AGENDA

WESTERN FLOOD MAPPING CONFERENCE

Uniting Minds, Mapping Futures:
Collaborative Solutions for Western Flood Mapping

February 19, 2025 | Calgary, Alberta

AGENDA

WESTERN FLOOD MAPPING CONFERENCE

8:30 AM	**Registration**	
9:00 AM	**Welcome and Opening Remarks**	
9:40 AM	**Keynote Presentation: Flood Mapping Adventures in the Okanagan** Dr. Anna Warwick Sears, Okanagan Basin Water Board	
10:25 AM	**Break**	
	MAIN ROOM Spectrum 4/5	**BREAK OUT ROOM** Spectrum 1/2/3
10:45 AM - 12:15 PM	**SESSION 1A:** **Advances in Flood Hazard Mapping Methodologies** Moderated by Monica Mannerström, Northwest Hydraulic Consultants	**SESSION 2A:** **Updates on Federal & Provincial Flood Mapping Programs** Moderated by Jean-Samuel Proulx-Bourque, Natural Resources Canada
	Emerging from Darkness: Pluvial Flood Mapping Brad Larson & Santosh Nishtala, City of Calgary	**NRCan – FHIMP Updates on Research Initiatives & Program Impact** Andrew Plowright Natural Resources Canada
	Subtractive Flow Methodology for Flood Mapping at Tributary Confluences Wolf Ploeger, WSP	**Alberta's Flood Hazard Identification Program** Peter Onyshko, Government of Alberta
	Mapping of Floodplains Protected by Dikes: A Fraser River Case Study Vanessa O'Connor, Northwest Hydraulic Consultants	**Introducing the First Nation Adapt Program** Tabitha Clavecillas, Crown-Indigenous Relations and Northern Affairs Canada
	Flood Hazard Mapping of the Red River Valley Andrew Weiss, KGS	**Using Canada-Wide Flood Hazard Modelling** Julie Van de Valk & Robin Bourke, Public Safety Canada

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12:15 PM	**Lunch**	
1:15 PM - 2:45 PM	**SESSION 1B:** **Ice Jams & Debris Flows** Moderated by Zahidul Islam, Government of Alberta	**SESSION 2B:** **Indigenous Perspectives, Guidelines & Standards** Moderated by Sandy Davis, City of Calgary
	Application of Direct and Indirect Methods for Estimation of Ice Jam Flood Frequency Dan Healy, Northwest Hydraulic Consultants	**Floodplain Mapping in Drumheller: A Case Study on Mapping Uses** Deighen Blakely & Darryl Drohomerski, Town of Drumheller
	Building Resilience: Alberta's Approach to Hydrogeomorphic Hazards Lance Katan, Government of Alberta	**Flood Realities: Sharing Lived Experiences and Lasting Impacts,** Dakota Marsden, Pinaymootang First Nation
		Flood Plain Mapping Scoping Study: Lower Mainland Tamsin Lyle, Ebbwater
	The Pas Flood Hazard Mapping Study Melissa Haresign, KGS	**Northwest Territories' Ice Jam Flood Mapping Guidelines** Jad Saade, Government of Northwest Territories & Dan Healy, Northwest Hydraulic Consultants
2:45 PM	**Break**	

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3:05 PM - 4:15 PM	**SESSION 1C:** **Research & Guidance on Climate Change** Moderated by Joel Trubilowicz, Environment and Climate Change Canada	**SESSION 2C:** **From Maps to Regulation** Moderated by Andrew Plowright, Natural Resources Canada
	Application of FHIMP Climate Change Guidelines on Water Survey of Canada Gauge Design Katie Slimmon, Environment and Climate Change Canada	**Flood Maps Are Only The First Step: How we moved from maps to regulations** Sandy Davis, City of Calgary
	Lessons from a Decade of Considering Climate Change in Floodplain Mapping Studies Genevieve Brown, Northwest Hydraulic Consultants	**Town of Canmore Regulation of Steep Creek Hazards** Devin Bartley and Félix Camiré, Town of Canmore
	Blackbird: Towards Regional Flood Mapping and Inundation Forecasting Under Climate Change Dr. Robert Chlumsky & Brian Peng, Heron Hydrologic	**Technical Bulletin For Updating Flood Maps in Canada** Apurba Das, Environment and Climate Change Canada
4:15 PM - 5:00 PM	**Panel Discussion: Successes and Challenges in Flood Mapping** MJ Valiquette | Zahidul Islam | Sandy Davis | Anna Warwick Sears **Moderated by Kerra Chomlak, ClimateWest** Highlighting success stories, addressing common challenges, and identifying opportunities for collaboration across jurisdictions and sectors. Includes open floor for questions and discussion.	

