HALIFAX

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Item No. 15.1.4
Halifax Regional Council
February 25, 2025

TO: Mayor Fillmore and Members of Halifax Regional Council

FROM: Cathie O'Toole, Chief Administrative Officer

DATE: February 18, 2025

SUBJECT: Supplementary Recommendation Report – Windsor Street Exchange

SUPPLEMENTARY REPORT

ORIGIN

January 28, 2025 Regional Council motion (Item No. 15.1.1):

MOVED by Councillor Morse, seconded by Councillor Steele

THAT Halifax Regional Council:
1. Suspend the rules of procedure under Schedule 7, the Transportation Standing Committee Terms of Reference, of Administrative Order One, the Procedures of the Council Administrative Order; and,
2. Direct the Chief Administrative Officer to proceed with the Windsor Street Exchange project, as per the current funding agreement and Design Build contract, including future proofing new structures along the corridor where municipal lands permit, to accommodate future dedicated transit lanes and separated pedestrian and cycling facilities.

MOVED by Councillor Cuttell, seconded by Councillor Purdy

THAT the motion be amended to include Halifax Regional Council direct the Chief Administrative Officer to prepare a supplemental staff report and recommendation about accommodating future widening and BRT/AT infrastructure in the Windsor Street interchange area.

MOTION TO AMEND PUT AND PASSED.

The motion as amended now read:
MOVED by Councillor Morse, seconded by Councillor Steele

THAT Halifax Regional Council:
1. Suspend the rules of procedure under Schedule 7, the Transportation Standing Committee Terms of Reference, of Administrative Order One, the Procedures of the Council Administrative Order; and,
2. Direct the Chief Administrative Officer to proceed with the Windsor Street Exchange project, as per the current funding agreement and Design Build contract, including future proofing new structures along the corridor where municipal lands permit, to accommodate future dedicated transit lanes and separated pedestrian and cycling facilities; and
3. Direct the Chief Administrative Officer to prepare a supplemental staff report and recommendation about accommodating future widening and BRT/AT infrastructure in the Windsor Street interchange area.

MOTION AS AMENDED PUT AND DEFEATED.

No alternative motion from the staff report dated January 20, 2025 was put on the floor.

A Notice of Motion was put forward by Councillor Hendsbee as follows:

TAKE NOTICE that at a future meeting of Halifax Regional Council, I intend to introduce a motion of rescission for 15.1.1 Windsor Street Exchange Redevelopment Project: Functional Design.

EXECUTIVE SUMMARY

On January 28, 2025, Regional Council defeated a motion to proceed with the Windsor Street Exchange (WSE) project. No alternative direction was provided. A motion of rescission was entered at the same meeting, which will be before Regional Council on February 25, 2025. This supplementary report provides a revised recommendation based on Council input at the January 28, 2025 meeting.

The current functional design for the WSE project provides benefits for all modes of transportation.

- Transit: There are 10 Halifax Transit routes that currently travel through the WSE, carrying approximately 50,000 people per day. Transit priority measures, including inbound transit priority will provide significant improvements to the inbound transit service, with an overall aggregate improvement of approximately 21% during peak periods compared to future conditions with no infrastructure changes. Some Transit routes see significant improvements, such as inbound on the Bedford Highway during the AM peak (up to 60%), while other routes are not as positively impacted. The improvements to transit delays during peak periods will provide an immediate benefit to transit service and reliability. The opportunity to expand transit infrastructure to accommodate dedicated transit lanes would also provide significant benefits to transit service, whether as part of the current project or in the future.
- Active Transportation: Currently, there is no cycling infrastructure and pedestrian infrastructure is limited to sidewalk on one side of the road. The WSE functional design includes a multi-use path with a focus on improving safety, making new connections, and providing safe infrastructure for people walking, rolling, and cycling moving along any route through the study area. The minimum standards for a AAA facility (a 3.0m multi-use path with 1.0m boulevard) were used to confirm the appropriate connections could be made. A comprehensive review of lane widths will continue to identify opportunities for lane width reductions that could reallocate additional space to widen active transportation facilities and reduce vehicle speeds and thus severity and frequency of injuries and fatalities. The existing active transportation facilities could be upgraded to accommodate separated pedestrian and cycling facilities.
- Goods Movement: The Fairview Cove Container Terminal is projected to play an increasingly significant role in the movement of goods in the region, and the Port of Halifax is undertaking a concurrent project to upgrade the rail connection between the two Halifax terminals. The Rail Shuttle project is expected to reduce the volume of trucks moving through downtown Halifax from the Port by at least 75% and increase the volume of trucks traveling between Fairview Cove and the MacKay Bridge. Accordingly, improving access to Fairview Cove is an important part of this project.
- Traffic: Results of the traffic modeling are aggregated across all routes through the project area and consider the inputs and outputs of adjacent corridors. In the morning, the WSE functional design provides a 48.5% improvement to vehicle delays and an additional 3.8% capacity for vehicles compared to the future no build scenario. In the afternoon, the WSE functional design provides a 17% improvement to vehicle delays and an additional 3.3% capacity for vehicles compared to the future no build scenario.

Bus Rapid Transit (BRT) is a form of higher order transit that can improve mobility around the municipality, complementing local and express bus routes and leading to increased access to important destinations through delivering frequent and reliable service. The Rapid Transit Strategy (RTS) was approved by Regional Council on May 26, 2020, and included a plan for Bus Rapid Transit throughout HRM. The RTS recommends a network of four BRT lines, each represented by a specific colour: Purple, Green, Red, and Yellow. Since adoption of the RTS, work has commenced on design for segments of the corridors. In addition to ongoing design work, staff are undertaking the development of an implementation plan for BRT which will guide HRM's construction of BRT over the next decade and beyond. This implementation plan will include a review of the assumptions from the 2020 Plan, including consideration for which assumptions may now be inappropriate considering the increased growth and congestion over the last five years.

The ongoing work to complete the BRT Implementation plan and finalize more detailed network planning is relevant to the ongoing Windsor Street Exchange work. The Green Line, as proposed by the 2020 RTS, transverses the WSE. Within the WSE, the RTS assumed that BRT would operate in mixed traffic, and that prioritization was not feasible. However, it is recognized that the WSE Redevelopment Project could provide opportunities to prioritize BRT and change the assumptions from the 2020 plan. Alternatively, through the ongoing review of the BRT plan, exploration is underway for other routing that may better offer transit priority, in a more cost-and impact-effective way.

In response to the motion from Regional Council to consider certain design elements within the detailed design, the project team engaged CBCL/HDR to evaluate proposed alternatives for integrating dedicated transit lanes and enhanced active transportation facilities into the WSE project. The focus of the study was to assess two scenarios against the existing functional – widening and reallocation of traffic lanes.

Scenario 1 evaluated the impact of widening the roadway to accommodate dedicated transit lanes. The analysis of this scenario showed significant improvements to reducing transit delays, with little to no impact to vehicle delays, but did have significant capital costs primarily associated with structural changes and property acquisition. Scenario 2 evaluated the impact of reallocating two general purpose lanes to dedicated in- and out-bound transit lanes. The analysis of this scenario did note a significant reduction in transit delays (though less than Scenario 1), but a significant increase in delays for goods movement and vehicles.

This report recommends that Council continue to proceed with the existing functional design that will be future proofed to act as an interim design for an ultimate design that provides for dedicated transit lanes and enhanced active transportation facilities throughout the WSE. Staff is seeking direction to begin planning for widening to accommodate full dedicated transit lanes and enhance active transportation facilities through the WSE as a second phase to the current project under contract. This approach will leverage current contracts in place and maintain current external funding agreements of $36.25M while ultimately achieving Bus Rapid Transit objectives as expressed by Regional Council.

Should Council provide approval to proceed with the report recommendations, staff will restart work to advance the existing functional design under the current Progressive Design-Build contract. The first phase of the project would be carried out under the existing contribution agreements with the federal and provincial governments. Staff will also begin an implementation plan for the second phase of the project to widen the roadway and prepare a report for Council on the property acquisition needs, proposed schedule for design and construction, capital budget estimates, external funding opportunities, and resourcing requirements.

RECOMMENDATION

It is recommended that Halifax Regional Council:

1. Suspend the rules of procedure under Schedule 7, the Transportation Standing Committee Terms of Reference, of Administrative Order One, the Procedures of the Council Administrative Order.

It is recommended that Halifax Regional Council direct the CAO to:

1. Proceed with the Windsor Street Exchange project, as per the current funding agreement and Progressive Design-Build contract, using the existing functional design as a first phase of the final overall project. This includes design and construction of new structures within the project area to accommodate additional dedicated transit lanes and separated pedestrian and cycling facilities.
2. Begin planning the second phase of the Windsor Street Exchange project, implementing Scenario 1 – Road Widening as described in the staff report dated January 20, 2025, to provide additional right-of-way for dedicated transit lanes in both the inbound and outbound directions and separated sidewalks and cycling facilities for active transportation connections from Joseph Howe Drive to Kempt Road.
3. Prepare a report regarding implementation of the second phase to include the proposed concept design, property acquisition needs, schedule for design and construction, capital budget estimates, external funding opportunities, and resourcing requirements for Regional Council's consideration.
4. Coordinate the planning and execution of the second phase Windsor Street Exchange Project with the Regional Transportation Plan and plans for a future MacKay Bridge corridor project when available from the Province, and other HRM-led initiatives including implementation of the Rapid Transit Strategy and IMP Strategic Corridors.
5. Review all current external funding opportunities for the Windsor Street Exchange project and submit applications for funding where eligible.

BACKGROUND

The Windsor Street Exchange (WSE) Redevelopment project involves the reconfiguration of the intersection of Bedford Highway, Windsor Street and Lady Hammond Road. As one of five roadway access points to the Halifax Peninsula and the downtown core, and an intersection of strategic corridors, an estimated 170,000 people per day travel through this area, via 10 Transit routes and approximately 90,000 – 110,000 vehicles. 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, and the municipal capital budget. Halifax Water has partnered with HRM to integrate planned capital work into the Windsor Street Exchange project and will fund the design and construction of their infrastructure.

Regional Council endorsed the functional design of the Windsor Street Exchange project in June 2024. Windsor Street Exchange Redevelopment Project – Functional Design - June 18/24 Regional Council | Halifax.ca

The June 2024 endorsement of the Windsor Street Functional Plan asked for the following additional considerations:

1. Active transportation facility options, prioritizing a AAA connection from the approved Bedford Highway functional plan to the potential Africville Road MUP extension from the future Barrington greenway, recognizing some work is out of scope and would be built during the Bedford Highway project and other future projects;
2. Inclusion of bus lanes to support the future Green Line of the Bus Rapid Transit plan through Windsor Street Exchange connecting Joe Howe Drive to Massachusetts Ave;
3. Demonstrate future proofing at northern extreme of the Windsor Street Exchange project to allow for bike and pedestrian connections to any future MacKay Bridge project;
4. Requesting the Mayor write the relevant Federal Ministers regarding an extension to accommodate these changes, and;
5. Provide an analysis of what increased vehicle traffic capacity will mean on mode share given induced demand.

On January 28, 2025, staff presented a report on the additional considerations requested by Council. The following motion as amended was presented to Regional Council regarding the Windsor Street Exchange project:

THAT Halifax Regional Council:

1. Suspend the rules of procedure under Schedule 7, the Transportation Standing Committee Terms of Reference, of Administrative Order One, the Procedures of the Council Administrative Order;

2. Direct the Chief Administrative Officer to proceed with the Windsor Street Exchange project, as per the current funding agreement and Design Build contract, including future proofing new structures along the corridor where municipal lands permit, to accommodate future dedicated transit lanes and separated pedestrian and cycling facilities; and

3. Direct the Chief Administrative Officer to prepare a supplemental staff report and recommendation about accommodating future widening and BRT/AT infrastructure in the Windsor Street interchange area.

This motion was defeated, with no alternative direction provided to staff, meaning the project will not proceed at this time.

DISCUSSION

This supplementary report provides a revised recommendation based on Council input at the January 28, 2025 meeting. The discussion includes:

- Additional information on the current functional design to support staff's recommendation to proceed with this configuration as an interim design.
- An update on Bus Rapid Transit and how that strategic initiative impacts the Windsor Street Exchange Project.
- Further details on the scenarios evaluated to include dedicated transit lanes and enhanced active transportation facilities to provide the information needed to determine the future and final state of the Windsor Street Exchange.
- Information on Halifax Water capital projects that will be integrated into the Windsor Street Exchange project.
- An implementation plan for phasing the design and construction of the future state of the Windsor Street Exchange.

