Fraser Valley Regional District

HATZIC PRAIRIE COMMUNITY WATER SYSTEM

Public Information Meeting

Presentation by:

Ray Boucher- Electoral Area F Director

Tareq Islam – Director of Engineering and Community Services

Sterling Chan – Manager of Engineering Services and Infrastructure

Dave Roblin – Manager of Operations

Graham Daneluz – Deputy Director of Planning and Development

Arnd Burgert – Piteau Associates Engineering Ltd.

HOUSEKEEPING

- Presentation by FVRD to be followed by discussion.
- Please hold your questions until after the presentation is complete.
- Meeting is being recorded. Meeting minutes will be transcribed and will be made available along with all other material presented.
- To be recorded you must speak into the mic, our equipment will not be able to record otherwise.

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MEETING OBJECTIVE

- Provide an overview of the existing Hatzic Prairie Water System, inform residents about the upgrades currently taking place and what can be expected in the future.
- Discuss the hydrogeological studies that have been conducted.
- Provide an overview of the Provincial water licensing process.
- Provide an overview of the potential for development.
- Provide residents with an opportunity to ask questions.

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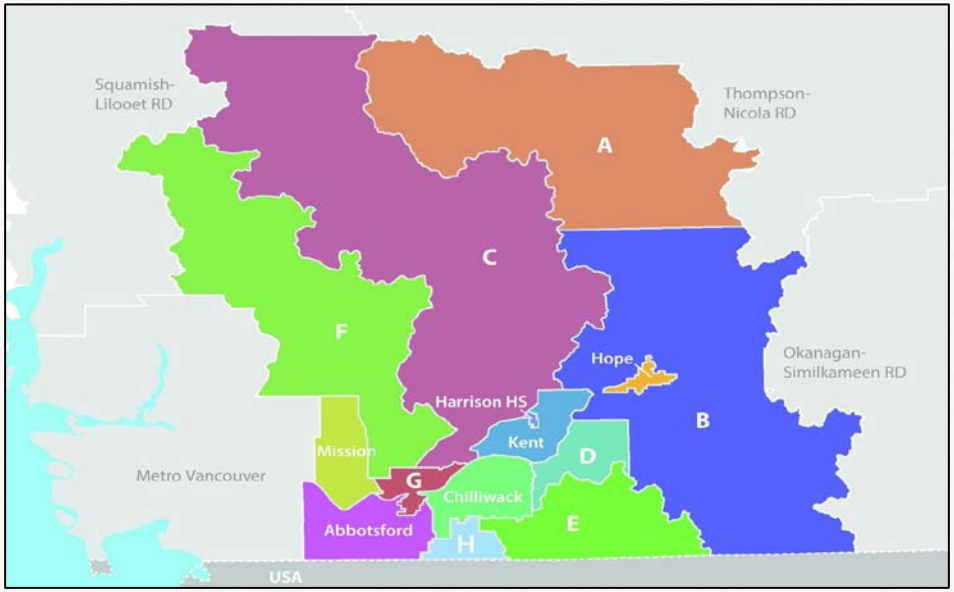
WHO IS THE FVRD?

- The Fraser Valley Regional District (FVRD) is comprised of 6 Municipalities and 8 Electoral Areas.



- The Hatzic Prairie/McConnell Creek community is within Electoral Area F.

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ROLE OF THE FVRD

- The FVRD is a local government that delivers over 100 separate services to over 275,000 residents throughout the Fraser Valley and Fraser Canyon.

- The FVRD currently operates 14 water systems and 3 sewage systems. All of our systems are operated by FVRD Utility Technicians.

- FVRD utilities are paid for by "Service Areas", which are comprised of the various users of the service. Service Areas are a user pay model whereby a service is paid for only by the people who receive it

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HATZIC PRAIRIE WATER SYSTEM

- The Hatzic Prairie area was previously serviced by several privately owned small water systems.
- There were concerns regarding the quantity and safety of the water supplied.
- Residents approached the FVRD for a water servicing solution. The FVRD secured financing to construct a new community water system.
- A service area was established through a petition process and the water system was constructed in 2008.
- Construction was financed through a combination of grant funding as well as borrowing.

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HATZIC PRAIRIE WATER SYSTEM

- In 2011 the system was further upgraded with the construction of a reservoir.
- Water is currently sourced from two supply wells located at Durieu Elementary School, located on Seux Rd.
- The system currently has 147 properties within its service area of which 127 are active users. The Average Daily Demand is ~1.5L/s
- The system provides residents with domestic drinking water as well as fire protection.
- Water consumption is metered and users are charged on an escalating scale depending on usage.

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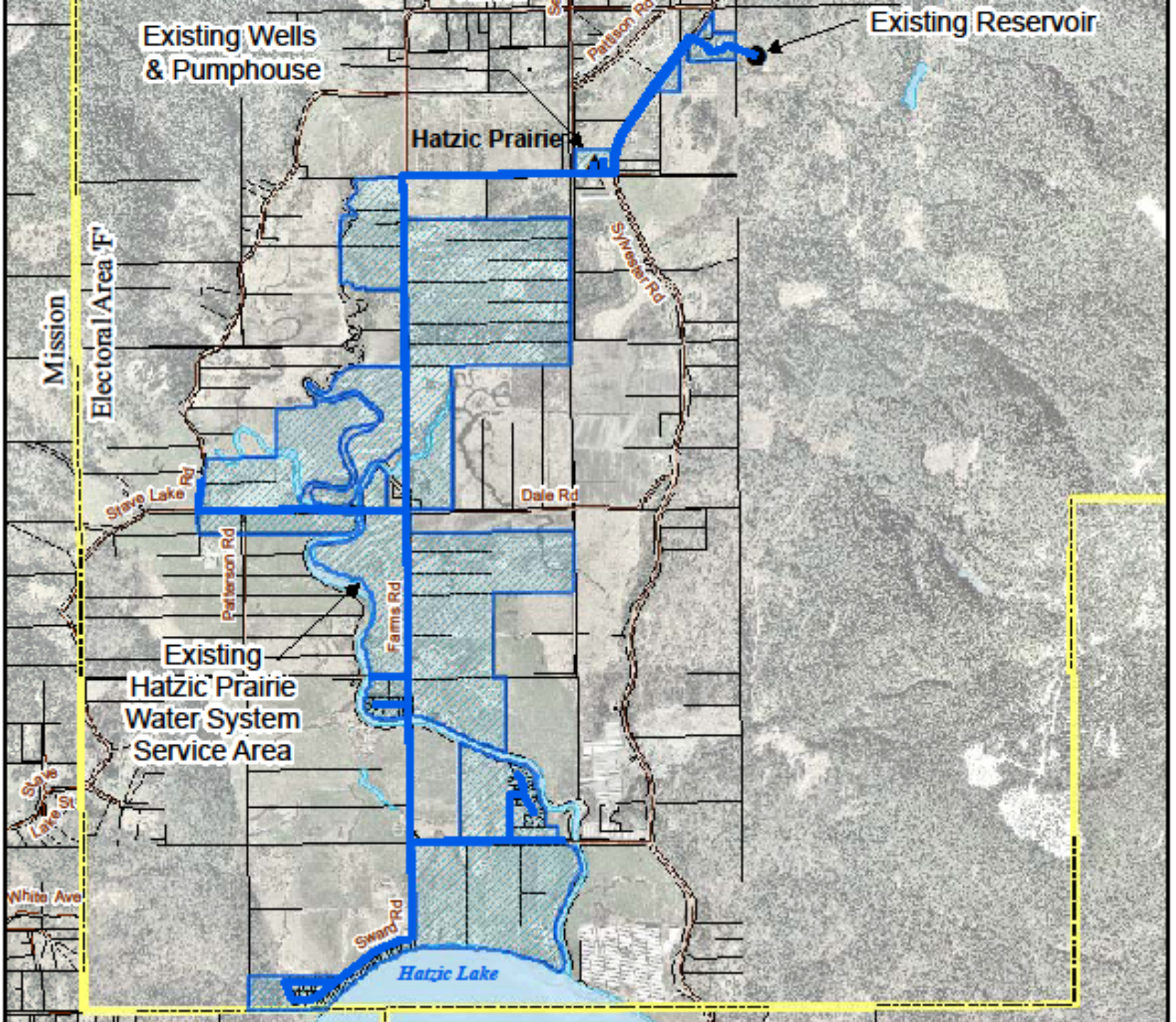
Existing Wells
& Pumphouse
Existing Reservoir
Hatzic Prairie
Mission
Electoral Area 'F'
Dale Rd
Fams Rd
Patterson Rd
Existing
Hatzic Prairie
Water System
Service Area
Hatzic Lake

UPGRADES TO THE HATZIC PRAIRIE WATER SYSTEM

- The FVRD has secured $1,476,298 in funding through the Clean Water and Wastewater Fund to upgrade the Hatzic Prairie Water System.
- The upgrades to the system include the development of a new water source as well as the installation of ~3,800m of new watermain.
- The purpose of the project is to access the Miracle Valley Aquifer as a new water source and to provide service to an additional 14 properties on Sylvester Rd.
- The current water source is on the Hatzic Prairie Aquifer. This aquifer is significantly smaller and is an unconfined aquifer. As a result it is much more susceptible to contamination.

