

4.0 Protecting the Natural Environment

The Georgia Basin, which includes the RDN, is one of the fastest growing areas in the Province and is also one of the most biologically diverse areas of North America. Electoral Area 'A' is home to many environmentally sensitive features which must be identified and preserved to ensure the long term environmental health of the area.

Maintaining healthy ecosystems is important for regulating our climate, cleaning our fresh water, regulating and cleaning atmospheric gases, maintaining genetic diversity, sustaining the water cycle, recycling nutrients, and pollinating our crops.



This section contains objectives and policies for minimizing the impact of development while working towards achieving the Community Vision in a way which is consistent with the Sustainability Principles.

Sustainability Implications

Climate Change

The OCP's role in addressing climate change is to support actions and decisions which are necessary to help reduce GHG emissions and prepare the community to adapt to changing conditions as a result of climate change (adaptation and mitigation). This OCP can influence GHG emissions through the designation and implementation of land use and conservation policies.

Environment

Biodiversity and ecosystem health are in decline worldwide, largely due to human activities. Factors such as climate change, pollution, resource extraction, and over consumption, impact both local and global ecosystems. As a growing electoral area with a desirable quality of life within close proximity to urban services, it is anticipated that there will be continued pressure placed on the natural environment. OCP policies need to ensure that biodiversity and ecosystem health are protected.

Social

A healthy, clean environment is important from a social perspective in that it helps define who we are, both as individuals, and as a community. The natural environment provides the foundation for our wellbeing, forms an important part of our culture and our memories, and helps define our sense of community.

Property owners, area residents, non-profit conservation organizations, business, First Nations, and all levels of government all have a role to play in protecting the natural environment.



The RDN recognizes its role is to ensure the natural environment is protected and enhanced as the plan area grows and changes over time to safe guard current and future Electoral Area ‘A’ residents’ ability to enjoy the natural amenities the plan area has to offer.

Economic

The economy depends on the environment for every aspect of its existence. Food, energy, minerals, raw materials, and water, are some examples of what the environment provides. Without biologically diverse and healthy ecosystems, the economy cannot prosper. Electoral Area ‘A’ residents support the development opportunities which provide opportunities for local employment while safeguarding the environment and rural way of life.

Strategic Direction and Goals

Section 4.0 helps achieve the Community Vision by contributing towards community goals 4, 6, 7, 11, 12, 13, and 14. Please refer to Section 3.3 for a list of community goals.

4.1 Environmentally Sensitive Ecosystems and Species of Concern

In keeping with the Community Vision and the goal of protecting the natural environment, this plan identifies and supports the protection and enhancement of important environmentally sensitive Areas (ESA) within the plan area. ESA’s are areas of land and/or water that are sensitive to human presence, development, and interference. They are also features, areas, or habitats that are worthy of a higher level of protection as a result of vulnerability or value in maintaining ecosystem components.

An inventory of sensitive ecosystems on east Vancouver Island and the Gulf Islands was undertaken by the Canadian Wildlife Service in partnership with other agencies. The result of this inventory was the Sensitive Ecosystem Inventory of east Vancouver Island and Gulf Islands. Protection of these ecosystems has been incorporated into the policies found within this OCP. In addition, the Conservation Data Centre collects and disseminates information on plants, animals and ecosystems at risk in British Columbia. This OCP includes provisions to protect the known locations of species of concern. There are likely other environmentally sensitive ecosystems and features unknown to the community and the RDN at this time.

This plan recognizes that new information on ESA’s and species of concern may become available and includes policies to recognize new information.

Objectives, Policies and Implementation Actions

Section 4.1	Policy/Objective
Objective 4.1.1	Retain a full range of habitat required to maintain and re-establish indigenous and endangered species.
Policy 4.1.1	Land, water, and species of concern which are sensitive to human disturbance are deemed to be an Environmentally Sensitive Areas (ESA). These areas are identified on Map No. 1 of this plan. It should be noted ESA’s are not limited to the boundaries indicated. This plan may be amended from time to time to recognize newly identified ESA’s and to make changes to ESA boundaries to reflect changing on-site conditions or more comprehensive environmental assessments and amendments to the ESA’s atlas.



Section 4.1	Policy/Objective
Advocacy Policy 4.1.2	Request that the provincial and federal ministries responsible for species and risk and ecosystem protection monitor ESA's and provide the RDN with updated information on the status, location, and management of ESA's on an ongoing basis.
Advocacy Policy 4.1.3	Work with senior provincial and federal agencies, non-government organizations, and other community interest groups to identify, preserve, protect, and enhance ESA's.
Advocacy Policy 4.1.4	Work with senior provincial and federal agencies, non-government organizations, property owners, and other community interest groups to identify wildlife movement patterns and needs in order to work towards creating and/or protecting opportunities for ecological connectivity within the plan area and adjacent lands.