The Western Flood Mapping Conference is hosted in partnership between Natural Resources Canada, ClimateWest and The Pacific Institute for Climate Solutions

ClimateWest
Building Prairie Resilience

Canada

Pacific Institute for Climate Solutions

SPEAKERS

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KEYNOTE PRESENTATION

Flood Mapping Adventures in the Okanagan
Since the historic floods of 2017 & 2018, the Okanagan Basin Water Board has been working with senior governments and local communities to map areas at future risk of flooding and to integrate them into local planning policies—with great successes, but also with big lessons learned.

Dr. Anna Warwick Sears, Okanagan Basin Water Board
Dr. Anna Warwick Sears is the Executive Director of the Okanagan Basin Water Board, a watershed agency focused on Okanagan water sustainability. Raised in B.C., Dr. Sears received a PhD in population biology at the University of California – Davis, returning to Canada in 2006 to work for the Water Board. Her work includes government relations; delivering applied water science in partnership with government and university researchers; developing projects and resources for climate adaptation; and acting as spokesperson for media and public communications. Dr. Sears is a member of the International Osoyoos Lake Board of Control, appointed by the International Joint Commission, and an alternate commissioner on the Skagit Environmental Endowment Commission, appointed by the B.C. Premier.

SESSION 1A: Advances in Flood Hazard Mapping Methodologies

Novel approaches to flood mapping including AI and regional modelling.
Moderated by Monica Mannerström, Northwest Hydraulic Consultants.

Emerging from Darkness: Pluvial Flood Mapping
The City wide project has brought the City of Calgary's stormwater analysis out of the stone ages and into the modern era. New drainage mapping tools, contouring and 1D models of all of the built out residential communities in The City have shed light onto every project that has been analyzed since it's inception in 2019. Santosh will share insights into the latest advancements in 1D-2D flood modelling techniques and their practical applications in flood mapping and management. Drawing on his current work for the City of Calgary, he will provide an overview of The City's transition from 1D-1D PCSWMM models to integrated 1D-2D ICM models. The discussion will highlight the driving factors behind this migration, including improved accuracy, better representation of overland flows, and enhanced decision-making capabilities.

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SESSION 1A: Advances in Flood Hazard Mapping Methodologies

Brad Larson, City of Calgary
Brad has 25 years experience in stormwater engineering, the past 17 being with the City of Calgary. His predominant focus has been retrofit opportunities to improve drainage in the older communities of The City. The City wide Mapping and Modelling project have provided the team with new tools that have fundamentally changed his day to day work in diagnosing and solving problems.

Santosh Nishtala, City of Calgary
Santosh Nishtala is a seasoned Water Resources Engineer with over 20 years of experience in stormwater design and analysis, spanning both design and regulatory perspectives. His expertise encompasses detailed and conceptual design, Stormwater Master Planning, and Watershed Planning. Santosh is highly skilled in advanced hydraulic and hydrologic modeling, with extensive experience in 1D-1D and 1D-2D modelling, flood mapping, and process automation using Python to enhance efficiency and accuracy.

Subtractive Flow Methodology for Flood Mapping at Tributary Confluences
Investigation of a simplified method to account for non-concurrent peak flows along a main stream with tributary inflows when using 2D hydraulic modelling.

Wolf Ploeger, WSP
Dr. Ploeger is a senior river engineer and hydraulic modelling specialist with over 20 years of professional experience as a project manager and technical leader for river engineering and hydraulic modelling projects. His experience includes flood studies using one- and two-dimensional numerical modelling of small to large river systems with or without tidal influence. He lead or participated in over 20 flood studies, mostly in Alberta, but also in British Columbia, Saskatchewan, Ontario and Northern Germany. Dr. Ploeger has taught comprehensive HEC-RAS modelling courses for the Canadian Society of Civil Engineers (CSCE) and other clients.

He is currently the Director for the Prairies & North Water Management Business Unit at WSP (formerly Golder).

