



Town of Qualicum Beach Water System Update

Amro Kotb, P.Eng.

July 15, 2026

TOWN OF
QUALICUM
BEACH

Presentation Overview

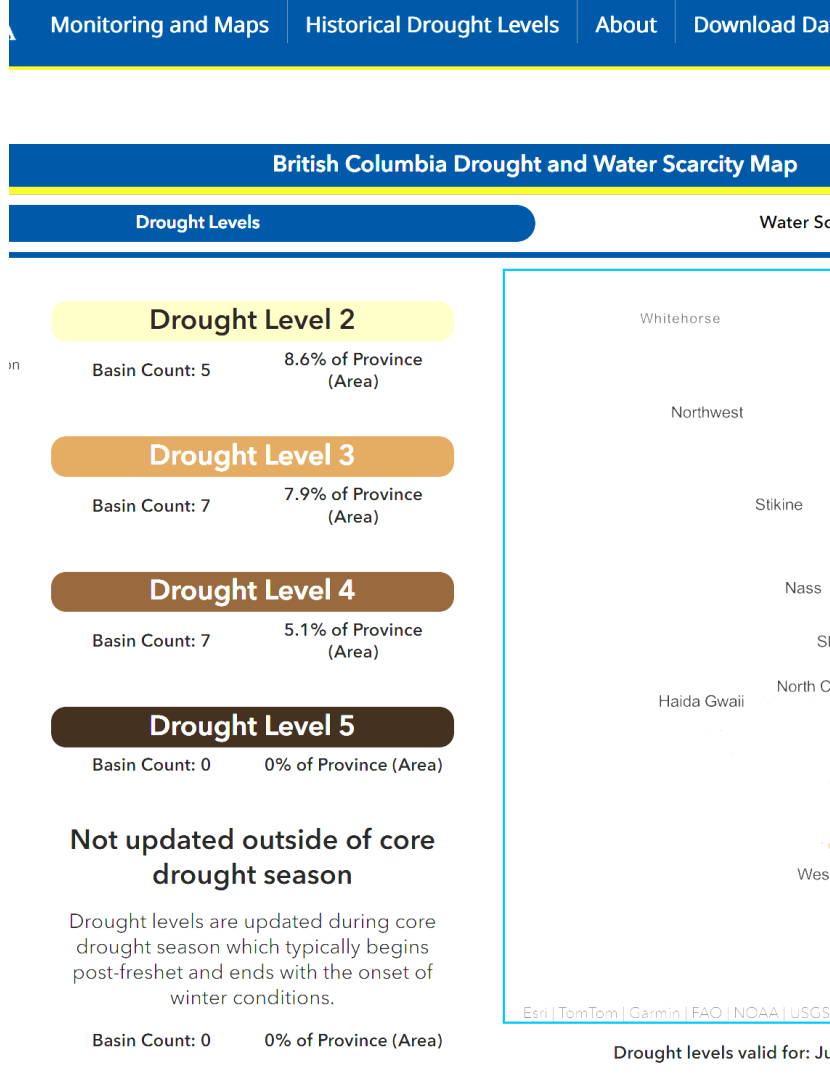
- Provincial Context
 - Drought Website
 - Water Scarcity
- Regional Context (RDN) – Current Status
- Local Context
 - Water Sources
 - Water Well Monitoring
 - Water Consumption
 - Summary



Provincial context (Drought Portal)

droughtportal.gov.bc.ca

- Provincial Drought Portal: situational overview and maps
- Island-wide indicators: precipitation, snowpack, streamflow, groundwater
- Purpose: early warning & decision support for water managers





Vancouver Island Drought Level

- Vancouver Island: Drought Level 4 (severe)
- Primary drivers: low spring precipitation and below-normal snowpack
- Impacts: reduced summer streamflow and lower groundwater recharge



Water Scarcity Level

British Columbia Drought and Water Scarcity Map

Drought Levels



Water Scarcity Level: Low

Basin Count: 0

Water Scarcity Level: Moderate

Basin Count: 5

Water Scarcity Level: High

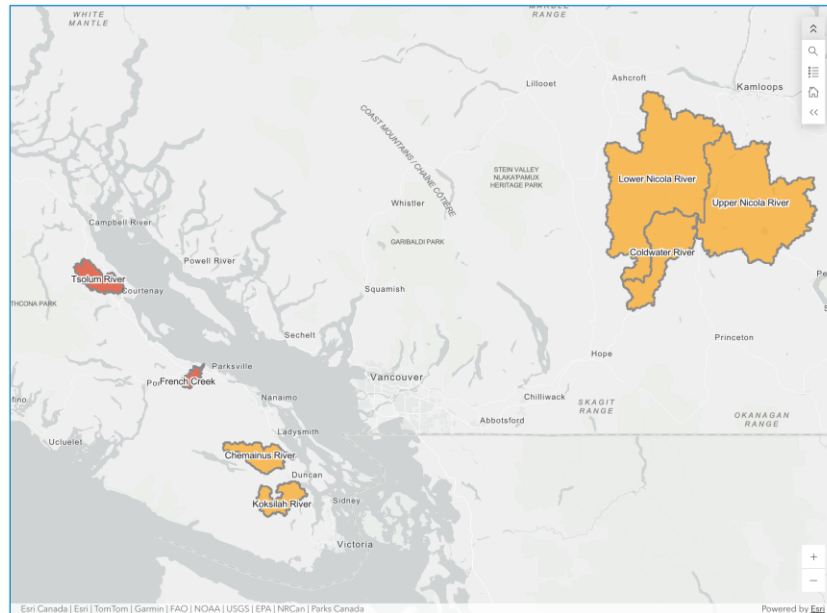
Basin Count: 2

Not updated outside of core drought season

Water scarcity levels are updated during core drought season which typically begins post-freshet and ends with the onset of winter conditions.