Implementation Actions	Timing (Immediate, Short Term, Long Term, Ongoing)
Advise senior government agencies of policies in the OCP.	Ongoing
Incorporate new and more accurate verifiable information on ESA's in this plan as it becomes available.	Ongoing
Work with the Provincial Approving Officer, property owners and developers and include habitat protection guidelines in a DPA.	Immediate

Section 4.1	Policy/Objective
Objective 4.1.2	New development will not result in a decrease in the amount or number of ESA's.
Policy 4.1.5	Designate DPA's in Section 12 of this plan to protect the following sensitive ecosystem types: riparian vegetation, wetland, coastal bluff, terrestrial herbaceous, and older forest as defined in the ESA atlas.
Policy 4.1.6	Designate DPA's in Section 12 of this plan to protect Bald Eagle and Great Blue Heron nesting trees and known occurrences of rare and endangered species shown on Map No. 1.

Section 4.1	Policy/Objective
Objective 4.1.3	To protect sensitive ecosystems and rare species through the use of policies and DPA's.
Policy 4.1.7	The RDN should not support development applications within or adjacent to ESA's where a proposed development would adversely affect an ESA or species of concern as determined by an environmental professional where the identified impacts are not proposed to be mitigated in a manner recommended by an environmental professional and where applicable, approved by a senior level of government.



Policy 4.1.8	Despite the minimum parcel sizes supported by this plan, the creation of new parcels less than the minimum parcel size supported by this plan and located within a smaller footprint of the parent parcel may be supported to protect and/or enhance an environmentally sensitive feature without an amendment to this plan, provided the overall number of parcels and density is consistent with the current zoning and the environmentally sensitive feature is permanently protected. Density and/or the number of potential parcels shall be based on the buildable area taking into account site constraints, not the overall parcel size. It is recognized that a rezoning and an amendment to the RGS may be required.
Policy 4.1.9	Development should generally conform to “ Develop with Care: Environmental Guidelines for Urban and Rural Land Development in British Columbia “ as amended and/or replaced from time to time.
Policy 4.1.10	Zoning amendments and development proposals shall be reviewed in relation to existing and potential archaeological sites and where sites are apparent or identified on provincial archaeological mapping, such applications shall be referred to the Ministry responsible for archaeology. The RDN shall notify applicants if the subject property includes a recorded protected archaeological site or an area of significant archaeological potential.
Policy 4.1.11	Development applications for lands in or adjacent to ESA’s generally as identified on Map No. 1 of this plan shall ensure that the environmentally sensitive feature is protected to the greatest extent possible.
Policy 4.1.12	To the greatest extent possible ESA and the habitat requirements for species of concern should remain in their natural state and should not be developed or disturbed.
Advocacy Policy 4.1.13	With respect to a proposed subdivision within, adjacent to, or containing an ESA, the RDN should request that the subdivision approving officer not support the proposed subdivision unless the ESA is adequately protected through zoning, covenant, park land dedication where appropriate, or conservation agreement. It is preferred that the creation of new parcels not be supported in the case where it is likely that encroachment into the sensitive area would occur over time. Approval from the Agricultural Land Commission shall be required where a covenant would prohibit agricultural activities on lands within the Agricultural Land Reserve.
Policy 4.1.14	This plan recognizes the importance of protecting Coastal Douglas Fir (CDF) ecosystems which are among the rarest and endangered coastal ecosystems within the plan area and on the east coast of Vancouver Island.
Policy 4.1.15	The RDN should support developing a strategy for conservation measures within Coastal Douglas Fir ecosystems which occur within the plan area.



Implementation Actions	Timing (Immediate, Short Term, Long Term, Ongoing)
RDN to consider the protection of ESA's as part of zoning amendment application review process.	Ongoing
Work with the Provincial subdivision approving officer to encourage the protection of ESA's.	Ongoing
Work with the Ministry's responsible for ecosystem conservation and forest stewardship and other stakeholder groups and agencies to develop a strategy for conservation measures on lands within the Coastal Douglas Fir Ecosystem.	Ongoing

Objective 4.1.4	Support and encourage community involvement and environmental education
Policy 4.1.16	Support and encourage communication and education on ESA's within the private sector, non-governmental organizations, and community groups.
Advocacy Policy 4.1.17	Land owners, senior government agencies, non-profit societies, and non-governmental organizations are encouraged to participate in the registration and holding of covenants and to assist with funding for environmental conservation.
Advocacy Policy 4.1.18	Encourage and assist (through education) land owners to develop their land in an environmentally sensitive way.

Implementation Actions	Timing (Immediate, Short Term, Long Term, Ongoing)
The RDN should develop an environmental stewardship education program.	Short Term
The RDN should develop an eco-gifting program whereas property owners wishing to donate land for the purpose of ecological protection can do so to the RDN or non-profit conservation organization.	Short Term
The RDN should develop incentives to encourage green development.	Ongoing

4.2 Freshwater Management

Electoral Area 'A' contains an extensive and complex interconnected water system primarily within the Nanaimo River watershed which includes watercourses, lakes, wetlands and aquifers that help define Electoral Area 'A'. The preservation and enhancement of pristine aquatic and riparian ecosystems is vital as many terrestrial and aquatic plant and animal species depend on these ecosystems for survival.