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SESSION 1A: Advances in Flood Hazard Mapping Methodologies

Mapping of Floodplains Protected by Dikes - A Fraser River Case Study
This presentation will illustrate the considerations, challenges, and potential solutions associated with the preparation of realistic and useful mapping in a floodplain protected by a complex diking system.

Vanessa O'Connor, Northwest Hydraulic Consultants (NHC)
Vanessa joined NHC in 2007 and was based out of the North Vancouver office until she relocated to Lasalle NHC's Montreal office in 2017. As a hydrotechnical engineer, her early project experience has consisted almost exclusively of developing and running large-scale hydrodynamic models for flood mapping and climate change studies.

In recent years, she has been leading a team of engineers and GIS specialists, from the survey and model planning phase, all the way through to the printing of the floodplain maps. These studies were done in British Columbia, Alberta, Quebec, and abroad for municipal and provincial governments, Fraser Basin Council, First Nations, and BC Hydro.

Flood Hazard Mapping of the Red River Valley
This presentation will focus on the simulation of a range of flood conditions throughout the Red River Valley with a large-scale coupled 1D-2D hydrodynamic model of the Red River extending from Grand Forks, U.S.A. to north of Winnipeg, Manitoba.

Andrew Weiss, KGS
Andrew Weiss is a Water Resources Modelling Lead at KGS Group with over 11 years of experience in a broad range of water resources projects, including hydrologic analyses and modelling studies, 1D, 2D and 3D hydraulic modelling studies, as well as flood mapping studies throughout Canada. These studies have considered open water flooding, freeze-up and ice jam flooding, lake flooding, and coastal flooding throughout diverse regions in Canada, including Yukon, Manitoba, and Newfoundland and Labrador, and have considered the potential future impacts associated with climate change.

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SESSION 2A: Updates on Federal & Provincial Flood Mapping Programs
Updates to existing flood hazard identification programs at provincial and federal levels.
Moderated by Jean-Samuel Proulx-Bourque, Natural Resources Canada.

NRCan – FHIMP Updates on Research Initiatives and Program Impact
This presentation highlights the advancements in the flood hazard identification and mapping program (FHIMP) at Natural Resources Canada (NRCan), detailing its research initiatives, impact, and collaboration with provincial, territorial, and Indigenous partners to advance flood mapping across Canada. It will be cover: the success and impacts of FHIMP 1; the plans and funding related to FHIMP 2; regional modelling using innovative approaches like AI and Earth observation; real-time emergency response maps; and the dissemination of data to protect communities from climate change impacts.

Andrew Plowright, Natural Resources Canada
Andrew Plowright is a geospatial specialist and programmer with a decade of experience in natural resource management. He joined Natural Resources Canada (NRCan) in 2022, where he manages intergovernmental agreements under the Flood Hazard Identification and Mapping Program. He is based out of Vancouver, British Columbia.

Alberta's Flood Hazard Identification Program
Alberta has delivered more than 1,600 km of new and updated flood mapping since 2015 and the province has plans to increase coverage to more than 3,000 km in the next few years. This presentation will outline the history and main elements of Alberta's flood mapping program, highlighting its local authority review, public engagement, and flood study finalization processes as well as technical standards updates that incorporate new and innovative approaches to hydraulic modelling and flood mapping.

Peter Onyshko, Government of Alberta
Peter Onyshko is a water resources engineer with over twenty years of experience in the private consulting and public service sectors. His areas of professional expertise include flood hydrology and hydraulic analysis, river engineering and hydrotechnical design, flood hazard mapping and floodplain management, and emergency flood forecasting. His current role as a flood hazard specialist with the River Engineering and Technical Services Section of the Government of Alberta focuses on the provincial Flood Hazard Identification Program.

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SESSION 2A: Updates on Federal & Provincial Flood Mapping Programs

Introducing the First Nation Adapt Program
The First Nation Adapt Program (FNA) provides funding to First Nation communities and organizations located below the 60th parallel to support them in their self-determined efforts to assess and respond to climate change impacts and strengthen community resilience. Priority areas identified by First Nation partners include flooding, sea-level rise, forest fires, drought, and winter road failures. The flood mapping portion of the program supports engineering and non-engineering flood mapping and watershed integration projects in First Nation communities to support community planning efforts, including land use, emergency management and infrastructure planning, with communities at significant risk of flooding.

