caused by mobile sources. (For more information, see Section 9.)

Single Occupancy Vehicles tend to contribute to and reinforce land-use sprawl. Land-use sprawl is development characterised by the conversion of natural (green-field) land to low-density residential suburbs and commercial centres, separated from one another by roads and parking lots.<sup>24</sup> Low-density neighbourhoods require more energy and infrastructure to meet the requirements of residents.



West Vancouver's is predominantly automobile dependent. Approximately 79 percent of West Vancouver residents drive to work in single occupancy vehicles.<sup>25</sup> The low density of our existing residential neighbourhoods reinforces automobile use as large distances separate people from schools, shops and services.

From 1998 to 2002, the number of registered vehicles in West Vancouver increased by 2.9%.<sup>26</sup>

### Link to the Official Community Plan

*T 2: Pursue comprehensive approaches to local transportation planning, including support of sustainability principles.*

*T 5: Enhance and expand transportation options to reduce auto dependency and associated environmental impacts.*

## **Transit**

Public transportation generally has less of an environmental impact and is more energy efficient than single occupancy vehicle use.<sup>27</sup>

Estimated gains in ridership and transit service hours on West Vancouver Blue Bus are modest, yet encouraging. From 2001 to 2003 the number of boarded passengers was projected to increase approximately 4%.<sup>28</sup>

## **Bikes and Pedestrians**

West Vancouver has an under-developed cycling and pedestrian network. The only formal existing bicycle route is the Trans Canada Trail.

While pedestrians are well served in some parts of commercial areas and along the seawall connecting Ambleside and Dundarave, other routes are under-developed and poorly connected. The Official Community Plan recognizes this deficiency and provides several policies aimed at improving cycling and pedestrian facilities.

## **Issue Identification**

- Air quality and greenhouse gas emissions
- Land use sprawl
- Pollution and health
- Energy use

## **Recommended Actions**

- 8.1 Develop and implement a Strategic Transportation Plan that incorporates principles of sustainability
- 8.2 Develop and implement a Cycling Plan

# Objective 9: Reduce Greenhouse Gas Emissions and Improve Air Quality

## Overview

Air pollution, in the form of particulate matter and greenhouse gases, has significant implications for human health and the environment.

Regionally, the total amount of common air contaminants emitted into the Canadian portion of the Air Basin in 2000 was approximately 40% lower than in 1985.<sup>29</sup> Over the same period, the ambient concentrations of many air pollutants have decreased significantly in the Lower Mainland. However, regional emissions of greenhouse gases continue to rise. In British Columbia, the largest single source of air pollution is transportation (see Section 8.).

### Link to the Official Community Plan

*G 6: Support the active participation of Council members, community leaders and Municipal staff in the resolution of issues within the Greater Vancouver Regional District that are relevant to the District of West Vancouver.*

*T 2: Pursue comprehensive approaches to local transportation planning, including support of sustainability principles.*

## Greenhouse Gases and Climate Change

The United Nations Intergovernmental Panel on Climate Change<sup>30</sup> and the US National Academies of Science<sup>31</sup> have concluded that the global atmosphere is warming due to human activities that release greenhouse gases. While certain greenhouse gases occur naturally, human activities are accelerating their release into the atmosphere. Rising temperatures have several impacts on a variety of physical and biological processes, with corresponding implications for human activity.

Global warming will result in more extreme weather events.<sup>32</sup> Regionally, climate change will affect creeks, lakes, rivers, fishing, agriculture, forestry and coastal communities. With the ratification of the Kyoto Protocol, the Government of Canada has made climate change a national priority. As of May 2003, municipalities throughout Canada are considering how action at a municipal level will address key reductions in greenhouse gas emissions.<sup>33</sup>

## Particulate Matter

In terms of air pollution in the form of particulate emissions, West Vancouver has excellent air quality. West Vancouver's proximity to the ocean, lack of industry and agriculture and abundance of greenspace contribute to the District's overall high air quality. However, there are some issues of localized concern in West Vancouver. Ambleside, Park Royal, Horseshoe Bay and Dundarave have higher concentrations of vehicle traffic that contribute to localized air pollution, in the form of greenhouse gas emissions and particulate matter.<sup>34</sup>

## Issue Identification

- Maintaining and improving air quality
- Links to sustainable energy use
- Public health

