



P.O. Box 1749
Halifax, Nova Scotia
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Item No. 14.4.1
Halifax Regional Council
November 8, 2016

TO: Mayor Savage and Members of Halifax Regional Council

SUBMITTED BY: ORIGINAL SIGNED

Councillor Tim Outhit, Chair, Transportation Standing Committee

DATE: September 26, 2016

SUBJECT: Local Street Bikeway Implementation Administrative Order

ORIGIN

September 22, 2016 Transportation Standing Committee meeting, Item No. 12.1.2

LEGISLATIVE AUTHORITY

Transportation Standing Committee Terms of references, section 4 (b) which states: "The Transportation Standing Committee shall oversee and review of the Municipality's Regional Transportation Plans and initiatives, as follows: overseeing and reviewing the Regional Transportation policies, bylaws and functional plans".

RECOMMENDATION

The Transportation Standing Committee recommends that Halifax Regional Council approve the Administrative Order respecting Local Street Bikeway Implementation as outlined in Attachment # 1 of the staff report dated September 15, 2016.

BACKGROUND

A staff report dated September 15, 2016 pertaining to a proposed Local Street Bikeway Implementation Administrative Order was before the Transportation Standing Committee for consideration at its meeting held on September 22, 2016.

For further information, please refer to the attached staff report dated September 15, 2016.

DISCUSSION

The Transportation Standing Committee considered the staff report dated September 15, 2016 at its meeting held on September 22, 2016 and forwarded the recommendation to Halifax Regional Council as outlined in this report.

FINANCIAL IMPLICATIONS

As outlined in the attached staff report dated September 15, 2016.

RISK CONSIDERATION

As outlined in the attached staff report dated September 15, 2016.

COMMUNITY ENGAGEMENT

The Transportation Standing Committee meetings are open to public attendance, a live webcast is provided of the meeting, and members of the public are invited to address the Committee for up to five minutes at the end of each meeting during the Public Participation portion of the meeting. The agenda, reports, video, and minutes of the Transportation Standing Committee are posted on Halifax.ca.

ENVIRONMENTAL IMPLICATIONS

As outlined in the attached staff report dated September 15, 2016.

ALTERNATIVES

The Transportation Standing Committee did not discuss alternatives.

ATTACHMENTS

1. Staff report dated September 15, 2016

A copy of this report can be obtained online at <http://www.halifax.ca/council/agendasc/cagenda.php> then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 902.490.4210, or Fax 902.490.4208.

Report Prepared by: Liam MacSween, Legislative Assistant, 902.490.6521.



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Attachment 1
Transportation Standing Committee
September 22, 2016

TO: Chair and Members of the Transportation Standing Committee

SUBMITTED BY: Original Signed
Taso Koutroulakis, P.Eng., A/Director, Transportation & Public Works

DATE: 15 September, 2016

SUBJECT: Local Street Bikeway Implementation Administrative Order

ORIGIN

Transportation Standing Committee, July 3, 2013, Item 5.1., MOVED by Councillor Mason, seconded by Councillor Watts, that in keeping with the motion of Regional Council of June 25, 2013 regarding the powers of Standing Committees to request reports within their mandate and with specific reference to the terms of reference of the Transportation Standing Committee clauses 3.1.2, 3.1.4, and 3.4.2, the Standing Committee requests that staff prepare a report on the development of a policy in HRM that would support the use of the Local Street Bikeway model.

Making Connections, 2014-19 Halifax Active Transportation Priorities Plan, Recommendation #18: "The municipality should consider the adoption of a policy to enable the implementation of Local Street Bikeways where shown on Maps 2 A, B, and C, including consistent signage to identify this type of facility."

LEGISLATIVE AUTHORITY

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

Section 90(3) of the Motor Vehicle Act authorizes the Traffic Authority to mark lanes on a street and control their use.

RECOMMENDATION

It is recommended that the Transportation Standing Committee recommend that Regional Council approve the Administrative Order respecting Local Street Bikeway Implementation (Attachment # 1).

BACKGROUND

The 2014-19 Active Transportation Priorities Plan (AT Plan) has objectives to expand and connect the on-road bicycling network, to increase the number of residents who bicycle for transportation purposes, and to focus on bicycling facilities that are attractive to new bicyclists and bicyclists of all ages and abilities. As noted above, there is a specific recommendation in the AT Plan for HRM to consider a policy to enable the implementation of Local Street Bikeways. This proposed Administrative Order (A.O.) 2016-002OP is in support of these objectives.

Section 6.3.1.3 of the AT Plan describes Local Street Bikeways as designated routes for bicycling on quieter, local streets. Following the process outlined in the attached A.O., these streets would be optimized for convenience, comfort, and safety for people on bicycles without the need to create separate lanes or remove on-street parking.

The key factor in creating safe environments for bicyclists of all levels of experience and comfort level to share the road with motor vehicles is to manage both the speed and volume of motor vehicles as required and to ensure that there are safe and convenient opportunities for bicyclists on these routes to cross intersections with higher order streets (collectors and arterials) as required. This proposed A.O. identifies a process to implement Local Street Bikeways and specifies the key criteria to be used in determining the design of such facilities.