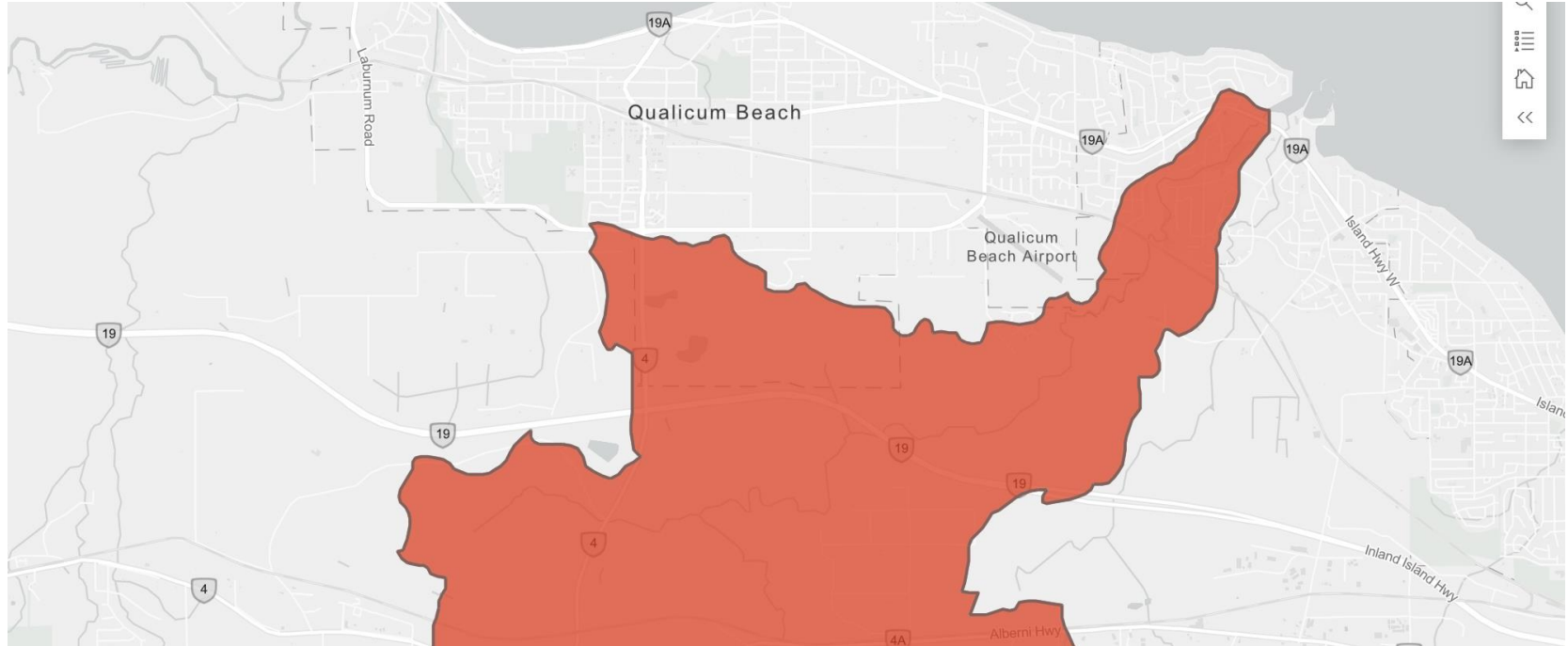
Basin Count: 0

Water Scarcity Levels (Pilot)



Water Scarcity levels valid for: June 30, 2026 | Issued: July 2, 2026

Water Scarcity Map: French Creek in red



Regional context: RDN and Parksville status



Water Conservation Stage	1	2	3	4
Effective Dates	Begins April 1	May 1-October 31	As required	
Frequency	Any day.	Every other day. Even # houses on even days, odd # house on odd days.	One day per week. Even # houses on Thursdays, odd # house on Mondays.	Sprinkling ban: lawn watering is not permitted.
Watering times	Between 7 p.m. and 7 a.m.	Between 7 - 10 a.m. or 7 - 10 p.m. for 2 hours max.	Between 7 - 10 a.m. or 7 - 10 p.m. for 2 hours max.	Sprinkling ban: lawn watering is not permitted.
Washing vehicles, boats, houses (siding)	Anytime.	Anytime on your watering day.	Between 7 - 10 a.m. or 7 - 10 p.m. on your watering day.	Between 7 - 10 a.m. or 7 - 10 p.m. once per week on your level 3 watering day.
Hand-watering, drip irrigation	Anytime.	Anytime.	Voluntary restrictions encouraging residents to reduce water use where they are able to.	Between 7 - 10 a.m. or 7 - 10 p.m.
Filling fountains, pools, hot tubs	Anytime.	Anytime on your watering day.	Voluntary restrictions encouraging residents to reduce water use where they are able to.	Not permitted.
Pressure washing walkways, driveways, siding	Anytime.	Anytime on your watering day.	Voluntary restrictions encouraging residents to reduce water use where they are able to.	Only prior to application of paint, preservative, stucco, or sealant.
New lawn permits	Can apply for a permit.	Can apply for a permit.	Voluntary restrictions encouraging residents to reduce water use where they are able to.	No permits issued.
Vegetable gardens and fruit trees exempt from all watering restrictions, even in stage 4.				