## Recommended Actions

- 9.1. Include air quality objectives in the strategic transportation plan
- 9.2. Work with the region and other levels of government to develop initiatives aimed at reducing greenhouse gas emissions

# Objective 10: Reduce Pesticide Use

## Overview

A pesticide is any substance or mixture intended to prevent, destroy, repel, attract, or mitigate any pest. Target pests include any living organism that causes damage or economic loss, or transmits or produces disease. The cosmetic use of pesticides is the use of pesticides for non-essential use, where the application is purely for an aesthetic purpose.<sup>35</sup>

Many public agencies, including medical professionals have linked pesticide use to human health impacts.<sup>36</sup> Environment Canada notes:

*“Pesticides are toxic to many forms of life in addition to the species to be controlled. ... Pesticide residues can accumulate in the food chain, causing damage to birds, fish, and other forms of animal life. In many cases these side effects are not immediately apparent, but show up later; for example, in the abnormal eggs laid by birds that have fed on pesticide-treated insects. Ultimately some side effects may extend to human life as well.”<sup>37</sup>*

### Link to the Official Community Plan

*NE 12: Establish comprehensive environmental policies, bylaws, regulations, and practices.*

West Vancouver has been reviewing options for appropriate pesticide use for many years and has reduced the need for pesticides on public property through an informal integrated pest management approach. This approach has included the use of organic products as opposed to the use of chemical compounds. The only public locations where synthetic pesticides are presently being used are: Kleewyck Nursery, Gleneagles Golf Course and Ambleside Golf Course greens. The staff using the pesticides are trained and registered under Provincial jurisdiction and are constantly looking for alternate methods for pest control.

The Ministry of Highways, BC Rail and Capilano Golf Course also have pesticide use programs that influence lands within the municipality. These agencies have been contacted by District staff and will be involved in the future management and application of pesticides.

Of note, BC Rail has developed a “Vegetation Management Program” that is based on a “best management practices” approach, as they spray pesticides for the control of weeds in close proximity to many West Vancouver homes.

## Issue Identification

- Ecosystem protection
- Public health
- Property maintenance

## Recommended Actions

- 10.1. Continue to pursue the development and implementation of Integrated Pest Management practices on public and private property aimed at significantly reducing the use of pesticides, including ongoing education initiatives and regulatory development

# Objective 11: Reduce Waste and Improve Recycling

## Overview

In West Vancouver, the Engineering Department is responsible for the collection, disposal and recycling of residential solid waste, which includes garbage, yard trimmings and recyclable materials. In 2002, single-family homes in the District produced 13,063 metric tons of garbage.<sup>38</sup> However, only 6,816 metric tons (52%) of that garbage made it to the landfill.<sup>39</sup> Forty-eight percent (the diversion rate) was either recycled in a curb side program, picked up as yard trimmings or dropped off at the North Shore recycling depot.<sup>40</sup>

### Link to the Official Community Plan

*U 8: Minimize the amount of refuse generated and promote the reuse and recycling of waste.*

The North Shore Recycling Program coordinates recycling and a yard trimming program for the entire North Shore, including West Vancouver. A large number of recyclable items are collected, including newspaper, mixed paper, corrugated cardboard, certain plastic bottles, glass bottles and jars, aluminium and tin cans, and clean yard trimmings. For items not collected in the curbside program, a recycling drop-off depot is available in North Vancouver.<sup>41</sup>

## Materials From Construction Sites

Challenges and opportunities exist in terms of dealing with tree waste and materials from construction sites. Historically, the municipality has removed soils and rock from construction sites to designated dump sites outside of the municipality. However, there may be an opportunity to reuse some of these materials within the District, reducing transportation and dumping costs while saving valuable and useful materials.

## Issue Identification

- Improving consumption patterns
- Waste reduction and improving the diversion rate
- Improving the use of natural waste from construction sites (trees, rocks)

## Recommended Actions

- 11.1. Continue to minimize West Vancouver's waste generation through recycling and the reuse of materials
- 11.2. Identify options to increase the recycling and reuse of materials from construction sites