Local Street Bikeways have been successfully implemented in other jurisdictions in North America such as Vancouver, BC, Montreal, QC, Winnipeg, MB, and Portland, OR under a variety of different labels such as "Bicycle Boulevard", "Neighbourhood Greenway" and "Bike/Walk Streets". "Local Street Bikeway" is the term used in Vancouver. This type of facility has been credited with enabling a rapid expansion of the bicycle network and helping to increase bicycle ridership.

The provisions in this A.O. are based on design guidance from the National Association of City Transportation Officials, reviews of similar projects, input from the City of Vancouver, and a functional planning exercise for the proposed North End Local Street Bikeway in Halifax in 2012-13. While there are no specific national guidelines for Local Street Bikeways, all of the elements that may be used in them are identified in approved Transportation Association of Canada guidelines.

The AT Plan identifies approximately 40 local streets proposed for designation as Local Street Bikeways. These routes were identified due to their connectivity to origins and destinations, their adjacency to commercial areas and their connectivity to other AT routes. Many of the proposed Local Street Bikeways in the AT Plan run parallel to higher order arterial or collector streets. The attached administrative order specifies that only those streets identified in the AT Plan as proposed Local Street Bikeways and as "route type to be determined" are eligible to be designated as "Local Street Bikeways". The A.O. also has a provision to consider routes on local streets parallel to the proposed street if analysis and public engagement conclude that the alternative street is a better option.

The Local Street Bikeway concept was introduced in HRM during the 2012-13 process to identify north-south cycling corridors on the peninsula. A preliminary design concept for the streets running north-south between Agricola Street and Novalea Drive/Gottingen Street was developed, however it could not be considered because there was no policy to guide its assessment or implementation. In June 2013, Regional Council approved the implementation of the Windsor-Vernon-Seymour bicycle route. The Vernon and Seymour portions of that route were proposed as potential Local Street Bikeway segments that would be planned and considered for approval by Regional Council following the development of this administrative order.

The approved 2016-17 capital budget for "Active Transportation – Strategic Projects" includes funding for the planning of two Local Street Bikeways. One would be Vernon-Seymour and the other is proposed for a number of streets in the North End of the Peninsula, including Leaman, Isleville, Northwood, Creighton, Fuller and Maynard. These would be proposed to Council for approval as per the process in the proposed A.O.

DISCUSSION

Local Street Bikeways can have a variety of benefits. They can be implemented relatively quickly in many cases, especially if traffic calming or traffic diversion measures are not required. They generally do not require the removal of on-street parking or reductions in motor vehicle capacity. Because such facilities have lower motor vehicle speeds and volumes, they have been shown to be attractive to a wide range of cycling abilities, particularly to newer cyclists who tend to have safety concerns about using streets with a higher volume of motor vehicles.

The proposed planning and design process recognizes that the context for urban street situations can be complex and design treatments need to be tailored to the individual situation based on engineering and design judgement. Therefore, this A.O. aims to establish an overarching objective to establish corridors that promote safe sharing of the road, with a process and criteria that address the distinct context and resident/public interests that exist on each corridor.

The proposed basic elements of Local Street Bikeways are:

- wayfinding and route identification signage;
- pavement markings (typically sharrows, as defined in the A.O.);

Elements that will be incorporated if required include:

- treatments to facilitate the crossing of major and minor streets (e.g. refuge medians, curb extensions);
- treatments to modify motor vehicle speeds (e.g. traffic calming measures such as speed humps or curb extensions)
- treatments to modify motor vehicle volumes as required (e.g. traffic diversion measures);
- the assessment and improvement of pavement conditions; and
- the addition of bicycle amenities, streetscaping features and pedestrian enhancements where possible (e.g. a curb extension proposed for traffic calming would also provide shorter pedestrian crossing distances and may provide an opportunity for streetscaping);

The proposed administrative order establishes the process to designate Local Street Bikeways in HRM.

Key proposed features of the process include:

- route analysis and preliminary design;
- mandatory notification of residents and property owners in the project area of the intent to plan and request approval of a Local Street Bikeway;
- community engagement as required;
- preliminary and detailed design based on criteria such as motor vehicle speed and volume control, intersection complexity, resident and public feedback, other HRM objectives; Internal HRM staff review from the perspectives of Halifax Fire and Emergency, Halifax Transit, Halifax Regional Police, Road Operations and Construction, Planning and Development, and Traffic Management. Others would also be consulted as required;
- Provisions for trial implementation for some Local Street Bikeways, especially any that propose traffic diversion measures;
- review and recommendation by Community Council and final approval by Regional Council; and,
- provisions for monitoring and the discontinuation of trial Local Street Bikeways.

Many of the proposed Local Street Bikeways in the AT Plan may only require the addition of basic features of pavement markings and signage to meet the criteria in this proposed A.O. Local streets already tend to have lower motor vehicle volumes and many have slower speeds. The route analysis considerations identified in the proposed A.O. provide guidance in this regard.

