

# Regional District of Nanaimo's Drinking Water & Watershed Protection Program

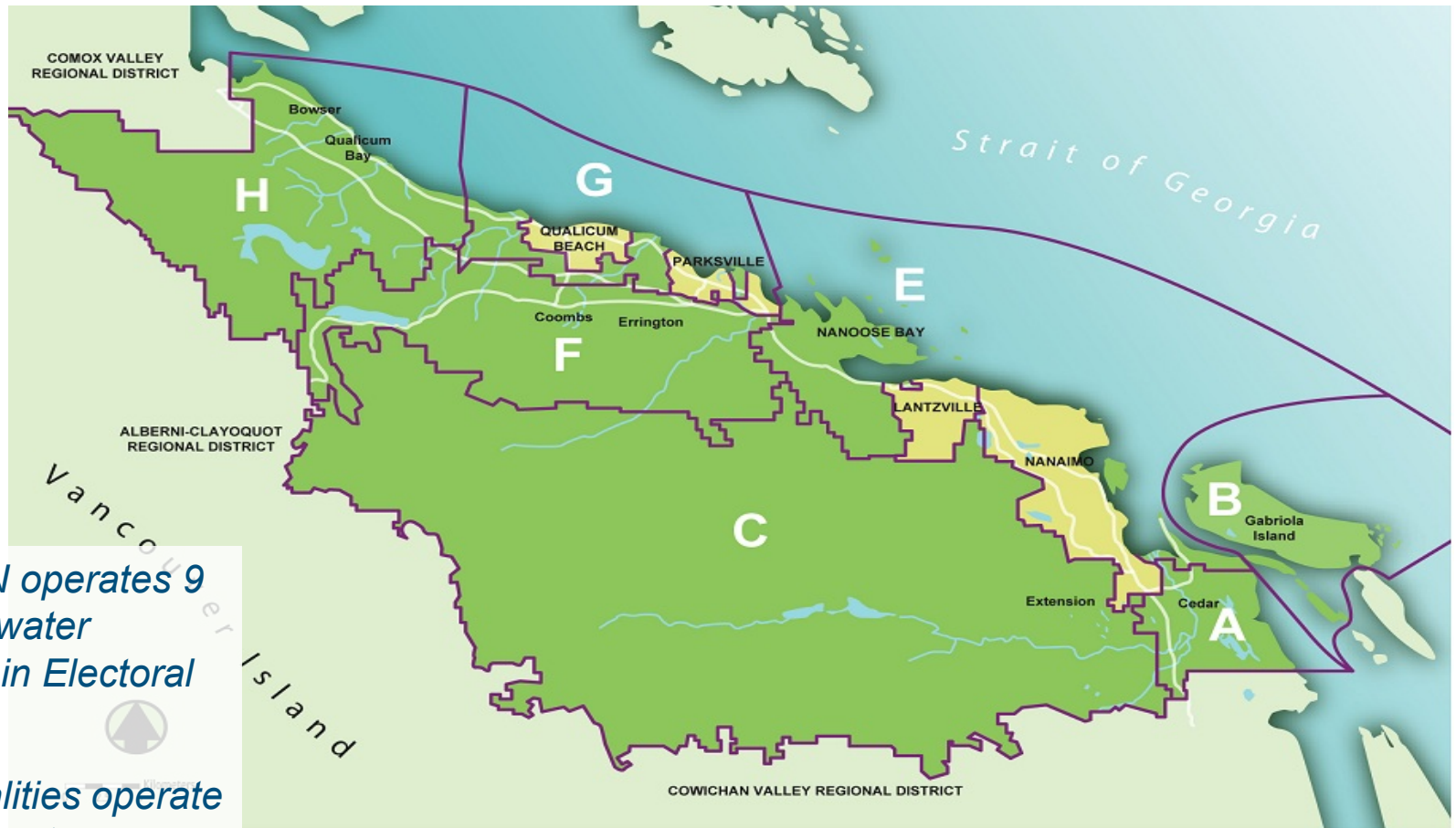
*presented by Julie Pisani - Program Coordinator  
on World Water Day March 22<sup>nd</sup> 2018 – Islands Trust Freshwater Forum*

# INTRODUCTION

## Today I will cover:

- RDN
  - geographic area
- DWWP Program
  - what is it? how does it work?
- Education
  - water conservation, wellSMART, rebate programs
- Science
  - groundwater monitoring, surface water quality monitoring, water budget analysis
- Policy / Planning
  - advocacy with Prov. ministries, inform local land use planning

