



# Preserving Our Lifeline

*working together to nurture, renew and protect  
the waters of the bow river basin*

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## Legislation and Policy Committee Workshop Flood Update 2022

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On February 24<sup>th</sup>, the BRBC Legislation and Policy Committee (L&P) hosted Part 1 of a two-part workshop entitled Flood Update 2022.

Part 1 updated participants on the physical science of flooding, while Part 2 on February 25<sup>th</sup> provided case studies of what has happened in the Bow Basin since the June 2013 flood events. Both workshops were well attended and participants had plenty of questions for the presenters.

Peter Onyshko from Alberta Environment and Parks (AEP) presented on Provincial Flood Mapping. He set the stage by acknowledging that "identifying and understanding flood hazards are the first steps to increase public safety and reduce future flood damages." Peter confirmed that "local authority review

and public engagement are important parts of the flood study finalization process." From that moment on, participants were all ears! We learned how the province has been updating old flood maps and creating new maps since 2015.

In 2015, there were just over 60 flood mapping studies across Alberta, with 1,200 km of streams mapped, representing flood hazard zones in over 100 municipalities. By the end of 2020, technical work on 21 new studies was completed (replacing 29 old studies) for rivers and tributaries affecting 60 municipalities and 5 First Nations. To date, there is 1,500 km of new mapping in various stages of local authority review or public engagement as part of the study finalization process. This represents 600 km of updated maps and 900 km of maps in areas never mapped before. Seven new flood studies have been started since 2020 in the municipalities of Hinton, Marten Beach, Milk River, Rochester, Rocky Mountain House, Sangudo, and Stand Off. This is a phenomenal amount of work to provide scientific data to municipalities as they engage in land use planning.

Peter explained the nine steps that are now taken to update old studies and create flood maps. Some steps are core components of all studies and others are risk dependent or optional considering the river system being studied. These steps are:

1. Survey & Base Data Collection - Core Component
2. Channel Stability Investigation - Optional
3. Hydrology Assessment - Core Component

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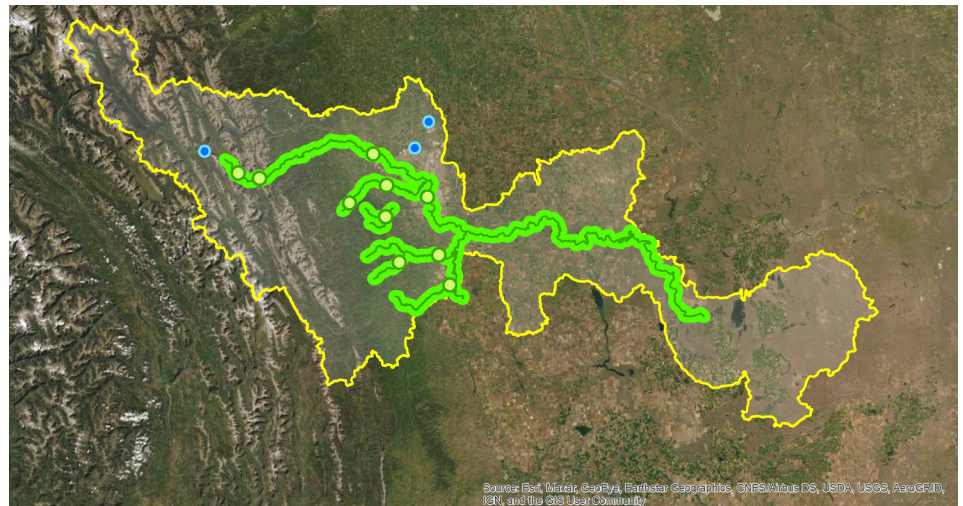
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4. Ice Jam History & Analysis - Risk Dependent
5. Hydraulic Modelling - Core Component
6. Open Water Flood Inundation Mapping - Core Component
7. Ice Jam Flood Inundation Mapping - Risk Dependent
8. Flood Hazard Mapping - Core Component
9. Flood Risk Inventory & Assessment - Optional

