

# Drinking Water & Watershed Protection

March 6, 2024 Technical Advisory Committee Meeting

**AGENDA**

**ROUNDTABLE**

**INVITED  
PRESENTATIONS**

**STAFF  
PRESENTATIONS**

**UNFINISHED  
BUSINESS**

**NEW  
BUSINESS**

# AGENDA

Approval of the agenda

Adoption of minutes

• December 6th 2023

Welcome to New Members

Roundtable Updates

Invited Presentations

Staff Presentations

Unfinished Business

New Business

Adjournment

**Welcome  
to New  
Members**



## Welcome to New Members:

**Maggie Estok**, Environment Community rep

**Vern Rogers**, Water Suppliers Association rep

**Glenn Morphy**, District of Lantzville rep

**Rob Dickinson**, Town of Qualicum Beach rep



# ROUNDTABLE UPDATES

All committee members



# INVITED PRESENTATIONS

VIU COASTAL COASTAL HYDROLOGY RESEARCH LAB  
**Snowpack Modelling 5-year Project Findings**

MT ARROWSMITH BIOSPHERE REGION RESEARCH INSTITUTE  
**Wetland Monitoring 2023/24 Report**

**Watering  
Restrictions  
Framework  
Review**

**VOW  
Data  
Portal**

**Project Scoping  
& Idea Gathering**

**Qualicum First Nation  
Water Workshop**

**Rain Garden  
Demo Site**

# **PROJECT UPDATES**

**STAFF PRESENTATIONS**

**Water 2  
Earth  
Month**



**Background**

**Watering  
Restrictions  
Framework  
Review**

# Watering Restrictions Framework

## Recap

### What it is and how it originated

- Current framework established in 2016 following an unprecedented drought year where several systems went to elevated Watering Restrictions for the first time in recent past
- The Framework was developed via consensus with the major water purveyors in the region. Designed so all water purveyors could "see themselves in it"



# Framework Objectives

## Objectives

- to create consistently defined watering restrictions stages, to minimize confusion and to include all major water purveyors in the region
- to align media communications with comprehensive information on each major water system and their watering restriction stage
- to create a one-window online hub for watering restrictions in the region --> RDN Interactive Map



# How it works

- April 1- September 30 Stage 1 in effect
- Water Purveyors meet regularly, depending on drought conditions, to discuss situation and moving to next stages
- For most systems, Stage 2 implemented on May 1
- Each water purveyor can move through the stages at their own discretion based upon their own supply and conditions

## Watering Restrictions

Please help conserve, because every drop counts!

WATERING RESTRICTION STAGE	1	2	3	4
WATERING RESTRICTIONS ARE IN EFFECT BETWEEN APRIL AND OCTOBER Go to <a href="http://www.teamwatersmart.ca">www.teamwatersmart.ca</a> to see your area or call 250-390-6560				Only as Required
Frequency	Any day	Every other day: Even# houses – Even# days Odd# houses – Odd# days	↑ VOLUNTARY HEIGHTENED REDUCTIONS ON TOP OF STAGE 2 ↓	SPRINKLING BAN: LAWN WATERING NOT PERMITTED
Watering times	Between 7pm - 7am	Between 7-10am OR 7-10pm for 2 hrs MAX		Between 7-10 am OR 7-10 pm (on your watering day)
Hand-watering, drip irrigation	ANYTIME	ANYTIME		NOT PERMITTED
Washing vehicles, boats, houses (siding)	ANYTIME	ANYTIME (on your watering day)		ONLY prior to application of paint, preservative, stucco, or sealant
Pressure washing walkways, driveways, siding	ANYTIME	ANYTIME (on your watering day)		NOT PERMITTED
Filling fountains, pools, hot tubs	ANYTIME	ANYTIME (on your watering day)		NO PERMITS ISSUED
New lawn permits	Can apply for a permit	Can apply for a permit		

Vegetable gardens and fruit trees are exempt from all watering restrictions, even in Stage 4.

Climate change is causing our summer months to be increasingly hot and dry on Vancouver Island, which is resulting in a longer period of high water demand and more stress on our water sources.

Watering restrictions provide a framework for residents to follow in order to make efficient use of this valuable resource which we all share.

