



# Advancing Predictive Analytics for Water and Wastewater Asset Management

Capital Projects Delivery

Presentation to Works Committee

March 4, 2026

# Introductions

## **Dan Waechter, Director - Capital Projects Delivery Branch**

- Overview of presentation and Sustainable Infrastructure Division

## **Adam Hurst, Manager - Sustainable Infrastructure**

- Review of our Asset Management Strategy and Programs

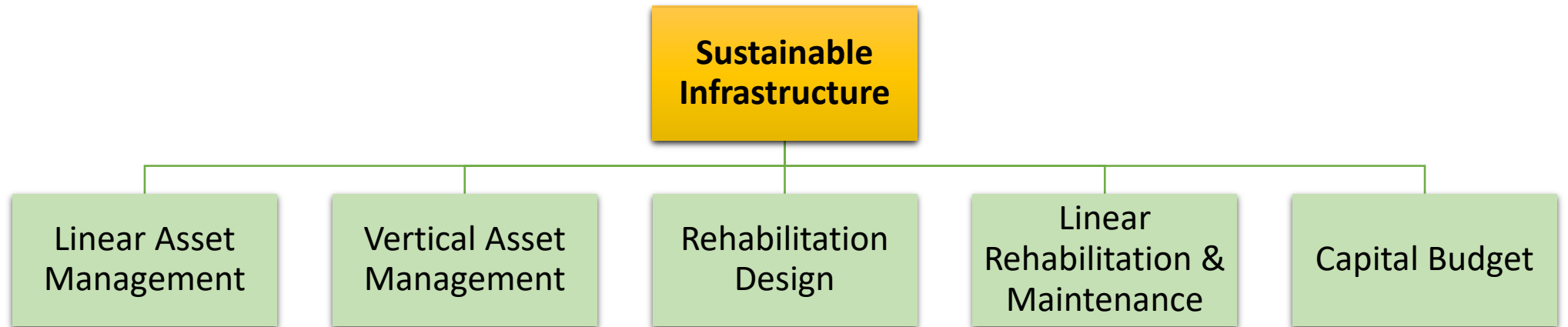
## **Ben McWade, Manager - Construction Management Services**

