P.O. Box 1749
Halifax, Nova Scotia
B3J 3A5 Canada

Item No.12.1.2
Transportation Standing Committee
October 27, 2022

TO: Chair and Members of Transportation Standing Committee

SUBMITTED BY: [redacted]

Jacques Dubé, Chief Administrative Officer

DATE: October 13, 2022

SUBJECT: **Dartmouth North Active Transportation Planning Project**

ORIGIN

This report was staff initiated as per:

- Action #72 of Halifax's Integrated Mobility Plan (IMP): Deliver the Regional Centre all ages and abilities bicycle network by 2022.
- Recommendation #20 of the Halifax Active Transportation Priorities Plan 2014-2019: To achieve the goal of doubling of AT mode share, the Municipality needs to focus AT plan implementation for cycling on the types of infrastructure preferred by new bicyclists.
- Recommendation #23 of the Halifax Active Transportation Priorities Plan 2014-2019 states that when making decisions about potential trade-offs needed to establish bicycle lanes in the Regional Centre, there should be:
    1. More detailed review of each corridor under criteria listed in Appendix E of the plan;
    2. Public engagement; and
    3. Regional Council approval.

LEGISLATIVE AUTHORITY

Halifax Regional Municipality Charter:
322(1) Council may design, lay out, open, expand, construct, maintain, improve, alter, repair, light, water, clean and clear streets in the Municipality.

Motor Vehicle Act, R.S., c. 293, as amended:
90 (3) The traffic authority may also mark lanes for traffic on street pavements at such places as they may deem advisable, consistent with this Act and may erect traffic signals consistent with this Act to control the use of lanes for traffic.

Administrative Order One, the Procedures of Council Administrative Order,
Schedule 7, Transportation Standing Committee Terms of Reference:

7(b) The Transportation Standing Committee shall… (b) promote and encourage the Municipality's Active Transportation corridor initiatives which supports the overall Transportation Strategy as outlined in the Regional Plan.

RECOMMENDATION

It is recommended that the Transportation Standing Committee recommend that Halifax Regional Council:

1. Approve the installation of 2.2km of bicycle facilities in Dartmouth North through Farrell Park, Farrell Street, Victoria Road and Highfield Park Drive as described in the *Discussion* section of this report.

2. Direct Chief Administrative Officer to consider planning and implementation of opportunities for other Dartmouth North mobility improvements including a corridor functional plan for Victoria Road and local street enhancements as identified by this planning study and described in the *Discussion* section of this report.

EXECUTIVE SUMMARY

This report describes a recommended route and bikeway facility through Dartmouth North connecting the Wyse Road bike lanes to the Burnside Greenway. This route is an important segment of the Regional Centre All Ages and Abilities (AAA) Cycling Network which was proposed in the Integrated Mobility Plan and approved by Council in 2017. If approved, this project would provide a safe and comfortable regional bikeway connection through Farrell Park and along Farrell Street, Victoria Road and Highfield Park Drive.

The recommended bikeway facility also addresses barriers for people walking and cycling in Dartmouth North. During two rounds of public engagement from July - December 2021, the four-lane section of Victoria Road between Albro Lake Road and Highfield Park Drive was the central concern for local residents when discussing barriers to active transportation in their community. The recommended cycling route adds two crossings of Victoria Road at Farrell Street and Highfield Park Drive and adds a missing sidewalk segment on Victoria Road. This planning study also identified the need for other local street and pathway enhancements as well as a corridor study for Victoria Road between Albro Lake Road and Highfield Park Drive to achieve further improvements for all road users.

BACKGROUND

Policy Rationale

The recommended bikeway in Dartmouth North supports HRM's goal to implement modern bicycle infrastructure that is safer, connected, and comfortable for residents of all ages and abilities. The project uses the most recent engineering design guidance to provide better safety for the vulnerable road users from motor vehicles and manage interactions among all road users. The project aligns with the following HRM policies:

- **Integrated Mobility Plan (IMP):** AAA bicycling facilities on streets with high motor vehicle volumes and/or speeds typically provide people riding bicycles with some form of physical separation from traffic. Proposed changes to the street also support the complete street objectives of the IMP.
- **Regional Municipal Planning Strategy:** the proposed bikeway supports the Regional Plan's transportation objectives and modal share targets.
- **Making Connections: 2014-19 Halifax Active Transportation Priorities Plan:** A cycling route is identified through Dartmouth North to connect the Wyse Road Bike Lanes to the Burnside Greenway.

- **HRM's Strategic Road Safety Framework:** the proposed bicycling facility aligns with two of the seven "emphasis areas" in the plan: *bicyclist collisions* and *intersection related*. Protected bicycle lanes are one of the identified countermeasures in the plan.
- **The Centre Plan (Package A):** provides corridor designation to Victoria Road but notes that it does not have adequate pedestrian crossings. The Centre Plan (Package A) also notes that the community node on Highfield Park Drive near Victoria Road does not have adequate pedestrian or active transportation links to the surrounding community. This cycling route addresses both of these issues noted in the Centre Plan.

Baseline Information and Project Context

The original Dartmouth North segment of the AAA Regional Centre Cycling Network, pictured in Fig.1, proposed travel along local streets. This candidate route consisted of Local Street Bikeway improvements to Farrell Street, Catherine Street, Brule Street and Pinecrest Street as well as pathway improvements to Farrell Park and Jason McCullough Park.

An Existing Conditions report was prepared upon project initiation in May 2021 with a focus on these local streets for traffic data, parking utilization, Transit data, survey data and sidewalk rating data as well as land use characteristics[1].

A Level of Service analysis for motor vehicles was conducted in May 2021 for major intersections within the project area based on available traffic data. Notably, the level of service for cars is high for this area where arterial and major collector roadways have multiple traffic lanes and dedicated intersection turning lanes.

Fig.1. Planning Context – Proposed Regional Centre AAA Bicycle Network, Integrated Mobility Plan

Dartmouth North is zoned for mixed commercial and residential uses. Many of the Dartmouth North commercial developments include multi-residential buildings and are classified as affordable housing. The "Building Poverty Solutions: Ideas for Action" report (2018) by United Way Halifax and the Halifax Regional Municipality identified that Dartmouth North has the highest rate (33.6%) for the poverty indicator (Individuals' Poverty Rate) out of all twelve geographic areas analyzed in HRM. While Dartmouth North faces certain socioeconomic challenges, it also has a vibrant community structure with various organizations providing services and advocating for Dartmouth North residents.

During the Urban Renewal planning phase through the 1960's, Victoria Road was envisioned as part of a network of inner city highways. To this day, the Cogswell interchange and Victoria Road north of Albro Lake Road are relics of car-centric planning that did not prioritize pedestrian and cyclist infrastructure. Four lanes of fast-moving traffic with widely spaced designated crossings mean that residents must walk significant distances in the wrong direction or risk crossing four lanes of traffic at an uncontrolled location. The design of Victoria Road is a major barrier to accessing community destinations for people walking and cycling, as it passes through a densely populated neighbourhood with important community destinations on either side.

In addition to the three schools in Dartmouth North[2] the following two areas have clusters of important community destinations abutting Victoria Road:

[1] For further detail on the Dartmouth North Existing Conditions context see Attachment A.

[2] John MacNeil Elementary School located on Leaman Drive, John Martin Junior High School located on Pinecrest Drive, and Harbourview Elementary School located on Alfred Street.

- Highfield Park Drive near Victoria Road: The Dartmouth North Library provides free internet access, childcare programs, access to a community kitchen cooking programs. The Dartmouth North Community Centre with a new playground facility is also at this location and provides youth sports programs as well as an open family gym program and a wide variety of municipal recreation programs. The Highfield Park Drive Transit Terminal is also at this location and provides important bus connections to other parts of the municipality.
- Primrose Street and Farrell Street at Victoria Road: The Lawton's Drugstore at the former Sobeys location on Primrose Street is where many residents buy food and access pharmacy services. The North Grove next door to Lawton's provides childcare, a community food centre, access to an urban farm and other important community services. The Dartmouth Boys and Girls Club is located on the other side of Victoria Road on Farrell Street and provides childcare as well as other family and community programs.

