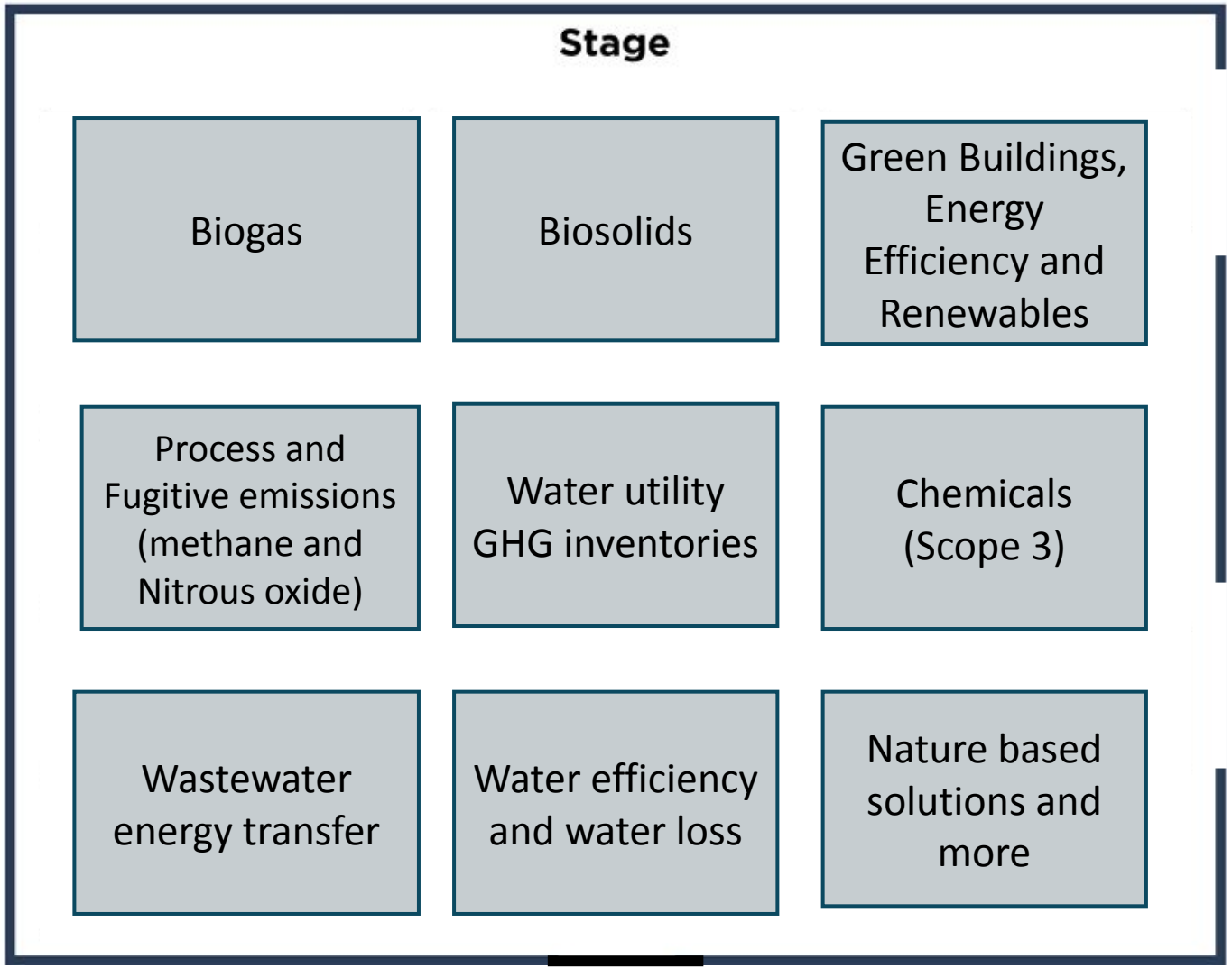
Charting the Course to Net Zero Water in Canada
Canadian Water Network

Select the area of greatest relevance to your work and **please take a seat at the designated table.**



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Charting the Course to Net Zero Water in Canada