Water Supply Assets



Qualicum River Wellfield – Primary Source

Deep, high-quality groundwater beside the Little Qualicum River; supplies most of the Town water year-round

Berwick Wellfield – Secondary Source

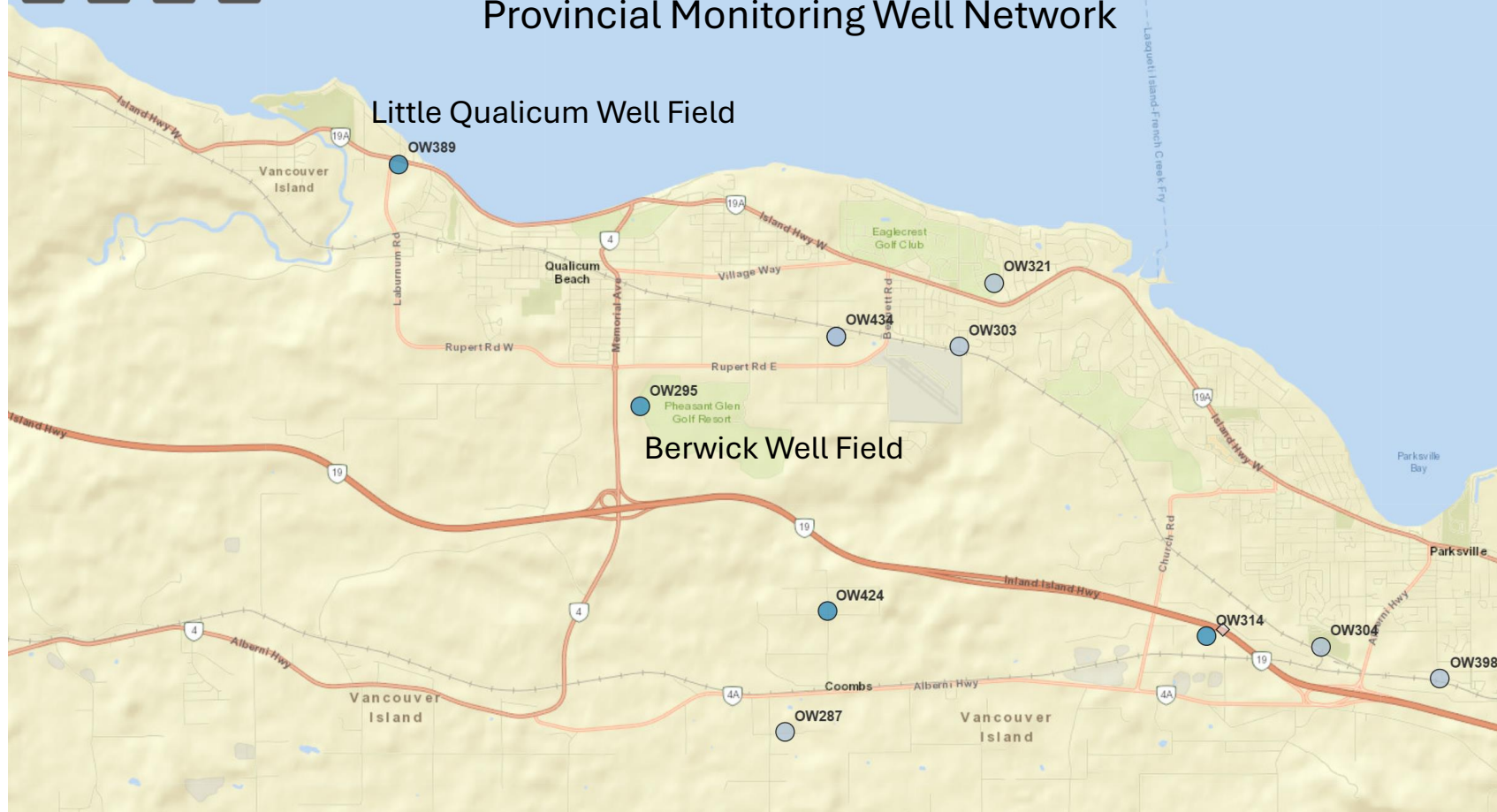
A second deep well source that supplements the system and meets peak summer demand.

Arrowsmith Water Service

Regional joint-venture.
Not part of Qualicum Beach Water System
Water License - 18% share



Provincial Monitoring Well Network





RDN June 23, 2026 Board Presentation

Next Six Slides

RDN June 23, 2026 Board Presentation



Regional Groundwater Level Analysis 2026
Drinking Water and Watershed Protection
Regional District of Nanaimo

Table B1: Historical Long-Term Groundwater Level Results 2026 As of May 10, 2026

RDN Water Region	Aquifer Number	Aquifer Type	Observation Well Number	Dataset Range	Trend Slope	Trend Result (m per Year)	Historical Groundwater Level Hydrograph	Historical Groundwater Level Trend
WR1 - Big Qualicum	416	Surficial	OW 310	2013 - 2026	0.000121407	0.044313543	FIGURE 1-B	Moderate Decline
			OW 427	2013 - 2026	0.000022918	0.008364942	FIGURE 2-B	Stable
	662	Surficial	OW 425	2013 - 2026	0.000238959	0.087220103	FIGURE 3-B	Moderate Decline
			OW 426	2013 - 2026	0.000004689	0.001711648	FIGURE 4-B	Stable
			OW 391	2013 - 2026	0.000100902	0.036829315	FIGURE 5-B	Moderate Decline
WR2 - Little Qualicum	664	Surficial	OW 389	2013 - 2026	-0.000021450	-0.007829124	FIGURE 6-B	Stable
WR3 - French Creek	212	Bedrock	VOW 15	2017 - 2026	-0.000409666	-0.149528117	FIGURE 7-B	Increasing
			OW 295	2013 - 2026	-0.000099893	-0.036460940	FIGURE 8-B	Increasing
	217	Surficial	OW 434	2017 - 2026	0.000067947	0.024800494	FIGURE 9-B	Stable
			VOW 16	2013 - 2026	0.000658524	0.240361318	FIGURE 10-B	Large Decline
	1250	Surficial	OW 424	2013 - 2026	0.000040269	0.014698136	FIGURE 11-B	Stable
	216	Surficial	OW 304	2013 - 2026	-0.001171924	-0.427752338	FIGURE 12-B	Increasing
			OW 314	2013 - 2026	-0.000388258	-0.141714137	FIGURE 13-B	Increasing
			OW 398	2013 - 2026	-0.000461504	-0.168448975	FIGURE 14-B	Increasing
			VOW 14	2017 - 2026	-0.000023271	-0.008493912	FIGURE 15-B	Stable
			VOW 01	2013 - 2026	-0.000095494	-0.034855204	FIGURE 16-B	Increasing
WR4 - Englishman								