The involvement of other HRM business units is an important aspect of the A.O. Because these facilities will be located on local streets, there is no expected impact to transit or emergency services. Should traffic diversion measures be required, they would be designed in such a way as to allow emergency access. HRM Road Operations and Construction will be consulted in the design of each facility to ensure that any proposed features (e.g. traffic calming) do not impact service standards. Traffic Management will be a key part of reviewing proposed designs to ensure conformity with applicable laws and guidelines.

As noted above, some Local Street Bikeways may require traffic calming or traffic diversion treatments to attain safe conditions for bicyclists and drivers of motor vehicles to share the road. Such treatments are also identified in HRM's Administrative Order 2015-004-OP Respecting Traffic Calming and in HRM's Neighbourhood Short-Cutting Policy. There are some similarities and differences between these policies.

Some differences include:

- The Traffic Calming AO and Neighbourhood Short-Cutting Policy are initiated via resident or Councillor requests or petitions to consider traffic calming or traffic diversion measures. The proposed Local Street Bikeway AO is initiated by staff based on the candidate route network in the Council-approved Active Transportation Priorities Plan;
- Final decisions on the implementation of treatments in the Traffic Calming AO and Neighbourhood Short-Cutting Policy are influenced by resident votes. The final decision on implementation of a Local Street Bikeway under this proposed AO is made by Regional Council based on a recommendation by Community Council; and,
- Implementation of the Local Street Bikeway Implementation AO only requires traffic calming or diversion treatments in certain situations. Consideration of traffic calming or traffic diversion is central to the other two policies.

Similarities between these three policies include:

- Establishment of processes for resident involvement;
- Identification of route analysis factors and thresholds;
- Requirement for Traffic Authority approval;
- The types of traffic calming or diversion treatments that would be considered (which are typically specified in national guidelines); and,
- Both the Traffic Calming A.O. and the proposed Local Street Bikeway A.O. establish 45km/h as a speed threshold that would necessitate further consideration of traffic calming measures. The proposed Local Street Bikeway A.O. also identifies speed thresholds in the 30km/h to 45km/h range that may require consideration of traffic calming measures.

If there are resident or councillor requests for measures to reduce vehicle speed or volume on local streets that are already designated as proposed Local Street Bikeways in the Active Transportation Priorities Plan, it would be the practice that such streets are referred for consideration under the proposed Local Street Bikeway A.O.

FINANCIAL IMPLICATIONS

There are no direct financial implications in approving this policy. Should this policy be approved, implementation of Local Street Bikeway routes would be incorporated into annual capital budget planning and approvals and would be incorporated into the Active Transportation – Strategic Projects capital budget. The capital costs to implement local street bikeways will vary depending on the extent to which physical changes are required to attain the conditions for motorists and bicyclists to share the road in as safe a manner as possible. The costs will also depend on the extent to which implementation of local street bikeways can be integrated into regular roadway rehabilitation costs. The intent is to implement local street bikeway projects in conjunction with regular state of good repair maintenance as much as possible.

To provide a general idea of potential costs, some of the proposed routes may only require the addition of pavement markings and signage which would cost under \$20,000. Other proposed routes may require traffic calming measures and/or new intersection treatments where the costs could exceed \$100,000. These costs would be specified as each project is submitted for approval and would also be reflected in annual capital budget requests.

RISK CONSIDERATION

The risks associated with the approval of the proposed administrative order are low.

COMMUNITY ENGAGEMENT

There has been no direct community engagement on the development of this policy. This facility type was proposed to the public in both consultations on the north-south peninsula bike route and in the development of the Active Transportation Priorities Plan. In both cases the concept was broadly supported.

The engagement of the community, particularly abutters and those on adjacent streets is considered key to the success of developing successful Local Street Bikeways. Such notification and engagement is described in the process in the attached A.O. 2016-002OP.

ENVIRONMENTAL IMPLICATIONS

Attracting more residents to bicycle for utilitarian purposes reduces the number of residents in cars. This helps improve air quality and reduce greenhouse gas emissions.

The Local Street Bikeway facility type has been credited with attracting residents to bicycling in the jurisdictions in which it has been introduced. This is because quieter local streets are attractive to newer bicyclists who may fear sharing the road with a larger number of motor vehicles and because they help to establish a connected municipal network of bicycling routes.

ALTERNATIVES

Regional Council may decline the approval of the Local Street Bikeway facility type and continue to work with the remaining facility types in the AT Plan. The implications of this are that the municipality would have a reduced "tool-kit" of facility types to employ and may need to rely on the use of painted bike lanes on collector or arterial streets to complete the on-street bicycle network. Implementing bike routes on such streets often involves trade-offs of reduced on-street parking or motor vehicle capacity which can be challenging to implement. Also, a network made up of entirely of such routes may not be as attractive to new or less confident cyclists.