# REGIONAL DISTRICT OF NANAIMO



- *The RDN operates 9 drinking water services in Electoral Areas*
- *Municipalities operate drinking water services for their residents*



# WATER IS NOT CONFINED BY POLITICAL BOUNDARIES



**Important to manage water on a regional, watershed scale**

# DRINKING WATER & WATERSHED PROTECTION

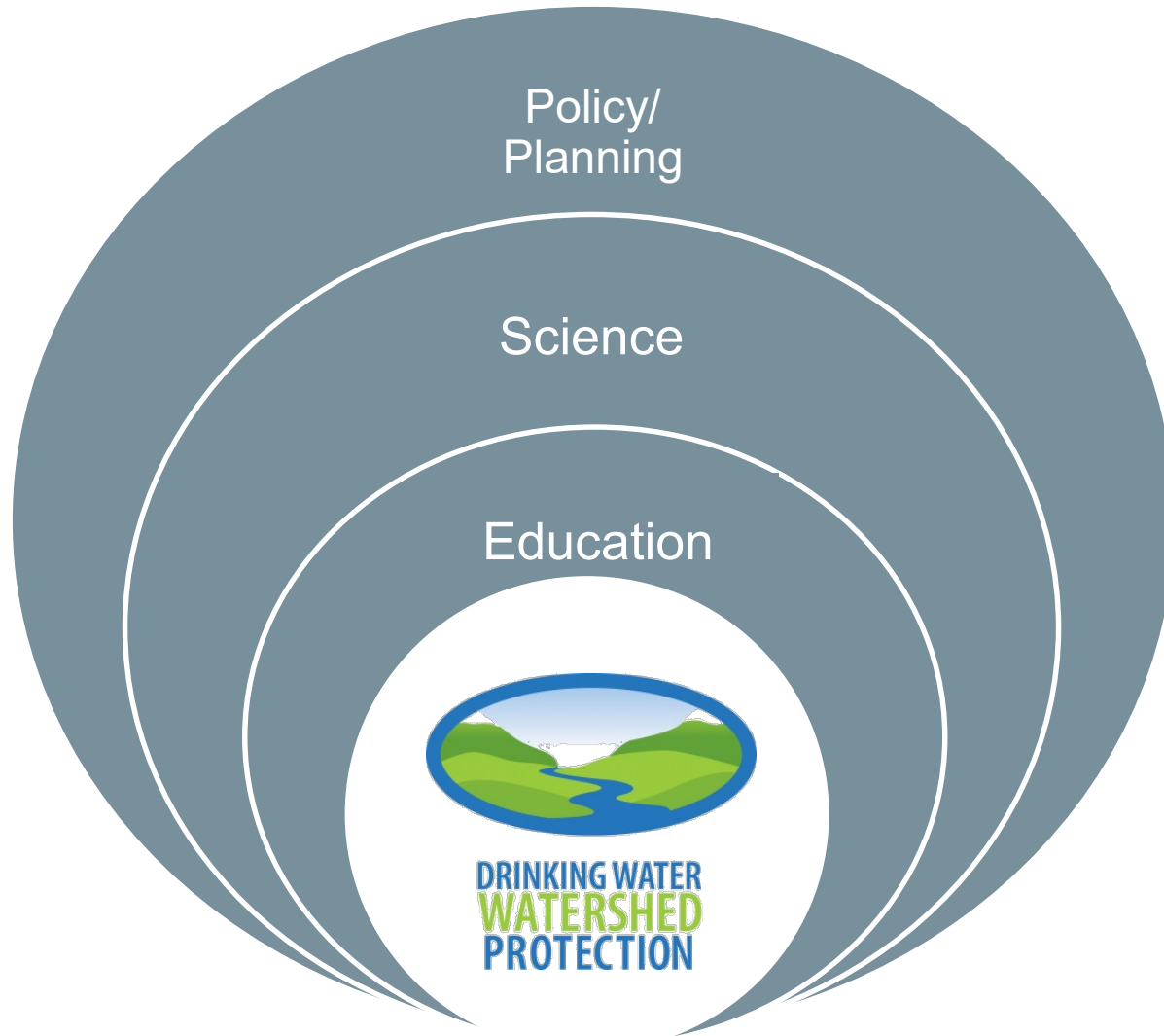


## Objectives:

- Track local water resources to ensure adequate water supply now and in the future;
- Increase water efficiency & protect water quality in our communities to avoid the costs of expanding infrastructure;
- Enable better water management and land use decisions, by collaborating across jurisdictions, to protect property values and ecological values in the region.

