



Drinking Water & Watershed Protection

September 29, 2021 // Technical Advisory Committee Meeting

AGENDA

REPORTS

**PROJECT UPDATE
PRESENTATIONS**

ROUNDTABLE

**NEW
BUSINESS**

AGENDA

Approval of the agenda

Adoption of minutes

- Minutes from April 28, 2021

Roundtable Updates

Reports

Project Update Presentations

New Business

Adjournment



ROUNDTABLE UPDATES

All committee members

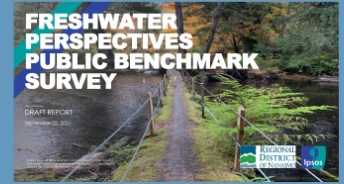
*Focus on drought
response, reflections
from summer.*

Welcome to New
Committee
Members

REPORTS

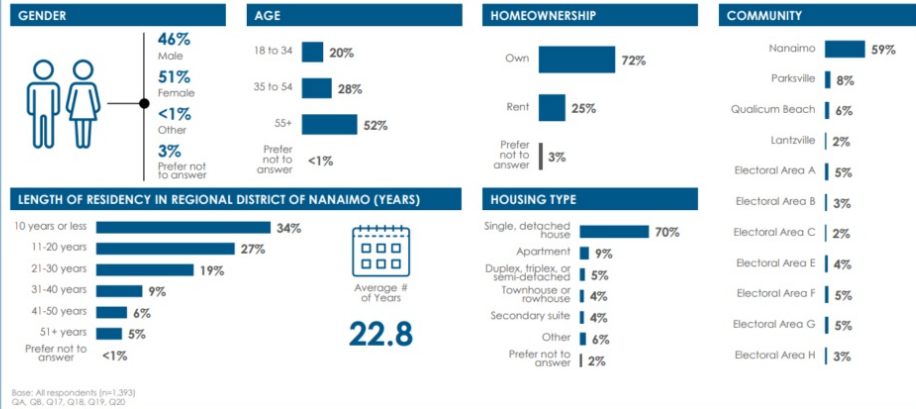
Freshwater
Perspectives
Public Survey
Results

Freshwater Perspectives Public Benchmark Survey - Draft Report



- 1, 393 responses over the month of July 2021
- online & telephone
- questions about freshwater priorities, habits & behaviours, awareness & involvement
- analyzed overall responses, responses by municipality/EA, responses by drinking water source

Weighted Sample Characteristics



Priorities



All the evaluated freshwater issues are important to residents.

- Greatest importance is *availability of supply for long-term community needs*;
- Tied with *the effect of seasonal drought / low streamflows on fish, wildlife and the community*;
- Closely followed by *restoration of streamside trees and vegetation to protect stream water quality*.

Related RDN initiatives:

- Water Supply Resilience study (joint action with CATAC priority)
- Water conservation & drought management (I.e. rebates, watering restrictions, requirements for protecting hydraulically connected streams in development applications)
- Stewardship Seedfunding for watercourse restoration; Riparian Restoration Spatial Analysis (upcoming); Community Watershed Monitoring Network

Habits and Behaviours

Motivations for conserving water encompass a variety of environmental, social and financial factors.



- First is to be *environmentally responsible considering water needs for fish and aquatic ecosystems*
- Close second is to be *socially responsible about a vital shared resource*
- Very close third is *because we may face reduced water availability and local water shortages due to climate change.*
- Less emphasis placed on *saving money (on water & energy bills)* but still was important to a majority of residents
- Fewer still chose their key motivation for water conservation *being able to postpone or avoid the costs of new water infrastructure.*

Interpretation:

- The first two motivators are reflective of the inherent value people place on water. The third top motivator reflects responsiveness to potential threats to water supply.
- The financial related motivators are not as strong, indicating that money is not as strong a driver for water conservation behaviour perhaps due to the 'priceless' nature of water as an essential element for life.
- DWWP messaging should continue to draw on all three elements to motivate behaviour change; certainly not focus solely focus on financial motivators, and have confidence in the ecological and social concern and awareness within the community.

By Electoral Area / Muni

- Most noted environmental responsibility slightly higher a motivation than social responsibility, with the exception of Area B who noted social responsibility as slightly higher motivator than environmental
- Area C residents were least likely to note climate change related water shortages as a motivator

Based on Water Source

- Fewer people on private wells say their motivations to conserve water is to save money on water and energy bills, which makes sense because they don't pay a water bill.

