Separated Cycling Network Pilot Project

**What:** A network of separated bike lanes.

**Where:** The City of Waterloo.

**Why:** To pilot a set of separated facility types within Waterloo Region to gain a better understanding of how it influences existing and future cyclist behavior and to determine appropriate methods of construction and maintenance for similar projects throughout the Region in the future.

**When:** From Spring 2018 to Fall 2019.

**Who:** Region of Waterloo Project Manager
Geoffrey Keyworth, P. Eng., MCIP, RPP
Region of Waterloo
Phone: (519) 575-4089
Email: gkeyworth@regionofwaterloo.ca

Public Consultation Centre
December 12, 2017
Albert McCormick Community Centre
(Community Room)
500 Parkside Drive, Waterloo

December 14, 2017
Waterloo Public Library (Main Branch)
(Auditorium)
35 Albert Street, Waterloo

We Want Your Input! There is a comment sheet at the back of this package. Please fill it out and share your comments with us.
Key Plan of Study Area Cambridge
Key Plan of Study Area Kitchener
Key Plan of Study Area Waterloo
1. Why is the Region doing this project?
The Region of Waterloo is committed to improving and enhancing cycling Region-wide. Currently, cycling is primarily used for recreation. Most people are considered “interested but concerned” about cycling for commuting to and from work, school or other frequent destinations. Research shows that more separation from traffic can increase the sense of comfort and safety for people on bikes, which in turn increases interest and potential for use.

This project will identify a study area and network of separated bike lanes to provide direct, safe routes connecting neighbourhoods, transit hubs, employment areas and other destinations. Through this project the Region wants to:

- Test separated bike lanes along some roads;
- Evaluate different types of separated bike lanes;
- Encourage more people to cycle;
- Connect to destinations; and
- Consult with a broad range of stakeholders.

2. What other Regional policies support this project?
The Regional Transportation Master Plan (RTMP) aims to triple the cycling share of transportation by 2031. This project supports this objective, as well as the goals of promoting transportation choice, optimizing the transportation system, and supporting sustainable development.

This project is also consistent with the Active Transportation Master Plan (ATMP). One of the ATMP’s goals is to develop a Region-wide cycling network. This project supports the ATMP’s Network Action Plan for a more comprehensive cycling network, and the Behavioural Shift Action Plan that targets inexperienced cyclists for improvements.

3. Who is directing this project?
A Project Team with staff from the Region is directing this project. The Project Team also includes Regional Councillor Jane Mitchell, consultants from the Kitchener office of WSP Canada Group Limited, and consultants from Paradigm Transportation Solutions Limited in Waterloo. After selecting the Preferred Study Area, staff from the appropriate area municipality will be added to the Project Team.

4. How is the project being planned?
The Region is following the Municipal Class Environmental Assessment “Schedule A+” process, which is pre-approved with public notice. This is appropriate because this project is a temporary pilot and will not involve any road reconstruction. Changes are expected to be limited to pavement markings, signage and localized operational improvements. We plan to implement the project in Spring of 2018 and finish the project in Fall of 2019.

The following table outlines the tasks to be completed.
### Phase 1: August 2017–March 2018

1. Initiate project and review background information
2. Analyze candidate study areas
   a. Evaluate 18 study areas
   b. Recommend one Preferred Study Area
   c. Launch consultation program (launch survey, Public Consultation Centre, local business and stakeholder meetings)
   d. Identify and evaluate potential streets within the Preferred Study Area
   e. Recommend specific streets and facility types
3. Baseline monitoring program
   a. Monitor baseline cycling activity on the recommended separated bike lane network

### Phase 2: June 2018–December 2019

1. Prepare base plans and preliminary design for separated bike lane network pilot
2. Implement separated bike lane network pilot
3. Monitor and evaluate separated bike lane network pilot project
4. Present evaluation report to Regional Council

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### 5. Why host this Public Consultation Centre?

The Public Consultation Centre gives you an opportunity to:

- Learn about the project
- Review the process to identify the Preferred Study Area
- Comment on the Preferred Study Area
- Suggest potential network connections
- Comment on potential facility types and network design considerations
- Ask questions to the Project Team

A Comment Sheet is provided in Appendix ‘C’. Please fill out this Comment Sheet and put it in the box at the Public Consultation Centre, or send it to the address indicated on the Comment Sheet. All comments received will be considered along with other information received over the course of the project to assist the Project Team in completing the planning and design for this project.

