

# Drinking Water and Watershed Protection Program



*Submission for:*

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Best Practices, General



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## Summary

Here on the 'wet coast' of British Columbia, one might take a safe, sufficient supply of water for granted. That is a precarious assumption. The quantity and quality of surface and groundwater are directly affected by human activity, whether that is land development, resource extraction, water consumption, or discharge of pollutants. All of these activities are on the rise in the Regional District of Nanaimo (RDN). These activities have already led to negative changes in many watersheds and groundwater sources in a number of areas. This not only affects the health of the Region's ecosystems but also the social and economic stability of the Region. Drinking Water & Watershed Protection (DWWP) is a service for the RDN Electoral Areas focused on providing improved management and increased security of ground and surface water resources.

The DWWP program was created to help address issues associated with impacts on the region's water resources and to improve our approach to land use that would then assist in reducing further degradation.

## Background

The RDN has a long-standing interest in drinking water protection throughout the region. Our surface and groundwater sources are constantly at risk from human activities - land development, forestry, agriculture, mining, recreation, water consumption and waste disposal, to name a few. All of these activities are on the rise in the RDN. There are already signs of trouble - declining water levels in wells in some parts of the region, saltwater intrusion in others, low flows and high temperatures in many streams during the summer.

The RDN Board identified Watershed/Drinking Water Protection as a priority in its 'Strategic Plan for 2003-2005'. The initial Drinking Water Protection efforts in October 2004 focused on actions that the RDN could take regarding drinking water protection in its seven local water service areas. Facing the realities of a growing population, competing land uses, and shrinking provincial resources, the Board recognized the need to take a broader perspective – to look at ways the RDN can address the protection of watersheds and drinking water in cooperation with the many other stakeholders in the region. In August of 2005, the RDN Board resolved to take a regional perspective on Watershed and Drinking Water Protection and develop a Regional Drinking Water and Watershed Protection Action Plan outlining a strategy for sustaining our water resources.

In 2007, the DWWP Action Plan was created, with the help of a committee representing a variety of region-wide interests including the Ministry of Environment, the Vancouver Island Health Authority, the Islands Trust, local well drillers, forestry interests, residents and conservation groups. To make the program a reality, the plan was taken to referendum and in November of 2008, Electoral Area residents voted to support the establishment of a new 'Drinking Water and Watershed Protection' service.

## Program Summary

The Drinking Water and Watershed Protection Program's long term goal is improved management and increased security of the ground and surface water resources that sustain our communities. It consists of actions aimed at:

- § Improving awareness of our valuable water resources
- § Understanding risks that threaten these resources
- § Reducing risks through better planning and decision-making
- § Using water wisely to sustain supplies for years to come
- § Healthy water with reduced risk of contamination

The DWWP program is guided by an Action Plan which is organized around seven programs, each involving a suite of actions or projects to be initiated over the next ten years:

1. Public awareness and involvement
2. Water resources inventory and monitoring
3. Management of land use and development
4. Watershed management planning
5. Management of water use
6. Management of water quality
7. Adapting to climate change



Many of the actions are proposed to occur in partnership with other government agencies, the private sector, and volunteers. Responsibilities for drinking water and watershed protection are shared among many players, and many of the above actions cannot move forward effectively without their cooperation.

## Accomplishments to Date

In the year and a half since the inception of the DWWP program, there have been several actions taken to protect the Region's water resources.

### Improved Public Awareness

The outreach component of the DWWP program is Team WaterSmart. Team WaterSmart partners with the Town of Qualicum Beach, Fairwinds Community & Resort, City of Nanaimo, and the City of Parksville to deliver a highly visible education outreach program. During the summer, Team WaterSmart hosts workshops on a variety of topics including rain harvesting, outdoor watering, rain gardens, native plants, and natural pest control. Team WaterSmart also attends many community events with a display that includes informative brochures, maps of the RDN aquifers and watersheds, a rain barrel, dual flush toilet, a watershed model, and a groundwater model.