Current Functional Design

The current functional design for the Windsor Street Exchange (WSE) has been developed through the following project activities:

- Transport Canada announced funding for the project in June 2019 through the National Trade Corridors Fund. The project was approved by Halifax Regional Council on August 13, 2019. The project was kicked off by HRM's project team in March 2020.
- In January 2021, the CAO 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 and interest holder 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 interest holder engagement to gather feedback on the concept design options was held in October and November 2021.
- WSP refined the design options based on feedback gathered and submitted functional design options in February 2022.
- A technical review on the functional design options was completed by an external consultant (EXP Services Inc.) in spring 2022.
- The results of the review and additional interest holder 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 CBCL Limited and HDR Inc. was conducted between August 2023 and February 2024 and led to $39 million in cost avoidance.
- The project team, supported by CBCL and HDR, completed assessment of the design considerations requested by Regional Council between June and November 2024.
- A Progressive Design Build team led by Dexter Construction was hired in November 2024. The Design Build team has completed review of the functional design and field investigations to facilitate developing and executing a design and construction phasing plan.

The benefits and trade-offs of the current functional design are outlined below, along with the impacts of not proceeding with the project.

Transit Services
One of the design objectives of the Windsor Street Exchange Redevelopment project is to improve transit reliability and efficiency by reducing delays for buses. The functional design proposes several transit priority elements to move people on buses through the area more reliably, as shown in Figure 1:

1. Consideration for the realignment of the proposed BRT Green line to travel inbound along Main Avenue (formerly Dutch Village Road to Joseph Howe Drive) to access the Windsor Street Exchange through the existing transit-only ramp, which also serves existing local and express routes (to be evaluated further before implementation of BRT network).
2. An inbound transit-only lane along the south side of the Fairview Overpass that is controlled by a new traffic signal at the eastern edge of the structure.
3. Phasing of the new signal to stop the inbound general traffic lanes from the Bedford Highway to allow inbound BRT, express, and local buses to bypass queues and change lanes through the interchange based on their destination to the MacKay Bridge (Route 39), Massachusetts Avenue (BRT Green Line), Windsor Street (Routes 90 and 4), Lady Hammond Road (Route 93) and Kempt Road (several express routes).
4. A 120m inbound transit-only lane approaching the Windsor Street intersection and through to Kempt Road, plus signal phasing at this intersection to prioritize inbound express buses headed to Kempt Road.
5. Creation of a transit-only northbound approach to the Windsor Street Exchange from Joseph Howe Drive that brings transit vehicles to the western side of the Fairview Overpass structure to access the inbound transit lanes and signal, which allows buses to bypass queuing on the northbound onramp (DV-K).

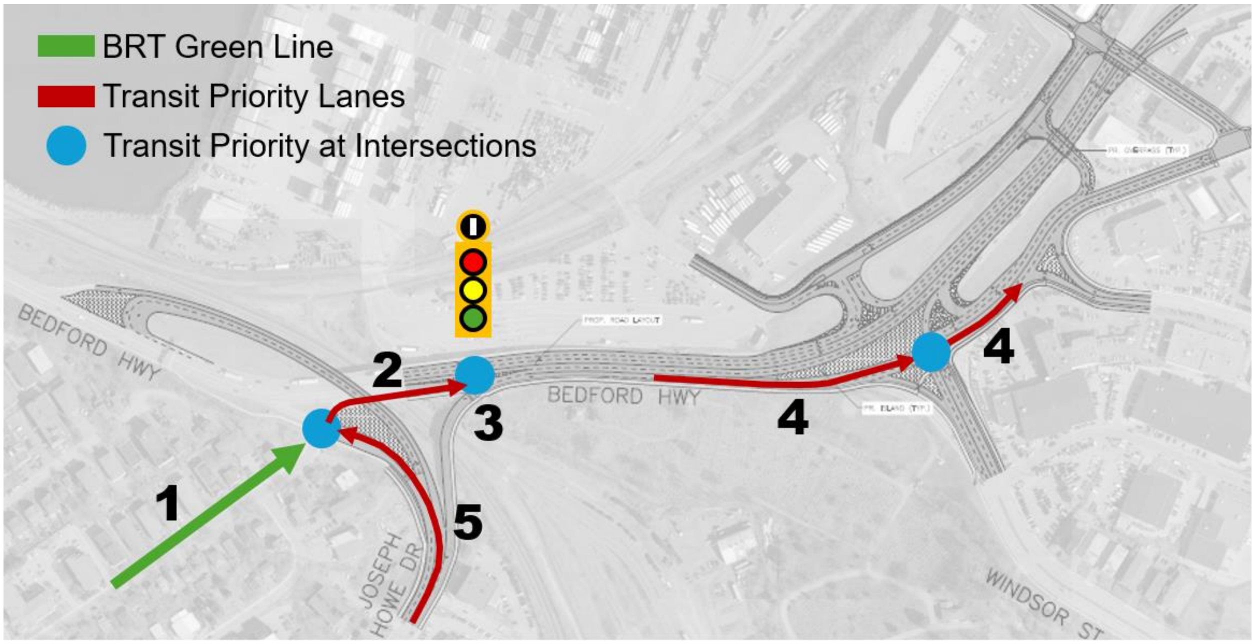

Figure 1 Design Features for Transit

There are 10 Halifax Transit routes that currently travel through the WSE, carrying approximately 50,000 people per day. Transit vehicles travel in mixed traffic, and experience delays and long queues caused by congestion at the bottleneck of the WSE. The inbound transit priority measures will have a significant benefit to existing express and local transit routes.

Results of the traffic modeling are aggregated across all routes through the project area and consider the inputs and outputs of adjacent corridors. The average delays for transit vehicles during the morning and afternoon peak hours are reported in the table below. The WSE functional design provides a 21.4% improvement to transit delays in the morning peak hour, and a 21.6% improvement to transit delays in the afternoon peak hour.

The transit routes that would travel through the WSE do not follow all travel routing that vehicles do, and therefore the improvements to transit delay do not match the improvements to vehicle delay. The improvements to transit delays are aggregated over all routes, with some routes seeing significant improvements and others seeing less improvement or an increase in delay. In the morning peak hour, inbound transit on the Bedford Highway has an improvement of up to 60% to delays; however transit routes traveling from Joseph Howe Drive see an increase in delay, and outbound transit routes are not significantly impacted. In the afternoon peak hour, the improvements are more even across all routes and align with improvements to vehicle delays.

Condition	Average Delay
AM Peak Hour	
Existing	2.7 min (162 sec)
Future No Build	5.1 min (304 sec)
Future Build – Functional Design	4.0 min (239 sec)
PM Peak Hour	
Existing	3.0 min (182 sec)
Future No Build	4.4 min (264 sec)
Future Build – Functional Design	3.5 min (207 sec)

Impacts on public transit service have been a key priority of the WSE project and have been considered during all stages of development of the functional design. The improvements to transit delays during peak periods will provide an immediate benefit to transit service and reliability. The opportunity to expand transit infrastructure to accommodate dedicated transit lanes would also provide significant benefits to transit service, whether as part of the current project or in the future.

Active Transportation

The existing functional design for the Windsor Street Exchange was developed with a focus on improving safety, making new connections, and providing safe infrastructure for people walking, rolling, and cycling moving along any route through the study area. Due to significant space constraints within the project area, most notably on the Fairview Overpass structure, and between the existing cemetery and the Port of Halifax lands, a multi-use path (MUP) with a minimum width of 3.0 m, separated by a boulevard of a minimum width of 1.0 m was used to confirm that the desired connections could be made. Connections to existing and planned active transportation infrastructure were identified, with the MUP following the routing of local traffic connections, separating people walking, rolling, and cycling from the mainline and higher volume / speed traffic.

Connections in the active transportation network include the Bedford Highway, Joseph Howe Drive (to Chain of Lakes Trail), the Peninsula via Windsor Street and Lady Hammond Road, and to Africville via Africville Road, as shown in Figure 2.

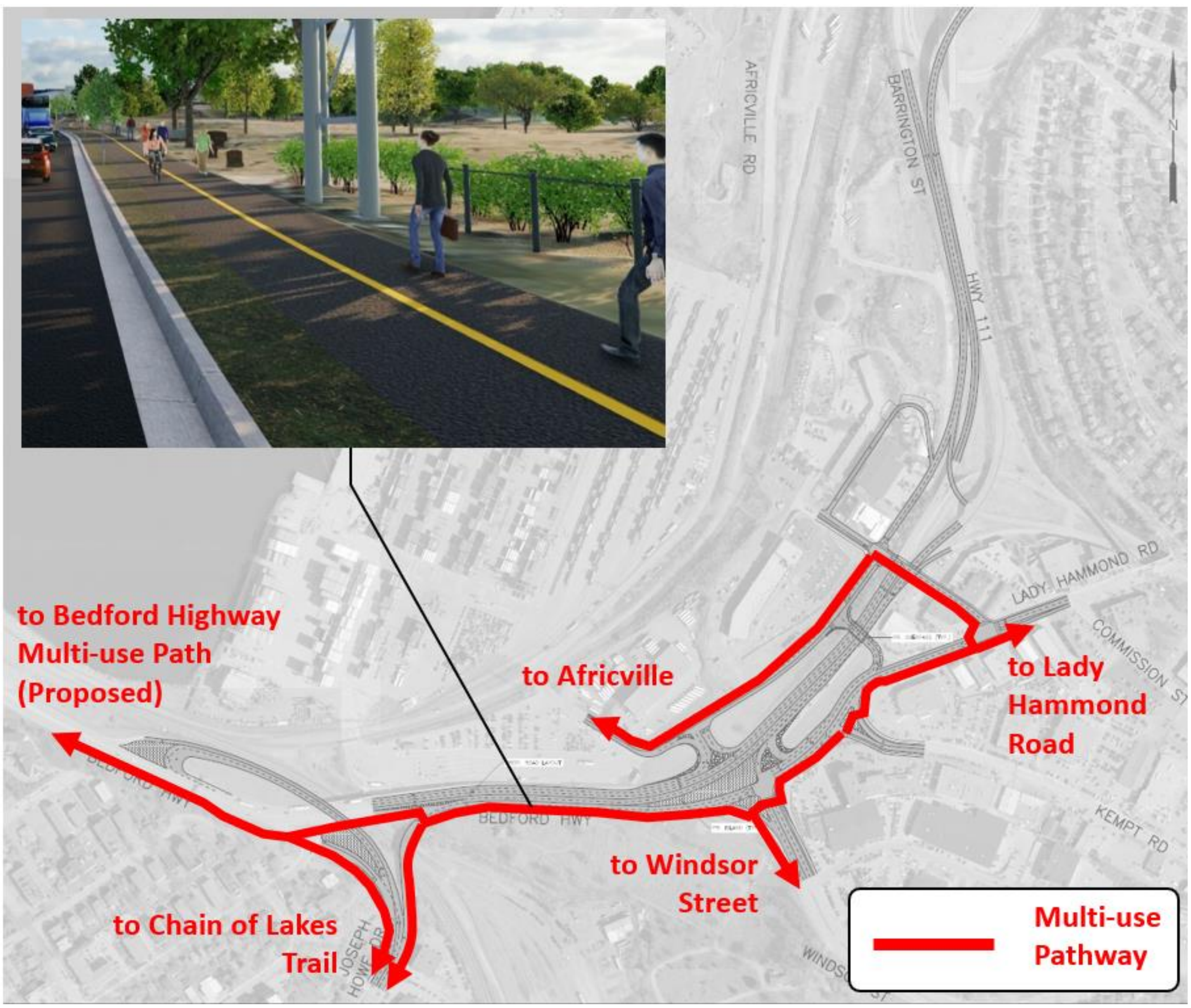

Figure 2 Design Features for Active Transportation

Within the current functional design, the minimum standards for a AAA facility (a 3.0m multi-use path with 1.0m boulevard) were used to confirm the appropriate connections could be made. Transportation Standing Committee passed a motion in August 2023 requesting a report on including separated and wide sidewalks and separated and protected bicycle lanes as part of the design. There were several actions by the project team to assess this request.