OW 389 Historical Water Level

Aquifer 664 (Unconfined sand and gravel aquifer - along streams)

River Well

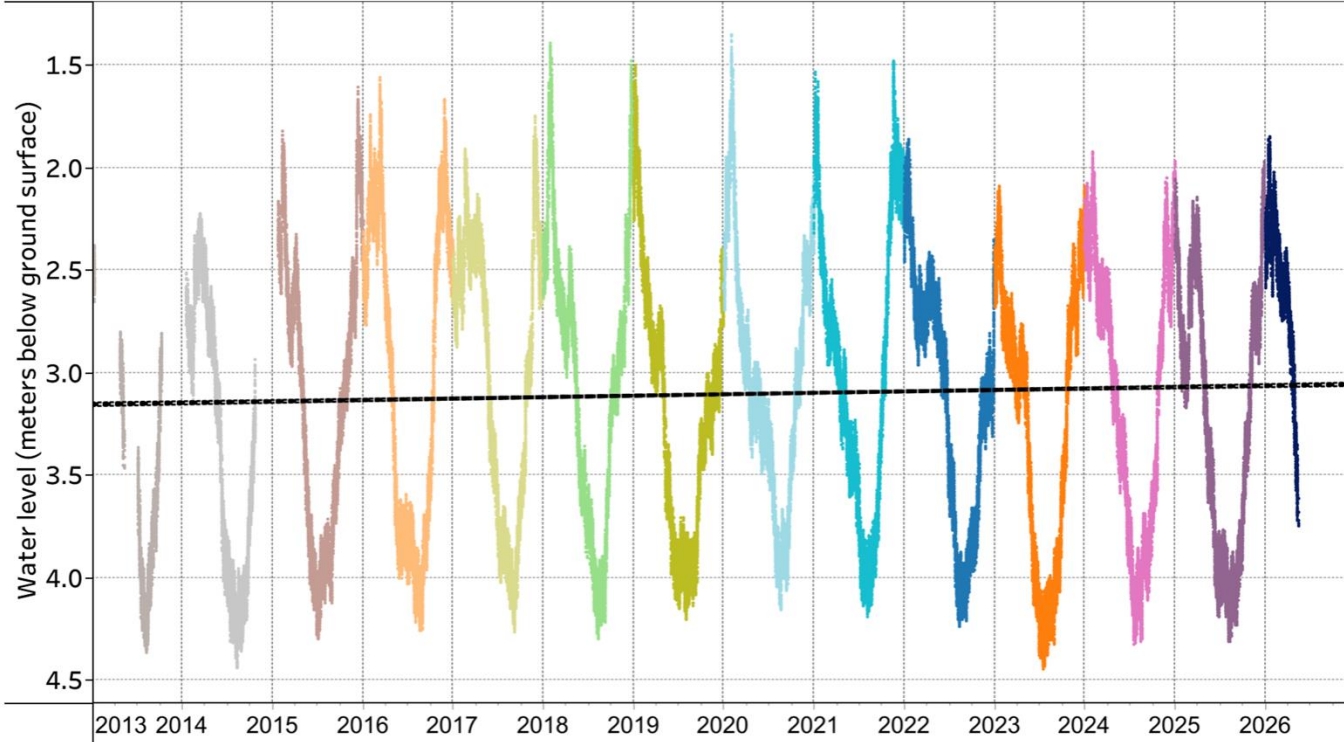


FIGURE 6-B

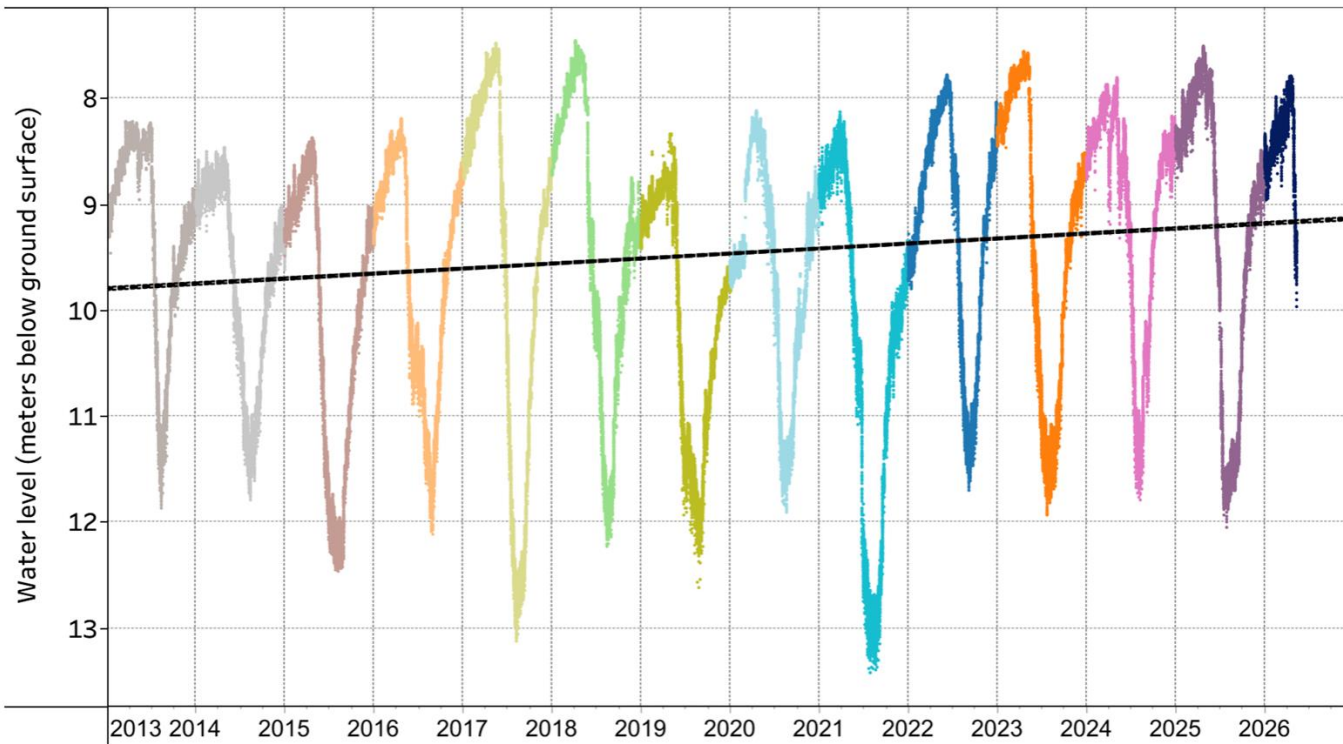
Water Region 2 - (Little Qualicum)



