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Item No. 12.1.2
Transportation Standing Committee
January 27, 2022

TO: Chair and Members of the Transportation Standing Committee

SUBMITTED BY: Original Signed

Jacques Dubé, Chief Administrative Officer

DATE: January 17, 2022

SUBJECT: **Implementation of Regional Centre AAA Bicycle Network: Almon Street Segment**

ORIGIN

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.

RECOMMENDATION ON PAGE 2

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 0.9 km of bicycle facilities and related changes to the right-of-way on Almon Street from Windsor Street to Gottingen Street as described in the *Discussion* section of this report.

BACKGROUND

Policy Rationale

The proposed Almon Street bikeway supports HRM's goal to implement modern bicycle infrastructure that is safer, connected, and comfortable for a wide range of residents and visitors. The project uses the most recent engineering design guidance to better separate vulnerable road users from motor vehicles and manage interactions among all road users. The project aligns with the following HRM policy:

- Integrated Mobility Plan (IMP): Almon Street is identified as a candidate bicycle route designed to be suitable for riders of all ages and abilities (AAA). 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: Almon Street is identified as candidate bicycle route.
- 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.
- July 2019 commitment from three levels of government to invest \$25 million in the AAA bicycling network.

The proposed bikeway will support goals for provincial and national active transportation corridors, including:

- Designation as part of the provincial Blue Route bicycle route network.
- The Almon Street corridor is part of implementing a cross-peninsula link between Trans-Canada Trail segments on the Eastern Shore and Dartmouth and the proposed Trans Canada Trail extension south and west to the Chain of Lakes Trail and beyond.

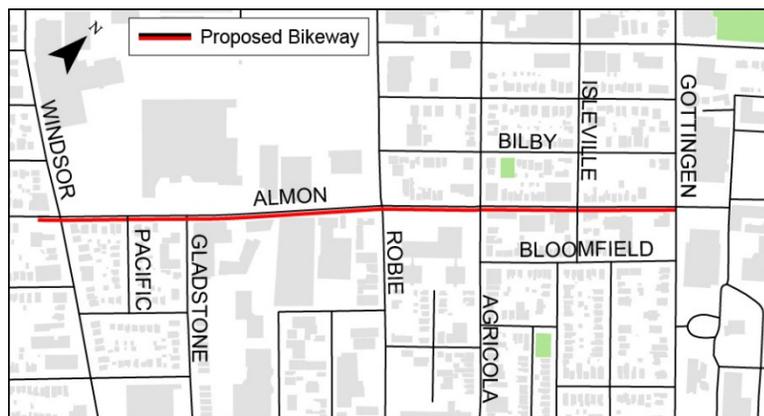
Figure 1: Planning Context – Proposed Regional Centre AAA Bicycle Network, Integrated Mobility Plan



Project Context and Baseline

This section describes the context of Almon Street, between Windsor Street and Gottingen Street. For further detail on the Almon Street context see Attachment A.

Figure 2: Almon Street Bikeway Study Area



Existing and Future Bicycle Network Connections

The proposed Almon Street bikeway would connect to several existing and planned AAA facilities:

- Existing Windsor Street painted bicycle lanes.
- Approved local street bikeway on Isleville Street (preliminary/detailed design underway).
- Approved local street bikeway on Liverpool Street from Windsor Street to George Dauphinee Avenue to connect to the West End Mall, Mumford Transit Terminal, and the route to the Chain of Lakes Trail via the recently completed Bayers Road multi-use pathway.

Current Context of Almon Street

Almon Street is one of only three east-west streets across the Halifax peninsula north of North Street. It connects the residential neighbourhoods west of Windsor Street to the mix of residential, recreational, institutional, and commercial uses east of Windsor, including the Halifax Forum, CNIB, Rona and CFB Halifax (Stadacona) at Gottingen Street.

The Almon Street segment under consideration is a 0.9km east-west major collector and is classified as a daytime truck route (trucks are 1-3% of total traffic). Vehicle volumes and speeds are high between Windsor and Robie Street (11,800 motor vehicles per day, 85th percentile speed is 52 KPH), dropping significantly east of Agricola Street (5,300 motor vehicles per day, 85th percentile speed is 39 KPH). The curb-to-curb width varies over the segment, from approximately 12m between Windsor Street and Agricola Street to 9.0m between Agricola Street and Gottingen Street. Almon Street has an uphill grade of approximately 4.5% from Connaught Avenue to Windsor Street and a downhill grade of approximately 2.5% from Windsor Street to Robie Street.

Over 50% of residents in the neighbourhoods adjacent to Almon Street walk, ride a bicycle or take transit to work, according to 2016 census data. For these same neighbourhoods, an average of 4% of all trips to work are made by bicycle.

The corridor is also poised for significantly increased residential and commercial densities. Three large scale developments along the corridor would add over 500 residential units, 12,677 square meters of commercial space and 4180 square meters of institutional space. In addition, the 1.3-hectare 2748-88 Agricola Street property (former Bloomfield School site) could see redevelopment with new residential and community space.

There is no existing or planned Halifax Transit service on Almon Street.

Parking Supply and Utilization in the Study Area

There are approximately 91 on-street parking spaces, including eight accessible spaces on Almon Street, and 285 spaces on adjacent streets. Table A-3 in Attachment A summarizes the parking supply in the study area. Figure A-1 in Attachment A shows the adjacent streets included in the on-street parking supply total.

Many of the commercial uses and multi-unit residential buildings in the study area provide their own off-street parking for customers, staff, and residents. These include Rona, Shoppers Drug Mart, Canada Post, and the Royal Bank. The Halifax Forum has 150 off-street parking spaces and sells 100 monthly parking passes, with the remainder of spaces available for hourly paid public parking. Future developments on the corridor propose to add over 600 parking spaces (allocation of spaces for the use of residents versus public use is not yet known).

An April/May 2018 parking utilization study found the average utilization along Almon Street (Windsor Street to Gottingen Street) to be low (42% average weekday occupancy 9:00am – 4:00pm), with occupancy even lower on side streets and various midblock sections. No individual block showed utilization higher than 70%. See Figure A-1 in Attachment A for a summary of parking utilization in the study area.

DISCUSSION

This section describes the project scope, an overview of public engagement outcomes, the recommended option, implications of the recommended option, and the proposed implementation strategy. Further information about the functional planning process, an overview of the options considered and more detail on the implications of the project can be found in Attachment A.

This information is based on the functional planning process and the 30% plans 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.

Project Objectives and Scope

A functional planning process was initiated in 2017 to identify preferred bikeway design options for the Almon Street corridor. The primary objective for the planning process in 2017 was to consider implementing a bicycle facility in conjunction with the 2017 recapitalization of Almon Street. Based on public and stakeholder feedback and Council adoption of the Integrated Mobility Plan, staff decided to focus on planning a safer, protected facility and to focus on Windsor Street to Gottingen Street. The objectives included:

- Develop a AAA bicycling connection along Almon Street from Windsor Street to Gottingen Street.
- Consider future connections to the proposed local street bikeway on Isleville Street and options for a connection from Windsor Street to George Dauphinee Avenue.
- Understand and accommodate other street uses (e.g., walking, transit, loading, accessible parking, parking).