Habits and Behaviours



Water conservation behaviours that are cited the most frequently are leak repair, sharing knowledge, monitoring water usage.

- Less frequently people cite collecting rainwater or re-using greywater

Interpretation

- There is more room for DWWP to promote and support rainwater collection and greywater re-use as key water conservation measures

By Electoral Area / Muni

- Top leak repair areas: Area E, G, H
- Top knowledge sharing areas: Area B, Area A, Lantzville
- Top monitoring water usage: Area G, Area H, Qualicum Beach
- Top rainwater collection: Area B, Area F, Area C
- Top greywater reuse: Area B, Area H, Qualicum Beach

Habits and Behaviours



70% of respondents have a lawn and most common water smart behaviour cited is not using pesticides or herbicides.

- This is followed by letting their lawn go dormant or golden in the summertime by not watering it.
- Fewer say that they reduce their turf area and plant native species, on par with the few that said they use a programmable timer or water deeply but infrequently.
- The least cited action was using a rain sensor that shuts off the irrigation when it's raining or has recently rained.

Interpretation

- Don't need to focus program efforts on reducing chemical use on lawns as it is reportedly low.
- Focus on promoting reducing turf area and water smart irrigation, including continued emphasis on "golden lawns".
- Supports the need for our irrigation and soil rebates.

By Electoral Area / Muni

- Over 80% have a lawn: Area H, Area C, Area A, Qualicum Beach
- Most likely to not apply pesticides: Area B, Area C, Nanaimo, Qualicum Beach, Area F
- Most likely to let lawn go dormant by not watering it: Area B, Area C, Area A, Area F, Lantzville
- Most likely to reduce turf area and place native species: Area H, Area B, Area A, Area C
- Most likely to aerate lawn and top dress with compost: Area G, Qualicum Beach, Area E
- Most likely to use programmable irrigation timer: Area E, Area G, Qualicum Beach, Parksville
- Most likely to water lawn deeply but infrequently: Area E, Area G, Nanaimo, Qualicum Beach, Area H
- Most likely to have a rain sensor: Area G and Area E

Habits and Behaviours



87% of respondents have trees, shrubs, outdoor plants. The most frequent water conservation action is watering early in the morning to reduce losses to evaporation; the least frequently mentioned is using drip irrigation.

Interpretation

- Supports the need for our irrigation and soil rebates

By Electoral Area/ Muni

- Most likely to water early: Area H, Area E, Area G, Area A
- Most likely to mulch: Area G, Area E, Area B, Qualicum Beach
- Most likely to add compost to soil: Area F, Area B, Area G, Area H
- Most likely to use drip irrigation: Area E, Area G, Lantzville



57% of respondents have a vegetable garden. The least frequently mentioned behaviours are mulching to increase water retention and using drip irrigation

Interpretation

- Majority of folks see growing food themselves as an important use of water.
- Supports the need for our irrigation and soil rebates

By Electoral Area / Muni

- Over 70% have a vegetable garden: Area F, Area H, Area C, Area B
- Most likely to place plants with similar water requirements together: Area F, Area H, Qualicum Beach
- Most likely to mulch: Area F, Area B, Area H
- Most likely to use drip irrigation: Area E, Area G, Lantzville

Habits and Behaviours



Nearly half of those with outdoor landscapes say that they maintain **cannot identify barriers to conserving more water outdoors**. Of all barriers mentioned, 'caring for plants' is the top of the list.

Interpretation

- Either this means they are truly doing all that can be done, or they perceive that they are doing all that can be done.
- The minority that list the barriers do provide some insights as to affordability, information on plant choice / understanding of how much water plants need to survive, & reliance on irrigation to keep plants alive in drought.
- DWWP can do more education on and continue to provide financial support for measures that help conserve water as well as the plants that are drought tolerant and the landscape designs that require less water

By Electoral Area / Muni

- Most likely to cite affordability as a barrier: Area A, Area B, Area C, Area H
- Most likely to cite weather / climate / lack of rain: Area B, Lantzville, Area C, Area G
- Most likely to cite lack of [efficient] irrigation infrastructure: Area H, Nanaimo, Area F
- Most likely to cite no storage tanks as a barrier: Area B
- Most likely to cite lack of knowledge: Area C, Nanaimo, Parksville
- Most likely to cite lack of ability to reuse greywater: Area B, Area C
- Most likely to cite large lawn or landscape area: Parksville, Area C, Area E, Area G
- Most likely to state that there is no barrier to conserving more: Lantzville, Parksville, Qualicum Beach
- Most likely to state they don't know: Area F, Area E, Area G, Area H

Habits and Behaviours



16% of respondents have a riparian areas on their property, and the majority report that they do not dispose of yard waste along the streambank nor install seating, trails or bridges.