Canadian Water Network

National Water Wastewater Conference, Victoria BC

November 4, 2025

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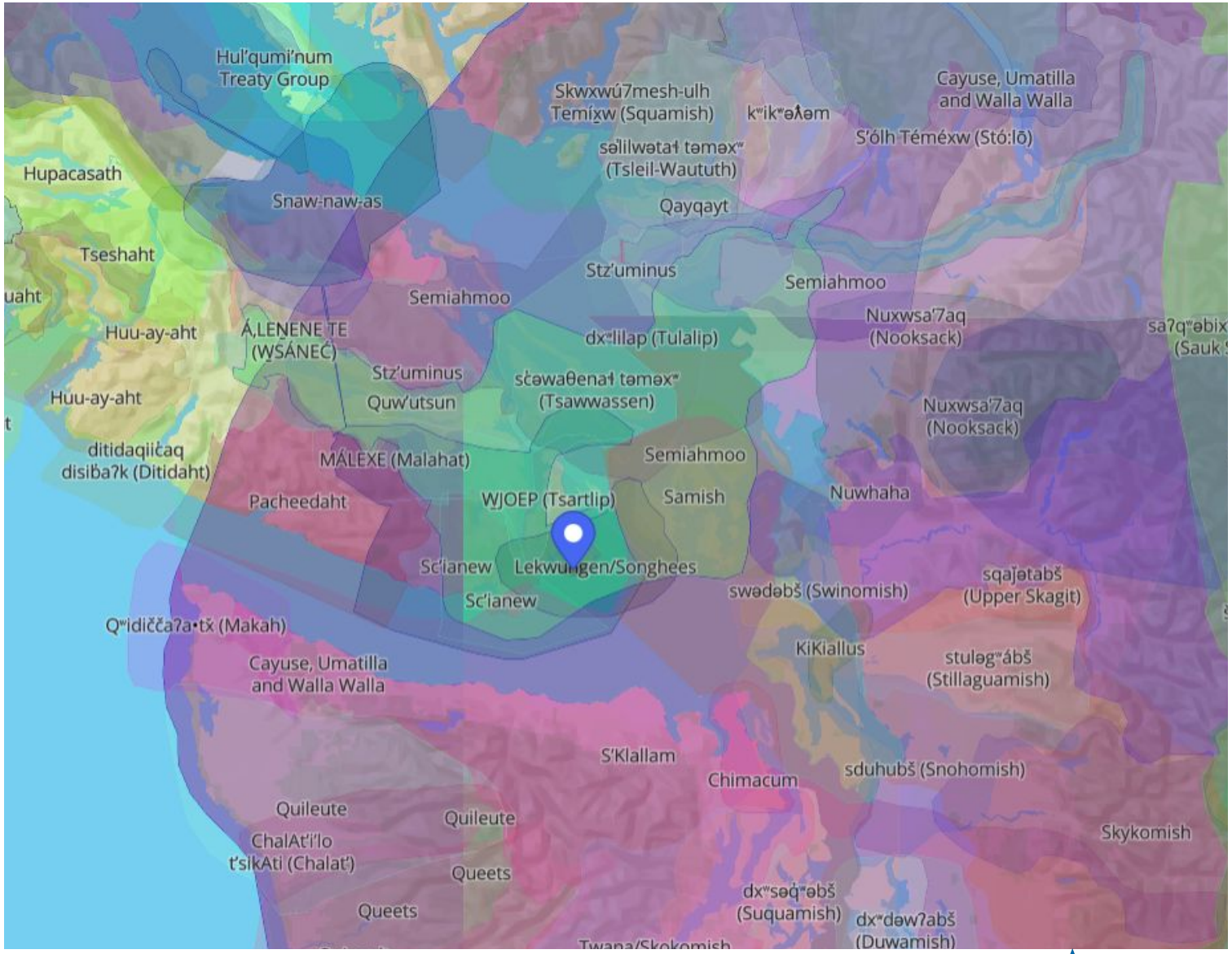
Territorial Acknowledgement



Source: https://native-land.ca

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With you Today

Dana Mears
Canadian Water Network

Stephanie Andrade
Canadian Water Network

Emily Zegers
City of Toronto

Jeff Carmichael
Metro Vancouver

Corey Pembleton
Federation of Canadian Municipalities

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Canadian Water Network

CWN addresses complex water-related challenges at the intersection of **Communities**, **Health** and **Climate**.

We do this by creating **cross-disciplinary** and **cross-sectoral networks** of professionals engaging in peer learning, mobilizing knowledge and expertise and catalyzing collaboration to accelerate action.

Canadian Water Network's
Canadian Municipal Water Consortium

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SAVE THE DATE

JUNE 9-10

BLUE CITIES 2026

GATINEAU, QC

RÉSERVEZ LA DATE

9-10 JUIN

WATER SECURITY

Strategies for Fiscal, Economic and Infrastructure Resilience

What to Expect Today

WHAT IS NET ZERO WATER?

RAPID PANEL OF EXPERTS

ROUND-TABLE WORKSHOP

QUESTIONS

WE INVITE YOU TO JOIN OUR NETWORK

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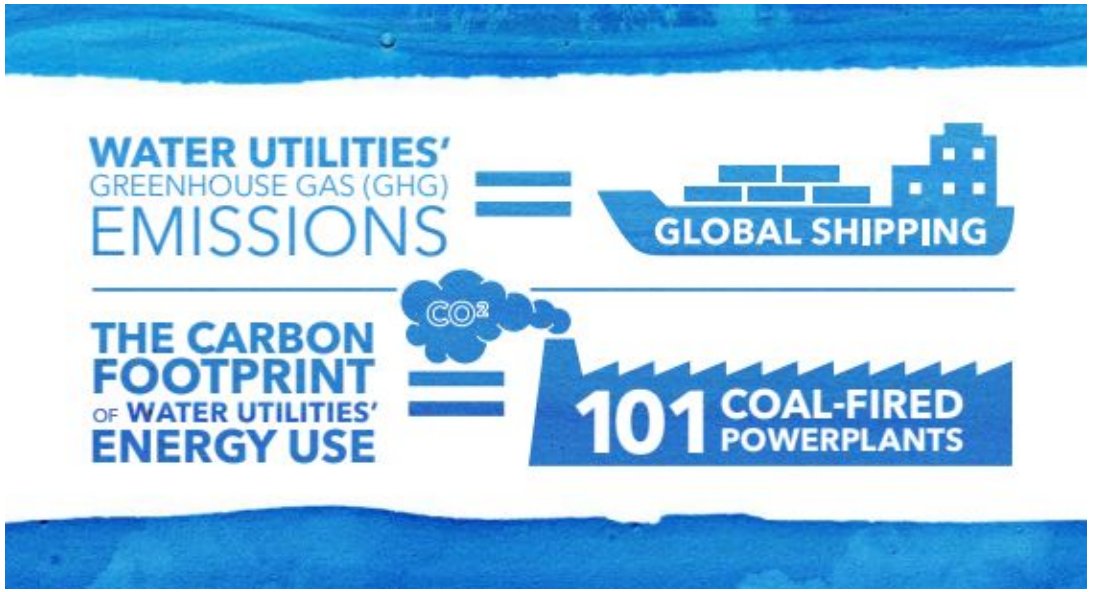
What is Net Zero Water?

- Federal 2030 Emission Reduction Plan to reach net zero 2050
- Rising demand for high-quality water requires stronger, faster action to keep pace with the mitigation efforts needed today.
- Creating resilience
  - Economic
  - Environmental
  - Level of service
- Funded in part by Environment and Climate Change Canada Implementation Readiness Fund



UN-Water. (2021, March 22). *World Water Day 2021: Global water community challenged to join the Race to Zero*. UN-Water.