OW 295 Historical Water Level

Aquifer 217 (Confined sand and gravel - glacial)

Berwick Well



YEAR



FIGURE 12-B

Water Region 3 - (French Creek)



RDN June 23, 2026 Board Presentation



Regional Groundwater Level Analysis 2026
Drinking Water and Watershed Protection
Regional District of Nanaimo

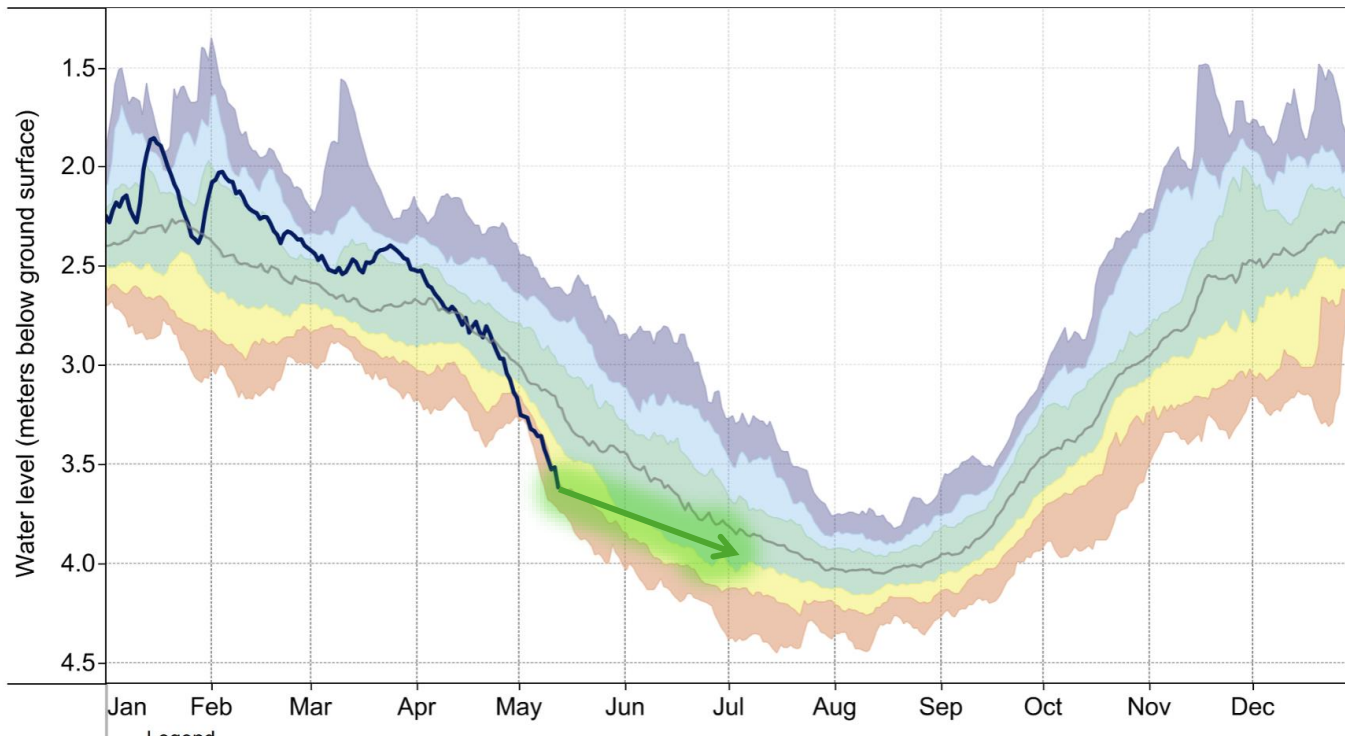
Table C1: Seasonal Groundwater Level Results 2026 As of May 10, 2026

RDN Water Region	Aquifer Number	Aquifer Type	Observation Well Number	Dataset Range	Seasonal Groundwater Level Hydrograph	Seasonal Groundwater Level Trend
WR1 - Big Qualicum	416	Surficial	OW 310	2013 - 2026	FIGURE 1-C	Below Normal
			OW 427	2013 - 2026	FIGURE 2-C	Much Below Normal
	662	Surficial	OW 425	2013 - 2026	FIGURE 3-C	Much Below Normal
			OW 426	2013 - 2026	FIGURE 4-C	Much Below Normal
WR2 - Little Qualicum	664	Surficial	OW 391	2013 - 2026	FIGURE 5-C	Much Below Normal
			OW 389	2013 - 2026	FIGURE 6-C	Much Below Normal
WR3 - French Creek	212	Bedrock	VOW 15	2017 - 2026	FIGURE 7-C	Much Above Normal
	217	Surficial	OW 295	2013 - 2026	FIGURE 12-C	Much Below Normal
			VOW 16	2017 - 2026	FIGURE 13-C	Below Normal
	1250	Surficial	OW 424	2013 - 2026	FIGURE 15-C	Much Below Normal
	216	Surficial	OW 304	2013 - 2026	FIGURE 8-C	Normal
			OW 314	2013 - 2026	FIGURE 9-C	Normal
			OW 398	2013 - 2026	FIGURE 10-C	Much Above Normal
			VOW 14	2017 - 2026	FIGURE 11-C	Normal
WR4 - Englishman River			VOW 01	2013 - 2026	FIGURE 16-C	Normal
WR3 - French Creek	220	Bedrock	OW 287	2013 - 2026	FIGURE 14-C	Normal
WR4 - Englishman River			VOW 18	2017 - 2026	FIGURE 18-C	Much Below Normal