ATTACHMENTS

Attachment 1 - Proposed Administrative Order number 2016-002OP, Respecting the Implementation of Local Street Bikeways

A copy of this report can be obtained online at <http://www.halifax.ca/commcoun/index.php> then choose the appropriate Community Council and meeting date, or by contacting the Office of the Municipal Clerk at 902.490.4210, or Fax 902.490.4208.

Report Prepared by: David MacIsaac, Active Transportation Supervisor 902.490.1665

Report Approved by: Dave Hubley, P.Eng., Manager, Project Planning & Design, 902 490.4845

**Attachment 1
(Proposed Administrative Order)**

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ADMINISTRATIVE ORDER NUMBER 2016-002-OP

RESPECTING THE IMPLEMENTATION OF LOCAL STREET BIKEWAYS

WHEREAS the Municipality aims to provide a connected network of on-street and off-street bicycling facilities to attain modal share targets set out in the Regional Municipal Planning Strategy of the Municipality;

AND WHEREAS the use of local streets that have been modified where necessary to optimize bicycle travel is a recognized bicycle facility type, known as a Local Street Bikeway;

AND WHEREAS the Municipality wants to provide the framework for the planning, designation and implementation of Local Street Bikeways in the Municipality;

BE IT RESOLVED AS AN ADMINISTRATIVE ORDER of the Council of the Halifax Regional Municipality under the authority of the *Halifax Regional Municipality Charter* and the *Motor Vehicle Act*, as follows:

Short Title

1. This Administrative Order may be cited as the “*Local Street Bikeway Implementation Administrative Order*”.

Description of Local Street Bikeways

2. (1) A Local Street Bikeway includes features as set out in subsection (2) that are intended to:

(a) create convenient routes for bicycling; and,

(b) help to create conditions on the streets where people of all cycling abilities and skill levels can comfortably share the street with motor vehicles without the addition of separated bicycle lanes or paths.

(2) A Local Street Bikeway has the following features:

(a) designated by the Municipality as a Local Street Bikeway;

(b) signs and pavement markings to designate the Local Street Bikeway;

(c) where necessary, speed or volume management measures, to reduce motor vehicle speeds and discourage through trips by motor vehicles; and

(d) as required, intersection treatments to create safe, convenient bicycle crossings of major collector streets and minor collector streets.

(3) Local Street Bikeways must avoid:

(a) Halifax Transit and truck routes, when possible; and,

(b) impact on the operation of emergency vehicles.

Purposes of Administrative Order

3. The purposes of this Administrative Order are to establish the processes to designate Local Street Bikeways, which include:

- (a) public notification and community engagement;
- (b) route analysis and design of features;
- (c) the decision-making framework; and
- (d) a process to monitor existing Local Street Bikeways.

Interpretation

4. In this Administrative Order,

- (a) “85th Percentile Speed” means the speed at or below which eighty-five percent (85%) of vehicles on a roadway are travelling;
- (b) “Active Transportation Greenway” means a multi-use trail suitable for the broadest range of active transportation users, such as walkers, cyclists, skateboarders, and inline skaters;
- (c) “Active Transportation Priorities Plan” means the Council adopted document “Making Connections: Halifax Active Transportation Priorities Plan 2014-2019” as revised from time to time;
- (d) “arterial street” means an arterial street as set out in the latest edition of the *Municipal Design Guidelines* of the Municipality;
- (e) *Bikeway Traffic Control Guidelines for Canada*” means the latest edition of this manual published by the Transportation Association of Canada;
- (f) “Community Council” means the council of a community established pursuant to the *Halifax Regional Municipality Charter*;
- (g) “Council” means the Council of the Municipality;
- (h) “intersection treatments” means measures to facilitate crossings for bicyclists at locations where a Local Street Bikeway crosses another street;
- (i) “local street” means a street in a primarily residential area, designed and constructed with the primary purpose of providing access to properties directly fronting the street;
- (j) “Local Street Bikeway” means a street with low motorized traffic volumes and speeds, modified to optimize bicycle travel, and designated by the Municipality as such;
- (k) “major collector street” means a major collector street as set out in the latest edition of the *Municipal Design* of the Municipality;
- (l) “major street crossing” means the intersection of the Local Street Bikeway with an arterial street or major collector street with right-of-way priority on the major collector street;

(m) *Manual of Uniform Traffic Control Devices for Canada* means the latest edition of this manual published by the Transportation Association of Canada;

(n) “minor collector streets” means a minor collector street as set out in latest edition of the *Municipal Design Guidelines* of the Municipality

(o) “minor street crossing” means the intersection of the Local Street Bikeway with another street with low motor vehicle volumes and speeds such as another local street or minor collector street;

(p) “Municipality” means the Halifax Regional Municipality;

(q) “off-set intersections” include two local streets that intersect with a major collector street or arterial street at two closely spaced T-junctions, instead of at a four legged intersection;



Diagram of off-set intersection for illustrative purposes only

(r) “project area” means the street proposed or designated as a Local Street Bikeway; and may include cross streets one block in either direction; the next parallel street; and streets for which the project street is the sole link, as determined by staff;