**DWWP coordinates these efforts in the region along with many partners**

# PROGRAM AREAS



# EDUCATION & OUTREACH



Engagement through:

- Field Trips
- Online Resources
- Workshop Series
- Community Events



Educational workshop for well owners:

- Since 2010.
- Organized by RDN DWWP & presented by Provincial Staff.
- Information on well construction, maintenance, water testing, groundwater protection.



Rebates for:

- Well head upgrades
- Rainwater Harvesting
- Well Water Testing
- Efficient Irrigation upgrades



# REBATE PROGRAMS



## Wellhead Upgrades

CATEGORY	MAXIMUM REBATE
Secure Well Cap	\$50 (drilled well); \$150 (dug well)
Well Casing Stick-up	\$200
Surface Seal	\$300
Well Closure	\$500

## Well Water Testing

This incentive program rebates 50% off (up to \$150) for full spectrum well water quality tests.



## Rainwater Harvesting

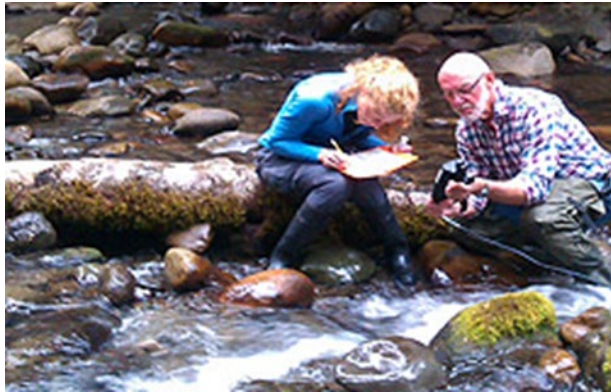
CATEGORY	MAXIMUM REBATE
Cistern 1000 imperial gallons +	\$450
Other eligible expenses – transport piping, filters, installation costs etc.	\$300



# SCIENCE & MONITORING

## Surface Water Quality Monitoring: *Community Watershed Monitoring Network*

- Train and equip 12 volunteer stewardship groups.
- Use Provincial sample protocol & enter data into Provincial EMS database.
- 7 years and running; 55+ sites, 25 + streams.
- Sample for turbidity, temperature, conductivity and dissolved oxygen .



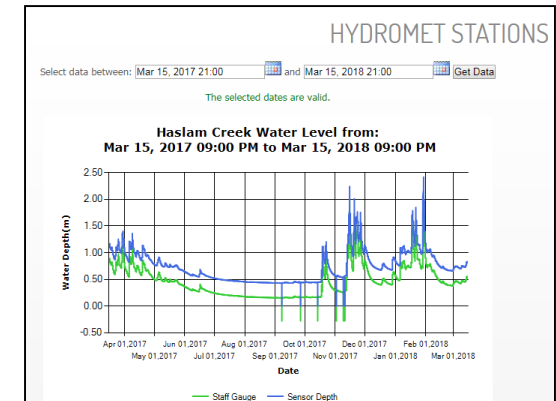
## Observation Well Network: Volunteer & Provincial

- Supported the expansion of the BC Observation Well Network in our region, adding 16 monitoring wells.
- Established monitoring in 30 volunteer private wells to expand reach.
- Data sharing with province & public reporting “State of our Aquifers”

