TRAINING GUIDE - PARTICIPANT
Municipal flood resilience in action

Small and medium communities (English)
February 24, 2025 from 12:00 – 3 :00pm ET

Zoom link:
https://fcm-ca.zoom.us/j/86776738874?pwd=fMJB72wuGJLecuexPS5AEDAEItkLgd.1
Meeting ID: 867 7673 8874 // Passcode: 619926
Link to Mentimeter: https://www.menti.com/blb2me3b4oau

Context

Centered on the goal of creating opportunities for facilitated training around the planning and implementation of actions that enable communities to adapt to the impacts of climate change, the **Green Municipal Fund'**s Capacity Development team is pleased to offer in collaboration with the **Intact Centre on Climate Adaptation** (University of Waterloo) a training series on their **Municipal Flood Risk Check-Up** tool**.**

The Municipal Flood Risk Check-Up has been developed to support Canadian municipalities in better preparing for heavy rainfall, river, and coastal flooding. It is a self-assessment questionnaire with 50 questions designed to assess potential flood hazards (flood exposure), and implementation of actions to reduce flood risks (flood preparedness).

Training objectives

By the end of the 3-hour training, we hope that participants will have the tools they need to:

1. **Gain** an understanding of flood exposure, even where flood mapping is not available.
2. **Benchmark** and document your current flood preparedness, drawing on Canadian guidance and standards, including consideration of equity.
3. **Document** progress towards reduction of municipal flood risk over time.
4. **Access** a library of key resources on flood risk and preparedness.
5. **Demonstrate** municipal flood preparedness to interested parties.
6. **Prioritize** equitable climate actions for different flood types and at different scales.
7. **Inform** future investment planning and funding applications.
8. **Anticipate** and answer questions that may be asked by municipal insurers in developing insurance policies.
9. **Contribute** to objectives and targets identified in Canada's National Adaptation Strategy.
10. **Support** municipal staff and service delivery.

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INTACT CENTRE ON CLIMATE ADAPTATION

Training agenda

TIME (ET)	ACTIVITY	WHO?
12:00	Welcome, Housekeeping items Land Acknowledgement, Context about GMF & LLCA	Anne-Charlotte Olivier, FCM
12:10	Icebreaker: Flood risk management at home Link to Mentimeter: https://www.menti.com/blb2me3b4oau	Participants on Mentimeter
12:25	Presentation: Municipal Flood Risk Check-Up	Joanna Eyquem, Intact Centre on Climate Adaptation
12:45	**Exercise #1:** Familiarizing yourself with the Check-Up tool Questions and answers (Q&A)	All (individual activity)
1:00	Wellness break (10mins)	
1:10	**Exercise #2a**: Identifying potential risks (Section I)	Three or four groups Fill out the Check-Up with our facilitators, based on a case study.
1:25	**Exercise #2b**: Analysing risks (Section II)	
1:40	**Exercise #2c**: Reducing risks (Section III)	
2:00	Wellness break (10mins)	
2:10	**Exercice #3** – Interpretation of results	Group discussion
2:25	Group feedback and recommendations (in plenary)	5 mins presentation per group
2:45	Feedback on the Check-Up tool and the experience Q&A	All
2:55	Summary and lessons learned Wrap up & Survey	All
3:00	**End of training**	

Exercise #1: Familiarizing yourself with the Municipal Flood Risk Check-Up tool

Individual activity (15mins)

The aim of this first activity is to familiarize you with the Check-Up tool sheets and how to navigate the tool. You can also ask us any questions you may have during this period.

Introduction:

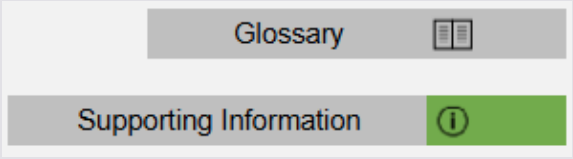
- Download the tool from the website (it will automatically appear in your downloads folder)
- Open the Excel file
- Review the11 tabs/sheets of the tool
    - Start Here (1 tab)
    - All 50 questions : Sections I-III (3 tabs)
    - Results: Scorecard, Web Diagrams, Overview, Background Calculations (4 tabs)
    - Resources: Glossary, Supporting information, References (3 tabs)

Take time to explore the sheets and navigation buttons.

EXERCISE 1 – YOUR TURN!

Start here!

- Find the sheet « Start here » - first tab on the left
- Read the section "Responding to questions" to understand how to complete the Check-Up tool.
- Note the descriptions of the "Glossary" and "Supporting Information" buttons.



- Navigate to the bottom of the sheet and click on the "Start here" button - you'll be taken back to Section I.

Functionality - Glossary

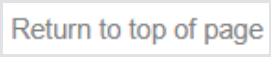
- At the top of Section I, click on the book icon to find the definition for "Flood Mapping" - you'll be taken to the definition in the "Glossary" sheet.
- While in the "Glossary" sheet, click on the blue button to return to Section I.

