

# Regional District of Nanaimo



## Drinking Water and Watershed Protection Update

Gabriola Community Meeting



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WATERSHED  
PROTECTION

# Drinking Water and Watershed Protection



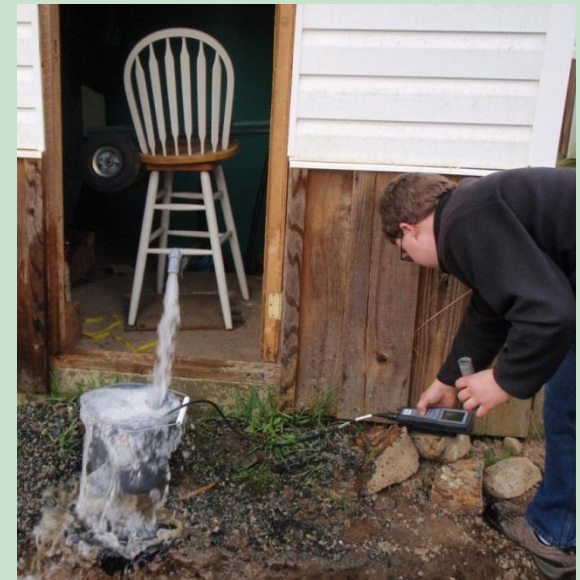
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- Learn more about water resources
- Use this information to help land use planners make more informed land use decisions
- Help communities protect the environment

# Regional Program Activities to Date

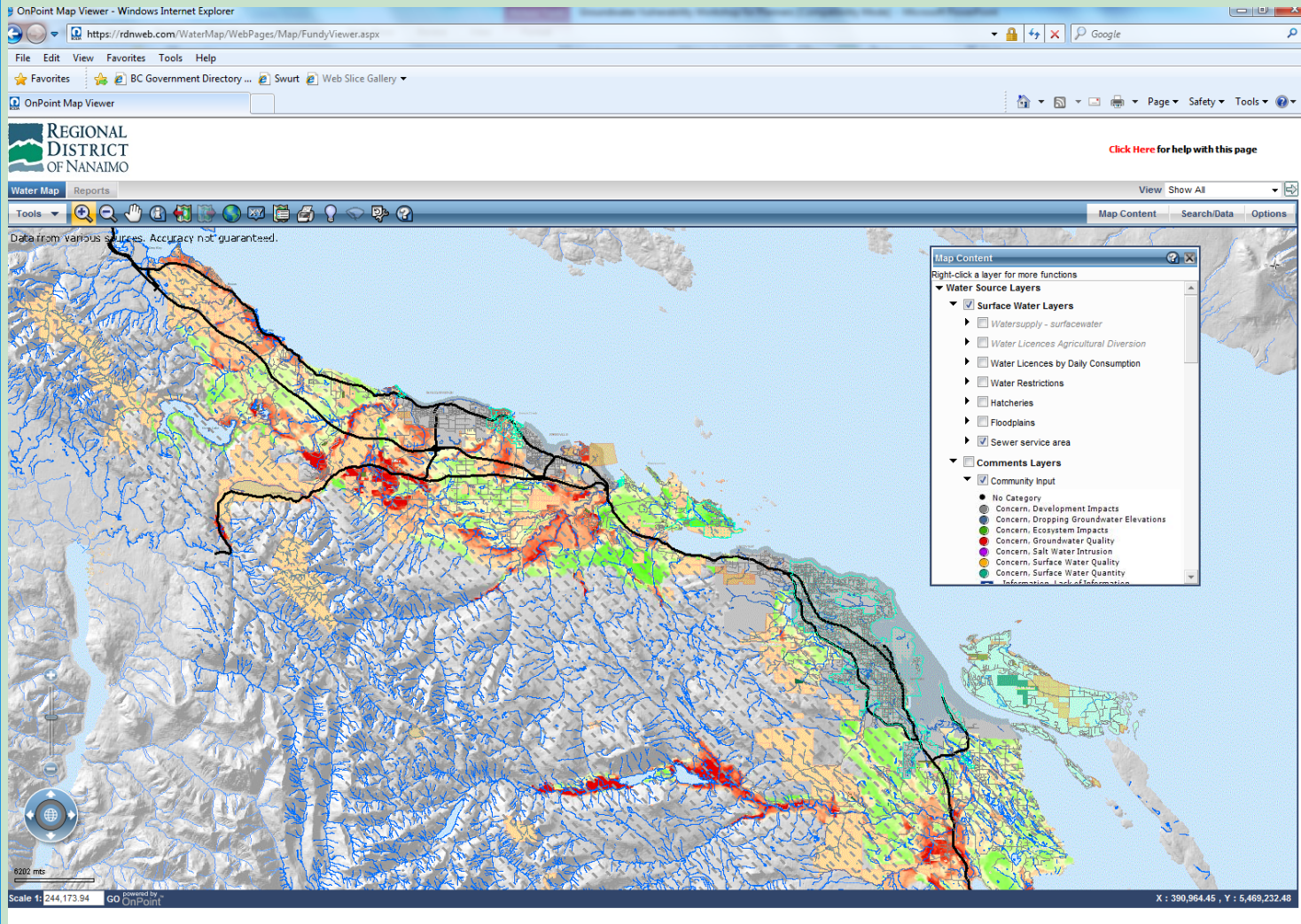


- Input to the Regional Growth Strategy update
- Observation well network expansion – Phase 1
- Green Building Sustainability Checklist
- Team WaterSmart outreach and Irrigation Review Program
- Cassidy- South Wellington Water Quality Survey
- Comments to Province on Water Act Modernization
- Water Purveyor Working Group
- Water sustainability indicators
- School education programs
- Vulnerability mapping
- Toilet Rebate program
- WellSmart

