



Drinking Water & Watershed Protection

December 6, 2023 // Technical Advisory Committee Meeting

AGENDA

**INVITED
PRESENTATIONS**

**STAFF
PRESENTATIONS**

ROUNDTABLE

**NEW
BUSINESS**

AGENDA

Approval of the agenda

Adoption of minutes

- No quorum at last meeting Sept. 19th, 2023; no minutes to adopt.

Roundtable Updates

Invited Presentation

Staff Presentations

New Business

Adjournment



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ROUNDTABLE UPDATES

All committee members

Year in review reflections



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INVITED PRESENTATION

MT ARROWSMITH BIOSPHERE REGION RESEARCH INSTITUTE



Drinking Water & Watershed Protection

December 6, 2023 // Technical Advisory Committee Meeting

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**NEW
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Climate Change and Resilience

Rebate Programs

**Regional Rainwater
Management**

PROJECT UPDATES

STAFF PRESENTATIONS

**Year-in-
Review**

**Looking Ahead
2024**



**Climate-
Informed
Water Supply
Planning**

**Regional Climate
Projections
Downscaling**

**Update Presentations by
Jessica Beaubier**

**RDN Climate Change &
Resilience Coordinator**



Climate-Informed Water Supply Planning in the RDN

Project of the RDN Climate Action Technical
Advisory Committee

Summary Report by Econics



Regional Downscaled Climate Projections

Joint Project between DWWP and RDN Long
Range Planning

Led by Pacific Climate Impacts Consortium

**Rainwater
Harvesting**

**Irrigation
and Soil**

**Stats: Uptake Per Electoral Area /
Municipality; Total Issued To
Date & For 2023.**

Rebate Programs

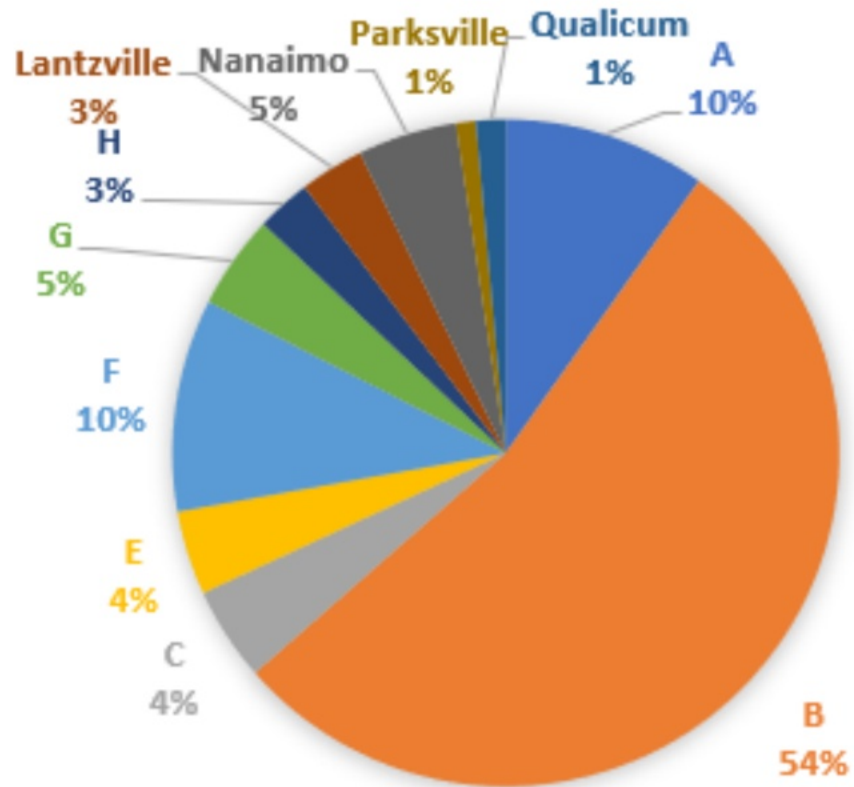


Rebates

**Wellhead
Upgrades**

**Well
Water
Testing**

RAINWATER HARVESTING REBATE UPTAKE BY EA/MUNI FROM 2012 TO NOVEMBER 2023



Details:

Up to \$750 rebate. One per property.

