



GREAT LAKES AND ST. LAWRENCE
CITIES INITIATIVE
L'ALLIANCE DES VILLES
DES GRANDS LACS ET DU SAINT-LAURENT

PIONEERING NEW APPROACHES TO WATER MANAGEMENT

Presented by:



FULL PROGRAM



WIFI

NETWORK:
**Saint Kate
Conference**

PASSWORD:
Saint Kate

SOCIAL MEDIA



#FutureofFreshWater
#GLSLStrong
@GLSLcities



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DES GRANDS LACS ET DU SAINT-LAURENT



Soula Chronopoulos
AquaAction



Étienne Lemieux
BioAlert



Regan Smith
ECOFIXE



Brittany Vanderbeek
AquaAction



Patrick Pauly
Milwaukee Water Works



Reeve Bert Liverance
**Township of the
Archipelago**

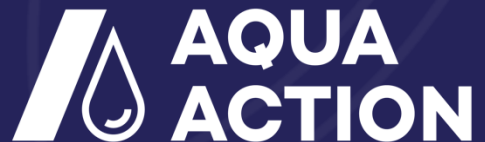
SPEAKERS



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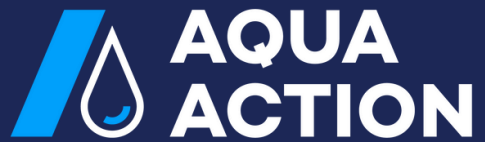


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Soula Chronopoulos

AquaAction





Pioneering New Approaches to Water Management

May 14, 2025

Established by



Fondation
de Gaspé Beaubien
Foundation

Powered by



Tech for
Nature

Accelerated by



Experts mondiaux en traitement de l'eau



Building a
Water secure future.



Our mission is to

**build a
secure
water
future**





**The future of
water depends
on solutions
developed
today.**



**Annual Binational
Competition**

Coming in Q1 2026





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Brittany VanderBeek AquaAction

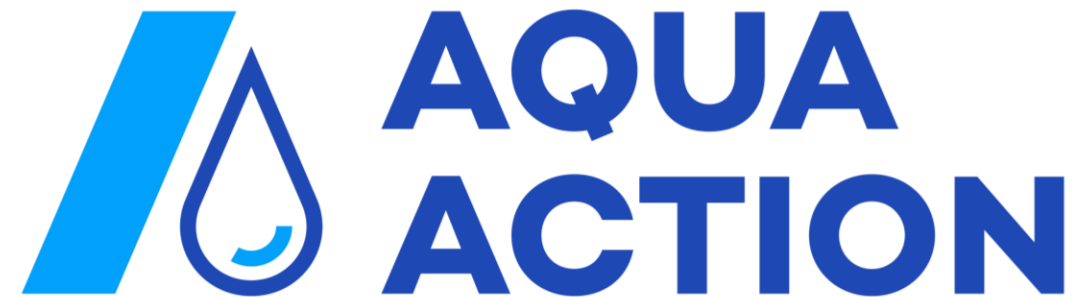


Participate Now



Scan or go to [slido.com \(#3632767\)](https://slido.com/#3632767) and select "**Pioneering New Approaches**" room

Thank You to Our Sponsor





Today's Top Challenges

Water & Municipalities



Contaminants



Workforce Shortage



Aging Infrastructure



Technology



Affordability



Thank you!



Established by



Fondation
de Gaspé Beaubien
Foundation

Powered by



Tech for
Nature

Accelerated by



Bringing water to life

Come see us at the Innovation Zone!

