# Regional District of Nanaimo as a partner in *Nanaimo Lowlands Aquifer Characterization*

Natural Resources Canada

Regional District of Nanaimo

British Columbia

*Presented by Julie Pisani, RDN*

*GSC Groundwater Workshop, Victoria BC, February 26th 2018*

# Partnership has layers

- Shared goals and interest
- Collaborative role
- Operationalizing the science

# Compatible goals

**FLNRO / ENV** to understand local and regional hydrogeological processes and characteristics to support effective use of the resource, minimize groundwater conflicts between users and protect environmental values

**RDN** to understand regional water resources to inform land-use planning and policy.

**NRCAN/GSC** to assess the geology and hydrogeology of the area to increase current knowledge in populated region dependent on groundwater

Observation Wells

Long Term Monitoring

Seismic Survey

Sonic Cores

Modelling

# Capacity to collaborate

The RDN has a unique capacity to support the pursuit of improved groundwater science and data in our region, through our *Drinking Water and Watershed Protection* service.

Access grant funds and act as a coordinator of efforts on the local level

- drillers
- landowners & other stakeholders
- local consulting professionals

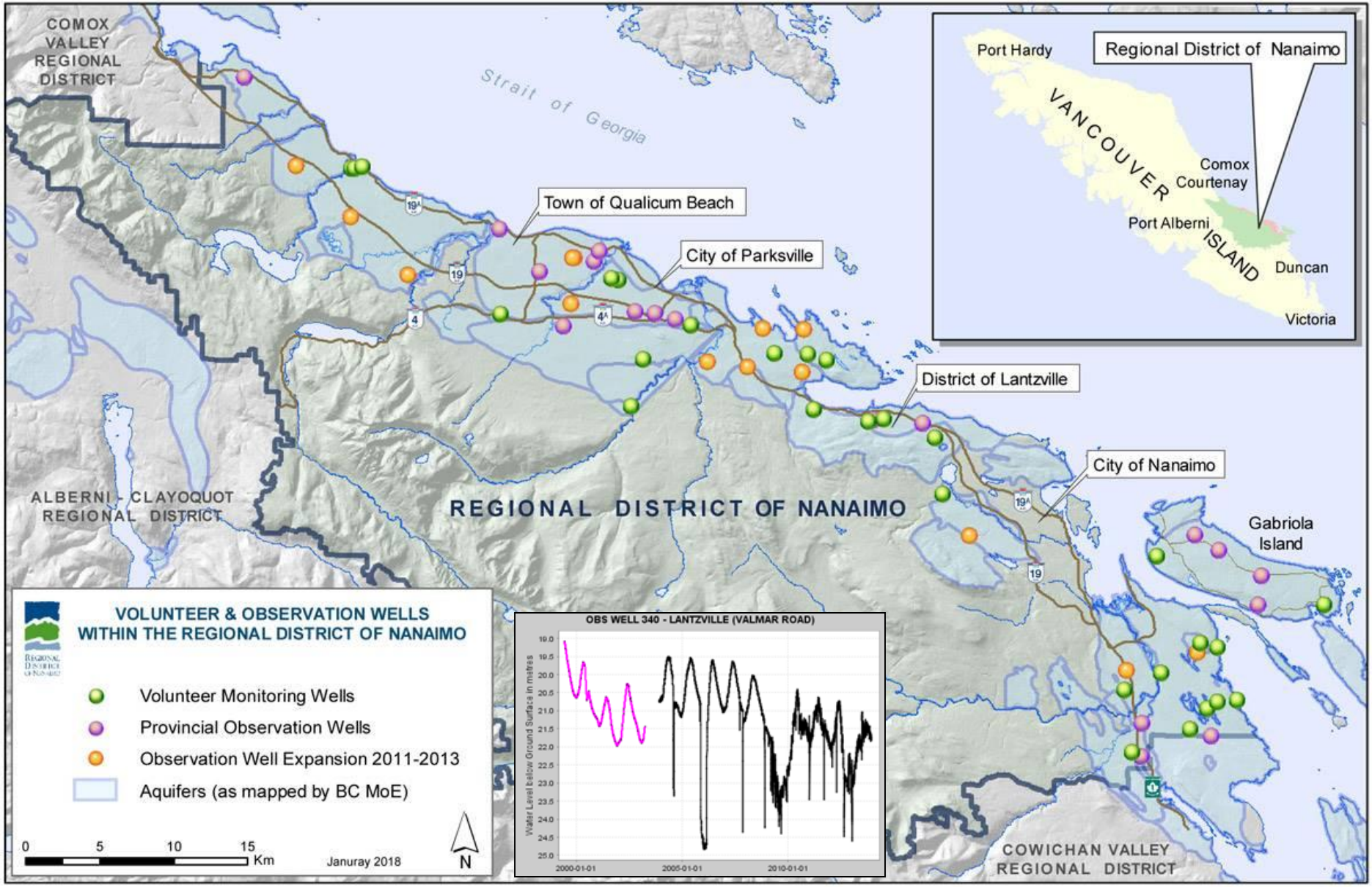
} Identify priority areas, suitable locations, establish partnerships