These two areas were also identified in the Centre Plan, which has assigned a portion of Victoria with a Corridor Designation[3] to help "create a safe, attractive, comfortable and accessible public realm for people of all ages and abilities." The Centre Plan notes that Victoria Road north of Albro Lake Road does not include adequate pedestrian infrastructure or safe crossings. The Centre Plan also assigns Centre Designation to Highfield Park Drive between Joseph Young Street and Victoria Road, noting that "…the future vibrancy of this center will require easy access for pedestrians, cyclists, and transit users"[4]. The route and facility type developed for this 30% design project address the issues with the existing conditions for people walking and cycling in Dartmouth North, as described below.

DISCUSSION

This section provides an overview of public engagement findings, the recommended facility type, implications of the recommended option, and the proposed implementation strategy. This information is based on the functional planning process and the 30% designs that have been produced. There will be further refinements as part of preliminary/detailed design, but the overall approach and implications will be consistent with the proposed bicycle facilities and related changes to the right-of-way described below.

Public Engagement Overview

Meaningful public engagement was an important component of this planning process. Where income rates are lower in Dartmouth North relative to municipal averages, personal computer or mobile device ownership could not be assumed. Therefore, while following HRM's pandemic safety guidelines, engagement activities took place in person in the form of pop-up events in strategic community locations and in-person community meetings. To further raise awareness about the project, three colorful "art bikes" with project information written onto the tires were placed in three community locations. A full list of engagement activities is outlined in the Community Engagement section below.

During Round 1 public engagement throughout summer 2021, survey questions were broad in scope to help the project team understand existing travel patterns and barriers to accessing destinations by walking, rolling, and cycling.

Key Public Engagement Findings

Strong community interest in addressing safety and connectivity for people walking on Victoria Road:

- Victoria Road at Highfield Park Drive: fast traffic flow through the intersection, wide turning radius and quick right turns prone to rolling stops. It is not seen to be a comfortable environment for pedestrians or cyclists crossing from Trinity Avenue and Nadia Drive.
- Victoria Road at Farrell Street: there are transit stops and childcare facilities on either side of Victoria Road at Farrell Street. The existing signalized crossings are too far apart, causing residents

[3] Page 72, Regional Centre Secondary Municipal Planning Strategy (Package A).
[4] Page 57, Regional Centre Secondary Municipal Planning Strategy (Package A).

to run across four lanes of traffic at Farrell Street.
- Interventions on Victoria Road to control pedestrian flow, such as the pedestrian overpass, chain link fence, and concrete barriers are often counter to desired routes and destination.

Concern for viability of route bikeway connection on local streets:
- Some residents reported not feeling personally secure after dark along the pedestrian overpass and through Jason McCullough Park. For some long term residents of Dartmouth North, the historic crime rate of the area impacts feelings of personal security.
- Residents note the importance of recapitalizing and improving the conditions of local streets and pathways but expressed concerns with a cycling route through this area as was proposed in the IMP.
- Residents noted that after dark, many pedestrians prefer to walk along Highfield Park Drive and Victoria Road as they are well lit and with many cars passing have "eyes on the street".

> *"I think it's important for active transit infrastructure to be visible; as more people use it, more people see it being used and I think that can help encourage them to use it or at least support it more. While I enjoy riding on side streets, I usually feel relatively safe and visible, whereas I would not feel safe sharing the road or taking the lane on… Victoria Rd., so think that adding infrastructure would have a greater impact."*
>
> – Survey Respondent

These concerns informed the development of concept options, one of which was a cycling route along Victoria Road and Highfield Park Drive. During Round 2 public engagement, 65% of survey respondents indicated that this would be their preferred cycling route option. The proposed route along Victoria Road and Highfield Park Drive is direct and convenient for cyclists and addresses local residents' concerns. The other two cycling route options on local streets each received 17% support respectively[5].

Throughout the second round of engagement, active transportation advocacy groups were also consulted on the cycling routes and facility types. During this consultation, support for separated bicycle facilities was expressed. Separated bike lanes create designated roadway space for cyclists, as opposed to Multi-Use Pathways which combine pedestrians and cyclists.

[5] See Attachment B for concept options presented to the public for input.

AAA Cycling Route Selection Process

Throughout the planning process it became evident that the AAA cycling route proposed in the IMP using local streets (Fig. 1) did not address the primary concerns of Dartmouth North residents in addressing barriers to active transportation. The preferred cycling route pictured in Fig.2 does address these concerns, improving access to destinations on either side of Victoria Road while also providing a more direct route for those commuting from downtown Dartmouth to Burnside and beyond. Improving infrastructure for cyclists and pedestrians along Victoria Road and Highfield Park Drive will help achieve the Complete Streets goal to have roadways serve as important public spaces in addition to being throughways for vehicle traffic.

One of the concept options taken forward during the second round of public engagement proposed a new signalized crossing at the Farrell Street-Victoria Road intersection via Farrell Street Park. This Farrell Street segment was noted by many participants as the preferred connection to Victoria Road, as it routes cyclists through a park setting and provides a signalized crossing at the Victoria Road-Farrell Street intersection. Therefore, the preferred cycling route pictured in Fig 2. is a hybrid of two route options that were put forward for consultation.

Fig. 2. Recommended Dartmouth North AAA cycling route

Proposed Facility Type

The proposed facility type for Victoria Road and Highfield Park Drive is protected bi-directional bike lanes. Where right-of-way widths allow for separated facilities along Victoria Road and Highfield Park Drive, bi-directional bike lanes are proposed to reduce user conflicts and make travel safer and more convenient for people walking & rolling and cycling. Separating people walking and biking improves conditions for people of all ages and abilities, including seniors, those using assistive devices such as wheelchairs and blind or partially sighted people.

Highfield Park Drive

A method such as pre-cast concrete bikeway barriers and temporary transit platforms are recommended to form on street bi-directional bike lane along Highfield Park Drive from Victoria Road to the Burnside Greenway. This treatment is recommended on Highfield for ease of future BRT implementation. On street parking would be removed along the south side of Highfield Park Drive but retained on the north side. Where all businesses and multi-unit residential buildings have dedicated parking lots, parking demands are anticipated to be met by one side of on-street parking. Fig. 3 below shows a typical cross section for Highfield Park Drive with a bi-directional bike lane beside the sidewalk on the south side of the street.

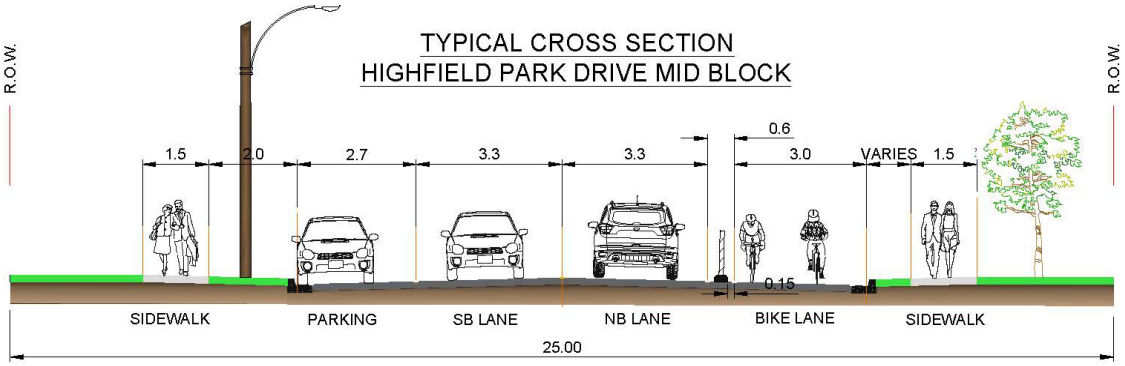

Fig 3. Cross section illustration of proposed Highfield Park Drive bi-directional bike lane

Victoria Road

On street bi-directional bike lanes are also proposed for Victoria Road between Farrell Street and Highfield Park Drive. These bike lanes would be added to the east side of the street in the wide grassed buffer area between the sidewalk and the travel lanes. Fig.4 below shows a typical cross section with varying boulevard widths.