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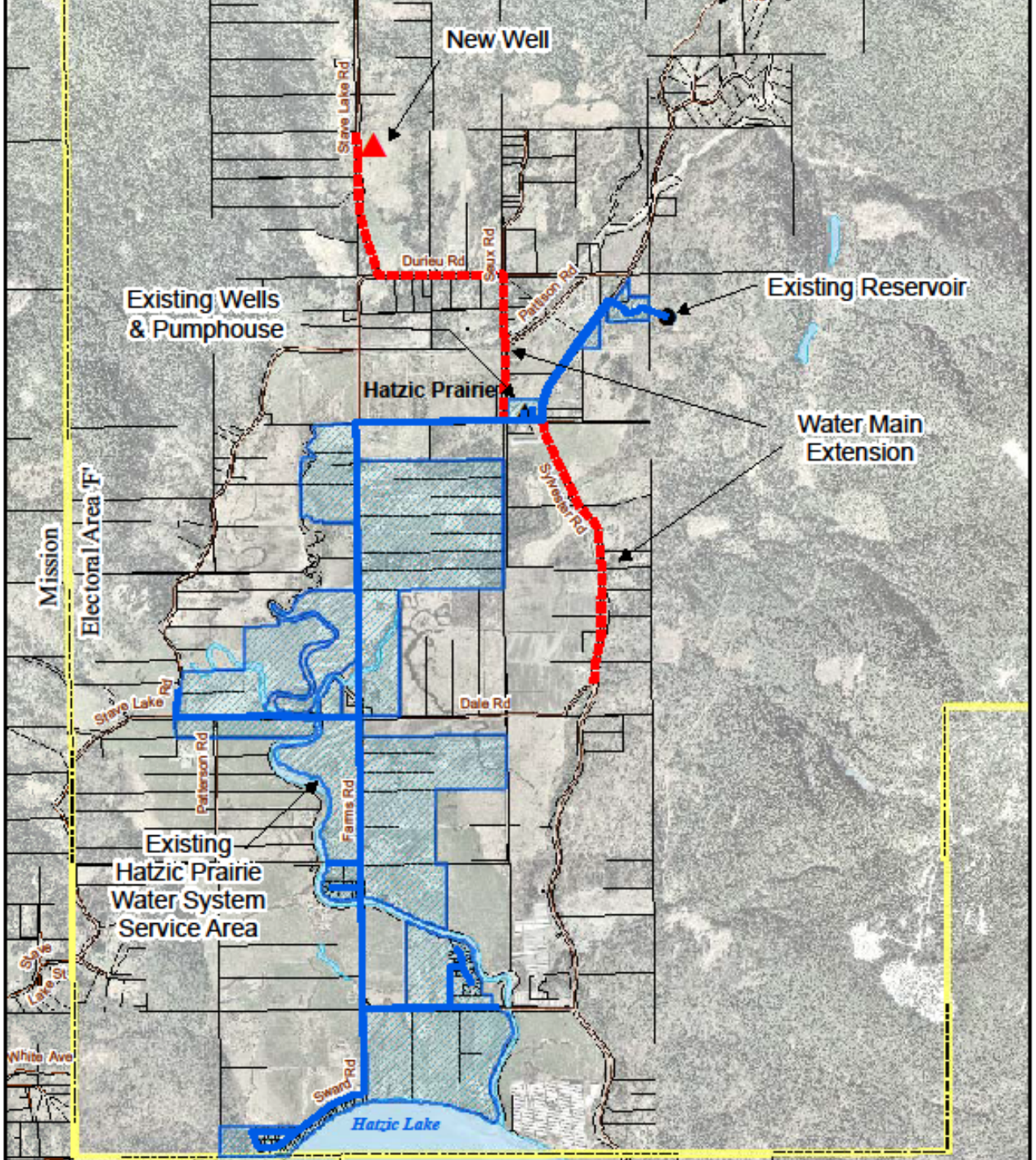
New Well
Stave Lake Rd
Durieu Rd
Sqeux Rd
Patterson Rd
Existing Wells
& Pumphouse
Existing Reservoir
Hatzic Prairie
Water Main
Extension
Sylvester Rd
Mission
Electoral Area 'F'
Stave Lake Rd
Dale Rd
Patterson Rd
Farms Rd
Existing
Hatzic Prairie
Water System
Service Area
Stave Lake St
White Ave
Sward Rd
Hatzic Lake

PROJECT FUNDING

- The FVRD has secured $1,476,298 in funding through the Clean Water and Wastewater Fund to upgrade the Hatzic Prairie Water System.
- Grant funding was awarded in April 2017 and project deadline of March 31, 2018
- The grant funding was awarded on a shared cost basis and covers 83% of the costs. In other words 83% is paid for by the grant and the FVRD is responsible for paying the remaining 17%.
- For the new water source this funding is coming from the Hatzic Prairie Water System's Capital Reserve.
- The Sylvester Rd extension is being paid for by the benefitting properties.

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WORK TO DATE

- The well for the new water source was drilled in August of 2017. The well was drilled by Field Drilling Contractors Ltd.
- Testing and monitoring was started shortly thereafter. The well report by Piteau and Associates was finalized in November of 2017.
- Detailed design of civil work was undertaken by Urban Systems. The design was finalized in December of 2017.
- Construction commenced in December of 2017 and is scheduled to last until the end of March 2018.
- The FVRD is acting as the general contractor for this project.

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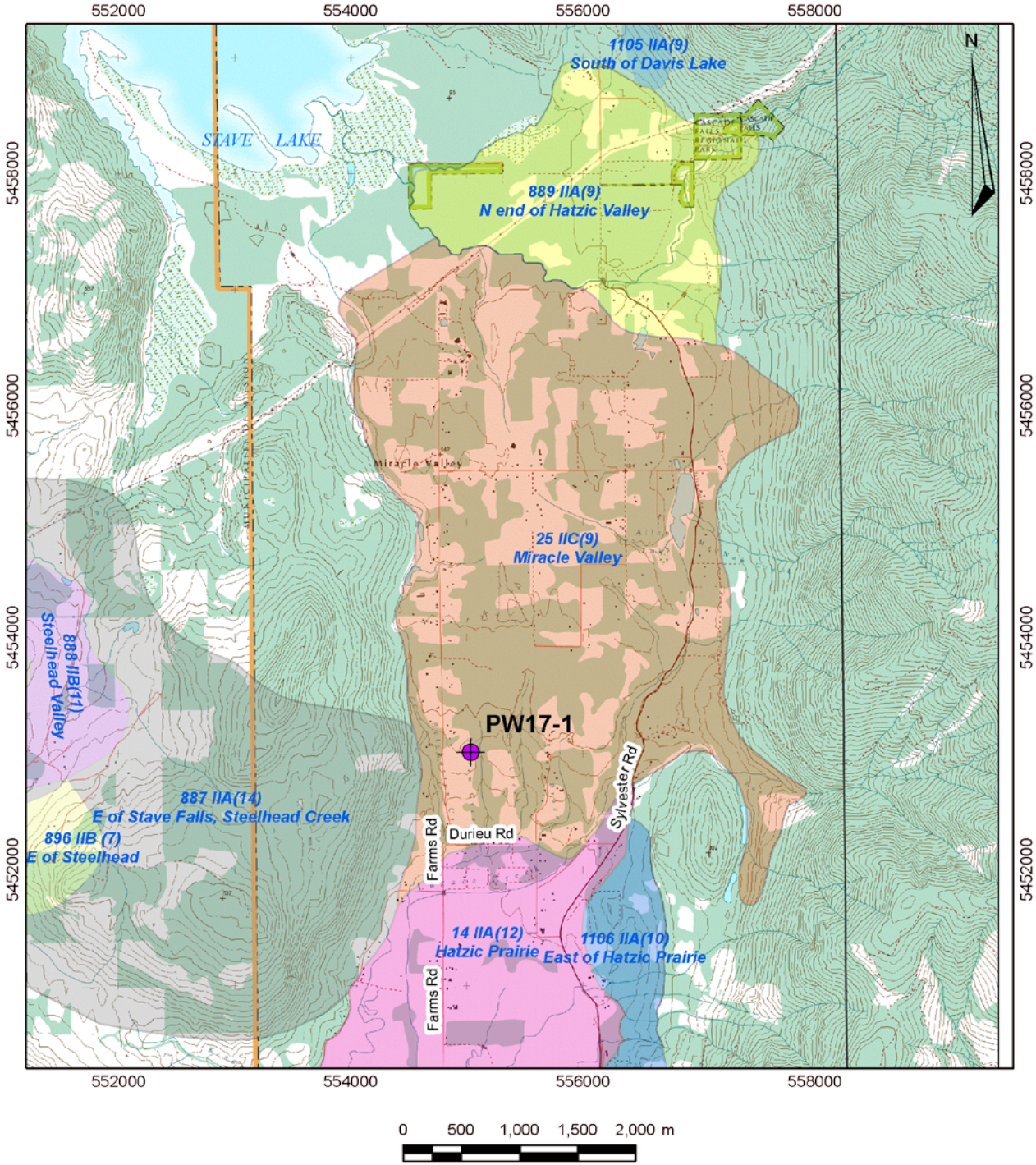
PW17-1 CONSTRUCTION AND TESTING

Arnd Burgert, P.Geo.
Sr. Hydrogeologist

PITEAU ASSOCIATES
GEOTECHNICAL AND WATER MANAGEMENT CONSULTANTS

Siting

- Productive aquifer
- Water quality
- Minimize well interference
- Avoid reducing stream flows
- Elevation with respect to reservoir
- Avoid flowing artesian conditions
- Access to property
- Water main constructability

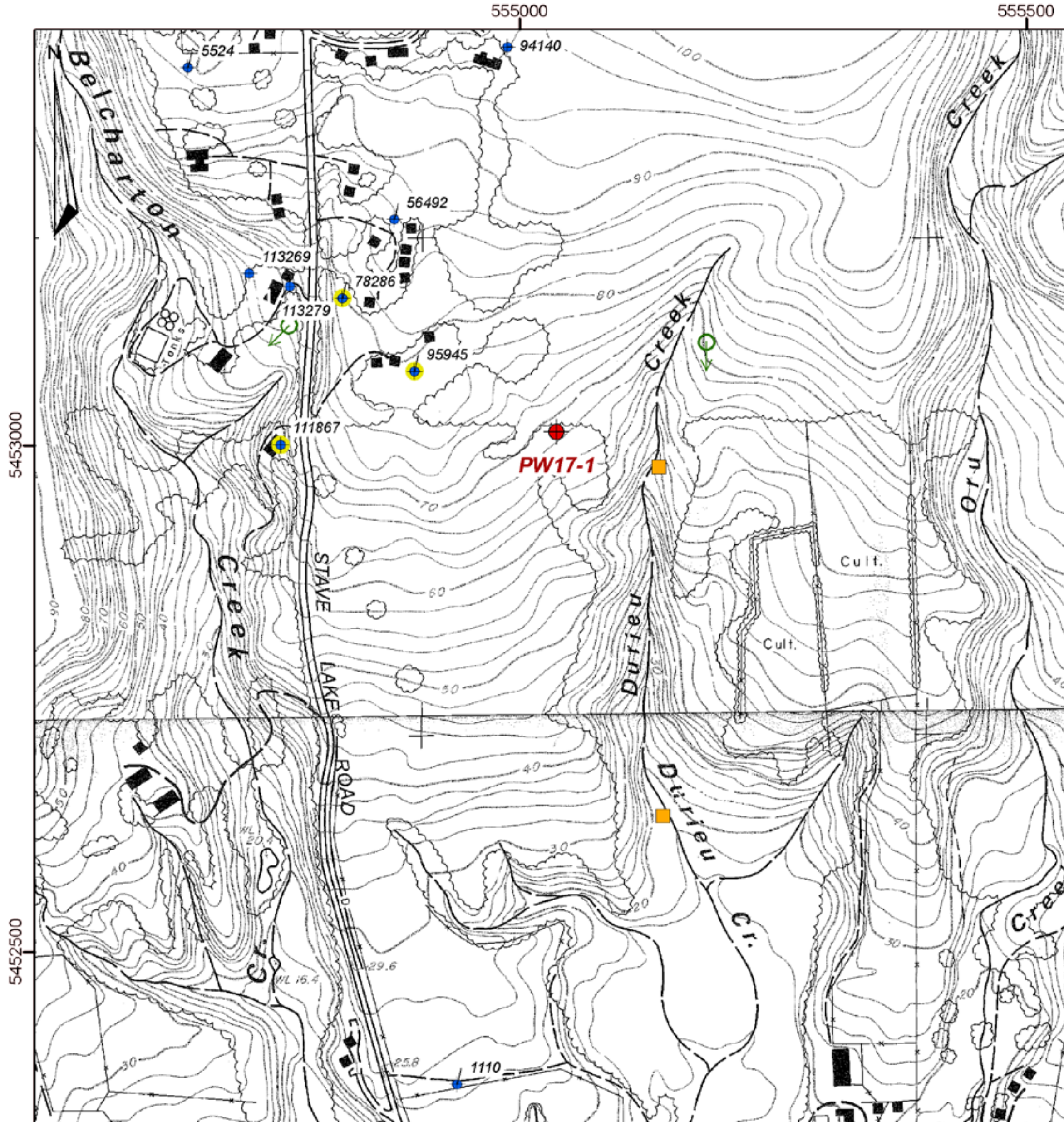


Well Construction

- Drilling with dual mode air rotary well drilling rig
- Grain size analyses
- Well screen design
- Well screen development

