Township of Langley

Est. 1873

Protecting Langley's Groundwater

Safe and sustainable groundwater for our community

Langley could be test case in B.C.

NATASHA JONES
AL IRWIN
Times Reporters

Langley could become a test case t
ter and, most importantly, regulate h
The proposed Waste Management
fall under the provincial Water Ac
response to a study which confirm
are dropping.
"The government says this is a
us to look at ways to deal with
controlling usage," said Steven
of water resources.
"Langley would be a test ca
ways to preserve water."
B.C. has no legislation to
that anyone can drill a larg

Region's water plan: use less, pay more

From A1

Ultra-low-flow toilets and other options

The region is expected to need new water sources by mid-century. In the meantime, the draft plan says Greater Vancouver can cut water consumption by 30 per cent by 2021 by implementing 14 key conservation measures.

Municipalities in the region now have a mix of water-conservation regulations. For example, Surrey, Richmond, Delta, White Rock and West Vancouver either have or plan to implement universal water metering. Others require metering only in new construction, or have voluntary metering programs, or no metering programs.

Nearly 100 per cent of industrial, commercial and institutional water users are metered. But only 13,000, or fewer than three per cent, of family homes in the region had meters as of 2003, leaving 360,000 homes not metered.

The draft plan says 83 per cent of toilets in the region are ultra-low-flow toilets that use six litres or less per flush in new construction and renovations.

Other proposed water conservation measures being considered by regional

- Water metering and volume-based pricing for every single family home.
- Seasonal pricing — meaning summer surcharges — for metered customers.
- Rebates for purchases of high-efficiency clothes washers.
- Rebates for purchases of non-residential low-volume toilets and waterless urinals.
- Rebates for purchases of high-efficiency clothes washers.
- Free indoor water audits for residential customers.
- Regular water audits for the 20 per cent of businesses that use the most water.
- Audits and retrofits of irrigation systems.
- Rebates for improvements to

water-conserving, along with 78 per cent of urinals, 89 per cent of faucets, 88 per cent of showerheads, 75 per cent of home washing machines, 90 per cent of home dishwashers and 78 per cent of commercial dishwashers.

The district already has plans to add summer surcharge wholesale water rates for families, beginning in 2007.

By 2020, "the summer price will be 1.25 times during the remainder of the draft plan says.

The water [Metric

Average water use per person per day in Greater Vancouver

For more than a decade, people and businesses in this region have become more efficient at using water and have reduced per capita water demand. Statistics show that annual peak day consumption has declined by about 30 per cent, and graph shows that per-capita water use (annual average) has declined since the 1980s [illegible] litres per capita day to less than 600, a reduction [illegible] the region could do significant

Weapons against water waste

The Langley Times

Sunday November 7, 2004

Water levels keep dropping

NATASHA JONES
Times Reporter

[illegible] reserve the aquifer. The [illegible] and nine complex [illegible] developed [illegible] to any [illegible] Lan said.
[illegible] with the Ministry o [illegible] al Land Protection sho [illegible] the City of Surrey, the [illegible] small [illegible] a subtlety [illegible] covered in very [illegible] ng as 22 kilometres

[illegible] Closer to the aquifer is [illegible] granted an unconfined aquifer is [illegible] recharged by rainwater. Continu [illegible] aquifers, which lie below wa [illegible] certain areas developed in the aq [illegible] age and also considered "the [illegible] deeper aquifer in the order, the water.

Langley draws its water from [illegible] lower than half of the 19 [illegible] lined aquifers which are 25 [illegible] hydraulically connected. All [illegible] the municipal bodies of Aldergrove, Langley [illegible] Surrey.

The study confirmed what of [illegible] officials know, namely that [illegible] level of the unconfined aquifer [illegible] dropping.

Without measures to conse [illegible] water, "models such as Bert Creek will begin to disappear said. It [illegible] be added, "so beginning to see the already. The most critical issue is c

GVRD eyes severe water restrictions

A 25-per-cent summer surcharge [illegible] g options being considered

[illegible] A.M. BOZIC [illegible] TIMES STAFF

[illegible] r metering, a [illegible] er surcharge [illegible] d ultra-low- [illegible] n the agenda [illegible] nt, according [illegible] provides a [illegible] ure of the [illegible] [illegible] t has not [illegible] measures, [illegible] th public [illegible] approval [illegible] ve they

become official.

But they are included in a draft conservation plan the district had to produce so it can get a $100-million grant from a federal-provincial infrastructure program to help pay for the $600-million Seymour-Capilano water filtration plant.

The district board will vote Friday on whether to forward the draft plan to the infrastructure program.

The region's water use has been declining since the mid-1980s from more than 700 litres per person per day to 575 litres in 2003.

"However, this region still has significant potential to improve its water use efficiency," the document says.

Greater Vancouver has far more water than it can use, but much of it is spilled every winter over the dams holding back the reservoirs in the North Shore mountains, while there are short-

THE LANGLEY ADVANCE NEWS

Langley Township

Water protection wanted

Special protection for Langley Township's water will be sought by the municipality.

by Leanna Jantzi
[illegible]@langleyadvance.com

Groundwater in Langley Township may soon become a protected commodity.

Councillors unanimously agreed Monday to seek provincial protection for the Township's groundwater.

The Township will apply to become a provincial water management area, in order to regulate the amount of water being pulled from its aquifers.

"The designation would go a long way" to help the Township protect its water supply, said Councillor Kim Richter, who suggested the idea [Protection considered, Oct. 29, Langley Advance News].

"We need to do everything we can to protect these aquifers," she said.

Councillor Howie

Langley Township's groundwater specialist Ardgore Dixon-Warren and manager of [illegible] Steven Lan checked out the tie-wall head of the Township's newest well and pump

effect on Monday, Nov. 1, but there are currently no controls to regulate how much water people can remove from the ground.

the Township also seek funding from the province to implement the designation.

"There's no cost estimate of what you could be getting into," he said. "I see no reason why we

ruled order, not a becau didn't cost any

AdvanceNews

Langley Township

Letter offers water hope

A letter appears to indicate that the provincial government is willing to work with Langley Township to protect local groundwater.

by Leanna Jantzi
ljantzi@langleyadvance.com

It's a touch ambiguous, but staff feel it's good news for Langley Township's water supply.

A letter from the provincial Ministry of Water, Land and Air Protection was received by Langley Township Council in regards to the municipality's efforts to protect its groundwater supply.

The letter prompted some councillors to ask what it really ment.

"It's a good question," said Mayor Kurt Alberts. "I didn't understand it either."

"I would say it's a good news letter," replied Township director of engineering Colin Wright.

The letter was responding to the Township's request to become a provincial water management area, in order to regulate the amount of water being pulled from its aquifers [**Water protection wanted**, Nov. 5, 2004, *Langley Advance News*].

"The province has recently amended the Water Act to protect ground water resources and to provide the development of a water management plan (WMP)," minister Bill Barisoff wrote. "I have instructed ministry staff to continue discussions with representatives of the Township to identify issues of greatest concern and determine whether these concerns may best be addressed through a WMP."

The letter shows the province is willing to work with the Township and shows the province's openness and readiness, Wright said.

"I believe these are words of encouragement," Wright said. "We can work from this."

Sixty per cent of the Township's water supply comes from groundwater, while the rest comes from the Greater Vancouver Regional District. A draft report presented to Council last fall indicated that water levels in local aquifers are declining, and that the long-term water supply will be in jeopardy if something is not done [**Fragile future in water model**, Oct. 29, *Langley Advance News*].

Groundwater is a provincial mandate. The first phase of the province's new Ground Water Protection Regulation came into effect in November, 2004, but there are currently no controls to regulate how much water people can remove from the ground.

An option for communities is to ask the province for the special designation.