Surface water is also a source of water for residences and agriculture and is valuable for recreational activities. In addition, maintaining intact watersheds and natural flow regimes serves to maintain stable stream channels and helps prevent or moderate flooding.



The Ministry of Environment, in cooperation with Fisheries and Oceans Canada, adopted the [Riparian Areas Regulation](#) (RAR), which came into force on March 31, 2006. This legislation was enacted in July of 2004 under Section 12 of the British Columbia [Fish Protection Act](#). The purpose of the RAR is to protect the features, functions, and conditions that are required to support fish life processes in riparian areas. Local governments are required to protect all streams in accordance with the regulation. This plan satisfies the requirements of the RAR.

Objectives and Policies

Section 4.2	Policy/Objective
Objective 4.2.1	To identify, preserve, protect, and enhance all freshwater ecosystems within Electoral Area ‘A’.
Policy 4.2.1	Ensure that all development, including the subdivision of land containing or adjacent to a watercourse, does not adversely affect any watercourse or its associated riparian ecosystems.
Policy 4.2.2	Development applications that pose negative impacts will not be supported unless those impacts are mitigated on the subject parcel or an adjacent parcel containing similar habitat such that the end result represents an overall improvement to the function of the ecosystem being impacted.
Policy 4.2.3	The restoration and ‘day lighting’ of previously disturbed watercourses is supported. Culverting and the permanent diversion of watercourses shall be discouraged.
Policy 4.2.4	Creative development proposals which enhance and/or provide protection to a watercourse shall be supported including clustering of development, density averaging, covenant protection, park land dedication over and above the minimum 5% requirement, providing green space and other methods. A rezoning and/or amendment to the RGS may be required.

Implementation Actions	Timing (Immediate, Short Term, Long Term, Ongoing)
Consider implications of development on surface water and riparian areas during application reviews.	Ongoing
Request that the subdivision approving officer not support a proposed subdivision unless watercourses are adequately protected through covenants, green space dedication where appropriate, or conservation agreement. Approval from the Agricultural Land Commission shall be required where a covenant would prohibit agricultural activities on lands within the Agricultural Land Reserve.	Ongoing

Objective 4.2.2	To maintain, enhance and protect the biodiversity, ecological function, aesthetic appeal and recreational value of all watercourses in Electoral Area ‘A’.
Policy 4.2.5	Designate DPA’s in Section 12 of this plan to protect watercourses and their associated riparian ecosystems.



Policy 4.2.6	The RDN shall support the use of protective measures such as return to Crown, covenants, or conservation agreements for riparian corridors and along the bed of watercourses, creeks, lakes, and wetlands wherever development on adjacent land is proposed.
Advocacy Policy 4.2.7	Proposed subdivisions that include or are adjacent to a watercourse shall not be supported unless the watercourse is adequately protected through covenants, green space dedication where appropriate, or a conservation agreement. Subdivision layouts designed to reduce encroachment into protective covenant areas shall be strongly encouraged.
Policy 4.2.8	Encourage the Provincial and Federal Agencies responsible for watershed management and ecosystem health to monitor watercourses and provide the RDN with updated information on their status, location, and management.

Implementation Actions	Timing (Immediate, Short Term, Long Term, Ongoing)
Work with applicable Provincial and Federal Agencies, and stewardship and enhancement groups to protect and restore watercourses.	Ongoing
For development applications require information from applicants that identifies the potential impacts of development and recommends measures to mitigate the potential impacts. Require reasonable measures as recommended by the qualified professional.	Ongoing

Objective 4.2.3	To encourage and promote environmentally responsible development.
Policy 4.2.9	Support and encourage communication and education on environmentally sensitive features within the private sector, non-governmental organizations, and community groups.

4.3 Coastal Zone Management

Coastal and marine environments provide goods and services from an ecological, economic, and social perspective. The form and dynamics of the shoreline help determine essential habitat conditions for coastal plant and animal communities. Coastal areas are also highly valued by property owners, the general community, and marine recreational users for their aesthetic qualities, recreational values, and views.



In addition, many coastal communities are experiencing unprecedented levels of growth. This is a critical time to recognize the unintended consequences of past practices and to identify ways to reduce the impacts of development and ensure that the benefits of having healthy



marine ecosystems continue to be enjoyed for generations to come.

Objectives and Policies

Section 4.3	Policy/Objective
Objective 4.3.1	Maintain, enhance, and protect biodiversity, ecological function, aesthetic appeal, and recreational value of the waterfront.
Policy 4.3.1	Designate DPA's in Section 12 of this plan to protect the coastline including its associated upland ecosystems.
Policy 4.3.2	Discourage the continued development or intensification of neighbourhoods along the coastal foreshore in order to limit impacts on environmentally sensitive features and the aesthetic impacts of development.