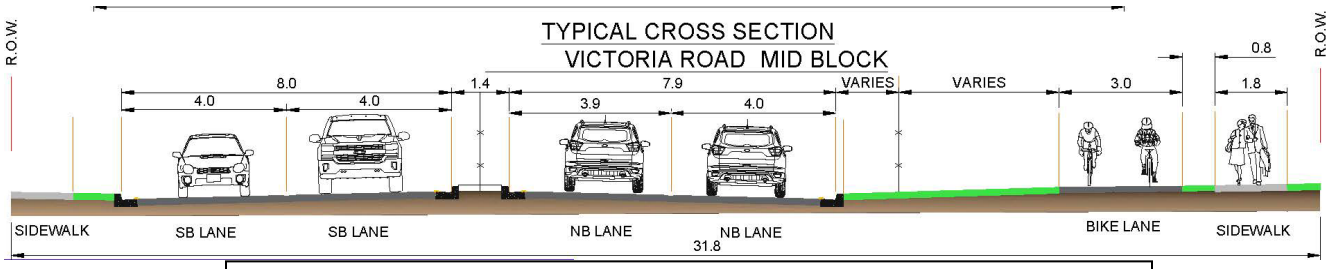

Fig 4. Cross section illustration of proposed Victoria Road bi-directional bike lane

This design also proposes a new sidewalk connection and bi-directional bike lane from the existing sidewalk at Brule Street Park to Highfield Park Drive. The addition of sidewalk and bike lane facilities on the east side of Victoria Road would provide a new access point from Brule Street Park to the destinations on Highfield Park Drive, including the Dartmouth North Library and Community Centre and Transit Terminal.

Farrell Street

On-street bi-directional bike lanes are the current recommended facility type for Farrell Street and would be added to the south side of the street as shown in Fig.5. However, as discussed below, further design and consultation are required to finalize the AAA facility type for Farrell Street.

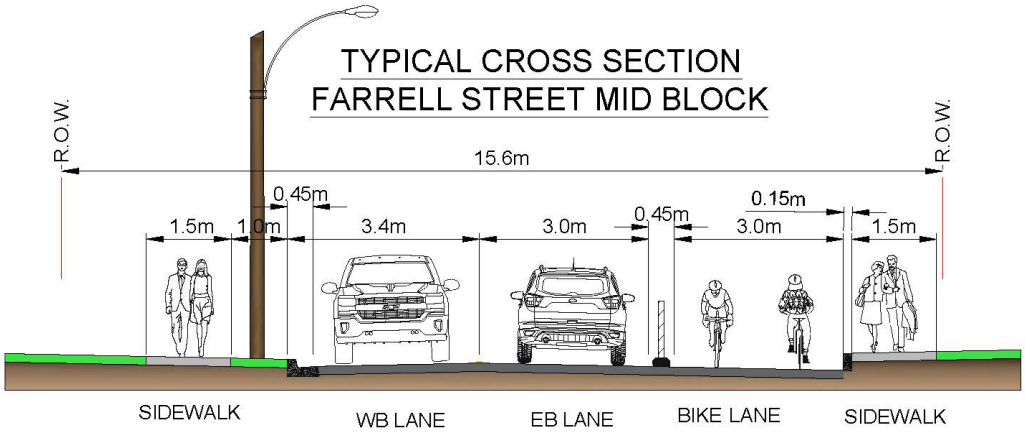

Fig 5. Cross section illustration of proposed Farrell Street bi-directional bike lane

A “yield street” concept is proposed for a block and a half of Farrell Street. This street concept allows two-way traffic and a single parking lane to overlap in a space that is sufficient for two vehicles to pass each other. When vehicles are parked, they form a natural obstruction to traffic flow and vehicles will need to stop to allow opposing traffic to pass.

Adjacent to the yield street is a bi-directional bike lane delineated with pre-cast concrete bikeway barriers. The existing asphalt curb must be removed in order to provide sufficient space for the bike lane at street grade. A new curb is assumed at the front of sidewalk, but an alternative may be preferred if this

bike lane and yield street are implemented in advance of a more complete recapitalization (see implementation discussion below). While the bi-directional bike lane is the current preferred facility type, additional design and consultation work is required to confirm this option. This is because of:

1. Concerns raised by local residents late in the planning process;
2. The potential need for internal approval of a narrower curb-to-curb width; and
3. The recent initiation of a planning study for Windmill Road that could justify a bike facility on the full length of Farrell Street.

Another All Ages and Abilities facility such as a multi-use pathway or local street bikeway could be implemented depending on these considerations.

Farrell Street Park

A bi-directional bike lane is also proposed for Farrell Street Park in addition to pedestrian pathway improvements as pictured in Fig 6. Farrell Street Park is owned by Nova Scotia Power but has a lease agreement with HRM. Nova Scotia Power staff were consulted during engagement, and no design or implementation issues were identified. This bi-directional bike lane would extend from Farrell Street Park to the Wyse Road-Albro Lake Road intersection via the existing street to street walkway.

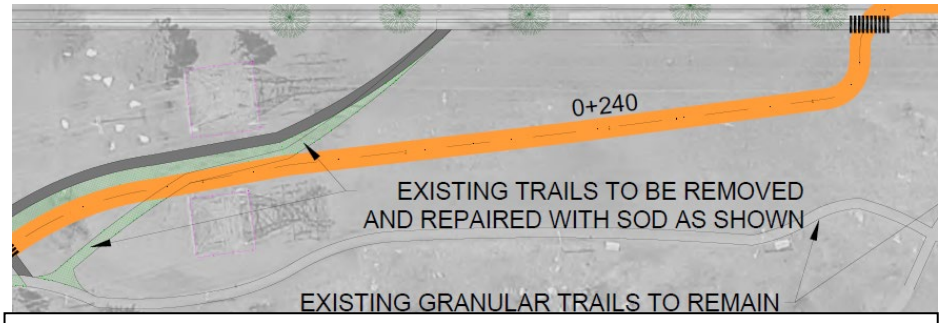

Fig 6. Proposed bi-directional bike lane pictured in orange alongside pedestrian pathway improvements.

Intersection Treatments

The 30% Designs for the Dartmouth North cycling route includes two major intersections. Dartmouth North residents provided feedback about the two intersections below being particularly difficult to cross and also being important links between community destinations.

Fig 7. Illustration of proposed Victoria Road at Highfield Park Drive Intersection

Victoria Road at Highfield Park Drive

The intersection design pictured in Fig. 7 proposes:

- Removal of the right turn lane to decrease the crossing distance and accommodate AT facilities.
- A bi-directional protected bike lane and sidewalk on the east side of Victoria Road to allow AT users to turn onto Highfield Park Drive.
- A gap in the precast concrete bikeway barriers to facilitate pedestrian crossings.
- A new pedestrian signal head to accompany this change to the crosswalk.
- Truck access to be maintained through this intersection with a relocation of the center traffic median on Highfield Park Drive.

Victoria Road at Farrell Street

The intersection design pictured in Fig. 8 proposes:

- A new signalized crossing at the intersection of Farrell Street and Victoria Road.
- Widened median on Victoria Road to facilitate safer pedestrian crossings.
- A half signal with separate bicycle signals and pedestrian signals for the two independent crossings. Coordination with the signal at Primrose Street will be necessary to ensure queues are cleared.
- Transit stops at this location modified to improve service and reduce user conflict. The northbound layby is eliminated, and the bike lane diverted outside the passenger area. The southbound stop is relocated slightly south to avoid interaction with the new crossing.

Fig 8. Illustration of proposed Victoria Road at Farrell Street Signalized

Maintenance and Operations

The mix of raised and street-level protected facilities along Highfield Park Drive could pose challenges for snow clearing equipment and routing. Staff anticipate the proposed bi-directional street-level bicycle lanes could require the removal of snow from the street to enable all street functions to continue to operate. This will add to the cost of winter maintenance. Estimated maintenance costs are outlined below in the Financial Implications section.

Transit

The preferred bikeway option would accomodate transit stops with raised accessible platforms.

