

Agriculture's water future – a shared responsibility

**Mike Nemeth
M.Sc., P.Ag., EP**

May 22, 2019

Agriculture's Water Futures (AWF) overview Phase 1 overview

Work started in 2015 funded by Nutrien, executed by WaterSMART

- Goal was to inform a trading system to **provide water stewardship incentives in a way that is accommodating and relevant for each producer**
- Examined the need for **watershed action** in the agricultural community
- Envisioned a system that **builds in incentives for producers**



Agrium

**Water stewardship and incentives:
report of programs and project options**

Submitted by:
P. Kim Sturgess, C.M, P.Eng., FCAE, ICD.D
CEO
WaterSMART Solutions Ltd.
#200, 3512 – 33 Street NW
Calgary, Alberta T2L 2A6
Kim.Sturgess@albertawatersmart.com

Submitted to:
Doug Beever
Senior Director, Sustainability and
Stakeholder Relations
13131 Lake Fraser Drive SE
Calgary, Alberta T2J 7E8
Doug.Beever@agrium.com

Submitted on:
June 02 2016

Background: Phase 2 overview

Focus on crop-based agri-food supply chain, defined as input supplier, crop producer, food processor, distributor, and seller, in the South Saskatchewan River Basin (SSRB).

Project objectives:

1. Contribute to the positioning of Alberta's Agri-food sector as a global leader in water stewardship
2. Increase awareness around ability of others in the watershed to **invest in water stewardship across the agri-food supply chain**



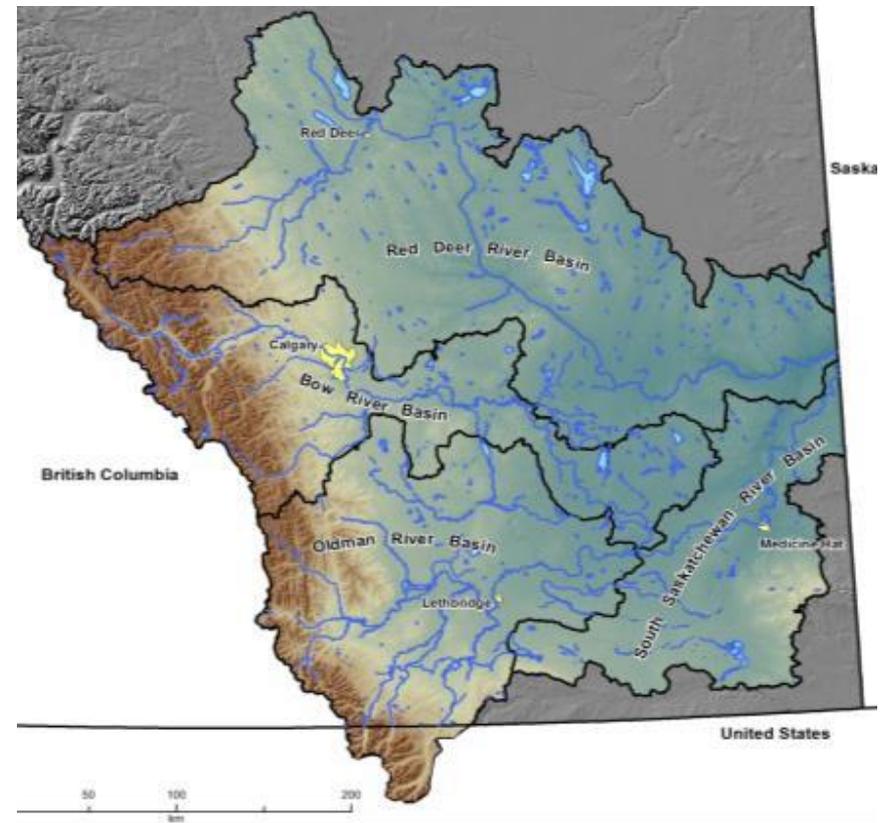
Involved groups and individuals with diverse interests in the watershed that all have the potential to contribute solutions to shared water challenges, and enjoy shared benefits.

AWF: starting in the South Saskatchewan River Basin (SSRB)

Focus on the SSRB to cover the broad spectrum of water stewardship issues and opportunities in the agri-food supply chain.