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Key Components

- Guidance for water, wastewater and stormwater services to mitigate emissions
- National Advisory Committee
- Technical Advisory Committee
- Project Partners
- Roadmap
- Learning tours
- Knowledge products

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Where is this Headed?

Communities of Practice with Purpose	• Connect with peers across Canada to explore complex and emerging challenges • Learn alongside municipal leaders and industry experts
Tools for Action	• In-Person Learning Tours of cutting-edge facilities • Case Studies, Videos, and guides to support action
Navigating your own Roadmap	• Acting is always better than waiting for perfection • Resources for resilient utilities

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Rapid Panel of Experts

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Emily Zegers
City of Toronto

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GHG Reduction at Toronto Water

Emily Zegers, City of Toronto

NWWC

November 4, 2025

Toronto

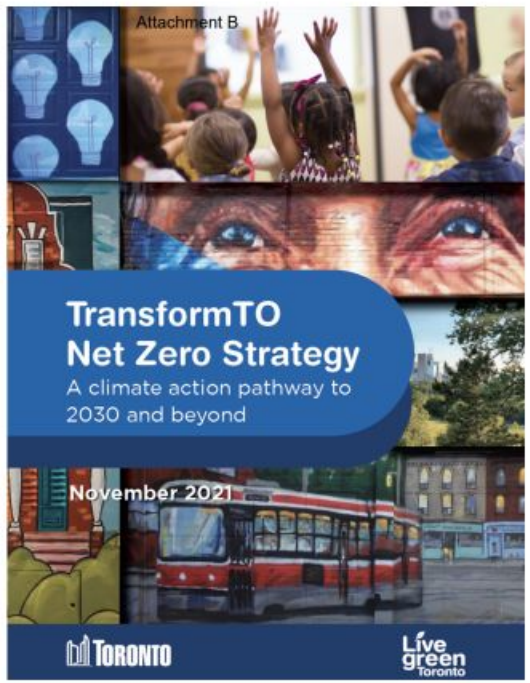
- Population about 6M
- Lake Ontario provides our drinking water & receives our effluent
- Toronto Water operates & maintains:
  - 4 drinking water treatment plants
  - 4 wastewater treatment plants
  - Water distribution, wastewater collection, stormwater management infrastructure

TORONTO

Our Drivers…

City of Toronto

- Council-declared a Climate emergency
- Net zero by 2040 or sooner

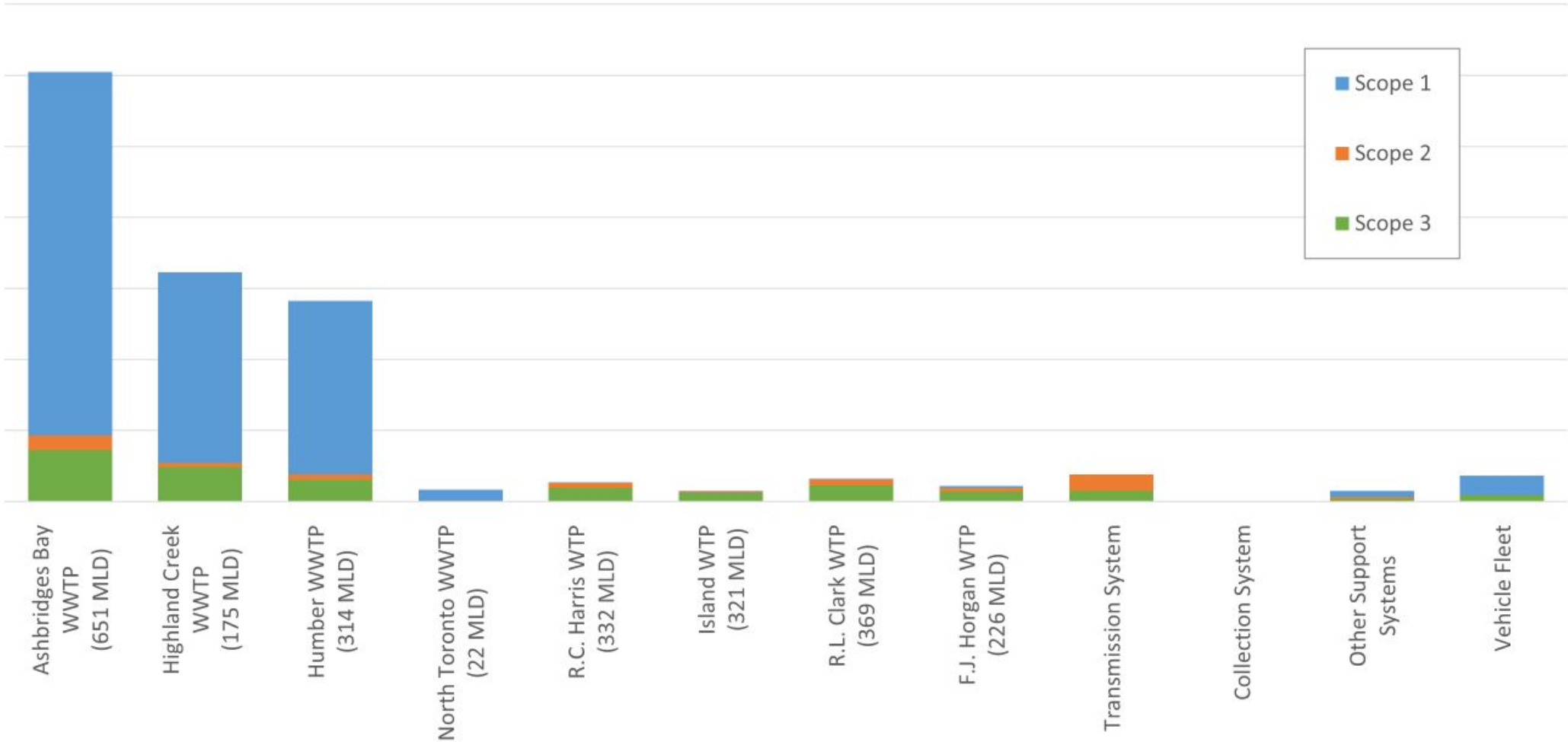


Toronto Water

- Future risks of GHG emissions- financial, regulatory
- Financial opportunities
- Reputational

