



Introduction to Alberta's Boreal Watersheds & their role in State of the Watershed Reporting

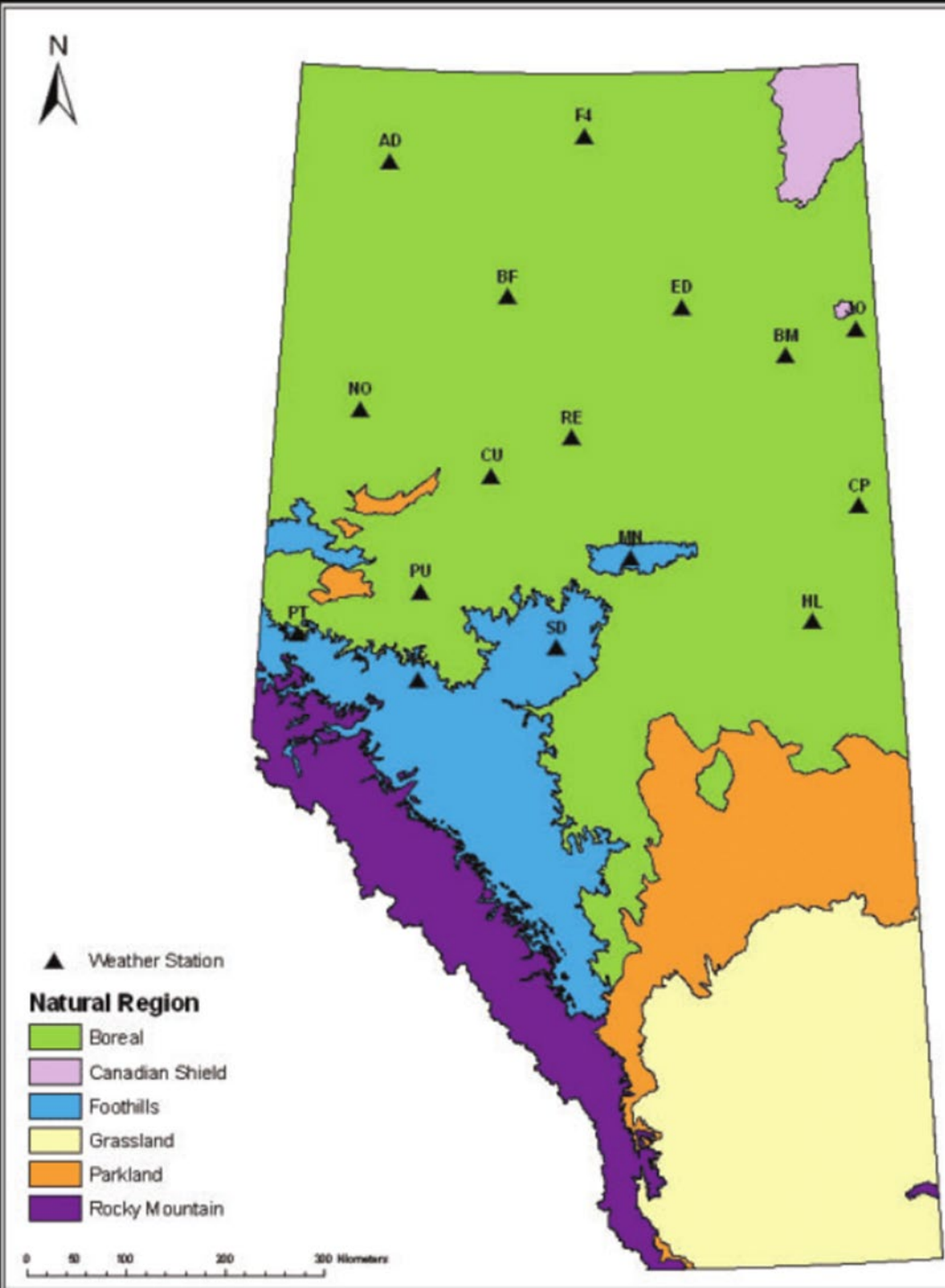
What do we mean Alberta's 'Boreal' watersheds?

- The Lesser Slave River flows into the Athabasca.
- The Athabasca River joins the Peace-Slave system.
- The Slave flows into the Mackenzie River and eventually, the Arctic Ocean.

