ALBERTA waterSMART
Water Management Solutions

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Agricultural Water Futures Project

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Alberta Innovates
Water Innovation Program Forum

The global case for investing in stewardship

Why invest in water stewardship?

- **Advance several UN SDGs**, ranging from poverty reduction to economic growth to clean water
- Ensure the **agri-food sector can maximize its contribution to achieving global sustainability**
- Advance goals of **food security, economic productivity, energy conservation, GHG emission reduction** and improving **watershed health**
- Help fulfill the need for 70% **increase to food production** by 2050 to feed 9 billion people
- Global **consumers** are paying more for products from companies committed to positive social and environmental impact
- Farmers and agri-food processors are becoming aware of the **benefits to farm productivity and product marketability of water stewardship practices and strategies**

Global production pressures and market shifts present an opportunity for Alberta to position itself as an attractive market and global leader in agricultural water stewardship

What is water stewardship?

Water Stewardship – the use of fresh water that is socially equitable, environmentally sustainable, and economically beneficial, achieved through a stakeholder-inclusive process that involves site- and watershed-based actions.

Water for People

Water for Food

Water for Industry

Water for the Environment

ALLIANCE FOR
WATER STEWARDSHIP

Project objectives

Define and advance water stewardship for agriculture in Alberta

- Position Alberta's agri-food sector as a global leader in water stewardship, enabling it to realize the economic benefits of access to new markets and to support the diversification of Alberta's economy
- Create support for the agriculture community and it's efforts on water stewardship as society values clean, abundant water, and should be supportive

Develop the business case for water stewardship in the agri-food supply chain

- Advance the uptake of water stewardship actions across the entire agri-food supply chain in Alberta to improve the health of watersheds and water resources across the province and beyond
- Uncover and communicate the value of water stewardship to create a pull so the whole supply chain feels the urgency of this

Create a common dialog between agriculture and watershed actors

- Manage regulatory, litigation, and reputational risk to the agri-food sector by creating a common dialogue and understanding of water stewardship and water resource awareness

Workplan

Project Start Date: November 1, 2017
Project Completion Date: March 31, 2019

Task 1: Project initiation and preliminary engagement

Task 2: Conceptual mapping of water stewardship in the agri-food supply chain

Task 3: Identification of water stewardship business case information needed by players in the agri-food sector

Task 4: Final visualizations and documentation of water stewardship in Alberta's agri-food sector

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

This work is designed to then be scalable to the rest of Alberta, or anywhere else in the world.