Alta Planning & Design was retained to complete the functional planning and detailed design of an AAA facility.

Public Engagement Overview

All property owners along the candidate streets were informed by mail about the planning project and were provided with staff contact information twice. In response to the spring 2017 options, members of the public provided feedback at a public engagement session, through an online survey and through individual email communications. See the *Community Engagement* section on page 12 for more information about the engagement strategy and a summary of public and stakeholder feedback.

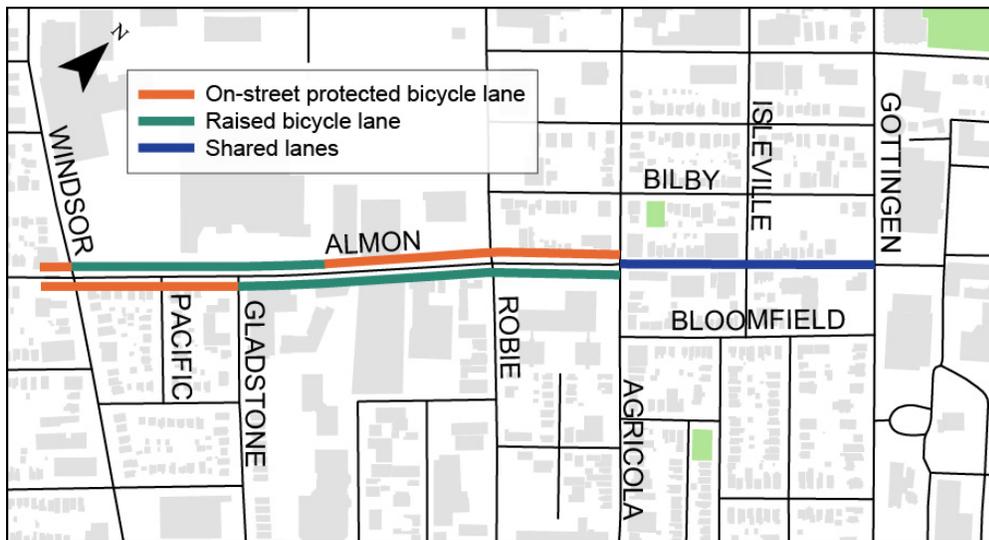
See page A-3 in Attachment A for more information on the functional planning process and an overview of the bikeway options considered.

Recommended Option

The recommended option is unidirectional protected bicycle lanes on both sides of Almon Street, from Windsor Street to Agricola Street. The bicycle lanes would be a combination of sidewalk level (raised) and street level (separated by pre-cast concrete curb) facilities (see Figure 3). The section between Agricola Street and Gottingen Street would be two single-file shared lanes.

Note that the illustrations and associated dimensions in this report and Appendix A represent a 30% design of the recommended option, which could change during preliminary and detailed design. Any changes to the right-of-way that don't meet HRM's Municipal Design Guidelines would require approval from the Municipal Engineer.

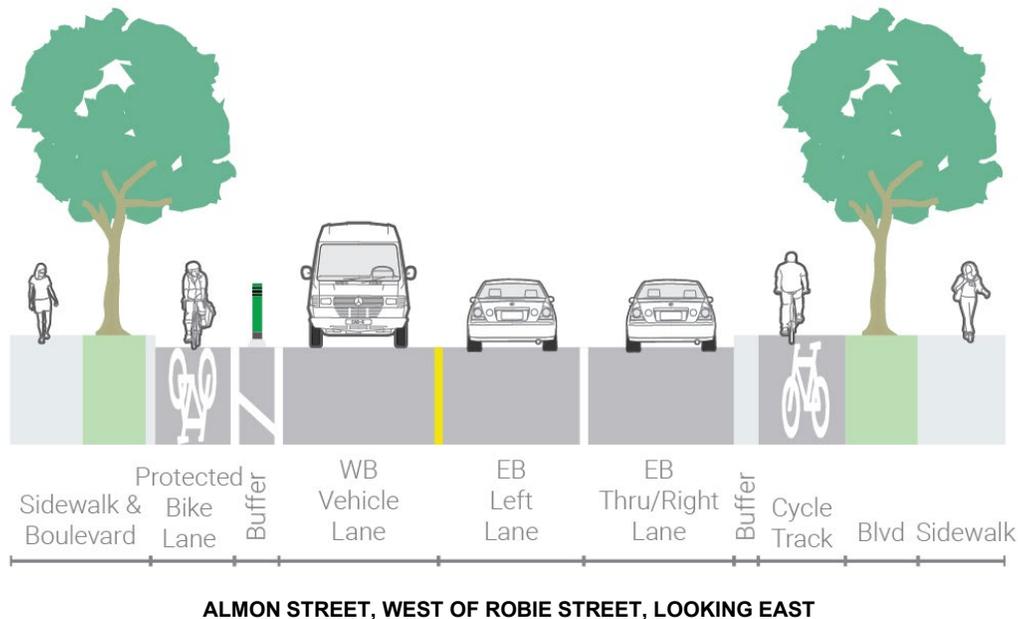
Figure 3: Recommended Almon Street Bicycle Facility Types



For more detailed information on the facility types, please see page A-4 in the attachment.

The Agricola Street to Gottingen Street segment would not separate bicycles from motor vehicles. This segment is very constrained with a nine-metre curb-to-curb width, which makes meeting criteria for “AAA” designation challenging. There is insufficient space for protected or painted bike lanes, and little opportunity to widen the right-of-way as most building facades sit at the back edge of the sidewalk. See page A-3 in Attachment A for more information on this segment. Further planning or consideration of alternative routes may be required to make the connection to Isleville Street and Gottingen Street.

Figure 4: Illustration of Proposed Almon Street Bikeway Segment



Description of Recommended Option

Intersection Treatments

The safety of interactions between vehicles, pedestrians and bicycles at intersections is an important component of this project. The measures proposed aim to improve visibility of pedestrians and people on bicycles, encourage eye contact between users, and provide clarity regarding the intended path and right-of-way for all modes, thus helping to reduce conflicts. The introduction of some protected intersection features will physically separate vulnerable road users from conflicts with motor vehicles at the Windsor Street and Robie Street intersections.

For more information on the functional plans for the intersection treatments, please see Figures A-5 to A-7 in Appendix A.

Summary of Implications of Proposed Almon Street Bikeway

This section describes how Almon Street would change with implementation of the proposed bicycling facilities and what the implications of those changes would be for all users.