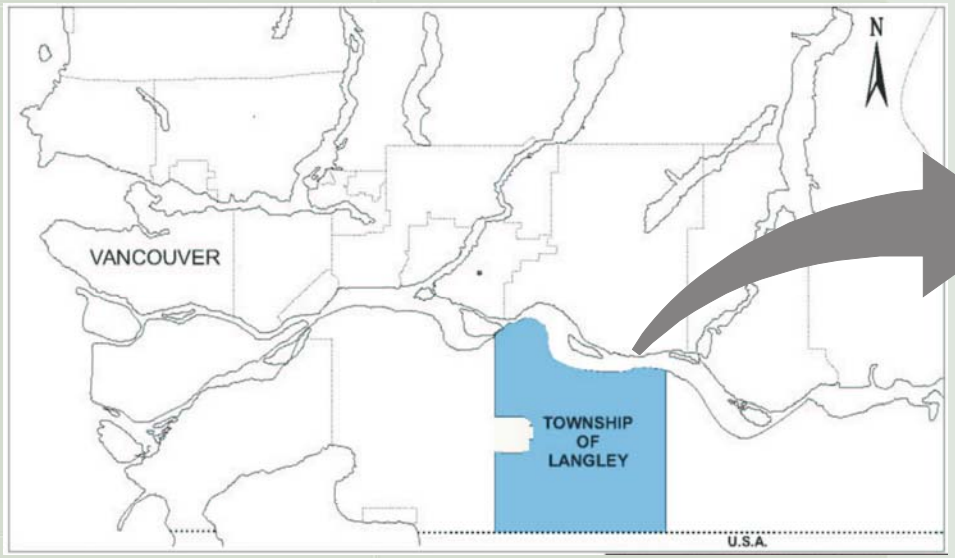
Summary

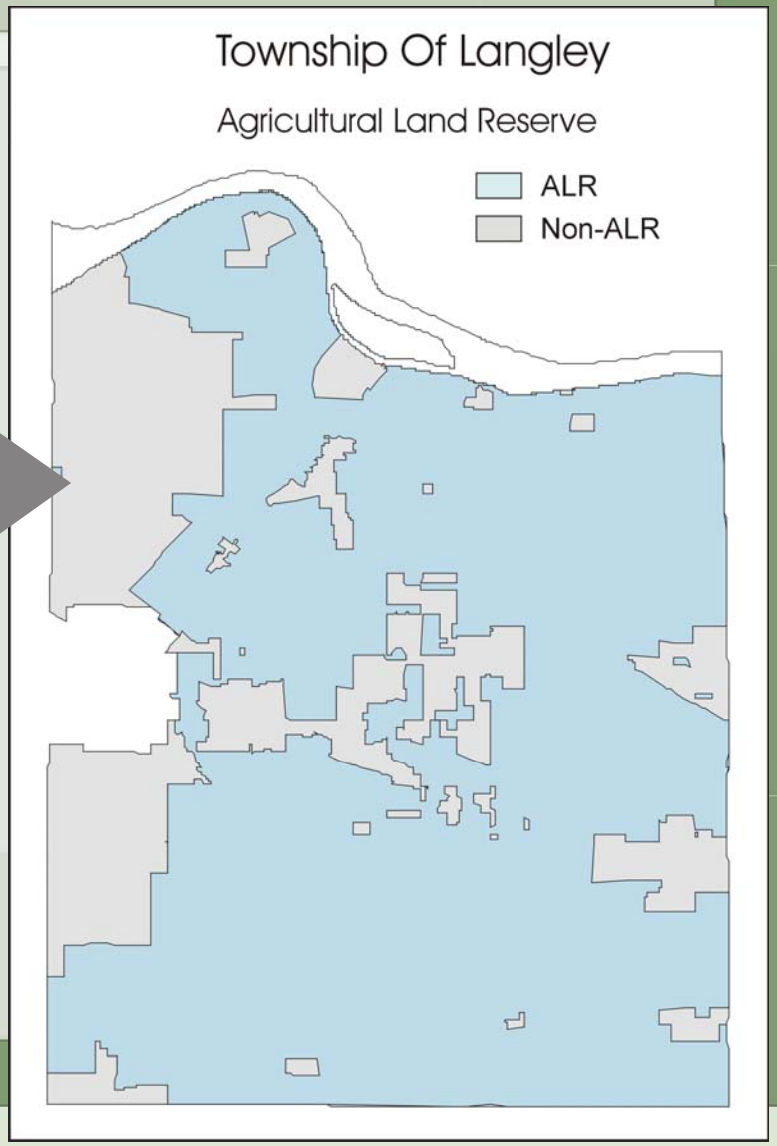
- Langley's Groundwater
  - Issues and Challenges
- On-going initiatives
  - Water Resources Management Strategy
    - Water Demand Management Strategy
    - Water Management Plan

