Thinking Differently
A Data Driven Approach to Water Management

Steve Holysh
Rick Gerber
Mike Doughty
Mason Marchildon
Britt Smith
Steve Shikaze

Oak Ridges Moraine Groundwater Program



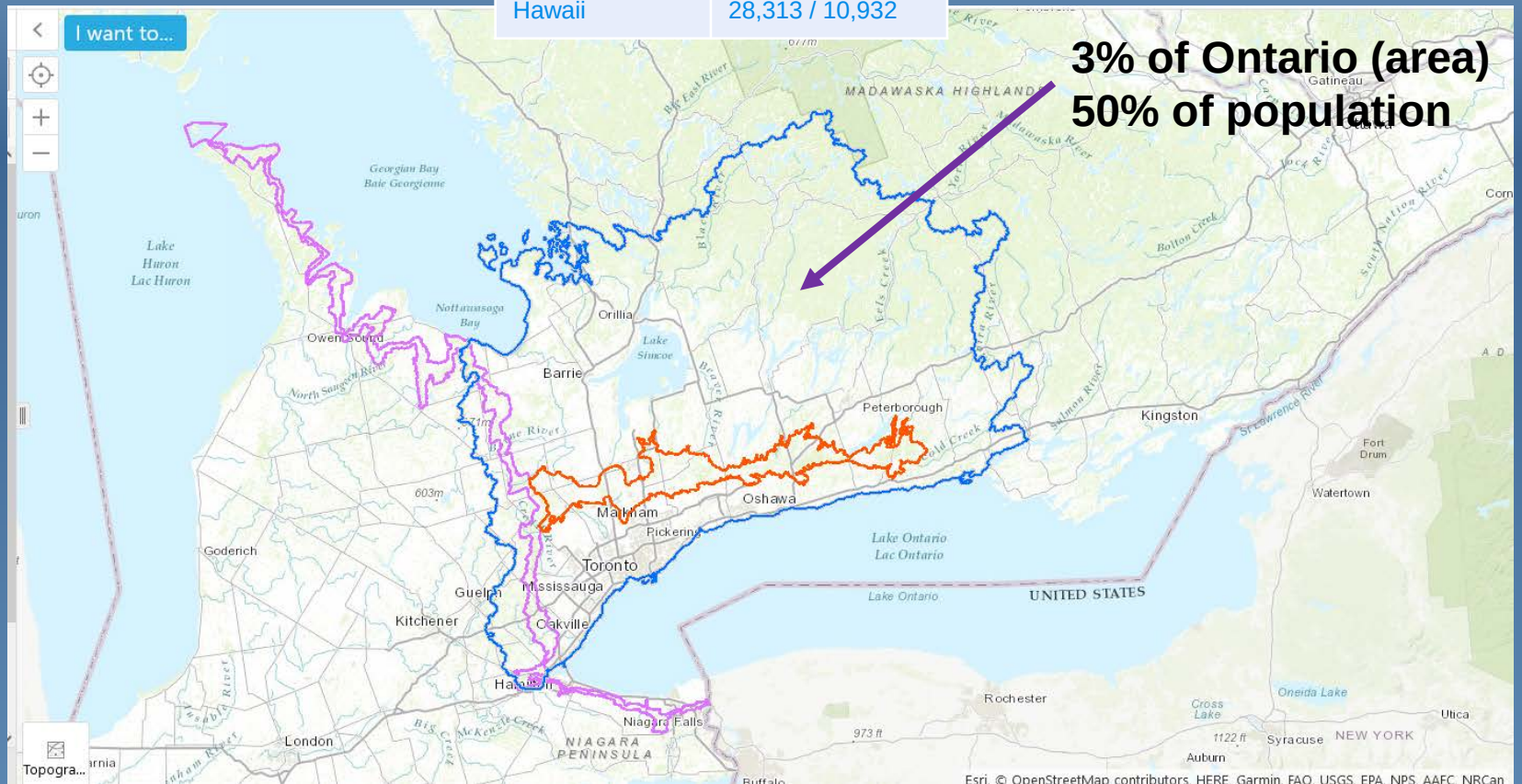

May 25, 2022

Internet of Water Coalition

Internet of Water

York Region
Region of Peel working with you
Durham Region
Toronto
Halton Region
Credit Valley Conservation inspired by nature
Lower Trent Conservation
Ganaraska Conservation
Central Lake Ontario Conservation
Toronto and Region Conservation for The Living City
Otonabee Conservation
Nottawasaga Valley Conservation Authority
Kawartha Conservation
Conservation Halton
Canada
Ontario