Through the section of the project area that is significantly constrained (the Fairview Overpass and adjacent to the cemetery), there is insufficient space to install separated pedestrian and cycling facilities within the existing road right-of-way. Alternatives that considered separated infrastructure required very high capital costs, significant property impacts, and/or had safety concerns that would be difficult to address. The road cross-sections for the proposed design have been updated to current design standards, which has resulted in narrowing of travel lanes compared to existing; however, the removal of any existing lanes would have a significant impact on the movement of goods, transit, and general traffic through the interchange, and ultimately the design would not meet the project objectives described above.

Through this section, a comprehensive review of lane widths assumed in the existing functional design was being completed by the Design-Build team. The existing functional design used existing lane widths where the road cross-section wasn't changed, some of which are much wider than current Municipal Design Guidelines. It is expected this could result in further lane width reductions that could reallocate additional space to widen active transportation facilities and reduce vehicle speeds and thus severity and frequency of injuries and fatalities. An analysis completed by HRM's Owner's Advisor CBCL demonstrated that there are multiple opportunities to improve safety outcomes by adopting minimum lane widths from the Municipal Design Guidelines without needing to widen the existing right-of-way and structures. When/if a widening project is undertaken in the future, the existing active transportation facilities could be upgraded to accommodate separated pedestrian and cycling facilities.

The nearby Strawberry Hill growth node has been identified as an area of significant housing development in the coming years. Adjacent to this growth node, on Windsor Street and Lady Hammond Road, the area will be designed for an ultimate condition that includes separated pedestrian and cycling infrastructure. It is anticipated that the housing developments at this location will prompt heavy use of active transportation facilities, and therefore separated facilities should be designated to improve accessibility and reduce conflicts between people walking, rolling, and cycling. The phasing of implementation of separated facilities will be considered with the team advancing plans for the development of Strawberry Hill; a multi-use path may be constructed with the Windsor Street Exchange project, and separated facilities constructed as part of the development of the sites, or the ultimate design may be able to be constructed as part of the Windsor Street Exchange project. The Design-Build team will determine the extent of construction through the detailed design process.

A safety review of the functional design will be undertaken through the next phase of detailed design to explore opportunities to enhance safety outcomes along the corridor. This could include modifications to intersection geometry to reduce crossing distances and vehicle speeds (e.g., reduced turning radii, elimination of ramps, etc.), new or enhanced signals, priority phasing (e.g., leading pedestrian intervals, protected phases), and other potential improvements. The purpose of this review will be to ensure that the active transportation infrastructure being designed and installed is appropriate for people walking, rolling, and cycling to create a AAA facility.

Goods Movement Through the Port of Halifax
The Integrated Mobility Plan (IMP) includes an objective to continue to facilitate the efficient and economically sound movement of goods in the Halifax region, while striving to minimize the associated social and environmental impacts. Goods movement plays a vital economic role in Halifax, with Halifax Harbour hosting several terminals and facilities that accommodate the movement of goods both locally and inter-regionally via water, road, rail and air. Action 110 of the IMP recommends that HRM work with CN and the Halifax Port Authority to retain and augment rail capacity through the South End rail cut.

The Fairview Cove Container Terminal is projected to play an increasingly significant role in the movement of goods in the region, and the Port of Halifax is undertaking a concurrent project to upgrade the rail connection between the two Halifax terminals. The Rail Shuttle project is expected to reduce the volume of trucks moving through downtown Halifax from the Port by at least 75% and increase the volume of trucks traveling between Fairview Cove and the MacKay Bridge. Accordingly, improving access to Fairview Cove is an important part of this project.

If the WSE project does not proceed, the Port of Halifax has confirmed that they will continue to proceed with the rail shuttle project. They have reported that not updating the current access routing for Fairview Cove Container Terminal will lessen the positive impact of the rail solution project and lead to more significant traffic impacts to that area.

Traffic Operations
This project was initiated in 2019, and project objectives and anticipated outcomes were based on projected population growth to 2031 (i.e. 2031 was set as the design horizon). Since the project has progressed, updated goals for future population growth have been released by the federal and provincial governments, which would significantly increase the number of people moving around in the region. The implications of this increase in population growth are currently being studied as part of HRM's Regional Plan and the Joint Regional Transportation Agency (JRTA) Regional Transportation Plan.

HRM and the JRTA have produced new regional travel demand forecasts based on the updated population growth. HRM's Owner's Advisor CBCL has updated the traffic microsimulation analysis of the existing functional design to reflect the new forecasts within the Windsor Street Exchange. The new travel demand forecasts reflect changes to travel patterns, and generally higher travel demands compared to previously available data. When input into the traffic model for the existing functional design, in general the updated analysis results are in line with the previously reported results, addressing a significant risk with the existing functional design. The travel time improvements measured in the updated modelling achieve cost savings consistent with previously completed cost-benefit analysis of the project as well.

The development of the existing functional design has optimized multimodal movement through the project area given the project constraints. Some of the major design constraints included (i) no changes to the structures of the Fairview Overpass and Mackintosh Street Overpass, (ii) no disturbance of St. John's Cemetery, and (iii) minimizing impact to Port of Halifax property. Traffic modelling of the functional design was compared to a future "no build" scenario; the additional population growth reflected in the updated analysis results in relative improvements (i.e. the percent reduction in delays, etc.) similar to those previously considered.

Results of the traffic modeling are aggregated across all routes through the project area and consider the inputs and outputs of adjacent corridors. The average delays and vehicles arrived during the morning and afternoon peak hours are reported in the table below. In the morning, the WSE functional design provides a 48.5% improvement to vehicle delays and an additional 3.8% capacity for vehicles compared to the future no build scenario. In the afternoon, the WSE functional design provides a 17% improvement to vehicle delays and an additional 3.3% capacity for vehicles compared to the future no build scenario.

Condition	Average Delay	Vehicles Arrived
AM Peak Hour		
Existing	2.2 min (130 sec)	8,397
Future No Build	5.1 min (303 sec)	9,499
Future Build – Functional Design	2.6 min (156 sec)	9,861
PM Peak Hour		
Existing	2.9 min (171 sec)	10,618
Future No Build	5.1 min (304 sec)	10,124
Future Build – Functional Design	4.2 min (251 sec)	9,890

Impact to Mode Shift
As previously reported, while there will be increased capacity to move more people in cars through the interchange, this also comes with improvements in travel time, reliability, and capacity to move more people in buses as well as improvements to safety and convenience for people walking, rolling, and cycling. The improvements to walking, rolling, cycling, and transit infrastructure should induce more people to travel through the area via sustainable modes.

The IMP has a goal of a minimum of 30% of trips being made by sustainable modes of transportation; transit and active transportation. As one of five roadway access points to the Halifax Peninsula and the downtown core, and an intersection of strategic corridors, an estimated 170,000 people per day travel through the WSE. An estimated 50,000 people travel through via 10 Transit routes and the remainder travel through in approximately 90,000 – 110,000 vehicles. If the IMP goal of 30% of trip via sustainable modes (considering only transit in this area) is met, this would be an estimated 51,000 people using transit and would not have much impact on the number of vehicles using the WSE.

The WSE is on the border of the regional centre, where the ideal would be to have a minimum of 60% of trips made by sustainable modes of transportation. If 50-60% of people travelling through the WSE use transit, this would be 85,000 – 102,000 people using transit per day. This would require an increase in transit service to achieve. The remainder of people traveling through WSE would use approximately 70,000 to 85,000 vehicles per day. It is anticipated that even with significant shift to sustainable transportation modes, there will continue to be a high demand for goods movement and vehicle transport through the WSE.

Bus Rapid Transit
Bus Rapid Transit (BRT) is a form of higher order transit that can improve mobility around the municipality, complementing local and express bus routes and leading to increased access to important destinations through frequent and reliable service.

There are many different standards of BRT, from BRT-lite to a Gold Standard BRT, that can be offered depending on funds allocated, political will, corridor availability, operational requirements, and other constraints. However, key components of most BRT systems include dedicated bus lanes, off-board fare collection, bus priority at intersections, and fast and frequent operations. While BRT standards aim to push for the highest quality service possible, many different interpretations are acceptable. Generally, The Bus Rapid Transit Standard requires a minimum of 3km of dedicated lanes to be considered a BRT corridor, but further details that a 1km lane of mixed traffic, sandwiched between two 1km lanes of dedicated lanes, would still meet this definition of a 3km corridor. However, different cities have created their own requirements and standards for percentage of dedicated lanes, frequency of bus headways, station designs and amenities, and style of buses.

Ultimately, the goal is affordable, safe, frequent, and reliable transit service.

Rapid Transit Strategy
The Rapid Transit Strategy was approved by Regional Council on May 26, 2020, and included a plan for Bus Rapid Transit throughout HRM. The recommendation approved at that time was the following:

It is recommended that Halifax Regional Council:

1. Suspend the rules of procedure under Schedule 3, the Community Planning and Economic Development Standing Committee Terms of Reference, and under Schedule 7, the Transportation Standing Committee Terms of Reference, of Administrative Order One, the Procedures of the Council Administrative Order.

2. Approve the Rapid Transit Strategy described in this report and direct the CAO to:

    a. develop an implementation plan including resourcing, functional planning, land acquisition strategy, and long-term capital planning, subject to securing external funding; and

   b. consider the application of mechanisms that preserve opportunities to accommodate transit infrastructure within the public right-of-way (e.g. transportation reserves, increased front yard setbacks), in the ongoing review of the Regional Municipal Planning Strategy and other planning documents as applicable;

3. Approve the Electric Bus Proposal described in this report and direct the CAO to commence with the acquisition of low carbon emission public transit buses, subject to securing external funding;

4. Direct the CAO to submit both the Rapid Transit Strategy and Electric Bus Proposal for funding through the Federal Government's Public Transit Infrastructure Fund and the Green Infrastructure Fund, as well as any additional stimulus funding streams that may become available.

5. Authorize the Mayor to send a letter of support for both the Rapid Transit Strategy and Electric Bus Proposal to the Province of Nova Scotia to stimulate discussion regarding the benefits and potential funding for these projects.

The Rapid Transit Strategy built on the direction in the 2017 Integrated Mobility Plan, and aligned itself with the understandings from the then, yet-to-be approved, HalifACT 2050, which included key considerations for transportation planning. Both plans include multiple actions aimed at investigating options for both increasing transit mode share, and reducing overall emissions, including higher-order modes of transit such as BRT.

The 2020 Rapid Transit Strategy (RTS) details the extent, modes and approach/timeline to implement a Rapid Transit system in HRM. Several HRM business units collaborated on the development of this strategy under the leadership of Planning & Development and Halifax Transit.

The RTS proposes a BRT network and new ferry services. The network is strategically aligned to serve the areas in the municipality most suitable for rapid transit and to align with land use plans and other sustainable transportation priorities. The RTS also provides direction to update existing land use policy to better respond to the Rapid Transit Network.

The RTS recommended a network of four BRT lines, each represented by a specific colour: Purple, Green, Red, and Yellow (shown in the figures below). At the time the RTS outlined the following expectations:

- BRT service will run at high frequency throughout the day, seven days a week. On weekdays, BRT service would run every ten minutes or better from 6am–10pm in both directions.
- 120,000 people and 100,000 jobs were within 800m walking/rolling distance of BRT stations (based on 2016 census data).
- BRT lines have less frequent stops than conventional bus routes; stations are generally spaced between 500m and 1km apart at major intersections and destinations.
- Recommended features for BRT stations include shelters with lighting, real-time bus arrival information, BRT system and route maps, and level platform boarding.
- The BRT Network incorporates extensive transit priority measures, including a recommended network of transit priority lanes that allow buses to avoid traffic congestion. This network included 2-way bus lanes, 1-way bus lanes, as well as segments in mixed traffic.