To collect base data, the province uses three main tools: river and ground surveys, LiDAR floodplain data, and aerial imagery. Enhanced flood inundation maps (FIMs) are created identifying multiple flood frequency scenarios: 1:2, 1:5, 1:10, 1:20, 1:35, 1:50, 1:75, 1:100, 1:200, 1:350, 1:500, 1:750, and 1:1000 open water floods; plus 1:50, 1:100, and 1:200 ice jam floods in affected areas. These FIMs are created to support local emergency response. The maps also identify areas that are protected behind berms where a residual flood risk exists.

Online public engagement (leveraging social media to get feedback on draft FIMs for 20 new flood studies) was completed in January 2021. Future public engagement is planned for additional mapping studies (including in High River), as well as for draft flood hazard maps for all new studies.

Peter walked participants through draft FIMs from new flood studies that can be viewed online at <https://floods.alberta.ca/> – remember to click on the “Drafts” button to see the newest maps! This is the same tool where draft flood hazard maps will be shared with the public in the future. He then



New flood mapping studies in the Bow Basin. Source: Alberta Environment and Parks.

explained some emergent policies and approaches being used by AEP to map floodways and update older flood hazard maps. When updating existing maps, previously defined floodways will not get larger by default and the concerns from local authorities and the public about changes to floodways will be considered. This “enables significant public investment in flood mitigation infrastructure to be reflected in flood hazard maps. The new approach provides maps and information about a wider range of flood hazards than the 1:100 design flood.”

When creating new hazard maps, the standard methodology divides the 1:100 design flood hazard area into floodway and flood fringe zones. In these maps, the floodway typically represents where flows are deepest, fastest, and most destructive. The flood fringe is also flooded, and can include new “high hazard flood fringe” areas that highlight areas of deeper or faster moving water outside the floodway. These areas are not a part of the floodway, but illustrate flood fringe areas where there may

be a higher flood risk than in other parts of the flood fringe. Another new zone being implemented is the “protected flood fringe” area, which illustrates areas of residual risk behind berms. These maps will provide local authorities with more regulatory flexibility during land use planning.

Local authorities may want or need to understand areas at risk for more floods than just the 1:100 design flood, and new flood hazard maps may including the 1:200 and 1:500 flood footprints to acknowledge incremental flood risk for larger floods. AEP is providing more information for communities to consider if desired, but this information is not part of the “design flood hazard area.” All of these steps, including identifying area behind berms that would be at risk of flooding are being taken to support local flood risk management and provide local regulatory flexibility.

Peter participated in the panel discussion and afterward provided responses to complex questions asked by workshop participants.

## Government of Alberta Taking Action: Review and Update of the Water for Life Action Plan

Working through the Alberta Water Council (AWC), the Government of Alberta (GOA) has launched an initiative to review and update the *Water for Life* Action Plan (AP).

The goal of this project is for partners to identify actions their community or sector will take to address risks and opportunities and advance the goals and directions of *Water for Life*.

BRBC contacted Cam Lane, Executive Director, Intergovernmental Relations and Engagement Branch, Alberta Environment and Parks. Cam is also the co-chair of the Project Team leading the review and update.

**BRBC:** What are your thoughts about the success and positive aspects of the *Water for Life* strategy so far? Is there something that you feel the BRBC has done well?

**Cam Lane (CL):** *Water for Life* established an enduring vision for water and aquatic ecosystem management in Alberta. It's been reviewed and renewed, and approved twice by Cabinet. Its three goals and directions provide a balanced and inclusive approach for managing a universal and complex resource. After the renewal of the *Water for Life* strategy in 2008, the creation of the *Water for Life* AP was a significant step outlining the actions and commitments of the GOA for a 10-year period.



The Bow River at Calgary. Photo: Mike Murray.

