

# Oak Ridges Moraine

## (YPDT – CAMC) GW MANAGEMENT PROGRAM



TRCA Board  
Apr.. 20, 2018



# Team work.....many have helped.....

- **Russ Powell (CLOCA), Rick Gerber (ORMGP); Mike Doughty (ORMGP); Mason Marchildon (ORMGP); Albert Halder (ORMGP); Britt Smith (ORMGP); Rod Wilmot (CLOCA); Andrew Caky (CLOCA); Sylwia Kubrak (CLOCA); Annie Brough (CLOCA); David Krupicz (CLOCA);** Dirk Kassenaar (EFX); E.J. Wexler (EFX); Kelsy Brennan (EFX); Mike Fairbanks (York) Don Goodyear (York, LSRCA); Tom Bradley (York); Wendy Kemp (York); Luis Lasso (Peel); Erin Inhat (Peel); Pawandeep Sembhi (Peel); Rick Buckley (All Terrain); Dave Sharpe (GSC); Hazen Russell (GSC); Peter Barnett (OGS); Andy Bajc (OGS); Rilley Mulligan (OGS); Beata Golas (Durham); James Partridge (Durham); Bill Snodgrass (Toronto); Jennifer Stephens, (TRCA); Shelly Cuddy (CLOCA, Durham, LSRCA); Ryan Post (KRCA, NVCA); Mark Peacock (GRCA); Michael D'Andrea (Toronto); Don Ford (TRCA); Jehan Zeb (TRCA); Dan Banks (CVC); Gayle Soo Chan (CLOCA, CVC); Mike Police (All Terrain); Stephen DiBiase (Golder, Aquatech); Kerry Mulchansingh (CVC); Frank Liu (CVC); Chris Neville (S.S. Papadopulos); Daron Abbey (Matrix); Paul Martin (Matrix); Steve Davies (ORMGP, Matrix); Caroline Hawson (KRCA); Jessica Mueller (GRCA, KRCA); John Piersol (Golder); Barbara Anderson (MOECC); Scott Bates (MNR); Mike Garroway (MNR); Cam Baker (OGS, Matrix); Andre Pugin (GSC; Sue Pullan (GSC); Jim Hunter (GSC); Vince Gerrie (Quantec, DGI); Barb Jeffrey (York), Laura Atkins (York, Toronto); Mark Head (Peel); Beverley Thorpe (TRCA), Anthony Usher (Usher Planning); Kim Gilder (ORMGP), Simone Banz (Peel), Rob Baldwin (LSRCA); Simone Banz (Peel); Andrea Warren (Peel); Tim Warman (Golder); Amanda Morin (ORMGP); Brian Whitehead (Rural Development); Bruce Hietkamp (Geo Kamp); Mezmure Haile-Meskale (MOECC, ORMGP); John Ford (EFX); Clifford (Peel); Tim Beckenham (LTCA, WESA); Tom Killingbeck (BluMetric); Bob Betcher (GRCA); Brandi Boardman (CLOCA); Shan Mugalingam (LTRCA), Josie Calebrese (CLOCA); Heather Borodie-Brown (MOECC); Mary Prawecki (York), Patty Meyer (CVC, Matrix), Scott MacRitchie (MOECC); Frank Brunton (OGS); Fred Carpio (CLOCA); Tim Cheng (MOECC); Deb Conrod (MOECC); Kevin Cover (Ottawa); Terri Cox (ORCA); Cliff Curtis (Durham); Alex Georgieff (Durham); Nick Tunnacliffe (Peel); Bryan Tuckey (York); Erin Mahoney (York); Chris Darling (CLOCA); Sonja Loessl (Peel), Laurence Davidson (EFX); Brian Denney (TRCA); Gunther Funk (RWDI); Murray Gomer (MMM); Katie Thompson (LSRCA, Barrie); Phil Harrison (York); Marc Hinton (GSC); Ross Hodgins (MOECC, ORMGP); Frank Kenny (MNR); Esmael Khazaei (York); Phil Smart (CRA), Linda Laliberte (GRCA); Rob Messervey (KRCA); Gayle Wood (LSRCA, NVCA); Mark Majchrowski (KRCA); Stephanie McPhie (NVCA); John Presta (Durham); Andrew Farr (Peel); Blythe Reiha (York); Dave Rudolph (Waterloo); Glenda Rogers (LTRCA); David Schieck (GAPS); Mark Schiller (Peel); Tammy Silverstone (York); .....mom & dad, etc.etc.