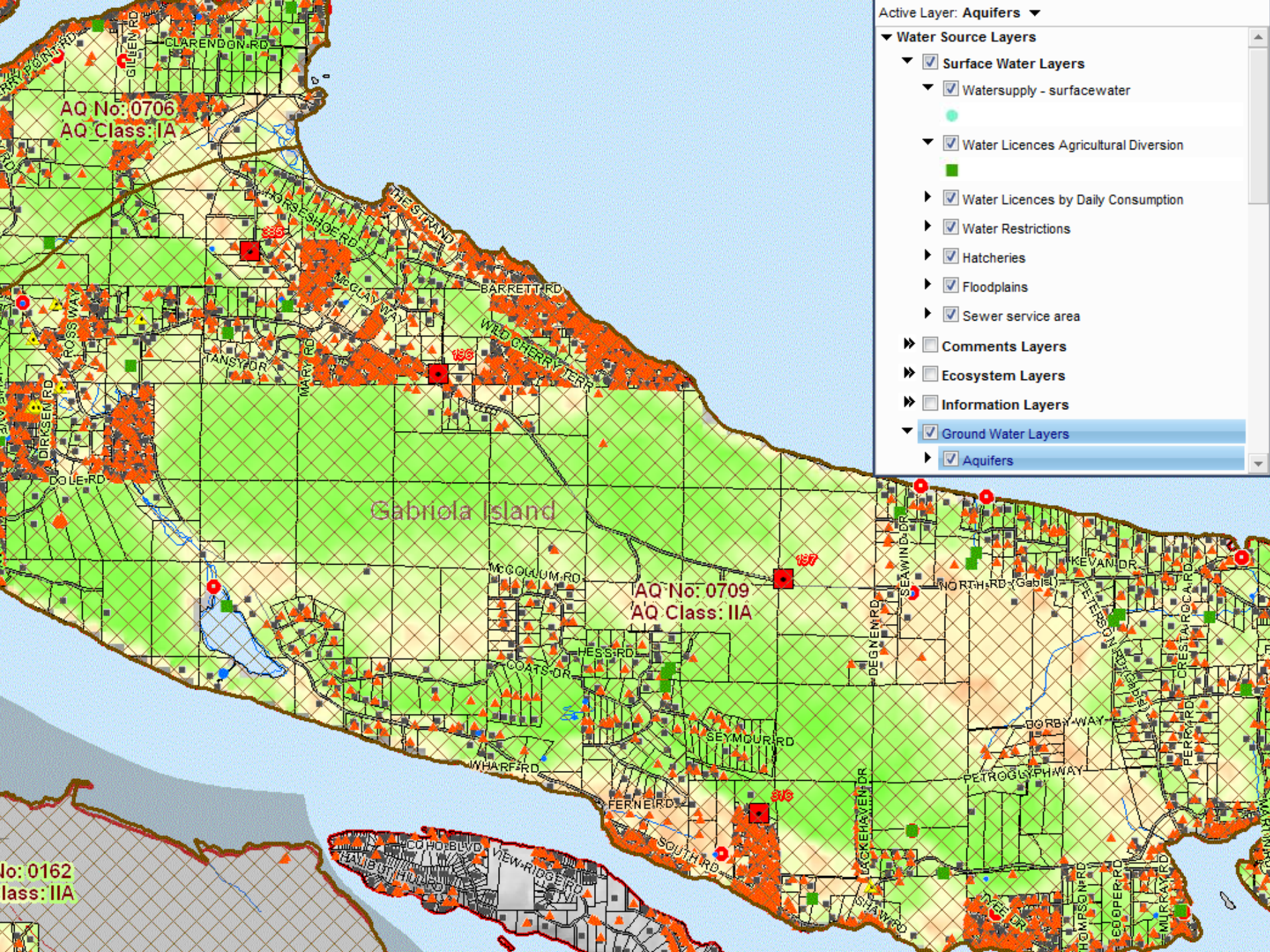




# Program Activities: WaterMap







AQ No: 0706  
AQ Class: IA

Gabriola Island

AQ No: 0709  
AQ Class: IIA

AQ No: 0162  
AQ Class: IIA

- Active Layer: Aquifers
- Water Source Layers
    - Surface Water Layers
      - Watersupply - surfacewater
    - Water Licences Agricultural Diversion
    - Water Licences by Daily Consumption
    - Water Restrictions
    - Hatcheries
    - Floodplains
    - Sewer service area
  - Comments Layers
  - Ecosystem Layers
  - Information Layers
  - Ground Water Layers
    - Aquifers