OW 389 Seasonal Water Level

Aquifer 664 (Unconfined sand and gravel aquifer - along streams)

River Well



Legend

- Much Above Normal (P90-100)
- Above Normal (P75-90)
- Normal (P25-75)
- Below Normal (P10-25)
- Much Below Normal (P0-10)
- Median Water Level
- 2026 Water Level (Current: January to May)

Percentile-median analysis: data included from January 2013 to December 2025

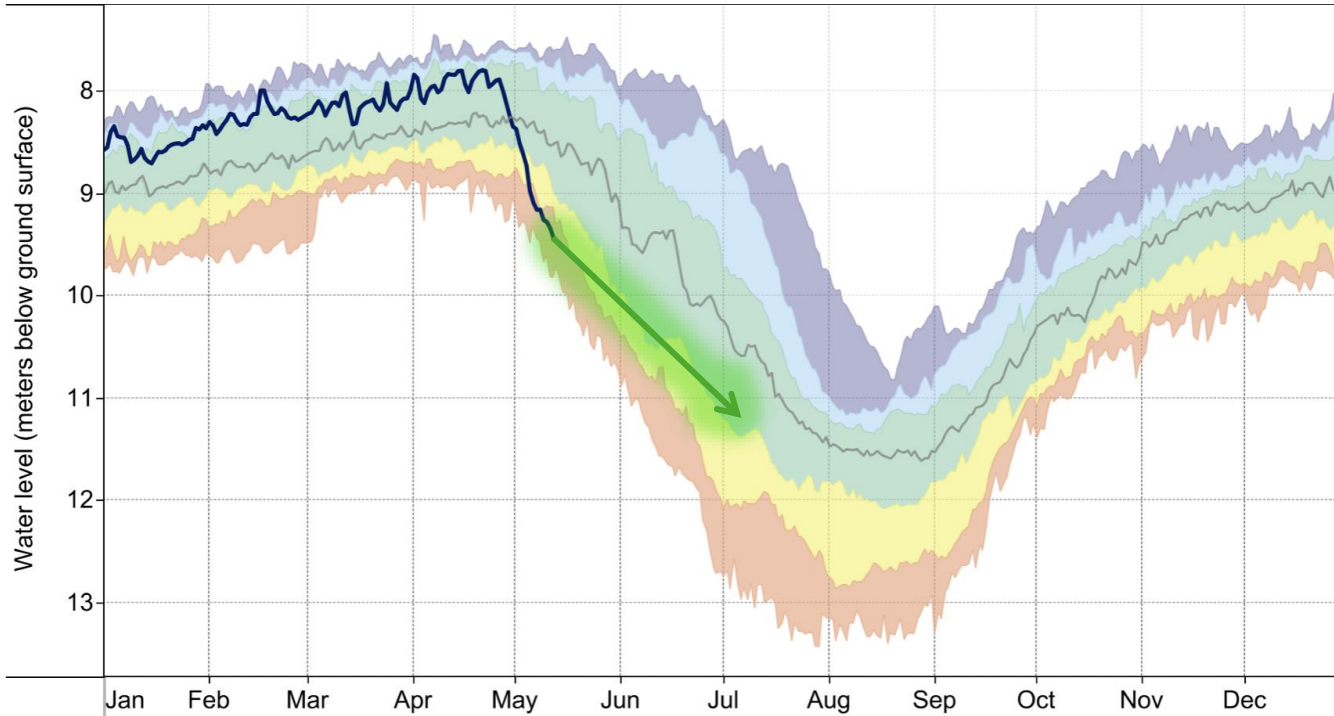
FIGURE 6-C

Water Region 2 - (Little Qualicum)



OW 295 Seasonal Water Level
Aquifer 217 (Confined sand and gravel - glacial)

Berwick Well



Legend

- Much Above Normal (P90-100)
- Above Normal (P75-90)
- Normal (P25-75)
- Below Normal (P10-25)
- Much Below Normal (P0-10)
- Median Water Level