# Recent Context For GW Discussion

## ➤ *Perception*

### **Ontario needs better data on its groundwater supply, says environmental watchdog**

“We’re making decisions with our eyes closed,” said the environmental commissioner and warned that climate change will increase the amount of stress on water.

*Dianne Saxe (Toronto Star, Oct 27, 2016)*

The issue of getting good data on the groundwater, and other environmental concerns, is “challenging” for all governments right now, added Murray.

“Climate change is creating such rapidly changing situations with water quality, air and forests that the amount of data you need to manage these things is enormous,” he said.

*Glen Murray (Toronto Star, Oct 27, 2016)*

## ➤ *Wealth of Information – not fully utilized*

## The Oak Ridges Moraine

Proposals for the Protection and Management of a Unique Landscape  
MAY, 2001



**GROUNDWATER MANAGEMENT STRATEGY  
STUDY  
YORK, PEEL AND DURHAM REGIONS  
PHASE 1 FINAL REPORT**

Prepared by:

The York Peel Durham Steering Committee

and

AMEC Earth & Environmental Limited  
Totten Sims Hubicki Associates  
And  
Terraprobe Limited

May 2001

## Groundwater Strategy – Goal:

*“To establish consistent policies, data collection, data management standards, and analytical methods for groundwater management and to determine a framework for implementation across the three regions.”*

## RECOMMENDATIONS

- Policy
- Data Collection/Management
- Technical Analysis/Studies
- Implementation Framework
- Monitoring, Evaluation and Program Refinement

# YORK PEEL DURHAM TORONTO GROUNDWATER MANAGEMENT STRATEGY STUDY

Towards a Sustained Long Term Program



June 21, 2004

## TASKS - DATA MODEL

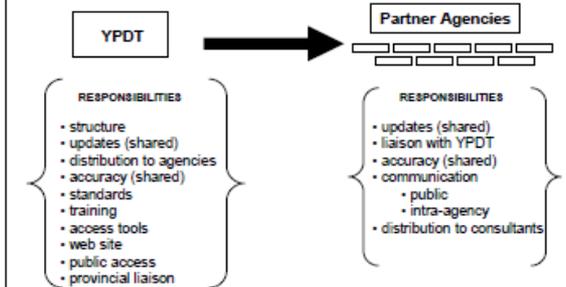


Figure 1 – Data Model Tasks

## TASKS - GEOLOGICAL MODEL

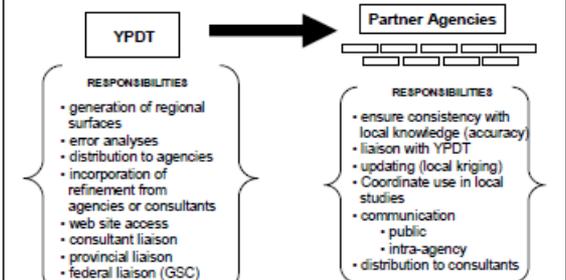


Figure 2 – Geological Model Tasks

## TASKS – NUMERICAL GW MODEL

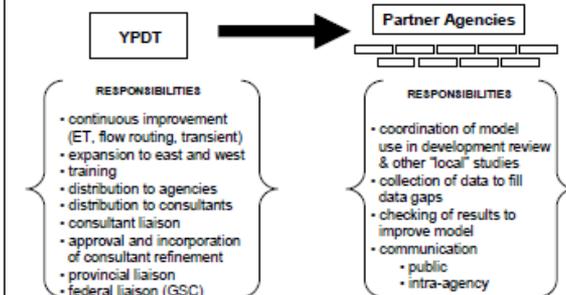
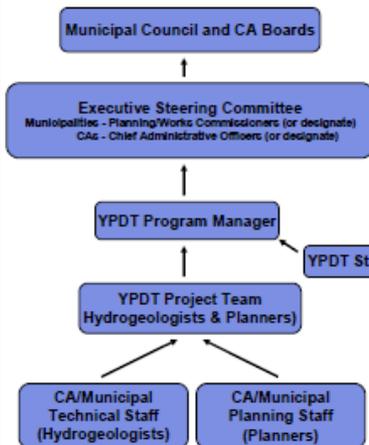