SSRB is a microcosm of global primary production systems

- Dryland and irrigated crop production
- Commodity and specialty crops
- Water quality concerns
- Water scarce region
- Good economic growth opportunity.



The project work presented here is scalable and transferable to livestock and other agricultural activities, as well as other sectors for the rest of Alberta, or anywhere else in the world.

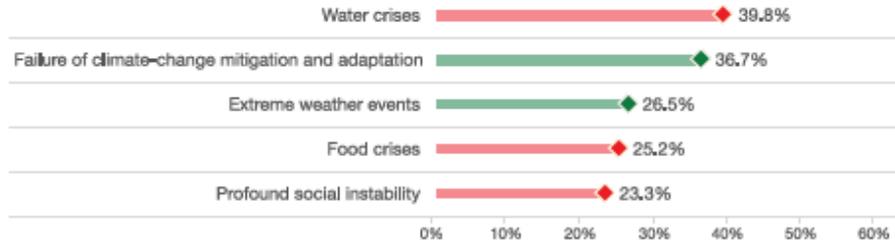
Relevant to current issues and work in the global agri-food supply chain

Agriculture - 70% of freshwater withdrawal globally, and higher consumptive use when evapotranspiration is considered.

– The World Bank

Top 5 Global Risks in the next 10 years – World Economic Forum

For the next 10 years



Source: Global Risks Perception Survey 2015, World Economic Forum.

Agriculture due to its high share of water use can expect greater pressure for reallocation of water resources.

The Ag Water Challenge- commits companies to:

- Reduce the water impacts associated with key agricultural commodities.
- Implement locally-relevant strategies to mitigate risk in agricultural areas where water is scarce.
- Support and incentivize farmers and other agricultural producers to strengthen water stewardship practices.



Increasing competition for water resources between water users as municipal, industrial and agricultural water demands grow to support economic growth.

What is water stewardship?

The use and safeguarding of fresh water that is:

- socially equitable
- environmentally sustainable, and
- economically beneficial

Considers:

- water governance,
- water balance,
- water quality, and
- Important Water-Related Areas (areas that provide environmental, social, cultural, or economic value (e.g. wetlands))
- Safe water, sanitation, and hygiene for all (WASH)