AREA	SIZE (km²/mi²)
ORMGP	**31,000 / 11,969**
Rhode Island	4,001 / 1,545
Delaware	6,446 / 2,489
Puerto Rico	13,791 / 5,325
Connecticut	14,357 / 5,543
New Jersey	22,591 / 8,722
New Hampshire	24,214 / 9,349
Vermont	24,906 / 9,616
Massachusetts	27,336 / 10,554
Hawaii	28,313 / 10,932



Library of Parliament / Bibliothèque du Parlement

Freshwater Management in Canada: IV. Groundwater

François Côté
Science and Technology Division

6 February 2006

Government of Canada / Gouvernement du Canada

Canada

Toward the Creation of a Canada Water Agency

Discussion Paper

Environment and Climate Change Canada

rkshop on a Canada-Wide Water Strategy
Agenda

September 29, 2010

8:00 – 4:00 p.m.

aton Hotel and Conference Centre

801 Dixon Road, Etobicoke

nt Refreshments

of Agenda Rick Ross CWRA CEO

Present All participants

ey- Carlson) Hugh Whiteley

ement Issues in a Global Perspective" Margaret Catley- Carlson

Canada-Wide Water Strategy " Prof Rob de Loe U Waterloo

Vater Issues and Needs

ies to date, who was invited to the workshop, reminder of workshop
e asked to accomplish Andrew Szojka CWRA President

Assessment of Collaborative Policy Development in Canada

David Marshall Fraser Basin Council

velopment – Pros and Cons

All participants

DRAFT Water Connections Feasibility Study – v.2 May 15, 2006

DRAFT

Water Connectio

A Feasibility Study Towards Understandi
Improving Access to Water Information in

Centre for Sustainable Watersheds
11 St. Mary Street, Portland Ontario K0C
www.watersheds.ca