Township of Langley

Est. 1873

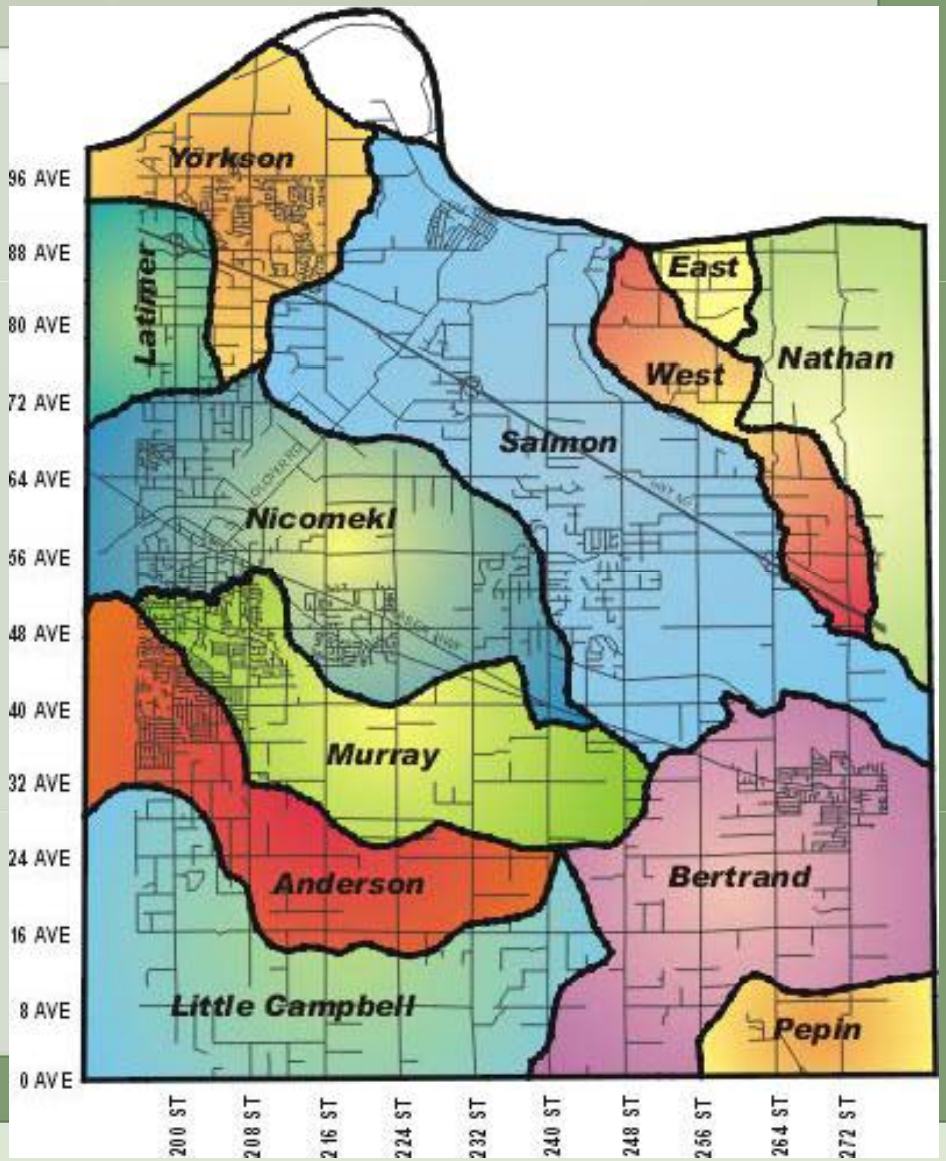
Township of Langley





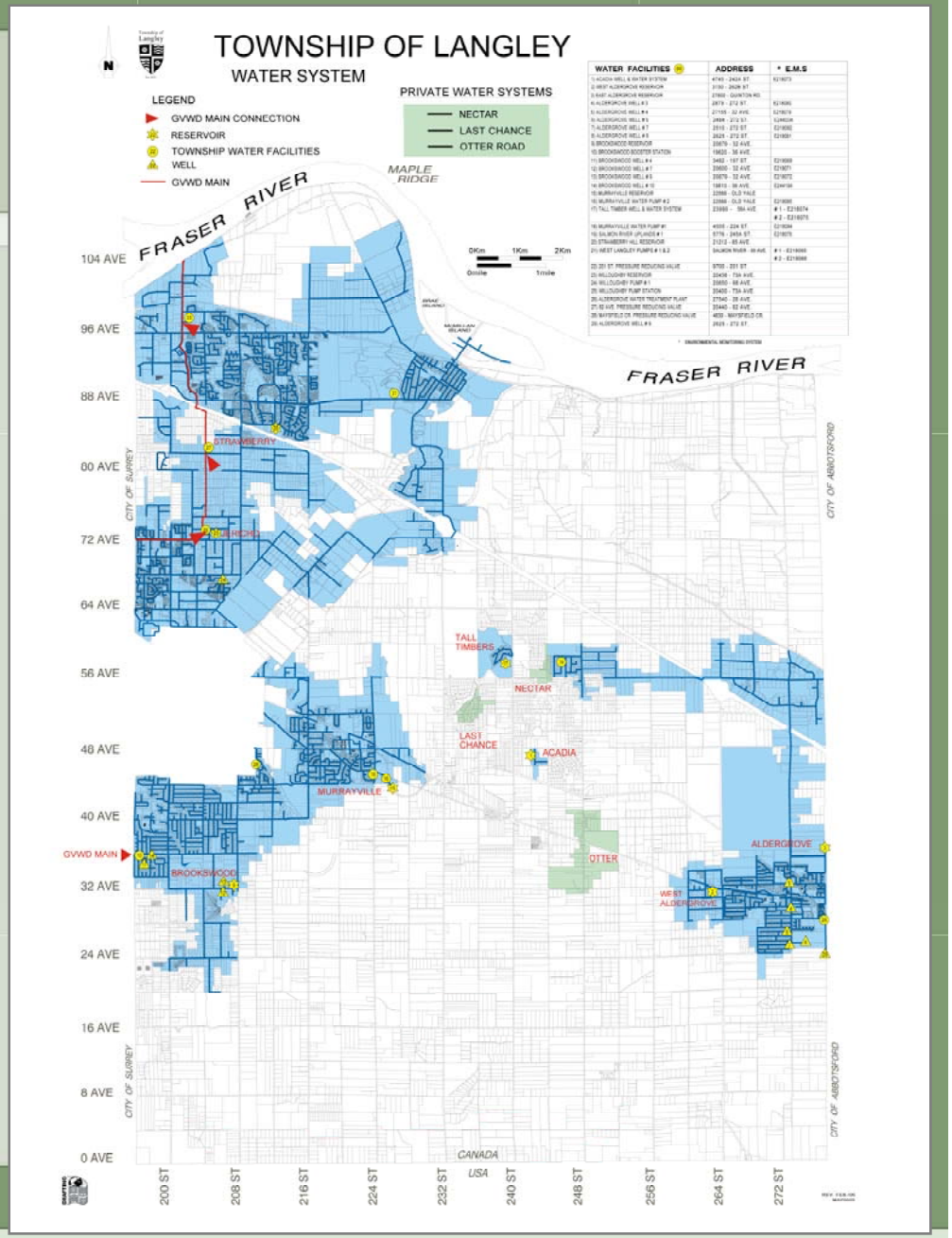
Langley's Surface Water Resources

- 14 Watersheds
  - 1,600 km watercourses
- Prime salmon habitat
- Endangered species
  - Nooksack Dace
  - Salish sucker
- Groundwater interaction