### 6. What is a Separated Bike Lane?

A separated bike lane is a designated and protected travel lane for bicycles along a road, which provides separation to create space between cyclists and moving or parked vehicles. Separated bike lanes can be unidirectional or bidirectional and may be raised from the roadway.

Separated bike lanes can take on many forms based on a number of separation criteria and design options. When determining the most appropriate type of separation the following is typically considered:
- Material and installation cost;
- Winter maintenance (e.g. snow clearance);
- Driveway access;
- Bicycle maneuverability and turning movements;
- Aesthetic appeal; and
- Emergency access.

A number of types of separation alternatives could be considered, including:

Concrete barrier curbs  Concrete roll curbs  Flexible or fixed bollards  Planters  Grade separation
Concrete delineators  Rubber delineators  Concrete barriers (walls)  Buffer zones (painted or durable markings)  Parking

7. How will the separated bike lane network be selected?

The Project Team will use a five-stage approach:

**Stage 1: Preliminary Study Areas (Complete)**
To identify a preliminary set of study areas in Cambridge, Kitchener and Waterloo that could contain a separated bike lane network, the Project Team consulted with the Regional Active Transportation Advisory Committee and local area municipal staff to identify 18 preliminary study areas.

**Stage 2: Study Area Criteria (Complete)**
The Project Team developed a set of criteria and evaluated each of the preliminary study areas to find the most promising one within each of Cambridge, Kitchener and Waterloo, for a total of three study areas.
Stage 3: Qualitative Assessment (Complete)
The Project Team did a further qualitative review of the three study areas from Stage 2 to choose one Preferred Study Area with the greatest potential for achieving overall project objectives. The Preferred Study Area is being presented at this Public Consultation Centre.

Stage 4: Preferred Separated Bike Lane Network
Within the Preferred Study Area, the Project Team will identify and evaluate potential roads or other routes to determine the network. The Project Team will consider high-level criteria such as connectivity, continuity, access, cost effectiveness, etc.

Stage 5: Preferred Design Options
For the network from Stage 4, the Project Team will determine the preferred separation type. This will consider available space, operating speed, traffic, existing and potential demand, etc.

8. How were the study areas evaluated?
In Stage 1, the Project Team identified 18 preliminary study areas in Cambridge, Kitchener and Waterloo. To identify one preferred study area in each municipality, 11 evaluation criteria were considered:

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<th>Criteria</th>
<th>Description</th>
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<tr>
<td>Destination Density</td>
<td>Points of interest, such as grocery stores, convenience stores, hospitals and health centres, malls/plazas, movie theaters, art venues, and regional buildings</td>
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<td>Community Centres</td>
<td>Local community centres</td>
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<td>Transit access</td>
<td>Points of access (transit stops) for the ION light rail transit and municipal bus routes</td>
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<td>Educational Building Density (Not Including Post-Secondary)</td>
<td>Locations of educational institutions, such as libraries, elementary, junior elementary, private, secondary, and senior elementary</td>
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<td>Proximity to Post-Secondary</td>
<td>Proximity to the nearest major post-secondary institution</td>
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<td>Upcoming Development</td>
<td>Approved and pending applications for sub-divisions and condominium developments by location</td>
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<td>Dwelling Count</td>
<td>Dwelling unit counts by census block as identified by the 2016 census (used as a proxy measure for population)</td>
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<td>Employment</td>
<td>Percentage of inbound trips that are work-related trips</td>
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<td><strong>Active Transportation Access</strong></td>
<td>Existing active transportation access</td>
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<td><strong>Current Cycling Mode Share</strong></td>
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<td><strong>Number of Potentially Cyclable Trips</strong></td>
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Using available data, each study area was assessed and ranked based on how it performed relative to each criteria. The results were also compared against STRAVA data, a self-documented online mapping tool which aggregates information from cyclists regarding their trip distance, destinations, travel times, etc.

Scores were given to each study area based on the 11 criteria. The study area with the lowest total ranking/score represented the area which is considered the most suitable for the separated bike lane pilot network.

The results of the evaluation are presented in **Appendix ‘B’**.

**9. What were the highest scoring study areas in each City?**

The evaluation identified three study areas, one in each City, which had the highest scores. **Appendix ‘B’** includes maps of the preliminary preferred study areas. The table below provides a description of each and its rank.