Figure 3 – Numerical GW Model Tasks

### YPDT REPORTING STRUCTURE



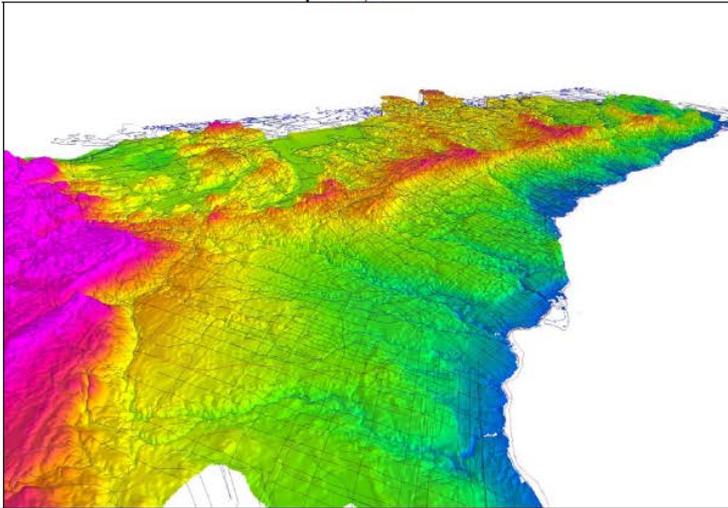
### ROLES AND RESPONSIBILITIES

- Approve overall funding and program direction
- TRCA Board to approve ongoing work plan (e.g. contractor/consulting contracts)
- Comment and strategically guide program direction
- Ensure program addresses agency's strategic vision and overall needs
- Develop and coordinate projects
- Develop and track budgets
- Oversee technical work and ensure quality
- Coordinate timely dissemination of data and technical information
- Liaise with Federal and Provincial governments
- Contribute technical and database project ideas
- Ensure database and technical work is up to date with recent thinking
- Communicate program and results to colleagues
- Communication with Provincial staff
- Ensure YPDT work meets usability, information and technical needs of agency

Figure 4 – Proposed YPDT Reporting Structure + Roles & Responsibilities

## Overview of Operations and Future Planning

April 11, 2007



York-Peel-Durham-Toronto (YPDT) Groundwater Management Program  
Conservation Authorities Moraine Coalition (CAMC)



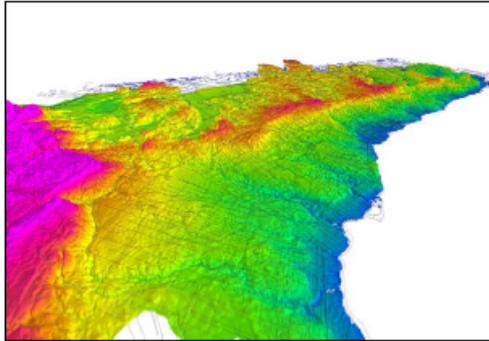
## Program Mandate (2007)

To provide a multi-agency, **collaborative** approach to **collecting, analyzing and disseminating water resource data** as a basis for effective stewardship of water resources. The YPDT-CAMC Groundwater Management Program is to **build, maintain and provide** to partnered agencies the **regional geological and hydrogeological context** for ongoing groundwater studies and management initiatives within the partnership area.

