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April 7, 2025

VIA EMAIL (pamela.mcgarrigle@novascotia.ca)
Ms. Pam McGarrigle, Regulatory Affairs Officer/Clerk of the Board
N.S. Utility and Review Board
3rd Floor, Summit Place, 1601 Lower Water Street
P. O. Box 1692, Postal Unit M
Halifax, NS B3J 3S3

Re: Windsor Street Exchange Redevelopment Project – Construction Application

Dear Ms. McGarrigle:

Halifax Water is seeking approval of a total project cost of $69,275,000 for the Windsor Street Exchange Redevelopment Project – Construction Application. The total project funding request includes the approved funding amount for design of $4,505,000 (M11999) and an estimated construction cost of $64,769,000.

On November 29, 2024, Halifax Water staff applied to the NSUARB for Phase 1 design costs ($4,208,000) for the Windsor Street Exchange Redevelopment (inclusive of the North End Feeder Replacement project and the Young Street Pocket – Route to the Harbour project) under Matter No. M11999. The funding request was subsequently amended to $4,505,000 through IR responses.

The Halifax Regional Municipality's (HRM's) Windsor Street Exchange Redevelopment Project includes Halifax Water's infrastructure as follows:

1) ***Local Water, Wastewater and Stormwater Improvements within HRM's Project Area***
2) ***HRWC North End Feeder (NEF) Water Main Project***
3) ***HRWC Kempt Road Stormwater Upgrades Project***

Items 2) and 3) above include work to be completed within HRM's project area (current funding request) as well as additional work to be completed outside of HRM's project area in future years following the completion of the Windsor Street Exchange Redevelopment Project.

Halifax Water and Halifax Regional Municipality Integrated Work

Halifax Water and HRM coordinate an annual program of water, stormwater, and wastewater renewal projects with HRM street recapitalization projects as there are integration advantages realized by both parties. The benefit of this approach is cost and schedule efficiency by

completing the project in a collaborative manner. A cost share agreement is typically established for surface reinstatement features such as gravel, asphalt, curbs, sidewalks, and landscaping. This allows HRM and Halifax Water to split the reinstatement costs. This approach results in quantifiable cost savings for both Halifax Water ratepayers and HRM taxpayers. Additionally, the costs of contractor overheads, mobilization, project management, and traffic control are also shared between HRM and Halifax Water. While the savings from integrating overhead costs are more challenging to quantify, there are still benefits. By avoiding the need to complete two separate projects in the same location, both HRM and Halifax Water can achieve infrastructure improvements more efficiently with less impact on the public.

HRM issued an order requesting Halifax Water's intention to integrate planned work within the Windsor Street Exchange project area. If Halifax Water chooses not to, or is not able to integrate the related projects, the planned work would not be able to proceed until at least 2029. HRM also understands that Halifax Harbour Bridges intends to complete an extensive recapitalization of the MacKay Bridge around 2030, which is likely to result in construction impacts near the WSE project area. Any planned work after HRM's Windsor Street Exchange Redevelopment Project, within the project area, would be at Halifax Water's cost.

Progressive Design-Build Project Delivery

The HRM team secured project funding from Transport Canada, which requires the project objective of improving truck traffic to and from the Ceres Container Terminal to be completed by the end of December 2027.

To maintain project timelines, HRM's Project team has chosen to utilize a design-build project delivery method, referred to as Progressive Design-Build (PDB). The PDB model features a collaborative approach between the HRM and its contracting partner during the early stages of the project, such as identifying project requirements and design work. It introduces additional steps that enable HRM and the design-builder to progressively develop a design solution before moving into detailed design and construction.

The Design-Build team recently submitted their 30% concept design review and verification of the project. Review and acceptance of this submittal by HRM's Project team is ongoing. Once the concept design is accepted by HRM and Halifax Water, detailed design on all work package areas will start (see Figure 1 below).

Figure 1 – Windsor Street Exchange – Work Package Areas

The completion of these areas is phased and is mainly driven by the overall project schedule and the contractor's phasing plan. The design will progress with submittals for review at 60%, 90% (100% for Halifax Water work at this stage) and 100% (Issued for Construction). The current design schedule for the work package areas is being updated by the design-build team.

HRM and the design-build team intend to undertake the design and construction on an overlapping, phased basis. Based on the previous design schedule, 100% cost information for all work packages would not be available until at least September 2025. This application is being made ahead of the 100% Class 1 cost estimate to allow time for the funding approval process and to maintain the overall project schedule.

Windsor Street Exchange – Local Water, Wastewater and Stormwater Improvements Scope of Work

Halifax Water is taking the opportunity during this project to improve local water, wastewater, and stormwater infrastructure within the limits of the Windsor Street Exchange Redevelopment Project. CBCL, on behalf of Halifax Water and HRM, completed a 30% concept design for the roadway realignments and underground infrastructure. This package was provided to the design-build team to incorporate into their proposal submission for the Phase 1 design work and is provided in Attachment 2 – Windsor Street Exchange Drawings.

The scope of proposed water infrastructure improvements includes:

- Construction of a new PRV chamber fed from the North End Feeder Transmission Main to service the Titus Evans Low zone in Mackintosh Street, Bayne Street and Forrester Street Lane and provide a secondary feed into the Peninsula Intermediate Zone at the Windsor Street Exchange. The current feed into the Titus Evans Low area has no supply redundancy and the alignment is through the CN Railyard, under the Fairview Underpass and HPA lands. The additional feed into the Northern portion of the Peninsula Intermediate zone is intended to reinforce the water supply into this area.

- Renewal of local water main infrastructure along Forrester Street and Mackintosh Street. Based on the pipe age and break history, it is Halifax Water's staff recommendation that these pipes be renewed at this time as part of this project as HRM is intending to resurface these streets with asphalt as part of their scope of work.

- Renewal of local water main infrastructure within the Windsor Street, Kempt Road, and Lady Hammond Road intersection. The pipe is near the end of its service life. The pipe layout of these intersections is not ideal because some sections of the watermain are in easements across private property rather than in the street right-of-way. The scope of work in this area is to remove and optimize the local network in these areas.

- Renewal of local water main infrastructure on Lady Hammond Road. The pipe is near the end of its service life. Based on the 30% concept design, Halifax Water staff are anticipating that a portion of this main may need to be relocated to incorporate the North End Feeder water main within the right of way to Commission Street. The extent of removals will be determined as design work proceeds.

The scope of proposed stormwater infrastructure improvements includes:

- Replacement/rehabilitation of local stormwater infrastructure due to condition and/or capacity. While the worst-case scenario assumes full replacement of this infrastructure, final decisions will be made on a case-by-case basis. The cost estimate currently assumes full replacement of this infrastructure. The contractor will provide a project implementation plan to guide these decisions. Based on their phasing plan, some stormwater infrastructure may be suitable for lining rather than full replacement. Collaborating closely with the contractor during the design phase will enable Halifax Water staff to identify cost-effective solutions for this infrastructure.

- Optimization of the stormwater network within the Windsor Street Exchange intersection. It is a design requirement for the design-build team to optimize the collection network to align with new roadways and to simplify the network through the intersection. The design will also consider alternate pipe alignments to minimize traffic disruptions, pumping and temporary connections.

- The scope of work for stormwater infrastructure relocation (mainline pipe, catch basins and leads) due to new street alignments will be funded by HRM.

  The scope of proposed wastewater/combined sewer infrastructure improvements includes:

- Replacement/rehabilitation of local wastewater infrastructure due to condition and/or capacity. While the worst-case scenario assumes full replacement of this infrastructure, final decisions will be made on a case-by-case basis. The cost estimate currently assumes full replacement of this infrastructure. The contractor will provide a project implementation plan to guide these decisions. Based on their phasing plan, some wastewater infrastructure may be suitable for lining rather than full replacement. Collaborating closely with the contractor during the design phase will enable Halifax Water staff to identify cost-effective solutions for this infrastructure.

Windsor Street Exchange - North End Feeder Scope

In 2018, CBCL was awarded the concept design review of potential options for a new shallow bury alignment for the transmission main. This report was completed and issued in October 2019. An RFP for concept design through construction phase services was issued in September 2020 and CBCL was the successful proponent. CBCL is currently working on refining the concept alignment for the entirety of the route (from Evans Avenue to Commission Street). It is Halifax Water's intention to complete the detailed design of the portion through the limits of the WSE with CBCL under their current contract and in coordination with the design-build team. The installation of the North End Feeder will then be completed by the design-build team as part of the overall project. A copy of the current concept alignment for the NEF project is included as Attachment 3 – NEF and Kempt Road Concept Alignments.

The scope of installation includes a new 900 mm diameter transmission main alignment from Bayne Street, across HWY 111 and along Lady Hammond Road to Commission Street. This work also includes the connection off this new 900 mm transmission main to a PRV chamber located in the right-of-way greenspace off Bayne Street.

Installation of the 900 mm transmission main from Bayne Street to Evans Avenue will be completed by Halifax Water in a separate contract and is not within the scope of the Windsor Street Exchange Redevelopment Project.

Windsor Street Exchange – Kempt Road Stormwater Upgrades Scope

The sewer separation program and the associated stormwater upgrade on Kempt Road to Bayne Street is critical to Halifax Water's strategy to accommodate growth within the Young Street area.

In 2021, WSP was retained by Halifax Water through a competitive RFP process to study potential stormwater route options from the Young Street growth pocket area. WSP has finalized the concept alignment for the stormwater pipe along Kempt Road. A concept alignment through the Windsor Street Exchange project area has been provided to the design-build team to integrate into their design for the project. The design-build team will design and construct the portion of the stormwater collector through the Windsor Street Exchange project area as part of the overall project. A copy of the WSP developed concept alignment for the Kempt Road Stormwater Upgrades is included in Attachment 3 – NEF and Kempt Road Concept Alignments.

The scope of work includes a new 1500mm diameter stormwater pipe from the end of Kempt Road, through the Windsor Street Exchange project area to a connection to existing stormwater infrastructure on Bayne Street. The remainder of the alignment on Kempt Road to Young Street and a future connection to larger diameter stormwater infrastructure crossing the CN tracks will be completed by Halifax Water under a separate contract and is not within the scope of the Windsor Street Exchange Redevelopment Project.

Onsite Construction Inspection – Halifax Water Services

The following information is provided in response to items identified by the Board in its decision for M11999. The onsite construction inspection for the Windsor Street Exchange was budgeted and planned as follows:

Halifax Water will provide a full-time inspector to oversee all work within the Windsor Street Exchange project, ensuring efficient execution. The Project Technologist's role includes:

- Performing audit inspections on all Halifax Water infrastructure work, including local water, sanitary, and stormwater improvements as part of the Windsor Street Exchange Redevelopment, the North End Feeder replacement and the Kempt Road Stormwater Upgrades.
- Ensuring work is completed to Halifax Water standards.
- Ensuring work complies with occupational health and safety requirements.
- Coordinating with Halifax Water operations staff for temporary water, shutdowns, and bypasses needed to facilitate construction activities.

A Halifax Water project technologist (inspector) is budgeted for 3 years (156 weeks), with the total cost divided among the budgets for water, wastewater, and stormwater infrastructure improvements under Internal Halifax Water costs ($112,598 per project).

Onsite Construction Inspection – External Services

1. Windsor Street Exchange – Local Water, Wastewater, and Stormwater Improvements

- Full-time construction inspection is included in the Design-Build team’s construction cost. As the project is a progressive design-build, the Design-Build team is the engineer of record,

responsible for the design and ensuring the installation of all underground infrastructure according to their design and Halifax Water standards.

2. North End Feeder Replacement (within WSE limits)

- Halifax Water intends for CBCL to complete the construction inspection.
- Within the progressive design-build method for the Windsor Street Exchange, CBCL will be responsible for and coordinate the design of the NEF with the Design-Build team to ensure the most efficient final alignment. CBCL is the engineer of record for the NEF, responsible for the design and ensuring the installation of all associated underground infrastructure according to their design and Halifax Water standards.
- During construction, it is more efficient for CBCL to coordinate unanticipated alignment conflicts between their site inspector & engineer of record directly with the Design-Build team. Any alignment alterations due to unforeseen circumstances could also impact alignments of other underground infrastructure that the Design-Build team is responsible for designing.
- The following are considerations for CBCL to provide full-time inspection services for the North End feeder Replacement (within the WSE limits):
    - Based on CBCL's financial proposal, the estimated cost for CBCL to provide this service for a one-year (52-week) construction duration is approximately $237,500, based on 50 hours per week of onsite inspection time.
    - The estimated cost for Halifax Water staff to provide similar full-time inspection for a 52-week construction duration is approximately $210,000,
    - If Halifax Water staff were to complete the onsite inspection on behalf of CBCL's engineer of record, it is expected that CBCL would require additional inspections by the engineer of record over the 52-week period to certify their design as required through their contract.
    - The cost for CBCL to complete the engineer of record work with a CBCL inspector on site is approximately $30,000 (50% of the fee provided in the financial proposal). It is anticipated that an additional $40,000 would be required for CBCL for additional inspections by the engineer of record if onsite inspection was subsequently completed by Halifax Water staff. The final alignment of the NEF through the WSE is currently in design development, therefore, the full scope and extent of the consultant's inspection and field services is unknown at the time of this application.
    - Halifax Water is confident the added benefit of having CBCL to coordinate unanticipated alignment conflicts from their site inspector/engineer of record directly with the Design-Build team provides good value through minimizing potential onsite delays in decision making and better facilitate the installation of CBCL's design, including the installation of multiple large diameter pipes in close proximity to each other.
    - If a conflict exists with the inspector proposed by CBCL, Halifax Water will request a resume from CBCL for an alternate inspector with similar experience and the same hourly rate.