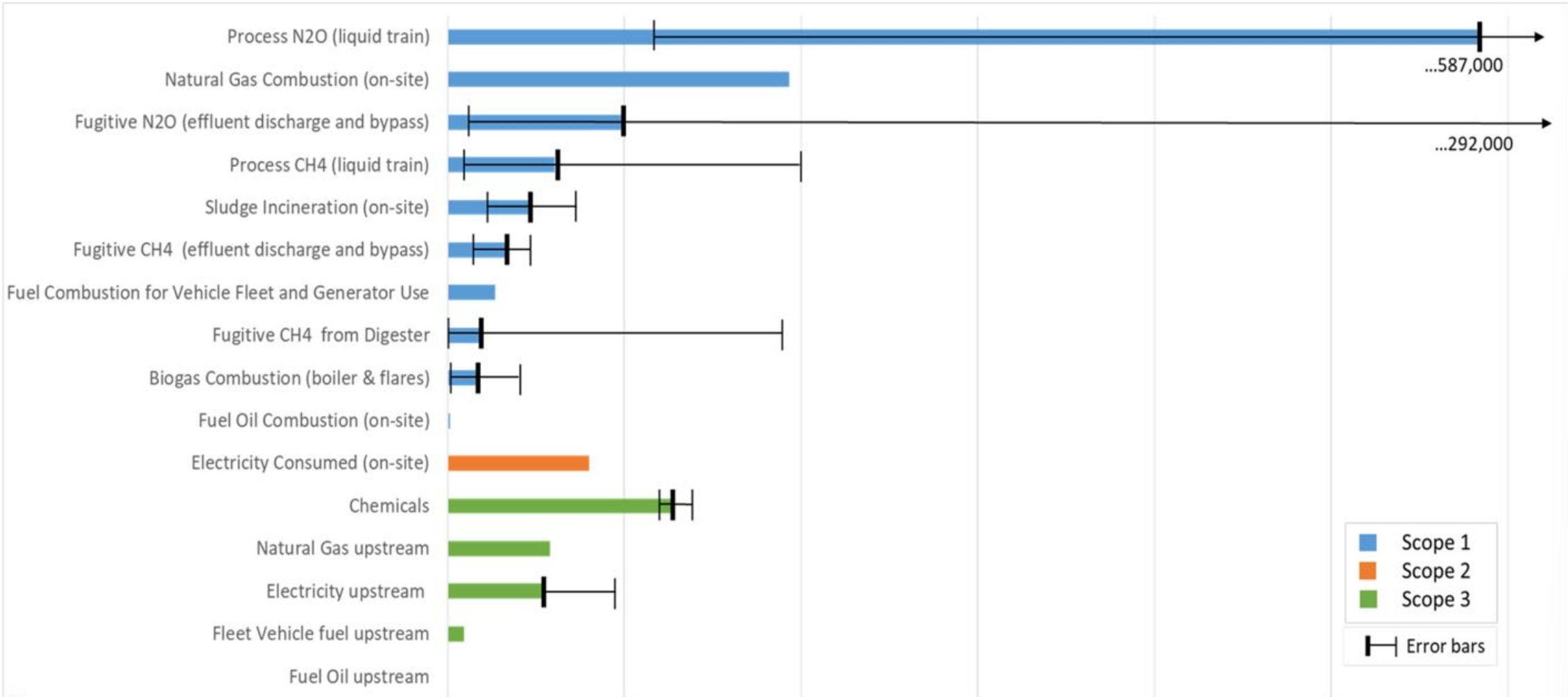
TORONTO

Completing our GHG Inventory



TORONTO

By Emission Source



TORONTO

Mitigation Projects Underway

Process Emissions Research

- 2024- Humber Treatment Plant- CFD-Biokinetic Modeling for N2O
- 2025- Ashbridges Bay Treatment Plant process emissions research
- Internal *Process Emissions Task Group*

TORONTO

Mitigation Projects Underway

Capital Upgrades

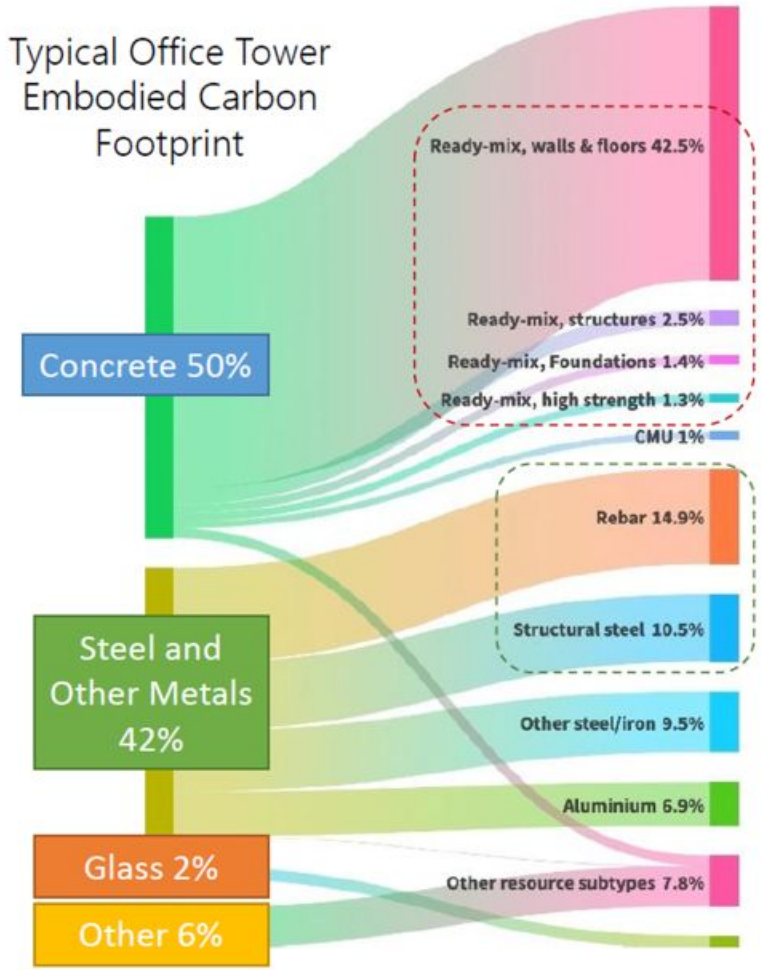
- Pelletizer replacement
- Incinerator replacement
- Boiler upgrades