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<th>Study Area #</th>
<th>Description</th>
<th>Rank</th>
<th>Considerations</th>
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| 17           | **Uptown Waterloo**: This area covers a large section of both University of Waterloo and Wilfred Laurier University campuses, which contains a significant amount of student housing. It also includes the Uptown Waterloo area containing some of Waterloo Park and residential areas with single-detached homes. The Uptown area is composed of a commercial area, groceries stores, night life, and Waterloo City hall. | 1    | This study area was ranked strongly in:  
  - Access to active transportation;  
  - Access to community centres;  
  - Upcoming development;  
  - Amount of currently cycled trips;  
  - Amount of inbound work related trips;  
  - Access to transit;  
  - High dwelling density;  
  - Proximity to post-secondary institutions. |
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| 11          | **Downtown Kitchener:** This area includes Victoria Park and access to key trails such as the Iron Horse. It also has residential areas with single-detached houses and mid-rise units. The area is home to Kitchener City Hall and many local businesses. This area features the new downtown Google offices and the Campus for Waterloo’s School of Pharmacy. | 2    | This study area ranked strongly in:  
  - Access to active transportation;  
  - Access to community centres;  
  - Upcoming development;  
  - Amount of currently cycled trips;  
  - Amount of inbound work related trips;  
  - Density of destinations;  
  - Access to transit;  
  - High dwelling density; and  
  - Proximity to post-secondary institutions. |
| 3           | **Cambridge Centre:** This area has the major commercial area within Cambridge. There is also medium to high-rise residential/townhouses, and single-detached homes. This residential/commercial area also borders a dense employment area to the north of the study area. The site features access to green spaces and trails. | 3    | This study area ranked strongly in:  
  - Access to community centres;  
  - Cycling potential;  
  - Proximity to post-secondary institutions; and  
  - Upcoming new development. |

10. **What is the preferred study area and why was it selected?**

The preferred study area for the separated bike lane pilot project is **Study Area 17: Uptown Waterloo**. After identifying the three highest scoring areas in each City, the Project Team looked at areas adjacent to the study areas that may contribute to a favourable cycling environment. **Study Area 17: Uptown Waterloo** was selected as the Preferred Study Area for the following reasons:

**Post-Secondary Institutions are Important**
This area contains Wilfrid Laurier University and Waterloo’s Conestoga College campus. It is also next to the University of Waterloo. Together, these institutions account for an estimated 48,700 full-time students. Providing this key demographic with access to separated bike lanes could substantially improve the already strong modal share of cyclists in the area.

**Major Destinations are Nearby**
Directly to the north of the study area is Conestoga Mall, which is a significant destination and presents an opportunity to connect Northern Waterloo to Uptown Waterloo and destinations along this portion of the King Street corridor.
Major Trail Routes Connect to the Area
This area has direct access to the Iron Horse Trail, which is an important link in The Great Trail (formerly named the Trans Canada Trail). Strengthening the active transportation connections to this provincially/nationally significant trail system represents an opportunity for the Region to increase tourists and commuters using the trail. The Iron Horse and Spur Line Trails also pass through Uptown, strengthening the connection to Kitchener.

Major Employers are Nearby
This area could provide bike access to thriving and growing business and employment sectors. The Research & Technology Park is next to the study area and already has a robust cycling network. Linking an area with impressive access to education capital to a growing technology sector is an opportunity to facilitate growth and promote active transportation.

11. Examples of Separated Bike Lane Projects
Separated bike lanes have been implemented in a number of municipalities throughout Canada. Here are some examples of projects in comparable municipalities, including lessons learned.

Cannon Street Bi-directional Cycle Track, Hamilton
- Implemented in 2014;
- 3.3 km two-way facility;
- No on-street parking adjacent to bicycle facility;
- Primarily flex bollards with rubber delineators and planters near some intersections are used to create separation between cyclists and motor vehicles;
- Occasional driveways and curbside waste collection;
- No roadway reconstruction associated with project;
- Snow removal required in winter; and
- Implementation budget: $867,200; annual maintenance budget $242,900 (winter cleared);
- Additional studies undertaken: Cannon Street Bi-directional Cycle Track Pilot Project: Feasibility Assessment and Functional Design.

