Crafting Resilient Communities

CNAM 2023 NATIONAL CONFERENCE

Fredericton, May 1 - 4, 2023

CNAM Canadian Network of Asset Managers

ASSET CONDITION AND CLIMATE IMPACT SCORING TOOL (ACCIST)

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ONTARIO SOCIETY OF PROFESSIONAL ENGINEERS

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AGENDA

Workshop

ASSET CONDITION AND CLIMATE IMPACT SCORING TOOL (ACCIST)

1. Introducing: **Knowledge Product ACCIST**
2. Asset Condition + Climate Impact
3. Case Study Application
4. Questions?

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Introducing: Knowledge Product ACCIST

This initiative was developed through the Municipal Asset Management Program, which is delivered by the Federation of Canadian Municipalities and funded by the Government of Canada

- Partner with FCM's MAMP Program
- Developed and delivered AM301 – Asset Management for Climate Resilience: Focus on Buildings
- Developed Knowledge Product
- NEW to be published on FCM Resources page

ACCIST: Asset Condition and Climate Impact Scoring Tool

- Excel Tool
  - Registry of buildings
    - Location
    - Age
    - Condition
    - Performance

+

  - Assessment of Climate Impact
    - at the system level
- Summary of condition info + climate impact

Asset Condition and Climate Impact Scoring Tool (ACCIST)

Facility List

current year	2022

Asset ID	Structure/Building Name	In-Service Date	Age	Location	Replacement Cost
	Building Example Name	2022	0	123 Sample St	$ 363,000.00
1	Water Treatment Plant	2002	20	125 Water Street	
2	Public Works Garage	1987	35	1675 River Avenue	
3	Community Centre and Arena	1992	30	100-16 Guelph Drive	
4	Park Washroom and Refreshment Booth	2015	7	75 New Forest Road	
5	Municipal Administration Office	2014	8	125 Main Street	
6	Fire Hall	2021	1	677 Siren Way	
7	Library	1942	80	79 Quiet Lane	
8	Wastewater Treatment Plant	2016	6	1919 Ontario Street	

Tab 3 – Facility Details

Asset Condition and Climate Impact Scoring Tool (ACCIST)

Facility Assessment

VERY GOOD (1)	GOOD (2)	FAIR (3)	POOR (4)	VERY POOR (5)

Building Component - Condition Rating

Please provide **CONDITION** rating for applicable building components for each facility below.

Asset ID	Structure/Building Name	Foundation / Basement	Superstructure (floor and wall structure)	Exterior Windows and Doors	Exterior Walls (facades)	Roof	Conveying (elevators, escalators, etc)	Plumbing Systems	Rainwater Drainage	HVAC Heating/ Cooling	Electrical (distribution, lighting and power)	Backup Power Generation	Communications Systems	Site/ Yardworks	Process Equipment
	Building Example Name	3	4	3	N/A	2	2	2	N/A	1	3	1	N/A	1	1
1	Water Treatment Plant			2									1		
2	Public Works Garage														
3	Community Centre and Arena														
4	Park Washroom and Refreshment Booth														
5	Municipal Administration Office														
6	Fire Hall														
7	Library														
8	Wastewater Treatment Plant														

Tab 4 – Facility Assessment - Condition

Asset Condition and Climate Impact Scoring Tool (ACCIST)

Facility Assessment

VERY GOOD (1)	GOOD (2)	FAIR (3)	POOR (4)	VERY POOR (5)

ALWAYS RELIABLE (1)	USUALLY RELIABLE (3)	NOT RELIABLE (5)

Building Component - Performance Rating

Please provide **PERFORMANCE** rating for applicable building components for each facility below.

Asset ID	Structure/Building Name	Foundation/ Basement	Superstructure (floor and wall structure)	Exterior Windows and Doors	Exterior Walls (facades)	Roof	Conveying (elevators, escalators, etc)	Plumbing Systems	Rainwater Drainage	HVAC Heating/ Cooling	Electrical (distribution, lighting and power)	Backup Power Generation	Communications Systems	Site/ Yardworks	Process Equipment
	Building Example Name	**3**	**1**	**1**	**3**	**1**	**5**	**1**	**1**	**1**	**5**	**1**	**1**	**1**	**1**
1	Water Treatment Plant			2						5					
2	Public Works Garage														
3	Community Centre and Arena														
4	Park Washroom and Refreshment Booth														
5	Municipal Administration Office														
6	Fire Hall														
7	Library														
8	Wastewater Treatment Plant														

Tab 4 – Facility Assessment - Performance

Asset Condition and Climate Impact Scoring Tool (ACCIST)