TORONTO

Mitigation Projects Underway (cont'd)

Scope 3 emissions

- Piloting a low-carbon concrete specification
- Research on requiring Environmental Product Declarations (EPD's) for purchased Chemicals



https://reset.build/newsroom/323

TORONTO

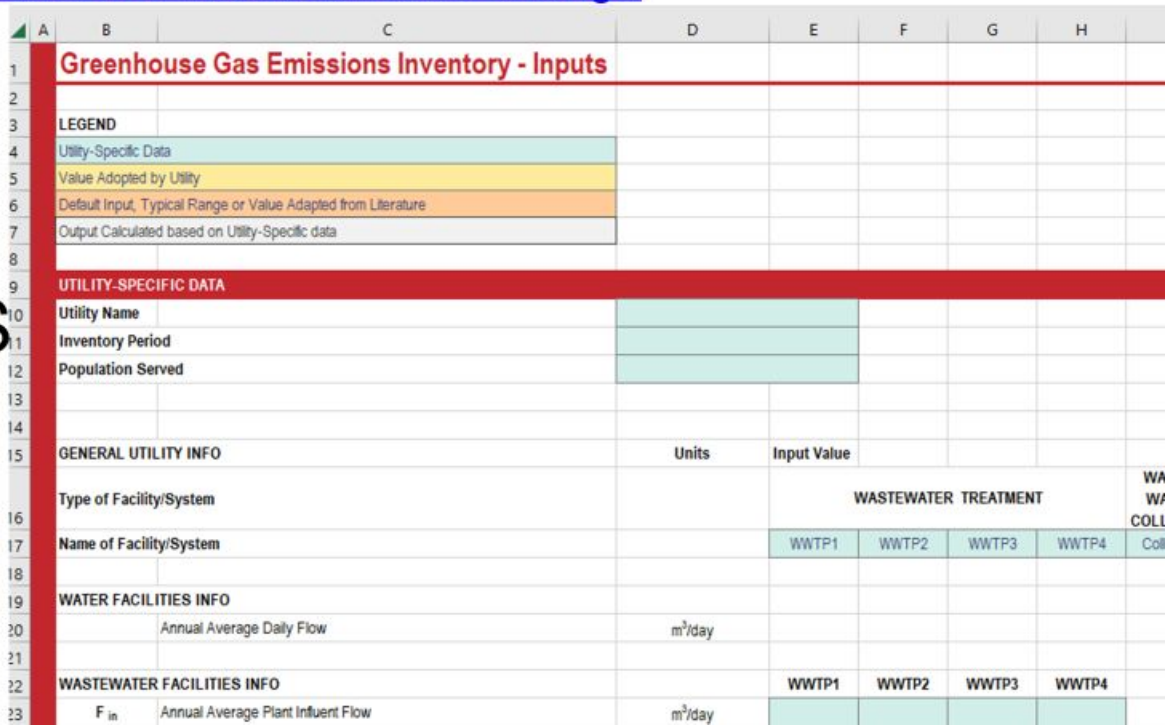
Toronto Water GHG Mitigation Strategy

- Beginning now
- Will fill in gaps & guide GHG mitigation activities throughout Toronto Water
- Not committing to Net Zero, yet…




Knowledge Networks & Resources

- OWWA/WEAO Climate Change Committee:
  - Expert-curated Resource Page for utility GHG's: owwa.ca/resources/climate-change-resource-page
  - Free utility GHG Emissions Inventory Tool: owwa.ca/committees/climate-change
- Canada Water Network
- Water Research Foundation (US)
- Water Environment Federation (US)
- International Water Association



Greenhouse Gas Emissions Inventory - Inputs							
LEGEND							
Utility-Specific Data							
Value Adopted by Utility							
Default Input, Typical Range or Value Adapted from Literature							
Output Calculated based on Utility-Specific data							
UTILITY-SPECIFIC DATA							
Utility Name							
Inventory Period							
Population Served							
GENERAL UTILITY INFO		**Units**	**Input Value**				
Type of Facility/System			**WASTEWATER TREATMENT**				WA WA COLL
Name of Facility/System			WWTP1	WWTP2	WWTP3	WWTP4	Coll
WATER FACILITIES INFO							
	Annual Average Daily Flow	m^3/day					
WASTEWATER FACILITIES INFO			**WWTP1**	**WWTP2**	**WWTP3**	**WWTP4**	
F_{in}	Annual Average Plant Influent Flow	m^3/day					

Jeff Carmichael
Metro Vancouver

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Metro Vancouver Climate Action Overview