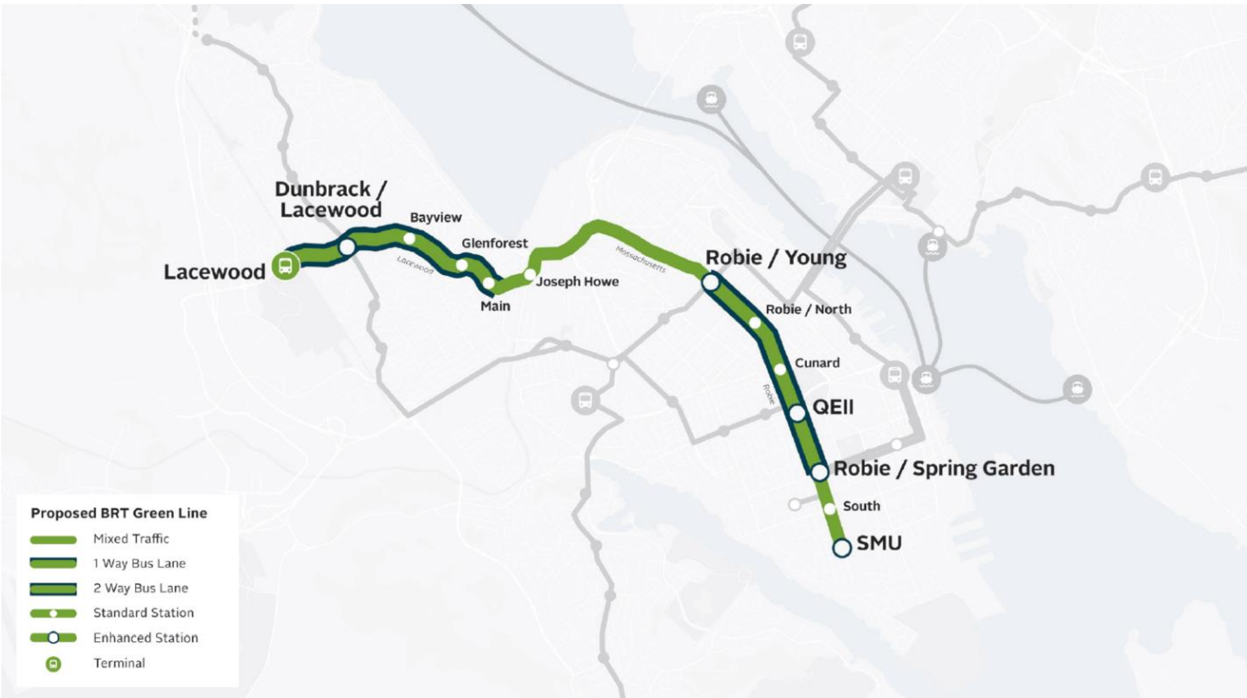

Figure 3 Bus Rapid Transit Green Line

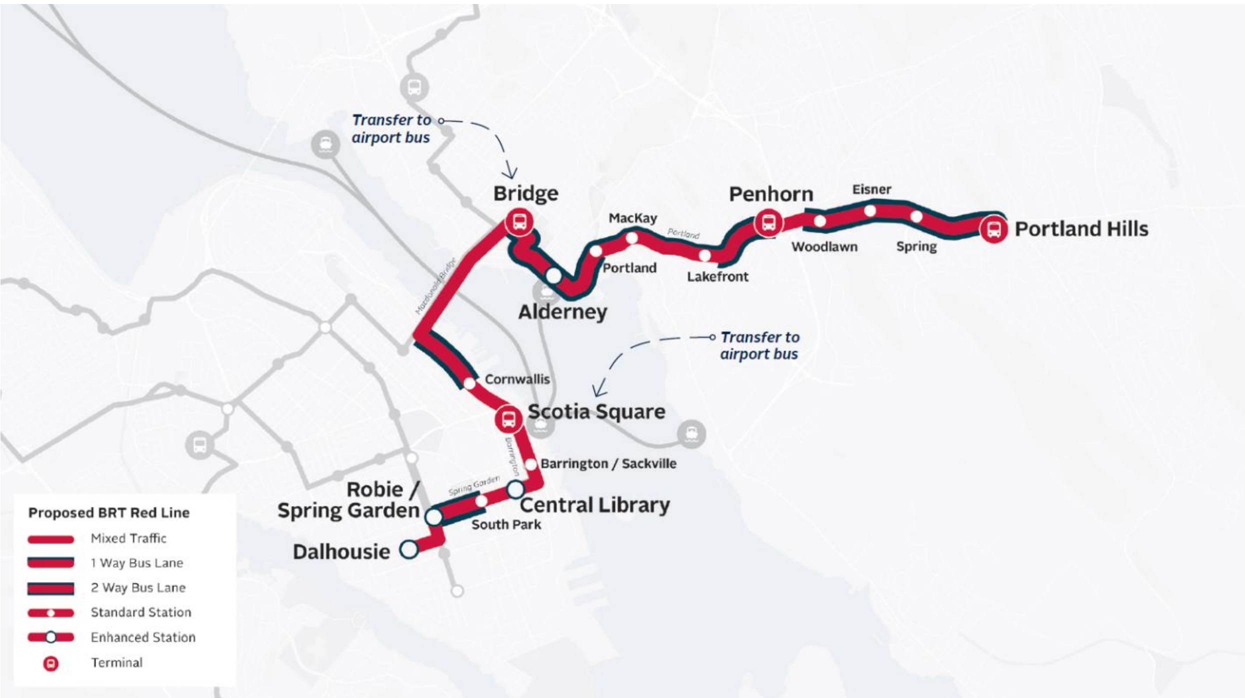

Figure 4 Bus Rapid Transit Red Line

Figure 5 Bus Rapid Transit Yellow Line

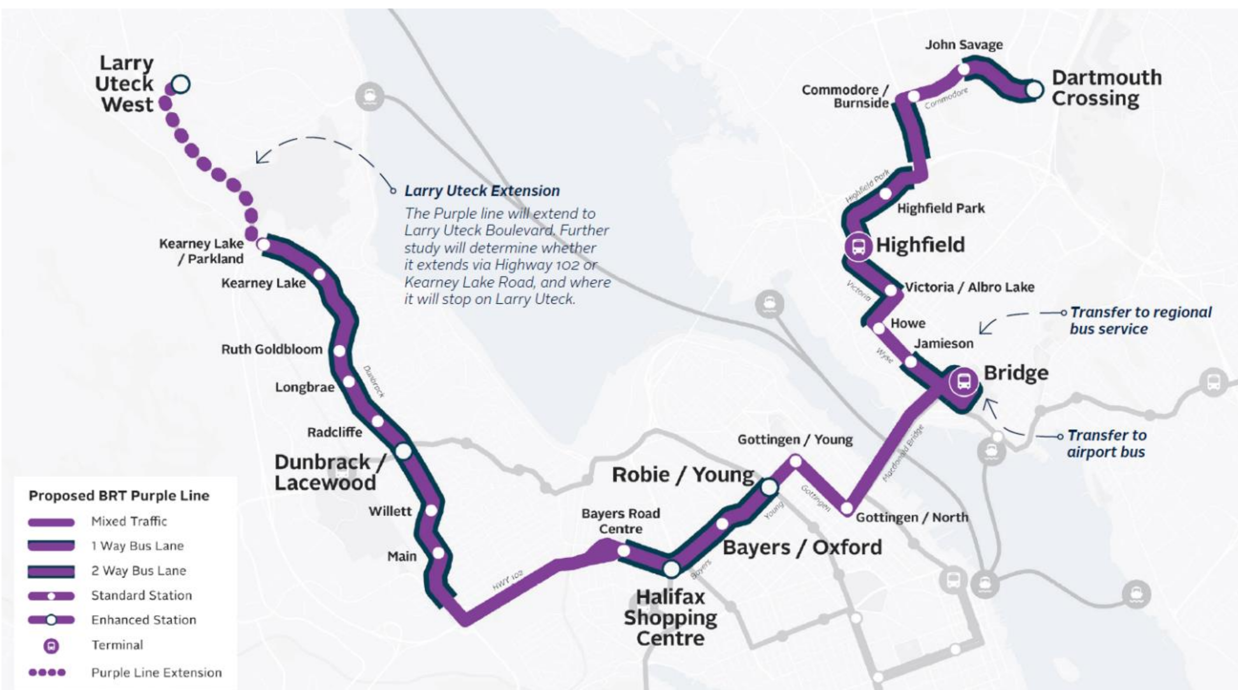

Figure 6 Bus Rapid Transit Purple Line

The Rapid Transit Strategy was an attempt to define HRM's standard for BRT.

Since the adoption of the Integrated Mobility Plan and the Rapid Transit Strategy, these documents have served as guiding principles for land use planning, including ongoing amendments to the Regional Plan and supporting documents to implement the direction contained within the mobility plans. With the balloon in population growth over the last five years, the Rapid Transit corridors have served as rationale for placement of densification. The 2020 BRT corridors were envisioned as a concept, with the expectation that further detailed planning work will confirm locations. As growth continues to be directed to the conceptual corridors, it is paramount that the detailed design work is completed to keep in line with ongoing land use changes. The update to our Suburban Plan is ongoing, as well as the Housing Accelerator Fund development decisions.

The 2020 RTS identified the need for a rapid transit network to support the growth of the municipality. With the increased population growth, our expected population targets were reached earlier than expected. This increased pressure has further increased congestion throughout the municipality, increasing the need for Rapid Transit from what was anticipated in 2020.

Since adoption of the Rapid Transit Strategy, work has commenced on design for segments of the corridors. In addition to ongoing design work, staff are undertaking the development of an implementation plan for BRT which will guide HRM's construction of BRT over the next decade and beyond.

This implementation plan will include a review of the assumptions from the 2020 RTS, including consideration for which assumptions may need to be updated considering the increased growth and congestion over the last five years. Of note, the assumptions on mixed traffic, and unidirectional bus lanes were always intended to be revisited as each segment was considered for implementation. There is a possibility that as the network design is advanced, staff identify that there are some changes that would be beneficial to consider, as it would increase the overall transit priority that can be provided. The intention is that this work will be completed in a timely manner to be best positioned to take advantage of any upcoming funding opportunities and partnerships.

Bus Rapid Transit in the WSE

The ongoing work to complete the BRT implementation plan and finalize more detailed network planning is relevant to the ongoing Windsor Street Exchange work.

The Green Line (Figure 3), as proposed by the 2020 RTS, traverses the WSE. As discussed above, the strategy considered how each line would be implemented by segment based on the best available information at the time. Within the WSE, it was assumed that BRT would operate in mixed traffic, and that prioritization was not feasible. The WSE was chosen in concept, as there were limited routing options to connect the green line from the peninsula to the suburbs, while recognizing the many competing demands the exchange had to meet. Adjacent segments of the Green Line, including Joseph Howe Drive, Ramp DV-K, and Massachusetts Avenue were also identified for BRT to operate in mixed traffic due to widening and/or lane conversion not believed to be feasible at the time of inception.

However, it is recognized that the WSE Redevelopment Project could provide opportunities for BRT and change the assumptions from the 2020 plan. An objective of the WSE project scope is to implement transit priority measures, as feasible, throughout the project area. Opportunities for transit priority have been considered throughout the development of design iterations and the value engineering study. Direction to consider dedicated transit lanes to support BRT was provided in August 2023 through the Transportation Standing Committee. When approving the WSE functional design in June 2024, Council provided direction to include dedicated transit lanes as considerations in the detailed design phase.

The WSE project team considered how to accommodate dedicated transit lanes within the WSE project. Due to constraints within the existing right-of-way, it was determined that the options for dedicated transit lanes in both directions include widening the roadway for additional lanes or reallocating general traffic lanes to dedicated transit lanes. Widening reduces transit, vehicle and person-hour delays, but requires additional property, a longer schedule and significant additional capital costs. Reallocation of traffic lanes reduces transit delay, but increases delays for goods movement, vehicles and overall person-hours. As both options would result in a loss of the federal funding contribution for the WSE project, staff recommended proceeding with the existing functional design, which does not preclude either option from being implemented in the future.

Alternatively, through the ongoing review of the BRT plan, exploration is underway for other routing that may better offer transit priority, in a more cost-and impact-effective way. Consideration is being given at a high-level to opportunities to augment capacity across the rail-cut, which could potentially avoid routing BRT through the WSE. These ideas are still very conceptual but could provide a mid- to long-term opportunity to improve BRT while reducing demands on WSE. The intention is to complete a feasibility study, understanding all potential routing options, which would offer the best solution overall to the green line, as well as consideration for regular transit (non-BRT) vehicles that must travel through the WSE in all options, connecting to the Bedford Hwy.