(s) “protected bicycle lane” means an exclusive bicycle facility that is physically separated from motor traffic and also distinct from the sidewalk;

(t) “route identification signage” means signs that confirm the identity of the Local Street Bikeway being traveled;

(u) “sharrow” means a shared lane pavement marking consisting of a white bicycle icon below a white chevron which is placed on the pavement in the intended area of bicycle travel;

(v) “staff” means the staff of the Municipality;

(w) “street” means a public street as defined in clause 3(bu) of the Halifax Regional Municipality Charter, S.N.S. 2008, c.39;

(x) “streetscaping” means the physical elements of a street, including the surfacing (e.g. asphalt roadway, concrete curb and sidewalk, grass boulevard) and also any street furniture, trees, and other elements that combine to form the street’s character;

(y) “Traffic Authority” means the Traffic Authority of the Municipality appointed by the Council pursuant to the *Halifax Regional Municipality Charter* and the *Motor Vehicle Act*;

(z) “traffic calming” means measures to reduce motor vehicle speed as described in applicable professional guidelines, such as speed humps, raised crosswalks, curb extensions, and traffic circles;

(aa) “traffic diversion” means measures that reduce or discourage motor vehicle through traffic by physically or operationally reconfiguring select features along the Local Street Bikeway such as described

in applicable professional guidelines which may include signed mandatory turns, channelized right-in or right-out islands, and diagonal diverters;

(ab) “truck route” means any truck route identified in By-law T-400, the *Truck Routes By-law*;

(ac) “vpd” means vehicles per day; and

(ad) “wayfinding signage” means signs that help people orient themselves in physical space and navigate from place to place with ease.

Roles and Responsibilities

5. Staff shall co-ordinate the implementation of this Administrative Order.

6. Council shall consider whether to designate a Local Street Bikeway on its own motion or on the recommendation by a Community Council.

Eligibility for Identification of a Local Street Bikeway

7. Council may designate a Local Street Bikeway if:

(a) the route is designated as a candidate route in the Active Transportation Priorities Plan or Council otherwise designates the route by resolution; and

(b) Schedules 1, 2 and 3 have been followed.

Monitoring of Designated Local Street Bikeways

8. Subject to Schedule 3, to ensure that a Council approved Local Street Bikeways is operating as desired, qualitative and quantitative monitoring of each Local Street Bikeway may be carried out from time to time, including monitoring:

(a) volumes of motor vehicle and bicycle traffic, as determined by traffic counts;

(b) motor vehicle speeds, as determined by speed studies;

(c) facility satisfaction, as determined by surveys of users and abutters;

(d) abutter perspectives; and

(e) observed street user behaviours, such as at intersections or any other potential conflict points.

Schedules

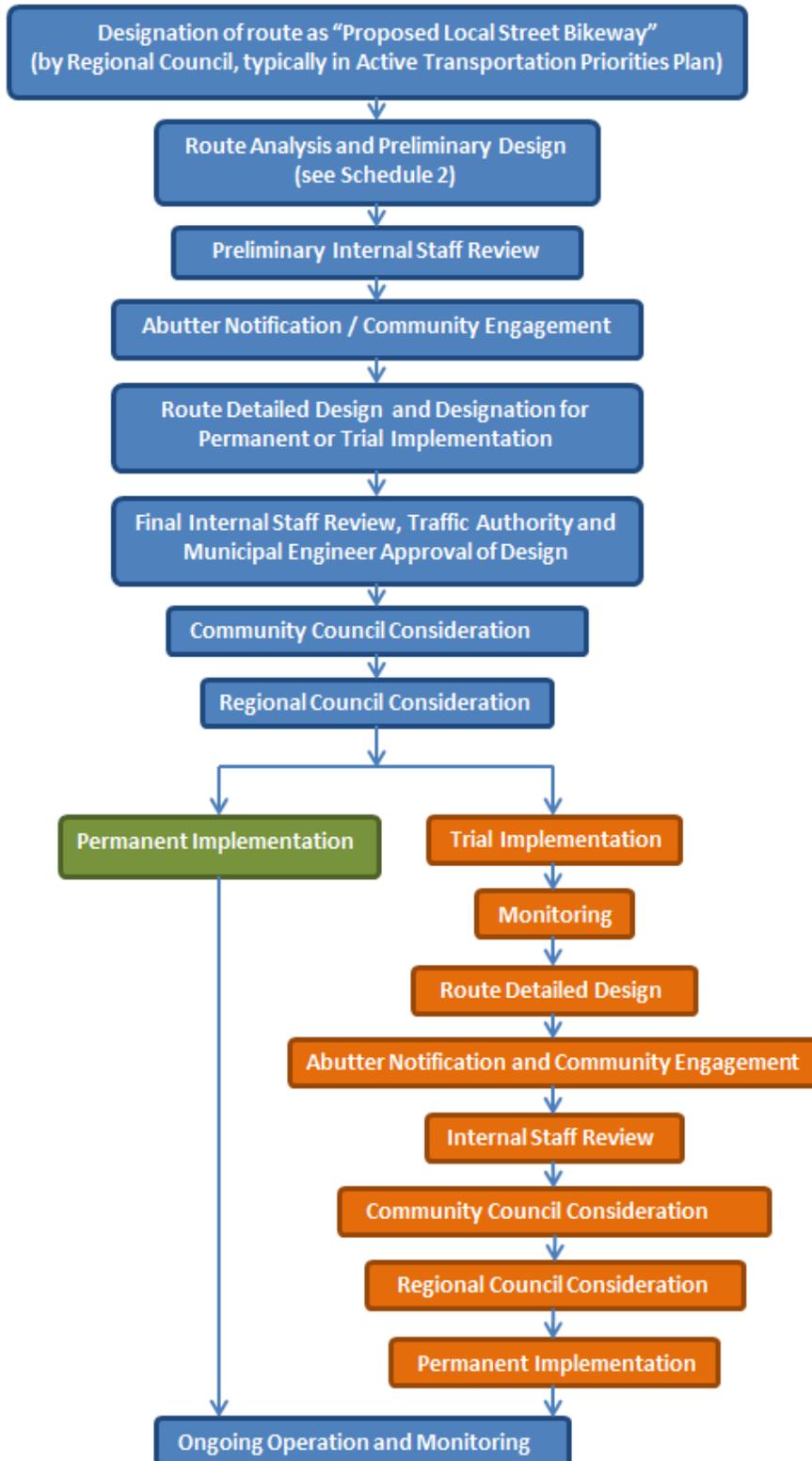
9. The Schedules attached to this Administrative Order shall form part of this Administrative Order.