Objective 4.3.2	Minimize impacts on public access and the natural environment.
Policy 4.3.3	Development which impedes public access along the foreshore shall not be supported.
Advocacy Policy 4.3.4	With respect to referrals on the siting of new aquaculture farms, due to the sensitive nature of the marine zone and minimal rates of water exchange in Stuart Channel, the RDN shall strongly encourage the provincial and federal governments to consult with the community to ensure that the impacts of such use have been adequately identified and mitigated.
Policy 4.3.5	The use of marine retaining walls and other 'hard' surfaces such as seawalls, concrete groynes, gabions, and rip rap shall only be supported where a qualified professional has determined that "soft" approaches to shoreline stabilization such as vegetation enhancement, upland drainage control, biotechnical measures, beach enhancement, anchor trees, and gravel placement are not appropriate given site specific conditions. In addition, the construction of shoreline stabilization measures including marine retaining walls must be in compliance with the RDN Marine Retaining Wall Policy, as amended or replaced from time to time.
Policy 4.3.6	The use of shoreline stabilization measures on Crown foreshore, in a manner that obstructs public access to and along public beaches or foreshore areas, shall not be supported. All works below the high water mark require Fisheries and Oceans Canada approval and Crown foreshore tenure from the Integrated Land Management Bureau. Where approval for Crown foreshore use is obtained, the RDN may support proposals for shoreline stabilization measures below the high water mark, provided they are designed to encourage public access along the coastline and do not have negative environmental impacts.
Policy 4.3.7	The RDN supports public access to the water in new subdivisions. Where more than one access to water is required under Section 7(f) of the Land Title Act , the RDN may support the consolidation of accesses to support recreational uses.



Policy 4.3.8	Development proposals adjacent to the marine foreshore should maintain and enhance public access.
Policy 4.3.9	The RDN shall not support zoning the surface of water within the plan area for residential or industrial purposes.

Objective 4.3.4	Foster public ownership and stewardship of the waterfront.
Policy 4.3.10	Support community involvement in the cooperation and coordination between agencies responsible for the use and management of marine, foreshore, and upland resources in order to balance community objectives with comprehensive management of the coastal zone.
Policy 4.3.11	The RDN should not support waterfront development proposals which do not provide suitable public waterfront access or which are likely to result in a unmitigated damage to the environment on land adjacent to the coastline.
Advocacy Policy 4.3.12	The Ministry of Transportation and Infrastructure (MOTI) is strongly encouraged to deny encroachment permits to occupy road ends adjacent to the ocean or a watercourse where the permit would affect public access.

Objective 4.3.5	Minimize the environmental and aesthetic impacts of boat houses, water access stairs, and boat ramps.
Policy 4.3.13	New boat ramps located on private property shall be discouraged in order to minimize cumulative environmental impact.
Policy 4.3.14	Notwithstanding policy 4.3.13, new boat ramps may be supported on publicly accessible lands such as public road rights-of-way to reduce the need for individual boat ramps and to reduce the cumulative environmental impacts.
Policy 4.3.15	The construction of structures for the purpose of providing private water access may be supported where it does not impede public access and where it can be demonstrated that the proposed structure would not have a negative environmental impact, would be safe from a geotechnical and structural engineering perspective, and would not impede views from adjacent properties.
Policy 4.3.16	The construction of boat houses shall not be supported where such structures result in a net negative environmental impact and/or impede views from adjacent properties.
Policy 4.3.17	The size and scale of beach access stairs should be minimized and should not include oversized landings, viewing platforms, decks, or any other additions beyond that which is required to provide safe access. Water access stairs must be located and designed in such a way as to reduce the impacts on native vegetation and animal communities and to preserve slope stability.
Policy 4.3.18	The RDN may consider developing zoning regulations for the construction of boat houses, beach access stairs, boat ramps, boat launching devices, and private docks. The regulations should address maximum dimensions, public access, environmental protection, building materials, minimum setback requirements, protection of view corridors, public consultation, and maximum height requirements.



Implementation Actions	Timing (Immediate, Short Term, Long Term, Ongoing)
Undertake a community planning exercise to develop regulations for boat houses, water access stairs, boat ramps, and private docks.	Short Term

4.4 Drinking Water Protection and Groundwater Resources

Groundwater is the primary source of water in Electoral Area ‘A’ and as such, residents depend on it to meet residential, industrial, commercial, and agricultural needs. A recent groundwater assessment and vulnerability study has shown that the surface water and groundwater regimes in Area A are very complex and not well understood.

Area ‘A’ includes both bedrock and large, shallow, and unconfined aquifers in coarse permeable materials. Some of these aquifers are very productive but are also very vulnerable to surface contamination. In addition to aquifer vulnerability, some portions of Electoral Area ‘A’ also experience a water deficit in the late summer/early fall, meaning that more water is extracted from the aquifers than is replenished resulting in a decline in groundwater levels. The Yellow Point Aquifer located east of Haslam Creek is a naturally low productivity bedrock aquifer. There are indications that there may be a significant long-term decline in water levels in this aquifer.