# Notes

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- <sup>1</sup> Fraser Basin Council. 2001. *Sustainability Indicators for the Fraser Basin – Consultation Report*. Vancouver: Fraser Basin Council
- <sup>2</sup> Ministry of Water Land and Air Protection. 2003. *Streamside Protection Regulation*. [http://wlapwww.gov.bc.ca/habitat/fish\\_protection\\_act/streamside\\_protection/streamside\\_protection.html](http://wlapwww.gov.bc.ca/habitat/fish_protection_act/streamside_protection/streamside_protection.html).
- <sup>3</sup> Condon, P. and Isaac, K. 2003. “Green municipal engineering for sustainable communities.” *Municipal Engineer* (156): 3-10.
- <sup>4</sup> Ibid.
- <sup>5</sup> Kerr Wood Leidal Associates Limited. 2002. *McDonald and Lawson Creeks Integrated Stormwater Management Plan*.
- <sup>6</sup> Greater Vancouver Regional District. 2003. *Sources and Supply*. [www.gvrd.bc.ca](http://www.gvrd.bc.ca)
- <sup>7</sup> Environment Canada. 2003. *Climate Change*. <http://www.ec.gc.ca/climate/home-e.html>
- <sup>8</sup> In 2003, flat-rate water rates increase \$19, changing from \$277 to \$296 per year for a single-family home in West Vancouver. This seven percent increase incorporates increased charges for water from the GVRD. The District’s long-term financial plan for the water utility provides an infrastructure replacement policy, along with phased rate increases to fund the program. The financial plan was amended in 2001 due to changes in the GVRD water treatment program and to incorporate the new Eagle Lake Development Plan.
- <sup>9</sup> District of West Vancouver. 2003. *Report to Council*. [www.westvancouver.net/upload/documents/council\\_agendas/2003/July/July%2021/4.3.pdf](http://www.westvancouver.net/upload/documents/council_agendas/2003/July/July%2021/4.3.pdf)
- <sup>10</sup> District of West Vancouver. 1983. *Waterfront Inventory*. West Vancouver, BC: District of West Vancouver.
- <sup>11</sup> West Vancouver Engineering Advisory Committee. 2005. *Ambleside – Dundarave Long Term Shoreline Planning Framework*.
- <sup>12</sup> Roseland, M. 1998. *Toward Sustainable Communities*. Gabriola Island, BC: New Society Publishers.
- <sup>13</sup> Smart Communities Network. 2003. *Creating Energy Smart Communities*. [www.sustainable.doe.gov](http://www.sustainable.doe.gov)
- <sup>14</sup> Charchun, G. 2002. *Personal Communication*. BC Hydro.
- <sup>15</sup> BC Hydro. 2002. *West Vancouver Hydro Electricity Use*. Statistics provided upon request.
- <sup>16</sup> SmartGrowth. 2003. *Creating More Liveable Communities*. [www.smartgrowth.bc.ca](http://www.smartgrowth.bc.ca)
- <sup>17</sup> Wackernagel, M. and Rees, W. 1996. *Our Ecological Footprint: Reducing Human Impact on the Earth*. Gabriola Island, BC: New Society Publishers. “Ecological footprint” is defined as the corresponding area of productive land and aquatic ecosystems required to produce the resources used, and to assimilate the wastes produced, by a defined population at a specified material standard of living, wherever on Earth that land may be located.
- <sup>18</sup> Ecological footprint analysis assumes that every category of consumption (energy or material) and the corresponding waste discharge requires the productive or absorptive capacity of a fixed area of land or water. Using this principle, the ecological footprint of cycling 10 km round trip per year is 122 square meters of land per rider. The ecological footprint for driving a car the same distance over the same period is 1530 square meters of land.
- <sup>19</sup> The energy system at the Civic Center is comprised of:
- A ground heat source pump.
  - An energy recovery system that reuses waste energy from the Ice Arena refrigeration system.
  - An integrated approach to energy management that allows energy loads to be met in different facilities by shifting energy to that area using the total capacity of the system. The integrated design allowed for the reduction of capital costs by eliminating an additional boiler and additional piping.
  - Flexibility has been built in with the ability to add to the system. For example, the Seniors Activity Center’s conventional heating and cooling units could be replaced over time with geothermal compatible equipment and this facility could be brought on line in the future.