High Winds and Wind Storms															Heavy/Intense Precipitation, Flooding														
Foundation/ Basement	Superstructure (floor and wall structure)	Exterior Windows and Doors	Exterior Walls (facades)	Roof	Conveying (elevators, escalators, etc)	Plumbing Systems	Rainwater Drainage	HVAC Heating/ Cooling	Electrical (distribution, lighting and power)	Backup Power Generation	Communications Systems	Site/ Yardworks	Process Equipment		Foundation/ Basement	Superstructure (floor and wall structure)	Exterior Windows and Doors	Exterior Walls (facades)	Roof	Conveying (elevators, escalators, etc)	Plumbing Systems	Rainwater Drainage	HVAC Heating/ Cooling	Electrical (distribution, lighting and power)	Backup Power Generation	Communications Systems	Site/ Yardworks	Process Equipment	
Impact (1, 3, 5)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact Statement(s)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact (1, 3, 5)	Impact Statement(s)
-	-	-	-	-	1	-	-	-	-	-	-	-	-	Flat roof, gravel loosens during high wind events	-	1	-	-	-	-	-	-	1	-	-	-	-	-	The basement experiences water infiltration every time it rains; roof and site drainage isn't keeping up with big events

Tab 5 – Facility Climate Impact

Case Study Application

Familiarize yourself with Community XYZ (map + information)

- **STEP 1:** (tab 3) **Facility Details**
- **STEP 2:** (tab 4) **Assess Condition and Performance**

Populate the ACCIST file for assigned building(s)

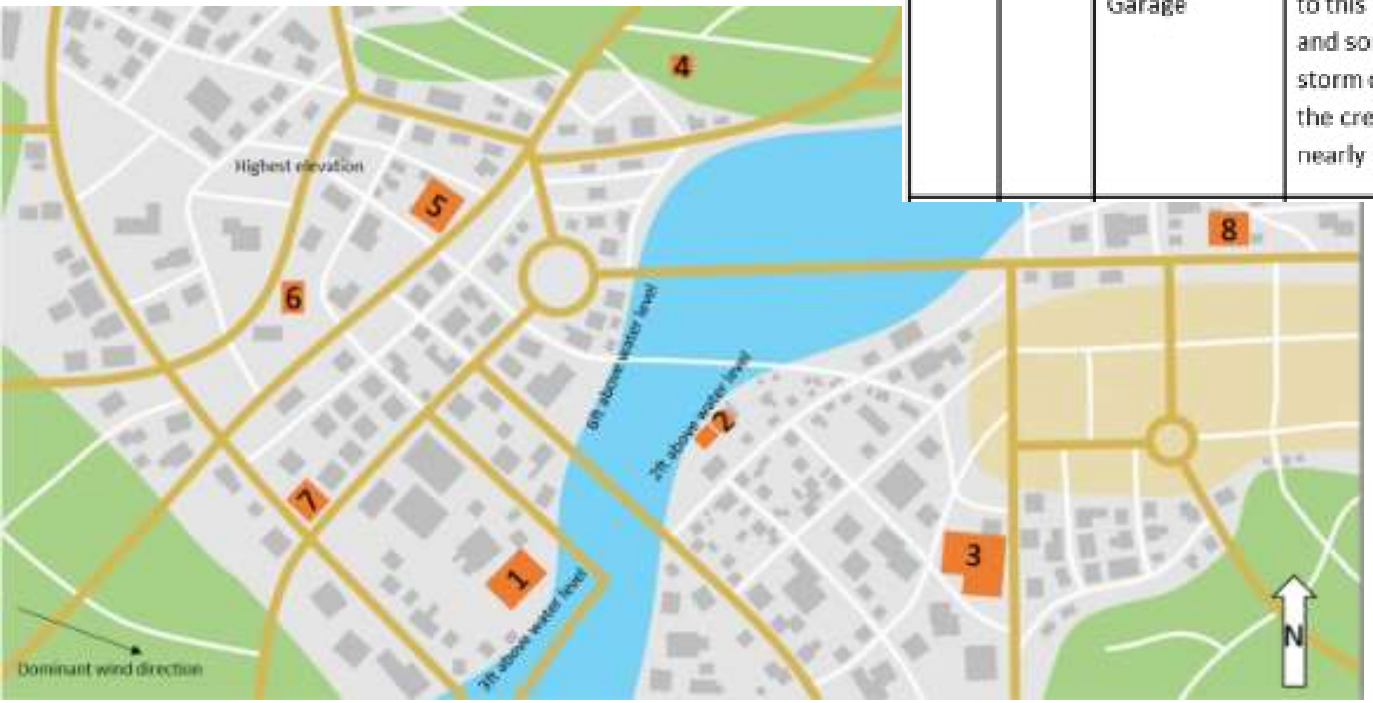
- **STEP 3:** (tab 5) **Climate Impacts**

Populate the ACCIST file for the same building(s)

Future Performance

Current Condition

Asset ID	Age (yrs)	NAME OF BUILDING / FACILITY	MAINTENANCE/OPERATOR NOTES Description of Facility and Major Components
1	20	Water Treatment Plant	The plant is near the river edge, and in a bit of lower lying area, so sometimes we see a bit of flooding around the building. So far the systems inside haven't been affected, but the basement does have some water infiltration from time to time. We've also noticed that heavy winds have knocked out the comms system in the past. Luckily the electrical system fares ok. The backup generator is in the basement on a housekeeping pad, but I worry it can get damaged if there's a lot of water down there.
2	35	Public Works Garage	No one spends a lot of time there, so we don't really get calls for repairs to this building. But it does house important snow removal equipment, and sometimes the building is hard to access if there's been an ice storm or heavy snow fall. It's also kind of low-lying, and I worry about the creek flooding - in last year's major storm the creek overflowed and nearly flooded the site.