Also have the unique capacity to coordinate the operationalizing of the information. DWWP Program can implement: more monitoring, analysis, policy review & development, public engagement, data sharing & decision support tools

# Related projects

Observation Well Network Expansion

Water Budget Project


COMOX VALLEY REGIONAL DISTRICT
Strait of Georgia
Town of Qualicum Beach
City of Parksville
District of Lantzville
City of Nanaimo
ALBERNI - CLAYOQUOT REGIONAL DISTRICT
REGIONAL DISTRICT OF NANAIMO
Gabriola Island
COWICHAN VALLEY REGIONAL DISTRICT
Port Hardy
Regional District of Nanaimo
VANCOUVER ISLAND
Comox
Courtenay
Port Alberni
Duncan
Victoria
VOLUNTEER & OBSERVATION WELLS WITHIN THE REGIONAL DISTRICT OF NANAIMO
Volunteer Monitoring Wells
Provincial Observation Wells
Observation Well Expansion 2011-2013
Aquifers (as mapped by BC MoE)
0 5 10 15 Km
Januray 2018
N
OBS WELL 340 - LANTZVILLE (VALMAR ROAD)
Water Level below Ground Surface in metres
2000-01-01
2005-01-01
2010-01-01

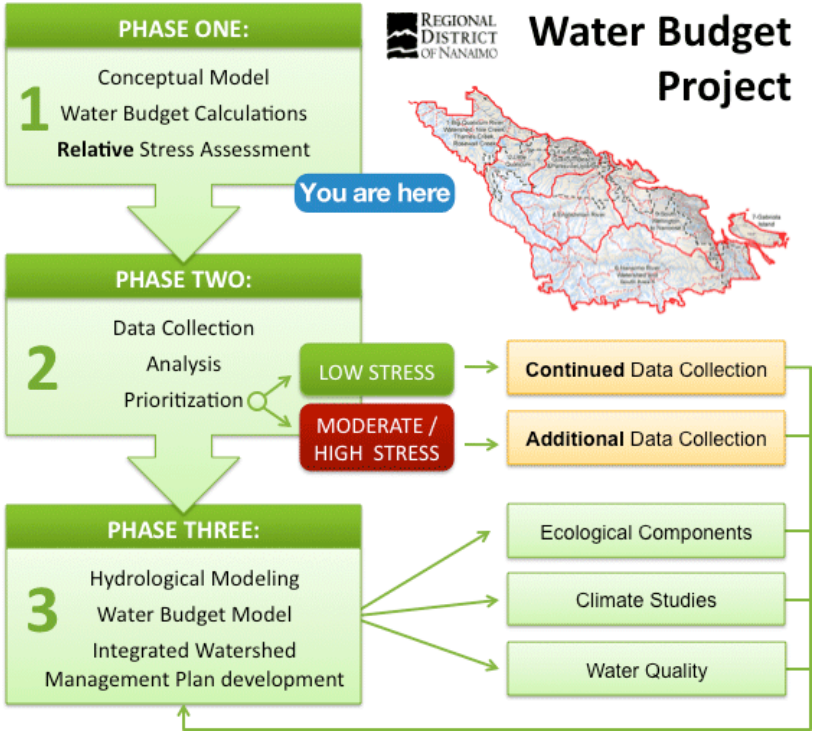
| Water Region | | Watershed or Aquifer Tag No. | Aquifer Material | Aquifer Location | Relative Stress Level |
|---|---|---|---|---|---|
| Big Qualicum (BQ) | WR1 | Nile Creek | NA | NA | Low |
| | | Big Qualicum River | NA | NA | Low |
| | | 416 | Quadra | North of Thames Creek | Low |
| | | 421 | Quadra | Between Nile and Thames | Moderate to High |
| | | 665 | Capilano | Over Quadra between BQ and Thames | Low to Moderate |
| | | 662 | Quadra | South of BQ and into LQ | Low to Moderate |
| Little Qualicum (LQ) | WR2 | Little Qualicum River | NA | NA | Moderate |
| | | 662 | Quadra | North of LQ to BQ | Low |
| | | 661 | Kame | South of LQ at upper Kinkade Creek | Moderate |
| | | 664 | Salish | Along LQ River Valley to ocean | Low |
| | | 663 | Kame | Upper Whiskey Creek | Moderate to High |
| | | 217 | Quadra | South of LQ and into WR3 | Moderate to High |
| French Creek (FC) | WR3 | French Creek | NA | NA | High |
| | | 220 | Bedrock | Upper FC, Coombs/Errington and area | Low to Moderate |
| | | 216 | Quadra | Upper Parksville, North/South of Hwy 1 | High |
| | | 217 | Quadra | Qualicum Beach, between LQ and FC | High |
| | | 212 | Bedrock | Along the coast in Parksville to FC | Moderate |
| Englishman River (ER) | WR4 | Englishman River | NA | NA | Moderate |
| | | 209 | Quadra | Upper ER near Morison/Swan Creeks | Low to Moderate |
| | | 220 | Bedrock | Upper ER under Aq. 209 | High |
| | | 216 | Quadra | Lower Parksville to ER | Moderate to High |
| | | 219 | Quadra | East of ER and extends into WR5 | Low to Moderate |
| | | 214 | Bedrock | East of ER along coast | Low |
| | | 221 | Salish | ER Valley to Ocean | Moderate |
| South Wellington to Nanoose (SW-N) | WR5 | Nanoose Creek | NA | NA | High |
| | | Millstone River | NA | NA | Moderate |
| | | Chase River | NA | NA | Moderate to High |
| | | 219 | Quadra | Nanoose area | Low |
| | | 214 | Bedrock | Nanoose underlying Quadra Aq. 219 | Low |
| | | 210 | Bedrock | Nanoose Creek | Moderate to High |
| | | 218 | Bedrock | Nanoose Penninsula | V. High |
| | | 213 | Bedrock | Lantzville underlying Quadra Aq. 215 | Low |
| | | 215 | Quadra | East Lantzville, North Nanaimo | Moderate to High |
| | | 166 | Bedrock | Stephenson Point, North Nanaimo | Low |
| | | 211 | Bedrock | Benson Meadows | V. High |
| | | 167 | Quadra | Westwood to Divers Lake above Hwy 1 | Low to Moderate |
| Nanaimo River (NR) | WR6 | Nanaimo River | NA | NA | Moderate to High |
| | | 160 | Vashon | Lower Cassidy Aquifer | Moderate to High |
| | | 161 | Capilano | Cassidy Aquifer-Nanaimo River Valley | Moderate to High |
| | | 162 | Bedrock | Cedar and Yellowpoint | High |
| | | 163 | Quadra | East of Holden Lake | V. High |
| | | 164 | Bedrock | South of Extension | Moderate to High |
| | | 165 | Bedrock | South Wellington | Moderate |