Highfield Park Drive and Victoria Road are both proposed routes for the Bus Rapid Transit (BRT) expansion, with proposed dedicated transit lanes in each direction. For Highfield Park Drive, incorporating both dedicated cycling facilities and dedicated bus lanes in this corridor puts pressure on the right-of-way to accommodate all modes in the space available.

HRM staff discussed the opportunities available with respect to implementation of cycling facilities and bus lanes. Although timelines for the Rapid Transit Strategy are not yet known, within the 25m ROW available it was determined that several options were viable. The 30% preferred bikeway option does not eliminate the possibility of a future bus rapid transit on Highfield Park Drive.

Urban Forest

No changes to the ROW are proposed that would require the removal of street trees. The 30% designs propose new street trees and will be explored further during preliminary and detailed design.

Emergency Access

No proposed changes to the ROW are anticipated to restrict the passage of emergency vehicles. There is a Halifax Regional Fire station on Highfield Park Drive that will be accommodated during design. As the design for each segment progresses further, there will be opportunity for review by emergency services.

Implementation

Implementation of this project is targeted for 2025. The exact implementation approach would be

determined during preliminary design and in conjunction with both larger road rehabilitation work and the results of multi-modal functional planning for Victoria Road. Some considerations for implementation will include:

- Adding pre-cast curb and bus stops beside existing curbs on Highfield Park Drive. This would allow for more significant redesign if and when funding for Bus Rapid Transit is approved.
- Permanent curb changes are required to narrow the Victoria Road at Highfield Park Drive intersection to add bike lanes and sidewalk.
- Adding bi-directional bike lanes on Victoria Road could happen in advance of more permanent ROW changes, as they are not on-street. However, further planning, design and budget processes are required to finalize the implementation approach.
- Adding a new signalized crossing of Victoria Road at Farrell Street could happen in advance of more permanent ROW changes to Victoria Road. However, further planning, design and budget processes are required to finalize the implementation approach.
- Farrell Street is currently identified for a significant rehabilitation. Before construction begins, further engagement with adjacent land-owners along the block and a half section of Farrell Street discussed above is recommended to inform the permanent bikeway facility type.
- Adding bi-directional bikeway through Farrell Park while aiming for further lighting and landscaping improvements. The Farrell Street Walkway is also identified for landscaping improvements and improved lighting.

Opportunity for Victoria Road Planning Study

A more comprehensive transportation planning study is needed to consider the role, function and design of Victoria Road between Albro Lake Road and Highfield Park Drive. While an important improvement for AT users, some Dartmouth North residents felt the proposed bi-directional bike lane would be inadequate to address the larger issue of speeding traffic and lack of safe pedestrian crossings between destinations on either side of Victoria Road.

The presence of wire fences and highway lighting along this segment of Victoria Road does not provide a neighborhood feel. As pictured below in Fig. 8, wire fencing currently prohibits pedestrian travel north bound on Victoria Road. Despite the area being fenced off and in close proximity to fast traffic, there are pedestrian desire lines along this section of Victoria Road near the Highfield Park Drive intersection. Although the pedestrian overpass pictured below in Fig 8 is a much-needed and well-used crossing, many residents feel that it is not a sufficient solution for pedestrians and cyclists. Through integration with the proposed 30% bikeway designs outlined above, there are opportunities to improve conditions for people walking, rolling and cycling along Victoria Road.

Fig. 8 Photograph of Victoria Road north bound. The grassy boulevard pictured right is the location of the proposed sidewalk and bike lane connection to Highfield Park Drive.

Suggestions heard during public engagement that could be taken under consideration for a Victoria Road functional plan include:

- The addition of green space, parkettes, improved street lighting and an urban tree canopy along the street boulevards.
- Opportunities to reduce vehicle travel speeds to improve safety.
- Design cues needed to accentuate the change in roadway context from “highway” to “residential neighbourhood” on Victoria Road south of Highfield Park Drive.

Victoria Road is slated for rehabilitation work in the next 3-7 years. There will be integration opportunities to accommodate the changes proposed in this 30% design at the intersections of Farrell Street and Highfield Park Drive. Additionally, in preparation of future rehabilitation work, a functional planning study is recommended to consider the role of Victoria Road holistically as a transit priority corridor, a future BRT corridor, a full-time truck route and a gateway to the Dartmouth North neighborhood.

Opportunities for Local Street Improvements and Community Connections

As discussed above, Brule Street and Pinecrest Drive were identified as Local Street Bikeway candidate routes in the IMP AAA Cycling Network. However, as a result of this planning process an alternate recommended route along Farrell Street, Victoria Road and Highfield Park Drive was identified as discussed above. Although not part of the preferred cycling AAA route, supportive recommendations are being put forward for Complete Streets improvements for Pinecrest and Brule streets. These improvements include widened sidewalks where possible and other accessibility features such as tactile walking surface indicators at the curb cuts. There are also landscaping and pathway resurfacing opportunities throughout Jason McCullough Park off of Pinecrest Drive.

Lack of connectivity in the street grid design was a theme that arose throughout the public consultation process. One of the route options taken forth for public consultation included a new roadway between Farthington Street and True North Crescent as a candidate bikeway connection to the Burnside Greenway from Farrell Street Park. Although this planning study did not identify Local Street Bikeways as the preferred AAA bikeway connection, a few residents provided positive feedback about this potential new roadway connection. This roadway connection has also been identified as a municipal priority for improving emergency vehicle access and general neighbourhood roadway connectivity.

Monitoring

To support IMP and AT Priorities Plan monitoring and evaluation objectives, staff are developing a comprehensive strategy to monitor the utilization of both individual bicycle facilities and the bicycling network. Central to this strategy is counts of riders from a mix of permanent and temporary counters. Two temporary counters are being installed along Victoria Road during fall 2022 to collect baseline data. The Dartmouth North bike lanes will be considered as future locations for permanent counters to gauge the impact of the facilities on active transportation.

Education and Promotion

As per IMP Action #78, staff are implementing the AT Promotion and Education Strategy by promoting the use of new facilities and by educating residents about new facilities and facility types as they are implemented.

FINANCIAL IMPLICATIONS

A Class C cost estimate was prepared based on the 30% design described above. This estimate was prepared using HRM’s 2021 unit costs. A total construction cost of $1,640,000 was estimated. The addition of a 35% contingency and a 4.286% net tax rate bring this to a total budget estimate of $2,310,000. Construction costs will be funded from Capital Project Account No. CR200007 – Regional Centre AAA Bikeways.

As discussed in the implementation plan above, much of the necessary work for this project could be coordinated with adjacent street reconstruction projects to improve delivery efficiency and cost savings. It should be noted that in response to recent supply chain issues, inflation, and fuel price rises construction costs in 2022 are much less predictable than in previous years.

Annual maintenance costs for bikeway projects average at about $10,000 per km per year and includes snow removal, surface maintenance and repairs. Where this project proposes 2.2km total bikeways, the estimated annual maintenance costs would be $22,000.

Depending on construction timelines, this project may fall under HRM's Regional Centre AAA Bikeway Network infrastructure funding agreement, HRM would pay 17% of the total construction cost, estimated at $392,700.

RISK CONSIDERATION

This section identifies risks and how they are being managed. Significant risks related to the recommendations in this Report are:

- Overall risk to vulnerable road users: The intersection of Highfield Park Drive and Victoria Road currently poses risks for vulnerable pedestrians, including children, seniors and the visually impaired. This intersection is commonly used by pedestrians, as it is the shortest route to the Dartmouth North Library, Transit Terminal, and Junior High School from the residences along Nadia Drive and Trinity Avenue. A concurrent left turn and pedestrian signal combined with a 30m crossing of six travel lanes is being managed by narrowing the intersection, adding protected bike lanes, sidewalks and intersection treatments that accommodate vulnerable road users. The intersection of Victoria Road and Farrell Street also currently poses risks for pedestrians, as there are important destinations on either side of Victoria Road and the nearest signalized intersection at Primrose requires pedestrians to travel over 140m in the wrong direction. This risk is being managed by adding a push-button activated half-signal to be timed with the existing traffic signals at Primrose. This will also help slow traffic along this stretch of Victoria Road where the road design leads to frequent speeding and unsafe conditions for pedestrians and cyclists.