The BRBC is a great example of what was envisioned as a Watershed Planning and Advisory Council (WPAC). The BRBC has consistently led by example, including its leadership on WPAC-initiated Watershed Management Planning. The BRBC received an Emerald Award for the first phase of the Bow River Basin Watershed Management Plan (which identified Water Quality Objectives). This award recognized the breadth and depth of the BRBC's accessible expertise.

Furthermore, the BRBC orchestrated the participation of four WPACs in the 10-year review of the implementation of the South Saskatchewan River Basin Approved Water Management Plan. The review, completed in 2018, increased awareness of the complexities and issues with water management in the basin, while identifying successes of the plan's implementation and highlighting areas where further work is needed.

**BRBC:** Why is this the right time to put this action plan together. What are the opportunities?

**CL:** The first GOA AP (2009) described actions for a 10-year period. That AP demonstrated tangible steps towards each of the strategy's goals and directions.

In the recent implementation review for the *Water for Life* strategy, the AWC recommended an AP renewal to signal the ongoing commitment to *Water for Life's* goals. With the maturity of partnerships like the AWC and WPACs, and the long-standing involvement of municipal, industry and non-governmental groups, it makes sense to approach the new AP from a multi-sector perspective.

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A recent AWC project, *Water Futures*, described the risks and opportunities likely looming for water management in Alberta. This multi-sector assessment outlined the need for a new water conversation enabling all water sectors to prepare for these potential future risks. The new AP presents an opportunity for sectors to define how they can increase their resilience, improve Alberta's overall water management, and advance the goals of *Water for Life*.

**BRBC:** In 10 years' time, what outcomes would you hope to see for the strategy and for BRBC/WPACs in particular?

**CL:** I don't want to presuppose what partnerships, water users, and governments might develop through the course of the AP project, but if I were to speculate on some actions that would help water management, I would focus on how our partnerships and governments work together.

When *Water for Life* was established, these partnerships were established with specific tasks to accomplish, including State of the Watershed reporting and Integrated Watershed Management Planning. These valuable tools coalesce watershed citizens and define basin-level management actions. But more can be done by better connecting both provincial and municipal government into these basin-scale partnerships. That could mean redefining what governments ask of WPACs, or it could mean being clearer on the government priorities and pressures that WPACs could support. I suspect the BRBC could be instrumental in defining what this kind of new working relationship could include.

We need stronger relationships with our First Nations partners so that we might better understand and recognize the cultural connections of Indigenous People in our water decisions. At a minimum, we should be finding ways to braid traditional knowledge together with western science for improved decision making.

Overall, the implementation of *Water for Life* should be working to build on the legacy of trust that we've all worked to establish since 2004. If the next 10 years of the *Water for Life* strategy accomplishes anything, it should make our water and aquatic ecosystem management more resilient to emerging challenges.

### **BRBC Editorial Comment**

The BRBC has a rich history of encouraging cooperative and effective strategies for water use management and environmental stewardship. The BRBC has taken on many roles in support of the *Water For Life* strategy, encompassing planning, program and project implementation, stakeholder engagement, education and outreach, reporting and more. The success we've achieved rests on our greatest strength: diversity. Our initiatives are diverse in both subject matter and timeframe; and our members cross all sectors, jurisdictions, and areas of expertise. The *Water for Life* Action Plan review and update is an opportunity for WPAC's to build on our collective, long-standing contributions to Alberta's water management. The BRBC welcomes this review and update as a confirmation that *Water for Life* remains central to the water conversation in Alberta - and that the collaborative input of all *Water for Life* partners will ensure that this conversation continually evolves to meet Alberta's water management needs, goals and priorities both now and into the future.



The Elbow River. Photo: Mike Murray.

## Young Professional Spotlight: Laura Corbeil

The BRBC’s greatest asset is its membership – and we are extremely fortunate to count young professionals as part of our collective strength! In this Young Professionals Spotlight, we shine a light on Laura Corbeil, Program Manager (Watersheds), with WaterSMART Solutions. WaterSMART and many of its staff are active participants with the BRBC through its various committees and events.