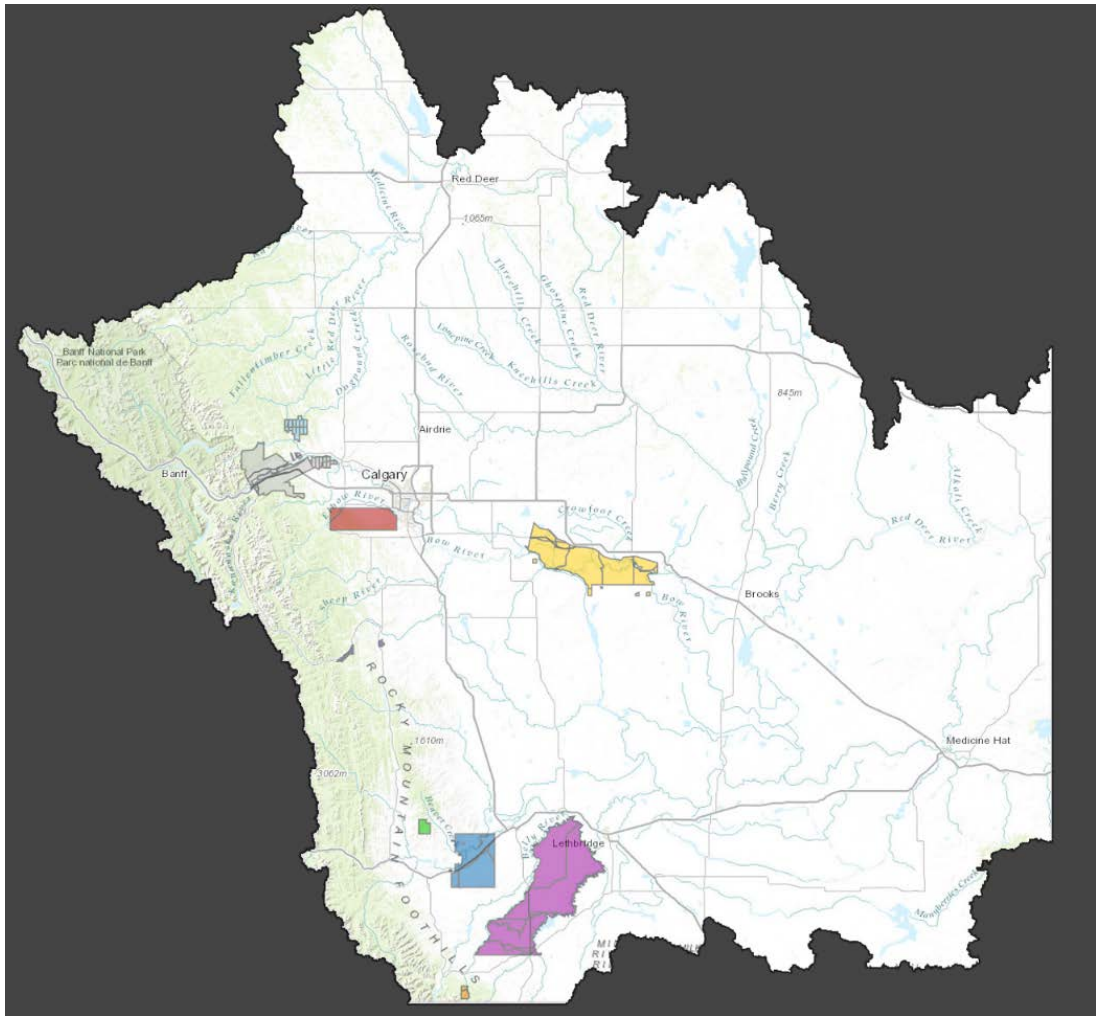
Project scope

Focus on agricultural supply chain in the SSRB, defined as **supplier, producer, processor**, distributor, and seller.

Current and future (25 years) impact on water and agricultural, including climate change

Current focus on the top (in terms of area) primary production systems

- irrigated and dryland cereal, forage, oil seeds and speciality crops in the SSRB.
- Livestock and manure management are not included in this phase of work.



Work completed

- First phase of work completed in early 2017 with funding and collaboration from Nutrien
  - Deliverables 1: a compendium of best practices in agricultural water stewardship
    - Corporate guidance docs.
    - Field scale best management practices
    - Collaboration tools
  - Deliverable 2: Model for “water credit” program
  - Current project builds this work with funding from Nutrien and Alberta Innovates
  - Report for this work is publicly available

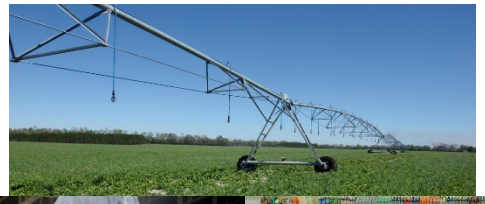
- Current scope of work
  - Further defining scope
  - Internal kickoff meeting, Steering Committee formation and meeting
  - Drafting of stakeholder list
  - Preliminary version on what water stewardship looks like in Alberta
  - Research to understand and confirm water stewardship work and opportunities in Alberta, and international efforts and examples
  - Develop interview guide to interviews targeted groups to help inform the examples of supply chain examples before the first workshop
  - Draft agenda for both workshops

Defining sector specific water stewardship in Alberta

Generic AWS International Standard

VS.

AWS Standard for agriculture in Alberta



What is the AWS Standard?