3. Kempt Road Stormwater Upgrades (within WSE Limits)

- Full-time construction inspection is included in the Design-Build team's construction cost. As the project is a progressive design-build, the Design-Build team is the engineer of record, responsible for the design and ensuring the installation of all underground infrastructure according to their design and Halifax Water standards

Total Project Cost Summary

CBCL developed an opinion of probable cost (OPC) for the project based on the concept Windsor Street Exchange redevelopment alignment and the underground infrastructure upgrades that Halifax Water is integrating. This included a preliminary cost share breakdown for unit rates, indirect costs, and overall construction project management items involved in the project.

The Phase 1 proposal included a submittal where the design-build team provided non-binding unit pricing based on the quantities developed by CBCL's OPC for the entire project scope. Halifax Water's cost estimates for this funding application are based on the unit price information provided by the design-build team.

Halifax Water's total project cost for the Windsor Street Exchange Redevelopment Project (work to be integrated with HRM's current project) of $69,275,000 is identified below in items 1 through 5.

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Item #	Project Name	Included in Prev Capital Budgets	Included in 25/26 Budget	Future Budget Requirement	UARB Application - Design (M11999)	Estimated Construction Cost	Current Funding Request (rounded)	Estimated Project Cost outside WSE (Future)	Estimated Cost to Completion (For Information Only)
1	Windsor Street Exchange Redevelopment - Water Infrastructure - Construction[1]	$1,096,682	$1,000,000	$9,089,000	$1,096,682	$10,089,000	$11,186,000	Not Applicable	$11,186,000
2	Windsor Street Exchange Redevelopment - Wastewater Infrastructure - Construction[1]	$661,083	$1,000,000	$15,319,000	$661,083	$16,319,000	$16,981,000	Not Applicable	$16,981,000
3	Windsor Street Exchange Redevelopment - Stormwater Infrastructure - Construction[1]	$597,573	$1,000,000	$13,573,000	$597,573	$14,573,000	$15,171,000	Not Applicable	$15,171,000
4	North End Feeder Replacement	$1,200,000	$2,000,000	$27,025,000	$1,022,936	$12,700,000	$13,723,000	$16,502,000	$30,225,000
5	Young Street Pocket - Sewer Separation - Route to the Harbour	$2,200,000	$1,000,000	$33,320,000	$1,125,875	$11,088,000	$12,214,000	$24,306,000	$36,520,000
	TOTAL	**$5,755,338**	**$6,000,000**	**$98,326,000**	**$4,505,000**	**$64,769,000**	**$69,275,000**	**$40,808,000**	**$110,083,000**
			$110,083,000		**Rounded**				

1 - Design costs for Items 1 through 3 are budgeted in a separate capital budget line item

Amount for NSUARB Construction Approval
requested with this funding application
Not requested with this funding application

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For clarity, Halifax Water intends to seek funding for remaining work outside of the HRM project area through separate future funding requests for each, the North End Feeder Replacement and Young Street Pocket – Route to the Harbour (Kempt Road).

For more information, please see Attachment 4 – Project Cost Estimates.

It is anticipated that the full cost of the work for the Windsor Street Exchange Redevelopment Project will be known later this year when the design for the work packages is completed.

The driver for items 1 through 4 above is asset renewal and funded through debt/depreciation.

For item 5, the project is funded 18.75% asset renewal to be funded through Halifax Water debt/depreciation, 75% growth funded from Regional Development Charges (RDC) and 6.25% HRM, based on the Integrated Resource Plan (IRP).

Halifax Water has applied for funding to the Federal Canadian Housing Infrastructure Funding (CHIF) program for the Windsor Street Exchange Redevelopment Project and is awaiting the outcome of the application. It is Halifax Water's intention to proceed with the project regardless of the outcome of the funding application.

The proposed expenditure meets 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". The project meets these criteria based on the following: The infrastructure throughout the Windsor Street Exchange is aging, and at the end of its useful service life. The infrastructure through the Windsor Street Exchange includes critical transmission main and trunk wastewater/stormwater conveyance which is required for system integrity and safety.

The alternative would be to complete the project following the completion of the HRM Windsor Street Redevelopment Project. Halifax Water does not recommend this alternative for the following reasons:

- The delay of upgrades impacts Halifax Water's ability to meet the IRP strategy.
- Carrying out future stand-alone work in this area is expected to be significantly more complex and costly compared to integrating the utility work with the current HRM project.
- The impact to the public would be more significant if the work were to proceed as two separate projects instead of an integrated approach between HRM and Halifax Water.

On February 25, 2025, the Halifax Regional Council voted to proceed with the Windsor Street Exchange project, as per the current funding agreement and Progressive Design-Build contract, after pausing the work in a previous January 25, 2025 decision. Halifax Water is currently working with HRM and the design-build team on the path forward to continue the design process. The

most recent design schedule for the 60% and 90% deliverables for the five work package areas is shown below:

Work Package Area #1
- 60% Design Submission: May 20, 2025
- 90% Design Submission: July 22, 2025

Work Package Area #2
- 60% Design Submission: May 27, 2025
- 90% Design Submission: July 17, 2025

Work Package Area #3
- 60% Design Submission: May 27, 2025
- 90% Design Submission: July 31, 2025

Work Package Area #4
- 60% Design Submission: July 21, 2025
- 90% Design Submission: September 25, 2025

Work Package Area #5
- 60% Design Submission: September 23, 2025
- 90% Design Submission: December 5, 2025

Accordingly, Halifax Water is requesting approval from the Nova Scotia Utility and Review Board for the Windsor Street Redevelopment Project - Construction. Please contact me if you have any questions regarding this submission.

Respectfully submitted,

Signed by:
John Eisnor

John Eisnor, MASc, P.Eng.
Acting General Manager (April 7th to April 11th)
Director of Operations

Attachments:
1. Attachment 1 – Windsor Street Exchange – UARB Design Application
2. Attachment 2 – Windsor Street Exchange Drawings
3. Attachment 3 – NEF and Kempt Road Concept Alignments
4. Attachment 4 – Project Cost Estimates

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November 29, 2024

VIA EMAIL (Pamela.McGarrigle@novascotia.ca)
Ms. Pamela McGarrigle, Clerk of the Board
N.S. Utility and Review Board
3rd Floor, Summit Place, 1601 Lower Water Street
P. O. Box 1692, Postal Unit M
Halifax, NS B3J 3S3

Re: Windsor Street Exchange Redevelopment Project

Dear Ms. McGarrigle:

Halifax Water is currently seeking funding for the Windsor Street Exchange Redevelopment design and related projects for an estimated total cost of $4,208,000.

The Windsor Street Exchange (WSE) Redevelopment is a HRM led project which involves the planned reconfiguration (horizontal and vertical alignment) of the intersection of Bedford Highway, Windsor Street and Lady Hammond Road, and surrounding road network. As one of five roadway access points to the Halifax Peninsula and the downtown core, the WSE accommodates 90,000 – 110,000 vehicles per day, with approximately 48,000 transiting the Windsor Street intersection, and the WSE is currently operating above its available capacity during peak travel periods. HRM's Integrated Mobility Plan identifies the WSE as a bottleneck in the network, and capacity improvements can be carried out in a manner that benefits all users. Funding for the project is being provided through Transport Canada under the National Trade Corridors Fund (NTCF), the Province of Nova Scotia and the Port of Halifax, in addition to funding through the municipality's capital budget.

Key project milestones are summarized below:

- Transport Canada announced funding for the project in June 2019 through the National Trade Corridors Fund. The project was approved by HRM Council August 13, 2019. (https://www.halifax.ca/sites/default/files/documents/city-hall/regional-council/190813rc-mins.pdf). The project was kicked off by HRM's project team in March 2020. The HRM team started their initial planning, interested party engagement and pre-design processes.
- In January 2021, HRM awarded RFP 20-400 to WSP Canada Inc. (WSP) to provide consulting services preparing the Functional Plan and Preliminary Design for the WSE Redevelopment Project.

- Public/interested party engagement to gather information on the existing conditions was held in May 2021.
- The project's consultant, WSP, completed a review of the existing conditions, analyzed traffic data, and developed high-level concepts for the intersection redesign in Spring and Summer 2021.
- Public and interested party engagement to gather feedback on the concept design options was held in October and November 2021.
- WSP refined the intersection design options based on feedback gathered and submitted functional design options in February 2022.
- A technical review completed by an external consultant (EXP Services Inc.) provided feedback on the functional design options in Spring 2022.
- The results of the review and additional interested party feedback were used by WSP to further refine the design options. Revised functional design options were submitted in August 2022.
- A value engineering study of the design options, led by external consultants (HDR Inc. and CBCL Limited), was conducted in February 2023
- A revised functional design incorporating value engineering options, led by external consultants (CBCL Limited and HDR Inc.), was conducted starting in August 2023 and finishing in February 2024.
- On June 18, 2024, HRM Regional Council authorized HRM staff to proceed with conditions on the next phase (design) of the Windsor Street Exchange project. See link to Council report (https://www.halifax.ca/sites/default/files/documents/city-hall/regional-council/240618rc-minsdraft.pdf)

Halifax Water has existing water, wastewater, and stormwater infrastructure throughout the Windsor Street Exchange project area. The water system has the North End Feeder transmission main running through the site in a deep tunnel to Commission Street. There are also watermains in the street right of way for local distribution. The intersection is also a common collection point for stormwater drainage from surrounding streets that currently enters the combined wastewater system at the bottom of Bayne Street (Fairview Cove/MacIntosh Street Chamber). There are also local and trunk wastewater collection systems that pass through the intersection to the bottom of Bayne Street, entering the Fairview Cove trunk sewer towards the Halifax Wastewater Treatment Facility.

Existing local water, wastewater and stormwater infrastructure within the Windsor Street Exchange area will be considered for replacement on a case-by-case basis as part of the HRM project, based on the new intersection alignment and the asset condition of the infrastructure.

In addition to the existing infrastructure within the limits of the WSE Redevelopment Project, Halifax Water has portions of two significant projects (from Halifax Water's Integrated Resource Plan) that fall within HRM's project boundary:

- Replace High Risk Transmission Main - Robie (North End Feeder)

- Young Street Sewer Separation – Stormwater Route to the Harbour

Since 2018, Halifax Water has been working on the preliminary planning/concept design for these projects separately from the design of the Windsor Street Exchange project. When the above projects were started by Halifax Water staff, the Windsor Street Interchange redevelopment was not being considered by HRM and communication with HRM staff concerning the above Halifax Water projects was through regular channels.

A brief presentation of the WSE project was shared with the Board Counsel Consultants during a workshop hosted by Halifax Water in August of 2024 to highlight the HRM work and how Halifax Water is integrating the above IRP projects.

Replace High Risk Peninsula Transmission - Robie (North End Feeder Replacement)

Volume 2 of Halifax Water's 2019 Infrastructure Master Plan (IMP) identified significant growth proposed on the Peninsula and proposed the Peninsula Supply Strategy of replacing the critical North End Feeder (NEF) and strategic upsizing of Chain Control transmission mains. Although the Peninsula transmission main from Geizer 123 to Robie does not need to be upsized as part of the supply strategy, it is a critical piece of infrastructure to service the Peninsula, today and in the future. The transmission main runs through the Fairview Cove Container Terminal. It is considered high risk as it is not easily accessible for condition assessments as it's located in a deep tunnel, is a pre-stressed concrete cylinder pipe under significantly high pressures with unknown condition and would be catastrophic if it were to fail. A break in the North End Feeder transmission main would significantly impact the water transmission network to Peninsula Halifax. The IRP recommended that the high-risk portion be twinned.

The NEF is a 900 mm pre-stressed concrete cylinder pipe (PCCP), C301(L) transmission main that supplies water from the Geizer 123 Reservoir to Robie 1 Control Chamber. This transmission main supplies most of the demand in the north end of peninsular Halifax. The transmission main was constructed from 1974-1976 when the Halifax supply was transitioning to Pockwock Lake and the JD Kline Water Supply Plant.

This type of transmission main material (Hyprescon) has been problematic in various areas throughout the water transmission network requiring numerous repairs and replacements. The pipe has an estimated service life of 50-75 years and as of 2024 the pipe is entering its 48th year of service.

One kilometer of the transmission main is located within a 2.0-metre-wide tunnel, approximately 25 metres below grade within the area of the WSE project. This section of pipe is located below seawater level which means the tunnel is susceptible to groundwater and saltwater intrusion. Based on Halifax Water's research and previous studies, salt-based corrosion of the reinforcing wire strands has contributed to breaks in this same type of pipe along Kearney Lake Road in the mid-1980s.

The existing water transmission main tunnel passes under CNR land, Halifax Port Authority land, the Bedford Highway, the existing Windsor Street Exchange intersection, and the Mackay Bridge approach roads.