Aquifer Pumping Test

- Variable rate test
- Constant rate test
- Monitoring other wells
- Analysis: well yield; interference



LEGEND

STREAM FLOW MONITORING STATION

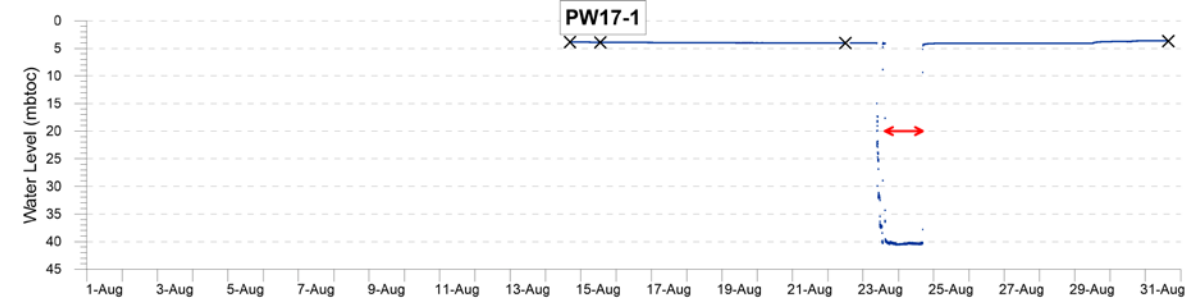
STREAM STAGE MONITORING STATION

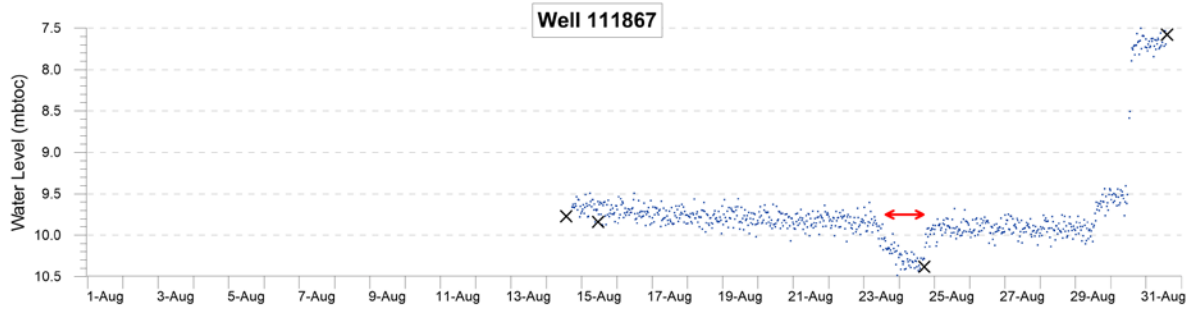
SPRING (APPROXIMATE LOCATION)

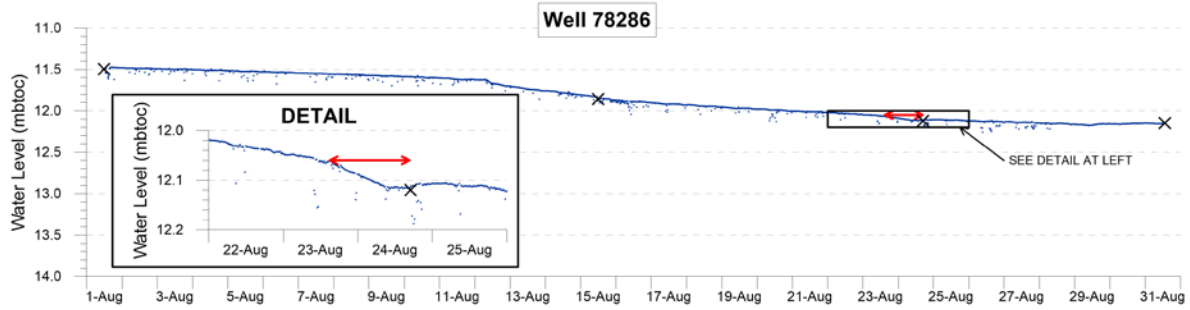
REGISTERED WELL

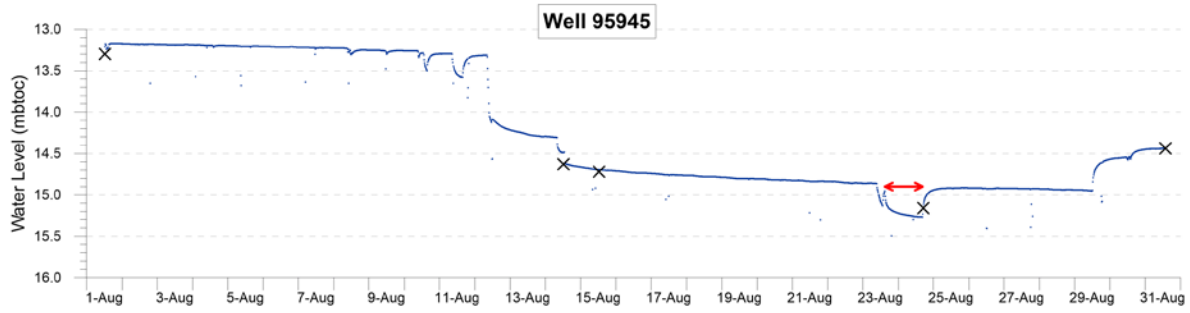
Yellow highlighting indicates water levels monitored during PW17-1 pumping test

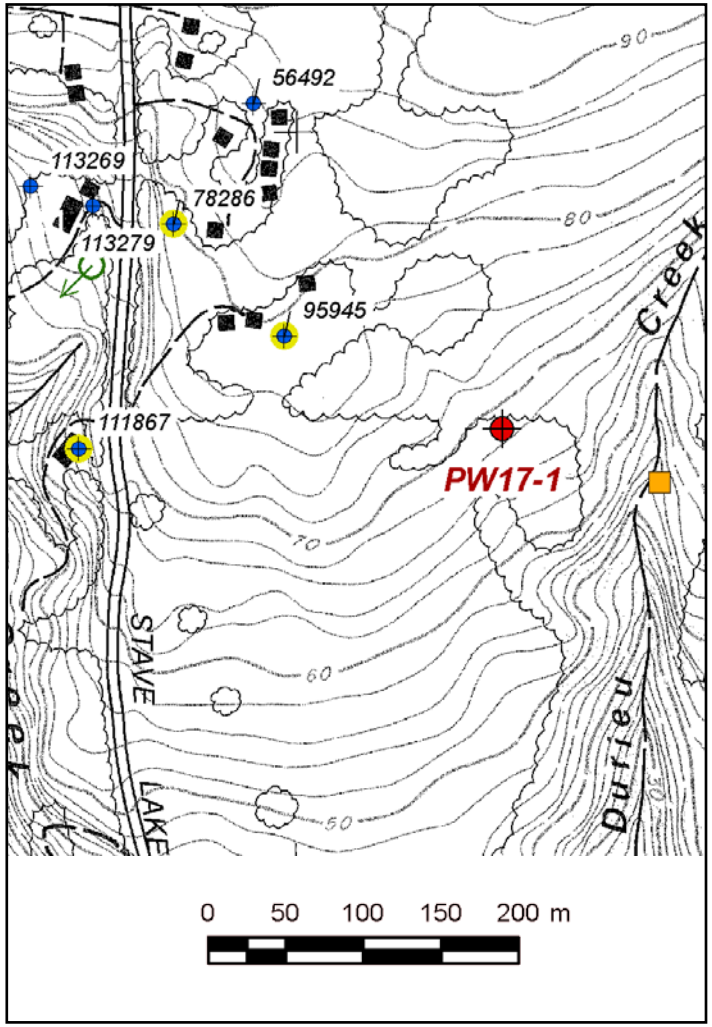
0 50 100 150 200 m


PW17-1
Water Level (mbtoc)
0
5
10
15
20
25
30
35
40
45
1-Aug
3-Aug
5-Aug
7-Aug
9-Aug
11-Aug
13-Aug
15-Aug
17-Aug
19-Aug
21-Aug
23-Aug
25-Aug
27-Aug
29-Aug
31-Aug