Tabitha Clavecillas, Crown-Indigenous Relations and Northern Affairs Canada
Tabitha Clavecillas is a Policy and Program Officer with the First Nation Adapt (FNA) program at Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC). She is currently the interim program officer for the Alberta region and provides regular support for the Manitoba region for climate change adaptation projects.

Using Canada-Wide Flood Hazard Modelling
Since 2020, Public Safety Canada (PS) has been using Canada-wide flood hazard models, combined with exposure data and impact models, to conduct quantitative risk assessments in support of major public policy programs. PS has done extensive testing of these Canada-wide flood hazard models, including quality control and evaluation, to better understand their limitations and uses, and to support robust risk analysis for PS and other federal departments and agencies. This presentation will describe the results of our study of global models, including performance assessment, recommendations for appropriate use cases, and derived products.

Julie Van de Valk, Public Safety Canada
Julie has a water resources engineering and disaster and emergency management background with experience in the public and private sectors. She primarily works on data analysis and policy supporting Integrated Flood Risk Management at Public Safety Canada. Her work includes synthesis and application of Canada-wide flood hazard models, and policy development for programs including Disaster Financial Assistance Arrangements, flood insurance, a flood risk awareness portal, and resilient infrastructure guidelines. She focuses on bringing together engineering, data and policy work to facilitate data informed flood risk reduction and policies.

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SESSION 2A: Updates on Federal & Provincial Flood Mapping Programs

Robin Bourke, Public Safety Canada

Robin Bourke is a Senior Engineering Advisor and Manager of Public Safety Canada's Data Science and Engineering Team. His primary roles are leading technical risk quantification initiatives with Public Safety Canada's Emergency Management and Programs Branch, with areas of focus on flooding including water resources engineering, hydrology and hydraulics, climate change, and impact assessments. Robin leads a team of scientists and engineers conducting scientific analyses supporting Public Safety's Flood Insurance Program, Disaster Financial Assistance Arrangement Program, Federally Identified Flood Risk Areas initiative, the Flood Risk Communication Portal, and other key mandate areas. He also provides expert services to federal departments and agencies including Canada Mortgage and Housing Corporation, Bank of Canada, Public Services and Procurement Canada, and others.

SESSION 1B: Ice Jams & Debris Flows

Different approaches and applications to flood mapping with consideration given to ice jams and different terrain scenarios.

Moderated by Joel Trubilowicz, Environment and Climate Change Canada.

Application of Direct and Indirect Methods for Estimation of Ice Jam Flood Frequency

This presentation provides practical examples of ice jam flood frequency estimation with supporting methodology. The examples presented are from flood mapping projects completed for the governments of Alberta and Northwest Territories.

Dan Healy, Northwest Hydraulic Consultants

For over 25 years, Dan has been working on a range of water resources projects pertaining to flood hydrology, flood modelling, flood mapping, river ice engineering, and ice process modelling. Flood mapping projects have become a passion for Dan over the last few decades of his consultant engineering career. He has intimate knowledge of all levels of project execution and delivery – from data collection and analysis, hydraulic and hydrologic analysis, flood mapping, senior review, and project management. River ice hydraulics is an area of special interest for Dan. It began with his graduate research centred on the computational and physical modelling of river ice jams. In his work, Dan contributes to the growth in the practice areas of river ice hydrology and climate change assessments pertaining to ice jam flooding.

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SESSION 1B: Ice Jams & Debris Flows

Building Resilience: Alberta's approach to Hydrogeomorphic Hazards
This presentation will provide information on Alberta's progress in the development of the hydrogeomorphic hazard identification initiatives. Key takeaways will include: information on the development of the alluvial fan inventory including metadata, education and awareness materials, how the draft technical guidelines will enable the assessment debris flood and debris flow scenarios in the current and changing climate.

Lance Katan, Government of Alberta
Lance is a Professional Geoscientist with over twelve years of experience in both policy and technical applications of Water Resources, Climate Change and Regional Planning. His current role as a Fluvial Hydraulics and Geomorphology Specialist with the Government of Alberta's River Engineering and Technical Services Section focuses on the development of a provincial Hydrogeomorphic Hazard Identification Program that includes maintaining the provincial alluvial fan inventory, building upon education and awareness of alluvial fan and channel migration hazards, developing and piloting the use of guidelines in the assessment of alluvial fan and channel migration hazards.