Includes \$450 towards the cistern(s) and \$300 towards collection system items such as transport piping, debris traps, filters and installation costs.

Storage must be min. of 1000 imperial gallons.

In 2024, value of rebate has been proposed to increase to \$1000, based on increased costs of supplies.

2023 (to Nov): 48 applications, 26 completed, \$36,000 allocated.

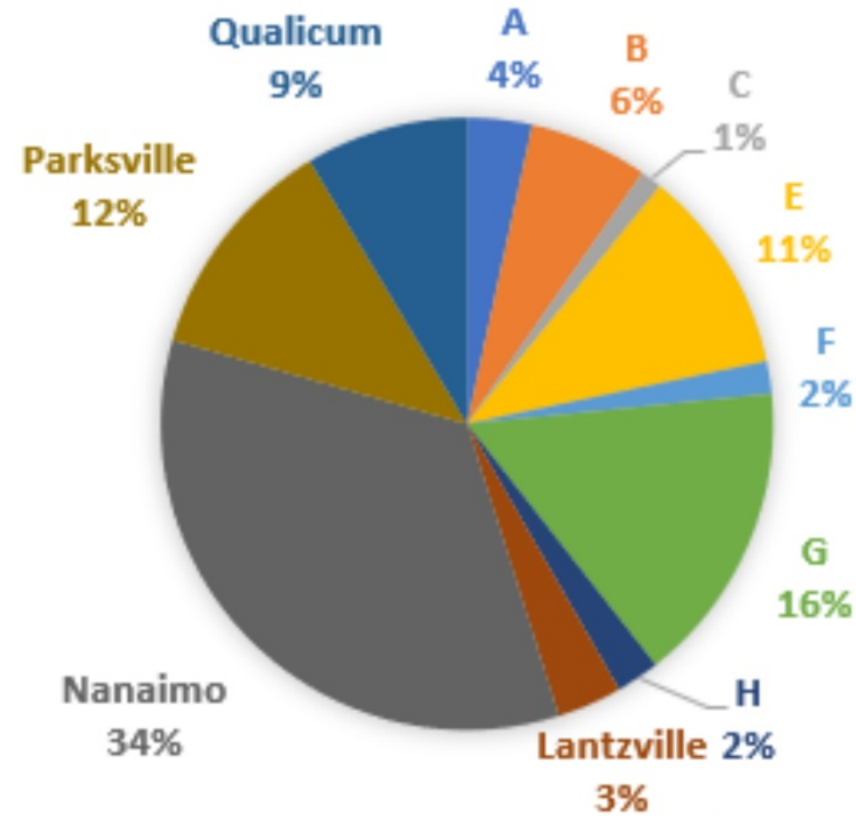
To date: 417 rebates have been processed for a total of \$304,288.87 issued to residents. Recently surpassed 1 Million Imperial gallons of total water storage volume added through this rebate program, in 544 cisterns!

Details:

Up to \$675, available in support of:

- irrigation upgrades for water efficiency (incl. smart controllers, rain / soil sensors, conversion to drip irrigation or matched-precipitation rotators) and;
- soil improvements for water retention (incl. mulch, top soil, compost).