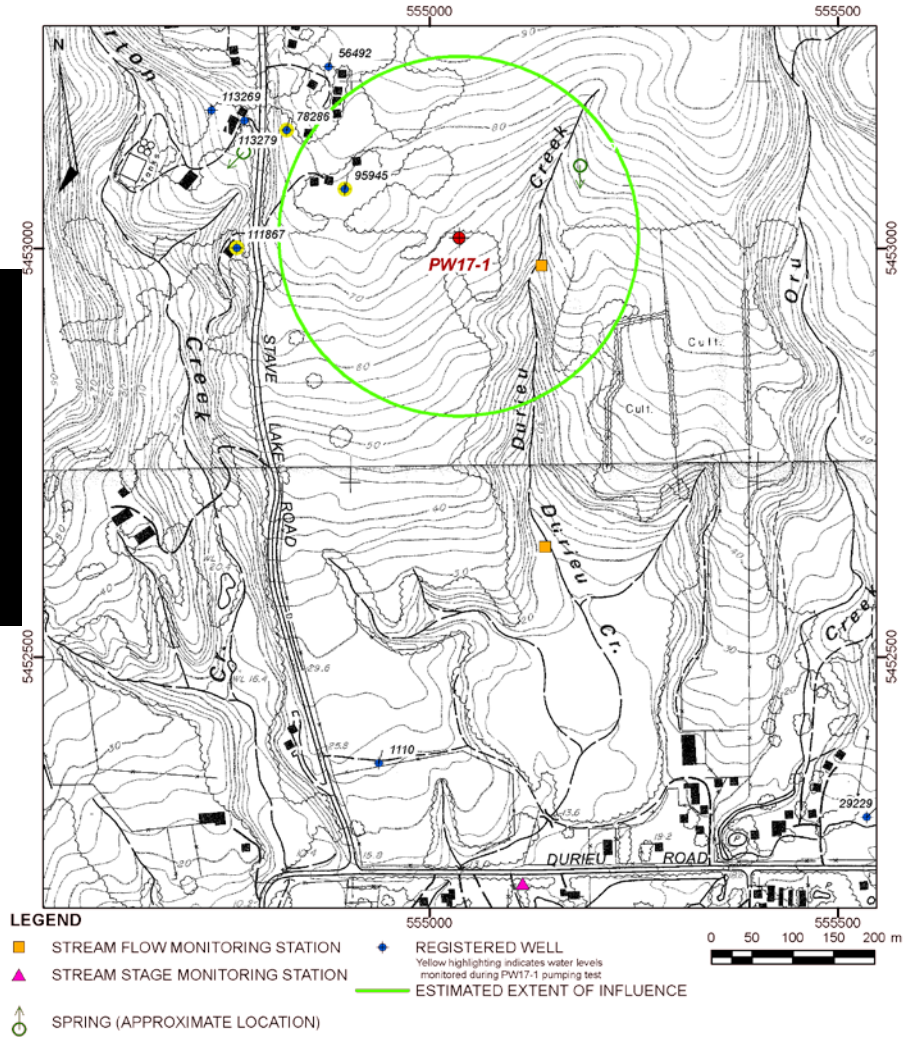

Well 111867
Water Level (mbtoc)
7.5
8.0
8.5
9.0
9.5
10.0
10.5
1-Aug
3-Aug
5-Aug
7-Aug
9-Aug
11-Aug
13-Aug
15-Aug
17-Aug
19-Aug
21-Aug
23-Aug
25-Aug
27-Aug
29-Aug
31-Aug


Well 78286
Water Level (mbtoc)
11.0
11.5
12.0
12.5
13.0
13.5
14.0
DETAIL
12.0
12.1
12.2
22-Aug
23-Aug
24-Aug
25-Aug
SEE DETAIL AT LEFT
1-Aug
3-Aug
5-Aug
7-Aug
9-Aug
11-Aug
13-Aug
15-Aug
17-Aug
19-Aug
21-Aug
23-Aug
25-Aug
27-Aug
29-Aug
31-Aug

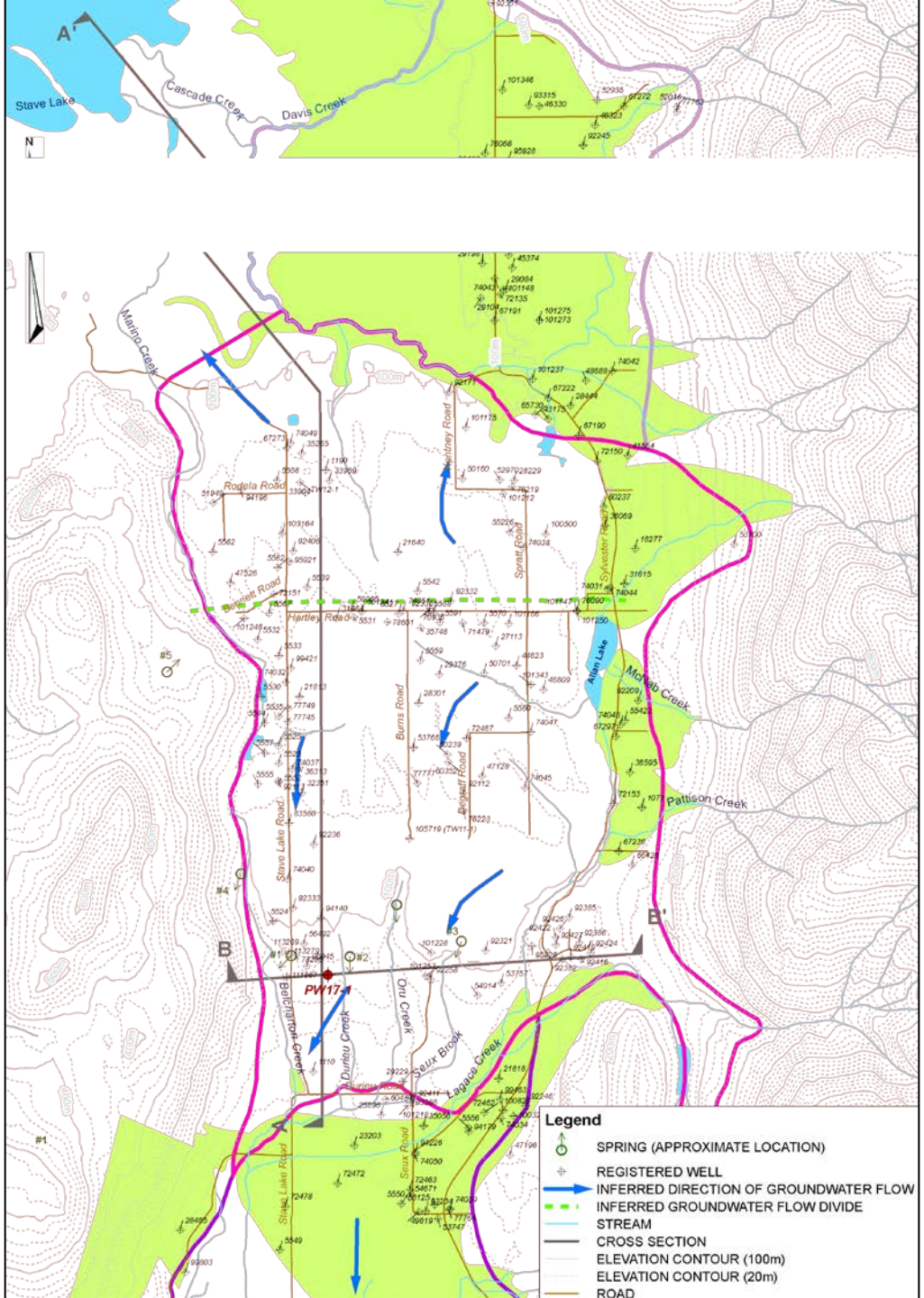

Well 95945
Water Level (mbtoc)
13.0
13.5
14.0
14.5
15.0
15.5
16.0
1-Aug
3-Aug
5-Aug
7-Aug
9-Aug
11-Aug
13-Aug
15-Aug
17-Aug
19-Aug
21-Aug
23-Aug
25-Aug
27-Aug
29-Aug
31-Aug


56492
113269
78286
113279
95945
111867
PW17-1
STAVE
LAKE
Creek
90
80
70
60
50
0
50
100
150
200 m

Stream flow monitoring


555000
555500
5453000
5452500
N
56492
113269
78286
113279
95945
111867
PW17-1
Creek
STAVE
LAKE
ROAD
Durieu
Cr.
Cult.
1110
29229
DURIEU
ROAD
LEGEND
STREAM FLOW MONITORING STATION
STREAM STAGE MONITORING STATION
SPRING (APPROXIMATE LOCATION)
REGISTERED WELL
Yellow highlighting indicates water levels monitored during PW17-1 pumping test
ESTIMATED EXTENT OF INFLUENCE
0 50 100 150 200 m

Visualization



A

SOUTH

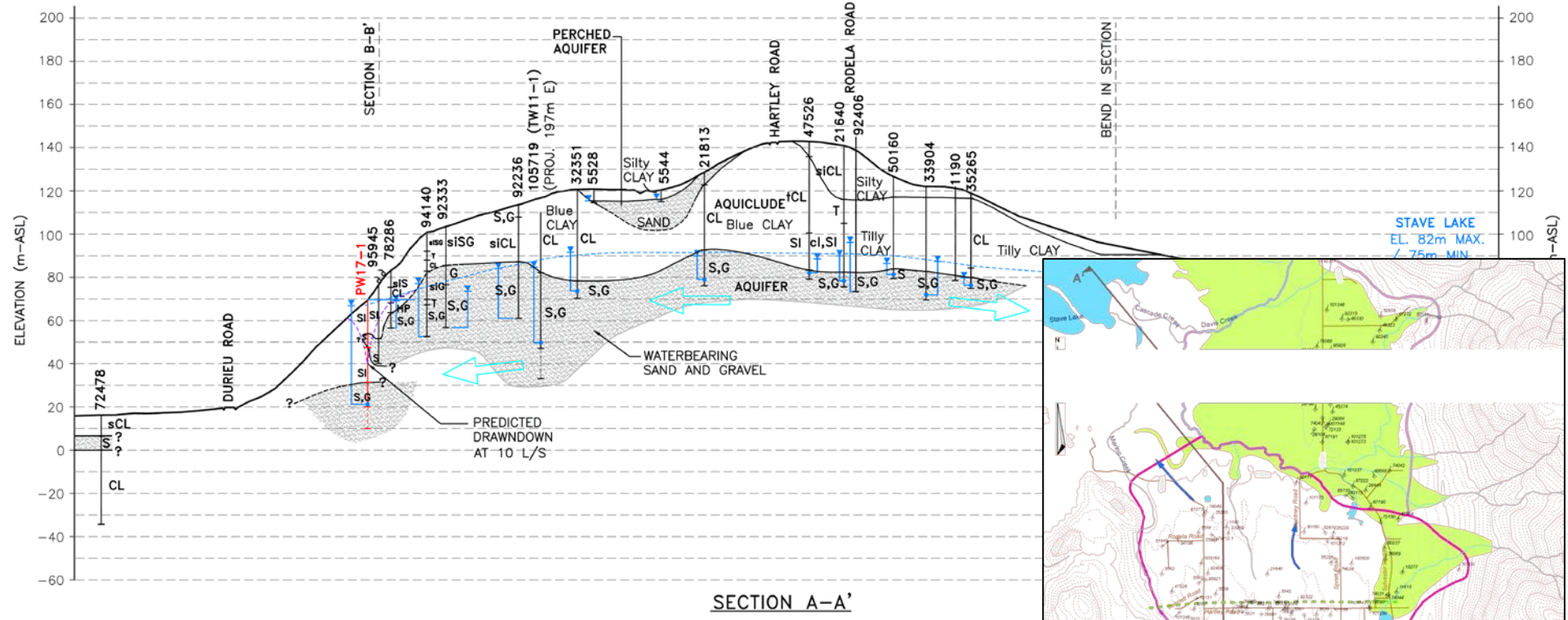
A'