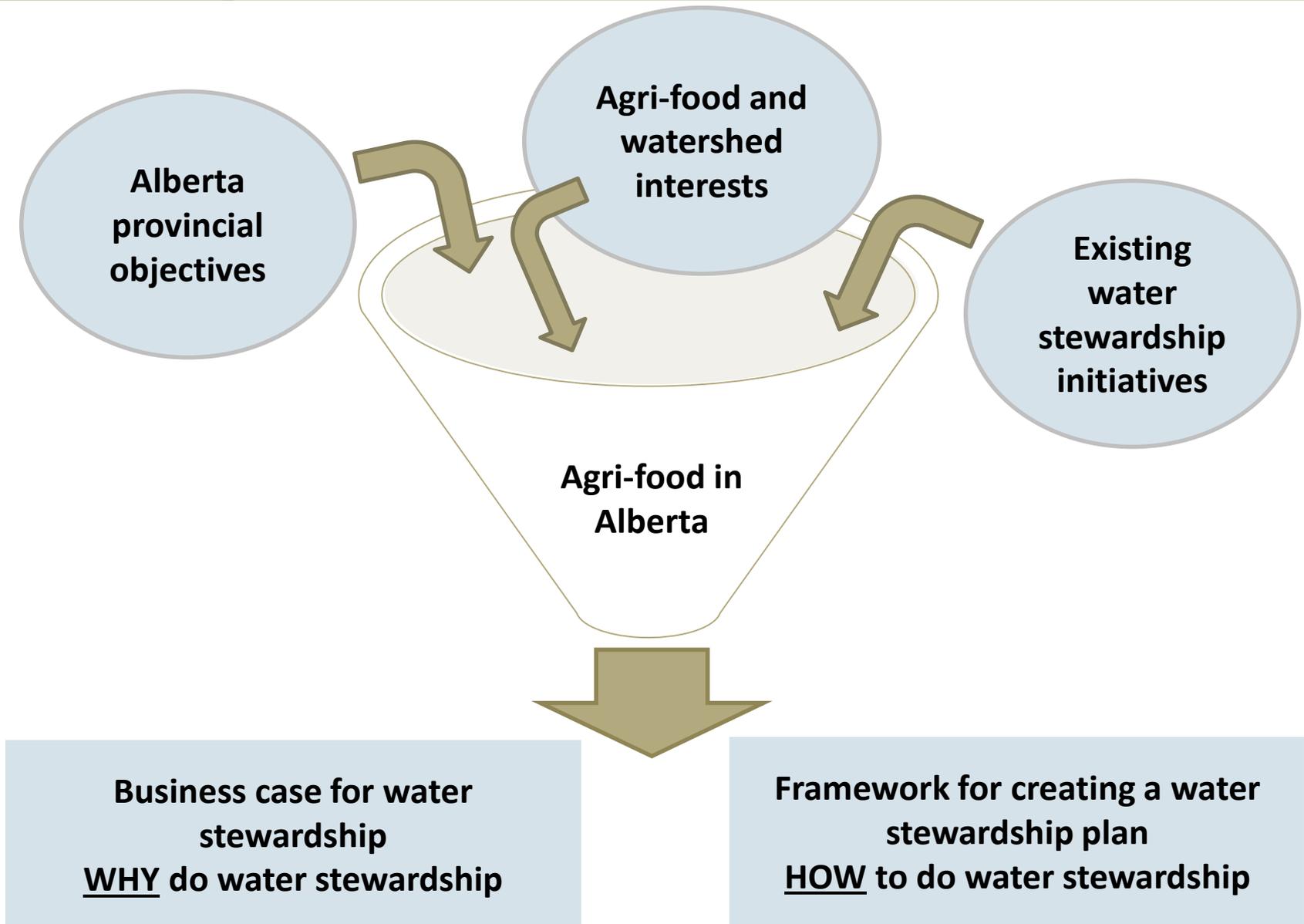


Requires understanding how you fit into the watershed as a whole (“beyond the fence-line”)

Achieved through a stakeholder-inclusive process that involves **both site- and watershed-based actions**

Water stewardship envelopes water management, which is the planning, developing, distributing and use of water for operational needs, typically within the operation’s footprint.

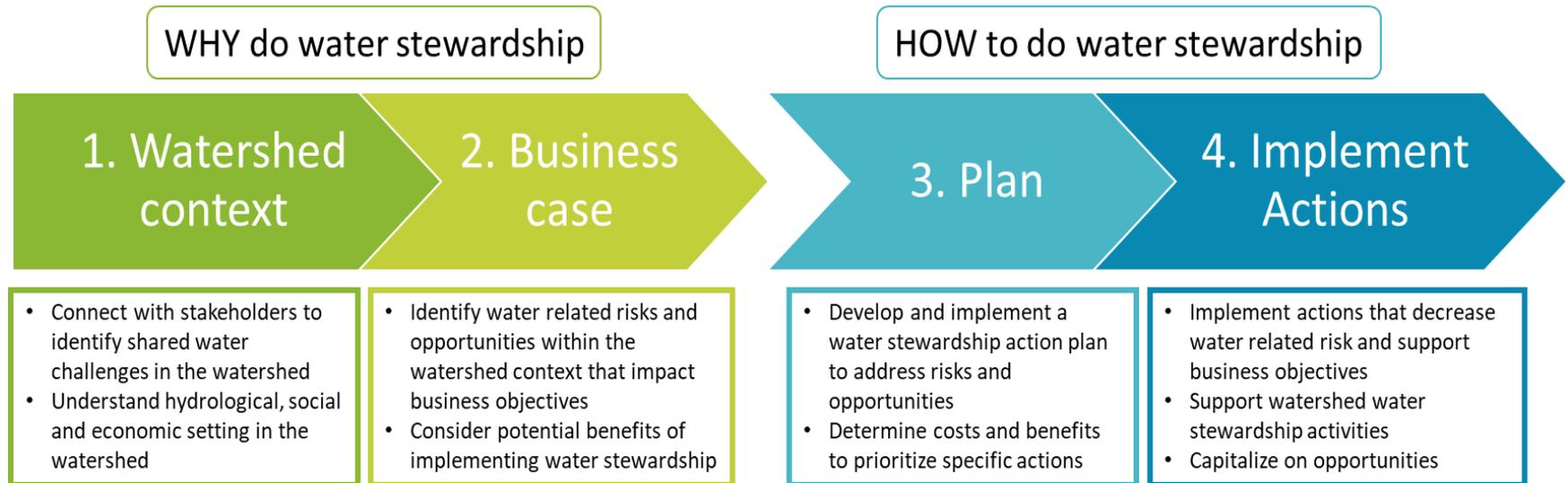
Translating existing stewardship efforts into actions for agri-food in Alberta...and beyond