Done and passed in Council this day of , 2016.

Mayor

Municipal Clerk

Schedule 1: Local Street Bikeway Implementation Process at a Glance



Schedule 2: Route Analysis Considerations for Local Street Bikeways

This Schedule outlines general factors that shall be considered in the route analysis and design of Local Street Bikeways. The context for urban street situations can be complex and design treatments need to be tailored to the individual situation based on engineering and design judgement.

Factor	Considerations/Criteria
Bicycle and pedestrian volume	In order to help measure the impact of the proposed Local Street Bikeway, baseline information on the number of pedestrians and bicyclists using the corridor will be collected. In addition to volume, information such as demographics, behaviours and other factors will be gathered.
Motor vehicle speed	<p>Reducing the speed differential between motor vehicles and bicyclists improves the bicycling environment by reducing overtaking events, enhancing drivers' ability to see and react, and diminishing the severity of crashes if they occur.</p> <p>Routes with 85th percentile vehicle speeds under 30 km per hour shall not require consideration of traffic calming.</p> <p>Routes with 85th percentile speeds between 30 and 45km per hour may require consideration of traffic calming.</p> <p>Routes with 85th percentile speeds over 45 km per hour shall require consideration of traffic calming.</p>
Motor vehicle volume	<p>Because bicyclists share the roadway with motor vehicles on Local Street Bikeways, motor vehicle traffic volumes significantly impact the comfort of people on bicycles -- higher vehicle volumes decrease bicyclist comfort and may lead to a greater potential for conflicts.</p> <p>Motor vehicle volumes, on local streets, under one thousand (1,000) vpd do not require measures to divert traffic from the Local Street Bikeway.</p> <p>Motor vehicle volumes, on local streets, over one thousand (1,000) vpd may require measures for traffic diversion.</p> <p>Along short sections of Local Street Bikeway Corridors that exceed desirable thresholds for motor vehicle volumes, other kinds of low stress bicycle facilities may be considered such as protected bicycle lanes.</p>
Intersection at Major Street Crossing	<p>Locations where a Local Street Bikeway crosses a major collector street with right-of-way priority on the major collector street may pose an obstacle and hinder the objective of accommodating the widest range of cycling abilities and skill levels. Intersection treatments to mitigate these obstacles shall be considered. In determining whether to apply a treatment and the type of treatment to apply, considerations include:</p> <ul style="list-style-type: none"> (a) street width (more than two (2) lanes to cross); (b) intersection complexity such as multi-leg or offset intersections, or the presence of merge lanes or turning lanes; (c) speed and volume of vehicles on the street to be crossed;