Climate Impacts

Asset ID	Age (yrs)	NAME OF BUILDING / FACILITY	MAINTENANCE/OPERATOR NOTES Description of Facility and Major Components
1	20	Water Treatment Plant	The plant is near the river edge, and in a bit of lower lying area, so sometimes we see a bit of flooding around the building. So far the systems inside haven't been affected, but the basement does have some water infiltration from time to time. We've also noticed that heavy winds have knocked out the comms system in the past. Luckily the electrical system fares ok. The backup generator is in the basement on a housekeeping pad, but I worry it can get damaged if there's a lot of water down there.
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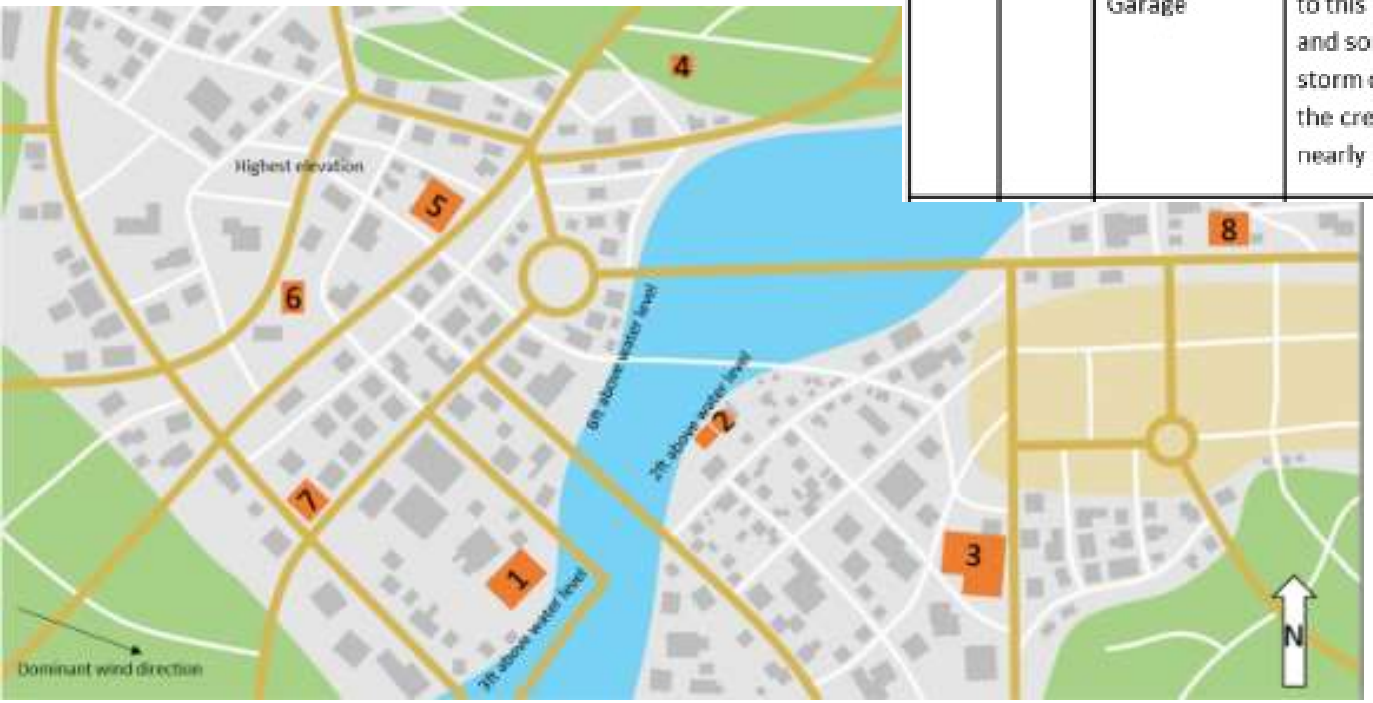

Reflection Questions

Q1. How might climate change affect the facilities in the future?

Q2. What is the desired LOS of infrastructure in 10-years?

Q3. If you “do nothing”, what is the performance of the infrastructure?

Q4. How do you prioritize to deliver LOS in your 10-year future?

Q5. How might this tool help you prioritize maintenance and rehabilitation work? Capital expenditures?

QUESTIONS

- Registry of buildings
  - Location
  - Age
  - Condition
  - Performance

+

- Assessment of Climate Impact
  - at the system level

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