# Recap on past few years

## What has worked well

- regional framework works well in terms of communications across the region
- benefit to interactive map and region-wide updates provided by RDN News Releases
- Spring/Summer regular check-ins
- Focusing on lawn watering for stage 4 most effective as that was where most savings can be realized as a 'non-essential' discretionary use that is also very consumptive

## What could be improved

- Stage 3 could be improved as 'voluntary reductions' don't always produce the results intended
- Stage 4 details could be examined ie boat washing, vehicle washing, definition of drip irrigation, hours for hand-watering etc.
- When on Stage 4 potentially implementing enforcement

## Watering Restrictions

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# Timeline

## Regional Watering Restrictions Framework Review



Potential implementation late Spring/ early Summer 2024

# Considerations

- Stage 3- change from voluntary or add another stage and remove Stage 1
- Adding another stage emergency 'watering ban'
- Look at stage 4 details- boat and vehicle washing
- Time of day watering allowed- right now 7-10am and 7-10pm
- Time of year- April-October dates- could be extended



# Volunteer Observation Well Network (VOW) Data Portal

- Depth2Water application used for internal data review and cleaning
- External viewer created for participating volunteers

## Go to Station

 [clear](#)  
 

## Summary

The **Regional District of Nanaimo's Groundwater Monitoring Program**, the Volunteer Observation Well Network (VOW), partners with existing well owners throughout the region to track groundwater levels over time. Typically, the wells that are monitored are private domestic wells used to supply water. More information on the Program can be found [here](#) or by contacting the Regional District of Nanaimo (RDN) at [watermonitoring@rdn.bc.ca](mailto:watermonitoring@rdn.bc.ca).



## Depth2Water Regional District of Nanaimo Portal

This Depth2Water portal presents groundwater level measurements collected by the RDN's VOW Program. The data can be downloaded from the web portal. This portal also presents the groundwater level data for the active and inactive stations in the [Provincial Groundwater Observation Well Network](#) that are located within the RDN. Depth2Water is developed and is maintained by [GW Solutions](#).

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<https://depth2water.gwsolutions.ca/client/rdn/#/wells>

Webinar or in-person meeting for volunteers?

# RDN Rain Garden Demo Site

In 2023, DWWP launched a new funding initiative, the **Demonstration Site & Interpretive Signage Program**, which supports local governments, partners, and environmental stewardship organizations with the installation of green infrastructure, such as rain gardens, and interpretive signage at demonstration sites or watershed features.



## RDN Rain Garden Pilot Project:

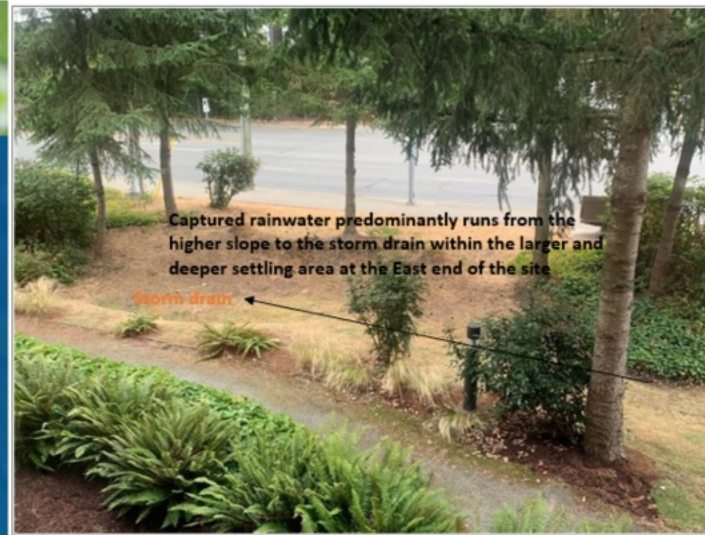
- to learn more about associated costs and processes of projects of this type to fully inform the new funding program
- amend an existing swale so that it functions to slow, capture, and infiltrate rainwater run-off from the surrounding landscape
- create a demonstration space for public awareness and education



# Current state of the RDN Rain Garden

- Turf grass covering hard-packed and poor soil
- Lack of vegetation
- Invasive species
- Uncovered storm drain

All of this results in...



RDN Rain Garden – Overlooking the East side of swale/rain garden from RDN Admin Building



RDN Rain Garden – overlooking the West side of swale from RDN Admin Building



Invasive English Ivy at the East end of the rain garden





# Vision for the RDN Rain Garden

## We plan to:

- Remove turf and amend soil
- Remove invasives and plant native species throughout
- Raise and cover storm drains
- Upgrade pathways & install interpretive signage



*The top of the rain garden berm along Hammond Bay Road*

### Zone 1

The deepest and wettest part of the rain garden.

### Zone 2

The bank slopes of the rain garden.

### Zone 3

The driest areas along the perimeter of the rain garden.