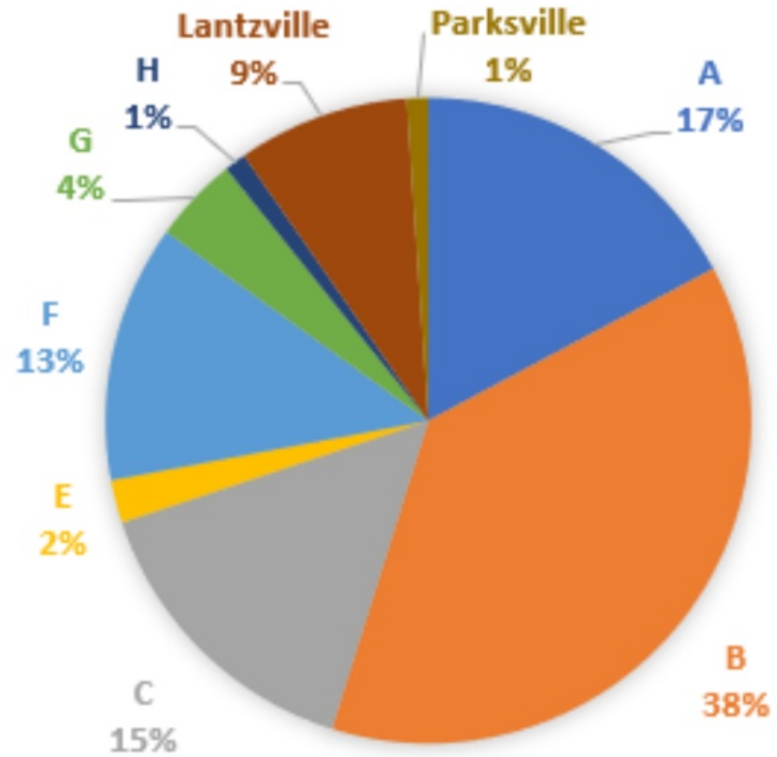
IRRIGATION & SOIL REBATE UPTAKE BY EA/MUNI FROM 2016 TO NOVEMBER 2023



2023 (to Nov): 35 applications, 29 completed, \$7,400 allocated.

To date: 117 rebates have been processed for a total of \$37,530 issued to residents.

WELLHEAD UPGRADES REBATE UPTAKE BY EA/MUNI FROM 2014 TO NOVEMBER 2023



Details:

Up to \$650 available for upgrades completed on private domestic wells including:

- well casing stick-up
- well cap
- surface seal

Up to \$500 available for proper closure of unused wells.

2023 (to Nov): 6 applications, 4 completed, \$2, 750 allocated.

To date: 94 rebates have been processed for a total of \$26, 479.08 issued to residents.

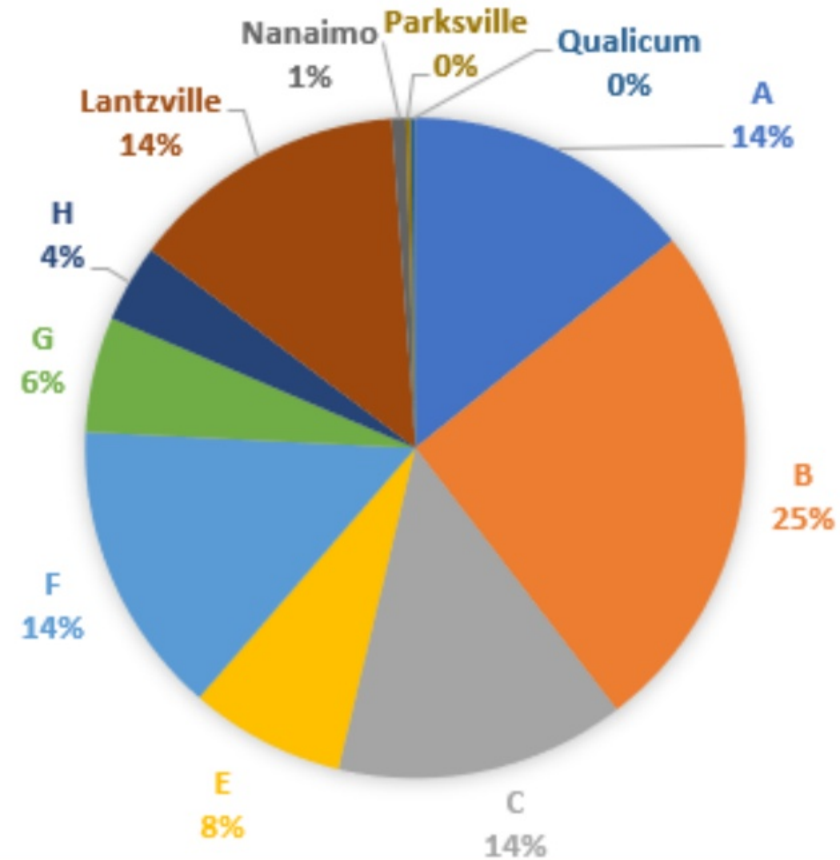
Details:

Provides 50% off (up to \$250) of full spectrum well water quality tests for private well owners.