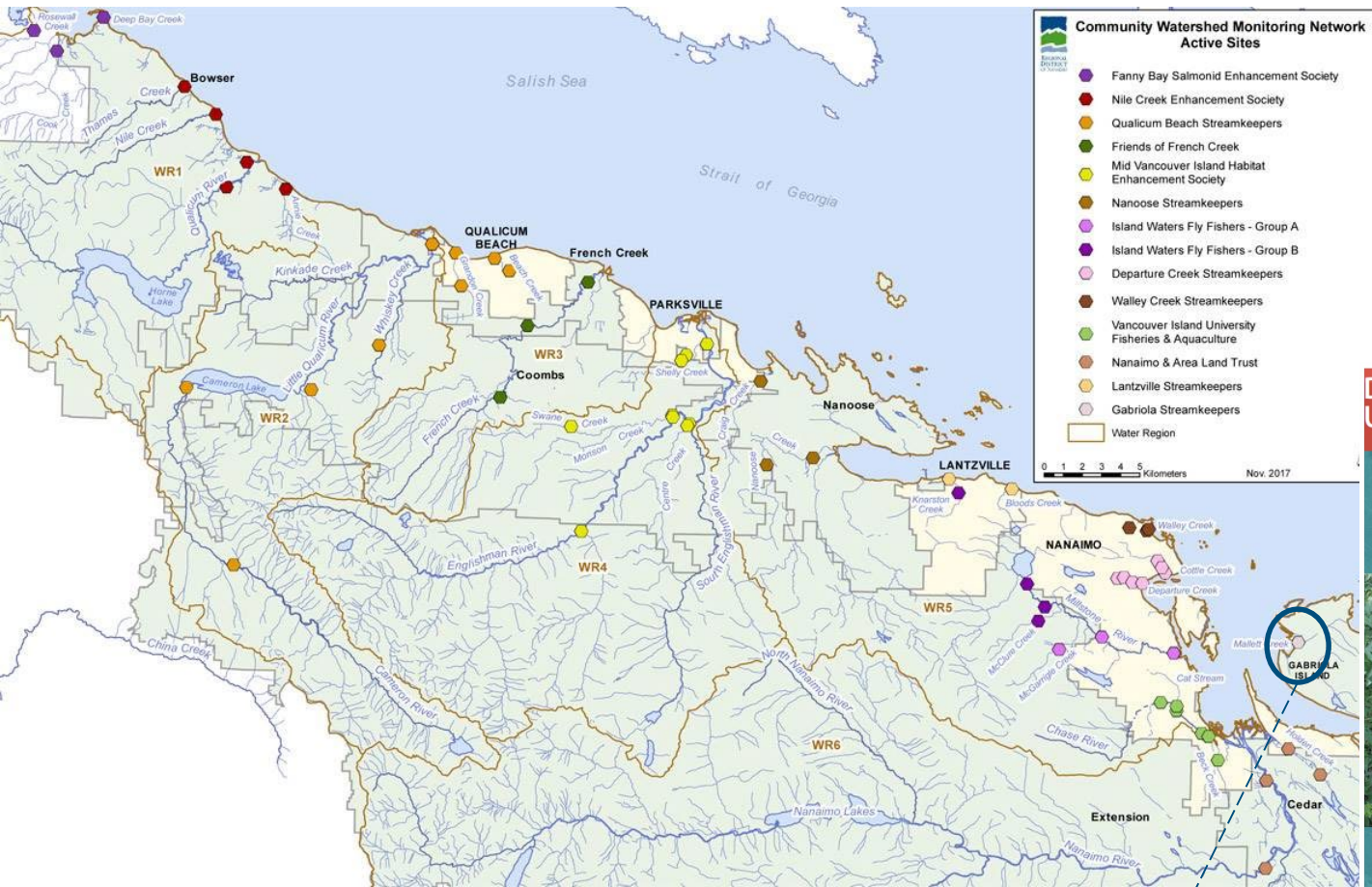


## Hydrometric & Climate Monitoring:

- Partner with FLNRO, DFO, Island Timberlands & private landowners
- Added 4 new streamflow monitoring sites
- Added 2 new climate monitoring sites