However, it is noted that transit will be limited in all options as it travels along the Bedford Highway. Through the development of the Bedford Highway functional plan, it was determined that transit priority is very challenging to add on the Bedford Highway due to space constraints. The Bedford Highway functional plan recommends an inbound bus lane starting at Kearney Lake Road and terminating at Sherbrooke Drive (just south of MSVU, approx. 1km north of WSE). No dedicated transit lanes outbound are recommended on Bedford Highway. This furthers the importance of the Mill Cove Ferry, highlighted in the 2020 RTS, as it will offer a rapid transit service to the area.

<u>Transit and Active Transportation Opportunities</u>
In response to the motion from Regional Council to consider certain design elements within the detailed design, the project team engaged CBCL/HDR to evaluate proposed alternatives for integrating dedicated transit lanes and enhanced active transportation facilities into the Windsor Street Exchange Redevelopment project. A workshop was held in September 2024; the focus of the workshop was to assess two scenarios against the existing functional design – widening and reallocation of traffic lanes, with a focus on incorporating dedicated transit lanes and enhanced active transportation facilities. Both options assume the Bus Rapid Transit Green Line routing via Massachusetts Ave from the east and Joseph Howe Drive and Main Avenue from the west. Cross-sections were developed at key locations to illustrate the scope of the changes, considering known constraints.

Scenario 1 – Widening
This concept proposes significant modifications to improve both transit and active transportation infrastructure. Multi-use paths (MUPs) on the south side would be upgraded to separated cycling and pedestrian facilities, enhancing safety and accessibility. Bi-directional, center-running bus lanes would be introduced for both inbound and outbound routes on the Bedford Highway, with an additional one-way outbound bus lane added to the Joseph Howe ramp. These transit improvements are achieved without reducing the general-purpose lane capacity, as the design would incorporate roadway widening. A full bridge replacement would be required to accommodate the widening and lengthening of the Fairview Bridge. To avoid encroachment on St. John's Cemetery, the centerline would need to shift north, resulting in an 11-meter encroachment into the Port of Halifax truck marshalling yard and necessitating the reconstruction of the existing retaining wall. As a federally regulated crown corporation, the Port of Halifax has no obligation to transfer land to HRM; however, the Port of Halifax is undergoing operational changes and has indicated they are open to discussing a transfer of land that would provide benefit to the WSE project and subsequently improve goods movement to and from the Fairview Cove Container Terminal. Additionally, the widening of both the proposed overpass and the existing Mackintosh Street overpass would be necessary. Modifications to the DV-K ramp would be required to accommodate the optimal cross-section for separated active transportation facilities.

Scenario 2 – Reallocation
The scope of bus lane improvements mirrors that of Scenario 1, with bi-directional, center-running bus lanes introduced on the Bedford Highway. However, instead of achieving this through roadway widening, these improvements are made by reallocating existing general purpose lanes. This approach eliminates the need for structural modifications, such as the replacement of the Fairview Bridge and adjustments to the retaining wall bordering the Port of Halifax truck marshalling yard. As a result, while transit improvements are comparable, enhancements to active transportation (AT) facilities are more constrained. Opportunities to expand AT facilities, such as widening cycling and pedestrian paths, would rely on reducing lane widths to reallocate space for AT use. Further design work is necessary to

determine the exact configuration of these facilities, as their implementation will vary throughout the corridor based on the available space and the potential for lane narrowing.

Assessment of Scenarios
A detailed assessment of both scenarios has been completed. The key findings are as follows.

- Both scenarios noted a significant reduction in transit delay compared to the existing functional design; a 39% reduction for Scenario 1, and a 15% reduction in Scenario 2. It is expected that the improvement in Scenario 2 was lower due to increased congestion outside the project area due to increases to vehicle delays.
- Scenario 1 noted a minor reduction in vehicle delay (1%) likely due to transit buses traveling in a separate lane. Scenario 2 noted an increase in vehicle delay of 49%, which does cause an increase to truck delay of 37%, impacting goods movement to the Fairview Cove Container Terminal.
- Both scenarios result in improvements to the active transportation infrastructure; however, the degree of safety and user experience benefits depend on the ultimate design which was outside the scope of this study. Additional analysis is required to confirm the ultimate design.
- When considering mode shift, the existing functional design projects a 28% transit share. Scenario 1 increased the transit share by 1% and Scenario 2 increased the transit share by 3%.
- The corridor potential of the Windsor Street Exchange is 2,400 people per hour per direction (capacity; the maximum number of people that can move through the area using all modes of transportation) in the existing functional design, with 345 people per hour per meter width (efficiency; a measure of how effectively people can move through based on the width of the right-of-way using all modes of transportation). Scenario 1 increases the capacity of the project area by 96% and the efficiency by 31%. Scenario 2 increases both the capacity and efficiency of the project area by 46%.
- Scenario 1 would involve significant capital costs estimated to be $51.9 to $68.1 million above current construction cost estimates, primarily associated with structural changes and property acquisition. Scenario 2 presents a lower-cost alternative (estimated at $600,000 above current construction cost estimates).
- Scenario 1 would have a significant impact on project schedule due to bridge modifications and land acquisition and would result in the loss of federal funding through the NTCF due to being unable to meet the contribution agreement schedule. The ultimate widening scenario would take additional time to design and construct, and in the meantime a key access point to and from the Halifax Peninsula would continue to act as a bottleneck in the transportation network.
- Scenario 2 could be delivered with relatively minor impacts to the budget and schedule; however, it would also result in the loss of federal funding through the NTCF due to not meeting the objectives of the funding contribution, namely improving goods movement to and from the Fairview Cove Container Terminal. It is also anticipated that significant delays to vehicle traffic at a critical node in the transportation network would result in new public and interest holder opposition to the project.

Table 1 Analysis of Options Compared to Current Functional Design

Measure	Scenario 1 – Road Widening	Scenario 2 – Lane Reallocation
People-Moving Delays	39% decrease in transit delay 1% decrease in vehicle delay 3% decrease in person-hour delay	15% decrease in transit delay 49% increase in vehicle delay 46% increase in person-hour delay
Goods Movement Delays	No change	37% increase in truck delays
Property Impacts	Encroachment of St. John’s Cemetery or the Port of Halifax truck marshaling yard, impact to CN rail and Fairview Overpass	No change
Schedule Impacts	Additional time to address property impacts, design and construct new and replacement infrastructure	No change

	(est. 4-6 years)	
Budget Impacts	$52 to $69 million increase in capital costs for design and construction Loss of $23.5 million in Federal Funding	$600,000 increase in capital costs Loss of $23.5 million in Federal Funding

Limitations of Study
The workshop that was held September 2024 focused on changes to the functional design for the Windsor Street Exchange Redevelopment project, and did not evaluate additional network-wide opportunities or provide an opportunity for in-depth collaboration. The analysis of both scenarios is limited to the project area. The potential impact to the overall existing transit network, and the future BRT network, has not been considered as part of this study. Further assessment of overall network impacts and potential alternative options should be considered prior to development of an ultimate design that includes dedicated transit lanes within the Windsor Street Exchange project area.

The consultant team provided a number of recommended next steps outside the scope of the project, which are being carried out or considered by others. The recommended next steps focus on addressing network-wide opportunities, in collaboration with HRM, the Joint Regional Transportation Agency, Halifax Harbour Bridges, and the Province of Nova Scotia. These opportunities will continue to be evaluated, and any impacts to the Windsor Street Exchange project will be incorporated into this project or planned for future final design.

<u>Halifax Water Capital Projects</u>
Halifax Water capital projects from their Integrated Resource Plan have been integrated into the WSE project. If the WSE project does not proceed, integration opportunities still exist as the HRM would prioritize rehabilitating the pavement and would integrate that project with Halifax Water.

The North End Feeder main project adds system redundancy to water distribution to the Halifax Peninsula. It is being designed under a separate contract between Halifax Water and its design consultant. The construction impacts of this work would include the Bayne Street and the Windsor St Exchange area, as the proposed alignment is within the Bayne Street right of way, crossing the Windsor St Exchange, along Lady Hammond Road and connecting to existing near Commission St. It is anticipated this work could begin construction in 2 to 4 years.

The Kempt Road stormwater upgrade project will provide a stormwater connection for sewer separation within the Young Street area along with separating the combined system on Kempt Road. The storm system upgrades will also support climate change resiliency. The construction impacts of this work would include replacement of an existing stormwater pipe from the end of Kempt Road through the current Windsor Street Exchange towards the intersection of Bayne Street and Africville Road. It’s anticipated this work could begin construction in 2-4 years. In addition, it is anticipated that upgrades of the existing combined system will be required through the Windsor St Exchange to support the Young Street growth node. It is anticipated that this work could be aligned with the Kempt Road stormwater upgrade work.

HRM and Halifax Water plan to integrate capital work where possible. It’s likely that HRM capital work to rehabilitate the road infrastructure around the Windsor Street Exchange will influence the Halifax Water capital plan. If the WSE project does not proceed, it’s unknown whether the cost savings through integration on the WSE project may be able to be realized through integration with other capital projects.

<u>Halifax Harbour Bridges</u>
Future MacKay Bridge Project
Halifax Harbour Bridges has identified that the MacKay Bridge is in need of rehabilitation or replacement by 2040. HHB is currently completing a feasibility assessment to define the scope of work required to complete rehabilitation of the suspended spans and to evaluate the impact of that scope. If the

rehabilitation is found to be unacceptable, then the bridge would logically be replaced on a new alignment. The locations of a new structure (if replaced) and approach roads have not been determined. The WSE project does not make alterations to the approaches and exits from the existing MacKay Bridge, and it is anticipated that a rehabilitated or new bridge alignment would not have a significant impact on the infrastructure that is being replaced within the WSE project area, with the exception of a new exit to Bayne Street.

While there is no design criteria confirmed, it is expected that HRM would want future changes to the MacKay Bridge to include the installation of active transportation facilities to create an additional connection across the Halifax Harbour for people walking, rolling and cycling. There were options evaluated as part of the Value Engineering Study conducted on the WSE project in 2023 that considered future active transportation connections to the MacKay Bridge; any connection options implemented at WSE would depend on the future design of the MacKay Bridge corridor. HRM staff will continue to coordinate with Halifax Harbour Bridges to ensure that both projects are integrated.

Though the timeline has not yet been determined, it is anticipated that construction on a future MacKay Bridge project could begin as soon as 2028. This construction would likely have significant impact to the traveling public, and it would be inadvisable to have other significant projects within the vicinity under construction at the same time (i.e. the WSE and Halifax Water capital projects). As the WSE project is currently scheduled, construction would be complete prior to significant construction on the MacKay Bridge corridor. If the WSE project does not proceed as planned, significant rehabilitation of the roadways within the project area would be required and would need to be completed prior to the start of construction on the MacKay Bridge.

Removal of Tolls
The Province of Nove Scotia has announced that tolls will be removed on the Halifax Harbour Bridges beginning April 1, 2025. The WSE project team has considered the potential impact of the tolls being removed on the MacKay Bridge.

Traffic modeling that has been completed for the project to date has considered future plans for HHB including the removal of the physical toll plazas and implementation of all electronic tolling. The results of traffic modeling have considered free-flowing traffic across the MacKay Bridge.

The impact of no tolls being levied on those traveling across the MacKay Bridge is unknown. It is anticipated that removing all tolls will induce an increase in traffic using the MacKay Bridge.

Publicly available research conducted by CSRB Group examined toll implementation and removal at 76 tolled facilities worldwide, including the case of the Port Mann Bridge in Vancouver, BC, where tolls were first implemented on a new crossing, then subsequently removed. The impact of toll removal typically causes a 10-20% increase in traffic using the previously tolled facilities. The actual impact of toll removal on the harbour bridges will not be known until some time after the traffic has returned to a steady state, but it is anticipated that when the tolls are eliminated from the MacKay Bridge, longer delays and longer queues will cause even more operational issues within the existing Windsor Street Exchange area if no improvements are undertaken.

<u>NS Public Works Structures</u>
The existing bridge structures in the project area are provincially-owned and maintained structures, with a cost-sharing agreement on maintenance and operations with HRM (HRM-08). This includes the Fairview Overpass, the DV-K Ramp (ramp from Joseph Howe Drive towards the WSE), the Mackintosh Street overpass. The retaining wall between the Bedford Highway and the Fairview Cove Container Terminal is provincially-owned and maintained. Based on the cost-sharing agreement with the Province, significant changes to these structures cannot be completed without negotiation of the costs associated with those changes; if the changes are to benefit HRM priorities, it is anticipated that HRM would need to contribute the bulk of the funding. Due to the anticipated costs associated with alterations to these structures, the provincially-owned structures were considered constraints, and the design development was completed to avoid impacts and/or changes.