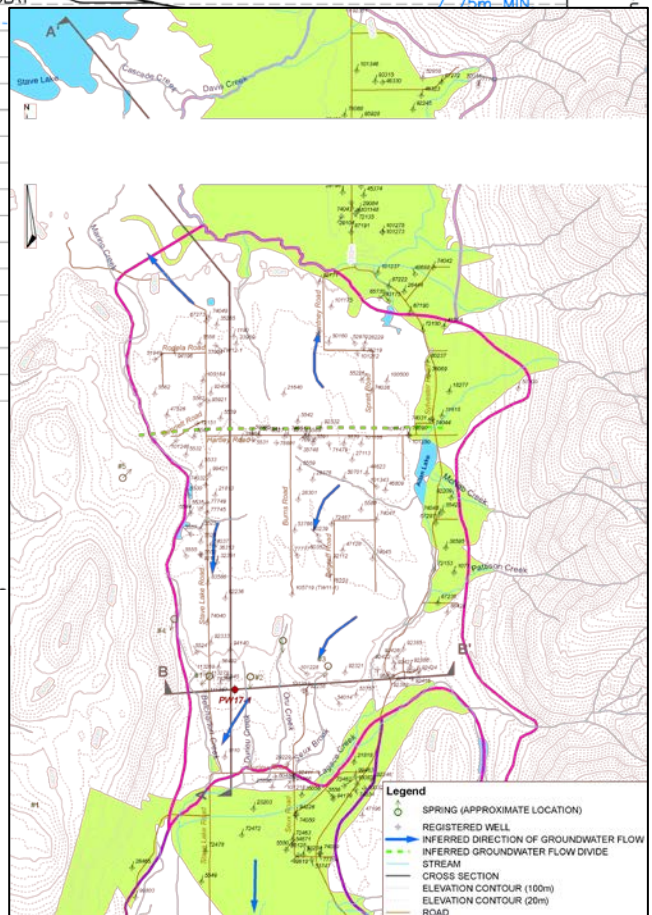
NORTH

[redacted]

SOUTH

NORTH





LEGEND

- DRILLED WELL SHOWING WATER ELEVATION AND BCMOE WELL TAG NO.
- PIEZOMETRIC ELEVATION
- GEOLOGICAL BOUNDARY
- PREDICTED DRAWNDOWN OF PIEZOMETRIC SURFACE AT 10 L/S
- INFERRED DIRECTION OF GROUNDWATER

G	GRAVEL
S	SAND
SI	SILT
CL	CLAY
T	TILL
HP	HARDPAN

(LOWER CASE INDICATES MINOR COMPONENT)

NOTE:

WATER LICENSING

- Groundwater is a Provincially owned resource. Accordingly, they are responsible for its regulation.

- In February 2016 changes to the Water Sustainability Act came into place requiring that anyone who uses groundwater for non domestic purposes (local governments, industry, agriculture, etc.) obtain a water license. The FVRD will not be permitted to extract water unless a license has been obtained.

- The requirement for water licensing applies both new and existing ground water users. For existing users no license fee will be charged if they apply prior to March 31, 2019

- Groundwater licensing is done through the Ministry of Forests, Lands, Natural Resource Operations & Rural Development (FLNRORD)

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WATER LICENSING

- As part of the processing of a water license application FLNRORD will send out referrals/notifications to other water users.

- The Province will send out notifications to other water users. Registered well owners with in the zone of influence of the application/pumping well will receive a notification.

- In addition, if the application well is likely hydraulically connected to streams, then current surface water licensees on those streams will also be notified.

- The Ratepayer group has been quite involved since the beginning of the process, and has a lot of local knowledge, the Water Officer assigned may also notify them.

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MIRACLE VALLEY AQUIFER USERS

- There are 300 properties that are either partially or entirely situated on the Mircale Valley Aquifer
- Of those properties there are 255 with homes built on them
- There are 143 wells registered on the Provincial Well Registry
- http://maps.gov.bc.ca/ess/sv/imapbc/

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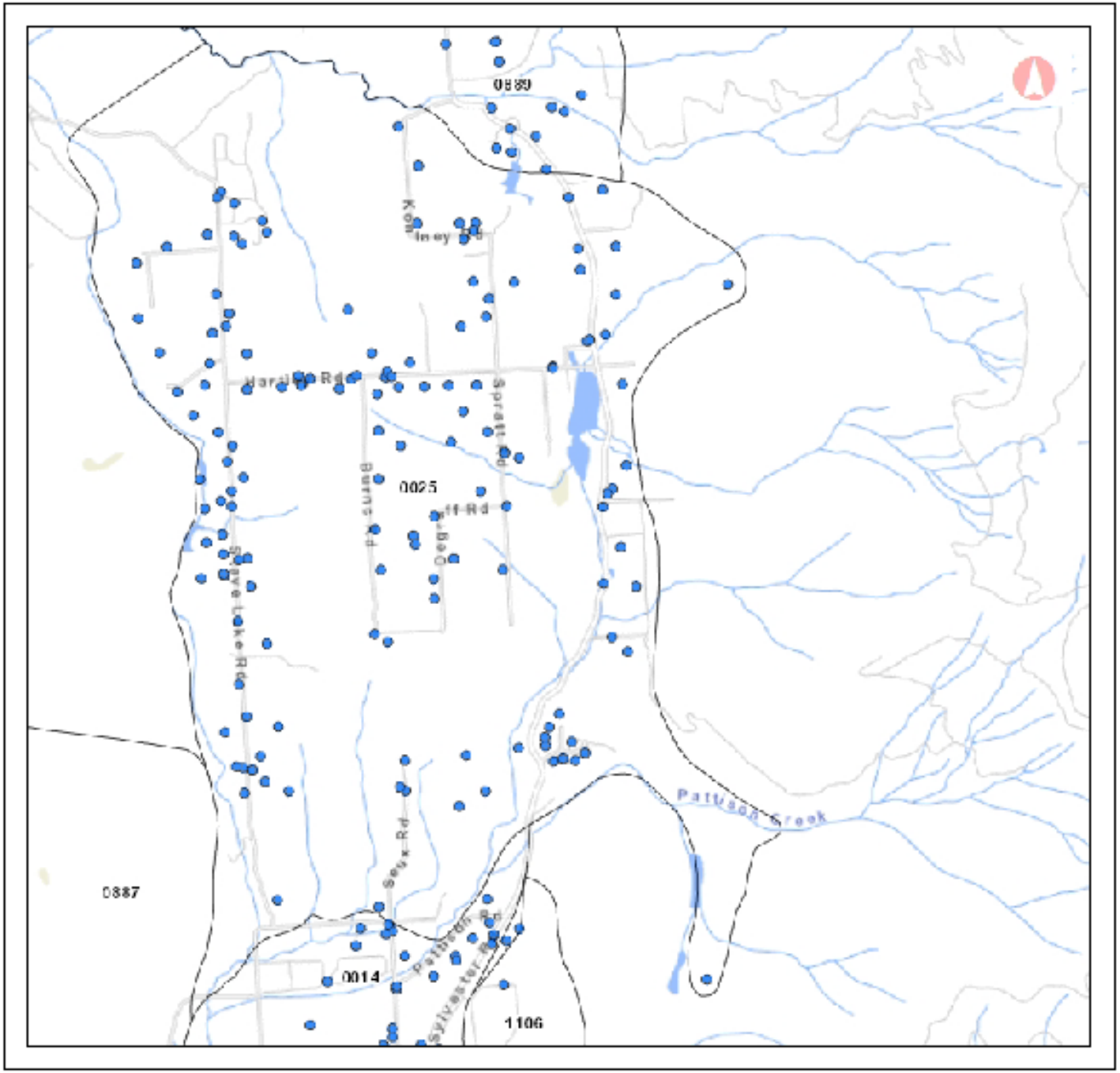


iMapBC Mapping

Legend

- Water Wells - All
- Aquifers - BC - Outlined

TileCache

0 0.65 1.30 km

1: 32,000

Copyright/Disclaimer

Datum: NAD83
Projection: NAD_1983_BC_Environment_Albers

Key Map of British Columbia

Current Developments

Learn more about development happening in your community.

Zoom in using the + and - buttons on the map.

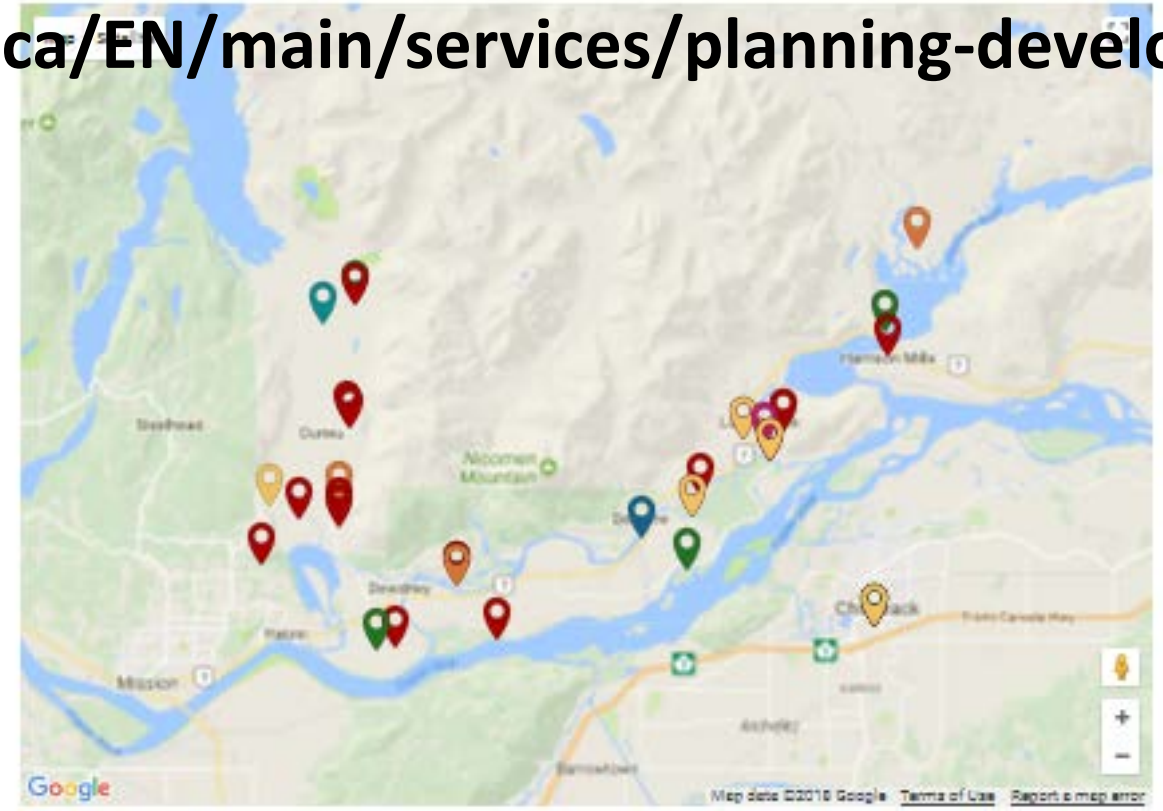
To view a specific category, deselect "All Categories" and choose the category that is of interest to you.