Brittany VanderBeek

Director of Business Development

brittany.vanderbeek@aquaaction.org

Soula Chronopoulos

President

soula@aquaaction.org



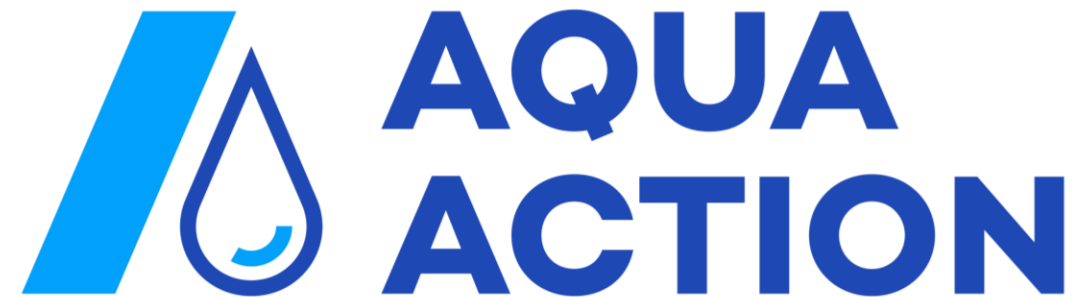
Building a
Water Secure Future

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Étienne Lemeiux

BioAlert



BioAlert Lp15, THE AUTOMATED SOLUTION TO PREVENT THE RISK OF LEGIONELLA

Etienne Lemieux Ph.D, MBA
Inventor and co-founder of BioAlert Solutions

Reliable, fast, economical and connected

BioAlert Lp15 is a device for continuous monitoring of legionella
levels in cooling towers water