# Water Quality Monitoring Network

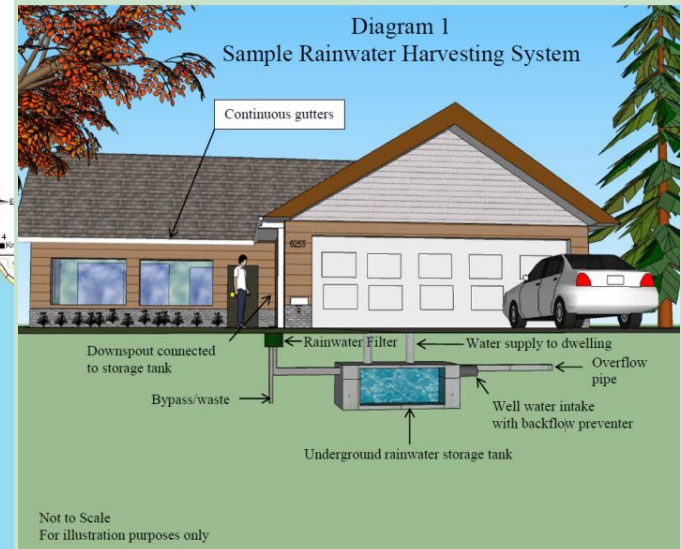
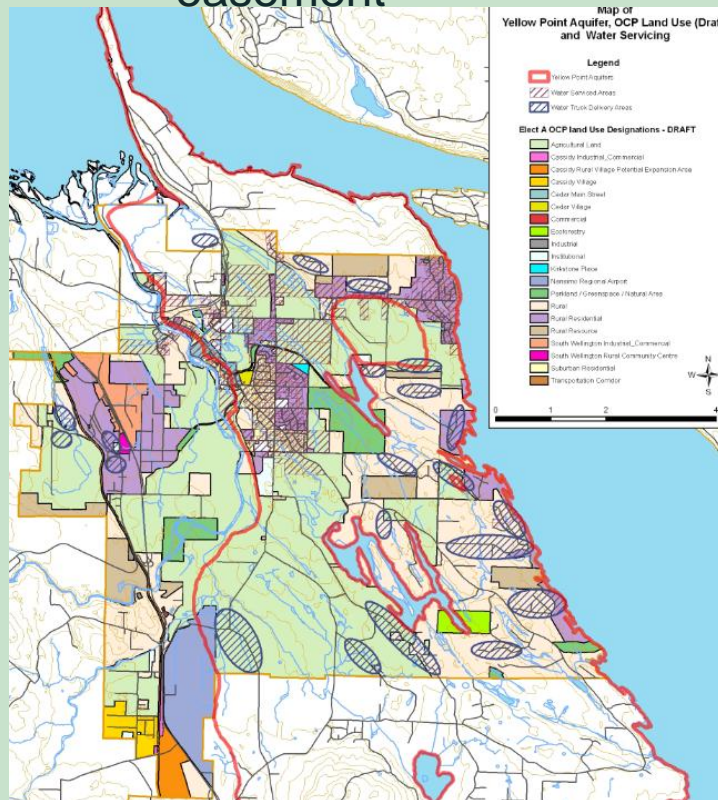
- Partnership between MOE, RDN, stewardship groups
- Consistently collect comparable data to assess watersheds (Turbidity, temperature, dissolved oxygen, conductance)
- Educational and data sharing resource for stewardship groups



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# Yellow Point Aquifer DPA

- To promote water conservation (Bill 27)
  - Mandatory rainwater collection and storage (18,000L) in new construction
  - 72 hour pumping test for subdivision of 3 or more lots
  - Potential to require long term monitoring wells with easement