One per well; can re-apply in 5 years (*new*).

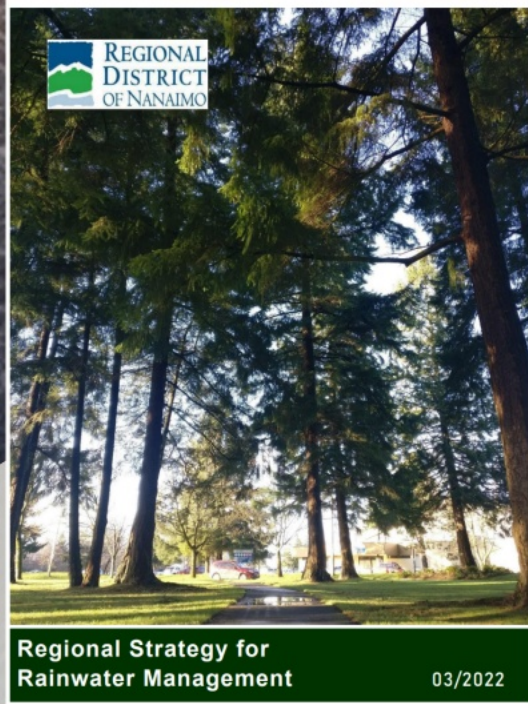
Well owners can choose to share their test results with RDN; 89% do.

WELL WATER TESTING REBATE UPTAKE BY EA/MUNI FROM 2016 TO NOVEMBER 2023



2023 (to Nov): 100 applications / vouchers issued, 46 rebates completed, \$ allocated TBD.

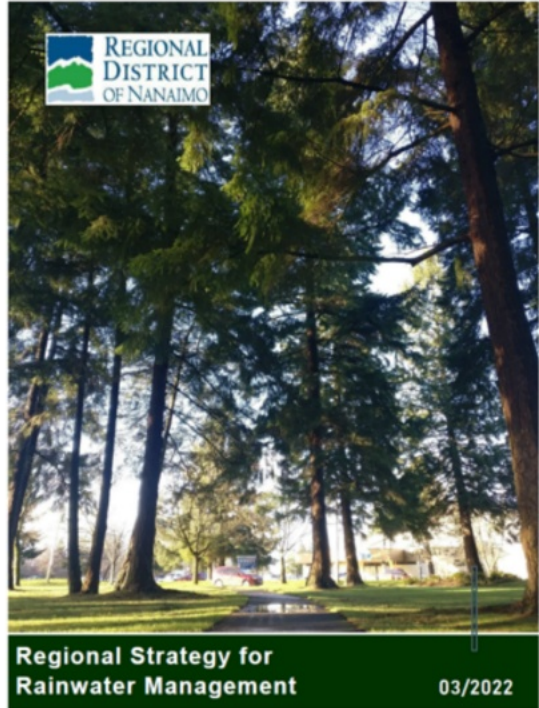
To date: 811 rebates have been processed region wide.



Update on Regional Rainwater Initiatives

Summary from Rainwater Working Group
Meeting Nov. 29. 2023

Regional Strategy for Rainwater Management



How do we manage precipitation within the landscape, using both natural ecosystems and built infrastructure, considering the full hydrologic cycle and changes in climate?

How do we safely capture, store, treat, convey and discharge water on the landscape, particularly in our built environment?

Considering rainwater as a resource, rather than a nuisance.

Lessening the severity of both extremes: flood & drought.

Completed March 2022; Endorsed by RDN Board April 2022

Regional Strategy for Rainwater Management

Recap: Key Elements



Regional Strategy for
Rainwater Management

03/2022

Foundation Setting Studies & Assessments

Watershed studies, watershed monitoring,
regional climate change assessment, funding options assessment

Development of Performance Targets

Release rate, retention volume, recharge volume, water
quality, interim targets

Implementation tools

Design standards and specifications, guidance documents /
manuals, policies, bylaws, DPAs, strategic planning tools.