Process to advance water stewardship in the agri-food supply chain

Four key steps in a process to address WHY one would pursue water stewardship and HOW to do so. Steps 1-3 were the focus of this work, while Step 4 is the focus of the next phase of work

- Step 1. Set the watershed context
- Step 2. Build a business case for water stewardship
- Step 3. Develop a water stewardship plan
- Step 4. Implement the water stewardship plan



What is the business case for water stewardship?

Participants were asked, *“What needs to be shown to prove the business case for investing resources and effort in water stewardship?”*

- We heard:
 - There needs to be **clear financial incentive**
 - **One or more water risks need to be mitigated** (social licence, public assurance, financial risk due to water emergencies, etc.)
 - **Implementation** needs to be **accessible and convenient**
 - A credible system or body needs to be in place which raises **awareness and recognition of efforts on water stewardship initiatives**
 - **Roles and responsibilities** of the different players need to be **clearly identified**

A business case is built on the principle that **water risks are inherent to all operations** that use water, and **addressing those risks brings value**.

The business case explains “WHY” you do pursue water stewardship.

Risk categories



OPERATIONAL



FINANCIAL



REGULATORY



REPUTATIONAL

The Alliance for Water Stewardship (AWS) International Water Stewardship Standard



A global membership-based collaboration of businesses, NGOs and the public sector, working with credible national and regional partners

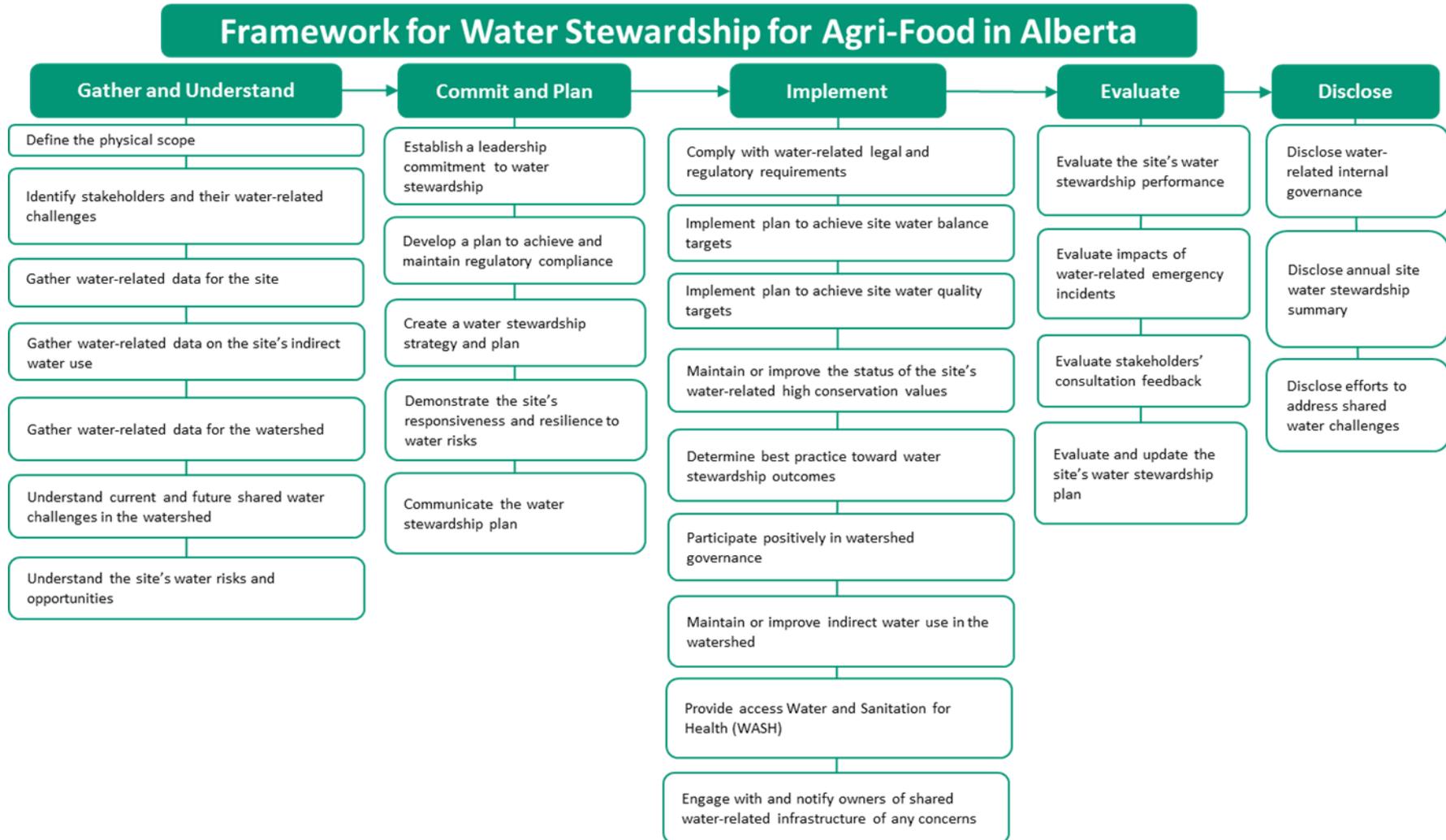
- An **international certification standard** for water stewardship
- Used as a **guide for how to do water stewardship**
- Is scalable to the size of the company, plant or operation, and **complimentary to existing initiatives** in water sustainability, management and stewardship