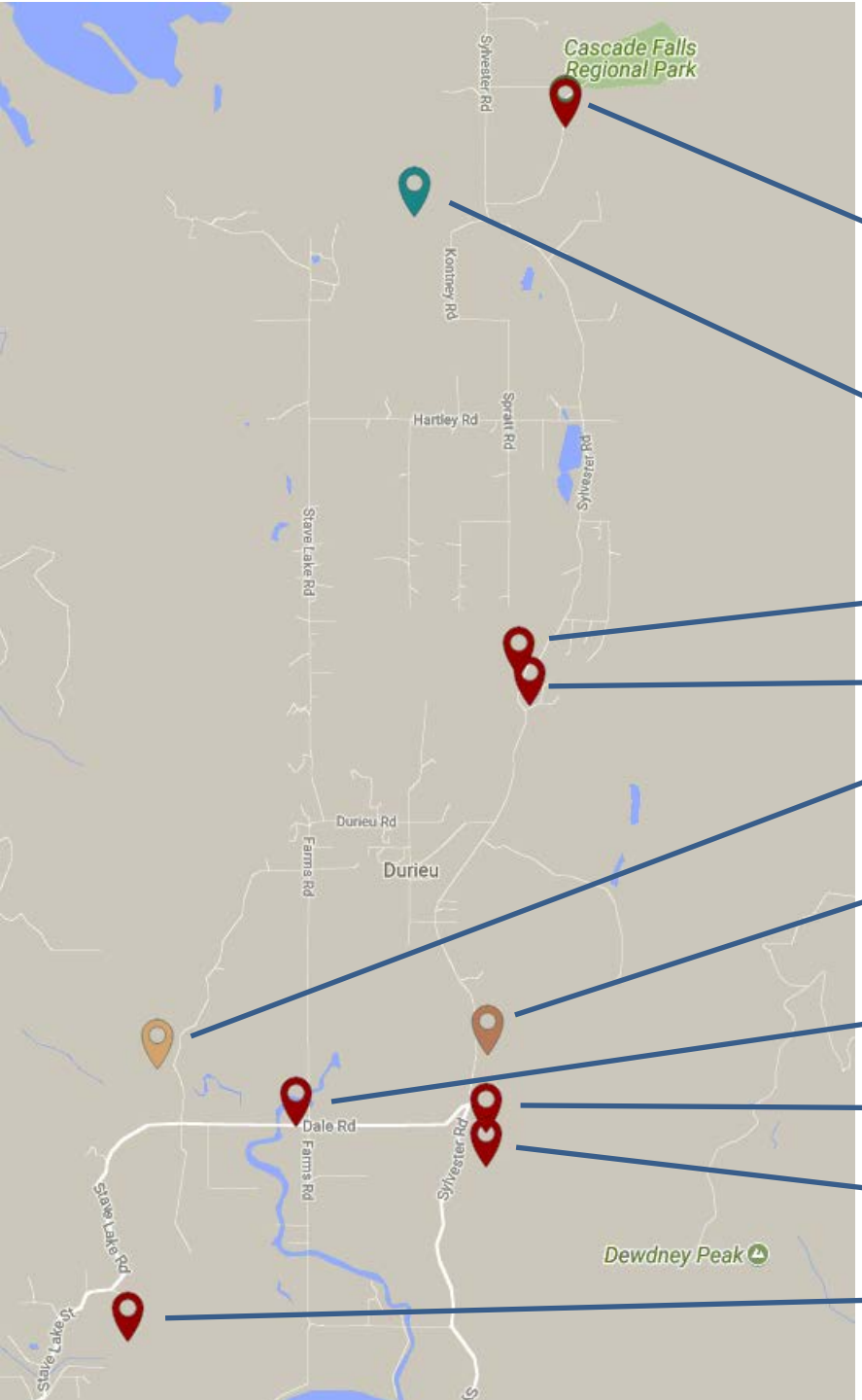
Show Categories:

- ALR
- Development Permits
- Development Variance Permits
- OCP Amendments
- Soil Permits
- Subdivisions
- Temporary Use Permits
- Zoning Amendments
- All Categories

MAP VIEW | LIST VIEW

www.fvrd.ca/EN/main/services/planning-development.html





Proposed Developments

2 lot subdiv. (2017)

ALR exclusion

3 lot subdiv. (2012)

7 lot subdiv. (2016)

Rezoning for 2 lot sub.

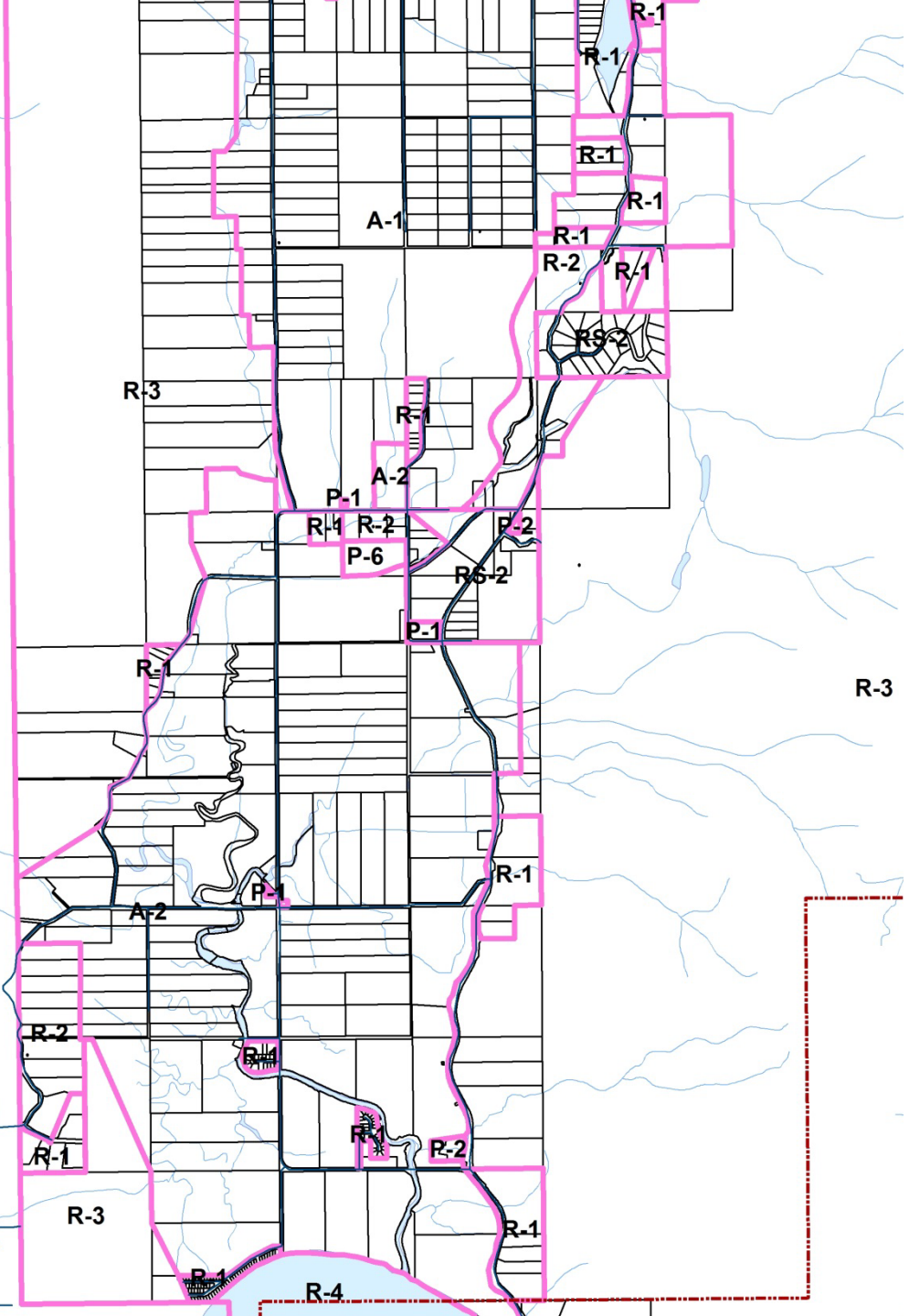
Dev't Permit

Boundary Adjustment

3 lot subdiv. (2017)

4 lot subdiv. (2017)

2 lot subdiv (2017).