Project Implementation
As both scenarios are anticipated to result in loss of federal funding, putting the project execution at risk, the project team is considering a phased implementation of these scenarios. The existing functional design would be future proofed to act as an interim design for an ultimate design including dedicated transit lanes and enhanced active transportation facilities.

Given the results of the analysis, it is recommended that the widening scenario be implemented to accommodate dedicated transit lanes through the Windsor Street Exchange. Figure 7 outlines the impacts to each transportation mode between the options, with green providing the best result, red providing no or worse result, and yellow indicating mixed results.

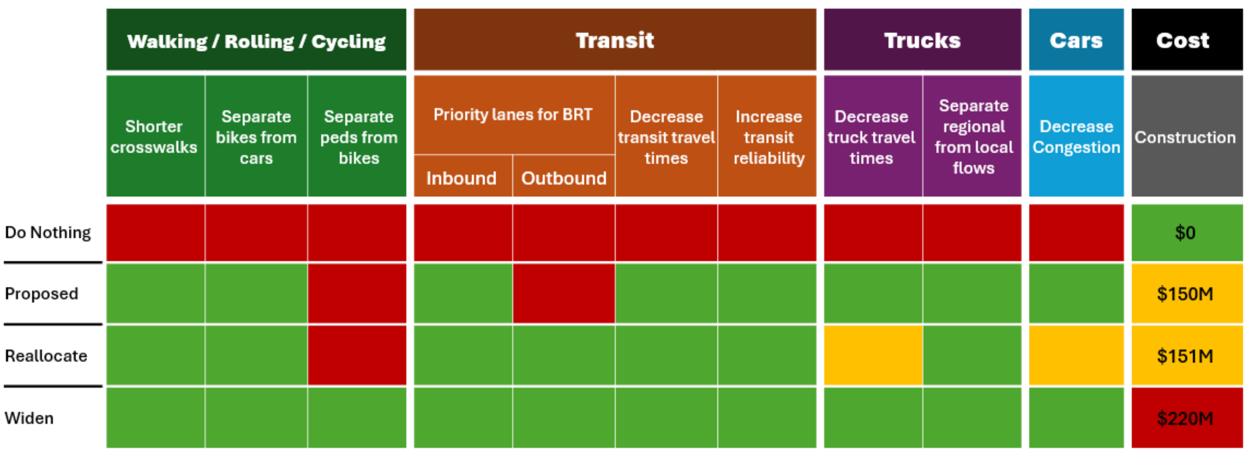

Figure 7 WSE Project Impacts to Transportation Modes

The Design-Build team is completing a review of all intersections, ramps, and structures proposed in the existing design to identify future-proofing opportunities. The new overpass structure proposed south of Mackintosh Street will be designed to allow a future 7-lane cross-section compared to the 5-lane cross-section in the existing functional design. Any significant structures to be constructed as part of the project, such as retaining walls, will be designed to accommodate a widened cross-section, either by creating space as part of the project, or being able to accommodate widening within minimal effort in the future.

The expected cost and impact of future proofing has not yet been calculated; however, it's expected that the additional costs to design and construct structural elements to accommodate widening would be within the existing project contingency budget. Additionally, constructing new structural elements such as bridges with consideration for future use is best engineering practice.

Should Council provide approval to proceed with the recommendation, staff will restart work to advance the existing functional design under the Progressive Design-Build contract. The first phase of the project would be carried out under the existing contribution agreements with the federal and provincial governments. Staff will also begin an implementation plan for the second phase of the project to widen the roadway and prepare a report for Council on the property acquisition needs, proposed schedule for design and construction, capital budget estimates, external funding opportunities, and resourcing requirements.

The construction phasing will be developed through the progression of the detailed design. It is not anticipated that there would be any difference in construction duration and impacts if the two phases of the project were completed separately or as a single project.

Progressive Design Build Project Approach
Progressive design build is a project delivery approach in which a design-build team is retained to carry out both the design and construction of the project. This contrasts HRM's typical project delivery approach, wherein design and construction are carried out in successive distinct phases. The progressive design build approach has been selected for the WSE project due to the ability to accelerate the project schedule, meeting the federal funding requirements of completion by December 2027. There are other benefits to this project approach, which would facilitate implementation of a second phase of the WSE project to widen the roadway.

An initial contract has been awarded for the design portion only but includes an ability to accomplish certain early works prior to entering the construction contract. The current scope includes advancing the existing functional design to detailed design and construction; however, with the design-build team on board, the WSE project team can work to adjust and expand the project scope to consider a second phase to widen the roadway, either included within the progressive design build contracts, or handled through a separate, but integrated, contract.

The progressive approach mitigates contract risk by allowing defined "exit points" for HRM if the relationship between the parties is not working. Although the construction budget portion of the contract is inherent in the design phase, it also allows for a defined exit strategy should the design process result in a more costly project than Council has considered. A separate contract would be entered into with the design-build team, at HRM's discretion, before HRM would proceed to the full construction of the Project. Benefits include:

- Continuity of the design-builder's design and construction teams allows for a relationship to be built and facilitates early and frequent constructability feedback. The WSE project is complex and located in an area of high importance to the regional transportation network; the strong relationship and feedback between the designer and constructor teams should lead to improvements in constructability and a strong understanding of impacts prior to construction.
- The overall project schedule can be compressed by removing the need for tender; the construction portion of the contract can be awarded progressively. Portions of the work can be awarded earlier to allow for advance ordering of materials with long-lead times to facilitate the construction schedule.
- Design elements can be adjusted with input from the construction team using actual construction costs, leading to the potential identification and implementation of cost and overall time saving measures where applicable.
- The construction team conducts constructability analysis throughout the design phase, which identifies potential risks and issues earlier in the process, and improves planning and execution of the construction phase.
- One team for both the design and construction phases is likely to reduce disputes and change orders, leading to a smoother construction process and a higher likelihood of adhering to the construction schedule.

FINANCIAL IMPLICATIONS

The Phase 1 Progressive Design Build contract for design and early works, valued at $9.4 million, has been awarded to Dexter Construction. Detailed project costs will be refined during this phase. A proposal for Phase 2 (construction) with an updated cost proposal will be submitted for review. HRM has the contractual ability to decline this proposal and proceed with the construction through a traditional tendering process.

Table 2: Proposed Project Budget and Cost Sharing Arrangement on the Windsor Street Exchange Project

	Original Budget (2019)		**June 2024 Budget**		**Proposed Budget (January 2025)**	
Transport Canada (NTCF)	$23,500,000	50%	$23,500,000	23%	$23,500,000	16%
Halifax Regional Municipality *	$10,750,000	23%	$30,115,000	29%	$53,750,000	36%
Province of Nova Scotia	$10,750,000	23%	$10,750,000	10%	$10,750,000	7%
Port of Halifax*	$2,000,000	4%	$2,000,000	2%	$2,000,000	1%
Halifax Water	N/A	N/A	$37,500,000	36%	$60,000,000	40%
Total Estimated Project Costs	**$47,000,000**	**100%**	**$103,865,000**	**100%**	**$150,000,000**	**100%**

*The funding from the Port of Halifax is offset by a $2,000,000 HRM contribution to a complementary Port of Halifax project supporting goods movement.

The most recent project cost estimate is $150 million, based on a preliminary, Class 'D' construction estimate with a 25% contingency. This was updated in collaboration with the Design Build Team. The current budget includes design fees, property acquisition, construction costs, and also includes the costs for Halifax Water's planned capital work. The cost-sharing agreement with Halifax Water is still being finalized as is Halifax Water's approval to proceed from the Nova Scotia Utility and Review Board. The values of cost sharing from the NTCF, the Port of Halifax and the Province are fixed based on the original agreement; per the agreement, any additional costs are the responsibility of the Municipality.

The increase in costs to HRM is largely due to inflation, additional costs of the new overpass structure, significantly increased project construction limits, material costs, traffic control, and construction of temporary roads/detours. The updated project costs are reflected in the proposed 2025-2026 Capital Budget, which will be subject to a separate approval.

The project design continues to be confirmed and refined. Project estimates may change, however current estimates are becoming more accurate through the progressive design build process with our designers and contractors. Further substantial estimate deviations are not currently anticipated.

The estimated costs associated with planning for the second phase of the WSE project area is unknown; it is anticipated that consultant costs to develop the estimates and preliminary plans would be approximately $500,000 and can currently be absorbed within the current project contingency funding.

<u>Cost Sharing</u>
Since the WSE project was awarded funding in 2019, the project scope and cost has evolved as the design has been developed.

2019 – Original Budget
Developed as part of the funding application to NTCF, based on a concept design (10%) that was limited to original project area (Windsor St-Bedford Hwy-Lady Hammond Rd intersection). Project budget of $47 Million included:

- $41 Million construction estimate
- $6 Million in other project related costs
- Budget for Halifax Water integrated work was limited at this time

2023 – Updated Budget

Project budget updated based on revised functional design options. Construction cost estimate increased by $4 Million due advancing the design to a functional level (30%), as well as due to inflation experienced during 2020-22 construction seasons. Project budget of $51 Million as follows:

- $45 Million construction estimate
- $6.09 Million in other project related costs
- Budget for Halifax Water integrated work was limited at this time

2024 – Updated Budget following Value Engineering Study and Integration of Halifax Water capital projects
In 2023 a Value Engineering Study was completed on the project, which identified the need to expand the project area significantly to address traffic flow through the WSE and make improvements to sustainable modes of travel. Additionally, Halifax Water proposed the integration of two major capital projects into the project scope, along with required repair and replacement of existing infrastructure. The construction cost estimate was updated to reflect expected inflationary pressures over the lifecycle of the construction phasing and was verified by an external cost consultant.

- $93 Million construction estimate
    - $37.5 Million in Halifax Water construction work
- $10 Million in other project related costs (increase to design estimate and project management costs due to scope of work and length of construction phasing)

2025 – Proposed Budget following Engaging Design-Build contractor
In 2024 a Design-Build team lead by Dexter Construction was engaged on the project. As part of their proposal for the Phase 1 contract (design and early works), an updated construction estimate was provided and used to update the overall project budget. The construction update considered increased costs for construction related to the construction of the new overpass, the underground infrastructure, higher material costs, traffic control and phasing, and construction of temporary roads and detours.

- $138 Million construction estimate
    - $60 Million in Halifax Water construction work
- $12 Million in other project related costs (increase in the design estimate based on scope of work and timeline required by the project)

A report on the second phase to widen the corridor roadway would be expected to return to Council in late 2025. Preliminary expectations are that the work contemplated in the second phase will occur in 2026 (design) and 2028 to 2031 (construction) and will be submitted with the 2026/27 Draft Four-Year Capital Plan.

RISK CONSIDERATION

There is a risk proceeding with an interim design without a final design complete. This is mitigated by developing the design through the progressive design-build approach. The design team will consider how the interim design will be implemented to facilitate the desired ultimate design, with the contractor to provide advice and input on the construction phasing. The benefit of proceeding with the interim design now are that the external funding contributed by other orders of government continues to support the WSE project, the benefits of the interim design on all modes of travel are realized sooner, and the progressive design-build approach can be leveraged to advance the project on a faster timeline than would otherwise be available.

There is a risk that the planning for the second phase of the WSE project identifies high capital costs without any opportunities for external funding. This risk is mitigated by staff reporting back to Council before significant costs are incurred in the design and construction of the second phase. The construction of the existing functional design will consider the potential for future widening, therefore if widening cannot occur immediately following the completion of the first phase, it can be implemented at any point in the future.

Provincial Bill 24 introduced February 20, 2025 allows for ministerial orders to a municipality relating to transportation to build, change, reconfigure or remove transportation infrastructure and do anything necessary or desirable in the interest of the safe, efficient and coordinated movement of people and goods. The existence of this order elevates the need to ensure that the Province is informed and supportive of the municipality's plans, but also creates a risk that in the absence of direction from Council the Minister of Public Works could provide direction via ministerial order.

COMMUNITY ENGAGEMENT

Interest holder updates were completed in the last six months to communicate project status to various interest holders including the JRTA, Port of Halifax, Halifax Harbour Bridges, Halifax Water, Utilities, Property Owners, and Various Advocacy and Community groups.