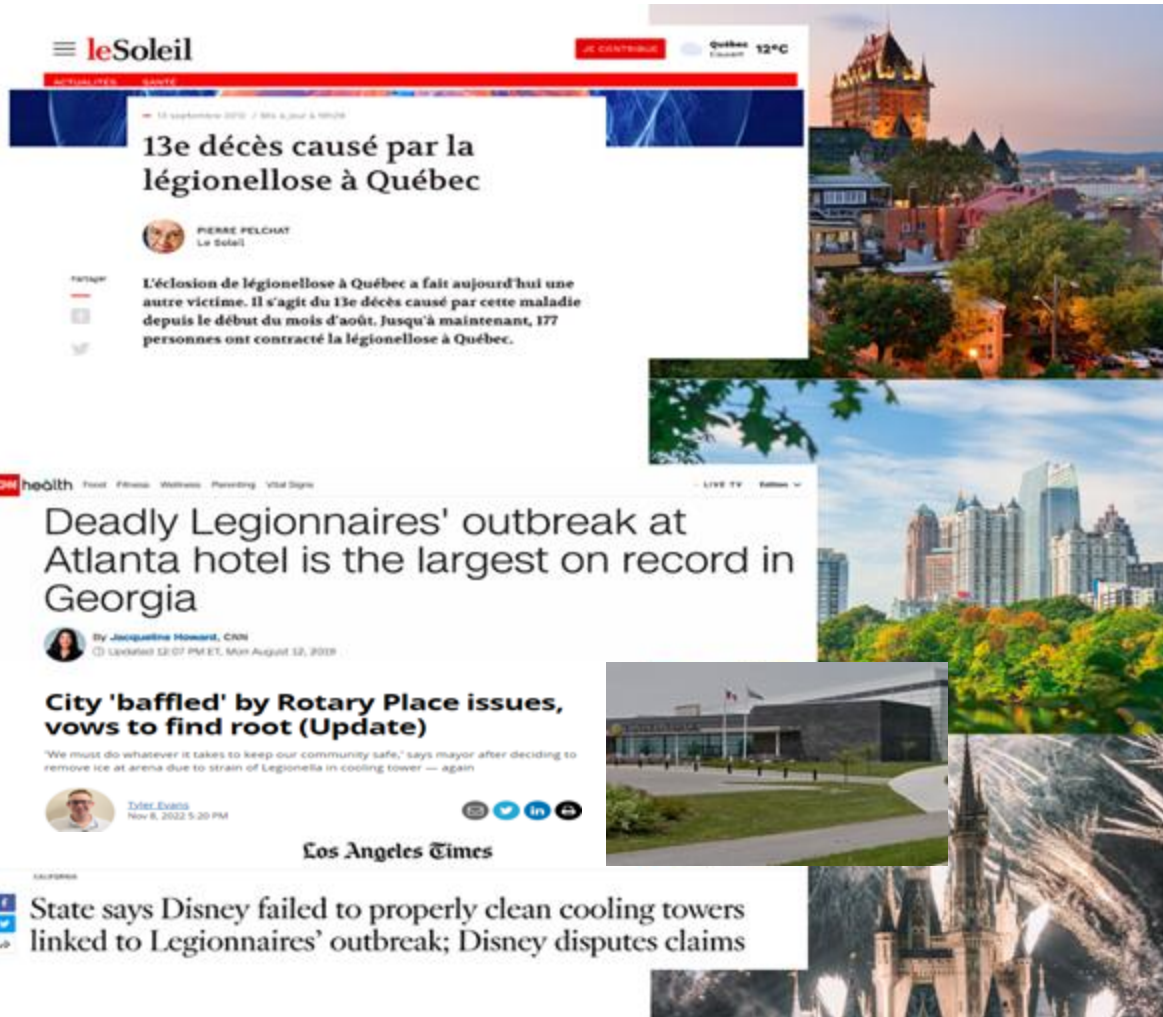


IMPACTS of epidemics - Health are at RISK



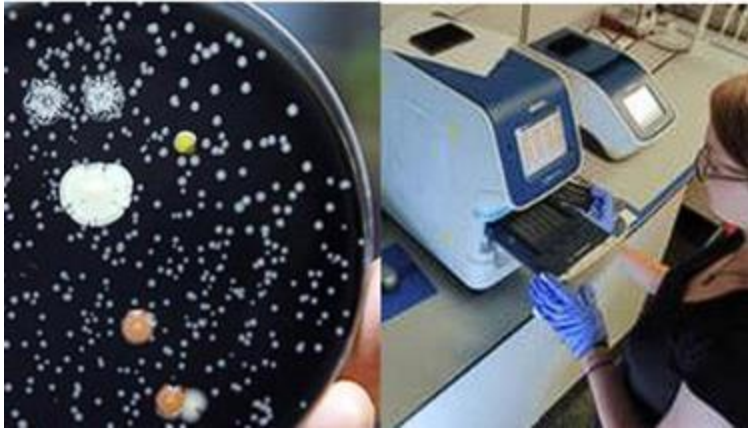
**In North America
25 000
hospitalizations
4 000 attributed
deaths**

Legionella, Emerging Waterborne Pathogens of Concern



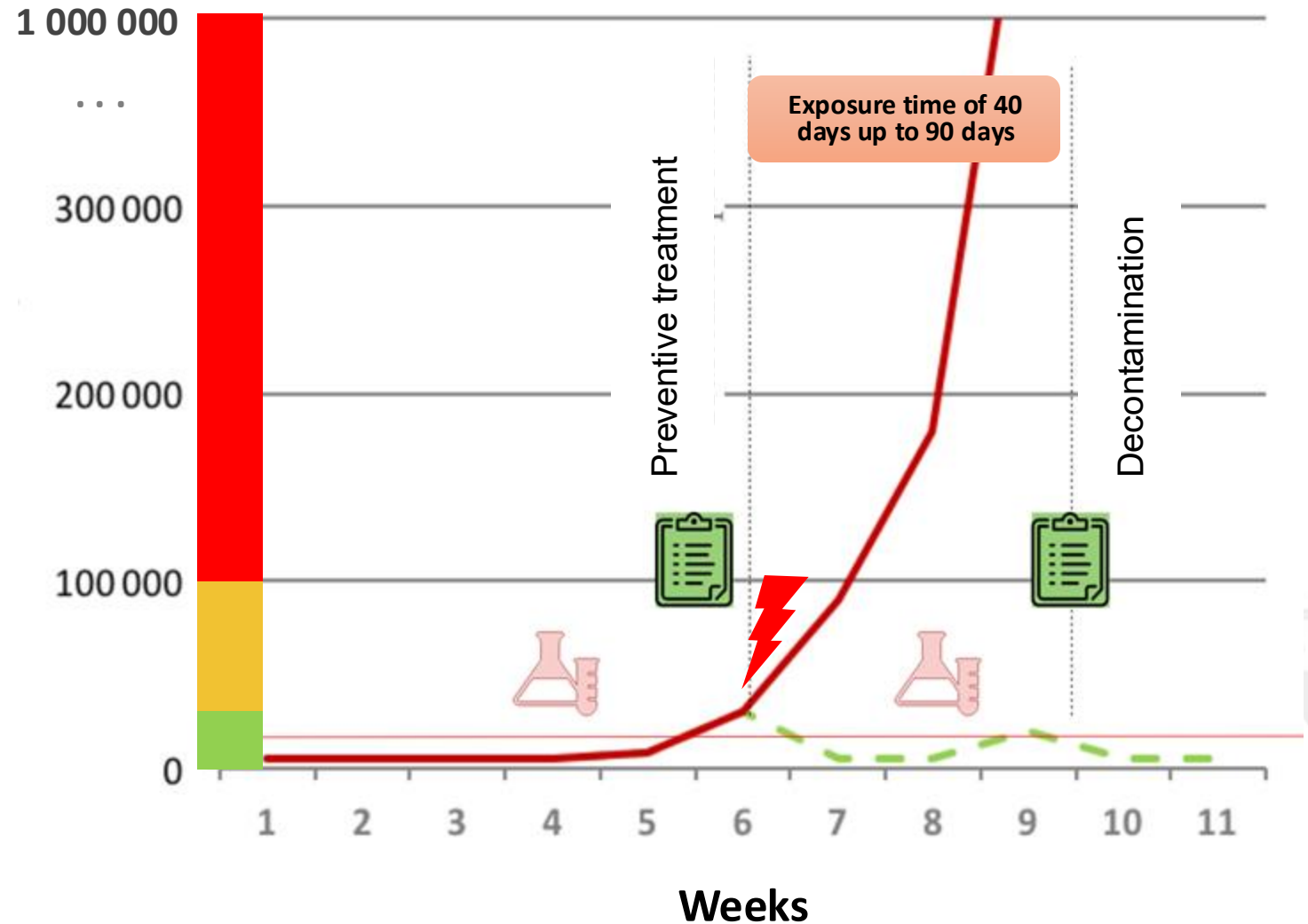
INEFFECTIVENESS OF CURRENT PREVENTION METHODS