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- <sup>20</sup> Pacific Cascade Hydro will design, construct and operate the micro generation facility, which will generate an estimated 1.1 gigawatt-hours annually. This is equivalent to 20 percent of the power used by the municipality's operations.
- <sup>21</sup> Better Environmentally Sound Transportation. 2003. [www.best.bc.ca](http://www.best.bc.ca).
- <sup>22</sup> Government of Canada, 2003. [www.climatechange.gc.ca](http://www.climatechange.gc.ca)
- <sup>23</sup> Greater Vancouver Regional District. 2003. <http://www.gvrd.bc.ca/air/emissions.htm>
- <sup>24</sup> SmartGrowth. 2003. *Creating More Liveable Communities*. [www.smartgrowth.bc.ca](http://www.smartgrowth.bc.ca)
- <sup>25</sup> Statistics Canada. 1996. *Census*.
- <sup>26</sup> ICBC. 2003. *Registered Vehicles*. Statistics provided upon request.
- <sup>27</sup> Wackernagel, M. and Rees, W. 1996. *Our Ecological Footprint: Reducing Human Impact on the Earth*. Gabriola Island, BC: New Society Publishers.
- <sup>28</sup> Greater Vancouver Transportation Authority. 2003. *2003 Transportation Plan*. Burnaby, BC: GVTA.
- <sup>29</sup> Greater Vancouver Regional District. 2003. <http://www.gvrd.bc.ca/air/planning.htm>
- <sup>30</sup> Intergovernmental Panel on Climate Change. 2003. [www.ipcc.ch](http://www.ipcc.ch)
- <sup>31</sup> US National Academies of Science. 2003. [www.4.nas.edu/onpi/webextra.nsf/web/climate?OpenDocument](http://www.4.nas.edu/onpi/webextra.nsf/web/climate?OpenDocument)
- <sup>32</sup> Intergovernmental Panel on Climate Change. 2003. [www.ipcc.ch](http://www.ipcc.ch)
- <sup>33</sup> Federation of Canadian Municipalities. 2003. *Municipal Leaders Develop Recommendations for Implementing the Kyoto Protocol*. [www.fcm.ca/english/communications/may22003.htm](http://www.fcm.ca/english/communications/may22003.htm)
- <sup>34</sup> Stubbs, Ken. 2002. Personal Communication. Greater Vancouver Regional District.
- <sup>35</sup> Supreme Court Ruling: Hudson vs. Spraytech, 2001
- <sup>36</sup> The Ontario College of Family Physicians, 2004. *Pesticides Literature Review*. <http://www.ocfp.on.ca/local/files/Communications/Current%20Issues/Pesticides/Final%20Paper%2023APR2004.pdf>
- <sup>37</sup> Environment Canada. 2003. *Alternatives to Pesticides*. [www.ns.ec.gc.ca/epb/factsheets/pesticides/altern.html](http://www.ns.ec.gc.ca/epb/factsheets/pesticides/altern.html)
- <sup>38</sup> Northshore Recycling Program. 2002. *Unpublished statistics*.
- <sup>39</sup> Ibid.
- <sup>40</sup> Ibid.
- <sup>41</sup> Northshore Recycling Program. 2003. <http://www.nsrp.bc.ca/>