The primary access for inspection of the existing main is also challenging. There is a 4.5-meter diameter access shaft in the Fairview Cove Container Terminal marshaling yards to the tunnel 22 metres below. The tunnel section of the transmission main can be isolated by system valves near the Titus/Evans control chamber and at the Lady Hammond Road/Commission Street Intersection. Any inspections require significant planning and are completed either remotely or using supplied air.

The tunnel is only slightly larger than the pipe itself and as a result, the replacement or repair of the main in the event of a break or failure would be a very difficult and lengthy process, resulting in loss of gravity fed service to the north end of peninsular Halifax. Operations staff would have to bring alternate water delivery systems online to maintain current levels of service.

A new transmission main installed at a shallower depth, along an alternative alignment to the existing pipe is recommended to add system redundancy and operational and maintenance benefits. The new transmission main will operate in parallel to the existing NEF, allowing Halifax Water to operate the system with one of these mains out of service. Currently, the NEF can be taken offline for maintenance and repairs for short periods of time, however, there are many alternate systems that need to be activated for the system to operate with the NEF offline. A break in the NEF transmission main would severely impact the water transmission network serving the peninsula.

Young Street Sewer Separation – Stormwater Route to the Harbour

HRM has identified the Young Street Pocket area, generally bound by Windsor Street, Almon Street, Robie Street and Young Street, as an area for significant development. Through its Integrated Resource Plan, Halifax Water has determined sewer separation is the preferred long-term solution to accommodate the planned growth. Volume 3 of Halifax Water's IMP outlines the decisions related to sewer separation.

The primary goal of Halifax Water's Sewer Separation Program is to divert stormwater away from the existing combined sewer system. This serves to:

- Improve local and overall capacity in the existing combined sewer system, to accommodate future increases in sanitary flows from increased population growth and development; and
- Support Halifax Water's overall mandate of zero net-increase in combined sewer overflows to the environment due to growth, without a management plan.

Halifax Water has explored routing options, selecting to upgrade the stormwater system on Kempt Road (from Young Street to the bottom of Bayne Street) as the sewer separation corridor for the Young Street pocket. Halifax Water's consultant, WSP, is currently working on the conceptual design for the entire alignment, including stormwater separation along the route.

Halifax Water and HRM Integrated Work

Halifax Water and HRM coordinate an annual program of water, stormwater, and wastewater renewal projects with HRM street recapitalization projects as there are integration advantages realized by both parties. The benefit to this approach is cost and schedule efficiencies by completing the project in a collaborative manner. A cost share agreement is typically completed for surface reinstatement features (asphalt, curb, sidewalk, landscaping, etc.) such that HRM and Halifax Water split reinstatement costs. For every project there is a quantifiable cost savings to Halifax Water rate payers and HRM taxpayers by using this approach. The cost of contractor overheads, mobilization, project management, traffic control is also shared by HRM/Halifax Water.

The HRM lead Windsor Street Exchange redevelopment project is being considered similarly to other integrated works between Halifax Water and HRM. Specifically, Halifax Water and HRM are coordinating as it relates to the Fairview Cove Trunk Sewer project that is planned in the vicinity of the WSE project.

To maintain their project timelines, HRM's Project Management team has chosen to utilize an integrated design build project delivery method, referred to as Progressive Design Build (PDB) model. The PDB model features a collaborative approach between the HRM and its contracting partner during the early stages of a project, such as identifying project requirements and design work. It introduces additional steps that enable HRM and the design-builder to progressively develop a design solution before moving directly into detailed design and construction.

HRM selected the design-builder based on expertise through a Request for Qualifications ("RFQ"). This process is primarily based on the value of the expertise and constructability knowledge the contractor can provide. The design-builder once awarded will deliver the project in two distinct phases.

First is the Preconstruction Services stage, whereby the design-builder collaborates with HRM and its consultants to create or confirm the project's basis of design, and then advances that design. Decisions are based on cost, schedule, operability, life cycle and other considerations, with the design-builder providing ongoing, transparent cost estimates to maintain the owner's budgetary requirements. When the design has achieved an appropriate level of definition adhering to the owner's needs, the design-builder will provide a formal commercial proposal for Phase 2 services. Phase 2 only commences once the owner and design-builder agree upon commercial terms (including the price and timeline). This is often called the Final Design and

Construction Services stage, and generally also includes any testing, commissioning, and other services that have been agreed upon.

If, for any reason, the parties cannot reach agreement on the Phase 2 commercial terms, then HRM may have the right to exercise an "off-ramp", where it can use the design and move forward with the project through another procurement process if it deems it appropriate.

HRM publicly issued a pre-qualification RFSQ in February 2024 which solicited responses from design-build teams that were interested in completing the project. The RFSQ process is complete and HRM evaluated which proponents were qualified to participate in the Phase 1 RFP submission process. The Phase 1 RFP was issued on July 22, 2024, and HRM has provided the following estimated schedule from their Phase 1 Request for Proposals:

Milestone	**Expected Date**
Issue Phase 1 RFP to Shortlisted Proponents	July 22, 2024
RFP Collaborative Meetings	Week of August 12, 2024
RFP Submission Date	September 24, 2024
Execute Phase 1 Agreement and Commence Phase 1 Services	October 2024
Interim Design Submissions (as determined by Design-Build team)	Beginning Fall 2024
Execution of Early Works Agreement	TBD
Design-Builder Submits Proposal for Phase 2	April 2025
Execute the Phase 2 Agreement (or elect to offramp)	May 2025
Construction Commences	June 2025
NTCF Scope of Work Construction Substantially Complete	December 2027
Final Construction Complete	December 2028

While there are several benefits with integration, there are several considerations that Halifax Water staff have identified through working with HRM in the delivery of this project:

- Halifax Water Board of Commissioners (HRWC Board) and Nova Scotia Utility and Review Board (NSUARB) construction funding and other regulatory approvals will be sought once the project construction pricing is more defined. Based on the schedule above this is anticipated to be in April 2025. During the Phase 1 design, project cost updates will be prepared by the design-build team and provided to HRM based on the evolution of the project scope and their plan to execute the work. Halifax Water recognizes the schedule will need to consider the process for the HRWC Board and NSUARB to consider construction funding requests. To mitigate this risk, Halifax Water is proposing the following as next steps:

1. Application to the NSUARB for funding approval of the phase 1 design costs for the Kempt Road, North End Feeder and Windsor Street Exchange projects currently. This funding request does not include costs for tender phase or construction phase services for the Kempt Road and North End Feeder projects outside the limits of the WSE project.
2. Application for construction funding approval with the HRWC Board once a more defined project cost estimate is available from the design-build team for the work within the limits of the Windsor Street Exchange project.
3. Following HRWC Board approval, construction funding will be sought from the NSUARB for the sections of the above projects within the limits of the Windsor Street Exchange.
4. Application for construction funding will be sought for the North End Feeder and Kempt Road Stormwater projects after detailed design is complete for the portions outside the limits of the Windsor Street Exchange project.

- Order of the Engineer (Bylaw S-300) – HRM have issued an order requesting that Halifax Water integrate our planned work in the Windsor Street Exchange project area. If Halifax Water chooses not to or is unable to integrate the related projects, the planned work will not be able to proceed until at least 2030. Any future projects in this area would be entirely at Halifax Water's cost. See Attachment #4 – HRM S-300 Letter.

North End Feeder

In 2018, CBCL were awarded the concept design review of potential options for a new shallower bury alignment. This report was completed and issued in October 2019. An RFP for concept design through construction phase services was issued in September 2020 and CBCL was the successful proponent. CBCL is currently working on refining the concept alignment for the entirety of the route (from Evans Avenue to Commission Street). It is Halifax Water's intent to complete the detailed design of the portion through the limits of the WSE with CBCL under their current contract and in coordination with the successful design-build team. The installation of the North End Feeder will then be completed by the design-build as part of the overall project. A copy of the concept alignment for the NEF project is included as Attachment #1.

Halifax Water Sewer Separation

The sewer separation program and the associated stormwater upgrade on Kempt Road to Bayne Street is critical to Halifax Water's strategy to accommodate growth. Further delay in completing this work could lead to capacity constraints within the system as new connections are activated.

WSP are currently finalizing the concept alignment for the stormwater pipe along Kempt Road. A concept alignment through the Windsor Street Exchange has been provided to HRM for the design team to integrate into their design for the project. It is Halifax Water's intention for the

design-build team to construct the portion of the stormwater collector through the WSE as part of the overall project. A copy of the concept alignment for the Kempt Road Stormwater Upgrades is included as Attachment #2.

Budget Implications

Halifax Water's total request for funding ($4,208,000) is available from past and future capital budgets within the following five projects:

1) Funding in the amount of $987,632 is available in "3.704 – Windsor Street Exchange Redevelopment – Water Infrastructure" for water from previous budgets ($170,000) and the 2025/26 Capital Budget ($817,632).

2) Funding in the amount of $635,951 is available in "2.905 Windsor Street Exchange Redevelopment" for wastewater from previous budgets ($250,000) and the 2025/26 Capital Budget ($385,951).

3) Funding in the amount of $572,441 will be available in "2.1133 Windsor Street Exchange Redevelopment – Stormwater Infrastructure – Design" for stormwater in the 2025/26 Capital Budget.

4) Funding in the amount of $908,577 is available in "3.554 – North End Feeder Replacement" in the 2025/26 Capital Budget.

5) Funding in the amount of $1,103,218 is available in "2.982 – Young Street Pocket – Sewer Separation – Route to the Harbour" from previous budgets.

The driver for items 1 through 4 is asset renewal and funded through rates/debt.

For item 5, the project is funded with 18.75% Halifax Water rates/debt, 75% RDC and 6.25% HRM based on the IRP. This project is planned to be added to the RDC update submission scheduled for March 2025.

The proposed expenditure meets 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", and "Directly supports the implementation of the Asset Management program". The project meets these criteria based on the following: The infrastructure throughout the Windsor Street Exchange is aging, and at the end of its useful service life. The infrastructure throughout the Windsor Street Exchange is also critical transmission main and trunk wastewater/stormwater conveyance which is required for system integrity and safety.

Future Budget Information

Currently, the total estimated project cost of all Halifax Water work for the Windsor Street Exchange and related projects is provided as information in the breakdown below:

Windsor Street Exchange Project

- Water Items
  - North End Feeder Replacement (Inside of WSE Limits): $13.1M
  - Windsor Street Exchange (Local Water Improvements): $10.0M
- Wastewater Items
  - Windsor Street Exchange (Local Wastewater Improvements): $16.3M
- Stormwater Items
  - Windsor Street Exchange (Component of Kempt Road Stormwater Upgrade and Local Improvements: $14.5M)
  - Kempt Road Stormwater Upgrades (Inside of WSE Limits): $11.2M

North End Feeder Project (Outside of WSE limits)

- Water Items
  - North End Feeder Replacement: $16.8M

Kempt Road Stormwater Upgrades Project (Outside of WSE limits)

- Stormwater Items
  - Kempt Road Stormwater Upgrades: $24.9M

Next Steps

This application is requesting approval for design fees for the Windsor Street Exchange, North End Feeder and Kempt Road Stormwater projects. The design cost estimate is included as Attachment 3. Halifax Water is including the design funding for all projects for the entire respective alignments via this request.

In a subsequent application to the NSUARB, Halifax Water will request funding approval for the construction phase of all work within the limits of the Windsor Street Exchange project for the North End Feeder Replacement and Kempt Road Stormwater Upgrades, based on the 30% (Class 3) estimate provided by the design-build proponent. The 30% (Class 3) estimate is anticipated to be available from the design-build team near the end of 2024/early 2025. Based on the RFP, the following deliverables from the design-build team for the construction costs are anticipated to be available at the following milestones:

a. 30% (Class 3) estimate
b. 60% (Class 2) estimate & design report
c. 90% (Class 2) estimate & design report
d. 100% (Class 1) estimate

The RFP proposal submitted to HRM from the design-build contractor included design costs to the 90% stage for HRM related work and to 100% for Halifax Water related work. HRM are currently negotiating the Phase 1 agreement with the design-build contractor at the time of this application.

Regarding the construction of the North End Feeder Replacement and Kempt Road Stormwater Upgrades projects that is outside of the limits of the Windsor Street Exchange, Halifax Water will request funding approval from the NSUARB after final design is complete.