Some portions of the plan area, mainly those with shallow bedrock aquifers with little storage capacity, experience severe water shortages during dry summer months and residents require water to be trucked in from elsewhere to meet their daily needs. Therefore, protection of drinking water and groundwater resources from both a quality and quantity perspective is paramount to the residents of Electoral Area ‘A’.

This section of the OCP provides objectives and policies which aim to implement the recommendations of the Electoral Area ‘A’ Groundwater Assessment and Vulnerability Study conducted by GW Solutions Inc., and Vancouver Island University dated March 2009.

Objectives and Policies

Section 4.4	Policy/Objective
Objective 4.4.1	Support and encourage further research, inventories, and monitoring of groundwater resources within the plan area.
Policy 4.4.1	Support the installation of monitoring wells throughout the plan area to characterize the dynamic of the aquifers and to monitor the interaction between the surface and groundwater. They should also be installed along the coast to better characterize the groundwater discharge to the foreshore and to monitor any deterioration of the groundwater quality due to saltwater intrusion.



Section 4.4	Policy/Objective
Policy 4.4.2	The RDN shall work with the provincial ministry responsible for monitoring water levels, Snuneymuxw First Nation, and Fisheries and Oceans Canada to consider installing a surface water gauging station where the Nanaimo River discharges into its estuary.
Policy 4.4.3	This plan supports conducting further research and study in order to gain a better understanding of the aquifers in Electoral Area 'A' including characterization and quantification of the water budget for the plan area.
Advocacy Policy 4.4.4	The RDN shall encourage the provincial ministry responsible for groundwater extraction and licensing to quantify and monitor the volume of water being extracted by water license holders.
Advocacy Policy 4.4.5	Support the creation and implementation of an aquifer/groundwater monitoring program in cooperation with the province, community water service providers, and plan area residents.

Implementation Actions	Timing (Immediate, Short Term, Long Term, Ongoing)
At the time of subdivision, development permit application, or rezoning, where a groundwater assessment is being conducted, consider the requirement for the installation of monitoring wells when recommended by a qualified professional.	Ongoing
Conduct additional detailed groundwater studies as time and funding permit.	Ongoing

Objective 4.4.2	Ensure that development applications and proposed subdivisions do not have a negative effect on the quantity or quality of groundwater both today and into the future.
Policy 4.4.6	The vulnerability of aquifers to surface contamination is shown on Map No. 2. Map No. 2 does not indicate areas where there are concerns with groundwater quantity such as the Yellow Point Aquifer. Adjustments may be made to reflect new information as it becomes available.
Policy 4.4.7	Designate DPA's in Section 12 of this plan to protect groundwater resources from potential negative effects of proposed development, where a development permit would be required prior to the development or alteration of land.
Policy 4.4.8	In areas not serviced by either an RDN Community Water system or NCID water, zoning amendments that propose to increase the density or intensity of the use of land above an area designated as 'moderate' or 'high' vulnerability on Map No. 2 shall only be supported where an aquifer impact assessment conducted by a hydrogeologist or other qualified person can demonstrate to the satisfaction of the RDN that the proposed development will be serviced with an adequate year round supply of potable water that meets or exceeds Canadian Drinking Water Guidelines and will not negatively affect the subject aquifer(s) or jeopardize the quality or quantity of water available for use by existing plan area residents.



Policy 4.4.9	The establishment of land uses which would have a negative impact on the quality, or quantity of ground or surface water shall not be supported.
Policy 4.4.10	All land uses and development within Electoral Area ‘A’ should generally be consistent with the groundwater protection best management practices contained in Appendix 2. It is recognized that some of the best management practices go beyond the RDN’s jurisdiction and require cooperation with other jurisdictions, individuals, and business owners The Best Management Practices contained in Appendix 2 are not intended to be enforceable and shall only be used as a guide.
Policy 4.4.11	All development applications must minimize impervious surfaces and consider both natural and man-made systems to maximize groundwater recharge while ensuring that groundwater resources are protected from potential deleterious substances.
Advocacy Policy 4.4.12	Encourage the subdivision approving officer, when considering a proposed subdivision, to require an aquifer impact assessment to ensure that the newly proposed potable water supplies will not negatively affect the subject aquifer(s) or jeopardize the quality or quantity of water available for use by existing plan area residents.
Policy 4.4.13	With respect to subdivision applications where community water is not available, the RDN should ensure that each proposed lot be provided with a sustainable water supply which does not negatively affect existing adjacent properties.

Implementation Actions	Timing (Immediate, Short Term, Long Term, Ongoing)
Adopt a subdivision servicing bylaw that applies to on-site servicing and includes requirements to drill and test a well on each proposed lot to ensure that each proposed lot has a sustainable water supply.	Short Term

Objective 4.4.3	Encourage a comprehensive and innovative approach to water conservation.
Policy 4.4.14	Encourage the use of soil covers and crops with low watering needs, reducing water loss.
Policy 4.4.15	Consider the formation and implementation of a comprehensive water conservation program in cooperation with the provincial ministry responsible for water planning, community water service providers, and plan area residents.
Policy 4.4.16	Encourage the use of xeriscaping, low flow plumbing fixtures, micro-irrigation, gray water and rainwater collection and reuse, and other innovative water conservation technologies in all existing and proposed development.
Advocacy Policy 4.4.17	Senior agencies are encouraged to remove barriers for the use of proven water conservation technologies that significantly reduce water consumption such as gray water and rain water collection and reuse.