On August 13, 2019, when authorizing the contribution agreement with Transport Canada, Regional Council directed staff to explore whether community benefits could be part of the selection of a preferred concept. The project team completed initial evaluation of the potential for community benefits, reporting back to Regional Council on August 18, 2020. The proposed plan was to consult with the Africville, Mi'kmaw, and Urban Indigenous communities to identify potential community benefits that could be considered as part of the project. Initial consultation has been limited; however, it was determined that the design concept should look to improve access to Africville. Now that a preferred design option has been selected, further consultation with these communities will be undertaken to identify potential community benefits and determine what can be included in the WSE project. It is anticipated that this consultation will be coordinated with other consultation with these communities, such as the Africville Visioning Process.

ENVIRONMENTAL IMPLICATIONS

Given the surrounding land uses within and adjacent to the project area are primarily industrial / commercial, there are minimal impacts to existing green infrastructure such as trees, green space, etc. Through the detailed design, the project team will be evaluating how to include green infrastructure upgrades such as trees to provide shade over the MUP, stormwater management infrastructure, etc.

A Climate Change Resilience Assessment was completed on the interim functional design options, which provided recommendations to improve the resilience of the final design and construction to the forecasted impacts of climate change in our region. While the existing functional design has changed from what had been evaluated, many of the recommendations continue to be applicable. The project team will work with the Design-Build team to incorporate these design details through the detailed design process and incorporate best practices for the installation of green infrastructure.

Reduction in delays, as well as idling time at intersections, reduces projected greenhouse gas emissions within the project area. Improvements to active transportation infrastructure and transit reliability will also support transportation mode shifts, further mitigating greenhouse gas emissions. The project is anticipated to reduce greenhouse gas emissions by at least 1,000 tons per year.

ALTERNATIVES

1. Regional Council could choose to direct staff to cease advancing the current functional design, reevaluate the project objectives as directed by Council, and prepare new design concepts without the constraints that were previously applied to the design process, either with change order to existing contracts or through a new procurement process. This alternative is not recommended because:
    a. Many design options have been considered throughout the development of the current functional design; several consulting firms have evaluated the design options and determined that the current functional design is the optimal solution for the area.
    b. The Municipality would likely forgo $23.5 Million in funding from the Federal government and may forgo $10.75 Million in funding from the Provincial government.
    c. There would be a delay in implementation of the ultimate design, delaying improvements to active transportation infrastructure and transit performance. Goods movement and general traffic operations is expected to further degrade.

   d. The Municipality would be required to fund the costs to date for design, consultants and other works without any cost sharing from other parties, as well as incur additional costs to duplicate work on the conceptual and functional design.

2. Regional Council could choose to request staff to prepare a report on an implementation plan for Scenario 2 – Reallocation of Traffic Lanes as described in the staff report dated January 20, 2025. This would include network-wide modeling of the implications of reallocating traffic lanes to dedicated transit lanes within the Windsor Street Exchange area, and recommendations to address increased congestion impacts to transit service. The implications of this alternative would be:
   a. The Municipality would likely forgo $23.5 Million in funding from the Federal government and may forgo $10.75 Million in funding from the Provincial government.
   b. Reallocation of traffic lanes is anticipated to significantly worsen congestion outside the Windsor Street Exchange area, which would impact transit service that currently travels in mixed traffic. Implementation would need to include strategies to address the overall transit reliability.
3. Regional Council could choose not to proceed with the Windsor Street Exchange Redevelopment project and direct staff to cease further design efforts and release their retained consultants and staff. The implications of this alternative would be:
   a. The Municipality would likely forgo $34.25 Million in combined funding from the Federal and Provincial governments.
   b. Key active transportation connections and transit performance improvements would not be made.
   c. Port access and general traffic performance would remain unchanged and further degrade over time. Congestion in and around the WSE is expected to worsen, which would impact transit service that is currently traveling in mixed traffic. Alternative strategies would need to be identified to address transit reliability.
   d. Critical Halifax Water and HRM capital projects would have to proceed separately, negating cost-sharing benefits and reduction to construction impacts to the public.
   e. The Municipality would be required to fund the costs to date for design, consultants and other works without any cost sharing from other parties.

LEGISLATIVE AUTHORITY

The *Halifax Regional Municipality Charter*, S.N.S. 2008, c. 39, provides:

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Administrative Order One – The Procedure of the Council Administrative Order

> 4. (1) The proceedings of the Council, Community Council, and committees of the Council shall be governed by this Administrative Order unless an Administrative Order, by-law or provincial enactment provides otherwise.
> (2) Notwithstanding subsection (1), any one or more of the rules of procedures contained herein except for sections 5 and 41 and subsections 12(5) and 59(3) may be suspended by Council, Committee of the Whole, Community Council or a Standing Committee by the affirmative vote of two-thirds (2/3rds) of the Members present and voting.

(3) A Committee, other than a Standing Committee or Committee of the Whole, may only suspend the rules of procedure respecting the number and length of time a person may speak pursuant to clause 45(1) (d), section 83 and subsection 131(1).

This report also complies with *Halifax Regional Municipality Charter*, S.N.S. 2008, c. 39, Part VIII, Planning & Development.

ATTACHMENTS

Attachment – Windsor Street Exchange Redevelopment Project – Functional Design, staff report dated January 20, 2025

Report Prepared by: Megan Soroka, P.Eng., PMP, Program Manager, Design & Construction, 902.717.4302

HALIFAX

P.O. Box 1749
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Item No. 15.1.1
Halifax Regional Council
January 28, 2025

TO: Mayor Fillmore and Members of Halifax Regional Council

FROM: Cathie O'Toole, Chief Administrative Officer

DATE: January 20, 2025

SUBJECT: **Windsor Street Exchange Redevelopment Project: Functional Design**

ORIGIN

On June 2, 2019, the federal Minister of Transport announced funding under the National Trade Corridors Fund for upgrades to the Windsor Street Exchange to facilitate the movement of regional and interprovincial containers by rail to an expanded truck gate at the Fairview Cove Container Terminal facility.

On August 13, 2019, Regional Council passed a motion authorizing the Mayor and Municipal Clerk to sign the Contribution Agreement with the Minister of Transport, to receive $23,500,000 in funding for the Windsor Street Exchange Upgrades (Acct No. CT190010).

On August 24, 2023, the Transportation Standing Committee passed a motion directing the Chief Administrative Officer to prepare a staff report on the Windsor Street Exchange redesign to include:

a. Separated and wide sidewalks;
b. Separated and protected bicycle lanes;
c. Dedicated transit-only lanes for people using public transit;
d. Protected intersections that are safe for all vulnerable road users; and
e. Design for 40 KPH traffic speeds.

On June 18, 2024, Regional Council passed a motion to:

1. Suspend the rules of procedure under Schedule 7, the Transportation Standing Committee Terms of Reference, of Administrative Order One, the Procedures of the Council Administrative Order;
2. Endorse in principle the Windsor Street Exchange Functional Design to achieve the project objectives as proposed in the staff report dated April 23, 2024, as amended;
3. Direct the Chief Administrative Officer to:
    a. Advance the development of the design, project specifications, and plans, and identify land requirements, as per the project delivery plan outlined in the staff report dated April 23, 2024, as amended.
    b. Prepare contract documents to retain a design-build team for the project;
    c. Proceed with negotiation of an amended Contribution Agreement with Transport Canada to extend the deadline for substantial project completion to the end of 2027;
    d. Investigate additional opportunities for external funding for consideration in future capital budget updates.

RECOMMENDATIONS ON PAGE 3

Prior to passing the motion, Regional Council passed a motion to amend the approach to the Windsor Street Exchange Functional Design project as set out in the staff report dated April 23, 2024, to include the following considerations during the design build phase II:

1. Active transportation facility options, prioritizing a AAA connection from the approved Bedford Highway functional plan to the potential Africville Road MUP extension from the future Barrington greenway, recognizing some work is out of scope and would be built during the Bedford Highway project and other future projects;
2. Inclusion of bus lanes to support the future Green Line of the Bus Rapid Transit plan through Windsor Street Exchange connecting Joe Howe Drive to Massachusetts Ave;
3. Demonstrate future proofing at northern extreme of the Windsor Street Exchange project to allow for bike and pedestrian connections to any future MacKay Bridge project;
4. Requesting the Mayor write the relevant Federal Ministers regarding an extension to accommodate these changes, and;
5. Provide an analysis of what increased vehicle traffic capacity will mean on mode share given induced demand.

Action 121 if the Integrated Mobility Plan (IMP) recommends identifying "Strategic Corridors" — existing road corridors that are key to regional traffic flow, transit, goods movement and active transportation — and develop plans that will guide their development over time.The IMP further recommends that where strategic improvements to "bottlenecks" in the roadway network can be implemented, consideration should be given to opportunities to integrate transit priority measures and active transportation improvements (Action 122). The IMP also recommends that HRM work with CN and the Halifax Port Authority to retain and augment rail capacity through the South End rail cut (Action 110).

HalifACT recommends the expansion of transit and active transportation infrastructure needed to achieve mode share targets in the Integrated Mobility Plan (Action 8). It also recommends that critical infrastructure be assessed to proactively protect and strengthen infrastructure to withstand impacts due to climate change (Action 16). The Windsor Street Exchange is a critical link in the transportation network, as well as an emergency evacuation route for the Halifax Peninsula.

The approved 2024/25 Capital Budget project CT190010 – Windsor Street Exchange.

EXECUTIVE SUMMARY

In June 2024, Halifax Regional Council endorsed the functional design for the Windsor Street Exchange Redevelopment project but directed staff to further explore active transportation facility options, inclusion of dedicated transit lanes, future proofing for connections to any future MacKay Bridge project, and the potential impact of increased traffic capacity on mode share. Council also directed staff to draft a letter for the Mayor's signature to the relevant ministers requesting an extension to accommodate these changes.

Consultants from CBCL and HDR were engaged to evaluate alternatives for integrating dedicated transit lanes and enhanced active transportation facilities into the Windsor Street Exchange Redevelopment project beyond what was provided in the functional design. Two scenarios were considered against the existing functional design: (i). Adding dedicated transit lanes (widening) and (ii). Reallocation of existing lanes as dedicated transit lanes. These scenarios were then measured against the existing functional plan.

Widening the roadway for dedicated transit lanes showed significant reductions to transit delays (39%), with little to no impact to vehicle delays. This option requires either replacement of the Provincially owned Fairview Overpass bridge structure and encroachment into St. John's Cemetery or shifting of the northern edge of the roadway by approximately 11m north into the Port of Halifax marshalling yard. This option can not be completed within the Federal Funding timeframe or the current project budget.

Analysis showed that reallocating the two central general-purpose lanes to dedicated inbound and outbound transit lanes would potentially generate a 3% mode shift to transit, reduce delay to transit by 15%

and increase delay to other vehicles by 49%. This impact to general traffic and truck traffic will negatively impact goods movement, and therefore not achieve the project objectives required for the federal funding.

Phase 1 of the Design-Build contract has been awarded to Dexter Construction, with support from Stantec Consulting and Harbourside Engineering. The Design-Build team is working to complete the detailed design, to allow for construction to begin in 2025.

Estimated capital project costs are $150,000,000. The updated project costs are reflected in the proposed 2025-2026 Capital Budget.

RECOMMENDATIONS

It is recommended that Halifax Regional Council:

1. Suspend the rules of procedure under Schedule 7, the Transportation Standing Committee Terms of Reference, of Administrative Order One, the Procedures of the Council Administrative Order;

It is recommended that Halifax Regional Council direct the CAO to:

1. Proceed with the Windsor Street Exchange project, as per the current funding agreement and Design Build contract, including future proofing new structures along the corridor where municipal lands permit, to accommodate future dedicated transit lanes and separated pedestrian and cycling facilities.

BACKGROUND

The Windsor Street Exchange (WSE) Redevelopment project involves the reconfiguration of the intersection of Bedford Highway, Windsor Street and Lady Hammond Road. As one of five roadway access points to the Halifax Peninsula and the downtown core, and an intersection of strategic corridors, an estimated 170,000 people per day travel through this area, via 10 Transit routes and approximately 90,000 – 110,000 vehicles. 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, and the municipal capital budget. Halifax Water has partnered with HRM to integrate planned capital work into the Windsor Street Exchange project and will fund the design and construction of their infrastructure.