- Over half also report that they remove invasive species.
- Much fewer mention that they plant additional native species to expand the vegetated buffer zone beside the stream

Interpretation

- Shows there's much room to expand our efforts in supporting riparian planting and restoration activities among riparian landowners.

By Electoral Area / Muni

- Over 25% respondents have riparian properties: Area C, Area F, Area H, Area A
- Most likely to not dispose of yard waste on streamside: Lantzville, Area A, Area B
- Most likely to not install seating, trails or bridges: Area G, Area C, Area E
- Most likely to remove invasive species: Area B, Area A, Area G
- Mostly likely to plant additional vegetation: Area G, Area H, Area B

Habits and Behaviours



Most are unaware of any **rain gardens** in their community, don't have one of their own and don't know of any in their neighborhood.

Interpretation

- Shows there is much room to expand the prevalence of rain gardens in the region and supports increasing education on what rain gardens are, including with use of interpretive signage and demo sites.

By Electoral Area / Muni

- Highest awareness of rain gardens (potentially related to prevalence of rain gardens): Qualicum Beach, Area E, Nanaimo, Area B
- Most often cited rain gardens on their property: Area B, Area E, Area F
- Most often cited rain gardens on nearby neighbour's properties: Area E, Area B, Area H
- Most often cited rain gardens on nearby public land: Qualicum Beach, Parksville, Nanaimo
- Most often cited rain gardens on nearby private businesses' property: Nanaimo

Awareness of & Involvement in DWWP



2 in 5 (41%) residents are aware of the RDN's DWWP program and similarly 2 in 5 have participated in at least one of the mentioned DWWP activities.

- Among those aware of the DWWP program, participation grows to 63%
- The most common types of participation are sharing regional water information (28%) & accessing regional water reports and information online (21%)
- Fewer have attended an event or workshop (15%)
- Even fewer have applied for a water stewardship rebate (5%)
- Fewer still have participated in a local water monitoring network (2%)

Interpretation

- There is room to enhance the awareness levels of the DWWP program in the region, especially in the municipalities
- There is an appetite to access and share regional water information
- We can grow our participation in events, rebates and monitoring

Awareness of & Involvement in DWWP

Continued from previous....

By Electoral Area / Muni:

- Top 3 most aware: Area F, Area C, Area E // Lowest 3 least aware: Qualicum Beach, Area B, Lantzville.
- ***Area B must not associate the rebates with the broader DWWP program
- Top 3 participation: Area B, Area F, Area E & Area G (tied)
- Most likely to share regional water information: Area E, Area H, Area F & Area G tied
- Most likely to access regional water reports online: Area H, Area E, Area B
- Most likely to have attended an event or workshop: Area H (Bowser sewer?), Area A & Area E tied, Area B & Lantzville tied.
- Most likely to have applied for a rebate: Area B, Area C, Area A
- Most likely to have volunteered in a local water monitoring network: Area H, Area B, Area E (would have thought more from Qualicum Beach & Parksville)

Awareness of & Involvement in DWWP



There are some misconceptions around where residents get their drinking water

By Electoral Area / Muni

- A high percentage of people living in the City of Nanaimo (47%) mistakenly think the RDN provides their drinking water; same with Parksville and to a lesser extent Lantzville & Qualicum Beach
- Most people in Area E correctly identify that the RDN provides their drinking water
- A high percentage of people living in Area H incorrectly identify municipal water system as their drinking water source (really it is Improvement District water supply)
- Area C, Area B, Area A are most likely to cite water delivery as a source of drinking water
- Area B (41%) and Area C (17%) are most likely to cite rainwater as a source of their drinking water



Residents are unsure what watershed they live in

By Electoral Area / Muni

- Residents in Nanaimo, Lantzville and Area H are the least aware of what watershed they live in, while Parksville and Area G are the most aware (Area B is of course highly aware but that's easy when you live on a small island)

Interpretation

- DWWP can do more to educate the public on their drinking water sources and what watershed they reside in