Advocacy Policy 4.4.18	The provincial ministry responsible for water licensing and extraction is strongly encouraged to monitor existing water extraction licenses and to revoke licenses that are no longer in use.
Advocacy Policy 4.4.19	The provincial ministry responsible for groundwater licensing and extraction is encouraged to adopt a groundwater extraction licensing and monitoring program to encourage water conservation and to provide aquifer data to help better understand and manage groundwater resources.
Advocacy Policy 4.4.20	The provincial government is requested to introduce legislation to govern the management of groundwater resources to ensure that: <ul style="list-style-type: none"> a. The rate of groundwater withdrawal does not exceed the rate at which the sources are recharged. b. There is an adequate allotment of water earmarked for agricultural use; and. c. The human use of ground or surface water does not have negative impacts on fish and wildlife, or on the recreation potential of a creek, river, or significant wetland.
Policy 4.4.21	The RDN should not support rezoning applications which propose to extract and/or process water for the purpose of bulk or retail sale such as bottled water. This does not include water services being provided to those who require water to be trucked in from elsewhere to meet their daily household needs due to well water shortages and or water quality concerns.

Implementation Actions	Timing (Immediate, Short Term, Long Term, Ongoing)
Consider rebate programs to encourage low flow toilets, plumbing fixtures, and other water saving devices.	Ongoing
Designates guidelines within DPA's to encourage water conservation.	Immediate

4.5 Rainwater Management

The creation of impervious surfaces interrupts the natural water cycle by decreasing the percentage of rain water and other surface water that is able to naturally infiltrate back in to the earth.

The resulting excess surface water, the water that would have otherwise been able to infiltrate back in to the earth, no longer becomes available to recharge aquifers and moderate stream flow and temperature. In addition, the excess water has the potential to erode native soils and pick up contaminants as it flows along the surface before depositing them in watercourses that form part of the natural drainage system. Therefore, there is a direct relationship between the amount of impervious surfaces in our built environment and environmental health.



Since plan area residents rely on groundwater for their domestic water supply and the plan area contains many fish bearing streams that are sensitive to disturbance that are also valued for their role in the ecosystem and for recreational opportunities, it is important to ensure that rain water runoff is managed in a way that ensures that the environment is protected.

Objectives and Policies

Section 4.5	Policy/Objective
Objective 4.5.1	Recognize rain water as a natural resource that must be managed to protect the environment including the quality and quantity of ground and surface water.
Policy 4.5.1	The RDN should take steps to ensure that erosion control is provided during construction and demolition.
Policy 4.5.2	The RDN may consider regulating impervious surfaces within the plan area through tools such as zoning regulations, landscaping requirements, etc.
Policy 4.5.3	The creation and implementation of a comprehensive area wide rain water management plan is supported.
Policy 4.5.4	The RDN shall strongly encourage rainwater retention and collection and should ensure that development proposals do not increase the peak flow run off into adjacent areas.
Policy 4.5.5	The RDN shall not support development applications that propose to or may result in the release of rain water run off containing sediments or other contaminants off site.

Implementation Actions	Timing (Immediate, Short Term, Long Term, Ongoing)
Develop a strategy for management of impervious surfaces at a watershed scale.	Long Term
Develop a watershed management plan.	Long Term

Objective 4.5.2	Support the use of engineering and environmental designs that mimic the function of the natural environment.
Policy 4.5.6	Development or subdivision of land must where practical be designed to: <ul style="list-style-type: none"> a. Replicate the function of a naturally vegetated watershed; b. Maintain the hydrological regime of surface and groundwater and pre-development flow rates; c. Minimize interference with groundwater recharge; and, d. Not introduce or remove materials where it would cause erosion of or the filling in of natural watercourses and/or wetlands.
Advocacy Policy 4.5.7	The Regional District shall request that the Approving Officer require subdivisions to be designed to maintain the hydraulic regime of streams and watercourses while providing sufficient drainage in a manner which does not interfere with groundwater recharge or allow erosion materials into natural watercourses, lakes, and wetlands.



Implementation Actions	Timing (Immediate, Short Term, Long Term, Ongoing)
When commenting on subdivision application referrals from the MOTI, the RDN shall request that the subdivision approving officer require the applicant to incorporate rainwater management systems which do not interfere with groundwater recharge or allow erosion materials into natural watercourses, lakes, and wetlands.	Ongoing
Include guidelines within DPA's to ensure that rainwater is managed appropriately and in general conformity with this plan.	Immediate

Objective 4.5.3	Minimize the amount of impervious surfaces to the greatest extent possible.
Policy 4.5.8	Zoning amendment applications that would result in increased density or intensification of land use shall be required to demonstrate that impervious surfaces have been minimized.
Policy 4.5.9	Rain water management provisions shall be incorporated in to DPA's included in Section 12 of this plan.
Policy 4.5.10	The RDN should not support development which would result in an increase in rain water flowing onto adjacent lands. Drainage must be controlled on-site by retention of open ground for infiltration, on-site retention basins, naturally vegetated areas, rock pits, or dry wells to the satisfaction of the RDN, who may require the owner to have the on-site storm drainage facilities designed by a qualified professional engineer at the owner's cost. Where onsite drainage is not possible due to poor drainage conditions as determined by a professional engineer, other environmentally sound options may be considered and may be subject to approval by the MOTI.