New gravel path from RDN Admin building to Hammond Bay Road near bus stop

# RDN Rain Garden Scope & Timeline



- Main Garden - 1700 ft2
- Extra Garden - 700 ft2
- Proposed Pathway
- Existing Trees

Track progress at [rdn.bc.ca/rdn-rain-garden](https://rdn.bc.ca/rdn-rain-garden)



**Project estimate of \$40,967.74**

**Fall 2023**  
RFSQ to select a landscaping firm

**Winter 2024**  
Agreement with selected firm, North Arrow Landscapes

**Early Spring 2024**  
Draft and finalize site plan

**Spring 2024**  
Landscaping work begins - excavation, soil amendments, planting, irrigation, pathway

**Summer to Fall 2024**  
Plantings and function monitored; additional plantings as needed

**Completed Rain Garden!**  
Educational signage design and install in 2025

Project: RDN Rain Garden Demo  
Title: Proposed Scope of Work Sketch  
Drawn by: Scott Nicol  
Date: Dec. 5, 2023



# Shade / Part Shade / Wetland

*Polystichum munitum*  
Sword fern



*Dicentra formosa*  
Bleeding heart



*Tellima grandiflora*  
Fringe Cup



*Juncus effusus*  
Common rush



*Aquilegia formosa*  
Western Columbine



*Mahonia nervosa*  
Oregon Grape



*Fragaria vesca*  
Woodland Strawberry



*Carex obnupta*  
Slough sedge

# Sun / Part Sun

*Ribes sanguineum*  
Red flowering currant



*Koeleria macrantha*  
June grass



*Symphyotrichum subspicatum*  
Douglas aster



*Eriophyllum lanatum*  
Woolly sunflower



*Armeria maritima*  
Sea thrift



*Festuca roemerii*  
Roemer's fescue



*Iris tenax*  
Toughleaf Iris



*Lupinus polyphyllus*  
Large-leaved Lupine



*Achillea millefolium*  
Common yarrow



*Anaphalis margaritacea*  
Pearly everlasting



*Allium cernuum*  
Nodding onion



*Prunella vulgaris*  
Heal all

# Rain Garden Colour Palette



Full Sun / Part Sun



Shade / Part Shade

Track progress at [rdn.bc.ca/rdn-rain-garden](https://rdn.bc.ca/rdn-rain-garden)

# Water 2 Earth Month

- **March 22- World Water Day- 'Leveraging Water for Peace'**
- **April 22- Earth Day- 'Planet vs Plastics'**
- **Community Partners**
  - City of Nanaimo
  - NALT
  - MABRRI
  - Mosaic
  - VIU
  - Brant Festival
  - Youth Ambassadors
  - Other RDN departments



**2024  
Events**

# W2E Month Events 2024



Date	Event	Location	Host
20-Mar	WellSmart Workshop	Errington Hall	RDN, Ministry of Forests and Island Health
21-Mar	Vernal Seeps and Pools	Bowen Park	NALT
March 23-24	Streamkeepers Course	Nanaimo	NALT
5-Apr	Brant Childrens Festival	Arrowview	MABRRI/Brant Festival
April 5-8	Brant Festival	Various	MABRRI/Brant Festival
6-Apr	Bio Blitz	Milner Gardens	MABRRI
April	Turtle Ambassador	Buttertubs Marsh	NALT
9-Apr	Septic Smart Workshop	Cedar	RDN Wastewater
11-Apr	Septic Smart Workshop	Coombs	RDN Wastewater
April 15-17	Wetland Monitoring	Multiple locations	MABRRI
19-Apr	Marine Debris Survey	French Creek	MABRRI
19-Apr	Nanaimo River Watershed and Treatment Plant Tour	Nanaimo	City of Nanaimo
20-Apr	Earth Day @ Bowen Park	Bowen Park	RDN/ City of Nanaimo
20-Apr	Intro to Local Plant ID- part of Earth Day	Bowen Park	City of Nanaimo
20-Apr	GNPCC Open House	Nanaimo	RDN Wastewater
22-Apr	Earth Day Invasive Plant Work Party	Nanaimo	City of Nanaimo
24-Apr	Intro to Raingardens Workshop	Nanoose	RDN
April	Youth Ambassador Earth Day event and Streamkeepers Course	Nanaimo	RDN
	Raingarden Passport	TBD	RDN
	Online Videos and Contests	Online	RDN

Full event info at [www.getinvolved.rdn.ca/team-watersmart](http://www.getinvolved.rdn.ca/team-watersmart)