Awareness of & Involvement in DWWP



Residents offer a number of suggestions on **what the RDN can do** to preserve and protect local freshwater

- Most common suggestion was *more public education / awareness / advertising*
- Followed by *manage growth / development*;
- And then by *encourage residential / commercial rainwater collection*

By Electoral Area / Muni

- Most often cited education / advertising: Nanaimo, Area A, Area C
- Most often cited manage growth and development: Area G, Area E & F tied, Qualicum Beach, Parksville, Lantzville
- Most often cited rainwater collection: Area B (21%).... next was Area E (8%) but quite far behind



PROJECT UPDATES

PRESENTATIONS

**Awareness &
Stewardship**

**Information
& Science**

**Policy &
Planning
Support**

**DWWP
Video Series**

**School
Curriculum
Modules**

**Water
Stewardship
Rebates**

Awareness & Stewardship

**Water Saver
Contest
Recap**

**WellSmart
Workshops**





DWWP Educational Video Series



- The Drinking Water & Watershed Protection program is engaged a with a communications and video production team, ZINC Communication Strategies and Fox & Bee Studios to create a freshwater awareness video series.
- The video series will be used to reach broader audiences with DWWP key messages and materials, promote initiatives, and inspire water awareness and stewardship in the region.

We are creating 6 educational short videos, 2 –3 minutes in length, with themes including:

- What is a watershed, the source of your drinking water, water connects us, water challenges, water science and stewardship, and the water sustainable future.

Project timeline:

- >> March – April: Draft scripts revised and edited ✓
- >> May - June: Scripts finalized and filming schedule developed ✓
- >> June – October: Filming, video and graphics production and sample video delivery [**CURRENT**] ←
- >> October - November: Final video review & editing, delivery, online/social media/school distribution

Trailer available now...



and how your drinking water
reaches your glass.



**and how your drinking water
reaches your glass.**

Water Stewardship Rebates



Rainwater Harvesting

- Maximum rebate of up to \$750 off the installation of 1000 imperial gallons or more of rainwater storage
- Currently closed due to full subscription and no longer accepting applications for 2021
- Notification List for 2022 Rainwater Harvesting Rebate
- 3-step application process: Pre-approval, 90-day completion of work, Claim application



Rebate Applications:	Total Allocated:	Rebates Issued:	Total Issued:
38	\$28,387.50	15	\$11,244.02

Issued Rebate Distribution by Electoral Area/Municipality:											
A	B	C	E	F	G	H	Nan	Lantz	Parks	QB	
4	12	2	3	6	4	1	4	1	0	1	

Water Stewardship Rebates



Irrigation Upgrades & Soil Improvements

- Maximum rebate of up to \$675 for irrigation upgrades (sensors, control timers, drip irrigation, & MP rotators) and soil improvements (mulch, top soil, compost).
- Currently open and accepting applications for 2021 projects
- 3-step application process: Pre-approval, 90-day completion of work, Claim application



Rebate Applications:	Total Allocated:	Rebates Issued:	Total Issued:
30	\$7,300	19	\$4,762.21

Issued Rebate Distribution by Electoral Area/Municipality:										
A	B	C	E	F	G	H	Nan	Lantz	Parks	QB
0	1	1	0	1	2	2	14	2	3	4

Water Stewardship Rebates



Wellhead Upgrades

- Maximum rebate of up to \$650 for wellhead upgrades (secure well cap, well casing stick-up, surface seal). Up to \$500 for the well closure.
- Currently open and accepting applications for 2021 projects
- 3-step application process: Pre-approval, 90-day completion of work, Claim application



Rebate Applications:	Total Allocated:	Rebates Issued:	Total Issued:
10	\$3,900	4	\$1,000

Issued Rebate Distribution by Electoral Area/Municipality:											
A	B	C	E	F	G	H	Nan	Lantz	Parks	QB	
2	3	3	0	1	0	0	0	1	0	0	

Water Stewardship Rebates



Well Water Testing

- Maximum rebate of up to \$175 for full spectrum analysis from accredited lab.
- Currently open and accepting applications for 2021 projects
- 2-step application process: Pre-approval, sample drop-off upon issuance of voucher.