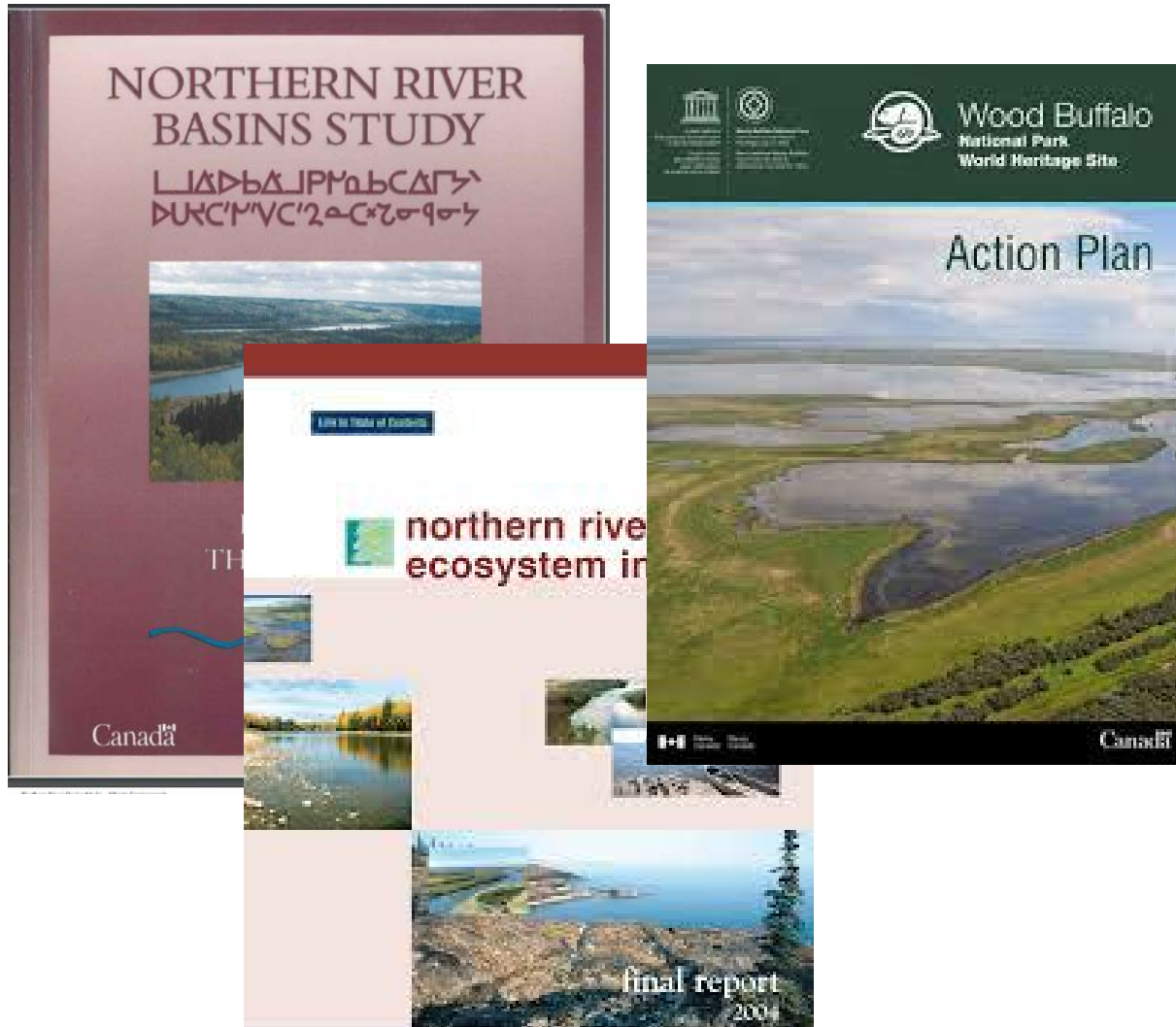




Alberta's Boreal Forest Natural Region



Boreal Water Management Initiatives:



- Late 1960s WAC Bennet Dam
- 1980s Peace-Athabasca Delta studies and weirs constructed
- 1980s weir construction on the Lesser Slave River to stabilize lake levels
- 1990s Northern River Basins Study followed by the Northern Rivers Ecosystem Initiative
- 1997 Mackenzie River Basin Transboundary Master Agreement
- 2015 AB-NWT Bilateral Agreement
- 2019 Wood Buffalo National Park Action Plan

Water for Life 2003

Drivers / Risks:

- Walkerton and North Battleford drinking water contamination events
- 2001 drought / apportionment
- Legal risk of issuing junior licenses

WFL 3 goals:

- Safe, secure drinking water supplies
- Healthy aquatic ecosystems
- Reliable quality supplies for a sustainable economy



WPAC Establishment 2005 – 2011

The mandate of WPACs is to **engage governments, stakeholders, other partnerships, and the public in watershed assessment and watershed management planning**, considering existing land and resource management planning processes and decision-making authorities.



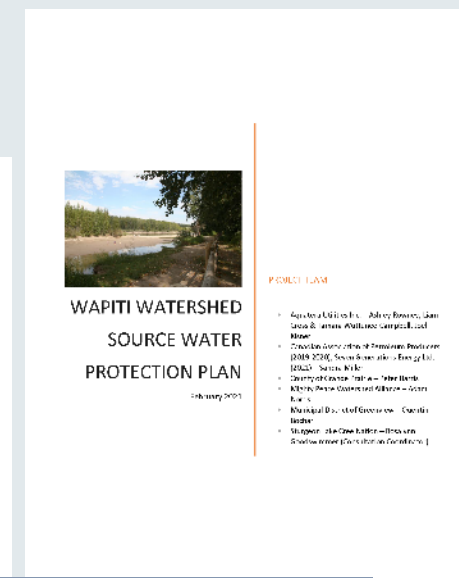
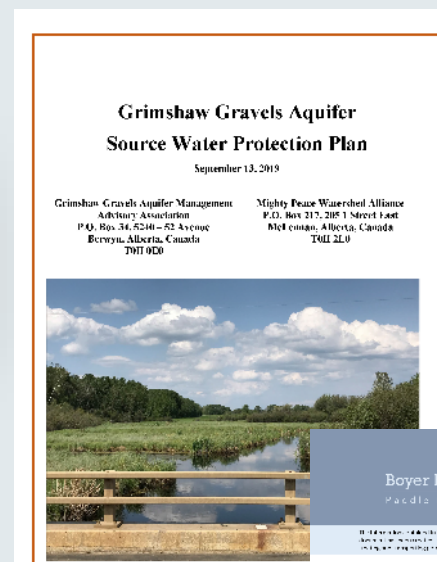