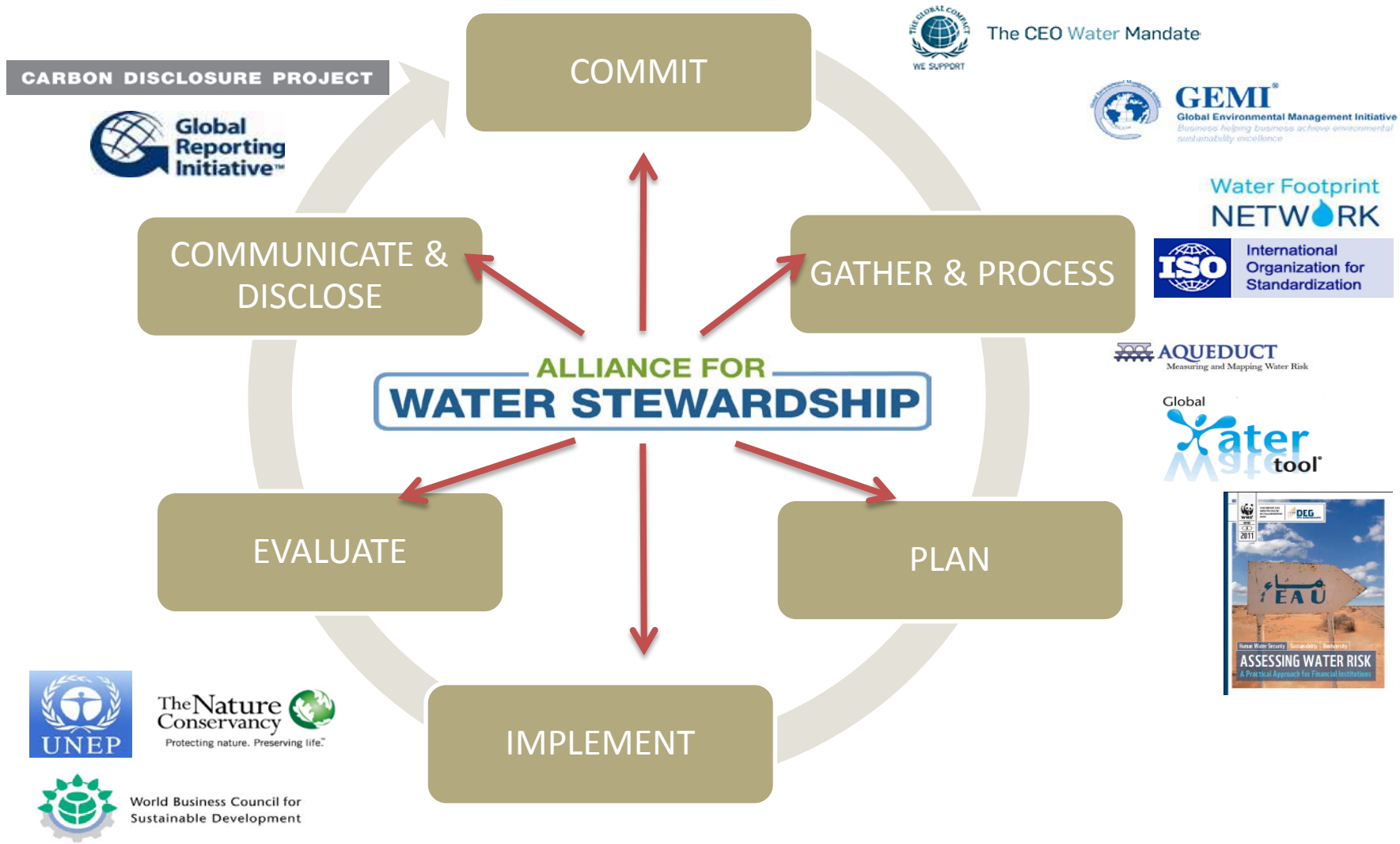
AWS Standard is a **globally-applicable framework** for water users to understand their water use and impacts, and to **work collaboratively and transparently for sustainable water management** within a catchment context.

The Standard is intended to **drive social, environmental and economic benefits at the scale of a catchment**.

Engages water-users in understanding and addressing shared catchment water challenges as well as site water risks and opportunities. The standard encourages collaborative approaches that involve business and industry, government and community as well as civic society organisations.