EXTERNAL LABORATORY



SLOW RETURN

Result: 10–14 days
Manual sampling
Handling & shipping
Reactive Management



BioAlert

Rapid, automated testing ensures just-in-time intervention



On-site
installation



Same-day
results



Superior
reliability



Continuous
monitoring



Remote
control



Cost-effective
solution



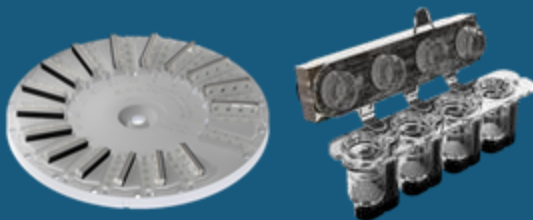
COOLING TOWER
as low as 2 GU / mL



ON HOT WATER
as low as 0.3 GU / mL



ON DRINKING WATER
as low as 0.1 GU / mL





BioAlert



FASTER DETECTION
EASIER MANAGEMENT
SAFER ENVIRONMENT

- ❑ Measure system performance and allows biocides management ;
- ❑ Identify problems in the treatment system at an early stage;
- ❑ Eliminates corrosive treatments to improve equipment life expectancy;



SAVINGS \$\$\$\$



WATER ✓

LABOUR ✓

CHEMISTRY ✓

ENERGY ✓



- Create an automated registry;
- Develop a monitoring hub;
- Monitor fountains, hot water, ...

**Process
Validation**



Main Customers

Real estate



Light industries



Heavy Industries



Institutional



LET US HELP YOU PROACTIVELY MANAGE
YOUR LEGIONELLA TESTING NEEDS





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Patrick Pauly Milwaukee Water Works

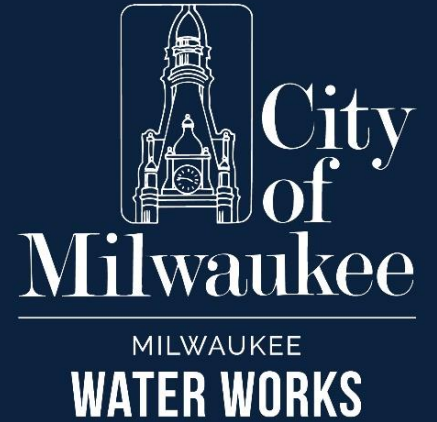


Plants Operator Staffing Challenges

Cities Initiative's Annual Conference

Pioneering New Approaches to Water Management Session

May 14, 2025



Plant Operations Staffing Challenges

Overview

The largest water utility in the state of WI, providing 151 years of continuous service.

- Publicly owned by the City of Milwaukee
- Division of the Department of Public Works
- Policy set by the Mayor and Common Council



Adheres to regulations per:

- Environmental Protection Agency (EPA),
- Wisconsin Department of Natural Resources (WI DNR)
- Public Service Commission of WI (PSC)

Consists of roughly **375 employees** in six sections: Business, Distribution, Engineering, IT, Plants and Water Quality.