# SURFACE WATER QUALITY MONITORING



MALLETT CREEK – Gabriola Streamkeepers

**DROUGHT UPDATE >**  
PULLOUT INSIDE

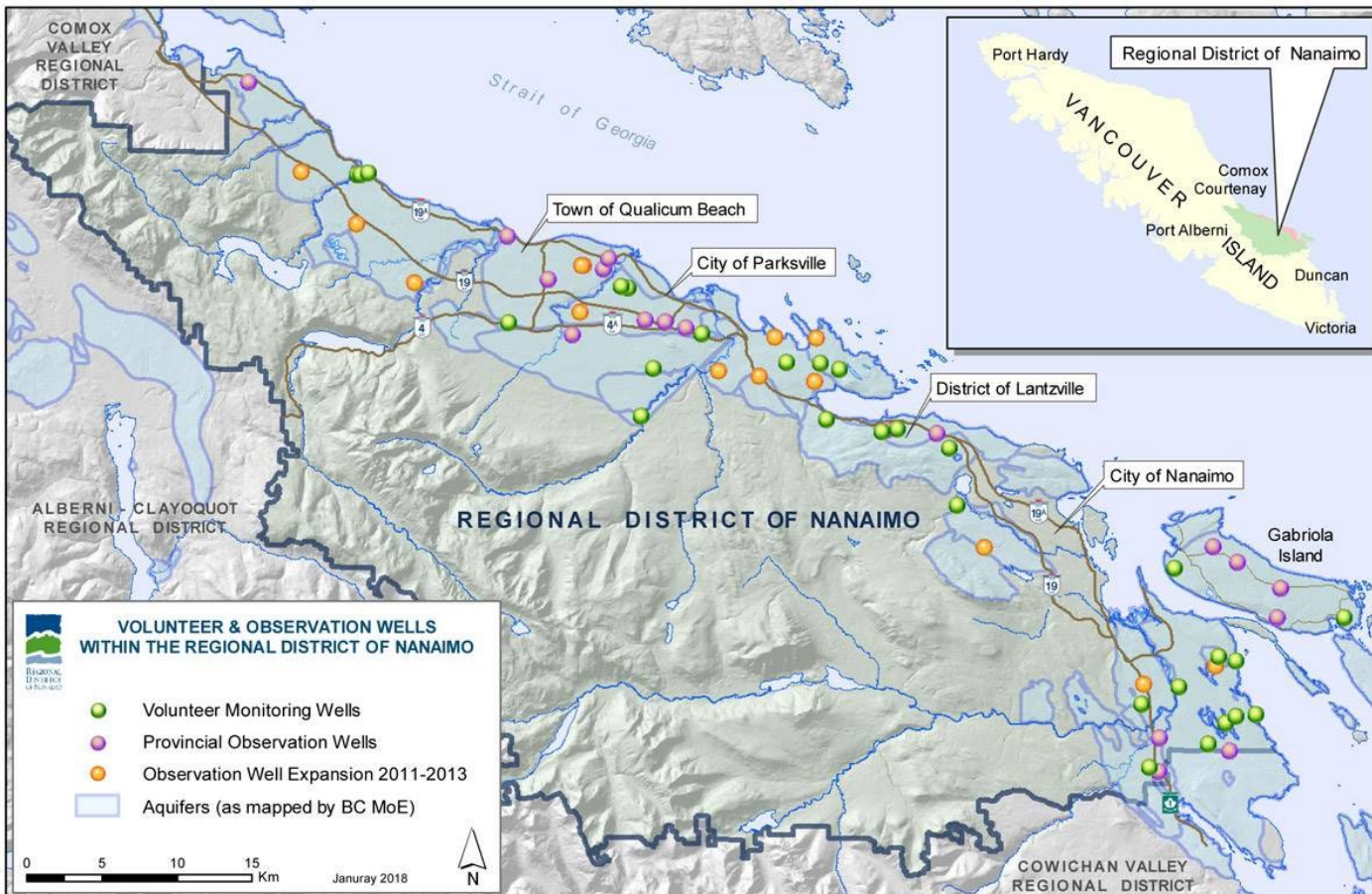
WATER REGION 5

State of OUR Streams 2015  
WATER QUALITY EDITION

This publication gives a snapshot of two streams in your local water region that have been monitored for the past three years as part of the Community Watershed Monitoring Network. Made possible with community partners including provincial and local government, private forest companies, environmental stewardship organizations and volunteers, this network is coordinated through the RDN's Drinking Water and Watershed Protection (DWWP) Program to monitor water quality in 23 streams across the region. We are excited to share what we continue to learn about our local water as we work to achieve goals outlined in the DWWP Action Plan. For more information please visit: [www.dwwp.ca](http://www.dwwp.ca)

DRINKING WATER WATERSHED PROTECTION REGIONAL DISTRICT OF NANAIMO

# GROUNDWATER MONITORING



## State <sup>OF OUR</sup> Aquifers 2017

GROUNDWATER LEVELS EDITION

Aquifers are underground areas where spaces between gravel, sand, clay or rock fill with water. This underground water is called "groundwater" and is an important drinking water source across our region.

For more information please visit: [www.dwwp.ca](http://www.dwwp.ca)

DRINKING WATER WATERSHED PROTECTION

REGIONAL DISTRICT OF NANAIMO

# PHASE 1 WATER BUDGET STUDY: Gabriola

## Water Budget Project: RDN Phase One (Gabriola, DeCourcy & Mudge Islands)

Report Prepared for

Regional District of Nanaimo



Report Prepared by



SRK Consulting (Canada) Inc.  
1CR010.000  
April 2013



THURBER ENGINEERING LTD.

Developed a conceptual hydrogeological model *based on available data*, in attempt to better understand water supply and demand, and relative aquifer stress.