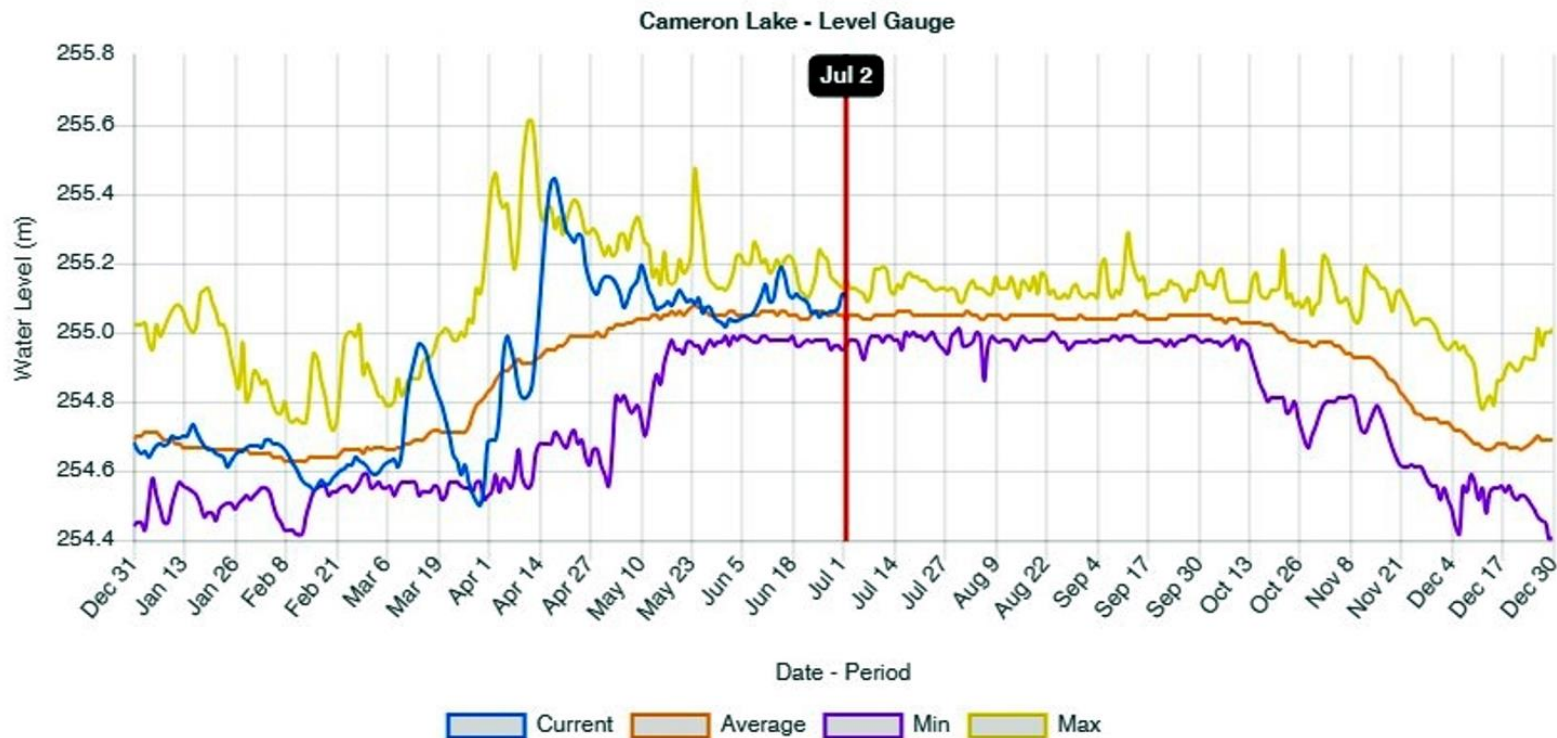
Percentile-median analysis: data included from January 2013 to December 2025

2026 Water Level (Current: January to May)

FIGURE 12-C
Water Region 3 - (French Creek)