The Pas Flood Hazard Mapping Study
This presentation will describe the hydrologic analyses and detailed hydraulic modelling carried out for The Pas, Manitoba, under both open water and ice jam conditions. The analysis showed that the ice jam conditions produced higher water levels than the open water conditions for a given return period. The ice jam river levels were subsequently used to develop flood hazard maps for the community.

Melissa Haresign, KGS
Melissa Haresign is a graduate of the University of Manitoba and holds a master's degree in water resources engineering. After graduation, she joined KGS Group's Water Resources Engineering Department in Winnipeg, eventually becoming the Assistant Department Head. Throughout her career at KGS Group, she has worked on a variety of projects and has gained experience in many areas of hydrologic and hydraulic engineering. Her expertise includes hydraulic modelling, dam safety, emergency planning, flood mapping, and hydroelectric development.

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SESSION 2B: Indigenous Perspectives, Guidelines & Standards
Community outreach scoping studies and on-the-ground implementation of resilience and flood mitigation programs.
Moderated by Sandy Davis, City of Calgary.

Floodplain Mapping in Drumheller: A Case Study on Mapping Uses
This presentation will highlight how a small municipality used Provincial Mapping data to enhance resilience, support mitigation planning, educate the community, and inform land use and emergency response. It will emphasize the importance of detailed flood maps for small communities, particularly those with limited resources, and the need for timely updates to ensure ongoing relevance.

Deighen Blakely, Town of Drumheller
Deighen, has served as the Project Director for the Flood Mitigation Office of Drumheller since 2021. Deighen specializes in Open Channel Hydraulics, with a master's degree and over 20 years of experience. She has worked with the Province of Alberta, Alberta Municipalities, and multiple engineering firms, focusing on water resources management and flood mitigation. Using flood inundation mapping to guide initiatives, and drawing on her prior work with the City of Calgary after the 2013 flood, Deighen has provided invaluable insights to flood mitigation strategies, integrating updated flood mapping into planning, land use policy, and emergency response efforts.

Darryl Drohomerski, Town of Drumheller
Darryl Drohomerski, has served as the Chief Administrative Officer for the Town of Drumheller since 2017, overseeing all municipal operations. He plays a key role in projects like the Flood Mitigation Program and Development and Planning initiatives focused on floodways and high-hazard zones. Since 2016, Darryl has successfully secured funding from the Province of Alberta and Government of Canada for the Flood Mitigation project. He has also led the renewal of the Town's Municipal Development Plan and Land Use Bylaw, incorporating essential flood regulations. A strong advocate for public education, Darryl works to raise awareness on flood risks and community protection.

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SESSION 2B: Indigenous Perspectives, Guidelines & Standards

Flood Realities: Sharing Lived Experiences and Lasting Impacts
In this presentation, Dakota shares her personal journey, as well as her Nation's experience with flooding, highlighting the deep and lasting impacts on people, culture and the land. This session offers a vital perspective on the human side of flooding, emphasizing the importance of Indigenous knowledge in flood preparedness and response.

Dakota Marsden, Pinaymootang First Nation
Boozhoo, Dakota nindizniikaaz. Pinaymootang nindoonjii. Makwa ndoodem. Aaniin, my name is Dakota Marsden. I am from Pinaymootang First Nation, Treaty 2 Territory. I am Anishinaabe, a mother, and from the Bear Clan. My education background is in health and lands. I was a previous participant in the Indigenous Youth Policy School program with Indigenous Youth Roots. Alumni of the Generation Power cohort and 20/20 Catalyst program with Indigenous Clean Energy. I am a Nationally Certified Lands Manager. I attended Vancouver Island University and the National Aboriginal Lands Management Association. Now currently employed by Pinaymootang First Nation as Lands Manager.
I have a duty to contribute to discussions and share the knowledge I have gained through my lived experiences. It is essential to advocate and protect the lands, waters, and resources for future generations.

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SESSION 2B: Indigenous Perspectives, Guidelines & Standards

Floodplain Mapping Scoping Study - Lower Mainland
How the heck do you decide where flood mapping is needed—and should be completed—in a large area with a range of rural and remote communities?