Recognized nationally and statewide for ongoing water quality research and improvements to water treatment, delivery, and management processes.



Plant Operations Staffing Challenges

Overview

Providing safe, fresh drinking water to 927,000 people in 18 communities

Capacity

System type: Water

System Capacity: 360 million gallons/day

Avg Daily Pumping: 100 million gallons

Distribution System

1,962 Miles of Water Mains

20K Fire Hydrants

50K Valves

163K Water Service Lines

162K Metered Accounts

2 Water Treatment Plants

3 Primary Pumping Stations

8 Booster Pumping Stations

6 Pressure Districts

6 Storage Tanks

Service Area

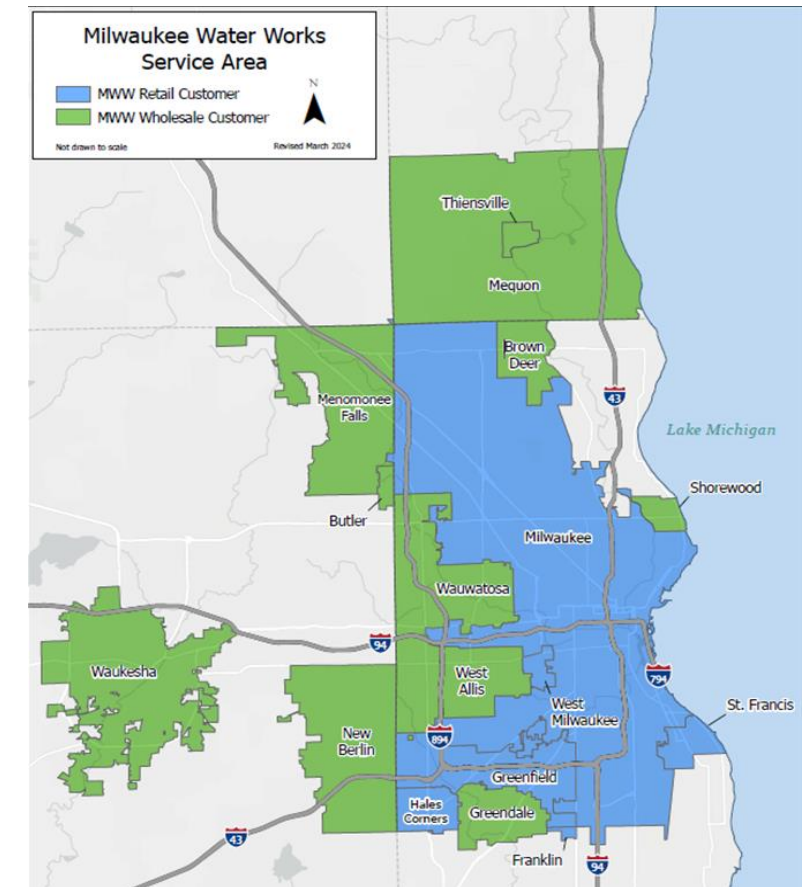
**Residential, Commercial, Industrial,
Public Authority and Wholesale**

12 Wholesale Customers

Brown Deer, Butler, Greendale,
Menomonee Falls, Mequon, New
Berlin, Shorewood, Thiensville,
Waukesha, Wauwatosa, and West Allis.

6 Retail Customers

Greenfield, Hales Corners, a portion of
Franklin, Milwaukee, St. Francis, and
West Milwaukee.



Plant Operations Staffing Challenges

Operations Background

5 Desks - 6-person Rotation at Each Desk

- Howard Operator in Charge (OIC)
- Howard Treatment Plant Operator
- Linnwood OIC
- Linnwood Treatment Plant Operator
- Distribution systems Operator



24/7/365 Shift Schedule Established in 1952

- Rotate shift assignment every 4 weeks
- Most assignments include weekend shifts
- One assignment includes 2nd & 3rd shifts
- Vacation only allowed during one shift assignment
- Tenured Operators proficient at adapting to maintain preferred schedule
- Challenging to navigate for new Operators

Staffing Challenges

- Difficulty recruiting and **retaining**
- Uncompetitive salary structure
 - MMSD and surrounding communities
- Began prior to Covid, stabilizing during, and accelerated post pandemic.
- Primary vulnerability to the utility
 - Secondary: Distribution Field Staff