http://a4ws.org/

Innovative international Standard well placed with other water programs

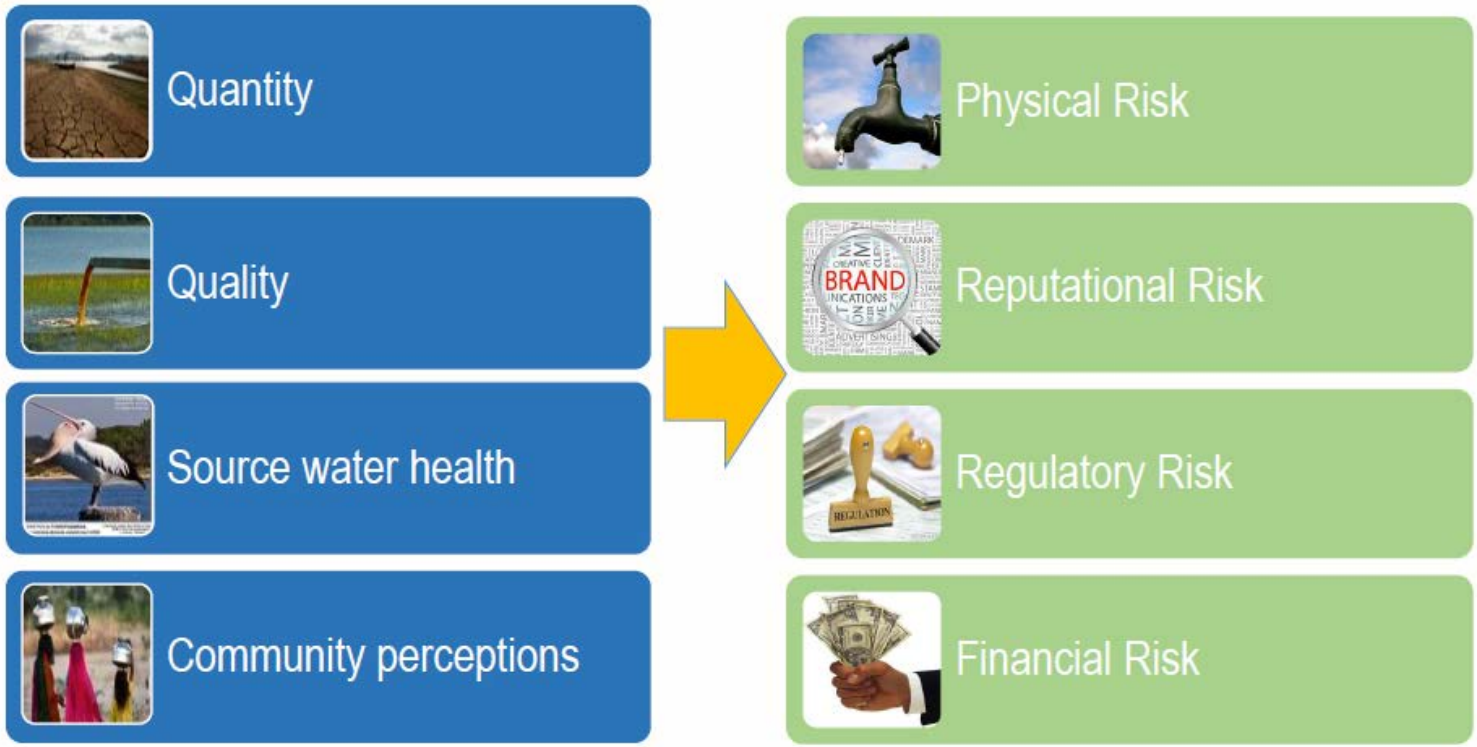


Source: Alliance for Water Stewardship

Why an interest in AWS?