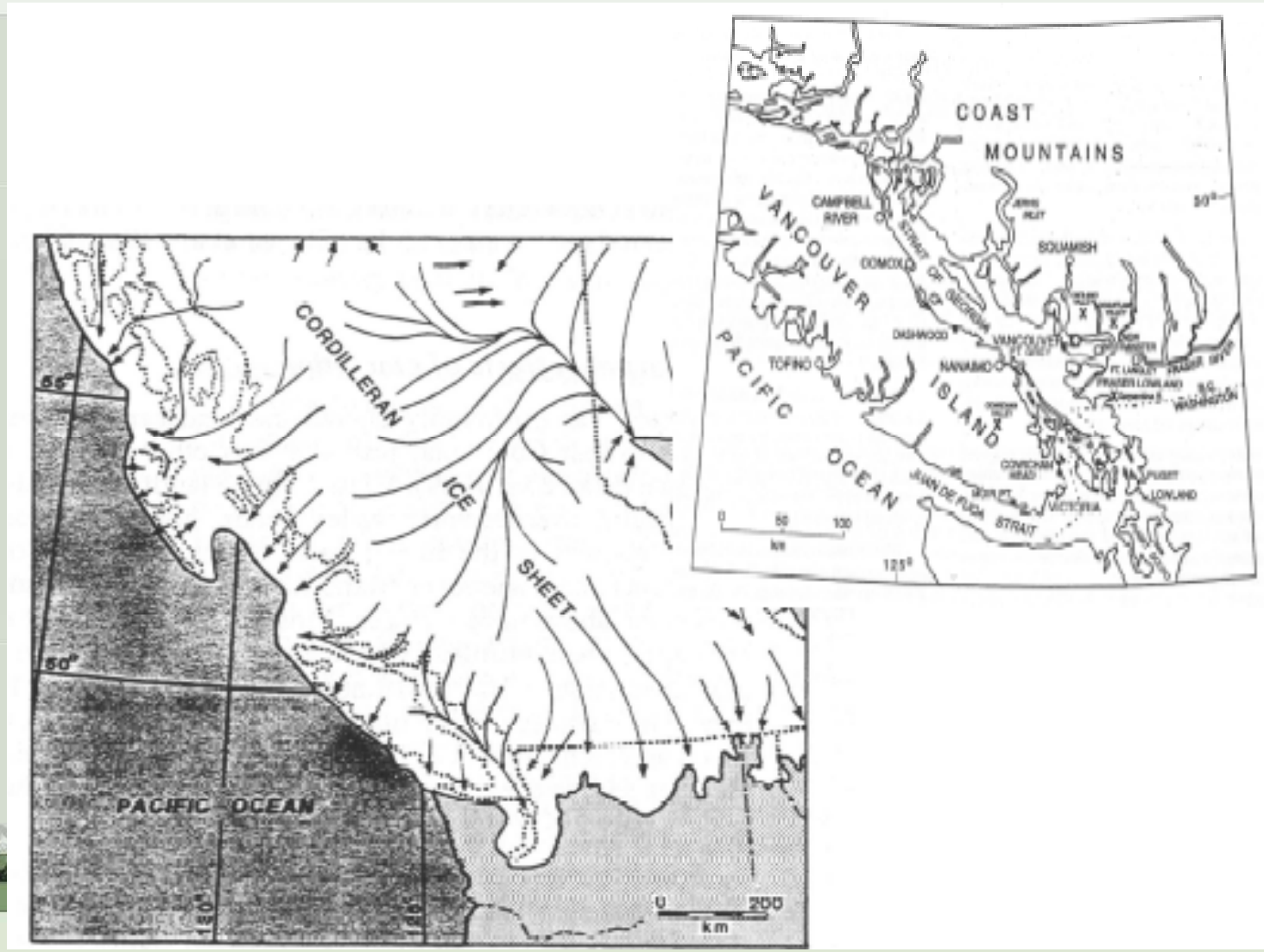


Langley's Water Supply

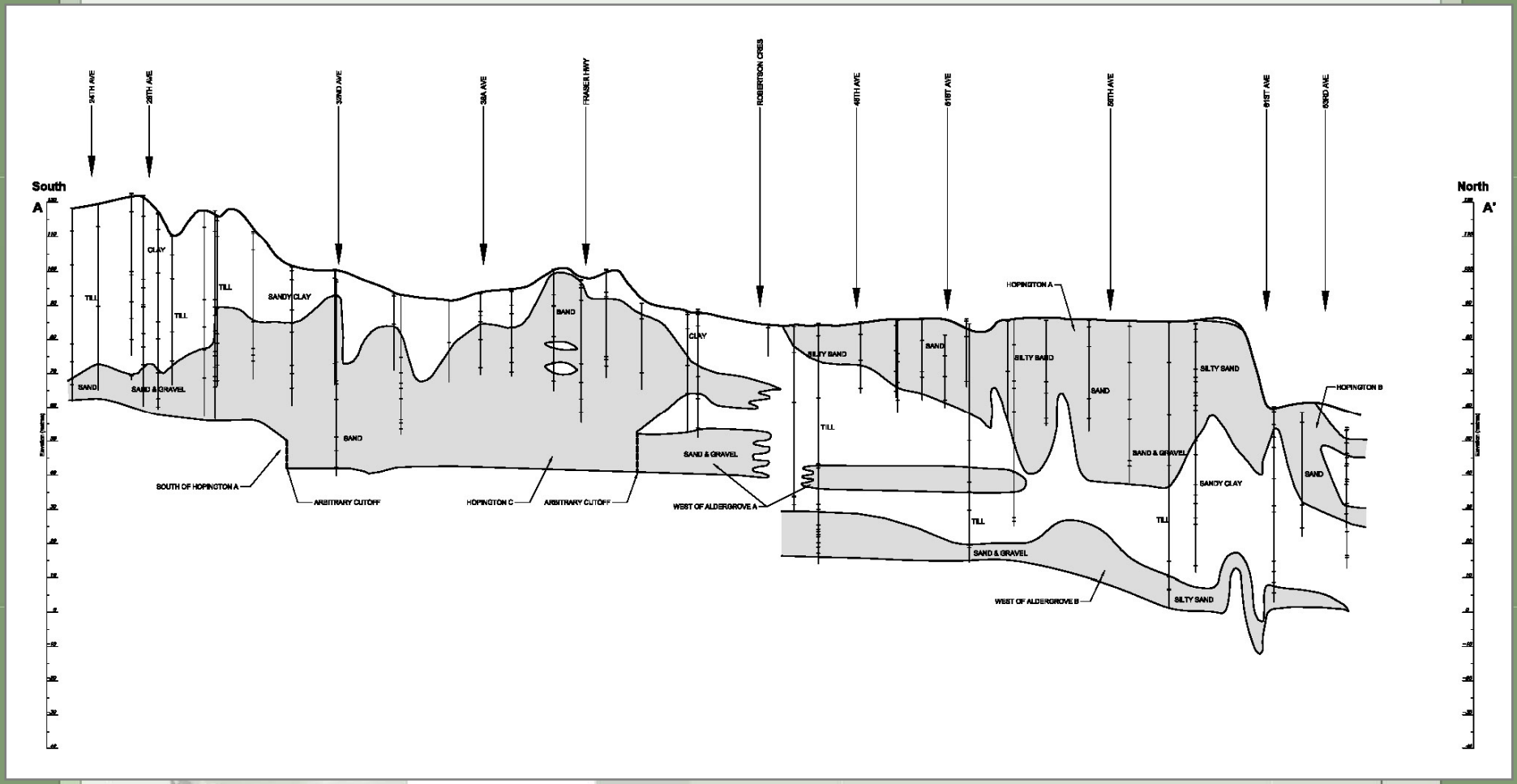
- 100,000 residents
  - 80% serviced by municipal supplies
  - 7,500 private wells
- Water supply
  - 50% GVWD
  - 50% groundwater
- Important for domestic, industrial, agricultural uses