- Risk to relationship with local community: If no further engagement is conducted along the aforementioned block and a half of Farrell Street, then there is a risk that HRM is not responding to concerns raised by residents during the final stages of this functional planning study. This is being managed by recommending that additional community engagement on Farrell Street be scoped into the preliminary design phase of this project, which is scheduled for 2022/2023. This engagement with Farrell Street residents will help ensure that community concerns are being addressed thereby reducing the risk to the relationship with the local community.

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Although significant, the risks are acceptable and manageable.

COMMUNITY ENGAGEMENT

Throughout two rounds of public and stakeholder engagement, residents were invited to learn more about the project and provide their feedback on current barriers to walking and cycling as well as cycling route options and designs. Information about the Dartmouth North Active Transportation Planning Project is available on the Shape Your City website, including summaries of public input in two *What We Heard Report* reports.

Public engagement activities for the Dartmouth North Active Transportation Planning Project included:

- **Stakeholder Interviews:** Initial scoping interviews were held with representatives from 8 community stakeholder groups.
- **Lived Experience Interviews**: Interviews were held with 6 long-time residents of Dartmouth North, including 5 women and 1 man, 1 youth, 2 seniors, and 2 people living with a disability.
- **Online Surveys:** Two surveys were open for public comment throughout August 2021 and November 2021. 181 online survey responses were submitted.
- **Paper Surveys:** Hard copy surveys were available at the Dartmouth North Public Library throughout both rounds of public engagement to provide an opportunity for feedback for those who do not own a personal computer or mobile device. 47 paper survey responses were submitted.
- **Pop-Up Events:** Five pop-up events were held in Dartmouth North throughout public consultation, with three at the Dartmouth North Library, one at the North Grove, and one at the Ecology Action Centre bike repair pop-up. Approximately 40 people engaged in discussions at the pop-ups.
- **Webinar Presentations:** For those unable to engage in person, two online presentations were delivered in November 2021.
- **Community Presentations:** A project presentation was delivered to 30 Grade 9 students at John Martin Junior High. Another project presentation was delivered to approximately 30 residents at the Islamic Association Mosque on Leaman Drive.
- **Community Stakeholder Meeting:** An in-person meeting was held with 9 community leaders, including two elected officials, two youth leaders and a representative from the Islamic Association.
- **Advocacy Stakeholder Meeting:** An on-line meeting was held with representatives from 4 local advocacy organizations, including an accessibility advocacy leader.
- **Mail Out:** All property owners within the study area in Dartmouth North were informed by mail in November 2021 about the planning project and were provided with staff contact information as well as dates and locations of engagement activities.
- **Online Promotion:** The public engagement sessions and online survey were promoted through HRM's @hfxgov social media channels including Facebook, Twitter and Instagram.
- **Community Promotion:** To ensure residents who do not own a personal computer or device were also aware of the project, three painted art-bikes with project information painted into the wheel wells were installed in strategic community locations. Posters promoting the project and engagement activities were also hung at the Dartmouth North Library.
- **Active Transportation Advisory Committee and Accessibility Advisory Committee** (ATAC): Staff presented to HRM's ATAC in February 2022.
- **30% Design Consultation:** Throughout June 2022, large display panels showing the preferred cycling route and facility types were installed at the Dartmouth North Library, the Boys and Girls Club on Farrell Street and the North Grove food center on Primrose Street. Informal review meetings were held with staff from each location to review the designs and receive feedback. Letters were also dropped off to property owners abutting the block and a half of Farrell Street between Victoria Road and Farrell Street Park. The preferred cycling route as well as the facility type for Farrell Street was outlined in the letter as well as an opportunity to provide feedback. A pop-up event was held on Farrell Street to discuss street designs with residents and receive feedback.

ENVIRONMENTAL IMPLICATIONS

No environmental implications were identified during 30% functional planning. However, AAA bikeways will make it easier for people to choose low-polluting transportation options by providing safer roadway crossings and better access to transit.

SOCIAL VALUE

All procurement of services to design and implement this AAA bikeway project will be subject to HRM's Social Value procurement policies.

ALTERNATIVES

Transportation Standing Committee could choose to recommend that Regional Council:

1. Not proceed with some or all the proposed bikeway in Dartmouth North due to the implications described in this report.
2. Proceed with the Dartmouth North AAA cycling route recommended in the IMP.

ATTACHMENTS

Attachment A: Dartmouth North Existing Conditions Information
Attachment B: Concepts Options Proposed During Round 2 Engagement

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A copy of this report can be obtained online at halifax.ca or by contacting the Office of the Municipal Clerk at 902.490.4210.

Report Prepared by: Chloe Kennedy, Active Transportation Planner, Public Works, 902-943-1746

ATTACHMENT A: Dartmouth North Existing Conditions Information

Mapping and Field Survey Data

Topographical GIS data and survey data were provided by HRM and were used to generate Study Area mapping. The data provided included survey files data for Highfield Park Dr, Trinity Ave, Pinecrest Dr, Crystal Dr, Brule St, Primrose St, Brule St, Farthington Pl, Farrell Park and parts of Albro Lake Road. Field data gathering included a walking tour of the study area to observe and document existing conditions (Monday, April 26, 2021).

Traffic Data

HRM provided peak hour traffic volume data for all signalized and several unsignalized intersections within the Study Area which were used to derive daily traffic volumes.

Englobe collected speed data for this project. Table 1 shows the four speed data collection locations, with results and other traffic data summarized in Tables 2 & 3.

Table 1 - Data Collection Locations Limits

Roadway	**Roadway Limits**	**Collection Dates**
Highfield Park Drive	Between True North Crescent and Burnside Drive	May 18-19, 2021
Pinecrest Drive	Between Crystal Drive and Brule Street	May 20-21, 2021
Albro Lake Road	Between Slayter Street and Sheridan Street	May 25-27, 2021
Leaman Drive	Between Jackson Road and Albro Lake Road	May 25-27, 2021

Table 2 – Dartmouth North Speed Data Results

Roadway	**Avg Hourly Volume**	**Avg Speed (km/hr)**	**85th Percentile Speed (km/hr)**	**% Vehicles Exceeding 50 km/hr**
Pinecrest Drive	59	32	<40km/hr	1%
Leaman Drive	154	36	<50km/hr	2%
Highfield Park Drive	380	46	<60km/hr	32%
Albro Lake Road	235	46	<60km/hr	32%

Table 3 – Major Roads Within the Study Area

Roadway	Street Class	# Of Travel Lanes	AADT	Sidewalks Present (Both Sides/One Side/None)	On-Street Parking (Both Sides/One Side/None)	Land Use Type
Albro Lake Road	Minor Collector	2	7,300	Both Sides	East Side/Both Sides	Residential/ Commercial
Highfield Park Drive	Minor Collector	2	9,500	Both Sides/ East Side	East Side/None	Residential/ Commercial
Leaman Drive	Minor Collector	2	2,000	South Side	Both Sides	Residential
Pinecrest Drive	Local	2	800	Both Sides	East Side	Residential/ Institutional
Victoria Road	Arterial	4	14,700	South Side	None	Link

On-Street Parking

In areas with limited right-of-way width, on-street parking is often a candidate for removal to create space for other street uses. The IMP considers on-street parking as typically a lower priority when compared to uses such as emergency/service vehicle movement, goods movement, and travel modes. Given the importance of parking in many areas and the impact that removal can have on residents and businesses, it is important to consider potential consequences.

An on-street parking study was completed for a number of streets on and near the proposed bikeway route. Many of these streets are abutted by residences and businesses with adequate off-street parking to serve the property. Because of this abundance of off-street parking, the proposed bikeway design is not expected to have significant impacts to street parking availability.

Observations for individual streets can be found in Table 4. Official counts were not collected for Highfield Park Drive, but utilization was observed to be low, again attributable to the ample off-street parking including dedicated parking lots for all businesses and multi-unit residential buildings. On-street parking is not permitted on Victoria Road north of Albro Lake Road.