LIQUID WASTE SERVICES

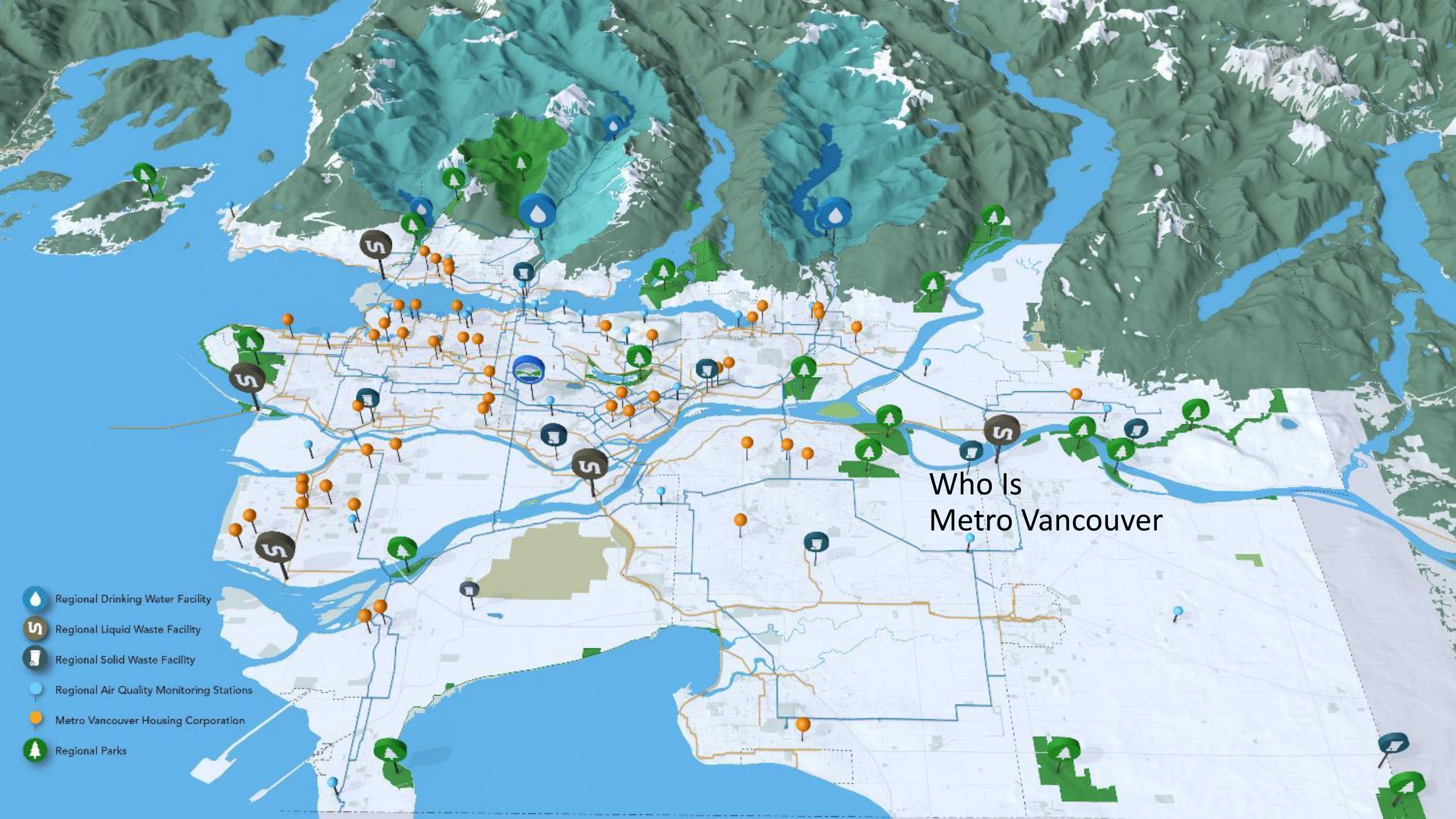
Jeff Carmichael

Division Manager, Business Development, Liquid Waste Services

CWWA National Water and Wastewater Conference 4 November 2025

Orbit Link: Add when archiving presentation to Orbit

metrovancouver


Who Is
Metro Vancouver
Regional Drinking Water Facility
Regional Liquid Waste Facility
Regional Solid Waste Facility
Regional Air Quality Monitoring Stations
Metro Vancouver Housing Corporation
Regional Parks