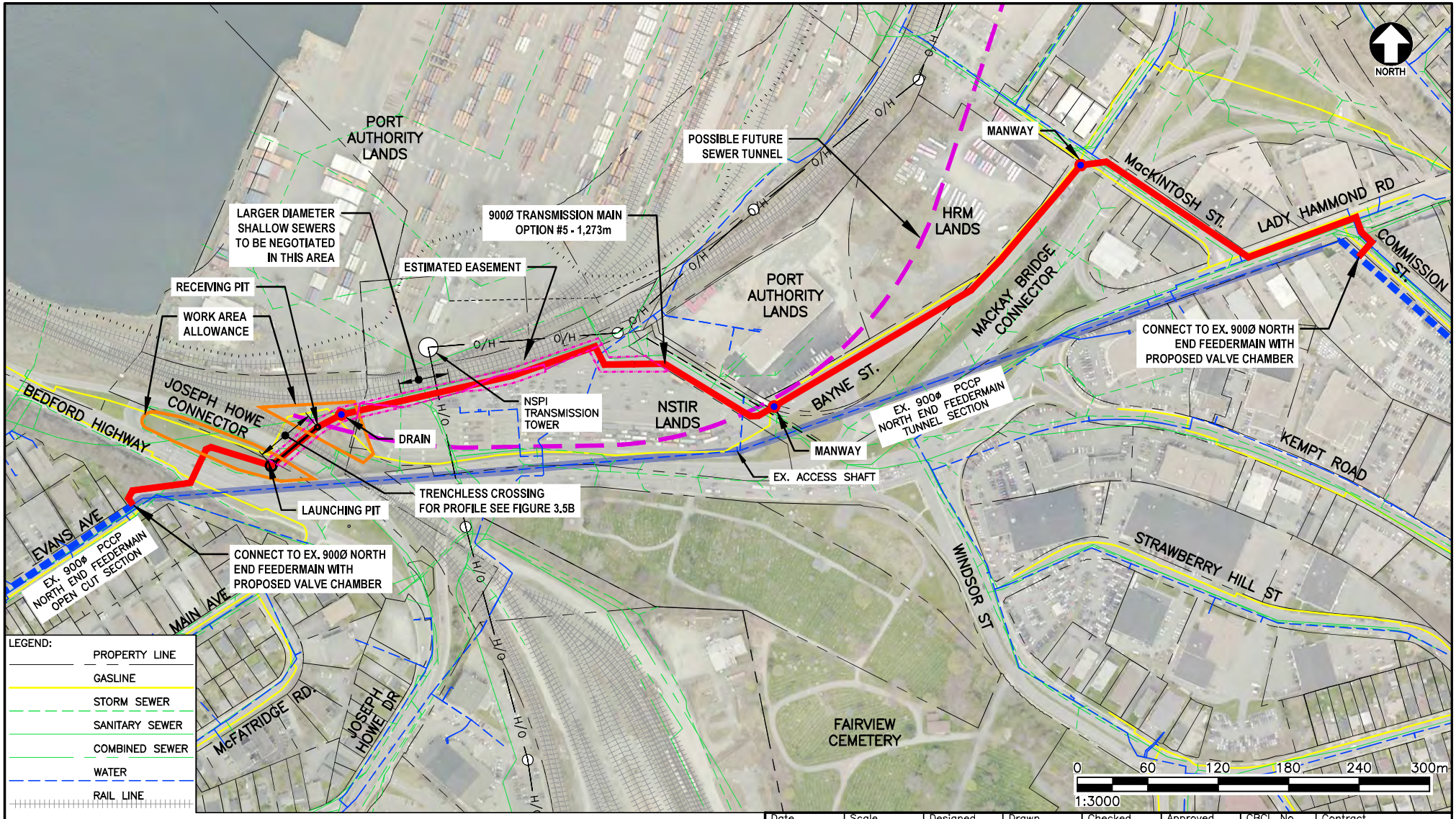
Accordingly, we are now requesting approval from the NSUARB for $4,208,000 for the Windsor Street Exchange Redevelopment Project as identified above. Please contact me if you have any questions regarding this submission.

Respectfully submitted,

Signed by:
Kenda MacKenzie
0C084AC815794F6...
Kenda MacKenzie, P.Eng.
Acting General Manager/CEO

Attachments:
Attachment 1 – North End Feeder Concept Sketch.
Attachment 2 – Kempt Road Stormwater – Route to Harbour.
Attachment 3 – Windsor Street Exchange – Design Cost Estimate.
Attachment 4 – Windsor Street Exchange - By-Law S-300 letter.

ATTACHMENT 1



LEGEND:

- PROPERTY LINE
- GASLINE
- STORM SEWER
- SANITARY SEWER
- COMBINED SEWER
- WATER
- RAIL LINE

CONCEPT DRAWING

Halifax Water

No.	Description
A	ISSUED FOR DRAFT REPORT

CBCL LIMITED Consulting Engineers

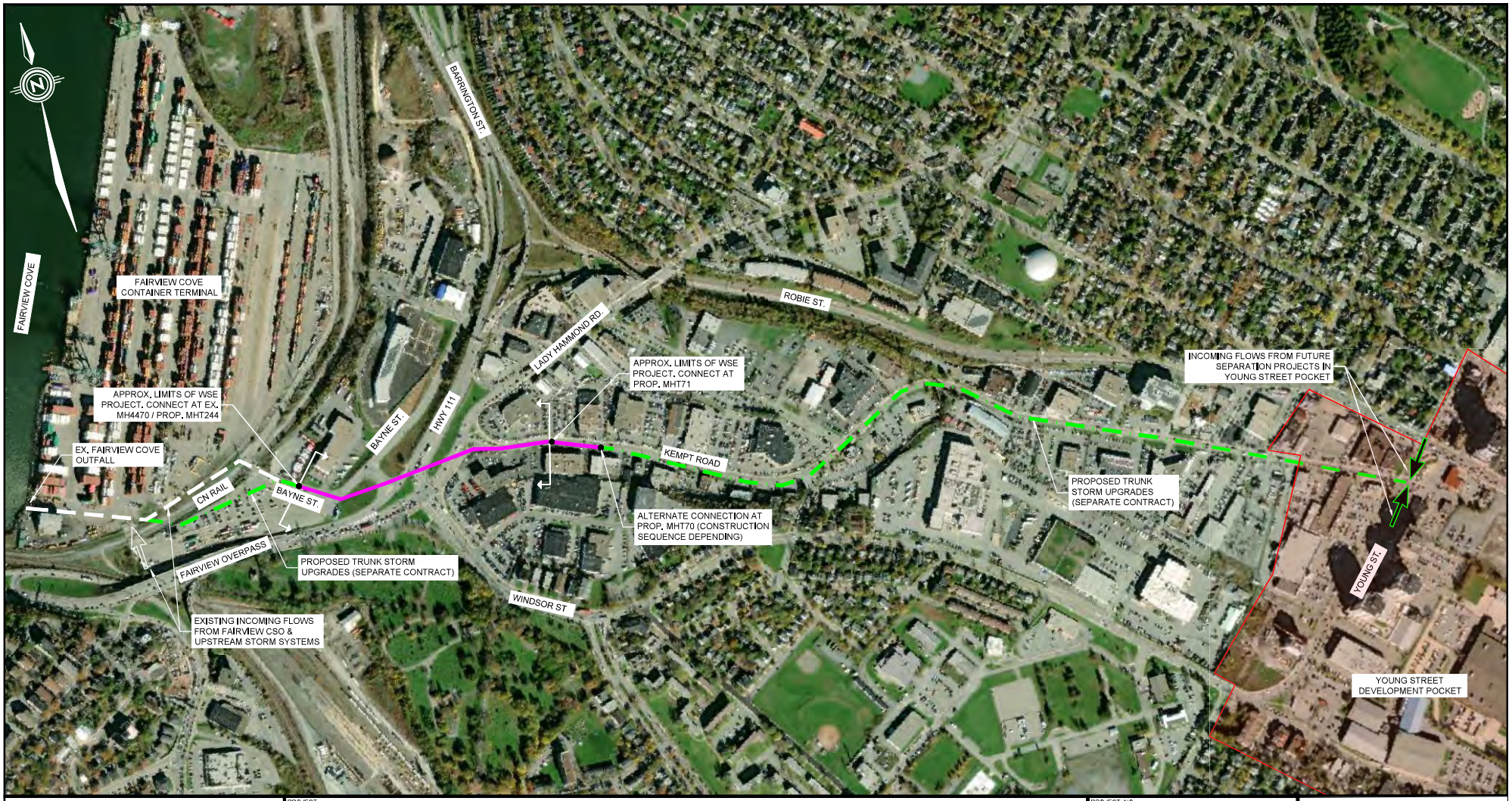
Date	Scale	Designed	Drawn	Checked	Approved	CBCL No.	Contract
2019JAN30	AS SHOWN	JC	VH	JC	JAB	181025.00	.

NORTH END FEEDER MAIN

OPTION 5

Figure **3.5A**

ATTACHMENT 2



WSP Canada Inc.
1 Spectacle Lake Drive
Dartmouth, Nova Scotia, Canada B3B 1X7
T 902-835-9955 F 902-835-1645 www.wsp.com

PROJECT:

PENINSULA SEWER SEPARATION PROGRAM
YOUNG STREET POCKET

TITLE:

KEMPT ROAD TRUNK STORM SEWER
AT WINDSOR STREET EXCHANGE

PROJECT NO:	211-12212
SCALE:	NTS
DRAWN BY:	WSP STAFF
CHECKED BY:	
REVISION:	0
DATE: (YYYY/MM/DD)	2024/10/16
SUPPLEMENTAL NO:	

TOTAL PROJECT COST ESTIMATE

October 31, 2024

Windsor Street Exchange (WSE) - Design Phase Cost Estimate

Windsor Street Exchange Design-Build Proponent Fees[1]	
WSE Phase 1 Design Fee - Water	$739,372
WSE Phase 1 Design Fee - Stormwater	$350,633
WSE Phase 1 Design Fee - Wastewater	$350,633
Cost Contingency (10%) - on items above	$144,064
(a) Windsor Street Exchange Phase 1 Sub-Total*	**$1,584,702**
Windsor Street Exchange Design - Owner's Advisor Fees (Halifax Water portion)[1]	
WSE - Phase 1 (CBCL Owners Engineer Admin for HRWC Scope)	$228,840
WSE - Pre Phase 1 (Development of Project Cost Estimate - CBCL)	$28,409
Cost Contingency (10%) - on Phase 1 CBCL Scope only	$22,884
(b) Windsor Street Exchange Design - Owner's Advisor Fees (Halifax Water portion) Sub-Total*	**$280,133**
HRWC Design Fees (outside of WSE limits)[2]	
Kempt Road Stormwater Detailed Design (HRWC Staff Estimate)	$600,000
North End Feeder Design (Concept & Detailed Design Phase Services)	$717,829
Young Street - Capacity Analysis and Study Services	$229,940
Cost Contingency (10%) - on items above	$154,777
(c) HRWC Design Fees (outside WSE limits) Sub-Total*	$1,702,546
Sub-Total (Taxable) = (a) + (b) +(c)	**$3,567,380**
Net HST (4.286%)	$152,898
OTHER COSTS (NON-TAXABLE)	
Internal HRWC Costs (To date on NEF, WSE & Kempt Road)	$179,864
Internal HRWC Costs (Future Phase 1 design - WSE/NEF/Kempt Road)	$272,000
Other Costs (Non-Taxable) Sub-Total	**$451,864**
Overhead & Interest (1%)	$35,674
TOTAL PROJECT COST ESTIMATE	**$4,207,817**
TOTAL PROJECT COST ESTIMATE	**$4,208,000**

** These fees do not include costs of tender phase and construction phase services*

July 12, 2024

Halifax Water
450 Cowie Hill Rd, PO Box 8388 RPO CSC
Halifax, NS B3K 5M1

Attn: Tom Gorman, P.Eng., Senior Manager – Infrastructure Planning

Transmitted via email to: tomg@halifaxwater.ca;

Dear Tom,

Re: Windsor Street Exchange Redevelopment Project
Integration of Halifax Water Capital Projects and Order of the Engineer

In accordance with our Capital Plan, Halifax Regional Municipality (HRM) is reconfiguring the Windsor Street Exchange (WSE), the project area of which extends from the Bedford Highway - Joseph Howe Interchange to the west, to the Hwy 111-Barrington Street Interchange to the east, as shown on the attached drawing. This is a major civil infrastructure project for the Municipality that will involve a full reconfiguration of the right of way within the project area.

A 30% functional design for the project was recently finalized and subsequently approval of Regional Council on June 18, 2024. HRM has contracted CBCL to act as Owner's Advisor on this project. The HRM project team is now working to advance the detailed design, with construction to begin as early as 2025.

It is HRM's understanding that Halifax Water is planning three (3) major capital projects within or adjacent to the WSE project area.

1) **North End Water Transmission Main (Feedermain):** This project involved installation of a feedermain water transmission pipe from the end of Evans Ave to Lady Hammond Road, to support the supply potable water to the Halifax Peninsula. We understand that the alignment of the feedermain has not yet been confirmed but is likely to overlap with the WSE project area. Because of the likely intersection of the two projects, the feedermain design has been on hold until the 30% functional design of the WSE 30% was complete. Now that the WSE 30% design is complete Halifax Water is continuing with the

feedermain design and intends to integrate with the WSE project on the construction of the feedermain.

2) **Fairview Cove Main Wastewater Collection Line (Trunk Sewer):** This project involves the installation of a trunk sewer to support collection of wastewater from the Halifax Peninsula. We understand that Halifax Water's intent is to complete this work by direction drilling beneath the Port of Halifax truck marshalling yard to make connections in the vicinity of the northern extent of Mackintosh Street. This project is in close proximity to the WSE project area and is likely to cause enhanced disruption if both projects complete construction at the same time. It is HRM's understanding that Halifax Water is planning to complete this work in advance of the WSE to mitigate construction impacts.
3) **Infrastructure Upgrades including Sewer Separation and Water Line Renewal:** Halifax Water plans to separate and upgrade the sewer system on Kempt Road, and repair the water main within the project area that has been deemed to be in poor condition. This work has recently been identified as a priority. Halifax Water intends to integrate design of this work with the WSE design work such that this work can be constructed as a cost-shared portion of the WSE project.