Athabasca Watershed Council

Lesser Slave Watershed Council



Mighty Peace Watershed Alliance



Rhonda Clarke-Gauthier
Executive Director



Adam Norris
Watershed Coordinator



Ashley Garnham
Project Coordinator

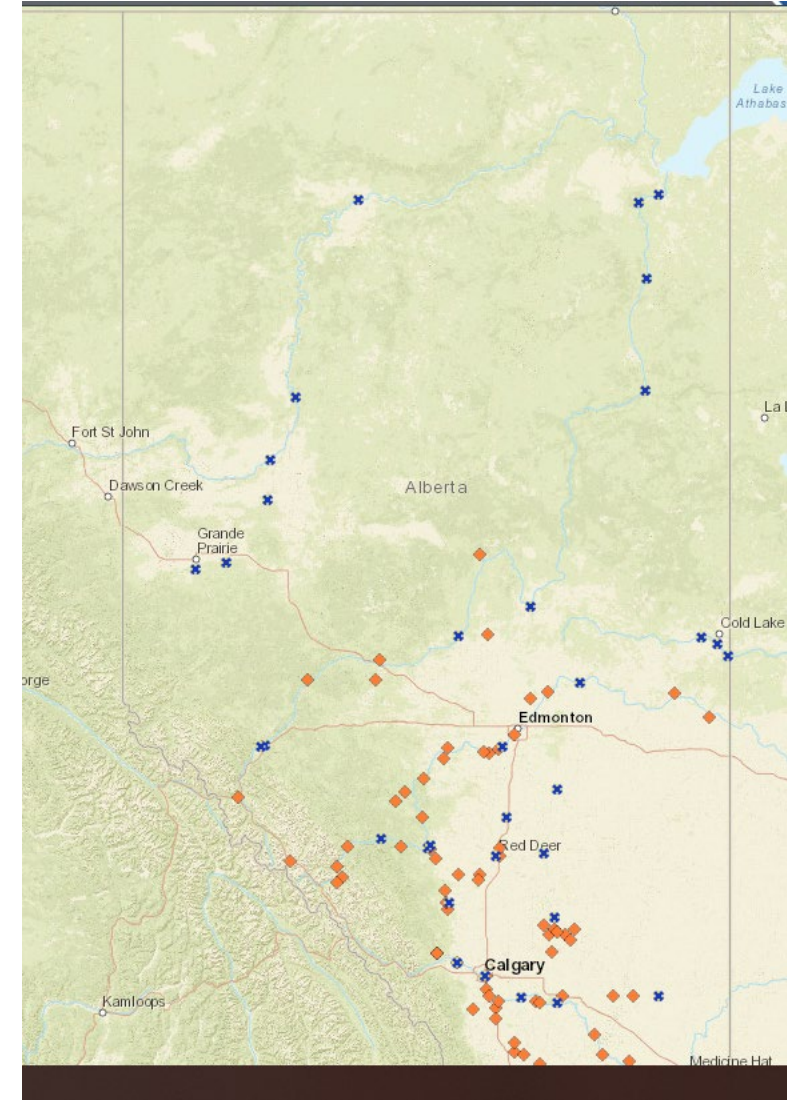


Adanna Hustler
Education & Outreach
Coordinator

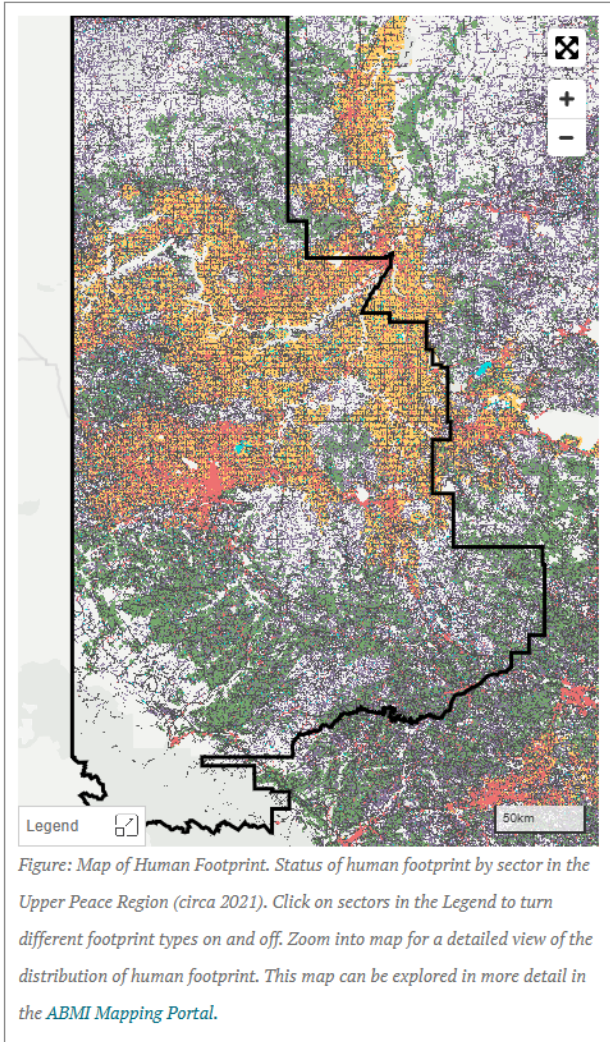


Water Management Challenges in the Boreal

- Large geographic area (60% of the province) & small population (about 400k or less than 10%)
- Rivers are mountain glacier and snowpack fed; big and sediment heavy. Guidelines for parameters like turbidity, if they exist, may not fit. Lots of background 'noise' (e.g., naturally occurring metals, sediments, etc.)
- Little baseline or benchmarking done prior to major disturbances like the WAC Bennett Dam or Oilsands
- Even today, monitoring efforts relatively sparse, sporadic, and not well coordinated given the extent of the geographic area and compared to smaller, more densely populated jurisdictions.