Drivers for Action

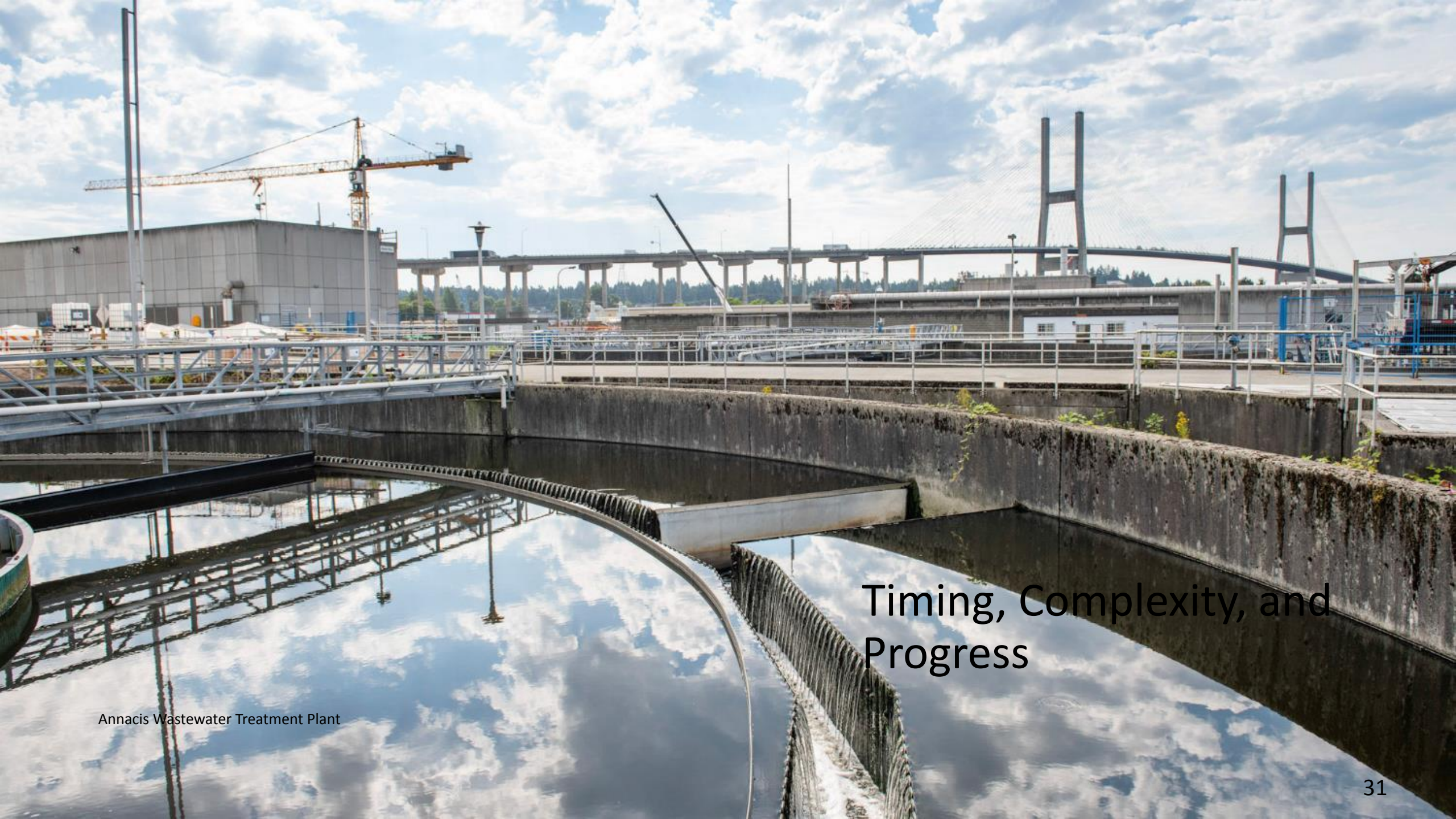
Tracking and Reducing Emissions

Annacis Wastewater Treatment Plant

Recovering Resources

Lulu Island Renewable Natural Gas Facility

Reducing Future Climate Impacts



Timing, Complexity, and Progress

Annacis Wastewater Treatment Plant

Current Goals

Corey Pembleton
Federation of Canadian Municipalities

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Valorisation énergétique des déchets organiques

GMF’s Organic Waste to Energy Offer

Green Municipal Fund (GMF)

Program of **$2.4 B** funded by the Government of Canada and implemented by FCM.

Our unique mix of **funding** and **capacity building** delivers clear environmental, economic and social impact—creating better lives for people in Canada.

Fonds municipal vert (FMV)

Programme de **2,4 G$** financé par le gouvernement du Canada et géré par la FCM.

Notre combinaison unique de **financement** et de **renforcement des capacités** a des retombées environnementales, économiques et sociales évidentes, améliorant la qualité de vie de la population canadienne.

Organic Waste to Energy
Valorisation énergétique des déchets organiques

Eligibility | Admissibilité

- Generation and use of energy from local organic waste materials or landfill gas (materials must be waste and not otherwise recyclable)
- Production et utilisation d'énergie à partir de déchets organiques ou de gaz d'enfouissement locaux (les déchets ne doivent pas être recyclables)

Organic Waste to Energy
Valorisation énergétique des déchets organiques

Grant | Subventions	Détails | Details
Business Case **Analyse de rentabilité***	• Grant covering up to 50% of eligible costs, to a maximum of $100,000. • Subvention pouvant atteindre 50 % des coûts admissibles • Jusqu'à concurrence de 100 000 $
Study **Étude de faisabilité**	• Grant covering up to 50% of eligible costs, to a maximum of $200,000. • Subvention pouvant atteindre 50 % des coûts admissibles. Jusqu'à concurrence de 200 000 $

Financing | Prêts + subventions	Details | Détails
Capital Project **Projet d'immobilisations**	• Combined financing (loan & 15% grant) up to a maximum of $10 million for 80% of admissible costs • An additional 5% grant is available if the project involves brownfield remediation. • Financement combiné (prêt & 15% subvention) jusqu'à concurrence de 10 millions $ pour 80% des coûts admissibles. • + 5% si le projet implique la réhabilitation d'un site contaminé.

Waterloo Region

Capital Project

Biogas-heated and biogas-powered wastewater treatment plants

Loan	**$5 000 000**
Grant	**$750 000**

Thanks to cogeneration, three treatment plants use their biogas to power their operations.

Impact

Environmental	Economic	Social
• Reduction in flaring and GHG emissions 2,409 tons of CO2 or 40% by 2041 • In the long term, engines will run almost entirely on biogas, thanks to population growth and the resulting increase in wastewater volumes.	• Replace 50% to 80% of the electricity consumed from the grid at each wastewater treatment plant. • The project will generate approximately $16.6 million in net savings over the lifetime of the equipment. • The return on investment will decrease from 20 to 10 years, thanks to the maximization of biogas usage.	• Less biogas flared = reduced odors and fewer air pollutants, improving air quality for residents living near the plants. •Local energy production = greater resilience to grid failures or electricity price increases. • Promoting local research and expertise

Ineligible projects | Projets non-admissibles

Burn waste (through high-oxygen combustion).

Brûlent des déchets (par combustion à haute teneur en oxygène).

Use feedstocks that could otherwise be recycled or reused to create higher-value products.

Utilisent des matières premières qui pourraient autrement être recyclées ou réutilisées pour fabriquer des produits de plus grande valeur.

Involve waste collection, transfer, or recycling (e.g., collection services, transfer stations, eco-centres, etc.).

Portent sur la collecte, le transfert ou le recyclage des déchets (collecte, stations de transfert, écocentres, etc.).

Relate to methane capture and control at landfill sites already subject to provincial or federal regulation.

Concernent le captage et le contrôle du méthane dans les sites d'enfouissement déjà assujettis à la réglementation provinciale ou fédérale.