	<ul style="list-style-type: none"> (d) crossing gaps (there are no established thresholds for assessing gaps for bicyclists, but modified pedestrian crossing warrant criteria may be used); and (e) assessment of impact on the motor vehicle capacity, safety and operations of the impacted streets.
Intersection at Minor Street Crossing	Where possible, the Local Street Bikeway shall have stretches of at least 0.8km or more of continuous travel without stop sign control between major street crossings. Achieving this objective may require changes to intersections with other local streets. Any proposed changes at crossings of minor collector streets are subject to an assessment of the impact on the motor vehicle capacity, safety and operations of the impacted streets.
Pavement Surface Quality	Poor quality or rough pavements may be considered for upgrading prior to implementing the Local Street Bikeway.
Bicycle Amenities	Opportunities to add tire pumps, repair stations, bicycle racks, rest areas and other potential amenities may be identified and considered for inclusion.
Other enhancements	Opportunities for other enhancements may be considered, including <ul style="list-style-type: none"> (a) tree planting; (b) streetscaping or pedestrian improvements such as refuge medians or reduced crossing distances; and, (c) other features that may be identified and included in the design.
Traffic volume and speed on adjacent streets	Where traffic calming or traffic diversion measures are introduced as a part of a Local Street Bikeway, staff shall consider and aim to avoid any detrimental impact on traffic volumes or speed on adjacent streets. As part of the planning for each project, there shall be a motor vehicle operational analysis if traffic calming or traffic diversion measures are being considered. If a significant impact is projected (e.g. an adjacent local street has the potential to exceed 3,000 vpd) this may be grounds for proposing other treatments, or for recommending trial implementation, or for proposing another corridor for the Local Street Bikeway.
Key origins and destinations and other transportation services/ infrastructure	The primary potential origins and destinations along the routes will be identified to ensure connectivity. Other transportation infrastructure such as transit routes, other AT routes and carshare locations will be identified to help foster integrated mobility opportunities.

Schedule 3: Planning Process to Designate Local Street Bikeways

Route Analysis and Design

1. Staff should conduct route analysis and designs for proposed Local Street Bikeways in accordance with the considerations in Schedule 2.

Preliminary Design

2. (1) The initial stage of route planning shall be known as the preliminary design.

(2) The objective of the preliminary design is to identify the potential measures that could become part of the detailed design and to develop a clear overall understanding of how the proposed Local Street Bikeway will operate.

(3) The preliminary design serves as a tool to obtain feedback to staff from, the abutter residents and property owners residing in the project area, and other members of the public respecting the proposed Local Street Bikeway.

(4) The preliminary design shall include:

(a) drawings of the proposed Local Street Bikeway illustrating the key proposed elements;

(b) presentation of a number of options for particular areas of the proposed Local Street Bikeway, where they exist; and

(c) identification of advantages, disadvantages or impacts of particular elements.

Preliminary Internal Staff Review

3. (1) The Traffic Authority, or designate, shall review and provide feedback on the preliminary design.

(2) Departments of the Municipality shall be consulted and advised of the preliminary design as required, including Road Operations and Construction, Halifax Transit, Halifax Regional Fire and Emergency Services, Halifax Regional Police and Planning and Development.

Abutter Notification and Community Engagement

4. (1) Abutters, including residents and property owners, in the project area shall be notified that their street is being assessed for implementation as a Local Street Bikeway.

(2) The notification in subsection (1) may include:

(a) a description of the proposed Local Street Bikeway and any anticipated impacts;

(b) background on Local Streets Bikeways and overall active transportation goals of the Municipality;

(c) a description of the Municipality's decision-making process prior to designation of a Local Street Bikeway;

(d) information on any community engagement opportunities;

(e) links to any additional information available online; and

(f) staff to contact for further information.

5. (1) Staff may complete community engagement for a proposed Local Street Bikeway.

(2) Staff shall undertake community engagement for any proposed Local Street Bikeway where traffic calming or diversion measures are being proposed.

(3) Community engagement may include any of the following:

- (a) holding a public meeting; and
- (b) hosting an online public engagement tool.

(3) Notifications of community engagement opportunities may be made by way of mailings to residents and property owners within the project area, public service announcements, advertisements in community and regional newspapers, the Municipality's social media, and advisories to local community organizations.

Route Detailed Design and Recommendation of Permanent or Trial Implementation

6. A detailed design shall be developed illustrating the location of elements of the proposed Local Street Bikeway, and may include:

(a) pavement markings for route identification as per the *Bikeway Traffic Control Guidelines for Canada*, such as sharrows;

(b) route identification signage, which may include:

(i) stand-alone signs with green background behind a white bicycle icon and including the name of the Local Street Bikeway in white letters; and

(ii) modified street signs with an extended blade containing a white bicycle icon on a green background following the street name;

(c) wayfinding signage which may be combined with route identification signage to assist users to navigate the Local Street Bikeway;

(d) intersection treatments as required to facilitate major street crossings and minor street crossings;

(e) improvements to pavement surface quality;

(f) opportunities identified to add bicycle amenities or other enhancements; and

(g) the proposed location of any traffic calming or traffic diversion measures.

7. (1) Following the route analysis, abutter and property owner notification and community engagement, if any, staff may recommend either permanent or trial implementation.