Fall 2023: Staffing Levels Reached Breaking Point

- 5,000 hours of overtime for year (typically near 1,000)
- 16-hour shifts
- Managers regularly covering shifts
- Linnwood OIC desk was especially short-staffed, relying on a three-person rotation

Plant Operations Staffing Challenges

Measures Taken

September 2023

Job Evaluation Report Approved

- Compensation improvements
- Four position career path series created
- Lead Operator promotional position created
- Plant Operator Trainee position added in January 2025
- Dramatic improvement in recruitment

November 2023

Assignment desks reduced from 5 to 4 by combining OIC duties

- Issued Summary & FAQ document in advance
- Staff resistance due to increased responsibilities.
- Introduced an 8-person rotation to improve work-life balance
- Added a formal Manager On-Call rotation for more consistent support
- Shifted select OIC duties to Plant Operators
- Maintained two Operators per plant by stationing OIC at Linnwood

January 2025

Transitioned to the 8-person rotation at the three remaining desks

- Considered options (10hr, 12hr, weekend)
- Half of the rotations are 1st shift, M-F
- The assignment with 2nd & 3rd shifts is 4 days (2-12hr shifts)
- Requires cross-training at other desks during specified shift assignments
- Requires all Operators to work a minimal number of 1st, 2nd, and 3rd shifts

May 2025

Finalize requirements to advance through position series

- Training & Certification at multiple desks
- Years of experience



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Regan Smith

ECOFIXE



Challenges Facing Municipalities

- Aging Infrastructure
 - Population Growth
 - Limited Capacity
- Revised Regulations Effluent % Limits
- Lack of Resources
 - Funding (CAPEX & OPEX)
 - Technical Staff / Operators
- Lack of Space Within Plant
- Lack of Flexibility
 - Short-Term vs. Long-Term Needs





Our main solutions, the ECOFIXE and BIOFIXE modules, were developed to solve the lack of capacity and improve effluent quality of wastewater.



*Giving a 2nd life to
wastewater treatment plants*

Economical, Ecological and **Eco**-responsible

This is **Ecofixe**



Regan Smith

Tel: (514)581-5576

rsmith@ecofixe.com

Technologies Ecofixe inc.