Exception: Projects that *eliminate methane* (e.g., energy production systems using methane) remain **eligible**.

Exception : les projets qui éliminent le méthane (ex. systèmes de production d' énergie à partir du méthane) demeurent admissibles.

Eligible applicants

(Municipalities and their partners)

Partnerships that are acceptable

- Lead municipality is contributing cash towards project costs.
- The project will take place at a municipally-owned site or facility (e.g. municipal landfill, anaerobic digestion or composting facility).
- The applicant has a long-term service agreement with the lead municipality for management of municipal waste that will be processed at the organic waste to energy facility.
- The applicant has a long-term service agreement to sell the energy produced through the project to the lead municipality for use at municipally-owned facilities or in municipal fleet vehicles.

Connect with us / Prenons contact

Expression of interest survey / Sondage d'expression d'intérêt

Contact us / Contactez-nous

gmfinfo@fcm.ca 1-877-417-0550

Round Table Workshop

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Priorities

A priority can provide direction and goal-oriented objectives to achieve a larger target.

If your aim is to mitigate emissions which priority is most relevant to your work?

What can you build capacity in, learn more about and develop a plan for to achieve Net Zero.

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Your Industry, Your Perspective

Utility

1. What priority aligns with the needs of your utilities strategic plan?
2. Which mitigation priority should your utility focus on next?

Consultants

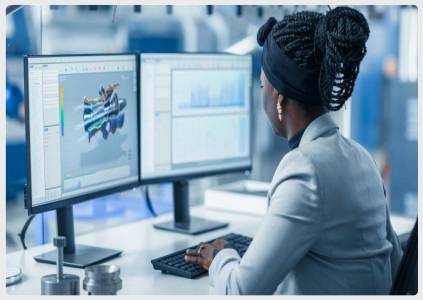
1. What trends in the water sector do you want to explore as mitigation opportunities?
2. Is there a project you are supporting a utility through that you want to explore further?

Government

1. What has your government identified as a priority to address?
2. What priorities does your government want to explore further?

Academia

1. What has research in the water sector and net zero shown trends in?
2. What are you interested in learning more about ?



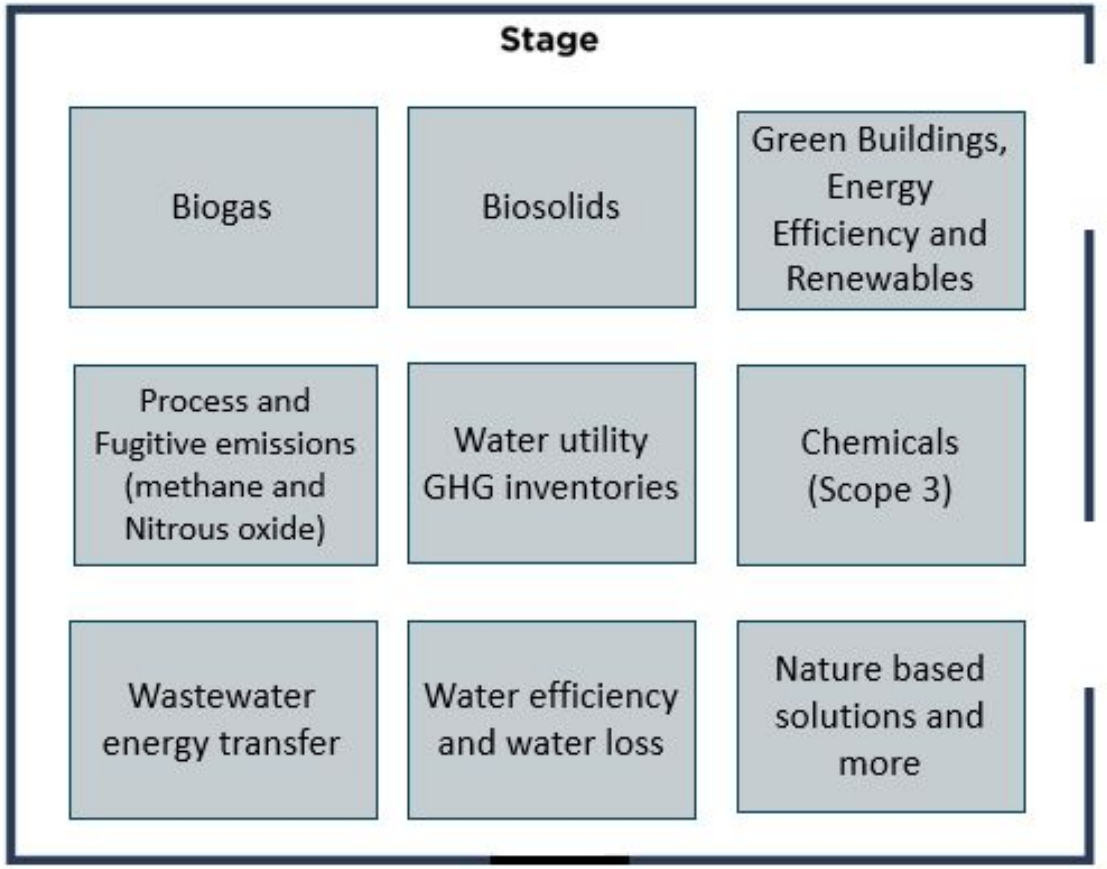
Technology Experts

1. What priorities would your technology improve or support?
2. What priority do you want to learn more about?

Activity Instructions

Time	Activity
11:00am	Select your priority (Move if needed)
11:05am	Introductions
11:10am	Group Worksheet • Answer the 5 different questions on each worksheet • Once you have completed your answer pass it to someone without a worksheet at your table
11:30am	Table Discussion • What was similar about your responses • What was different about your responses
11:40am	Panel Question Period

CWN and Panel will come around to support



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Questions for the Panel

Event evaluation

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WATER SECURITY

Strategies for Fiscal, Economic and Infrastructure Resilience

Thank you

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NWWC 2025

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