

Application of the Updated ACWWA Guidelines: Climate Change *Practical Considerations and Key Concepts*

November 13, 2023 Halifax, NS

November 17, 2023 Moncton, NB

Expected Course Timeline:

- 6-hour course: 9:00am – 3:30pm
- 1 hour lunch break
- 2, 15 min breaks
- Time for discussion/ questions included.

Audience:

- Operators - CEUs
- Utility Management/ Project Management – Professional development time
- Consultants – Professional development time

Course Instructors:

- Lindsay Bolton
- Melissa Fraser
- Support (Lauren Fleet)

1. Introduction

Expected Timeline: 15 minutes.

- Instructors/ participants introductions.
- Brief outline of what the course will cover: syllabus.

2. Overview of Updates to Guidelines

Expected Timeline: 30 minutes.

1. New Chapter on Climate Change Risk Assessments and Resilience

- Overview of Climate Change Chapter Table of Contents and what additions were made to the Guidelines.
- How to access Guidelines.

2. Climate Chapter

- Overview importance of incorporating climate change into planning, asset management, design & operations of infrastructure.
- Emerging industry standards for incorporating climate change.

- Mitigating losses and impacts of climate change.

3. Overview Updates to the recommended approval process to include climate considerations.

- (1) Pre-consultation phase and screening assessment.
- (2) Pre-design phase and risk assessment (scope of which is determined through the screening-level assessment).

3. Introduction to Observed and Projected Climate Changes in Atlantic Canada

Expected Timeline: 1 hour.

- Discussion on observed changes in Atlantic Canada
- Brief overview of key climate indices and projected changes over time in different regions of Atlantic Canada
 - Air Temperature
 - Water Temperature
 - Seasonal Precipitation
 - Ice Accretion and Freezing Rain
 - Flooding
 - Storm Activity
 - Sea Level Rise
 - Extreme Coastal Water Level and Erosion
 - Wildfire and Other Disturbance Regimes
 - Permafrost

Break: 30 mins

4. Overview of Climate Impacts to Water and Wastewater Treatment and Infrastructure

Expected Timeline: 45 mins.

- Example impacts to water and wastewater treatment, operations, and infrastructure due to projected changes in climate.
 - Structural damage and overland and/or coastal flood risk to buildings and infrastructure.
 - Supply chain disruption.
 - Power and communication outages.
 - Water quality changes (source water, groundwater, and water distribution).
 - Reduced allowable withdrawal and safe yield of source water.
 - Structural performance and maintenance of dams.
 - Operations of residuals management facilities.
 - Breakage and deterioration of water transmission and distribution systems.

Lunch: 1 hour (12 -1)

5. Climate Information

Expected Timeline: 45 min

- Purpose is to summarize important background concepts relating to climate projections. These ideas are key for understanding how climate information is used in climate change risk assessments.

1. Finding Climate Information

- Overview of the different types, use, and accessibility of various information sources.
 - Local, operator and & Indigenous Knowledge.
 - Measured Data.
 - Data Portals.
 - Impact models.
 - Floodlines and Hazard Mapping.
 - Literature.

2. Managing Uncertainty

- Overview of uncertainty management in climate science, projections and models, and data sources.
 - Use of Ensembles
 - Sources of Uncertainty
 - Evolving science

3. Understanding Climate Models

4. Climate Indices

5. Projection Horizons

6. Emission Scenarios

- Overview of available emission scenarios and what each represent.
- Selection of appropriate project specific emission scenarios for assessment

6. Climate Risk Assessments

Expected Timeline: 45 mins.

1. Introductory Concepts

- What is a risk assessment.
- Who is involved in a risk assessment.
- What is the role of risk assessment in new infrastructure projects.
- What is the role of risk assessment for Existing infrastructure/ systems.
- What should a risk assessment include.
- Evaluation of risk tolerance.

2. Screening Level Assessment

- Purpose of the screening level assessment
- Scope of the screening level assessment and how it ties into the approval process and the risk assessment. Considerations for level of effort.

- Requirements of the screening level assessment.

3. Concepts for Executing a Risk Assessment

- Scope of the risk assessment.
- Considerations for level of effort.
- Requirements of the risk assessment.
- ISO31000 Risk Management Guidelines and other widely accepted risk assessment methodologies.
- Considerations when selecting risk assessment methodologies (top-down, bottom-up, PIEVC (lite), J-100) and obtaining training.

15 min break

7. Climate Change Adaptation and Risk Mitigation

Expected Timeline: 30 – 45 mins

- Different approaches/ types of adaptation and risk mitigation.
- Remedial action to upgrade the existing infrastructure or improve design parameters.
- Management action, such as developing new policy or procedures.
- Modification of operational plans or maintenance practices.
- Monitor performance of infrastructure and re-evaluate at a later time.
- Studies or investigations to fill data gaps or improve quality of existing data.

Course Location:

November 13, 2023

CBCL

1505 Barrington St Suite 901

Halifax, NS B3J 3K5

November 17, 2023

Quality Inn Dieppe

70 Dieppe Blvd

Dieppe, NB E1A 8H4



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November 13, 2023 Halifax, NS _____
November 17, 2023 Moncton, NB _____

Name: _____

Organization: _____

Mailing Address: _____

City, Province: _____ Postal Code: _____

Phone: _____ Email: _____

ACWWA Membership No: _____ WEF Membership No: _____

If no membership number is listed, you will be invoiced as a non-member. See pricing below.

Fee for ACWWA or WEF Members & Employees of UTILITY Members

Fee for **ACWWA** or **WEF** members
Course: $\$450.00 + \$67.50 \text{ HST (15\%)} = \517.50

Fee for Non – Members
Course: $\$550.00 + \$82.50 \text{ HST (15\%)} = \632.50

Fees include coffee breaks each day, but not meals.

Invoices will be sent to the address listed above.

PO number to be included on the invoice _____

Payment can be made by Visa, Master Card or cheque.

Card Holder's Name _____

Credit Card Number _____

Expiry _____ CVV _____

Signature _____

Email address for credit card receipt _____

Cheques should be made payable to:

ACWWA

PO Box 28141 · Dartmouth, NS · B2W 6E2

Phone 902-434-6002 Fax 902-435-7796