

May 17, 2019



Darlene Fenton, Chair
Halifax Water
Halifax, Nova Scotia

A special meeting of the Halifax Water Board will be held on May 22, 2019 at 9:00 a.m. in the Boardroom at 450 Cowie Hill Road, Halifax.

AGENDA

In Camera Reports

- 1C Personnel Matter
- 2C Personnel Matter
- 3C Legal Matter - Verbal

Regular Reports - Capital Project

- 1. Wanda Lane and Tobin Drive Integrated Project \$6,091,185

Original Signed By:

Heidi Schedler
Secretary

TO: Darlene Fenton, Chair and Members of the Halifax Regional Water Commission Board

SUBMITTED BY: *Original Signed By:*

Jamie Hannam, P. Eng.
Director, Engineering & Information Services

APPROVED: *Original Signed By*

Carl Yates M.A.Sc., P.Eng., General Manager

DATE: May 16, 2019

SUBJECT: **Wanda Lane and Tobin Drive Integrated Project**

ORIGIN

The 2019/20 Capital Budget

RECOMMENDATIONS

The Halifax Regional Water Commission (Halifax Water) Board approve funding for the Wanda Lane and Tobin Drive Integrated Project at a gross total estimated cost of \$6,091,185 with a net cost to Halifax Water of \$4,558,702.

BACKGROUND

Ellenvale Run is an urban stormwater drainage system in Dartmouth that Halifax Water is responsible for as specifically identified in the 2007 Transfer Agreement between the Halifax Regional Municipality (HRM) and Halifax Water. The approximately five kilometre long drainage system with headwaters at Lake LeMont consists of natural riparian areas, culverts, various types of retaining walls, and buried pipe which eventually discharges into the northwest end of Morris Lake.

In 2004, HRM completed the Ellenvale Run Drainage Study. It recommended a program of capital projects to reduce flooding along Ellenvale Run. All of the recommended work

with the exception of the Tobin Drive Culvert Replacement and Channel Upgrade Project have been implemented. According to the Transfer Agreement, the Tobin Drive Culvert is considered a “bridge” (based on the diameter of the clear opening). Accordingly, HRM is responsible for core bridge replacement and Halifax Water is responsible for the Ellenvale Channel Upgrade work.

DISCUSSION:

A deeper and wider culvert at Tobin Drive is needed because of hydraulic capacity requirements. In addition, the upgraded culvert is also required because the immediate upstream channel was made deeper and wider in 2006 by HRM. This upstream channel work was one of the recommended projects in the 2004 drainage study. Due to the deeper culvert and associated lower invert, the downstream channel will also need to be regraded to a distance where the proposed grade matches the existing grade.

During the preliminary design of the Tobin Drive culvert, it was determined that the proposed vertical alignment of the culvert would interfere with the existing sanitary sewer on Tobin Drive. Several options were developed and evaluated to resolve the conflict. The selected approach was to lower the sanitary sewer and cross under the proposed culvert. A new section of sanitary sewer is therefore needed down Wanda Lane at a minimum slope and would be reconnected to the existing sanitary sewer system at the first available location.

The new sanitary sewer provides the opportunity for the existing sanitary sewer along Wanda Lane (which is in good structural condition) to be converted into a deep storm sewer. This section of the street does not currently have a formal storm sewer and thus the converted sewer will help improve street drainage and reduce wet weather inflow into the sanitary system. With the new sewer installation, the existing watermain was reviewed to determine if this presented a cost effective opportunity for the watermain renewal. Based on the existing structural condition of the waterman, the renewal opportunity is warranted.

In addition to the core Halifax Water project scope, the project has matured into a fully integrated project with planned HRM works (indicated on Attachment 1). The HRM work scope includes street renewal, sidewalk renewal and new sidewalk, road bridge replacement and HRM pedestrian bridge replacement. In addition, Halifax Water and HRM will cost share on a new deep storm sewer on Wanda Lane above Ronald Court to both improve street drainage and provide storm sewer access for abutters to facilitate wet weather inflow reduction.

In 2016, Halifax Water completed a condition assessment study of the retaining walls along Ellenvale Run. The drainage corridor of Ellenvale Run is comprised of sections that have a rectangular cross section and those with an irregular cross section. The sections with a rectangular shape are man-made cross sections and are formed by two retaining walls and a relatively flat bottom. Significant sections of these retaining walls are at the end of their

service life and in some cases have required immediate attention by Halifax Water Operations staff to temporarily stabilize them. The risks associated with the failure of these assets include flooding and harm to public health and safety.

The Halifax Water 2016 study recommended a program of upgrades where the retaining wall elements were replaced with a precast reinforced concrete “U” shaped channel. The proposed Tobin Drive Channel Upgrade Project’s design incorporates the recommendations from the Halifax Water 2016 study and includes the third phase of the Ellenvale Run Retaining Wall replacement program.

The full integrated project was tendered by Halifax Water. The tender closed on May 7, 2019 and the following bids were received.