HRM has received funding through the National Trade Corridors Fund (NTCF) to support the WSE project. **To meet the requirements of the NTCF contribution agreement, construction must be complete by the end of 2027, motivating urgency for Halifax Water to confirm their plans and funding for integrated and coordinated works.**

HRM is using a Progressive Design Build (PDB) procurement model to allow for a phased approach to the detailed design and construction to accelerate the work and to meet NTCF contribution agreement requirements. This involves a Phase 1 contract for design and early construction works, and a second Phase 2 contract for the full construction package. Our intention is to issue the Phase 2 contract in 2025, at which point all associated works must be well defined, funded and planned.

As HRM prepares to launch the Phase 1 WSE contract, HRM and Halifax Water staff have been in close communication about delivery of projects in and near the WSE. As a result of these discussions, it is understood that there is a current opportunity for Halifax Water to seek alignment in planning and funding of the aforementioned work in order to increase the chance

of benefits such as improved confidence in cost estimates, scope of work and construction timing, as well as economies of scale in procuring services such as traffic control, earthworks, etc.

If Halifax Water intends to partner on the WSE project, HRM requires Halifax Water to take all necessary steps to ensure their work is designed and planned to fit the project delivery schedule that will soon be developed in greater detail as part of the Phase 1 contract. We understand that Halifax Water are subject to Nova Scotia Utility and Review Board approval processes and will support Halifax Water in providing necessary information as required.

If Halifax Water is not in the position to coordinate with HRM to complete their work in and near the WSE project, **HRM is hereby providing in the form of the Order of the Engineer pursuant to the HRM Streets By-law S-300** that work within the project area would not be permitted during construction, and during the two-year moratorium on road-cuts following HRM recapitalization work as noted in the HRM Streets By-Law S-300 as follows, which would likely result in a delay of any Halifax Water work in the area to at least 2029.

> ***HRM Streets By-Law (S-300)***
> *28. (j) unless otherwise authorized by the Engineer, pavement cuts shall not be permitted for two calendar years on streets which have been resurfaced, reconstructed or have received a pavement treatment.*

For your consideration, HRM understands that Halifax Harbour Bridges intends to complete an extensive recapitalization of the MacKay Bridge around 2030, which is likely to result in construction impacts near the WSE project area.

Please contact HRM project managers Scott Donahoe (902-229-0198, scott.donahoe@halifax.ca) or Megan Soroka (902-717-4302, sorokam@halifax.ca) to obtain further details respecting the WSE project, and to coordinate project activities.

We appreciate your diligent attention to this matter and look forward to your response.

Sincerely,

Crysta Cumming, FEC, P.Eng.

Manager, Engineering Design
Design & Construction
Halifax Regional Municipality

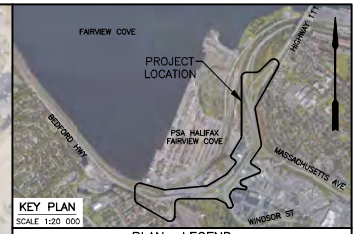
Tel 902.717.9521
Email cumminc@halifax.ca

CC: Megan Soroka, Project Manager, HRM PW, sorokam@halifax.ca
Scott Donahoe, Project Manager, HRM PW, scott.donahoe@halifax.ca
Robyn Homans, Manager of Project Management, HRM PW, homansr@halifax.ca
Phil Nickerson, Design Engineer Supervisor, HRM PW, nickerph@halifax.ca
Chris Davis, Right-of-Way Services Manager, HRM PW, davisc@halifax.ca

Attachments:

1) Windsor Street Exchange: Overall Site Plan – Proposed Work
2) Halifax Water Drawing Package: Overall Site Servicing Plan, HW Removal Limit, Existing Site Servicing Plan, Proposed Site Servicing Plan

STREET CLASSIFICATION TABLE		
STREET NAME	STREET CLASSIFICATION	DESIGN SPEED (km/h)
BEDFORD HIGHWAY	ARTERIAL	50–60
JOSEPH HOWE DRIVE	ARTERIAL	50
HIGHWAY 111	ARTERIAL	50–70
BARRINGTON STREET	ARTERIAL	50–70
WINDSOR ST/HIGHWAY 111	ARTERIAL	50
LADY HAMMOND ROAD	ARTERIAL/MAJOR COLLECTOR	50
KEMPT ROAD	MINOR COLLECTOR	50
BAYNE STREET	LOCAL	50
MACKINTOSH STREET	LOCAL	50
BAYNE/LADY HAMMOND LINK	LOCAL	50
FORRESTER STREET	LOCAL	50



KEY PLAN
SCALE 1:20 000

PLAN LEGEND

EXISTING		PROPOSED
PT NO	SURVEY CONTROL POINT	
	WATERVALVE	
	UTILITY POLE AND GUY WIRE	
	SIGN POST/BASE	
	LIGHT STANDARD	
X X	FENCE	X X
GR GR	GUIDERAIL	GR GR
RW RW	RETAINING WALL	RW RW
	CONCRETE CURB	
	PROPERTY LINE	
	SEWER MANHOLES	
	CATCHBASIN	
G G	GAS MAIN	G G
	LINE MARKING	
	BOTTOM OF SLOPE	
	SIDEWALK	
	MULTI-USE PATH	
	ASPHALT REINSTATEMENT	
	NEW ROAD CONSTRUCTION	
	LANDSCAPE SURFACE	
	PAVEMENT MARKING	
	TREE	
H H	HEDGE	

NOTES

1. FOR GENERAL NOTES, SEE DWG C01.

No.	Date	Revision Description	Appr'd
2	MAY 03/24	ISSUED FOR 30% DESIGN	RG
1	FEB 23/24	ISSUED FOR DESIGN REVIEW	EN

PRELIMINARY

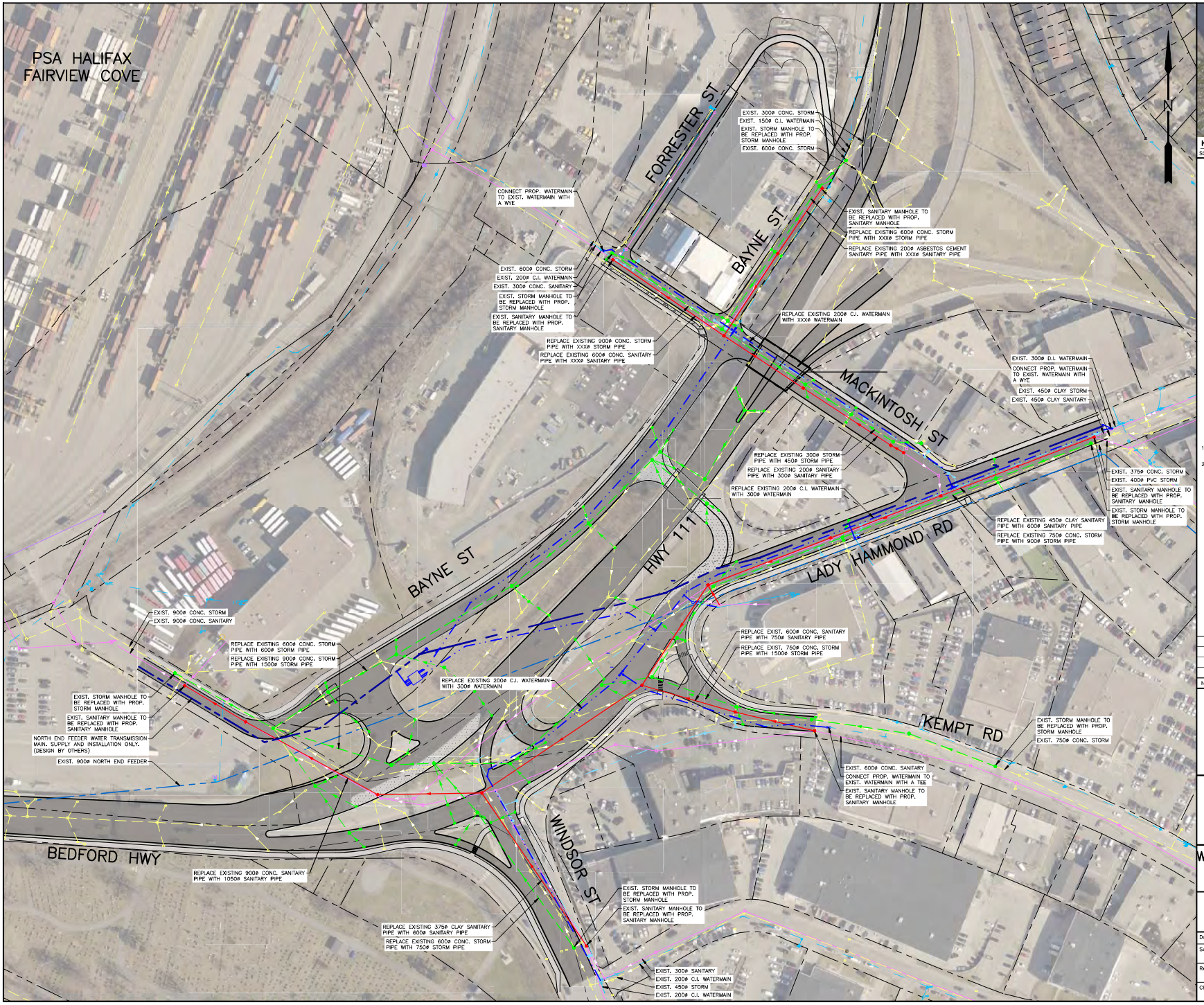
HALIFAX

WINDSOR STREET EXCHANGE VALUE

BEDFORD HWY TO HWY 111
BEDFORD

OVERALL SITE PLAN – PROPOSED WORK

Date FEB 2024	Drawn M. ZHOU	Tender No.
Scale Horz.1:2000 Vert.	Survey No. SU21xxxx	
Reference	DATUM HORZ: NAD83(CSRS) EPOCH 2010.0 3° MTM PROJECTION ZONE 5 VERT: CGVD2013	Sheet 7 OF 23
Checked R. GIFFIN		Drawing No. C10



KEY PLAN
SCALE 1:20 000

PLAN LEGEND

EXISTING		PROPOSED
	WATERVALVE	
	UTILITY POLE AND GUY WIRE	
	SIGN POST/BASE	
	LIGHT STANDARD	
	FENCE	
	GUIDERAIL	
	RETAINING WALL	
	CONCRETE CURB	
	PROPERTY LINE	
	SEWER MANHOLES	
	CATCHBASIN	
	STORM HEADWALL	
	STORM SEWER	
	SANITARY SEWER	
	COMBINED SEWER	
	WATER MAIN	
	TRANSMISSION MAIN	
	GAS MAIN	
	O/H UTILITY	
	U/G UTILITY	
	LINE MARKING	
	SIDEWALK	
	TREE	
	HEDGE	
	TOP OF SLOPE	
	BOTTOM OF SLOPE	
	GAS MAIN	
	LINE MARKING	
	BOTTOM OF SLOPE	
	SIDEWALK	
	MULTI-USE PATH	
	ASPHALT SURFACE	
	LANDSCAPE SURFACE	
	PAVEMENT MARKING	
	HEDGE	

NOTES

1. THIS DRAWING DEPICTS THE PROPOSED PIPE LAYOUT OVERLAID ON THE EXISTING PIPE NETWORK. THIS IS A CONCEPT LAYOUT AND SUBJECT TO CHANGE.
2. PROPOSED PIPE SIZES ARE APPROXIMATE AND WILL NEED TO BE CONFIRMED BY THE PBD TEAM WITH HALIFAX WATER.