Logical framework to adapt and use for agri-food water stewardship:

- Framework is **recognized globally**
- Creates possible market advantage and access
- **Can be used to work toward third party certification if desired**
- A verifiable, transparent framework for water stewardship efforts - no global standard existed
- Highly adaptable for **any type of water user, in any sector, anywhere in the world**



Framework to develop a water stewardship plan



Key learnings

Face-to-face communication is valuable.

- Meeting face-to-face to share knowledge and build understanding of water issues and opportunities across sectors is extremely important.

Cross-sectoral conversations are important.

- Knowledge holders in the agri-food supply chain may not be connected, and this siloed effect can limit opportunities that might be generated through cross-sectoral conversations.

Water stewardship is a shared responsibility.

- Water stewardship and sustained growth of the agriculture industry cannot rely solely on one member of the value chain to act to benefit the entire watershed. Implementers in the agriculture sector are crucial, but they cannot and should not bear the entire cost of stewardship.

Common dialogue makes for positive change.

- Risk can be mitigated in part by establishing a common dialogue among stakeholders in a watershed. Face-to-face discussions promote development of cross-sectoral solutions.

There is often a disconnect between corporate goals and local needs.

- Corporations often have company-wide sustainability goals that underestimate the value of implementing or supporting work at the local level, because the value and outcomes from local efforts might be small from an overall corporate perspective.

Phase 3: The opportunity

Pilot projects to implement the process developed in Phase 2, and evaluate the outcomes to be able to verify a scalable global model to drive uptake of water stewardship in the agri-food supply chain

- Proposed pilot projects include:
 1. Rotational crops in the SSRB
 2. Livestock in the SSRB
 3. Crop-based pilot in another jurisdiction
- Locations and partners are still being assessed
- Outcomes can be applied to any basin globally.



Pilots can be scaled up or down in any jurisdiction to provide support in building resiliency, reducing risk, and creating value in the supply chain for companies, individuals, and the watershed.

Water: the key to our sustainable future

Funding for Phase 2 was provided by Nutrien, with matching funds contributed from the Alberta Innovates Water Innovation Program

Nutrien[™]
Feeding the Future[™]

 ALBERTA INNOVATES



waterSMART !
Water Management Solutions

For more information:

WaterSMART Solutions Ltd.
www.watersmartsolutions.ca

Email:

michael.nemeth@watersmartsolutions.ca