Functionality – Supporting Information

- Navigate to the bottom of the "Section I" sheet and click on the "Section II" button - these navigation buttons are at the bottom of all sheets and allow you to progress to the next sheet.
- Navigate to measure A2 in the "Section II" sheet.

- Click on the green icon to find additional information on stormwater management. 
- While in the "Supporting Information" sheet, click on the blue button to return to Section II, A2.

Functionality - References

- Navigate to the "References" sheet (the last tab on the right)
- Find the link to « Vouk, I., Pilechi, V., Provan, M., and Murphy, E. 2021. "Nature-Based Solutions for Coastal and Riverine Flood and Erosion Risk Management." Groupe CSA at the end of the sheet.
- Click on the link to open the resource.
- Return to the tool Excel file and click on the "Return to top of page" button (these buttons are at the bottom of every page). 

Exercise #2: Fill out the Municipal Flood Risk Check-Up tool

Sub-group activity (15mins + 15mins + 20mins, 50mins total)

2a / Section I: Flood Hazard and Exposure – Identifying Potential Risks (15mins)

- Identify the community you are going to use as a case study (a community represented by a member of your group).
- Answer the questions with the information provided to the group and with the help of your facilitator, based on the case study.
- There are 16 questions for section I.

A: Combined Flood Hazards	A1	History of Flooded Buildings and Infrastructure
	A2	Age of Development
	A3	Vulnerable Populations
B: Intense Rainfall / Sewer Flooding	B1	Surface Ponding
	B2	Impervious Surfaces
	B3	Basement Flooding
	B4	Sewer Design Type
	B5	Buildings at risk of intense rainfall / sewer back-up flooding
C: River Flooding	C1	Presence of Watercourses
	C2	Proximity to River Floodplain Areas
	C3	Buildings at risk of river flooding
	C4	Buildings at high-risk of river flooding

D: Coastal or Shoreline Flooding	D1	Presence of Shorelines
	D2	Proximity to Coastal or Lake Shoreline Floodplain Areas
	D3	Buildings at risk of coastal/lake flooding
	D4	Buildings at high-risk of coastal/lake flooding

EXERCISE 2A – YOUR TURN!

- For each question od Section I, read the descriptions to choose your answer gradation:

In this section:

High	Denotes a factor contributing to a higher level of flood hazard exposure.
Low	Denotes a factor contributing to a lower level of flood hazard exposure (the desired outcome).
Medium	In-between "high" and "low" cases.
Unsure:	To be selected where insufficient information is available to select a High, Medium or Low response. In order to take a conservative approach to risk management, an "unsure" response will be considered as "High" exposure.
Not Applicable N/A:	To be selected only where river or coastal / shoreline flood questions are not applicable, based on the responses to C1 and D1. N/A is not presented as an option where questions in the assessment require a response; please select unsure if you do not have sufficient information to select a High, Medium or Low response.

- If you have quantitative information (e.g. maps), answer the following additional questions (B5, C3, C4, D3, D4).
- High gradation means that the level of exposure to a hazard is high, and low gradation means that it is low (desired result for this section I).

2b / Section II: Flood Preparedness - Analysing Risks (15mins)

- Based on your case study, answer the questions with the information provided.
- There are 12 questions for section II (some with sub-questions).

A: Combined Flood Hazards	A1	Climate Change Projections
	A2	Strategic Stormwater Management Plan
	A3	Socio-Economic Assessment
	A4a	Infrastructure - Electrical Power
	A4b	Infrastructure - Telecommunications
	A4c	Infrastructure - Transportation
	A4d	Infrastructure - Drinking Water
	A4e	Infrastructure - Wastewater
	A4f	Infrastructure - Food
	A4g	Infrastructure - Health
	A4h	Infrastructure - Emergency Management Services
	A5	Natural Asset Inventory
	A6	Property-Level Flood Resilience Assessments
B: Intense Rainfall / Sewer Flooding	B1a	Rainfall Flood Risk Maps
	B1b	Rainfall Flood Risk Maps
	B2a	Sewer-Backup Flood Risk Maps
	B2b	Sewer-Backup Flood Risk Maps
C: River Flooding	C1	Watershed Management
	C2a	River Flood Risk Maps
	C2b	River Flood Risk Maps
D: Coastal or Shoreline Flooding	D1	Strategic Coastal/Shoreline Management
	D2a	Coastal/Shoreline Flood Risk Maps
	D2b	Coastal/Shoreline Flood Risk Maps

EXERCISE 2B – YOUR TURN!

- For each measure under Section II, read the description of best practice, then choose your response gradation:

In this section, a consistent qualitative scale is used to rate *flood preparedness*, following the description of each best practice measure:

High: Measure implemented (prepared)

Medium: Some elements of measure implemented or underway (preparing)

Low: Measure not implemented (unprepared)

Unsure: To be selected where insufficient information is available to select a High, Medium or Low response. In order to take a conservative approach to risk management, an "unsure" response will be considered as "High" exposure.