**State of our  
Aquifers  
Publication &  
Mail-out**

**Project  
Scoping & Idea  
Gathering**

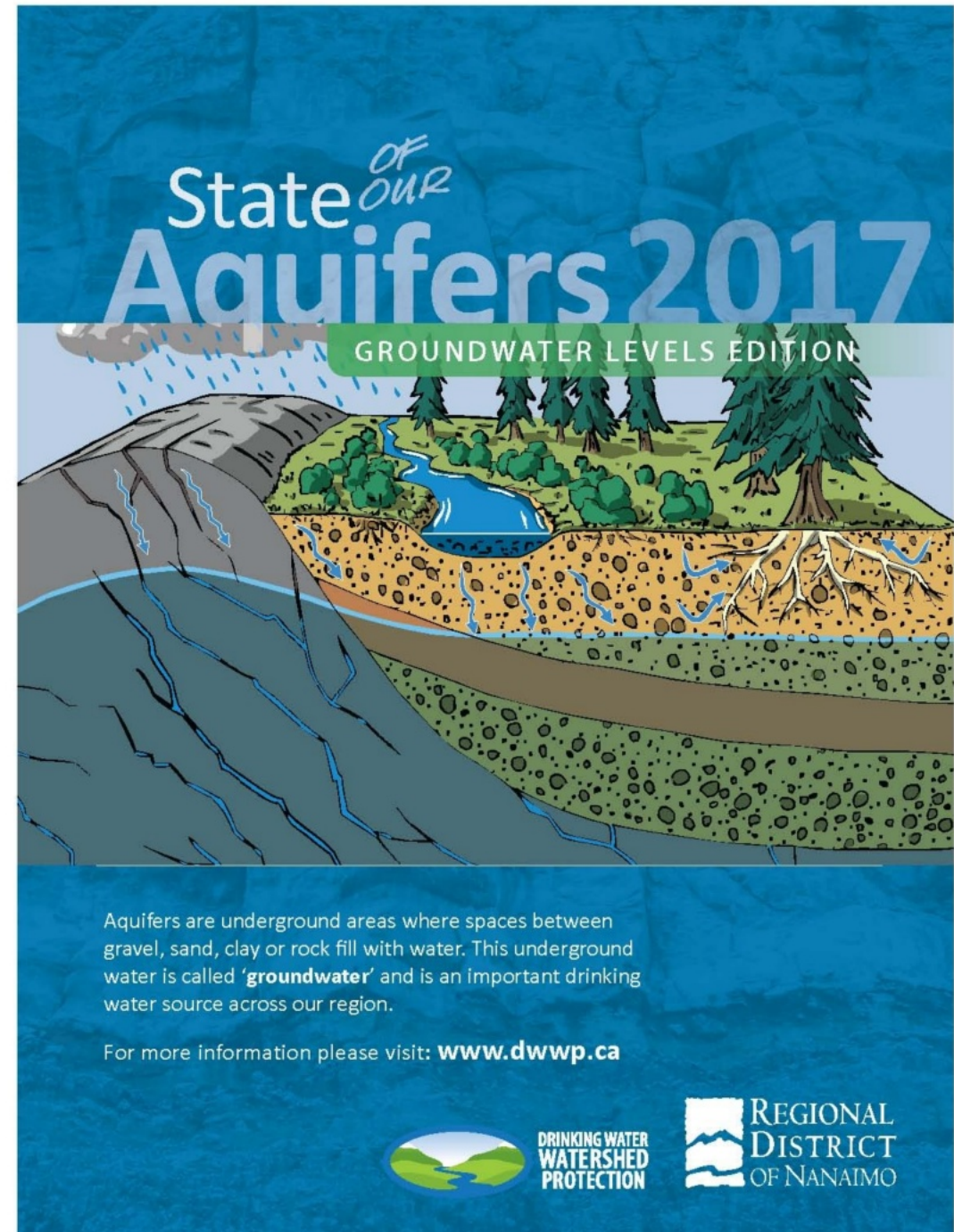
**Climate-Informed  
Water Supply  
Planning  
Communications**



# State of our Aquifers

- Groundwater Levels Edition published in 2017
  - focus was on groundwater level monitoring, regional trends, representative hydrographs, and water conservation tips
- 2024 publication: Groundwater Connections Edition
- Distribution of publication to align with concurrent projects:
  - Regional Groundwater Level Analysis Pre-summer
  - Climate-Informed Water Supply Planning
- Currently in the scoping stage

