

# NORTH END AND WEST END BIKEWAYS (NEWEB)

## What are the North End and West End Bikeway Projects?

HRM is investigating available options for providing two key connections to the core cycling network on the Halifax Peninsula. The West End Bikeway will connect existing and current bicycle facility projects from the West End Mall to the existing Windsor Street Bicycle Facilities, while the North End Bikeway will create an AT spine from Africville Lookoff Park to the future Cogswell Interchange Greenway Project. Both of these bikeway projects are meant to:

- create **safe, comfortable, and convenient** cycling corridors for users of **all and abilities ('AAA')**, and
- **connect the existing and planned future bicycle facility projects** on the Halifax Peninsula in a north-south, and east-west direction.

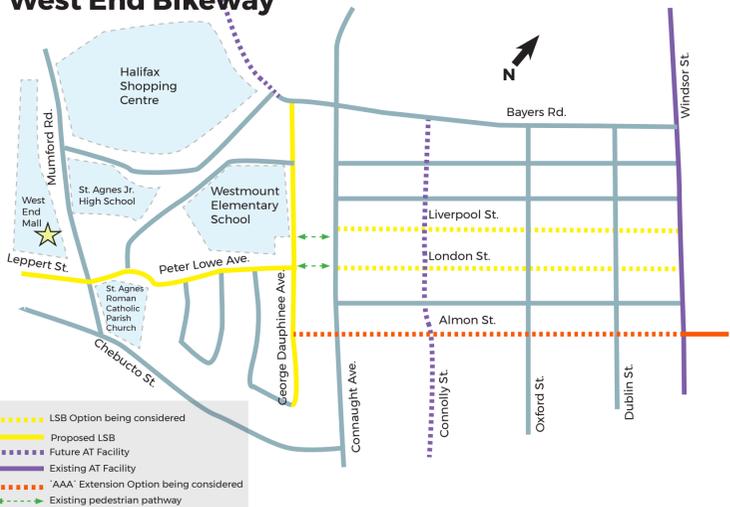
## The Bigger Picture

HRM has been working to implement the various AT facility projects identified in the **2014-19 Active Transportation Priorities Plan** which identifies candidate routes and facility types across the entire HRM. Together, these AT facility projects will create a safe, convenient, and connected network for cyclists to travel to and from common origins and destinations in the city.

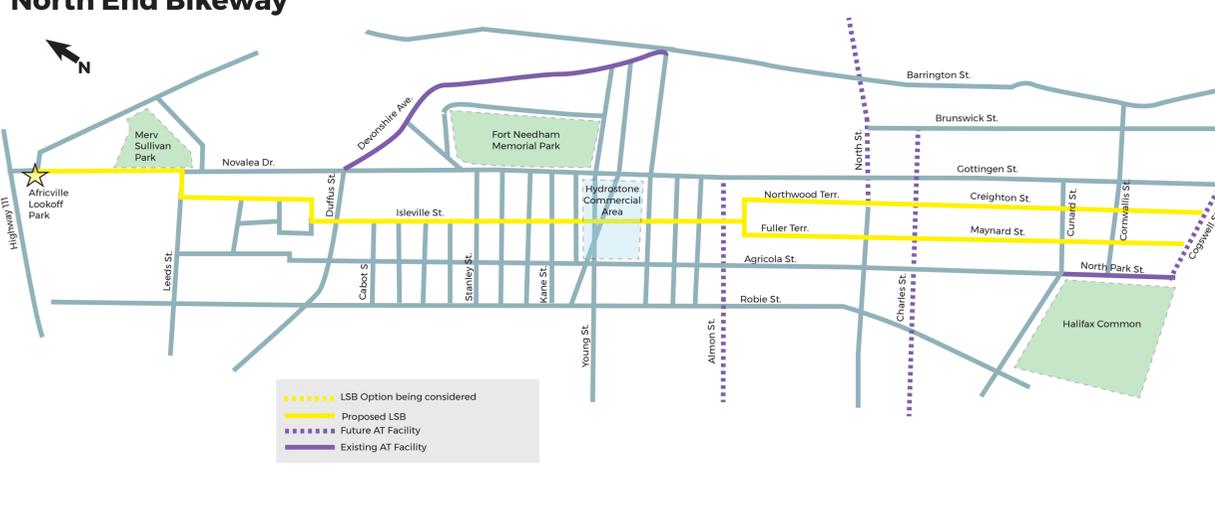
The **Integrated Mobility Plan (IMP)** sets a goal to deliver an all ages and abilities (AAA) bicycling network in the Regional Centre by 2022. The IMP identifies the need for AT facility connections on a number of residential streets including those highlighted on the map to the right.