Remains Relevant in 2017

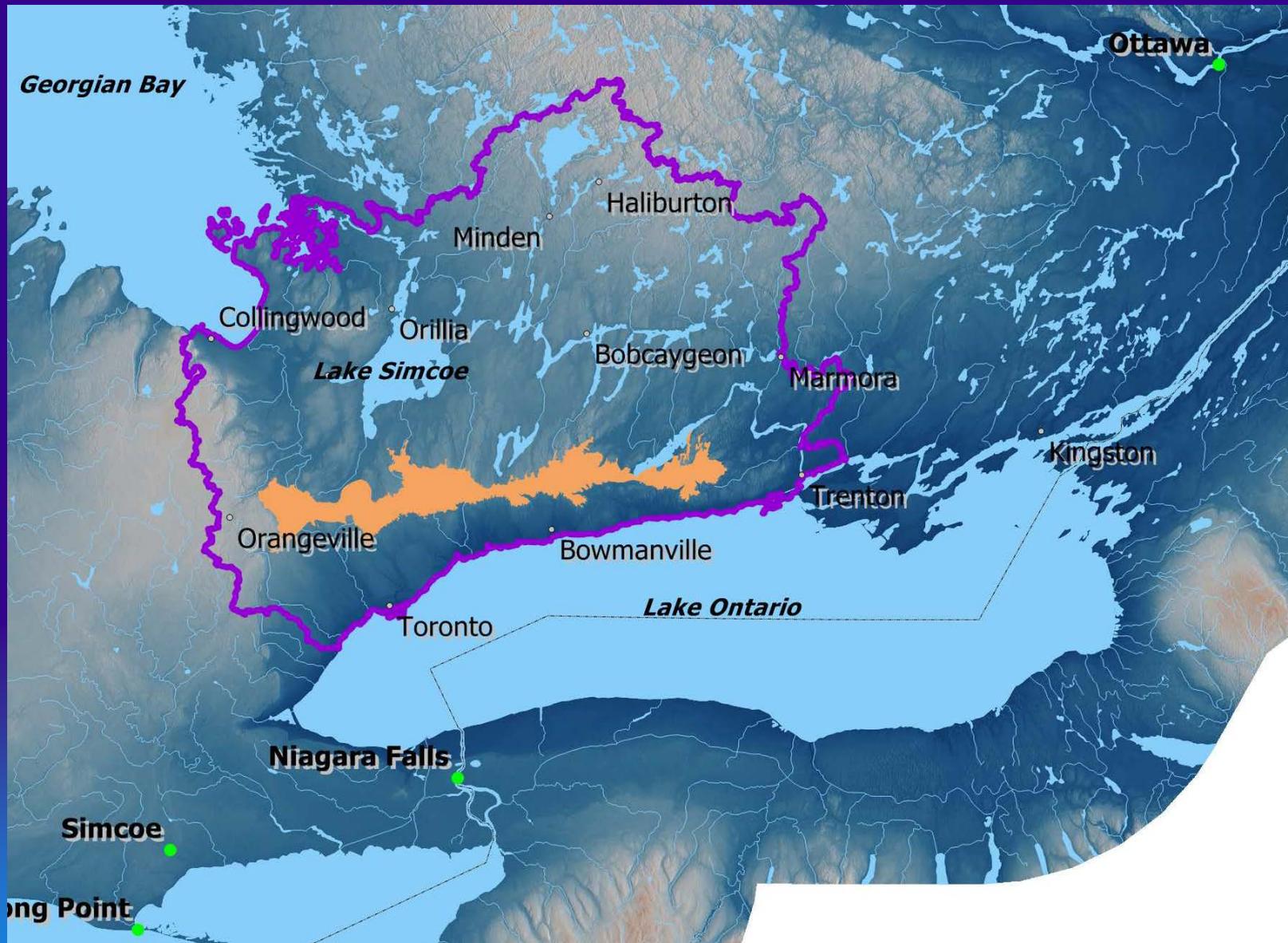
## MEMORANDUM OF UNDERSTANDING FOR THE COLLECTION, MAINTENANCE, AND DISTRIBUTION OF GROUNDWATER DATA AND INFORMATION (2011 to 2020)

1st Draft – November 8, 2010  
2nd Draft - November 15, 2010  
3rd Draft - January 12, 2011