### ***Tell us a bit about your career path – how did you get to where you are today?***

I graduated from the University of Calgary in 2015, right around the time that we experienced an economic downturn. Uncertain about my future in the environmental consulting industry, I looked to volunteer opportunities to expand my network beyond the oil and gas sector (having held summer student positions in that sector for three years). My most significant volunteer position was with Alberta EcoTrust Foundation’s Animation Team for their 2016 Environmental Gathering in Calgary. This was a great introduction to facilitation and working within a collaborative environment.

Shortly after my involvement with EcoTrust I was fortunate to be offered a role with my current employer, WaterSMART Solutions. Throughout my six years with WaterSMART my career path has certainly evolved, having learned more about the industry, and my interests and skills. Early on I provided support on

various projects, including the Alberta WaterPortal’s non-profit educational work. Over time, as I became more familiar with the water management landscape and key players, I moved exclusively to watershed-based projects and began developing my facilitation skills. During the last three years I have had the pleasure of facilitating numerous multi-stakeholder working group sessions for projects in water management, flood mitigation, agriculture and agri-food, and municipal stormwater planning. Now in my role as Program Manager, I continue to facilitate working groups while working closely with a team of environmental scientists, hydrologists and engineers to conduct projects from initial concept development to final report delivery.

### ***What kinds of projects or activities are you currently working on?***

I am currently managing WaterSMART’s involvement in the Bow River Reservoir Options Initiative Phase 2: Feasibility Study. This includes working with our hydrologists to model flood and drought operations, as well as facilitating Bow River Working Group sessions.

My team also provides support to the Stormwater Management Cooperative project (CSMI), which will see the implementation of a regional stormwater system east of Calgary.

Working closely with my colleagues at WaterSMART and other consultants, I am managing a feasibility study for a



new irrigation project in east-central Alberta. This involves assessing the business case, water availability, land suitability, conceptual engineering, governance and other key components.

### ***What is the most useful career advice you have ever received?***

Listen, listen, listen, and then listen some more. In a field like water management, we are always collaborating with a range of people who bring their unique personalities and experiences to the table. Only through active listening can we achieve understanding and respond in helpful and meaningful ways.

### ***What advice would you pass along to students currently studying to become environmental professionals?***

Practice communicating in written and verbal forms. The ability to summarize and synthesize

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information (scientific or not) is an extremely helpful professional skill. Practice summarizing your own or others' thoughts in ways that are easily and quickly understood.

***Did you (or do you) have a mentor?***

I have worked closely with two individuals that I would call mentors. Their mentorship is immensely important in developing my professional skills and providing perspective on the bigger picture. My mentors are honest with me, which I find so valuable for learning lessons and growing as an individual. Their wealth of experience is always a reminder of how big the world is and how my career is only just beginning ... it leaves me with a feeling of excitement that there is still so much to contribute.

***What is the most rewarding aspect of your current work?***

All our projects are collaborative. My most rewarding moments happen after meetings or working sessions, when groups find alignment on addressing challenges or developing new ideas. It is rewarding to know a group has made progress, as this can often mean that our team created an effective agenda and successfully facilitated the session through focused discussion on shared objectives.

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***Are you a young professional who would like to be featured in an upcoming Preserving Our Lifeline newsletter? Please contact BRBC Publications Editor, Andrea Czarnecki, for details:***  
[aczarnecki@brbc.ab.ca](mailto:aczarnecki@brbc.ab.ca)

## 310-LAND: Enhancing Enforcement and Education to Protect Watersheds

Alberta Environment and Parks

The Bow River Basin provides a rich diversity of ecological and culturally significant areas. People come from all over to access this beautiful area of Alberta and to enjoy the variety of recreation opportunities the basin offers. The Bow River's headwaters are in Banff National Park, but much of the river and its tributaries flow through provincial Crown lands.

Alberta's Crown land covers 60 per cent of the province and includes provincial parks, protected areas and public lands. Designating these areas as Crown lands helps protect the environment and conserve wild spaces while supporting outdoor recreation and other land uses.



