## Northwest Arm Trunk Sewer Rehabilitation

June 15, 2017



#### » Agenda

- Introduction
- History of the Northwest Arm Trunk Sewer (NATS)
- Aging Sewer Challenges
- The Approach to Rehabilitate
- How We Can Work Together
- Our Commitment



### » An Old City With Old Infrastructure

- Took over former City of Halifax's water assets in 1945. HRM's wastewater/stormwater assets in 2007.
- 2012 Integrated Resource Plan outlines \$2.6 billion in infrastructure investments over next 30 years. Work is underway.
- Similar challenges faced by many cities across Canada/United States.





#### » Northwest Arm Trunk Sewer

#### The Situation

- 100 years old
- Significant deterioration
- Must be repaired for improved system functionality, safety, and environmental reasons

#### Good News

- We can stop leaks and improve NWA water quality
- We can extend the life of the sewer for up to 75 years
- We are utilizing technology that will minimize resident impacts
- Approved for Government of Canada infrastructure funding



#### » Our Objectives

- Improve the water quality of Northwest Arm for local residents and the wider community
- Complete the project to a high standard to ensure efficient, high quality service for years to come
- Work with you and communicate regularly to ensure a smooth process
- Minimize impacts on local residents during construction
- Meet the completion deadline of March 31, 2018 for federal and provincial funding







Public Information Meeting #2



June - November 2017: Majority of Construction

December 2017: Major Construction Complete

March 2018: Final Construction Completion



#### » History of the NATS

- Constructed around 1917
- Materials used include concrete and clay tiles
- Pipe shape varies both round and arch
- Depth 300mm to 5 meters



Section at Station 48+2836 showing proposed

Elevation 100.00

Sea Wall.

#### » Sewer Location

Runs through Halifax Water's 4.5 kilometre easement along the north shore of the Northwest Arm



### » Ageing Sewer Challenges

- Leaking joints
- Breaks in pipe wall
- Periodic leakage into Northwest Arm
- Substantial debris build-up



### » Preliminary Investigations

- Detailed condition assessment (2007)
- Rehabilitation technology investigation (2009)
  - Approx. 460 metres from Jubilee Rd. Coburg Rd., of NATS successfully rehabilitated using cured-in-place pipe (2009)
- Update of sewer condition via CCTV inspection (2016)
- Identification of suitable rehabilitation method (2016)

![](_page_9_Picture_6.jpeg)

#### » Traditional Sewer Replacement

- Large footprint with open trench
- Heavy machinery
- Significant inconvenience to local residents
- Potential environmental impacts

![](_page_10_Picture_5.jpeg)

#### » Awarded Rehabilitation Approach

#### CURED IN PLACE PIPE (CIPP)

![](_page_11_Picture_2.jpeg)

#### » Successfully Awarded Contractor

- Prime Contractor:
  - Liqui-Force Services
- Sub-Contractors:
  - Insituform
  - Empipe
  - Uni-Jet Industrial
  - G & R Kelly
  - Absolute Traffic Services

![](_page_12_Picture_9.jpeg)

### » Approach and Methodology

- Project Broken into 4 Zones
  - 1. **Zone 1 Quinpool** (Quinpool/Jubilee Area)
  - 2. Zone 2 South (Jubilee to Ridgewood Area)
  - 3. Zone 3 Belmont (Ridgewood to Atlantic School of Theology (AST))
  - 4. **Zone 4 AST** (AST to Balmoral Pump Station)

 Timing and schedule of work will depend on which zone you are located in.

![](_page_13_Picture_7.jpeg)

**Before Rehabilitation** 

After Rehabilitation

#### » Zone 1 – Quinpool

- Standard Installation lengths Approx. 75 222 m
- Periodic lane closures along Quinpool from late June to September 2017

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![](_page_14_Picture_4.jpeg)

![](_page_14_Picture_5.jpeg)

![](_page_14_Picture_6.jpeg)

#### » Zone 2 – South

- Longer Installations Approx. 400 580 m
- Access to manholes in backyards will be required
- Primary construction area South St between Blenheim & Cromwell
- Considerable traffic restrictions along South Street

![](_page_15_Picture_5.jpeg)

![](_page_15_Picture_6.jpeg)

![](_page_15_Picture_7.jpeg)

#### » Zone 3 – Belmont

- Most complicated installation lengths (up to 600 m)
- Some traffic restrictions on Belmont on the Arm
- Primary construction area Belmont on the Arm at the water access easement

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HWEST ARM TRUNK SEWER REHABILITATION

#### » Zone 4 – AST

- Longer Installations Approx. 400 500 m.
- Access to MHs in Backyards will be required
- Primary Construction area Atlantic School of Theology (AST)

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#### » Stages of Construction

#### Access $\rightarrow$ Cleaning $\rightarrow$ By-Pass $\rightarrow$ Lining $\rightarrow$ Restoration

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While work will be continuous throughout the project stages, visibility of the work will vary from property to property

![](_page_18_Picture_4.jpeg)

### » Rehabilitation Construction

#### What does Construction look like?

- Potential odours sewer & CIPP Liner
- Possible night work (lights & noise)
- Temporary sanitary sewer service interruption
- Access pits in required strategic locations
- Individual meetings with property owners who's properties will be impacted by equipment and access to the sewer will be scheduled to provide specific details.

#### GOOD NEWS: WILL NOT BE DIGGING LONG TRENCHES →

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#### » Need Your Help

- Various Required Access Areas have been identified
- 17 manhole modifications required
- Contractor has begun individual engagement with homeowners and will continue throughout the project

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#### » Contractor-Homeowner Engagement

- Over the past week the contractor (LiquiForce) has spoken with numerous homeowners concerning construction access on their properties
- If you have not already spoken with the contractor concerning construction access on your property they will be available to talk following this presentation

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### » Our Commitment to you

- Continue to work with you directly
- Be available to answer questions or concerns
- Communicate project news early and often
- Minimize inconvenience to residents and local community

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#### » Project Information

Project information can be found online through the Halifax Water website link below:

http://www.halifax.ca/HalifaxWater/undergroundoverhaul/northwest-arm.php

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# Thank you

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