In 2010, Team Watersmart developed a pilot 'Irrigation Audit' program to provide free irrigation system reviews to homeowners in several high water use neighbourhoods.

The RDN also partners with the Nanaimo Recycling Exchange (NRE), for an in-class school program. The NRE has built an interactive watershed model of the Millstone River Watershed together with Cedar Secondary Art students. The model is taken to classrooms and events across the region.



In Fall 2010, the RDN is launching a private well education program to help rural landowners protect their own drinking water and community water resources. WellSmart will provide workshops in local communities that focus on the care and maintenance of residential water wells. The program is modeled after the already successful RDN SepticSmart program which uses a comprehensive outreach model to help rural landowners better understand and care for their on-site systems.

### Improved Understanding of Water Resources

A key goal of the DWWP program is an increased understanding of water resources, in order to improve decision making and help protect those resources. The DWWP has already begun several programs in support of this goal.



## **Expansion of the MOE Observation Well Network**

The Ministry of Environment currently has 14 dedicated groundwater monitoring wells in the Regional District. These help monitor the amount of water that is available and the quality of water in the ground in select areas. However, there are many areas where there is not adequate information about the quality or quantity of water in the ground. In order to better understand groundwater across the region, the RDN is working with the Ministry of the Environment to add ten new wells to the Groundwater Observation Well Network by the end of 2011.

## **Surface Water Quality Monitoring on French Creek and Englishman River**

The RDN is working with the Ministry of Environment to learn more about the quality of surface water in the Regional District by funding biological sampling on the Englishman River and French Creek, and supporting the development of water quality objectives for the Nanaimo Area Lowlands Eco-region.



## **Private Well Monitoring Program**

Many RDN residents are concerned about their wells going dry and would like to help the RDN understand groundwater levels better, by monitoring their own private wells. The RDN is working with Vancouver Island University's GIS department to develop a website to help residents and local water purveyors share this information.

## **Empowering Communities to Help the Environment**

### **Incentive Programs**

In November 2009, the RDN launched a Toilet Replacement Rebate program to help local residents use water wisely. This is available to all Electoral Area residents whether they are on an RDN water system, another water system, or a private well. This approach differs from the majority of Toilet Rebate programs that only cater to homeowners that are on a water system. The RDN commissioned a study of Innovative Options for Sustainable Water Use and will use this to guide the development of more innovative water conservation incentives in future years.

### **Partnerships with Volunteer Organizations**

The RDN has partnered with a local environmental organization, Mid Vancouver Island Habitat Enhancement Society, to monitor river flows and private water well levels in the Englishman River Area. This will help better understand surface and groundwater interactions in order to protect the water for fish and people. This volunteer driven initiative, not only raises awareness of water resources, but also makes efficient use of community resources. Based on the strong community and local government support, this project was awarded \$70,000 in additional funding through the RBC Blue Water Project.

## Planning for the Future

One of the key goals of the DWWP program is to gather the information necessary to make better land use decisions. The RDN is working with local community groups, and professionals to identify areas of concern where we need to better understand water resources and take action to protect them for the future. The RDN has hosted two professional workshops and three community workshops to learn about concerns with the local water resources. The workshops will help guide future DWWP programs and water stewardship activities.

### Greener Development

The Action Plan prepares the RDN to adopt 'Low Impact Development' standards to reduce the impacts of urban development on watersheds by managing storm/rainwater in ways that mimic nature. Low Impact Development standards will be prepared and adopted for:

- § Rain gardens
- § Pervious paving for driveways and parking
- § Infiltration swales
- § Absorbent soils and landscapes
- § Rainwater leader exfiltration trenches
- § Reduced road widths (from typical urban standards) for local streets
- § Green roofs

After a learning and assessment period, the RDN plans to encourage the use of dual plumbing systems and grey water/rainwater reuse where appropriate. The RDN is currently in discussion with senior government to include dual plumbing in the building code and to offer related training.