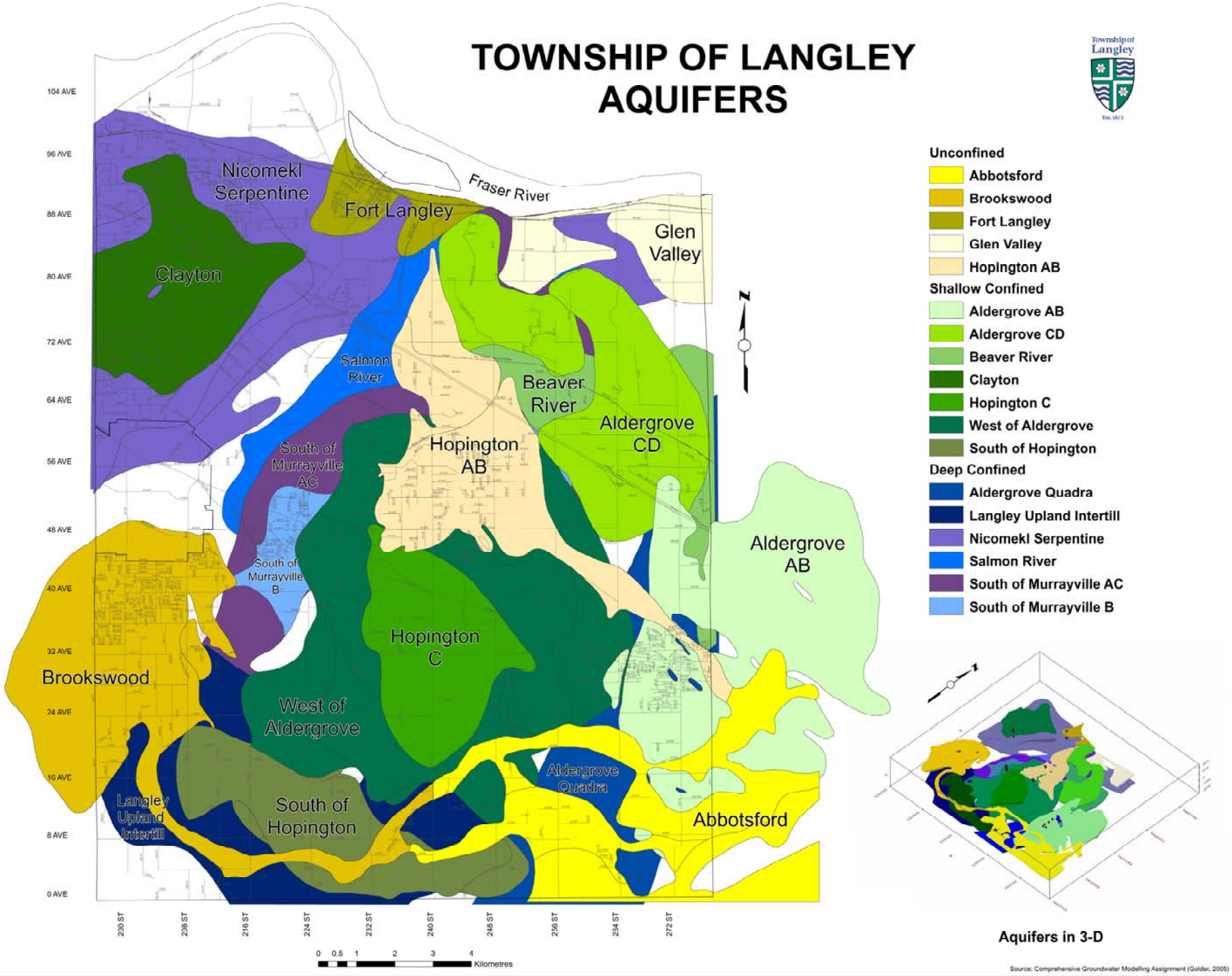
Glacial History



Geologic Cross Section

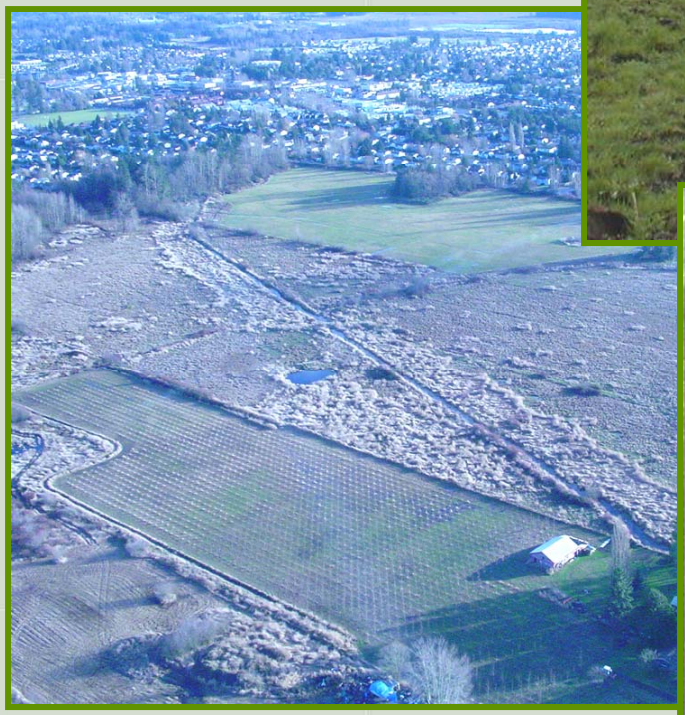


TOWNSHIP OF LANGLEY AQUIFERS



Issues and Challenges

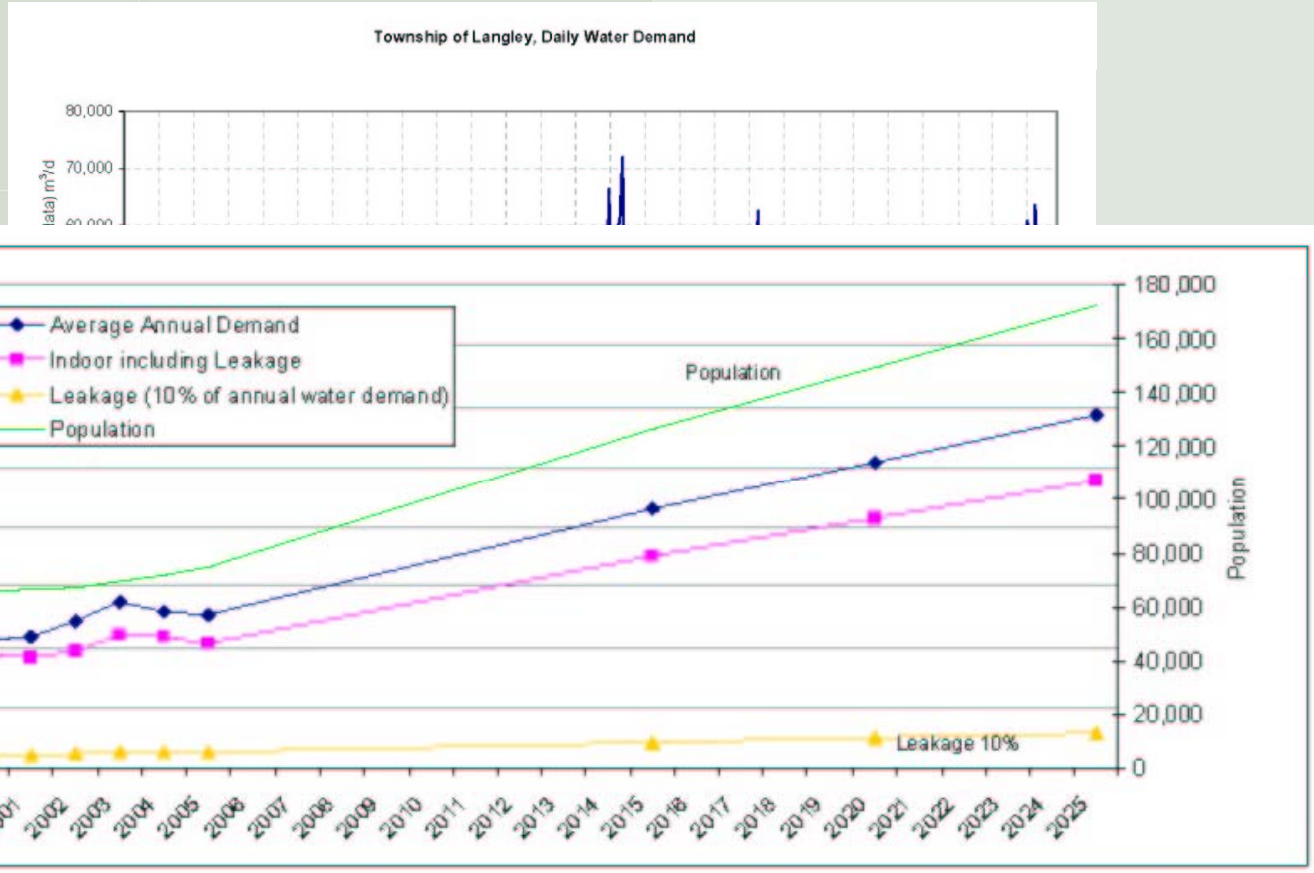
- **Increasing population and intensification of land use**



Issues and Challenges

- Increasing population and intensification of land use
- **Growing demand for water resources**

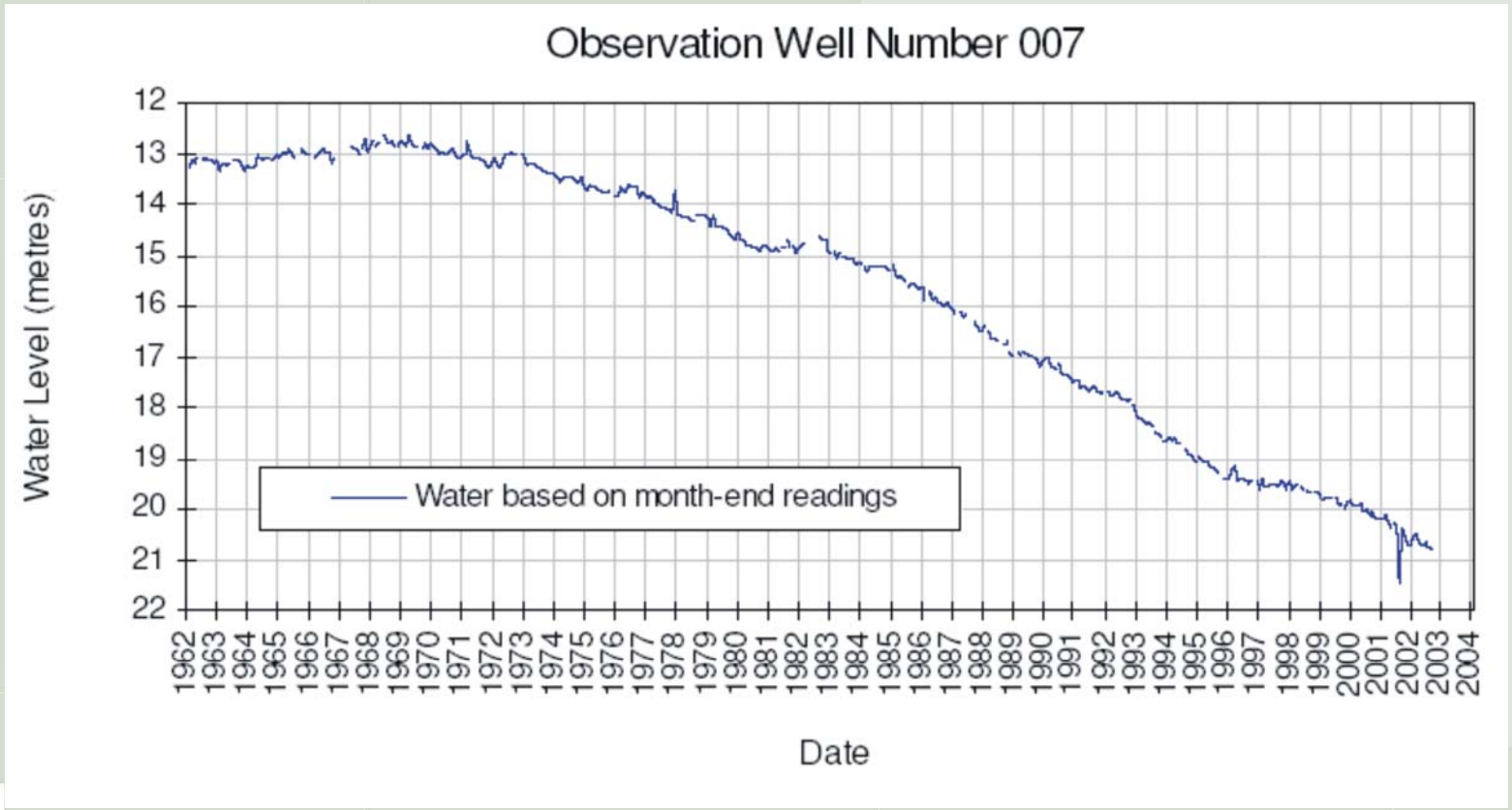
Langley's Water Use



Issues and Challenges

- Increasing population and intensification of land use
- Growing demand for water resources
- **Dropping groundwater levels**