### West End Bikeway



### North End Bikeway



## What's next for the NEWEB projects?

The public input will be discussed and the preferred design options be selected. A **functional design report** will be prepared for these two corridors which will identify the opportunities and constraints for the Design Options.

## How can you participate?

Your input is an important part of the design process. We invite you to review the options being considered and provide your feedback. Tell us about your experiences in each of the areas, and how the design concepts might impact you. Let us know if you have any ideas or concerns. Your feedback will be very important during the next stages of the project.

[www.shapeyourcityhalifax.ca/NWbikewayconnections](http://www.shapeyourcityhalifax.ca/NWbikewayconnections)

- The **functional design report** will include
- conceptual options for each corridor as well
- as a summary of what we heard from public
- engagement events. Feedback will be used
- to inform a preferred design option that will
- be advanced to the functional design phase
- as part of the final report.

## Next Steps

1. Analyze public input and select preferred designs.
2. Finalize functional design reports (end of 2018).
3. Bring preferred option to Council for design approval (Early 2019).
4. Complete detailed design of selected option (2019)\*.
5. Position selected option for phased construction between 2019 and 2022\*.  
(\*pending Council approval)

## HRM's Administrative Order for Local Street Bikeways

A key objective of a Local Street Bikeways (LSB) is to prioritize bicycle traffic and to create a street that is continuous and comfortable for cyclists of all ages and abilities. Intersections can be challenging and uncomfortable for cyclists as they are often forced to be integrated with moving traffic. To provide the level of comfort that is needed for a LSB, traffic calming and/or diverting measures are often put in place.



HRM Council has adopted an **Administrative Order (2016-002OP)** which provides guidance on when and where traffic calming and/or diverting measures are needed:

Vehicle Volume Thresholds:	Vehicle Speed Thresholds:
<ul style="list-style-type: none"> <li>&lt; 1,000 vpd - shall not require consideration of diversion of traffic</li> <li>1,000 to 3,000 vpd - may require consideration of diversion of traffic</li> <li>&gt; 3,000 vpd - shall require consideration of diversion of traffic</li> </ul>	<ul style="list-style-type: none"> <li>&lt; 30 km/hr - shall not require consideration of traffic calming</li> <li>30 to 45 km/hr - may require consideration of traffic calming</li> <li>&gt; 45 km/hr - shall require consideration of traffic calming</li> </ul>

To successfully calm/divert traffic on a LSB, alterations to high-volume intersections are often implemented. Examples of intersection traffic calming/diverting that are proposed for these bikeway corridors include:

### Rectangular Rapid Flashing Beacons



Rectangular Rapid Flashing Beacon (RRFB) pedestrian crossings control the flow of traffic with the use of a pedestrian push-button or cyclist sensor that activate flashing lights on the side of the road.

**How do they work?**  
Similar to crosswalks with overhead flashing beacons (RA-5), a pedestrian or cyclist arrives at an RRFB crosswalk and pushes a button that activates the flashing beacon to alert drivers to yield at the crosswalk.

**Why are they useful?**  
RRFB's are typically considered on roadways with 3 or fewer lanes. By placing the beacons on the side of the road they are closer to driver eye height and have been found to improve driver yielding, however, on wider roads overhead beacons are used. In 2016, HRM began trialling RRFB crosswalks at four locations throughout the Municipality.

### Overhead Flashing Beacons Pedestrian Crossing



Overhead Flashing Beacons pedestrian crossings control the flow of traffic with the use of a pedestrian push-button or cyclist sensor that activate flashing lights above the road.

**How do they work?**  
Similar to RRFB's crosswalks, a pedestrian or cyclist arrives at an overhead flashing beacon crosswalk and pushes a button that activates the flashing beacon to alert drivers to yield at the crosswalk.