May 2006

This project was funded through Infras
Research, Knowledge and Outre

Canada

the 21st Century

Policy

Prepared for the
Walter and Duncan Gordon Foundation

Rob de Loë
Jeji Varghese
Cecilia Ferreyra
Reid Kreutzwiser

ater Management Group
versity of Guelph

ber 1, 2007

INLAND WATERS BRAN
DEPARTMENT OF THE ENVIRONMENT
AWA, CANADA, 1972

Conseil des académies canadiennes

file:C:\Temp\fedstrat.htm 6/17/98

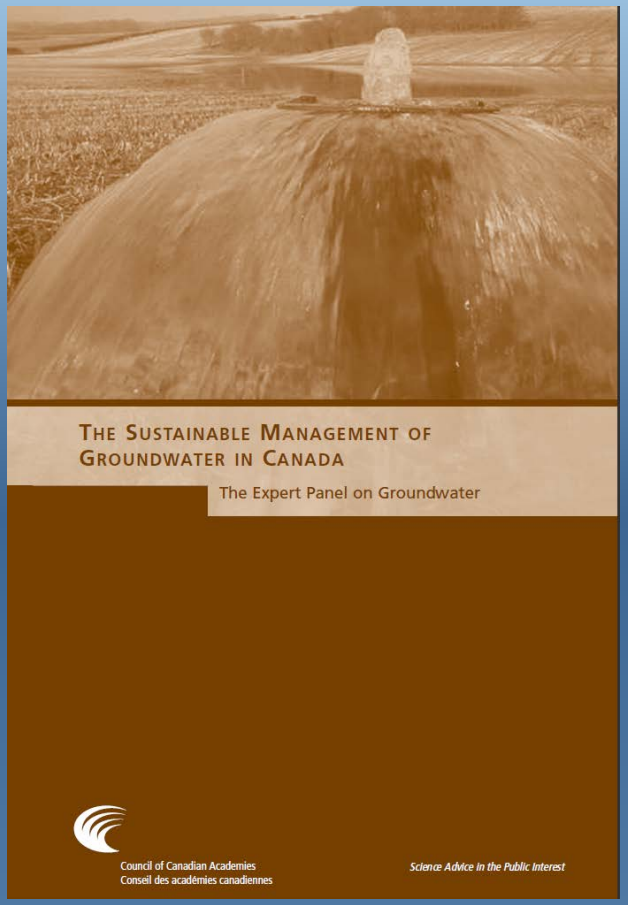
Just Do It……

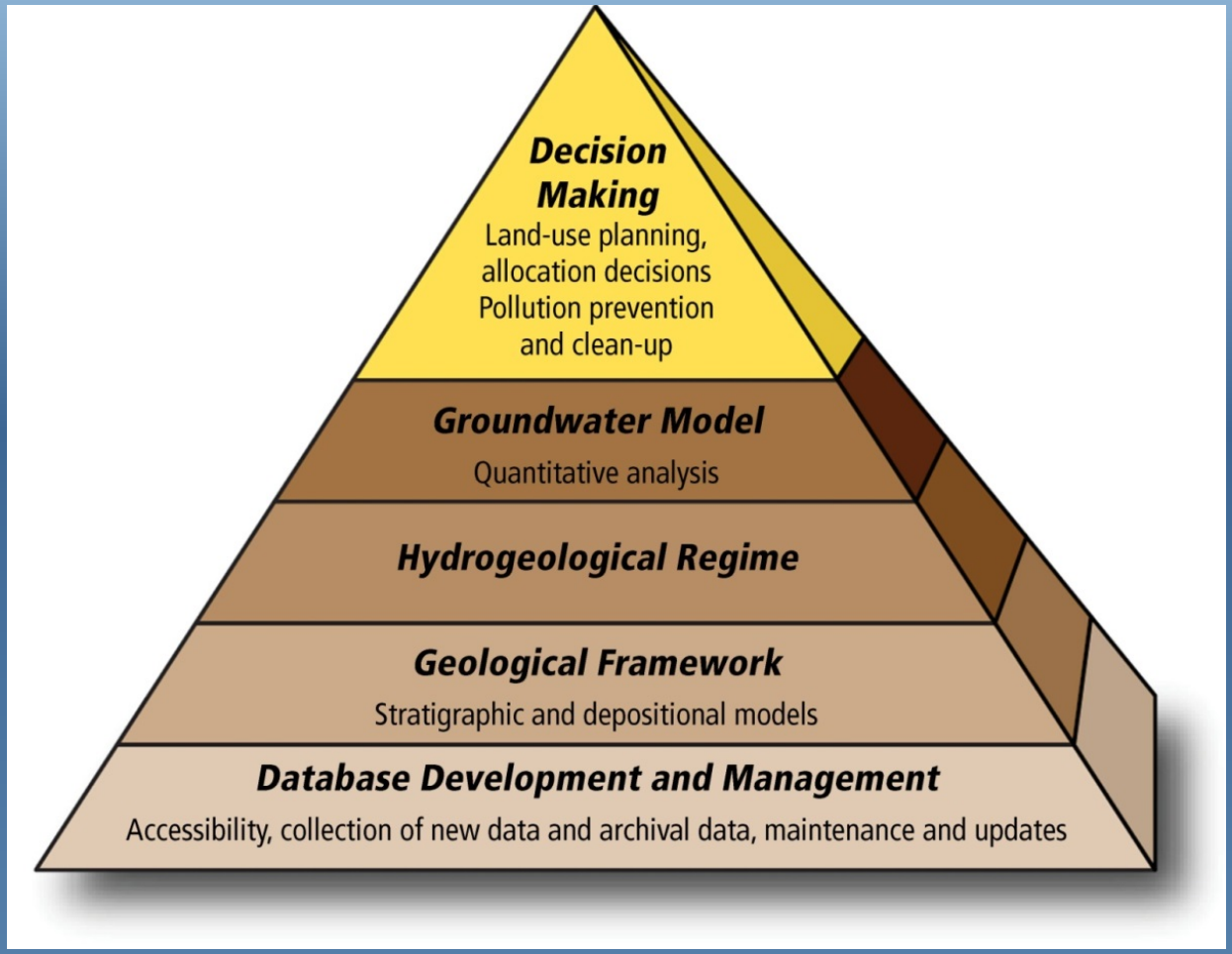
- Too much hand-wringing, thinking about obstacles, problems, etc.