Project Timeline



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



# SooA Timeline

## Finalize Scope

- Input from TAC
- DWWP team collaborate on final scope

## Content Development

- Draft first text and layout for publication
- Engage graphic designer

## Data Collection and Review









- Site visits to download data
- Data review and cleaning
- Engage hydrologist

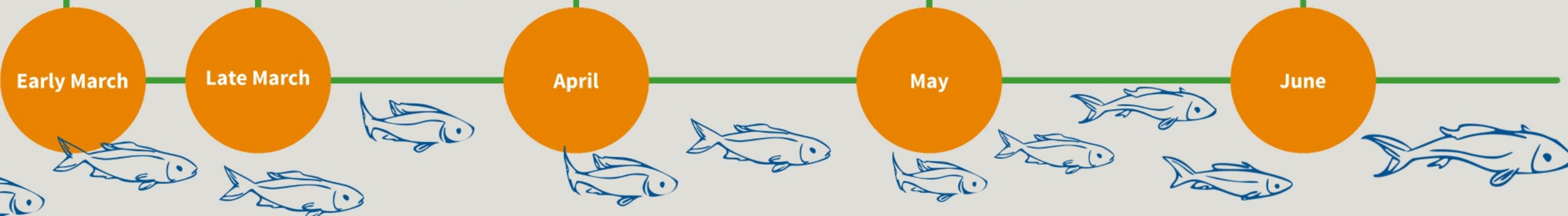
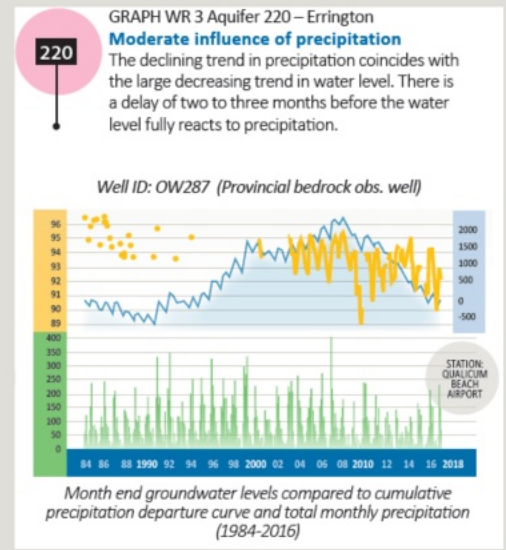
## Data Interpretation

- Hydrologist review and report trends seen in data
- selected graphs to graphic designer

## Report and Publish

- Report 2024 Regional Groundwater Analysis Pre-summer to RDN Board
- Finalize SooA publication for July direct mail-out and online

Aquifer Location	Aquifer #	Water Region	Aquifer Type	Observation Wells	Water Trend (last 5 years)	Water Trend (last >5 years)
Deep Bay, Bowser	416	1		1	INCREASING +0.089m observed per year	STABLE
Qualicum Bay, Dashwood	662	1		3	NOT ENOUGH DATA	NOT ENOUGH DATA
Little Qualicum River Valley	664	2		1	STABLE	STABLE
Errington, Coombs	220	3		1	DECLINING -0.32m observed per year	DECLINING -0.11m observed per year
Qualicum Beach, Coombs	217	3		4	DECLINING -0.095 to -0.68 observed per year	DECLINING +0.34 and -0.091 to -0.31 observed per year
Parkville, French Creek	216	3 & 4		5	DECLINING -0.18 to -0.32m observed per year	DECLINING -0.03 to -0.29m observed per year
East Wellington, Westwood Lake	167	5		1	NOT ENOUGH DATA	NOT ENOUGH DATA
Benson Meadows, Jingle Pot	211	5		1	DECLINING -0.94m observed per year	DECLINING -0.66m observed per year