- Review of recent failures in other Agencies

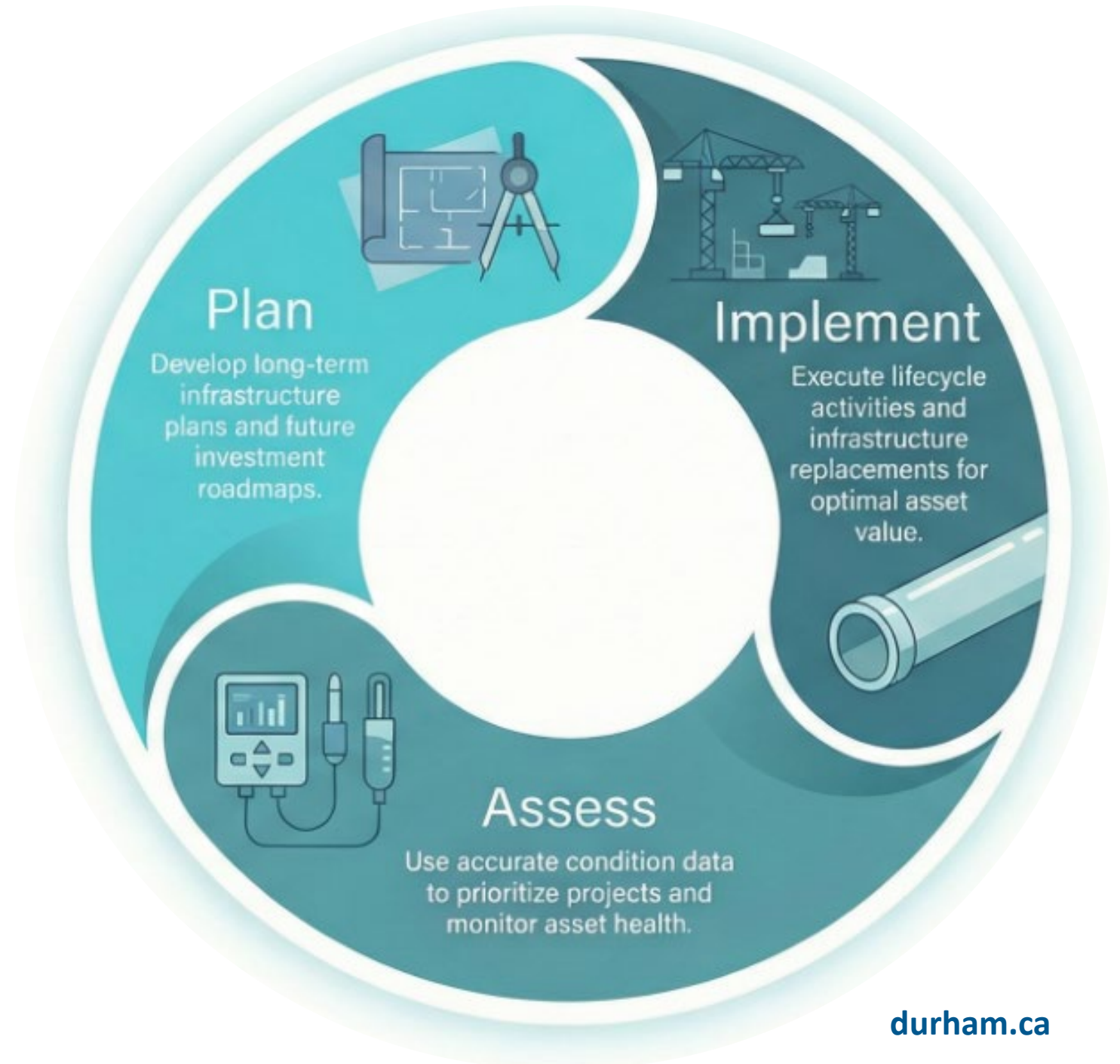
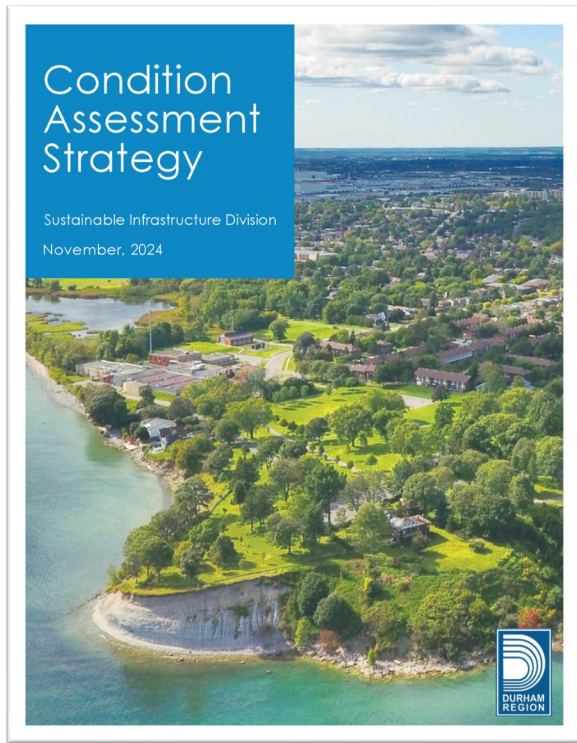
# Agenda

1. Asset Management and Purpose
2. Lessons Learned from other Agencies
3. Status of Asset Management for Durham water and wastewater infrastructure
4. Looking Ahead