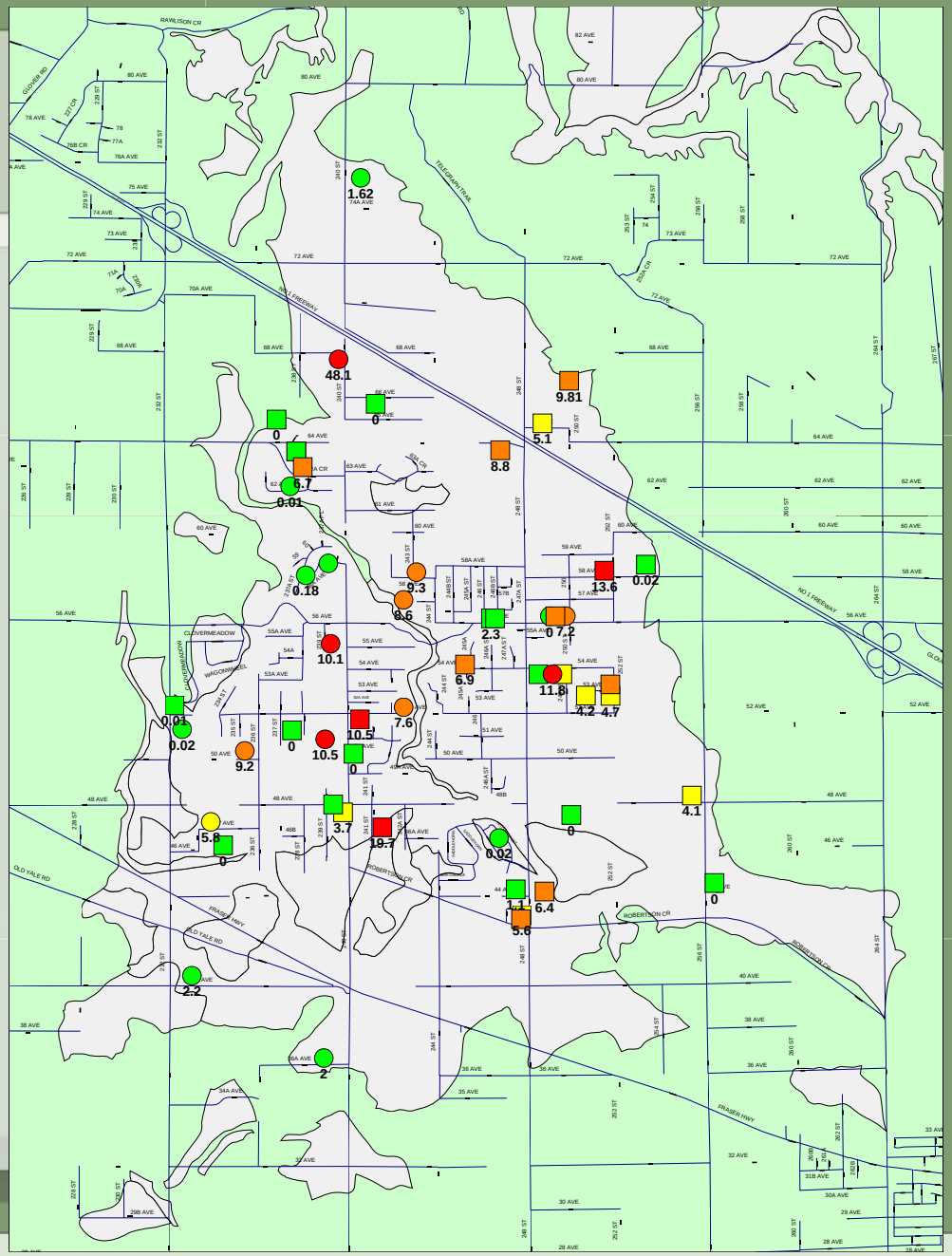
Provincial Observation Well



Issues and Challenges

- Increasing population and intensification of land use
- Growing demand for water resources
- Dropping groundwater levels
- **Highly vulnerable aquifers**
  - **Local occurrences of nitrates, coliforms, arsenic, iron and manganese**

Hopington Aquifer Nitrate Levels



Issues and Challenges

- Increasing population and intensification of land use
- Growing demand for water resources
- Dropping groundwater levels
- Highly vulnerable aquifers
  - Local occurrences of nitrates, coliforms, arsenic, iron and manganese
- **Dropping baseflow levels**

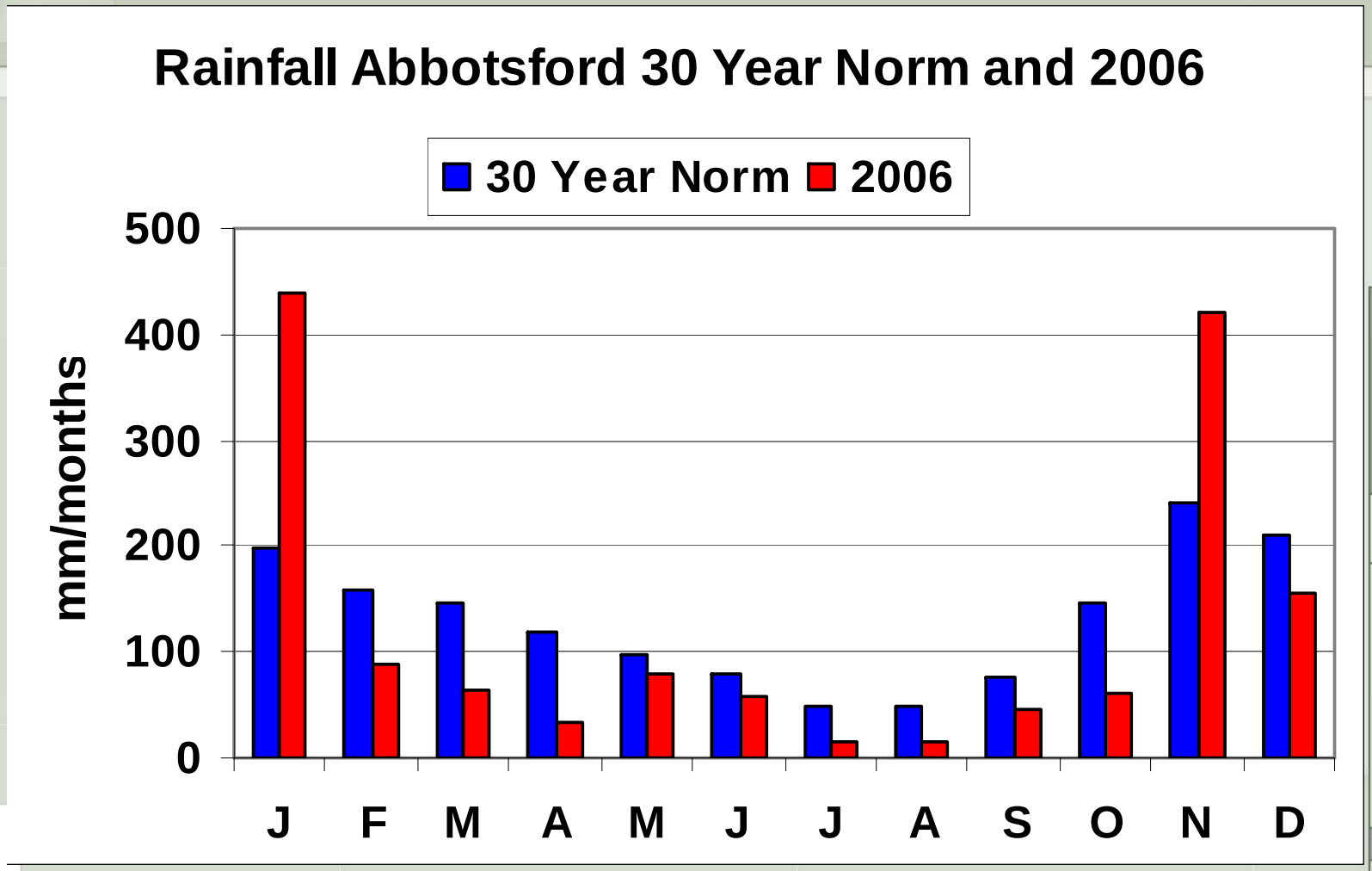
Summary of Predicted Stream Baseflow Declines