*west vancouver*

# environmental strategy work plan

May 2005



# Environmental Strategy Work Plan (2005 - 2006)

KEY OBJECTIVES / RECOMMENDED ACTION	OFFICIAL COMMUNITY PLAN POLICY DIRECTION	DELIVERABLE			LEAD	STATUS	POTENTIAL ADDITIONAL BUDGET (\$)
		POLICY / PLAN / INITIATIVE	REGULATION / BYLAW	COMMUNICATION / PUBLIC EDUCATION			
<b>1.0. Lead by Example in Environmental Stewardship</b>							
1.1. Develop and implement high performance design and operation standards (ie: LEED, Natural Step) for major new and upgraded District facilities, utilities and services	<i>BFA 1: Promote superior environmental design in new development. BFA 2: Demonstrate municipal leadership by providing a commitment to the environment and sustainability practices.</i>	<ul style="list-style-type: none"> <li>Corporate Policy to guide the provision of District services, utilities and facilities, including a "green energy" assessment component</li> </ul>		<ul style="list-style-type: none"> <li>Website, newsletters</li> </ul>	Planning to coordinate, all Divisions to participate	<ul style="list-style-type: none"> <li>Corporate Policy: To be initiated in 2005 subject to funding</li> <li>Communications: To be initiated following adoption of Corporate Policy</li> </ul>	<ul style="list-style-type: none"> <li>40,000 for consultant for Corporate Policy</li> <li>5,000 for communications</li> </ul>
1.2. Develop and implement an Environmental Management System for Blue Bus	<i>BFA 2: Demonstrate municipal leadership by providing a commitment to the environment and sustainability practices.</i>	<ul style="list-style-type: none"> <li>Environmental Management System for Blue Bus</li> </ul>		<ul style="list-style-type: none"> <li>Website, newsletters</li> </ul>	Engineering	<ul style="list-style-type: none"> <li>Environmental Management System for Blue Bus: In progress</li> <li>Communications: To be initiated following adoption of EMS</li> </ul>	<ul style="list-style-type: none"> <li>No additional costs projected</li> </ul>
1.3. Educate staff on methods to reduce environmental impacts in the provision of facilities, utilities and services	<i>NE 12: Establish comprehensive environmental policies, bylaws, regulations, and practices.</i>			<ul style="list-style-type: none"> <li>Workshops with District staff</li> </ul>	Parks & Environment / Community Services	<ul style="list-style-type: none"> <li>Workshops: In progress</li> </ul>	<ul style="list-style-type: none"> <li>No additional costs projected</li> </ul>
1.4. Integrate sustainability into Purchasing Policy	<i>BFA 2: Demonstrate municipal leadership by providing a commitment to the environment and sustainability practices.</i>	<ul style="list-style-type: none"> <li>Revised Purchasing Policy</li> </ul>		<ul style="list-style-type: none"> <li>Website, newsletters</li> </ul>	Purchasing	<ul style="list-style-type: none"> <li>Revised Purchasing Policy: To be initiated in 2005</li> <li>Communications: To be initiated following adoption of revised Purchasing Policy</li> </ul>	<ul style="list-style-type: none"> <li>4,000 for consultant policy research and education manual</li> </ul>
1.5. Develop and implement a District Environmental Award Program	<i>BFA 2: Demonstrate municipal leadership by providing a commitment to the environment and sustainability practices.</i>	<ul style="list-style-type: none"> <li>Environmental Awards Program</li> </ul>		<ul style="list-style-type: none"> <li>Website, newsletters</li> </ul>	Parks & Environment	<ul style="list-style-type: none"> <li>Environmental Awards Program: In progress</li> </ul>	<ul style="list-style-type: none"> <li>1,500 for administration</li> </ul>
<b>2.0. Promote More Sustainable Land Stewardship</b>							
2.1. Update, develop and provide environmental guidelines, best practices and polices for residents, builders and developers	<i>NE 12: Establish comprehensive environmental policies, bylaws, regulations, and practices.</i>	<ul style="list-style-type: none"> <li>Land Development Best Practices Brochures</li> </ul>	<ul style="list-style-type: none"> <li>Update Soil Removal and Deposit Bylaw, Blasting Bylaw</li> </ul>	<ul style="list-style-type: none"> <li>Website, handouts, brochures</li> </ul>	Planning	<ul style="list-style-type: none"> <li>Best Practices Brochure: To be initiated in 2005</li> <li>Updated Bylaws: To be initiated in 2005 subject to funding</li> <li>Communications: To be initiated following creation of brochures and bylaw updates</li> </ul>	<ul style="list-style-type: none"> <li>20,000 for bylaw consultant</li> <li>5,000 for communications</li> </ul>
2.2. Ensure environmental policies and regulations are applied to development applications	<i>G 1: Enhance communication between residents, businesses, organizations and the Municipal Council.</i>		<ul style="list-style-type: none"> <li>Enforcement through Environmental Protection Officer</li> </ul>	<ul style="list-style-type: none"> <li>Website, handouts, brochures, meetings with developers</li> </ul>	Planning	<ul style="list-style-type: none"> <li>Enforcement: In progress</li> <li>Communications: To be initiated in 2005</li> </ul>	<ul style="list-style-type: none"> <li>No additional costs projected</li> </ul>