No.	Date	Revision Description	Appr'd
2	APR 23/24	ISSUED FOR REVIEW	AB
1	APR 19/24	ISSUED FOR REVIEW	AB

PRELIMINARY

HALIFAX

WINDSOR STREET EXCHANGE VALUE

BEDFORD HWY TO HWY 111
BEDFORD

OVERALL SITE SERVICING PLAN

Date FEB 2024	Drawn M. ZHOU	Tender No.
Scale Horz.1:1000 Vert.	Survey No. SU21xxxx	
Reference	DATUM HORZ: NAD83(CSRS) EPOCH 2010.0 3° MTM PROJECTION ZONE 5 VERT: CGVD2013	Sheet 1 OF 28
Checked A. BAILLIE		Drawing No. C001

KEY PLAN
SCALE 1:20 000

PLAN LEGEND

EXISTING		PROPOSED
	WATERVALVE	
	UTILITY POLE AND GUY WIRE	
	SIGN POST/BASE	
	LIGHT STANDARD	
	FENCE	
	GUIDERAIL	
	RETAINING WALL	
	CONCRETE CURB	
	PROPERTY LINE	
	SEWER MANHOLES	
	CATCHBASIN	
	STORM HEADWALL	
	STORM SEWER	
	SANITARY SEWER	
	COMBINED SEWER	
	WATER MAIN	
	GAS MAIN	
	O/H UTILITY	
	U/G UTILITY	
	LINE MARKING	
	SIDEWALK	
	TREE	
	HEDGE	
	TOP OF SLOPE	
	BOTTOM OF SLOPE	
	GAS MAIN	
	LINE MARKING	
	BOTTOM OF SLOPE	
	SIDEWALK	
	MULTI-USE PATH	
	ASPHALT SURFACE	
	LANDSCAPE SURFACE	
	PAVEMENT MARKING	
	HEDGE	

No.	Date	Revision Description	Appr'd

PRELIMINARY

HALIFAX

WINDSOR STREET EXCHANGE VALUE

BEDFORD HWY TO HWY 111
BEDFORD

HALIFAX WATER REMOVAL LIMIT

Date FEB 2024	Drawn M. ZHOU	Tender No.
Scale Horz.1:2000 Vert.	Survey No. SU21xxxx	
Reference	DATUM HORZ: NAD83(CSRS) EPOCH 2010.0 3° MTM PROJECTION ZONE 5 VERT: CGVD2013	Sheet 2 OF 28
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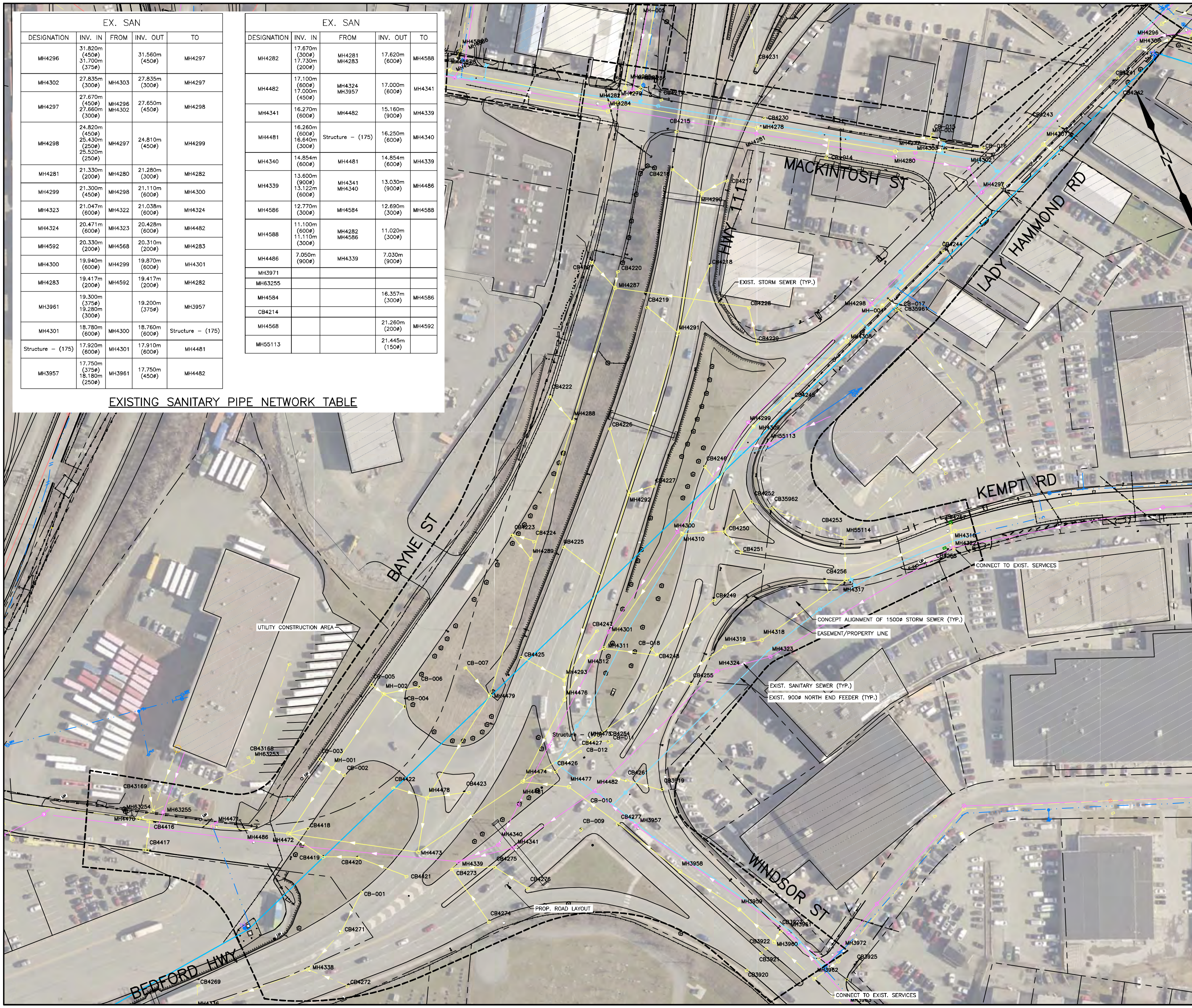


EX. SAN				
DESIGNATION	INV. IN	FROM	INV. OUT	TO
MH4296	31.820m (450ø) 31.700m (375ø)		31.560m (450ø)	MH4297
MH4302	27.835m (300ø)	MH4303	27.835m (300ø)	MH4297
MH4297	27.670m (450ø) 27.660m (300ø)	MH4296 MH4302	27.650m (450ø)	MH4298
MH4298	24.820m (450ø) 25.430m (250ø) 25.520m (250ø)	MH4297	24.810m (450ø)	MH4299
MH4281	21.330m (200ø)	MH4280	21.280m (300ø)	MH4282
MH4299	21.300m (450ø)	MH4298	21.110m (600ø)	MH4300
MH4323	21.047m (600ø)	MH4322	21.038m (600ø)	MH4324
MH4324	20.471m (600ø)	MH4323	20.428m (600ø)	MH4482
MH4592	20.330m (200ø)	MH4568	20.310m (200ø)	MH4283
MH4300	19.940m (600ø)	MH4299	19.870m (600ø)	MH4301
MH4283	19.417m (200ø)	MH4592	19.417m (200ø)	MH4282
MH3961	19.300m (375ø) 19.280m (300ø)		19.200m (375ø)	MH3957
MH4301	18.780m (600ø)	MH4300	18.760m (600ø)	Structure – (175)
Structure – (175)	17.920m (600ø)	MH4301	17.910m (600ø)	MH4481
MH3957	17.750m (375ø) 18.180m (250ø)	MH3961	17.750m (450ø)	MH4482

EX. SAN				
DESIGNATION	INV. IN	FROM	INV. OUT	TO
MH4282	17.670m (300ø) 17.730m (200ø)	MH4281 MH4283	17.620m (600ø)	MH4588
MH4482	17.100m (600ø) 17.000m (450ø)	MH4324 MH3957	17.000m (600ø)	MH4341
MH4341	16.270m (600ø)	MH4482	15.160m (900ø)	MH4339
MH4481	16.260m (600ø) 16.640m (300ø)	Structure – (175)	16.250m (600ø)	MH4340
MH4340	14.854m (600ø)	MH4481	14.854m (600ø)	MH4339
MH4339	13.600m (900ø) 13.122m (600ø)	MH4341 MH4340	13.030m (900ø)	MH4486
MH4586	12.770m (300ø)	MH4584	12.690m (300ø)	MH4588
MH4588	11.100m (600ø) 11.110m (300ø)	MH4282 MH4586	11.020m (300ø)	
MH4486	7.050m (900ø)	MH4339	7.030m (900ø)	
MH3971				
MH63255				
MH4584			16.357m (300ø)	MH4586
CB4214				
MH4568			21.260m (200ø)	MH4592
MH55113			21.445m (150ø)	

EXISTING SANITARY PIPE NETWORK TABLE

KEY PLAN
SCALE 1:20 000

PLAN LEGEND

EXISTING / PROPOSED

WATERVALVE
UTILITY POLE AND GUY WIRE
SIGN POST/BASE
LIGHT STANDARD
FENCE
GUIDERAIL
RETAINING WALL
CONCRETE CURB
PROPERTY LINE
SEWER MANHOLES
CATCHBASIN
STORM HEADWALL
STORM SEWER
SANITARY SEWER
COMBINED SEWER
WATER MAIN
GAS MAIN
O/H UTILITY
U/G UTILITY
LINE MARKING
SIDEWALK
TREE
HEDGE
TOP OF SLOPE
BOTTOM OF SLOPE
GAS MAIN
LINE MARKING
BOTTOM OF SLOPE
SIDEWALK
MULTI-USE PATH
ASPHALT SURFACE
LANDSCAPE SURFACE
PAVEMENT MARKING
HEDGE

NOTES

1. SEE CSK02 FOR EXISTING STORM PIPE NETWORK TABLE.

No.	Date	Revision Description	Appr'd
1	FEB 23/24	ISSUED FOR DESIGN REVIEW	EN

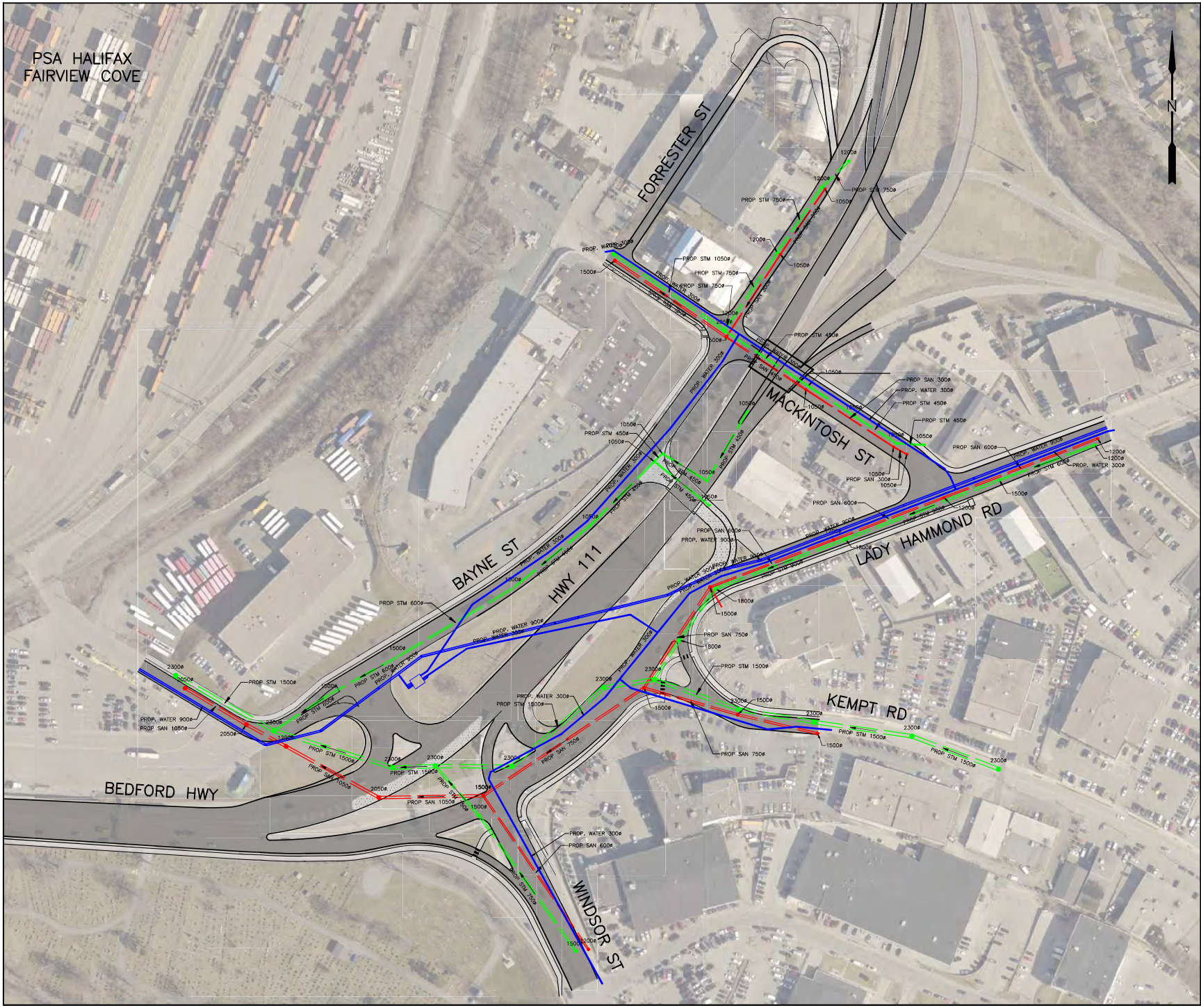
PRELIMINARY

HALIFAX

WINDSOR STREET EXCHANGE VALUE
BEDFORD HWY TO HWY 111
BEDFORD

EXISTING SITE SERVICING PLAN

Date: APR 2024	Drawn: M. ZHOU	Tender No.	
Scale: Horz.:1:750 Vert.	Survey No.: SU21xxxx		
Reference	DATUM HORZ: NAD83(CSRS) EPOCH 2010.0 3° MTM PROJECTION ZONE 5 VERT: CGVD2013	Sheet 3 OF 28	
Checked: A. BAILLIE		Drawing No. C101	



KEY PLAN
SCALE 1:20 000

PLAN LEGEND

EXISTING		PROPOSED
	WATERVALVE	
	UTILITY POLE AND GUY WIRE	
	SIGN POST/BASE	
	LIGHT STANDARD	
X X	FENCE	X X
GR GR	GUIDERAIL	GR GR
RW RW	RETAINING WALL	RW RW
	CONCRETE CURB	
	PROPERTY LINE	
	SEWER MANHOLES	
	CATCHBASIN	
	STORM HEADWALL	
	STORM SEWER	
	SANITARY SEWER	
	COMBINED SEWER	
	WATER MAIN	
	TRANSMISSION MAIN	
G G	GAS MAIN	
OH OH	O/H UTILITY	
	U/G UTILITY	
	LINE MARKING	
	SIDEWALK	
	TREE	
H H	HEDGE	
	TOP OF SLOPE	
	BOTTOM OF SLOPE	
	GAS MAIN	
	LINE MARKING	
	BOTTOM OF SLOPE	
	SIDEWALK	
	MULTI-USE PATH	
	ASPHALT SURFACE	
	LANDSCAPE SURFACE	
	PAVEMENT MARKING	
	HEDGE	

NOTES

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2. PROPOSED PIPE SIZES ARE APPROXIMATE AND WILL NEED TO BE CONFIRMED BY THE PBD TEAM WITH HALIFAX WATER.