Tamsin Lyle, Ebbwater
Tamsin Lyle is the Principal and founding engineer of Ebbwater Consulting and a well-known thought leader on flood management in Canada. She has invested her academic and professional careers in the exploration of various aspects of floods and other climate hazards. She is particularly interested in exploring the nexus of science, engineering, policy, and planning—disciplines that often work apart when best practice suggests they should work together.

Northwest Territories Ice Jam Flood Mapping Guidelines
The Government of Northwest Territories' recently issued Ice Jam Flood Mapping Guideline is intended for a wide range of users such as territorial and provincial governments, hydrologists, engineers, consultants, contractors, community planners, emergency responders, academics, researchers, and Indigenous and local communities involved in flood risk management. The guideline outlines a methodology for developing ice jam flood maps including data collection, hydrologic and hydraulic analysis, flood map creation, and climate change assessment.

Jad Saade, Government of Northwest Territories
Jad is a hydrologist with the Government of Northwest Territories' Department of Environment and Climate Change, where he leads flood mapping projects and conducts hydrological studies on ice jams across the NWT. Previously, he served as a water resources policy advisor for Ontario's Ministry of Natural Resources and Forestry, focusing on climate change policy development. Jad holds a Master of Science in Civil Engineering from the University of Toronto and dual degrees in Civil and Environmental Engineering from Notre Dame University – Louaize.

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SESSION 1C: Research & Guidance on Climate Change
Lessons learned from considering climate change in floodplain mapping and case studies.
Moderated by Zahidul Islam, Government of Alberta.

Application of FHIMP Climate Change Guidelines on Water Survey of Canada Gauge Design
Climate change adjustments are critical for accurate flood hazard mapping. As the climate continues to evolve, hydrological patterns and peak flow events are becoming increasingly unpredictable. The Environment and Climate Change Canada Flood Hazard Identification and Mapping Program (FHIMP) is developing a framework for assessing climate change impacts, aimed at guiding practitioners in incorporating climate adjustments into peak flow values. This presentation will explore a case study demonstrating the application of this framework in a Water Survey of Canada (WSC) gauge relocation project.

Katie Slimmon, Environment and Climate Change Canada
Katie Slimmon is a Water Resources Engineer with Environment and Climate Change Canada. She works with the Flood Hazard Identification and Mapping Program (FHIMP) on Provincial/Territorial technical support and on the FHIMP guidelines series. Ms. Slimmon has a Bachelor's degree in Environmental Systems Engineering from the University of Regina, and a Masters degree in Hydrotechnical Engineering from the University of British Columbia. Katie is passionate about resiliency in the face of climate change as well as transboundary watershed governance.

Lessons from a Decade of Considering Climate Change in Floodplain Mapping Studies
Western Canada's hydrologic and climatic landscape is both diverse and complex, encompassing everything from small coastal watersheds to large, snowmelt dominated basins. This diversity presents unique challenges to floodplain mapping projects when it comes to incorporating climate change into the project. In this talk, NHC will share valuable lessons learned from our experience incorporating climate change assessments into open water, ice jam, and coastal floodplain mapping projects across the Yukon, Northwest Territories, British Columbia, and Alberta.

Genevieve Brown, Northwest Hydraulic Consultants (NHC)
Genevieve Brown is a hydrologist with NHC based out of their North Vancouver office. Her work focuses on understanding climate change impacts to watersheds across western Canada and the US, utilizing a variety of modelling and programming tools to support a better understanding of the potential impacts.

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SESSION 1C: Research & Guidance on Climate Change

Blackbird: Towards Regional Flood Mapping and Inundation Forecasting Under Climate Change
This presentation will provide the scientific underpinning for the novel flood mapping approach Blackbird, which combines recent geospatial methods used in flood mapping with a one-dimensional hydrodynamic model. We discuss how this approach is computationally efficient and more accurate than conventional methods, and how it can be used in climate change analysis as well as inundation forecasting from examples in recent case studies.

Dr. Robert Chlumsky, Heron Hydrologic
Dr. Robert Chlumsky is President of Heron Hydrologic and recent PhD graduate from the University of Waterloo. His research focuses on hydrologic and hydraulic models, including the development of a novel flood mapping approach called Blackbird. In a consulting capacity, Rob has worked on a wide variety of water resources projects, and has particular expertise in those related to water budgets and flood mapping studies.