# Organization Chart



# What is Asset Management?



# Why This Matters



**2,765 km of  
Watermains**



**56 Water  
Facilities**



**\$7.46 Billion  
Valuation**

**2,893 km of  
Sanitary Sewers**



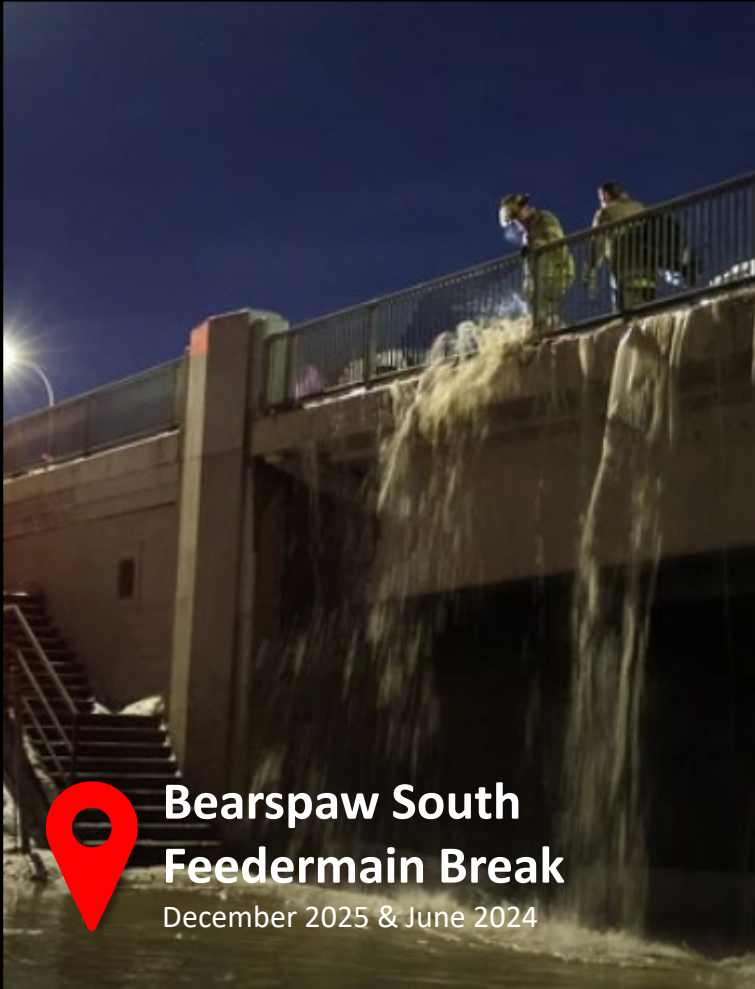
**65 Wastewater  
Facilities**



**\$8.24 Billion  
Valuation**



**Infrastructure is invisible - until it fails.**



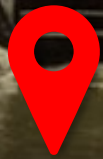
**Bearspaw South  
Feedermain Break**  
December 2025 & June 2024



**Potomac Interceptor  
Sewer Break**  
February 2026



**Can this happen here?**



## Bears paw South Feedermain Break

December 2025 & June 2024



# Why did it break?

# Vertical Asset Management

## Successfully Implemented



Elevated Tank Condition Assessment (CA) Program (3 year)

Reservoir CA Program (5 year)

Arc Flash Study – Several Sewage Pumping Stations (PS)

Beaverton WSP CA

Waverley and Grandview Water PS CA

Nonquon WPCP CA

Vertical Costing Database Study

Maintenance Management – Maximo

## Areas of Improvement



Arc Flash Study – All W/WW Locations (5 year)

Water Pollution Control Plants CA

Sanitary Sewage Pumping Stations CA

Wastewater Storage Facilities CA

Water Pumping Stations CA

Groundwater Wells CA

Water Treatment Plants CA

Asset Management Reporting – Data Migration

# Linear Asset Management

## Successfully Implemented



Trunk Sewer Inspection and CA Program

Valve Chamber CA Program

Streambank Erosion and Hazard Assessment – TRCA Areas Only

## Areas of Improvement



Ductile Iron and Cast Iron Watermain CA Program

Forcemain Condition Assessment Program

Streambank Erosion and Hazard Assessment – All Conservation Authority Areas

Concrete Watermain Condition Assessment Program

Maintenance Hole Inspection and Condition Assessment Program

Linear Risk Scoring

# Rehabilitation Design

## Successfully Implemented

SSPS Overflow Upgrades – Detailed Design

Corbett Creek Trunk Sanitary Sewer Rehab – Construction support

Lord Elgin Sewer Phase 2 – Feasibility Study

Lord Elgin Sewer Phase 2 Rehab – Detailed Design (Q3 2026)

Ductile Iron Watermain Rehab – Detailed Design (Q2 2026)

Large Diameter Sewer Rehab – Detailed Design (Q3 2026)

Sunderland Standpipe Rehab – Detailed Design (Q2 2026)

Capital Project Delivery Tracker

## Areas of Improvement

Concrete Watermain Rehabilitation – Detailed Design  
(increased annual rehab length)

Ductile Iron/ Cast Iron Watermain Rehabilitation – Detailed Design  
(increased annual rehab length)

Gravity Sewer Rehabilitation – Detailed Design  
(increased annual rehab length)

Elevated Tank (ET) Rehabilitation – Detailed Design (all ET facilities)

Capital Project Delivery Tracker Continuous Improvement

# Linear Rehab & Maintenance

## Successfully Implemented



Watermain CIPP Lining (T-096)

Watermain Service Replacement and CIPP Lining (T-1049)

Gravity Sewer Rehabilitation using CIPP (T-681)

Gravity Sewer Rehab using, cleaning, reaming, grout sealing (T-297)

CCTV Inspection (T-201)

Gravity Sewer Flushing (T-200)

Gravity Sewer Spot Repair Program (T-314)

Gravity Sewer Acoustic Inspection Program (T-1041)

Hydrants Painting (T-546)

Watermain Foam Swabbing (T-210)

Watermain Cathode Protection (T-214)

Depot supply contracts

## Areas of Improvement



Expanded footprint  
for all programs

# Capital Budget

## Successfully Implemented



Annual Water and Sanitary Sewer Capital Budget

Project Cost Analysis and General Support

Funding Reallocations for Shortfalls During Contract Award or at Project Completion

Project Tracking and Monitoring

Grant Funding Applications to Provincial and Federal Governments

## Areas of Improvement



Dashboard, Interactive Mapping, and status updates

Reducing pressure on user rates, debentures, and development charge requirements through grant applications

Project Prioritization Model

# Looking Ahead

From reactive response to proactive resilience



Questions?