# Environmental Strategy Work Plan (2005 - 2006)

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		POLICY / PLAN / INITIATIVE	REGULATION / BYLAW	COMMUNICATION / PUBLIC EDUCATION			
2.3. Identify, manage, protect and seek public ownership of environmentally sensitive lands	NE4: Seek public ownership of environmentally sensitive lands, including creek corridors, where feasible. NE6: Recognize and manage environmentally sensitive areas	<ul style="list-style-type: none"> <li>Baseline environmental assessment</li> <li>Report on options to protect ESAs</li> </ul>	<ul style="list-style-type: none"> <li>Ensure development projects comply with OCP</li> <li>Regulations to ensure protection of environmentally sensitive areas</li> </ul>		Parks & Environment / Planning	<ul style="list-style-type: none"> <li>Environmental Assessment: In progress, to continue subject to funding</li> <li>Report on ESA Options: To be initiated in 2005</li> <li>Ensure compliance with OCP: Ongoing</li> <li>Regulatory Development: In progress</li> </ul>	<ul style="list-style-type: none"> <li>40,000 over 3 years for Environmental Assessment</li> </ul>
2.4. Develop and implement Area Development Plans based on environmental and land use stewardship best practices	UL6: Require Area Development Plans in order to establish future land use and development objectives for neighbourhoods, and to create more detailed Development Permit guidelines for subsequent implementation and subdivision designs	<ul style="list-style-type: none"> <li>Area Development Plans</li> </ul>	<ul style="list-style-type: none"> <li>Bylaws to reflect Area Development Plans</li> </ul>	<ul style="list-style-type: none"> <li>Website, newsletters</li> </ul>	Planning	<ul style="list-style-type: none"> <li>Area Development Plan: Developer has commenced plan for Roger's Creek neighbourhood</li> <li>Bylaw development: Once Area Development Plan completed</li> <li>Communications: To be initiated during and after completion of Area Development Plans</li> </ul>	<ul style="list-style-type: none"> <li>Costs paid by developer</li> </ul>
2.5. Identify strategies to best protect and control activities on municipal land above the 1200' contour	UL10: Consider preservation of Municipal Lands above 1200 foot elevation as public forest and limited recreation areas	<ul style="list-style-type: none"> <li>Report on strategies</li> </ul>		<ul style="list-style-type: none"> <li>Website, newsletters</li> </ul>	Planning	<ul style="list-style-type: none"> <li>Report on strategies: To be initiated in 2005</li> <li>Communications: To be initiated following adoption of strategies</li> </ul>	<ul style="list-style-type: none"> <li>No additional costs projected</li> </ul>
<b>3.0. Protect and Enhance Creek Habitat and Corridors</b>							
3.1. Develop, update and implement bylaws to protect creeks, including designating creek corridors as mandatory Development Permit Areas	NE1: Provide for the protection of creek corridors and other environmentally sensitive lands throughout the municipality. NE6: Recognize and manage environmentally sensitive areas.		<ul style="list-style-type: none"> <li>New bylaw(s) to protect creek habitat and corridors</li> </ul>	<ul style="list-style-type: none"> <li>Public consultation on Bylaw development</li> <li>Website, handouts, brochures</li> </ul>	Planning / Parks & Environment	<ul style="list-style-type: none"> <li>Creek Bylaw(s): In progress</li> <li>Public consultation on Bylaw: To be initiated during Public Hearings</li> <li>Communications: To be initiated following adoption of Bylaw(s)</li> </ul>	<ul style="list-style-type: none"> <li>Report on bylaw will address potential costs</li> <li>3,000 for communications</li> </ul>
3.2. Continue to cooperate with the Federal and the Provincial Governments on creek protection initiatives	NE1: Provide for the protection of creek corridors and other environmentally sensitive lands throughout the municipality.	<ul style="list-style-type: none"> <li>Memorandum of Understanding (MOU) with senior government</li> </ul>		<ul style="list-style-type: none"> <li>Website, handouts, brochures</li> </ul>	Parks & Environment	<ul style="list-style-type: none"> <li>MOU: In progress</li> <li>Communications: To be initiated following adoption of MOU</li> </ul>	<ul style="list-style-type: none"> <li>No additional costs projected</li> </ul>
3.3. Implement the recommendations of the Lawson and McDonald Creek ISMP and apply the framework to other watersheds in West Vancouver	NE8: Integrate storm water management practices with community planning. U5: Upgrade and manage the storm water and sanitary sewerage collection system to reduce environmental impacts and optimize municipal costs. U6: Design storm water management and long-term flood control measures to carry out best environmental practices.	<ul style="list-style-type: none"> <li>Development guidelines and standards</li> </ul>	<ul style="list-style-type: none"> <li>Revise / replace bylaw(s) dealing with drainage</li> </ul>	<ul style="list-style-type: none"> <li>Website, handouts, brochures</li> </ul>	Engineering	<ul style="list-style-type: none"> <li>Standards and Guidelines: To be initiated in 2005</li> <li>Revised Bylaws: In progress</li> <li>Communications: To be initiated following adoption of guidelines and bylaw(s)</li> </ul>	<ul style="list-style-type: none"> <li>Capital projects for stormwater accommodated through the existing budget</li> <li>Possible funding required for communications</li> <li>Report on bylaw will address potential costs</li> </ul>