Pedestrian Infrastructure

- Proposed curb extensions at Gladstone Street and Isleville Street would shorten pedestrian crossing distances, improve sightlines between drivers and pedestrians, reduce vehicle speeds and increase queuing space for people walking.

Bicycle Level of Service

- Conditions for people on bicycles would improve significantly as a result of a physical barrier separating the bicycle lanes from vehicle traffic and treatments to manage conflicts at the intersections.
- The proposed shared lanes for the Agricola Street to Gottingen Street segment would not achieve the AAA objective. See the Risk Consideration section on page 12 and page A-3 in Attachment A for more information on this segment.

Transit Service and Future Plans

- The proposed changes to the Almon Street intersections at Windsor Street and Robie Street would not impact the existing transit service on Windsor Street or Robie Street. There is no current or planned transit service on Almon Street.

Traffic

Traffic analysis based on weekday morning and afternoon peak periods indicates that key metrics, including vehicle delay and queue length, would increase for some movements relative to existing conditions. Analysis also indicates that based on current traffic demand during peak periods, traffic volumes would approach or exceed the amount of available capacity for some movements at Robie Street. As a result, congestion on Almon Street would be expected to worsen relative to existing conditions.

Resulting traffic congestion may encourage motorists to consider alternatives such as (i) shifting to other modes (i.e., transit, active transportation), (ii) changing commute times to earlier or later in the day, and (iii) diversion to other routes. It is difficult to predict how motorists will respond to the proposed changes. Shifts in transportation behaviours are fundamental to the success of the IMP's transportation planning objectives.

Proposed changes at intersections and the anticipated impacts are summarized in Table 1 on the following page. Traffic impact analysis was completed to evaluate these intersection changes.

Table 1: Summary of Intersection Modifications and Implications

| Intersection | Proposed Changes | Implications |
|---------------------------------------|--|--|
| Almon Street @ Windsor Street | Right-turn-on-red restrictions and cyclist use of existing Leading Pedestrian Interval (LPI) would be considered. Almon Street EB approach: remove left turn lane. | Minimal impacts to the overall intersection performance expected during the AM peak travel period. Impacts to EB movements during the PM peak travel period may increase vehicle delay up to a total of approximately 65 seconds per vehicle. The 95th percentile vehicle queue length is expected to be approximately 125m (68m or 2.2 times longer compared to the existing PM peak travel period conditions). |
| Almon Street @ Robie Street | Right-turn-on-red restrictions (except Robie Street NB & SB approaches) and cyclist use of existing Leading Pedestrian Interval (LPI) would be considered. Almon Street EB approach: no proposed changes to traffic lanes Almon Street WB Approach: remove WB right turn lane, leaving one through/left turn/right turn lane | No impact to EB movements at the approach to Almon Street. Impacts to WB movements, most notably during the PM peak travel period, may increase vehicle delay (up to a total of approximately 239 seconds per vehicle). The 95th percentile vehicle queue length is anticipated to be approximately 266m (approximately 79m or 1.4 times longer compared to the existing PM peak period travel conditions). This would result in a queue that extends east to Isleville Street. The 95th percentile queue lengths on Robie Street are not expected to be impacted. |
| Almon Street @ Agricola Street | Almon Street EB approach: remove EB right turn lane | Impacts to queues on Almon Street at the WB approach to Robie Street during the PM peak travel period (see above) could interact with queues on Agricola Street at Almon Street, resulting in increased delay and queue lengths for NB left turn and WB movements. |

Parking Changes and Mitigation

- On-street parking changes would include a loss of approximately 32 on-street parking spaces on Almon Street from Windsor Street to Agricola Street and a potential gain of up to 33 on-street spaces on adjacent streets.
 - On-street parking changes would include a loss of 1 to 2 spaces on Almon Street, east of Agricola Street (near the intersection), to allow for a short section of receiving painted bicycle lane.
- Staff will consider adding on-street parking on adjacent streets: a 2nd side of parking to Pacific Street (up to 12 new spaces), Windsor Terrace (up to 9 new spaces), and Gladstone Street (up to 12 spaces). These would be regulated as short-term and permit parking.
- Staff will consider converting additional spaces on Bilby Street from unrestricted to short-term parking.
- See Table A-4 in Attachment A for a detailed summary of the proposed on-street parking changes.

Relocation/Reconfiguration of Accessible Parking

- The eight existing accessible spaces on Almon Street would be retained, with some changes as described below.
- The proposed section of protected bicycle lanes on Almon Street west of Windsor Street, part of the enhanced intersection treatment, would require relocating the three existing accessible parking spaces approximately 40m to the west on the same side of the street (see Figure A-8 in Appendix A).
- The above-mentioned accessible spaces primarily serve the three tenants (naturopathic health clinic, optometry clinic and physiotherapy clinic) located in the building on the northwest corner of Almon Street and Windsor Street. The tenants have expressed concern that the proposed changes to the accessible spaces would negatively affect their patients. HRM's recently adopted Accessible Parking Planning and Design Guidelines state on-street accessible parking should, where intended to serve medical centres and rehabilitation centres, be located within 50 metres of the location served. The Guidelines also require a total of one to four accessible spaces to serve the Almon/Windsor clinics. Entrances to the naturopathic health clinic and physiotherapy clinic would be within 50m of the nearest relocated accessible space, while the entrance to the optometry clinic (fronting on Windsor Street) would be approximately 65m from the nearest space. A parking utilization study completed by staff in 2017 concluded these three existing accessible parking spaces have low usage (<10%).
- The two accessible spaces in front of the CNIB offices would remain in the same location but would be reconfigured. A raised bicycle lane between the sidewalk and parking lane is proposed to facilitate access to the sidewalk for people using the parking lane. See *Curbside Access for Loading* on page A-4 in Attachment A for a more detailed discussion of the proposed changes.
- No changes are proposed to the two accessible spaces on Almon Street near Gottingen Street.

Curbside Access for Loading

- Most commercial uses on Almon Street where protected bicycle lanes are proposed have driveways and/or off-street parking lots that can accommodate loading.
- Currently there is no off-street parking or loading available to the CNIB Foundation at their location and to date the two accessible spaces and five two-hour parking spaces in front of the building have served the needs of their clients, who are often dropped off to attend programs by family members, care givers, taxi, or Halifax Transit's Access-A-Bus service. The design of the bike facility here will mean no changes to this loading and parking.
- See page A-7 of Attachment A for further description of the proposed approach to accommodate loading and parking at the CNIB location.
- Loading demands (people and goods) for the Richmond Yards redevelopment project (south side of Almon Street, west of Robie Street) will be accommodated internally on the site. The development includes two internal streets (extensions of Clifton Street and King Street), a surface parking lot and an underground parking structure.