Implementation Actions	Timing (Immediate, Short Term, Long Term, Ongoing)
When evaluating rezoning applications which result in increased density or intensification of land use, the RDN shall require the applicant to demonstrate that impervious surfaces have been minimized.	Ongoing



4.6 Encouraging Sustainable Development

Well designed developments contribute towards the Electoral Area ‘A residents’ goal of preserving and protecting the natural environment, conserving resources, and reducing greenhouse gas emissions. Factors such as historical land use patterns, inefficient buildings, site design, and recently climate change have raised environmental awareness and the need to improve the efficiency of and reduce the ecological footprint of the built environment.



This section works towards achieving the Community Vision by encouraging green development.

Objectives and Policies

Section 4.6	Policy/Objective
Objective 4.6.1	Encourage the use of efficient building materials, techniques and practices that reduce energy and water consumption.
Policy 4.6.1	The use of proven innovative and technologically viable technologies that make efficient use of water and energy resources shall be supported such as gray water recycling, subject to provincial approval where applicable.
Policy 4.6.2	The RDN shall consider developing a sustainability checklist for the purpose of encouraging green development and best management practices which should include a focus on energy efficiency, water conservation, greenhouse gas emission reductions, resource conservation, best management practices, site design considerations, and environmental protection.
Policy 4.6.3	In conjunction with the sustainability checklist, the RDN shall consider the development of an incentive program for developments which receive a high score. Incentives may include, but are not limited to, reduced/waived fees and DCC's, quicker processing times, rebates for energy and water efficiency, and community recognition.
Policy 4.6.4	Where irrigation is required to maintain proposed landscaping, it should be designed and installed by an Irrigation Industry Association of British Columbia certified irrigation designer.
Advocacy Policy 4.6.5	The RDN shall work with the Vancouver Island Health Authority (VHIA) and other jurisdictions having authority to remove the barriers and encourage the use of green technologies for on-site rain water, gray water and reclaimed water recycling.
Policy 4.6.6	The RDN should consider developing a program with incentives that encourages homeowners to retrofit existing housing stock for the purpose of increasing its energy and water efficiency.
Policy 4.6.7	The use of local and sustainable building materials such as stone, wood, and site cut timber shall be encouraged.
Policy 4.6.8	The use of renewable energy systems such as wind, solar-voltaic cells, micro-hydro, cogeneration, and geothermal shall be encouraged.



Implementation Actions	Timing (Immediate, Short Term, Long Term, Ongoing)
Investigate the feasibility of a water conservation rebate program. Consider incentives for rain water retention systems and low flow fixtures and appliances.	Short Term/ Ongoing
Work with the Vancouver Island Health Authority to streamline approvals for green alternatives.	Ongoing
In consultation with the community, develop a comprehensive sustainability checklist used to evaluate and score development applications and form the basis for incentives for green development.	Immediate
Work with senior governments and other agencies to consider the development of a housing retrofit program to increase the efficiency of the existing housing stock.	Long Term

Objective 4.6.2	Encourage the creation of compact complete communities which reduce the dependence on automobiles for the primary mode of transportation.
Policy 4.6.9	Compact residential development shall be concentrated on lands within the GCB in accordance with Section 6.0 of this plan.

Objective 4.6.3	Encourage developments that contribute towards maintaining a healthy natural environment, conserving water and energy, reducing greenhouse gas emissions, and assist in moving towards sustainability and discourage developments which do not.
Policy 4.6.10	The RDN shall consider amending the development application fee structure to provide financial incentives for all development and building permit applications which score high on the sustainability checklist.
Policy 4.6.11	Rezoning applications that propose developments that achieve Leadership in Energy and Environmental Design (LEED) certification, Built Green, or other high level standard shall be encouraged.
Policy 4.6.12	Comprehensive development proposals that consider the full life cycle of input materials and process by-products, as well as those that seek to minimize the use of energy and raw materials, minimize waste, and build sustainable economic, ecological and social relationships are encouraged (may require a RGS amendment).

