

Adaptation Resilience Training



Watersheds across Alberta vary in terrain, geology, climate, hydrology and vegetation that shape the landscape and waterways. Climate change is modifying the cycling of water within these watersheds. This will require land and water management to adapt to support healthy, resilient communities and ecosystems into the future.

Whether it is increased water demand during hot days or more frequent extreme precipitation events contributing to flood risks, climate change is altering the way that we manage water. These changes can impact public safety and wellbeing; water supply and use including community, industrial and recreational activities; and disturb the natural environment and habitat for many of Alberta's species.

The Adaptation Resilience Training (ART) program is an Alberta-focused set of introductory courses that will be delivered online from September 7 to 16, 2021 at no cost. This **free training** will explore how Alberta's climate is changing, how this is impacting watershed management and how you, as a professional in the sector, can understand and manage climate risks in an uncertain future.

"Alberta has felt the impact of water extremes, including both flood and drought. This training builds on the experience of our water professionals to prepare for the future"
Mike Murray, Bow River Basin Council

"Water is fundamental for a sustainable economy and for community sustainability and growth. Innovative, collaborative, and creative options for watershed management are needed to adapt to climate variability and change."
Claire Jackson, WaterSMART Solutions




Who should take the training?

Professionals working in water and land management who recognize the challenges that climate change presents and want to learn how to incorporate adaptation in their practice and build resilience in the sector, including biologists, engineers, land architects, foresters, operators, researchers, policy makers, utilities, and other professionals

Continuing Educations Credits (CECs) may be available through certain professional organizations, such as the Alberta Society of Professional Biologists and the Association of the Chemical Profession of Alberta.

What is involved in the training?

The program consists of five **Pre-requisite Core Modules** (total of 10.5 hours) that will cover foundational information, followed by a session focused on watershed management titled **Water: Too Much or Too Little to Manage** (total of 3.5 hours). There are also three optional modules that may be of interest.

	September 7	September 8	September 9	September 10	
	9 - 11:30 AM The Weather Isn't What it Used to Be: Separating Fact From Fiction about Climate Change	9 AM - 12 PM Risks Around Us: Learning which Climate Risks are Important to Manage and How	9 - 11:30 AM Making Dollars and Sense out of Climate Change: Economic Aspects of Adaptation	9 - 11:30 PM But It's so Cold Outside! How to Speak Effectively About Climate Change	 Pre-requisite Core Module  Watershed Module  Optional Modules
September 13	September 14	September 15	September 16		
8:30 AM - 12 PM Water: Too Much or Too Little to Manage	8:30 AM - 12 PM Building Climate Resilient Infrastructure: Using PIEVC to Understand and Manage Climate Impacts	8:30 AM - 12 PM Feeding Alberta into the Future: Adapting Agriculture to the Changing Climate	9 AM - 12 PM Stronger Together: Planning Resilient Communities		

Register at <https://your.alberta.ca/art-registration>



Water: Too Much or Too Little to Manage

SEPTEMBER 13, 8:30 AM - 12 PM

This module will review the basics of watersheds, hydrological modeling, and linkages to the climate data when projecting potential impacts on both built and natural environmental within watersheds. Watershed risks will then be discussed through Alberta focused examples. Attendees will be introduced to adaptation measures.

KRISTEN ANDERSON, P.Biol.
Senior Environmental Scientist
ASSOCIATED ENGINEERING



JOHN VAN DER EERDEN, P.Eng.,
Water Resources Vice President
ASSOCIATED ENGINEERING



PRE-REQUISITE CORE MODULES

The Weather Isn't What It Used to Be: Separating Fact from Fiction about Climate Change

SEPTEMBER 7, 9 - 11:30 AM

This core module will introduce climate science, including the basics of the global climate system and observed climate trends in Canada and Alberta. You will be presented with an overview of the models that are used to evaluate climate trends and make projections of future climate conditions. Basic terminologies will also be introduced to help you navigate the climate change conversation. We will lead you through an Alberta-focused discussion on changes in average and extreme climate conditions, and how these changes are related to floods, droughts and wildfires that have social, environmental and economic impacts. To inform your analyses, planning and decisions, the module will also introduce key tools and resources for understanding and accessing climate data and information.