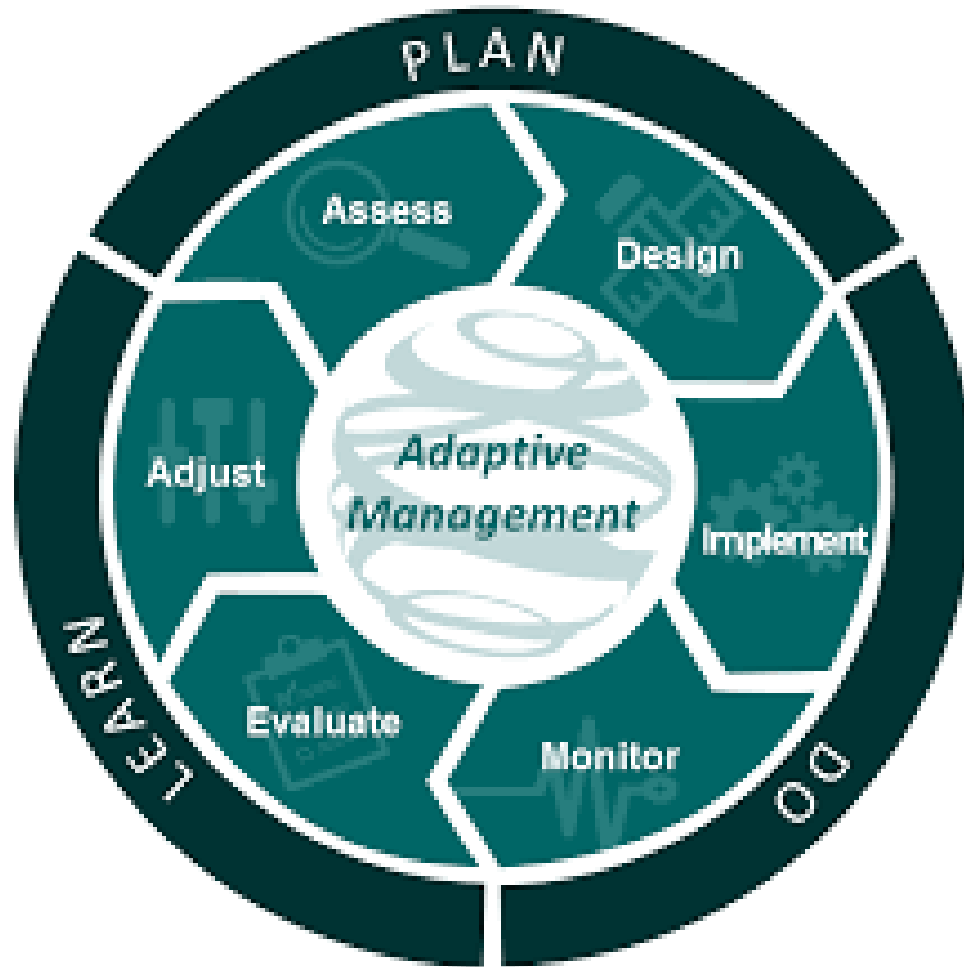
TOTAL HUMAN FOOTPRINT = 36.0 %



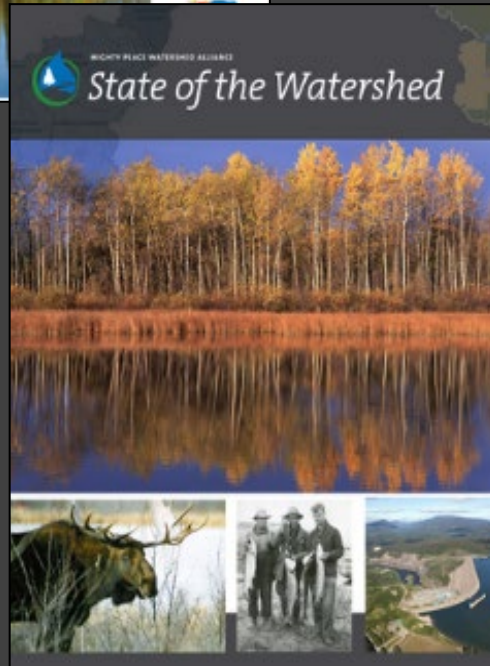
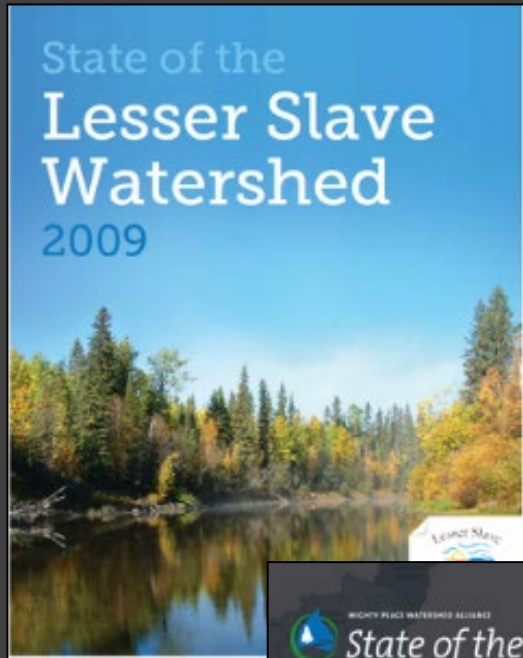
Water Management Challenges in the Boreal

- Very busy landscape (ABMI footprint 9 – 36%)
- Agriculture (crop and livestock), Forestry (lumber, pulp and paper), Oil and gas (conventional, in situ, oil sands), Mining (coal, peat, sand & gravel), Recreation, Transportation & Urban centres
- New (geothermal, Hydrogen, minerals, carbon capture, utilization and storage, small nuclear?)
- Climate change? Cumulative effects?
- With impacts to water quality, instream flow needs, biodiversity and surrounding uplands

To address these issues, WPACs



- Take an iterative and adaptive management approach
- Identify issues and fill data gaps
- ***Assess the state of the watershed (SOWs)***
- Develop and implement an integrated Watershed Management Plan
- Monitor, adjust and repeat!



State of the Watershed reports:

- Are a snapshot in time
 - Iterative and adaptive (need to be repeated every 8 years)
 - Provide a benchmark to measure progress towards goals over time
 - Rely on good, long-term, consistent data
 - Need to be scale-able to lakes, tributaries, main stem rivers
- Are an assessment watershed 'health' based on a suite of indicators.
 - Include ecological as well as social and economic metrics
 - Might include condition, pressures and management metrics