Maintenance and Operations

- The mix of raised and street-level protected facilities along the corridor could pose challenges for snow clearing equipment and routing.
- Staff anticipate the proposed unidirectional street-level bicycle lanes will 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. These costs are identified in the *Financial Implications* section of this report.
- Compared to existing conditions, impacts to snow removal/operations between Agricola Street and Gottingen Street would be minimal as changes to the street would be limited to the addition of pavement markings and curb extensions at Isleville Street.
- In September 2020, Regional Council adopted new winter operations service standards that include clearing protected bicycle lanes to the same standard as the adjacent Priority 1, 2 or 3 sidewalks.
- Pavement markings will require maintenance to maintain the integrity of the proposed bicycling facilities. Durable pavement markings, such as thermoplastic, will be installed for all markings

considered important for the safe operation of the facility. Based on the experience of other jurisdictions, durable markings are expected to last 5+ years on the street and up to 10 years in the bike lanes.

- To accommodate collection of green organic waste carts from residential properties adjacent to the proposed on-street protected bicycle lane segments, gaps would be left between pre-cast curb sections as required.

Emergency Access

- No changes to the ROW are proposed that would restrict the passage of emergency vehicles.
- Changes to turning radii for vehicles due to curb extensions would be modelled by HRM engineers during the design phase and emergency services staff would be consulted if there are any concerns.

Streetscape Enhancements

- Adjacent to the Richmond Yards development (south side of Almon Street, west of Robie Street) the eastbound bicycle lane would be raised to sidewalk height and integrated with the streetscaping in front of the new development.

Urban Forest

- The proposed section of off-street bicycle lane on the north side of Almon Street between the Canada Post driveway and Windsor Street would require removal of two to three mature trees as well as construction work within the root zones of nine mature trees located in the boulevard between the existing curb and sidewalk.
- Work within the tree root zone can lead to tree mortality. Options will be explored during detailed design to mitigate the potential for tree mortality through design features and construction techniques.
- As per IMP Action 52, staff will explore opportunities to compensate for tree removal through the planting of new trees along Almon Street or nearby streets.
- An agreement exists between HRM and Westwood Developments Limited to plant 19 trees on HRM streets adjacent to Westwood's Richmond Yards development, some of which will be planted in the boulevard along the Almon Street frontage of the development site.

Land Acquisition

The acquisition of additional lands required for the implementation of the proposed bicycle facilities will be the subject of an in-camera report to Council.

Implementation

Timeline

Pending Council approval, further refinement of the 30% plans would proceed through preliminary and detailed design of the proposed Almon Street facilities, with proposed construction potentially beginning in 2022 pending successful completion of detailed design.

Richmond Yards Construction Encroachment

An encroachment was approved along Westwood's Almon Street frontage to facilitate excavation and construction on the site. Construction of the segment of eastbound bicycle lane adjacent to the Richmond Yards site would be delayed until full removal of the encroachment. Staff will work closely with the developer to find the safest solution possible to bridge this gap in the eastbound bike lane while the encroachment is in place.

Agricola Street to Gottingen Street Segment

Staff will monitor user experience along this segment to collect feedback and determine if the proposed shared lane configuration is or is not meeting the needs of people cycling. See further discussion in the *Risk Consideration* section on page 12.

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. The Almon Street bicycle lanes will be considered for installation of a permanent counter prior to opening the facility.

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

Capital

The class B cost estimate for construction of the recommended bikeways and associated changes to the right-of-way is as follows:

Almon Street (Windsor Street to Gottingen Street) bikeway construction: \$1,310,000 (excluding HST).

There will be an offset to HRM costs once HRM and Westwood Developments Limited reach agreement on cost sharing for the segment of bikeway, boulevard, and sidewalk reinstatement adjacent to the Richmond Yards site.

As this project falls under HRM's Regional Centre AAA Bikeway Network infrastructure funding agreement, HRM would pay 17% of the total construction cost, estimated at \$222,700. The project will form part of the 22/23 Capital Budget submission.

Operating

The estimated annual cost for year-round maintenance of the 0.6 km recommended Almon Street protected bicycle facilities (Windsor to Agricola Street) is approximately \$16,750 (net HST included). Most of this cost is for snow clearing, including snow removal where required due to limited space for snow storage after implementation of the bikeways. There would be no additional cost for winter maintenance between Agricola Street and Gottingen Street as the proposed treatment is shared lanes and the current approach to snow clearing could continue for this segment. The increased costs for snow-clearing will form part of the Operating Costs of Capital, associated with the 2022/23 Capital Budget Submission.

RISK CONSIDERATION

The Discussion section identifies risks and how they are being managed. These include:

- Overall risk to vulnerable road users. This is being managed by having protected bike lanes, intersection treatments and design that accommodates particularly vulnerable visually impaired pedestrians accessing CNIB. There is increased risk to people bicycling on the segment between Agricola and Gottingen Streets as they will be sharing the road with motor vehicles as noted above. This risk is mitigated by the lower volume and speed of vehicles on this section and signage and pavement markings. It may be further reduced if measures to further manage vehicle speed are part of the detailed design. This section will be monitored and, if necessary, consideration of more significant changes to this section of Almon Street (e.g., converting to one-way) may be considered.

- Risk to effectiveness of winter operations due to limited or inadequate snow storage in some areas and transitions between varying segments. As noted above, this would have to be mitigated through the additional expense of snow removal. There is significant risk that with heavy snowfalls or back-to-back snowfalls, there will be a delay in clearing beyond the P-1 (12 hour) service standard. In extreme scenarios, the protected bike lane may be required for snow storage until operations can remove the snow.

COMMUNITY ENGAGEMENT

Stakeholders and the public were invited to learn more about the project and provide their feedback on the functional design options. Information about the Almon Street bikeway project is available on the Halifax.ca website at:

www.halifax.ca/transportation/cycling-walking/expanding-network/fall-2018-regional-centre-bikeway-update

Additional information, including a summary of public input in the *What We Heard Report* is available on the *Shape Your City* site: www.shapeyourcityhalifax.ca/almon-street-bike-lane

Almon Street Bikeway Summary of Community Engagement

Public engagement activities for the Almon Street project included:

- A public engagement session was hosted at the Halifax Forum on May 3, 2017.
- Staff presented to HRM's Active Transportation Advisory Committee and Accessibility Advisory Committee in October 2018.
- Staff hosted a meeting with external active transportation stakeholders in April 2017 at the Central Library.
- Staff consulted with CNIB representatives and the owner and commercial tenants of the building located on the northwest corner of Almon and Windsor Streets.
- All property owners along Almon Street, between and Windsor Street and Gottingen Street, were informed by mail (April 2017 and November 2018) about the planning project and were provided with staff contact information.
- A survey was available online at Shape Your City from May 3-18, 2017. Some public comments were also received by email and phone. Over 500 people provided feedback on the project, 400 of whom submitted their input via the online survey.
- The public engagement session and online survey were promoted through Facebook, Twitter, print ads in The Coast and The Star Halifax, HRM's Employee HUB, HRM's digital screens, a PSA and a memo to the Mayor and members of Regional Council.