Rebate Applications:	Rebates Issued:	Total Issued:
91	66	\$6,887.92

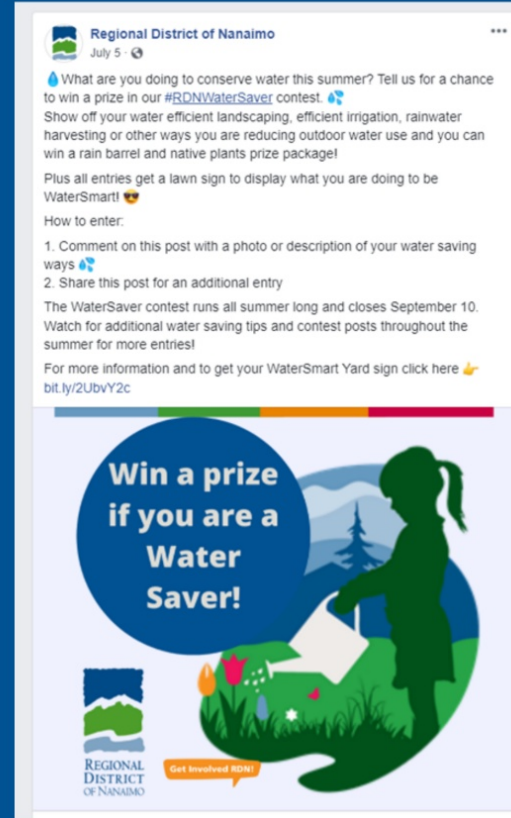
Issued Rebate Distribution by Electoral Area/Municipality:										
A	B	C	E	F	G	H	Nan	Lantz	Parks	QB
10	37	14	7	11	3	1	1	7	0	0



All application forms and program details available at [RDNrebates.ca](https://rdnrebates.ca)

Water Saver Contest Recap

WaterSaver 2021 Summary	
Facebook Entries	29
Facebook Shares	40
Instagram Entries	10
Instagram Shares	6
Email Entries	4
Yard Signs handed out	32



School Curriculum Connected Freshwater Stewardship Modules

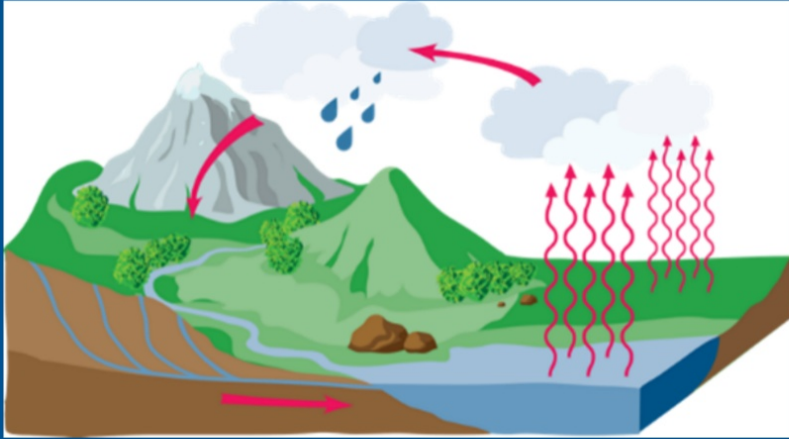
Primary K-3 & Intermediate 4-7 | SD68 & SD69

Developed in collaboration with Skye Educational Consulting, Colleen Lucas Design, NALT & Indigenous education advisors from the school districts.

- Each digital toolkit includes:
 - PDF Presentation slides
 - Detailed teachers guide
 - Activity sheets
 - Extension materials and links



Next steps...



- Meet with Learning Coordinators from School District 68&69
- Arrange for 3-5 pilot classrooms to use the materials and provide feedback
- Present to individual school Pro-D days
- Present for school inquiry days with and Environmental Stewardship focus
- Have materials listed on “NLPS Learns” and D69 equivalent teacher resource website
- Consultants present at two district-wide Pro-D days in February 2022

Workshop for Well Owners...



Free wellSMART Webinar

with live Q&A!



REGIONAL DISTRICT OF NANAIMO

Learn all about...

- Drought Management
- Water Testing & Treatment
- Maintenance & Operation
- Rebates

With representatives from...
Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD),
Island Health, Bureaux Veritas Labs (BVLabs) and DrillWell

Monday, October 25th, 2021 at 6:00pm
Wednesday October 27th, 2021 at 2:00pm

Visit rdn.bc.ca/wellsmart or call **250-390-6560** to register!