Watercourse	Estimated Baseflow Decline (%)	
	Predevelopment Conditions to Present Day	Present Day to the Year 2018
Pepin Creek	-9	-10
Campbell River	-4	-5
Bertrand Creek	-24	-21
Anderson Creek	-35	-27
Murray Creek	-12	-9
Nicomekl River	-10	-8
Nathan Creek	-6	-4
Salmon River	-17	-15
Yorkson Creek	-11	-9
West Creek	-15	-12
Glen Valley	-1	-1

Note: Overall change in estimated baseflow is within the Township boundaries only.

Issues and Challenges

- Increasing population and intensification of land use
- Growing demand for water resources
- Dropping groundwater levels
- Highly vulnerable aquifers
  - Local occurrences of nitrates, coliforms, arsenic, iron and manganese
- Dropping baseflow levels
- **Uncertainty of global warming**


Rainfall Abbotsford 30 Year Norm and 2006
30 Year Norm
2006
mm/months
500
400
300
200
100
0
J
F
M
A
M
J
J
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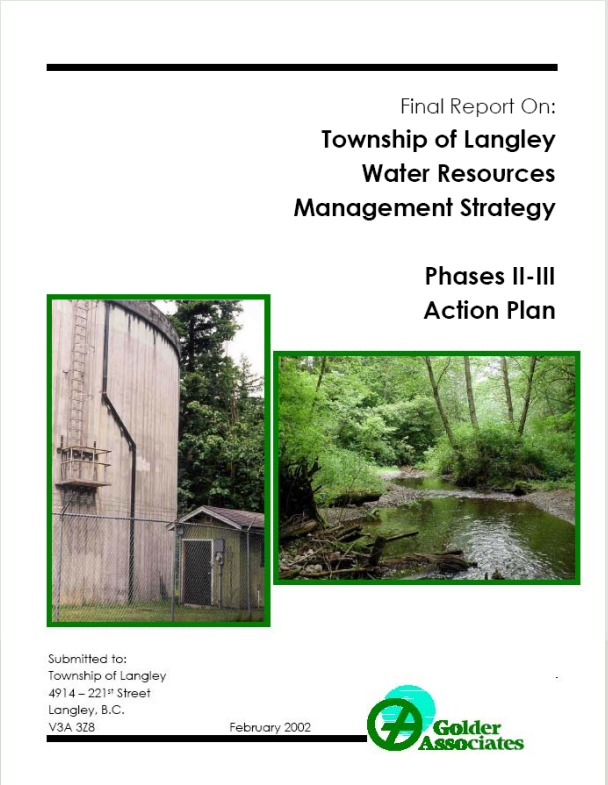
N
D

Issues and Challenges

- Increasing population and intensification of land use
- Growing demand for water resources
- Dropping groundwater levels
- Highly vulnerable aquifers
  - Local occurrences of nitrates, coliforms, arsenic, iron and manganese
- Dropping baseflow levels
- Uncertainty of global warming
- **Limitations in groundwater legislation**

What steps have been taken?

- Water Resources Management Strategy
  - **Public outreach**



-WISE
nking water
er Resources Management Strategy
Toilet Rebate Application Form
Applicant (must be owner or owner's representative)
Applicant's Mailing Address
City Province Postal Code
Home phone Business phone
Property address (if different from above)
Number of people in household
Number of toilets at this address
Year home was built
Flushing volume of toilet replaced
Low-flow toilet installed by: plumber self
Toilet manufacturer / brand
Toilet name / model #
Flow rating litres / flush
Store purchased from
Purchase date
Number of qualifying toilets covered by this application
Would you have replaced your old toilet without a rebate? Y N
Where did you learn about this rebate program?
Township page newspaper ad
Newspaper article
Township web site
Friend / neighbour
Township door-to-door Water Wise Program
Retailer
Community facility or event (specify):
Other (specify):
Here's what you need to do:
1. Determine if you're eligible.
2. Purchase and install a 6 litre or dual flush CSA or Warnock Hersey approved toilet to replace your 13 litre or greater toilet (no permit required for simple toilet replacement). We recommend that you select a toilet that meets minimum performance standards.
3. Remove all plastics and metals from your old toilet. Drop off the ceramic from the toilet at the Township of Langley Operations Centre: 4700 - 224 St., Langley. June - August: M - F 8:30 - 3: 30, September - May: M - F 8:30 - 4:30. Keep your toilet drop-off receipt to submit with your Rebate Application Form. Ceramic will be recycled.
4. Submit the completed application form, original toilet purchase receipt and original toilet drop-off receipt to the Township.
Approved rebates will be mailed within 4 weeks of receiving applications.
Eligibility criteria:
• Available only for Township of Langley residents on Township water supplies (private well users are not eligible).
• Residential use only.
• Applicant must be property owner or owner's representative.
• Toilet(s) being replaced must have a flushing volume of 13 litres or greater.
• Only for houses built before 2004.
• New toilets must be CSA or Warnock Hersey certified and must not exceed 6.0 liters per flush.
• Not eligible for toilets purchased before June 1, 2006.
• Not eligible for toilets replaced as part of a renovation which requires a building permit.
Would you like to
13L
save water
by replacing your water guzzling toilet
6L
and get $100 at the same time?
Mail or drop off your application form and receipts to:
6L
Toilet Rebate Program
c/o Water Resources and Environment Department
Township of Langley
20338-65 Avenue Langley, BC V2Y 3J1
For more information, contact the Township's Environmental Coordinator at 604.533.6082, environment@tol.bc.ca or go to www.tol.bc.ca/toilets
Township of Langley
Est. 1873
Pilot Low-Flow Toilet Rebate Program
Replace your old water-guzzling toilet with a sleek, new ultra low-flow model and we'll give you $100!*
*Some conditions apply - read on for details.

What steps have been taken?

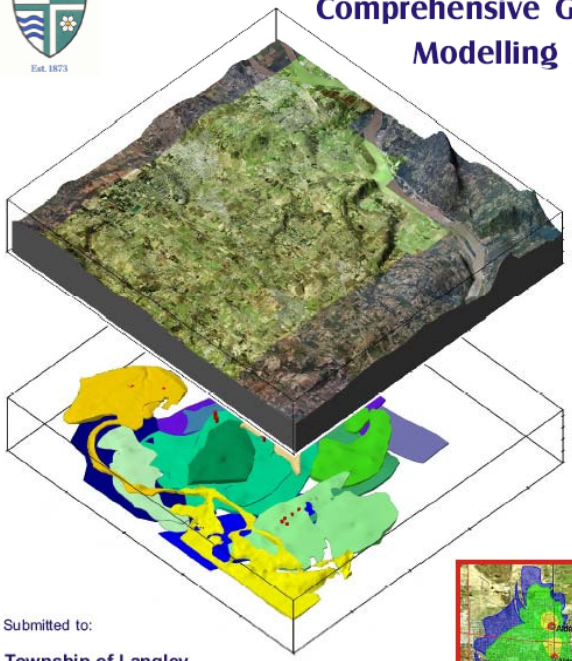
- Water Resources Management Strategy
  - Public outreach
  - **Studies**

Township of Langley

Est. 1873

Draft Report:

Comprehensive Groundwater Modelling Assignment



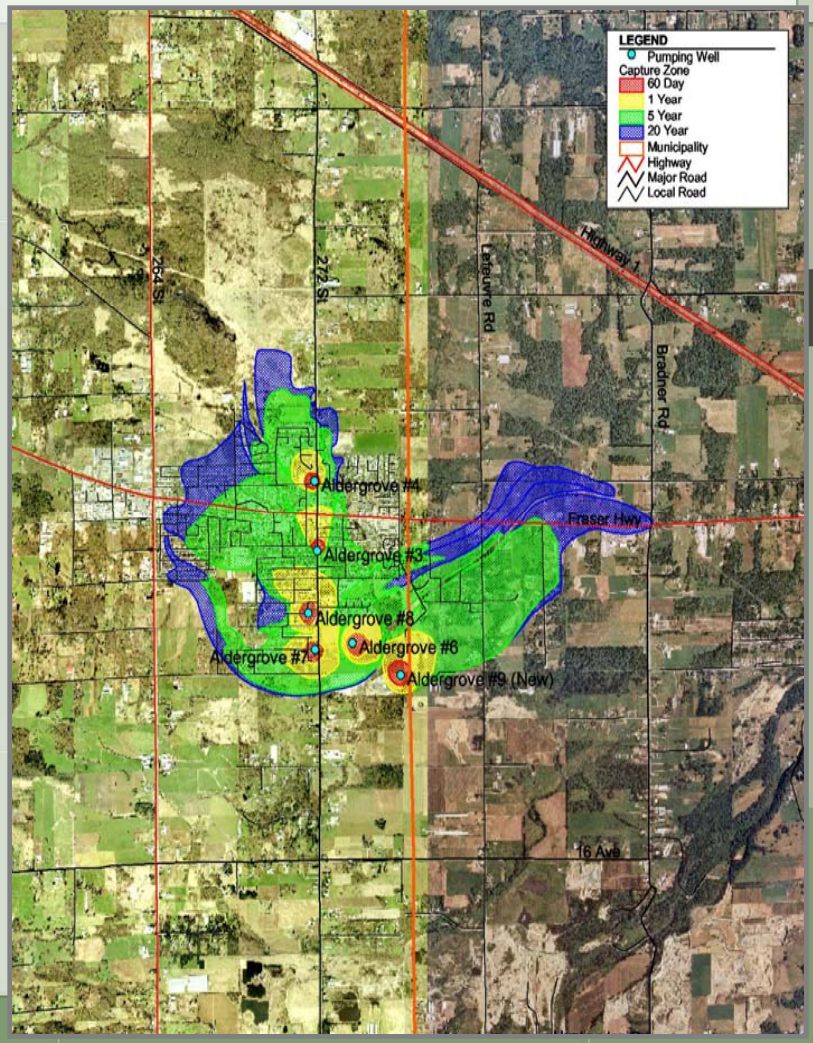
Submitted to:

Township of Langley
4914 - 221st Street
Langley, British Columbia
V3A 3Z8

022-1826/5000

October 2004

Golder Associates



Water Demand Management

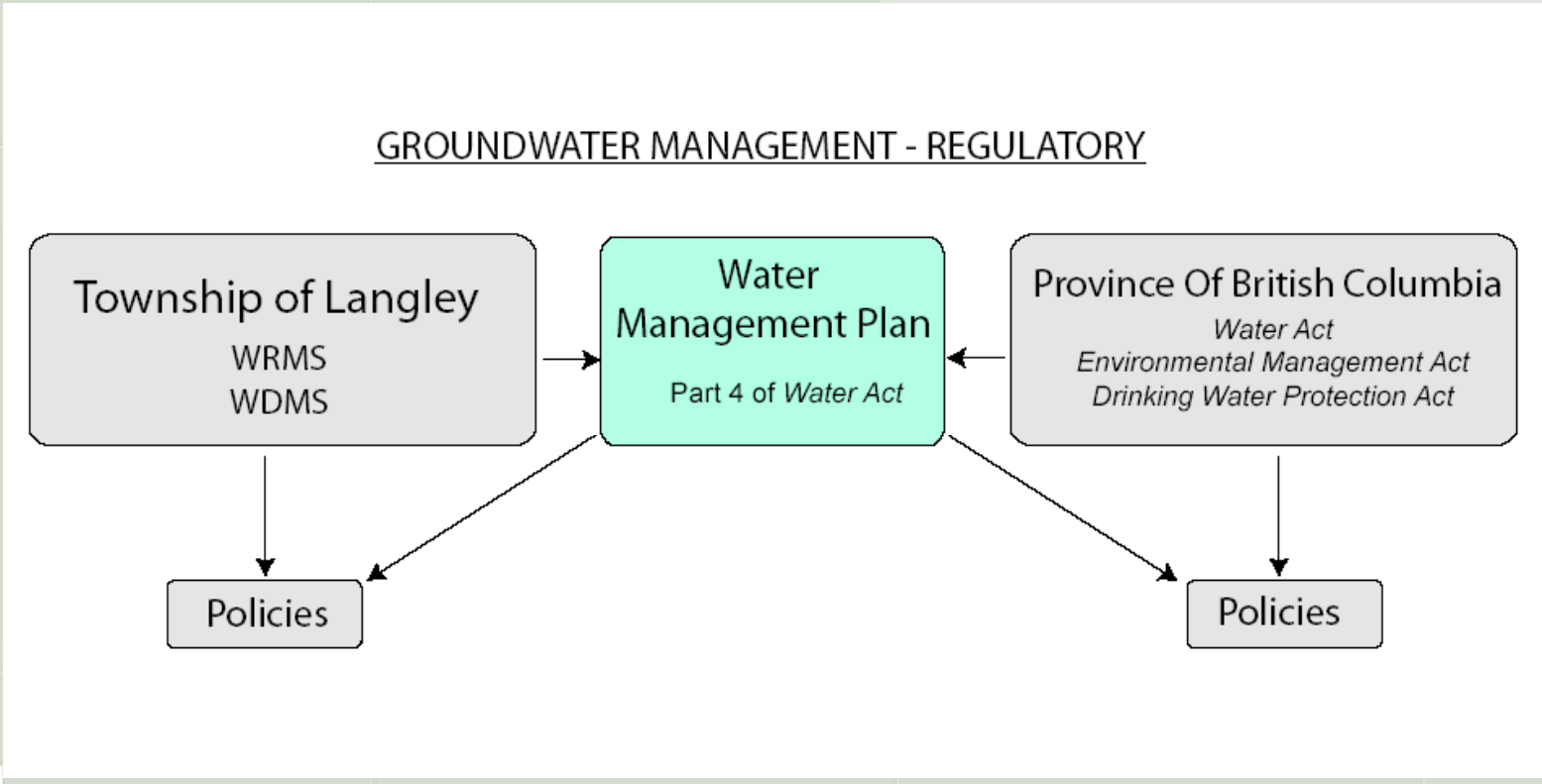
- Examining full range of initiatives to improve municipal water conservation

What steps have been taken?

- Water Resources Management Strategy
  - Public outreach
  - Studies
  - **Policies**

Enhance Stormwater Detention

Groundwater Management



Water Management Plan

- Part 4 of the *BC Water Act*
- Designed to help communities address local issues
  - Conflicts between users
  - Risks to water quality
  - Conflicts between users and in-stream requirements
- Stakeholder and Public Process
  - Stakeholder workshops
  - Expert workshop
  - Public open house
- Legislated by Cabinet
  - Legally enforceable and binding

What can it do?

- Protect quantity of groundwater supplies
  - Drilling authorizations and water allocation
- Protect and enhance recharge areas
  - Enhanced development practices
- Protect aquifers from contamination
  - Nutrient management plans
- Protect fish habitat
  - Drilling set-backs for streams

Schedule

Identification of issues & reasons for a plan	2005
Submission & approval of Ministerial Order	2006
Plan development & opportunities for feedback	**2007**
Implementation, compliance, enforcement	2008…

Summary

- Groundwater is a precious resource
- Supplies are relatively good shape
- Take opportunities to proactively prevent degradation and overuse

…to ensure adequate supply for future generations