  Not enough action

- ORMGP - one step at a time – “opportunistic vs systematic”
- Looo…….ooong term vision - >100yrs

CCA – Sustainable GW Management





Does This Make Sense?

- Lots of environmental work done/data collected that is never used again
- Consultant reports thrown away after very limited shelf life
- Data never managed in a consistent manner and in central place
- Access to data is very difficult/impossible
- Data not used by Province to make decisions/interpretations

Groundwater Infrastructure - Summary

(Millions $)

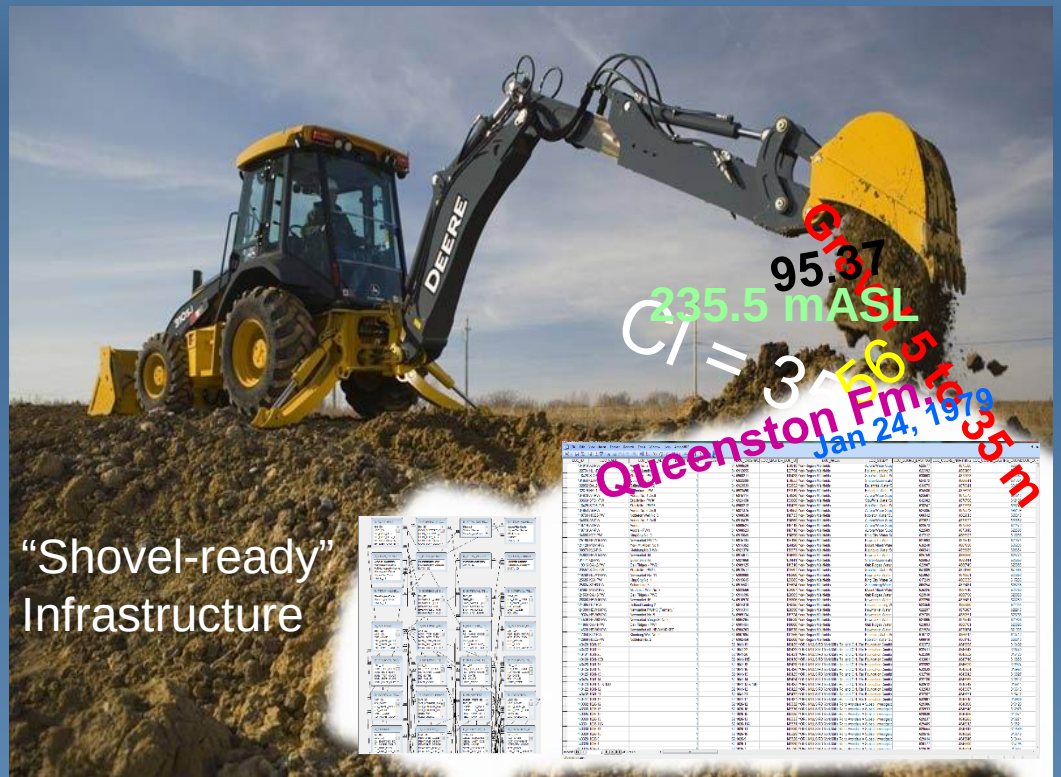
- Program Cost (2001 – 2020) $ 14.0
- BHs/Wells (550K/1.3 million m) $ 162.5
  - Assume $40/ft drilling)
- Water Quality (116K samples) $ 32.6
  - Assume $280/sample)
- Monitoring WLs (>100 million) $ 18.1
  - Assume quarterly 1-day site visits for every 15 monitoring wells
- Documents/Reports (~12K) $ 595.3
  - Assume $50,000/Report
- Numerical Models (~70 Models) $ 24.0

EST. ORMGP INFRASTRUCTURE VALUE

$833 MILLION

(Ground)Water Knowledge/Insight….