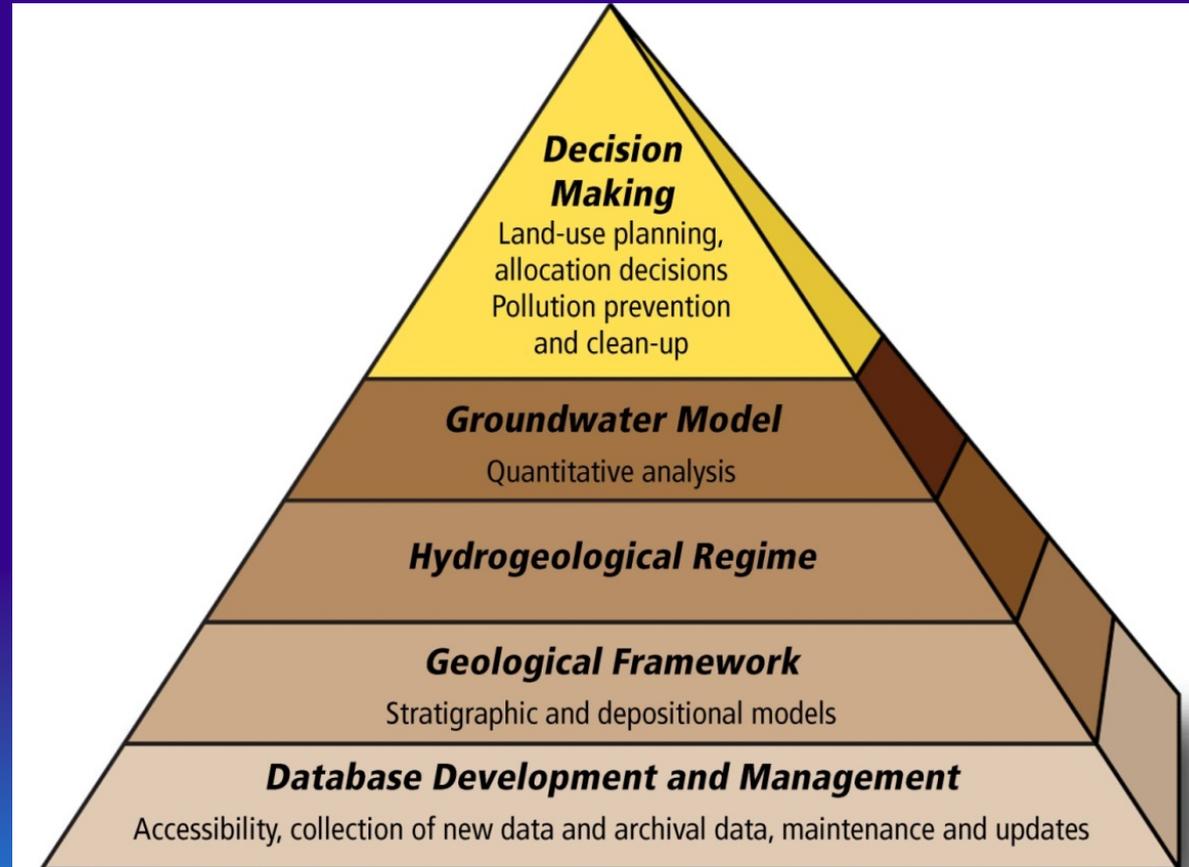


## Establishes Procedures Re:

- Collection of Data
- Deposit of Data
- Maintenance of Data
- Interpretation of Data
- Maintenance of Information
- Distribution of Data
- Distribution of Information



# CCA – Sustainable GW Management



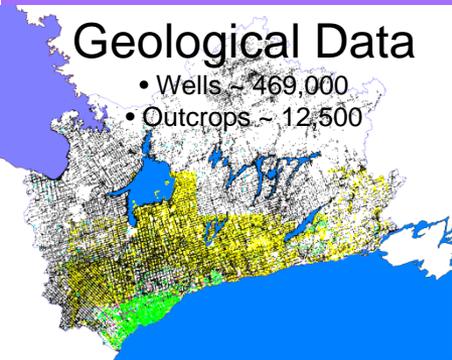
# Data

(The YPDT Mauve DB)