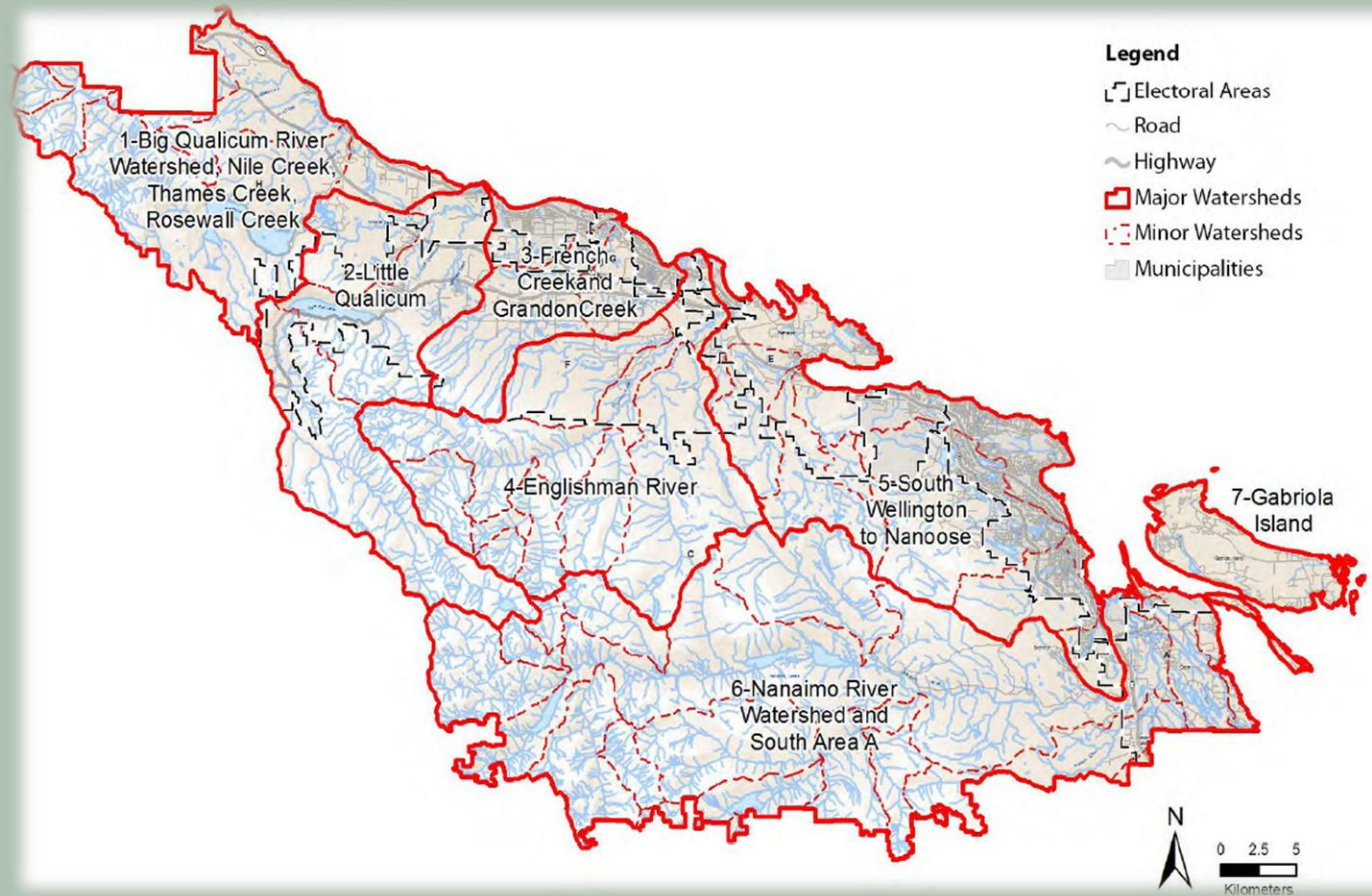




# Watershed Snapshot Report 2010



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# Watershed Snapshot Report 2010



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1. Describe watersheds: problem areas, potential solutions
2. Recommendations: by watershed & region-wide

# Watershed Snapshot



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## Watershed #7 Gabriola Island

*dropping  
groundwater  
levels*

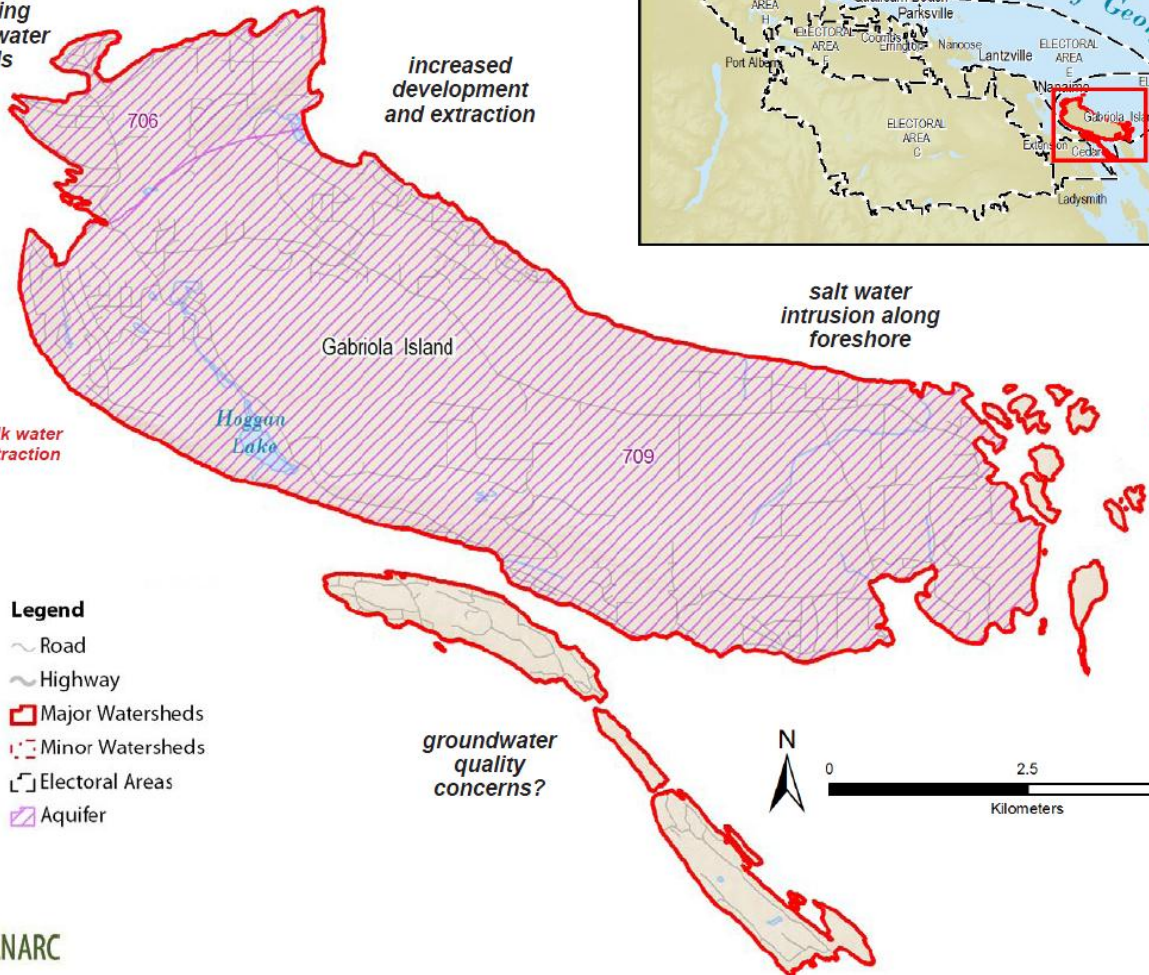
*increased  
development  
and extraction*

*salt water  
intrusion along  
foreshore*

*bulk water  
extraction*

*high density  
wells and  
septics*

*groundwater  
quality  
concerns?*



### Legend

- ~ Road
- ~ Highway
- ▭ Major Watersheds
- ▭ Minor Watersheds
- ▭ Electoral Areas
- ▨ Aquifer