Most respondents (70%) to the 2017 survey indicated support for some type of bicycle facility; 60% chose the option to add painted lanes and shared facilities now and conduct planning for protected lanes in 2-3 years, and 10% chose to wait 2-3 years for protected facilities. Twenty-three percent oppose implementation of any bicycle facility.

Thirty-five percent of engagement session attendees provided positive comments about the project, 10% were negative, 31% were not clearly positive or negative, 19% proposed alternate bicycle facility types, and 5% proposed alternate routes.

Concerns regarding the proposed facilities with painted bicycle lanes and sharrows relate to a lack of safety for cyclists. Popular suggestions for alternative bicycle facility design include:

- Implementing fully protected lanes immediately.
- Adding bike boxes and conflict markings at intersections.

- Using a walk/cycle shared facility.
- Having a more consistent treatment along Almon Street.

Other top concerns relate to:

- Lack of pedestrian/cyclist safety due to high traffic speeds and volumes.
- Loss of on-street parking.
- Loss of load and unload zones.
- Reduced access for the elderly and people with reduced mobility.

ENVIRONMENTAL IMPLICATIONS

This project is supportive of the sustainability objectives of the municipality as it aims to make it safer and more comfortable for residents to choose sustainable transportation options for everyday transportation purposes.

ALTERNATIVES

The Transportation Standing Committee may recommend that Regional Council not proceed with some or all the proposed bikeways due to the implications described above.

ATTACHMENTS

Attachment A: Almon Street Bikeway Additional Information

Attachment B: Appendix E from the Active Transportation Priorities Plan

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: Mark Nener, Active Transportation Planner, Project Planning and Design, 902.490.8474

Attachment A: Almon Street Bikeway Additional Information

Current Context of Almon Street

Table A-1 below summarizes the right-of-way and motor vehicle traffic characteristics of Almon Street in the study area.

Table A-1: Summary of Almon Street Characteristics

| Almon Street Segment | Segment Length | Curb-to-Curb Width | Daily Traffic Volume | Vehicle Speed (85 th percentile) |
|-----------------------|----------------|--------------------|----------------------|---|
| Windsor to Robie | 460m | 11-12m | 11,800 (2017) | 52 KPH |
| Robie to Agricola | 140m | 11-12m | 9000 (2021) | no data |
| Agricola to Gottingen | 280m | 9m | 5,300 (2017) | 39 KPH |

Bicycle Counts

AT staff completed manual counts of people on bicycles at the Almon/Windsor and Almon/Agricola intersections in August 2017 during the AM and PM peak periods, and at midday. The results of the counts are summarized below in Table A-2.

Table A-2: Almon Street Bicycle Volumes (August 2017)

| Intersection | AM Bicycle Volume 7-9am | Midday Bicycle Volume 11am – 1pm | PM Bicycle Volume 4pm – 6pm |
|----------------|----------------------------|-------------------------------------|--------------------------------|
| Almon/Windsor | 33 | 10 | 43 |
| Almon/Agricola | 26 | 10 | 35 |

A permanent bicycle counter was installed in the northbound and southbound Windsor Street bike lanes at Edinburgh Street in December 2020. Counts for 2021 show a daily average of 98 cyclists using the bike lanes, with a total of over 28,600 bicycle trips for the year as of October 22, 2021.

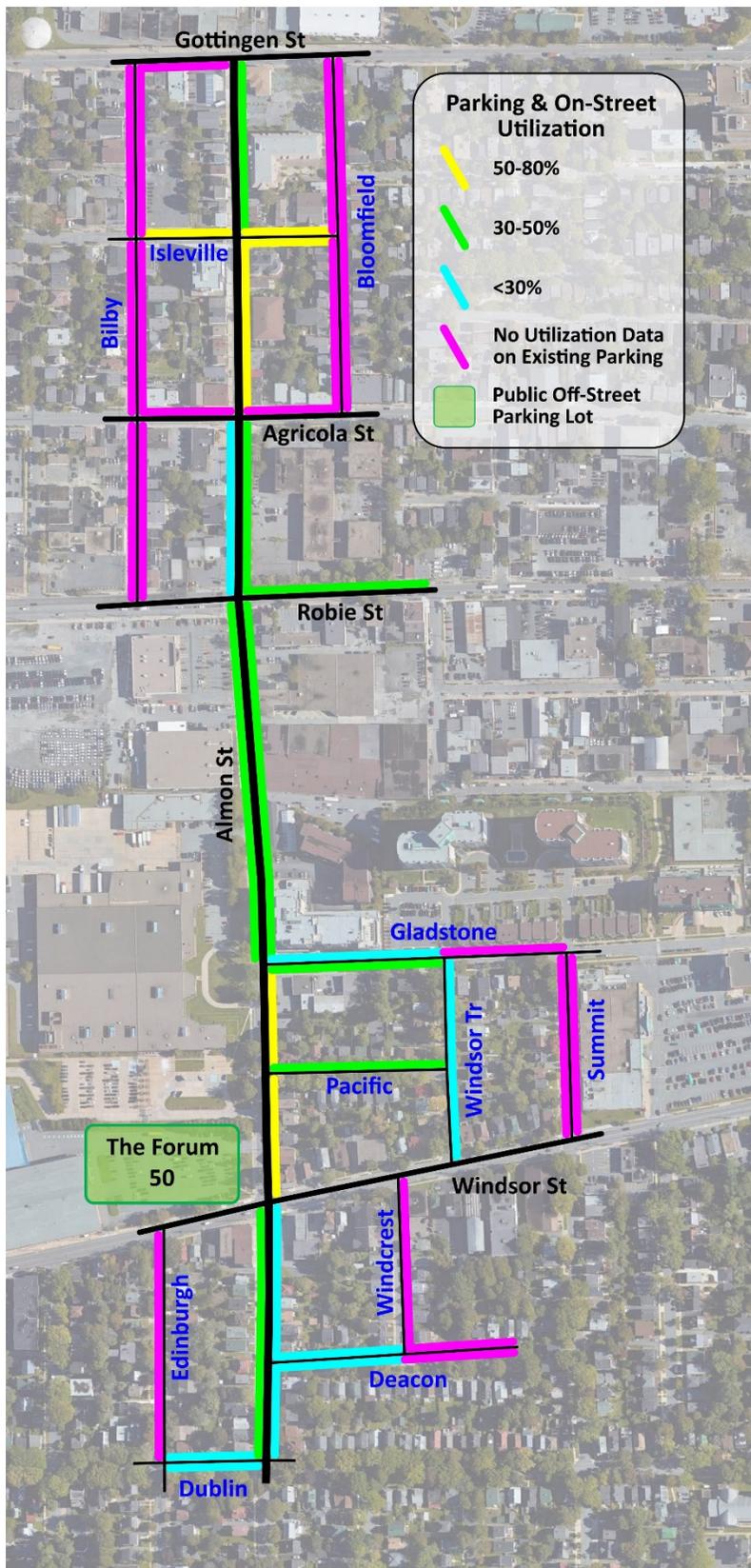
Parking Supply and Utilization in the Study Area

Table A-3 below summarizes the current parking supply in the study area. See Figure A-1 on the following page for a visual summary of the parking supply and utilization in the study area.