State of the Watershed Reports

Athabasca State of the Watershed Report: Phase 2

Prepared for:
Athabasca Watershed Council
P. O. Box 5066, HINTON, AB
T7V 1X3

March 31, 2012

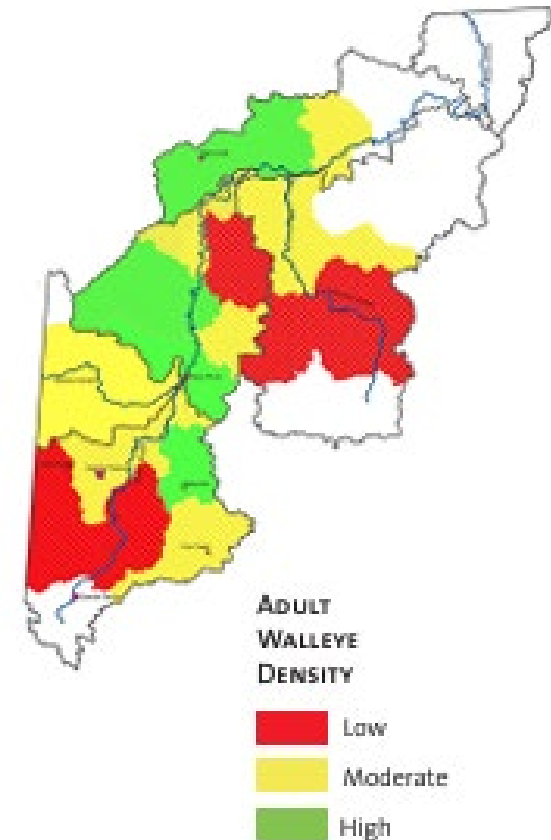


- A suite of indicators might include:
 - Surface and groundwater quality (physical, chemical and biological parameters) for a particular purpose (livestock, recreation, source)
 - Surface and groundwater quantity (flow or level)
 - Aquatic Ecosystem Health (Instream flow needs, Biodiversity, Riparian and wetland health)
 - Social/Cultural values like source drinking water quality, recreation or traditional Indigenous harvest
 - Economic measures such as water supply, water conservation, efficiency and productivity

How do we use SOW metrics?

Table 3. Indicators for which Pressure Ratings were developed based on thresholds derived from the scientific literature.

| INDICATOR | UNIT | HIGH PRESSURE | MODERATE PRESSURE | LOW PRESSURE |
|--|--|---------------|-------------------|--------------|
| Road Density | km/km ² | ≥0.5 | >0.1 to 0.5 | 0 to 0.10 |
| Seismic, Pipeline, Power Line & Railroad Density | km/km ² | >3 | >1.2 to 3 | 0 to 1.2 |
| Large Patches of Natural Vegetation | % aerial coverage of tertiary watershed with large patches | ≤30% | <30 – 65% | >65% |
| Stream Crossing Density | # of road crossings/km ² | >0.6 | >0.4 – 0.6 | ≤0.4 |
| Human Population Density | Growth rate by tertiary watershed (%) | >5.67 | >0 to 5.67 | ≤0 |
| Human Land Use - Agriculture | % aerial coverage of tertiary watershed | >60 | >25 to 60 | ≤25 |

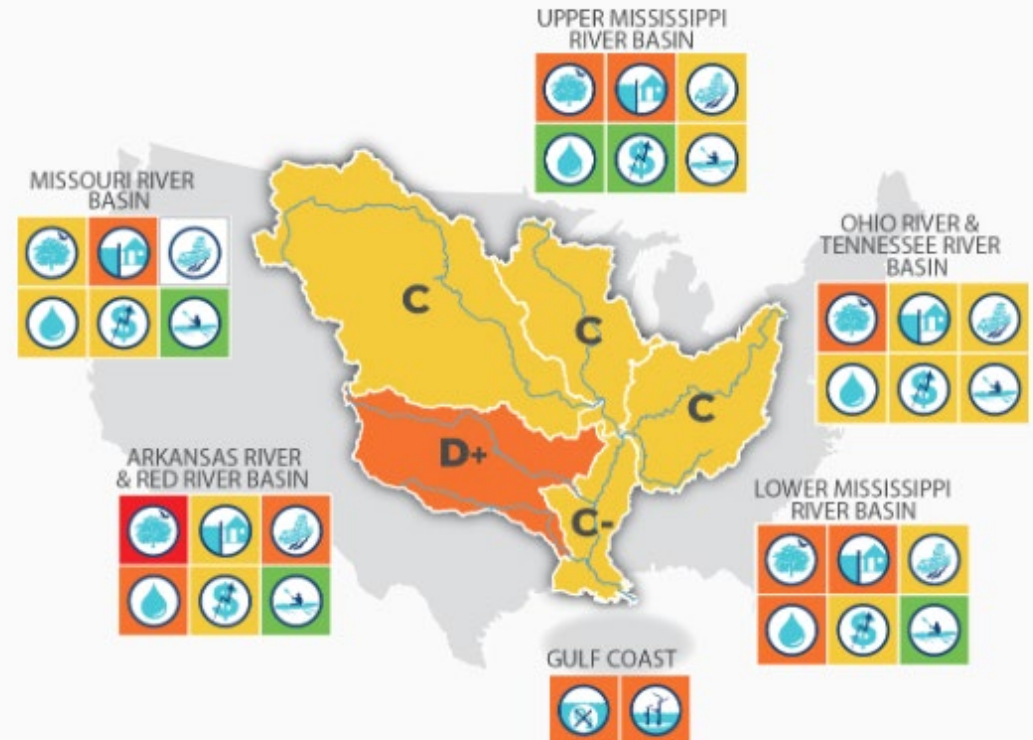


At the end of the day, SOWs ...