HB LANARC



# Recommendations for Gabriola



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1. Develop groundwater monitoring strategy to better understand water levels.
  - **1a)** Install observation well in the Village
  - **1b)** Monitor water levels in volunteer private wells
2. Develop a program to obtain well records and locate wells.
3. Rural Water Quality Program

# Gabriola and Region-Wide: Science

## Better understanding our water resources

- Water budgets for each of the seven (7) major watershed areas
- Develop and monitor indicators for assessing water resources
- Determine indicators of water consumption by monitoring (metering) or surveying of representative volunteer users e.g. golf courses, agriculture, commercial/industrial.
- Gather information on groundwater levels by working with major users such as purveyors.
- Work with the Ministry of Environment and local volunteers to monitor surface water quality
- In partnership with the MOE, expand Provincial Observation Well Network
- Work with MOE to develop monitoring program for climate change





# Gabriola and Region-Wide: Stewardship



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## Helping communities help the environment

- Develop an interactive website to share water resource information and stewardship resources
- Continue summer outreach activities – focus on outdoor water conservation
- Water conservation incentives
- Develop and implement a strategy for rainwater reuse
- Communicate building options for rainwater and greywater reuse
- Promote Environmental Farm Plan program
- WellSMART, SepticSmart
- Water purveyor working group

# Gabriola and Region-Wide: Planning and Development



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## Better Planning

- Strengthen RGS language regarding water protection.
- Require higher standards for hydrogeological assessments in at-risk areas (ie., Yellow Point, Parksville, etc.)

## ...and better building

- Promote Low Impact Development Engineering standards
- Update landscape and irrigation design standards and bylaws
- Develop bylaws dictating construction practices, including sediment and erosion control, spill preparedness, etc.

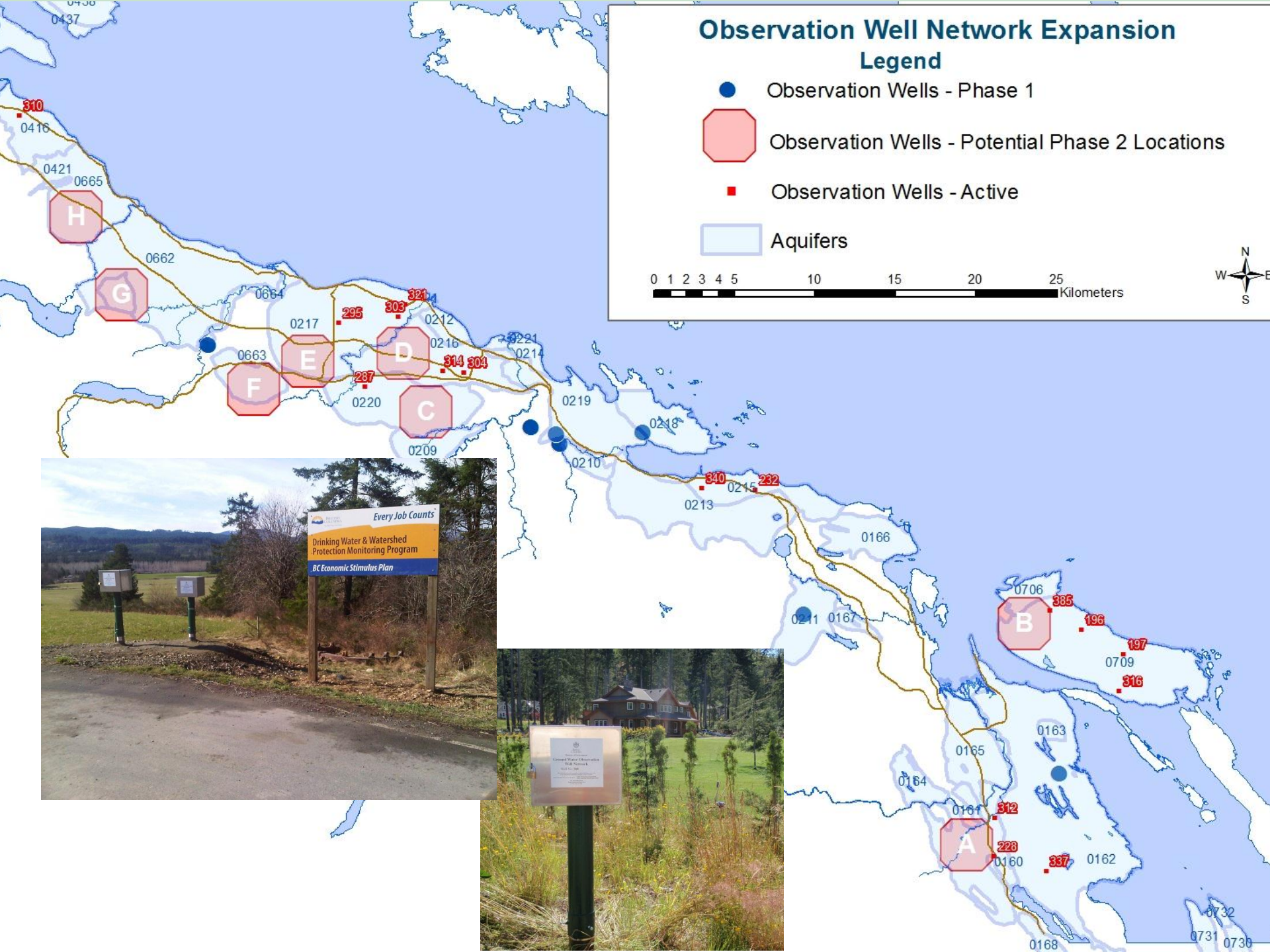


# Observation Well Network Expansion

## Legend

- Observation Wells - Phase 1
- ⬡ Observation Wells - Potential Phase 2 Locations
- Observation Wells - Active
- Aquifers