Implementation Actions	Timing (Immediate, Short Term, Long Term, Ongoing)
The RDN should initiate a fee structure review with the intent of identifying options for encouraging green development in conjunction with the development of a sustainability checklist.	Immediate

Objective 4.6.4	Educate the public on sustainable development practices and the use of green building technologies.
------------------------	--



Policy 4.6.13	The RDN shall consider providing clear and concise consolidated information available on line and in hardcopy about the availability of grants and rebate programs which support green initiatives for homeowners and developers.
Policy 4.6.14	This plan supports the adoption of a green building policy for all new buildings as well as renovations and retrofits of existing buildings.
Policy 4.6.15	The RDN should support the creation of a community education program aimed at informing the community on actions they can choose which result in reduced GHG emissions and efficient use of energy and resources.

Implementation Actions	Timing (Immediate, Short Term, Long Term, Ongoing)
Amend the RDN website by creating a section for grants and rebate programs. Develop informational brochures updated on a yearly basis outlining the availability of grants and rebate programs in support of green development.	Short Term

4.7 Hazard Management

Natural hazard areas are sources of potentially dangerous chance events such as lands which may be susceptible to damage from floods, mass movement of soil, landslides, earthquakes, or forest fire. Map No. 1 shows known natural hazard areas within the plan area (Environmentally Sensitive Features and Natural Hazard Areas).

A wildland fire protection plan for the North Cedar Improvement District, Snuneymuxw First Nation and Electoral Area 'A' was prepared. The report found that a large portion of Electoral Area 'A' is considered to have a moderate, high, or extreme forest fire risk.

Seismic activity is a distinct possibility within the plan area. South Central Vancouver Island is classified as a Zone 4 area according to the 2006 National Building Code Seismic Zoning Map. This indicates that the area is at high risk for seismic activity.

This section is intended to minimize the risk of potential hazards to persons and property.

Objectives and Policies

Section 4.7	Policy/Objective
Objective 4.7.1	Minimize the risk of personal injury or loss of property which may result from natural hazards.
Policy 4.7.1	Designate DPA's in Section 12 of this plan to protect lives and property from natural hazards to ensure that development is reviewed through the development permit process prior to development or alteration of land.
Policy 4.7.2	Despite the minimum parcel sizes supported by this plan, proposals which do not result in an increase to the number of parcels being created or an increase in density may be supported through a rezoning or development variance permit to protect future and existing development from natural hazards subject to satisfying the following criteria: <ul style="list-style-type: none"> a. The proposal must demonstrate that the purpose of the alternate land use



Section 4.7	Policy/Objective
	<p>pattern is for mitigating a risk as a result of a natural hazard on the property including flooding, landslide, and/or forest fire;</p> <ul style="list-style-type: none"> b. A report, from a professional qualified to comment on the applicable hazard, shall be required and must include an assessment of the hazard and recommendations to minimize the risks; c. A covenant prepared at the applicant's expense and to the satisfaction of the RDN shall be registered on the title of the subject property registering the professional report, requiring compliance with the report's recommendations and saving the RDN harmless from liability as a result of the proposed development; d. There must be a demonstrated need and rationale for the proposed land use pattern; e. Performance bonding and/or a development agreement may be required to ensure that the recommended mitigation works are complete to the satisfaction of the RDN; f. Density and/or the number of potential parcels shall be based on the buildable area taking into account site constraints not the overall parcel size; g. The balance/remainder of the property is protected from further subdivision and/or development through zoning and/or covenant; and, h. The land is not located in the ALR and the proposal is consistent with the RGS.

Objective 4.7.2	Enforce mitigation measures which are compatible with the needs of local residents and are sensitive to the environment.
Policy 4.7.3	No development application, subdivision, or alteration of land in a natural hazard area shall be supported unless the applicant or appropriate authority provides evidence that measures can and will be taken to reduce the potential hazard, mitigate the risk, and protect adjacent properties from possible impacts.
Policy 4.7.4	All development proposals located within a designated floodplain must comply with the RDN Floodplain Management Bylaw 1469, 2006 as amended or replaced from time to time.

Objective 4.7.3	Identify, conserve and protect natural hazard areas and adjacent lands from damage due to development, subdivision, or alteration of land.
Policy 4.7.5	Areas susceptible to flooding, mass movement, unstable slopes, high rates of erosion, forest fire, steep slopes, or land that would pose a threat to property or lives if developed is deemed a natural hazard area. These areas are identified on Map No. 1 (Environmentally Sensitive Features and Natural Hazard Areas).
Policy 4.7.6	Natural Hazard Areas are not limited to the boundaries indicated on Map No. 1 and adjustments may be made to reflect changing on-site conditions or hazard assessments.
Advocacy Policy 4.7.7	The Ministry of Environment is encouraged to provide additional floodplain mapping data on other watercourses in the plan area.



Policy 4.7.8	The RDN is encouraged to provide information to land owners, perspective buyers and developers on the potential hazards within the plan area and methods for minimizing risk.
--------------	---

Implementation Actions	Timing (Immediate, Short Term, Long Term, Ongoing)
Distribute fire smart manuals and informational brochures to land owners and applicants for development applications.	Ongoing
Work with the provincial ministry responsible for forest and risk management, Union of British Columbia Municipalities, South Island Woodlot Association, and Private Managed Forest Land Council to develop and implement a fuel abatement program for the plan area.	Ongoing