### 3.2 Estimation Method for Pumping Water Demand

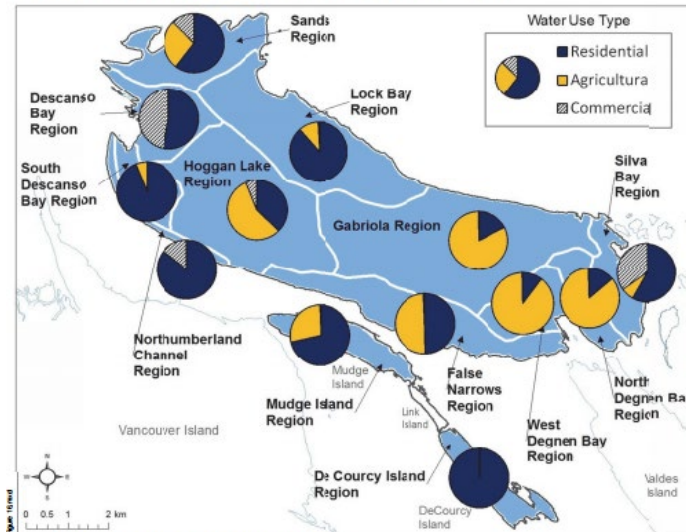
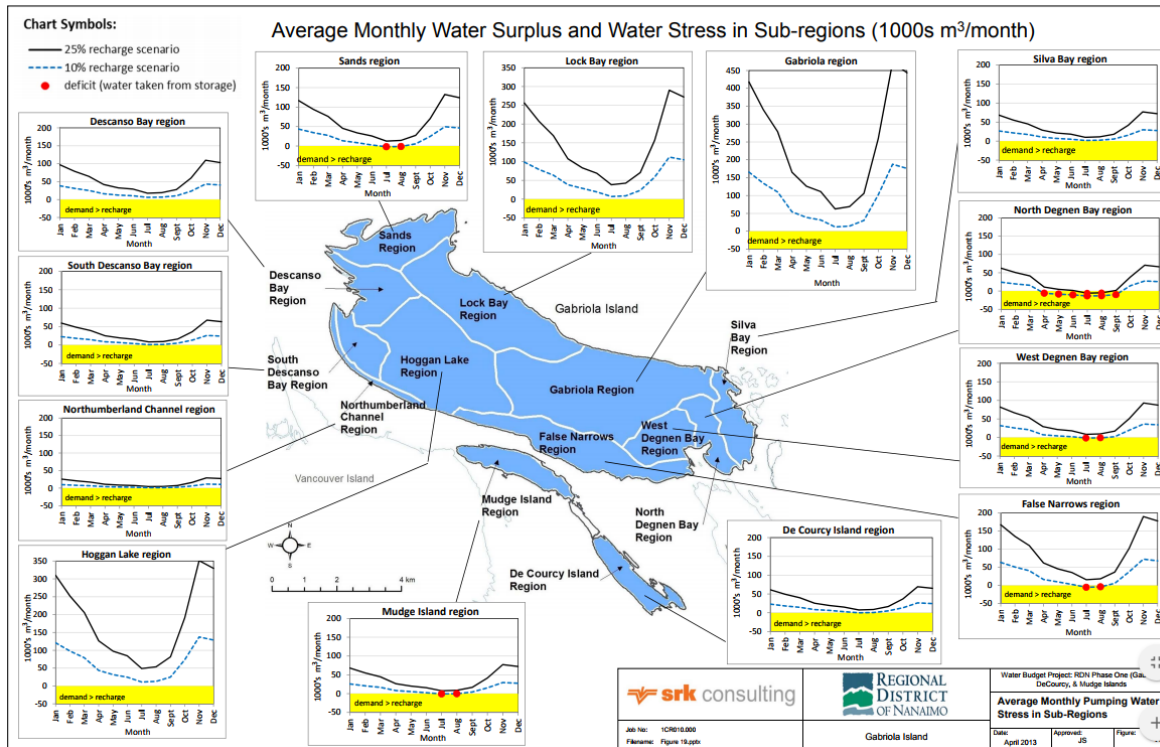


Figure 16: Water use type in sub-regions.

# PHASE 1 WATER BUDGET STUDY: Gabriola



On an *annual* time scale, recharge appears to be sufficient to meet annual demand. On a *monthly* time scale, certain regions extract more groundwater from storage than is recharged.


