Keeping the Rain *on* Our Heads!

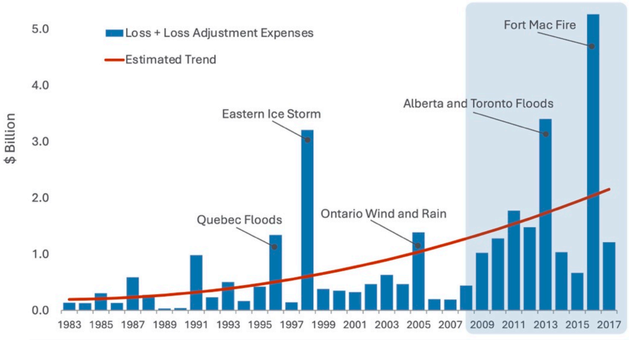
07

Smart blue roofs at Enviro-Stewards and CVC

The Problem

- Flood-related insurance claims have doubled in the last decade
- Conventional (expensive) adaptation measures involve larger sewers and more storage
- With climate change, storms are more intense and frequent

View of the Don Valley following heavy rain in Toronto on July 16, 2024. (Source: thestar.com)



Flood-related claims are now the largest contributor to insurance claims. (Source: Intact Centre)

The Solution

- Blue roofs can avoid stormwater discharge, but are historically expensive
- Enviro-Stewards' design stores water directly on the roof under the snow load allowance for 3 seasons of the year (this avoids capital costs & structural upgrades)

The Results

Enviro-Stewards

- Retained **100%** of storm events
- **43%** reduction in air conditioning, **50%** reduction in heating, **56%** reduction in water consumption
- Indoor living wall (which reduces outside air requirements by 97%) is irrigated with rainwater

Enviro-Stewards' blue roof after a rain event.

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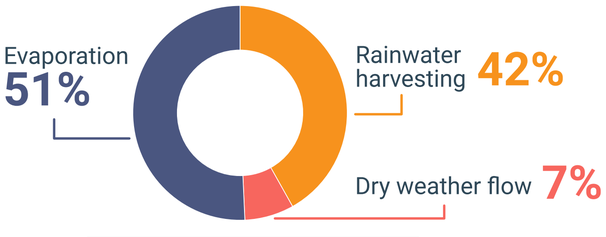
- Retained **100%** of storm events (including a combined 122 mm over 2 rain events in July '24)
- **75%** reduction of potable water for toilet flushing
- Other benefits are currently being studied



CVC smart blue roof water balance (results from Aug 18 to Sep 6, 2024)

CVC's blue roof after a rain event.

Conclusion

- Blue roofs provide practical & affordable stormwater infrastructure (adaptation)
- They also provide climate action by reducing energy consumption
- Smart blue roofs can be scaled at a community level to affordably adapt to climate change while reducing water, energy, and heat-island effect
- Stay tuned for the 2025 season's analysis by CVC, E-S, and Toronto Metropolitan University

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