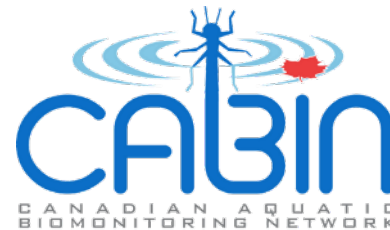
- Are a reflection of what we value & everything going on in the watershed
- Water, land and resource managers need to be involved
- Must be supported by a system of long-term data collection and sharing
- Are not one-off's! Must be repeatable.
- Can be expensive!
- Can inform a variety of water, land and resource managers, authorities and rights-holders

Explore Report Card by Basin

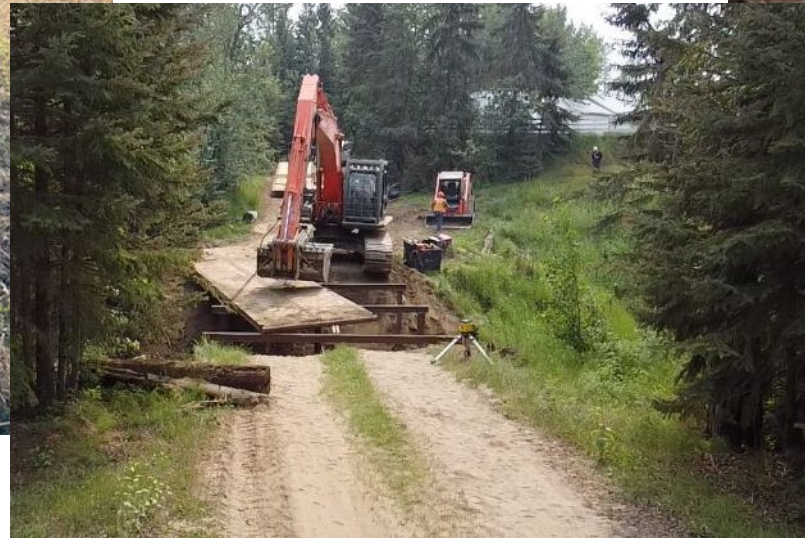
Click on the map below to explore grades for each of the five Sub-Basins.



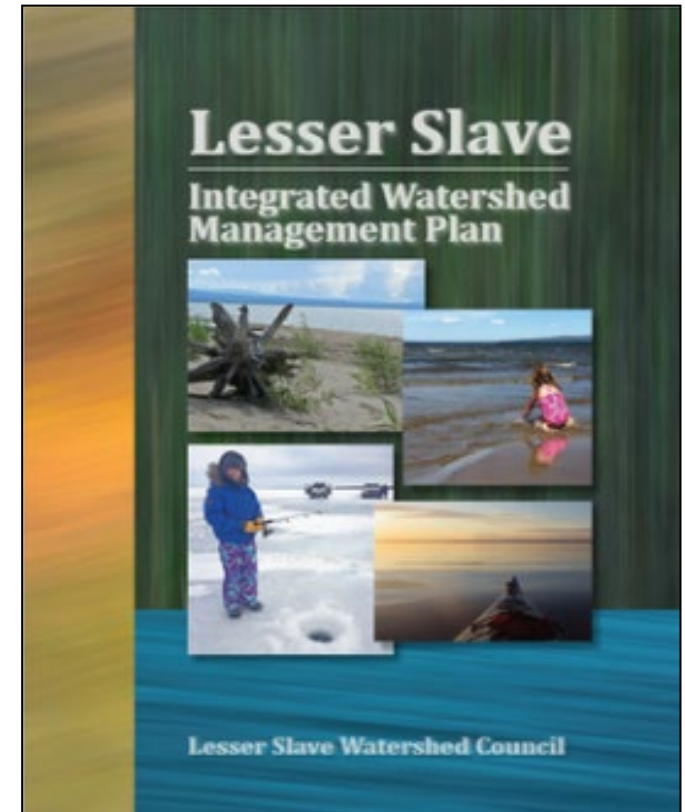
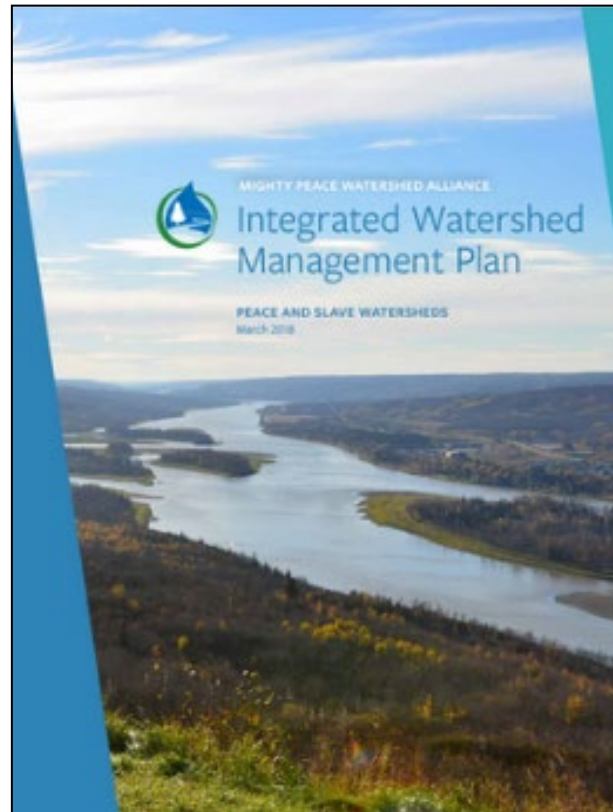
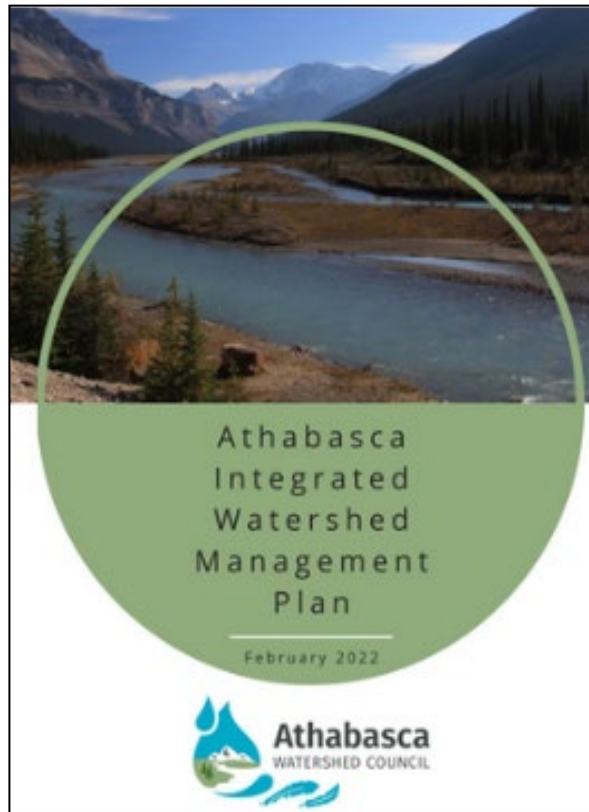
Monitoring



Restoration



Integrated Watershed Management Planning



Advice on Policies, plans & Practices

Search public engagements | 2

alberta.ca/search-public-engagements?field=status;target_id=All&field=topic;target_id=All&field=opportunities;target_id=All&combine=water&listing-block

Part of Public engagement

Search public engagements

Find out how government is involving Albertans in making decisions, and how you can participate.