No.	Date	Revision Description	Appr'd

PRELIMINARY

HALIFAX

WINDSOR STREET EXCHANGE VALUE

BEDFORD HWY TO HWY 111
BEDFORD

PROPOSED SITE SERVICING PLAN

Date FEB 2024	Drawn M. ZHOU	Tender No.
Scale Horz.1:1000 Vert.	Survey No. SU21xxxx	
Reference	DATUM HORZ: NAD83(CSRS) EPOCH 2010.0 3° MTM PROJECTION ZONE 5 VERT: CGVD2013	Sheet 13 OF 28
Checked A. BAILLIE		Drawing No. C200

EX. SAN				
DESIGNATION	INV. IN	FROM	INV. OUT	TO
MH4296	31.820m (450ø) 31.700m (375ø)		31.560m (450ø)	MH4297
MH4302	27.835m (300ø)	MH4303	27.835m (300ø)	MH4297
MH4297	27.670m (450ø) 27.660m (300ø)	MH4296 MH4302	27.650m (450ø)	MH4298
MH4298	24.820m (450ø) 25.430m (250ø) 25.520m (250ø)	MH4297	24.810m (450ø)	MH4299
MH4281	21.330m (200ø)	MH4280	21.280m (300ø)	MH4282
MH4299	21.300m (450ø)	MH4298	21.110m (600ø)	MH4300
MH4323	21.047m (600ø)	MH4322	21.038m (600ø)	MH4324
MH4324	20.471m (600ø)	MH4323	20.428m (600ø)	MH4482
MH4592	20.330m (200ø)	MH4568	20.310m (200ø)	MH4283
MH4300	19.940m (600ø)	MH4299	19.870m (600ø)	MH4301
MH4283	19.417m (200ø)	MH4592	19.417m (200ø)	MH4282
MH3961	19.300m (375ø) 19.280m (300ø)		19.200m (375ø)	MH3957
MH4301	18.780m (600ø)	MH4300	18.760m (600ø)	Structure – (175)
Structure – (175)	17.920m (600ø)	MH4301	17.910m (600ø)	MH4481
MH3957	17.750m (375ø) 18.180m (250ø)	MH3961	17.750m (450ø)	MH4482

EX. SAN				
DESIGNATION	INV. IN	FROM	INV. OUT	TO
MH4282	17.670m (300ø) 17.730m (200ø)	MH4281 MH4283	17.620m (600ø)	MH4588
MH4482	17.100m (600ø) 17.000m (450ø)	MH4324 MH3957	17.000m (600ø)	MH4341
MH4341	16.270m (600ø)	MH4482	15.160m (900ø)	MH4339
MH4481	16.260m (600ø) 16.640m (300ø)	Structure – (175)	16.250m (600ø)	MH4340
MH4340	14.854m (600ø)	MH4481	14.854m (600ø)	MH4339
MH4339	13.600m (900ø) 13.122m (600ø)	MH4341 MH4340	13.030m (900ø)	MH4486
MH4586	12.770m (300ø)	MH4584	12.690m (300ø)	MH4588
MH4588	11.100m (600ø) 11.110m (300ø)	MH4282 MH4586	11.020m (300ø)	
MH4486	7.050m (900ø)	MH4339	7.030m (900ø)	
MH3971				
MH63255				
MH4584			16.357m (300ø)	MH4586
CB4214				
MH4568			21.260m (200ø)	MH4592
MH55113			21.445m (150ø)	

EXISTING SANITARY PIPE NETWORK TABLE

KEY PLAN
SCALE 1:20 000

PLAN LEGEND

EXISTING		PROPOSED
	WATERVALVE	
	UTILITY POLE AND GUY WIRE	
	SIGN POST/BASE	
	LIGHT STANDARD	
	FENCE	
	GUIDERAIL	
	RETAINING WALL	
	CONCRETE CURB	
	PROPERTY LINE	
	SEWER MANHOLES	
	CATCHBASIN	
	STORM HEADWALL	
	STORM SEWER	
	SANITARY SEWER	
	COMBINED SEWER	
	WATER MAIN	
	GAS MAIN	
	O/H UTILITY	
	U/G UTILITY	
	LINE MARKING	
	SIDEWALK	
	TREE	
	HEDGE	
	TOP OF SLOPE	
	BOTTOM OF SLOPE	
	GAS MAIN	
	LINE MARKING	
	BOTTOM OF SLOPE	
	SIDEWALK	
	MULTI-USE PATH	
	ASPHALT SURFACE	
	LANDSCAPE SURFACE	
	PAVEMENT MARKING	
	HEDGE	

NOTES

1. SEE CSK02 FOR EXISTING STORM PIPE NETWORK TABLE.

No.	Date	Revision Description	Appr'd
1	FEB 23/24	ISSUED FOR DESIGN REVIEW	EN

PRELIMINARY

HALIFAX

WINDSOR STREET EXCHANGE VALUE

BEDFORD HWY TO HWY 111
BEDFORD

EXISTING SITE SERVICING PLAN

Date APR 2024	Drawn M. ZHOU	Tender No.
Scale Horz.1:750 Vert.	Survey No. SU21xxxx	
Reference	DATUM HORZ: NAD83(CSRS) EPOCH 2010.0 3° MTM PROJECTION ZONE 5 VERT: CGVD2013	Sheet 3 OF 28
Checked A. BAILLIE		Drawing No. C101

PSA HALIFAX
FAIRVIEW COVE

FORRESTER ST
BAYNE ST
MACKINTOSH ST
HWY 111
LADY HAMMOND RD
KEMPT RD
WINDSOR ST
BEDFORD HWY

EXIST. 300ø CONC. STORM
EXIST. 150ø C.I. WATERMAIN
EXIST. STORM MANHOLE TO BE REPLACED WITH PROP. STORM MANHOLE
EXIST. 600ø CONC. STORM
CONNECT PROP. WATERMAIN TO EXIST. WATERMAIN WITH A WYE
EXIST. SANITARY MANHOLE TO BE REPLACED WITH PROP. SANITARY MANHOLE
REPLACE EXISTING 600ø CONC. STORM PIPE WITH XXXø STORM PIPE
REPLACE EXISTING 200ø ASBESTOS CEMENT SANITARY PIPE WITH XXXø SANITARY PIPE
EXIST. 600ø CONC. STORM
EXIST. 200ø C.I. WATERMAIN
EXIST. 300ø CONC. SANITARY
EXIST. STORM MANHOLE TO BE REPLACED WITH PROP. STORM MANHOLE
EXIST. SANITARY MANHOLE TO BE REPLACED WITH PROP. SANITARY MANHOLE
REPLACE EXISTING 900ø CONC. STORM PIPE WITH XXXø STORM PIPE
REPLACE EXISTING 600ø CONC. SANITARY PIPE WITH XXXø SANITARY PIPE
REPLACE EXISTING 200ø C.I. WATERMAIN WITH XXXø WATERMAIN
EXIST. 300ø D.I. WATERMAIN
CONNECT PROP. WATERMAIN TO EXIST. WATERMAIN WITH A WYE
EXIST. 450ø CLAY STORM
EXIST. 450ø CLAY SANITARY
REPLACE EXISTING 300ø STORM PIPE WITH 450ø STORM PIPE
REPLACE EXISTING 200ø SANITARY PIPE WITH 300ø SANITARY PIPE
REPLACE EXISTING 200ø C.I. WATERMAIN WITH 300ø WATERMAIN
EXIST. 375ø CONC. STORM
EXIST. 400ø PVC STORM
EXIST. SANITARY MANHOLE TO BE REPLACED WITH PROP. SANITARY MANHOLE
EXIST. STORM MANHOLE TO BE REPLACED WITH PROP. STORM MANHOLE
REPLACE EXISTING 450ø CLAY SANITARY PIPE WITH 600ø SANITARY PIPE
REPLACE EXISTING 750ø CONC. STORM PIPE WITH 900ø STORM PIPE
EXIST. 900ø CONC. STORM
EXIST. 900ø CONC. SANITARY
REPLACE EXISTING 600ø CONC. STORM PIPE WITH 600ø STORM PIPE
REPLACE EXISTING 900ø CONC. STORM PIPE WITH 1500ø STORM PIPE
REPLACE EXISTING 200ø C.I. WATERMAIN WITH 300ø WATERMAIN
REPLACE EXIST. 600ø CONC. SANITARY PIPE WITH 750ø SANITARY PIPE
REPLACE EXIST. 750ø CONC. STORM PIPE WITH 1500ø STORM PIPE
EXIST. STORM MANHOLE TO BE REPLACED WITH PROP. STORM MANHOLE
EXIST. SANITARY MANHOLE TO BE REPLACED WITH PROP. SANITARY MANHOLE
NORTH END FEEDER WATER TRANSMISSION MAIN. SUPPLY AND INSTALLATION ONLY. (DESIGN BY OTHERS)
EXIST. 900ø NORTH END FEEDER
EXIST. STORM MANHOLE TO BE REPLACED WITH PROP. STORM MANHOLE
EXIST. 750ø CONC. STORM
EXIST. 600ø CONC. SANITARY
CONNECT PROP. WATERMAIN TO EXIST. WATERMAIN WITH A TEE
EXIST. SANITARY MANHOLE TO BE REPLACED WITH PROP. SANITARY MANHOLE
REPLACE EXISTING 900ø CONC. SANITARY PIPE WITH 1050ø SANITARY PIPE
REPLACE EXISTING 375ø CLAY SANITARY PIPE WITH 600ø SANITARY PIPE
REPLACE EXISTING 600ø CONC. STORM PIPE WITH 750ø STORM PIPE
EXIST. STORM MANHOLE TO BE REPLACED WITH PROP. STORM MANHOLE
EXIST. SANITARY MANHOLE TO BE REPLACED WITH PROP. SANITARY MANHOLE
EXIST. 300ø SANITARY
EXIST. 200ø C.I. WATERMAIN
EXIST. 450ø STORM
EXIST. 200ø C.I. WATERMAIN

N

KEY PLAN
SCALE 1:20 000

PLAN LEGEND

EXISTING		PROPOSED
	WATERVALVE	
	UTILITY POLE AND GUY WIRE	
	SIGN POST/BASE	
	LIGHT STANDARD	
	FENCE	
	GUIDERAIL	
	RETAINING WALL	
	CONCRETE CURB	
	PROPERTY LINE	
	SEWER MANHOLES	
	CATCHBASIN	
	STORM HEADWALL	
	STORM SEWER	
	SANITARY SEWER	
	COMBINED SEWER	
	WATER MAIN	
	TRANSMISSION MAIN	
	GAS MAIN	
	O/H UTILITY	
	U/G UTILITY	
	LINE MARKING	
	SIDEWALK	
	TREE	
	HEDGE	
	TOP OF SLOPE	
	BOTTOM OF SLOPE	
	GAS MAIN	
	LINE MARKING	
	BOTTOM OF SLOPE	
	SIDEWALK	
	MULTI-USE PATH	
	ASPHALT SURFACE	
	LANDSCAPE SURFACE	
	PAVEMENT MARKING	
	HEDGE	

NOTES

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No.	Date	Revision Description	Appr'd
2	APR 23/24	ISSUED FOR REVIEW	AB
1	APR 19/24	ISSUED FOR REVIEW	AB

PRELIMINARY

HALIFAX

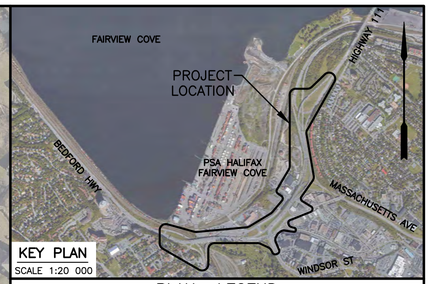
WINDSOR STREET EXCHANGE VALUE

BEDFORD HWY TO HWY 111
BEDFORD

OVERALL SITE SERVICING PLAN

Date FEB 2024	Drawn M. ZHOU	Tender No.
Scale Horz.1:1000 Vert.	Survey No. SU21xxxx	Sheet 1 OF 28
Reference	DATUM HORZ: NAD83(CSRS) EPOCH 2010.0 3° MTM PROJECTION ZONE 5 VERT: CGVD2013	Drawing No. C001
Checked A. BAILLIE		

PSA HALIFAX
FAIRVIEW COVE



KEY PLAN
SCALE 1:20 000

N

FORRESTER ST
MACKINTOSH ST
LADY HAMMOND RD
KEMPT RD
BAYNE ST
HWY 111
BEDFORD HWY
WINDSOR ST
UTILITY CONSTRUCTION AREA

PROP. WATER 300ø
PROP. WATER 900ø
PROP STM 750ø
PROP STM 1050ø
PROP STM 450ø
PROP STM 600ø
PROP STM 1500ø
PROP SAN 300ø
PROP SAN 600ø
PROP SAN 750ø
PROP SAN 1050ø