- | | |
|------------------------|-------------|
| 1. Dexter Construction | \$5,239,330 |
| 2. ARCP | \$6,069,000 |
| 3. Brycon | \$7,813,000 |

Based on the low bid tender price for construction, the total project cost is estimated at \$6,091,185 (see attached project cost estimate). The project includes the following integrated components of work, which are funded from separate sources:

<u>Project Component</u>	<u>Cost</u>
Wastewater Sewer	\$994,220
Storm Sewer	\$580,518
Watermain Renewal	\$940,920
Ellenvale Run Retaining Wall	\$2,043,044
HRM Street Renewal, New Sidewalk, Sidewalk Renewal Pedestrian Bridge Replacement, Culvert (Road Bridge) Replacement	\$1,532,483
Total Project Cost	\$6,091,185

BUDGET IMPLICATIONS

The total project cost is \$6,091,185. As per the agreed cost sharing agreement, HRM is responsible for an estimated project cost share of \$1,532,483. Thus, the balance to be funded by Halifax Water is \$4,558,702. The funding is available as follows:

Funding in the amount of \$994,220 for the **Wastewater Sewer** component of the project is available within:

- 2018/19 Halifax Water Wastewater Capital Budget, Wastewater - Collection System (\$50,000), and
- 2019/20 Halifax Water Wastewater Capital Budget, Wastewater -Collection System (\$944,220).

Funding in the amount of \$580,518 for the **Storm System** Upgrade component of the project is available within:

- 2019/20 Halifax Water Stormwater Capital Budget, Stormwater – Pipes - Wanda Lane Storm Sewer (\$210,000), and
- 2019/20 Halifax Water Stormwater Capital Budget, Stormwater – Pipes – Wanda Lane Deep Storm Sewer (\$205,000).
- Proposed underspending within the 2019/20 Halifax Water Stormwater Capital Budget, Stormwater Culvert/Ditches – Coronet Avenue Driveway Culvert Replacement Project. The Coronet Avenue project work scope involves the detail engineering design of a series of driveway culvert replacements located on the watercourse between Chain Lake and Chocolate Lake. Upon further review of the original work scope it was determined it could be reduced given the recent discovery that the hydrotechnical watershed modelling portion of the work scope had been adequately addressed by previous engineering work (\$100,000).
- Reallocation of debt funding to this stormwater project with no net impact on total corporate debt for 2019/20 (\$65,518)

Funding in the amount of \$940,920 for the **Watermain** component of the project is available within the 2019/20 Capital Budget under Water Distribution – Watermain Renewal Program

Funding in the amount of \$2,043,044 for the **Ellenvale Run Retaining Wall System – Phase 3 (Wanda Lane)** is available within:

- 2019/20 Halifax Water Stormwater Capital Budget, under Stormwater – Structures (\$1,830,000), and
- Reallocation of debt funding to this stormwater project with no net impact on total corporate debt for 2019/20 (\$213,044)

The proposed expenditures all meet the “No Regrets – Unavoidable Needs” approach of the 2012 Integrated Resource Plan. The proposed work meets the NR-UN criteria of “Required to ensure infrastructure system integrity and safety”.

ATTACHMENTS

Attachment 1 – Wanda Lane and Tobin Drive Project – Site Plan

Attachment 2 – Project Cost Estimate

Report Prepared by: *Original Signed By*

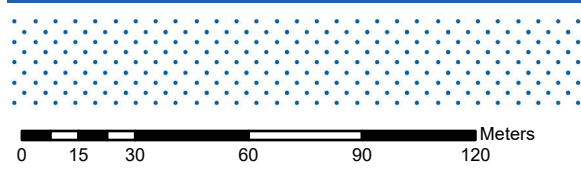
Ian Guppy, P.Eng, PMP, Manager Stormwater Infrastructure
Engineering, 902-476-1610