0 1 2 3 4 5 10 15 20 25 Kilometers

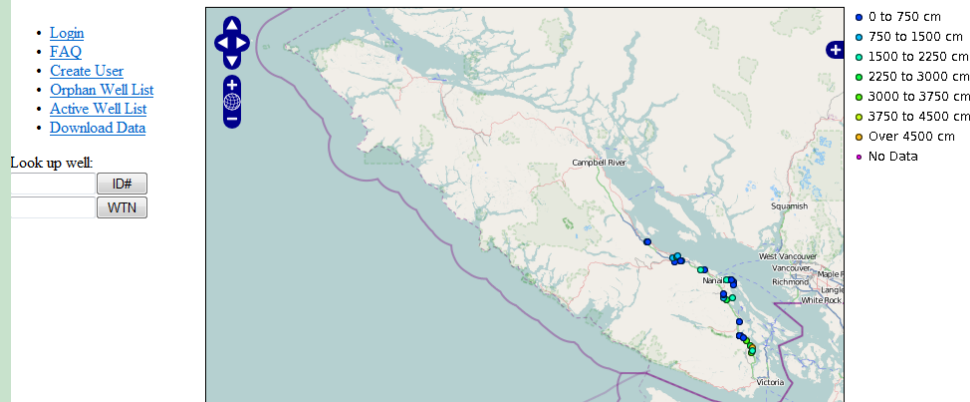


# Private Well Monitoring

- Final Selection of equipment – potentially WellMinder
- Data uploaded to Vancouver Island Groundwater Monitoring Network
- Pilot: Approx. 5 new locations on Gabriola, 5 in Yellow Point
- Call for volunteers



## VICGMN Well Water Level Database



Vancouver Island Community Groundwater Monitoring Network





# Water Use




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1. Initial estimates for Simple Water Budget
2. More detailed Information on use from Streamlined Water Use Reporting Tool (SWURT)
3. Potential: Water Demand Modeling Tool

# Water Use and Levels Website



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 **BRITISH COLUMBIA**  
The Best Place on Earth

 **Okanagan Basin**  
WATER BOARD

*livingwatersmart.ca*  
**STREAMLINED WATER USE REPORTING TOOL**

[Profile](#) | [Data Entry](#) | [Dashboard](#) | [Reports](#) | [Help](#)

**Organization:** Nelson's waterworks

**Company Profile** \* indicates required fields

**Organization Utility:** Okanagan Test Waterworks #1

**General** | **License** | **Ground Water** | **Reservoir/Lake Level** | **Return Flow** | **Users**

Organization Name: Nelson's waterworks

Utility Name: \* Okanagan Test Waterworks #1

Utility No: \* 001

Client No: \* 345678

Owner: \* Test Works

Office Location: Latitude: 49.562187 Longitude: -119.573822

Data Entry Units: \* cubic m

Area Served: \* Okanagan Area History

Population Served: \* 2400 History

Basis of Population Estimate: \* Best local estimates (reviewed annually) History