**Why are they useful?**  
Overhead flashing beacons pedestrian crossings are typically considered on roadways with 4 or more lanes. By placing the beacons above the road they provide better visibility for larger roadways.

### Speed Humps



Speed Humps are traffic calming devices that use vertical deflection to slow motor-vehicle traffic in order to improve safety conditions.

**How do they work?**  
Speed humps are rounded traffic calming devices used to reduce speed and volume on residential streets. Speed humps are placed across the road and are often installed in a series of several humps to prevent cars from speeding before and after the speed hump.

**Why are they useful?**  
Speed humps typically limit vehicle speeds to approximately 30-35 km/h at the speed hump and 40-50 km/h at the midpoint between speed humps.

### Curb Extensions



Curb extensions are a traffic calming measure primarily used to extend the sidewalk, reducing the crossing distance and providing better visibility of the pedestrian.

**How do they work?**  
Curb extensions narrow the roadway and widen the sidewalk and are typically accompanied by a RRFB pedestrian crossing control.

**Why are they useful?**  
They decrease the crossing distance and increase the visibility of pedestrians.

# ALL AGES AND ABILITIES ('AAA') CROSSING TREATMENTS

## CROSSING OF MAJOR INTERSECTIONS

An important aspect of creating all-ages-and-abilities cycling corridors is considering how to facilitate the safer, more comfortable crossing of major intersections while on a bicycle. Intersection treatments are aimed at improving visibility, creating gaps, and delineating how bicycles should move through the intersection.

Intersection treatments should be context specific and will depend on factors such as:

- Type of bicycle facility
- Street classification, volume of motor vehicles and percentage turning movements
- Adjacent street function and surrounding land uses
- Pedestrian movement
- Connection to other cycling facilities

## TYPES OF FACILITIES



CROSSRIDES

Dashed lines or otherwise designated area alongside a crosswalk that allows people bicycling to ride through the intersection rather than dismounting to walk their bike through the crosswalk. This is not currently allowed through provincial legislation but may be on the horizon in the near future.



BICYCLE DETECTION AND/OR ACTUATION

Flashing lights (RA-5 Overhead or Rectangular Rapid Flashing Beacons) and traffic signals can be calibrated to detect bicycles using in-pavement loops, video or radar technology to cause signals to trigger in the presence of bicycles. Alternatively, push-button actuation alongside the roadway can be installed within reach of people cycling.



MEDIAN REFUGE ISLAND

Physically protected spaces in the centre of an intersection that allow people walking and bicycling to cross the street in two stages, typically one lane at a time. This reduces distance and improves comfort for people walking and cycling.



TRAFFIC SIGNALS

Traffic signals can help facilitate the crossing of major intersections by bicycle. Half signals stop vehicles on the cross street only (bikes can proceed with any gap) while full signals control all four legs of the intersection. Bicycle signals may eventually be used (pending legislation) to separate signal phase for bikes, therefore improving safety and comfort.



FOUR WAY STOP

Creation of a four way stop at major streets along a bikeway can help to establish priority movement along the bikeway (if the cross street has greater traffic volume) and to create gaps for easier crossing by bicycles.



BIKE BOXES

Designated area at the front of a traffic lane that provides a safe and visible place for people on bicycles to bypass waiting cars and queue at a signalized intersection. These are often installed alongside a painted bike lane approach and are typically green in colour.

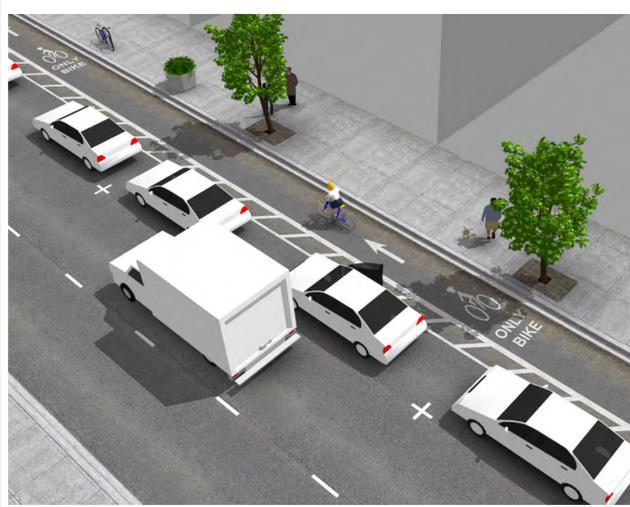
# ALL AGES AND ABILITIES ('AAA') BIKE FACILITIES