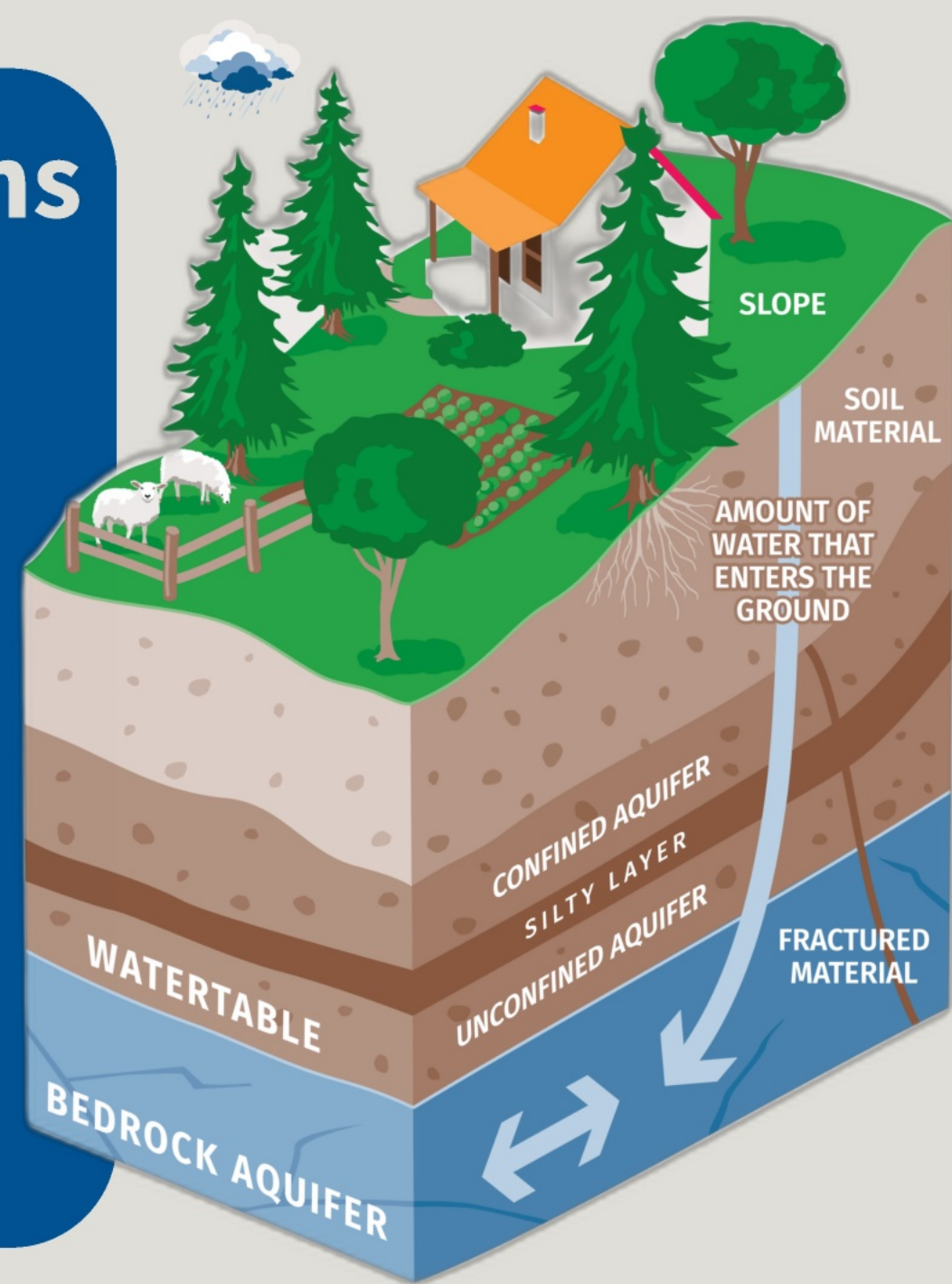


# Groundwater Connections

Topics for potential inclusion:

- surface water interaction
- Environmental Flow Needs
- climate resiliency planning
- water conservation
- sea water intrusion
- green infrastructure

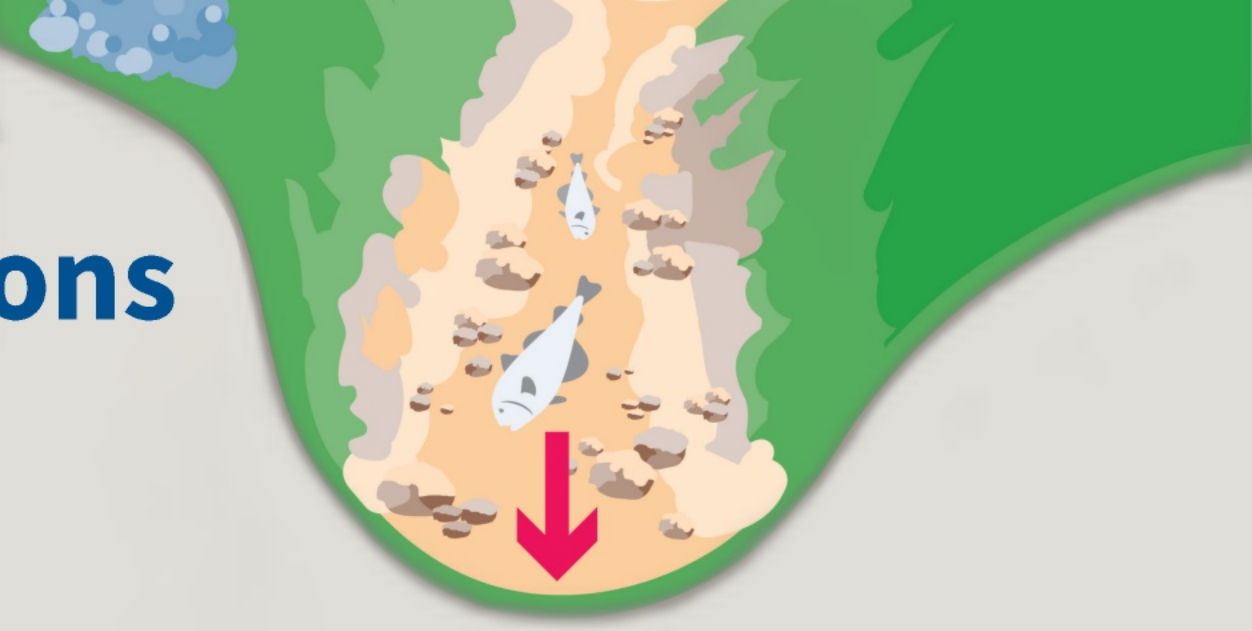
*What is an important topic to touch on?  
What should be emphasized?*