Area Units: \*  Acres  Hectares

Irrigated Acres (currently): 36000 History

Total Committed Acres: 12000 History

Weather Station: Pentiction South

**Customers**

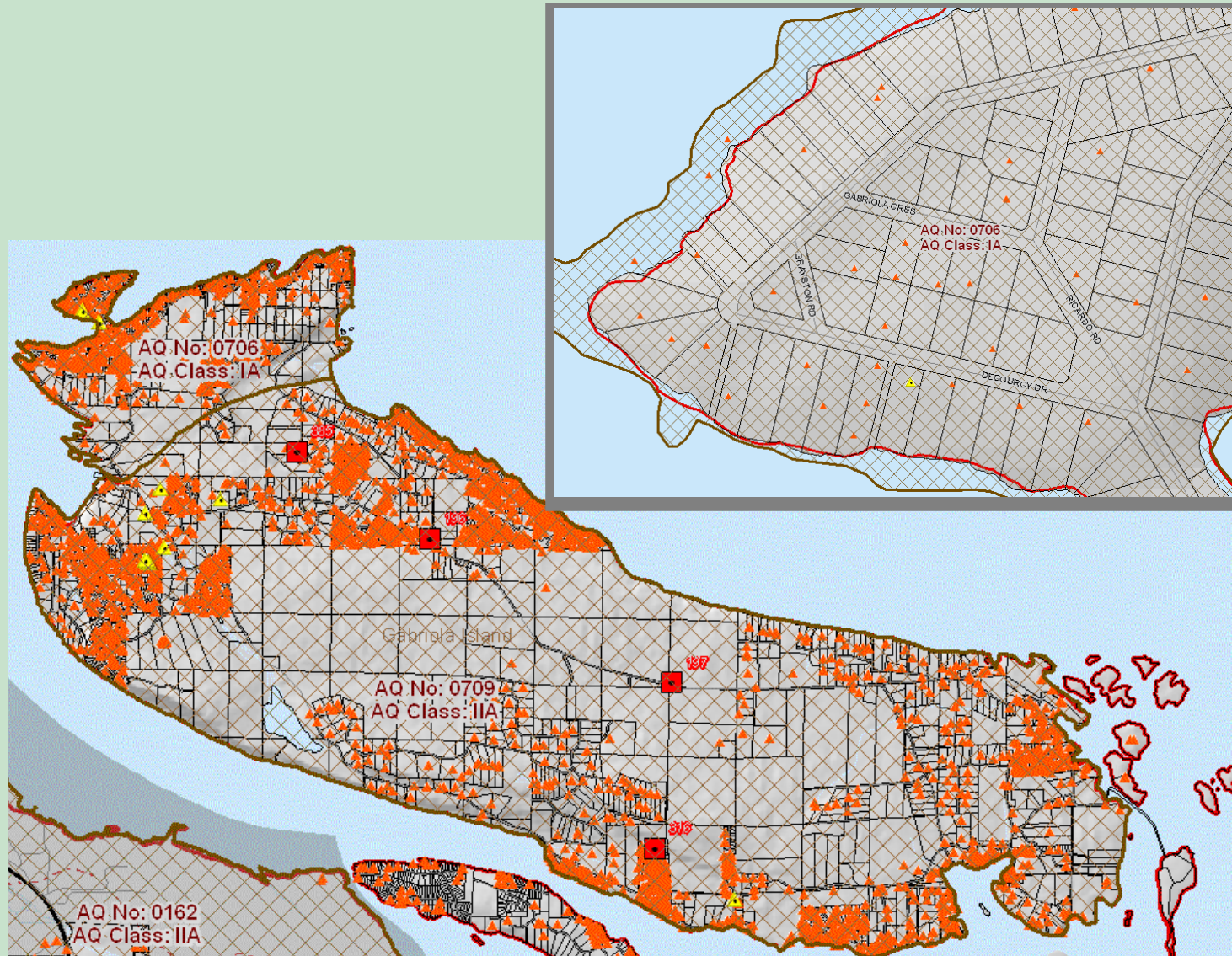
Connections: \* Customer Type: \*



# Gabriola Island – Well Records



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# Gabriola Island – Well Records



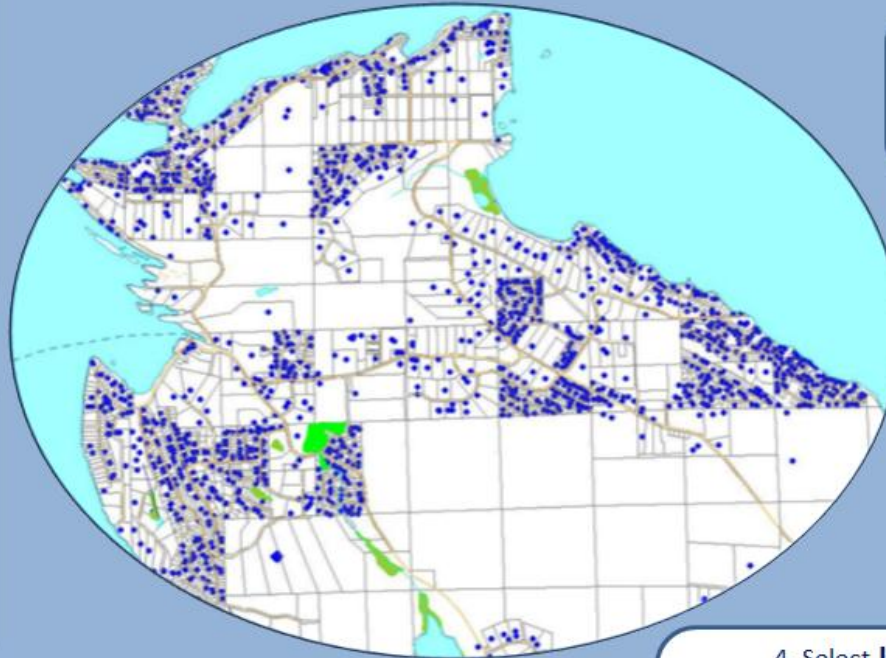
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## Is Your Well On The Map?

1. Launch the Water Resources BC Website  
([http://www.env.gov.bc.ca/wsd/data\\_searches/wrbc/index.html](http://www.env.gov.bc.ca/wsd/data_searches/wrbc/index.html))

Is your well not on the map? Contact Rachelle Ormond at 250.751.3265 or [rachelle.ormond@gov.bc.ca](mailto:rachelle.ormond@gov.bc.ca) for more information.

See a blue dot?  
You're on the map!



2. Select **Find Location** tab

3. Select **Place Name** tab, type **Gabriola**, and select **Gabriola Island**

4. Select **Layers** tab and Click folder – sub folder:  
**Water Wells – Water Wells Land Ownership and Status - Integrated Cadastral Fabric Private Base Maps – DRA**