Table 4 – Parking Utilization

Street	Parking Restrictions	Land-Use Type	Utilization
Alfred St	Unrestricted; No-Parking Permitted	School, Church, Single and Multi-Family Living	High-Medium
Brule St	Unrestricted	School, Single and Multi-Family Living	Medium-Low
Catherine St	Unrestricted; No-Parking Permitted	Single And Multi-Family Living	Medium
Crystal Dr	Unrestricted; No-Parking at Bus Stops	Convenience Store, Single and Multi-Family Living	Medium-Low
Farrell St	Unrestricted	Single And Multi-Family Living	Low
Leaman Dr	Unrestricted; No-Parking Permitted	School, Church, Single and Multi-Family Living	High-Medium
Pinecrest Dr	Unrestricted; No-Parking Permitted	Single And Multi-Family Living	Low
Albro Lake Rd	Unrestricted; No-Parking Permitted	Commercial, Single and Multi-Family Living	--
Highfield Park Dr	Unrestricted; No-Parking Permitted	Commercial, Office Space, Fire Station, Multi-Family Living	--

Existing Conditions Level of Service Analysis

Traffic conditions were modelled using Synchro 10, which is a traffic analysis software package that implements the Highway Capacity Manual (HCM) evaluation procedure. The intersection performance was evaluated mainly in terms of the level of service (LOS), which is a common performance measurement of an intersection. The LOS is determined based on vehicle delay and is expressed on a scale of A through F, where LOS A represents very short delay (<10 seconds per vehicle) and LOS F represents very long delay (>50 seconds per vehicle at a stop-controlled intersection and >80 seconds per vehicle at a signalized intersection). A LOS D is often considered acceptable in urban locations; however, some communities will accept a LOS E.

HRM provided peak hour traffic volume data for all signalized and several unsignalized intersections within the Study Area which were used to derive daily traffic volumes. Traffic data were collected between 2016-2019 (pre-Covid-19) and therefore were grown to 2021 present day volumes. A 1% annual growth rate was selected based on historical data for the HRM. LOS analyses were completed for the 2021 adjusted traffic volumes. The LOS results are summarized as follows:

- All unsignalized intersections operate at an overall excellent LOS A or higher during the peak periods.
- All signalized intersections operate at a very good LOS B or better during the peak periods with the exception of Albro Lake Road at Victoria Road which performs at satisfactory LOS C during the peak periods. All movements perform at acceptable LOS and no operational deficiencies related to traffic capacity were identified. The LOS results for the 2021 Adjusted Conditions are summarized in Table 5.

Table 5 – 2021 Level of Service Results

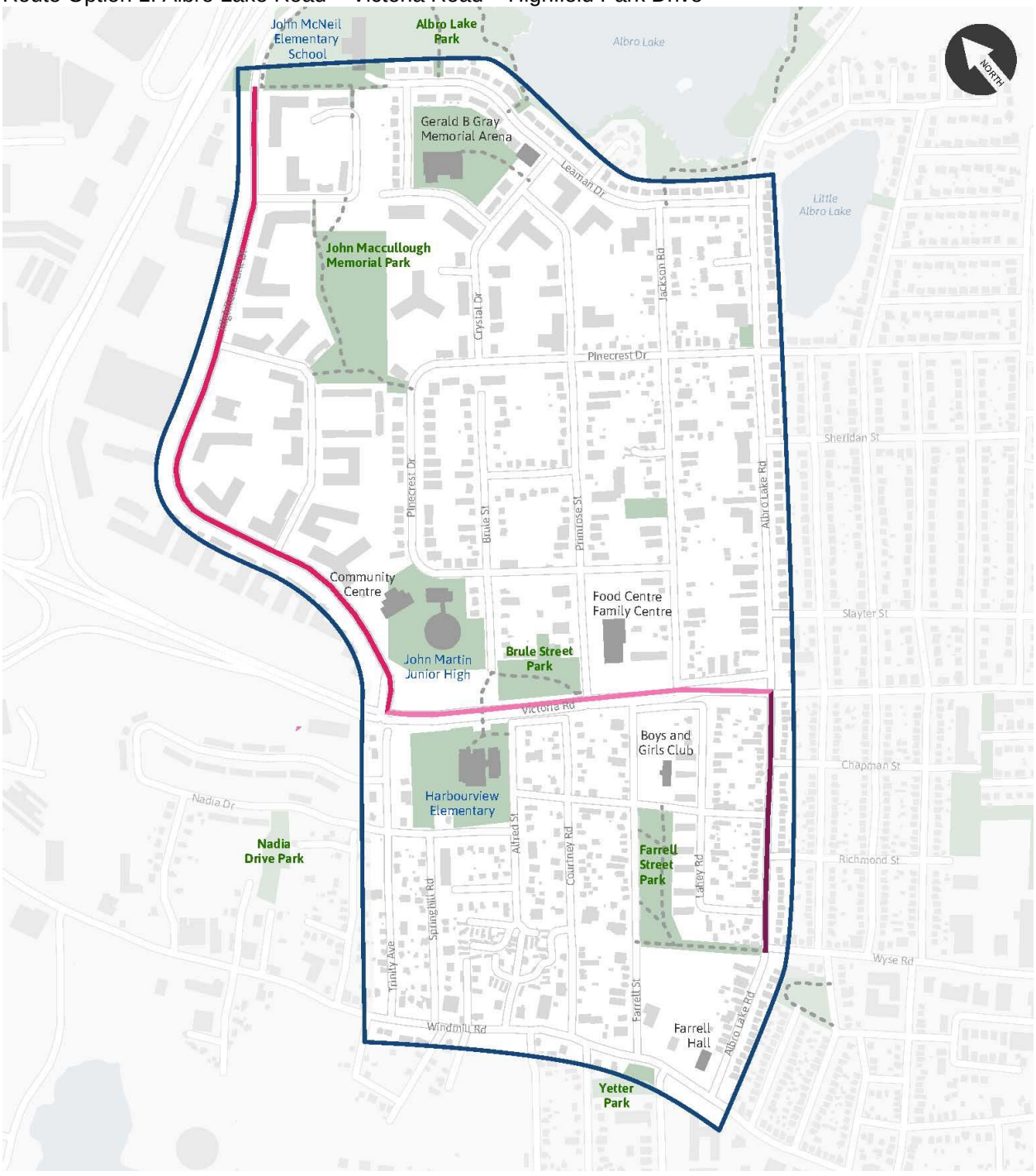
Intersection			Overall LOS & Delay (sec/veh)	Turning Movement LOS Average Delay (seconds per vehicle) [Volume to Capacity Ratio (v/c)] 95th Percentile Queue (m)											
				Eastbound			Westbound			Northbound			Southbound		
North-South Street @ East-West Street	Traffic Control	Time Period		L	T	R	L	T	R	L	T	R	L	T	R
Farrell St @ Windmill Rd	STOP	AM Peak	LOS A 1.1	Shared	A 0.5 [0.02] <1	-	-	A 0.0 [0.35] <1	Shared	-	-	-	C 16.8 [0.17] 5	-	C 16.8 [0.17] 5
		PM Peak	LOS A 2.4	Shared	A 0.9 [0.03] <1	-	-	A 0.0 [0.35] <1	Shared	-	-	-	C 24.6 [0.40] 15	-	C 24.6 [0.40] 15
Courtney Rd @ Windmill Rd	STOP	AM Peak	LOS A 1.0	A 8.8 [0.02] <1	Free Flow [0.34]	-	-	A 0.0 [0.36] <1	Shared	-	-	-	C 19.8 [0.18] 5	-	C 19.8 [0.18] 5
		PM Peak	LOS A 0.9	A 9.1 [0.03] <1	Free Flow [0.44]	-	-	A 0.0 [0.40] <1	Shared	-	-	-	D 26.5 [0.20] 6	-	D 26.5 [0.20] 6
Trinity Ave @ Windmill Rd	STOP	AM Peak	LOS A 0.7	A 8.6 [0.02] <1	Free Flow [0.32]	-	-	A 0.0 [0.32] <1	Shared	-	-	-	B 14.5 [0.10] 3	-	B 14.5 [0.10] 3
		PM Peak	LOS A 0.6	A 8.8 [0.02] <1	Free Flow [0.39]	-	-	A 0.0 [0.37] <1	Shared	-	-	-	C 17.7 [0.10] 3	-	C 17.7 [0.10] 3