# GABRIOLA ISLAND GROUNDWATER RECHARGE MODEL

**SFU**  
Department of  
Earth Sciences

**Groundwater Recharge Model for Gabriola Island**

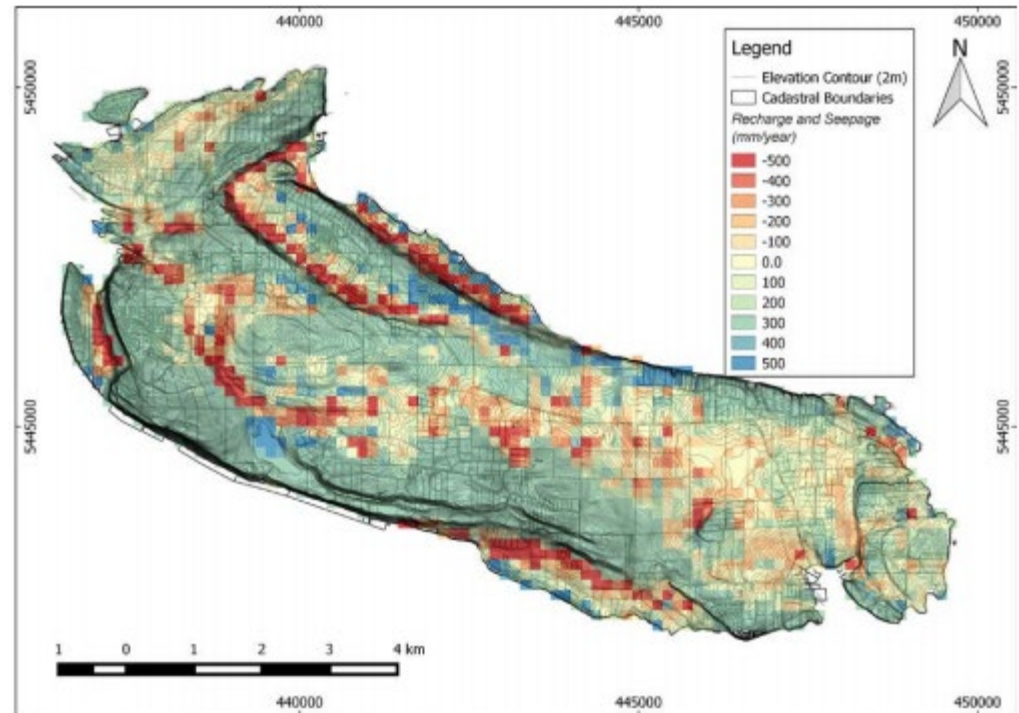
R. Burgess and D.M. Allen  
Department of Earth Sciences, Simon Fraser University

Final Report  
Submitted to:  
Regional District of Nanaimo



Cover photo: Glenn Jaschko

December 2016



**Figure 23. Average annual recharge and seepage (mm/year).** The scale shows positive and negative numbers. Positive numbers represent recharge areas on an average annual basis, while negative numbers represent discharge zones on an average annual basis. Values close to zero are neither recharge or discharge areas.

# LAND USE PLANNING & POLICY



## Resolution on Rainwater as a Potable Water Source

🕒 February 9, 2016 📌 Featured, General Interest, News, Reports 🏷️ AVICC, objectives, potable, Province, rainwater, resolution, treatment, VIHA, water 📌 Water Smart

The Regional District of Nanaimo Board has forwarded a resolution regarding *Rainwater as a Potable Water Source* to the [Association of Vancouver Island and Coastal Communities \(AVICC\)](#) for consideration at their 2016 AGM and convention in April.

If the resolution is adopted at the AVICC convention, then it is forwarded to the [Union of BC Municipalities](#) convention in September.

The resolution urges the Province via the Ministry of Health to develop **rainwater-specific**:

- treatment objectives and standards
- source characterization protocols
- infrastructure requirements

... for small water systems in BC that are regulated under the *Drinking Water Protection Act*. Small water systems purvey water to the public, for example community centres, restaurants, mobile home parks etc. The need for this resolution comes from the fact that many small water systems that operate under the *Act* exist in water-stressed locations and would benefit from utilizing rainwater as an alternate / additional source of water to protect and reduce demand on traditional water sources, namely [groundwater](#).