Table A-3: On-Street Parking Supply in the Almon Street Study Area

| Almon Street Segment | Current On-Street Parking | Current Accessible Parking |
|------------------------------------|---------------------------|----------------------------|
| Dublin to Windsor | 23 | 3 |
| Windsor to Pacific | 5 | - |
| Pacific to Gladstone | 2 | - |
| Gladstone to Robie | 32 | 3 |
| Robie to Agricola | 8 | - |
| Agricola to Gottingen | 21 | 2 |
| Total | 91 | 8 |
| Adjacent Streets | 285 | 1 |
| Total with Adjacent Streets | 376 | 9 |

Figure A-1: Parking Supply and Utilization (April 2018) in the Almon Street Study Area



Functional Planning Process

In Spring 2017, AT staff proposed two options to the public for a bikeway on Almon Street:

1. Implement a combination painted bike lanes/shared-street facility in 2017 as part of a regular street paving and rehabilitation project. Conduct planning on conversion to protected bike lanes in two-three years.
2. Reinstate street with no bicycling facility in 2017. Conduct planning on conversion to protected bike lanes in two-three years.

Based on the public's response and the Integrated Mobility Plan's direction to achieve a AAA facility on Almon Street, staff decided to explore options for a protected facility between Windsor Street and Agricola Street. It was at this point that staff chose to plan for the bicycle connection from Windsor Street to George Dauphinee Avenue as part of a separate planning process that would consider parallel local street bikeways (on London Street or Liverpool Street) as alternatives to Almon Street west of Windsor Street.

Alta Planning & Design were engaged in 2018 to complete the functional planning for the Almon Street bikeway. Pending Council approval of the recommended option, Alta will also complete detailed design of the facility.

An internal technical committee with representatives from multiple HRM business units, including Transportation & Public Works and Planning & Development, provided input at multiple stages throughout the project.

Overview of Options Considered

Windsor Street to Agricola Street

Painted bike lanes (with and without painted buffer) were considered at the outset of the project in 2017.

As per professional design guidance for AAA facilities from the Transportation Association of Canada (TAC) and the National Association of City Transportation Officials (NACTO), protected bicycle lanes are the recommended bicycle facility type for Almon Street, from Windsor to Agricola Street, to achieve a level of comfort suitable for all ages and abilities given the high traffic volumes. The Almon/Windsor Street intersection presented multiple design challenges given the complexity of two intersecting bicycling facilities and high volumes of motor vehicle traffic, especially westbound vehicles turning right from Almon Street to northbound Windsor Street.

Agricola Street to Gottingen Street

Shared-lanes were considered at the outset of the project in 2017.

Where vehicle speeds and volumes are significantly lower between Agricola Street and Gottingen Street, NACTO suggests conventional painted or buffered bike lanes as suitable options, while TAC recommends a protected facility (for average vehicle volumes over 4000 vehicles/day).

Almon Street narrows to approximately 9.0m (curb to curb) east of Agricola Street, which is not sufficient for protected bike lanes. Introducing conventional painted bike lanes would require removing the on-street parking for the segment, leaving two minimum-width bike lanes next to two minimum-width traffic lanes, which would not achieve the goal of a AAA facility. Alta and staff decided instead to move forward with a shared-lane configuration with consideration of measures to slow traffic for the segment of Almon Street from Agricola Street to Gottingen Street.

Alta and AT staff considered multiple criteria drawn from Appendix E (*Evaluation Criteria for New Bicycle Facilities*) of the AT Priorities Plan (see Attachment B) in their comparative analysis of the bikeway options.

Recommended Option

Almon Street/Windsor Street Intersection

As part of a separate process, AT staff are planning the AAA bikeway connection west from the Almon/Windsor intersection to George Dauphinee Avenue in Westmount. Though a local street bikeway on Liverpool Street has been identified as the preferred option, staff are also proposing to continue the Almon Street protected bicycle lanes west of the Windsor Street intersection for at least 30m. The rationale is as follows:

- Continuing the protected bike lanes west of Windsor Street completes the protected treatment for this section of the corridor, providing guidance to all users through a busy intersection with many potential conflicts.
- Having people on bicycles merge from the protected bike lane into traffic west of the intersection, but before the on-street parking begins, is more intuitive for all users.
- The bike lanes and buffers west of Windsor Street create space in the intersection to facilitate two-stage left turns for people on bicycles.

Description of Recommended Option

On-Street Protected Bicycle Lanes

For the sections of on-street bicycle lane, a barrier in the buffer between the bicycle lane and adjacent traffic lane would provide the physical separation between people on bicycles and motor vehicle traffic and prevent vehicles from entering and blocking the bicycle lane.

The proposed physical separation for the Almon Street on-street bicycle lanes would include a continuous row of pre-cast concrete curb placed end-to-end with flexible bollards placed on top of the curb at regular intervals and at each end of a gap in the barrier. This is the same configuration as the South Park Street and Hollis Street protected bicycle lanes (see Figure A-2). Staff will explore with internal departments the feasibility to incorporate planter boxes into the barrier to add visual appeal to the facility. There would be gaps in the barrier at driveways.

Raised Bicycle Lanes

Two sections of raised bicycle lane are proposed:

- Canada Post driveway to Windsor Street on the north side (westbound).
- Gladstone Street to Agricola Street on the south side (eastbound).

Figure A-2: Pre-Cast Concrete Curb and Flexible Bollard, South Park Street, Halifax,



The section adjacent to the Canada Post and Halifax Forum properties would be constructed at the same height as the sidewalk and separated from the vehicle lanes by a hardscaped buffer close to the Windsor Street intersection and the existing tree lawn and mature trees further east (see Figure A-5 on page A-6).

The section adjacent to the CNIB and Credit Union on the south side of Almon Street, also constructed at the height of the sidewalk, would be separated from a parking lane by a hardscaped boulevard and from the sidewalk with a strip of contrasting hard surface. This eastbound section would continue and be integrated with the reinstatement of the sidewalk in front of the Richmond Yards development where the bicycle lane would be separated from the traffic lanes by a boulevard and from the sidewalk by a hardscaped/landscaped buffer (see Figure A-6 on page A-6).

East of Robie Street, the raised bicycle lane would be separated from a parking lane by the existing tree lawn and mature trees and separated from the sidewalk by a buffer zone (see Figure A-7 on page A-7).