JEREMY G. FYKE,
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Climate Science and
Modelling
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DAVID SAUCHYN, Ph.D.
Climate Science
UNIVERSITY OF REGINA



Risks Around Us: Learning which Climate Risks are Important to Manage and How

SEPTEMBER 8, 9 AM - 12 PM

This two-part core module is an introduction to risk. In the first part, we will explore risk identification and assessment, starting with a discussion on “what do we mean by risk”, “why thinking about risk is important” and “what has risk got to do with climate change.” We will then review risk-related terminology, such as likelihood and consequence, and define what they mean in the context of risk identification and assessment. The basic process for identifying, quantifying, and evaluating risk will be discussed and demonstrated with a case study.

OWEN JAMES, M.Sc.,
CEnv., CWFM, MIAM
Asset Management
Specialist
ASSOCIATED
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Following risk identification, we will discuss risk management. It is necessary to support decision making, so what tools are available, and how do we take positive action to manage the risk within our influence? The second part of the module will introduce the basic principles, processes, and tools commonly used for managing risk.

Making Dollars and Sense of Climate Change: Economic Aspects of Adaptation

SEPTEMBER 9, 9 - 11:30 AM

This core module will provide information to help initiate conversations on economic risk in the context of adaptive climate risk management. Through this module, we will explain common terminologies and parameters that are used to discuss adaptation cost and benefits, and approaches to estimate potential climate change costs. Economic decision-support tools to manage uncertainties will also be discussed, along with key economic barriers and limits to adaptation.

RICHARD BOYD, Ph.D.,
Economics and
Research
ALL ONE SKY
FOUNDATION



But It's so Cold Outside! How to Speak Effectively About Climate Change

SEPTEMBER 10, 9 - 11:30 AM

This core module will help guide you in effectively communicating about climate change. We will begin with the importance of knowing your target audience and tailoring your discussion to fit their interests and values. We will also outline what is needed to help achieve your communication goals. Then, we will talk about the keys to successful communication.



GARRY DRACHENBERG, P.Eng.,
Vice President, Water Solutions
ASSOCIATED ENGINEERING

The courses noted below are not part of the watershed management modules but are open to all attendees who have taken the pre-requisite core modules.

Building Climate Resilient Infrastructure: Using PIEVC to Understand and Manage Climate Impacts

SEPTEMBER 14, 8:30 AM - 12 PM

This module will demonstrate the assessment of infrastructure vulnerability through a risk assessment process using the Public Infrastructure Engineering Vulnerability Committee (PIEVC) Protocol with a focus on buildings, roads and bridges. PIEVC is a systematic process to assess consequence and likelihood of future climate conditions and events on infrastructure.



JEFF O'DRISCOLL, P.Eng.
Division Manager, Infrastructure
ASSOCIATED ENGINEERING

Feeding Alberta into the Future: Adapting Agriculture to Changing Climate

SEPTEMBER 15, 8:30 AM - 12 PM

In this module, we will discuss how climate change is impacting agricultural production and businesses, including potential risks and adaptation strategies that can be implemented in the sector. The importance of meaningful conversations and identifying opportunities for adaptation through collaboration with all types of professionals, from producers to insurers, researchers, policy makers and others in the value chain, will be examined. In this module, we will have real conversations – not simply a lecture – about opportunities for adaptation in this important industry.



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ASSOCIATED ENGINEERING



CRYSTAL MACKAY
CEO, Loft32
FOOD DAY CANADA COORDINATOR

Stronger Together: Planning Climate-Resilient Communities

SEPTEMBER 16, 9 AM - 12 PM

This module will introduce you to information that will help plan and implement strategies for building resilience in your community. We will present key frameworks and standards that are commonly used in risk-informed discussions. We will also present policy considerations for increasing resilience over the long-term, such as stakeholder support, cost, and residual risk.



DANA WOODWORTH, MBA,
National Practice Lead
Community Resilience
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JEFF ZUKIWSKY, RPP..
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Supporting Organizations

The Adaptation Resilience Training Program is co-funded by Alberta Environment and Parks, and Natural Resources Canada. In collaboration with the Government of Alberta, Associated Engineering has worked with professionals from over 30 municipalities, post-secondary organizations, professional associations, not-for-profits, businesses and industry groups that have volunteered their time to help develop the training. We thank all the subject matter experts and project partners for their contributions.



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Associated Engineering



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