Brian Peng, Heron Hydrologic
Brian Peng is an Engineering Hydrologist at Heron Hydrologic and a recent graduate of the University of Waterloo's Computer Engineering program. Outside of work, Brian enjoys playing badminton and video games.

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SESSION 2C: From Maps to Regulation
Use of flood hazard mapping in local regulations.
Moderated by Andrew Plowright, Natural Resources Canada.

Flood Maps Are Only The First Step: How We Moved From Maps to Regulations
Between 2020-2025, the City of Calgary received updated inundation maps and regulatory flood maps, which reflected new boundaries, new mitigation infrastructure, and new zones not described in bylaws. Hear how The City reviewed the maps and associated hazards, engaged the public, assessed options for policy and regulation, and intend to apply various regulatory tools to implement the new maps and manage associated river hazards.

Sandy Davis, City of Calgary
Sandy Davis leads the City of Calgary's River Engineering team, having joined The City in 2015 following over a decade in water resources engineering consulting and non-profit sectors. She's been integral to The City's flood damage study, development of the flood resilience strategy, flood mapping review and policy updates, design and management of river infrastructure including flood mitigation structures, watershed monitoring and forecasting, emergency response, land use regulation, bank protection, riparian health and public flood risk awareness and education.

Town of Canmore Regulation of Steep Creek Hazards
This presentation will outline the Town of Canmore's approach to managing existing and new development within steep creek hazard zones. We will delve into the process of hazard mapping and explore its integration into the town's regulatory framework and development guidelines.

Devin Bartley, Town of Canmore
Devin Bartley is a Geographic Information Systems professional with over a decade of experience leading GIS programs in environmental consulting and municipal government. He has served as the GIS Coordinator for the Town of Canmore since 2016 where he worked with Town Engineers to implement Steep Creek Hazard mapping into the Land Use Bylaw. His current GIS passions include configuring cloud IT infrastructure for hosting GIS systems and working with Open-Source GIS software.

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SESSION 2C: From Maps to Regulation

Félix Camiré, Town of Canmore
Félix Camiré, P.Eng., serves as a Project Engineer for the Town of Canmore. In this capacity, Félix has spearheaded numerous capital projects, including the construction of the Cougar Creek Debris Flood Retention Structure. His expertise extends to flood rehabilitation, hazard and risk assessments, and flood mitigation works. Furthermore, he plays an important role in developing and implementing policies, regulations, and technical guidelines for development within the Bow River and Steep Creek Hazard zones.

Technical Bulletin for Updating Flood Maps in Canada

Environment and Climate Change Canada (ECCC) is developing a technical bulletin that addresses when and how flood maps should be reviewed and revised. This presentation will provide a preliminary overview of the bulletin, including recommendations for the flood map review periods, important triggers for scheduled and unscheduled review of a flood map, and reporting procedures.

Apurba Das, Environment and Climate Change Canada (ECCC)
Apurba Das is a Water Resources Engineer in Hydrotechnical Services at ECCC. With expertise in hydraulic modelling, flood hazard analysis, and flood mapping, Apurba actively supports various Flood Hazard Identification and Mapping Program (FHIMP) projects across the country. Previously, Apurba acquired a PhD in water resources from the University of Saskatchewan, focusing on ice jam flood modelling and flood hazard mapping.

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PANEL DISCUSSION

MJ Valiquette, Natural Resources Canada
MJ is a senior policy advisor with experience in local and federal government policy and communications, and a background in environmental sciences. Since 2021, she has been working as an analyst with the Canada Centre for Mapping and Earth Observation at Natural Resources Canada (NRCan). At NRCan, she leads policy support to establish the flood mapping program and communicate its progress.

Dr. Zahidul Islam, Government of Alberta
Dr. Zahidul Islam (Ph.D., PEng.) is a Senior Manager at River Engineering and Technical Services section, Watershed Resilience and Predictions branch, Department of Environment and Protected Areas, Government of Alberta. He leads the River Hazard Management unit, a team of professional engineers and geoscientists responsible for contributing to provincial flood response and recovery efforts, providing river engineering expertise to internal and external clients, and leading provincial flood and fluvial hazard identification initiatives. Dr. Islam is the current Chair of Hydrotechnical Division Council of Canadian Society for Civil Engineering, and a member of the Association of Professional Engineers and Geoscientists of Alberta (APEGA) Practice Review Board.