**Interactive Water
Regions Map**

**Agricultural
Nutrient
Monitoring**

**Community
Watershed
Monitoring
Equipment
Update**

**Information &
Science**



ArcGIS Online - Interactive Water Regions Map

Under development, aiming for roll out by end of October.

Will replace the water regions map currently on our website ...

PREVIEW:

<https://rdn.maps.arcgis.com/apps/MapSeries/index.html?appid=5ec9bd56b5374ef7814c0281db9b70f9>

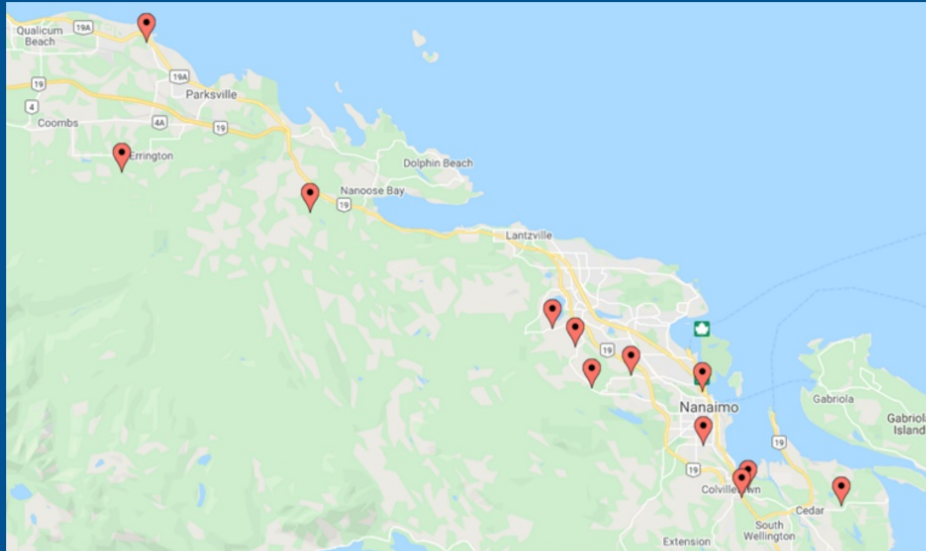
The screenshot shows the 'Our Water Regions | Drinking Water & Watershed Protection Program' interface. At the top, there are navigation tabs for 'Overview Tab' and 'Water Region 1' through 'Water Region 7'. Below the tabs is the title 'Water Regions Overview Map' and a 'LEGEND' button. The main content area is divided into two columns. The left column contains a 'WELCOME TO OUR WATERSHEDS!' section with introductory text about the RDN population and water sources, followed by a 'HOW TO USE THE WATER REGIONS MAP' section with instructions. The right column features a map of the region with seven water regions highlighted in different colors: WR1 (Big Qualicum), WR2 (Little Qualicum), WR3 (French Creek), WR4 (Englishman River), WR5 (Lantzville to South Wellington), WR6 (Nanaimo River), and WR7 (Gabriola Island). Below the map, there are three sections: 'FIRST NATIONS SIGNIFICANCE', 'COMMUNITY PROGRAMS', and 'STEWARDSHIP'. The bottom right corner of the map area includes the Esri logo and copyright information.

The screenshot shows the current website's water regions map. The title is 'Our Water Regions | Drinking Water & Watershed Protection Program | www.dwwp.ca'. The map displays seven numbered water regions (1-7) in different colors, corresponding to the regions in the new map. A 'Learn More!' button is present. Below the map, there are three sections: 'Quick Facts' (The RDN is home to more than 140,000 people...), 'Region-Wide Reports' (RDN Regional Growth Strategy [2011], RDN Watershed Snapshot Report [2010]), and 'DWWP Action Plan' (Technical Advisory Committee, DS Water Map).

OLD

NEW

Agricultural Nutrient Monitoring in Partnership with ENV



RDN-ENV partnership – sampling watercourses with upstream agricultural land uses to determine if nutrients from run-off are impacting water quality.

Twelve CWMN sites selected – continuation and expansion of 2019 total phosphorus monitoring.

Monthly sampling for nutrients plus both CWMN 5-in-30 sample periods (summer low-flow and fall flush).

Parameters measured: Temp, DO, SpC, Turb, Nitrate, nitrate/nitrite, T-organic, T-kjedal nitrogen, T-Phosphorus, Turbidity, E. coli, and T-Metals*

*T-Metals during 5-in-30's only

Results and data analysis completed by ENV tied to the 2019 provincial Code of Practice for Agricultural Environmental Management.