## 'AAA' FACILITIES IN HRM

Bicycling should be comfortable and enjoyable for people of all ages and abilities - from children to seniors to new bicyclists. 'AAA' facilities are considered critical to increasing the number of people who choose to ride a bicycle because most people feel uncomfortable riding in mixed traffic and may only choose to ride if there is a network of low stress facilities available. HRM's Integrated Mobility Plan (IMP) seeks to encourage and enable year-round bicycling by implementing a connected 'AAA' network.

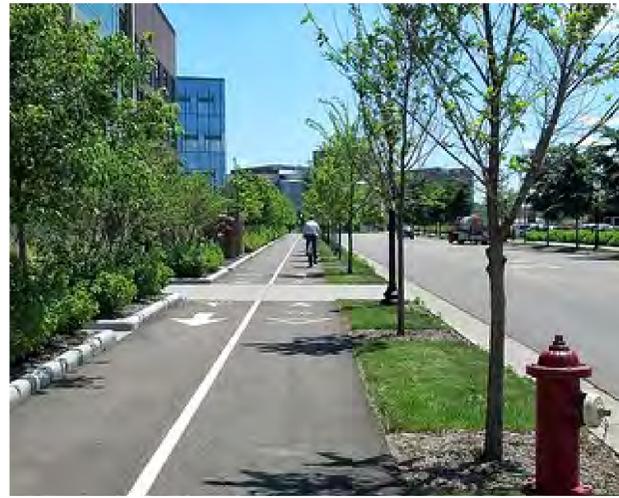
'AAA' networks include a variety of protected facilities on busy streets that physically separate the cyclist from adjacent moving traffic. On quiet, residential streets a shared roadway facility called a local street bikeway can be used to build the connections.

## TYPES OF FACILITIES



### UNI-DIRECTIONAL PROTECTED BIKE LANE

Uni-Directional protected bike lanes are bike facilities that accommodate the movement of cyclists in one direction. Design features include protective measures such as raised curbs, parked cars, bollards or even planter boxes.



### BI-DIRECTIONAL PROTECTED BIKE LANE

Bi-Directional protected bike lanes are bike facilities that accommodate the movement of cyclists in two directions, including one-way streets.



### MULTI-USE PATHWAY

Multi-use pathways are 3-4m wide trails that are typically off-road and surfaced with asphalt. Such facilities are sometimes branded as 'trail' or 'greenway'. The pathway is to be shared by users of all non-motorized modes (e.g. walking, cycling, wheeling) for active travel or recreational purposes. Travel is permitted in both directions. Multi-use pathways have been identified as the most comfortable type of facility due to their location away from traffic. However, in high volume areas there may be conflict between users of different speeds (e.g. people walking and people bicycling).



### LOCAL STREET BIKEWAY

Local Street Bikeways are streets with low motorized traffic volumes and speeds, modified to optimize bicycle travel without the need for separated bicycle lanes or paths -- bicycles and vehicles proceed in a shared lane. These designated routes maximize cyclist convenience, comfort, and connectivity to appeal to users of all ages and abilities.

Lower motor vehicle speeds and volumes are critical to facilitating safe sharing of the road along these routes. As a result, traffic calming and/or diversion features may be added to facilitate increased safety and convenience for cyclists. In addition, special treatments at intersections can help facilitate the safer crossing of major roads along the route.



### CONTRAFLOW BIKE LANE

Contraflow painted bike lanes allow for bicycle travel in the opposite direction of vehicular traffic in the case of one-way streets. As a result, the street becomes two-way for bicycles while remaining one-way only for cars. Contraflow bike lanes are typically delineated with a painted yellow line or hatched buffer, however, some applications on busier streets also include physical barriers such as curbs, bollards, planters, parking protection, or a raised lane alongside the sidewalk.