(2) Permanent implementation may be recommended when staff determines that the establishment of the Local Street Bikeway only requires the implementation of basic route elements, such as:

(a) pavement markings, route identification signage or wayfinding signage,

(b) intersection treatments,

(c) pavement improvements,

- (d) bicycle amenities, and
 - (e) traffic calming or traffic diversion treatments that are predicted to have minimal impact on access for motor vehicles on the Local Street Bikeway or adjacent streets and minimal impact on motor vehicle volumes on adjacent local streets.
- (3) Trial implementation may be recommended when:
- (a) an analysis of proposed traffic diversion or traffic calming treatments predicts the route elements may have significant impact on access for motor vehicles on the Local Street Bikeway street or adjacent streets and significant impact on motor vehicle volumes on adjacent local streets;
 - (b) community engagement demonstrated significant uncertainty or opposition to traffic diversion or traffic calming, particularly by residents in the project area; or
 - (c) if the analysis was inconclusive about the impact of traffic calming or traffic diversion elements and further analysis through a trial implementation would provide the required information.

Final Internal Staff Review and Traffic Authority

8. (1) Departments of the Municipality shall be consulted and advised of the detailed design as required, including Road Operations and Construction, Halifax Transit, Halifax Regional Fire and Emergency Services, Halifax Regional Police, and Planning and Development.

(2) The detailed design shall be reviewed and approved by the Traffic Authority and the Municipal Engineer, or designate, prior to their implementation of any Local Street Bikeway.

Community Council Consideration

9. (1) A staff report and the detailed design of the proposed Local Street Bikeway shall be presented to Community Council for review and recommendation to the Council.

(2) Community Council may recommend to Regional Council permanent implementation or trial implementation of a proposed Local Street Bikeway, or may recommend that the proposed Local Street Bikeway not be implemented.

Regional Council Consideration

10. (1) Where a Community Council recommends permanent or trial implementation of a proposed Local Street Bikeway, the matter shall be forwarded to Council for consideration.

(2) Council may approve permanent implementation or trial implementation of a proposed Local Street Bikeway or choose not to approve the proposed Local Street Bikeway.

(3) Approval of permanent implementation by Council constitutes designation of the proposed Local Street Bikeway as a permanent Local Street Bikeway and such approval shall be deemed to be direction to staff to permanently implement the Local Street Bikeway, subject to budget availability.

(4) Approval of trial implementation by Council constitutes direction to staff to implement the Local Street Bikeway on a trial basis, subject to budget availability.

(5) Where Council does not approve the proposed Local Street Bikeway, it shall not be implemented.

Local Street Bikeways Approved for Trial Implementation

11. Trial implementation of a Local Street Bikeway shall include:
- (a) installation of the route elements;
 - (b) public notification of the new Local Street Bikeway; and
 - (c) operation of the Local Street Bikeway for a trial period of no less than six months and no more than three years.

Monitoring and Evaluation of Trial Local Street Bikeways

12. Qualitative and quantitative monitoring of trial Local Street Bikeways shall occur before and after installation and may include:
- (a) motor vehicle and bicycle counts;
 - (b) motor vehicle speed studies;
 - (c) user intercept surveys;
 - (d) observations of street user behavior at intersections and other potential conflict points;
 - (e) household surveys of residents and property owners within the project area, and
 - (f) other studies as required.

Consideration of Permanent Implementation or Discontinuation of Trial Local Street Bikeway

13. (1) Following trial implementation and monitoring of a trial Local Street Bikeway, staff shall analyze the results of the trial and determine whether to recommend permanent installation or recommend discontinuation of the trial and the removal of Local Street Bikeway features.
- (2) If discontinuation is recommended staff shall, if possible, notify abutters, including residents and property owners, in the project area prior to staff's presentation of a report to Community Council.
- (3) The notification in subsection (2) may include:
- (i) a summary of the analysis of the trial Local Street Bikeway including impacts, usage and other results;
 - (ii) a summary of the key rationale for recommending the discontinuation of the street or corridor as a trial Local Street Bikeway and for not being recommended for permanent installation; and
 - (iii) staff to contact for further information.
- (4) If permanent implementation is recommended, the processes in sections 4, 5, 6 and 8 of this Schedule shall be repeated.

Community Council Consideration of Permanent Implementation or Discontinuation of Trial Local Street Bikeways

14. (1) Prior to permanent implementation or discontinuation of a trial Local Street Bikeway, a staff report and detailed design shall be presented to Community Council for review and recommendation to the Council.
- (2) The Community Council may recommend to Regional Council the permanent implementation of a trial Local Street Bikeway, or recommend that the trial Local Street Bikeway be discontinued.

Regional Council Consideration of Permanent Implementation of Trial Local Street Bikeways

15. (1) Where a Local Street Bikeway is forwarded to Council for consideration under section 14 of this Schedule the Council shall approve the permanent implementation of the trial Local Street Bikeway or direct that the trial Local Street Bikeway be discontinued.

(2) Approval by the Council constitutes direction to staff to permanently implement the trial Local Street Bikeway, subject to budget availability.

(3) Where Council directs that a trial Local Street Bikeway be discontinued, the trial Local Street Bikeway shall be removed by staff.

Permanent Implementation

16. Permanent implementation shall include:

- (a) installation of the permanent Local Street Bikeway design features; and
- (b) public notification of the new Local Street Bikeway.

Discontinuation of Local Street Bikeway

17. Council may discontinue a Local Street Bikeway at any time at its sole discretion.