Regional Council endorsed the functional design of the Windsor Street Exchange project in June 2024. Windsor Street Exchange Redevelopment Project – Functional Design - June 18/24 Regional Council | Halifax.ca

The June 2024 endorsement of the Windsor Street Functional Plan asked for the following additional considerations:

1. Active transportation facility options, prioritizing a AAA connection from the approved Bedford Highway functional plan to the potential Africville Road MUP extension from the future Barrington greenway, recognizing some work is out of scope and would be built during the Bedford Highway project and other future projects;
2. Inclusion of bus lanes to support the future Green Line of the Bus Rapid Transit plan through Windsor Street Exchange connecting Joe Howe Drive to Massachusetts Ave;
3. Demonstrate future proofing at northern extreme of the Windsor Street Exchange project to allow for bike and pedestrian connections to any future MacKay Bridge project;
4. Requesting the Mayor write the relevant Federal Ministers regarding an extension to accommodate these changes, and;
5. Provide an analysis of what increased vehicle traffic capacity will mean on mode share given induced demand.

The Design Build contract has been awarded to Dexter Construction, with design support provided by Stantec Consulting and Harbourside Engineering. Construction is scheduled to begin in summer 2025. Design details and a construction phasing plan are expected to be shared in spring 2025.

DISCUSSION

The current functional design includes a new, continuous multi-use path (MUP) along the Bedford Highway, and several transit priority upgrades through the project area. Consultants from CBCL and HDR were engaged to evaluate the potential to integrate dedicated transit lanes and enhanced active transportation facilities into the Windsor Street Exchange Redevelopment project beyond what was provided in the functional design. Two scenarios were considered against the existing functional design: (i) Adding dedicated transit lanes (widening) and (ii) Reallocation of existing lanes to dedicated transit lanes. These scenarios were then measured against the existing functional plan. The following sections address each of the additional considerations that Regional Council requested additional information on in June 2024.

Active Transportation Facility Options

Widening of the cross section will provide additional space for separated pedestrian and cycling facilities. Reallocation of existing lanes does not provide the required space for separated active transportation facilities within the current constraints. There is a potential opportunity within the existing Functional Plan design to reduce the lane widths, which reduces vehicle speed, enhances road safety, and would allow for a wider MUP and boulevard; this will be reviewed during detail design.

The Bedford Highway and Africville Road MUP projects and the development of Strawberry Hill are scheduled to be constructed outside of the construction period of Windsor Street Exchange Project but will all provide additional opportunities to improve AAA connections.

Transit Lanes to Support the Green Line Bus Rapid Transit (BRT)

The functional design includes an inbound signalized transit-only lane along the south side of the Fairview Overpass, a 120m inbound transit only lane approaching the Windsor Street intersection, prioritized signalization through the Windsor Street intersection, and the creation of a transit only northbound approach to Windsor Street Exchange from Joseph Howe Drive (as shown in Figure 1). These design elements will benefit existing express and local transit routes. The project does not include outbound transit only lanes due to space constraints.

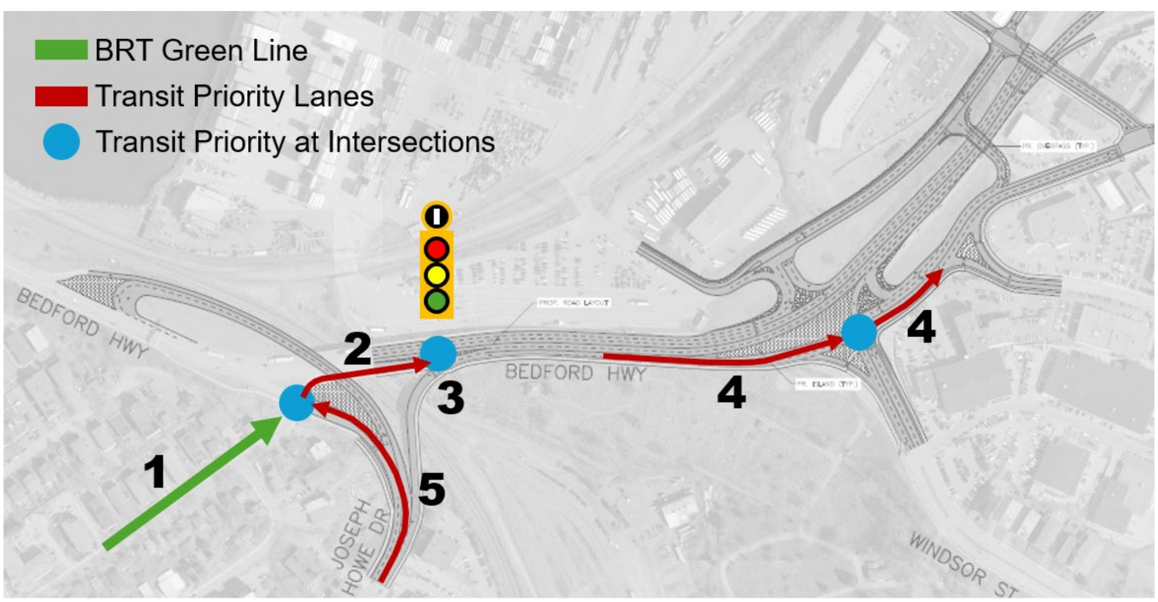

Figure 1 Functional Design Features for Transit

Further prioritization of the Green Line BRT beyond what is provided in the existing functional design will require either a widened cross section or the reallocation of existing lanes. Both options were analyzed compared to the results of the current functional design, as shown in Table 1.

Table 1 Analysis of Options Compared to Current Functional Design

Measure	Scenario 1 – Road Widening	Scenario 2 – Lane Reallocation
People-Moving Delays	39% decrease in transit delay 1% decrease in vehicle delay 3% decrease in person-hour delay	15% decrease in transit delay 49% increase in vehicle delay 46% increase in person-hour delay
Goods Movement Delays	No change	37% increase in truck delays
Property Impacts	Encroachment of St. John's Cemetery or the Port of Halifax truck marshaling yard, impact to CN rail and Fairview Overpass	No change
Schedule Impacts	Additional time to address property impacts, design and construct new and replacement infrastructure (est. 4-6 years)	No change
Budget Impacts	$52 to $69 million increase in capital costs for design and construction Loss of $23.5 million in Federal Funding	$600,000 increase in capital costs Loss of $23.5 million in Federal Funding

To mitigate impacts to goods movement, consideration was given to the use of combined transit / truck priority lanes. This was determined not to be a viable option due to differing travel patterns of transit routes and goods movement in the area.

Due to the impacts to goods movement and the project schedule, it is expected that both scenarios would result in the loss of the NTCF funding, putting the project execution at risk. The loss of funding would include funds received to date for design work if the project is not completed as per the funding agreement.

The project team is reviewing opportunities to futureproof the design such that road widening (and the addition of continuous transit lanes) could be incorporated at a future date. The existing functional design would be future proofed to act as an interim design for an ultimate design including dedicated transit lanes and enhanced active transportation facilities including the design of new structures where property and design requirements allow.

Demonstrate future proofing at northern extreme of the Windsor Street Exchange project to allow for bike and pedestrian connections to any future MacKay Bridge project

The HRM project team is coordinating with Halifax Harbour Bridges on its planning process for the future retrofit / replacement of the MacKay Bridge. It is anticipated that a future MacKay bridge project will include active transportation facilities. There are several options being considered to make an active transportation connection to the future MacKay bridge; this project does not prevent any known connection opportunities.

Requesting the Mayor write the relevant Federal Ministers regarding an extension to accommodate these changes

Given the recommendations of this report, a letter has been drafted to the Federal Minister for the Mayor's signature to request additional funding support from the Federal government to restore the original contract funding proportions of the NTCF agreement.

Provide an analysis of what increased vehicle traffic capacity will mean on mode share given induced demand.

Induced demand refers to the manner in which people's travel choices change based on how safe, costly, and convenient the options available to them are to use. The safer, cheaper, and/or more convenient you make it to travel by a specific mode, the more likely people are to use that mode. This applies equally to walking, rolling, cycling, transit, and driving. It is difficult to accurately forecast the impact of induced demand. However, the functional design achieves the goals of the project to varying degrees for each mode:

- New connections for walking and rolling have been established through the study area. Intersection designs will be optimized to reduce crossing distances, address existing safety concerns, and provide buffer space between people walking and vehicular traffic. No safe cycling infrastructure currently exists within the study area. The project will establish cycling infrastructure that separates people on bikes from vehicular traffic within the study area and will eventually connect to protected facilities in all directions
- Transit travel time and reliability will be improved through implementation of inbound transit priority measures
- Travel time for goods movement vehicles will be significantly reduced with the general capacity improvements provided by the proposed functional design
- The functional design separates significant vehicle flows from intersections to reduce delays for all vehicles in general purpose lanes (i.e., trucks, outbound buses, and cars)

While there will be increased capacity to move more people in cars through the interchange, this also comes with improvements in travel time, reliability, and capacity to move more people in buses as well as improvements to safety and convenience for people walking, rolling, and cycling. The improvements to walking, rolling, cycling, and transit infrastructure should also induce more people to travel through the area via sustainable modes.

FINANCIAL IMPLICATIONS

The Phase 1 Progressive Design Build contract for design and early works, valued at $9.4 million, has been awarded to Dexter Construction. Detailed project costs will be refined during this phase. A proposal for Phase 2 (construction) with an updated cost proposal will be submitted for review. HRM has the contractual ability to decline this proposal and proceed with the construction through a traditional tendering process.

Table 2: Proposed Project Budget and Cost Sharing Arrangement on the Windsor Street Exchange Project

	Original Budget (2019)		June 2024 Budget		Proposed Budget (January 2025)	
Transport Canada (NTCF)	$23,500,000	50%	$23,500,000	23%	$23,500,000	16%
Halifax Regional Municipality *	$10,750,000	23%	$30,115,000	29%	$53,750,000	36%
Province of Nova Scotia	$10,750,000	23%	$10,750,000	10%	$10,750,000	7%
Port of Halifax*	$2,000,000	4%	$2,000,000	2%	$2,000,000	1%
Halifax Water	N/A	N/A	$37,500,000	36%	$60,000,000	40%
Total Estimated Project Costs	**$47,000,000**	**100%**	**$103,865,000**	**100%**	**$150,000,000**	**100%**

*The funding from the Port of Halifax is offset by a $2,000,000 HRM contribution to a complementary Port of Halifax project supporting goods movement.

The most recent project cost estimate is $150 million, based on a preliminary, Class 'D' construction estimate with a 25% contingency. This was updated in collaboration with the Design Build Team. The current budget includes design fees, property acquisition, construction costs, and also includes the costs for Halifax Water's planned capital work. The cost-sharing agreement with Halifax Water is still being finalized as is Halifax Water's approval to proceed from the Nova Scotia Utility and Review Board. The values of cost sharing from the NTCF, the Port of Halifax and the Province are fixed based on the original agreement; per the agreement, any additional costs are the responsibility of the Municipality.

The increase in costs to HRM is largely due to inflation, additional costs of the new overpass structure, material costs, traffic control, and construction of temporary roads/detours. The updated project costs are reflected in the proposed 2025-2026 Capital Budget, which will be subject to a separate approval.

The project design continues to be confirmed and refined. Project estimates may change, however current estimates are becoming more accurate through the progressive design build process with our designers and contractors. Further substantial estimate deviations are not currently anticipated.

ALTERNATIVES

1. Regional Council could choose not to proceed with the Windsor Street Exchange Redevelopment project and direct staff to cease further design efforts and release their retained consultants and staff. The implications of this alternative would be:
   a. The Municipality would forgo $34.25 Million in combined funding from the Federal and Provincial governments.
   b. Key active transportation connections and transit performance improvements would not be made.
   c. Port access and general traffic performance would remain unchanged and further degrade over time.
   d. Critical Halifax Water capital projects would have to proceed separately, negating cost-sharing benefits and reduction to construction impacts to the public. Those budgets could then be used for other capital priorities.
   e. The Municipality would be required to fund the costs to date for design, consultants and other works without any cost sharing from other parties.

LEGISLATIVE AUTHORITY

The *Halifax Regional Municipality Charter*, S.N.S. 2008, c. 39, provides:

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ATTACHMENT

None

If the report is released to the public, a copy can be obtained by contacting the Office of the Municipal Clerk at 902.490.4210, or Fax 902.490.4208.

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