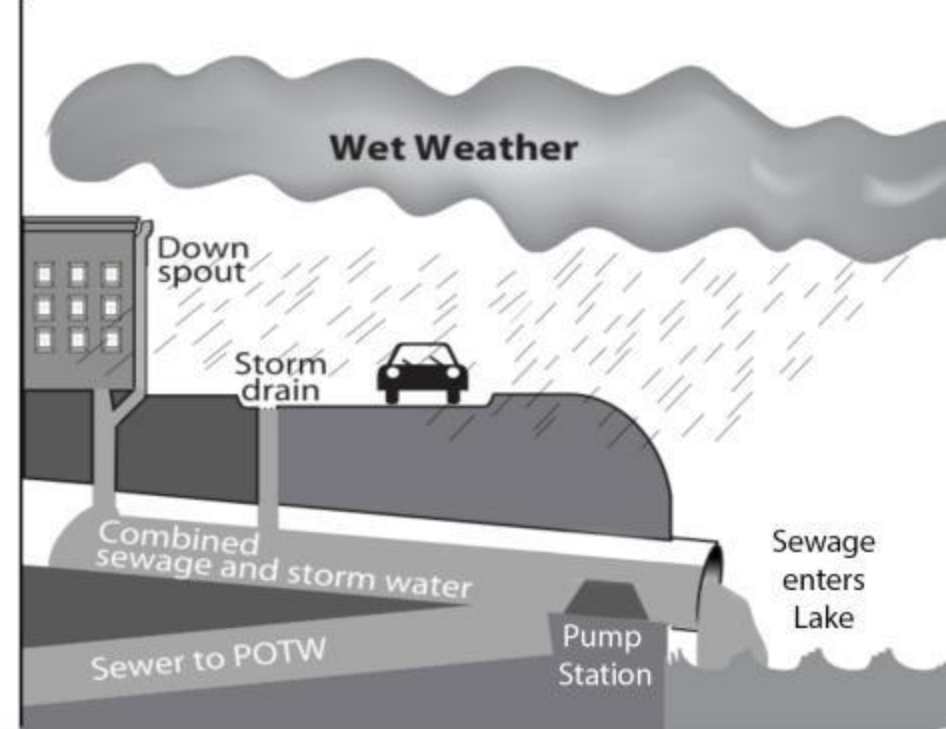
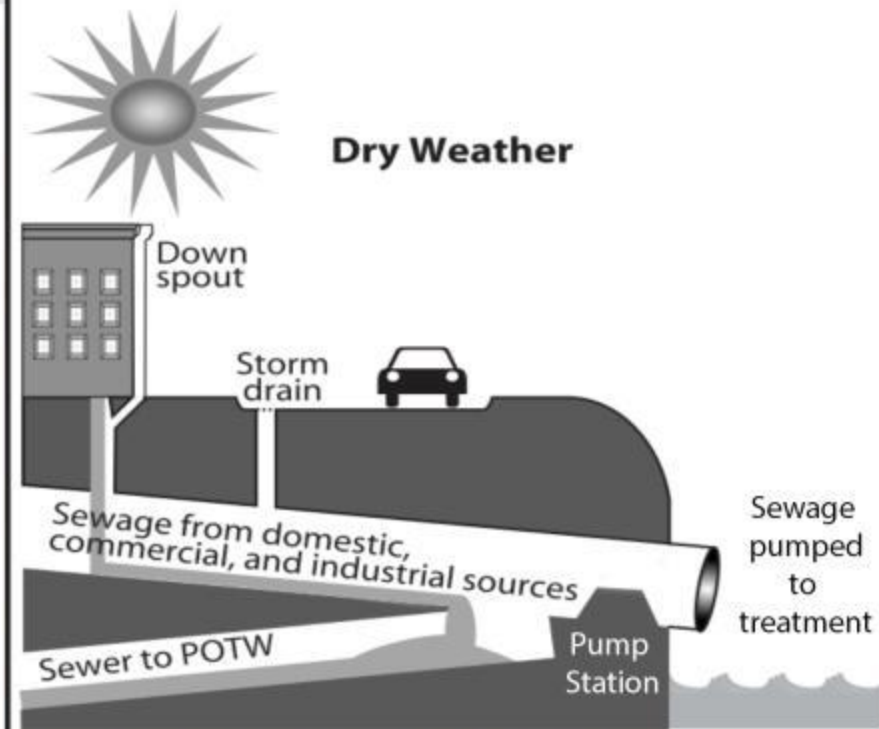
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Reeve Bert Liverance Township of the Archipelago