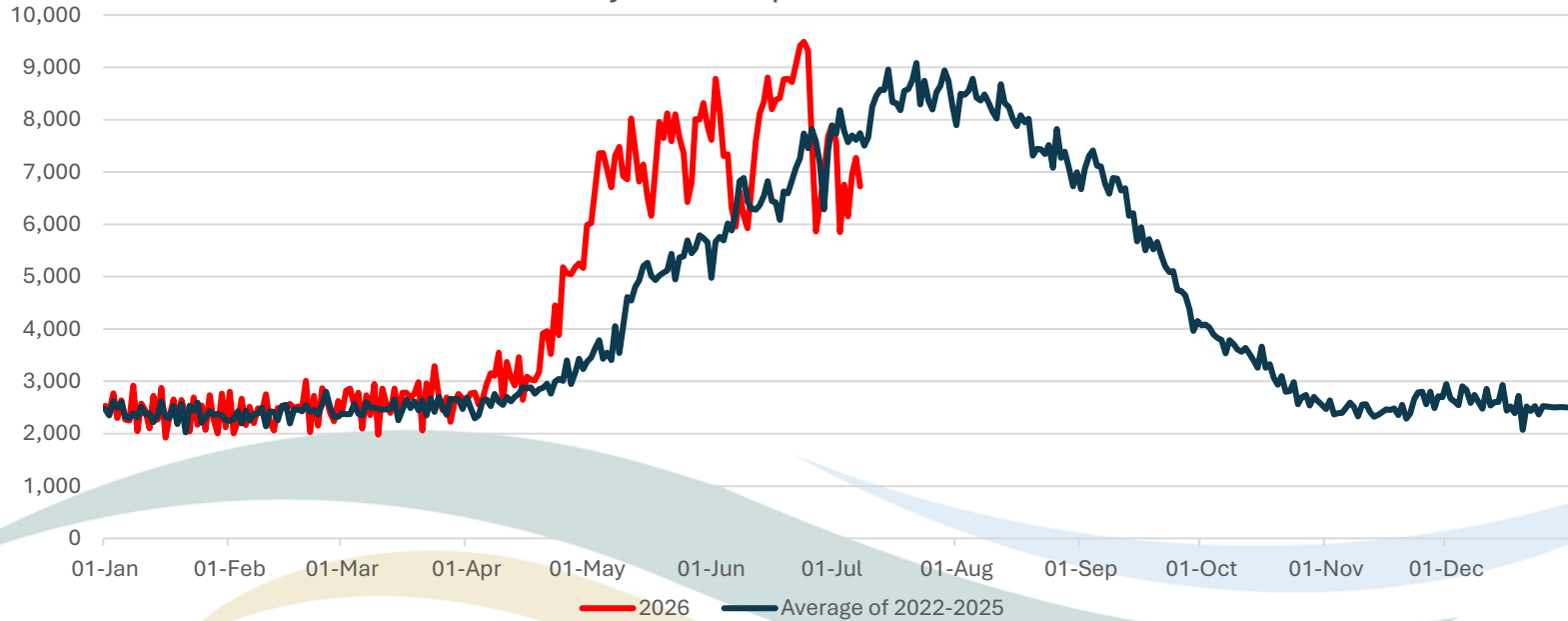
Cameron Lake – Water Level



Last Updated: Jul 2, 2026

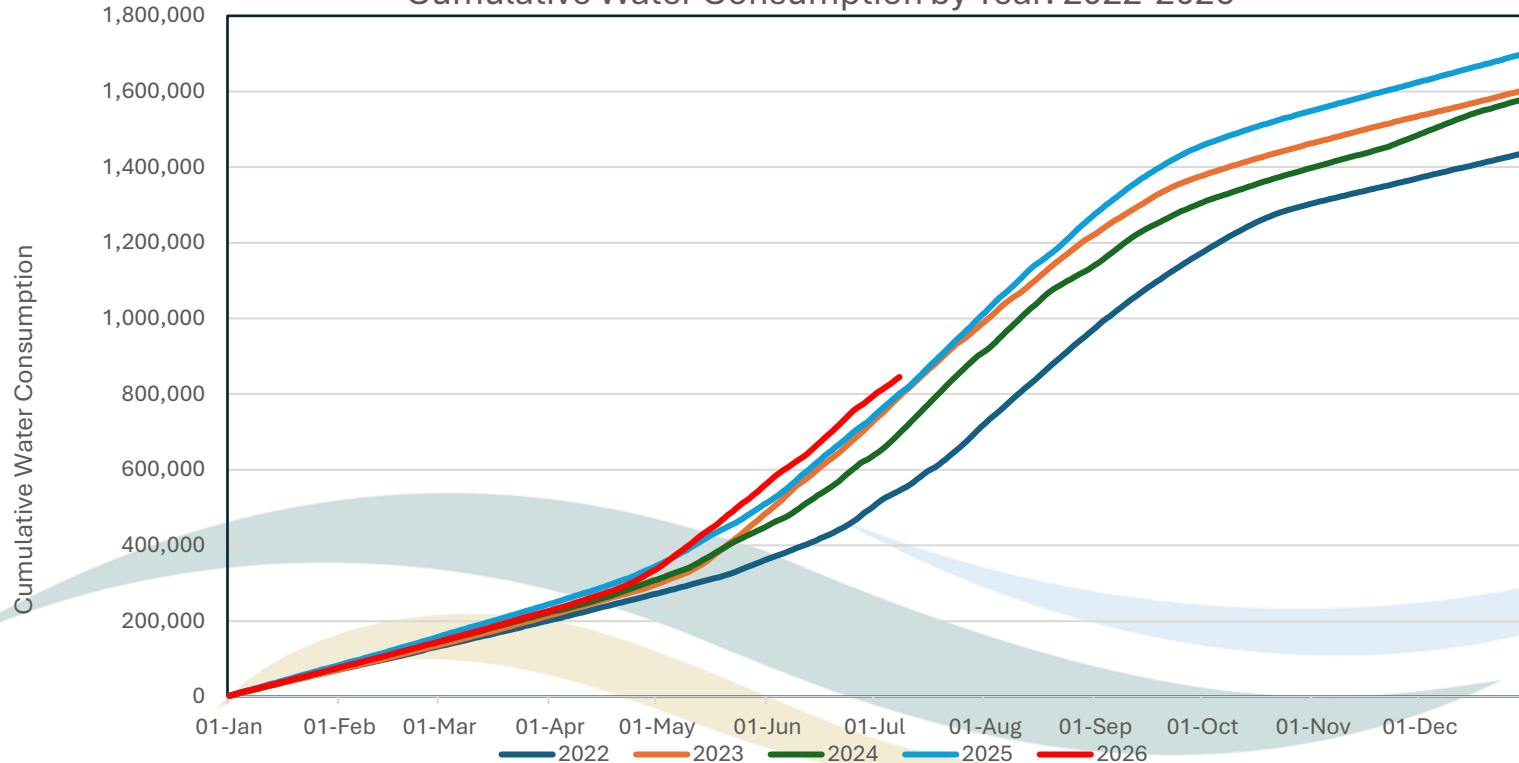
Water Consumption

Daily Consumption 2022-2026



Water Consumption

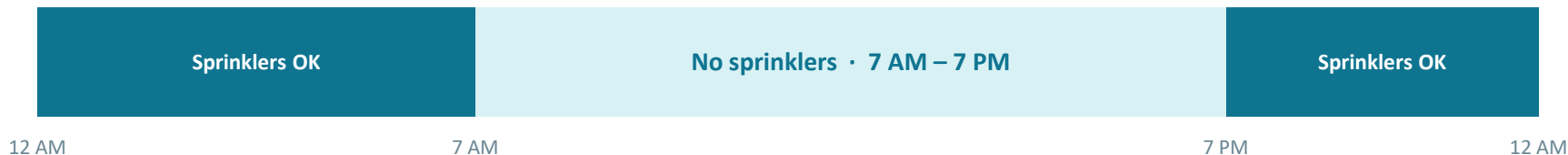
Cumulative Water Consumption by Year: 2022-2026



Current Status – Summer 2026



Daily watering window



Anytime with a shut-off nozzle

Permitted anytime

Summary

- Regional and provincial indicators show elevated drought risk;
- Our monitoring saw a short stress period in May but recovered with rain;
- Cumulative consumption for 2026 is higher than previous years;
- The Town has remained on Water Restrictions Level 1 as per the RDN scale;
- We recognize climate change as the new reality (warmer wetter winters and hotter drier summers).



Next Steps

- Hydro-geological Study of Little Qualicum Wellfield – Report to Council in 2027
- Next year: Define the Technical Thresholds to trigger further water restriction.
- As per bylaw, Council could impose additional water use restrictions by resolution.