Adopting these standards will support the use of these measures as environmentally friendly alternatives to traditional methods of managing rainwater and grey water and support a greener, more progressive development market.

## Community Partnerships and Teamwork

Since the inception of the Drinking Water and Watershed Protection Stewardship Committee, the DWWP program has been highly focused on partnerships and stakeholder involvement. The following organizations provided expertise, support, guidance and participation on the Drinking Water-Watershed Protection Stewardship Committee which shaped the Drinking Water and Watershed Protection Action Plan:

- § Vancouver Island Health Authority - Provincial Government
- § Ministry of Environment - Provincial Government
- § Islands Trust - Local Government
- § Well Drilling Industry Representative
- § Private Forests Lands Council
- § Coastal Water Suppliers Association
- § Mid Vancouver Island Habitat Enhancement Society - Community organization
- § Arrowsmith Water Coalition Society - Community organization
- § Elanco Enterprises Ltd. - Engineer
- § GW Solutions Inc. - Hydrologist
- § Lanarc Consultants Ltd. - Land-use Planner

In 2009, a new Committee was formed for implementation of the Action Plan. The Drinking Water Protection Advisory Committee consists of:

- § RDN Board members (4)
- § General public representatives (2)
- § Vancouver Island Health Authority
- § Ministry of Environment
- § Islands Trust – Local Government
- § Environmental Community Representative
- § Forestry Industry Representatives (2)
- § Water Purveyors' Representative
- § Hydrogeology Representative
- § Academic Community Representative (2)
- § Vancouver Island University Representative
- § Registered Professional Biologist Representative

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## Innovative Approach

The DWWP Program is the first of its kind in British Columbia. The program is a Regional District function in Electoral Areas with taxation authority to support the program's activities. It takes an integrated approach to watershed management, with the goal of managing human activities and natural resources on a watershed basis. It has a strong focus on community involvement and creative partnerships with all levels of government, residents, academia, agencies, and business.

## Increased Effectiveness, Efficiency, and Accountability

The DWWP service will increase the effectiveness of land use planning by helping inform land use decisions. This will provide the Board and staff with the tools to make better land use decisions and improve accountability to the community's citizens.

With a broad watershed protection mandate and minimal resources, the DWWP program looks to increase efficiencies through creative initiatives and by pooling existing resources and effort where possible between a variety of stakeholders such as government, residents, agencies, and business.

The DWWP service has also increased the efficiency by creating a region-wide water education program. In 2005, the Team WaterSmart program was introduced to promote water conservation. At that time, the RDN Team WaterSmart program provided water conservation outreach to RDN Water Service areas, and one local municipality. Since the adoption of the DWWP Action Plan, the Team WaterSmart program, a component of the Plan, has expanded to also include the City of Nanaimo, the City of Parksville, and all RDN Electoral Areas, resulting in a region-wide outreach program. The Team WaterSmart program has expanded from a focus of water conservation to broader messaging on protection of drinking water and watersheds.

## Benefits

The long term goal of the program is improved management and increased security of the ground and surface water resources that sustain our communities. This will help avoid costly capital investments in the future if the water resource is depleted. This will also help avoid costly infrastructure upgrades related to higher water demands in the future for water services in the region.

With the protection of our water resources, other industries are protected such as tourism, fishing, and agriculture. With more knowledge of our water resources, we can better plan for future development.

## Replication

This program could be replicated in whole or in any part by other local governments. Though this program is developed in a region in the west coast, many of the principles and practices developed could be used across Canada. This is a large program, so depending on the jurisdictional priorities there are opportunities to start with a couple components of the Plan and continue to expand the program based on funding and support of the program.

## Conclusion

This RDN's innovative Drinking Water & Watershed Protection program is deserving of the 2010 UBCM Community Excellence Award. The DWWP program addresses issues associated with impacts on the region's water resources and will enhance our role in land use decision making.

## Attachment

Drinking Water and Watershed Protection Action Plan