6. Zoom to Your Property

5. Select **Refresh Map**



# Alternate Water Sources



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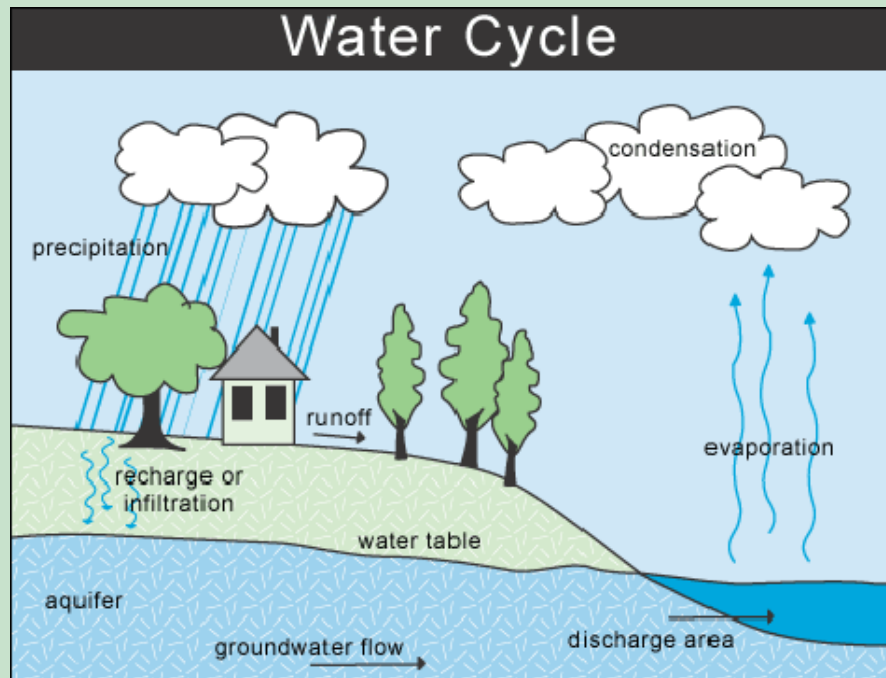
- Team WaterSmart –Focus on rainwater harvesting and greywater use in 2011
- Sustainable Development Checklist
- Input to the Province on Building Code Update
- Partnership with Sustainability Department in development of Rainwater Harvesting Best Practices Manual for potable and non-potable use
- Mandatory rainwater harvesting in Yellow Point
- Rainwater Harvesting Incentive Program

# Water Budget Project

“The goal of this project is to better understand regional water resources by identifying where various elements of the hydrologic cycle are located (ie., soils, aquifers, streams, lakes), how much water they hold, how water moves between these elements, and where water is being taken or used in a way that may not be sustainable”



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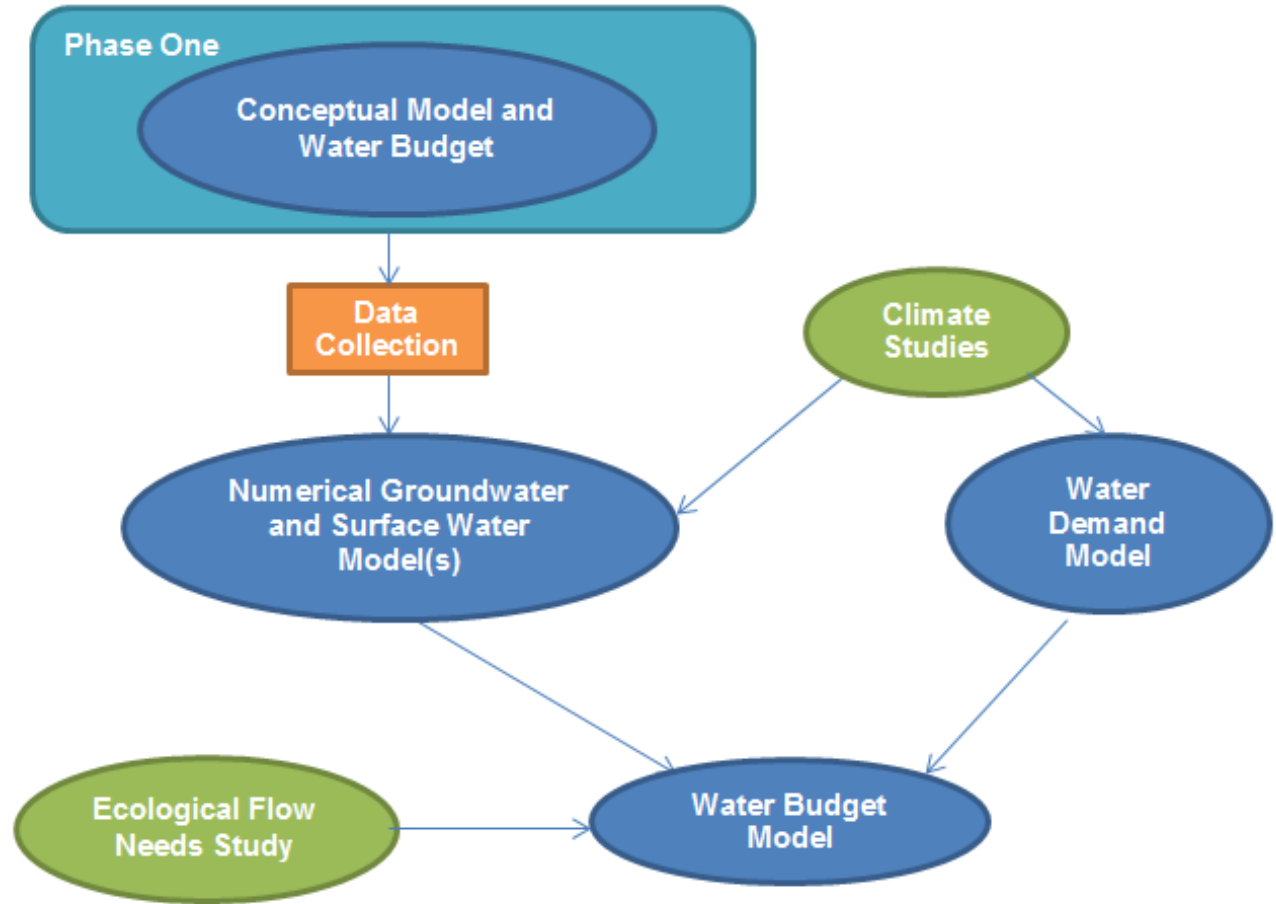


# Water Budget Project



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## Understanding Water Supply and Demand:



Gabriola ...unique needs, distinct area, OCP update

# Conclusion



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Thank-you and questions?