2023 Initiatives

- Regional Downscaled Climate Projections
- Watershed Performance Targets - Implementation Update
 - French Creek Water Region Targets went to Board April 2023
 - Now working with Planning Dept. to implement via DPA
 - Including Draft Checklist for Rainwater Management Plans
- Raingarden Demonstration Site @ RDN Admin Building
- Support for Tire Wear Toxin (6PPD-Q) Sampling
- Support for Community (Stream)Flow Monitoring Network
- Fairwinds Neighbourhood Rainwater Detention Service

Summary Report to RDN Board Jan. 9th, 2024

2024: continue policy related work, outreach, science



2023 DWWP Year in Review

Summary Report to RDN Board Dec. 12th 2023

Refer to Handout Summarizing Key Accomplishments in 2023.



Regional District of Nanaimo's
Drinking Water and Watershed
Protection Action Plan 2.0

2020-2030+

2023 Workplan Review

DWWP Theme	DWWP Initiative <i>(* = continuing; ^ = new ...as of 2023)</i>	Action Detail		Complete	>> 2024
		2023			
Water Awareness and Stewardship	5.1.1 Community Based Social Marketing (CBSM) review / redesign of outreach programs *	Ongoing Implementation	✓		
	5.1.1 Public research survey for benchmarking on water behaviours, perspectives and priorities *	-			
	5.1.1 Multimedia outreach *	Updated brochures + graphics	✓		
	5.1.1 Demonstration sites / interpretive signage^	Admin building rain garden			✓
	5.1.1 Youth water leadership engagement^	Pilot	✓		
	5.1.1 Team WaterSmart tours, community events, workshops, school materials, irrigation check-ups	Ongoing Implementation	✓		
	5.1.2 Expand existing rebate programs*^	Review where expansion needed			✓
	5.1.2 Explore new rebate for water flow meters for wells^	Push out to 2025 >>			
	5.1.3 Agricultural sector outreach^	Push out to 2024 - 2025 >>			
	5.1.3 ICI sector outreach^	-			
	5.1.4 Expand seedfunding for restoration projects*^	15% increase	✓		
	5.1.4 Water stewardship organizations networking opportunities^	Ongoing Implementation	✓		
	5.1.5 Support regional water conservation plans*	-			
	5.1.5 Coordinate regional watering restrictions communications	Ongoing Implementation	✓		
	5.1.5 Support small water systems with annual working group session*	Annual Event	✓		
	5.1.6 Participate in and coordinate advisory committees*	Ongoing Implementation	✓		
Water Science and Information	5.2.1 Maintain regional surface water (CWMN) and groundwater (VOW) monitoring*	Equip. replacement plan	✓		
	5.2.1 Hydrometric and climate monitoring partnerships*	>>			✓
	5.2.1 Data management *^	GW Data Management System	✓		
	5.2.1 Explore potential for Benthic Invertebrate Monitoring (ie. CABIN)^	Continued pilot	✓		
	5.2.1 Wetland monitoring and mapping *^	Citizen science	✓		
	5.2.2 Water budget phase 3*	French Creek Phase 3 WB complete	✓		
	5.2.2 Surface water trend analysis*	CWMN Tech Memo	✓		
	5.2.2 Groundwater trend analysis*	Pre-Summer Reporting	✓		
	5.2.2 Quantifying ecosystem services via ecological accounting pilot (in partnership with PWSBC)^	French Crk EAP year 1 of 2; Support Reg. MNAI	✓		
	5.2.2 Snowpack modelling^	Yr 5	✓		
	5.2.2 Water balance modelling (rainwater management) Linked to 5.2.4	French Creek Phase 2 complete	✓		
	5.2.3 Interactive water map(s)*^	Update DWWP Website watershed map	✓		
	5.2.3 Data visualization through dynamic graphs^	Groundwater level graphs	✓		
	5.2.3 Publications*^	Push out to 2024 >>			✓
5.2.4 Develop watershed performance targets for priority water region^	French Creek implementation			✓	
Water-centric Planning	5.3.1 Integrating water information into key long-range planning processes*^	Ongoing Area F OCP, RGS	✓		
	5.3.1 Provide regional water information to inform referrals from Current Planning and the Provinc	Staff Time	✓		
	5.3.1 Provide regional water information to inform Emergency Services operations*	Staff Time	✓		
	5.3.1 Develop a regional rainwater management strategy^	Complete	✓		
	5.3.2 Best practices and policy research*^	Water governance	✓		