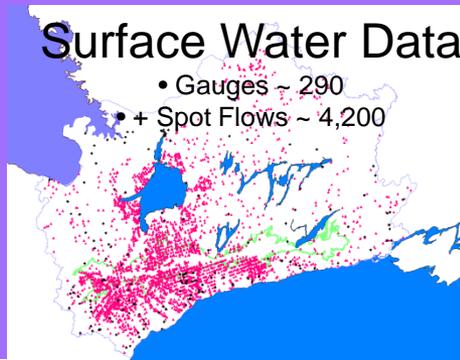
## Geological Data

- Wells ~ 469,000
- Outcrops ~ 12,500



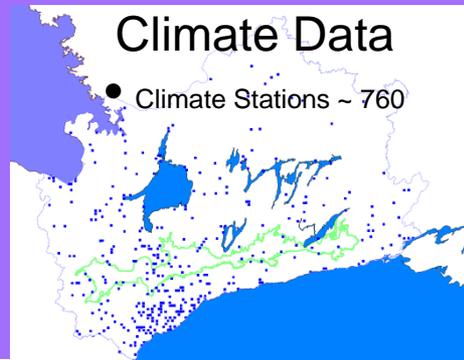
## Surface Water Data

- Gauges ~ 290
- + Spot Flows ~ 4,200



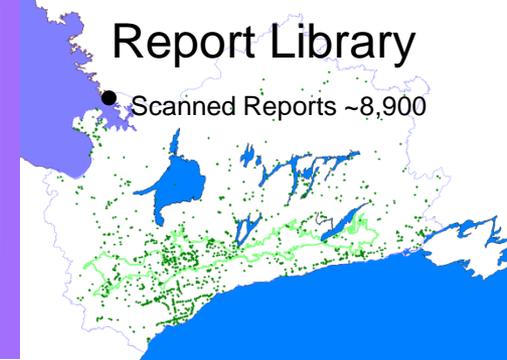
## Climate Data

- Climate Stations ~ 760



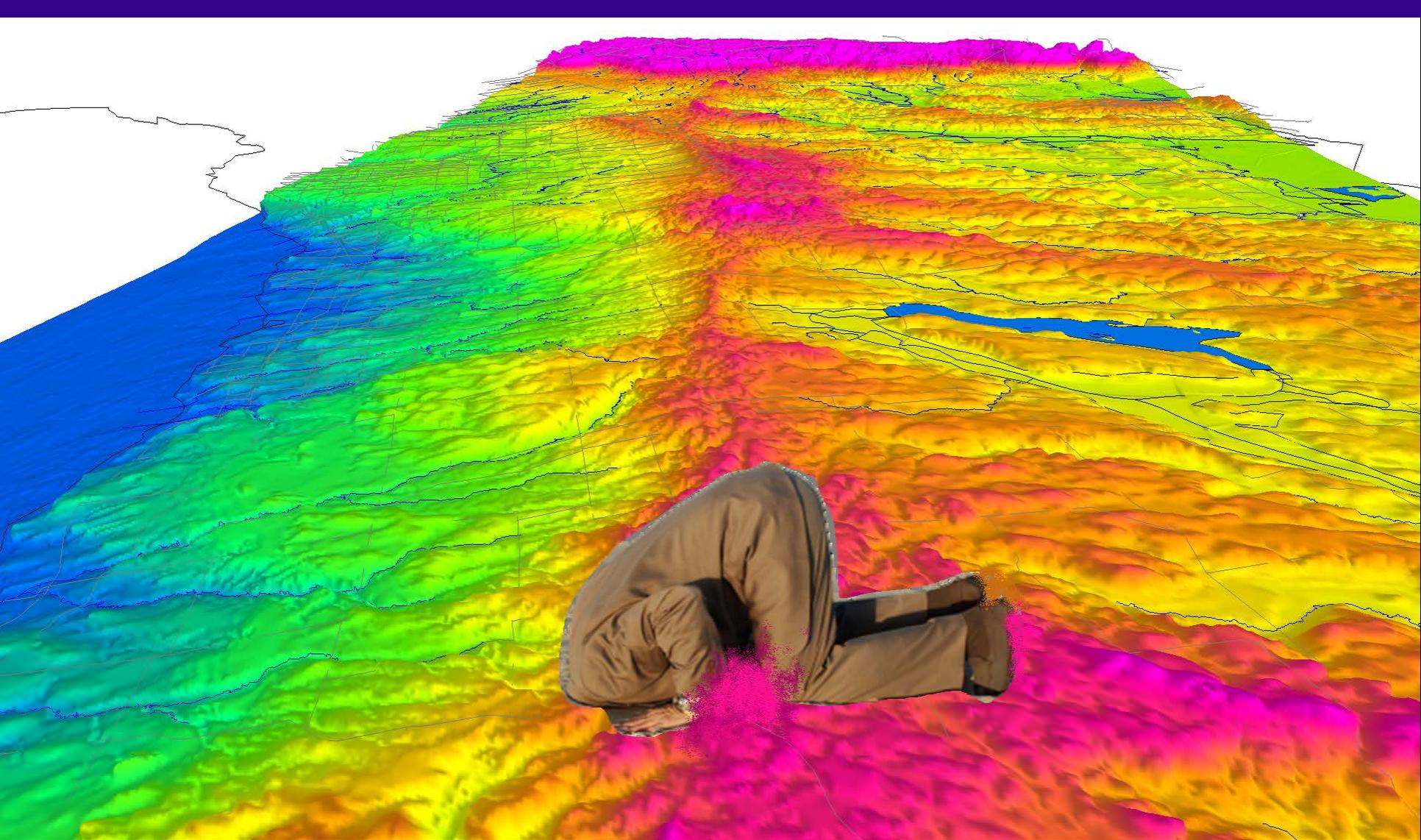
## Report Library

- Scanned Reports ~8,900



# Website - Overview

- Documents
- Water Table
- Groundwater Levels
- Cross-Sections
- Boreholes



OK – So What's In There?