**Notes:** Aquifer stress color codes: blue=low, green =low to moderate, yellow =moderate, brown =moderate to high, red=high to very high, NA means not applicable.

DRINKING WATER WATERSHED PROTECTION

REGIONAL DISTRICT OF NANAIMO

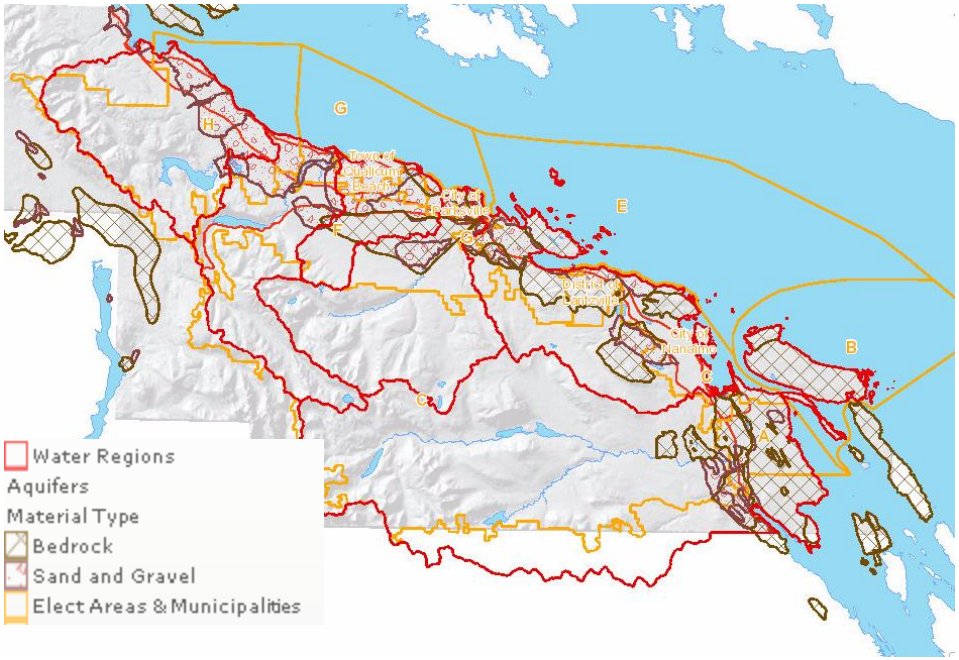
## Water Budget Project



# End use of the data

Decision making support for a sustainable water future in our region

- Land-Use
- Development policy
- Water Allocations
- Climate Change adaptation



# Questions…? Thank you!

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