Hiking in Alberta is enjoyed by thousands of enthusiasts each year! Photo: Government of Alberta.

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With more Albertans and visitors than ever before accessing provincial Crown land, there is a need for increased public education and enforcement. While an individual may not think their activity will impact the environment, the collective impacts of land users can have negative consequences for sensitive landscapes and wildlife. In the areas surrounding the Bow River Basin, this means educating visitors on how to enjoy outdoor recreation opportunities like hiking, biking, quadding and camping, while protecting delicate areas and ensuring this special part of the province can continue to be enjoyed for years to come.

### **Striking a Balance**

The Alberta government recently introduced a new, toll-free phone line to enhance and optimize Crown land enforcement – 310-LAND (5263). This line consolidates 15 regional and department phone lines, making it easier for Albertans to report violations and public safety incidents 24 hours a day, 7 days a week. Albertans can also call this number during regular government business hours to speak with Environment and Parks staff about general land-related inquiries.

When you call the new line (or 1-833-310-5689 for out of province), a trained staff member will answer and want to know:

- what happened
- where it happened
- if you have any photos of the activity/incident
- a description of person(s) involved in the activity/incident
- the vehicle make and licence plate number (if applicable)



What to report:

- damage to Crown land
- enforcement concerns
- public safety incidents
- abandoned vehicles and trailers
- unauthorized or illegal structures
- people using areas with active trail and area closures
- wheels in the water (motorized recreation along the banks and shores, and in waterbodies)
- motorized vehicles off-trail in sensitive areas
- blocking existing trails
- garbage dumping
- public safety incidents
- human/wildlife conflict
- serious noise complaints in provincial parks

Enhanced enforcement means increased support for Albertans and visitors seeking to explore our parks and public lands.

Crown land belongs to Albertans and is managed according to our shared values. It is up to all of us to ensure the sustainable use of our land now and into the future. If you are looking for resources with tips on responsible recreation, visit [Guide to Outdoor Recreation](#), the [Southern Alberta Public Land Use Zones \(PLUZ\)](#) page and make sure to follow Environment and Parks on social media ("Respect the Land in Alberta" on Facebook).

You can help conserve the Bow River Basin by recreating responsibly and using the 310-LAND phone line to report illegal activity, public safety incidents and enforcement concerns on Crown land.

## Notice to All BRBC Members

### BRBC Board Openings

Some BRBC board members will soon be leaving their roles – so now is a good time to consider participating in the Board!

Upcoming roles and categories include:

- BRBC Chair
- Treasurer
- Individual Public
- Regulatory/Administrative/First Nations

Nominations and voting will take place during the Annual General Meeting on June 1<sup>st</sup> (as part of the Quarterly Educational and Networking Forum).

## BRBC Quarterly Educational and Networking Forum

**\*\* In person \*\***

**June 1, 9:00 am - 4:00 pm**  
**Reception to follow: 4:00 - 6:00 pm**

**Rotary House in Calgary**  
**1410 Olympic Way SE**  
**(Calgary Stampede Grounds)**

### FORUM SPEAKERS

#### **Amy McLeod, Cows and Fish**

Working together to recover native trout in Alberta; a case study on the Alberta Native Trout Collaborative working in the Bow River watershed

#### **Hillary Keyes, AJM Environmental**

Native Trout Habitat Restoration Assessment in the Ghost Public Land Use Zone

#### **Elliot Fox, The Blackfoot Confederacy/ The Resilience Institute**

Blackfoot Confederacy Native Trout Recovery Project

#### **John Swann and Diane Edwards ABI Environmental**

CABIN sampling of benthic invertebrates in Alberta with specific reference to the Bow River Basin

#### **Mike Nemeth, Nutrien**

Water stewardship at Nutrien and the agri-food value chain

[Click here](#) to register for the Forum and Reception.

[Click here](#) for the Reception only.

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The opinions expressed in the articles in this newsletter are those of the author/s and do not necessarily reflect the views of the BRBC.

The next BRBC newsletter will be released in September.

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