Intersection			Overall LOS & Delay (sec/veh)	Turning Movement LOS Average Delay (seconds per vehicle) [Volume to Capacity Ratio (v/c)] 95th Percentile Queue (m)											
				Eastbound			Westbound			Northbound			Southbound		
North-South Street @ East-West Street	Traffic Control	Time Period		L	T	R	L	T	R	L	T	R	L	T	R
Primrose St @ Robert Burns Dr	STOP	AM Peak	LOS A 5.0	Shared	B 10.7 [0.15] 4	Shared	Shared	B 13.7 [0.08] 2	Shared	Shared	A 4.8 [0.09] 1	Shared	Shared	A 0.1 [0.0] <1	Shared
		PM Peak	LOS A 4.9	Shared	B 11.0 [0.18] 5	Shared	Shared	B 13.5 [0.08] 2	Shared	Shared	A 3.1 [0.06] 2	Shared	Shared	A 0.6 [0.01] <1	Shared
Highfield Park Dr @ Joseph Young St North	STOP	AM Peak	LOS A 1.6	-	-	-	B 12.0 [0.13] 3	-	B 12.0 [0.13] 3	-	A 0.0 [0.23] <1	Shared	A 0.3 [0.03] <1	A 1.1 [0.03] <1	-
		PM Peak	LOS A 1.1	-	-	-	B 11.8 [0.05] 1	-	B 11.8 [0.05] 1	-	A 0.0 [0.20] <1	Shared	A 1.3 [0.04] 1	A 1.3 [0.04] 1	-
Albro Lake Road @ Victoria Road		AM Peak	LOS C 24.2	B 10.1 [0.12] 10	C 28.5 [0.78] 115	-	B 10.0 [0.11] 7	C 22.9 [0.58] 80	A 0.1 [0.02] <1	C 20.7 [0.43] 38	B 15.8 [0.14] 19	Shared	C 28.9 [0.15] 13	C 30.3 [0.58] 46	Shared
		PM Peak	LOS C 27.7	B 10.4 [0.23] 18	C 35.0 [0.86] 177	-	B 10.1 [0.13] 8	C 21.4 [0.47] 70	A 0.1 [0.05] <1	C 31.6 [0.70] 47	C 21.1 [0.39] 47	Shared	C 31.3 [0.22] 13	C 34.8 [0.60] 40	Shared

Intersection			Overall LOS & Delay (sec/veh)	Turning Movement LOS Average Delay (seconds per vehicle) [Volume to Capacity Ratio (v/c)] 95th Percentile Queue (m)											
				Eastbound			Westbound			Northbound			Southbound		
North-South Street @ East-West Street	Traffic Control	Time Period		L	T	R	L	T	R	L	T	R	L	T	R
Primrose St @ Victoria Rd		AM Peak	LOS B 10.0	Shared	B 10.9 [0.62] 41	-	-	A 7.8 [0.43] 33	Shared	-	-	-	B 14.8 [0.55] 18	-	B 14.8 [0.55] 18
		PM Peak	LOS A 8.6	Shared	A 9.3 [0.56] 41	-	-	A 6.5 [0.37] 31	Shared	-	-	-	B 14.0 [0.48] 16	-	B 14.0 [0.48] 16
Highfield Park Dr @ Victoria Rd		AM Peak	LOS B 10.8	A 6.4 [0.25] 13	A 7.0 [0.16] 11	-	-	B 15.7 [0.40] 28	A 4.7 [0.38] 13	-	-	-	B 19.9 [0.46] 31	-	A 5.7 [0.19] 8
		PM Peak	LOS B 14.7	B 10.6 [0.33] 22	B 10.4 [0.25] 26	-	-	C 20.8 [0.59] 61	A 4.8 [0.47] 17	-	-	-	C 25.7 [0.66] 75	-	A 6.3 [0.29] 15
Albro Lake Rd @ Wyse Rd		AM Peak	LOS A 8.1	-	-	-	B 15.1 [0.22] 12	-	A 5.8 [0.35] 9	-	B 14.9 [0.19] 13	A 5.8 [0.21] 8	A 7.0 [0.43] 22	A 6.3 [0.09] 10	-
		PM Peak	LOS A 9.9	-	-	-	B 17.6 [0.37] 26	-	A 6.6 [0.60] 18	-	B 18.2 [0.41] 26	A 5.8 [0.32] 10	A 9.1 [0.50] 27	A 7.3 [0.14] 13	-

ATTACHMENT B: Concepts Options Proposed During Round 2 Engagement

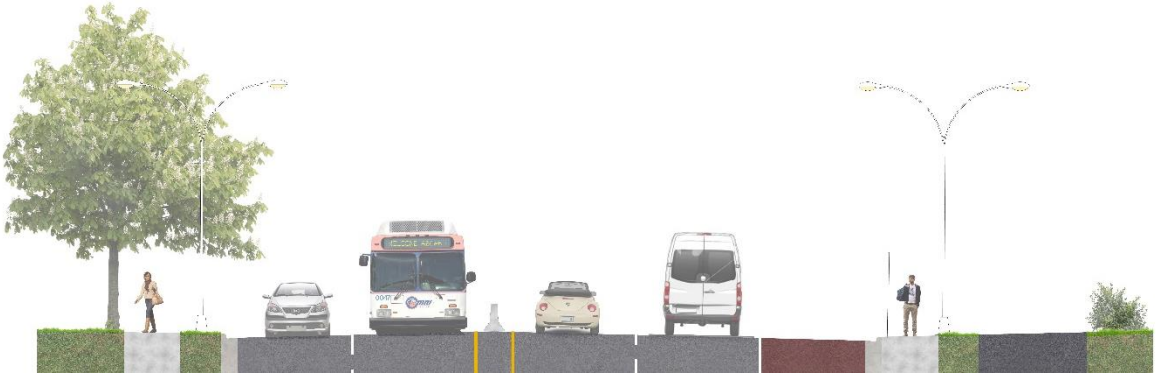
Route Option 1: Albro Lake Road – Victoria Road – Highfield Park Drive



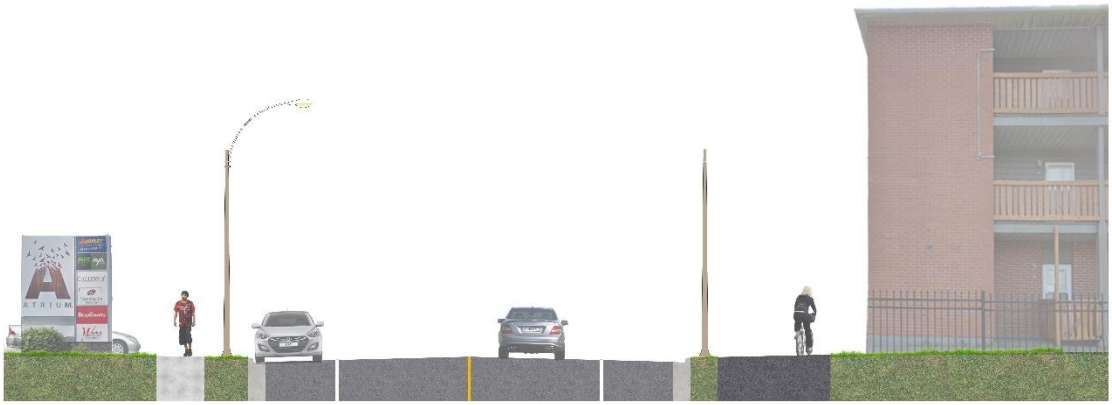
Cross Sections for Route Option 1:

Albro Lake Road Multi-Use Pathway

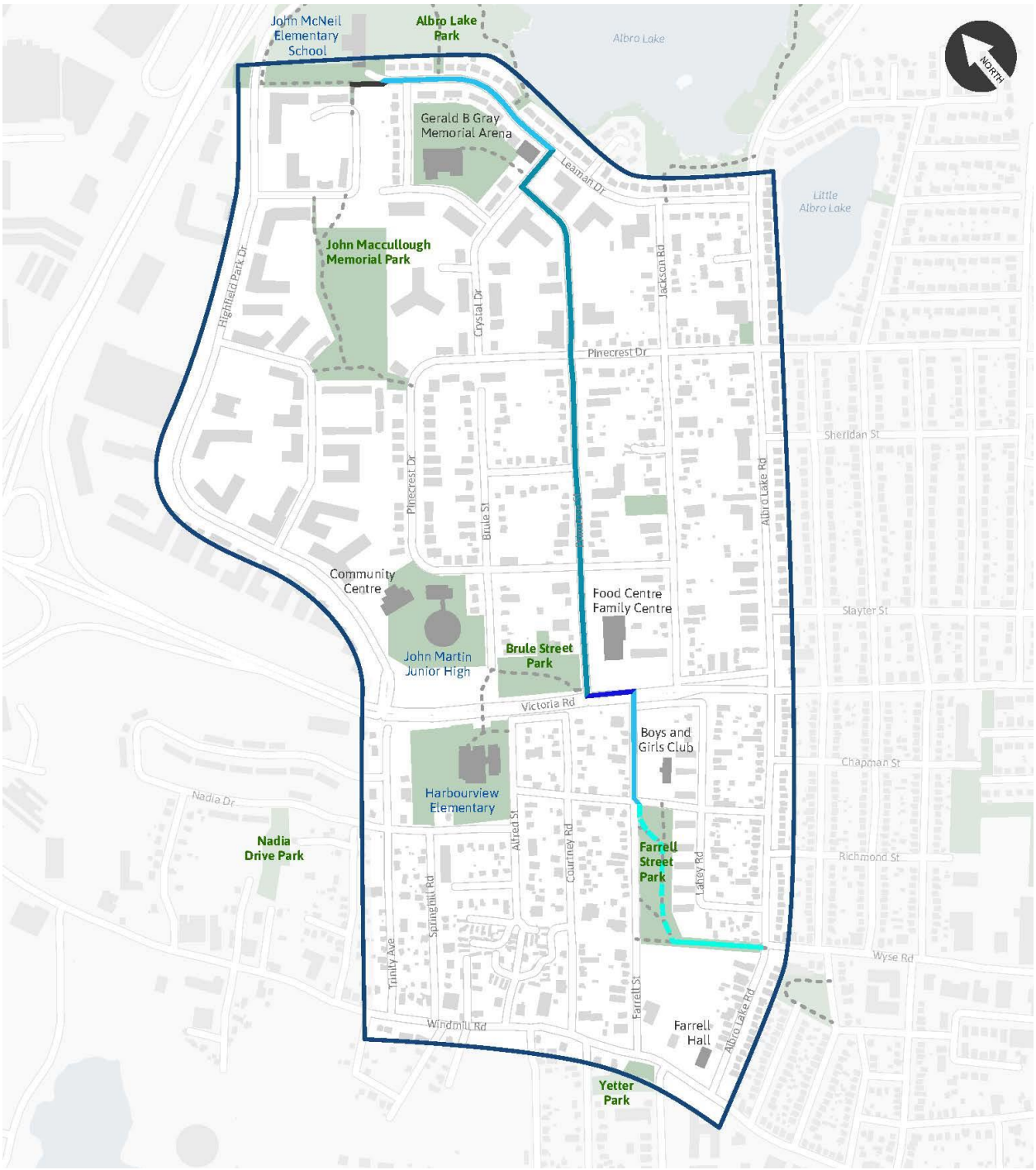
Victoria Road Multi-Use Pathway



Highfield Park Multi-Use Pathway



Route Option 2: Farrell Street Park – Farrell Street – Primrose Street – Leaman Drive



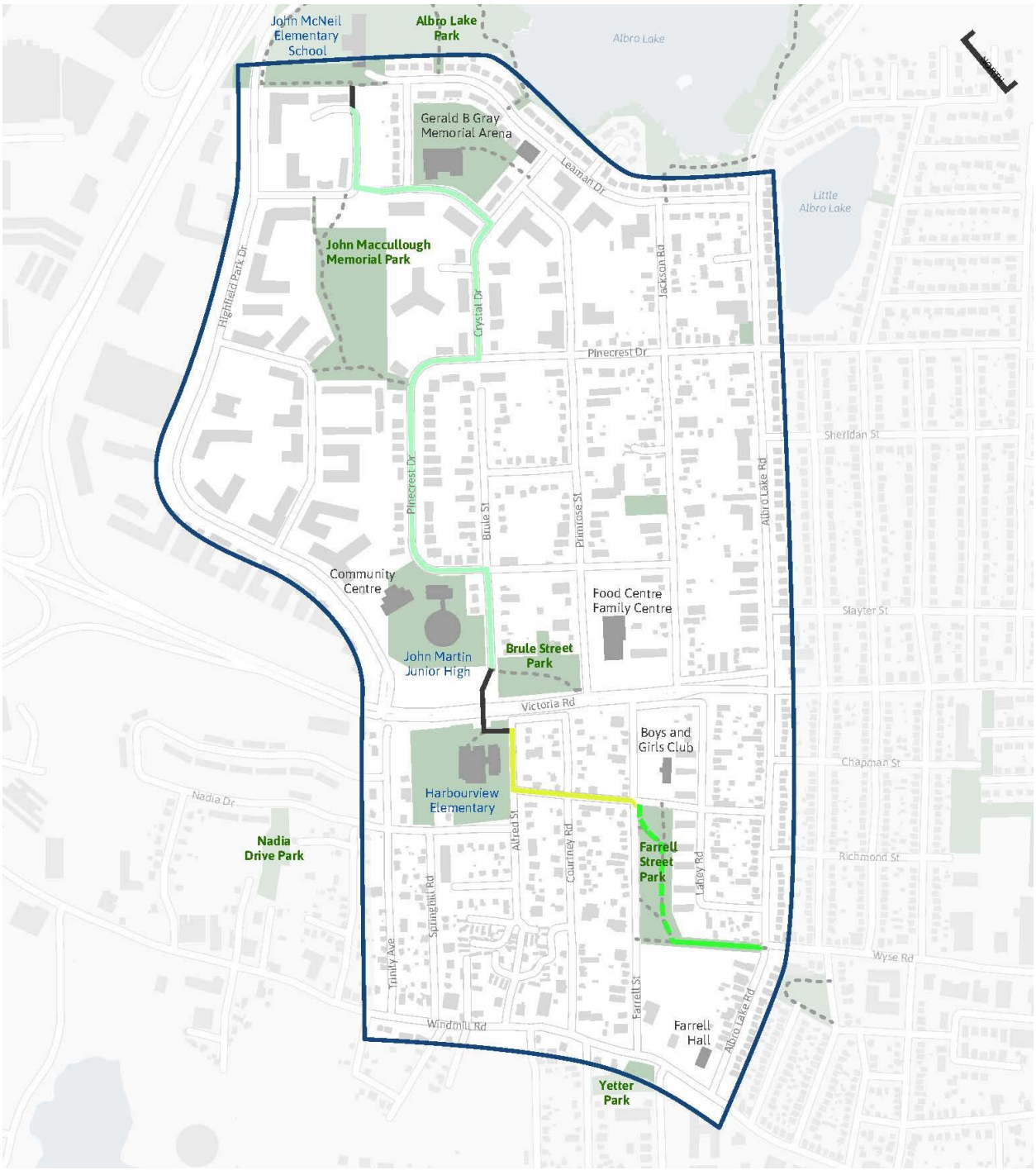
Cross Sections for Route Option 2:

Farrell Park Multi-Use Pathway

Farrell Street & Leaman Street Multi-Use Pathways

Primrose Street Buffered Bike Lanes

Route Option 3: Catherine Street – Brule Street – Pinecrest – True North Crescent



Cross Sections for Route Option 3

Catherine Street Local Street Bikeway

Pinecrest Drive Local Street Bikeway