PRICELESS……

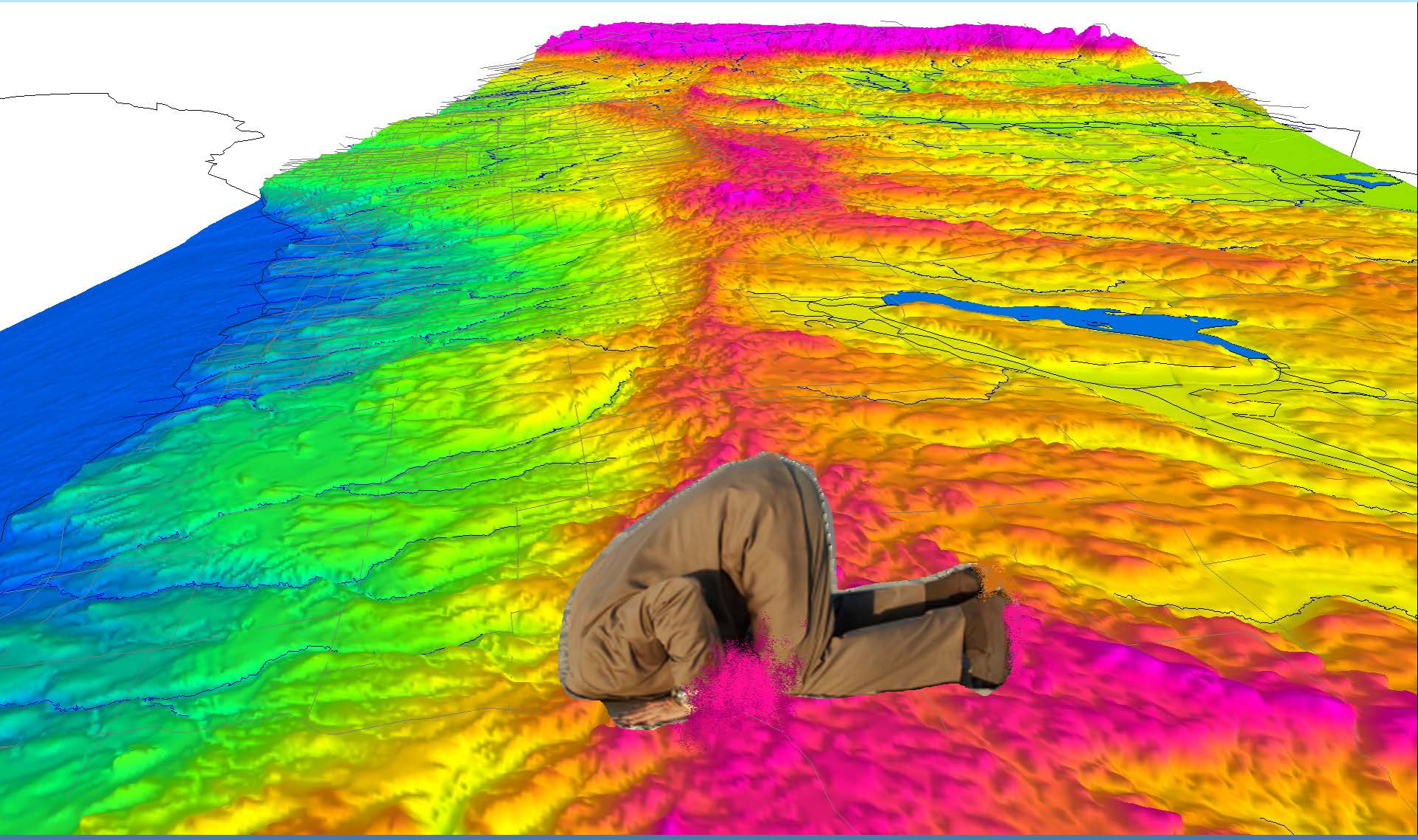


Significant ORMGP Elements

- Focus on data and data management – standardized, well designed schema allows for incorporation of wide variety of datasets
- Collective data management – links to many partner agencies (15 Local/3 Provincial/1 Federal/>20 consulting firms) – develop a two-way partnership for data management / interpretations – continual improvement
- Use the data – QA/QC largely tied to data use
- Provide access to interpretations of data (interpolated maps/graphs/statistics) – in addition to raw data
- Knowledge Management – pass down knowledge to future practitioners;

Significant ORMGP Elements

- Interactive mapping tools - makes data/interpretations readily accessible
- 'Living models' – continue to build on numerical modelling – provide model access to all consultants
- Holistic approach to water (Precip/GW/ Streamflow)
- Communication – facilitates ongoing conversations/interactions for staff from different agencies – learn from others;
- Long term thinking – not driven by short term political agendas



OK – So What's In There?