Intersection Treatments

In addition to continuing the bicycle lanes to the intersections, intersection markings to indicate the intended path of people on bicycles and highlight conflict zones are proposed (see Figure A-4 below). To facilitate safe two-stage left turns for people on bicycles, green turn box pavement markings and right-turn-on-red restrictions are proposed for the Almon Street/Windsor Street intersection where the Almon Street bicycle lanes would connect to the existing Windsor Street bicycle lanes.

Figure A-4: Example of Bikeway Intersection Markings, South Park Street, Halifax, NS



Figure A-3: Raised Bicycle Lane, South Park Street, Halifax, NS



Traffic volumes are high through the Almon/Windsor and Almon/Robie intersections, with notably high numbers of vehicles turning right onto Windsor Street from westbound Almon Street during the morning and afternoon peak periods. To facilitate movements for people on bicycles through the Almon Street intersections, several modifications/treatments are proposed, including geometric changes, two-stage turn boxes to facilitate left turns, intersection conflict markings, removal of vehicle turn lanes to allow for physical separation of the bikeway, and traffic control changes such as prohibiting right turns on a red signal (see Figures A-5 and A-6 below).

Figure A-5: Functional Plan for Almon Street Bikeway at the Windsor Street Intersection

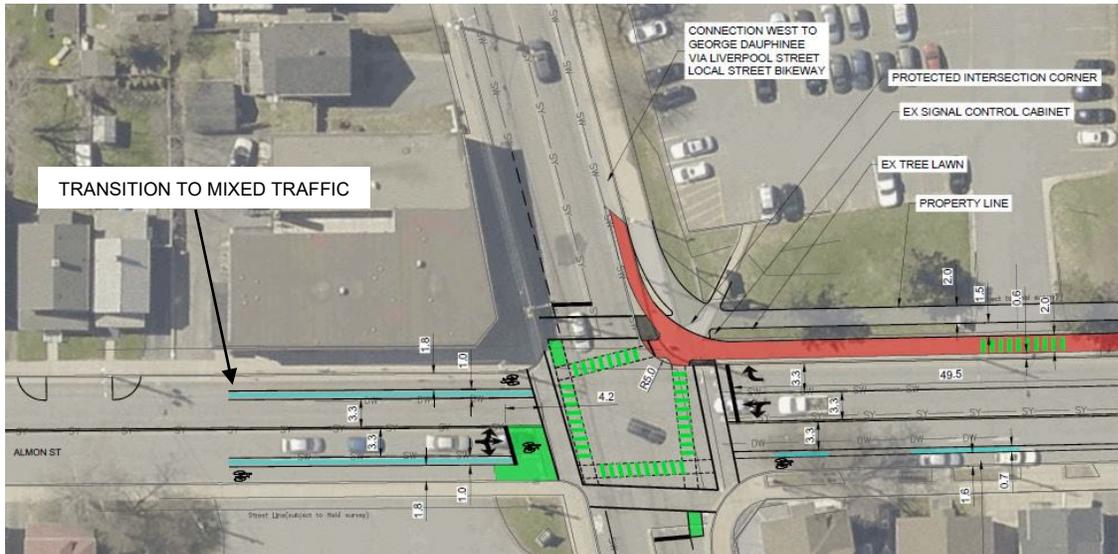
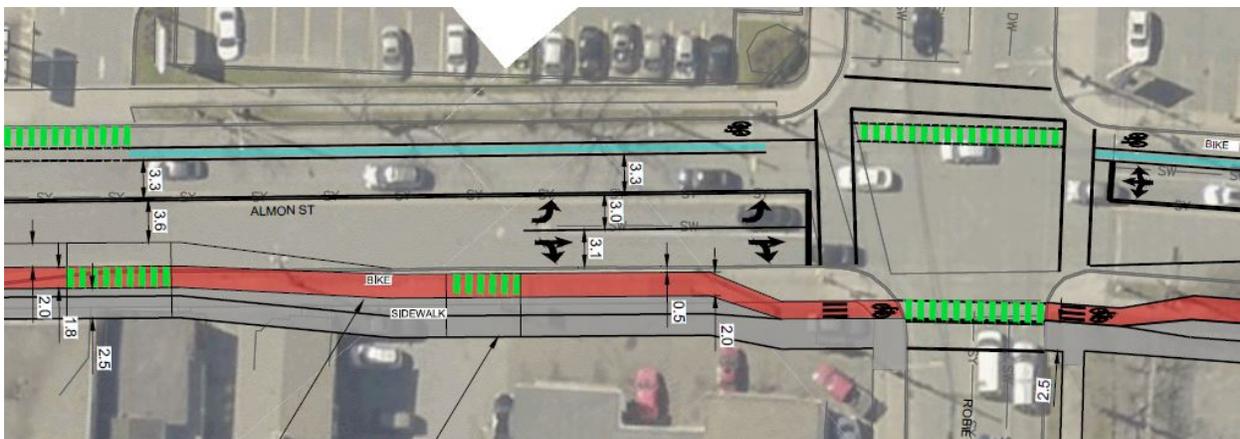


Figure A-6: Functional Plan for Almon Street Bikeway at the Robie Street Intersection

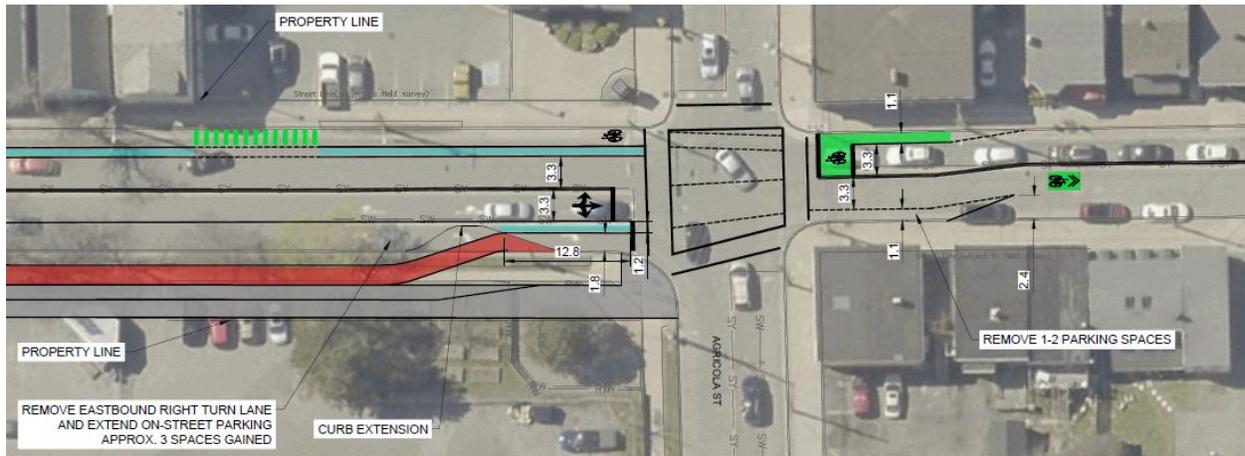
On the eastbound approach to Agricola Street, the off-street bicycle lane would bend onto the street to better align people cycling to continue eastbound through the intersection. Physical separation would be



maintained to the intersection with pre-cast curb and bollards. East of Agricola Street, a short section of painted bicycle lane would allow people cycling to merge with traffic into the shared lane after they have cleared the intersection. On the westbound approach, a short section of painted bicycle lane with a bike box would align cyclists to enter the protected facility west of Agricola Street. When arriving on a red

signal, the bike box would allow people cycling to position themselves ahead of traffic as they wait to proceed on a green signal (see Figure A-7 below).