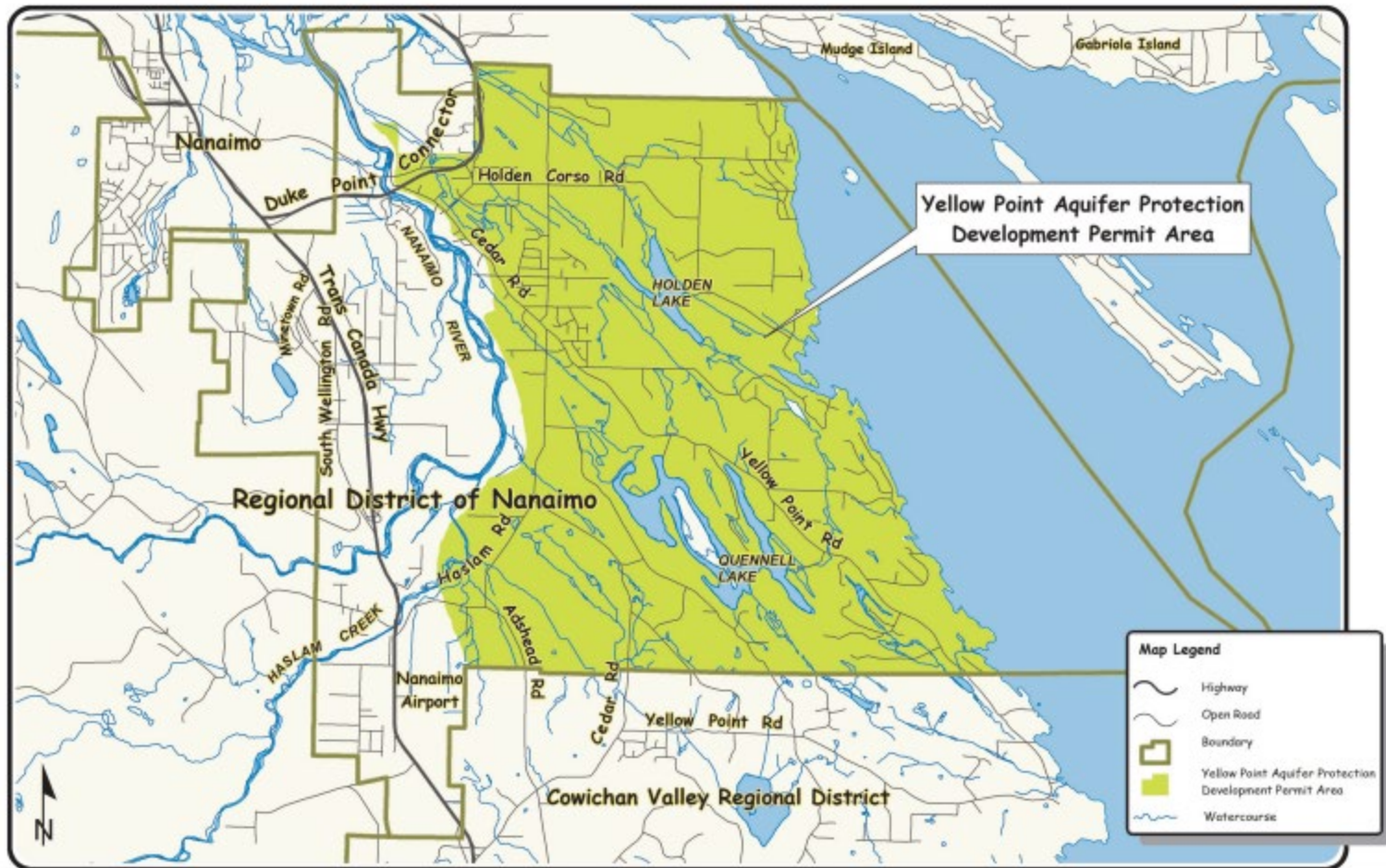
Because rainwater is a non-traditional water source, however, the risks are largely unknown. The quality is inherently variable as collection surfaces and environmental conditions differ from place to place. **There are currently no provincial rainwater treatment objectives or standards for characterizing rainwater as a drinking water source.** There is currently no comprehensive provincial guidance or framework of requirements for water systems to safely develop and use rainwater for potable purposes.



*This lack of guidance and standards makes it difficult for water system operators to confidently and consistently address the safety requirements, and makes it difficult for the local health officers to approve rainwater source proposals. Ultimately this limits the successful utilization of rainwater as a potentially suitable additional water source to increase resiliency in rural areas.*

If the Province, via the Ministry of Health, had a comprehensive framework that was developed through research, it would **improve the prospect of rainwater being used as a safe alternative drinking water source.** This is what the RDN is urging of the Province, to ultimately build community self-sufficiency and resilience in rural areas.

# LAND USE PLANNING & POLICY





*IN SUMMARY...*



**DRINKING WATER  
WATERSHED  
PROTECTION**

**Sustainable Water  
Future**

Protect water  
quality &  
quantity

**Decision-making  
Support & Collaboration**

Local &  
provincial gov.;  
industry

**Local Data & Science**

Groundwater,  
Surface water,  
Climate,  
Demand etc.

**Public Awareness**

Resources to  
promote  
action.

# THANK YOU! QUESTIONS?

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