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Water Information and Science	Number of sites with long-term (>3 years) datasets hosted on open Provincial platforms	Groundwater monitoring (VOW): 11 sites; Surface water quality (CWMN) 84 sites; Hydrometric stations 3; Climate stations 2. TOTAL = 100 sites	Completion of numerical water budget models for priority watersheds and aquifers	French Creek Water Region complete	Continued participation of community volunteers in citizen science efforts	14 returning stewardship groups (CWMN); 31 ongoing well monitoring volunteers	Number of publications communicating water science	Groundwater /Aquifer graphics update; Our Water Sources graphic update; CWMN Data to Action infographic; New Watering Restrictions Door Hangers; Keynote Presentation for Streamkeeper AGMs.
Water-centric Planning and Policy Support	Number of planning documents and processes informed by DWWP actions / information	Area F OCP Update; Regional Strategy for Rainwater Manangement; Parks Biodiversity Plan; 10+ Development Referrals; Climate Best Practices For Water Supply Report; Muncial Natural Asset Initiative	Number of watershed performance targets developed	French Creek Water Region Performance Targets - Implementation, Moniotring, and Adaptive Manangement	Implementation of innovative rainwater managment policies and practices	Draft Rainwater Management Plan Checklist and Draft DPA with Rainwater Performance Targets	Successful advocacy with outside agencies	Resolution on Regional Water Supply Strategies, endorsed by the RDN Board and then successfully endorsed at AVICC and UBCM in 2023; Input to Provincial Watershed Security Strategy and Fund.

2023 Performance Indicators



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2023 Performance Indicators



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10 Year Action Plan

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DWWP ACTION PLAN 2.0 Progress / Performance Indicators 2023

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Water Awareness and Stewardship	Reduction of metered water use over time	31% reduction in per capita water demand in City of Nanaimo over past 14 years. ** Need better data reporting across all metered systems **	Number of Restoration project completed	Five community-level restoration and research projects supported through Stewardship Seed Funding in 2023	Market research survey response indicating improved awareness	2021 benchmark survey complete, to be re-assessed in 2025	Improving trends in groundwater level and surface water quality	GW Level: Regional analysis identified increasing or stable trends in 12 / 19 aquifers reporting; 5 / 19 aquifers reporting had spatially variable trends with wells ranging from a large decline to increasing. SW Quality: Trend analysis was completed in 2023; variable results some parameters at some locations improving, others declining.
Water Information and Science	Number of sites with long-term (>3 years) datasets hosted on open Provincial platforms	Groundwater monitoring (VOW): 11 sites; Surface water quality (CWMN) 84 sites; Hydrometric stations 3; Climate stations 2. TOTAL = 100 sites	Completion of numerical water budget models for priority watersheds and aquifers	French Creek Water Region complete	Continued participation of community volunteers in citizen science efforts	14 returning stewardship groups (CWMN); 31 ongoing well monitoring volunteers	Number of publications communicating water science	Groundwater /Aquifer graphics update; Our Water Sources graphic update; CWMN Data to Action infographic; New Watering Restrictions Door Hangers; Keynote Presentation for Streamkeeper AGMs.
Water-centric Planning and Policy Support	Number of planning documents and processes informed by DWWP actions / information	Area F OCP Update; Regional Strategy for Rainwater Manangement; Parks Biodiversity Plan; 10+ Development Referrals; Climate Best Practices For Water Supply Report; Muncial Natural Asset Initiative	Number of watershed performance targets developed	French Creek Water Region Performance Targets - Implementation, Moniotring, and Adaptive Manangement	Implementation of innovative rainwater managment policies and practices	Draft Rainwater Management Plan Checklist and Draft DPA with Rainwater Performance Targets	Successful advocacy with outside agencies	Resolution on Regional Water Supply Strategies, endorsed by the RDN Board and then successfully endorsed at AVICC and UBCM in 2023; Input to Provincial Watershed Security Strategy and Fund.