# Groundwater Connections

<https://www.menti.com>

use code 2739 5786



**Under the theme of Groundwater Connections, what topic should be included in State of our Aquifers (SooA)?**

**What topic(s) should be emphasized?**



**Climate Informed  
Water Supply  
Planning  
Communications**

**Scope and  
Objectives**

**Project  
Timeline**

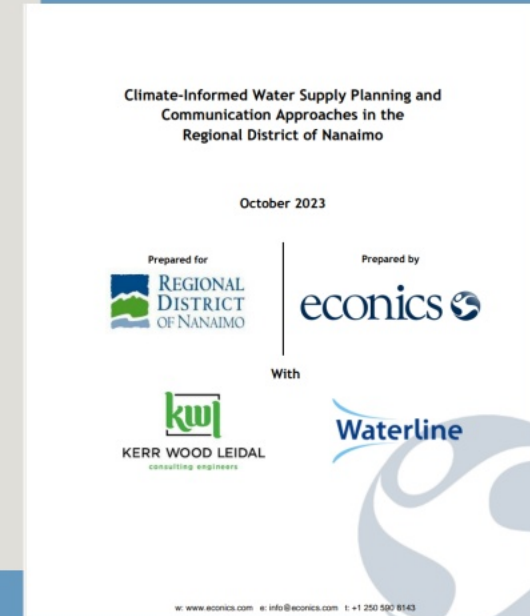
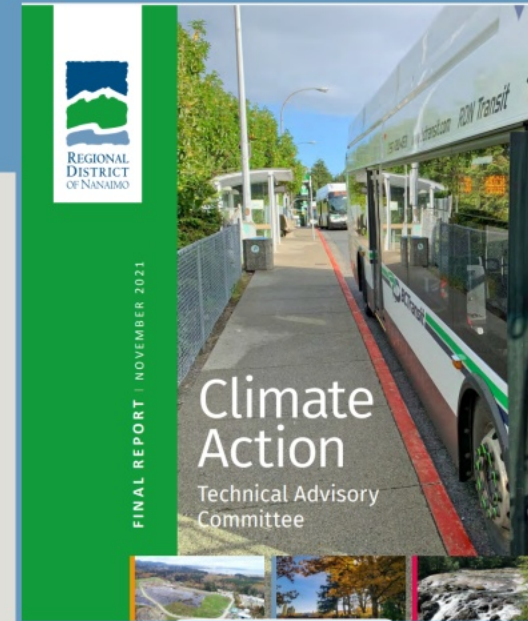
# Project Context

The RDN Board-approved priority recommendations for the Climate Action Technical Advisory Committee (CATAC) in 2022-2024 included a project focused on water supply resiliency in a changing climate with the following tasks, implemented jointly by DWWP and Energy & Sustainability:

- Document state of existing, climate-informed supply planning across water purveyors in the RDN (where purveyors are willing), including contingency/emergency supplies.
- Make RDN information easily accessible and understandable by the public and encourage other water purveyors to do the same.
- Identify areas where additional supply planning work is needed.

The first item listed above was completed by water-focused consultancy Econics and their report entitled Climate-Informed Water Supply Planning and Communication Approaches in the RDN (Econics, October 2023) was received by the RDN Board in December 2023.

The second item listed above is the genesis for this communications project in 2024, and is echoed by a recommendation in the Econics report, for the RDN to act as a regional coordinator for water supply planning communications and content.