Search engagements

Status:

Topic:

Opportunities to get involved:

Keyword:

☐ Include archived engagements

[Search engagements](#) [Clear filters](#)

Explore pages in:
Public engagement

- [Search public engagements](#)
- [Glossary of terms](#)
- [Public engagements 2012 to 2015](#)

12 results

Stormwater management engagement

Last updated April 11, 2022

Stakeholders shared feedback to help inform proposed amendments that would allow increased stormwater use.

North Saskatchewan Region Surface Water Quality Management engagement

Last updated January 3, 2023

Albertans shared their feedback on the development of a water quality framework for the North Saskatchewan and Battle rivers.

Upper Athabasca Region Surface Water Quality Management engagement

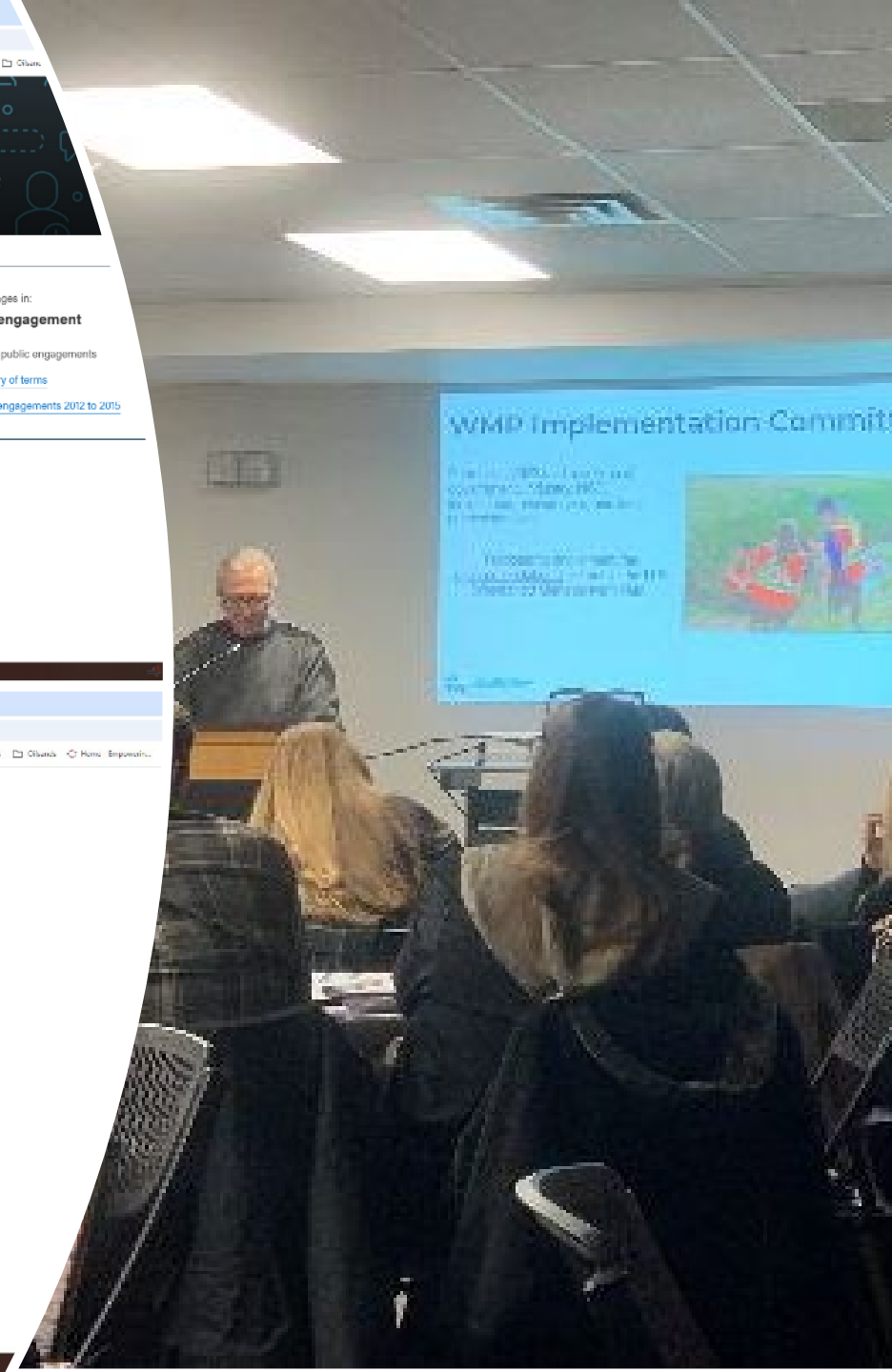
Last updated January 5, 2023

Albertans shared their feedback on the development of a water quality framework for the upper Athabasca River.

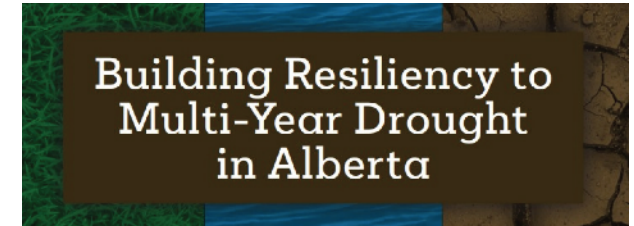
Potable water regulation updates engagement

Last updated February 9, 2023

Stakeholders shared their feedback on the proposed updates to the Potable Water Regulation.