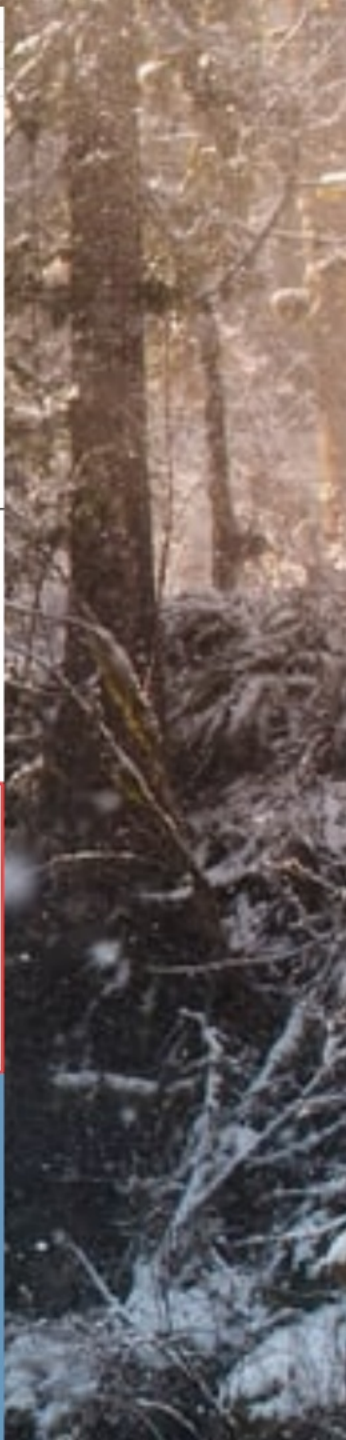
2023 Performance Indicators



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2023 Performance Indicators



Workplan Highlights for 2024

- Update the regional publication “**State of our Aquifers**” **newsletter** and mail it out to residents in areas supplied by groundwater. (\$30,000)
- Develop **communication material on water supply planning in the region and best practices**, as summarized in the CATAC report on Climate-Informed Water Supply Planning (Econics, 2023). (\$30,000)
- Initiate the **Phase 3 Water Budget Study for Cedar-Yellowpoint-Cassidy** (deferred from 2023). (\$112,500)
- Continue coordination of the **Community Watershed Monitoring Network** following an internal **strategic planning** session to refresh the vision for the next 5 years. (~\$100,000)
- Complete the **Raingarden Demonstration site** project at RDN Administration Building. (\$20,000)
- Continue to **implement actions under the Regional Strategy for Rainwater Management**.
- Explore options and **advocate for stream mapping improvements** in the region, in consultation with the Province, RDN Departments, Environmental Professionals, and stewardship groups.
- Continue to co-develop a new program related to **Youth Ambassadors** for climate and water stewardship. (\$3500)



DWWP Technical Advisory Committee Meeting Dates for 2024

Wednesday, March 6, 2024 | 12:30 - 3:30

Wednesday, May 22, 2024 | 12:30 - 3:30

Wednesday, September 11, 2024 | 12:30 - 3:30

Wednesday, November 20, 2024 | 12:30 - 3:30



Drinking Water & Watershed Protection

December 6, 2023 // Technical Advisory Committee Meeting

AGENDA

**INVITED
PRESENTATIONS**

**STAFF
PRESENTATIONS**

ROUNDTABLE

**NEW
BUSINESS**



**NEW
BUSINESS**

Thank you, from Julie.

It's been my great pleasure and privilege to work with RDN's Drinking Water and Watershed Protection program over the past 12 years. We've accomplished a lot through collaboration, commitment, creativity and curiosity.

The outstanding DWWP team will continue to serve the region well and advance important priorities related to water sustainability and watershed health.

Thank you for being a part of the DWWP journey thus far; I am grateful to have worked with each and every one of you. We will meet again in another capacity, I'm sure. Keep up the great work all!



Drinking Water & Watershed Protection

December 6, 2023 // Technical Advisory Committee Meeting

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