Laurier Separated Bicycle Lanes, Ottawa
- Implemented in 2011 as a pilot project; approved as a permanent facility in 2013 with minor modifications;
- 1.3 km one-way facilities, primarily using precast concrete curbs, but also including planters and bollards in some locations to create separation;
- One lane of on-street parking located between motor vehicle lane and bicycle lane;
- Very few driveways/private entrances crossing the separated bicycle lanes;
- Implementation budget: $1.3 million; annual maintenance budget: $261,500 (winter cleared); and
- Additional studies undertaken: Laurier Avenue Segregated Bike Lane Mitigation Design.

Calgary
- Implemented in 2015 as a pilot and voted by Council in 2016 to become permanent;
6.5 km of cycle track in downtown, with a mix of one and two-way separated and painted cycling facilities; and
Estimated implementation cost (total project): $5.5 million.

Edmonton
- Implemented in 2017;
- 7.8 km of protected and painted cycling facilities, and designated routing; and
- Estimated implementation cost (total project): $7.5 million, annual operational budget: $625,000.

Winnipeg
- Implemented in 2017 as a pilot project;
- City using precast, concrete barriers to create separated bicycle facilities without making major alterations to roads; and
- Estimated implementation cost of precast separator treatment on two city streets (Sherbrook St. and Bannatyne Ave.): $15,000.

Some photos of these and other projects are on the next page.

12. When will the Region implement the network?
The pilot project is scheduled to be implemented in May/June 2018. The design and implementation of the separated bike lane pilot project will not require road construction. It will include the temporary implementation of different physical separation treatments throughout the network and could include the repainting of some travel lanes.

13. How will the pilot project be monitored?
A key component of the project is monitoring to determine how well it works. A monitoring program will assess the impact on bicycle traffic, cycling habits and vehicle traffic, in three ways:

1. A count program (turning movement counts, midblock volume counts and video collection) will count the volume of bicycles, motor vehicles and pedestrians at key location in the network;
2. Travel times and speed data for motor vehicles will be collected and monitored to evaluate whether the separated bike lanes are affecting traffic operations of cars and trucks; and
3. A voluntary user intercept survey will gather additional information about the users of the separated bike lane network. The survey will collect information on trip origin/destination and route, trip purpose and frequency, impact of the separated bike lane facility on decision to cycle, and demographics. The survey will be distributed by a small survey team stationed along the network. Bicycle volumes past the survey location will also be counted while the survey is in progress.
Top Left: Buffered bike lane with durable markings (Bloor St., Toronto); Top Right: Buffered bike lane with durable markings and planters (Richmond St., Toronto, Credit: ibiketo.ca);

Middle Left: Flex-bollards and rubber delineators used at a signal controlled intersection (Cannon St., Hamilton); Middle Right: Flex-bollards used at a stop controlled intersection (Cannon St., Hamilton);

Bottom Left: Precast concrete barrier curbs with flex-bollards adjacent to a motor vehicle lane (Laurier Ave., Ottawa); Bottom Right: A durable roll curb with frequent gaps to permit drainage and a flex bollard at the beginning/end point of roll curb (Sherbourne St., Toronto).
14. What are the next steps?
The Project Team will review the comments received from this Public Consultation Centre and verify the selection of the Preferred Study Area, as well as the proposed separated bike lane network and design treatments.

The preferred network and preliminary design treatments are scheduled to be presented to the Project Team, select stakeholders, local businesses and private land owners that are impacted by its implementation in January/February 2018.

Following the additional consultation and engagement, the Project Team will complete preliminary design for the proposed separated bike lane treatments, which will be presented to Regional Council for consideration prior to implementation.

15. How will I receive further notification regarding this project?
Everyone who attends the Public Consultation Centre and registers will be notified of all forthcoming public correspondence and will be notified of future meetings.

16. How can I provide my comments?
Please fill out the attached Comment Sheet and leave it in the comment box provided at the registration table. Alternatively, please mail, fax or e-mail your comments to the Project Team member listed below by December 22, 2017.