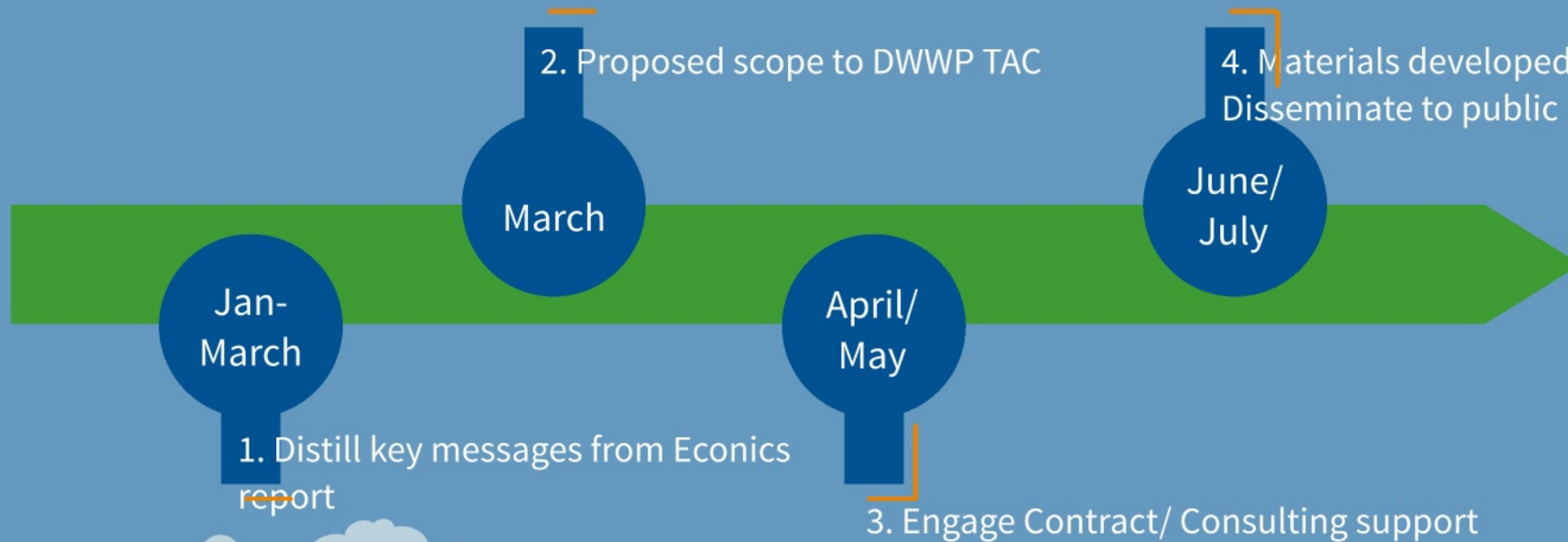
# Objectives

The background features a stylized landscape with green evergreen trees, blue mountains, and a blue lake. A single blue water drop is shown falling into the water, creating ripples. The text is presented in a white box on the left side of the image.

- To create easily accessible information on **water supply** in the region including:
  - **Sources – who gets water from where**
    - Ground/surface water, How that works, and bigger watershed picture (ie recharge, watershed)
  - **Climate-Informed Planning practices** – what are best practices and what is currently in place for the various water systems in the region
    - **How uncertainty is managed within supply planning and climate change** – with end goal of improving public and elected official comfort with uncertainty and how it is managed
- To have the communications collateral endorsed by regional water purveyors and shared widely amongst the various water systems
- To have this messaging integrated into longer term communications so that public understanding is built up over time

# CIWSP Communications Timeline

- Interface with State of Aquifers and Regional Watering Restrictions Framework review where appropriate





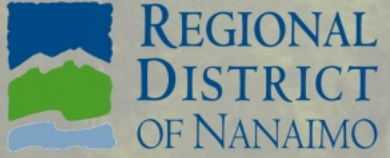
# Qualicum First Nation Watershed Workshop

March 7th, 2024 at Qualicum First Nation

## Invitation and hosted by Qualicum First Nation

- RDN DWWP presentation with facilitation support through RDN Strategy & Intergovernmental Services (SIS)
- Water-themed workshop for community members of all ages
- Presentations, engagement sessions, and interactive activities focusing on:
  - Watersheds
  - Groundwater
  - Drinking Water & Distribution
  - WaterSmart practices





# Drinking Water & Watershed Protection

March 6, 2024 Technical Advisory Committee Meeting

**AGENDA**

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**UNFINISHED  
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**NEW  
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# UNFINISHED BUSINESS

French Creek  
Water Budget  
Phase 3 Update



# French Creek Water Budget Phase 3 Update

- 1. That the Board receives the Phase 3 Water Budget Model for French Creek Water Region report.**
- 2. That Regional District of Nanaimo staff consider the results of the French Creek Water Budget when developing Official Community Plan updates and related policies such as Development Permit Areas for aquifer protection and rainwater management.**
- 3. That the Regional District of Nanaimo Board take advantage of any available opportunity to encourage the major water purveyors in the French Creek Water Region to undertake more granular studies of their well fields and make that work publicly available to advance understanding of the water resources available in the region.**
- 4. That the Board direct staff to write a letter on behalf of the Regional District of Nanaimo to the Ministry of Water, Land and Resource Stewardship to formally request that an appropriately resourced body be struck to initiate discussions on a regional water supply strategy for the French Creek Water Region / Oceanside Area.**



**NEW  
BUSINESS**

**Thank  
you**

# Thank you for your participation!

Join us **May 22, 2024** from 12:30 to 3:30



REGIONAL  
DISTRICT  
OF NANAIMO