N/A: À sélectionnez uniquement là où les questions relatives aux inondations fluviales ou côtières ne s'appliquent pas, en fonction des réponses à C1 et D1. N/A n'est pas présenté en option lorsque les questions de l'évaluation nécessitent une réponse; veuillez sélectionner 'incertain' si vous n'avez pas suffisamment d'informations pour choisir une réponse 'Élevée', 'Moyenne' ou 'Faible'."

- Note here that the rating system is the inverse to Section I on flood exposure, where "High" denotes a factor contributing to a higher level of flood hazard exposure, and "Low" denotes a factor contributing to a lower level of flood hazard exposure (the desired outcome for Section I). The desired outcome for Section II is "High – Measure implemented".

2c / Section III: Flood Preparedness - Reducing Risks (20mins)

- Based on your case study, answer the questions with the information provided.
- There are 22 questions for section III (some with sub-questions).

A: Combined Flood Hazards	A1	Climate Adaptation Plan
	A2a	Infrastructure - Electrical Power
	A2b	Infrastructure - Telecommunications
	A2c	Infrastructure - Transportation
	A2d	Infrastructure - Drinking Water
	A2e	Infrastructure - Wastewater
	A2f	Infrastructure - Food
	A2g	Infrastructure - Health
	A2h	Infrastructure - Emergency Management Services
	A3a	Flood Risk in Asset Management Planning
	A3b	Flood Risk in Asset Management Planning
	A4a	Natural Asset Management
	A4b	Natural Asset Management
	A5	Homeowner Flood Resilience

	A6	Commercial Real-Estate Flood Resilience
	A7	Emergency Management Response
	A8	Flood Forecasting and Alert Systems
	A9	Climate Adaptation Officer
	A10a	Municipal Staff and Council Capacity - Mandate
	A10b	Municipal Staff and Council Capacity - Knowledge
	A10c	Municipal Staff and Council Capacity - Training
	A10d	Municipal Staff and Council Capacity - Tools
	A10e	Municipal Staff and Council Capacity - Funding
	A11	Non-Emergency Operational Activities that support flood preparedness
B: Intense Rainfall / Sewer Flooding	B1	Stormwater Management System
	B2	Sanitary Sewer System
	B3	Basement Flood Protection
	B4	Backwater values – new homes
	B5	Backwater values – existing homes
C: River Flooding	C1	River Floodplain Regulation
	C2	River Flood Management
	C3	High-Risk River Floodplain Areas
D: Coastal or Shoreline Flooding	D1	Coastal/Shoreline Floodplain Regulation
	D2	Coastal/Shoreline Flood Management
	D3	High-Risk Coastal/Shoreline Floodplain Areas

EXERCISE 2C – YOUR TURN!

- For each measure under Section III, read the description of best practice, then choose your gradation of response:

In this section, a consistent qualitative scale is used to rate *flood preparedness*, following the description of each best practice measure:

High: Measure implemented (prepared)

Medium: Some elements of measure implemented or underway (preparing)

Low: Measure not implemented (unprepared)

Unsure: To be selected where insufficient information is available to select a High, Medium or Low response. In order to take a conservative approach to risk management, an "unsure" response will be considered as "High" exposure.

N/A: À sélectionnez uniquement là où les questions relatives aux inondations fluviales ou côtières ne s'appliquent pas, en fonction des réponses à C1 et D1. N/A n'est pas présenté en option lorsque les questions de l'évaluation nécessitent une réponse; veuillez sélectionner 'incertain' si vous n'avez pas suffisamment d'informations pour choisir une réponse 'Élevée', 'Moyenne' ou 'Faible'."

- In this section, the gradation "high" means that the level of preparation is high (desired result), and "low" that it is low.

Exercise #3: Interpretation of the results

Group activity (15mins)

- After answering some or all the 50 Check-Up questions, look at the three tool results sheets with your group and answer the following questions:

EXERCISE 3 – YOUR TURN!

Scorecard | Web Diagrams | Overview

- Using the **Scoreboard :**
  - What is the community's exposure gradation for the subsections:
    - A : Combined Flood Hazards
    - B: Intense rainfall / Sewer Flooding
    - C: River Flooding
    - D: Coastal or Shoreline Flooding
  - For which type of flood is exposure highest?

- Using the **Web Diagrams**,
  - For flood preparedness - risk analysis, what measure(s) have already been implemented to analyze combined flood hazards? (*Note that higher gradations, towards the outside of the canvas, indicate better flood preparedness).*
  - For flood preparedness - risk reduction, what measure(s) should be taken to manage fluvial flooding?

- Using the **Overview,**
  - What is your overall assessment of **flood exposure**?
  - What is your overall assessment of **flood preparedness**?
  - What is your gradation in the final matrix? High / medium or low?

- **Prepare your 5mins presentation!** Chose a representative!
  - Provide a brief overview and description of the community.
  - For which type of flood is exposure highest (Section I)?
  - Name some strengths of the community's current flood preparedness (Section II and III)
  - Name some weaknesses in its current preparedness (Section II and III).
  - What action(s) can you recommend?