Zoning

Parcel Sizes for new Lots

A-1 - 10 ac

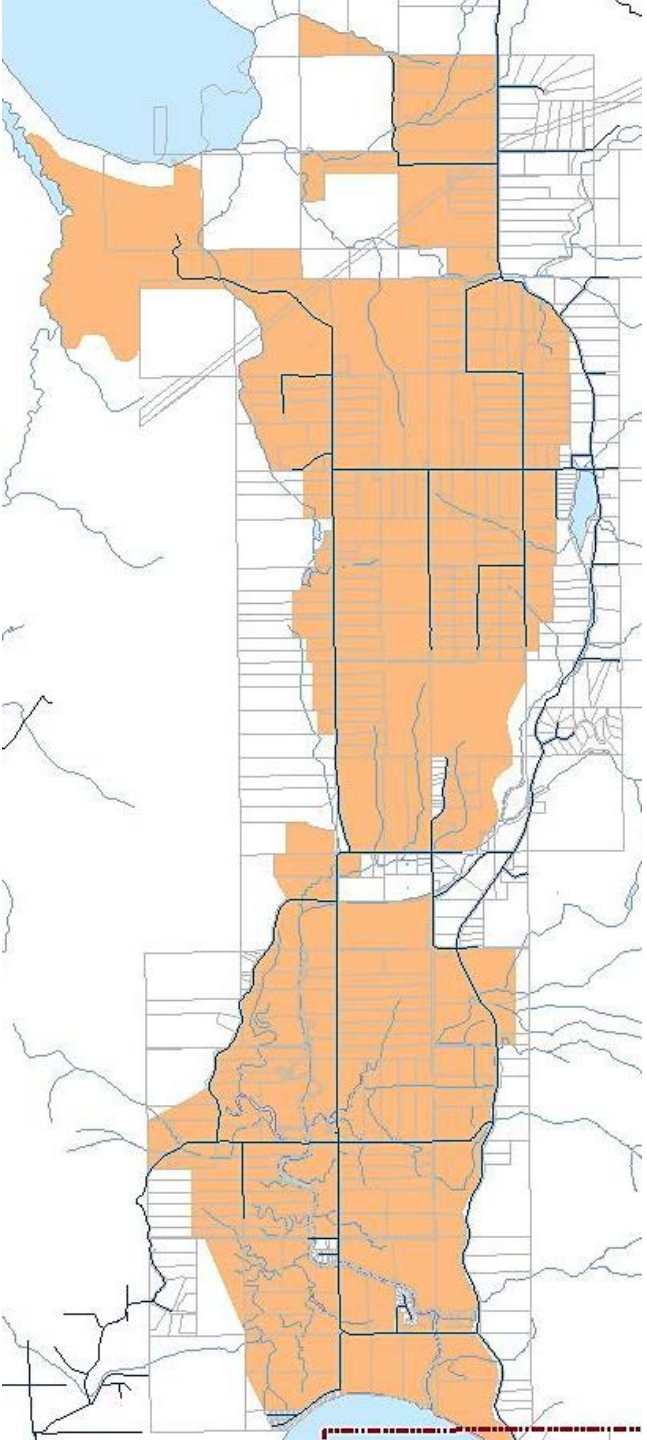
A-2 - 40 ac

R-1 - 5 ac

R-1 - 10 ac

R-3 - 20 ac

RS-2 - 2.47 ac



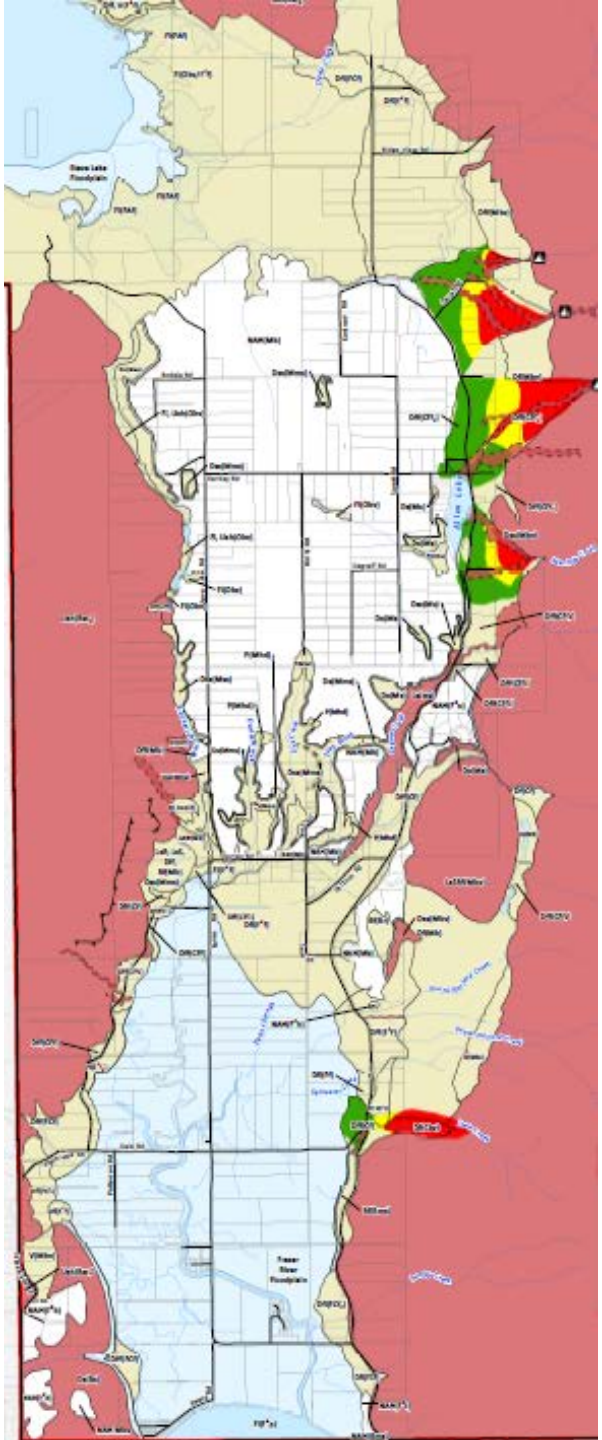
ALR

ALC must approve subdivision and non-farm uses.

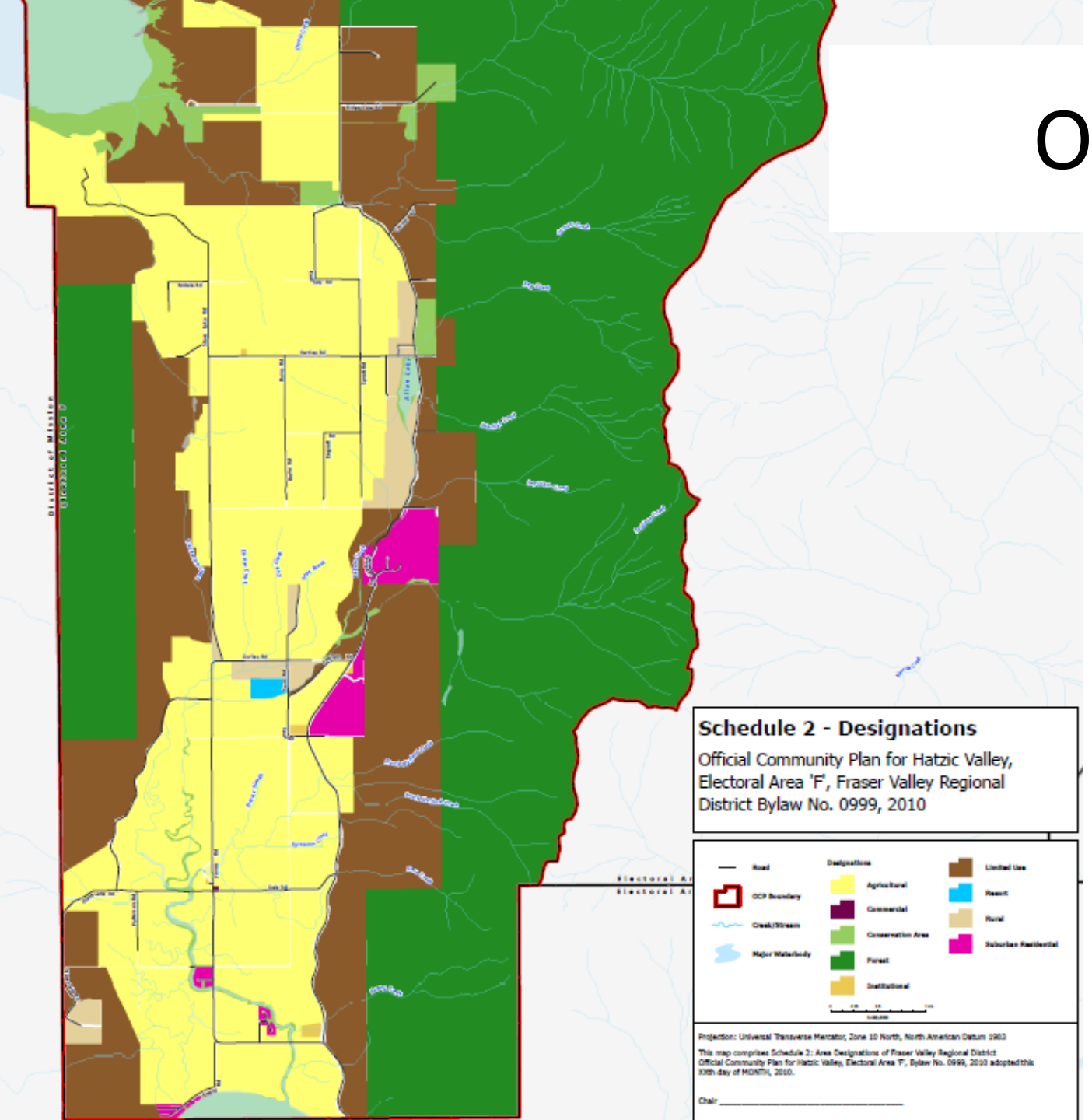
ALC mandate to preserve agricultural land limits subdivision on the valley bottoms.

Hazards

Slopes, floodplains, streams & hazards constrain development on the valley sides.



OCP


Schedule 2 - Designations
Official Community Plan for Hatzic Valley, Electoral Area 'F', Fraser Valley Regional District Bylaw No. 0999, 2010
Road
OCP Boundary
Creek/Stream
Major Waterbody
Designations
Agricultural
Commercial
Conservation Area
Forest
Institutional
Limited Use
Resort
Rural
Suburban Residential
Projection: Universal Transverse Mercator, Zone 10 North, North American Datum 1983
This map comprises Schedule 2: Area Designations of Fraser Valley Regional District Official Community Plan for Hatzic Valley, Electoral Area 'F', Bylaw No. 0999, 2010 adopted this XXth day of MONTH, 2010.
Chair

Development Prospects

- Modest subdivision of rural lots on lower hillsides
- Minor tweaks & infill subdivisions on the agricultural valley bottoms
- 1996-2008 - average annual rate of development:
  - 1.5 parcels/year
  - 7 dwellings/year
    - ≈ 0.9% annual increase in dwellings (2011)

QUESTIONS?