Financial Review by: *Original Signed By*

Cathie O’Toole, MBA, CPA/CGA, ICD.D
Director, Corporate Services 902-490-3685

WANDA LANE, TOBIN DRIVE & RONALD COURT INFRASTRUCTURE UPGRADES

DARTMOUTH



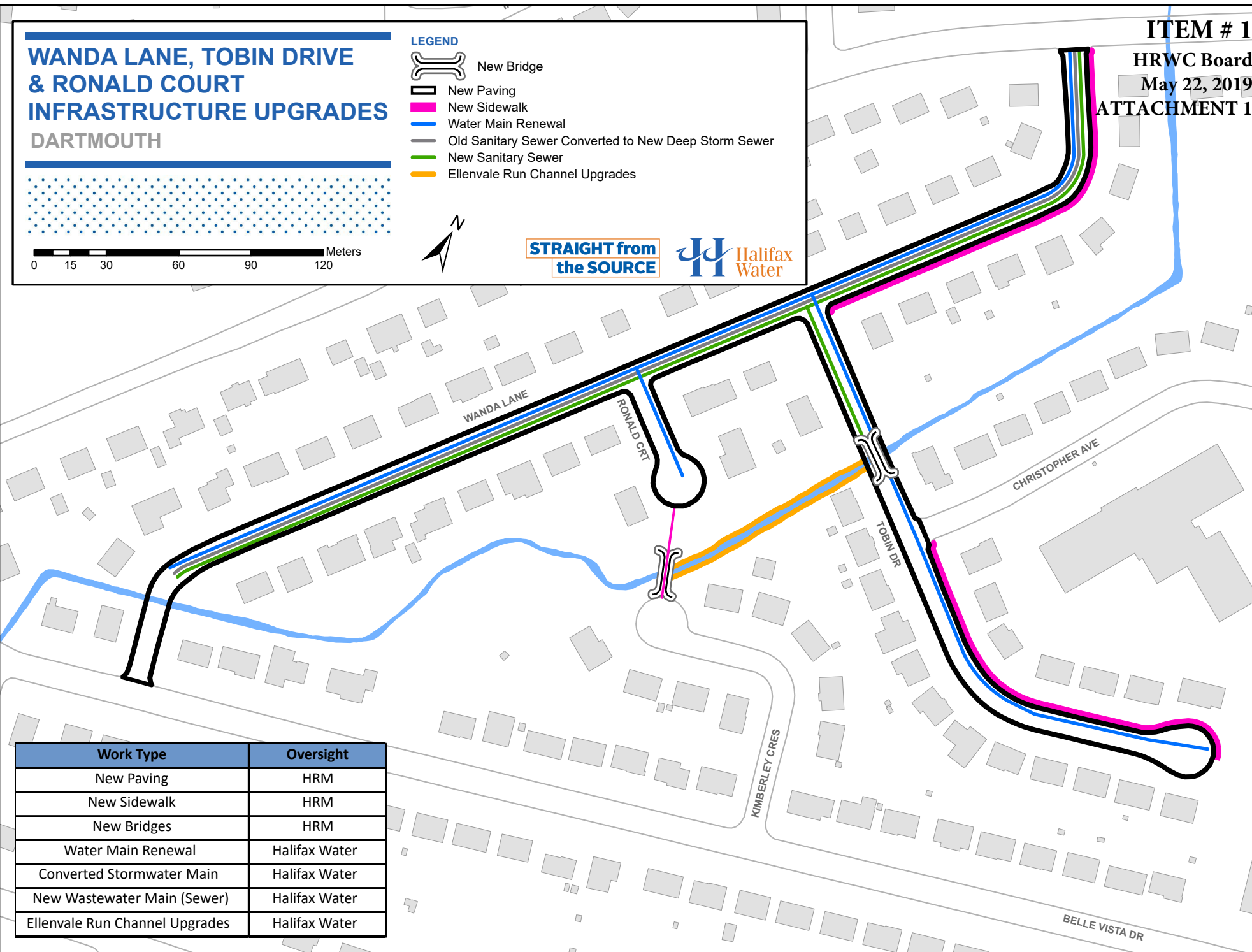
- LEGEND**
- New Bridge
 - New Paving
 - New Sidewalk
 - Water Main Renewal
 - Old Sanitary Sewer Converted to New Deep Storm Sewer
 - New Sanitary Sewer
 - Ellenvale Run Channel Upgrades



STRAIGHT from the SOURCE



ITEM # 1
HRWC Board
May 22, 2019
ATTACHMENT 1



Work Type	Oversight
New Paving	HRM
New Sidewalk	HRM
New Bridges	HRM
Water Main Renewal	Halifax Water
Converted Stormwater Main	Halifax Water
New Wastewater Main (Sewer)	Halifax Water
Ellenvale Run Channel Upgrades	Halifax Water

Project Cost Estimate

Ellenvale Improvements

Part A - Municipal Services Improvement

Part B - Ellenvale Run Watercourse Rehabilitation Sections 5 and 11

Description	
Halifax Water	
Wanda Lane - Water and Sewer	\$1,430,632.50
Tobin Drive - Water, Sewer and Culvert	\$628,899.85
Ronald Court - Water and Sewer	\$86,548.20
Ellenvale Run	\$1,788,123.08
HRM	
Pedestrian Bridge and Walkway	\$136,876.92
Wanda Lane - Street	\$332,007.50
Wanda Lane - Sidewalk	\$52,200.00
Wanda Lane - Deep Storm Sewer	\$288,425.00
Tobin Drive - Street	\$238,470.15
Tobin Drive - Sidewalk	\$28,500.00
Tobin Drive - Culvert (Bridge)	\$125,000.00
Ronald Court - Street	\$103,646.80
Construction Total - not including HST	\$5,239,330.00
Subtotal HRM	\$1,305,126.37
Contingencies, Engineering Fees and Net HST - HRM	\$227,356.48
HRM Total - Cost Sharing	\$1,532,482.85
Subtotal HW	\$3,934,203.63
Contigencies (5%), Engineering Fees, HW Staff Costs	\$393,862.39
Net HST	\$185,500.91
Overhead/Interest	\$45,135.67
HW Total	\$4,558,702.60
Total Cost	\$6,091,185.45