Convening and Collaborating



WORKSHOPS FOR MUNICIPALITIES

- Discuss drought impacts past, present & future
- Connect with water management partners Identify roles & responsibilities
- Share strategies, tools, resources
- Develop drought management strategies
- Build community resilience

REGISTER
TODAY FOR
JAN 31



NORTHERN ALBERTA

Date: January 31, 2024

Time: 10 am - 3:30 pm

Location: Grande
Prairie, AB

Scan here to see the
venue!

LSM Room, Tara
Centre Evergreen
Park



HOST: MIGHTY PEACE WATERSHED ALLIANCE (MPWA), ATHABASCA WATERSHED COUNCIL (AWC), AND LESSER SLAVE WATERSHED COUNCIL (LSWC)

Invited Guests:

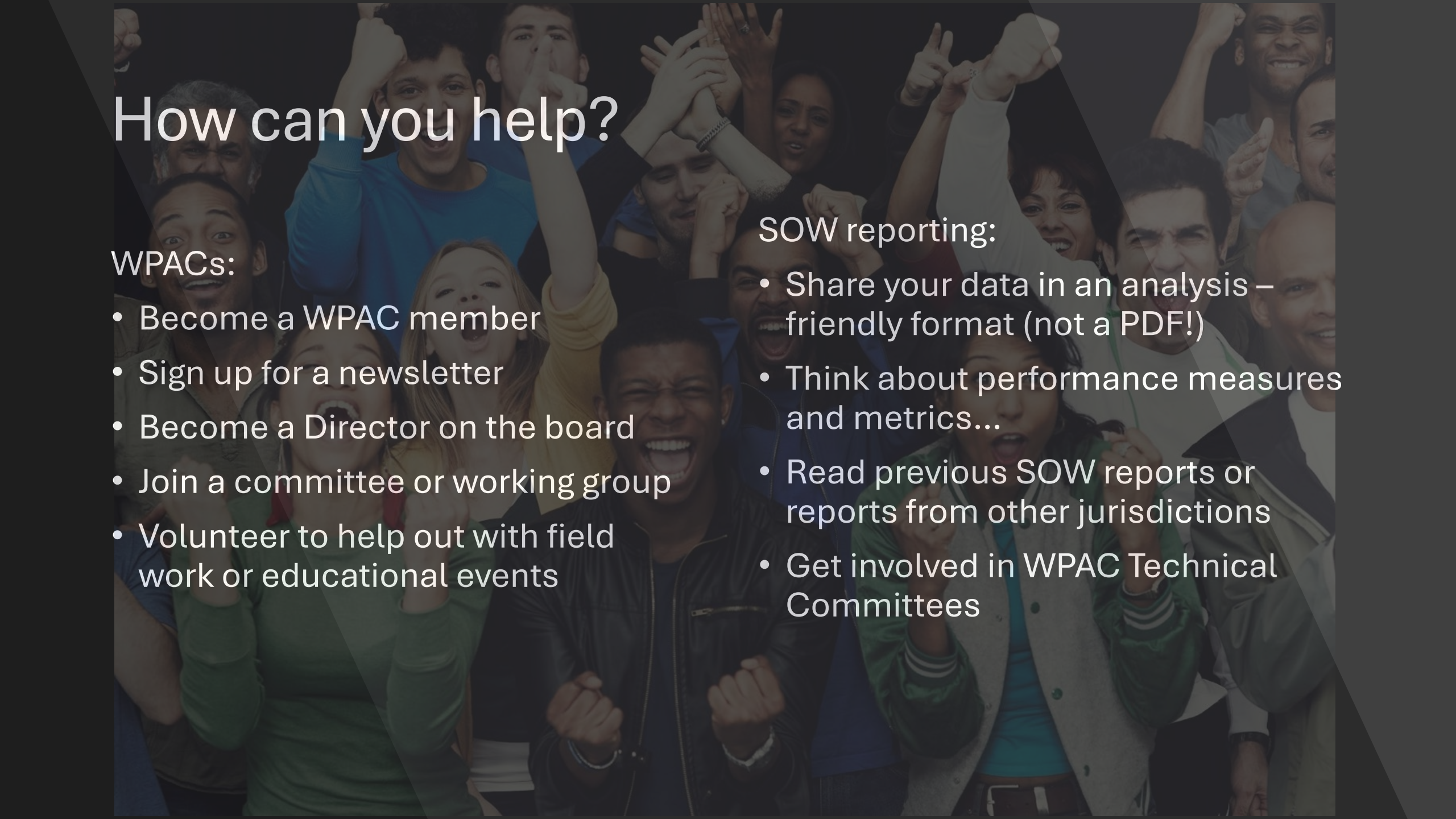
- Municipal CAOs,
- Council Members,
- Agricultural Services, and other municipal staff
- Community Health and AHS
- Government of Alberta
- Alberta Energy Regulator
- Alberta Emergency Management Agency
- Alberta Urban Municipalities Association
- Rural Municipalities of Alberta
- Other organizations impacted by drought

CONTACT: Rhonda Clarke-Gauthier, Mighty Peace Watershed Alliance
mpwaexecdirector@telus.net 780-324-3335



Education and Literacy



A diverse group of people of various ages and ethnicities are shown in a crowd, cheering and raising their hands in a celebratory gesture. The image is overlaid with a semi-transparent dark grey layer where the text is placed.

How can you help?

WPACs:

- Become a WPAC member
- Sign up for a newsletter
- Become a Director on the board
- Join a committee or working group
- Volunteer to help out with field work or educational events

SOW reporting:

- Share your data in an analysis – friendly format (not a PDF!)
- Think about performance measures and metrics...
- Read previous SOW reports or reports from other jurisdictions
- Get involved in WPAC Technical Committees



Thank you!