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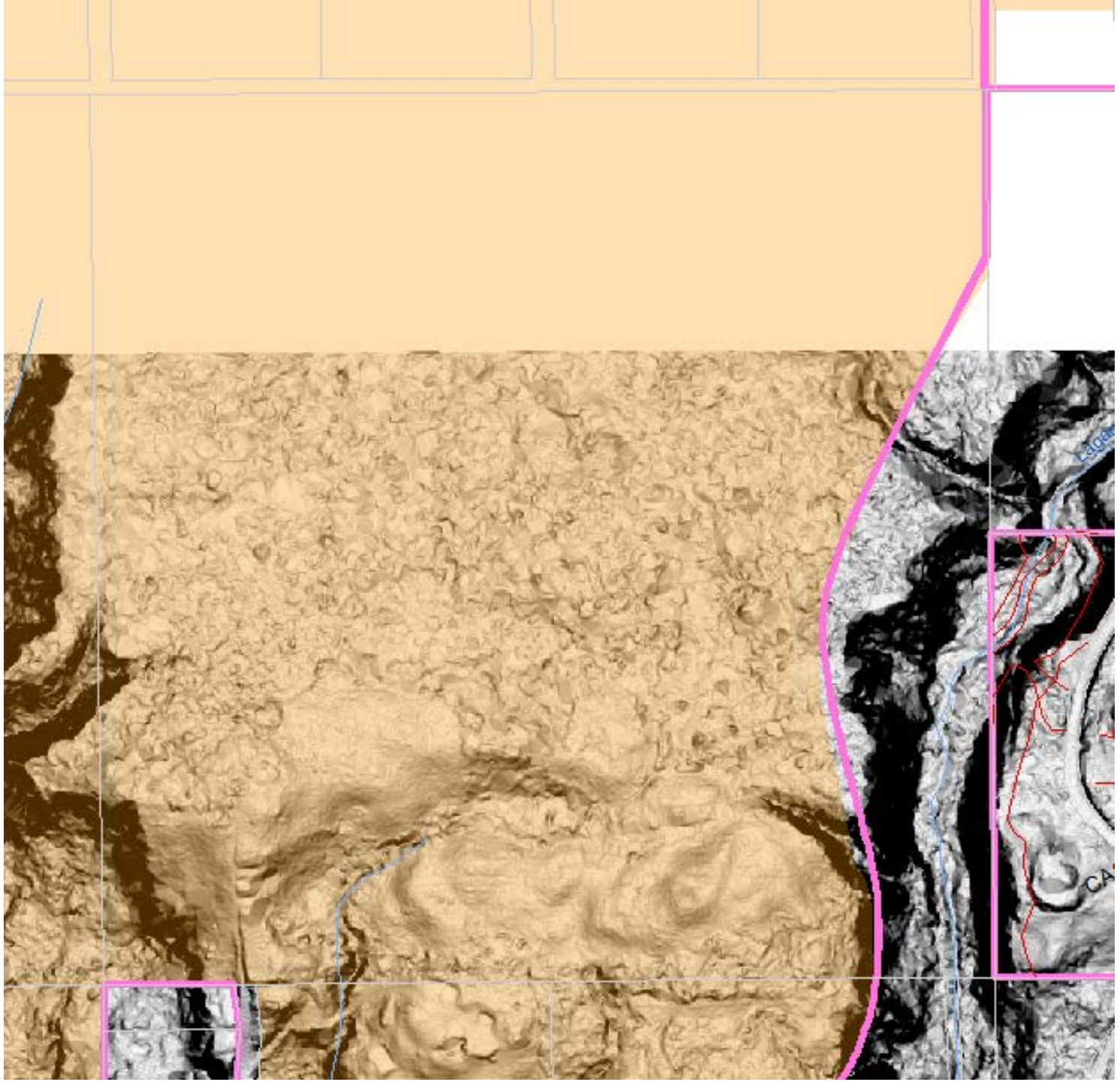
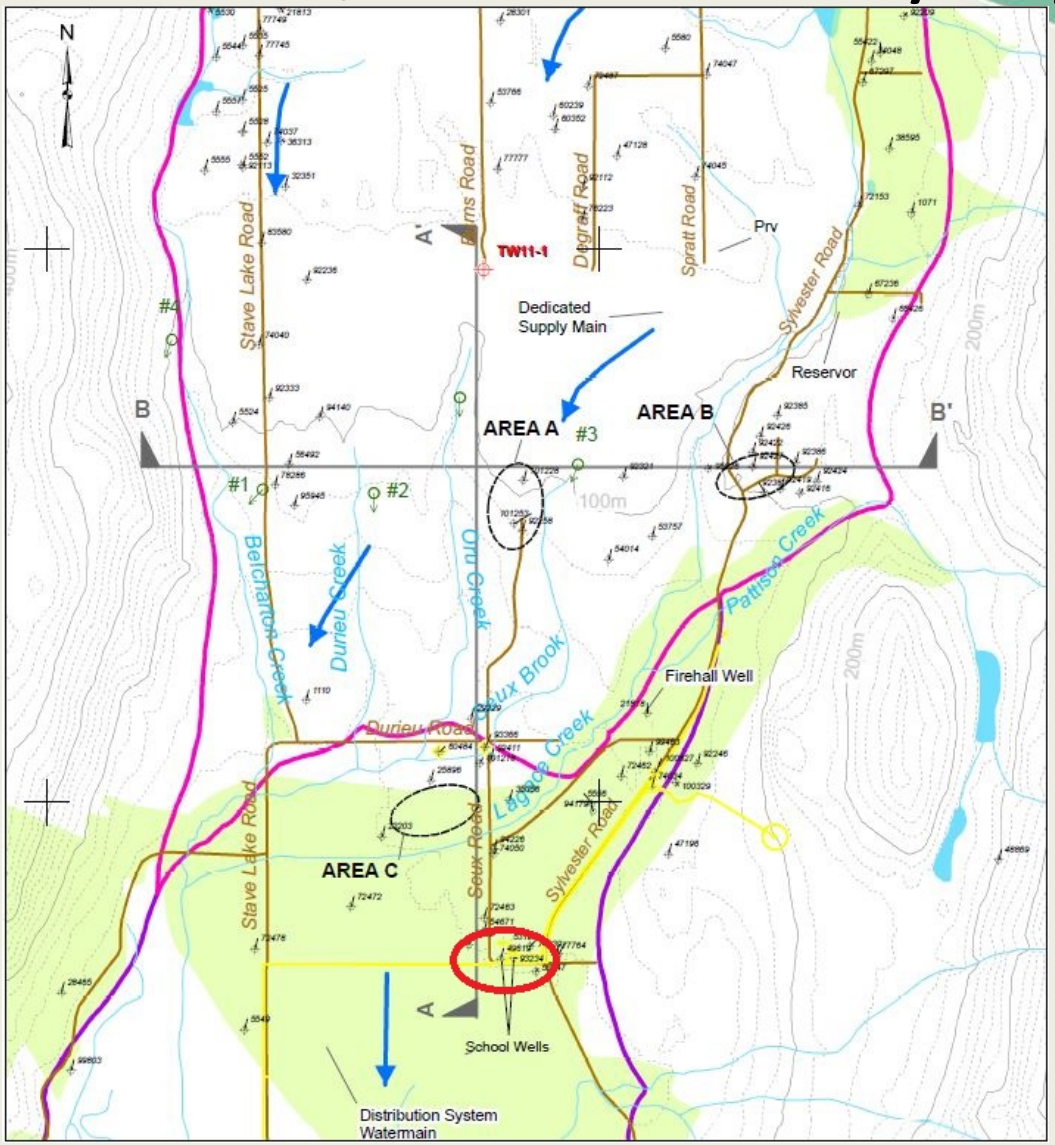


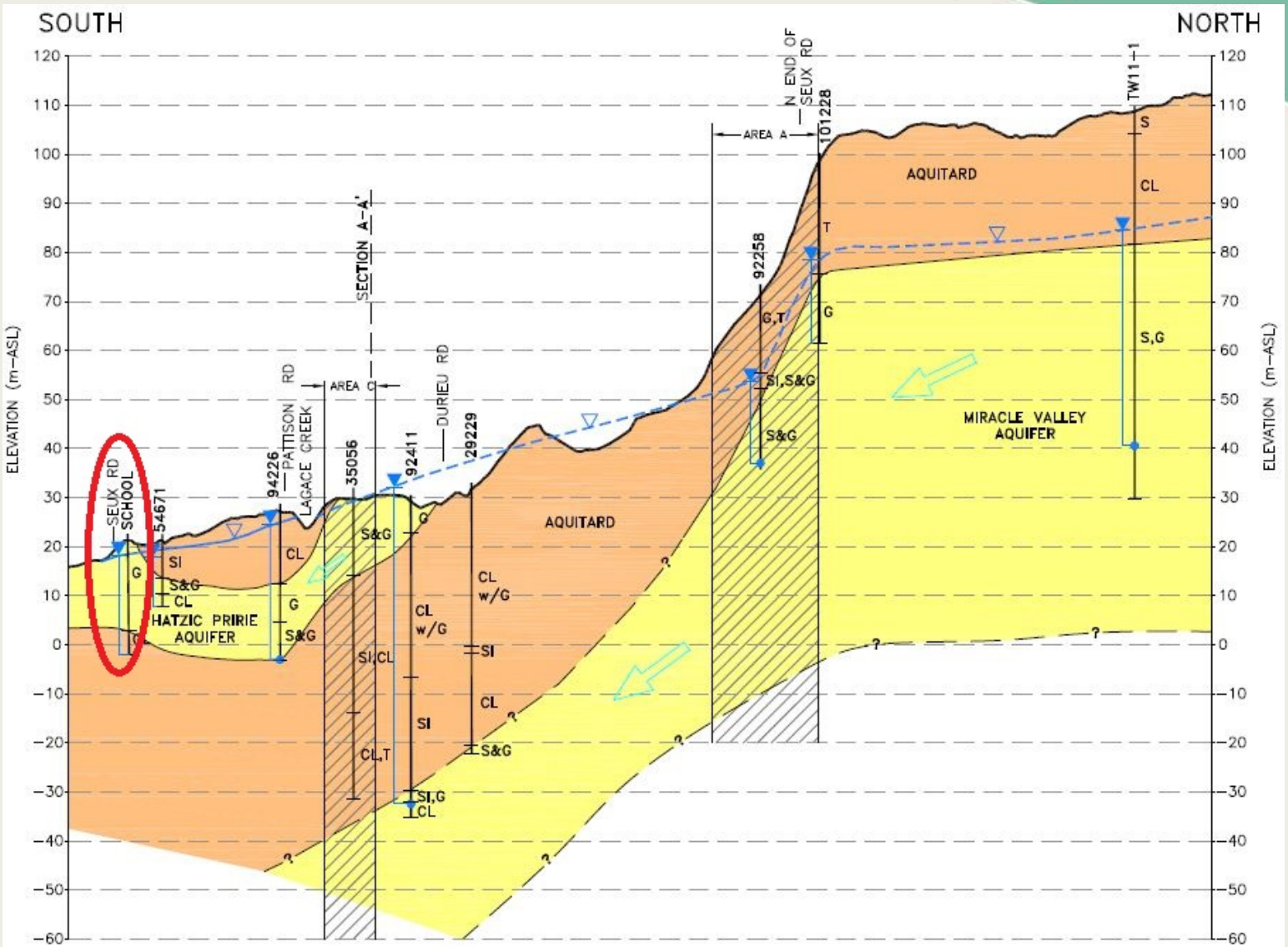
Characteristics of Hatzic Prairie Aquifers

- **Miracle Valley Aquifer**
  - **13.1 square kilometers in size**
  - **50m thick in some areas**
  - **Future FVRD wells will be drilled into the Miracle Valley Aquifer**
  - **Estimated to be capable of delivering up to 30 L/s without affecting neighbouring wells**

Hatzic Prairie / Miracle Valley Aquifer



Hatzic Prairie / Miracle Valley Aquifer



Hatzic Prairie / Miracle Valley Aquifer