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<b>4.0. Promote Sustainable Water Use</b>							
4.1. Continue to develop and implement a Water Conservation Strategy	<i>Policy U 4: Upgrade water supply, treatment and distribution, and promote conservation.</i>	<ul style="list-style-type: none"> <li>Implement Water Conservation Strategy including metering, and Toilet Retrofit Rebate Program</li> </ul>	<ul style="list-style-type: none"> <li>Amended Waterworks Bylaw to include Water Shortage Response Plan</li> </ul>	<ul style="list-style-type: none"> <li>Website, handouts, brochures, work with schools</li> </ul>	Engineering	<ul style="list-style-type: none"> <li>Conservation Strategy / Metering / Retrofit Program: Strategy adopted, implementation ongoing</li> <li>Amended Waterworks Bylaw: To be initiated in 2005</li> <li>Communication / Education: In progress</li> </ul>	<ul style="list-style-type: none"> <li>No additional costs projected</li> </ul>
4.2. Continue to monitor water to ensure that water meets high quality standards	<i>U 4: Upgrade water supply, treatment and distribution, and promote conservation.</i>	<ul style="list-style-type: none"> <li>Continue to monitor water quality</li> <li>Install additional turbidity meters and membrane filtration facility at Eagle Lake</li> <li>Initiative to reduce impacts of detergents on water quality</li> </ul>		<ul style="list-style-type: none"> <li>Website, handouts, brochures, work with government agencies</li> </ul>	Engineering	<ul style="list-style-type: none"> <li>Monitor Water Quality: In progress</li> <li>Additional infrastructure: Initiated in 2005</li> <li>Detergent initiative: To be initiated in 2005</li> <li>Communications: In progress</li> </ul>	<ul style="list-style-type: none"> <li>No additional costs projected</li> </ul>
<b>5.0. Promote Tree and Forest Stewardship</b>							
5.1. Formalize a new tree management policy	<p><i>NE 9: Encourage a "Good Neighbour" approach through education to mitigate instances of trees on private properties that block sunlight and significant views.</i></p> <p><i>NE 10: Encourage tree planting on streets and manage cutting and pruning of public trees to maintain the balance between preservation of the streetscape and forested public lands, and residents' desire for access to sunlight and views.</i></p> <p><i>NE 11: In planning for development, recognize and manage the effects of tree growth on amenities such as access to sunlight, views and safety</i></p>	<ul style="list-style-type: none"> <li>District Tree Policy</li> </ul>		<ul style="list-style-type: none"> <li>Website, handouts, brochures</li> <li>Increased communication with public and staff</li> </ul>	Parks & Environment	<ul style="list-style-type: none"> <li>Tree Policy: Adopted July 5, 2004</li> <li>Communications: In progress</li> </ul>	<ul style="list-style-type: none"> <li>22,000 for new staff</li> <li>3,000 for communications</li> </ul>
5.2. Include a forest management component in any Parks and Open Spaces Plan	<p><i>P1: Develop a comprehensive Parks System Plan.</i></p> <p><i>P2: Protect and enhance the natural character of the mountain and coastal landscape in municipal land-use management and planning.</i></p>	<ul style="list-style-type: none"> <li>Parks and Open Spaces Plan to include forest management component, including fire interface strategy</li> </ul>		<ul style="list-style-type: none"> <li>Continue to work with the public in the development of a Parks and Open Spaces Plan</li> </ul>	Parks & Environment	<ul style="list-style-type: none"> <li>Parks and Open Spaces Plan: In progress</li> <li>Public Consultation: In progress</li> </ul>	<ul style="list-style-type: none"> <li>No additional costs projected</li> </ul>
<b>6.0. Protect and Enhance the Foreshore</b>							
6.1. Develop and implement a Foreshore Policy based on environmental protection	<p><i>NE 3: Maintain, protect and enhance the shoreline and foreshore and, where feasible, provide for public access.</i></p> <p><i>P7: Protect the shoreline and significant environmental and cultural features.</i></p>	<ul style="list-style-type: none"> <li>Report on feasibility of Development Permit Areas as a mechanism for protecting the foreshore</li> </ul>		<ul style="list-style-type: none"> <li>Website, handouts, brochures</li> </ul>	Planning	<ul style="list-style-type: none"> <li>Report: To be initiated in 2006</li> <li>Communications: Initiation subject to report conclusions</li> </ul>	<ul style="list-style-type: none"> <li>No additional costs projected</li> </ul>