ENV will present findings at the Dec. 1st TAC.

Community Watershed Monitoring Equipment Replacement Update

Parameters measured: water temperature, turbidity, specific conductivity, dissolved oxygen.

Units used 2011-2021: LaMotte 2020we turbidimeter (turbidity) & YSI ProPlus (temp, SpC, DO)

Aging units:

- LaMotte 2020we Turbidimeter repairs no longer supported.
- YSI ProPlus no longer in production.
-

Potential replacement units:

- Hach 2100Q (turb).
- YSI ProSWAP (temp, turb).
- YSI ProQuatro (temp, SpC, DO).
- YSI ProDSS (temp, turb, SpC, DO).



Community Watershed Monitoring Equipment Replacement Update

Current considerations:

Cost analysis – units, calibration solutions, sensor replacements and components.
Additional criteria – ease of use, calibration procedure, training considerations.

Next steps:

Feedback, comment, and discussion with ENV (program partner) & TAC.
Creation of financial plan for equipment replacement.



Policy & Planning Support

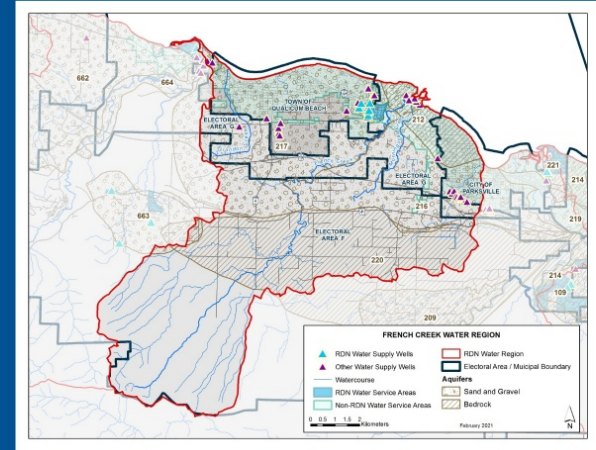
**French
Creek Phase
3 Water
Budget**



FRENCH CREEK WATER REGION - WATER BUDGET PHASE 3

Update:

- RFP closed Sept. 10th, 2021
- 6 submissions received
- Evaluation underway; scoring meeting on Oct. 6th, 2021
- Plan to engage top ranked firm by end of October
- Project will be supported by DWWP, EA G Community Works Funds, EPCOR





**NEW
BUSINESS**

**Proposed
School Water
Stewardship
Program
Delivery
Partnership**

**Organizational
Arrangements
for Watershed
Governance –
Thesis**




Exploring partnership with NALT to deliver in-class freshwater stewardship

- Potential 3-year contract
- Visit schools in SD68 & SD69
- Include on-stream activities
- Seasonal, local field trips to nearby streams

ORGANIZATIONAL ARRANGEMENTS FOR WATERSHED GOVERNANCE ON VANCOUVER ISLAND: A FOCUS ON REGIONAL GOVERNMENT ROLES AND RELATIONSHIPS



View/Open

 [Pisani_royalroads_1313O_10764.pdf](#)
(826.6Kb)

Author
Pisani, Julie

The nature of water being cross-jurisdictional, vital, and not constrained by political boundaries, underscores the importance of arranging the organizations that make and influence decisions about watersheds in a way that meets complexity with resilience. This research — through interviews, network mapping, grounded observation, and literature review — investigates the experiences of various organizations within three Vancouver Island case study areas: Alberni-Clayoquot, Nanaimo, and Capital regions. Using a social-ecological systems lens focused on the system as a whole, inclusive of the organizations and the ecology, this study explores what organizational arrangements can support sustainable context-driven watershed decision-making. The results point to key principles for organizational roles and relationships concerning watersheds, including: multiplicity, capacity, forums, and reciprocity. Niches for regional government in a multi-level framework also emerged, such as: bridging to community; exercising some regulatory authority and influence; establishing reliable long-term funding mechanisms; convening across levels of government; and supporting First Nations leadership.

URI

<https://viurrspace.ca/handle/10613/24490>
<http://dx.doi.org/10.25316/IR-16312>

Collections
[Dissertations & Theses @ RRU](#)





THANK YOU!

Next meeting scheduled:
Dec. 1st, 2021