Working Together To Solve Challenges



Environmental
Challenge



Housing Challenge

1970s

The height of affordable housing investments in Canada



1990s

Government cutbacks to affordable housing become more drastic



2010s

The crisis deepens, but housing commitments begin to emerge



1980s

Cutbacks to government investments in affordable housing begin



2000s

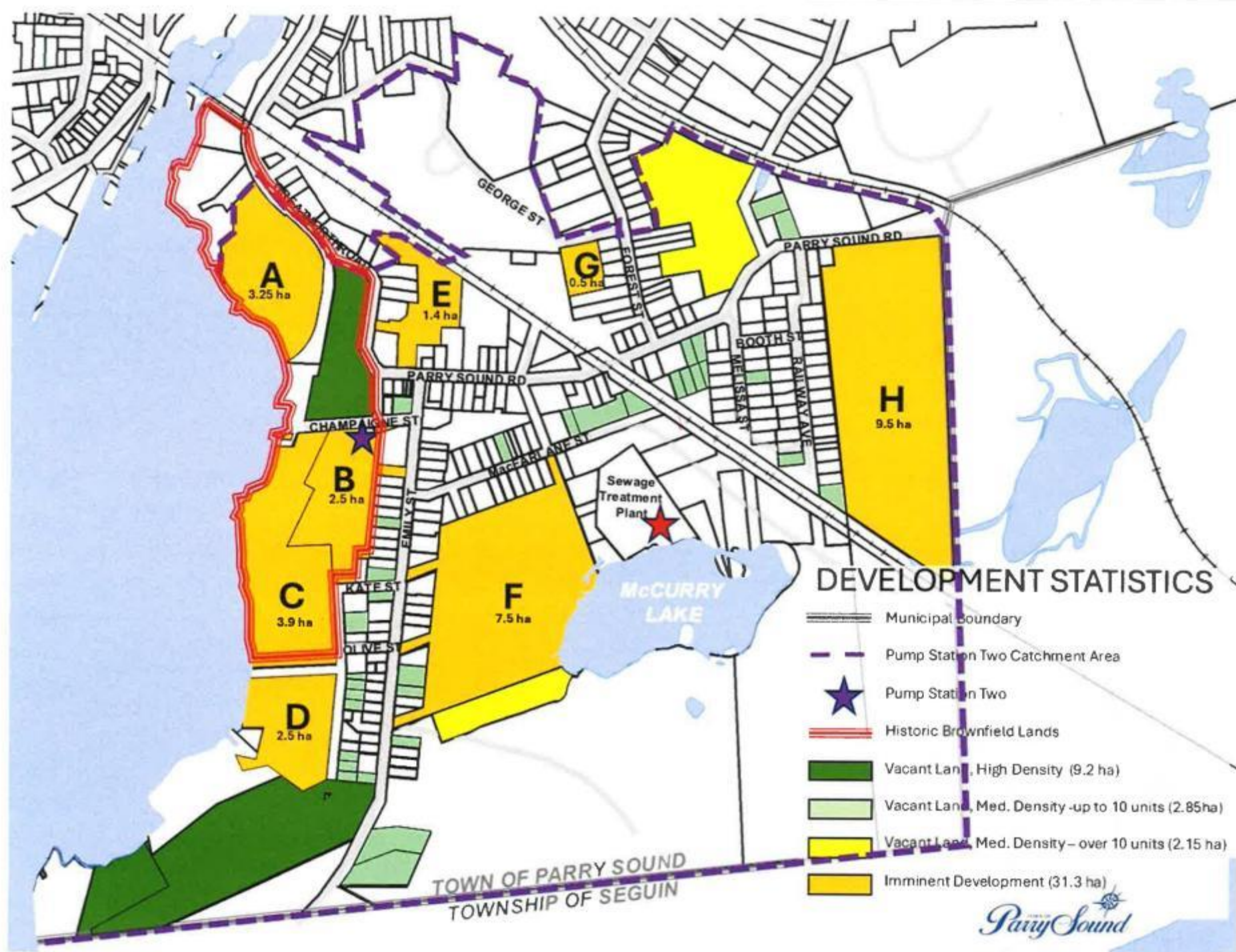
Responsibility for funding affordable housing is devolved to municipalities



2020s

The housing crisis is worsened by the COVID-19 pandemic







Parry Sound receives \$13.1M in Infrastructure Funding from the Ontario Government

Media Release
January 28, 2025

PARRY SOUND, ON — Mayor Jamie McGarvey announced the Ontario government is investing \$13,094,375 in the Town of Parry Sound to enable the construction of new housing. The investment is being delivered through a joint funding application under Intake 2 of the **Housing-Enabling Water Systems Fund (HEWSF)**. The Town, with a financial contribution from The Archipelago, \$4,483,125 and \$360,000 respectively, submitted a joint grant application for a project with a total cost of \$17,937,500.

This funding will support a new Wastewater Pump Station near Champagne Street and the construction of a new force main to connect it to the Towns sewage treatment plant. The new pump station will support 2,441 infill residential units in the Town of Parry Sound.

CORNER DISCUSSIONS

1. How can companies and municipalities work together to solve today's water challenges?
2. What are some barriers to innovating in municipalities?



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Patrick Pauly
Milwaukee Water Works



Reeve Bert Liverance
Township of the Archipelago

PANEL Q&A



The Future of the Great Lakes' Fresh Water
depends on **INNOVATION** and **COLLABORATION**

THANK YOU



COME EXPLORE THE

BIINAAGAMI GIANT FLOOR MAP

PÈRE MARQUETTE PARK
900 N. PLANKINTON AVE
TODAY
5:30 PM – 6:00 PM



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MAYORS OPENING RECEPTION

MILWAUKEE COUNTY HISTORICAL SOCIETY
910 N DOCTOR MLK JR. DR
TODAY – 7:00 PM

Presented
by



PRESENTED BY



THE FUTURE OF **FRESH WATER** | L'AVENIR DE **DE L'EAU DOUCE**

MAY 14 - 16, 2025 MILWAUKEE, WI



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