Thank you for your involvement. If you have any questions or concerns please contact one of the following:

<table>
<thead>
<tr>
<th>Dave McLaughlin</th>
<th>Geoffrey Keyworth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultant Project Manager</td>
<td>Region of Waterloo Project Manager</td>
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<td>WSP Canada Group Ltd.</td>
<td>Region of Waterloo</td>
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<td>100 Commerce Valley Drive West</td>
<td>150 Fredrick Street</td>
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<tr>
<td>Thornhill, ON L3T 0A1</td>
<td>Kitchener, ON N2G 4J3</td>
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<tr>
<td>Phone: 905-882-7306</td>
<td>Phone: (519) 575-4089</td>
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<tr>
<td>E-mail: <a href="mailto:dave.mclaughlin@wsp.com">dave.mclaughlin@wsp.com</a></td>
<td>E-mail: <a href="mailto:gkeyworth@regionofwaterloo.ca">gkeyworth@regionofwaterloo.ca</a></td>
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17. How can I view project information following the PCC?
All of the PCC display materials and other relevant project information, notifications of upcoming meetings and contact information are available for viewing at the Region of Waterloo’s website at: http://www.regionofwaterloo.ca/
### WATERLOO SEPARATED BIKE LANE: STUDY AREA ANALYSIS RESULTS

Each of the 18 preliminary study areas were evaluated and ultimately ranked according the criteria identified in the matrix. Each study area will have a set of individual rankings based on how it performs relative to each criteria, and a final ranking (which is based on a summation of all individual ranks). The study areas which have achieved the lowest total ranking / score (after summation of each criteria ranking) represent areas which are considered the most suitable for the separated bike lane pilot network. The results are listed below.

#### Legend
- **Best Performing**
- Study area was ranked 1st overall for this criteria and indicates that this area has a most favourable condition when referring to this criterion.
- **Suitable**
- Study area was ranked between 2nd and 4th overall for this criterion and indicates that this area has a favourable condition when referring to this criterion.
- **Moderately suitable**
- Study area was ranked between 7th and 13th overall for this criterion and indicates that this area has a moderately favourable condition when referring to this criterion.
- **Unsuitable**
- Study area was ranked between 13th and 18th overall for this criterion and indicates that this area is not as favourable as other study areas when referring to this criterion.

#### Overall Ranking

<table>
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<tr>
<th>Study Area</th>
<th>Rank</th>
<th>Overall Score</th>
<th>Active Transportation</th>
<th>Community Centres</th>
<th>Current Cycling Mode Share</th>
<th>Upcoming Development</th>
<th>Inbound Work Trips</th>
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Appendix C: Public Consultation Centre Comment Form

Comment Sheet
Regional Municipality of Waterloo
Separated Cycling Network Pilot Project

Please complete and hand in this sheet with your comments. If you cannot complete your comments today, please take this home and mail, fax or e-mail your comments by December 22, 2017 to:

Geoffrey Keyworth
Acting Manager, Transportation Planning
Region of Waterloo 150 Frederick Street, 6th Floor
Kitchener, ON N2G 4J3 Phone: (519) 575-4089
Fax: (519) 575-4453 Email: gkeyworth@reginofwaterloo.ca

1. Three Study Areas have been reviewed and evaluated. The evaluation results indicate that Study Area 17: Uptown Waterloo is the Preferred Study Area for a separated bike lane network.

Do you agree or disagree with Study Area 17: Uptown Waterloo as the Preferred Study Area?
☐ Agree  ☐ Disagree

2. If you disagree with Study Area 17 as the Preferred Study Area, please tell us which alternative you prefer and why you prefer it.

________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________

3. Are there specific roadways within the Study Area 17 that you think would be a good candidate for the separated bike lane network? If so, please list them below and why.

a.  ___________________________________________________________________________

b.  ___________________________________________________________________________

c.  ___________________________________________________________________________

d.  ___________________________________________________________________________

e.  ___________________________________________________________________________
4. There are a number of design treatments that could be considered for the network. Please review the list below and check off which of those you think should be considered.

- Concrete barrier curbs
- Concrete barriers
- Concrete delineators
- Planters
- Concrete roll curbs
- Buffer zones (painted or durable markings)
- Rubber delineators
- Grade separation
- Flexible or fixed bollards
- Parking

5. Please use this space to provide any other comments or concerns you have regarding this project.

________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________

Name: ___________________________________________________________________________
Address: _________________________________________________________________________
Postal Code ______________________________________________________________________
Phone: _________________________ Email: ___________________________________________

Collection Notice

All comments and information received from individuals, stakeholder groups and agencies regarding this project are being collected to assist the Region of Waterloo in making a decision. Under the “Municipal Act”, personal information such as name, address, telephone number, and property location that may be included in a submission becomes part of the public record.