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<b>7.0. Promote Sustainable Energy Use</b>							
7.1. Encourage residents to reduce energy use through various education initiatives	<i>U 1: Promote energy consciousness.</i>	• Report on techniques		• Website, handouts, brochures in conjunction with utility providers	Planning	• Report: To be initiated in 2006 • Communications: To be initiated in 2006	• No additional costs projected
7.2. Identify options to encourage residents to utilize "green" (i.e. solar, geothermal) energy sources	<i>U 1: Promote energy consciousness.</i>	• Report on options		• Website, handouts, brochures,	Planning	• Report: To be initiated in 2006 • Communications: Initiation subject to report conclusions	• No additional costs projected
<b>8.0. Promote and Provide Sustainable Transportation</b>							
8.1. Develop and implement a Strategic Transportation Plan	<i>T 2: Pursue comprehensive approaches to local transportation planning, including support of sustainability principles.</i>	• Strategic Transportation Plan		• Website, handouts, brochures, public meetings	Engineering	• Strategic Transportation Plan: To be initiated in 2006 • Communications / Public Consultation: To be initiated during and after adoption of the Plan	• Consulting costs to be detailed in future reports (total costs ~100,000)
8.2. Develop and implement a Cycling Plan	<i>T 5: Enhance and expand transportation options to reduce auto dependency and associated environmental impacts.</i>	• Cycling Plan		• Public consultation • Website, handouts, brochures	Engineering	• Cycling Plan: In progress • Public consultation: To be initiated in 2005 • Communications: To be initiated during after adoption of the Plan	• 40,000 for plan, public consultation and communications
<b>9.0. Reduce Greenhouse Gas Emissions and Improve Air Quality</b>							
9.1. Include air quality objectives in the strategic transportation plan	<i>T 2: Pursue comprehensive approaches to local transportation planning, including support of sustainability principles.</i>	• Include air quality objectives in strategic transportation plan			Engineering	• Strategic Transportation Plan: To be initiated in 2006	• See 8.1
9.2. Work with the region and other levels of government to develop initiatives aimed at reducing greenhouse gas emissions	<i>G 6: Support the active participation of Council members, community leaders and Municipal staff in the resolution of issues within the Greater Vancouver Regional District that are relevant to the District of West Vancouver.</i>	• See 1.1, 1.2, 7.1, 8.1, 8.2			Planning	• See 1.1, 7.1, 7.2, 8.1, 8.2 • Communication and consultation with region: In progress and ongoing as opportunities arise	• See individual deliverables in other sections
<b>10.0. Reduce Pesticide Use</b>							
10.1. Continue to pursue Integrated Pest Management practices, including ongoing education initiatives and regulatory development	<i>NE 12: Establish comprehensive environmental policies, bylaws, regulations, and practices.</i>	• Continue to implement integrated pest management practices in District operations	• Develop and implement a Pesticide Control Bylaw	• Website, handouts, brochures, other public education	Parks & Environment	• Continue to implement best management practices: In progress • Pesticide Control Bylaw: Adopted February 14, 2005 • Communications: In progress	• Detailed budget request forthcoming as per Council's recommendation
<b>11.0. Reduce Waste and Improve Recycling</b>							
11.1. Continue to minimize West Vancouver's waste generation through recycling and the reuse of materials	<i>U 8: Minimize the amount of refuse generated and promote the reuse and recycling of waste.</i>			• Website, handouts, brochures	Engineering	• Communications: In progress	• No additional costs projected
11.2. Identify options to increase the recycling and reuse of materials from construction sites	<i>U 8: Minimize the amount of refuse generated and promote the reuse and recycling of waste.</i>	• Report on policy options to reduce construction waste from municipal and private sites			Engineering	• Report: To be initiated in 2005	• No additional costs projected