PLAN LEGEND

EXISTING		PROPOSED
	WATERVALVE	
	UTILITY POLE AND GUY WIRE	
	SIGN POST/BASE	
	LIGHT STANDARD	
X X	FENCE	X X
GR GR	GUIDERAIL	GR GR
RW RW	RETAINING WALL	RW RW
	CONCRETE CURB	
	PROPERTY LINE	
	SEWER MANHOLES	
	CATCHBASIN	
	STORM HEADWALL	
	STORM SEWER	
	SANITARY SEWER	
	COMBINED SEWER	
	WATER MAIN	
	TRANSMISSION MAIN	
G G	GAS MAIN	
OH OH	O/H UTILITY	
	U/G UTILITY	
	LINE MARKING	
	SIDEWALK	
	TREE	
H H	HEDGE	
	TOP OF SLOPE	
	BOTTOM OF SLOPE	
	GAS MAIN	
	LINE MARKING	
	BOTTOM OF SLOPE	
	SIDEWALK	
	MULTI-USE PATH	
	ASPHALT SURFACE	
	LANDSCAPE SURFACE	
	PAVEMENT MARKING	
	HEDGE	

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No.	Date	Revision Description	Appr'd

PRELIMINARY

HALIFAX

WINDSOR STREET EXCHANGE VALUE

BEDFORD HWY TO HWY 111
BEDFORD

PROPOSED SITE SERVICING PLAN

Date FEB 2024	Drawn M. ZHOU	Tender No.
Scale Horz.1:1000 Vert.	Survey No. SU21xxxx	
Reference	DATUM HORZ: NAD83(CSRS) EPOCH 2010.0 3° MTM PROJECTION ZONE 5 VERT: CGVD2013	Sheet 13 OF 28
Checked A. BAILLIE		Drawing No. C200

Kempt/Fairview Cove CSO

Young Street CSO

Kempt Road/Fairview Cove CSO Sewershed Boundary

Proposed Sewershed Diversion to Young Street Pocket

Young Street CSO Sewershed Boundary

MH45974
MH45975
MH4466
MH4469
MH4484
MH4319
MH3954
MH5280
CSO32

FG526
FG447
FG503
FG426
FG565
FG543
FG448
FG591
FG455
FG456Romans
FG446
FG486
FG461
FG460

LACEWOOD DR
BEDFORD HWY
MAIN AVE
TITUS ST
DUTCH VILLAGE RD
JOSEPH HOWE DR
HIGHWAY 102
MUMFORD RD
CHEBUCTO RD
BAYERS RD
CONNAUGHT AVE
WINDSOR ST RAMP
ROBIE ST RAMP
RAMP MAC-D RAMP
RAMP MAC-J RAMP
RAMP MAC-R RAMP
RAMP MAC-K RAMP
RAMP MAC-I RAMP
BARRINGTON ST
LADY HAMMOND RD
WINDSOR ST
KEMPT RD
MASSACHUSETTS AVE
ROBIE ST
DUFFUS ST
NOVALEA DR
DEVONSHIRE AVE
YOUNG ST
KAYE ST
RUSSELL ST
OXFORD ST
ALMON ST
AGRICOLA ST
GOTTINGEN ST
NORTH ST

Legend

- Outfall
- Operational Issues

Collection Type

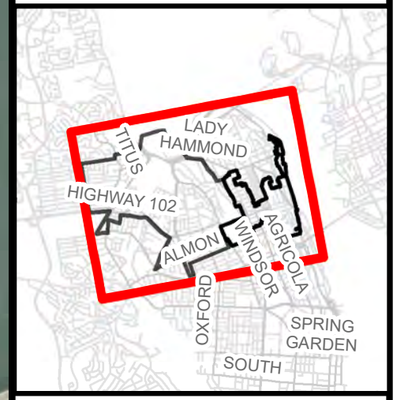
- Sanitary
- Storm
- Combined

Trunk Storm Route Options

- Kempt Road (Option 0)
- Young-Kaye (Option 1)
- Projects (Young Street Pocket)

Sewer System

- Combined
- Storm
- Sanitary
- Young Street Pocket Development
- Sewershed Boundary
- Proposed Sewershed Diversion to Young Street Pocket



wsp

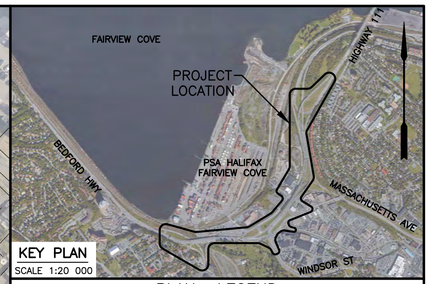
Young Street Pocket
Sewer Separation Study

Figure A1 Drainage Area Schematic

Metres
0 125 250 500

211-12212-00 | May, 2024

PSA HALIFAX
FAIRVIEW COVE



KEY PLAN
SCALE 1:20 000

N

FORRESTER ST

MACKINTOSH ST

NEF SCOPE NOT IN WSE CONTRACT (NORTH END FEEDERMAIN ALIGNMENT IS PRELIMINARY AND SUBJECT TO CHANGE)

WSE UTILITY CONSTRUCTION AREA

BAYNE ST

HWY 111

LADY HAMMOND RD

KEMPT RD

NEF SCOPE NOT IN WSE CONTRACT (NORTH END FEEDERMAIN ALIGNMENT IS PRELIMINARY AND SUBJECT TO CHANGE)

BEDFORD HWY

WINDSOR ST

JOSEPH HOWE DR

PLAN LEGEND

EXISTING		PROPOSED
	WATERVALVE	
	UTILITY POLE AND GUY WIRE	
	SIGN POST/BASE	
	LIGHT STANDARD	
	FENCE	
	GUIDERAIL	
	RETAINING WALL	
	CONCRETE CURB	
	PROPERTY LINE	
	SEWER MANHOLES	
	CATCHBASIN	
	STORM HEADWALL	
	STORM SEWER	
	SANITARY SEWER	
	COMBINED SEWER	
	WATER MAIN	
	TRANSMISSION MAIN	
	TRANSMISSION MAIN (N.I.C.)	
	GAS MAIN	
	O/H UTILITY	
	U/G UTILITY	
	LINE MARKING	
	SIDEWALK	
	TREE	
	HEDGE	
	TOP OF SLOPE	
	BOTTOM OF SLOPE	
	GAS MAIN	
	LINE MARKING	
	BOTTOM OF SLOPE	
	SIDEWALK	
	MULTI-USE PATH	
	ASPHALT SURFACE	
	LANDSCAPE SURFACE	
	PAVEMENT MARKING	
	HEDGE	

NOTES

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No.	Date	Revision Description	Appr'd

PRELIMINARY

HALIFAX

WINDSOR STREET EXCHANGE VALUE
BEDFORD HWY TO HWY 111
BEDFORD

NORTH END FEEDERMAIN ALIGNMENT

Date JAN 08, 2025	Drawn M. ZHOU	Tender No.
Scale Horz.1:2000 Vert.	Survey No. SU21xxxx	Sheet 1 OF 1
Reference	DATUM HORZ: NAD83(CSRS) EPOCH 2010.0 3° MTM PROJECTION ZONE 5 VERT: CGVD2013	Drawing No. C001
Checked A. BAILLIE		

TOTAL PROJECT COST ESTIMATE

January 17, 2025

Item 1 - WSE Local Water - Construction Cost Estimate

CONSTRUCTION COSTS	
Consultant Costs Allowance (Construction Phase)	$100,000
Local Water Inside WSE Project (incl Contingency)	$9,369,660
Construction Costs Sub-Total	**$9,469,660**
OTHER COSTS (TAXABLE)	
Other Costs (Taxable) Sub-Total	**$0**
Net HST (4.286%)	$405,870
OTHER COSTS (NON-TAXABLE)	
Future Halifax Water Costs	$112,598
Other Costs (Non-Taxable) Sub-Total	**$112,598**
SUB-TOTAL	**$9,988,128**
Overhead (1%)	$99,881
TOTAL CONSTRUCTION COST ESTIMATE	**$10,088,009**
TOTAL CONSTRUCTION COST ESTIMATE (Construction)*	**$10,089,000**

** Rounded up, excluding HST*

Design Costs (M11999)	$1,096,682.00
Total Project Cost Estimate (Grand Total)	$11,185,682.00
Total Project Cost Estimate (Grand Total) Rounded	**$11,186,000.00**

TOTAL PROJECT COST ESTIMATE

January 17, 2025

Item 2 - WSE Local Wastewater Cost Estimate

CONSTRUCTION COSTS	
Local Wastewater Inside WSE (Incl Contingency)	$15,279,741
Consultant Cost Allowance (Construction Phase)	$100,000
Construction Costs Sub-Total	**$15,379,741**
OTHER COSTS (TAXABLE)	
QA/QC Testing	$5,000
Other Costs (Taxable) Sub-Total	**$5,000**
Net HST (4.286%)	$659,390
OTHER COSTS (NON-TAXABLE)	
Internal Halifax Water Costs	$112,598
Other Costs (Non-Taxable) Sub-Total	**$112,598**
SUB-TOTAL	**$16,156,729**
Overhead (1%)	$161,567
TOTAL CONSTRUCTION COST ESTIMATE	**$16,318,296**
TOTAL CONSTRUCTION COST ESTIMATE*	**$16,319,000**

** Rounded up, excluding HST*

Design Funding (M11999)	$661,083
Total Project Cost Estimate (Grand Total)	$16,980,083
Total Project Cost Estimate (Grand Total) Rounded	$16,981,000.00

TOTAL PROJECT COST ESTIMATE

January 17, 2025

Item 3 - WSE Local Stormwater Cost Estimate

CONSTRUCTION COSTS	
Local Stormwater Inside WSE (Incl Contingency)	$13,622,211
Consultant Cost Allowance (Construction Phase)	$100,000
Construction Costs Sub-Total	**$13,722,211**
OTHER COSTS (TAXABLE)	
QA/QC Testing	$5,000
Other Costs (Taxable) Sub-Total	**$5,000**
Net HST (4.286%)	$588,348
OTHER COSTS (NON-TAXABLE)	
Internal Halifax Water Costs	$112,598
Other Costs (Non-Taxable) Sub-Total	**$112,598**
SUB-TOTAL	**$14,428,157**
Overhead (1%)	$144,282
TOTAL CONSTRUCTION COST ESTIMATE	**$14,572,439**
TOTAL CONSTRUCTION COST ESTIMATE*	**$14,573,000**

** Rounded up, excluding HST*

Design Funding (M11999)	$597,593
Total Project Cost Estimate (Grand Total)	$15,170,593
Total Project Cost Estimate (Grand Total) Rounded	$15,171,000

TOTAL PROJECT COST ESTIMATE

January 17, 2025

Item 4 - North End Feeder Project - Inside WSE Budget

CONSTRUCTION COSTS	
Estimated Construction Cost (Pre-Tender)	
Consultant Costs (Tender & Construction Phase)	$445,903
NEF Inside WSE Project (incl Contingency)	$11,501,696
Construction Costs Sub-Total	**$11,947,599**
OTHER COSTS (TAXABLE)	
QA/QC Testing	$12,500
Other Costs (Taxable) Sub-Total	**$12,500**
Net HST (4.286%)	$512,610
OTHER COSTS (NON-TAXABLE)	
Future Halifax Water Costs	$101,859
Other Costs (Non-Taxable) Sub-Total	**$101,859**
SUB-TOTAL	**$12,574,568**
Overhead (1%)	$125,746
TOTAL CONSTRUCTION COST ESTIMATE	**$12,700,313**
TOTAL CONSTRUCTION COST ESTIMATE*	**$12,700,000**

** Rounded up, excluding HST*

Design Funding (M11999)	$1,022,936
Total Project Cost Estimate (Grand Total)	$13,722,936
Total Project Cost Estimate (Grand Total) Rounded	**$13,723,000**

TOTAL PROJECT COST ESTIMATE

January 17, 2025

Item 5 - Kempt Road Stormwater Upgrades - Inside WSE Limits

CONSTRUCTION COSTS	
Estimated Construction Cost (Incl contingency)	$10,187,924
Construction Costs Sub-Total	**$10,187,924**
OTHER COSTS (TAXABLE)	
Phase 2 Consultant Cost allowance	$200,000
QA/QC Testing	$12,500
Other Costs (Taxable) Sub-Total	**$212,500**
Net HST (4.286%)	$445,762
OTHER COSTS (NON-TAXABLE)	
Internal Halifax Water Costs	$132,174
Other Costs (Non-Taxable) Sub-Total	**$132,174**
SUB-TOTAL	**$10,978,360**
Overhead (1%)	$109,784
TOTAL PROJECT COST ESTIMATE	**$11,088,144**
TOTAL PROJECT COST ESTIMATE*	**$11,088,000**

** Rounded up, excluding HST*

Design Funding (M11999)	$1,125,875.00
Total Project Cost Estimate (Grand Total)	$12,213,875.00
Total Project Cost Estimate (Grand Total) Rounded	**$12,214,000.00**