Figure A-7: Functional Plan for Almon Street Bikeway at the Agricola Street Intersection



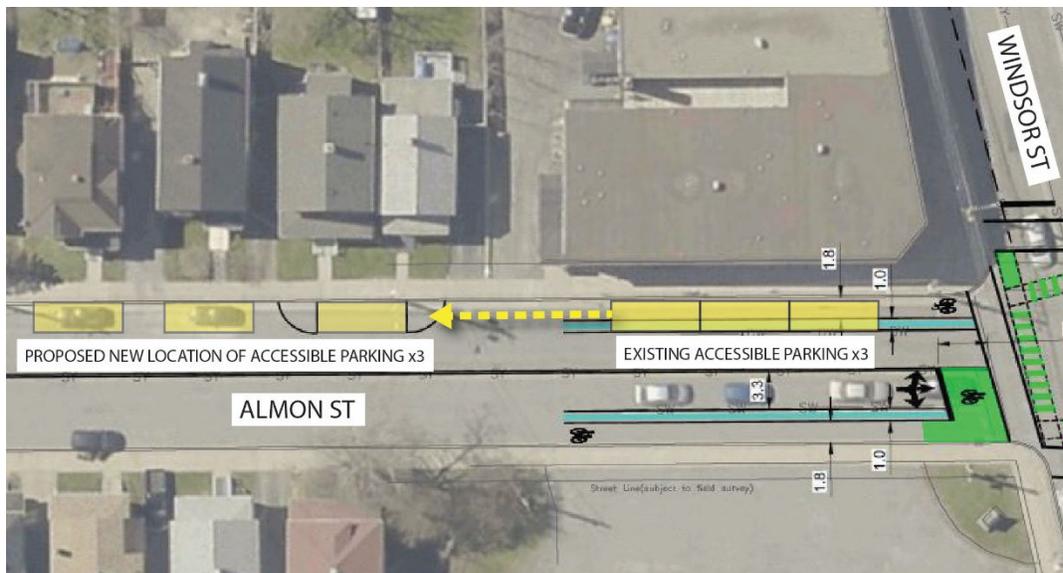
Implications of Proposed Facility

This section provides additional information on how Almon Street would change with implementation of the proposed bicycling facilities.

Relocation/Reconfiguration of Accessible Parking

- The proposed section of protected bicycle lanes on Almon Street west of Windsor Street, part of the enhanced intersection treatment, would require relocating the three existing accessible parking spaces approximately 40m to the west on the same side of the street (see Figure A-8 below).

Figure A-8: Proposed Relocation of Accessible Parking at Windsor Street



Curbside Access for Loading

Most of the commercial uses on Almon Street where protected bike lanes are proposed have driveways and/or off-street parking lots that can accommodate loading where the bike lanes would prevent access to the curb. However, the CNIB Foundation, one of the commercial tenants located in the mixed-use building located on the southeast corner of Almon Street and Gladstone Street, has unique needs. CNIB Halifax is a regional hub for the organization, offering a variety of programming for people with visual impairments. There is no off-street parking or loading available to the CNIB and to date the two

accessible spaces and five two-hour parking spaces in front of the building have served the needs of their clients, who are often dropped off to attend programs by family members, care givers, taxi or Halifax Transit's Access-A-Bus service.

Shifting the westbound bicycle lane off street opposite the CNIB location would allow for the retention of six parking spaces in front of the building. The eastbound bike lane would ramp up to sidewalk level adjacent to the parking area, with the bikeway located between the new curb and the existing sidewalk. Similar to the shared cycle track-bus stop treatment installed on South Park Street in 2019, various features will be used to alert all users to the potential for conflicts, such as pavement markings, "bicycles yield to pedestrians" signs and tactile warning surface indicators (TWSI). Staff have met several times with CNIB representatives to discuss the design of the bicycling facility in front of their building, management of the six retained spaces and options to mitigate the loss of some of the on-street parking on Almon Street.

Proposed Parking Changes

Implementing the Almon Street bicycle facilities as per the recommendation would result in changes to the on-street parking supply as described in Table A-4 (below). Parking gains on adjacent streets are pending final review and approval by staff.

Table A-4: Proposed Changes to On-Street Parking Supply in the Study Area

| Almon Street Segment | Current On-Street Parking | Proposed On-Street Parking | Change |
|------------------------------------|--|--------------------------------------|--|
| Dublin to Windsor | 23 (incl. 3 accessible spaces west of Windsor) | 20 (move accessible spaces 40m west) | - 3 |
| Windsor to Pacific | 5 | 0 | - 5 |
| Pacific to Gladstone | 2 | 3 | +1 |
| Gladstone to Robie | 32 (incl. 2 accessible spaces) | 6 (incl. 2 accessible spaces) | - 26 |
| Robie to Agricola | 8 | 11 | +3 |
| Agricola to Gottingen | 21 (incl. 2 accessible spaces) | 19 (incl. 2 accessible spaces) | - 2 |
| Total | 91 | 59 | - 32 |
| Adjacent Streets | 285 | (up to) 318 | + 33 |
| Total with Adjacent Streets | 376 | 377 | +1 |
| | | | Percent Change (Almon Street) ≈ - 35% |
| | | | Percent Change (study area with adjacent streets) < 1% |

ATTACHMENT B:

Active Transportation Priorities Plan Appendix E: Evaluation Criteria for New Bicycle Facilities

Potential for Use/ Connectivity

High density of existing/ planned origins and destinations

- Residences
- Workplaces
- Shops
- Community Facilities
- Schools
- Other destinations
- Other AT infrastructure (bike lanes, local street bikeways, AT greenways)

Street Characteristics

- Favourable grades (preferably 6% or less)
- Low volume of motor vehicle traffic
- Low volume of large vehicles
- High volume of existing cyclists
- Speed of traffic
- Few complex intersections
- Safety issues
- Impact on traffic (i.e., of reducing vehicle travel or turn lanes to add a bike facility).
- Impact on green space
- Impact on commercial or residential parking
- The ability to mitigate losses to on-street parking

Alternative Route Analysis

- Consideration of the suitability of adjacent corridors (if applicable) which could be alternatives to the proposed route. Alternatives would be subject to the same criteria.

Public and Stakeholder Feedback

- Public support for the facility
- Stakeholder support for the facility
- Internal (HRM) review of the facility