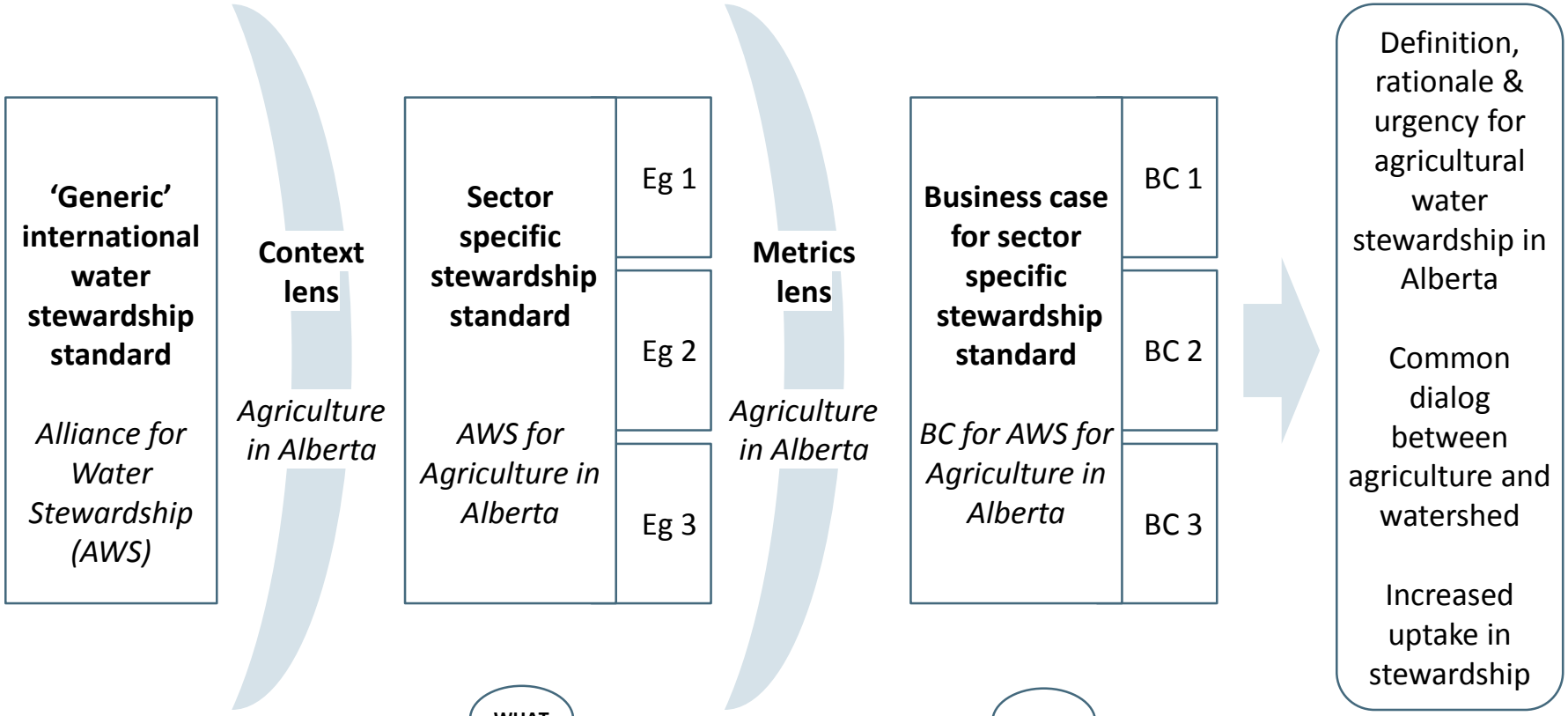
Implementing the AWS Standard helps sites and organizations to **minimize negative impacts and maximize positive impacts** for everyone through:

- Mitigate their water risks
- Address their shared water challenges in the catchment
- Ensure that responsible water stewardship actions are in place



Source: Alliance for Water Stewardship

Translating global stewardship standard into proven, sector specific actions



WHAT

1. Research, interviews & workshop

- Provisions in generic standard
- Provincial objectives
- Agricultural & watershed sector interests
- What is already available or being done

2. Research, interviews & workshop

- Metrics meaningful and available to agriculture in Alberta
- Metrics meaningful and available to watersheds in Alberta
- Metrics used in other jurisdictions

WHY

3. Document & communicate:

- Definition of agricultural water stewardship in Alberta
- Business case from agricultural and watershed perspectives
- Communication toolkit

Creating a water stewardship standard for agriculture in Alberta

Original AWS Standard criteria	Will this criterion be included in our version of AWS?	What changes, if any, are needed?	AWS for agriculture in Alberta
1.1 Establish a leadership commitment on water stewardship	✓		Establish a leadership commitment on water stewardship
1.2 Develop a water stewardship policy	✓		Develop a water stewardship policy
1.3 Further the Alliance for Water Stewardship	✗		
2.4 Gather water-related data for the site	✓	The supply chain may consist of multiple sites.	Gather water related data for the sector's sites

DRAFT MAY 2018

Agricultural Water Stewardship in Alberta*

Commit

- 1.1 Establish a leadership commitment on water stewardship
- 1.2 Develop a water stewardship policy
- 1.4 Commit to other initiatives that advance effective water stewardship
- 1.6 Prioritize communities' rights to water

Gather

- 2.1 Define the physical scope
- 2.2 Identify stakeholders, their water-related challenges, and the sector's sites' sphere of influence
- 2.3 Gather water-related data for the catchment
- 2.4 Gather water related data for the sector's sites
- 2.5 Improve sector's sites' understanding of indirect water use
- 2.6 Understand shared water-related challenges in the catchment
- 2.7 Understand and prioritize the sector's sites' water risks and opportunities
- 2.8 Support and undertake joint water-related data collection
- 2.10 Review a formal study on future water resource scenarios

Plan

- 3.1 Develop a system that promotes and evaluates water-related legal compliance stewardship
- 3.2 Create a sector water stewardship strategy and plan
- 3.4 Demonstrate responsiveness and resilience to water-related risks in the site's incident response plan
- 3.6 Develop a formal plan for climate change adaptation

Implement

- 4.1 Comply with water-related legal and regulatory requirements
- 4.2 Maintain or improve site water balance
- 4.3 Maintain or improve site water quality
- 4.5 Participate positively in catchment governance
- 4.6 Maintain or improve indirect water use within the catchment
- 4.8 Notify the owners of shared water-related infrastructure of any concerns
- 4.12 Achieve best practice results and strengthen capacity in water governance
- 4.15 Engage in collective action to address shared water challenges

Evaluate

- 5.1 Evaluate the site's water stewardship performance, risks, and benefits in the catchment context
- 5.2 Evaluate water-related emergency incidents and extreme events
- 5.3 Consult stakeholders on water-related performance
- 5.4 Update water stewardship and incident response plans

Disclose

- 6.1 Disclose water-related internal governance
- 6.2 Disclose annual site water stewardship performance
- 6.3 Disclose efforts to address shared water challenges
- 6.4 Drive transparency in water-related compliance
- 6.5 Increase awareness of water issues within the site

Agricultural Supply Chain

- Farm input suppliers
- Farm input retailers
- Producers/ Farmers
- Sales cooperatives
- Processors
- Logistics and distribution
- Public retailers
- Public consumers
- NGOs
- Governments
- Industry associations
- Researchers

Watershed Stakeholders

- Governments
- Water governance groups (WPACs)
- NGOs
- Water users
- Researchers
- Public

* Stewardship steps are derived from the Alliance for Water Stewardship International Water Stewardship Standard.

Water stewardship- example in Africa

Launched in 2009 by The Coca-Cola Africa Foundation, with the support over 140 partners, RAIN aims to reach 6 million people with sustainable safe water access by 2020

Replenish Africa Initiative (RAIN) and the CARE international charity are championing sustainable and water efficient agriculture through the Pathways Program.

- enable farmers, particularly women, to be more livelihood- and **food-secure through Water Smart Agriculture (WaSA) technologies and practices**
- provide the **tools and knowledge needed to increase food production** in the context of climate variability and limited water resources.

At the end of 2016, RAIN had provided safe drinking water to more than 2.5 million Africans and supported water, sanitation and hygiene programs in over 2,000 communities across 37 African countries.

Water stewardship closer to home

Goal is to increase the level of understanding of the value of irrigation to Alberta and ensure appropriate stewardship and conservation of water

Alberta Irrigation PROJECTS ASSOCIATION

Thanks to irrigation

Irrigation in southern Alberta

- contributes ~20% of the province's gross agricultural production on 5% of Alberta's cultivated land.
- contributes ~$5 billion annually to the Alberta economy through direct and indirect impacts
- provides a source of safe drinking water
- supports environmentally sensitive wildlife habitats
- provides some of Alberta's best lakes and reservoirs for recreational use.

Three Demonstrative Business Cases

Supply chain member

1. Canola oil producer

2. Potato farmer

3. Wheat farmer

AWS for Agriculture in Alberta

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Water Stewardship Action Plan

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b
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Water Stewardship Action Plan

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2
3

Water Stewardship Action Plan

i
ii
iii

Cost	<	Benefit

Cost	<	Benefit

Cost	<	Benefit

Next steps

Begin engagement of stakeholders, including interviews to targeted groups to help inform the supply chain examples before the first workshop

Finalize plans for both workshops (likely held in July and September)

Continue to research BMPs and examples of water stewardship activities to support the framework developed for the agri-food supply chain in the SSRB

Advance supply chain examples and business cases

Water: the key to our sustainable future

Thank you to our funders: ALBERTA INNOVATES Nutrien™ Feeding the Future™

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